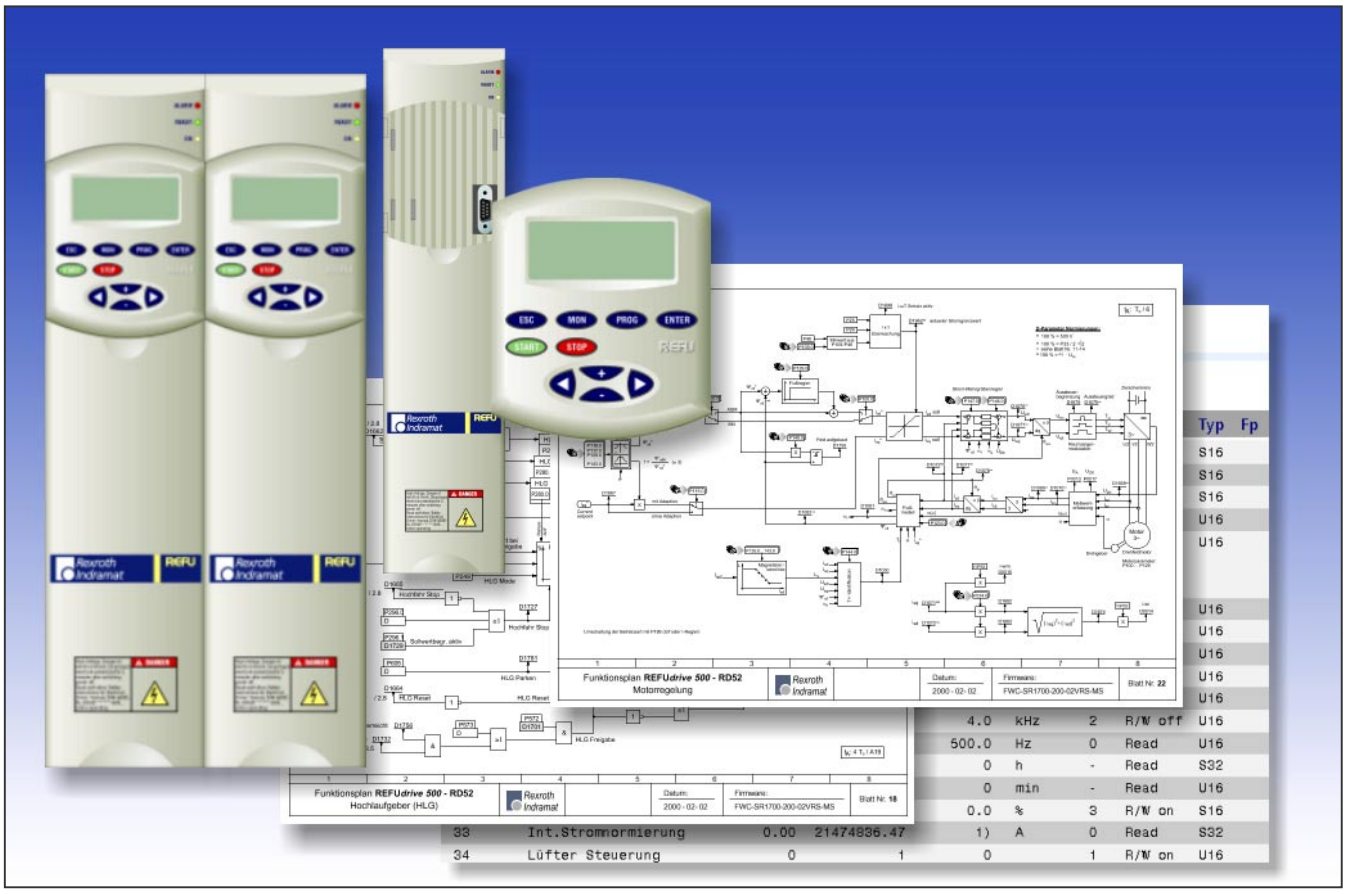
Rexroth



REFUdrive 500 RD52
Function diagrams and parameter list

Functional Description: Firmware 05VRS

DOK-RD500*-RD52*05VRS*-FK01-EN-P

Rexroth Indramat

Titel REFUdrive 500 RD52
Function diagrams and parameter list
Functional Description: Firmware 05VRS

Type of Documentation Functional Description

Document Typecode DOK-RD500*-RD52*05VRS*-FK01-EN-P

Internal File Reference 120-1950-B324-01/EN

Purpose of Documentation This documentation describes....

- The parameterization of the drive control devices based on function diagrams and parameter ist.

Record of Revisions

Description	Release Date	Notes
DOK-RD500*-RD52*05VRS*-FK01-EN-P	07.2002	First edition

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Published by Indramat Refu GmbH
Uracher Strasse 91• D-72555 Metzingen
Telefon +49 (0)71 23 / 9 69-0 • Fax +49 (0)71 23 / 9 69 – 2 60
http://www.boschrexroth.de/
Dept. Development E (JR)

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List of contents

1 Parameterization

1.1 Parameterization

In the parameterization, the operator has the full functional scope of the firmware documented in the function charts and the parameter list. It is selected in the condition when supplied. Using the "numerical list", all parameters can then be selected and set using their parameter number.

1.2 Parameterization using the operator panel RZB

Fig. 1-1: Operating panel with graphics display (option)

Key functions when parameterizing

Key	Menu level	Parameterizing level
Esc	Return jump to the previous menu item	The modified value is rejected
Mon	Change into the monitor	
Prog	Change in the parameter-ization	The value is temporarily accepted. All of the values are only accepted after first pressing the "enter" key.
Enter	The selected menu item is accepted	The modified value is accepted
+	To the previous menu item	The value is increased
−	To the next menu item	The value is decreased
▶	Jump to the end of the list	Cursor position to the right
◀	Jump to the start of the list	Cursor position to the left

Fig. 1-2: Key functions of the operator panel when parameterizing

Fast parameterization using the key combinations

Key	Response
◀	The first selection text for text parameters is directly selected.
+ + −	When these keys are pressed together: – the complete parameter number is set to zero (numerical list). – the complete parameter value is set to zero (for numerical parameters). – the text selection is progressed in steps of 10 (practical e.g. for parameter P0875 with almost 100 selection texts). – the standard value is set.
▶	The last selection text for text parameters is directly selected.
◀ + ▶	When these keys are pressed together, the factory setting is set for the active value.
Mon + Prog	If these keys are pressed together, the system changes from the Mon. - or Prog area into a temporary actual value display. When the ESC key is pressed once, the display switches back to the selected menu. In order that the operator can make a differentiation between the normal operating display and the temporary actual value display, a flashing frame is used for the temporary actual value display.

Fig. 1-3: Key combinations

Fault messages when parameterizing

Fault message	Cause	Solution
Parameter can only be read	An attempt was made to change a display parameter.	
Parameter can only be changed when the inverter is inhibited	Inverter is operational.	Inhibit the inverter and then change the parameter.
Data conflict (general)	Some parameter settings are dependent on others. If a parameter value is changed and confirmed with Enter, data conflicts can arise.	
e.g. data conflict P0046 with P0109.00 Prog=temp.transfer	The current limit specified in P0109.00 is too high for this unit with the selected pulse frequency (P0026).	Temporarily accept the value of the first parameter change with Prog, after the second parameter change, confirm that both values should be saved with Enter.

Fig. 1-4: Fault messages when parameterizing

Structure of the PARAMETERIZING menu

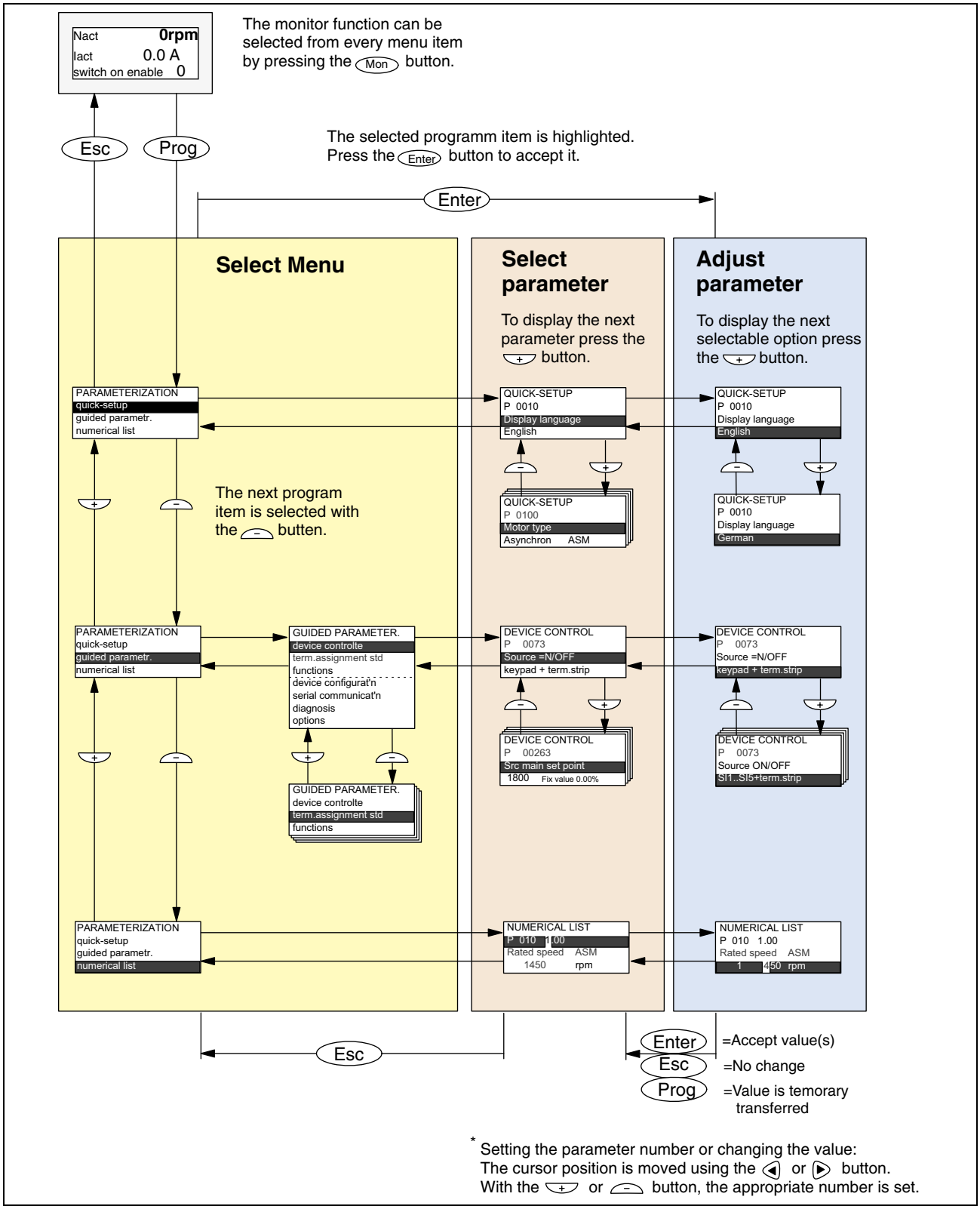

Fig. 1-5: Menu structure

2 Interface protocol

2.1 USS protocol

Description of the USS protocol

The USS protocol (German: Universal-Serial interface protocol) defines an access technique according to the master-slave principle for communications via a serial bus.

When using the RS232, in addition to the master, only one slave is permissible.

When using RS485, one master and a max. of 32 slaves can be connected to the bus.

The individual slaves (REFU*drive 500*) are selected by the master (higher-level computer) using an address character in the telegram.

A slave can never initiate a data send operation. Direct data transfer between the individual slaves is not possible. Communications are realized in the half-duplex mode.

The master function cannot be transferred (single-master system).

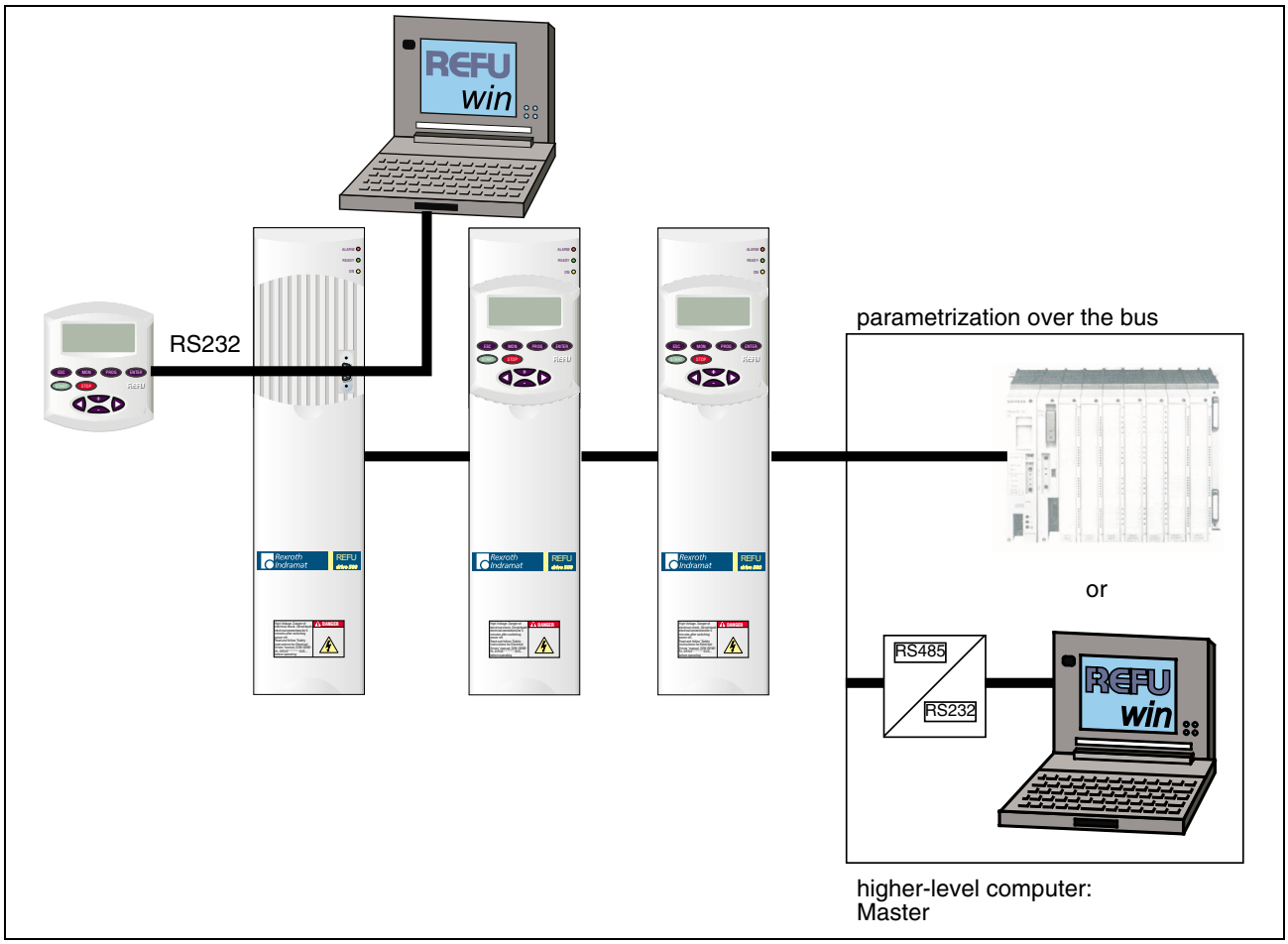

Fig. 2-1:USS communications

Telegram transfer

The master sends telegrams (task telegrams) to the slaves and expects a response telegram from each of the addressed slaves.

A slave must send a response telegram:

- If it received a task telegram, error-free, and
- It was addressed in this task telegram.

A slave may not send if these conditions are not fulfilled, the slave was addressed in the broadcast mode (refer to Page 2-8, Broadcast), or the special bit is set (refer to Page 2-7 Special telegrams).

For the master, a connection is established to the associated slave, if it receives a response telegram from the slave in a defined processing time (response delay time, refer to Fig. 2-2:USS).

Also refer to 2-11, Task and response ID (AK).

Handling data transfer

In order that the telegram start can be clearly identified, a starting interval without characters, equivalent to at least 2 characters is specified before the STX. This start interval is part of the telegram. Only an STX with preliminary start interval identifies the valid start of a telegram.

Data transfer always proceeds as follows (half-duplex mode):

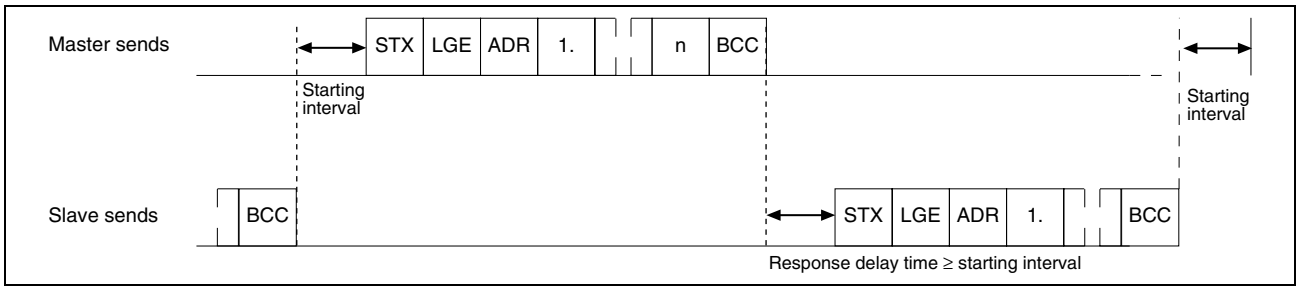

Fig. 2-2:USS data transfer

The time between the last character of the task telegram (BCC) and the start of a response telegram (STX) is called the response delay time. If a node (station) x does not respond within the maximum permissible response delay time of 20 ms, an error message "Node x does not send" is saved in the master. The master sends the telegram for the next node. The error message is only deleted after an error-free telegram has been received from node x.

Task and response processing

The task and response processing describes the timing and functional sequence of data transfer for the PKW interface (parameter ID value, refer to Section x, net data block and X, description of the PKW elements) between the master and slaves.

- The master may only send one task to a node (an address), and must wait for the appropriate response. The master must repeat its task as long as it waits for this response!
- The task must be completely sent in one telegram. Split task telegrams are not permitted. This also applies to response telegrams!
- Every task change signifies a new task, which must be followed by the associated response. The task ID “No task” must be considered just like any other task ID, and must be responded to with the response ID “No response”!
- If no information is required from the PKW interface in cyclic operation (only process data are important), then the “No task” task must be issued.

- If there are considerable time differences in the drive converter between the cyclic telegram sequence and the response, the slave sends, in the transition phase between “Old task” and “New task”, the response to the “Old task” until it recognizes the “New task” and has prepared the associated response.
  - For responses, which contain parameter values, the slave always responds with the actual value when repeating the response telegram.
- When first establishing communications between the master and slave (the first time that the slave is addressed), in the transition phase, in which an answer is being prepared in the drive unit, the slave can only respond with the ID “No response”.
- If the master does not receive a response ID from the addressed slave associated with the particular task, the error message “Node x does not respond” is saved in the master.
- If the master does not have PKW change rights (P0072), then none of the changes from the drive unit are processed and the response ID “No PKW change rights” issued. All of the read tasks are processed.
- The slave does not expect an acknowledgement from the master as to whether the response telegram was received or not.
- Response ID in the master to a task which was issued:
  - The master recognizes the correct response in the response telegram by evaluating the response ID, the parameter number (PNU), and if required, by the value in the index (IND) and the parameter value.
- Recognizing a new task in the slave:
  - Every task, which the master issues after receiving a valid response to the old task, is recognized by the slave as new task.
- If the master sends a broadcast telegram, the slaves do not respond to this broadcast telegram.

Electrical Installation

The standard RS485 interface is connected at connector X12 on the control card (refer to the Instruction Manual of the drive unit, terminal diagram SR1700X).

Terminal	Designation	Comment
X12	**RS485**	
1	RxD+ /TxD+	RS485 interface; communications with the USS protocol
2	RxD-/TxD-	

Fig. 2-3: Terminal diagram X14 (SR1700x)

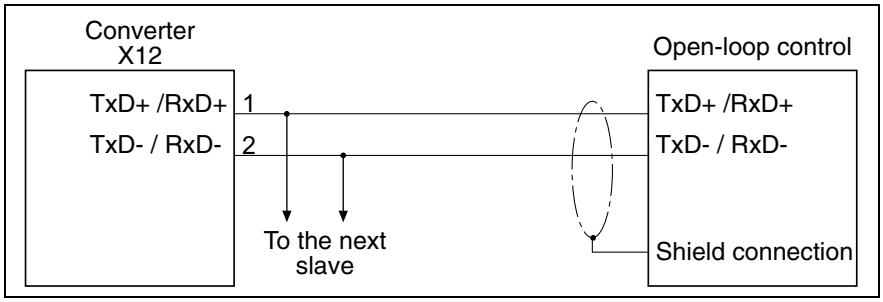

Fig. 2-4:RS485

When using this interface, it should be ensured that the same interface configuration is set for each bus node.

Exception: "SS1 slave address", in this case, each bus node has its own address.

The parameterization of the interface is provided in Section X, Parameterizing the drive converter.

Bus termination

The bus must be terminated at the first and last node to protect against the influence of noise. The bus termination is switched-in using a switch on the control card.

Terminal diagram of the control card

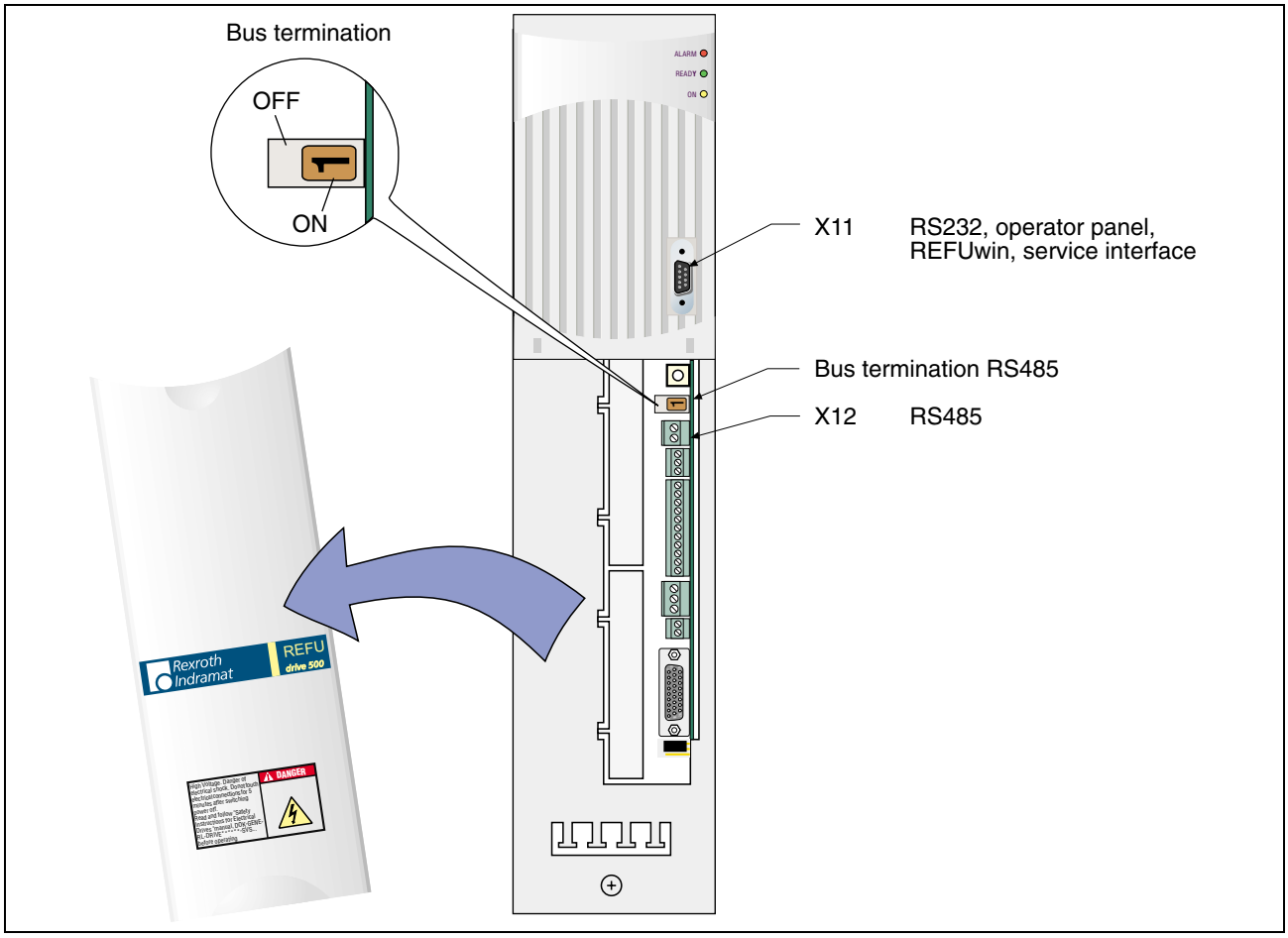

Fig. 2-5:Terminal diagram SR17002

Parameterizing the drive converter

The configuration of the standard RS485 interface should be set using parameters P0500 to P0506.

The parameters are accessed as follows via the following menu:

PARAMETERIZATION/PROMPTED PARAMETR/SER. COMMUNICATIONS

Parameterizing the standard RS485 interface

Parameter No.:	Name	Description / explanation selectable options	Factory setting min ... max values	Password
0500	SS1 protocol X12	The serial interface 1 (SS1) is a RS485 interface (X12 connection) Parameter value: 0 = no protocol 1 = USS 4/2 words 2 = USS 4/6 words 3 = USS 0/2 words 4 = USS 0/6 words 5 = USS 4/0 words	USS 4/6 words 0 ... 5	2
0501	SS1 baud rate X12	Parameter value: 0 = no protocol 1 = 1200 baud 2 = 4800 baud 3 = 9600 baud 4 = 19200 baud 5 = 38400 baud 6 = 76800 baud	9600 baud 0 ... 6	2
0502	SS1 parity X12	Parameter value: 0 = no parity 1 = ODD 2 = EVEN	EVER 0 ... 2	2
0503	SS1 stop bits X12	Either 1 or 2 stop bits can be set.	1 1 ... 2	2
0504	SS1 slave address	For the RS485 bus, the address of the device can be set between 0 and 31. **Caution:** This address must be unique on the bus, i.e. there must be no identical addresses!	0 0 ... 31	2
0505	SS1 Rx monitoring	Parameter value: 0 = no action 1 = warning 2 = fault	Fault 0 ... 2	2
0506	SS1 Rx monitoring time	Monitoring time for the standard interface SS1. If the interface does not receive an error-free protocol within this time, then the response, selected in P0505, is initiated.	0.1 s 0.1 ... 60.0 s	2

Fig. 2-6: Parameters for RS485

Parameterizing the service interface RS232

The service interface also operates with the USS protocol.

However, the protocol type is fixed (4/6 words, even parity 1 stop bit).

The baud rate can be selected using P0499.

Parameter No.:	Name	Description / explanation selectable options	Factory setting min ... max values	Pass-word
0499	RS232 baud rate X11	Parameter value: 0 = 1200 baud 1 = 2400 baud 2 = 4800 baud 3 = 9600 baud 4 = 19200 baud 5 = 38400 baud 6 = 57600 baud 7 = 76800 baud	9600 baud 0 ... 7	2

Fig. 2-7: Parameters for RS232

Character frame

Every transferred character starts with a start bit and ends with a stop bit or 2 stop bits depending on the parameterization. 8 data bits are transferred. Each character (byte) is, when required, secured by a parity bit (e.g. even parity: The number of ones in the data bits, including the parity bit is an even number). The received telegram is rejected if the character frame is not observed.

Character frame with parity bit and one stop bit

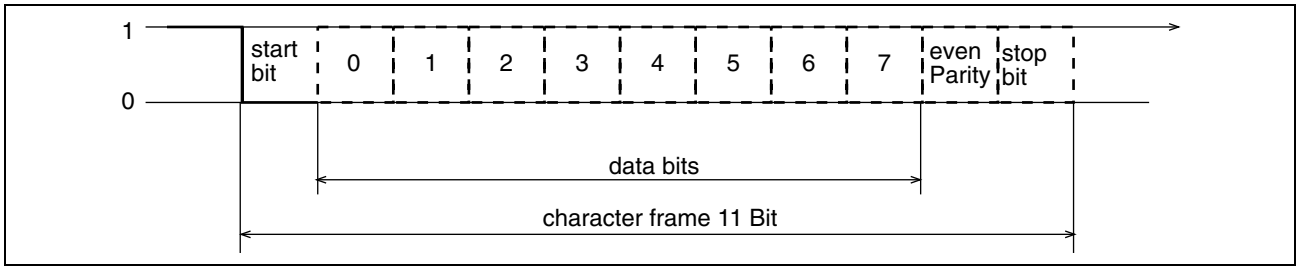

Fig. 2-8:USS character frame

Telegram structure

Every telegram starts with the STX start character, followed by the length data LGE and address byte ADR. The net characters follow. The telegram is terminated by the block check character BCC.

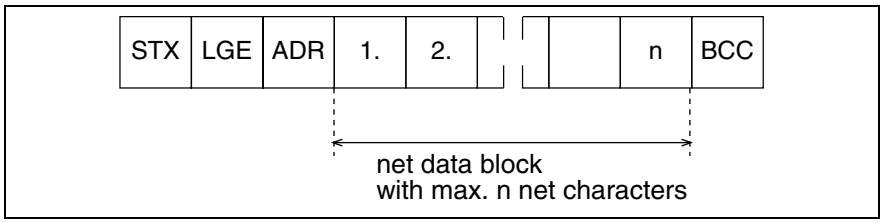

Fig. 2-9:USS telegram structure

Data coding

STX (Start of Text)	ASCII characters: 02 hex.
LGE (telegram length)	1 byte, contains the telegram length as binary number. Refer to the next Section, Telegram length.
ADR (address byte)	1 byte, contains the slave address and the telegram type as binary number. Refer to the Section, Address byte assignment.
Net characters	Each 1 byte, contents depend on the particular task.
Net data block	The net data block can be programmed in various lengths. Refer to the Section, Telegram lengths.
BCC	Block check character. Refer to the Section, BCC generation for how this character is generated.

Fig. 2-10: USS data coding

Telegram length

Telegram data transfer is realized with a fixed telegram length. This length must be defined before the drive system is commissioned for the first time.

The net data block (n net characters), the address byte ADR and the BCC are included in the telegram length. The following is obtained for the fixed telegram length:

$$LGE = n + 2$$

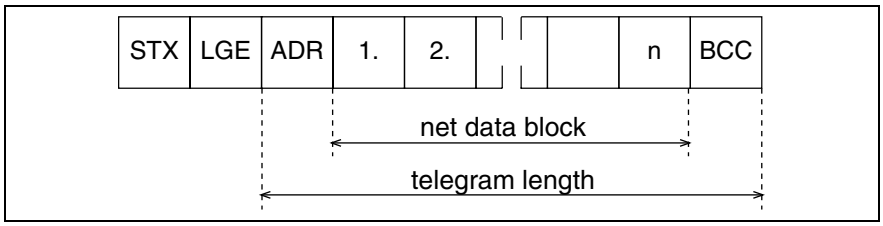

Fig. 2-11:USS telegram length

The following fixed telegram lengths can be selected, which only differ by the length of the net data block:

Type 1	4/2 words	12 bytes	LGE = 14 bytes
Type 2	4/6 words	20 bytes	LGE = 22 bytes
Type 3	0/2 words	4 bytes	LGE = 6 bytes
Type 4	0/6 words	12 bytes	LGE = 14 bytes
Type 5	4/0 words	8 bytes	LGE = 10 bytes

Fig. 2-12: USS telegram type

Special telegrams

The bus master can send special telegrams to slaves, which support this utility.

REFU*drive 500* units do not support this utility, and do not evaluate telegrams where bit 7 is set in the address byte (special telegram); they also do not respond to these telegrams.

Address bytes assignment

The individual address byte bits are assigned as follows:

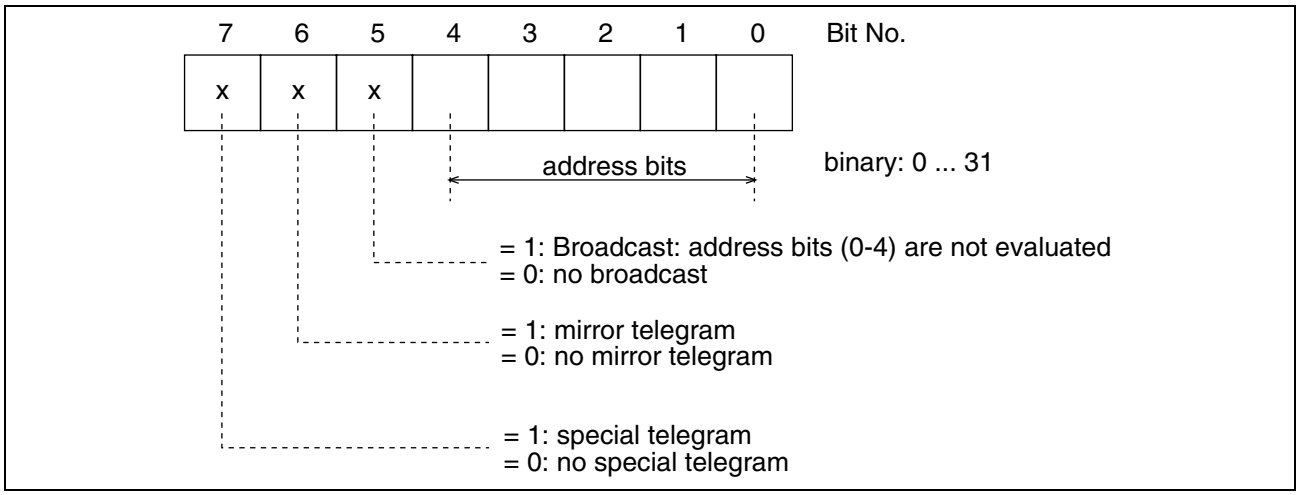

Fig. 2-13:USS address bits

Note: Bit 7 (special telegram) has the highest priority, bit 5 (broadcast) has a higher priority than bit 6 (mirror telegram). The slave sends the address byte ADR back to the master, without any changes, in the response telegram (mirror telegram).

Broadcast telegram

In the broadcast mode, the master sends a telegram to all of the slaves connected to the bus. In this case, the "broadcast bit" in the task telegram, is set to logical 1 in the address byte. The address bits are ineffective. The slaves only evaluate the PZD area. The individual slaves do not respond to a broadcast telegram with a response telegram.

Mirror telegram

The bus master can request a mirror telegram from the slave.

Sequence:

The master sends a telegram to the appropriate slave nodes. This telegram differs from the normal telegram by the fact that bit No. 6 of the address byte is set (= logical 1). The slave does not evaluate this telegram, but returns it to the master without making any changes (it mirrors the telegram).

Data transfer between the master and slave can be checked using the mirror telegram. This is advantageous when commissioning step-by-step or when troubleshooting.

BCC generation

BCC (Block Check Character): The BCC byte is determined using a bitwise EXOR logic operation and is used for secure data transfer.

Example for generating the Block Check Character:

Before the first telegram charakter is received:

BCC (initial value)

7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	0

After the first character has been received (STX): BCC_{new} = BCC_{old} EXOR "1st character"

BCC_{old}

7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	0

EXOR

1st character (STX)

7	6	5	4	3	2	1	0
0	0	0	0	0	0	1	0

BCC_{new}

7	6	5	4	3	2	1	0
0	0	0	0	0	0	1	0

Ater each additional character hase been received this is EXOR'ed with BCC_{old} to generate BCC_{new}

BCC_{old}

7	6	5	4	3	2	1	0
0	0	0	0	0	0	1	0

EXOR

2nd character (LGE)

7	6	5	4	3	2	1	0
0	0	0	1	0	1	1	0

BCC_{new}

7	6	5	4	3	2	1	0
0	0	0	1	0	1	0	0

etc ...

The result after the last net character is BCC

Fig. 2-14:USS BCC generation

Net data block

Structure of the net data block

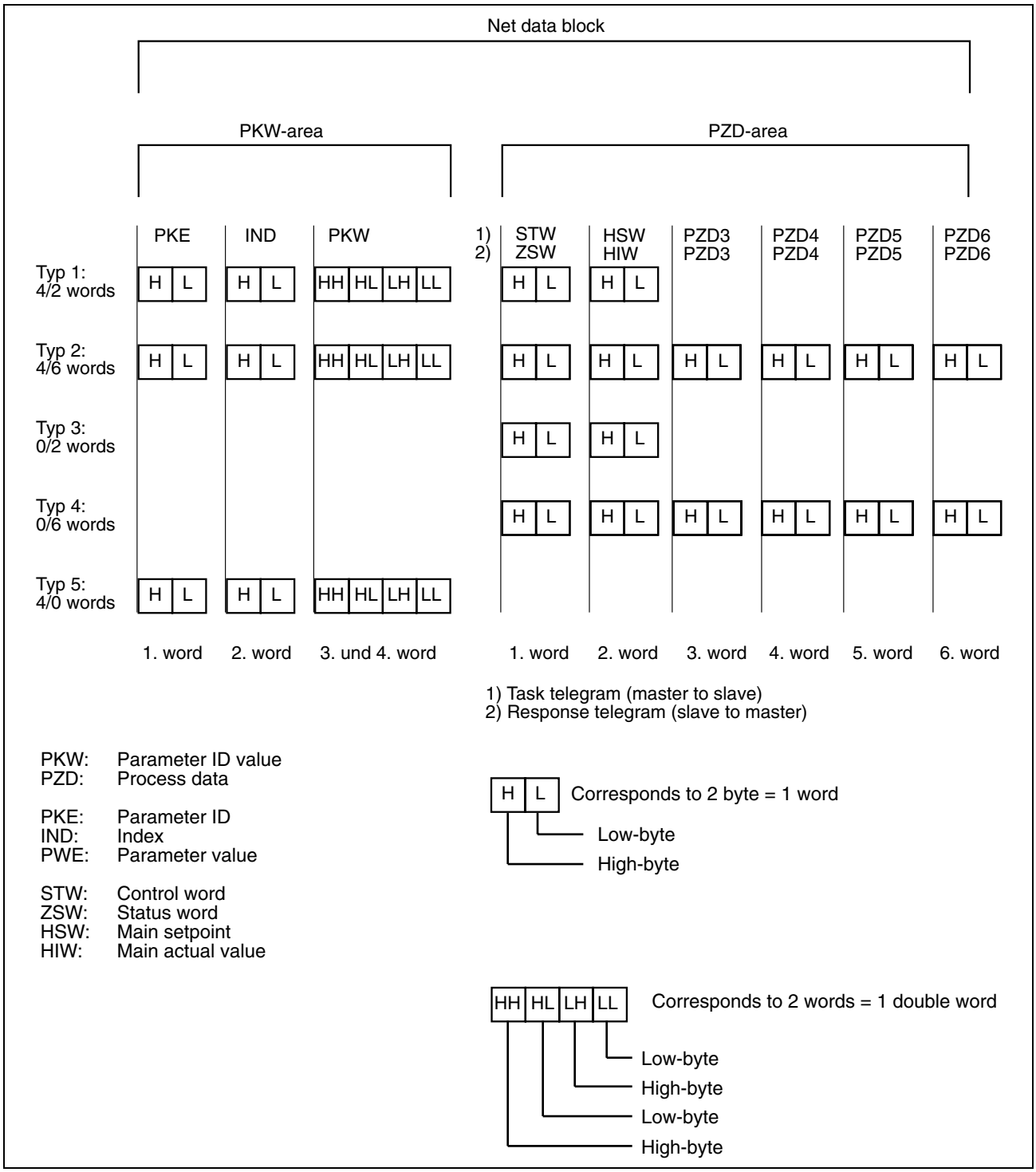

Fig. 2-15:USS net data block

Description of the net data block

PKW area

The PKW area refers to the handling of the PKW interface (German: PKW = parameter ID value). PKW interface does not involve a physical interface, but instead, it describes a mechanism, which controls parame-

ter transfer between two communication partners, i.e. reading and writing parameter values.

All of the tasks, which are realized via the PKW interface, are tasks related to OPERATOR CONTROL AND VISUALIZATION.

If only PZD data are to be transferred in the net data block, then the number of PKW elements can also be 0 (types 3 and 4).

Also refer to Section X, Description of the PKW elements.

PZD area

The PZD area contains all of the signals required for the AUTOMATION:

- Control word and setpoints (from the master to the slave),
- Status word and actual values (from the slave to the master).

Definition according to USS:

- Depending on the data transfer direction, always the control word or the status word are transferred in the PZD1.
- Always the main setpoint or the main actual value are sent in PZD2.

If only PKW data are to be transferred in the net data block, then the number of PZD elements can also be 0 (type 5).

Also refer to Fig. 2-15:USS .

Description of the PKW elements

PKE (parameter ID)

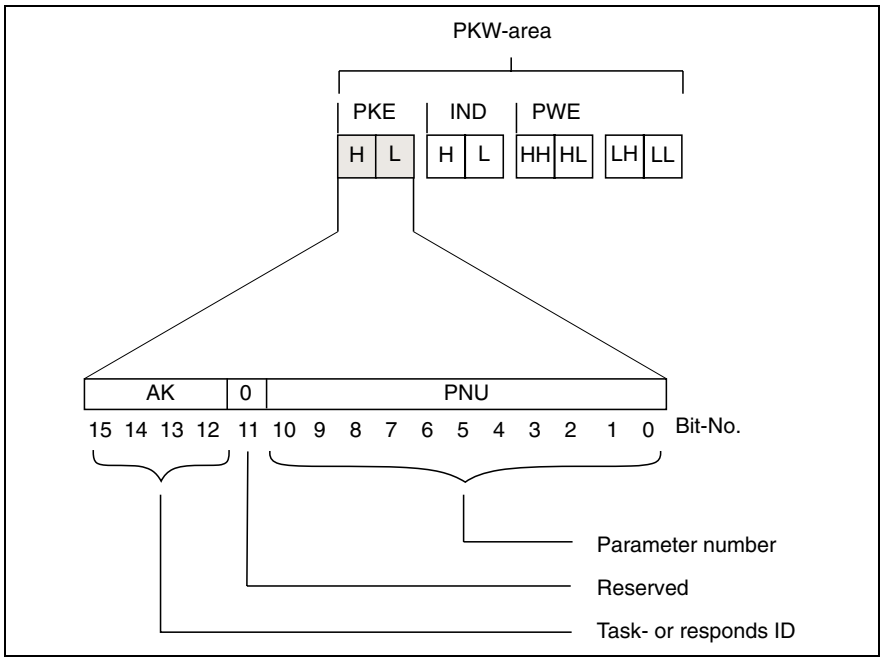

Fig. 2-16:USS PKW area

Task and response ID (AK)

The tasks, which the master issues to the slave, are coded in the task ID. The slave processes the task and formulates the appropriate response to it. This is then returned to the master as response ID, also in a coded form.

The task and response ID are defined so that a task and a response are uniquely identified by the parameter ID (PKE = AK + PNU). Certain tasks and responses are additionally defined by the index word IND (refer to “Index word”).

Parameter number (PNU)

The parameter number is contained in bits 0 to 10. You can find the parameters, arranged in an increasing sequence according to the PNU, in the parameter list of the appropriate drive unit firmware.

The function of most parameters can be taken from the function chart.

Function of the task ID AK

AK bit No. 15 14 13 12	Function master to slave	Description
0 0 0 0	No task	No task
0 0 0 1	Request PWE	Requests a parameter value (PWE).(16 or 32 bit)[1]
0 0 1 0	Change PWE (word)	Writes a parameter value (PWE) in the word format (16 bit)[1]
0 0 1 1	Change PWE (double word)	Writes a parameter value (PWE) in the double-word format (32 bit)[1]
0 1 1 0	Request PWE (array)[2]	Reads a parameter value from an array. The location within the array, from which the value is to be read, is in IND: Example: If IND = 4, then the PWE is transferred which is located in the 5th element of the array. (16 or 32 bit)[1]
0 1 1 1	Change PWE (array word)[2]	Writes a parameter value (PWE) in the word format into a specific location in an array. (same as when reading) (16 bit)[1]
1 0 0 0	Change PWE (array double word)[2]	Writes a parameter value (PWE) in the double-word format into a specific location in an array. (such as ID 0111) (32 bit)[1]
1 0 0 1	Request the number of array elements	Reads the number of elements of an array.[1]

1: 16 bit parameter values are located in word 4 of the net data
32 bit parameter values are located in words 3 and 4 of the net data

2: For all tasks, which refer to an array (=one-dimensional field), in order to uniquely identify the task, the value is included, which is located in the IND in the net data block.

The standard entry of the drive unit for the interface is password level 3

Fig. 2-17: USS function of the task ID

It is always permissible to read parameter values.

Writing is possible, as a function of the operator control authority (P0072) and the password level (P0009)

Selecting the password level (P0009):

Password level	Operator panel	Interface
0	Password not required	Value = 0
1	Esc Mon Prog and acknowledge with Enter	Value = 123
2	Esc Mon Prog + and acknowledge with Enter	Value = 1234
3	▶ Esc Mon Prog and acknowledge with Enter	Value = 7123

Fig. 2-18: USS password levels

Function of the response ID AK

AK bit No. 15 14 13 12	Function master to slave	Description
0 0 0 0	No response	No response
0 0 0 1	Transfer PWE (word)	Transfers a parameter value (PWE) as word (16 bit)[1]
0 0 1 0	Transfer PWE (double word)	Transfers a parameter value (PWE) as double word (32 bit)[1]
0 1 0 0	Transfer PWE (array word)[2]	Transfers a parameter value from the element, specified in IND + 1, within an array. (16 bit)[1]
0 1 0 1	Transfer PWE (array double word)[2]	As for ID 0100, only PWE in the double-word format. (32 bit)[1]
0 1 1 0	Transfer the No. of array elements[2]	Transfers the number of elements of a field.
0 1 1 1	Task cannot be executed (with error number in the PKW)[2]	The slave cannot execute the task which was issued to it. Refer to the fault number in the PKW for the reason.
1 0 0 0	No PKW operator control authority.	The interface, which runs on this protocol, may not change parameter values, only read them.

1: 16 bit parameter values are located in word 4 of the net data
32 bit parameter values are located in words 3 and 4 of the net data

2: For all tasks, which refer to an array (=one-dimensional field), in order to uniquely identify the task, the value is included, which is located in the IND in the net data block.

The standard entry of the drive unit for the interface is password level 3

Fig. 2-19: USS function of the response ID

Interrelationship between the task and response

AK bit No. 15 14 13 12	Function, task ID master to slave	AK bit No. 15 14 13 12	Function, response ID slave to master
0 0 0 0	No task	0 0 0 0	No response
0 0 0 1	Request PWE	0 0 0 1	Transfer PWE (word)
		0 0 1 0	Transfer PWE (double word)
0 0 1 0	Change PWE (word)	0 0 0 1	Transfer PWE (word)
0 0 1 1	Change PWE (double word)	0 0 1 0	Transfer PWE (double word)
0 1 1 0	Request PWE (array)	0 1 0 0	Transfer PWE (array word)
		0 1 0 1	Transfer PWE (array double word)
0 1 1 1	Change PWE (array word)	0 1 0 0	Transfer PWE (array word)
1 0 0 0	Change PWE (array double word)	0 1 0 1	Transfer PWE (array double word)
		0 1 1 1	Task cannot be executed
		1 0 0 0	No control authority

Fig. 2-20: USS, interrelationship between task and response

Fault ID	Description
0	Illegal parameter No.
1	Parameter cannot be changed
2	Min/max limiting
3	Erroneous index value
4	No array
5	Incorrect data type
101	Task unknown
102	Data conflict, parameter X with parameter Y The two conflict parameters can be read-out via parameter P1019: P1019.0 = parameter X P1019.1 = parameter Y
103	Can only be written into when the inverter is inhibited
104	Password level too low
105	Can only be written into in the configuration mode
106	Internal interface buffer is full, task must be repeated

Fig. 2-21: USS fault ID

Index word (IND)

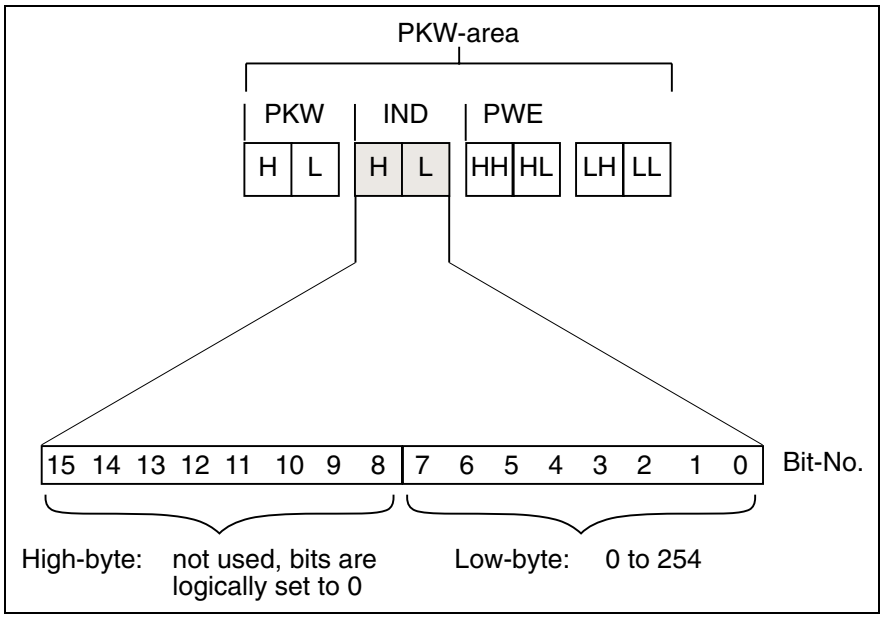

Fig. 2-22: USS index word in the PKW area

Tasks with index word (IND)

PKE		IND	
AK bit No. 15 14 13 12	**Function master to slave**	**Low byte**	**Function**
0 1 1 0	Request PWE (array)	y(<=254)	Reads the parameter value from the “y+1”th element of the array
0 1 1 1	Change PWE (array word)	y(<=254)	Writes PWE in the word format to “y+1”th element in the array
1 0 0 0	Change PWE (array double word)	y(<=254)	Writes PWE in the double-word format to “y+1”th element in the array

Fig. 2-23: USS tasks with index word

Response with index word (IND)

PKE		IND	
AK bit No. 15 14 13 12	**Function master to slave**	**Low byte**	**Function**
0 1 0 0	Transfer PWE (array word)	y(<=254)	Transfers the PWE which is located in the “y+1”th element in the array
0 1 0 1	Transfer PWE (array double word)	y(<=254)	Function as above, only PWE as double word
1 0 0 0	Change PWE (array double word)	y(<=254)	Writes PEW in the double-word format to the “y+1”th element in the array

Fig. 2-24: USS response with index word

Description of the PZD elements

PZD area structure

The process data area is, independent of the PKW area, the second section in the net data block.

The PZD area structure is always the same when it comes to the sequence of its elements (words), and only differs from its standard structure by the number of transferred setpoints and actual values.

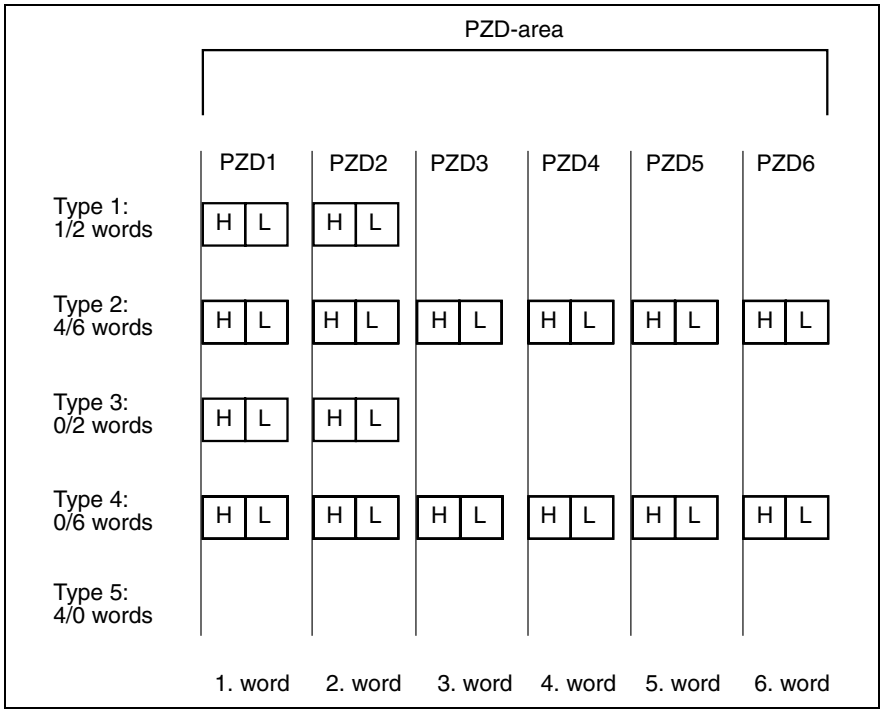

Fig. 2-25:USS, PZD area

	PZD1	**PZD2**	**PZD3 ... PZD6 (only for types 2 and 4)**
Task telegram (master to slave)	Control word[1]	Main setpoint[1]	Suppl. setpoint[2]
Response telegram, slave to master)	(Device) status word[1]	Main act. value[1]	Actual values[2]

1: Defined according to USS, refer to Page 2-11, **Definition according to USS:**

2: The setpoint to actual value assignment can be selected as required. For example, if the speed setpoint is transferred in the task telegram

in PZD3, then the speed actual value can be signaled back in the response telegram in PZD3, which is practical from a technological perspective. However, another actual value also can be transferred, for example, the torque actual value, the position actual value or the current actual value.

Normalization of the process data

Refer to the documentation “Function charts and parameter list” of the appropriate device in the Section, Display parameters.

The control word and the status word

The control word (task telegram) and the status word (response telegram) are always transferred as PZD1 according to the USS definition.

A higher-level automation enters or evaluates the control and status word.

The functions of bits 0 to 10 are defined in accordance with the VDI / VDE 3689 Directive; bits 11 to 15 can be assigned functions on a device-specific basis.

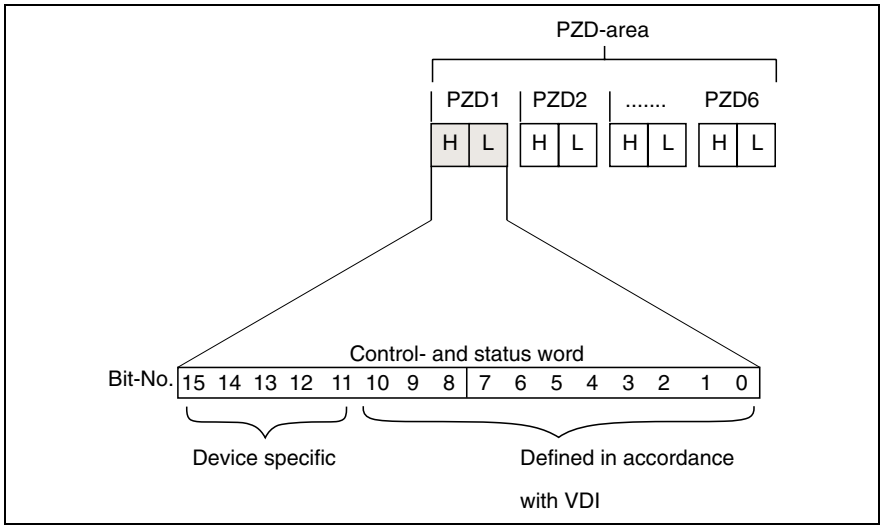

Fig. 2-26:USS control and status word

Support in REFUdrive 500

Control word:	Defined	0 ... 7
	Can be freely configured	8 ... 15
Status word:	Defined	0 ... 10
	Can be freely configured	11 ... 15

Control and status word diagram for drive converters

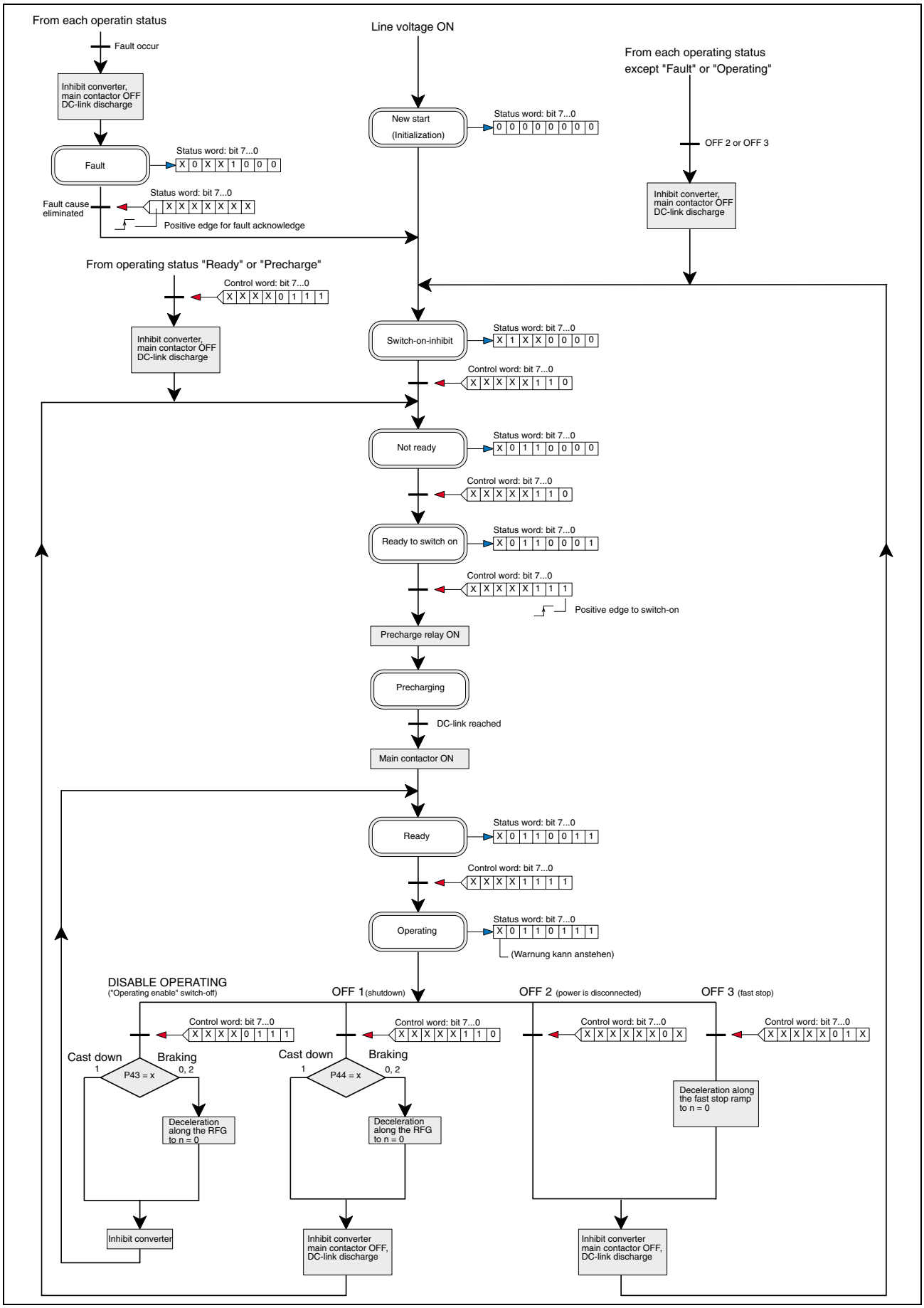

Fig. 2-27:USS control and status word diagram for drive converters

Control and status word diagram for inverters

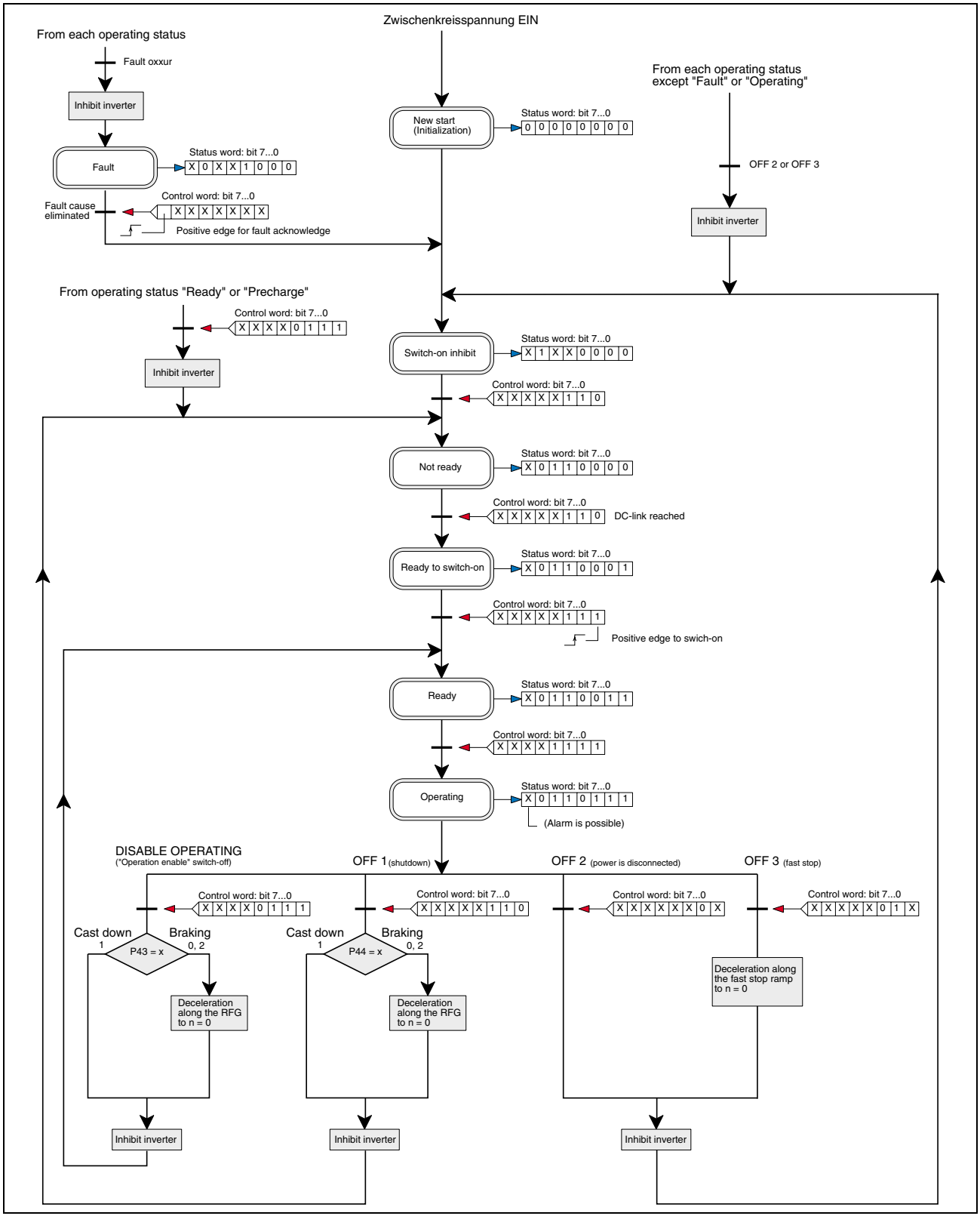

Fig. 2-28:USS control and status word diagram for inverters

Assignment of the control word bits

Bit	Value	Significance	Comment
0	1	On	Transition into the “Ready” condition; DC link is charged, main contactor On (if available).
	0	Off 1	Shutdown (return to the “Ready to power-up” condition); decelerates along the RFG (ramp-function generator) ramp*; power disconnected at n/f = 0 and I = 0; main contactor Off (if available). * or the motor coasts-down, refer to parameter P0044
1	1	Operating condition	All “Off 2” commands have been canceled
	0	Off 2	Power disconnected, pulses inhibited! The main contactor is opened (if available), and the drive unit goes into the “Power-on inhibit” condition; the motor coasts down.
2	1	Operating condition	All “Off 3” commands have been canceled
	0	Off 3	Fast stop; the drive decelerates along the fast stop ramp or current limit; the inverter pulses are inhibited at n/f = 0; the power is then disconnected (if available, the contactor is opened) and the drive unit goes into the “Power-on inhibit” condition.
3	1	Enable operation	Electronics and inverter pulses are enabled, and the field current impressed. The RFG then runs-up to the entered setpoint.
	0	Inhibit operation	Inhibit inverter pulses: The drive coasts down (RFG to zero) or braking along the RFG ramp (refer to P0043), and the drive unit goes into the “Ready” condition (refer to control word, bit 2).
4	1	Operating condition	
	0	Inhibit RFG	The ramp-function generator output is set to 0. The main contactor remains closed, the drive converter is not isolated from the line supply.
5	0	Stop RFG	The setpoint, currently entered from the RFG, is frozen.
	1	Enable RFG	
6	1	Enable setpoint	The value selected at the input of the RFG is switched-in.
	0	Inhibit setpoint	The value selected at the input of the RFG is set to 0.
7	1	Acknowledge	Group message is acknowledged for a positive edge; the drive converter is in the fault condition until the fault was successfully removed, and then goes into the “Power-on inhibit” condition.
	0	No significance	

Fig. 2-29: USS assignment of the control word bits

All of the control word bits are also available in the drive unit as D parameters. Also refer to the function chart (control word). Control word bits 8 and 15 only become effective after the appropriate D parameters have been entered in a variable source parameter. The function of the control word bits then corresponds to the function of the variable source parameter, to which the D parameter was connected.

Example: If the direction of rotation change function is to be connected to bit 8, then proceed as follows:

Enter D1768 (bit8) into the variable source parameter P0067

Control word bit	8	9	10	11	12	13	14	15
Freely interconnectable dig. display parameter	D1768	D1769	D1770	D1771	D1772	D1773	D1774	D1775

Assignment of the status word bits

Bit	Value	Significance	Comment
0	1	Ready to power-up	The power supply is powered-up, electronics initialized, main contactor, if available, dropped-out (open), pulses inhibited
	0	Not ready to power-up	
1	1	Ready	Ready; voltage at the drive converter, i.e. the main contactor is closed (if available). DC link is charged; inverter pulses are inhibited.
	0	Not ready to power-up	
2	1	Operation enabled	The electronics and pulses are enabled. Enable the inverter pulses: RD51: For F_{min}, wait for the delay time P0544 to expire. RD52: Wait until the field has been established, D1756. The RFG (ramp-function generator) is then ramped-up to the applied setpoint.
	0	Operation inhibited	
3	1	Fault	Drive faulted and therefore not operational; after the fault has been removed and acknowledged, if there is an “On command” present, the drive goes into the power-on inhibit. Fault numbers in the fault memory P0040.x (the last fault can also be read-out via D1793).
	0	No fault	
4	1	No Off 2	
	0	Off 2	“Off 2” command present.
5	1	No Off 3	
	0	Off 3	“Off 3” command present.
6	1	Power-on inhibit	The drive is only powered-up again by “Off 1” and a subsequent “On” command
	0	No power-on inhibit	
7	1	Warning	Drive is still operational, warning in the warning parameter P0039.
	0	No warning	There is no warning or the warning has been withdrawn again.
8	1		“f set” in the tolerance range (default)
9	1		Remote
10	1		“f set reached” (default)

Fig. 2-30: USS assignment of the status word bits

3 Parameter description

3.1 Explanations on the parameter description

The section includes the parameters and data of the FWC-SR1700-200-05VRS-MS firmware (designation in the firmware: SR 501.2.3.x). The description is used to numerically refer to parameters. This is the reason that they are numerically arranged in increasing sequence.

1) Parameter number and parameter name

Parameter number
The parameter name, which is also displayed on the operator panel. In many cases, the function of a parameter cannot be explained with just the name alone. The significance and function can be taken from the function charts.

2) Max. index)

Various parameters have an index range. If, e.g. [4], is located in this line, then the parameter has the index range from 0...4, i.e. 5 Index levels.

3) Min. value - Max. value

The selectable value range of the parameter. All of the values between these limits including "minimum value" and "maximum value" can be set and displayed with a resolution of the last position.

4) Standard value

The parameter value settings correspond to those when the equipment was originally shipped. For parameters with index, the parameter value in the line “standard value” is generally valid for all index levels; also refer to Page 1-1, Load standard values.

The „min. value“, „max. value“ and „standard value“ are specified as decimal number in the parameter descriptions, a comma is used in the US and GB).

When parameterizing via an interface, only the pure numerical value (without comma, without decimal point) may be transferred as parameter value. The parameter value is appropriately interpreted by the firmware in the drive in order to obtain the correct decimal point value, as specified in the tables. Also when reading parameter values, only the numerical value is transferred from the drive to the control computer. The parameter value must be interpreted there corresponding to the data in the list.

Example: The ramp-up time (P0280.x) of the ramp-function generator should be set to 5.5 sec. The following is displayed with a resolution to three decimal places => 5.500s. The parameter value 5500 must be sent via the interface. In the drive, it is interpreted with the decimal format #.###, this results in => 5.500 sec.

5) Parameter value

Parmeters to set functions. The selectable functions are listed below the line for the parameter. When parameterizing using the operator pane, the function is selected using the plain text display. The number og the required function must be transferred as parameter value when parameterizing via an interface.

6) Units (units)

Hz, V, A, kW, RPM, °C, W, % etc.

7) D-par

All of the parameter values are interpreted as D parameter numbers.

8) Pw (Password)

0 = No password required

1 = Password 1: Esc Mon Prog and confirm with Enter

2 = Password 2: Esc Mon Prog + and confirm with Enter

3 = Password 3: ▶ Esc Mon Prog and confirm with Enter

9) Read / Write

Read = The parameter can only be read.

R/W = The parameter can be read and written into.

off = Programming is not possible when the drive is in the “run condition”

on = Programming is also possible when the drive is in the “run condition”.

10) Type

U = unsigned

S = signed

Example: S16 = signed 16 bit = 15 data bits (bits 0 to 14) and a bit for the sign (bit15)

11) Fp

Cross-reference to the function chart.

3.2 Explanations regarding the display parameters (D parameters)

The display parameters are called, in the following text, as well as in the function charts, D parameters (D1716 = display parameter No. 1716). D parameters can only be read. Four D parameters can be simultaneously displayed on the operator panel using the monitor (refer to the Instruction Manual, Section 5).

D parameters have no factory setting. When the drive converter is powered-up, they assume a value between "minimum value" and "maximum value" and can continually change during operation, with the exception of the system constants, also refer to Function chart, Sheet 1.

System constants	Constant parameter value
D1700	0 (logical low)
D1701	1 (logical high)
D1800	0.00 %
D2000	100.00 %
D2001	-100.00 %

D parameters can be sub-divided into two groups:

- D parameters for status display and control functions.
- D parameters for process data.

D parameters for status display and control functions

Most of the parameters of this group have only logical status 0 or 1. For 0, the message or function is not active, for 1, appropriately active. If there is a text explanation for a D parameter in the function charts, this is always valid for the logical status 1.

Here are some examples:

D1708	Motor temp. fault	0 = no fault	1 = fault
D1729	Setpoint limiter	0 = not active	1 = active
D1714	Digital input 1	0 = low	1 = high
D1748	Comparison x > xs	0 = x less than xs	1 = x greater than xs

The values of this parameter group have no units and are therefore not normalized, i.e. the value in the parameter list is the same value which is sent via the interface.

D parameters for process signals

The process signals are normalized according to units as follows:

Units	Display/Table		Interface				
Percent (%):	100.00 %	=	4000	Hex	=	16384	Dec
Controller Kp:	1.0	=	100	Hex	=	256	Dec
Voltage (V) (P1039x $\sqrt{2}$/ $\sqrt{3}$)V		=	4000	Hex	=	16384	Dec
Exception:							
D1928 (V_{DClink})	(P1039)	=	4000	Hex	=	16384	Dec
D1998 (V_{line})	(P1038)	=	4000	Hex	=	16384	Dec
Degrees Celsius (°C):	100.00°C	=	4000	Hex	=	16384	Dec

The voltage normalization of the drive is defined in D1039.

3.3 Parameterlist

parameter: P0000 Firmware FWC-

maximum index:	23
minimal value:	0
maximal value:	0
default value:	0
parameter value:	0 = SR1700-201-05L15-MS
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -

parameter: P0001 Device ID

maximum index:	-
minimal value:	502
maximal value:	502
default value:	502
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Drive identification
	The drive type can be identified here.

parameter: P0002 Firmware version

maximum index:	-
minimal value:	0
maximal value:	65535
default value:	2
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Firmware version
	Firmware version of the drive firmware

parameter: P0003 Firmware modul

maximum index: -
minimal value: 0
maximal value: 65535
default value: 5
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Firmware module
Firmware module for the drive firmware

parameter: P0004 Firmware revision

maximum index: -
minimal value: 0
maximal value: 65535
default value: 15
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Firmware revision
Firmware revision of the drive firmware

parameter: P0005 Firmware

maximum index: -
minimal value: 0
maximal value: 9
default value: 1
parameter value:
0 = RD52 standard
1 = RD52 A1 special V.
2 = RD52 A2 special V.
3 = RD52 A3 special V.
4 = RD52 A4 special V.
:
9 = RD52 A9 tmp.Sonder
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Firmware
Text description of the SR firmware via a text index

parameter: P0006 Serial number

maximum index:	-
minimal value:	0
maximal value:	65535
default value:	0)
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Serial number
	Drive serial number

parameter: P0007 Converter number

maximum index:	-
minimal value:	0
maximal value:	65535
default value:	0)
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Drive number

parameter: P0008 EEPROM prog cycles

maximum index:	-
minimal value:	-1
maximal value:	100000
default value:	0
unit:	no
passwordlevel:	-
read / write:	Read
type:	signed 32 bit
function diagram:	plan -
	Programming cycles
	Number of programming cycles for the EEPROM on the SR board

parameter: P0009 Enter Password

maximum index:	-
minimal value:	0
maximal value:	9999999
default value:	0

unit: no
passwordlevel: 0
read / write: R/W on
type: signed 32 bit
function diagram: plan -
Password
Parameters for the password input

parameter: P0010 Display language

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = English
1 = German
unit: no
passwordlevel: 0
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Display language
Selecting the display language

parameter: D0013 O/P voltage Vout

maximum index: -
minimal value: 0
maximal value: 32767
default value: -
unit: V
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11, 25, 26
Output voltage Vact
Actual output voltage at the drive inverter

parameter: D0014 O/P current Iout

maximum index: -
minimal value: -3276.8
maximal value: 3276.7
default value: -
unit: A
passwordlevel: 0
read / write: Read

type: signed 16 bit
function diagram: plan 11, 25
Output current Iact
Actual total output current at the drive inverter

parameter: D0015 O/P current Iactive

maximum index: -
minimal value: -3276.8
maximal value: 3276.7
default value: -
unit: A
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11, 25
Output current Iactive
Actual active component of the output current

parameter: D0017 DC link voltage

maximum index: -
minimal value: 0
maximal value: 1000
default value: -
unit: V
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 11, 25, 26
DC link voltage
Actual DC link voltage

parameter: D0018 Line voltage

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: V
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Line supply voltage Vsupply
Actual line supply voltage (only if available)

parameter: P0019 Converter type

maximum index: -
minimal value: 0.0
maximal value: 6553.5
default value: 1)
unit: kW
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Drive type (Class)

Coding of the drive output class

parameter: P0020 Power input

maximum index: -
minimal value: 0
maximal value: 1
default value: 0)
parameter value: 0 = DC Input
1 = AC Input
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Drive type

The type of supply used for the drive can be identified here.

0 = DC feed
1 = AC feed

parameter: P0021 Rated mains voltage

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0)
unit: V
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Line supply voltage

Rated line supply voltage for which the drive is designed.

parameter: P0022 Continuous output

maximum index:	-
minimal value:	0.0
maximal value:	6553.5
default value:	1)
unit:	kVA
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Continuous output S
	Max. continuous drive output

parameter: P0023 Peak output long

maximum index:	-
minimal value:	0.0
maximal value:	6553.5
default value:	1)
unit:	kVA
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Peak output Skb
	Max. drive output for t = 60 seconds (short-time rating)

parameter: P0024 Continuous current

maximum index:	-
minimal value:	0.0
maximal value:	6553.5
default value:	1)
unit:	A
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 25, 26
	Continuous current In
	Continuous permissible drive output current

parameter: P0025 Peak current long

maximum index:	-
minimal value:	0.0
maximal value:	6553.5

default value: 1)
unit: A
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 25, 26

Peak current Ikb

Max. drive output current for t = 60 seconds (short-time rating) on the average it may not be exceeded, ton : toff = 1 : 4

parameter: P0026 Pulse frequency

maximum index: -
minimal value: 2.0
maximal value: 12.0
default value: 4.0
unit: kHz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Pulse frequency

The frequency with which the semiconductor devices are clocked.

The optimum characteristic of the output current and the lowest noise level is achieved with the highest value for fp.

When selecting lower clock frequencies, the switching losses are reduced, whereby the maximum drive output is increased.

The noise level is then somewhat higher.

Permissible values are:

4.0 kHz .. 8kHz (to 12kHz only on request to Indramat Refu)

adjusting steps: 100Hz

parameter: P0027 Max. output . freq.

maximum index: -
minimal value: 50.0
maximal value: 1500.0
default value: 1500.0
unit: Hz
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Maximum normalization frequency

The maximum output frequency which can be used is dependent on the programmed pulse frequency of the drive inverter.

f_P = 10 kHz max.output frequency = 500 Hz

f_P = 5 kHz max.output frequency = 250 Hz

parameter: P0028 Operating hours

maximum index: -
minimal value: 0
maximal value: 2147483647
default value: 0
unit: h
passwordlevel: -
read / write: Read
type: signed 32 bit
function diagram: plan -

Operating hours

The current status of the operating time counter in hours.

The operating hours counter runs as soon as The drive inverter is enabled, i.e. when the drive is in the run condition.

parameter: P0029 Operating minutes

maximum index: -
minimal value: 0
maximal value: 59
default value: 0
unit: min
passwordlevel: -
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Operating minutes

Current status of the operating time counter in minutes.

The operating time counter runs as soon as the DC link voltage is available at the drive inverter.

parameter: P0033 Int current norm

maximum index: -
minimal value: 0.00
maximal value: 21474836.47
default value: 1)
unit: A
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan 25, 26

Internal current normalization

The internal current normalization is used to calculate the motor model, and is specified as peak value.

parameter: P0034 Fan control

maximum index: -
minimal value: 0
maximal value: 2
default value: 0
parameter value: 0 = automatic
1 = ON permanently
2 = ON if inverter on
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Fan control

This allows to control the fan on the cooler. The fan can be directly powered-up or automatic operation where the fan is automatically powered-up/down can be selected.

parameter: P0035 Fan contr threshold

maximum index: -
minimal value: 20
maximal value: 150
default value: 40
unit: °C
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Temperature threshold

The temperature threshold is required for automatic operation to compare with the actual cooler temperature.

parameter: P0036 Braking resistor

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value: 0 = REFU standard
1 = disabled
2 = no protection
3 = external programabl
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit

function diagram: plan -

Brake resistor

The brake resistor connection can be defined here.

0: REFU standard (thermal model of the standard resistor)

1: disabled (no triggering of resistor)

2: not protected (triggering of resistor, but no thermal model of resistor)

3: external programable (thermal model of resistor in parameters P0623 – P0625 is used for thermal model)

parameter: P0037 Display line 1,2,3

maximum index: 02

minimal value: 0

maximal value: 6

default value: 5

parameter value:
0 = status
1 = N actual
2 = I active
3 = I actual
4 = U actual
5 = DC-link voltage
6 = f actual

unit: no

passwordlevel: 0

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Operator panel display line 1, 2, 3

The display of the basic menue, which is normally available, can be configurated here

0: Selection of the first line

1,2: Selection of the second and thirst line

parameter: P0039 Alarm

maximum index: -

minimal value: 0

maximal value: 65

default value: 0

parameter value:
0 = No fault
1 = External 0
:
3 = DC-link volt.high
4 = DC-link volt.low
:
7 = Device overtemp.
8 = Brake resistor

9 = Main contacter
10 = Pre-charging
11 = New EEPROM
:
13 = Power section
14 = Inverter
15 = Power supply
16 = Internal DSP comm.
17 = Overspeed
18 = Ground fault
19 = EEPROM DATA
20 = Internal DSP ackn.
21 = Internal WS comm.
22 = NTC powersection
23 = encoder
24 = SS1 timeout
25 = SS2 function
26 = SS2 timeout
27 = Analog input I<4mA
28 = Motor overtemperat.
29 = Parameter calculatn
30 = ? SR-Release ?
31 = BR overload
:
35 = Motor overload
36 = SS3 timeout
:
38 = Configuration mode
39 = start protection On
40 = Switched pwr supply
41 = SR <==> WS new
42 = New device startup!
43 = Option1 <=> option2
44 = SI4 function
45 = SI4 timeout
46 = SI5 timeout
47 = start protection On
48 = module overtemp.
49 = DC-link asymmetry
50 = Phase V
51 = Phase W
52 = External 1
53 = External 2
54 = External 3
55 = External 4
56 = External 5
57 = External 6

58 = External 7
59 = SI6 timeout
60 = SynchroLink timeout
:
63 = Output current EN81
64 = DC link discharge
:

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Alarm

Actual alarm.

If the drive is powered-up, this doesn´t cause the drive to be powered-down.

If the drive is powered-down, it is not possible to power-up the drive.

parameter: P0040 Fault memory

maximum index: 09
minimal value: 0
maximal value: 65
default value: 0
parameter value:
0 = No fault
1 = External 0
:
3 = DC-link volt.high
4 = DC-link volt.low
:
7 = Device overtemp.
8 = Brake resistor
9 = Main contacter
10 = Pre-charging
11 = New EEPROM
:
13 = Power section
14 = Inverter
15 = Power supply
16 = Internal DSP comm.
17 = Overspeed
18 = Ground fault
19 = EEPROM DATA
20 = Internal DSP ackn.
21 = Internal WS comm.
22 = NTC powersection
23 = encoder

24 = SS1 timeout
25 = SS2 function
26 = SS2 timeout
27 = Analog input I<4mA
28 = Motor overtemperat.
29 = Parameter calculatn
30 = ? SR-Release ?
31 = BR overload
:
35 = Motor overload
36 = SS3 timeout
:
38 = Configuration mode
39 = start protection On
40 = Switched pwr supply
41 = SR <==> WS new
42 = New device startup!
43 = Option1 <=> option2
44 = SI4 function
45 = SI4 timeout
46 = SI5 timeout
47 = start protection On
48 = module overtemp.
49 = DC-link asymmetry
50 = Phase V
51 = Phase W
52 = External 1
53 = External 2
54 = External 3
55 = External 4
56 = External 5
57 = External 6
58 = External 7
59 = SI6 timeout
60 = SynchroLink timeout
:
63 = Output current EN81
64 = DC link discharge
:

unit: no

passwordlevel: -

read / write: Read

type: unsigned 16 bit

function diagram: plan -
Fault

Fault which is present which causes the drive to be powered-down. It can either be initiated by a previous alarm, or by a fault which occurred directly. The faults are stored in the sequence in which they occurred.

parameter: P0041 Fault time h

maximum index: 09
minimal value: 0
maximal value: 65535
default value: 0
unit: h
passwordlevel: -
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Fault time in hours

Power-on duration of the drive inverter in hours until the fault, which occurred, has been removed.

parameter: P0042 Fault time min

maximum index: 10
minimal value: 0
maximal value: 159
default value: 0
unit: min
passwordlevel: -
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Fault time in minutes

Power-on duration of the drive inverter in minutes until the fault has been removed.

parameter: P0043 Inhibit operation

maximum index: -
minimal value: 0
maximal value: 2
default value: 1
parameter value:
0 = brake mode
1 = inverter off
2 = brake down to N_min
unit: no
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -

Inhibit operation

Select the function which is to be executed when the operating enable is canceled (no run permissive):

coasting down

the motor coasts down under no load conditions brakingThe motor is braked with the appropriate ramp-function generator down ramp.

braking n-min

The motor is braked with the appropriate ramp-function generator down ramp, the inverters switchs off only when the condition n < n-min (P0392) is true

parameter: P0044 Inhibit drive

maximum index: -

minimal value: 0

maximal value: 2

default value: 0

parameter value:
0 = brake mode
1 = inverter off
2 = brake down to N_min

unit: no

passwordlevel: 2

read / write: R/W on

type: signed 16 bit

function diagram: plan -

Function for OFF 1, drive inhibit

Select the function, which is executed when the drive is inhibited (Off1):

coasting down

the motor coasts down under no load conditions braking operation The motor is braked with the appropriate ramp-function generator down ramp.

braking n-min

The motor is braked with the appropriate ramp-function generator down ramp, the inverters switchs off only when the condition n < n-min (P0392) is true

parameter: P0046 Peak current short

maximum index: -

minimal value: 0.0

maximal value: 6553.5

default value: 12.0

unit: A

passwordlevel: 0

read / write: Read

type: unsigned 16 bit

function diagram: plan 25, 26

Peak current Ikb briefly permissible drive output current for t = 1 second

parameter: P0048 Src fault external

maximum index: 07
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 05

Variable parameter source for the function fault, external.

Signals from the existing machine control can be connected-in through a digital input.

parameter: P0049 Src warning externl

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 05

Variable parameter source for the function alarm, external.

Signals from the existing machine control can be connected-in through a digital input.

parameter: P0050 Src. ctrol. word KL

maximum index: 07
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 02

Variable parameter sources for the "control word KL" (D1927).

These commands are effective in the individual bits of the "control word KL" (D1927) logically combined with the "control word MS", in the "control word" (D1920).

Index 0

Variable parameter source for the On command. To power-up the drive, the rising edge of the On bit in the "control word" (D1920) is evaluated..

Index 1

Variable parameter source for the voltage disconnect function. This command is active at zero. 0 = enable voltage.

Index 2

Variable parameter source for the fast stop function. This command is active at zero. 0 = fast stop.

Index 3

Variable parameter source for the operating enable function.

1 = enable the inverter.

Index 4

Variable parameter source for the ramp-function generator reset function. This command is active at zero. 0 = ramp-function generator reset. For a ramp-function generator reset, the ramp-function generator output is set to zero.

Index 5

Variable parameter source for the ramp-up stop function. This command is active at zero. 0 = ramp-up stop. For a ramp-up stop, the ramp-function generator output is held, further ramp-up is inhibited, however it is possible to ramp-down to lower absolute frequencies.

Index 6

Variable parameter source for the setpoint enable function. If the command is not available, the ramp-function generator input is set to zero.

Index 7

Variable parameter source for the fault acknowledge function. To acknowledge a fault, the rising edge of the bit fault acknowledge in the "control word" (D1920) is evaluated.

parameter: P0060 Special quit

maximum index:	-
minimal value:	0
maximal value:	1
default value:	0
unit:	no
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan -

parameter: P0061 Param.No. faultlist

maximum index:	19
minimal value:	0.00
maximal value:	9999.99
default value:	0.00
unit:	no
passwordlevel:	0
read / write:	Read

type: unsigned 32 bit
function diagram: plan -

parameter: P0062 Par.value faultlist

maximum index: 9
minimal value: 0
maximal value: 999999
default value: 0
unit: no
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan -

Special acknowledgment of special faults e.g. as: "EEprom"

0 = no action

1 = acknowledgment

This special acknowledgment function is required, if the EEprom data error message is present. The EEprom data error message cannot be deleted using the normal acknowledgment procedure, the parameterized acknowledge input, the ESC key on the operator panel or the acknowledge key on the SR17000. We recommend, before initiating special acknowledgment using this parameter, to take a look at the EEprom parameter error list in parameter D0061.

The parameters are entered in the format nnnn.ii, for nnnn = parameter number and ii = parameter index, if available. In parameter D0062.xx you can see the value of the parameter displayed in D0061.xx.

parameter: P0067 Invert RFG s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function direction of rotation change.

For a direction of rotation change, the entered setpoint is transfered with the inverse polarity.

parameter: P0070 Parameter set 0/1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 05

Operating parameter set

For REFUdrive 500 drives, you can enter the data of two different motors. Using the "parameter set" control signal, all motor-specific data in the converter are changed-over. The control signal either has the value 0 or 1, and is set with P0070. The default value of P0070 is D1700 (constant, logical 0). Thus, motor 0 is selected with the associated data. To select motor 1, set P0070 with D1701. You can also control the selection of a motor 0 and 1 from a digital input. If you wish to use, e.g. digital input 1, then set D1714 in P0070. If a low signal is now applied to digital input 1, motor data0 are selected; the corresponding is true with a high signal, where motor data 1 are selected. The operating enable (run enable) prevents the "parameter set" control signal from being changed-over. In operation, it is notpossible to toggle between parameter sets.

parameter: P0071 Load factorySetting

maximum index: -

minimal value: 0

maximal value: 4

default value: 0

parameter value:
0 = no action
:
2 = genaral parametriz.
:
4 = Sercos applic. gen.

unit: no

passwordlevel: 0

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

mode of parameter set load

0 = no action

1 = load standard values, depends on the password level

Only the parameters with the same or a lower password level (of the current level) will be set to standard values

2 = save all values to EEPROM

parameter: P0072 Source parameter

maximum index: -

minimal value: 0

maximal value: 5

default value: 4

parameter value:
0 = keypad, PC(RS232)
1 = bus SI1

2 = bus SI2
3 = bus SI4
4 = all busses SIx
5 = bus SI6

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

Source, parameter

The parameterization authority is defined here.

Examples:

0 = parameterization from the operator panel or PC via RS 232,
1 = parameterization from the SI1 standard interface,
2 = parameterization from the SI2 option interface,
3 = parameterization from the SI4 option interface,
4 = parameterization from all option interfaces.

parameter: P0073 Source ON/OFF

maximum index: -

minimal value: 0

maximal value: 3

default value: 2

parameter value:
0 = keypad + term.strip
1 = bus SSx +term.strip
2 = terminal strip
3 = PC(RS232)+term.str.

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 02

Generating the control word

The unit is controlled (open-loop) using the control word. The control word comprises 16 Bits. Bits 0 to 7 are defined in accordance with the VDI/VDE Directives 3689. Bits 8 to 15 can only be set via the serial interface, and evry Bit can be freely assigned a unit control function. The control word is generated by logically combining the control word KL and the control word MS. The control word MS can be entered from four sources and selected via a switch. The switch is changed-over using parameter P0073.

P0073, switch setting 0:

Control word MS is generated from a mask, in which bits 1 to 15 are permanently specified. Only bit 0 can be set to 1 (ON command) or 0 (OFF1 command) using the operator panel.

P0073, switch setting 1:

Control word MS comes from a variable parameter source. Only process data associated with the serial interface can be used in the parameter source. Thus, control word MS is entered via the

interface. In this configuration, bits 8 to 15 can also be set via the serial interface, and each bit can be freely assigned a unit control function. These become effective in the unit by further inter-connecting parameters D1768 to D1775.

P0073, switch setting 2:

Control word MS is generated from a mask, in which bits 0 to 15 are permanently specified. the mask is assigned so that the unit is only controlled using control word KL.

P0073, switch setting 3:

Control word MS comes from the service interface RS232. Switch setting 3 is intended for control operation via REFUwin, which sends its control commands as PZD1. Note: In order to power-up the unit, in the operating status "Ready to power-up", the signal in bit 0 must change from 0 to 1. The fault acknowledgement (bit 7) is also only transferred when the signal changes from 0 to 1.

Control word bit assignment

Bit 0 to 7 of control word 1 (D1920) coincide with the functions, specified in the VDI/VDE Directives 3689:

Bit 0 = ON (L->H edge) / OFF1	(L active)
Bit 1 = OFF2, power disconnected	(L active)
Bit 2 = OFF3, fast stop	(L active)
Bit 3 = Operation enable	(H active)
Bit 4 = RFG reset	(L active)
Bit 5 = Ramp-up stop	(L active)
Bit 6 = Setpoint enable	(H active)
Bit 7 = Fault achnowledgement	(L->H edge)

Bits 8 to 15 can only be entered via the control word from the serial interface. The functions for these bits can be freely configured.

parameter: P0074 Src control word 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1900
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 02

Generating the control word

The unit is controlled (open-loop) using the control word. The control word comprises 16 Bits. Bits 0 to 7 are defined in accordance with the VDI/VDE Directives 3689. Bits 8 to 15 can only be set via the serial interface, and evry Bit can be freely assigned a unit control function. The control word is generated by logically combining the control word KL and the control word MS. The control word MS can be entered from four sources and selected via a switch. The switch is changed-over using parameter P0073.

Source, control word MS

Variable parameter source for the control word MS, if the source is set ON/OFF on the SI1/SI2 standard interface or the SI2 option interface. (P0073)

parameter: P0075 Src control word 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 04

Source, control word 2

Variable parameter source for control word 2.

parameter: P0076 Src stat.word 1 bit

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 03

Variable parameter sources for the freely-definable bits of status word 1.

Here, display parameters can be entered from the control functions area.

parameter: P0077 Src brakeChopper On

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Source, Brake resistor(BW) permanent ON

ATTENTION: This parameter is only needed in special applications. Please do not change the factory setup!

parameter: P0078 switch DC-threshold

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Threshold switched Brake resistor(BW)

ATTENTION: This parameter is only needed in special applications. Please do not change the factory setup!

parameter: P0079 thresh. BW-warning

maximum index: -
minimal value: 0
maximal value: 100
default value: 80
unit: %
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Threshold Brake resistor - Alarm

The brake resistor is monitored by a thermal model. The actually value is showed in dispay parameter D 1096. It reaches from 0 to 100%. A value of 100% demands a fault power-down of the drive unit. This parameter is for adjusting the response thresshold of the brakeresistor overload alarm.

parameter: P0080 src. main-cont. off

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Source, maincontactor OFF

ATTENTION: This parameter is only needed in special applications. Please do not change the factory setup!

parameter: P0084 Src stat.word 2 bit

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 04

Variable parameter sources for the freely-definable bits of status word 2. Here, display parameters can be entered from the control functions area.

parameter: P0085 BCC motordaten

maximum index: 01
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

BBC motor data

Check sum of the parameterized motor data.

Please do not change the factory setup of this parameter!

parameter: P0086 Heatsink temp diff

maximum index: -
minimal value: 0
maximal value: 40
default value: 5
unit: °
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 30

Alarm threshold for the temperature of the cooler.

The threshold is entered as differential value. differential value = drive shutdown threshold - required alarm threshold. The drive shutdown threshold is fixed and is specified by the manufacturer.

parameter: P0089 Source AND-gate

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 33

Control for a mechanical brake

Variable parameter sources for the function free input, AND logic element.

parameter: P0090 Source OR-gate

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1746
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 33

Control for a mechanical brake

Variable parameter sources for the function free input, OR logic element.

parameter: P0092 Switch off delay

maximum index: -
minimal value: 0.00
maximal value: 600.00
default value: 0.00
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Power-down delay

The power-down command is delayed

0.00 second

The off command is directly executed.

1.00 second

The off command is executed after 1 second.

parameter: P0093 Fault quit delay

maximum index: -
minimal value: 0
maximal value: 20
default value: 1
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Fault acknowledgment delay

Fault acknowledgment delay

Off

Fault acknowledgments are directly processed.

1 second

Fault acknowledgments are processed after 1 second.

Attention: The fault „precharging“ is generally processed after 30 seconds.

parameter: P0094 DC link min. value

maximum index: 01
minimal value: 0
maximal value: P 95
default value: 450
unit: V
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Minimum value of the DC link voltage U DC link min

When this value is fallen below, the inverter is shutdown with a fault message.

parameter: P0095 DC link max. value

maximum index: -
minimal value: P 94
maximal value: 2500
default value: 700
unit: V
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Maximum value of the DC link voltage V DC link max

When this value is exceeded, the inverter is shutdown with a fault message.

parameter: P0096 Precharge- DC min

maximum index: -
minimal value: 0
maximal value: 250
default value: 10
unit: V
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
difference: Pre-charging threshold - V DC link min

parameter: P0097 DCmax - BR ON

maximum index: 01
minimal value: 0
maximal value: 1000
default value: 40
unit: V
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
difference: V DC link max - PWon threshold

parameter: P0098 DCmax - BR OFF

maximum index: 01
minimal value: 0
maximal value: 1000
default value: 45
unit: V
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
difference: V DC link max - PWoff threshold

parameter: P0100 Motor type

maximum index: 01
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = Asynchron ASM
1 = Synchron SM
2 = DC Motor DC
3 = line inverter
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Motor type

Specifies the connected motor type,

0: induction motor
1: synchronous motor
2: dc motor (only available in special firmware-version A1)
3: line inverter (only available in special firmware-version A1)

parameter: P0101 Rated speed ASM

maximum index: 01
minimal value: 100
maximal value: 90000
default value: 2)
unit: 1/min
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan 01, 25, 26

Rated speed IM (induction motor)

Rated speed of the connected induction motor according to the rating plate.

parameter: P0102 Rated frequencyASM

maximum index: 01
minimal value: 10.0
maximal value: 1500.0
default value: 2)
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Rated frequency IM (induction motor)

Rated frequency of the connected induction motor according to the rating plate.

parameter: P0103 Rated current ASM

maximum index: 01
minimal value: 0.1
maximal value: 3000.0
default value: 2)
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Rated current IM (induction motor)

Rated current of the connected induction motor according to the rating plate.

parameter: P0104 Rated voltage ASM

maximum index: 01
minimal value: 10
maximal value: 550
default value: 2)
unit: V
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Rated voltage IM (induction motor)

Rated voltage of the connected induction motor according to the rating plate.

parameter: P0106 Power factor ASM

maximum index: 01
minimal value: 0.50
maximal value: 0.98
default value: 2)
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

COS-PHI IM (induction motor)

COS-PHI of the connected induction motor according to the rating plate.

parameter: P0107 Pole number SM

maximum index: 01
minimal value: 2
maximal value: 64
default value: 2)
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Pole number SM (synchronous motor)

Number of poles of the connected synchronize motor according to the rating plate.

parameter: P0108 Rated torque SM

maximum index: 01
minimal value: 0.1
maximal value: 500000.0
default value: 2)
unit: Nm
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan 01, 25, 26

Rated torque SM (synchronous motor)

Rated torque of the connected synchronize motor according to the rating plate.

parameter: P0109 Max. motor current

maximum index: 01
minimal value: 0.0
maximal value: P 33
default value: 2)
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Motor Imax SM / IM (induction / synchronous motor)

Maximum permissible motor current of the connected motor (induction or synchronize) according to the rating plate. It is independent of all normalization factors.

parameter: P0110 Stator resistor SM

maximum index: 01
minimal value: 0.001
maximal value: 10.000
default value: 2)
unit: Ohm
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Stator resistance SM (synchronous motor)

Stator resistance of the connected synchronous motor according to the rating plate.

parameter: P0111 Inductance LD SM

maximum index: 01
minimal value: 0.05
maximal value: 650.00
default value: 2)
unit: mH
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Three-phase inductance SM (synchronous motor)

Three-phase inductance of the connected synchronous motor according to the rating plate.

parameter: P0112 Rated current SM

maximum index: 01
minimal value: 0.1
maximal value: 3000.0
default value: 2)
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 25, 26

Rated current SM (synchronous motor)

Rated current of the connected synchronous motor according to the rating plate.

parameter: P0113 Rated speed SM

maximum index: 01
minimal value: 50
maximal value: 90000
default value: 2)
unit: 1/min
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan 01, 25, 26

Rated speed SM (synchronous motor)

Rated speed of the connected synchronous motor according to the rating plate.

parameter: P0114 Pole pair number

maximum index: 01
minimal value: 1
maximal value: 64
default value: 2)
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 13, 14, 15, 16, 17, 18, 25, 26

Pole pair number

Pole pair number of the connected induction- or synchronous motor. This parameter is calculated by the values of the rating plate. No Input possible!

parameter: P0115 speedloop gain adpt

maximum index: 01
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = without
1 = with
unit: no
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Adaptation speed controller gain

In field weaking, the coupling inductance Lm changes due to the lower magnetizing current. Thus, the gain factor of the torquegenerating current isq to the torque changes. This parameter defines whether this parameter

change should be compensated by an internal gain change (the gain increases in field weakening.

Standard setting : with adaption

parameter: P0117 Rated Isd ASM

maximum index: 01
minimal value: 0.0
maximal value: P 25
default value: 5.6
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Isd rated IM (induction motor)

Nominal value of the field-generating current of the connected induction motor.

parameter: P0118 CornerFrequency ASM

maximum index: 01
minimal value: 10.0
maximal value: 1500.0
default value: 104.0
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Transition frequency IM (induction motor)

Frequency at which field weakening starts.

parameter: P0119 Rated power ASM

maximum index: 01
minimal value: 0.0
maximal value: 6553.5
default value: 2.0
unit: kW
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Rated power

Rated power of the connected induction- or synchronous motor according to the rating plate.

parameter: P0120 Stator resistor ASM

maximum index:	01
minimal value:	0.001
maximal value:	65.535
default value:	0.628
unit:	Ohm
passwordlevel:	3
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 25, 26
	Stator resistance IM (induction motor)
	Stator resistance of the connected induction motor.

parameter: P0121 Leakage factor ASM

maximum index:	01
minimal value:	0.0001
maximal value:	1.0000
default value:	0.3341
unit:	no
passwordlevel:	3
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 25, 26
	Leakage coefficient "sigma" IM (induction motor)
	Leakage coefficient "sigma" of the connected induction motor.

parameter: P0122 Main-inductance ASM

maximum index:	01
minimal value:	0.000
maximal value:	3000.000
default value:	32.090
unit:	mH
passwordlevel:	3
read / write:	R/W off
type:	unsigned 32 bit
function diagram:	plan 25, 26
	Stator inductance IM (induction motor)
	Stator inductance of the connected induction motor.

parameter: P0123 Rotor-timeconst ASM

maximum index:	01
minimal value:	10
maximal value:	3000

default value: 100
unit: ms
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Rotor time constant IM (induction motor)

Rotor time constant of the connected induction motor which is calculated from the rating plate data (this is only effective for induction motors).

parameter: P0125 Long.inductance SM

maximum index: 01
minimal value: 0.05
maximal value: 655.35
default value: 10.00
unit: mH
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Direct axis inductance SM (synchronous motor)

Direct axis inductance of the connected synchronous motor.

For synchronous motors, allows the in-line and quadrature inductance to be seperately entered (normally, this is internally calculated).

parameter: P0126 Transinductance SM

maximum index: 01
minimal value: 0.05
maximal value: 655.35
default value: 10.24
unit: mH
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25, 26

Quadrature axis inductance SM (synchronous motor)

Quadrature axis inductance of the connected synchronous motor.

For synchronous motors, allows the in-line and quadrature inductance to be seperately entered (normally, this is internally calculated).

parameter: P0127 Rated voltage SM

maximum index: 01
minimal value: 10
maximal value: 1000
default value: 200

unit: V
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Nominal voltage synchronous motor

Used to calculate the voltage requirement of the synchronous motor. If the DC linc - voltage doesn´t reach the nominal value, the type point will be moved forwardly.

$$U = U_n(P0127) \times 1{,}41 \times 1{,}03 + 10V$$

parameter: P0128 Flux adaption ASM

maximum index: 01
minimal value: 0
maximal value: 200
default value: 50
unit: %
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

Gain of Flux-adaption-controller for incuction motor

This controller reduces the Flux-setpoint if the maximum output-voltage of inverter is reached. These method of flux-adaption allows to operate induction motors in higher speed ranges in case of low input-voltage.

parameter: P0129 Fluxcontr.gain ASM

maximum index: 01
minimal value: 0
maximal value: 200
default value: 50
unit: %
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

Flux controller gain:

50% standard value (flux is controlled with an internally calculated gain)

0% open loop flux control (For open-loop controlled operation, the flux is established with delay according to an exponential function, duration approx. 3 * Tr. For closed-loop controlled operation, the flux is established with the maximum possible magnetizing current, duration approx. 1*Tr)

1% .. 100% closed loop flux control

(this is only effective for induction motors)

parameter: P0130 Encoder selection

maximum index: 01
minimal value: 0
maximal value: 8
default value: 1
parameter value:
0 = Resolver
1 = Incremental Encoder
2 = co/sine +comutation
3 = sine/cosine Encoder
4 = no speed sensor
5 = external via P145
6 = 3 phase-system
7 = sine/cosine 8Vss
8 = 1 phase-system
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 13, 14, 16, 17, 18

Encoder selection

Selects the connected encoder.

0: resolver

1: incremental encoder

2: sin/cos sensor with comutation signal

3: sin/cos sensor

4: open loop field oriented control

5: extern via parameter P0145: used for sensor signal from option G2 or option SynchroLink

6: 3-Phase-System (synchronisation of output-voltage reffered to a 3phase line system, only available in special firmware-version A1)

7: (not used)

8: 1-Phase-System (synchronisation of output-voltage reffered to a 1phase line system, only available in special firmware-version A1)

parameter: P0131 Resolver pole-no

maximum index: 01
minimal value: 2
maximal value: 100
default value: 2
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 13

Resolver pole number

Pole number of the resolver used.

parameter: P0132 Encoder increments

maximum index: 01
minimal value: 64
maximal value: 10000
default value: 1024
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 14, 15, 16

Incremental encoder or ERN sensor resolution
n pulses per revolution.
Example: 1024 or 2048 pulses / revolution.
In function only when P0130 = 1, 2 or 3

parameter: P0133 sensor delta-phi

maximum index: 01
minimal value: -180
maximal value: 180
default value: 0
unit: °
passwordlevel: 3
read / write: R/W off
type: signed 16 bit
function diagram: plan 13, 14, 15, 16, 18

Resolver delta-phi
Adjusts the delta-phi angle for the mounted resolver.

parameter: P0134 encoder emulation

maximum index: 01
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = of encoder SR17002
1 = of encoder GB21082
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Sourceparameter for the function, encoder emulation
0 = from encoder, connected to SR 17002, X18
1 = from incremental encoder, connected to optioncard, X48

parameter: P0135 Ls-factor @ 0.1 In

maximum index:	01
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0136 Ls-factor @ 0.2 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0137 Ls-factor @ 0.3 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0138 Ls-factor @ 0.5 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0139 Ls-factor @ 0.6 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0140 Ls-factor @ 0.7 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0141 Ls-factor @ 0.8 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0142 Ls-factor @ 0.9 In

maximum index:	1
minimal value:	0.010
maximal value:	3.000
default value:	1.000
unit:	no
passwordlevel:	3
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 25

parameter: P0143 Ls-factor @ 1.0 In

maximum index: 1
minimal value: 0.010
maximal value: 3.000
default value: 1.000
unit: no
passwordlevel: 3
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 25

The stator inductance of a inductance-motor is a nonlinear function of the field current isd. This function is described in a characteristic with 10 points. The x-values of this characteristic is fixed in steps of 0.1 of the rated motorcurrent In (0.1In ... 1.0In). The y-values are relative factors of the rated stator-inductance Ls. The rated inductance Ls ist measured at a current of 0.4 In.

P1035 value for Ls at 0.1 Inom motor
P0137 value for Ls at 0.3 Inom motor
(P0122 value for Ls at 0.4 Inom motor (!))
P0138 value for Ls at 0.5 Inom motor
P0143 value for Ls at 1.0 Inom motor

example: P0135 = 1.300
P0122 = 100 mH
-> Ls (0.1 Inom) = 130mH

parameter: P0144 TRotor ident gain

maximum index: 01
minimal value: 0.00
maximal value: 199.00
default value: 10.00
unit: %
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

Gain, rotor time constant identification

0% .. no thermal compensation of rotor time constant
1% .. 100% thermal compensation of rotor time constant is active

In addition to the thermal modell a precontrol of the magnetising curve (P0135 ... P0143) is done independant of the value in P0144. The output of the identification controller for rotor time constant Tr is multiplied with the relative value from the magnetising function.

parameter: P0145 Src encoder extern

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 18

Sourceparameter for the function, encoder extern

Prescribes, from which interface the extern encoder will be supplied G2-option in slot1: P0145 = 1910

G2-option in slot2: P0145 = 1100 encoder evaluation from synchrolink: P0145 = 1130

parameter: P0146 Trigger encoderAdj.

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Sourceparameter for the function, enable sensor optimising

Assignment: 0 = First enable, after previous PowerOn 1 = Enable, after next inverter enable

parameter: P0147 I-control dynamic

maximum index: 01
minimal value: 0
maximal value: 2
default value: 1
parameter value: 0 = standard
1 = high
2 = very high
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

Dynamic I/controller

This allows the current controller dynamic response to be increased or decreased. This changes torque rise times. Normally, this does not have

to changed, as the gain is automatically adapted to the motor. However, it requires relatively precise information about the motor parameters.

(e.g. from the automatic parameter identification routine)

Current controller response time in steps of Ta. The time-tick Ta is the reziprocal value of the pulse frequency (P0026).

(e.g. pulse frequency: fp = 5.0 kHz; Ta = 1/fp = 0.2 msec)

Index 0

standard: The current controller response time is normally 4 Ta (time-ticks)

Index 1

high: The current controller response time is normally 3 Ta (time-ticks)

Index 2

very high: The current controller response time is normally 2 Ta (time-ticks)

parameter: P0148 I-control gain

maximum index: 01
minimal value: 0
maximal value: 100
default value: 60
unit: %
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

gain I/controller

Is used to change the current controller gain. Generally this does not have to be changed, as the gain is automatically adapted to the motor.

parameter: P0149 Flux level reached

maximum index: 01
minimal value: 10
maximal value: 90
default value: 75
unit: %
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25

Threshold for message setpoint field current reached

Selects from above which flux actual value torque can be output. For induction motors, torque can only be output, if the flux has been essentially established after the motor has been powered-up.

Standard: 75% (only effective for induction motors)

parameter: P0150 speed encoderAdjust

maximum index: -
minimal value: -120
maximal value: 120
default value: 30
unit: 1/min
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -

Speed encoder adjustment

The "Encoder optimize-Function", which is selected in P0189, will be continued with the number of revolutions, which is seted up in P0150.

parameter: P0151 current encoderAdj.

maximum index: -
minimal value: 1
maximal value: 100
default value: 50
unit: %
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Current encoder adjustment

The "Encoder optimize-function", which is selected in P0189, calculates a commutationangledetermination, in case of using a synchronous machine. Therefore a current is impressed, which value is determinated by P0151. The procentually value of P0151 is scaled by the norminal current of the motor(P0112).

parameter: P0153 Mode PWM-limiter

maximum index: 01
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = circle
1 = hexagon
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

PWM-limitation-mode

The pulswithmodulation of an inverter works with the spaceanglemodulation. There are two modes of limitation the voltage phasor; circle and hexagon.

Circle mode:

In case of limitation, the inverter generats a really sine-waved output vol- tage. The setreserve of the inverter (voltage) is not full available (ca. 95%).

Hexagon mode:

In case of limitation, the inverter generats a sine-waved output voltage with harmonics. The setreserve of the inverter(voltage) is full available. Standard setup, hexagon mode: Notice: A current-looped system will deliver a sine-waved current, the voltage is manipulated variable. The highness of the setreserve have more importance as a sine-waved manipulated variable.

parameter: P0155 MFB source 0

maximum index: 03
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 39

Variable parameter source input0 of multi-function block

parameter: P0156 MFB source 1

maximum index: 03
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 39

Variable parameter source input1 of multi-function block

parameter: P0157 MFB source 2

maximum index: 03
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan 39
Variable parameter source input2 of multi-function block

parameter: P0158 MFB function 1

maximum index: 03
minimal value: 0
maximal value: 7
default value: 0
parameter value:
0 = addition
1 = subtraction
2 = multiply
3 = divide
4 = minimum of all i/p
5 = maximum of all i/p
6 = processData switch
7 = multiply and square
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 39
Function, multi-function blocks
The arithmetic function is set here, with which inputs E1 and E2 are handled:

0: Addition	Y = E1 + E2
1: Subtraction	Y = E1 - E2
2: Multiplication	Y = E1 * E2
3: Division	Y = E1 / E2
4: Min value, smallest value of	Y = Min(E1, E2)
5: Max value, highest value of	Y = Max(E1, E2)
6: switching of process values	Y = (E0) ? E1:E2
7: power of inputs	$Y = (E1 * E2)^2$

parameter: P0159 MFB function 2

maximum index: 03
minimal value: 0
maximal value: 2
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverting
unit: no
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan 39

Selects how the sign is handledfor the multi-function blocks.

0 = direct	; output = y
1 = ammount	; output = abs (y)
2 = inverted	; output = - y
3 = ammount inverted	; output =-abs (y)

parameter: P0160 S/P integrator up

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 41

Variable parameter source for the function, integrator up

parameter: P0161 S/P integrator down

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 41

Variable parameter source for the function, integrator down

parameter: P0162 S/P int. pos.limit

maximum index: -
minimal value: P 163
maximal value: 190.00
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 41

Integrator, positive limit value

parameter: P0163 S/P int. neg.limit

maximum index:	-
minimal value:	-190.00
maximal value:	P 162
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 41
	Integrator, negative limit value

parameter: P0164 S/P integratr speed

maximum index:	-
minimal value:	1
maximal value:	100
default value:	5
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 41
	Integrator, rate-of-change

parameter: P0165 Src reset s/p int.

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 41
	Variable parameter source for the function, reset integrator memory

parameter: P0166 Src free-ch pos.i/p

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par

passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 40
Variable parameter source for the function, free characteristic, P input

parameter: P0167 Src free-ch neg.i/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 40
Variable parameter source for the function, free characteristic, N input

parameter: P0168 Free-char. x-values

maximum index: 09
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 40
Free characteristic, X points

parameter: P0169 Free-char. y-values

maximum index: 09
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 40
Free characteristic, Y points

parameter: P0170 Src normalize F-C

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 40

Variable parameter source for the function, free characteristic normalization

parameter: P0171 Select normalize FC

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 40

Free characteristic, select normalization, variable source or fixed value.

parameter: P0172 Fixval normalize FC

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 40

Free characteristic, normalization, fixed value

parameter: P0173 DR Teach in; upper

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700

unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 32
Variable parameter source for the function, dancer roll, teach-in, top

parameter: P0174 DR Teach in: lower

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 32
Variable parameter source for the function, dancer roll, teach-in, bottom

parameter: P0175 Dancing roller norm

maximum index: -
minimal value: -180.00
maximal value: 180.00
default value: 10.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 32
Dancer roll, teach-in, normalization

parameter: P0176 Dancing roller offs

maximum index: -
minimal value: -100.00
maximal value: 100.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 32
Dancer roll, teach-in, offset

parameter: P0177 Src Dancing roller

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 32

Variable parameter source for the function, dancer roll input

parameter: P0181 V/f characterist.Fa

maximum index:	01
minimal value:	0.0
maximal value:	1500.0
default value:	2)
unit:	Hz
passwordlevel:	2
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 26

parameter: P0182 V/f characterist.Fb

maximum index:	1
minimal value:	0.0
maximal value:	1500.0
default value:	2)
unit:	Hz
passwordlevel:	2
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 26

parameter: P0183 V/f characterist.Fc

maximum index:	1
minimal value:	0.0
maximal value:	1500.0
default value:	2)
unit:	Hz
passwordlevel:	2
read / write:	R/W on
type:	unsigned 16 bit

function diagram: plan 26

parameter: P0184 V/f characterist.Fd

maximum index: 1
minimal value: 0.0
maximal value: 1500.0
default value: 2)
unit: Hz
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

parameter: P0185 V/f characterist.Va

maximum index: 1
minimal value: 0
maximal value: 550
default value: 2)
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

parameter: P0186 V/f characterist.Vb

maximum index: 01
minimal value: 0
maximal value: 550
default value: 2)
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

parameter: P0187 V/f characterist.Vc

maximum index: 1
minimal value: 0
maximal value: 550
default value: 2)
unit: V
passwordlevel: 2
read / write: R/W on

type: unsigned 16 bit
function diagram: plan 26

parameter: P0188 V/f characterist.Vd

maximum index: 1
minimal value: 0
maximal value: 550
default value: 2)
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

Use only for service!!!!
V/f characteristic
Operating points of the voltage/frequency characteristic V/f.

1. point Va / Fa
2. point Vb / Fb
3. point Vc / Fc
4. point Vd / Fd

parameter: P0189 operating mode

maximum index: -
minimal value: 0
maximal value: 6
default value: 0
parameter value:
0 = cl. loop curr. ctrl
1 = op.loop voltage ctr
2 = MotorIdentification
3 = Encoder optimize
4 = res curr compensat
5 = vector-Controlled
6 = onboard line invert
unit: no
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 13, 15, 16, 26

Operation mode
Selects the operating mode

0: field-oriented current control (standard)
1: Voltage/frequency mode
2: start the automatic motor identification
3: start the automatic sensor optimisation
4: residual current compensation (special operation mode,

only available in special firmware-version A4)

5: (not used)

6: onboard line inverter (special operation mode,

only available in special firmware-version A1)

Motor identification (2): If this mode is selected, the next time that the inverter is enabled, an automatic motor identification routine is executed. A voltage output and a test current flows. The motor doesn´t rotate (the shaft might make short notching movements).

Prerequisites for automatic identification:

The motor is connected with the selected encoder (P0130)

Encoder data (P130 onwards) and the motor rating plate data (P0100) onwards) have been entered.

During the identification routine, the yellow LED flashes quickly and "Motor identification" is indicated in the display. Depending on the particular motor, the identification routine can take several minutes. After the identification routine has been completed, "MotID ready" is displayed and the yellow LED flashes slowly. The drive converter should now be powered-down. After this, the determined data is automatically saved in a non-volatile fashion in the EEPROM (this means that data cannot be lost during power failures).

When required, a new identification run can be made (if this is done several times, this can result in further improvements).

If no further identification routine is required, then after power-off, P189 should be set to closed-loop current controlled. The drive converter can now be operated again in the normal mode. The determined values can be viewed in the following parameters (all of the quantities are phase quantities).

induction machine:

P0117 magnetizing current

P0120 stator resistance Rs

P0121 leakage coefficient sigma

P0122 stator inductance Ls

P0135 ... P0043 magnetising function

synchronous machine:

P0110 stator resistance Rs

P0111 Three-phase inductance Ld

P0125 Direct axis inductance Lsd = Ld

P0126 Quadrature axis inductance Lsq = 0.88 * Ld

Encoder opimizing(3):

If the encoder optimizing mode is selected, the next time that the inverter is enabled, an automatic encoder optimizing routine is executed. The motor will rotate slowly. If you use an inccremental encoder or sensorless-mode,this routine won´t work.

Prerequisites for this mode:

Encoder data (P0130 onwards) and the motor rating plate data (P0100 onwards) have been entered. - The speed controller should be seted up(for 2.).

Function:

1. Currentinjection mode to calculate the commutationangle, only activ, when synchronous motor is selected with resolver or sin/cos encoder with com. track.

Observation: slowly right-hand-rotation for a half revolution. The highness of the current will be seted up in P0151, the speed in P0150.

Prehanged parameter: P0133

2. Variable speed drive mode to calculate the offset and amplitude error of the sin/cos tracks.

Observation: very slowly left-hand-rotation for 1,5 rotations Prechanged parameter: P0633... P0636

3. The shaft will be stopped.

parameter: P0200 Analog input1 norm.

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 08

Analog input normalization

Normalization for the signal at the analog input.

e.g.: 100.00% = 10V

parameter: P0201 Analog input1 mode

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = -10V .. +10V
1 = +4 .. +20mA
2 = 0 .. +20mA
3 = +2V .. +10V
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 08

Analog input

Selects the signal type for the analog input,

0 = -10 V ... +10 V
1 = +4 ... +20 mA
2 = +0 ... +20 mA
3 = 2 V ... +10 V

parameter: P0202 Analog input1 offs.

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 08

Analog input offset

Offset value for the signal at the analog input.

parameter: P0203 Analog input1 sign

maximum index: -
minimal value: 0
maximal value: 4
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverted
3 = abs. value inverted
4 = limit on pos. value
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 08

Analog input signal

Selects the sign handling for the analog input.

parameter: P0204 Analog input1 filtr

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 01, 08

Analog input, filter time

Adjustable filter time for signal damping at the analog input.

parameter: P0205 Input-block 2 norm.

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block2, normalization
Normalization for the signal at input block2.
e.g.: 100.00 % = 10 V

parameter: P0206 Input-block 2 offs.

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block2, offset
Offset value for the signal at the input block2.

parameter: P0207 Input-block 2 sign

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverted
3 = abs. value inverted
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block2, signal
Selects the sign handling for input block2.

parameter: P0208 Input-block 2 filtr

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block2, filter time
Adjustable filter time for the signal damping at input block2.

parameter: P0209 Input-block 3 norm.

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block3, normalization
Normalization for the signal at input block3.
e.g.: 100.00 % = 10 V

parameter: P0210 Input-block 3 offs.

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block3, offset
Offset value for the signal at input block3.

parameter: P0211 Input-block 3 sign

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverted
3 = abs. value inverted
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block3, signal
Selects the sign handling for input block3.

parameter: P0212 Input-block 3 filtr

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block3, filter time
Adjustable filter time for the signal damping at input block3.

parameter: P0213 Input-block 4 norm.

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block4, normalization
Normalization for the signal at input block4.
e.g.: 100.00 % = 10 V

parameter: P0214 Input-block 4 offs.

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 09
Input block4, offset
Offset value for the signal at input block4.

parameter: P0215 Input-block 4 sign

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverted
3 = abs. value inverted
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block4, signal
Selects the sign handling for input block4.

parameter: P0216 Input-block 4 filtr

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 09
Input block4, filter time
Adjustable filter time for the signal damping at input block4.

parameter: P0217 Source i/p block 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 09

Variable parameter source for the function, input, input block2

parameter: P0218 Source i/p block 3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 09

Variable parameter source for the function, input, input block3

parameter: P0219 Source i/p block 4

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1851
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 09

Variable parameter source for the function, input, input block4

parameter: P0220 Src PT1 filter

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38
Variable parameter source for the function, input, PT1 element

parameter: P0221 PT1 filt.timeconst.

maximum index: 01
minimal value: 0
maximal value: 5000
default value: 0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 38
Time, PT1 element
Adjustable filter time for the signal damping at the PT1 element.

parameter: P0222 Source limiter 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38
Variable parameter source for the function, input limiter

parameter: P0223 Positive limit 1

maximum index: -
minimal value: P 224
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 38
Limiter, positive limit
Adjustable positive limit of the limiter module.

parameter: P0224 Negative limit 1

maximum index: -
minimal value: -199.99
maximal value: P 223
default value: -100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 38

Limiter, negative limit

Adjustable negative limit of the limiter module.

parameter: P0225 Source P-Modul

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38

Variable parameter source for the function, input multiplication element with the factor Kp.

parameter: P0226 Gain P-Modul

maximum index: -
minimal value: 0.000
maximal value: 10.000
default value: 1.000
unit: no
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 38

Gain, P element

Value for the multiplication factor Kp of the P element.

parameter: P0227 Offset P-Modul

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00

unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 38

Offset, P element

Value for the offset, which is then added after the multiplication by the factor Kp of the P element.

parameter: P0228 Src1 ch-over switch

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38

Variable parameter source for the function, input0 of the process channel changeover switch.

parameter: P0229 Src2 ch-over switch

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38

Variable parameter sources for the function, input1 of the process channel changeover switch.

parameter: P0230 Src switch function

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 38

Variable parameter source for the function, changeover of the process channel changeover switch.

parameter: P0231 Src TC normalizat'n

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, normalization input of the technology regulator.

parameter: P0232 Select TC normalize

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Selects the normalization of the technology regulator

Selects either a variable normalization value or fixed value as normalization value.

parameter: P0233 Fixvalue TC norm.

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 35

Fixed value for the normalization value of the technology regulator.

A fixed value can be saved here which is entered as normalization value.

parameter: P0234 Src TC actual value

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, input, technology regulator actual value.

parameter: P0235 DT1 Modul T1

maximum index: -
minimal value: 0
maximal value: 5000
default value: 0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 35

DT1 element T1

Value for time T1 of the DT1 element.

T1 defines the rate at which the output quantity is reduced.

parameter: P0236 DT1 Modul gain

maximum index: -
minimal value: 0.000
maximal value: 16.000
default value: 1.000
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 35

DT1 element, normalization

Value for normalization K of the DT1 element.

parameter: P0237 Src TC act.val.sign

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, sign, technology regulator actual value.

parameter: P0238 Src TC set point

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, setpoint input of the technology regulator.

parameter: P0239 Select TC set point

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Selects either a variable setpoint or fixed value for the setpoint of the technology regulator, and the pre-control of the technology regulator output.

parameter: P0240 Fixvalue TC s/p

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 35

Fixed value for the technology regulator setpoint.

A fixed value can be saved here for input as setpoint.

parameter: P0241 Src TC s/p sign

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, technology regulator setpoint sign.

parameter: P0242 TC gain

maximum index: -
minimal value: 0.000
maximal value: 16.000
default value: 1.000
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 35

Kp technology regulator

Factor for the proportional component Kp of the technology regulator.

parameter: P0243 TC integral time

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10

unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 35
Tn technology regulator
Value for the integral action time Tn of the technology regulator.

parameter: P0244 TC droop

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 35
Droop, technology regulator
Value for the technology regulator droop.

parameter: P0245 Src TC enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35
Variable parameter source for the function, enable technology regulator.

parameter: P0246 Src TC droop enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 35

Variable parameter source for the function, droop enable, technology regulator.

parameter: P0247 TC positive limit

maximum index: -
minimal value: 0.00
maximal value: 190.00
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 35

Positive limit, technology regulator

Adjustable positive limit of the technology regulator.

parameter: P0248 TC negative limit

maximum index: -
minimal value: -190.00
maximal value: 0.00
default value: -100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 35

Negative limit, technology regulator

Adjustable negative limit of the technology regulator.

parameter: P0249 RFG up/down-mode

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = torque-direction
1 = speed-direction
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

RFG mode (ramp-function generator mode)

The ramp-function generator mode can be pre-selected here:

M direction (sign):

For arithmetic, positive setpoint changes, the ramp-up time and UP rounding-off parameters are effective. For arithmetic, negative setpoint changes, the ramp-down time and DOWN rounding-off parameters are effective.

Speed direction (absolute value):

for absolute setpoint increases the ramp-up time and UP rounding-off parameters are effective for absolute setpoint reductions, the ramp-down time and DOWN rounding-off parameters are effective

parameter: P0250 Src add. s/p 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Variable parameter source for the function, input, supplementary setpoint1.

parameter: P0251 Select add. s/p 1

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Selects supplementary setpoint1

Selects either the variable source or fixed value for the supplementary setpoint1.

parameter: P0252 Fixvalue add. s/p1

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on

type: signed 16 bit

function diagram: plan 22

Fixed value for supplementary setpoint1.

parameter: P0253 Src factor add.s/p2

maximum index: -

minimal value: 0

maximal value: 2044

default value: 1800

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 22

Variable parameter source for the function, input, supplementary setpoint2.

parameter: P0254 Select fact.ad.s/p2

maximum index: -

minimal value: 0

maximal value: 1

default value: 0

parameter value: 0 = variable source

1 = fixvalue

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 22

Selects supplementary setpoint2

Selects either a variable source or fixed value for supplementary setpoint2.

parameter: P0255 Fixval.fact.ad.s/p2

maximum index: -

minimal value: -199.99

maximal value: 199.99

default value: 0.00

unit: %

passwordlevel: 1

read / write: R/W on

type: signed 16 bit

function diagram: plan 22

Fixed value for supplementary setpoint2.

parameter: P0256 Src add. s/p 3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Variable parameter source for the function, input, supplementary setpoint3.

parameter: P0257 Select add. s/p 3

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Selects supplementary setpoint3

Selects either a variable source or fixed value for the supplementary setpoint3

parameter: P0258 Fixvalue add. s/p 3

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 22

Fixed value for supplementary setpoint3.

parameter: P0259 Src add. s/p 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1825
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Variable parameter source for the function, multiplier supplementary setpoint2

parameter: P0260 Fixvalue add. s/p2

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 22

Fixed value, multiplier supplementary setpoint2

parameter: P0261 Src select add.s/p2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Selects multiplier supplementary setpoint2

Selects either a variable source or fixed value for the multiplier supplementary setpoint2.

parameter: P0262 Src RFG-initial val

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1851

unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Variable parameter source for the function, input, RFG setting value.

This is the start value of the RFG between RFG-reset.

parameter: P0263 Src main set point

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1801
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function, input, variable main setpoint

parameter: P0264 Select main setp'nt

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function, select main setpoint

Selects either the variable main setpoint or fixed value for the main setpoint.

parameter: P0265 Fixvalue main s/p

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 20

Fixed value for the main setpoint.

parameter: P0266 S/P base speed

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 1.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 20

Fixed value for the base setpoint

parameter: P0267 S/P inch speed 1

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 2.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 20

Fixed value for setpoint, inching1

parameter: P0268 S/P inch speed 2

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 3.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 20

Fixed value for setpoint, inching2

parameter: P0269 Src inch speed 3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800

unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 20
	Source parameter for input setpoint, inching3

parameter: P0270 Src enable inching3

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 20
	Source parameter to select setpoint, inching3

parameter: P0271 Src RFG param.set 2

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 21
	Variable parameter source for the function, select ramp-function generator2

parameter: P0272 Src base speed

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 20
	Variable parameter source for the function, select Vbase

parameter: P0273 Src inch speed 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function, select setpoint inching1

parameter: P0274 Src inch speed 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function, select setpoint inching2

parameter: P0275 Src setpoint RFG

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1880
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Source parameter for direct RFG input.

parameter: P0277 Src enable SC

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23
Variable parameter source for the function, enable speed n regulator

parameter: P0278 Src SC integral OFF

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23
Variable parameter source for the function, speed n regulator I component inhibit

parameter: P0279 Src SC droop enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23
Variable parameter source for the function, enable n regulator droop

parameter: P0280 Ramp up time

maximum index: 01
minimal value: 0.000
maximal value: 3200.000
default value: 1.000
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 01, 21
Ramp-up time
Enters the ramp-up time for the ramp-function generator. The entered times are normalized for a 100.00% setpoint change.

Attention: If a UP rounding-off time > 0 is selected, the time would be longer!

parameter: P0281 Ramp down time

maximum index: 01
minimal value: 0.000
maximal value: 3200.000
default value: 1.000
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 01, 21

Ramp-down time

Enters the ramp-down time for the ramp-function generator. The entered times are normalized for a 100.00% setpoint change.

Attention: If a DOWN rounding-off time is selected, the time would be longer!

parameter: P0282 Rounding ramp up

maximum index: 01
minimal value: 0.000
maximal value: 800.000
default value: 0.000
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 21

UP rounding-off

Enters the UP rounding-off time for the ramp-function generator. The entered times are normalized for a 100.00 % setpoint change.

parameter: P0283 Rounding ramp down

maximum index: 01
minimal value: 0.000
maximal value: 800.000
default value: 0.000
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit

function diagram: plan 21

DOWN rounding-off

Enters the DOWN rounding-off time for the ramp-function generator. The entered times are normalized for a 100.00 % setpoint change.

parameter: P0288 Ramp up fast stop

maximum index: -

minimal value: 0.000

maximal value: 3200.000

default value: 0.000

unit: sec

passwordlevel: 1

read / write: R/W on

type: unsigned 32 bit

function diagram: plan 21

Ramp-up time, fast stop

Enters the ramp-up time for the ramp-function generator, fast stop. The entered times are normalized for a 100.00 % setpoint change.

Attention: If a UP rounding-off time > 0 is selected, the time would be longer!

parameter: P0289 Ramp down fast stop

maximum index: -

minimal value: 0.000

maximal value: 3200.000

default value: 0.000

unit: sec

passwordlevel: 1

read / write: R/W on

type: unsigned 32 bit

function diagram: plan 21

Ramp-down time, fast stop

Enters the ramp-down time for the ramp-function generator, fast stop. The entered times are normalized for a 100.00% setpoint change.

Attention: If a DOWN rounding-off time is selected, the time would be longer!

parameter: P0290 Rounding up f.stp

maximum index: -

minimal value: 0.000

maximal value: 800.000

default value: 0.000

unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 21

UP rounding-off fast stop

Enters the UP rounding-off time for the ramp-function generator, fast stop.

The entered times are normalized for a 100.00 % setpoint change.

parameter: P0291 Rounding down f.stp

maximum index: -
minimal value: 0.000
maximal value: 800.000
default value: 0.000
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 21

UP rounding-off, fast stop

Enters the DOWN rounding-off time for the ramp-function generator, fast stop.

The entered times are normalized for a 100.00 % setpoint change.

parameter: P0292 RFG override level

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 21

Threshold for the automatic ramp-function generator bypass

parameter: P0293 Normalize dv/dt

maximum index: -
minimal value: 0.00
maximal value: 655.35
default value: 100.00
unit: %
passwordlevel: 1

read / write: R/W on
type: unsigned 16 bit
function diagram: plan 21
Normalization, dv/td
Ramp-function generator, normalization dv/td D1835
Definition:
D1835 = P0293 * 10 / RFG-ramp (sec)

parameter: P0294 Src RFG override

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21
Variable parameter source for the function,
selects ramp-function generator bypass

parameter: P0295 Src fixval. T-limit

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Variable parameter source for the function, selects fixed values of the torque limiting

parameter: P0296 Src RFG stop

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Variable parameter source for the function, selects ramp-function generator, RAMP-UP STOP

parameter: P0297 Analog input window

maximum index: -
minimal value: 0.00
maximal value: 20.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 08

P0297.x Setpoint smoothing

A firmware module with parameterizable window is inserted after the A/D converter to smooth the setpoint at the analog input. Using P0297.x, a window is entered as a %. Setpoint fluctuations within this window are not accepted. The setpoint at the output of the firmware module remains constant. This value is only accepted at the output, if the setpoint lies outside the parameterized window and the window of this value is re-defined with +/- %.

parameter: P0298 Src SC param.set 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Variable parameter source for the function, selects n regulator parameter Kp2/Tn2

parameter: P0299 Src sign revers.AI1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 08

Variable parameter source for the function, selects sign reversal, analog input

parameter: P0300 Src add. s/p 4

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 22
	Variable parameter source for the function, input, variable supplementary setpoint4

parameter: P0301 Select add. s/p 4

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1701
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 22
	Selects supplementary setpoint4
	Selects either a variable value or fixed value for supplementary setpoint4.

parameter: P0302 Fixvalue add. s/p 4

maximum index:	-
minimal value:	-199.99
maximal value:	199.99
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 22
	Fixed value, supplementary setpoint4
	A fixed value can be saved here as supplementary setpoint4.

parameter: P0303 Speed s/p pos.limit

maximum index: -
minimal value: 0.00
maximal value: 190.00
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 22

Positive setpoint limiting

Adjustable positive limit of the setpoint limiter module.

parameter: P0304 Speed s/p neg.limit

maximum index: -
minimal value: -190.00
maximal value: 0.00
default value: -100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 22

Negative setpoint limiting

Adjustable negative limit of the setpoint limiter module.

parameter: P0305 Src 305 set point

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1834
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 22

Variable parameter source for the function, main setpoint before limiting

To transfer the setpoint after the ramp-function generator and before adding supplementary setpoint4.

parameter: P0306 Source notch-filter

maximum index: -
minimal value: 0
maximal value: 2044

default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 19

Variable parameter source for the function, input bandstop module.

parameter: P0307 Source reversal

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Variable parameter source for the function, select inversion, n regulator actual value and moment setpoint.

parameter: P0308 Notch filter f

maximum index: -
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: Hz
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 19

Bandstop f

Frequency of the bandstop module filter.

parameter: P0309 Notch filter Q

maximum index: -
minimal value: 0.0
maximal value: 10.0
default value: 1.0
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 19

Bandstop Q

Quality of the bandstop module filter.

parameter: P0310 Speed signal filter

maximum index: -
minimal value: 0.0
maximal value: 100.0
default value: 2.0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 01, 23

Filter time for the n regulator actual value

parameter: P0311 Source limiter 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36

Variable parameter source for the function, input, limiter2

parameter: P0314 Source 1 mul-div

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36

Variable parameter source for the function, input factor1, multiplier-divider module

parameter: P0315 Factor mul-div

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 36
Factor2, multiplier-divider module

parameter: P0316 Source 2 mul-div

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36
Variable parameter source for the function, input divisor, multiplier-divider module

parameter: P0317 Source 1 Multipl. 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36
Variable parameter source for the function, input factor1, multiplication module

parameter: P0318 Source 2 Multipl. 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par

passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36
Variable parameter source for the function, input factor2, multiplication module

parameter: P0319 SC initial-integral

maximum index: -
minimal value: -100.00
maximal value: 100.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 23
Variable parameter source for the function, input n regulator, I setting value

parameter: P0320 Source AuxContr s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 34
Variable parameter source for the function, setpoint, supplementary regulator

parameter: P0321 Source AuxContr f/b

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 34
Variable parameter source for the function, actual value1, supplementary regulator

parameter: P0322 AuxContr Gain

maximum index:	-
minimal value:	0.0
maximal value:	128.0
default value:	1.0
unit:	no
passwordlevel:	1
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 34
	Supplementary regulator Kp

parameter: P0323 AuxContr integral

maximum index:	-
minimal value:	0
maximal value:	5000
default value:	0
unit:	ms
passwordlevel:	1
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 34
	Supplementary regulator Tn

parameter: P0324 Src AuxContr enable

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 34
	Variable parameter source for the function, enable supplementary regulator

parameter: P0325 AuxContr positv lim

maximum index:	-
minimal value:	0.00
maximal value:	190.00
default value:	100.00
unit:	%
passwordlevel:	1

read / write: R/W on
type: signed 16 bit
function diagram: plan 34
Positive limit, supplementary regulator

parameter: P0326 AuxContr negatv lim

maximum index: -
minimal value: -190.00
maximal value: 0.00
default value: -100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 34
Negative limit, supplementary regulator

parameter: P0327 Src 1 add. Torque

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1842
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 31
Variable parameter source for the function, input1, total M supplementary

parameter: P0328 Src 2 add. Torque

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 31
Variable parameter source for the function, input2, total M supplementary

parameter: P0329 Src 3 add. Torque

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1844
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 31

Variable parameter source for the function, input3, total M supplementary

parameter: P0330 Source adaptive G

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Variable parameter source for the function, input adaptation Kp for n regulator

parameter: P0331 Select adaptive G

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Selects adaptation Kp for n regulator

Selects either a variable value or fixed value for the adaptation Kp for n regulator.

parameter: P0332 Fixvalue adaptive G

maximum index:	-
minimal value:	-199.99
maximal value:	199.99
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 23
	Fixed value, adaptation Kp for n regulator

parameter: P0333 Norm. adaptive Gain

maximum index:	-
minimal value:	-10.000
maximal value:	10.000
default value:	0.000
unit:	no
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 23
	Normalization, adaptation Kp for n regulator

parameter: P0334 Addvalue adaptive G

maximum index:	-
minimal value:	-1.000
maximal value:	1.000
default value:	1.000
unit:	no
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 23
	Addition for adaptation Kp for n regulator

parameter: P0335 Speed controller G1

maximum index:	-
minimal value:	0.0
maximal value:	128.0
default value:	5.0
unit:	no
passwordlevel:	1

read / write: R/W on
type: unsigned 16 bit
function diagram: plan 01, 23
n regulator Kp1
Factor for the proportional component Kp1 of the n regulator.

parameter: P0336 Speed controller T1

maximum index: -
minimal value: 0
maximal value: 5000
default value: 10
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 01, 23
n regulator Tn1
Integral action time Tn1 of the n regulator.

parameter: P0337 Speed controller G2

maximum index: -
minimal value: 0.0
maximal value: 128.0
default value: 5.0
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 23
n regulator Kp2
Proportional component Kp2 of the n regulator.

parameter: P0338 Speed controller T2

maximum index: -
minimal value: 0
maximal value: 5000
default value: 10
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 23
n regulator Tn2
Integral action time Tn2 of the n regulator.

parameter: P0339 Source speed f/b

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1873
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 23
	Variable parameter source for the function, input n regulator actual value

parameter: P0340 Multiplier droop

maximum index:	-
minimal value:	-25.00
maximal value:	25.00
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 23
	Fixed value, multiplication value, droop n regulator

parameter: P0341 Source w2-Input

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 23
	Variable parameter source for the function, input w2 input

parameter: P0342 Speed s/p filter

maximum index:	-
minimal value:	0.0
maximal value:	100.0
default value:	0.0
unit:	ms
passwordlevel:	1

read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 23
	nset filter time n regulator

parameter: P0343 SC freeze integral

maximum index:	-
minimal value:	0
maximal value:	2
default value:	1
unit:	no
passwordlevel:	2
read / write:	R/W on
type:	unsigned 16 bit
function diagram:	plan 23
	Mode "Freeze the I component" n regulator

parameter: P0344 Src frict'n compens

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1851
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Variable parameter source for the function, input, friction characteristic

parameter: P0345 Frict.: speed value

maximum index:	09
minimal value:	0.00
maximal value:	199.99
default value:	1.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	n values, friction characteristic

parameter: P0346 Frict.:torque value

maximum index:	09
minimal value:	-199.99
maximal value:	199.99
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	M values, friction characteristic

parameter: P0347 Friction normalize

maximum index:	-
minimal value:	0.00
maximal value:	199.99
default value:	100.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	Normalization of the friction characteristic outputs

parameter: P0348 Source J-external

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Variable parameter source for the function, input J external

parameter: P0349 Normalize J-extern

maximum index:	-
minimal value:	0.00
maximal value:	199.99
default value:	100.00
unit:	%
passwordlevel:	1

read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	Normalization, J external

parameter: P0350 Source J-ext/-fix

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Select J external
	Select between a variable value or fixed value for J external.

parameter: P0351 Fixed value J

maximum index:	-
minimal value:	0.00
maximal value:	199.99
default value:	0.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	Fixed value, J external

parameter: P0352 Source J-extrnal ON

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1701
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Variable parameter source for the function, select J external input

parameter: P0353 Source dv/dt

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Variable parameter source for the function, input dv/dt to generate M supplementary

parameter: P0354 Source dead band

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 31
	Variable parameter source for the function, input deadband element

parameter: P0355 Dead band, width B

maximum index:	-
minimal value:	0.00
maximal value:	199.99
default value:	5.00
unit:	%
passwordlevel:	1
read / write:	R/W on
type:	signed 16 bit
function diagram:	plan 31
	B deadband element

parameter: P0356 Dead band gain

maximum index:	-
minimal value:	0.000
maximal value:	10.000
default value:	1.000
unit:	no
passwordlevel:	1

read / write: R/W on
type: signed 16 bit
function diagram: plan 31
Kp deadband element

parameter: P0357 positive limit 3

maximum index: -
minimal value: P 358
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 31
Positive limit for the limiter after the deadband element

parameter: P0358 negative limit 3

maximum index: -
minimal value: -199.99
maximal value: P 357
default value: -100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 31
Negative limit for the limiter after the deadband element

parameter: P0359 Enable frict'n test

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 31
Variable parameter source for the function, start friction characteristic plot

parameter: P0360 Src add.Torque s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Variable parameter source for the function, input Mset supplementary1

parameter: P0361 Select add.T s/p

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Selects Mset supplementary1
Selects either a variable value or fixed value for Mset supplementary1.

parameter: P0362 Fixvalue add.T s/p

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 24
Fixed value for Mset supplementary1.

parameter: P0363 Normalize add.T s/p

maximum index: -
minimal value: -100.00
maximal value: 100.00

default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 24
Normalization for Mset supplementary1.

parameter: P0364 Filter add. T s/p

maximum index: -
minimal value: 0
maximal value: 5000
default value: 0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 24
Filter time for Mset supplementary1.

parameter: P0365 Source T limit 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Variable parameter source for the function, variable limit value1 M limiter

parameter: P0366 Select T limit 1

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Selects limit value1 M limiter

Selects either a variable value or fixed value for limit value1 M limiter.

parameter: P0367 Fixvalue T limit 1

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 24
Fixed value, limit1 M limiter

parameter: P0368 Source T limit 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Variable parameter source for the function, variable limit2 M limiter

parameter: P0369 Select T limit 2

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Select limit value2, M limiter
Select between a variable value or fixed value for limit2 M limiter.

parameter: P0370 Fixvalue T limit 2

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: -100.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 01, 24
Fixed value, limit2 M limiter

parameter: P0371 Invert T limit 2

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = direct
1 = inverted
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Sign reversal limit1 M limiter

parameter: P0372 Fast stop T limit 1

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: 125.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 24
Fixed value, limit1 M limiter (for fast stop)

parameter: P0373 Fast stop T limit 2

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: -125.00

unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 24
Fixed value, limit2 M limiter (for fast stop)

parameter: P0374 Normalize current

maximum index: 01
minimal value: 0.0
maximal value: P 33
default value: P 24
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 01, 24, 25

Current normalization

The current normalization of the drive is selected using this parameter.

All of the current-oriented quantities which are processed as a percentage, are included in this normalization.

e.g.: 100.00 % = 10.0 A

Note: Changing this value will affect the closed-loop gain of the speedcontroller.

parameter: P0375 Compens. motortemp.

maximum index: -
minimal value: 0.00
maximal value: 20.00
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 30

Motor temperature compensation

The measured value of the motortemperature multiplied with the factor of compensation P0375 (+100%) results the displayvalue D1877.

Application: D1877 can be used or compensation the torque constant of a connected synchronous motor. In this case D1877 should be connected to P0687.

parameter: P0376 Source Torque s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1854
unit: D-Par
passwordlevel: 1
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Variable parameter source for the function, input Mset

Maininterface speedcontroller-torque-limitation.

parameter: P0377 Source inv.T-limit

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Variable parameter source for the function, Select interchange limit1 and limit2 for M limiter

parameter: P0380 Source T add. s/p 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1858
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Variable parameter source for the function, input, Mset supplementary1

parameter: P0381 Source T add. s/p 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par

passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24
Variable parameter source for the function, input Mset supplementary2

parameter: P0382 Source Isd-extern

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 2000
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 25
Manual intervention, flux setpoint: The quantity, entered via P0382, is multiplied by the internal flux setpoint. The factory setting P0382 = 2000 (100%) results in the nominal setpoint.

parameter: P0385 Select KTY / PTC

maximum index: -
minimal value: 0
maximal value: 2
default value: 2
parameter value: 0 = without
1 = KTY
2 = PTC
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 30
Motor temperature monitoring
Selects the connected temperature sensor, to evaluate the motor temperature.
no evaluation
KTY
PTC

parameter: P0386 KTY Alarm

maximum index: -
minimal value: 30
maximal value: 180
default value: 135

unit: °C
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 30
Motor temperature monitoring
Alarm, motor temperature
Sets the temperature threshold for the trip alarm, motor temperature. Only active when the KTY evaluation has been selected. (P0385=KTY)

parameter: P0387 KTY Fault

maximum index: -
minimal value: 30
maximal value: 195
default value: 155
unit: °C
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 30
Motor temperature monitoring
Fault, motor temperature
Sets the temperature threshold for the trip motor temperature.
Only active when the KTY evaluation has been selected. (P0385=KTY)

parameter: P0388 PTC Evaluation

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = warning
1 = switch off
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 30
Motor temperature monitoring
PTC evaluation
Sets the response if PTC evaluation has been selected (P0385=PTC). Either initiates an alarm, motor temperature or initiates a fault, motor temperature.

parameter: P0389 PTC Switch value

maximum index: -
minimal value: 1000
maximal value: 4500
default value: 4000
unit: Ohm
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 30

Motor temperature monitoring PTC switching value

Enters the ohmic response value. Sets the resistance threshold to initiate the response if PTC evaluation has been selected (P0385=PTC). The response type is defined via parameter P0388.

parameter: P0390 Speed normalization

maximum index: 01
minimal value: 100
maximal value: 80000
default value: 1500
unit: 1/min
passwordlevel: 2
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 01, 19, 26, 28, 52

nact normalization

The speed normalization of the drive is set via this parameter. All of the speed-oriented quantities which are processed as a percentage, are included in this normalization.

e.g.: 100.00 % = 16384 1/RPM

parameter: P0391 Hysteresis N < Nmin

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 19

Standstill signal

Hysteresis n < nmin

parameter: P0392 Threshold N < Nmin

maximum index: -
minimal value: 0.00
maximal value: 120.00
default value: 1.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 19
Standstill signal
Fixed value for n-min

parameter: P0393 Hysteresis N < Nx

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 19
n-x signal
Hysteresis n < n-x

parameter: P0394 Threshold N < Nx

maximum index: -
minimal value: 0.00
maximal value: 120.00
default value: 50.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 19
n-x signal
Fixed value for n-x

parameter: P0395 Threshold N > Nmax

maximum index: 01
minimal value: 0
maximal value: 100000

default value: 2000
unit: 1/min
passwordlevel: 2
read / write: R/W on
type: unsigned 32 bit
function diagram: plan 19

Fixed value for n-max for initiating the fault, overspeed.

parameter: P0396 Source x1 comp. 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, measured value x1 for comparator1.

parameter: P0397 Hysteresis x1:xs1

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 43

hysteresis x1 : xs1

Enters the hysteresis to compare x1 and xs1 for comparator1.

parameter: P0398 Fixvalue xs1 comp 1

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 43

Fixed value, threshold value xs1

Enters the fixed value for the threshold xs1 comparator1.

parameter: P0399 Source x2 comp. 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, measured value x2 for comparator2.

parameter: P0400 Hysteresis x2:xs2

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 43

Hysteresis x2 : xs2

Enters the hysteresis to compare x2 and xs2 for comparator2.

parameter: P0401 Fixvalue xs2 comp 2

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 43

Fixed value, threshold value xs2

Enters the fixed value for the threshold value, xs2, comparator2.

parameter: P0402 Source xs1 comp 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, threshold value xs1 for comparator1.

parameter: P0403 Select fixval comp1

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Selects threshold value xs1, comparator1

Either selects a variable value or a fixed value for threshold value xs1, comparator1.

parameter: P0404 Source xs2 comp 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, threshold value xs2 for comparator2.

parameter: P0405 Select xs2 comp 2

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Selects threshold value xs2, comparator2

Selects either a variable value or a fixed value for threshold value xs2, comperator2.

parameter: P0406 Source x0 pos i/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, measured value x0 +input for comparator0.

parameter: P0407 Source x0 neg i/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 43

Variable parameter source for the function, measured value x0 -input for comparator0.

parameter: P0408 Hysteresis x0:xs0

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 10.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 43

Hysteresis x0 : xs0

Enters the hysteresis to compare x0 and xs0 for comparator0.

parameter: P0409 Fixvalue xs0

maximum index: -
minimal value: -199.99
maximal value: 199.99
default value: 1.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan -

Fixed value, threshold value xs0

Enters the fixed value for the threshold value, xs0 comparator0.

parameter: P0420 G2 Encoder typ

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = sine/cosine Encoder
1 = Incremental Encoder
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

G2 Sourceparameter, for selection the encodertype

0 = sin/cos encoder

1 = incremental encoder

parameter: P0421 G2 Encod.increments

maximum index: -
minimal value: 1
maximal value: 8192
default value: 256
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

G2 Encoder increments

Prescribes the number of increments per revolution.

parameter: P0422 G2 adjust mode

maximum index: -
minimal value: 0
maximal value: 2
default value: 2
parameter value:
0 = off
1 = auto offset
2 = auto offset+amplit.
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

G2 Calibration mode

Autocalibration for offset and/or amplitude of the encodersignal, will be selected here.

parameter: P0428 G2 debug adress 1

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

test mode 1

Prescribes, which encodersignals could be connected to D1915, D1916 for slot 1; or D1105, D1106 for slot 2.

parameter: P0429 G2 debug adress 2

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Prescribes, which encodersignals could be connected to D1915, D1916 for slot 1; or D1105, D1106 for slot 2.

parameter: P0434 Src analog output

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1804
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 10

Sourceparameter for the function, analog output terminal X14.8

Factory setup: Actual speed signal D1851, which is connected over D1804

parameter: P0435 Fixvalue for Dxxxx

maximum index: 08
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 06

Fixed value for D parameters

Enters fixed values, which can be switched to variable parameter sources for process signals via display parameters.

P0435.0 ==> D1860
P0435.1 ==> D1861
P0435.2 ==> D1967
P0435.3 ==> D1968
P0435.4 ==> D1969

P0435.5 ==> D2004
P0435.6 ==> D2005
P0435.7 ==> D2008
P0435.8 ==> D2009

parameter: P0436 Mode analog output

maximum index: -
minimal value: 0
maximal value: 2
default value: 0
parameter value: 0 = +10V signal source
1 = -10V signal source
2 = analogue output
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 10
Mode analogoutput terminal X14.8
0 = +10V reference voltage
1 = -10V reference voltage
2 = +/- 8 bit analog output

parameter: P0437 Src 1 multiplier 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 37
Variable parameter source for the function, factor1, multiplier1

parameter: P0438 Src 2 multiplier 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 37

Variable parameter source for the function, factor2, multiplier1

parameter: P0439 Src invert multip.1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 37

Variable parameter source for the function, select inversion, multiplier1, output

parameter: P0440 Src 1 multiplier 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 37

Variable parameter source for the function, factor1, multiplier2

parameter: P0441 Src 2 multiplier 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 37

Variable parameter source for the function, factor2, multiplier2

parameter: P0442 Src invert multip.2

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 37
	Variable parameter source for the function, select inversion, multiplier2, output

parameter: P0443 Src 1 multiplier 3

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 37
	Variable parameter source for the function, factor1, multiplier3 with addition

parameter: P0444 Src 2 multiplier 3

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 37
	Variable parameter source for the function, factor2, multiplier3 with addition

parameter: P0445 Src 3 mul/add 3

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1800

unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 37

Variable parameter source for the function, addition value, multiplier3 with addition

parameter: P0446 Source 1 XOR

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 45

Variable parameter source for the function, input1 EXOR logic element.

parameter: P0447 Source 2 XOR

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 45

Variable parameter source for the function, input2 EXOR logic element.

parameter: P0458 Ramp friction test

maximum index: -
minimal value: 0.1
maximal value: 3200.0
default value: 10.0
unit: sec
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 31

RFG time, friction characteristic plot (record).

parameter: P0460 Src digital out 1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1709
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 07

Variable parameter source for the function, digital output1, terminator X14.2

Note: P0471 change over in/output

parameter: P0461 Mode dig. in/out 1

maximum index: -
minimal value: 0
maximal value: 4
default value: 3
: 3 = direct
4 = inverted
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 07

Mode, digital output 1, terminator X14.2

0..2 = reserved
3 = output, direct
4 = output, inverted

Note: P0471 change over in/output

parameter: P0462 Src digital out 2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1730
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 07

Variable parameter source for the function, digital output2, terminator X14.3

Note: P0473 change over in/output

parameter: P0463 Mode dig. in/out 2

maximum index: -

minimal value: 0

maximal value: 4

default value: 3

:

3 = direct

4 = inverted

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 07

Mode, digital output 2, terminator X14.3

0..2 = reserved

3 = output, direct

4 = output, inverted

Note: P0473 change over in/output

parameter: P0464 Src digital out 3

maximum index: -

minimal value: 0

maximal value: 2044

default value: 1732

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 07

Variable parameter source for the function, digital output 3, terminator X14.4

Note: P0475 change over in/output

parameter: P0465 Mode dig. in/out 3

maximum index: -
minimal value: 0
maximal value: 4
default value: 3
: 3 = direct
4 = inverted
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 07
Mode, digital output 3, terminator X14.4
0..2 = reserved
3 = output, direct
4 = output, inverted

Note: P0475 change over in/output

parameter: P0466 Src relay output

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1733
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 07
Variable parameter source for the function, relay output, terminator X16.1..3

parameter: P0467 Mode relay output

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = relay direct
1 = relay inverted
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 07

Mode, relay output

0 = relay, direct

1 = relay, inverted

parameter: P0470 Source SI1 PZD

maximum index: 05

minimal value: 0

maximal value: 2044

default value: 1800

unit: D-Par

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan 11

SS1 PZD1..6

Variable parameter source for the function, output interface SI1, process data1..6.

parameter: P0471 Mode dig. in/out 1

maximum index: -

minimal value: 0

maximal value: 1

default value: 0

parameter value: 0 = input

1 = output

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan 07

direction change over for digital in/output1, terminal X14,2.

Notice also P0461 (mode digital output1).

parameter: P0473 Mode dig. in/out 2

maximum index: -

minimal value: 0

maximal value: 1

default value: 0

parameter value: 0 = input

1 = output

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan 07
direction change over for digital in/output1, terminal X14,3.
Notice also P0463 (mode digital output2).

parameter: P0475 Mode dig. in/out 3

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = input
1 = output
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 07
direction change over for digital in/output1, terminal X14,4.
Notice also P0465 (mode digital output3).

parameter: P0480 Source SI2 PZD

maximum index: 09
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 48
SS2 PZD1..10
Variable parameter source for the function, output interface SI2, process data1..10.

parameter: P0491 Source SI4 PZD

maximum index: 09
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 49
SI4 PZD1..10

Variable parameter source for the function, output interface SI4 process data 1..10.

parameter: P0493 SynchroLink PZD-src

maximum index: 09
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 51

SynchroLink Interface

Notice:

The source parameter P0493.0, P0493.2, P0493.5, P0493.7 have a sonder-mode. When the respective following index is connected to D1800, the two parameters will work as a 32bit input.

e.g.: If P0493.1 = 1800, follows P0493.0 = 32 bit input.

A 32 bit link is only activ, when a 32 bit D-parameter in P0493.0 is connected; for example D2014 or D2012.

parameter: P0494 Source SI6 PZD X13

maximum index: 11
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 12

Variabel parameter source for the function output interface SI6 process data 1..12.

parameter: P0496 SyLi Rx watchdog

maximum index: -
minimal value: 0
maximal value: 4
default value: 0
parameter value:
0 = no reaction
1 = warning
2 = fault
3 = warning & clearData
4 = fault & clearData

unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
watch dog, SI7 synchrolink interface

parameter: P0497 SyLi Rx timeout

maximum index: -
minimal value: 1
maximal value: 60000
default value: 1
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Interface SI1 monitoring time
The monitoring time for the SI7 interface is set here.
The response, which is defined using P0496, is initiated, if the interface receiver does not receive an error-free protocol within this time

parameter: P0498 SynchroLink Mode

maximum index: -
minimal value: 0
maximal value: 6
default value: 2
parameter value:
0 = master peer-to-peer
1 = master mixed mode
2 = slave peer-to-peer
3 = slave mixed mode
4 = slave broadcast
5 = unsync.Peer-to-peer
6 = unsync. broadcast
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Synchrolink mode
0 = Master peer to peer
1 = Master multi mode
2 = Slave peer to peer
3 = Slave multi mode
4 = Slave broadcast

5 = unsync. peer to peer
6 = unsync. broadcast

parameter: P0499 RS232 baudrate X11

maximum index: -
minimal value: 0
maximal value: 7
default value: 3
parameter value:
0 = 1200 Baud
1 = 2400 Baud
2 = 4800 Baud
3 = 9600 Baud
4 = 19200 Baud
5 = 38400 Baud
6 = 57600 Baud
7 = 76800 Baud
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Baudrate-selector for RS232-service interface X11

To take most advantage of speed in parameter-transfer with your PC (REFUdos or REFUwin) select 57600 Baud.

parameter: P0500 SI1 protocol type

maximum index: -
minimal value: 0
maximal value: 5
default value: 2
parameter value:
0 = no protocol
1 = USS 4/2 words
2 = USS 4/6 words
3 = USS 0/2 words
4 = USS 0/6 words
5 = USS 4/0 words
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 protocol connector X12

Selects the appropriate protocol for the standard interface SI1.

0 = no protocol
1 = 4/2 words 4words PKW + 2words PZD

2 = 4/6 words 4words PKW + 6words PZD
3 = 0/2 words 2words PZD
4 = 0/6 words 6words PZD
5 = 4/0 words 4words PKW

PKW are words associated with the parameter value interface to parameterize the drive. PZD are the words associated with the fast process data, which can be delayed as a result of the parameterization.

parameter: P0501 SI1 baudrate

maximum index: -
minimal value: 0
maximal value: 6
default value: 3
parameter value:
0 = 1200 Baud
1 = 2400 Baud
2 = 4800 Baud
3 = 9600 Baud
4 = 19200 Baud
5 = 38400 Baud
6 = 76800 Baud
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 baud rate

Sets the appropriate baud rate for the standard SI1 interface.

parameter: P0502 SI1 parity

maximum index: -
minimal value: 0
maximal value: 2
default value: 2
parameter value:
0 = no parity
1 = odd
2 = even
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 parity

Selects the parity monitoring for the standard SI1 interface.

parameter: P0503 SI1 stop bits

maximum index: -
minimal value: 1
maximal value: 2
default value: 1
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 stopbits

Sets the number of stopbits to be transfered per character, for the standard SI1 interface.

parameter: P0504 SI1 slave address

maximum index: 01
minimal value: 0
maximal value: 31
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 slave address

Sets the appropriate slave address for the standard SI1 interface. It should be observed, that in a bus system with RS485-or RS422 coupling, each address is unique, as otherwise bus collisions will occur.

parameter: P0505 SI1 Rx watchdog

maximum index: -
minimal value: 0
maximal value: 2
default value: 2
parameter value:
0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI1 RX monitoring

Selects the response for the receive monitoring of the standard SI1 interface.

no action

alarm

fault

parameter: P0506 SI1 Rx timeout

maximum index: -

minimal value: 0.1

maximal value: 60.0

default value: 0.1

unit: sec

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Interface SI1 monitoring time

The monitoring time for the standard SI1 interface is set here. The response, which is defined using P0506, is initiated, if the interface receiver does not receive an error-free protocol within this time.

parameter: P0507 P-to-P operat. mode

maximum index: -

minimal value: 0

maximal value: 1

default value: 0

parameter value:
0 = Outp. U3 = Outp. U2
1 = Outp. U3 = Inp. U1

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

Synchronizing the peer to peer transmit data

0 = internal

The software generates and sends the transmit data.

1 = external REFU

The received data, received at the fiber-optic cable receiver, are taken as transmit data, with neither delay nor changes.

parameter: P0509 SI2 function

maximum index: -

minimal value: 0

maximal value: 3

default value: 0

parameter value:
0 = all active
1 = no warning
2 = no fault

3 = disabled

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Mask for the SS2 functions

all active

suppress alarm message

suppress fault trip

suppress alarm message and fault trip

parameter: P0510 P-to-P protocoll

maximum index: -

minimal value: 6

maximal value: 10

default value: 8

parameter value:

6 = P-to-P 1 word

7 = P-to-P 2 words

8 = P-to-P 3 words

9 = P-to-P 4 words

10 = P-to-P 5 words

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Peer to peer protocol

Selects the appropriate protocol for the optional peer to peer interface.

parameter: P0511 P-to-P baudrate

maximum index: -

minimal value: 3

maximal value: 8

default value: 8

parameter value:

3 = 9600 Baud

4 = 19200 Baud

5 = 38400 Baud

6 = 76800 Baud

7 = 115200 Baud

8 = 230400 Baud

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Peer to peer baud rate

Sets the appropriate baud rate for the optional peer to peer interface.

parameter: P0512 CAN baudrate

maximum index: -

minimal value: 0

maximal value: 7

default value: 6

parameter value:
0 = reserve
1 = reserve
2 = reserve
3 = reserve
4 = 125 kBaud
5 = 250 kBaud
6 = 500 kBaud
7 = 1 MBaud

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

CAN baud rate

Set the appropriate baud rate for the option CAN-bus interface.

0..3 are reserved
4 = 125 kbaud
5 = 250 kbaud
6 = 500 kbaud
7 = 1 Mbaud

parameter: P0515 CAN Tx ID-number

maximum index: 03

minimal value: 128

maximal value: 1024

default value: 176

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

CAN Tx identifier

Sets the appropriate send identifier for the various protocol types.

(Values less than 80 hex = 128 dec may not be used!)

(Different identifier numbers must be entered for all Rx-, and Tx identifiers!)

in subindex 0: for PZD 1 ... 4

subindex 1 & 2 reserved

in subindex 3: for PKW response

parameter: P0516 CAN Rx ID-number

maximum index: 03

minimal value: 128

maximal value: 1024

default value: 160

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

CAN Rx identifier

Sets the appropriate receive identifier for the various protocol types.

(Do not use values less than 80 hex = 128 dec!)

(Different identifier numbers must be entered for all Rx-, and Tx identifiers!)

in subindex 0: for PZD 1 ... 4

subindex 1 & 2 reserved

in subindex 3: for PKW task

parameter: P0517 CAN Tx PZD clock

maximum index: 02

minimal value: 0

maximal value: 255

default value: 254

unit: ms

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

CAN Tx PZD clock

Sets the appropriate return transmit rate for PZD protocols in subindex 0: for PZD 1 ... 4

subindex 1 & 2 reserved

the following values are possible:

0 : do not send

1..253 : send clock cycle in ms

254 : send after the specified Rx identifier has been received

255 : send after RTR has been received

parameter: P0518 IBS watchd.function

maximum index: 01

minimal value: 0

maximal value: 3

default value: 0

parameter value:
0 = no action
1 = fault
2 = inverter OFF
3 = fast stop

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Interbus-S WD function

Selects and sets the response setting of the receive monitoring for the optional Interbus-S interface.

P0518 [0] response for the process data area.

P0518 [1] response for the communications area.

no action
fault
inhibit voltage
fast stop

parameter: P0519 IBS watchd. timeout

maximum index: 01

minimal value: 0

maximal value: 65535

default value: 65535

unit: ms

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

Interbus-S WD time

The monitoring time for the optional Interbus-S interface is set here.

The response, which is defined by parameter P0518, is initiated, if the interface receiver has not received an error-free protocol within this time.

P0519 [0] monitoring time for the process data area.

P0519 [1] monitoring time for the communications area.

Caution: The monitoring function is disabled for value 65535.

parameter: P0520 IBS register length

maximum index: -
minimal value: 2
maximal value: 10
default value: 3
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interbus-S register length (words)

Sets the size of shift register.

parameter: P0522 PB baudrate

maximum index: 01
minimal value: 0
maximal value: 14
default value: 0
parameter value:
0 = initialization
1 = 9600 Baud
2 = 19200 Baud
3 = 38400 Baud
4 = 93750 Baud
5 = 187500 Baud
6 = 500000 Baud
7 = 1.5 MBaud
8 = 57600 Baud
9 = 76800 Baud
10 = 115200 Baud
11 = 3.0 MBaud
12 = 6.0 MBaud
13 = 12.0 MBaud
14 = 45450 Baud
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Profibus baud rate

Actually value of profibus baud rate

Index 0 for the profibus interface in slot 1 (SI2)

Index 1 for the profibus interface in slot 2 (SI4)

parameter: P0523 PB address

maximum index: -
minimal value: 3
maximal value: 124
default value: 9
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Profibus slave address

Sets the appropriate slave address for the optional Profibus interface.

It should be ensured, that each address is only assigned once in any bus system (unique address), as otherwise bus collisions will occur.

parameter: P0524 PB CLR-DATA

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value:
0 = no reaction
1 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Profibus clear data function

Response of the drive to the clear data bus function

no action

fault

parameter: P0525 PB PPO-TYPE

maximum index: 01
minimal value: 0
maximal value: 6
default value: 0
parameter value:
0 = initialization
1 = 4/2 words
2 = 4/6 words
3 = 0/2 words
4 = 0/6 words
5 = 4/10 words
6 = 0/10 words
unit: no

passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Profibus PPO type (protocol)
Actually profibus PPO type
Index 0 for the profibus interface in slot 1 (SI2)
Index 1 for the profibus interface in slot 2 (SI4)

parameter: P0526 SI2 Rx watchdog

maximum index: -
minimal value: 0
maximal value: 2
default value: 0
parameter value: 0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
SI2 RX monitoring
Selects the response for the receive monitoring of the optional SI2 interface.
no action
alarm
fault

parameter: P0527 SI2 Rx timeout

maximum index: -
minimal value: 0.01
maximal value: 60.00
default value: 0.01
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
SI2 monitoring time
The monitoring time for the optional SI2 interface is set here.
The response, which is defined by parameter P0526, is initiated if the interface receiver has not received an error-free protocol within this time.

parameter: P0535 v/f Stall.protect Kp

maximum index: 01
minimal value: 0.00
maximal value: 0.00
default value: 0.10
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Toppleprotection for v/f testmode

Factor for the proportional component kp1 of the topple-protection regulator.

Note: Only activ, when P0189 is pre-selected with v/f testmode.

parameter: P0536 v/f Stall.protect Tn

maximum index: 01
minimal value: 0
maximal value: 5000
default value: 5
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Toppleprotection for v/f testmode

Integral action time of the toppleprotection regulator.

Note: Only activ, when P0189 is pre-selected with v/f testmode.

parameter: P0547 v/f: Kp curr.limit.

maximum index: 01
minimal value: 0.00
maximal value: 128.00
default value: 0.10
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

Currentlimiting for v/f testmode

Factor for the proportional component kp1 of the current-limiting regulator

parameter: P0548 v/f CurrentContr Tn

maximum index: 01
minimal value: 0
maximal value: 5000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 26

Currentlimiting for v/f testmode Integral action time of the current limiting regulator.

parameter: P0564 Ain1 react on i<4mA

maximum index: -
minimal value: 0
maximal value: 2
default value: 1
parameter value:
0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 08

Response, if I < 4 mA at analoginput1
Only activ, if P0201 (mode analoginput1) = 4 ... 20 mA or +2 ... +10 V

parameter: P0571 Src base speed ON

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Variable parameter source for the function, select Vset on

parameter: P0572 Src AND RFG-enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Variable parameter source for the function, select RFG enable via AND logic gates

parameter: P0573 Src OR RFG-enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Variable parameter source for the function, select RFG enable via OR-, AND logic gates

parameter: P0575 Src x2 AuxContr.

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 34

Variable parameter source for the function, actual value2, supplementary regulator

parameter: P0576 Src ResetIndexSynch

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700

unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

Variable parameter source for the function, synchronize pulse reset, incremental encoder evaluation

parameter: P0577 Src RFG fast stop

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Variable parameter source for the function, select RFG fast stop

parameter: P0578 Src T-s/p 3 switch

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Variable parameter source for the function, changeover Mset3

parameter: P0579 Src T-s/p 3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Variable parameter source for the function, Mset3

parameter: P0580 SC S&H-reset(inv)

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Variable parameter source for the function, reset sample+hold-n regulator via AND logic gates

parameter: P0581 SI2-watchdog OFF

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Variable parameter source for the function, SI2 monitoring OFF

parameter: P0582 fixvalue for D164x

maximum index: 01
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 06

fixvalue for Dxxxx
valuerange: 0 ... 65535
P0582.0 => D1642
P0582.1 => D1643

parameter: P0583 Src i/p 0 gate

maximum index: 15
minimal value: 0
maximal value: 2044

default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 44, 45
Variable parameter source for the function, input 0 logic gates

parameter: P0584 Src i/p 1 gate

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 44, 45
Variable parameter source for the function, input 1 logic gates

parameter: P0585 Src i/p 2 gate

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 44, 45
Variable parameter source for the function, input 2 logic gates

parameter: P0586 Function gate

maximum index: 15
minimal value: 0
maximal value: 22
default value: 0
parameter value:
0 = And
1 = Or
2 = Xor
3 = RS-memory
4 = D-Latch
5 = Sample & hold
6 = angle add

7 = angle subtract
8 = symetric limiter
9 = 3 input limiter
10 = processData switch
11 = comparator
12 = window comparator
13 = absolute comparator
14 = 3-Input And
15 = 3-Input Or
16 = And - Or
17 = Nand - Or
18 = Or - And
19 = Nor - And
20 = Xor - And
21 = Xor - Or
22 = invert / NAND

unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 44, 45

Function, logic gates

The function of the logic gates is set here,

parameter: P0587 Src timer modul

maximum index: 03
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 46

Source parameter for timer inputs

parameter: P0588 Timer modul: mode

maximum index: 03
minimal value: 0
maximal value: 9
default value: 0
parameter value:
0 = ON delay
1 = OFF delay
2 = pulse
3 = extended pulse

4 = pulse generator sym
5 = pulse generator
6 = ramp generator sym.
7 = ramp generator sign
8 = ramp generator val.
9 = PT1 / DT1 module

unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 46
Timer function
mode 0..9
For further explanations please take a look at the functionplan p.46.

parameter: P0589 Timer modul: time 1

maximum index: 03
minimal value: 0.00
maximal value: 650.00
default value: 0.10
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 46
timebase1 for the timers,

Note: Some timer functions are using additional timebase 2 P0596.

parameter: P0590 4 to 1 coder enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27
Source parameter for the function, dataenable of 4to1 coder.

parameter: P0591 4 to 1 coder bit0

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27
Variable parameter source for the function, input bit0 4to1 coder (P0591) & 0x0001 => bit0 of D1673

parameter: P0592 4 to 1 coder bit1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27
Variable parameter source for the function, input bit1 4to1 coder (P0591) & 0x0001 => bit1 of D1673

parameter: P0593 4 to 1 coder bit2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27
Variable parameter source for the function, input bit2 4to1 coder (P0591) & 0x0001 => bit2 of D1673

parameter: P0594 4 to 1 coder bit3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27
Variable parameter source for the function, input bit3 4to1 coder (P0591) & 0x0001 => bit3 of D1673

parameter: P0596 Timer modul: time 2

maximum index: 03
minimal value: 0.00
maximal value: 650.00
default value: 0.10
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 46
timebase2 for the timers
Several functions of the timers needs a second timebase.
For further explanations please take a look at the functionplan p.46.

parameter: P0600 Source var. droop

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23
Variable parameter source for the function, input droop factor n regulator

parameter: P0601 Offset var. droop

maximum index: -
minimal value: -199.99
maximal value: 199.99

default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 23
Offset for the variable droop factor, n regulator

parameter: P0602 Gain variable droop

maximum index: -
minimal value: 0.000
maximal value: 10.000
default value: 1.000
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 23
Gain, variable droop factor, n regulator

parameter: P0603 Limit var. droop

maximum index: -
minimal value: 0.00
maximal value: 10.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 23
Positive limit value for the variable droop factor, n regulator

parameter: P0604 Select droop mode

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = variable source
1 = fixvalue
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23

Select droop mode, n regulator

Select between a variable value or fixed value for droop mode n regulator.

parameter: P0605 Src ramp parking

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 21

Source parameter for the function, "RFG parking"

Hinweis: If the function „RFG parking“ is active, the RFG will be freeze the actually value and it´s immpossible to ramp down.

In Opposite of this, please read P0296 ramp up stop

parameter: P0606 Position s/p

maximum index: -
minimal value: 0.00
maximal value: 359.99
default value: 0.00
unit: °
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Fixed value for the 16 bit position reference value ==> D1972

parameter: P0612 Src multiplier i/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36

Variable parameter sources for the function, input multiplication element.

parameter: P0613 Src multipl. factor

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1700
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 36

Variable parameter source for the function, select multiplication element.

parameter: P0614 Multiplier factor

maximum index:	01
minimal value:	-10.00000
maximal value:	10.00000
default value:	1.00000
unit:	no
passwordlevel:	1
read / write:	R/W on
type:	signed 32 bit
function diagram:	plan 36

Factors for the multiplier element.

Depending on the particular selection [P0613], the input value is multiplied by these values.

parameter: P0622 reset act. position

maximum index:	-
minimal value:	0
maximal value:	2044
default value:	1696
unit:	D-Par
passwordlevel:	2
read / write:	R/W off
type:	unsigned 16 bit
function diagram:	plan 28

Variable parameter sources for the function, input position set incremental encoder evaluation

parameter: P0623 Ext.BR: Resistance

maximum index:	-
minimal value:	0.1
maximal value:	199.9
default value:	199.9

unit: Ohm
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
External brake resistor value

parameter: P0624 Ext.BR: Rated power

maximum index: -
minimal value: 0.1
maximal value: 999.9
default value: 1.0
unit: kW
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Continuous power rating of the brake resistor

parameter: P0625 Ext.BR: Heatup time

maximum index: -
minimal value: 1.0
maximal value: 999.9
default value: 1.0
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
External brake resistor, time constant

parameter: P0628 Src SC add setpoint

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 23
Variable parameter source for the function, n-set supplementary1 and n-set supplementary2 for the n regulator

parameter: P0633 Encod.Adj. offs.sin

maximum index: 01
minimal value: -50.00
maximal value: 50.00
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 13, 15, 16

Offset setup for the sinus-signal of a resolver or sin/cos encoder.

If parameter P0189 is seted to "encoder optimize", this parameter will be optimized.

parameter: P0634 Encod.Adj. offs.cos

maximum index: 01
minimal value: -50.00
maximal value: 50.00
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 13, 15, 16

Offset setup for the cosinus-signal of a resolver or sin/cos encoder.

If parameter P0189 is seted to "encoder optimize", this parameter will be optimized.

parameter: P0635 Encod.Adj. ampl.sin

maximum index: 01
minimal value: 50.00
maximal value: 100.00
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 13, 15, 16

Amplitude setup for the sinus-signal of a resolver or sin/cos encoder.

If parameter P0189 is seted to "encoder optimize", this parameter will be optimized.

parameter: P0636 Encod.Adj. ampl.cos

maximum index: 01
minimal value: 50.00
maximal value: 100.00
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan 13, 15, 16

Amplitude setup for the cosinus-signal of a resolver or sin/cos encoder.

If parameter P0189 is seted to "encoder optimize", this parameter will be optimized.

parameter: P0637 Enable aux.function

maximum index: -
minimal value: 0
maximal value: 4
default value: 0
parameter value:
0 = all disabled
1 = position control on
2 = encoder2 active
3 = encoder2+ pos.contr
4 = anti slide & slip
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

Select incremental encoder2 sensing, position regulation

no action
position regulation
incremental encoder2 sensing
incremental encoder2 sensing & position regulation

Depending on the selection, only the appropriate modules are calculated.

parameter: P0638 Encoder2 resolution

maximum index: -
minimal value: 100
maximal value: 8192
default value: 1024
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 52
Incremental encoder2 resolution n pulses per revolution.
Pulse numbers with values 2 to the power of n are prefered.
Example: 1024 or 2048 pulses/revolution.

Note: Activate the additive encoder emulation with P0637.

parameter: P0639 Offset position 2

maximum index: -
minimal value: -180.00
maximal value: 179.99
default value: 0.00
unit: °
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 52
Incremental encoder2 sensing
Offset for position actual value2

Note: Activate the additive encoder emulation with P0637.

parameter: P0640 Enc2 Reset IndexSyn

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 52
Incremental encoder2 sensing
Variable parameter sources for the function, input n-act2 normalization

Note: Activate the additive encoder emulation with P0637.

parameter: P0641 Source 2nd mul/div

maximum index: -
minimal value: 0
maximal value: 2044

default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

anglesynchronous gear unit

Source parameter for the input, speed pre-control

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated.

parameter: P0642 Source 1st mul/div

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

anglesynchronous gear unit

Source parameter for the 16bit positionsetpoint

The anglesynchronus gear unit allows the calculation of a positionsetpoint without rounding error, by using a limit calculation routine.

Attention: Working without rounding error is only possible, if no Online numerator- or denominatoradjusting via the parameters P0645 or P0646 is active; P0645 = 1800 and P0646 = 1800.

Note: The anglesynchronous gear-function is cyclic processed, eben if the position regulator in P0637 is activated!

parameter: P0643 Mul/div numerator

maximum index: -
minimal value: -16000
maximal value: 16000
default value: 5000
unit: no
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan 28

anglesynchronous gear unit Meter reading of the gear ratio.

Equals the input speed of the gear unit.

Notice: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0644 Mul/div denominator

maximum index: -

minimal value: 1

maximal value: 16000

default value: 5000

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 28

anglesynchronous gear unit

Denominator for numerator-, denominator module 1+2 Equals the outputspeed of the gear unit.

Notice: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0645 Src numerator adjst

maximum index: -

minimal value: 0

maximal value: 2044

default value: 1800

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 28

anglesynchronous gear unit

Variable parameter sources for the function, factor for the numerator of the numerator-, denominator module1+2.

Caution: If an error-free ratio is required in the numerator-, denominator module1, then it is not permissible to use the factors for numerator and denominator! This means, that the value D1800 = fixed value 0% must be entered in the parameter sources P645 and P646!

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0646 Src denominat.adjst

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

anglesynchronous gear unit

Variable parameter sources for the function, factor for the denominator of the numerator-, denominator module1+2

Caution: If an error-free ratio is required in the numerator-, denominator module1, then it is not permissible to use the factors for numerator and denominator! This means, that the value D1800 = fixed value 0% must be entered in the parameter sources P0645 and P0646!

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0647 Src add.setpoint PC

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Position regulation

Variable parameter sources for the function, supplementary position reference value, position regulator

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0648 Src setpoint PC

maximum index: -
minimal value: 0
maximal value: 2044

default value: 2012
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Position regulation

Variable parameter sources for the function, position reference value, position regulator

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0649 Src position f/b

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2014
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Position regulation

Variable parameter sources for the function, position actual value, position regulator

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0650 Src position s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Position regulation

Variable parameter sources for the function, input position - set position regulator deviation

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0651 Src position reset2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Variable parameter source for the function, synchronous pulse reset position regulator deviation

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0652 Pos. error filter

maximum index: -
minimal value: 0.0
maximal value: 5000.0
default value: 0.0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Filter time for the position regulator deviation

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0654 PosController Gain

maximum index: -
minimal value: 0.000
maximal value: 16.000
default value: 0.100
unit: no

passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Kp position regulator
Factor for the proportional component Kp of the position regulator.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0655 PosContr. integral

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: ms
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Tn position regulator
Value for the integral action time Tn of the position regulator.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0656 Src PosContr enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Variable parameter sources for the function, enable position regulator.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0657 Src PosContr +limit

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2000
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Positive limit, position regulator
Adjustable positive limit value for the position regulator.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0658 Src PosContr -limit

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2001
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29
Position regulation
Negative limit, position regulator
Adjustable negative limit value of the position regulator.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0659 PC o/p sig.polarity

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off

type: unsigned 16 bit

function diagram: plan 29

Position regulation

Variable parameter sources for the function, select sign reversal at the position regulator output.

Note: The anglesynchronous gear-function is cyclic processed, even if the position regulator in P0637 is activated!

parameter: P0669 unit position-value

maximum index: -

minimal value: 0

maximal value: 3

default value: 0

parameter value:
0 = x = Grad
1 = x = meter
2 = x = millimeter
3 = x = inch

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

Input here the unit of the position reference value.

This parameter has only a memofunction for the user. Normalization of the position reference value is seted up in P0780..784.

parameter: P0670 Posit. s/p fix/var

maximum index: -

minimal value: 0

maximal value: 2044

default value: 1700

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 27

Source parameter for online-changeover of the function, input position reference value.

(P0670)=0 : reference value via position reference memory P0785.x

(P0670)=1 : reference value via variable sources (P0671), (P0672)

parameter: P0671 Position s/p HiWord

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

Source parameter for highword of the 32bit position reference value

Notice: If P1237 = 1800, it is able to recall a 32bit D-parameter, using P1236 or the 16bit D-parameter is only took over in the highword of the position reference value.

parameter: P0672 Position s/p LoWord

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

Source parameter for Lowword of the 32bit position reference value

Note: If P1236 = 1800, the value of P1237 will be prozessed as pre-signed 16bit position reference value.

parameter: P0673 Position s/p Mode

maximum index: -
minimal value: 0
maximal value: 4
default value: 0
parameter value:
0 = absolut no Trigger
1 = absol. pos. Trigger
2 = absol. gen. Trigger
3 = relat. pos. Trigger
4 = relat. gen. Trigger
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 27

Setup-mode for position reference value processing:

0: absolute reference value without trigger

1: absolute reference value with trigger positive edge in bit0 from (P0674)

2: absolute reference value with trigger from changing (P0674)

3: relative reference value with trigger positive edge in bit0 from (P0674)

4: relative reference value with trigger from changing (P0674)

Explanation: Mode 0 equals the normally used processing P0785.x.

A relative reference value equals, the actual reference value will added with the last position reference value, if the triggercondition is reached. This is needed for applications with continuous feed. -The triggermode pos. edge processes only bit D-parameters.

The triggermode Changing processec either bit D-parameters; it´s generating a triggersignal on both edges. Or you can connect status-or countervariables, for e.g. the sequence number of the sequence processor (D1536). A trigger will shot here on each changing of the state.

If relative reference value processing is selected, the refe-rence value will be initialised by a high edge of P0675.

parameter: P0674 Position s/p Trigg.

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

Source parameter for the function, triggerinput position reference value processing, see P0673

This input is only active, if P0673 is not selected to modul0.

parameter: P0675 Reset position s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

Source parameter for the function, zero-normalization position reference value.

Resetting by edge low to high (0-1). This input is only active, P0673 is set to relativ reference value processing, for e.g.: P0673 = 3, 4 or 5.

parameter: P0687 Source Mset-factor

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2000
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 24

Source parameter for the function, evaluationfactor torque reference value.

factory setup: P0687 = 2000 (100%) equals factor 1,

parameter: P0688 Src +value limiter2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2008
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36

Variable parameter source for the function, positive limit value, limiter2

parameter: P0689 Src -value limiter2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 2009
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 36

Variable parameter source for the function, negative limit value, limiter2

parameter: P0690 Timer: on/off

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Variable parameter source for the function, enable timer module

parameter: P0691 Timer: hours

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0
unit: h
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Timer module, hours
actual number of hours or can be externally set by changing.

parameter: P0692 Timer: minutes

maximum index: -
minimal value: 0
maximal value: 59
default value: 0
unit: min
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Timer module, minutes
actual number of minutes or can be externally set by changing.

parameter: P0694 Src endstop right

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701

unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Source parameter for the function, limit switch right.

parameter: P0695 Src endstop left

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 20

Source parameter for the function, limit switch left.

parameter: P0710 6 to 1 coder enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 42

Source parameter for the function, enable-input 6to1 coder.

If (P0710) = 1: The information of (P0711.i) is taken to D1187 and P712(D1187) is transfered to D1129.

If (P0710) = 0: The last value of D1187 is frozen, equal no change of D1129.

parameter: P0711 6 to 1 coder bit x

maximum index: 05
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 42

Source parameter for the function, input bit 0..5 6to1 coder.

In mode bitsource (P713 = 0) D1187 is configurated like

(P0711.0) & 0x0001 => bit0 of D1187

(P0711.1) & 0x0001 => bit1 of D1187

(P0711.2) & 0x0001 => bit2 of D1187

(P0711.3) & 0x0001 => bit3 of D1187

(P0711.4) & 0x0001 => bit4 of D1187

(P0711.5) & 0x0001 => bit5 of D1187

In mode wordsource (P0613 = 1) D1187 is configurated to (P0711.9)

The enable data (P0710) is not active!

parameter: P0712 6 to 1 coder code x

maximum index: 63

minimal value: 0

maximal value: 65535

default value: 0

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan 42

Output value of the 6to1 coder.

The index selection of the 64 several values is generated to D1187, for e. g.: Output D1129 = D0712 (D1187).

parameter: P0713 6 to 1 coder mode

maximum index: -

minimal value: 0

maximal value: 1

default value: 0

parameter value: 0 = bit src. P0711.0x.

1 = word src. P0711.00.

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 42

Mode, programmable coder

Assignment: 0 = coderoutput direct 1 = data from P711.0

parameter: P0714 CAN node ID

maximum index: -
minimal value: 1
maximal value: 127
default value: 3
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Option CAN open:

Address of the CAN open interface connection.

parameter: P0715 CANopen baudrate

maximum index: -
minimal value: 0
maximal value: 7
default value: 4
parameter value:
0 = reserve
1 = reserve
2 = reserve
3 = reserve
4 = 125 kBaud
5 = 250 kBaud
6 = 500 kBaud
7 = 1 MBaud
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Option CAN open:

Selection of the transfer baudrate, used by the CAN open interface connection.

parameter: P0716 CANopen PDO mode

maximum index: 02
minimal value: 0
maximal value: 255
default value: 253
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Option CAN open:
PDO mode
Prescribes, how the CANopen member is acted on the bus.
Factory setup 253 = On request once transmit asynchron (remote frame)

parameter: P0717 CANopen cycle timer

maximum index: 02
minimal value: 0
maximal value: 255
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
See description of the option card!

parameter: P0718 CANopen emergency

maximum index: -
minimal value: 0
maximal value: 1
default value: 1
parameter value: 0 = off
1 = on
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
See description of the option card!

parameter: P0719 CANopen bus off

maximum index: -
minimal value: 0
maximal value: 255
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
See description of the option card!

parameter: P0720 CANopen profile

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = Std profile DS301
1 = I/O profile DS401
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
See description of the option card!

parameter: P0732 Copy from keypad

maximum index: -
minimal value: 0
maximal value: 2
default value: 0
parameter value: 0 = no
1 = yes
2 = identification
unit: no
passwordlevel: 0
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
This parameter is used to transfer the data record of the operation panel memory into the inverter.
0: No transfer into the inverter
1: Transfer into the inverter

parameter: P0733 Copy data to keypad

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = no
1 = yes
unit: no
passwordlevel: 0
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

This parameter is used to transfer the data record of the inverter memory into the operation panel

0: No transfer into operation panel

1: Transfer into operation panel

parameter: P0734 Display contrast

maximum index: -
minimal value: 10
maximal value: 20
default value: 11
unit: no
passwordlevel: 0
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Setup displaycontrast of the operation panel.

parameter: P0735 opt.anal in1,2 mode

maximum index: 01
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = voltage input
1 = current input
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 50

Option KL, analog input:

Switch-on the messcircuit for current monitoring.

P0735.0 Option KL is connected to slot1.

P0735.1 Option KL is connected to slot2.

parameter: P0736 anlog Input 2 mode

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = 0%..±100%
1 = +20%..+100%
unit: no
passwordlevel: 2
read / write: R/W on

type: unsigned 16 bit
function diagram: plan 50
Option KL, analog input:
Selection mode of the analog value processing D1805 - D1806, P0735 is only active, if option KL is set to slot2.

parameter: P0740 src. output block

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 10
Input source parameter for the outputblocs.
Assignment: index0: outp.bloc0 => D1120 index1: outp.bloc0 => D1121

parameter: P0741 signal output block

maximum index: 01
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = direct
1 = absolute value
2 = inverted
3 = abs. value inverted
unit: no
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 10
Source parameter for the signal-mode of the output blocs.
Assignment: index0: outp.bloc0 => D1120
index1: outp.bloc0 => D1121

parameter: P0742 output block norm.

maximum index: 01
minimal value: 6.26
maximal value: 160.00
default value: 100.00
unit: %
passwordlevel: 1

read / write: R/W on
type: unsigned 16 bit
function diagram: plan 10
Normalization value for the outputblocs.
Assignment: index0: outp.bloc0 => D1120
index1: outp.bloc0 => D1121

parameter: P0743 output block

maximum index: 01
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = 0%..±100%
1 = +20%..+100%
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 10
Pre-select the 4..20mA evaluation for the outputblocs.
Assignment: index0: outp.bloc0 => D1120
index1: outp.bloc0 => D1121

parameter: P0744 output block offset

maximum index: 01
minimal value: -100.00
maximal value: 100.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: signed 16 bit
function diagram: plan 10
Offset setup for the outputblocs.
Assignment: index0: outp.bloc0 => D1120
index1: outp.bloc0 => D1121

parameter: P0745 SI4 function

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value: 0 = all active
1 = no warning

2 = no fault
3 = disabled

unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Mask for the SS4 functions
all active
suppress alarm message
suppress fault trip
suppress alarm message and fault trip

parameter: P0746 SI4 Rx watchdog

maximum index: -
minimal value: 0
maximal value: 2
default value: 0
parameter value:
0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI4 RX monitoring (watchdog)

Selects the response for the receive monitoring of the SI4 interface.
no action
alarm
fault

parameter: P0747 SI4 Rx timeout

maximum index: -
minimal value: 0.01
maximal value: 60.00
default value: 0.01
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Interface SI4 monitoring time

The monitoring time for the SI4 interface is set here. The response, which is defined using P0745/P0746, is initiated, if the interface receiver does not receive an error-free protocol within this time.

parameter: P0750 Src SI4 watchdogOFF

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Variable parameter source for the function, Switch off SI4 monitoring.

parameter: P0752 Ain2 react on i<4mA

maximum index: -
minimal value: 0
maximal value: 2
default value: 1
parameter value:
0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 50

Option KL, analoginput:
Reaction if I < 4 mA
P0735 is only active, if optioncard KL is connected to slot2.

parameter: P0768 Illum. display

maximum index: -
minimal value: 0
maximal value: 999
default value: 10
unit: min
passwordlevel: 0
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Open-loop control of the display background illumination:

0 = Switch off
1..998 = minutes reilluminated after last keypress
999 = permanent illuminated

parameter: P0769 sensles start curr.

maximum index: 01

minimal value: 0.00

maximal value: 199.99

default value: 50.00

unit: %

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

These parameters are necessary for the work of a motor with field-oriented control without speed sensor (P0130 = open loop) and if a synchronous motor will be used.

For correct work is only P0774 kp speed estimation needed. Implementing notice see parameter P0774. A startroutine can be selected, if demanded, which will be active after every inverterenable. It calculates the actuall peed or rotor position of the motor.

It includes 2 steps:

a) Searching the actuall speed, using the start circuit method, for the in P0771 selected waiting time. If a speed value greater than 10% of the normalization speed is searched, the routine will change in normal mode, otherwise step b)

b) The motor will be work with a constant speed(P0770) and a pre-selected current(P0769) during the waiting time P0772. After that changing to normal mode. If P0771 or P0772 is set to 0.00sec, the start-routine will be switched-off.

parameter: P0770 sensles start speed

maximum index: 01

minimal value: -199.99

maximal value: 199.99

default value: 10.00

unit: %

passwordlevel: 2

read / write: R/W off

type: signed 16 bit

function diagram: plan -

These parameters are necessary for the work of a motor with field-oriented control without speed sensor (P0130 = open loop) and if a synchronous motor will be used. For correct work is only P0774 kp speed estimation needed. Implementing notice see parameter P0774. A startroutine can be selected, if demanded, which will be active after every inverterenable. It calculates the actuall speed or rotor position of the motor.

It includes 2 steps:

a) Searching the actuall speed, using the start circuit method, for the in P0771 selected waiting time. If a speed value greater than 10% of the normalization speed is searched, the routine will change in normal mode, otherwise step b)

b) The motor will be work with a constant speed (P0770) and a pre-selected current (P0769) during the waiting time P0772. After that

changing to normal mode. If P0771 or P0772 is set to 0.00sec, the start-routine will be switched-off.

parameter: P0771 sensles wait time

maximum index: 01

minimal value: 0.00

maximal value: 100.00

default value: 1.00

unit: sec

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

These parameters are necessary for the work of a motor with field-oriented control without speed sensor (P0130 = open loop) and if a synchronous motor will be used. For correct work is only P0774 kp speed estimation needed. Implementing notice see parameter P0774. A startroutine can be selected, if demanded, which will be active after every inverterenable. It calculates the actuall speed or rotor position of the motor.

It includes 2 steps:

a) Searching the actuall speed, using the start circuit method, for the in P0771 selected waiting time. If a speed value greater than 10% of the normalization speed is searched, the routine will change in normal mode, otherwise step b)

b) The motor will be work with a constant speed (P0770) and a pre-selected current (P0769) during the waiting time P0772. After that changing to normal mode. If P0771 or P0772 is set to 0.00sec, the start-routine will be switched-off.

parameter: P0772 sensles start time

maximum index: 01

minimal value: 0.00

maximal value: 100.00

default value: 5.00

unit: sec

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

These parameters are necessary for the work of a motor with field-oriented control without speed sensor (P0130 = open loop) and if a synchronous motor will be used. For correct work is only P0774 kp speed estimation needed. Implementing notice see parameter P0774. A startroutine can be selected, if demanded, which will be active after every inverterenable. It calculates the actuall speed or rotor position of the motor.

It includes 2 steps:

a) Searching the actuall speed, using the start circuit method, for the in P0771 selected waiting time. If a speed value greater than 10% of the

normalization speed is searched, the routine will change in normal mode, otherwise step b)

b) The motor will be work with a constant speed (P0770) and a pre-selected current (P0769) during the waiting time P0772. After that changing to normal mode. If P0771 or P0772 is set to 0.00sec, the start-routine will be switched-off.

parameter: P0773 K speed-observer

maximum index: 01

minimal value: 0.00

maximal value: 100.00

default value: 1.00

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 17

observer, closed loop

This parameter is used for sensorless special-mode. It is not possible to work with another value as 1.0 (factory setup).

parameter: P0774 G speed-estimation

maximum index: 01

minimal value: 0.00

maximal value: 100.00

default value: 3.00

unit: %

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 17

In this mode the modul speedmonitoring will be replaced by a speed appraise-ment, which is based on a modell of a asynchronous or synchronous machine. There are two moduls, which are responsible for the speed appraisement, the identificationregulator (PI controller P0774, P0775) and an observer, with its gain P0773.

Implementing notice:

1. Do the speed controler set up reserved, switch the automatic tr-correction (P0144) off.

2. Set up values:

P0773: 1,0 k factor observer closed loop

P0774: 3,0% kp speed-appraisement controller

P0775: 10 msec Tn speed-appraisement controller

3. Adjustment:

Scale kp speed-appraisement, until the motor will work reliable. Scale Tn, until Changing the speed will be controlled reliable. If necessary, modify P0773 until correct work is possible.

parameter: P0775 Tn speed-estimation

maximum index: 01
minimal value: 0
maximal value: 5000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 17

In this mode the modul speedmonitoring will be replaced by a speed appraise-ment, which is based on a modell of a asynchronous or synchronous machine. There are two moduls, which are responsible for the speed appraisement, the identificationregulator (PI controller P0774, P0775) and an observer, with its gain P0773.

Implementing notice:

1. Do the speed controler set up reserved, switch the automatic tr-correction (P0144) off.

2. Set up values:

P0773: 1,0 k factor observer closed loop

P0774: 3,0% kp speed-appraisement controller

P0775: 10 msec Tn speed-appraisement controller

3. Adjustment: Scale kp speed-appraisement, until the motor will work reliable. Scale Tn, until Changing the speed will be controlled reliable. If necessary, modify P0773 until correct work is possible.

parameter: P0776 sens-less freq-levl

maximum index: 01
minimal value: 0.0
maximal value: 1500.0
default value: 2.0
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Switch over frequency, sensorless mode

This parameter is used in the sensorless-mode (P0130 = open looped) for pre-selecting the switch-over, from steered speed appraisement method mode to the complete modell. Below this frequency, the speed appraisement will be steered, to compensate instabilisations, which are caused by inexact parameter calculation. Normally, the factory setup shouldn´t be changed.

parameter: P0778 sens-less freq-hyst

maximum index: 01
minimal value: 0.0
maximal value: 20.0
default value: 2.0
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Switch over hysteresis, for the sensorless mode.

This hysteresis is in relation with the switch over frequency, which is pre-selected in P0776.

Normally, the factory setup shouldn´t be changed.

parameter: P0779 sign angle signal

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value:
0 = + direct measuring
1 = - neg. measuring
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 13, 14, 15, 16, 17, 18

This parameter is for reverse the direction, of the sensor/encoder signals.

parameter: P0780 resolution/mot-turn

maximum index: -
minimal value: 0
maximal value: 22
default value: 2
parameter value:
0 = 1024 increments
1 = 2048 increments
2 = 4096 increments
3 = 8192 increments
4 = 16384 increments
5 = 32768 increments
6 = 65536 increments
7 = 2exp17 increments
8 = 2exp18 increments
9 = 2exp19 increments
10 = 2exp20 increments

11 = 2exp21 increments
12 = 2exp22 increments
13 = 2exp23 increments
14 = 2exp24 increments
15 = 2exp25 increments
16 = 2exp26 increments
17 = 2exp27 increments
18 = 2exp28 increments
19 = 2exp29 increments
20 = 2exp30 increments
21 = 2exp31 increments
22 = 2exp32 increments

unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27, 28

Defines the resolution of the position actual value and therefore the accuracy of the position controller. The resolution means number of steps (increments) on one turn of the motor-shaft.

Note: This is not the increment-number of the encoder. To get a stabile position controller, choose the resolution less or equal than the resolution of the encoder. for e.g. pulse coder P0130 * 4, resolver 4096 ... 8192, for ERN 1387 2E17).

parameter: P0781 diameter/perimeter

maximum index: -
minimal value: 0.001
maximal value: 1000.000
default value: 1.000
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan 27

parameter: P0782 gear ratio

maximum index:
minimal value: 0.001
maximal value: 100000.000
default value: 100.000
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan 27

parameter: P0783 switch diam./perim.

maximum index:
minimal value: 0
maximal value: 1
default value: 0
parameter value: 0 = diameter (P0781*PI)
1 = perimeter (P0781* 1)
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

The parameters P0781 ... P0783 defines the mechanical link between your linear move and the motor shaft.

P0781: Put in the diameter or perimeter of the driving wheel in your unit of length.

P0783: Choose conform to your P0781 input diameter or perimeter.

P0782: If you have a gear between driving wheel an motor shaft, put in the gear ratio.

parameter: P0784 Src position switch

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1673
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

Selector input for the position setpoint array. Only bit 0..3 are used to build the setpoint number. Usually, you can connect the coder with D1793 or a PZD of an interface.

parameter: P0785 position s/p array

maximum index: 15
minimal value: -1000000.000
maximal value: 1000000.000
default value: 0.000
unit: x
passwordlevel: 2
read / write: R/W on
type: signed 32 bit
function diagram: plan 27

Position reference value memory:

The value is entered in the selected lenghts units, ref to the normalization, P0781 ... P0783. One of the 16 position reference values is selected via the D parameters entered in P0784.

parameter: P0786 tolerance posSensor

maximum index: -
minimal value: 0.000
maximal value: 20.000
default value: 1.000
unit: x
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Tolerance for message "position reached", unit of length like P0781

parameter: P0787 hysteres. posSensor

maximum index: -
minimal value: 0.000
maximal value: 10.000
default value: 0.500
unit: x
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Hysteresis for message "position reached", unit of length like P0781

parameter: P0788 Enable reset posit.

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

Enable input to set the actual position value to its reference value.

parameter: P0789 position reference

maximum index: -
minimal value: -100000.000
maximal value: 10000.000

default value: 0.000
unit: x
passwordlevel: 2
read / write: R/W off
type: signed 32 bit
function diagram: plan 28

reference value of position, defines the difference between your zero-position and the hardware-reference point in the plant.

parameter: P0790 HiWord 16/32Convert

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

P0790 = High word input of 16->32bit Converter

parameter: P0791 LoWord 16/32Convert

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 27

P00791 = Low word input of 16->32bit Converter

Connecting 32/16 bit D parameters to variable parameter sources. All of the signal paths, which are disignated by a double line, are processed with 32-bit word format which means that there are both 32 bit D parameters (e.g. D2012, D2014...) as well as also 32 bit parameter sources (P647...P649). This also means that there is a 32-bit connection when connecting these parameters. When connecting a 16 bit D parameter to a 32 bit source or a 32 bit D parameter to a 16 bit source, only 16 bits of information is transferred, whereby the high word (bits 16...31) of the 32 bit value is always used. If a 16 bit value is to be connected to the low word of a 32-bit source, or a 32-bit value is to be generated from 16 bit components (e.g. when transferring PZD from interfaces), the 16-32 bit converter can be used.

parameter: P0792 reset positionOffse

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Reset input for the sample/hold modul about the position error signal.

Note: Activate the additive encoder emulation with P0637.

parameter: P0793 linearPart squ.root

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.00
unit: %
passwordlevel: 1
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 29

Defines the range of linear part of the square root characteristic.

Note: Activate the additive encoder emulation with P0637.

parameter: P0794 weighting pos.error

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
parameter value:
0 = factor 1
1 = factor 1/65536
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

If the position controller have to prozess 16bit values, for e.g. using a self-synchronous syste, it is possible to set P0794 to factor 1/65536.

Fact: Standardly, 16bit values have to connected in 32bit sourceparameters as high word.

parameter: P0795 Src position f/b-2

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 29

Input sourceparameter for second-inverted-input position controller.

Note: Activate the additive encoder emulation with P0637.

parameter: P0796 angle:angle-adjust

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

angle-adjust-modul:

Input sourceparameter for the function, speed value.

Application: For use as a self-synchronous system via a synchrolink connection, the angle setpoint value have to correct with the timedelay of the transmission-time. The Output of the modul D2017 can supplied to the position controller.

parameter: P0797 speed:angle-adjust

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 28

angle-adjust-modul:

Input sourceparameter for the function, angle value.

Application: For use as a self-synchronous system via a synchrolink connection, the angle setpoint value have to correct with the timedelay of the transmission-time. The Output of the modul D2017 can supplied to the position controller

parameter: P0799 SI1 adr. set 0/1

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

parameter for external switching of SI1 Slave adress

signal = 0 -> Slave adress is given by P0504.0

signal = 1 -> Slave adress is given by P0504.1

example a:

P0499 = D1700

P0504.0 = 0

P0504.1 = 1

SI1 Slave adress = 0

example b:

P0499 = D1701

P0504.0 = 0

P0504.1 = 1

SI1 Slave adress = 1

parameter: P0800 Rated speed DC mot

maximum index: 01
minimal value: 10
maximal value: 90000
default value: 3000
unit: 1/min
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan -

DC motor: nominal speed (only available in special firmware-version A1)

parameter: P0801 Rated current DCmot

maximum index: 01
minimal value: 1.0
maximal value: P 33
default value: 5.6
unit: A
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
DC motor: nominal current (only available in special firmware-version A1)

parameter: P0802 Rated voltage DCmot

maximum index: 01
minimal value: 10
maximal value: 900
default value: 330
unit: V
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
DC motor: nominal voltage (only available in special firmware-version A1)

parameter: P0803 Rated power DC mot

maximum index: 01
minimal value: 0.0
maximal value: 6553.5
default value: 2.0
unit: kW
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
DC motor: nominal power (only available in special firmware-version A1)

parameter: P0804 Armature resist. DC

maximum index: 01
minimal value: 0.001
maximal value: 65.535
default value: 0.628
unit: Ohm
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
DC motor: resistance (only available in special firmware-version A1)

parameter: P0805 Armature induct. DC

maximum index: 01
minimal value: 0.000
maximal value: 500.000
default value: 1.000
unit: mH
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan -
DC motor: inductance (only available in special firmware-version A1)

parameter: P0809 line: st. alone act

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Source for starting stand alone mode (only available in special firmware-version A1)

parameter: P0810 rated line-frequ.

maximum index: 01
minimal value: 45
maximal value: 65
default value: 50
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
nominal frequency in operation-mode line inverter (only available in special firmware-versions A1 and A4)

parameter: P0811 line inductance

maximum index: 01
minimal value: 0.00
maximal value: 650.00
default value: 1.00
unit: mH
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

nominal inductance in operation-mode line inverter (only available in special firmware-version A1)

parameter: P0812 line resistance

maximum index: 01
minimal value: 0.001
maximal value: 10.000
default value: 1.000
unit: Ohm
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

nominal resistance in operation-mode line inverter (only available in special firmware-version A1)

parameter: P0813 max. frequ. error

maximum index: 01
minimal value: 0.0
maximal value: 20.0
default value: 10.0
unit: Hz
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

maximum of frequency threshold

(only available in special firmware-versions A1 and A4)

parameter: P0814 min line voltage

maximum index: 01
minimal value: 0.00
maximal value: P 815
default value: 0.00

unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -
minimum of line voltage
(parameter not in use, only for future use)

parameter: P0815 max line voltage

maximum index: 01
minimal value: P 814
maximal value: 199.99
default value: 199.99
unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -
maximum of line voltage
(parameter not in use, only for future use)

parameter: P0816 line: delta angle

maximum index: 01
minimal value: -180.00
maximal value: 180.00
default value: 0.00
unit: °
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
manual adjusting of line angle
(only available in special firmware-versions A1 and A4)

parameter: P0817 line: magnitude uv

maximum index: 01
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -

manual adjusting of line magnitude phase u
(only available in special firmware-versions A1 and A4)

parameter: P0818 line: magnitude vw

maximum index: 01
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -
manual adjusting of line magnitude phase v
(only available in special firmware-versions A1 and A4)

parameter: P0819 line: offsetcorr.uv

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -
manual adjusting of line offset phase u
(only available in special firmware-versions A1 and A4)

parameter: P0820 line: offsetcorr.vw

maximum index: 01
minimal value: -199.99
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -
manual adjusting of line offset phase v
(only available in special firmware-versions A1 and A4)

parameter: P0832 TCC gear ratio d.w.

maximum index:	-
minimal value:	1.0
maximal value:	100.0
default value:	1.0
unit:	no
passwordlevel:	2
read / write:	R/W off
type:	signed 16 bit
function diagram:	plan -
	only available in special firmware-version A1

parameter: P0833 TCC drive wheel dia

maximum index:	-
minimal value:	1.0
maximal value:	2000.0
default value:	1000.0
unit:	mm
passwordlevel:	2
read / write:	R/W off
type:	signed 16 bit
function diagram:	plan -
	only available in special firmware-version A1

parameter: P0834 TCC suspension fact

maximum index:	-
minimal value:	1
maximal value:	8
default value:	2
unit:	no
passwordlevel:	2
read / write:	R/W off
type:	signed 16 bit
function diagram:	plan -
	only available in special firmware-version A1

parameter: P0845 Moment of inertia

maximum index:	-
minimal value:	1.0
maximal value:	2000.0
default value:	1.0
unit:	kgmý
passwordlevel:	2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
only available in special firmware-version A1

parameter: P0846 Nominal speed

maximum index: -
minimal value: 0.000
maximal value: 10.000
default value: 0.000
unit: m/s
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
only available in special firmware-version A1

parameter: P0847 Nominal load

maximum index: -
minimal value: 0
maximal value: 10000
default value: 0
unit: kg
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
only available in special firmware-version A1

parameter: P0848 Nomin. acceleration

maximum index: -
minimal value: 0.10
maximal value: 2.00
default value: 0.10
unit: m/s^2
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
only available in special firmware-version A1

parameter: P0898 Scratchpad REFU

maximum index:	-
minimal value:	0.000
maximal value:	2147483.647
default value:	0.000
unit:	no
passwordlevel:	2
read / write:	R/W on
type:	unsigned 32 bit
function diagram:	plan -
	scratchpad REFU
	Parameter for saving of any information (exemple custumer version number)
	The parameter does not effect any modul in the inverter
	The parameter ist saved automatically into EEPROM

parameter: P0899 Scratchpad customer

maximum index:	-
minimal value:	0.000
maximal value:	2147483.647
default value:	0.000
unit:	no
passwordlevel:	2
read / write:	R/W on
type:	unsigned 32 bit
function diagram:	plan -
	scratchpad customer
	Parameter for saving of any information (exemple custumer version number)
	The parameter does not effect any modul in the inverter
	The parameter ist saved automatically into EEPROM

parameter: D1017 Ixt-value shorttime

maximum index:	-
minimal value:	-1000000
maximal value:	1000000
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 32 bit
function diagram:	plan -
	limiting value I * t for overload function

parameter: P1019 Data conflict

maximum index: 01
minimal value: 0
maximal value: 4095
default value: 0
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Data conflict between parameters A and B

parameter: P1020 WS bus info

maximum index: 48
minimal value: 0000
maximal value: FFFF
default value: 0000
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Communication power unit, only for servicepersonal!!!

parameter: P1021 option board 1 code

maximum index: 05
minimal value: -32768
maximal value: 32767
default value: 0
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

code from optional board 1

P1021.0 shows the code of the optioncard, which is set to slot1

0	no option card	
1	peer to peer connection (SK17021)	L2
16	KL option card (KL17037)	T1
18	synchrolinlk card (SL21058)	L1
21	pulsecoderemulation with resolveremulation (GB21082.1)	G1

22 gear coder and pulsecoderemulation (GB21084) G2

23 pulsecoderemulation (GB21082.2) G3

32 Can-pur (old CAN-bus-optioncard) (CB17029)

33 CANopen (CB20944) C1

48 Interbus S (IB19285) B1

64 Profibus DP (PB19283,PB22847) P1,P2

96 Sercos (SC22243) S1

P1021.1..P1021.5 shows the version of the firmware, which is set with the optioncard to slot1

parameter: P1022 option board 2 code

maximum index: 05

minimal value: -32768

maximal value: 32767

default value: 0

unit: no

passwordlevel: 0

read / write: Read

type: signed 16 bit

function diagram: plan -

code from optional board 2

P1022.0 shows the code of the optioncard, which is set to slot2

0 no option card

1 peer to peer connection (SK17021) L2

16 KL option card (KL17037) T1

18 synchrolinlk card (SL21058) L1

21 pulsecoderemulation with resolveremulation (GB21082.1) G1

22 gear coder and pulsecoderemulation (GB21084) G2

23 pulsecoderemulation (GB21082.2) G3

32 Can-pur (old CAN-bus-optioncard) (CB17029)

33 CANopen (CB20944) C1

48 Interbus S (IB19285) B1

64 Profibus DP (PB19283,PB22847) P1,P2

96 Sercos S1
(SC22243)

P1022.1..P1022.5 shows the version of the firmware, which is set with the optioncard to slot2

parameter: P1023 panel code

maximum index: -
minimal value: 0.0
maximal value: 6553.5
default value: 0.0
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Version of the operation panel firmware, which is connected at X11.

VT1.0 or VT1.1 8kbyte copymemery
VT1.2 16kbyte copymemory

parameter: D1030 actual T-rotor

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: ms
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 25

Rotor time constants, actual value

It will be displayed the value, which is calculated by the identification regulator(see P0144).

parameter: P1038 WS-PIC Scan Anz Mst

maximum index: 10
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Requestion, how many WS-boards are connected to the SR-board

D1038.0-7: WS adress

Value 0: none WS acknowledged

Value 255: WS acknowledged

D1038.8 : number of acknowledged WS

D1038.9 : adress of Master WS (with 255 engaged index from D1038.0-7)

D1038.10 : slave adress with lowest adress (lowest with 255 engaged index from D1038.0-7)

parameter: D1040 actual positionNorm

maximum index: -
minimal value: 0.0000
maximal value: 429496.7295
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan 27, 28, 29

Normalization of user defined Position-values and internal position values.

Note: Do not connect this parameter with any source-parameter

parameter: D1041 valid position s/p

maximum index: -
minimal value: -2147483.648
maximal value: 2147483.647
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 27

actual selected position setpoint in user defined unit of length.

Note: Do not connect this parameter with any source-parameter

parameter: D1042 actual position

maximum index: -
minimal value: -2147483.648
maximal value: 2147483.647
default value: -
unit: x
passwordlevel: 0

read / write: Read
type: signed 32 bit
function diagram: plan 28

actual position in user defined unit of length.

Note: Do not connect this parameter with any source-parameter

parameter: P1049 Test ON/OFF

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
unit: no
passwordlevel: 3
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Sourceparameter for the function, testmode

0 = standard-mode

1 = testmode, all regulators are enabled, but ignitionpulses are disabled.

parameter: P1050 Service ON/OFF

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
unit: no
passwordlevel: -
read / write: Read
type: unsigned 16 bit
function diagram: plan -

special-mode for servicepersonal!!!

parameter: D1051 DSP controlword

maximum index: -
minimal value: 00000000
maximal value: 0000001F
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 32 bit

function diagram: plan -
information for communication between yc and signprocessor onto SR17002. Only for servicepersonal!!!

parameter: D1067 DSP Statusword

maximum index: -
minimal value: 00000000
maximal value: FFFFFFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan -
Displayparameter, DSP statusword

parameter: D1069 current-out phase U

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25, 26
Shows the actual current measured value, inverter phase u. Normalization: 200% = P0033

parameter: D1070 current-out phase V

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25, 26
Shows the actual current measured value, inverter phase v. Normalization: 200% = P0033

parameter: D1071 Isq actual

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Shows the torque-building component, current measured values inverter.
Normalization: 200% = P0033 (phasorvalue = peakvalue)

parameter: D1072 Isd actual

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Shows the field-building component, current measured values inverter.
Normalization: 200% = P0033 (phasorvalue = peakvalue)

parameter: D1073 Is actual

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Shows the addition-current-vector, current measured values inverter.
Normalization: 200% = P0033 (phasorvalue = peakvalue)

parameter: D1074 DC-link voltage

maximum index: -
minimal value: -200.00
maximal value: 199.99

default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Shows the actual DC link voltage.

Normalization depends from the inverter datas. For standard 460V-drives is 100% = 500V).

parameter: D1075 Voltage amplitude

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

Shows the actual voltage modulation of the inverter Normalization: 200% = 2/3 * Udclink

Depends of modulation mode:
200% = peakmodulation hexagon, only in 6 anglepunts possible
171% = nominal modulation circle

parameter: D1076 I-contr-out usd

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

Shows the actual modulation of the d-voltage component.

Normalization: 100% = Max. value

parameter: D1077 I-contr-out usq

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %

passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Shows the actual voltage modulation of the q-voltage component.
Normalization: 100% = Max. value

parameter: D1078 I-contr: theta-i

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 13, 14, 15, 16, 17, 18, 25
Shows the actual angle of the rotating field.
Normalization: 100% = 90 degrees

parameter: D1079 DSP PWM time U

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Shows the actual Setup of the PWM-modulation for the inverter phase u. -intern value-

parameter: D1080 DSP PWM time V

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Shows the actual Setup of the PWM-modulation for the inverter

phase v. - intern value-

parameter: D1081 DSP PWM time W

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Shows the actual Setup of the PWM-modulation for the inverter phase w. - intern value-

parameter: D1082 act.rotorflux PSIrd

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Shows the actual value of the rotorflux from aasynchronous machine. - intern value-

parameter: D1083 Slip-frequency

maximum index: -
minimal value: -32.768
maximal value: 32.767
default value: -
unit: Hz
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Shows the actual value of the slipfrequence from a asynchronous machine. - intern value-

parameter: D1084 reso. exitat. phase

maximum index: -
minimal value: -62
maximal value: 61
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Datas from resolver excitation, only activ if P0130 = resolver

Phase setup of the resolver excitation in function of scanning.

parameter: D1085 reso. exitat. ampl.

maximum index: -
minimal value: 0
maximal value: 125
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Datas from resolver excitation, only activ if P0130 = resolver

Amplitude setup of the resolver excitation in function of scanning.

parameter: D1086 encoder sine-wave

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 13, 15, 16

Measured value of the codersignal at X18.

+/- 199% = Limitation of he measuring amplifier, for resolver or sin/cos-encoders:

The limitations shouldn´t be reached (overdrive) for pulsecoders:

The value is static set to positiv or negativ limitation, it´s no analog evaluation possible.

Faultdetection for all coders:

If the signal will amount smaller than 3%, during the shaft is moved,

the coder is defect or you have a linecord interruption.

parameter: D1087 encoder cosine-wave

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 13, 15, 16

Measured value of the codersignal at X18.

+/- 199% = Limitation of he measuring amplifier, for resolver or sin/cos-encoders:

The limitations shouldn´t be reached (overdrive) for pulsecoders:

The value is static set to positiv or negativ limitation, it´s no analog evaluation possible.

Faultdetection for all coders:

If the signal will amount smaller than 3%, during the shaft is moved,

the coder is defect or you have a linecord interruption.

parameter: D1089 Encoder signal ampl

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 13

Whole amplitude of the codersignal used for resolver or sin/cos encoders to generating the codersignalalarm.

D1089 = (D1086² + D1087²) / 65536

Limiting values:

10%	= lower limit, threshold for alarmdetection
50..100%	= nominal value
130%	= Upper limit, threshold for alarmdetection

parameter: P1090 DSP debug adress

maximum index: 03
minimal value: 80000000
maximal value: 7FFFFFFF
default value: 00000000
unit: hex
passwordlevel: 3

read / write: R/W on
type: unsigned 32 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: P1091 DSP debug mode

maximum index: 03
minimal value: 0
maximal value: 15
default value: 0
parameter value:
0 = off
1 = fix Loword
2 = fix Hiword
3 = float 1
4 = float 10
5 = float 100
6 = float 1000
7 = float 1E4
8 = float 1E5
9 = float 1E6
10 = float 0.1
11 = float 0.01
12 = float 1E-3
13 = float 1E-4
14 = float 1E-5
15 = float 1E-6
unit: no
passwordlevel: 3
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: D1092 DSP watch Test 0

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: D1093 DSP watch Test 1

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: D1094 DSP watch Test 2

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: D1095 DSP watch Test 3

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Parameter for diagnostics of intern values

parameter: D1096 temp. braking resis

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan -

Display the temperaturemodell of the brakeresistor.
100% = Alarmdetection BW - Overtemperature
Actual value normalization of P0079 fault-threshold brake resistor.

parameter: P1098 firmware-date

maximum index: -
minimal value: 0
maximal value: 0
default value: 0
parameter value: 0 = 14.Dec.2001 09:51
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Firmware generating date

parameter: D1100 SI4: PZD1 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD1 of interface SI4.

parameter: D1101 SI4: PZD2 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD2 of interface SI4.

parameter: D1102 SI4: PZD3 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD3 of interface SI4.

parameter: D1103 SI4: PZD4 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD4 of interface SI4.

parameter: D1104 SI4: PZD5 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD5 of interface SI4.

parameter: D1105 SI4: PZD6 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD6 of interface Si4.

parameter: D1106 SI4: PZD7 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD7 of interface SI4.

parameter: D1107 SI4: PZD8 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD8 of interface SI4.

parameter: D1108 SI4: PZD9 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD9 of interface SI4.

parameter: D1109 SI4: PZD10-input

maximum index: -

minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 49

Actually received value from process data PZD10 of interface SI4.

parameter: D1120 Output-block 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 10

Output outputbloc 1

parameter: D1121 Output-block 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 10

Output outputbloc 2

parameter: D1129 coder output 2

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 42

Output 2 of the programmable coder

parameter: D1130 SynchroLink PZD0-in

maximum index: -
minimal value: -200.00000
maximal value: 199.99999
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 51

Actual received value from PZD0, optioncard synchrolink

Special-mode:

If D1130 is connected with a sourceparameter of 32bit signals, the information of D1131 will be take over into the low word.

parameter: D1131 SynchroLink PZD1-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51

Actual received value from PZD1, optioncard synchrolink

parameter: D1132 SynchroLink PZD2-in

maximum index: -
minimal value: -200.00000
maximal value: 199.99999
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 51

Actual received value from PZD2, optioncard synchrolink

Special-mode:

If D1132 is connected with a sourceparameter of 32bit signals, the information of D1133 will be take over into the low word.

parameter: D1133 SynchroLink PZD3-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51

Actual received value from PZD3, optioncard synchrolink

parameter: D1134 SynchroLink PZD4-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51

Actual received value from PZD4, optioncard synchrolink

parameter: D1135 SynchroLink PZD5-in

maximum index: -
minimal value: -200.00000
maximal value: 199.99999
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 51

Actual received value from PZD5, optioncard synchrolink

Special-mode:

If D1135 is connected with a sourceparameter of 32bit signals, the information of D1136 will be take over into the low word.

parameter: D1136 SynchroLink PZD6-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -

unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51
Actual received value from PZD6. optioncard synchrolink

parameter: D1137 SynchroLink PZD7-in

maximum index: -
minimal value: -200.00000
maximal value: 199.99999
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 51
Actual received value from PZD7, optioncard synchrolink
Special-mode:
If D1137 is connected with a sourceparameter of 32bit signals, the information of D1138 will be take over into the low word.

parameter: D1138 SynchroLink PZD8-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51
Actual received value from PZD8, optioncard synchrolink

parameter: D1139 SynchroLink PZD9-in

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 51

Actual received value from PZD9, optioncard synchrolink

parameter: D1160 SI6: PZD1-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD1, onboard interface SI6 (X13)

parameter: D1161 SI6: PZD2-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD2, onboard interface SI6 (X13)

parameter: D1162 SI6: PZD3-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD3, onboard interface SI6 (X13)

parameter: D1163 SI6: PZD4-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -

unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD4, onboard interface SI6 (X13)

parameter: D1164 SI6: PZD5-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD5, onboard interface SI6 (X13)

parameter: D1165 SI6: PZD6-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD6, onboard interface SI6 (X13)

parameter: D1166 SI6: PZD7-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD7, onboard interface SI6 (X13)

parameter: D1167 SI6: PZD8-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD8, onboard interface SI6 (X13)

parameter: D1168 SI6: PZD9-input X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD9, onboard interface SI6 (X13)

parameter: D1169 SI6: PZD10-inp. X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12

Actual received value from PZD10, onboard interface SI6 (X13)

parameter: D1170 SI6: PZD11-inp. X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD11, onboard interface SI6 (X13)

parameter: D1171 SI6: PZD12-inp. X13

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 12
Actual received value from PZD12, onboard interface SI6 (X13)

parameter: D1176 Control word 3

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3

parameter: D1177 Status word 3

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
statusword 3

parameter: D1178 ASS: Torque - dv/dt

maximum index: -

minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan -
	Display value, have only importance for the special-mode slip & slide protection.

parameter: D1186 3ph.system synch ok

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	signal line synchronisation ok
	(only available in special firmware-versions A1 and A4)

parameter: D1187 coder output 1

maximum index:	-
minimal value:	0
maximal value:	63
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 42

parameter: D1188 onb./line inv. mode

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit

function diagram: plan -
signal synchronisation mode
(only available in special firmware-versions A1)

parameter: P1238 Src control word 3

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 04
Input sourceparameter for the controlword 3
The whole word is signed in D1176. The single bit is signed in D1480 ... D1495

parameter: P1239 Src stat.word 3 bit

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 04
Digital input sourceparameter for the function, Status word 3 (D1177)
Assignment:
(P1239.0) => bit 0 of D1177
(P1239.1) => bit 1 of D1177
....
(P1239.15) => bit15 of D1177

parameter: P1240 SSC: src mod1 inp0

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input0, logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1241 SSC: src mod1 inp1

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input1, logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1242 SSC: src mod1 inp2

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input2, logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1243 SSC: function mod1

maximum index: 15
minimal value: 0
maximal value: 4
default value: 0
parameter value:
0 = AND Inp0*Inp1*Inp2
1 = OR Inp0+Inp1+Inp2
2 = AND-OR (I0*I1)+I2
3 = OR-AND (I0+I1)*I2
4 = Compare I0 > I1
unit: no
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Pre-select the function of logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1244 SSC: src mod2 inp0

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input0, logicmodul 2.

The index of the parameter is assigned to the step number!

parameter: P1245 SSC: src mod2 inp1

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input1, logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1246 SSC: src mod2 inp2

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input2, logicmodul 1.

The index of the parameter is assigned to the step number!

parameter: P1247 SSC: function mod2

maximum index: 15

minimal value: 0

maximal value: 4

default value: 0

parameter value:
0 = AND Inp0*Inp1*Inp2
1 = OR Inp0+Inp1+Inp2
2 = AND-OR (I0*I1)+I2
3 = OR-AND (I0+I1)*I2
4 = Compare I0 > I1

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Pre-select the function of logicmodul 2.

The index of the parameter is assigned to the step number!

parameter: P1248 SSC: src mod3 inp0

maximum index: 15

minimal value: 0

maximal value: 2044

default value: 1700

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input0, logicmodul 3.

The index of the parameter is assigned to the step number!

parameter: P1249 SSC: src mod3 inp1

maximum index: 15

minimal value: 0

maximal value: 2044

default value: 1700

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input1, logicmodul 3.

The index of the parameter is assigned to the step number!

parameter: P1250 SSC: src mod3 inp2

maximum index: 15

minimal value: 0

maximal value: 2044

default value: 1700

unit: D-Par

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Sourceparameter for the input2, logicmodul 3.

The index of the parameter is assigned to the step number!

parameter: P1251 SSC: function mod3

maximum index: 15

minimal value: 0

maximal value: 4

default value: 0

parameter value:

0 = AND Inp0*Inp1*Inp2

1 = OR Inp0+Inp1+Inp2

2 = AND-OR (I0*I1)+I2

3 = OR-AND (I0+I1)*I2

4 = Compare I0 > I1

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Pre-select the function of logicmodul 3.

The index of the parameter is assigned to the step number!

parameter: P1252 SSC: source timer 1

maximum index: 15

minimal value: 0

maximal value: 2044

default value: 1700

unit: D-Par

passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Input sourceparameter for the timermodul 1.

The index of the parameter is assigned to the step number!

parameter: P1253 SSC: funct. timer 1

maximum index: 15
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = ON delay
1 = OFF delay
2 = pulse
3 = extended pulse
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Pre-select the function of timermodul 1.

The index of the parameter is assigned to the step number!

parameter: P1254 SSC: time (timer 1)

maximum index: 15
minimal value: 0.00
maximal value: 650.00
default value: 0.10
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Timebase of timermodul 1.

The index of the parameter is assigned to the step number!

parameter: P1255 SSC: source timer 2

maximum index: 15
minimal value: 0
maximal value: 2044
default value: 1700

unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Input sourceparameter for the timermodul 2.

The index of the parameter is assigned to the step number!

parameter: P1256 SSC: funct. timer 2

maximum index: 15
minimal value: 0
maximal value: 3
default value: 0
parameter value:
0 = ON delay
1 = OFF delay
2 = pulse
3 = extended pulse
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Pre-select the function of timermodul 2.

The index of the parameter is assigned to the step number!

parameter: P1257 SSC: time (timer 2)

maximum index: 15
minimal value: 0.00
maximal value: 650.00
default value: 0.10
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Timebase of timermodul 2.

The index of the parameter is assigned to the step number!

parameter: P1258 SSC: transit.mask A

maximum index: 15
minimal value: 0000
maximal value: 00FF

default value: 0000
unit: hex
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Transitionmask A, input in hex values

Assignment: bit0 <= D1557 (logicmodul 1, output 1)
bit1 <= D1558 (logicmodul 1, output 2)
bit2 <= D1559 (logicmodul 2, output 1)
bit3 <= D1560 (logicmodul 2, output 2)
bit4 <= D1561 (logicmodul 3, output 1)
bit5 <= D1562 (logicmodul 3, output 2)
bit6 <= D1563 (timermodul 1, output 1)
bit7 <= D1564 (timermodul 2, output 1)

The index of the parameter is assigned to the step number!

parameter: P1259 SSC: A -> next step

maximum index: 15
minimal value: 0
maximal value: 15
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Next step A, the transition into the next step A will be activ, if the transitionmask A condition is valid.

The index of the parameter is assigned to the step number!

parameter: P1260 SSC: transit.mask B

maximum index: 15
minimal value: 0000
maximal value: 00FF
default value: 0000
unit: hex
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Transitionmask B, input in hex values

Assignment: bit0 <= D1557 (logicmodul 1, output 1)
bit1 <= D1558 (logicmodul 1, output 2)
bit2 <= D1559 (logicmodul 2, output 1)
bit3 <= D1560 (logicmodul 2, output 2)
bit4 <= D1561 (logicmodul 3, output 1)
bit5 <= D1562 (logicmodul 3, output 2)
bit6 <= D1563 (timermodul 1, output 1)
bit7 <= D1564 (timermodul 2, output 1)

The index of the parameter is assigned to the step number!

parameter: P1261 SSC: B -> next step

maximum index: 15
minimal value: 0
maximal value: 15
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Next step B, the transition into the next step B will be activ, if the transitionmask B condition is valid.

The index of the parameter is assigned to the step number!

parameter: P1262 SSC: transit.mask C

maximum index: 15
minimal value: 0000
maximal value: 00FF
default value: 0000
unit: hex
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Transitionmask C, input in hex values

Assignment: bit0 <= D1557 (logicmodul 1, output 1)
bit1 <= D1558 (logicmodul 1, output 2)
bit2 <= D1559 (logicmodul 2, output 1)
bit3 <= D1560 (logicmodul 2, output 2)
bit4 <= D1561 (logicmodul 3, output 1)
bit5 <= D1562 (logicmodul 3, output 2)
bit6 <= D1563 (timermodul 1, output 1)
bit7 <= D1564 (timermodul 2, output 1)

The index of the parameter is assigned to the step number!

parameter: P1263 SSC: C -> next step

maximum index: 15
minimal value: 0
maximal value: 15
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Next step C, the transition into the next step C will be activ, if the transitionmask C condition is valid.

The index of the parameter is assigned to the step number!

parameter: P1264 SSC: transit.mask D

maximum index: 15
minimal value: 0000
maximal value: 00FF
default value: 0000
unit: hex
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Transitionmask C, input in hex values

Assignment: bit0 <= D1557 (logicmodul 1, output 1)
bit1 <= D1558 (logicmodul 1, output 2)
bit2 <= D1559 (logicmodul 2, output 1)
bit3 <= D1560 (logicmodul 2, output 2)
bit4 <= D1561 (logicmodul 3, output 1)
bit5 <= D1562 (logicmodul 3, output 2)
bit6 <= D1563 (timermodul 1, output 1)
bit7 <= D1564 (timermodul 2, output 1)

The index of the parameter is assigned to the step number!

parameter: P1265 SSC: D -> next step

maximum index: 15
minimal value: 0
maximal value: 15

default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Next step D, the transition into the next step D will be activ, if the transitionmask D condition is valid.

The index of the parameter is assigned to the step number!

parameter: P1266 SSC: set bit mask

maximum index: 15
minimal value: 0000
maximal value: FFFF
default value: 0000
unit: hex
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Output state of a step, input in hex values.

The whole word is signed in D1536.

The single bit is signed in D1537 ... D1552.

parameter: P1267 SSC: src RESET

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan 47

Sequence processor: For further informations, please take a look at the functionplan Input sourceparameter for the function, reset sequence prozessor.

parameter: P1270 SI6 baudrate X13

maximum index: -
minimal value: 4
maximal value: 7
default value: 6

parameter value: 4 = 125 kBaud
5 = 250 kBaud
6 = 500 kBaud
7 = 1 MBaud
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Baud rate, standard Can(125kbaud...1Mbaud)

parameter: P1271 SI6 Tx ID numb. X13

maximum index: 03
minimal value: 1
maximal value: 2047
default value: 176
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Identifier, send protocols
Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 9...12

parameter: P1272 SI6 Rx ID numb. X13

maximum index: 03
minimal value: 1
maximal value: 2047
default value: 160
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Identifier, receive protocols
Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 9...12

parameter: P1273 SI6 Tx PZD clk. X13

maximum index: 02
minimal value: 0
maximal value: 255
default value: 254
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

Clock rate, send protocols (unit, 1 msec)

Special functions: 0 = cyclic data not sent, protocol not active
1-253 = clockrate in msec
254 = sender starts after receive protocol
255 = reserved

Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 9...12

parameter: P1274 SI6 Rx watchdog X13

maximum index: -
minimal value: 0
maximal value: 2
default value: 2
parameter value: 0 = no reaction
1 = warning
2 = fault
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

SS6 Rx monitoring

Selects the response for the receive monitoring of standard interface SI6.

Master prinziple: (P1273=1 ... 253)

The device is the master and sends self aktiv data.

The monitoring starts with the first send protocoll.

When here no receive data expected, the monitoring must be switched off

Slave prinziple: (P1273=254)

An external control or an external device is master. The device here sends only data if from the master requested.

The monitoring starts with the first correct received protocoll.

The response, which is defined by parameter P1274, is realized if the interface receiver has not received an error-free protocol within this time.

parameter: P1275 SI6 Rx timeout X13

maximum index: -
minimal value: 0.01
maximal value: 60.00
default value: 0.01
unit: sec
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

SI6 monitoring time

The monitoring time for the standard SI6 interface is set here.

Master prinziple: (P1273=1 ... 253)

The device is the master and sends self aktiv data.

The monitoring starts with the first send protocoll.

When here no receive data expected, the monitoring must be switched off

Slave prinziple: (P1273=254)

An external control or an external device is master. The device here sends only data if from the master requested.

The monitoring starts with the first correct received protocoll.

The response, which is defined by parameter P1274, is realized, if the interface receiver has not received an error-free protocol within this time.

parameter: P1276 src.SI6-watchd. OFF

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

Source parameter for switch: Rx monitoring off

parameter: P1280 Src ASS enable

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1700
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1281 ASS source nact

maximum index: 03
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1282 ASS nact[i] enable

maximum index: 02
minimal value: 0
maximal value: 2044
default value: 1701
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1283 ASS: source M s/p

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2

read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1284 ASS: src nist dn/dt

maximum index: -
minimal value: 0
maximal value: 2044
default value: 1800
unit: D-Par
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1285 ASS RFG2 startvalue

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 100.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1286 ASS RFG2 endvalue

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1287 ASS RFG1 endvalue

maximum index: -
minimal value: 0.00
maximal value: 199.99
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1288 ASS RFG1 T_up slide

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1289 ASS RFG1 T_up slip

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1290 ASS RFG1 Tdown slid

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2

read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1291 ASS RFG1 Tdown slip

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1292 ASS RFG2 T_up slide

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1293 ASS RFG2 T_up slip

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1294 ASS RFG2 Tdown slid

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1295 ASS RFG2 Tdown slip

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1296 ASS comp1 lev.slide

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1297 ASS comp1 lev. slip

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.10
unit: %
passwordlevel: 2

read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1298 ASS comp1 hyst.slid

maximum index: -
minimal value: 0.00
maximal value: 99.99
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1299 ASS comp1 hyst.slip

maximum index: -
minimal value: 0.00
maximal value: 99.99
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1300 ASS comp2Level slid

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1301 ASS comp2Level slip

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1302 ASS comp2 hyst.slid

maximum index: -
minimal value: 0.00
maximal value: 99.99
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1303 ASS comp2 hyst.slip

maximum index: -
minimal value: 0.00
maximal value: 99.99
default value: 0.10
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1304 ASS: Pt1-Mset T1

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2

read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1305 ASS:Dt1-nact T1

maximum index: -
minimal value: 0
maximal value: 10000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1306 ASS:Dt1-nact Td

maximum index: -
minimal value: 0
maximal value: 30000
default value: 10
unit: ms
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1307 ASS div-limit

maximum index: -
minimal value: 0.00
maximal value: 100.00
default value: 0.00
unit: %
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
Parameter is only used in special function slide & slingprotection.

parameter: P1309 v/f: Kp2curr.limit.

maximum index: 01

minimal value: 0.00
maximal value: 128.00
default value: 0.10
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
gain current controller
(only available in special firmware-version A4)

parameter: P1311 RCC: voltage v1

maximum index: 01
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1312 RCC: voltage v3

maximum index: 01
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1313 RCC: phase angle 3

maximum index: 01
minimal value: -180.00
maximal value: 180.00
default value: 0.00
unit: °
passwordlevel: 2

read / write: R/W on
type: signed 16 bit
function diagram: plan -
reference angle in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1314 RCC: voltage v5

maximum index: 01
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1315 RCC: phase angle 5

maximum index: 01
minimal value: -180.00
maximal value: 180.00
default value: 0.00
unit: °
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
reference angle in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1316 RCC: voltage v7

maximum index: 01
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1317 RCC: phase angle 7

maximum index: 01
minimal value: -180.00
maximal value: 180.00
default value: 0.00
unit: °
passwordlevel: 2
read / write: R/W on
type: signed 16 bit
function diagram: plan -
reference angle in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1318 RCC: add. voltage

maximum index: 01
minimal value: 0.0
maximal value: 1000.0
default value: 0.0
unit: V
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1319 RCC: add. frequency

maximum index: 01
minimal value: 0.00
maximal value: 500.00
default value: 0.00
unit: Hz
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
reference frequency in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1320 RCC: src mult.f_add

maximum index: 01
minimal value: 0
maximal value: 2044

default value: 2000
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
normalisation of frequency in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1321 RCC: src mult.v_add

maximum index: 01
minimal value: 0
maximal value: 2044
default value: 2000
unit: D-Par
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -
normalisation of voltage in special operation modes
(only available in special firmware-versions A1 and A4)

parameter: P1322 SC address

maximum index: -
minimal value: 0
maximal value: 254
default value: 1
unit: no
passwordlevel: 2
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the actual SERCOS-busadress of this drive.
Is set with rotary coded switches S3 and S4 on interface-board.

parameter: P1323 SC baud rate

maximum index: -
minimal value: 0
maximal value: 3
default value: 0
parameter value: 0 = 2 MBaud
1 = 4 MBaud
2 = 8 MBaud
3 = 16 MBaud

unit: no
passwordlevel: 2
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Shows the actual baudrate.

Is set with DIP-switch S1 on interface board.

parameter: P1324 S15 telegram type

maximum index: -
minimal value: 0
maximal value: 7
default value: 2
parameter value:
0 = prefered telegr. 0
1 = prefered telegr. 1
2 = prefered telegr. 2
3 = prefered telegr. 3
4 = prefered telegr. 4
5 = prefered telegr. 5
6 = prefered telegr. 6
7 = configur. telegr.
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0015 "Telegram type parameter" on the SR.

For a detailled description of S-0-0015 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1325 S16 konfig. list AT

maximum index: 09
minimal value: 0
maximal value: 34836
default value: 40
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0016 "Configuration list of AT" on the SR.

For a detailled description of S-0-0016 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

In order to generate the "Configuration list of AT" via for e.g. RefuWin, it is important only to implement those parameters,that are desired for AT.

Other indicised values have to be zero.

Example: P1325.0 = 40 (for S-0-0040)

P1325.1 = 34828 (for P-0-2060)
(Note: 32768 + 2060 = 34828)

P1325.2 to P1325.9 = 0

this means S-0-0016 contains the parameters S-0-0040 and P-0-2060

parameter: P1326 S24 konfig.list MDT

maximum index: 09

minimal value: 0

maximal value: 34826

default value: 36

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0024 "Configuration list of MDT" on the SR.

For a detailled description of S-0-0024 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

In order to generate the "Configuration list of MDT" via for e.g. RefuWin, it is important only to implement those parameters,that are desired for MDT.

Other indicised values have to be zero.

Example: P1326.0 = 36 (for S-0-0036)

P1326.1 = 34818 (for P-0-2050)
(Note: 32768 + 2050 = 34818)

P1326.2 to P1326.9 = 0

this means S-0-0024 contains the parameters S-0-0036 and P-0-2050

parameter: P1327 S32 main oper. mode

maximum index: -

minimal value: 0

maximal value: 65535

default value: 2

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0032 "Primary operation mode" on the SR.

For a detailled description of S-0-0032 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1328 S33 aux oper.mode 1

maximum index: -

minimal value: 0

maximal value: 65535

default value: 2

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0033 "Secondary operation mode 1" on the SR.

For a detailled description of S-0-0033 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1329 S34 aux oper.mode 2

maximum index: -

minimal value: 0

maximal value: 65535

default value: 2

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0034 "Secondary operation mode 2" on the SR.

For a detailled description of S-0-0034 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1330 S35 aux oper.mode 3

maximum index: -
minimal value: 0
maximal value: 65535
default value: 2
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0035 "Secondary operation mode 3" on the SR.

For a detailled description of S-0-0035 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1331 S43 speed polarit.

maximum index: -
minimal value: 0
maximal value: 7
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0043 "Velocity polarity parameter" on the SR.

For a detailled description of S-0-0043 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1332 S44 veloc.scal type

maximum index: -
minimal value: 0
maximal value: 127
default value: 2
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0044 "Velocity data scaling type" on the SR.

For a detailled description of S-0-0044 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1333 S45 veloc.scal fact

maximum index: -
minimal value: 0
maximal value: 65535
default value: 1
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0045 "Velocity data scaling factor" on the SR.

For a detailled description of S-0-0045 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1334 S46 veloc.scal exp.

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -4
unit: no
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0046 "Velocity data scaling exponent" on the SR.

For a detailled description of S-0-0046 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1335 S55 posit. polarity

maximum index: -
minimal value: 0
maximal value: 31
default value: 0
unit: no
passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0055 "Position polarity parameters" on the SR.

For a detailled description of S-0-0055 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1336 S57 position window

maximum index: -

minimal value: 0

maximal value: 2147483647

default value: 0

unit: no

passwordlevel: 2

read / write: R/W on

type: unsigned 32 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0057 "Position window" on the SR.

For a detailled description of S-0-0057 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1337 S85 torque polarity

maximum index: -

minimal value: 0

maximal value: 7

default value: 0

unit: no

passwordlevel: 2

read / write: R/W off

type: unsigned 16 bit

function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0085 "Torque polarity parameter" on the SR.

For a detailled description of S-0-0085 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1338 S86 torq.scal type

maximum index: -
minimal value: 0
maximal value: 63
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0086 "position window" on the SR.

For a detailled description of S-0-0086 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1339 S91 veloc limit bip

maximum index: 01
minimal value: 0
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 32 bit
function diagram: plan -

This parameter is used, in order to store the values of SERCOS-parameter S-0-0091 and S-1-0091 "Bipolar velocity limit value" on the SR.

For a detailled description of S-i-0091 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

P1339.0 stores the value of S-0-0091

P1339.1 stores the value of S-1-0091

parameter: P1340 S92 torquelimit bip

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0092 "Bipolar torque limit value" on the SR.

For a detailled description of S-0-0092 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1341 S93 torquescal fact

maximum index: -
minimal value: 0
maximal value: 65535
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0093 "Torque data scaling type" on the SR.

For a detailled description of S-0-0093 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1342 S94 torque scal exp

maximum index: -
minimal value: -32768
maximal value: 32767
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: signed 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0094 "Torque data scaling exponent" on the SR.

For a detailled description of S-0-0094 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1343 S103 modulo value

maximum index: -
minimal value: 0
maximal value: 2147483647
default value: 0

unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0103 "Modulo value" on the SR.

For a detailled description of S-0-0103 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1344 S124 standstil wind

maximum index: -
minimal value: 0
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: signed 32 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0124 "Standstill window" on the SR.

For a detailled description of S-0-0124 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1345 S153 spindle angle

maximum index: -
minimal value: -2147483648
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: signed 32 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0153 "Spindle angle position" on the SR.

For a detailled description of S-0-0153 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1346 S154 spindleposMode

maximum index: -
minimal value: 0
maximal value: 15
default value: 2
unit: no
passwordlevel: 2
read / write: R/W on
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0154 "Spindle positioning parameter" on the SR.

For a detailled description of S-0-0154 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1347 S157 speed window

maximum index: -
minimal value: 0
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: signed 32 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0157 "Velocity window" on the SR.

For a detailled description of S-0-0157 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1348 S222 position.speed

maximum index: -
minimal value: 0
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W on
type: signed 32 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0222 "Spindle positioning speed" on the SR.

For a detailled description of S-0-0222 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

parameter: P1349 S265 language sel.

maximum index: -
minimal value: 0
maximal value: 1
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 16 bit
function diagram: plan -

This parameter is used, in order to store the value of SERCOS-parameter S-0-0265 "Language selection" on the SR.

For a detailled description of S-0-0265 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

With SERCOS the value:

0 corresponds to the german language

1 corresponds to the english language

In RefuDrive there is the Parameter 10, where:

0 corresponds to the english language

1 corresponds to the german language

When writing S-0-0265 via SERCOS, the parameter P0010 is modified accordingly.

When writing parameters P10 (via Operator panel or RefuWin), the value of S-0-0265 (and also P1349) is not modified!

parameter: P1360 Sercos Max. speed

maximum index: 01
minimal value: 0
maximal value: 2147483647
default value: 0
unit: no
passwordlevel: 2
read / write: R/W off
type: unsigned 32 bit
function diagram: plan -

This parameter is used, in order to store the values of SERCOS-parameter P-0-2070 and P-1-2070 "RD500 Speed for standardization" on the SR.

For a detailled description of P-i-2070 please check the manual of the SERCOS-interface-board RZP01.1-S1.

This parameter can be modified with operator panel, RefuWin or another serial interface, although the usual way is by the SERCOS-master.

P1360.0 stores the value of P-0-2070

P1360.1 stores the value of P-1-2070

parameter: D1480 Control word3 Bit 0

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 0

parameter: D1481 Control word3 Bit 1

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 1

parameter: D1482 Control word3 Bit 2

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 2

parameter: D1483 Control word3 Bit 3

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 3

parameter: D1484 Control word3 Bit 4

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 4

parameter: D1485 Control word3 Bit 5

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	controlword 3, bit 5
	controlword 3, bit 6

parameter: D1486 Control word3 Bit 6

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no

passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 7

parameter: D1487 Control word3 Bit 7

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 8

parameter: D1488 Control word3 Bit 8

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 9

parameter: D1489 Control word3 Bit 9

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 10

parameter: D1490 Control word3 Bit10

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04 controlword 3, bit 11

parameter: D1491 Control word3 Bit11

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04 controlword 3, bit 12

parameter: D1492 Control word3 Bit12

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04 controlword 3, bit 13

parameter: D1493 Control word3 Bit13

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 14

parameter: D1494 Control word3 Bit14

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 14

parameter: D1495 Control word3 Bit15

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
controlword 3, bit 15

parameter: D1496 warning brake-Resis

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
The value of D1096 "modell of temperature, brake resistor" has exceeded the alarm threshold value P0079.

parameter: D1497 Fault brakeResistor

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

The value of D1096 "modell of temperature, brake resistor" has exceeded the fault threshold value 100%.

parameter: D1498 Fault DC-link low

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

statusbit Udc linc minimum

The bit will be "high", if the DC linc voltage will be smaller than the value, which is set in P094. An alarmcode 04 will be generated.

parameter: D1499 start protect.activ

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Start protection activ

This output is logical high, if the connection is cuted down between the two start protection terminals.

parameter: D1500 limit position s/p

maximum index: -
minimal value: 2147483.648
maximal value: 2147483.647
default value: -
unit: x
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan 27

Bipolar limit value for the position setpoint.

If the normalization of the position setpoint (P780..P784) equals a calcultefactor greater than 1.000 (see D1041), the setpoint will be limit the 32bit valuerange.

All position setpoints will be limited with the value, signed in D1500.

parameter: D1501 position-sp limited

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 27

Position setpoint limitation activ, actual presenting setpoint is greater than the limitvalue (D1500) or, using negative setpoints, smaller as (D1500 * -1).

parameter: D1502 position deviation

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 29

Difference between setpoint- and actualvalue, inputvalue of position comperator shows only the low word of the difference. If the value will be greater than +/- 32 767, D1502 will be limited here.

For recording the position controller via Refuwin oscilloskop-function, D1502 is usefully needed.

parameter: D1520 SC state

maximum index: -
minimal value: 0
maximal value: 27
default value: -
parameter value:
0 = phase 0
1 = phase 1
2 = phase 2
3 = phase 3
4 = phase 4 ready
5 = not defined 5
6 = not defined 6
7 = not defined 7
8 = not defined 8
9 = not defined 9
10 = not defined 10
11 = not defined 11
12 = not defined 12
13 = weak
14 = mid weak
15 = mid strong
16 = strong
17 = prefered telegr. 0
18 = prefered telegr. 1
19 = prefered telegr. 2
20 = prefered telegr. 3
21 = prefered telegr. 4
22 = prefered telegr. 5
23 = prefered telegr. 6
24 = configur. telegr.
25 = absolut no Trigger
26 = absol. pos. Trigger
27 = absol. gen. Trigger
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the actual SERCOS-Phase

parameter: D1521 SC cycle time S-002

maximum index: -
minimal value: 0.000
maximal value: 65.535
default value: -

unit: ms
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the value of SERCOS-parameter S-0-0002
Used for fault-diagnosis and for installation.

parameter: D1522 SC control word

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the value of SERCOS-parameter S-0-0134
Used for fault-diagnosis and for installation.

parameter: D1523 SC status word

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the value of SERCOS-parameter S-0-0135
Used for fault-diagnosis and for installation.

parameter: D1524 SC light intensity

maximum index: -
minimal value: 0
maximal value: 3
default value: -
parameter value:
0 = weak
1 = mid weak
2 = mid strong
3 = strong
unit: no

passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows the actual transmitted luminous-intensity.
Is set with DIP-switch S2 on optioncard.

parameter: D1531 SyncLink RxD active

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows, if the synchrolinkboard receives valid telegramms.

parameter: D1532 SyncLink synchroniz

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows, if the scanning time-synchronisation via the synchrolinkboard is in the valid range.

parameter: D1533 SyncLink RxD-fail

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Shows, if datatransmissionerrors of the synchrolinkboard will be detected.

parameter: D1534 encoder2 zeroPassed

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 52

Shows the status of the zeroreference-pulse from the optional encoder, connected to G1 or G3.

parameter: D1535 Brake res.available

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Displayparameter for the function, transistor for brakechopper is built-in

0 = None

1 = built-in

parameter: D1536 SSC: status bitmask

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Sequence processor: actual outputword P1266.n, n is signed the actual valid step (D1565).

parameter: D1537 SSC: status bit 0

maximum index: -
minimal value: 32768
maximal value: 32767

default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit0 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1538 SSC: status bit 1

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit1 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1539 SSC: status bit 2

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit2 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1540 SSC: status bit 3

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit

function diagram: plan 47
Sequence processor: actual outputword, bit3 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1541 SSC: status bit 4

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit4 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1542 SSC: status bit 5

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit5 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1543 SSC: status bit 6

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit6 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1544 SSC: status bit 7

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit7 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1545 SSC: status bit 8

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit8 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1546 SSC: status bit 9

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit9 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1547 SSC: status bit 10

maximum index: -
minimal value: 32768
maximal value: 32767

default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit10 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1548 SSC: status bit 11

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit11 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1549 SSC: status bit 12

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit12 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1550 SSC: status bit 13

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit

function diagram: plan 47
Sequence processor: actual outputword, bit13 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1551 SSC: status bit 14

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit14 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1552 SSC: status bit 15

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: actual outputword, bit15 (P1266.n).
N is signed the actual valid step (D1565).

parameter: D1553 SSC: transition A

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: step A is activ

parameter: D1554 SSC: transition B

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: step B is activ

parameter: D1555 SSC: transition C

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: step C is activ

parameter: D1556 SSC: transition D

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: step D is activ

parameter: D1557 SSC: modul 1 outp.1

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: output1, logicmodul 1

parameter: D1558 SSC: modul 1 outp.2

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: output2, logicmodul 1

parameter: D1559 SSC: modul 2 outp.1

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: output1, logicmodul 2

parameter: D1560 SSC: modul 2 outp.2

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: output2, logicmodul 2

parameter: D1561 SSC: modul 3 outp.1

maximum index: -

minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: output1, logicmodul 3

parameter: D1562 SSC: modul 3 outp.2

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: output2, logicmodul 3

parameter: D1563 SSC: Timer 1

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47
	Sequence processor: output, timermodul 1

parameter: D1564 SSC: Timer 2

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 47

Sequence processor: output, logicmodul 2

parameter: D1565 SSC: actual step

maximum index: -
minimal value: 32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 47
Sequence processor: display actually step number

parameter: D1567 position in toler.

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 29
Message "In Position"
Bit information of the position controller

parameter: D1568 posit. out of toler

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 29
Message "Position not reached"
Bit information of the position controller

parameter: D1569 word position mess.

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 29

Statusword "In Position"

In this word is only set 1bit, if the position controller ist setpoint position reached.

The bitposition is signed the actual setpoint.

For e.g.: bit5 is set => setpoint position 5 is reached
D1567 = 0 => No position is reached

parameter: D1570 position s/p number

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 27, 29

Pre-selected setpoint position number

parameter: D1571 PS control volt. ok

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

powerunit: control voltage available

This output is high, if the controlvoltage of the powerunit is available. It is used to supply the electric valves.

The controlvoltage will be optained from several sources:

line voltage, using AC devices

or extern DClink voltage

or intern DClink voltage

parameter: D1580 Logic gate 10

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 10

parameter: D1581 Logic gate 10 not

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 10

parameter: D1582 Logic gate 11

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 11

parameter: D1583 Logic gate 11 not

maximum index: -
minimal value: -32768
maximal value: 32767
default value: -

unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44 Inverted output, logic gate 11

parameter: D1584 Logic gate 12

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45 Direct output, logic gate 12

parameter: D1585 Logic gate 12 not

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45 Inverted output, logic gate 12

parameter: D1586 Logic gate 13

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45 Direct output, logic gate 13

parameter: D1587 Logic gate 13 not

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45
	Inverted output, logic gate 13

parameter: D1588 Logic gate 14

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45
	Direct output, logic gate 14

parameter: D1589 Logic gate 14 not

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45
	Inverted output, logic gate 14

parameter: D1590 Logic gate 15

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0

read / write:	Read
type:	signed 16 bit
function diagram:	plan 45
	Direct output, logic gate 15

parameter: D1591 Logic gate 15 not

maximum index:	-
minimal value:	-32768
maximal value:	32767
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 45
	Inverted output, logic gate 15

parameter: P1608 Init finished

maximum index:	-
minimal value:	0
maximal value:	1
default value:	0
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan -
	Initialization of SR is finished

parameter: D1610 Logic gate 0

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Direct output, logic gate 0

parameter: D1611 Logic gate 0 not

maximum index:	-

minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 0

parameter: D1612 Logic gate 1

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 1

parameter: D1613 Logic gate 1 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 1

parameter: D1614 Logic gate 2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44

Direct output, logic gate 2

parameter: D1615 Logic gate 2 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 2

parameter: D1616 Logic gate 3

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 3

parameter: D1617 Logic gate 3 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 3

parameter: D1618 Logic gate 4

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 4

parameter: D1619 Logic gate 4 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 4

parameter: D1620 Timer 0

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 46
Direct output timer 0

parameter: D1621 Timer 0 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 46
Inverted output timer 0

parameter: D1622 Timer 1

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 46
	Direct output timer 1

parameter: D1623 Timer 1 not

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 46
	Inverted output timer 1

parameter: D1624 Timer 2

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 46
	Direct output timer 2

parameter: D1625 Timer 2 not

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 46
Indirect output timer 2

parameter: D1626 Timer 3

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 46
Direct output timer 3

parameter: D1627 Timer 3 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 46
Indirect output timer 3

parameter: D1642 fixvalue P582.00

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0582.0

parameter: D1643 fixvalue P582.01

maximum index: -

minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0582.1

parameter: D1645 EncoderAdjust ready

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Resolver adjustment has been completed for a logical one

parameter: D1650 Logic gate 5

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 5

parameter: D1651 Logic gate 5 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44

Inverted output, logic gate 5

parameter: D1652 Logic gate 6

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 6

parameter: D1653 Logic gate 6 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Inverted output, logic gate 6

parameter: D1654 Logic gate 7

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 44
Direct output, logic gate 7

parameter: D1655 Logic gate 7 not

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Inverted output, logic gate 7

parameter: D1656 Logic gate 8

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Direct output, logic gate 8

parameter: D1657 Logic gate 8 not

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Inverted output, logic gate 8

parameter: D1658 Logic gate 9

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Direct output, logic gate 9

parameter: D1659 Logic gate 9 not

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 44
	Inverted output, logic gate 9

parameter: D1660 Control word1 Bit0

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 02, 20, 33
	Control word bit 0 on, for logical one.

parameter: D1661 Control word1 Bit1

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 02
	Control word bit 1 voltage disconnect, for logical zero

parameter: D1662 Control word1 Bit2

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 20, 21, 24
Control word bit 2 fast stop, for logical zero

parameter: D1663 Control word1 Bit3

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 23, 33
Control word bit 3 operating enable, for logical zero

parameter: D1664 Control word1 Bit4

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 21
Control word bit 4 ramp-function generator reset, for logical zero

parameter: D1665 Control word1 Bit5

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 21
Control word bit 5 ramp-function generator stop, for logical zero

parameter: D1666 Control word1 Bit6

maximum index: -

minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 20
Control word bit 6 setpoint enable

parameter: D1667 Control word1 Bit7

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02
Control word bit 7 fault acknowledgment

parameter: D1668 Operating & [P89]

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 33
Operation & P0089

parameter: D1669 ON Command OR [P90]

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 33

Command ON OR P0090

parameter: D1672 Parameterset

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 05
Active parameter set

parameter: D1673 coder output

maximum index: -
minimal value: 0
maximal value: 15
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 27
Output 4bit coder (valuerange 0..15)

parameter: D1680 Control word2 Bit 0

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 0 on, for logical one.

parameter: D1681 Control word2 Bit 1

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 1 voltage disconnect, for logical zero

parameter: D1682 Control word2 Bit 2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 Bit 2 fast stop, for logical zero

parameter: D1683 Control word2 Bit 3

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 3 operating enable, for logical zero

parameter: D1684 Control word2 Bit 4

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 4 ramp-function generator reset, for logical zero

parameter: D1685 Control word2 Bit 5

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 5 ramp-function generator stop, for logical zero

parameter: D1686 Control word2 Bit 6

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 6 setpoint enable

parameter: D1687 Control word2 Bit 7

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 7 fault acknowledgment

parameter: D1688 Control word2 Bit 8

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0

read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 8 user-specific defined

parameter: D1689 Control word2 Bit 9

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 9 user-specific defined

parameter: D1690 Control word2 Bit10

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 10 user-specific defined

parameter: D1691 Control word2 Bit11

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 11 user-specific defined

parameter: D1692 Control word2 Bit12

maximum index: -

minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 12 user-specific defined

parameter: D1693 Control word2 Bit13

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 13 user-specific defined

parameter: D1694 Control word2 Bit14

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04
Control word 2 bit 14 user-specific defined

parameter: D1695 Control word2 Bit15

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 04

Control word 2 bit 15 user-specific defined

parameter: D1696 Encoder index pulse

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 14, 15, 16, 28
Zero pulse, incremental encoder
Zero pulse from the incremental encoder identified for logical one.

parameter: D1697 MechanicalBrakeOpen

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 33
Mechanical brake is released
The mechanical brake is opened for a logical one.

parameter: D1698 I*t protection ON

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 25, 26
I*t protection active
I*t protective function active for logical one

parameter: D1699 Current ctrl limit

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 23, 25, 26
	I regulator at its limit
	I regulator at its limit for logical one

parameter: D1700 Constant logic 0

maximum index:	-
minimal value:	0
maximal value:	0
default value:	0
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 02, 06, 33
	Constant, logical zero

parameter: D1701 Constant logic 1

maximum index:	-
minimal value:	1
maximal value:	1
default value:	1
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 02, 06, 20, 21, 22, 23, 27, 28, 31, 33, 42
	Constant, logical one

parameter: D1702 SC limiting

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no

passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 23
n regulator is limited for logical one

parameter: D1703 Torque limiting

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 23, 24
M limiting for logical one

parameter: D1704 RFG active up

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 21
The ramp-function generator ramps up, for logical one.

parameter: D1705 RFG active down

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 21
The ramp-function generator ramps-down, for logical one.

parameter: D1706 RFG s/p reached

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 21

The ramp-function generator has reached the setpoint, for logical one.

parameter: D1707 Alarm motor temp.

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 30

Alarm, motor temperature, for logical one.

parameter: D1708 Fault motor temp.

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 30

Fault, motor temperature, for logical one.

parameter: D1709 N actual < Nmin

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0

read / write: Read
type: unsigned 16 bit
function diagram: plan 07, 19
Actual speed less than n-min, for logical one

parameter: D1710 N actual < Nx

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 19
Actual speed less than n-x, for logical one

parameter: D1711 Overspeed

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 19
Overspeed, for logical one

parameter: D1712 comp: x1 > xs1

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Output x > xs , comparator 0
This output is logical one if the measured value x is greater than the threshold value xs.

parameter: D1713 comp: x2 > xs2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Output x > xs, comparator 1
This output is logical one if the measured value x is greater than the threshold value xs.

parameter: D1714 Digital Input 1

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 1
24V = logical one

parameter: D1715 Digital Input 2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 2
24V = logical one

parameter: D1716 Digital Input 3

maximum index: -
minimal value: 0
maximal value: 1

default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 3
24V = logical one

parameter: D1717 Digital Input 4

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 07
Digital input 4
24V = logical one

parameter: D1718 Digital Input 5

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02, 07
Digital input 5
24V = logical one

parameter: D1722 Digital Output 1

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit

function diagram: plan 07
Digital output 1
logical one = 24V.

parameter: D1723 Digital Output 2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital output 2
logical one = 24V.

parameter: D1724 Digital Output 3

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital output 3
logical one = 24V.

parameter: D1725 Relay Output

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Relay output
logical one = relay has pulled-in.

parameter: D1727 RFG stop

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 21
	Ramp-function generator, ramp-up hold is active, for logical one.

parameter: D1728 RFG reset

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 21
	Ramp-function generator reset is active, for logical one..

parameter: D1729 S/P limiter active

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 21, 22
	The setpoint limiter is active, for logical one.

parameter: D1730 Status ready

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 03, 07
	Status word bit 0 ready

parameter: D1731 Status ON

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 03
	Status word bit 1 on

parameter: D1732 Status operation

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 03, 05, 07, 20, 21, 23, 33
	Status word bit 2 run

parameter: D1733 Status fault

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 03
	Status word bit 3 fault

parameter: D1734 Status not Off2

maximum index:	-

minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 4 not off 2

parameter: D1735 Status not faststop

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 5 not off 3, fast stop

parameter: D1736 Status inhibit

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 6 power-on inhibit

parameter: D1737 Status alarm

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03

Status word bit 7 alarm

parameter: D1738 Statusword 1 bit 8

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 8

parameter: D1739 Statusword 1 bit 9

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 9

parameter: D1740 Statusword 1 bit 10

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 10

parameter: D1741 Statusword 1 bit 11

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 11

parameter: D1742 Statusword 1 bit 12

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 12

parameter: D1743 Statusword 1 bit 13

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 13

parameter: D1744 Statusword 1 Bit 14

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03
Status word bit 14

parameter: D1745 Statusword 1 Bit 15

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 03
	Status word bit 15

parameter: D1746 Actual speed > Nmin

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 19, 33
	Actual speed greater than n-min, for logical one

parameter: D1747 Actual speed > Nx

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 19
	Actual speed greater than n-x, for logical one

parameter: D1748 Comp: x1 < xs1

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Inverted output x < xs comparator 0
This output is a logical one if measured value x is less than the threshold value xs.

parameter: D1749 Comp: x2 < xs2

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Inverted output x < xs comparator 1
This output is a logical one if measured value x is less than the threshold value xs.

parameter: D1750 T-controller limit

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 35
The technology regulator is at its limit, for logical one.

parameter: D1751 Limiter 1 active

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 38
Limiter 1 is active, for logical one.

parameter: D1752 Limiter 2 active

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 36
	Limiter 2 is active, for logical one.

parameter: D1753 Limiter 3 active

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 31
	Limiter 3 is active, for logical one.

parameter: D1754 EXOR-Gate

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 45
	Output, EXOR gates

parameter: D1755 Motor rotation ccw

maximum index:	-
minimal value:	0
maximal value:	1
default value:	-
unit:	no
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan 23, 24
Left-hand-rotation is selected for logical one

parameter: D1756 Flux o.k.

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 21, 23, 25, 33
The flux in the motor has been established for logical one

parameter: D1757 Comp: x0 < xs0

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Output x < xs comparator with subtraction element
This output is logical one if the measured value x is less than the threshold value xs.

parameter: D1758 Comp: x0 > xs0

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 43
Inverted output x > xs comparator with subtraction element
This output is logical one if the measured value x is greater than the threshold value xs.

parameter: D1759 Friction test end

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 31
The friction characteristic plot has been completed.

parameter: D1760 Digital In1 inverse

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 1 inverted
24V = logical zero

parameter: D1761 Digital In2 inverse

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 2 inverted
24V = logical zero

parameter: D1762 Digital In3 inverse

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 3 inverted
24V = logical zero

parameter: D1763 Digital In4 inverse

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 4 inverted
24V = logical zero

parameter: D1764 Digital In5 inverse

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 07
Digital input 5 inverted
24V = logical zero

parameter: D1768 Controlword 1 bit 8

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Control word 1 bit 8

parameter: D1769 Controlword 1 bit 9

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 9

parameter: D1770 Controlword 1 bit10

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 10

parameter: D1771 Controlword 1 bit11

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 11

parameter: D1772 Controlword 1 bit12

maximum index: -
minimal value: 0
maximal value: 1
default value: -

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 12

parameter: D1773 Controlword 1 bit13

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 13

parameter: D1774 Controlword 1 bit14

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 14

parameter: D1775 Controlword 1 bit15

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Control word 1 bit 15

parameter: D1780 Index pulse passed

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 28
Zero pulse from incremental encoder1 identified for logical one

parameter: D1781 RFG parking

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 21
Display-parameter of the function, input RFG-generator parking.

parameter: D1783 fault signal LT

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Display-parameter of the function, fault power unit.

parameter: D1784 Offset PC adjusted

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0

read / write: Read
type: unsigned 16 bit
function diagram: plan 29
Offset position regulator is set for logical one

parameter: D1785 ASS active

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Slip- or slide protection is active for logical one

parameter: D1786 ASS sliding

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Slip protection is active for logical one

parameter: D1787 ASS slipping

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Slide protection is active for logical one

parameter: D1788 Main contactor ctrl

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Main contactor control is active for logical one

parameter: D1789 Main contactor On

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Message "Main conactor on" active for logical one

parameter: D1790 Brake resistor ON

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Brake resistor control is active for logical one

parameter: D1791 Pre-charging ON

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0

read / write: Read
type: unsigned 16 bit
function diagram: plan -
Pre-charging relay control is active for logical one

parameter: D1793 Fault code

maximum index: -
minimal value: 0
maximal value: 511
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Code number of the actual fault

parameter: D1794 Alarm bits

maximum index: -
minimal value: 00000000
maximal value: FFFFFFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan -
Alarm bits

parameter: D1795 Fault bits

maximum index: 03
minimal value: 00000000
maximal value: FFFFFFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan -
Fault bits

parameter: P1796 St. PU:S 1P W21P

maximum index: -
minimal value: 00000000
maximal value: 10111111
default value: 00000000
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Power unit control

parameter: D1797 Outp. fan control

maximum index: -
minimal value: 0
maximal value: 1
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Display-parameter of the function, output "fan" is activ.

parameter: P1798 DO Rel321

maximum index: -
minimal value: 00000000
maximal value: 00001111
default value: 00000000
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Status of the digital outputs and the relay output
The status (condition 0 or 1) of the 3 digital outputs and the relay outputs can be simultaneously displayed on the operator panel monitor using the group display parameter D1798.

parameter: P1799 DI 5 43231

maximum index: -
minimal value: 00000000
maximal value: 00011111
default value: 00000000

unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -

Group display parameter

The status (condition 0 or 1) of all digital inputs can be simultaneously displayed on the operator panel monitor using the group display parameter D1799.

parameter: D1800 Fixvalue 0.00%

maximum index: -
minimal value: 0.00
maximal value: 0.00
default value: 0.00
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06

Process constant 0.00%

parameter: D1801 Analog input 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 08, 20

Analog input

parameter: D1802 Output block 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 09

Output from input block2

parameter: D1803 Output block 3

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 09
Output from input block3

parameter: D1804 Output block 4

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 09, 10
Output from input block4

parameter: D1805 opt.1 analog input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Analoginput optioncard 1

parameter: D1806 opt.2 analog input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 50
Analoginput optioncard 2

parameter: D1807 Analog inp.1 direct

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 08
Analoginput1 direct

parameter: D1808 TC PT1-Modul 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38
Output from filter element 0

parameter: D1809 TC PT1-Modul 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38
Output from filter element 1

parameter: D1810 Limiter 1 o/p

maximum index: -

minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38
Output from limiter 1

parameter: D1811 Gain-Modul

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38
Output from the P element before the offset input

parameter: D1812 Gain-Modul+Offset

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38
Output from the P element after the offset input.

parameter: D1813 Changeover switch 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38

Output from process channel changeover switch 0.

parameter: D1814 Changeover switch 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 38

Output from process channel changeover switch 1.

parameter: D1815 TC normalization

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35

Normalization value of the technology regulator.

parameter: D1816 TC actual value

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35

Input from the DT1 element.

parameter: D1817 TC actual value+TD

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -

unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35
Output from the DT1 element.

parameter: D1818 TC error signal

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35
Control error of the technology regulator.

parameter: D1819 TC setpoint

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35
Setpoint of the technology regulator.

parameter: D1820 TC output

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35
Output of the technology regulator before the normalization position.

parameter: D1821 TC o/p normalized

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35

Output of the technology regulator after the normalization position.

parameter: D1822 TC o/p norm + s/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 35

Addition result from the technology regulator setpoint and the technology regulator output.

parameter: D1823 S/P integrator

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 41

Output, integral memory

parameter: D1824 Free characteristic

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 40
Output, free characteristic

parameter: D1825 Additional s/p 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22
Supplementary setpoint 1 after the selector switch (P0251) for variable value or fixed value for supplementary setpoint 1.

parameter: D1826 Factor add. s/p 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22
Supplementary setpoint 2 after the selector switch (P0261) for variable value or fixed value for supplementary setpoint 2.

parameter: D1827 Additional s/p 3

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22
Supplementary setpoint 3 after the selector switch (P0257) for variable value or fixed value for supplementary setpoint 3.

parameter: D1828 Additional s/p 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22

Factor, supplementary setpoint 2 after the selector switch (P0254) for a variable value or fixed value for multiplication by supplementary setpoint 2.

parameter: D1829 Speed s/p delta v

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22

Result from multiplying supplementary setpoint 2 by the selected factor.

parameter: D1830 Setpoint sum o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22

Sum of the supplementary setpoints 1, 2 and 3

parameter: D1831 Multiplier

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %

passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 36
Output, multiplier element

parameter: D1832 Main setpoint

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 20
Main setpoint after the selector switch (P0264) for variable value or fixed values of the main setpoint.

parameter: D1833 Ramp generator i/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 20, 21
Input, ramp-function generator

parameter: D1834 Ramp generator o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 21, 22
Output, ramp-function generator

parameter: D1835 Rampgenerator dv/dt

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 21
	Output, ramp-function generator dv/dt

parameter: D1836 Limiter 2 o/p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 36
	Output, limiter2

parameter: D1837 Multiply/divide

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 36
	Output, multiplier-, divider module

parameter: D1838 Additional s/p 4

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 22

Supplementary setpoint 4 after the selector switch (P0301) for variable value or fixed value for supplementary setpoint 4.

parameter: D1839 Setpoint limit i/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22

Setpoint before slip compensation.

parameter: D1840 Setpoint limit o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 22, 23

nset, input n regulator

parameter: D1841 Notch-filter o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 19

Output, bandpass module

parameter: D1842 Friction compens'n

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 31

parameter: D1843 Inertia compens'n

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 31 Output, inertia compensation

parameter: D1844 Limiter 3 o/p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 31 Output, limiter 3

parameter: D1845 Sum add. torque s/p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read

type: signed 16 bit
function diagram: plan 31
Sum, Mset supplementary

parameter: D1846 AC error signal

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 34
Control error, supplementary regulator

parameter: D1847 Adaption SC gain

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator adaptation, Kp

parameter: D1848 SC gain

maximum index: -
minimal value: -128.0
maximal value: 128.0
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator Kp actual

parameter: D1849 SC integral time

maximum index:	-
minimal value:	32768
maximal value:	32767
default value:	-
unit:	ms
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 23 n regulator Tn actual

parameter: D1850 SC speed demand

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 23, 26 n regulator setpoint

parameter: D1851 SC feedback

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 09, 11, 12, 21, 23, 31, 48, 49 n regulator actual value

parameter: D1852 SC error signal

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator control error

parameter: D1853 SC droop

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator pre-control

parameter: D1854 SC output

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23, 24
n regulator output

parameter: D1855 SC symmetr. limit

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator symmetrical limit

parameter: D1856 SC droop input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
n regulator supplementary input

parameter: D1857 Aux.Controller o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 34
Supplementary regulator output

parameter: D1858 Additional T s/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 24
Mset supplementary

parameter: D1859 Torque limiter o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 24
Mset after limiting

parameter: D1860 Fixvalue P435.00

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0435.0.

parameter: D1861 Fixvalue P435.01

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0435.1.

parameter: D1862 Mul/Inv. Modul 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 37
Output, multiplier element1 with sign reversal

parameter: D1863 Mul/Inv. Modul 2

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 37
	Output, multiplier element2 with sign reversal

parameter: D1864 Mul/Add. Modul 3

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 37
	Output, multiplier element3 with addition

parameter: D1865 Torque limiter i/p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 24
	Mset before limiting

parameter: D1866 Torque demand

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 24
Mset

parameter: D1867 Current s/p Isq*

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06, 24, 25
Current setpoint Isq

parameter: D1868 Torque limit 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06, 24
Torque limit1

parameter: D1869 Torque limit 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06, 24
Torque limit2

parameter: D1870 Heat sink temp.

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	°C
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 30

Actual temperature of the power unit heatsink.

parameter: D1871 Motor temp. sensor

maximum index:	-
minimal value:	0
maximal value:	10000
default value:	-
unit:	Ohm
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 30

Actual resistance of the connected motor temperature sensor.

parameter: D1872 Motor temp. linear

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	°C
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 30

Actual temperature of the motor with the connected and selected KTY temperature sensor.

parameter: D1873 Speed feedback 1

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 19, 23

Motor actual frequency, measured with an encoder, normalized as % with [P0390].

parameter: D1874 Motor current

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

Actual output summed current of the drive, normalized in P0374.

parameter: D1877 motor temp normal.

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 30

Motor temperature compensation

Application: D1877 can be used for compensation the torque constant of a connected synchronous motor. In this case D1877 should be connected to P0687.

parameter: D1878 isd setpoint

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

isd current reference value after limiter before current controller.

isd means the field-building current component.

parameter: D1879 isq setpoint

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

isq current reference value after limiter before current controller

isq means the torque-building current component.

parameter: D1880 setpoint queue

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 20

Output of the reference switchchain before ramp-function-generator

parameter: D1882 Isq actual value

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25

Actual current actual value of the torque-generating current Isq, normalized in P0374.

parameter: D1883 Isd actual value

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %

passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
Actual current actual value of the field-generating current Isd, normalized in P0374.

parameter: D1884 Isd external s/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 25
isd current reference value before limiter

parameter: D1888 Dancing roller i/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 32
Input, dancer roll block

parameter: D1889 Dancing roller o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 32
Output, dancer roll block

parameter: D1890 Mechanical angle

maximum index:	-
minimal value:	-200.00000
maximal value:	199.99999
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 32 bit
function diagram:	plan 13, 14, 15, 16, 17, 18, 19, 28
	Actual angle, incremental encoder sensing; normalized at one shaft rotation.

parameter: D1891 Danc_roller upper p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 32
	Dancer roll block, upper value

parameter: D1892 Danc_roller lower p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 32
	Dancer roll block, lower value

parameter: D1893 MFB 1 Output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write:	Read
type:	signed 16 bit
function diagram:	plan 39
	Output from the multi-function block1

parameter: D1894 MFB 2 Output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 39
	Output from the multi-function block2

parameter: D1895 MFB 3 Output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 39
	Output from the multi-function block3

parameter: D1896 MFB 4 Output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 39
	Output from the multi-function block4

parameter: D1897 Absolute speed sig.

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 19
Ammount of n act

parameter: D1898 [P406] - [P407]

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 43
Result of subtraction [P0406] - [P0407].

parameter: D1900 SI1: PZD1 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11
Actual received value from process data PZD1 of interface SI1.

parameter: D1901 SI1: PZD2 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 11
Actual received value from process data PZD2 of interface SI1.

parameter: D1902 SI1: PZD3 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11
Actual received value from process data PZD3 of interface SI1.

parameter: D1903 SI1: PZD4 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11
Actual received value from process data PZD4 of interface SI1.

parameter: D1904 SI1: PZD5 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11
Actual received value from process data PZD5 of interface SI1.

parameter: D1905 SI1: PZD6 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11

Actual received value from process data PZD6 of interface SI1.

parameter: D1910 SI2: PZD1 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD1 of interface SI2.

parameter: D1911 SI2: PZD2 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD2 of interface SI2.

parameter: D1912 SI2: PZD3 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 48
Actual received value from process data PZD3 of interface SI2.

parameter: D1913 SI2: PZD4 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48
Actual received value from process data PZD4 of interface SI2.

parameter: D1914 SI2: PZD5 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48
Actual received value from process data PZD5 of interfaceSI2.

parameter: D1915 SI2: PZD6 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48
Actual received value from process data PZD6 of interface SI2.

parameter: D1916 SI2: PZD7 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD7 of interface SI2.

parameter: D1917 SI2: PZD8 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD8 of interface SI2.

parameter: D1918 SI2: PZD9 -input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD9 of interface SI2.

parameter: D1919 SI2: PZD10-input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 48

Actual received value from process data PZD10 of interface SI2.

parameter: D1920 Control word 1

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02

The drive is controlled using the control word.

The control word consists of 16 bits. Bits 0 to 7 are defined according to VDI guidelines (German regulatory body). Bits 8 to 15 can only be set by the serial interface, and each bit can be freely assigned a drive control function. The control word is formed by logically combining control word KL and control word MS. Control word MS can be specified from three sources, which are selected via a switch.

The switch is toggled using parameter P0073.x.

Switch setting 0:

The control word MS is formed from the mask control word HE, in which bits 2 to 15 are permanently specified.

Only bit 1 can be set using the handheld terminal HE51 or the operator panel BF51 to 1 (ON command) or 0 (OFF1 command).

Switch setting 1:

The control word MS comes from a variable parameter source.

Only process data of serial interfaces 1 and 2 can be used in the parameter source. This means, that control word MS is entered via the interface. In this configuration, bits 8 to 15 can also be set by the serial interface, and each bit can be freely assigned a drive control function.

These become effective in the drive by connecting parameters D1768 to D1775.

Switch setting 2:

The control word MS is formed with a mask, in which bits 1 to 15 are permanently specified. The mask is assigned, so that the drive is only controlled via control word KL.

Switch setting 3:

The control word MS is entered from the service interface (RS232). In this configuration, bits 8 to 15 can also be set via the service interface, and each bit can be freely assigned a drive control function. These become active in the drive by connecting parameters D1768 to D1775.

Bits 0 to 7 of control word KL are specified from the variable parameter sources P0050 to P0057.

The bits of control word KL are set to 1 or 0 via the digital inputs by connecting the digital inputs 1 to 8 in these parameter sources.

Bit 1 (On command) and bit 7 (fault acknowledgment) are only identified by the drive when an edge changes from 0 to 1.

parameter: D1921 SI Control word

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02

The drive is controlled using the control word.

The control word consists of 16 bits. Bits 0 to 7 are defined according to VDI guidelines (German regulatory body). Bits 8 to 15 can only be set by the serial interface, and each bit can be freely assigned a drive control function. The control word is formed by logically combining control word KL and control word MS. Control word MS can be specified from three sources, which are selected via a switch.

The switch is toggled using parameter P0073.x.

Switch setting 0:

The control word MS is formed from the mask control word HE, in which bits 2 to 15 are permanently specified. Only bit 1 can be set using the handheld terminal HE51 or the operator panel BF51 to 1 (ON command) or 0 (OFF1 command).

Switch setting 1:

The control word MS comes from a variable parameter source. Only process data of serial interfaces 1 and 2 can be used in the parameter source. This means, that control word MS is entered via the interface. In this configuration, bits 8 to 15 can also be set by the serial interface, and each bit can be freely assigned a drive control function. These become effective in the drive by connecting parameters D1768 to D1775.

Switch setting 2:

The control word MS is formed with a mask, in which bits 1 to 15 are permanently specified. The mask is assigned, so that the drive is only controlled via control word KL.

Switch setting 3:

The control word MS is entered from the service interface (RS232). In this configuration, bits 8 to 15 can also be set via the service interface, and each bit can be freely assigned a drive

control function. These become active in the drive by connecting parameters D1768 to D1775.

Bits 0 to 7 of control word KL are specified from the variable parameter sources P0050 to P0057.

The bits of control word KL are set to 1 or 0 via the digital inputs by connecting the digital inputs 1 to 8 in these parameter sources.

Bit 1 (On command) and bit 7 (fault acknowledgment) are only identified by the drive when an edge changes from 0 to 1.

parameter: D1922 Status word 1

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 03, 11, 12, 48, 49

The drive is controlled using the control word.

The control word consists of 16 bits. Bits 0 to 7 are defined according to VDI guidelines (German regulatory body). Bits 8 to 15 can only be set by the serial interface, and each bit can be freely assigned a drive control function. The control word is formed by logically combining control word KL and control word MS. Control word MS can be specified from three sources, which are selected via a switch.

The switch is toggled using parameter P0073.x.

Switch setting 0:

The control word MS is formed from the mask control word HE, in which bits 2 to 15 are permanently specified. Only bit 1 can be set using the handheld terminal HE51 or the operator panel BF51 to 1 (ON command) or 0 (OFF1 command).

Switch setting 1:

The control word MS comes from a variable parameter source. Only process data of serial interfaces 1 and 2 can be used in the parameter source. This means, that control word MS is entered via the interface. In this configuration, bits 8 to 15 can also be set by the serial interface, and each bit can be freely assigned a drive control function. These become effective in the drive by connecting parameters D1768 to D1775.

Switch setting 2:

The control word MS is formed with a mask, in which bits 1 to 15 are permanently specified. The mask is assigned, so that the drive is only controlled via control word KL.

Switch setting 3:

The control word MS is entered from the service interface (RS232). In this configuration, bits 8 to 15 can also be set via the service interface, and each bit can be freely assigned a drive control function. These become active in the drive by connecting parameters D1768 to D1775.

Bits 0 to 7 of control word KL are specified from the variable parameter sources P0050 to P0057.

The bits of control word KL are set to 1 or 0 via the digital inputs by connecting the digital inputs 1 to 8 in these parameter sources.

Bit 1 (On command) and bit 7 (fault acknowledgment) are only identified by the drive when an edge changes from 0 to 1.

parameter: D1923 Control word 2

maximum index:	-
minimal value:	0000
maximal value:	FFFF
default value:	-
unit:	hex
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	Control word2

parameter: D1924 Status word 2

maximum index:	-
minimal value:	0000
maximal value:	FFFF
default value:	-
unit:	hex
passwordlevel:	0
read / write:	Read
type:	unsigned 16 bit
function diagram:	plan 04
	Status word2

parameter: D1925 Heat-sink/ motor

maximum index:	-
minimal value:	0000
maximal value:	FFFF
default value:	-
unit:	hex
passwordlevel:	0

read / write: Read
type: unsigned 16 bit
function diagram: plan -
Cooler temperature and motor temperature

parameter: D1926 Current/Status

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan -
Current actual value and status word

parameter: D1927 Control word KL

maximum index: -
minimal value: 0000
maximal value: FFFF
default value: -
unit: hex
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 02

The drive is controlled using the control word.

The control word consists of 16 bits. Bits 0 to 7 are defined according to VDI guidelines (German regulatory body). Bits 8 to 15 can only be set by the serial interface, and each bit can be freely assigned a drive control function. The control word is formed by logically combining control word KL and control word MS. Control word MS can be specified from three sources, which are selected via a switch.

The switch is toggled using parameter P0073.x.

Switch setting 0:

The control word MS is formed from the mask control word HE, in which bits 2 to 15 are permanently specified. Only bit 1 can be set using the handheld terminal HE51 or the operator panel BF51 to 1 (ON command) or 0 (OFF1 command).

Switch setting 1:

The control word MS comes from a variable parameter source. Only process data of serial interfaces 1 and 2 can be used in the parameter source. This means, that control word MS is entered via the interface. In this configuration, bits 8 to 15 can also be set by the serial interface, and each bit can be freely assigned a drive

control function. These become effective in the drive by connecting parameters D1768 to D1775.

Switch setting 2:

The control word MS is formed with a mask, in which bits 1 to 15 are permanently specified. The mask is assigned, so that the drive is only controlled via control word KL.

Switch setting 3:

The control word MS is entered from the service interface (RS232). In this configuration, bits 8 to 15 can also be set via the service interface, and each bit can be freely assigned a drive control function. These become active in the drive by connecting parameters D1768 to D1775.

Bits 0 to 7 of control word KL are specified from the variable parameter sources P0050 to P0057.

The bits of control word KL are set to 1 or 0 via the digital inputs by connecting the digital inputs 1 to 8 in these parameter sources.

Bit 1 (On command) and bit 7 (fault acknowledgment) are only identified by the drive when an edge changes from 0 to 1.

parameter: D1928 DC link voltage

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 25, 26
	Actual DC link voltage V DC link

parameter: D1961 S/C-o/p sample&hold

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 23
	Outputs of the sample & hold module at the speed regulator output.

parameter: D1962 Actual I*t-Limit

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 25, 26
	Actual current limit of the drive - Ixt protection

parameter: D1967 Fixvalue P435.02

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan -
	Fixed value, which can be specified via parameter P0435.2.

parameter: D1968 Fixvalue P435.03

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 06
	Fixed value, which can be specified via parameter P0435.3.

parameter: D1969 Fixvalue P435.04

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0

read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be specified via parameter P0435.4.

parameter: D1970 Variable drp factor

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 23
Variable droop factor

parameter: D1971 Torque s/p+add.1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 24
Sum of Mset & Mset supplementary

parameter: D1972 Position s/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Position reference value for incremental encoder sensing

parameter: D1977 Multiplier o/p

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 36
Output, multiplier element

parameter: D1985 Encoder2 angle

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 52
Angle, raw value from incremental encoder2 sensing (optionG1/G3)

parameter: D1986 Encoder2 angle+offs

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 52
Angle of incremental encoder2 sensing between reference (optionG1/G3)

parameter: D1987 Speed feedback 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0

read / write: Read
type: signed 16 bit
function diagram: plan 52
n-act2

parameter: D1988 Output mul/div 1

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 28
Output, numerator-, denominator module1

parameter: D1989 PC error-signal

maximum index: -
minimal value: -0.00305
maximal value: 0.00305
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan -
Position regulator, control error, raw value

parameter: D1990 PC error-sig.corr.

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 29
Position regulator, control error, after position adjustment and filter time

parameter: D1991 Pos.Controller o/p

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan 29 Output, position regulator

parameter: D1992 ASS RFG1-output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan - Slip- & slide protection Output, ramp-function generator1

parameter: D1993 ASS RFG2-output

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-
unit:	%
passwordlevel:	0
read / write:	Read
type:	signed 16 bit
function diagram:	plan - Slip- & slide protection Output, ramp-function generator2

parameter: D1994 ASS selected dn

maximum index:	-
minimal value:	-200.00
maximal value:	199.99
default value:	-

unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Slip- & slide protection
dn selection

parameter: D1995 ASS Mset filter

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Slip- & slide protection
Mset pt1

parameter: D1996 ASS nact / dt

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Slip- & slide protection
n act dt1

parameter: D1997 ASS mset - n/dt

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -

Slip- & slide protection
Mset- n/dt

parameter: D1998 Mains voltage

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan -
Actual line supply voltage

parameter: D1999 Output mul/div 2

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 28
Output, numerator-, denominator module2

parameter: D2000 Fixvalue 100.00%

maximum index: -
minimal value: 100.00
maximal value: 100.00
default value: 100.00
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06, 24, 25
Process constant +100.00%

parameter: D2001 Fixvalue-100.00%

maximum index: -
minimal value: -100.00
maximal value: -100.00

default value: -100.00
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Process constant -100.00%

parameter: D2004 Fixvalue P435.05

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0435.5.

parameter: D2005 Fixvalue P435.06

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0435.6.

parameter: D2008 Fixvalue P435.07

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06
Fixed value, which can be entered via parameter P0435.7.

parameter: D2009 Fixvalue P435.08

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 06

Fixed value, which can be entered via parameter P0435.8.

parameter: D2012 position setpoint

maximum index: -
minimal value: 0
maximal value: 4294967295
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan 27

Actual selected position setpoint (32bit) in internal unit.

Typical used for connection with 32bit sourceparameter for e.g. the position regulator input (P0647 ... P0649). If a 16bit sourceparameter is connected, only the high-word will be transmitted. For transmission the value via interface (PZD-channel) it is necessary to need 2 PZD-channels.

For e.g.: 1. channel D2012 (high-word)
2. channel D2013 (low-word)

parameter: D2013 position s/p LoWord

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 27

Lo Word (least significant part) of actual selected position setpoint (D2012) in internal unit.

parameter: D2014 act. position norm.

maximum index: -
minimal value: 0
maximal value: 4294967295
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 32 bit
function diagram: plan 28

Actual position (32bit) in internal unit.

Typical used for connection with 32bit sourceparameter for e.g. the position regulator input (P0647 ... P0649). If a 16bit sourceparameter is connected, only the high-word will be transmitted. For transmission the value via interface (PZD-channel) it is necessary to need 2 PZD-channels.

For e.g.: 1. channel D2012 (high-word)
2. channel D2013 (low-word)

parameter: D2015 act.position LoWord

maximum index: -
minimal value: 0
maximal value: 65535
default value: -
unit: no
passwordlevel: 0
read / write: Read
type: unsigned 16 bit
function diagram: plan 28

Lo Word (least significant part) actual position (D2014) in internal unit.

parameter: D2016 16->32bit Converter

maximum index: -
minimal value: -0.00305
maximal value: 0.00305
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 27

32bit Output of 16bit=>32bit Converter

Typical used for connection with 32bit sourceparameter for e.g. the position regulator input (P0647 ... P0649).

Application: To transmit a 32bit value via a interface in 2 PZD-channels. It must be further connected to a 32bit sourceparameter.

parameter: D2017 angle adjust module

maximum index: -
minimal value: -200.00000
maximal value: 199.99999
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 32 bit
function diagram: plan 28

angle-adjust-modul:

Output angle adjust.

Application: For use as a self-synchronous system via a synchrolink connection, the angle setpoint value have to correct with the time-# delay of the transmission-time. The Output of the modul D2017 can supplied to the position controller.

parameter: D2029 Heat sink temperat.

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: °C
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 30

Actual temperature at the rectifier heatsink.

parameter: D2030 Service PZD1-input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 02, 11

Actually received value from the process data PZD1 of service interface RS232.

parameter: D2031 Service PZD2-input

maximum index: -
minimal value: -200.00

maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11

Actually received value from the process data PZD2 of service interface RS232.

parameter: D2032 Service PZD3-input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11

Actually received value from the process data PZD3 of service interface RS232.

parameter: D2033 Service PZD4-input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit
function diagram: plan 11

Actually received value from the process data PZD4 of service interface RS232.

parameter: D2034 Service PZD5-input

maximum index: -
minimal value: -200.00
maximal value: 199.99
default value: -
unit: %
passwordlevel: 0
read / write: Read
type: signed 16 bit

function diagram: plan 11

Actually received value from the process data PZD5 of service interface RS232.

parameter: D2035 Service PZD6-input

maximum index: -

minimal value: -200.00

maximal value: 199.99

default value: -

unit: %

passwordlevel: 0

read / write: Read

type: signed 16 bit

function diagram: plan 11

Actually received value from the process data PZD6 of service interface RS232.

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72555 Metzingen

Postadresse: 72545 Metzingen – Postfach 1554

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Telefax: +49 (0)7123/969-120

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Function diagrams **REFU*drive 500* - RD52**
Contens

Rexroth Indramat

P254 — **Control parameters** to changeover switches

P210 — **Value parameters** e.g. to enter percentage values, times, normalization factors etc. The parameters in this documentation are always specified as three characters. When entering, a 0 must first be entered, P210 -> P0210. This is valid for value parameters and control parameters.

P435.0 — **Parameter with index**
The parameter number is located to the left of the point, and the index to the right. The point is only used as separator for parameter number and index, and is **not** a **decimal point**!

D1855 — **Display** or **dispay parameters**
D parameters can be connected as signal sources in variable parameter sources.

D1890 — **32-bit displayparameter**
D parameters with a 32-bit resolution. Signal paths for 32-bit parameters have a double line.

P217 / D1805 — **Variable parameter source**: The required D parameters are entered as signal source in the variable parameter sources. The standard values are entered in the function charts. If no entry is made, then the standard setting D1700 and D1800 apply.

RFG Outp. — **Factory settings** are those entries with gray background. Switch settings are also schown in the factory setting. The factory setting can be replaced ant any time by the customer-specific parameterization.

/ 20.1 — **Target character** "/ 20.1" on e.g. Sheet 20, Field 1

n-*set* — **Process value** "n-set" with signal continuation

Summing points
If the sum is formed from a positive value, then only the negative input at the summing point is designated with a (-).

Control signal to changeover the motor parameter set; signal generator, refer to Function Chart 5.

Analog-Digital converter

Digital-Analog converter

≥1 — **Or logic operation**

& — **And logic operation**

Threshold switch (comparator)

Absolute value generation element

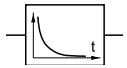
-1 — **Inverter element** for process values

Multiplier element
Example: If, for example, two process values (90% and 128%) are multiplied, the following would be obtained: 0.9 x 1.28 = 1.152 => 115.2 %

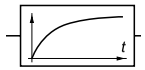
Amplifier

S Q / R $\overline{Q}$ — **R-S flipflop**

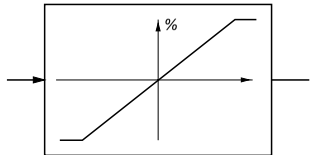
D Q / EN $\overline{Q}$ — **D-latch**



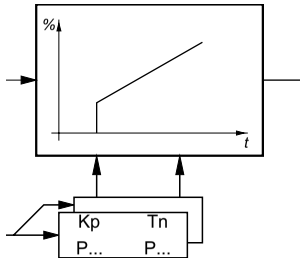
Differentiating element



Filter element, filter



Two-sided **limiter** (positive, negative)



PI controller (proportionaler and integrale controller component)
If the integral action time is set to 0 seconds, the integral control component is disabled and a pure P controller is obtained.
Kp = gain factor of the P controller
Tn = integral action time of the PI controller

t_A: 1 ms **Processing cycle, sampling time**

t_A: 4 T_0 / A1 **Processing cycle** is sub-divided into time sectors, which are dependent on the selected pulse frequency.

Processing sequence within a time sector.

$$T_0 = \frac{1}{\text{pulse frequ.}} \quad \text{e.g.} \quad \frac{1}{8\ \text{kHz}} = 0{,}125\ \text{ms}$$

$$t_A = 4\,T_0 = 4 \times 0{,}125\ \text{ms} = 0{,}5\ \text{ms}$$

Special case: f_p > 8 kHz

All of the function modules, which are identified with $T_A = 4\,T_0$ are processed in 8 T_0.
All of the function modules, which are identified with $T_A = 16\,T_0$ are processed in 32 T_0.

General information

The RD52 series of units, offer, with their open and freely interconnectable function chart structure, an extremely flexible system which can be adapted to the requirements of the particular application. The application is parameterized using the REFUwin Windows program or via the operator panel.
In order to simplify the handling, the closed-loop speed control mode is pre-set with standard values (factory setting). The controller structure, with the most important parameters is shown in the block diagram. In this particular case, the unit is controlled through the terminal strip and with an analog setpoint. The alternative possibilities for control communications are indicated. The reference to the detailed function chart (Sheet No.) is specified in the function blocks.
This means that it is easy to parameterize controller structures going beyond the standard setting.

With the standard values, digital input DE4 is assigned the ON/OFF function and DE5 is assigned the enable function; the setpoint is entered via analog input 1 with 0 to ± 10 V. The analog value can be flexibly adapted using the following normalization location, offset and smoothing.

Procedure when parameterizing a drive

Entering motor data
Parameter P0100: Induction/synchronous motor selection; additional data can be taken from the rating plate or the manufacturer's data
.
Entering the encoder data
P0130, encoder type selection, pulse number

Current normalization
P0374, e. g. the rated motor current is entered, I_N corresponds to 100%

Speed normalization
P0390, the motor speed for 100% is entered

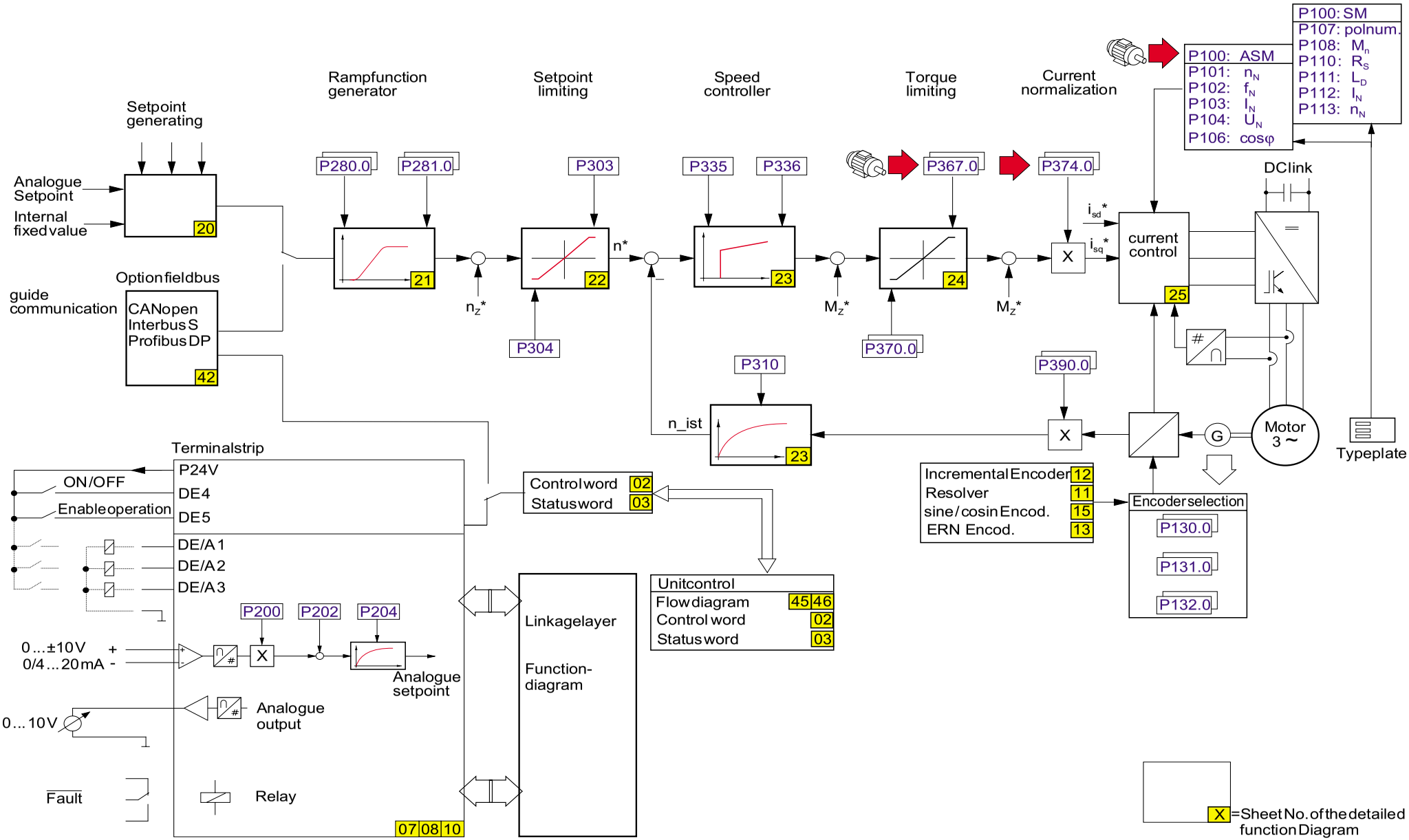
Shutdown, overspeed
P0395, according to system-specific safety criteria

After this data has been entered, the drive is parameterized, and can be commissioned, taking into account all of the relevant safety regulations.

The overload capability can be separately set for acceleration and braking up to 200% using the parameters for torque limits P0367 (+) and P0370 (-). If a higher overload capability of the drive is required, current normalization P0374 must be appropriately adapted.

The speed setpoint is transferred to the setpoint limiter n_max / n_min via a ramp-function generator with rounding-off and separately adjustable ramps. After the setpoint/actual value comparison, the system deviation is evaluated in the speed controller with PI characteristics, and fed to the torque limiter. The torque limits can be separately set for acceleration and braking. The resulting torque setpoint is converted into a current setpoint using the current normalization P0374, and represents the "torque-generating current component" control quantity for the field-orientated current controller. The "field-generating current components" are generated in the current controller.

The variable quantities are shown as a percentage, speed quantities are referred to parameter P0390 (speed normalization), current quantities are referred to parameter P3074 (current normalization).



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Overview	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **01**

Generating the control word

The unit is controlled (open-loop) using the control word. The control word comprises 16 bits. Bits 0 to 7 are defined in accordance with the VDI/VDE Directives 3689. Bits 8 to 15 can only be set via the serial interface, and every bit can be freely assigned a unit control function. The control word is generated by logically combining the **control word KL**[1)] and the **control word MS**[1)]. The control word MS can be entered from four sources and selected via a switch. The switch is changed-over using parameter P0073.

P0073, switch setting 0:

Control word MS is generated from a mask, in which bits 1 to 15 are permanently specified. Only bit 0 can be set to 1 (ON command) or 0 (OFF1 command) using the operator panel.

P0073, switch setting 1:

Control word MS[1)] comes from a variable parameter source. Only process data associated with the serial interface can be used in the parameter source. Thus, control word MS is entered via the interface.
In this configuration, bits 8 to 15 can also be set via the serial interface, and each bit can be freely assigned a unit control function. These become effective in the unit by further inter-connecting parameters D1768 to D1775.

P0073, switch setting 2:

Control word MS[1)] is generated from a mask, in which bits 0 to 15 are permanently specified. The mask is assigned so that the unit is only controlled using control word KL[1)].

Bits 0 to 7 of control word KL[1)] are permanently assigned control functions. In order to control the unit via the terminal strip, the D parameters of the digital inputs used must be connected to the variable parameter sources (P0050.x).

P0073, switch setting 3:

Control word MS comes from the service interface RS232. Switch setting 3 is intended for control operation via REFU*win,* which sends its control commands as PZD1.

Note

In order to power-up the unit, in the operating status “Ready to power-up”, the signal in bit 0 must change from 0 to 1. The fault acknowledgement (bit 7) is also only transferred when the signal changes from 0 to 1.

Control word bit assignment

Bits 0 to 7 of control word 1 (D1920) coincide with the functions specified in the VDI/VDE Directives 3689:

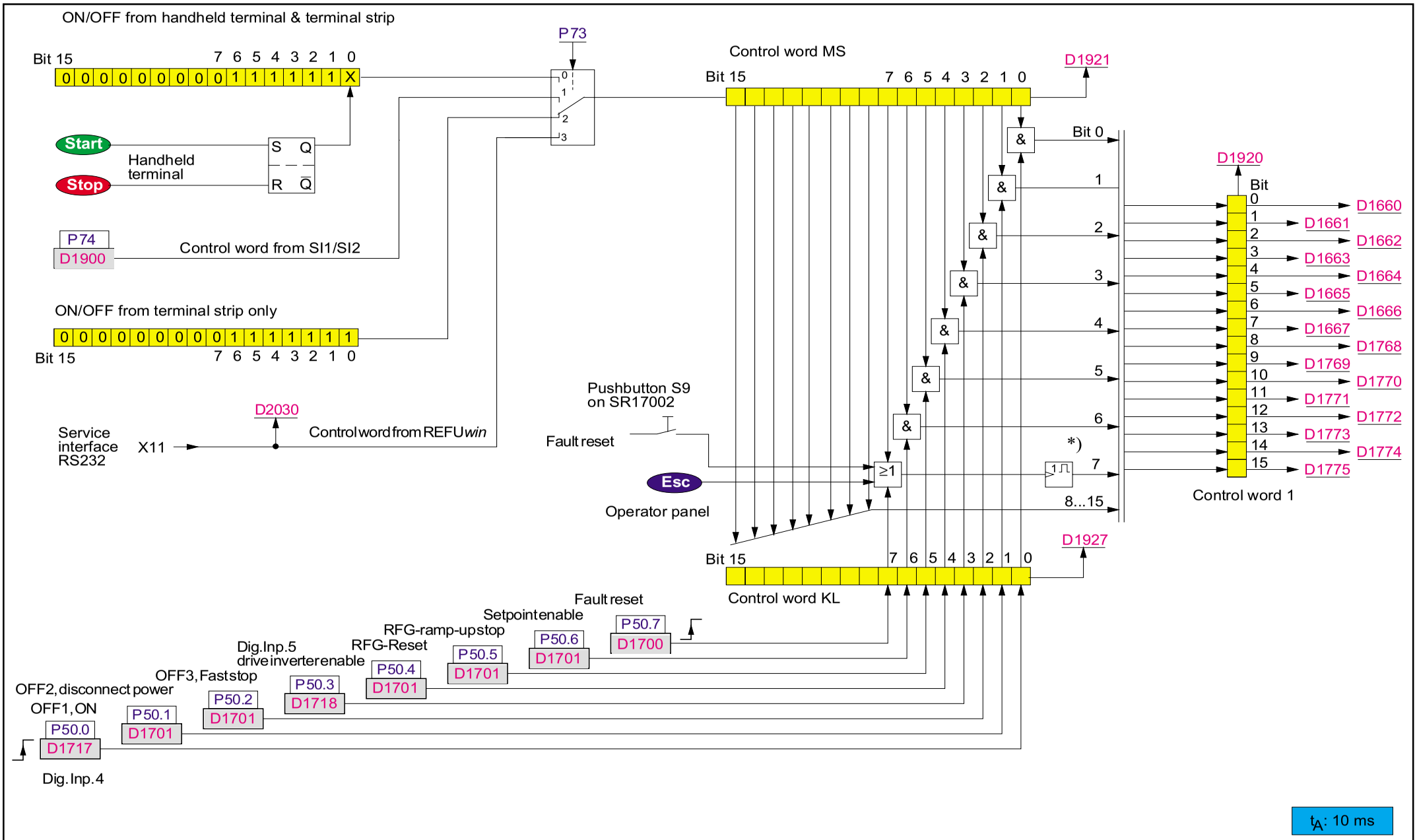
Bit 0	=	ON (L-> H edge) / OFF 1	(L active)
Bit 1	=	OFF 2, power disconnected	(L active)
Bit 2	=	OFF 3, fast stop	(L active)
Bit 3	=	Operation enable	(H active)
Bit 4	=	RFG reset	(L active)
Bit 5	=	Ramp-up stop	(L active)
Bit 6	=	Setpoint enable	(H active)
Bit 7	=	Fault acknowledgement	(L-> H edge)

Bits 8 to 15 can only be entered via the control word from the serial interface. The functions for these bits can be freely configured.

Note

More detailed information about the control/status logic is available in the control and status word flow diagram, function chart Sheets 53 and 54.

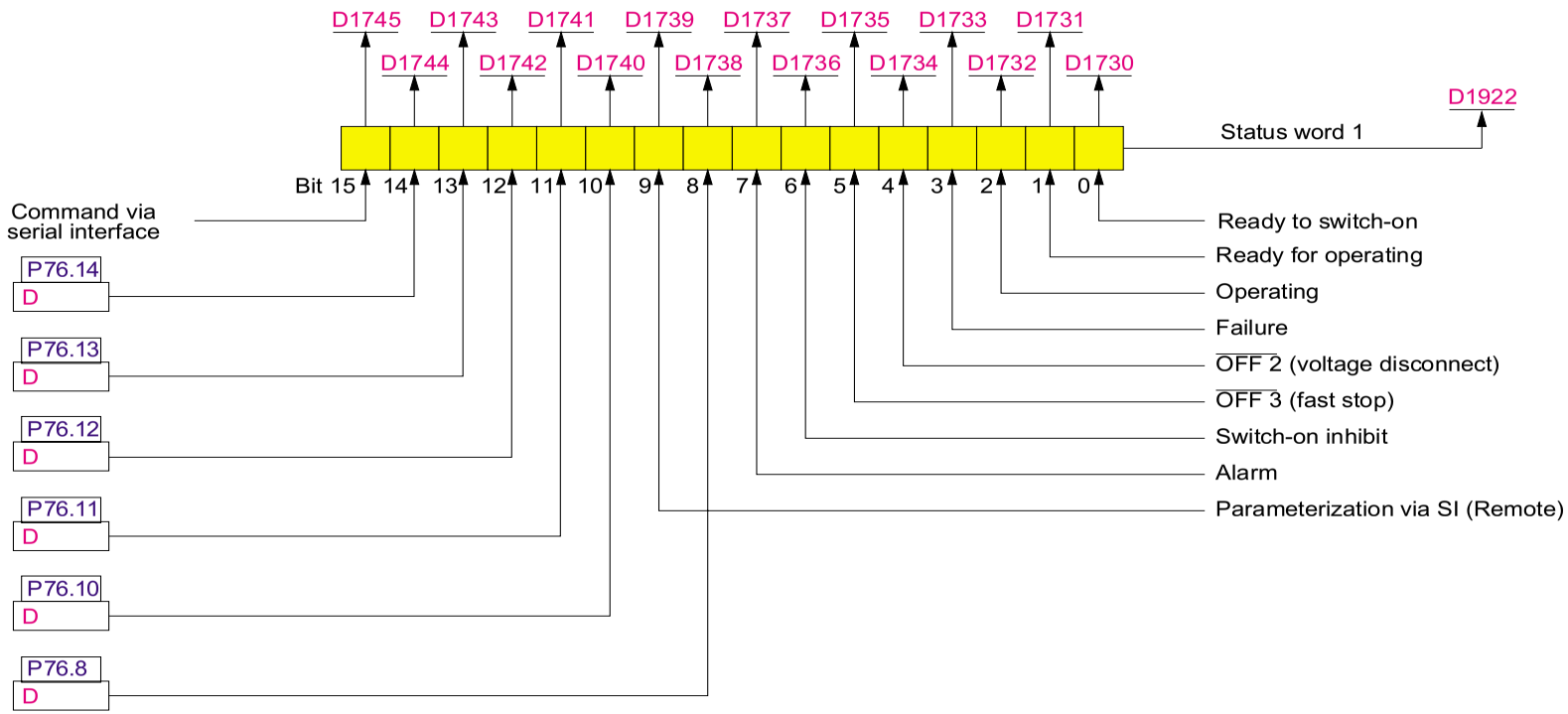
1) Control word KL: KL = terminal strip
Control word MS: MS = mask or interface



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Control word 1	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **02**

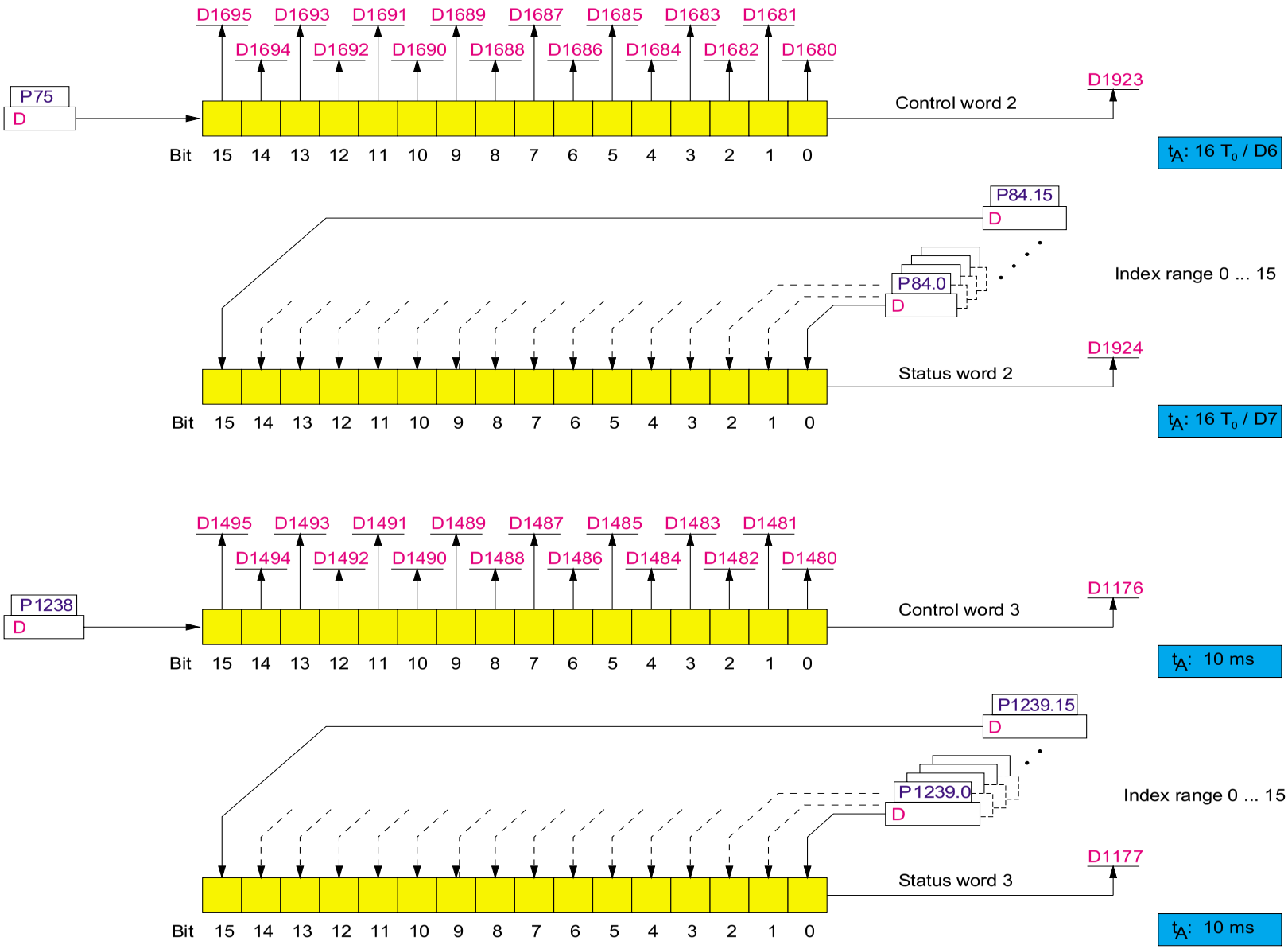
Note
More detailed information about the control/status logic is available in the control and status word flow diagram, function chart Sheets 53 and 54.



t_A: 10 ms

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Status word 1	Rexroth Indramat	Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **03**



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Control and Status word 2 and 3	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **04**

Changing-over the motor parameter set

For REFU*drive 500* converters, you can enter the data for two different motors. In the standard setting, the same values are set for both motors and motor 0 is selected. All of the motor-specific data in the drive converter are changed-over using the “Motor parameter set” control signal.
The “Motor parameter set” control signal has either a value of 0 or 1, and is set using P0070. The default value of P0070 is D1700 (constant, logical 0). This selects motor 0 with the associated data. To select motor 1, set D1701 in P0070.
You can control the selection of motor 0 and 1 from a digital input. If, for example, you wish to use digital input 3, then set D1716 in P0070. If a low signal is now connected at digital input 3, motor data 0 is selected; correspondingly, with a high signal, motor data 1.
The changeover of “Parameter set” control signal is inhibited with the operating enable. It is **not** possible to changeover the parameter set in operation.
All of the motor model data are re-calculated as a result of the changeover.

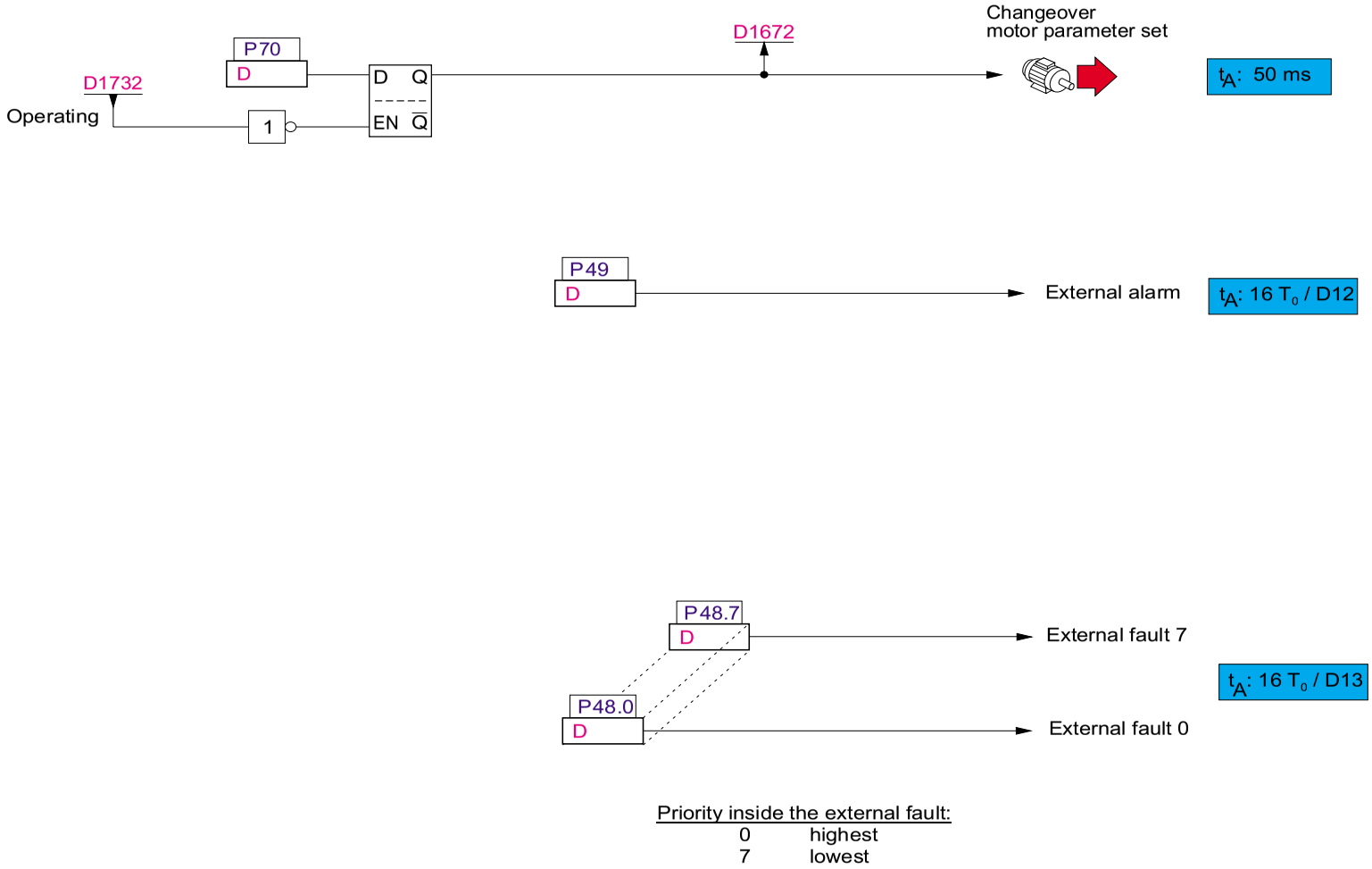
The following motor parameters have 2 index levels, and are involved with a motor changeover:

P0130 ... P0133	Encoder data, function chart Sheet No. 13 - 18
P0390, P0395	Speed normalization and monitoring, function chart Sheet No. 19
P0367, P0370, P0373, P0372	Torque limits
P0374	Current normalization, function chart Sheet No. 24
P100...P129, P135...P148	Motor data and closed-loop motor control, function chart Sheet No. 25

Selecting index parameters using the “Changeover motor parameter set” control signal

In the function charts, only the symbols of the “Changeover motor parameter set” control signal are used:

If the “Changeover motor parameter set” control signal has a value of 1, then appropriately, the index level 1 of all of the parameters specified above, is selected and become effective in the drive converter.



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Unit control functions	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **05**

Selectable control constants

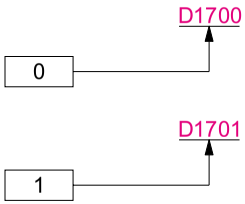
A direct numerical value, 0 ... 65536 is entered.
If possibly connected as process data, it is interpreted in the generally used % normalization; in all other cases as numerical value.

100	% =	16384
199.99	% =	32767
- 199.99	% =	32768
- 100	% =	49152

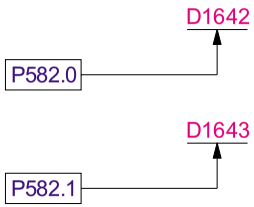
Selectable process constants

% values are directly entered.

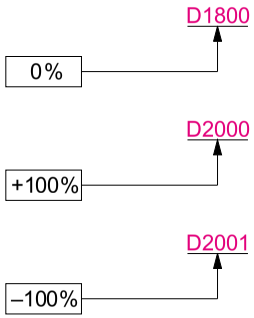
Fixed control constant



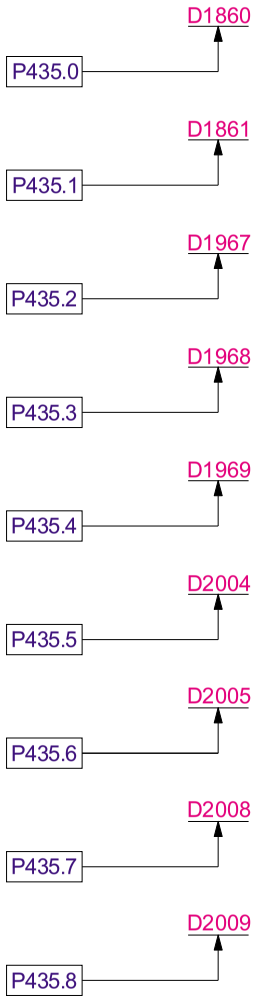
Adjustable control constant
numerical value 0...65535



Fixed process constant



Adjustable process constant
input in %-value

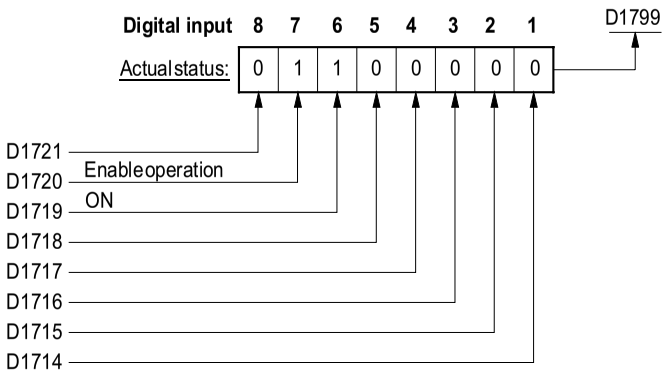


1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** System constants	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **06**

Group display parameter D1799

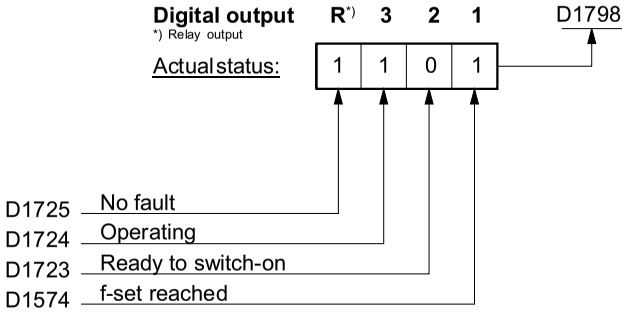
The status (condition 0 or 1) of all digital inputs can be simultaneously displayed on the operator panel monitor using the group display parameter D1799.
Example: The digital inputs are assigned typical functions.

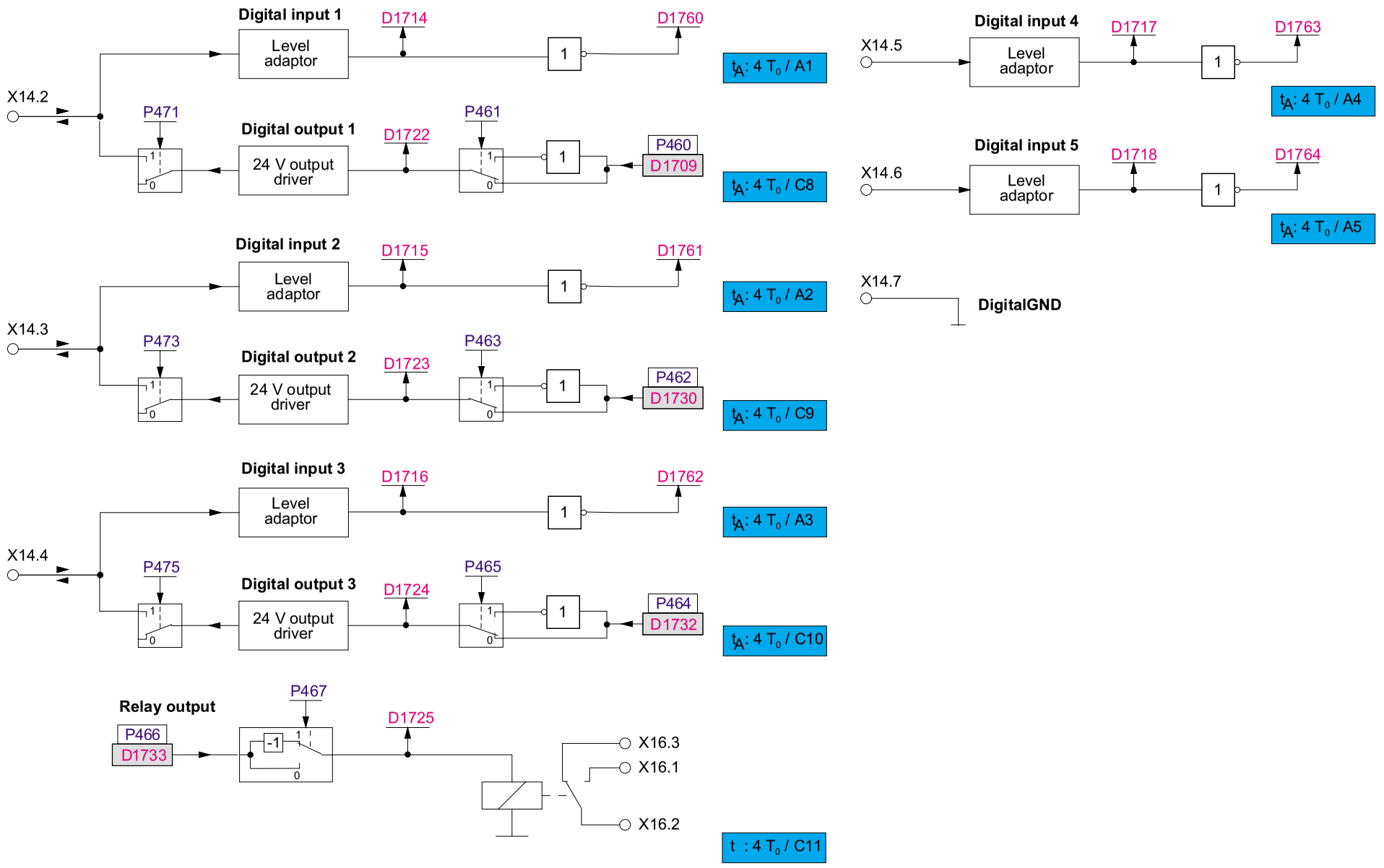


Group display parameter D1798

The status (condition 0 or 1) of the 3 digital outputs and teh relay outputs can be simultaneously displayed on the operator panel monitor using the group display parameter D1798

Example: The digital outputs are assigned typical functions.



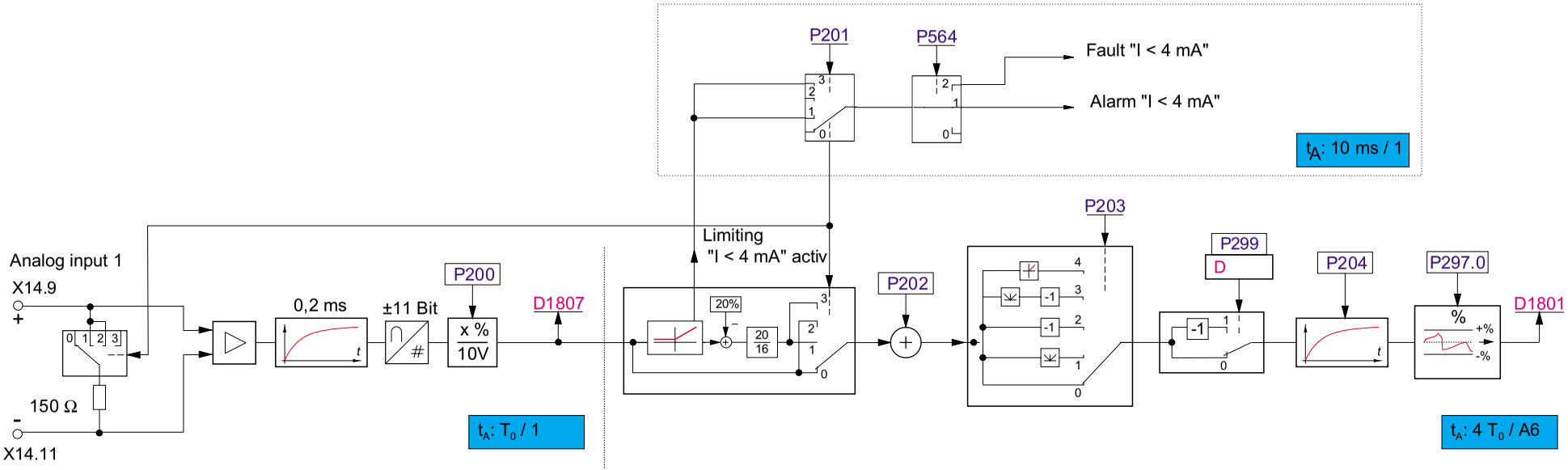


1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Digital inputs, digital outputs	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **07**

Mode analog input

0 ... ±10 V	P0201=0
+4 ... +20 mA	P0201=1
0 ... +20 mA	P0201=2
+2 ... +10 V	P0201=3



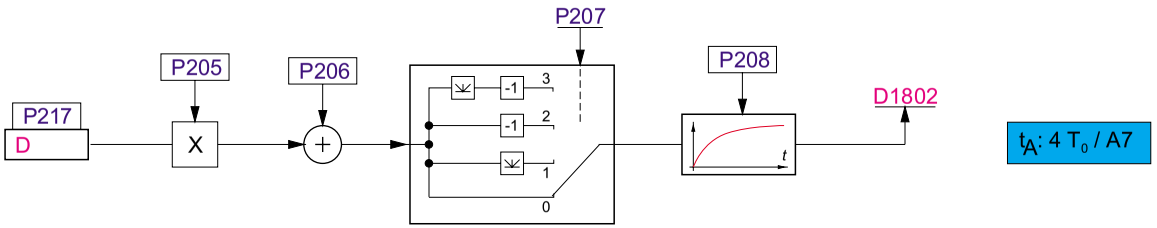
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Analog input (standard)	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **08**

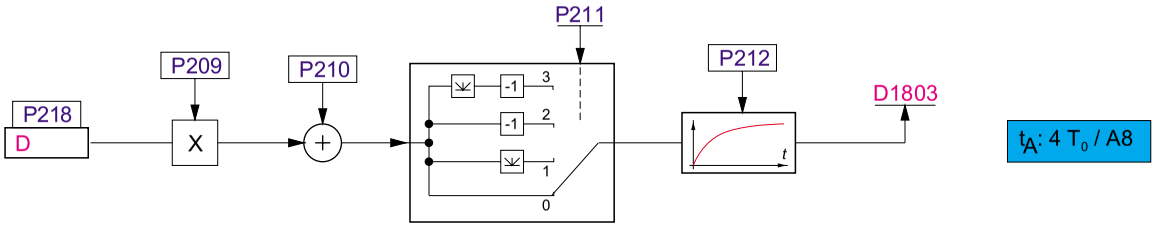
Input blocks

The firmware has three input blocks to condition the process value signals. If the option is used (extended terminal strip), an input block is preferably used to condition analog input D1806.

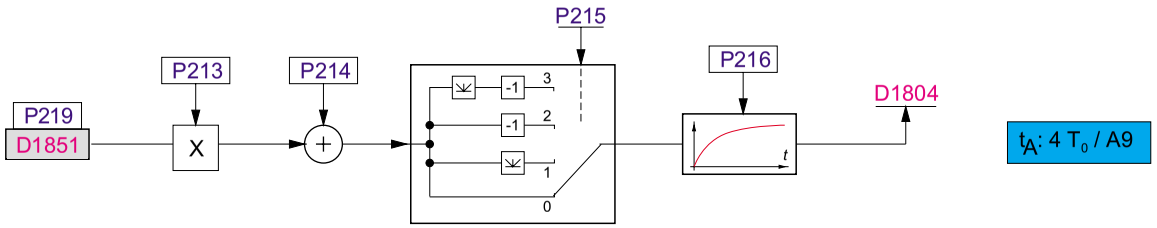
Input block 1



Input block 2



Input block 3



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Input blocks	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **09**

Output blocks

The firmware contains 2 output blocks for signal conditioning, which are processed in the 16T0 time sector. These are preferably used to condition signals for the analog outputs, option RZP01.1-T1 (extended control terminal strip, KL17037).

Note

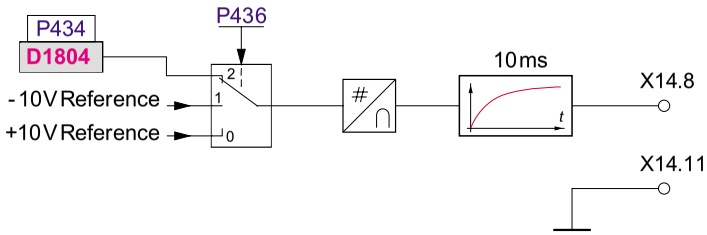
The outputs of output blocks 2 and 3, D1120 and D1121 must be switched to the extended control terminal strip KL17037 via the process data interface, refer to function chart 49, “Process data interface SI4”.

If an output block is not used for an additional analog output, it can be used to process signals of other process values.

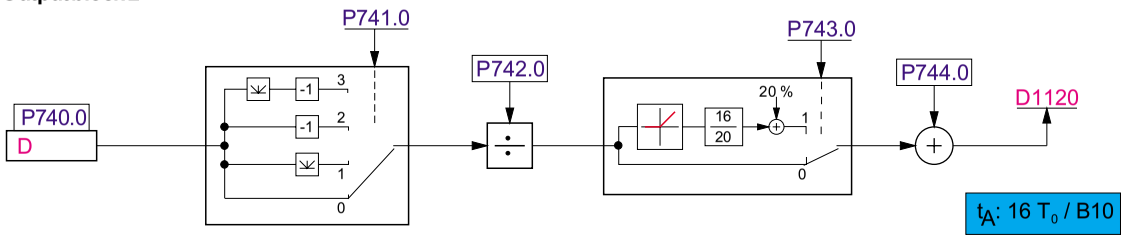
Analog output normalization

100.00 % = 10 V at the analog output

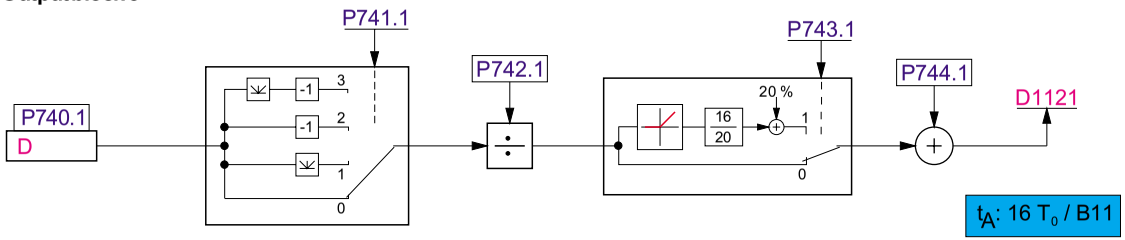
Analog output



Output block 2



Output block 3



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Analog output	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **10**

Service interface definition

The service interface is the standard serial RS232 interface integrated in the drive converter (X11 on the SR 17002).

Processing the process data of the service interface

The process data, received via the service interface, are converted into display parameters in the drive converter. These can be connected to the variable parameter sources for controlling the unit.

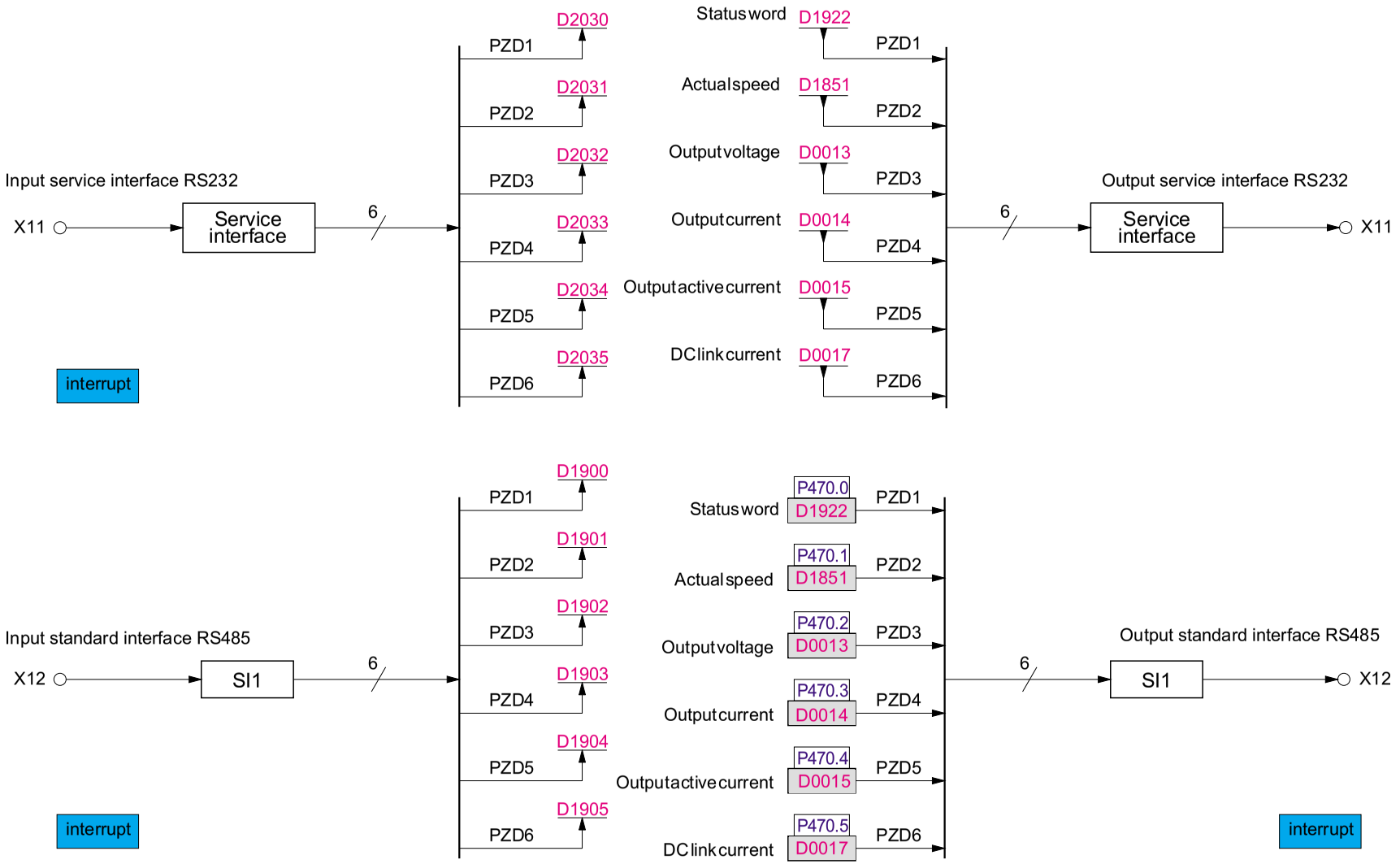
SI1 definition

SI1 is the standard RS485 serial interface integrated in the drive converter (X12 on SR 17002).

Processing the process data SI1

The process data, received via the SI1 are converted into display parameters in the drive converter. They can be freely connected to the variable parameter sources to control the unit.
The drive converter sends its actual values as process data via the SI1, by connecting D parameters to the variable parameter sources for output SI1.

When operating REFUwin via the SI1 with RS232 -> RS485 interface converter with automatic three-state control, we recommend that the standard parameterization is used. This guarantees that the status and actual value display operates correctly in the “Operator control and visualization” menu.



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Process data, stadard interfaces	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **11**

Process data interface SI6 (CANpur)

The SR17002 module has at connector X13 a CAN interface, which can couple 2 RD500 units. This standard CAN interface is exclusively used for process data transfer. Up to 12 process data can be sent and received. A CAN protocol contains 4 process data so that 3 send and 3 receive protocols (identifiers) can be configured. The circulating rate of the send protocols can be specified in a time grid of 1 msec, whereby the shortest circulating rate of 3 protocols is 4 msec. If only 2 send protocols are active, the shortest circulating rate is 2 msec, and if only one protocol is active, 1 msec.

P1270 Baud rate, standard CAN (125 kbaud .... 1 Mbaud)

P1271 [0...2] Identifier, send protocols
Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 19...12

P1272 [0...2] Identifier, receive protocols
Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 19...12

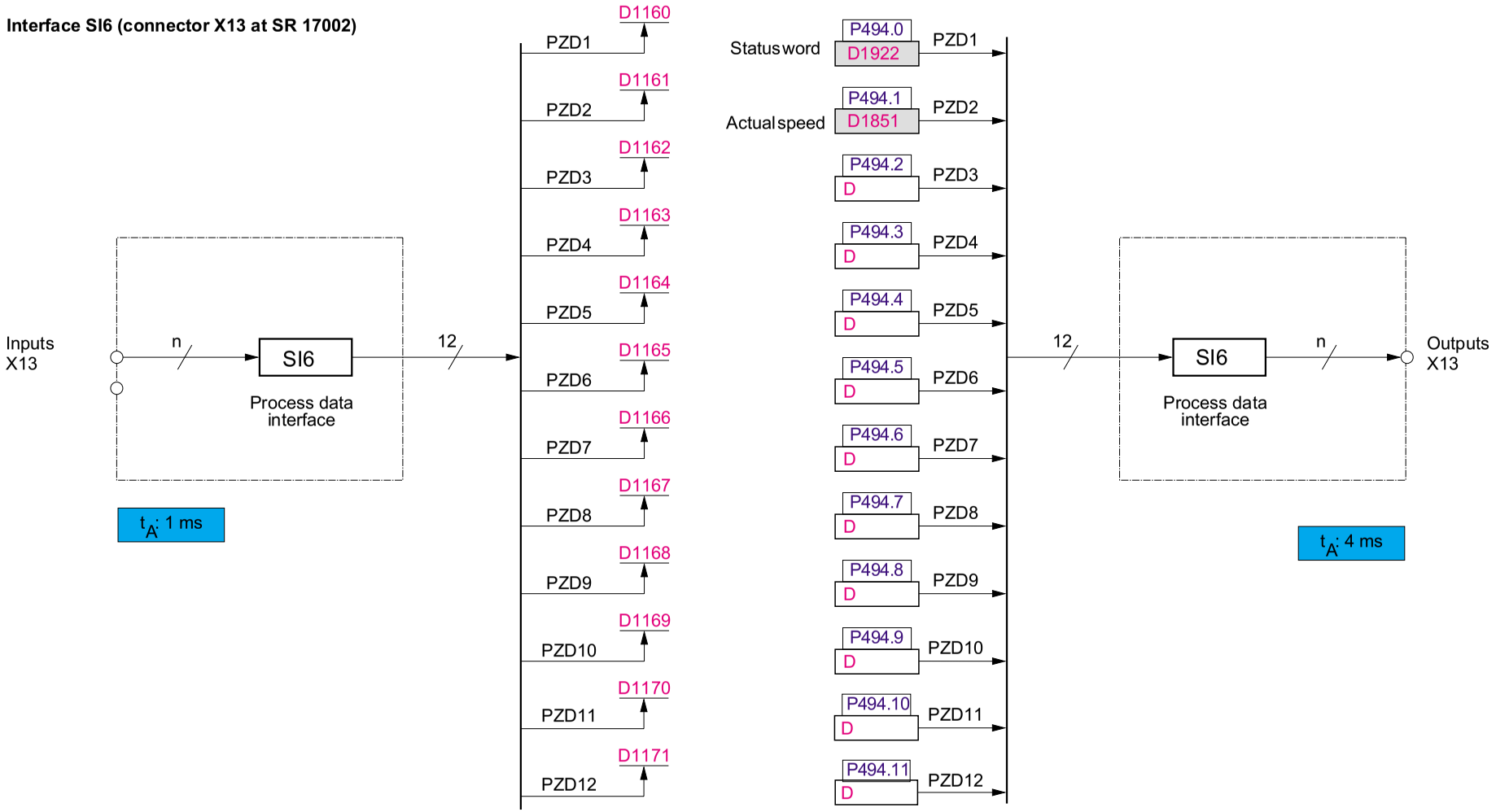
P1273 [0...2] Clock rate, send protocols (units, 1 msec)
Special functions:
0 = cyclic data not sent, protocol not active
254 = sender starts after receive protocol
255 = reserved
Index 0: PZD 1...4
Index 1: PZD 5...8
Index 2: PZD 19...12

P1274 SI& Rx monitoring function [interface&Rx]
0 = no action
1 = warning
2 = fault

P1275 SI6 Rx monitoring time (units, 0.01 sec)

P1276 Source parameter for switch: Rx monitoring off

Interface SI6 (connector X13 at SR 17002)

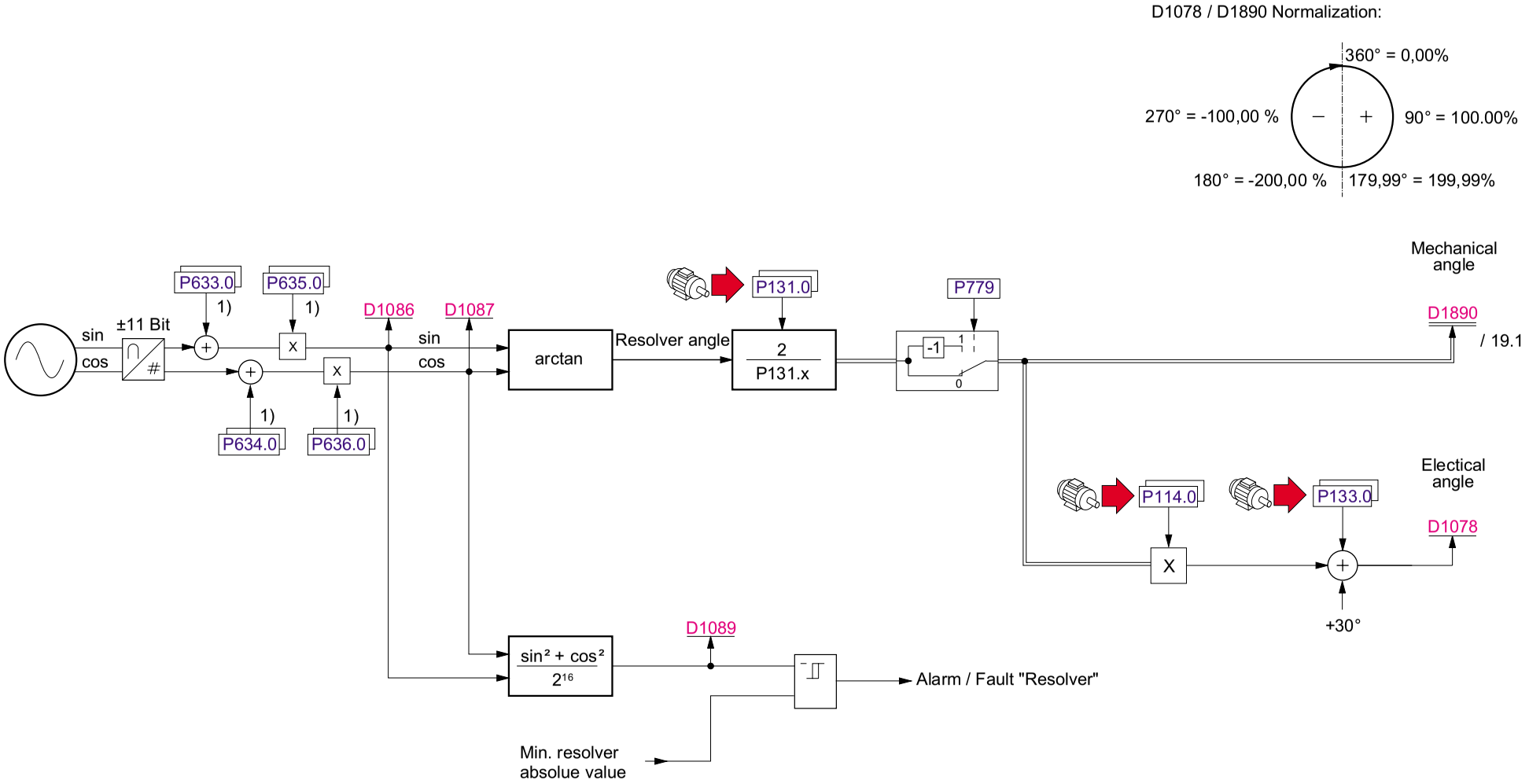


1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Process data, interface SI6	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **12**

Note
The standard resolver adjustment is for Siemens 1FT6 motors. For other adjustments, this can be corrected using P0133.

Select the resolver:
P0130 = 0



1)This parameters will be changed by the Encoder optimize (P0189), see also the dokumentation DOK-RD500*-RD52*******-IBxx-EN

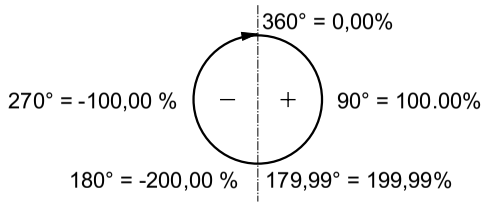
t_A: T_0 / 2

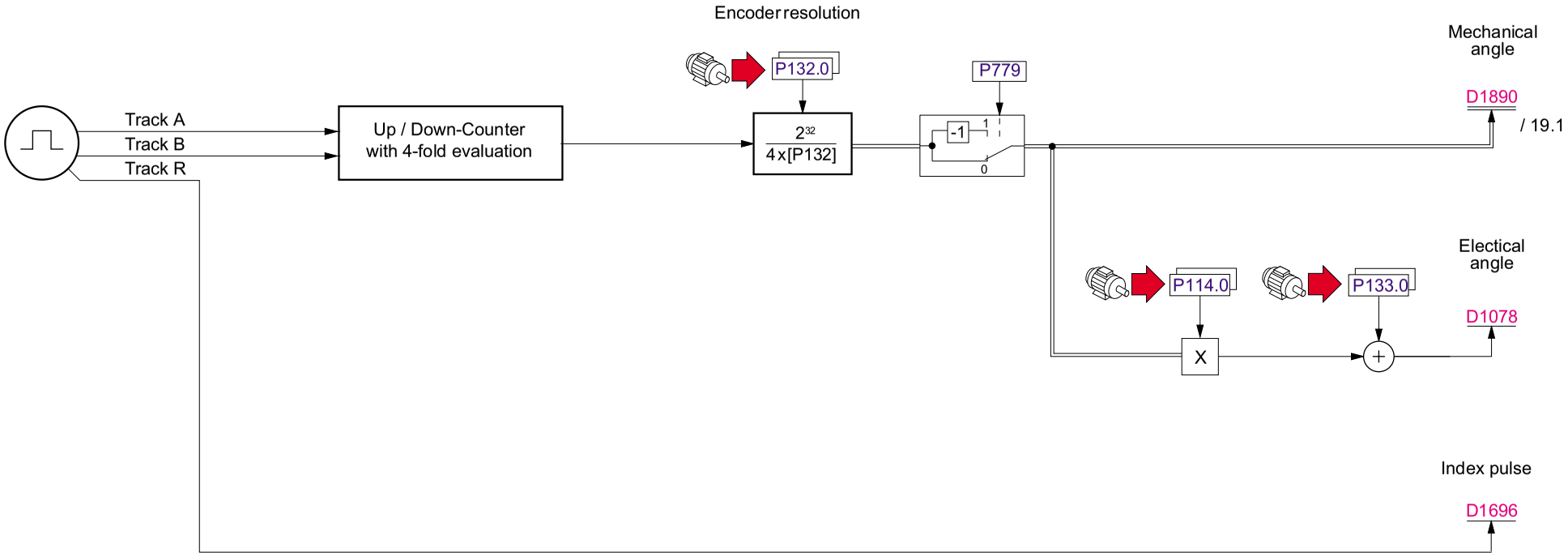
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Resolver evaluation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **13**

Select the incremental encoder:
P130 = 1

D1078 / D1890 Normalization:





t_A: T_0 / 2

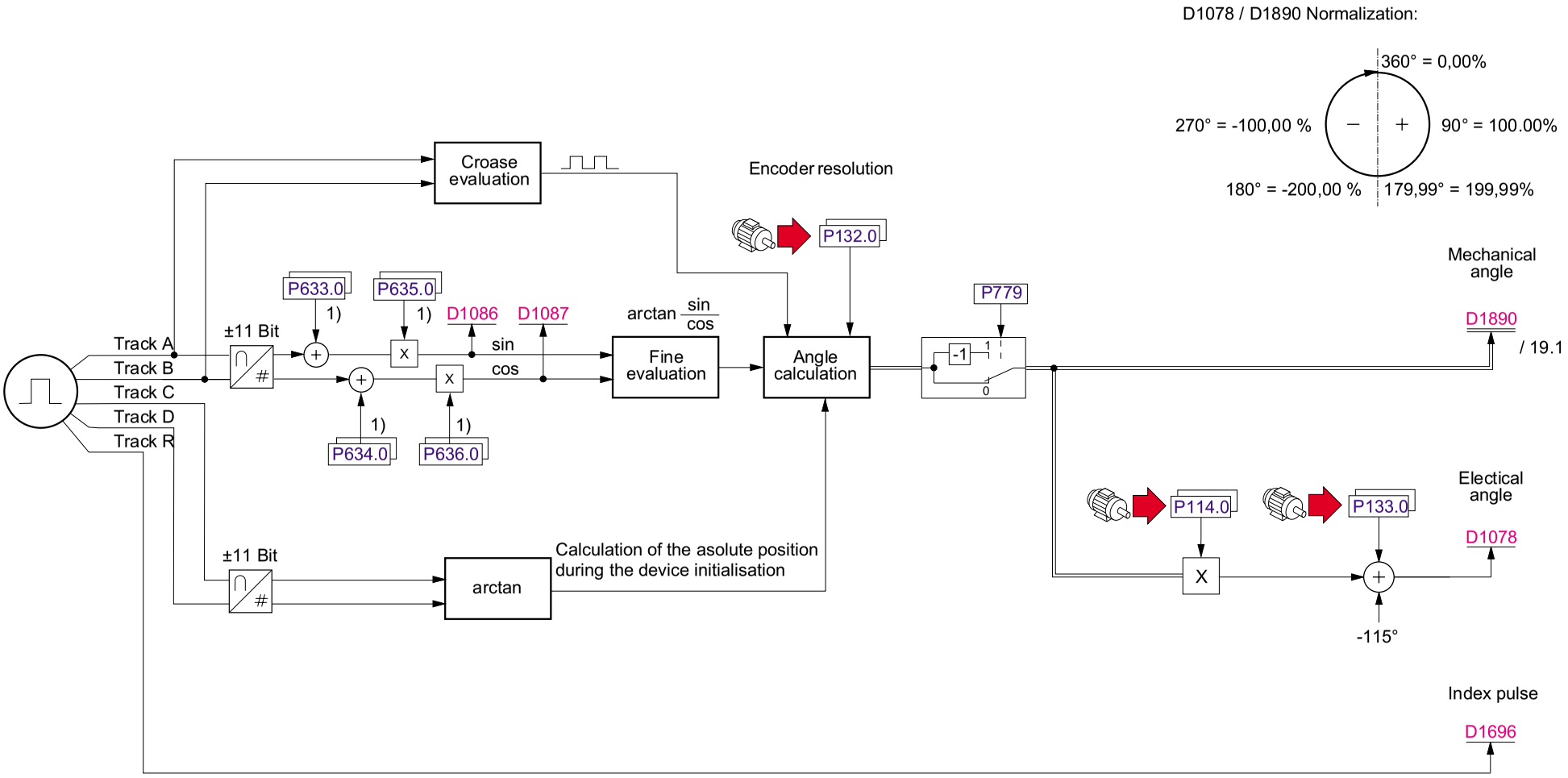
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Incremental encoder evaluation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **14**

Note
The standard ERN1387 encoder adjustment refers to Siemens 1FT6 motors. For other adjustments, this can be corrected using P0133.

Encoder selection: sin/cos - encoder with commutating - signal
(e.g. Heidenhain, ERN 1387, ...)

P130 = 2



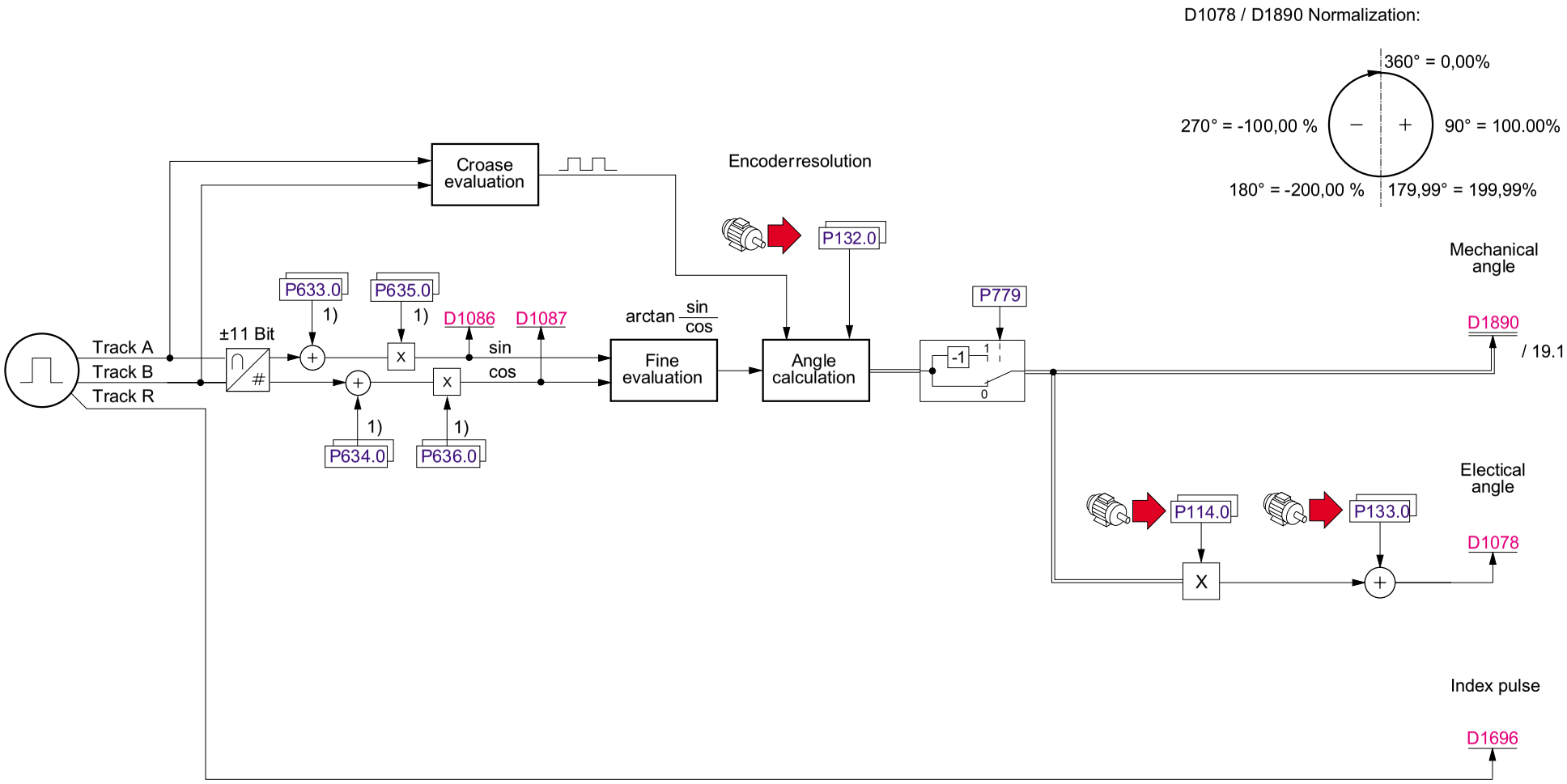
1) This parameters will be changed by the Encoder optimize (P0189), see also the dokumentation DOK-RD500*-RD52*******-IBxx-EN

t_A: T_0 / 2

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Sin/cos&commutation - encoder evaluation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **15**

Encoder selection: sin/cos - encoder without commutating - signal
P130 = 3



1)This parameters will be changed by the Encoder optimize (P0189), see also the dokumentation DOK-RD500*-RD52*******-IBxx-EN

t_A: T_0 / 2

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Sin/cos encoder evaluation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **16**

For encoderless operation, the structure of the complete control (closed-loop) is kept. Speed estimation replaces speed measurements using an encoder. The speed estimation function includes a monitor, based on a model of an induction or synchronous motor. This monitor uses motor currents and fluxes to predict the current at the next closed-loop control clock cycle. The deviations between the measured and predicted currents are fed to an identification controller, which defines the speed. The identification controller (PI controller) is set using P0774 and P0775. The monitor is adjusted using P0773. The parameters are available for every motor parameter set. (index 0 and 1).

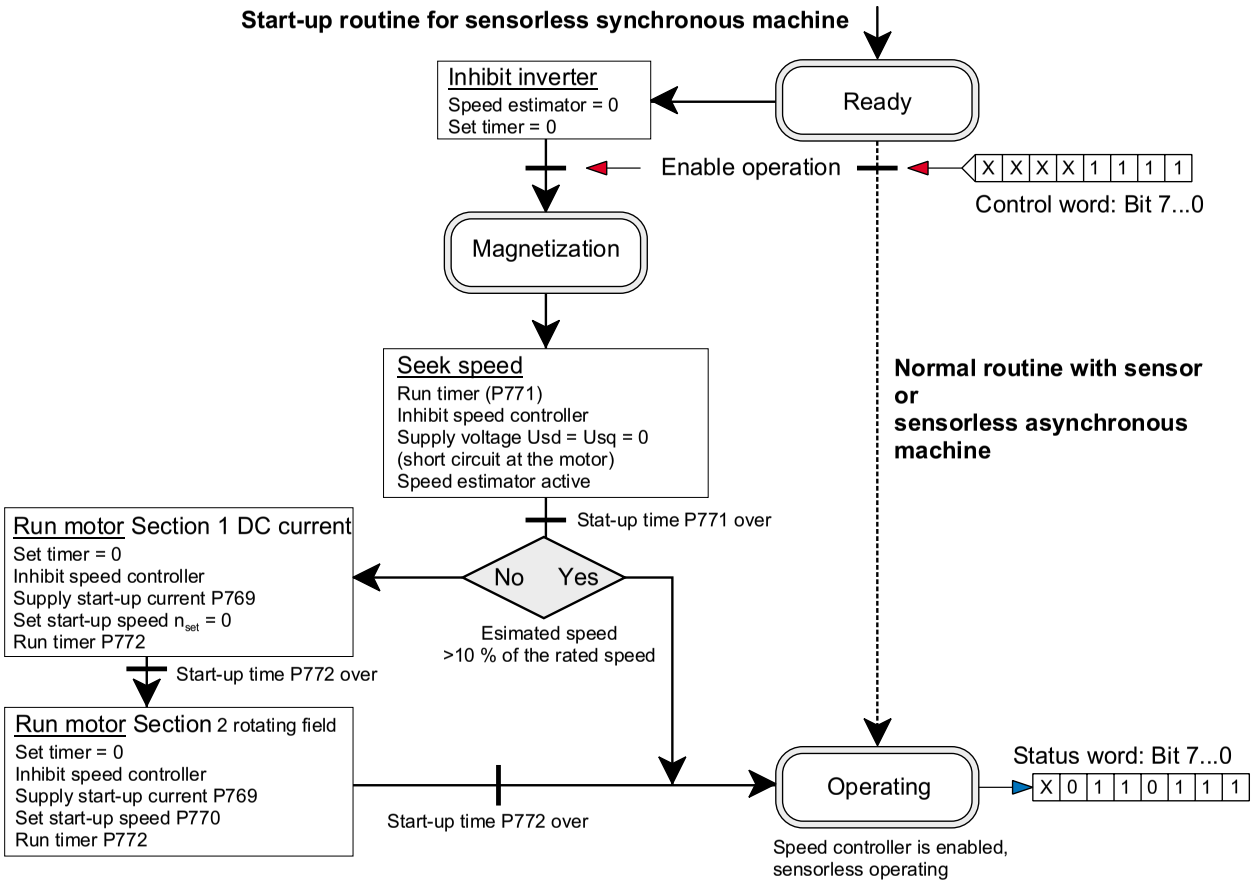
Commissioning induction motors

1. General settings:
   Conservatively set the speed controller (P0335, P0336), do not use excessively fast up and down ramps (P0280, P0282).
   P0147 (current controller), set the dynamic performance to “extremely high”.
   P0148 = 100 %
   P0149 = 0
   Set Tn of the speed controller (P0336/P0338) to a value ≥ 5 x P0775.
2. Enter a start value:
   P0774 Kp speed estimation 3 %
   P0775 Tn speed estimation 10 ms
   P0773 k speed monitor 1.0
3. Change P0774 (Kp speed estimation) until the speed estimation function operates correctly. The speed signal under no-load conditions should not exhibit any higher oscillations (test with approx. 0.2 .. 0.5 of the rated speed).
4. Change P0775 (Tn speed estimation), until speed changes are cleanly sensed.
5. If required, modify P0773 (k speed monitor), between 0.5 and 1.5 until stable operation is possible, otherwise keep the standard value of 1.0.

Commissioning synchronous motors

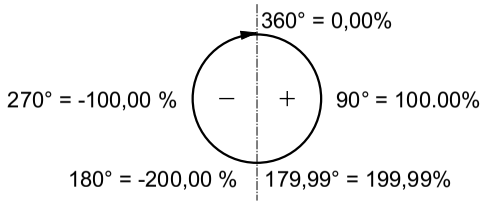
1. General settings:
   Conservatively set the speed controller, do not use excessively fast up and down ramps.
   Set P0147 (current controller) set the dynamic performance to “extremely high”.
2. Enter a starting value:
   P0774 Kp speed estimation 3 %
   P0775 and P0773 are of no significance for synchronous motors, and can be left at the selected values. The setting is realized exclusively via P0774. This specifies the identification controller gain to estimate the pole wheel angle.
3. Change P0774 (Kp speed estimation) until the speed estimation function runs correctly. The speed signal under no-load conditions should not exhibit any significant oscillations

A starting routine is executed in the standard setting where a fixed frequency (P0770) and a specified current (P0769) is impressed in the synchronous motor. P0771 and P0772 must be set to 0 s if a starting routine is not required.

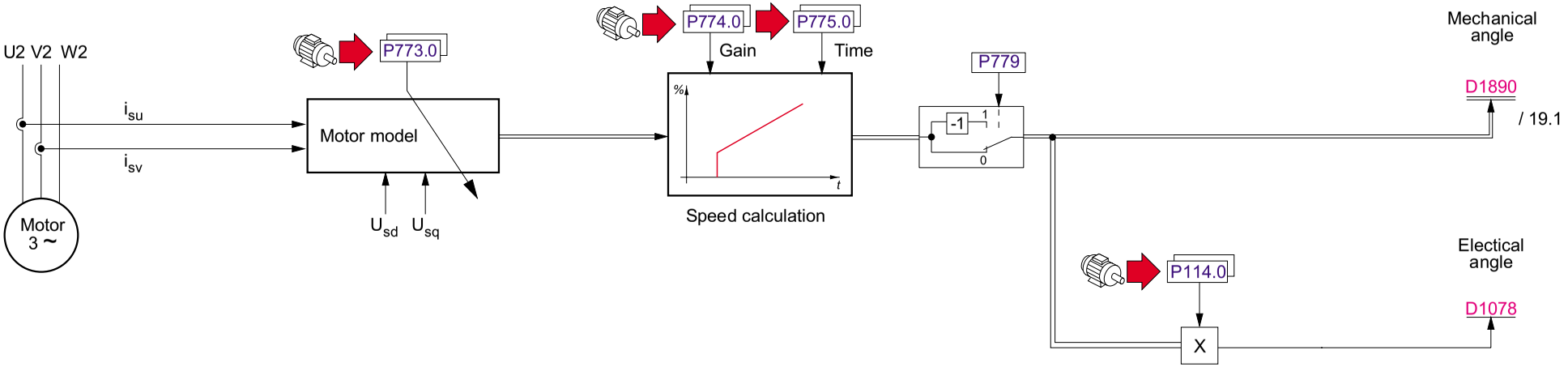

Start-up routine for sensorless synchronous machine
Inhibit inverter
Speed estimator = 0
Set timer = 0
Ready
Enable operation
X X X X 1 1 1 1
Control word: Bit 7...0
Magnetization
Seek speed
Run timer (P771)
Inhibit speed controller
Supply voltage Usd = Usq = 0
(short circuit at the motor)
Speed estimator active
Normal routine with sensor
or
sensorless asynchronous
machine
Stat-up time P771 over
Run motor Section 1 DC current
Set timer = 0
Inhibit speed controller
Supply start-up current P769
Set start-up speed n_{set} = 0
Run timer P772
No Yes
Esimated speed
>10 % of the rated speed
Start-up time P772 over
Run motor Section 2 rotating field
Set timer = 0
Inhibit speed controller
Supply start-up current P769
Set start-up speed P770
Run timer P772
Start-up time P772 over
Operating
Status word: Bit 7...0
X 0 1 1 0 1 1 1
Speed controller is enabled,
sensorless operating

Select "no speed sensor":
P130 = 4

D1078 / D1890 Normalization:



Motor model adjustment



t_A: T_0 / 2

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Encoderless operation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheed No. **17**

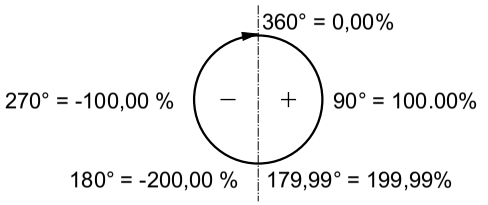
The “External encoder” setting is provided for the following functions:

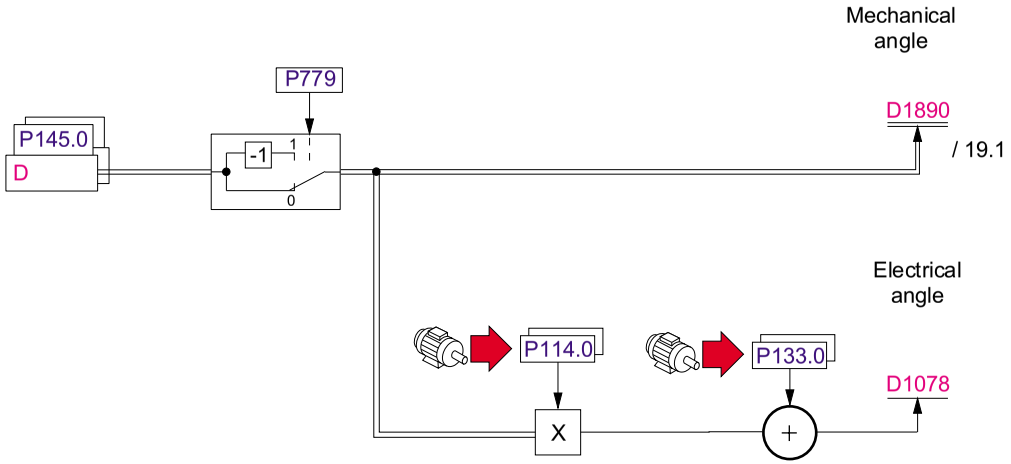
1. Encoder evaluation via the RZP01.1-G2 option card:
   The option G2 determines the encoder angle on the first two processor channels from SI2 and SI4. P0145 is connected to the first process channel, i.e. if the RZP01.1-G2 encoder card is inserted in module location 1, P0145 =1910 is correct; if the RZP01.1-G2 encoder card is inserted at module location 2, P0145 = 1100.

2. Encoder evaluation via SynchroLink:
   The SynchroLink option transfers the encoder angle of an adjacent unit. In this case, we recommend the first process channel of the SynchroLink, i.e. P0145 = D1130.

Encoder selection: external encoder
(P130 = 5)

D1078 / D1890 Normalization:



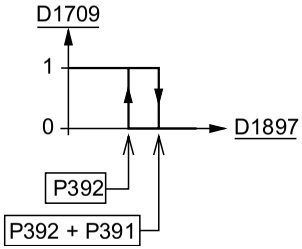


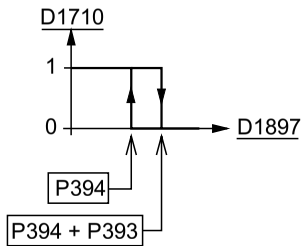
t_A: T_0 / 2

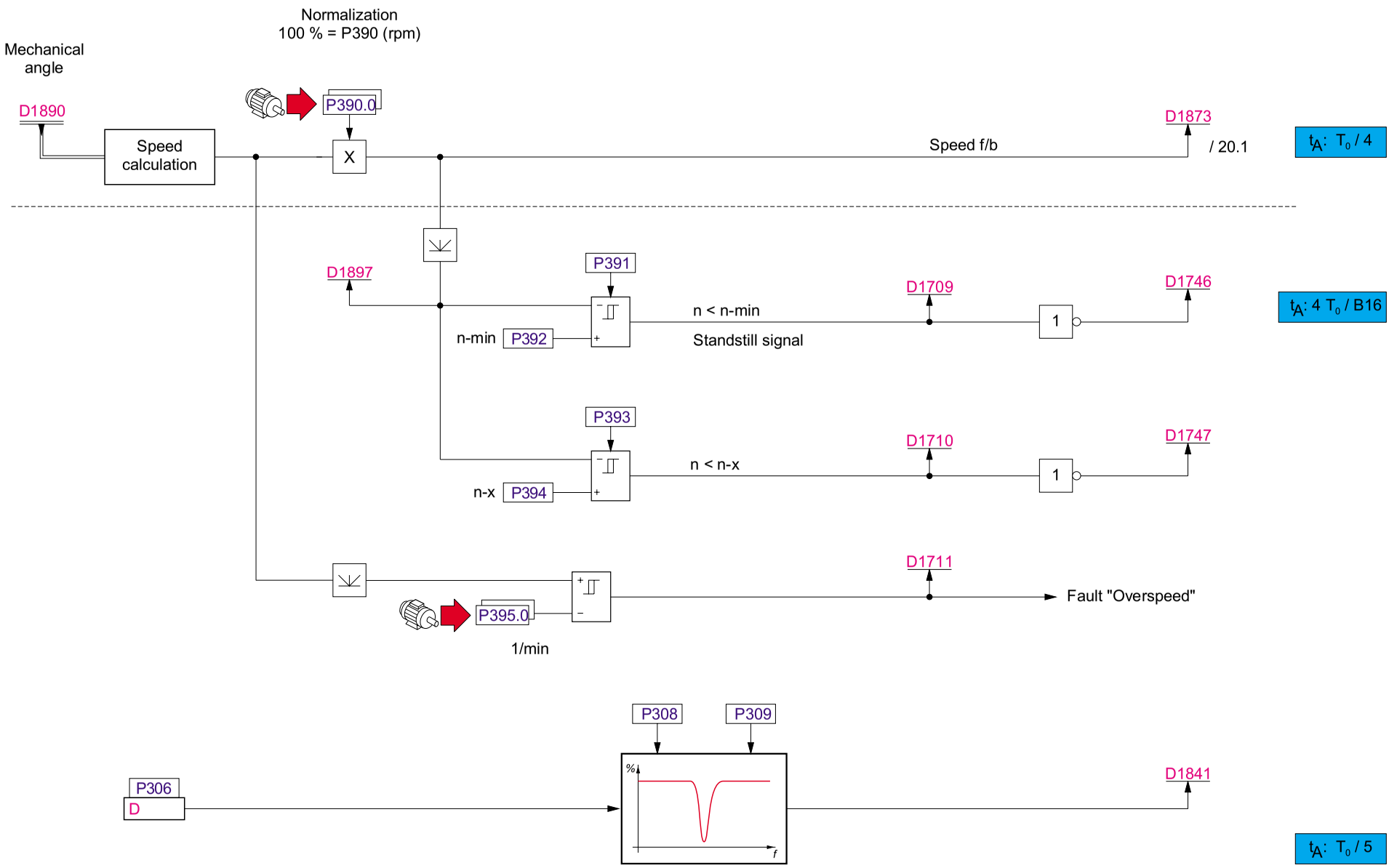
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** External encoder	Rexroth Indramat	Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **18**

Switching diagrams of the comparators

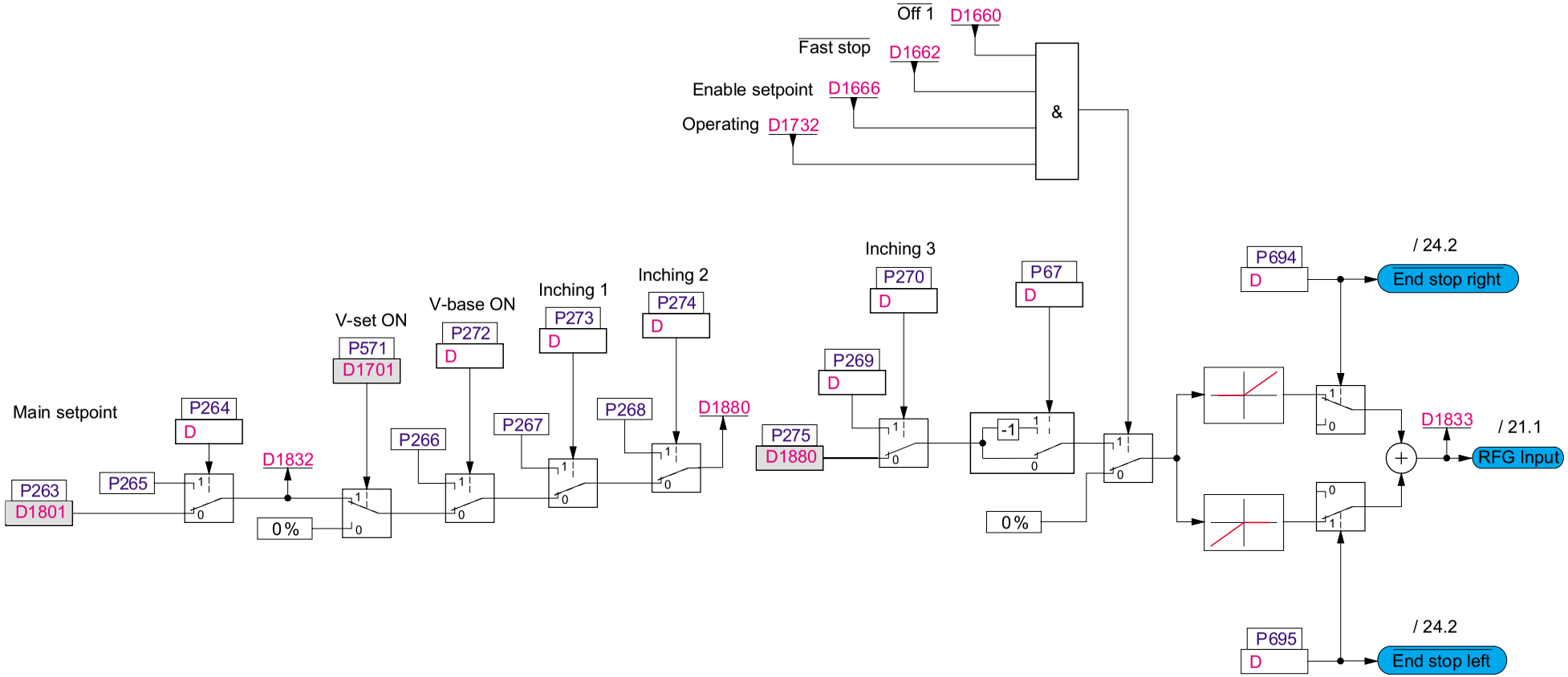






1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Speed evaluation, bandstop	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **19**



t_A: 4 T_0 / A11

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Setpoint generation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **20**

Ramp-function generator (RFG)

Ramp-up time and ramp-down time: When defining the ramp-up and ramp-down time, any selected rounding-off times are not taken into account.
The ramp-up time is the time which the RFG output requires to move from 0% to 100% and for the ramp-down time, appropriately from 100% to 0%.
If there is rounding-off, the ramp-up and ramp-down time is obtained by extending the linear portion of the characteristic up to the 0% and 100% intersection points, refer to the adjacent drawing.

Rounding-off UP and DOWN: The rounding-off is defined as the time in which the output quantity, starting from a constant initial value, reaches the maximum acceleration value (phase 1). The rounding-off is also defined as the time in which the output quantity, starting from its maximum acceleration, reaches a constant final value (phase 3).
The ramp-up operation with rounding-off is sub-divided into three phases:

Phase 1:

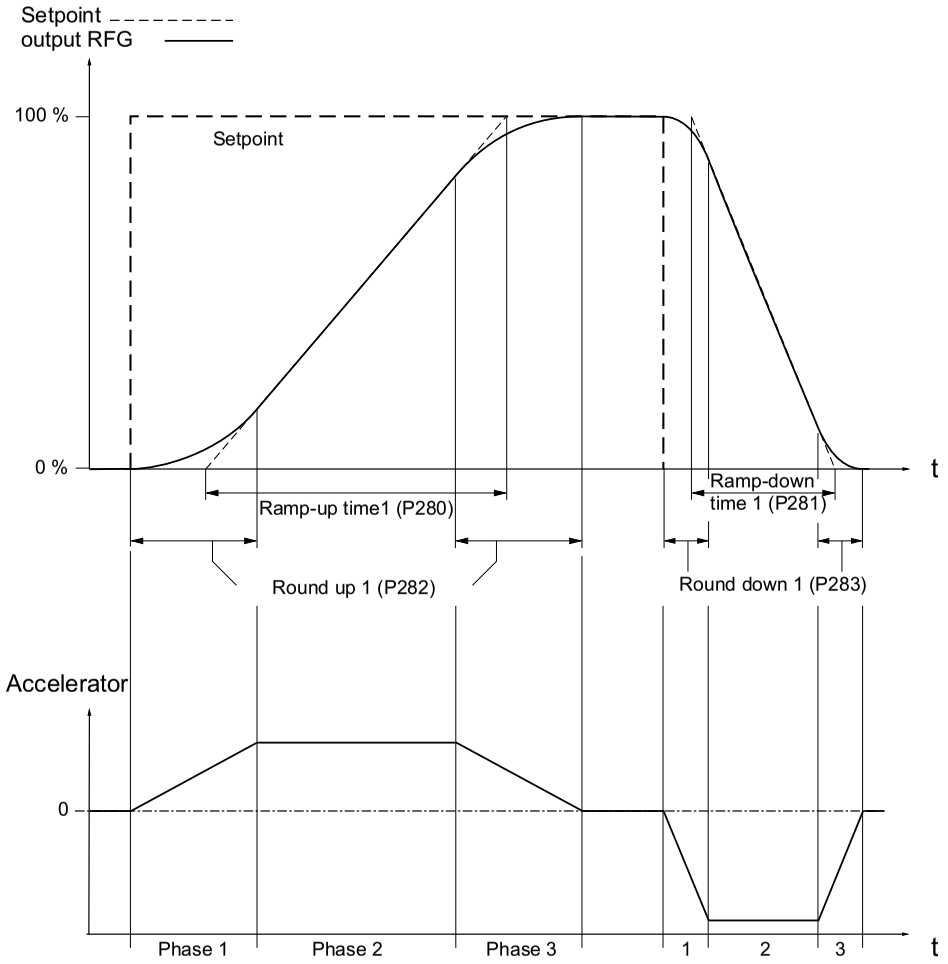
When the setpoint is increased, in the first phase the acceleration is increased proportional to time. In this rounding-off phase, the ramp-function generator output increases as the square of the time.

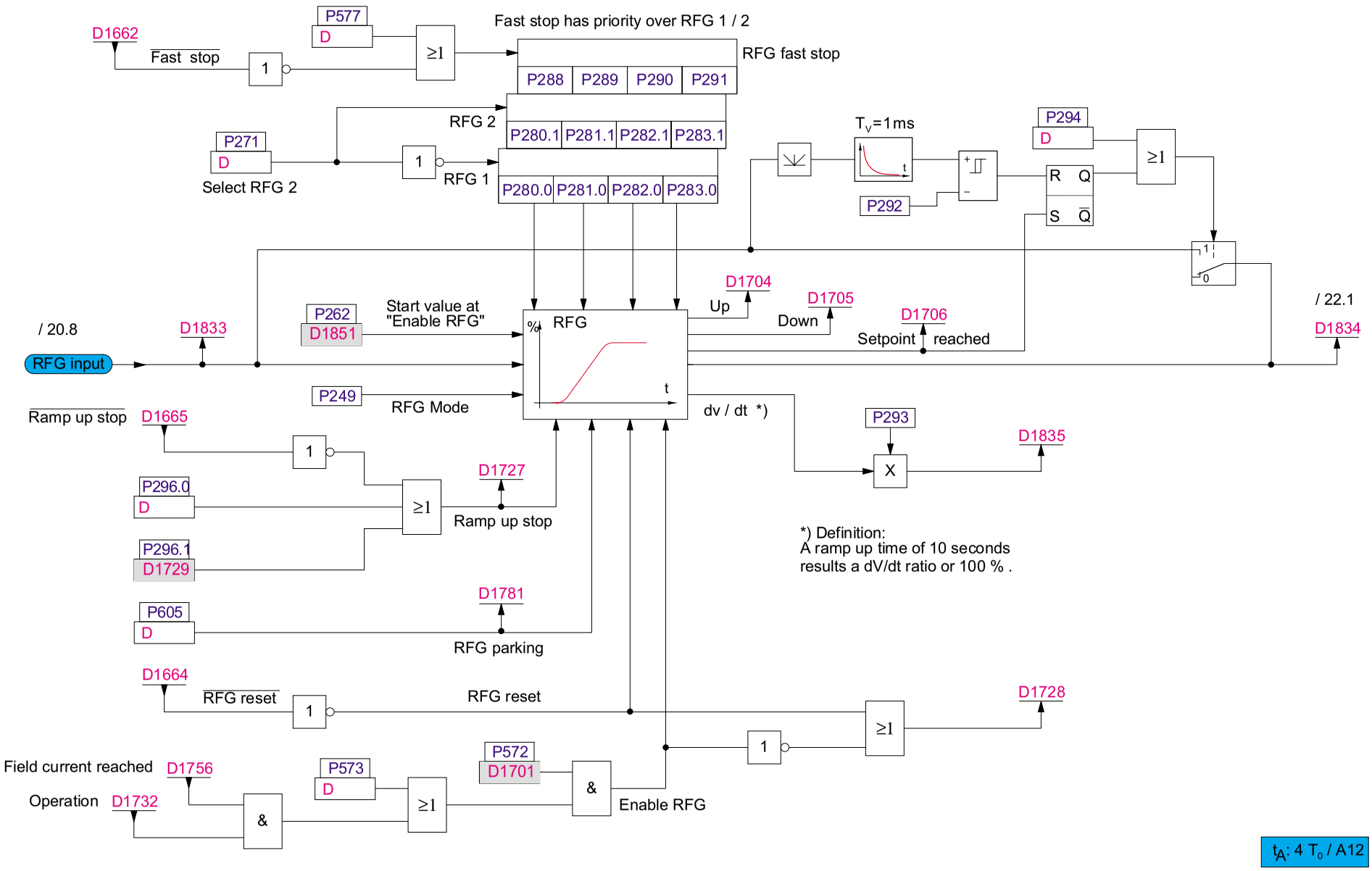
Phase 2:

After the maximum acceleration has been reached, corresponding to the entered ramp-up time, acceleration remains constant. The ramp-function generator output increases linearly with time.

Phase 3:

In the third phase, acceleration is reduced linearly with time. In this rounding-off phase, the ramp-function generator output approaches the final value as the square of the time (setpoint). The ramp-down operation behaves essentially the same as previously described.



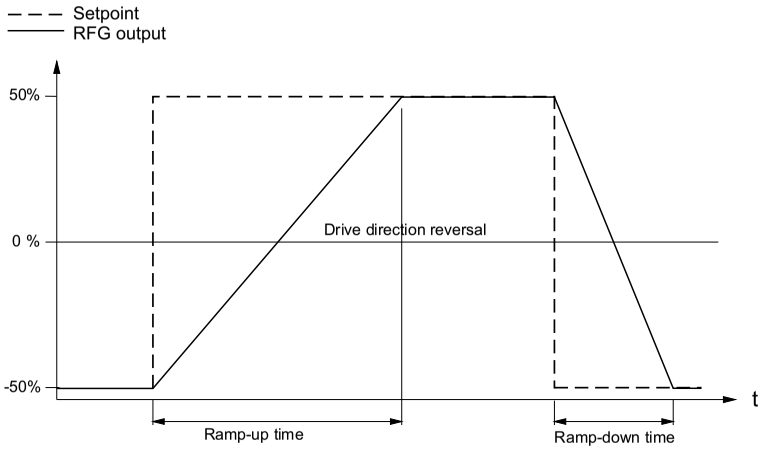


1	2	3	4	5	6	7	8

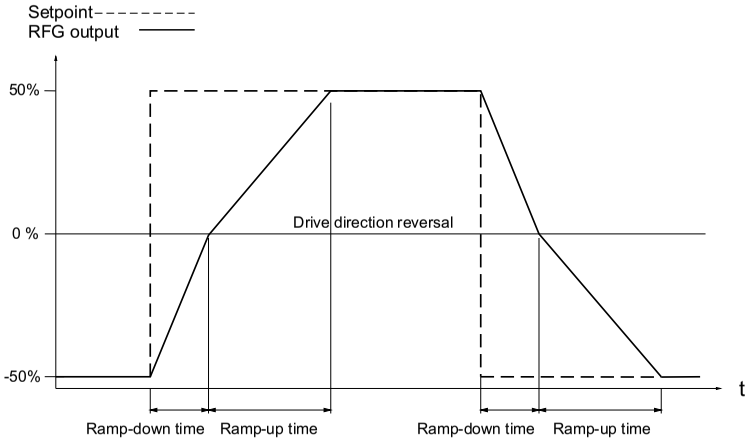
Function diagram **REFU*drive 500* - RD52** Ramp-function generator (RFG)	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **21**

Ramp-up and ramp-down with direction of rotation reversal

RFG mode “M direction”: P0249 = 0:
For arithmetical positive setpoint changes, the RFG UP times are effective, for arithmetic negative setpoint changes, the RFG DOWN times are effective.



RFG mode “speed direction”: P249 = 1:
For absolute setpoint increases, the RFG UP times are effective, for absolute setpoint decreases, the RFG DOWN times are effective.

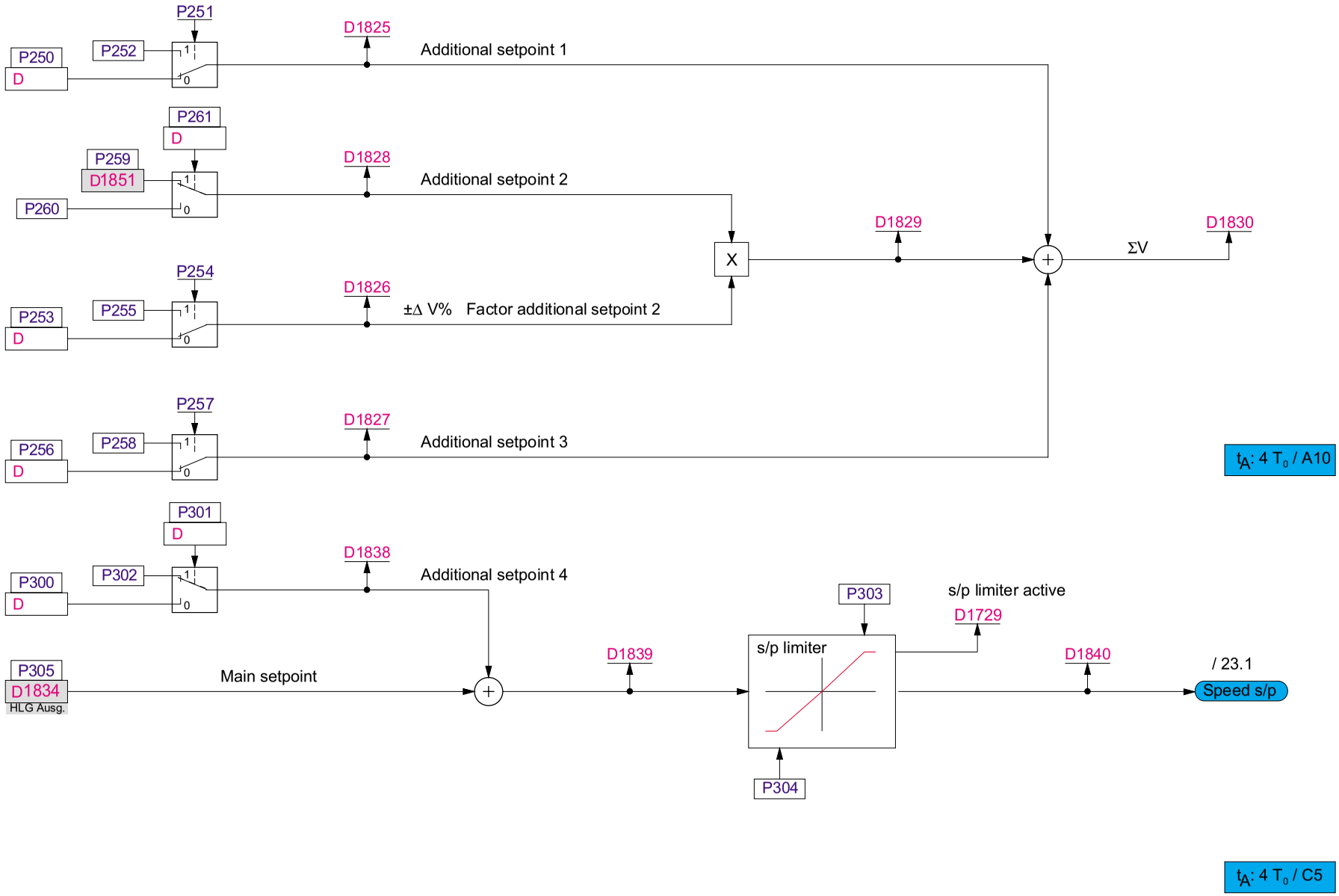


Ramp-up stop (1727)

The “Ramp-up stop” command holds the actual value at the ramp-function generator output, i.e. it no longer ramps-up to the setpoint applied.
However, the setpoint can ramp-down towards 0% at the ramp-function generator output.

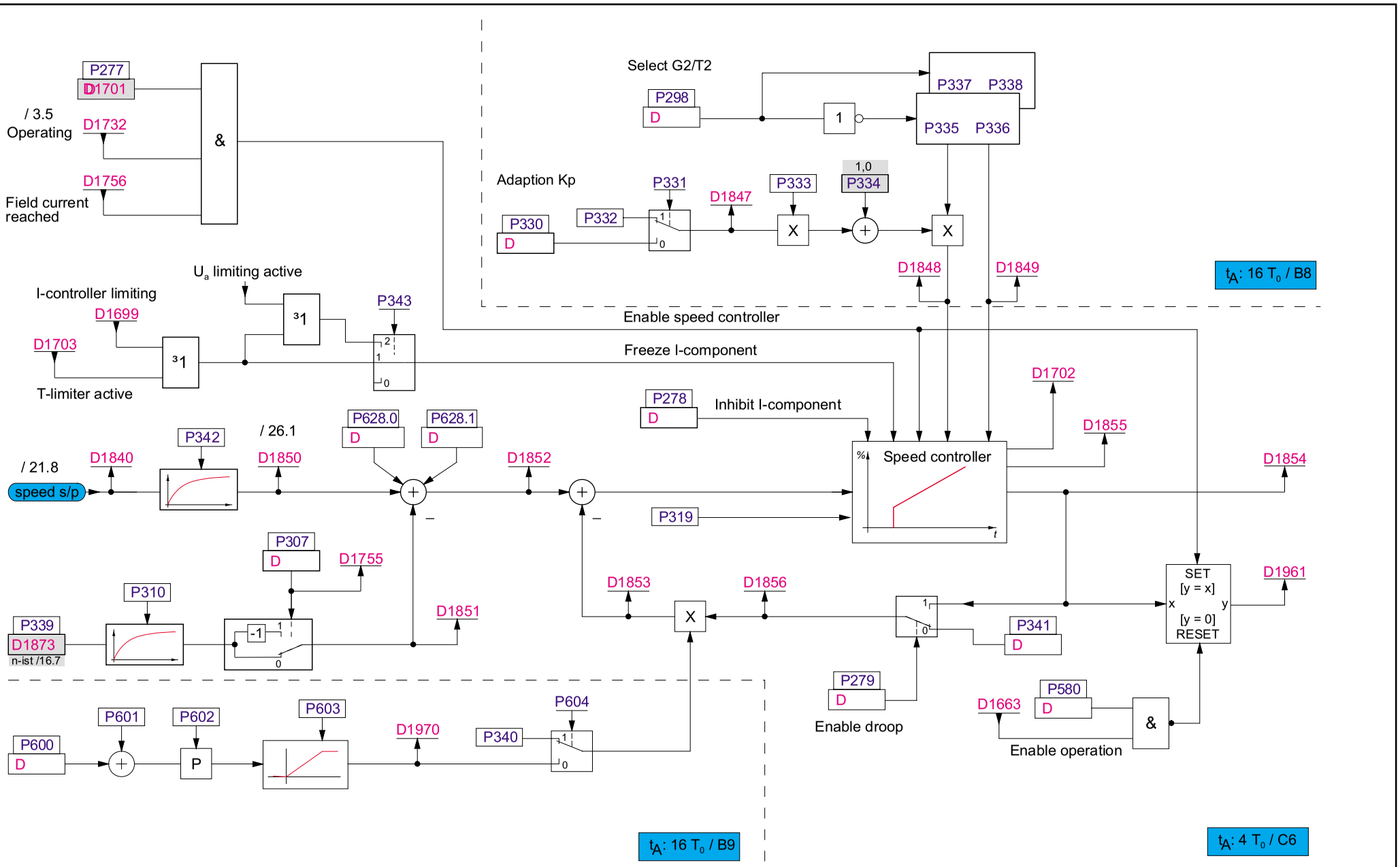
RFG park (1781)

The “RFG park” command holds the current value at the ramp-function generator output, i.e. it can *neither* be increased nor decreased as a result of a setpoint change.
Note: If the “RFG park” and “Off1” commands with braking are simultaneously active, the ramp-function generator does *not* return to zero, but maintains the actual value.



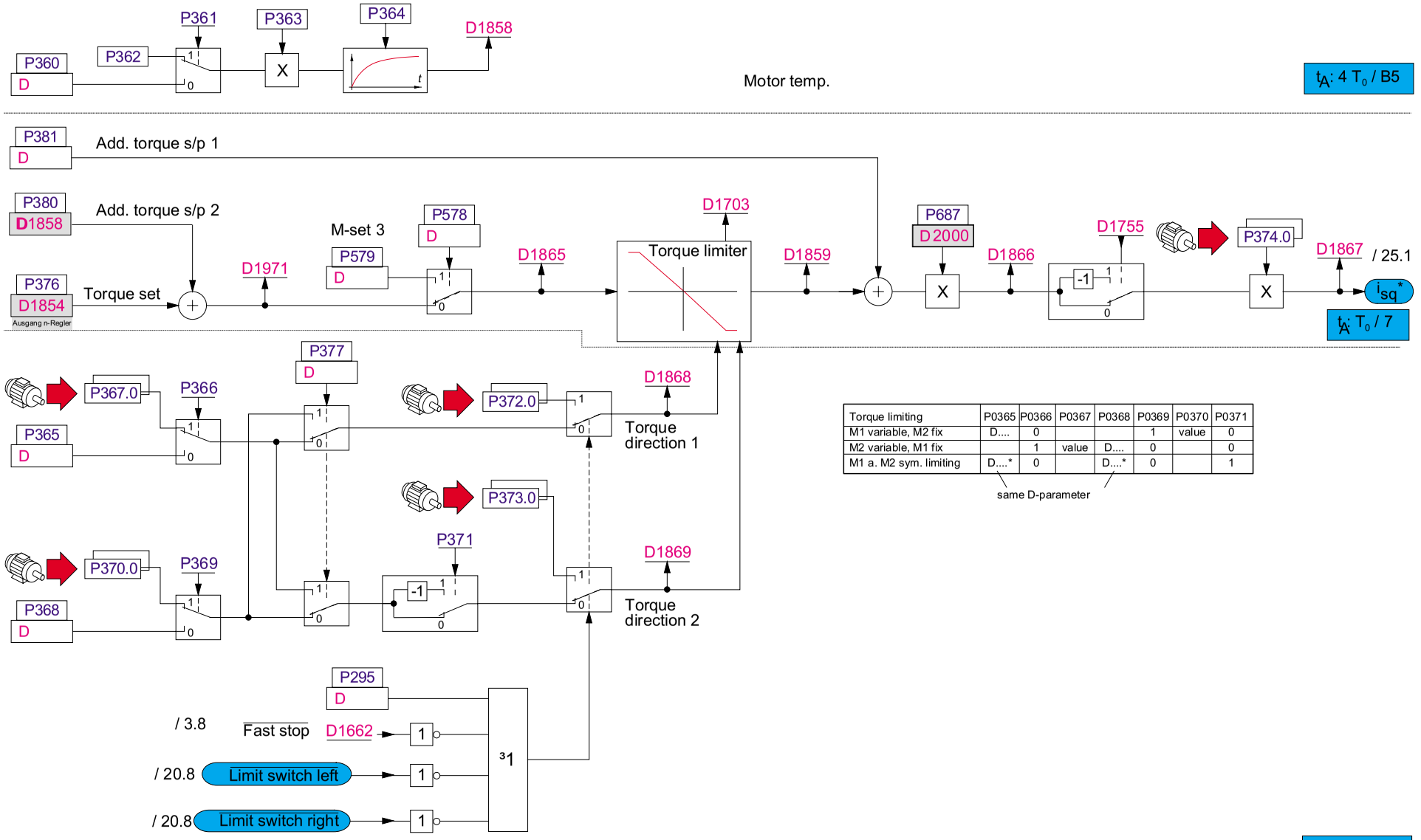
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Supplementary setpoints, setpoint limiting	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **22**



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Speed controller	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **23**



Torque limiting	P0365	P0366	P0367	P0368	P0369	P0370	P0371
M1 variable, M2 fix	D....	0			1	value	0
M2 variable, M1 fix		1	value	D....	0		0
M1 a. M2 sym. limiting	D....*	0		D....*	0		1

same D-parameter

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Torque limiting	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **24**

P109 Limiting (vector) the complete current; independent of all normalization factors, the maximum permissible current is entered here in A

P115 In field weakening, the coupling inductance L_m changes due to the lower magnetizing current. Thus, the gain factor of the torque-generating current i_{sq} to the torque changes. This parameter defines whether this parameter change should be compensated by an internal gain change. (the gain increases in field weakening).

Standard setting: With adaptation

P117 Indicates the internally calculated rated magnetizing current value (this can be subsequently changed).

P118 Indicates the internally calculated start of field weakening.

P119 Rated motor output

P120 Stator resistance for induction motors

P121 Leakage factor σ for induction motors

P122 Stator inductance of induction motors

P123 Indicates the rotor time constants T_r calculated from the rating plate data (this is only effective for induction motors).

P125,P126 For synchronous motors, allows the in-line and quadrature inductance to be separately entered (normally, this is internally calculated).

P128 Flux correction controller: This controller supports field-weakening operation by ensuring sufficient voltage reserve. Generally, this does not have to be changed, as the gain is internally calculated.

P129 Flux controller gain:

Standard value 50 % (flux is controlled with an internally calculated gain)

Special case 0 % (flux open-loop controlled). For open-loop controlled operation, the flux is established with delay according to an exponential function, duration approx. $3*T_r$. For closed-loop controlled operation, the flux is established with the maximum possible magnetizing current, duration approx. $1 \cdot T_r$

(this is only effective for induction motors).

P135- P143 Magnetizing characteristic $L_s = f(i)$ determined using the automatic motor identification (P189). The characteristic is referred to the value $L_s = f(0.4\ I_{rated})$. This reference value is saved in P122. Including the reference value in P122, the curve comprises 10 points ($L_s = f(0.1 I_n)$, $L_s = f(0.2\ I_n)$ ... $L_s = f(1.0\ I_n)$), between which, the characteristic is linearly interpolated.

P144 Allows the identification controller gain to be manually changed, which determines the rotor time constant T_r. Normally, this does not have to be changed, as the gain is automatically adapted to the motor.

Standard: 100%

Special case: 0% (disables the T_r adaptation)

(only effective for induction motors)

P147 This allows the current controller dynamic response to be increased or decreased. This changes torque rise times. Normally, this does not have to changed, as the gain is automatically adapted to the motor. However, it requires relatively precise information about the motor parameters. (e.g. from the automatic parameter identification routine.)

Settings P147 = extremely high (highest dynamic performance)
= high (average dynamic performance, standard)
= standard (standard dynamic performance)

P148 Is used to change the current controller gain. Generally this does not have to be changed, as the gain is automatically adapted to the motor.

Standard: 100%

P149 Selects from above which flux actual value torque can be output. For induction motors, torque can only be output, if the flux has been essentially established after the motor has been powered-up.

Standard: 75%

(only effective for induction motors)

P382 **Manual intervention, flux setpoint:** The quantity, entered via P382, is multiplied by the internal flux setpoint. The factory setting P382 = 2000 (100 %) results in the nominal setpoint.

P189 Allows the various operating modes to be selected:

Open-loop controlled operation with V/Hz characteristic from P181 – P188

Caution: This mode is only intended for test purposes and when commissioning the system.

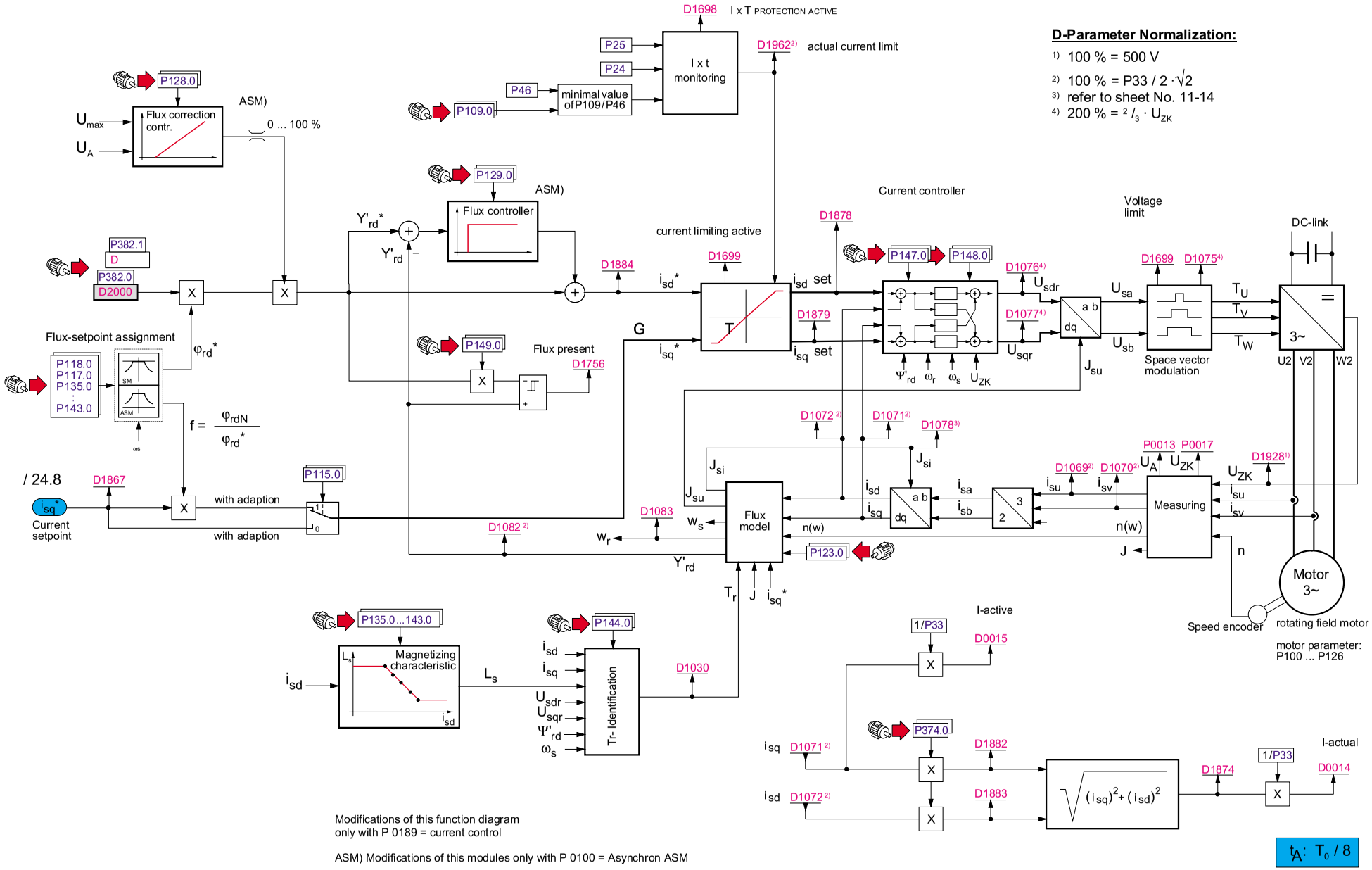
Closed-loop current controlled operation: Standard setting (field-oriented operation)

Motor identification: If this mode is selected, the next time that the inverter is enabled, an automatic motor identification routine is executed. A voltage is output and a test current flows. The motor does not rotate (the shaft might make short notching movements).

Prerequisites for automatic identification:

- The motor is connected with the selected encoder (P130)
- Encoder data (P130 onwards) and the motor rating plate data (P1 onwards) have been entered.
- During the identification routine, the yellow LED flashes quickly and ”Motor identification” is indicated in the display. Depending on the particular motor, the identification routine can take several minutes. After the identification routine has been completed, ”Mot ID ready” is displayed and the yellow LED flashes slowly. The drive converter should now be powered-down. After this, the determined data is automatically saved in a non-volatile fashion in the EEPROM (this means that data cannot be lost during power failures).
- When required, a new identification run can be made (if this is done several times, this can result in further improvements).
- If no further identification routine is required, then after power-off, P189 should be set to closed-loop current controlled. The drive converter can now be operated again in the normal mode. The determined values can be viewed in the following parameters (all of the quantities are phase quantities).
- Induction motor
  P117 - magnetizing current
  P120 - stator resistance Rs
  P121 - leakage coefficient σ
  P122 - stator inductance (for $L_s = f(0.4\ I_n)$; this is the reference value for the magnetizing characteristic P135 ... P143
- Synchronous motor
  P110 - stator resistance Rs
  P111 - three-phase inductance L_D

Normally, the motor can be operated with values estimated from the rating plate data. However, better results can be achieved using the motor identification routine.



D-Parameter Normalization:

1) 100 % = 500 V

2) 100 % = P33 / 2 ·√2

3) refer to sheet No. 11-14

4) 200 % = 2/3 · U_{ZK}

Modifications of this function diagram only with P 0189 = current control

ASM) Modifications of this modules only with P 0100 = Asynchron ASM

1	2	3	4	5	6	7	8

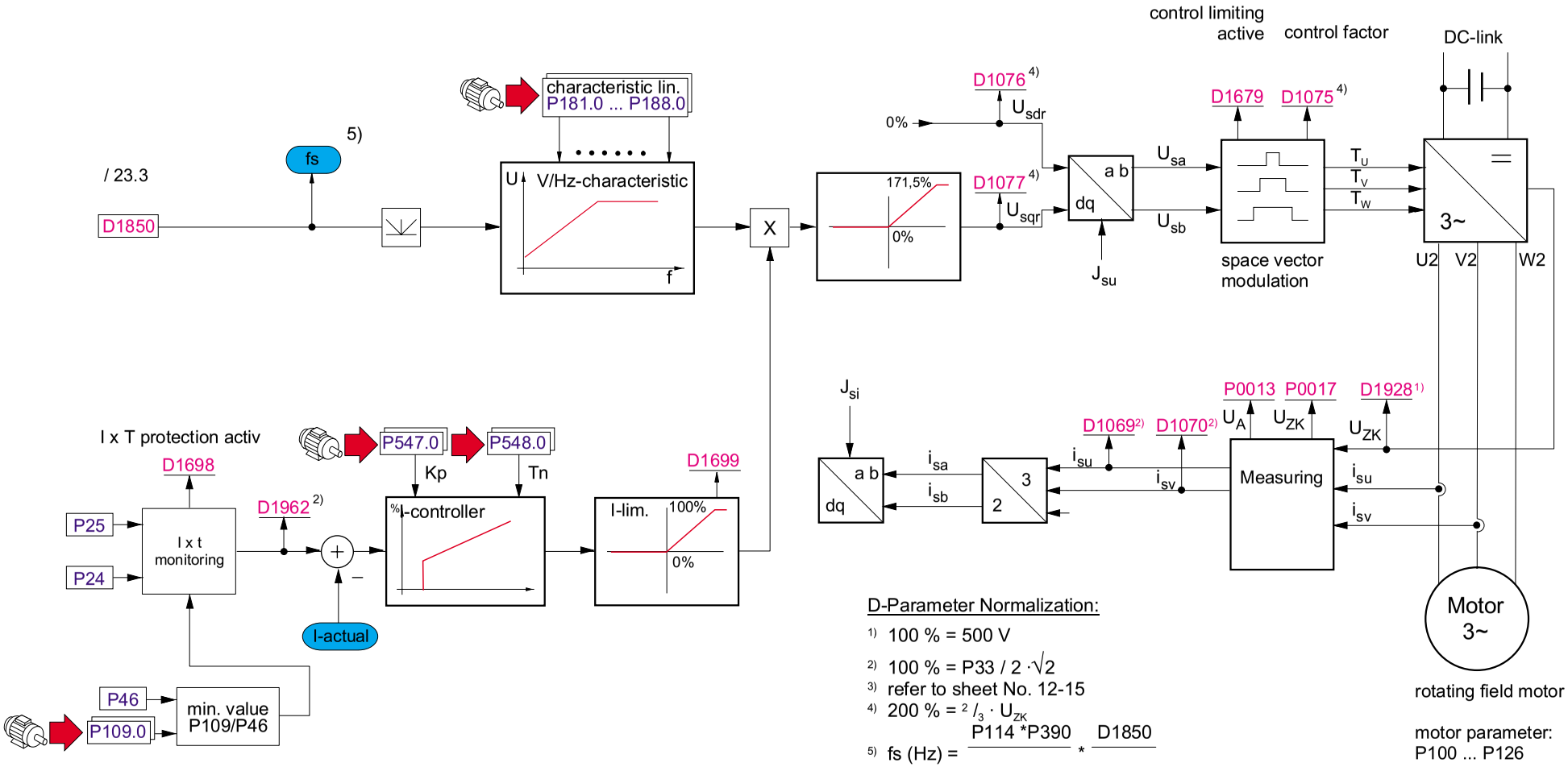
Function diagram **REFU*drive 500* - RD52**
Closed-loop motor control

Rexroth Indramat

Date: 2002-07-23

Firmware: FWC-SR1700-200-05VRS-MS

Sheet No. **25**



D-Parameter Normalization:

1) 100 % = 500 V

2) 100 % = P33 / 2 ·√2

3) refer to sheet No. 12-15

4) 200 % = $^2/_3 \cdot U_{ZK}$

5) $fs\ (Hz) = \frac{P114 * P390}{60s} * \frac{D1850}{100\%}$

P114 = present pole pair number

Modifications of this modules only with P0189 = voltage-controlled

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** V/Hz characteristic (special operation)	Rexroth Indramat	Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **26**

Resolution of the position information

The resolution is not rigidly linked with the encoder pulse number. As part of the required positioning accuracy, it can be selected to be lower. This is interesting, especially for high-resolution encoders, e.g. ERN1387, as the maximum distance depends on the position actual value resolution and the memory depth of the counter.

P780 Resolution in increments per motor shaft resolution. When entered via the operator panel, values to the power of two (1024, 2048 etc.) can be selected from a list. When entering via the interface, the assignment should be taken from the parameter list.

Which setting should be selected? Required positioning accuracy x 4, however not higher than the encoder accuracy (for pulse encoders P130 x 4, for resolvers 4096...8192, for ERN 1387, approx. 2^{17}).

Normalization of the position values

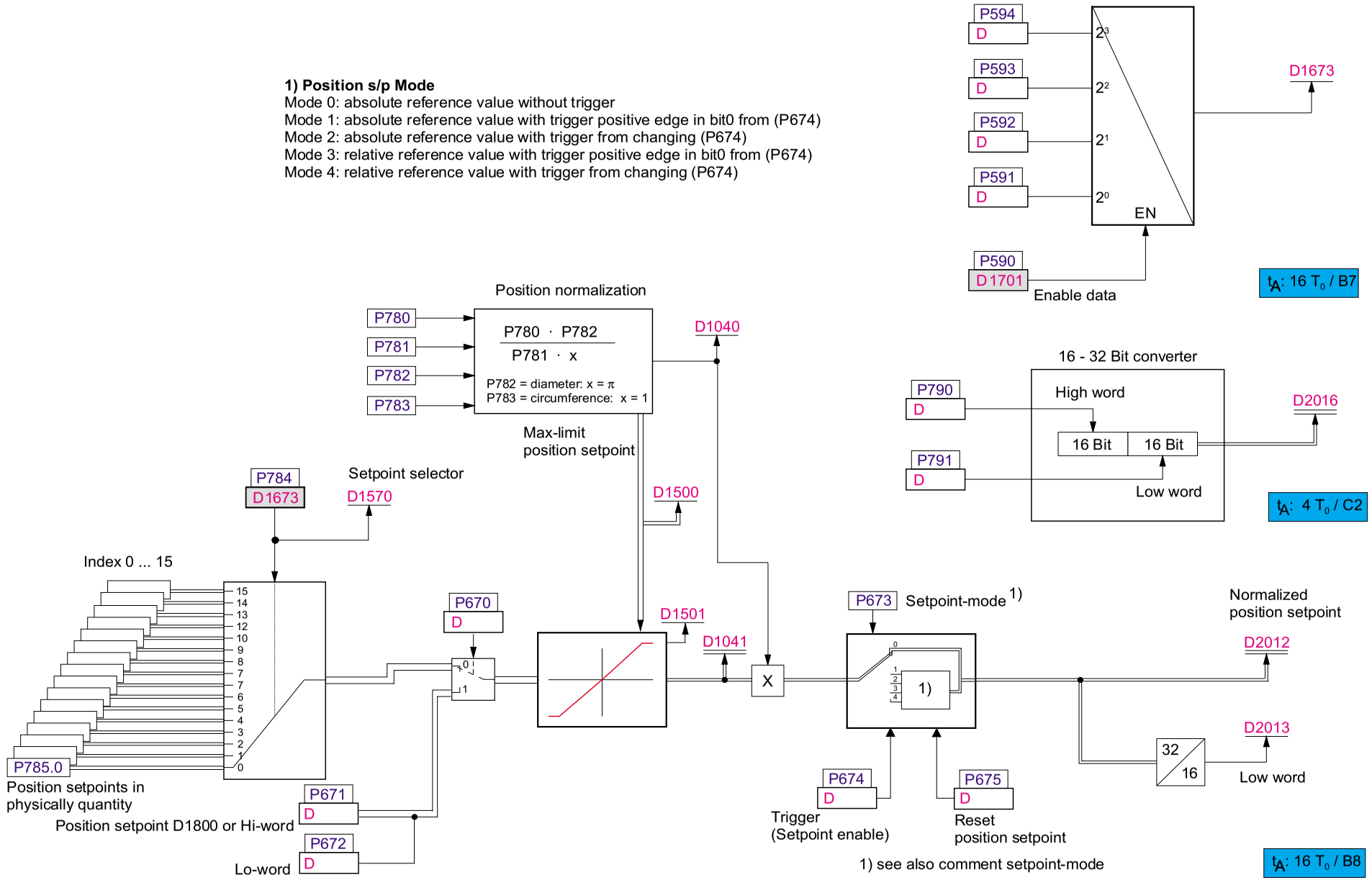
P781..P783 Using these parameters, an adaptation is made to the position unit at the machine (e.g. mm) for the motor rotary motion. Enter the circumference or diameter (depending what is specified) of the drive pulley into P781, whereby P783 must be appropriately selected as to whether the data in P781 refers to the diameter or circumference. Enter the gearbox factor into P782, which is located between the drive pulley and motor shaft.

P785 Position reference value memory: The value is entered in the selected lengths units, refer to the normalization, P781...P783. One of the 16 position reference values is selected via the D parameters entered in P784.

Connecting 32/16 bit D parameters to variable parameter sources

All of the signal paths, which are designated by a double line, are processed with 32-bit word format which means that there are both 32 bit D parameters (e.g. D2012, D2014...) as well as also 32 bit parameter sources (P647...P649). This also means that there is a 32-bit connection when connecting these parameters. When connecting a 16 bit D parameter to a 32 bit source or a 32 bit D parameter to a 16 bit source, only 16 bits of information is transferred, whereby the high word (bits 16...31) of the 32 bit value is always used.
If a16 bit value is to be connected to the low word of a 32-bit source, or a 32-bit value is to be generated from 16 bit components (e.g. when transferring PZD from interfaces), the 16-32 bit converter can be used.

1) Position s/p Mode
Mode 0: absolute reference value without trigger
Mode 1: absolute reference value with trigger positive edge in bit0 from (P674)
Mode 2: absolute reference value with trigger from changing (P674)
Mode 3: relative reference value with trigger positive edge in bit0 from (P674)
Mode 4: relative reference value with trigger from changing (P674)



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Position reference value memory	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **27**

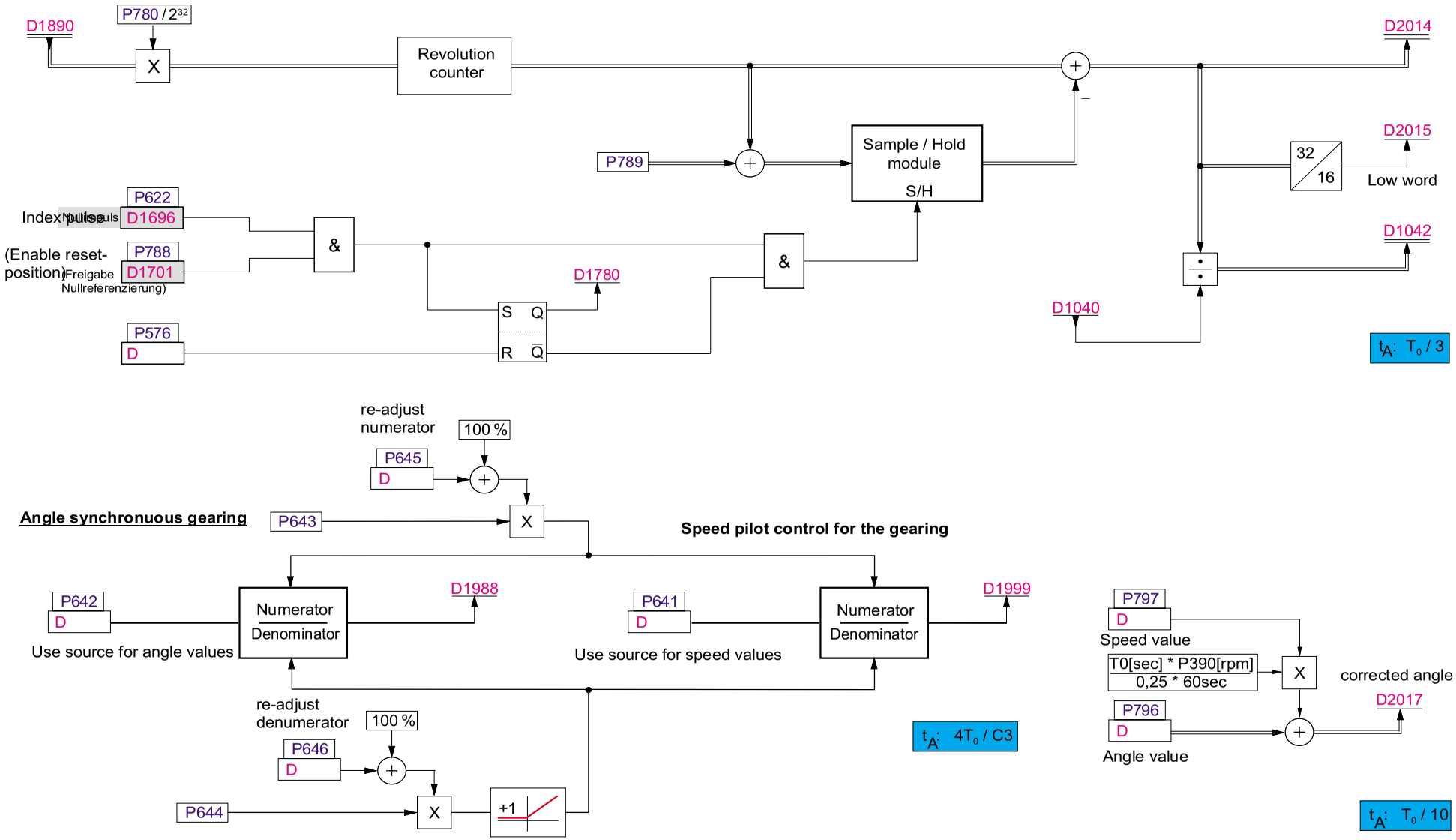
Position actual value referencing

The position actual value must be set once each time that the unit is initialized (power supply On). This is generally realized using a reference contact, which marks a pre-adjusted point along the distance to be moved along (zero range). This contact should be connected to P788 via a digital input. For encoders with zero pulse, an adjustment which is still precise enough, can be achieved (P622 = D 1696).

P789 The difference between the required position zero and the reference mark, is entered in the same lengths units as for the setpoint memory P785.

Angular correction module for the electronic shaft

If an electronic shaft is established between several inverters using a SynchroLink connection, the incoming angular setpoint from SynchroLink must be corrected. The output of the angular correction module (D1207) can be entered into the position controller as setpoint (reference value).



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Position actual values, angular synchronous gearbox	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **28**

Closed-loop position controller with root characteristic

General information: For travel to a target with constant deceleration (braking torque), the velocity (speed) behaves like a root characteristic over distance. This is taken into a consideration by the characteristic in the setpoint [reference value] / actual value difference of the position controller. However, the stability criteria of the complete position control loop (linear section) determines the gradient at the zero setpoint.

Procedure when commissioning:
The position controller can be set after the current and speed controller have been optimized.

- Set the linear section to an average value with P793 - approx. 10 %
- Set the controller gain P654 to 0.5
- Set the integral action time P655 to 0 ms (disabled)

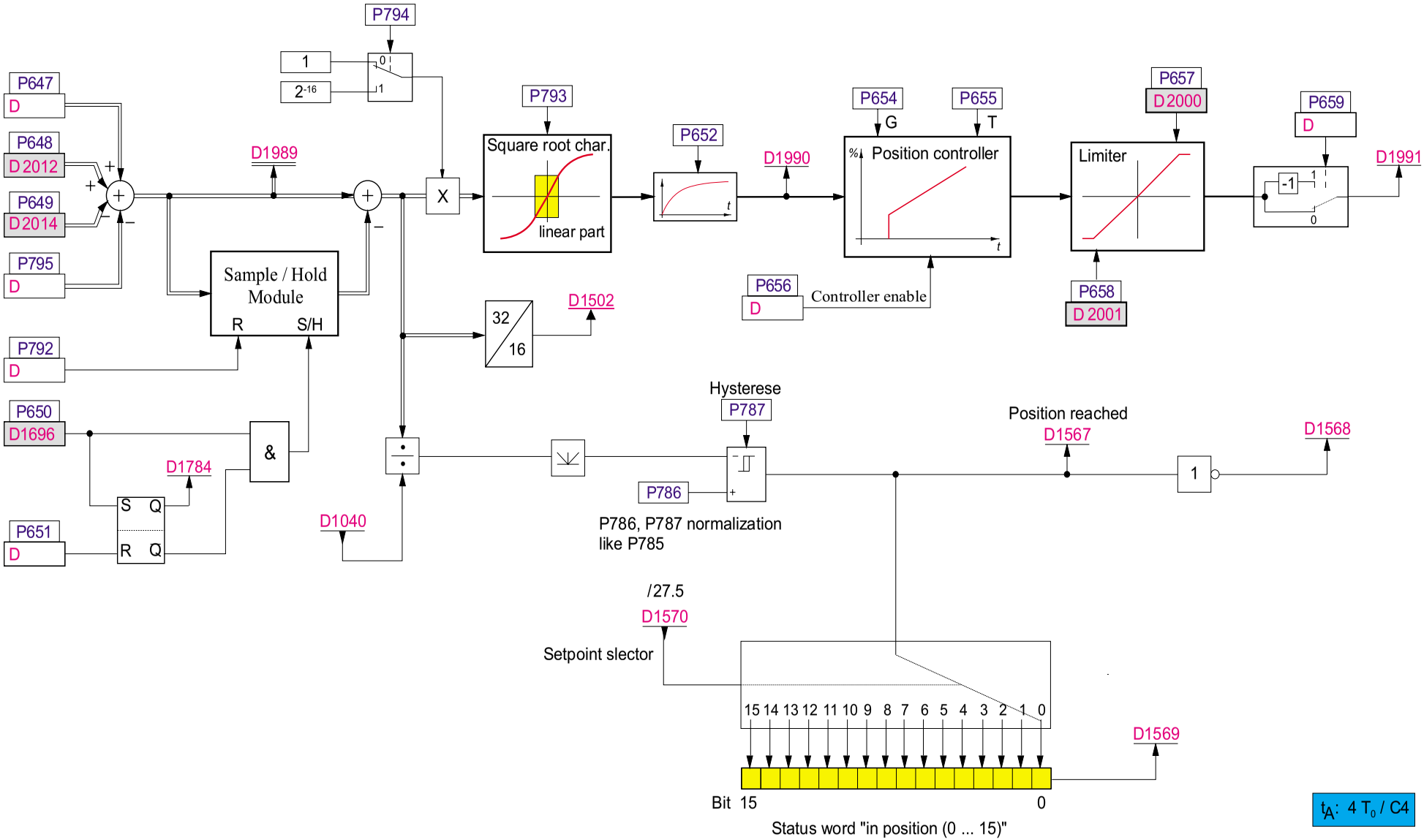
Bring the position deviation to zero and enable the position controller. Enter a low setpoint step and monitor the step response using the REFUwin oscilloscope. The setpoint step amplitude should be set small enough (just a few increments) so that the speed controller does not go to its limit. The low signal behavior can be optimized using the controller gain P654. Typical values lie between 1 and 5. Set P793 so that for large signal changes of the position reference value, the maximum deceleration torque is reached; the speed controller must remain in the active range (increasing P793 increases the torque).

Position controller expansions

1. The angular addition location of the position controller has an additional inverted input with P795. This means, that especially when using an electronic shaft, an additional angular offset can be entered.

2. For the electronic shaft application, if angle D1890 is used as reference value / or actual value for position controller, which precisely emulates one motor shaft revolution, then the loop normalization with parameters P780..P784 is not required. Angle D1890 is a 32 bit quantity, however its resolution is far too high (2^{32} increments/360 degrees), which means that the angular difference can be reduced by a factor of 2^{16} using P794 (switch).

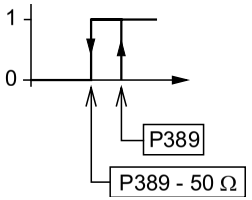
Select the position controller: P637



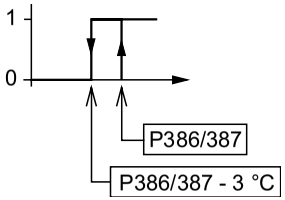
1	2	3	4	5	6	7	8

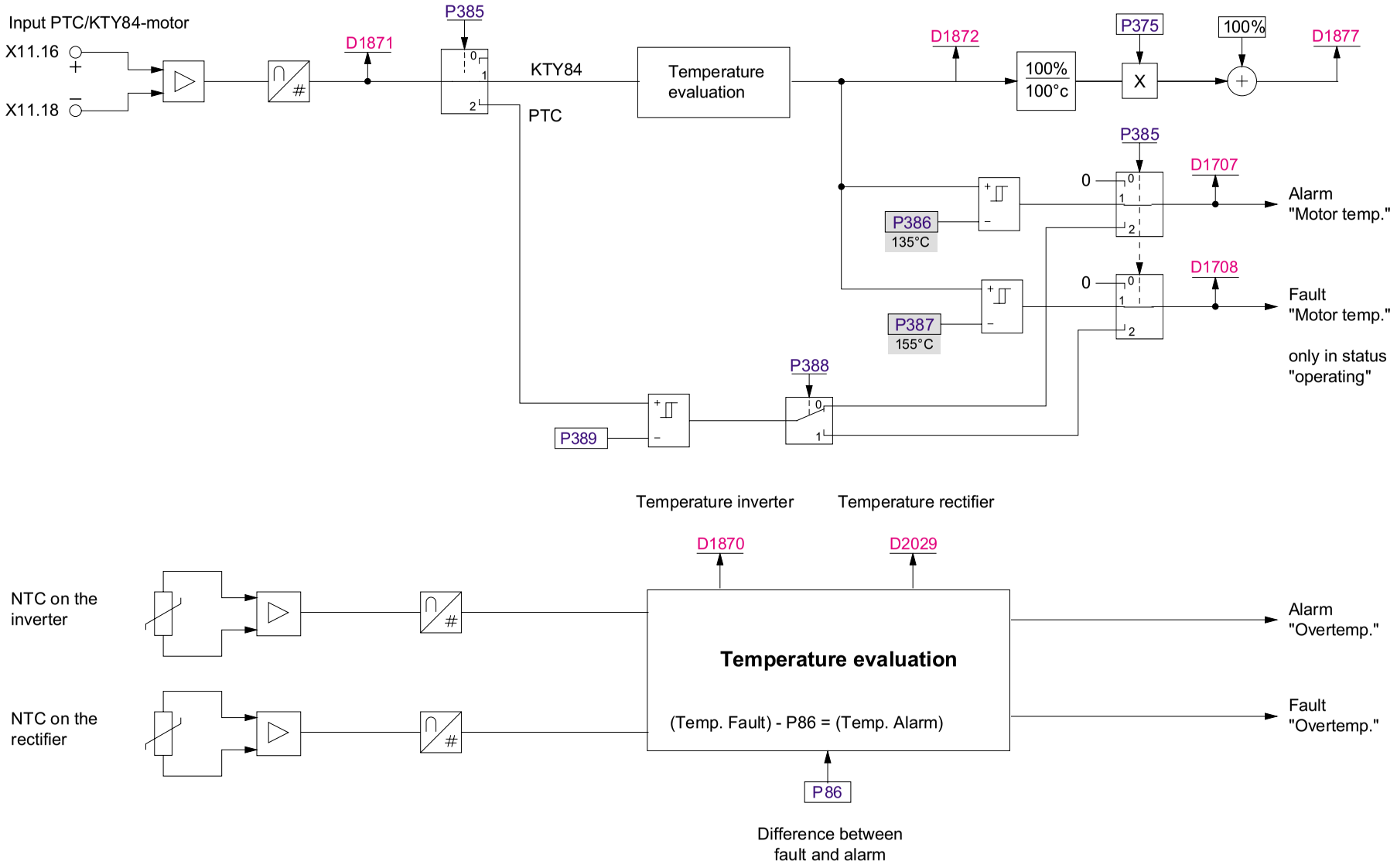
Function diagram **REFU*drive 500* - RD52** Position controller	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **29**

Switching diagram of the comparator PTC



Switching diagrams of the comparators KTY





1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Temperature evaluation	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **30**

Plotting the friction characteristic

The friction characteristic automatic plot can be called-up via a digital input or via the serial interface (connect the appropriate control bit in P359). The unit power-up, operating enable and / or speed controller enable are parameterized so that they correspond to the other drive requirements.

Example:

- Assign digital input 3 to the “Plot friction characteristic” control signal; to realize this, set P465 to “Input” and connect D1716 to P359.
- Enter the speed setpoints for the friction characteristic in P345.0 to P345.9 in an increasing sequence. This means that the density of the points along the characteristic are adapted to the friction characteristics.
- Enter the ramp-up time in parameter P458. This value is also automatically used for the ramp-down time. The rounding-off is 10 %.

Automatic sequence

The “Plot friction characteristic” control signal of the selected digital input must be set to high before the “Enable operation” control signal!

After operation has been enabled, the drive accelerates to the first speed (P345.0) with the ramp set in P458. After a delay time of t_W = 200 ms + 100*T_n, the speed encoder output value is averaged over 10*T_n and transferred in parameter 346.0. Tn is the integral action time of the active parameter set associated with the speed controller (P336 or P338).

The next speed values are then approached. After the last value, the drive goes down to zero speed along the ramp and sets parameter D1759 to 1 (= “Friction characteristic plot completed”). This parameter can be output via a digital output or via the interface for an external control. This means that the external control recognizes the end of the friction plot and removes the operation enable and the ”Plot friction characteristic” control signal. This means that D1759 is again set to zero and the friction values are saved in the EEPROM so that they cannot be lost when the power fails (this means that they are saved in a non-volatile fashion).

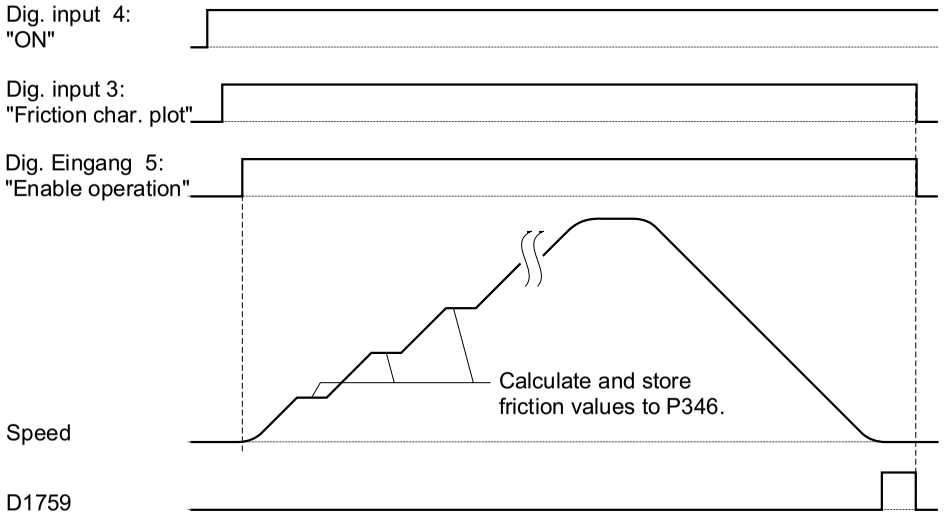
Interruption

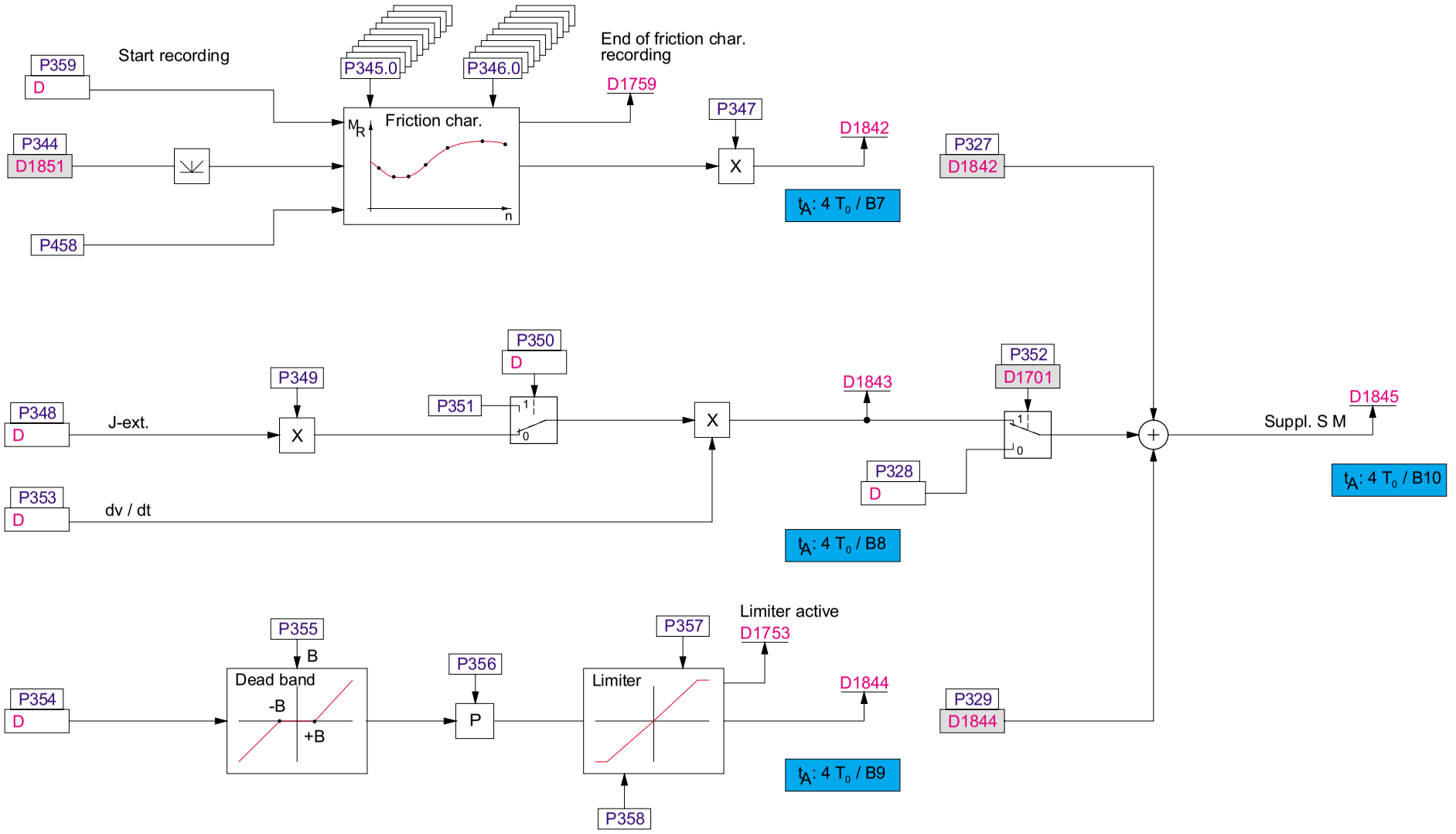
The friction plot can be interrupted by withdrawing the operating enable. The friction plot is then continued at the previous location after operation has been re-enabled.

Cancellation

To cancel the operation, the “Operating enable” and the ”Plot friction characteristic” control signal must be withdrawn. The newly plotted friction values up to this time, are saved in the operating memory, and remain valid until the power supply voltage is powered-down. The old friction values must be transferred out of the EEPROM when powering-up again.

Plotting the friction value diagram



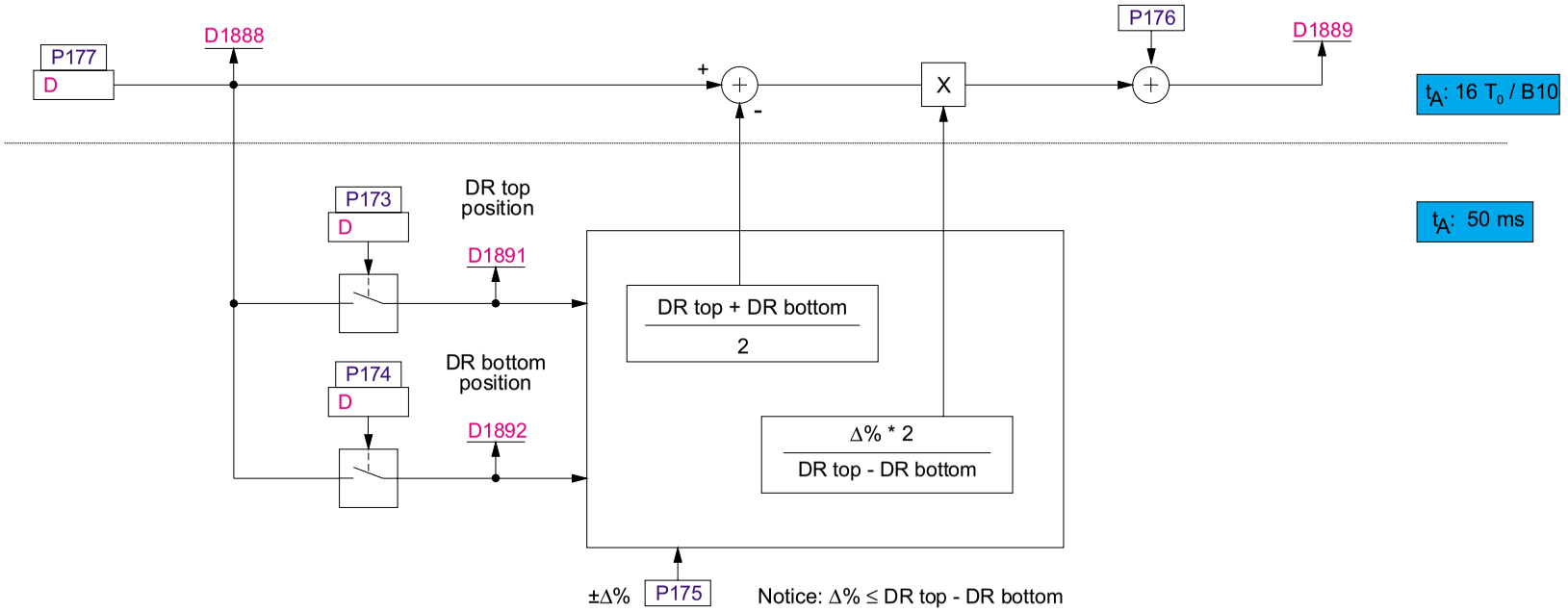


1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Friction characteristic, dv/dt input	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **31**

Dancer rolls “teach-in” function

Commissioning a dancer-roll control system is made significantly easier and speeded-up using the teach-in function. The dancer roll is connected to the drive converter as usual.
A 0 ... +10V reference voltage is available for the potentiometer feedback, if the analog output is not required. The dancer roll output can be connected at any drive converter analog input. The appropriate D parameter of the analog input must be connected in P177.
When executing the dancer roll ”teach-in” function the normalization and the offset (dancer roll center) are calculated from the analog values of the upper and lower dancer roll end positions and the required (parameterizable) dancer roll intervention. This offset can be additionally adjusted using a parameter.
The dancer roll correction signal is available at parameter D1889. The calculation is initiated by activating a digital input. The assignment is realized separately for dancer roll top and dancer roll bottom, so that two digital inputs must be parameterized. In order that the values are saved in the EEPROM in a non-volatile fashion, the digital input must be activated for at least 2 sec during the teach-in operation.
After the ”teach-in” function has been completed, these digital inputs are no longer required, and can be used for other functions by re-parameterizing them.



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Dancer roll „Teach-in“ function	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **32**

Controlling a mechanical braking device

P89 [1701] Freely-available control input of the AND logic operation (output D1668)
Using this parameter, an external or internal condition can be specified for the brake control, e.g. Emergency Off.

P90 Control input of the OR logic operation (output D1669)

P90 = D1700 Function, operating brake
The brake is immediately closed after the “OFF1” or “Inhibit operation” command, and brakes the motor.

P90 = D1746 Function, holding brake
The brake only closes for $n<n_{min}$ whereby the switching threshold n_{min} is specified with P392.

P92 [0 sec] Switch-out delay after the “OFF1” or “Inhibit operation” command
The mechanical brake delay time when closing can be compensated using this parameter. After the Off command, the inverter remains operational until the brake is completely closed. This prevents a no torque condition during the brake delay time.

For a command “OFF 2” (power-down), “OFF 3” (fast stop), function no-load coast down or fault, the brake close signal is immediately output without delaying the inverter inhibit.

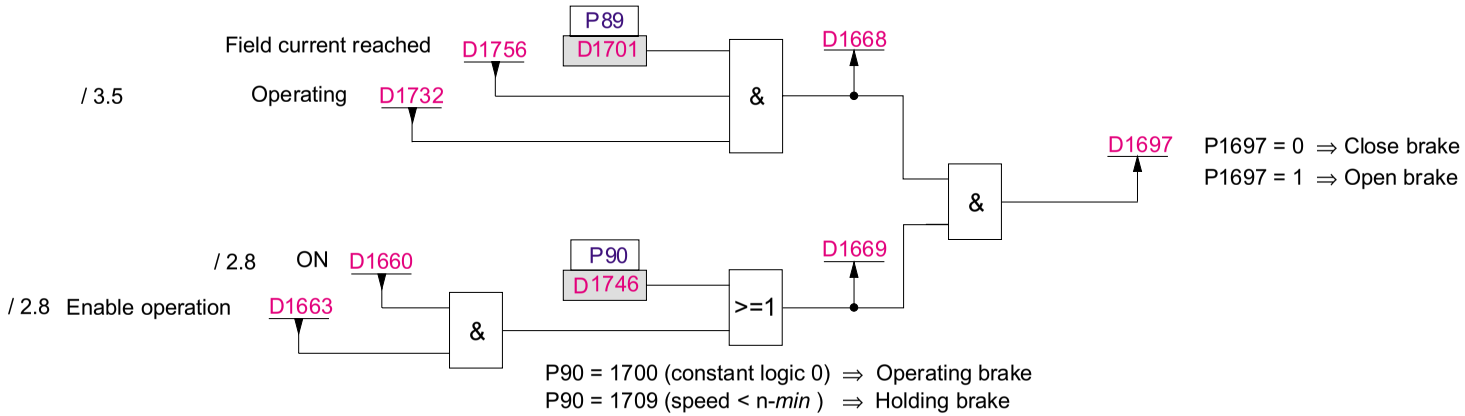
Function description

Switch-on command for holding or operating brakes:
Parameter D1697 is available as control command for a mechanical brake.
As for all display parameters, it can be freely logically combined, e.g. at a digital output or to control word 2

Status 0 “Close brake” command
Status 1 “Open brake” command

The control logic ensures that the brake can only be opened when the field current has been established (isd), and in the status “Operation enabled” (no fault/alarm).
For induction motors, the full motor torque is then available.
For permanent-magnet synchronous motors, bit D1756 is permanently set to 1 in operation.

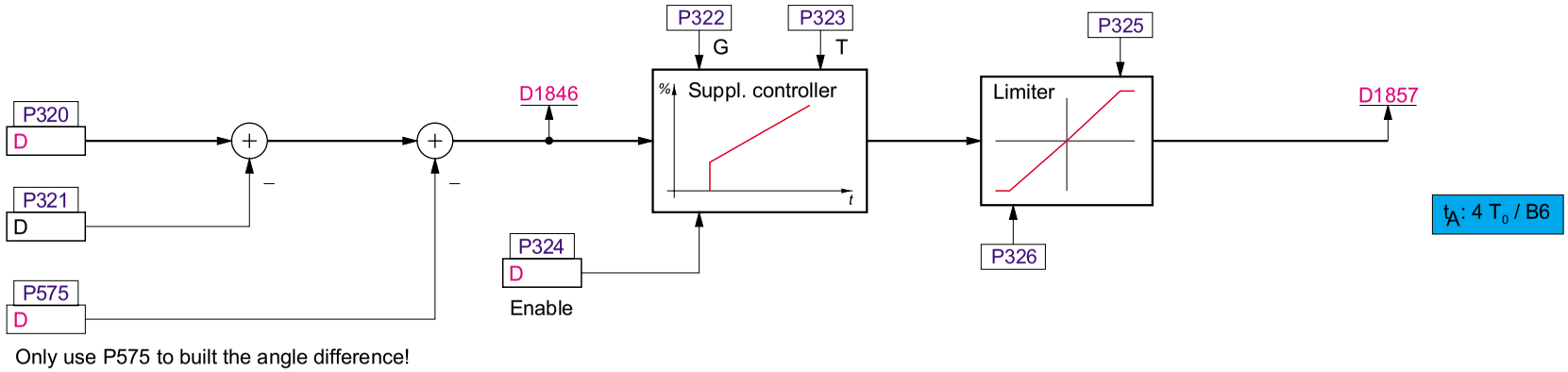
At power-up, the setpoint should be enabled (e.g. ramp-function generator RFG) delayed by the brake opening time, in order to prevent the motor starting with the brake still closed. However, depending on the particular brake type, this can be neglected.



t_A: 10 ms

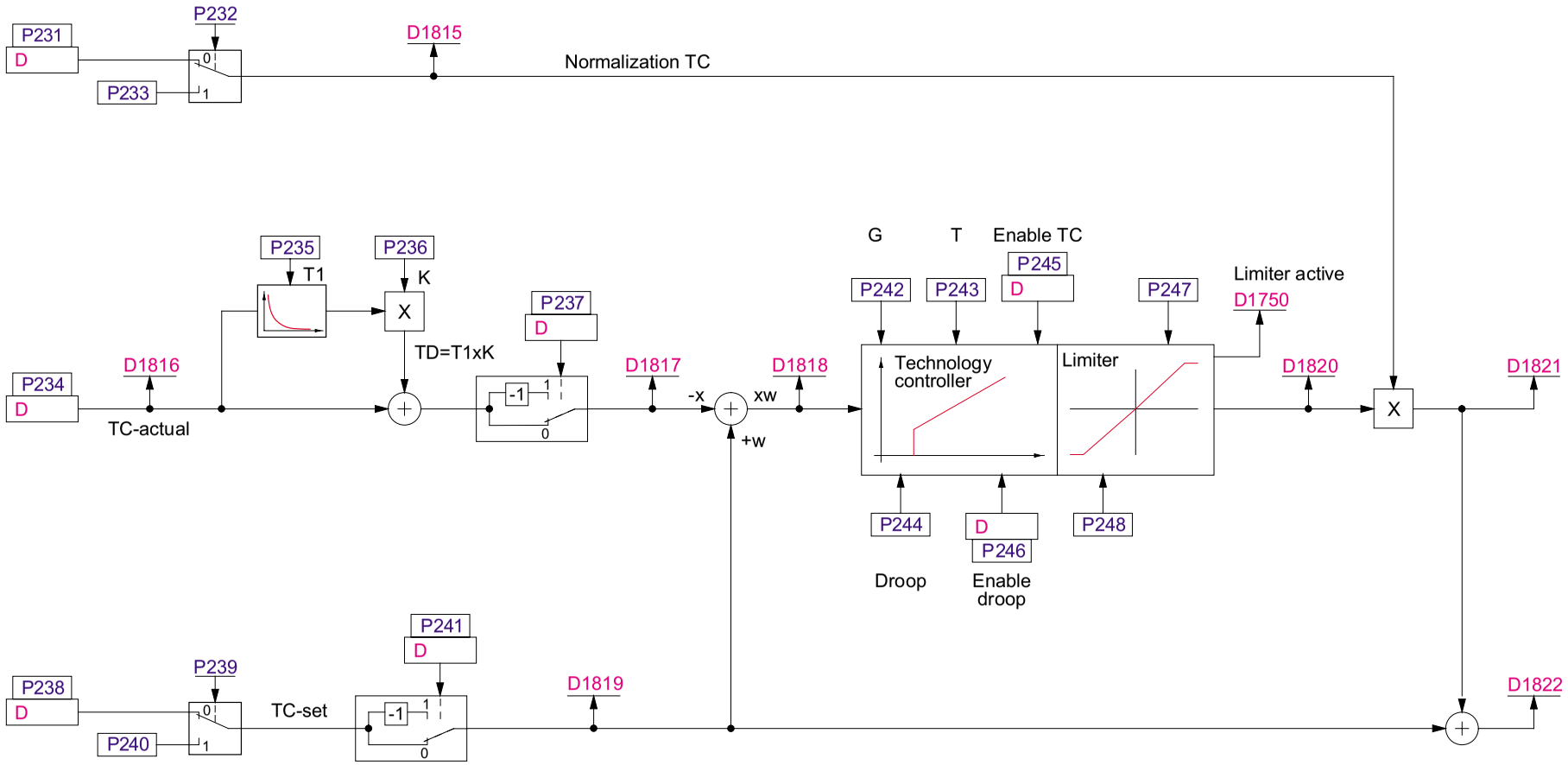
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Controlling a mechanical brake	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **33**



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Supplementary controller	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **34**

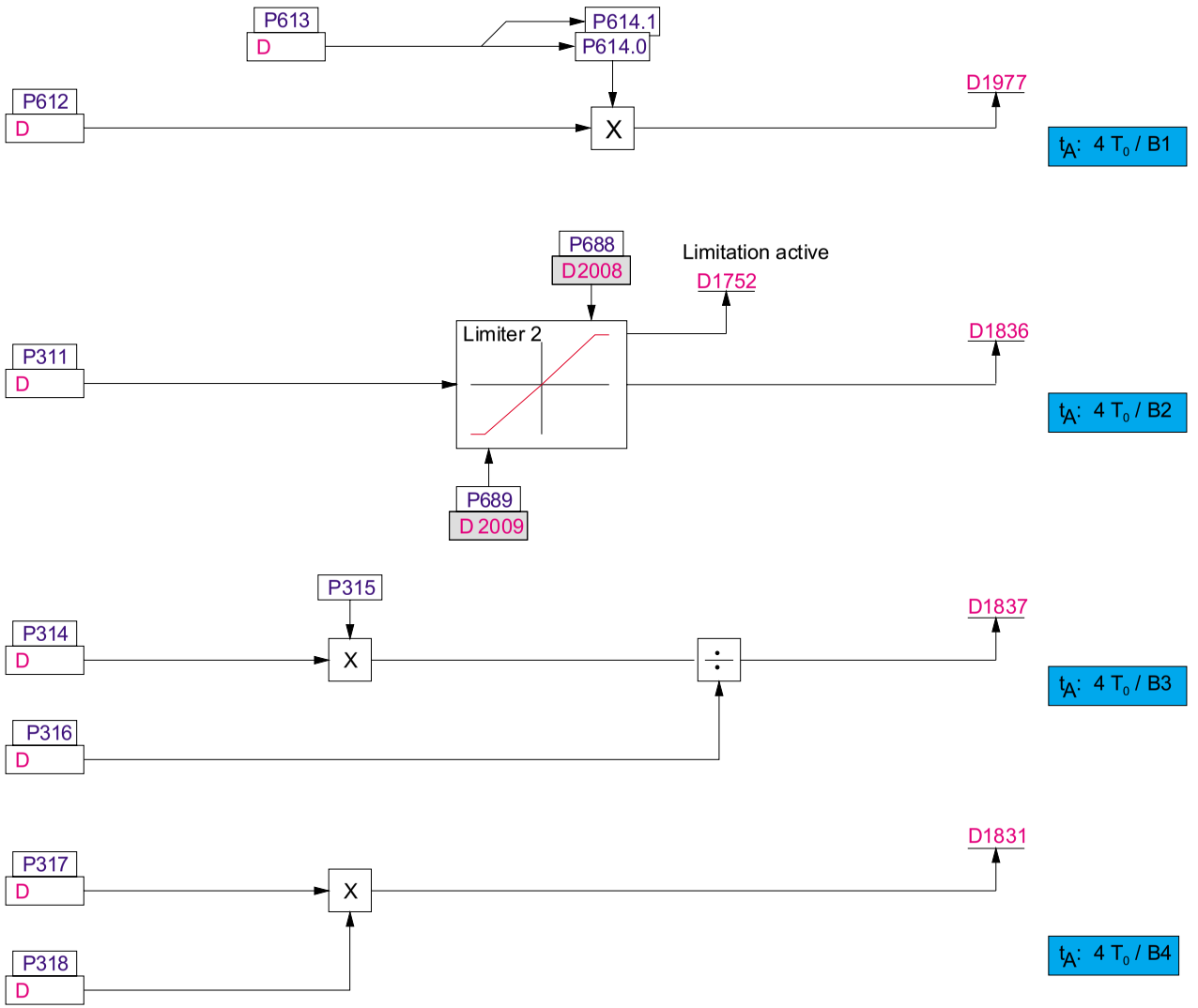


t_A: 16 T_0 / B6

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Technology controller	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **35**

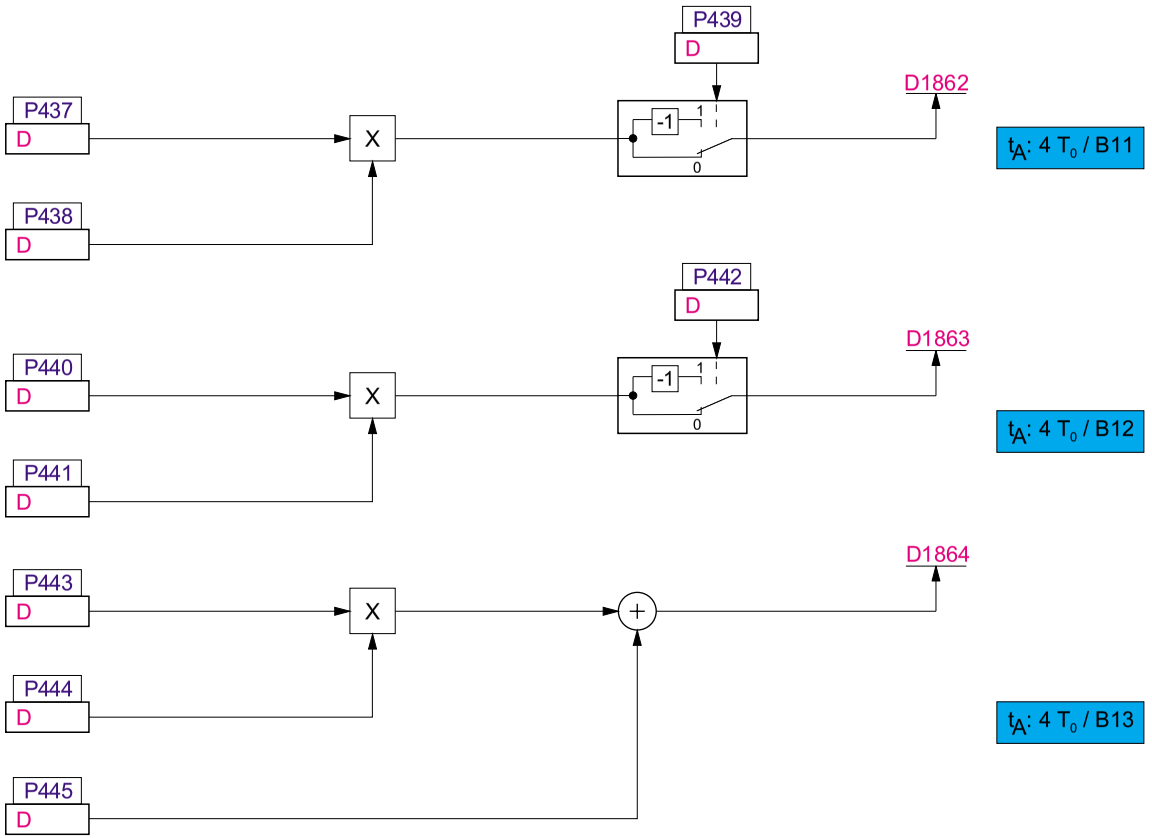
Rexroth
Indramat



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Function modules, group 1	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **36**

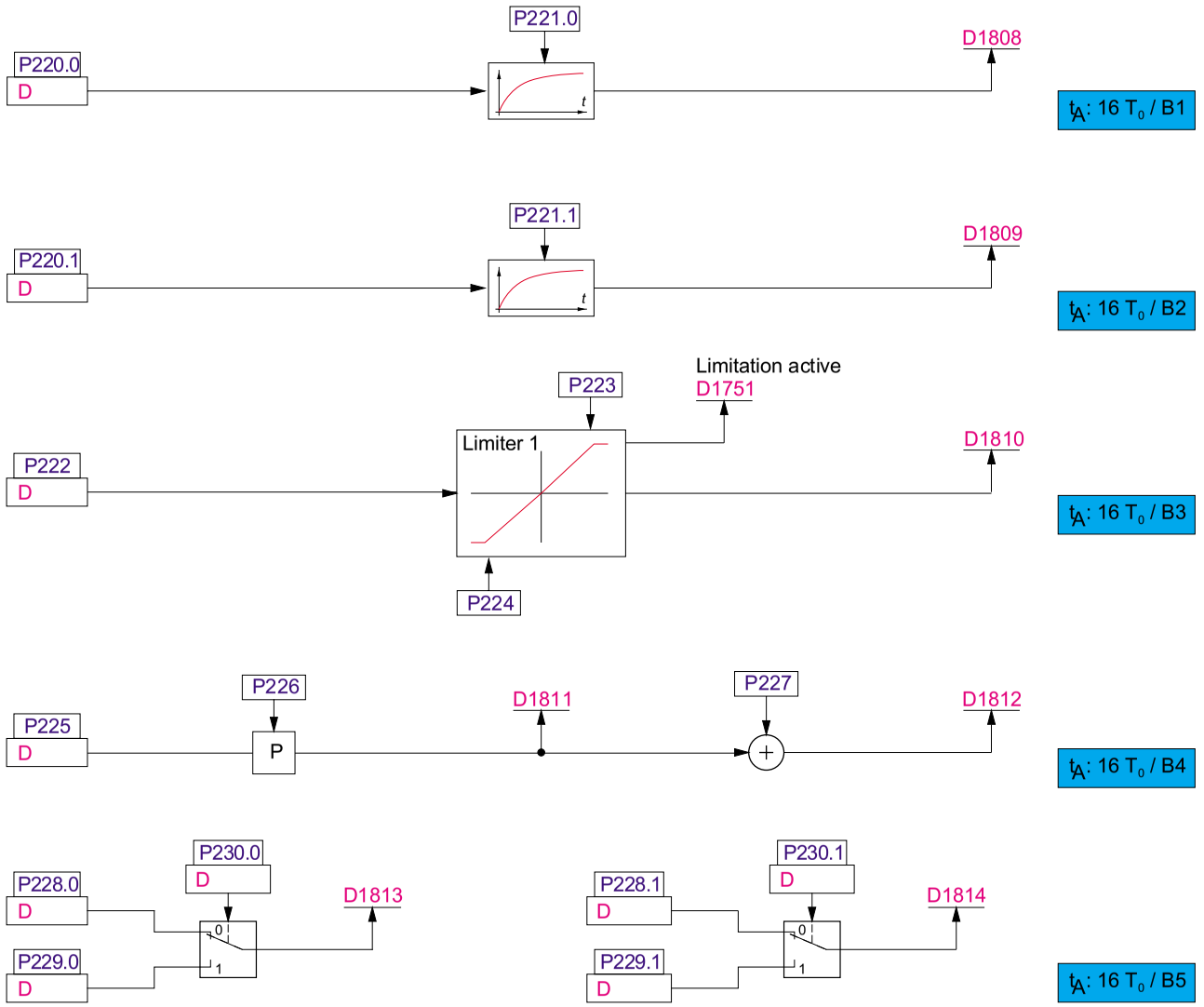
Rexroth
Indramat



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Function modules, group 2	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **37**

Rexroth
Indramat



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Function modules, group 3	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **38**

The multi-function blocks (MFB) execute arithmetic operations (function) of two or three input values. The function is selected using parameter P158.x.

Explanation of the functions:

1. P158.x = 0 (adder)
   $Y = E_1 + E_2$ (E_0 not used)

2. P158.x = 1 (subtractor)
   $Y = E_1 - E_2$ (E_0 not used)

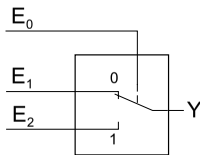
3. P158.x = 2 (multiplier)
   $Y = E_1 * E_2$ (E_0 not used)

4. P158.x = 3 (divider)
   $Y = E_1 / E_2$ (E_0 not used)

5. P158.x = 4 (minimum value)
   Y = minimum (E_1, E_2) (E_0 not used)

6. P158.x = 5 (maximum value)
   Y = maximum (E_1, E_2) (E_0 not used)

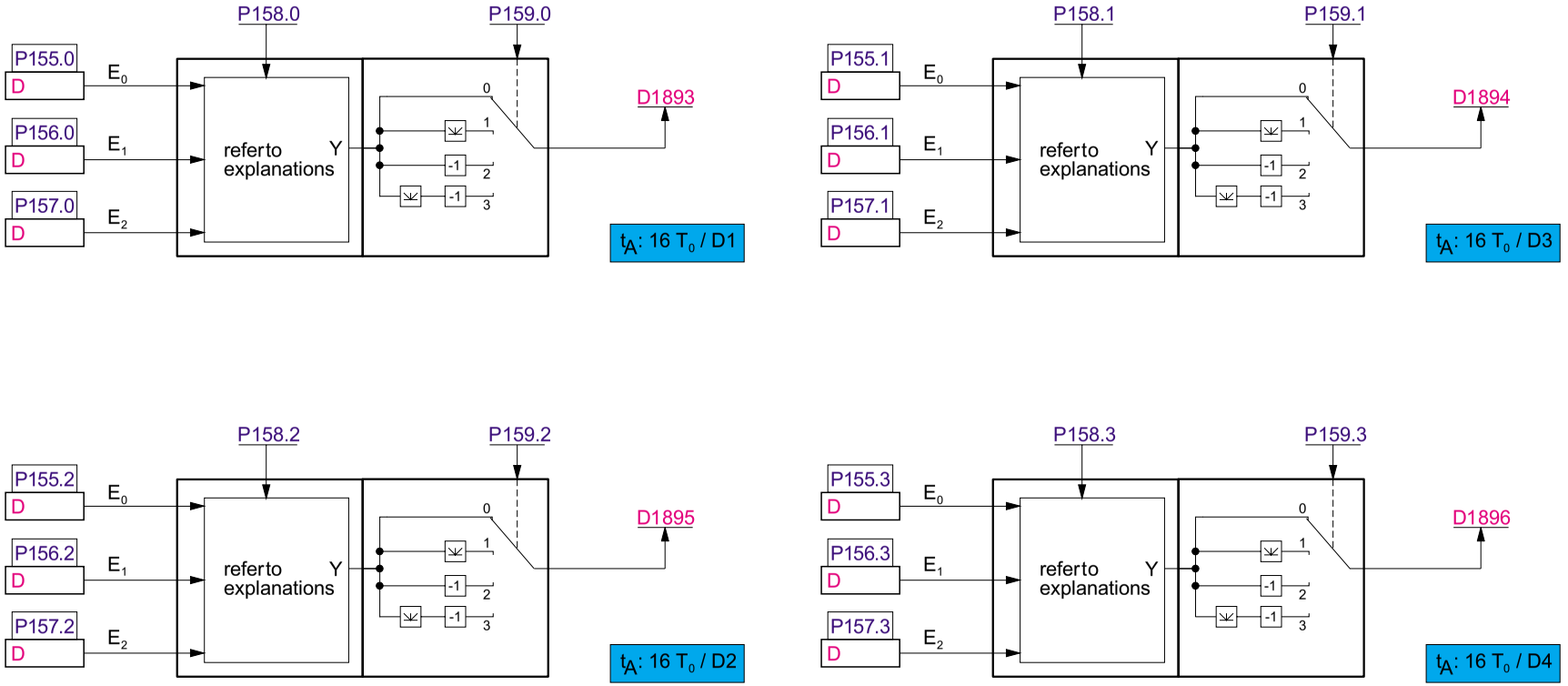
7. P158.x = 6 (process data switch)
   Y = maximum (E_1, E_2) (E_0 not used)



8. P158 = square of the product
   $Y = (E_1 * E_2)^2$

The second stage of the MFB further processes the result Y; the selection is made using P159.x

P159. x	Function
1	Direct
2	Absolute value
3	Inverted
4	Absolute value, inverted

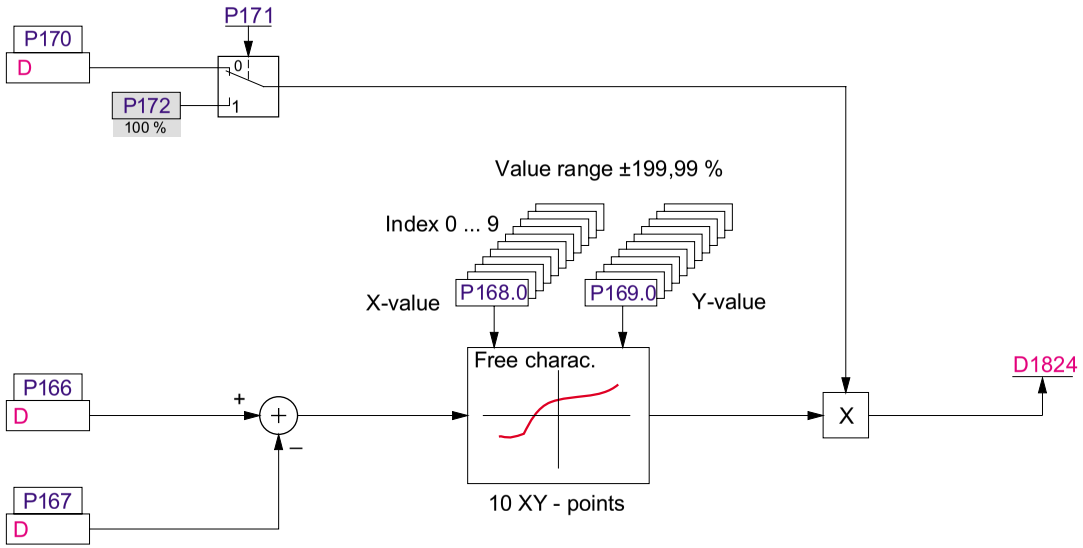


1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Multi-function blocks	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **39**

Free characteristic

The free characteristic has 10 x-y value pairs. In order to increase the flexibility, a differential stage is located in front of the characteristic input, and the output is fed through a normalization function.



t_A: 16 T_0 / D5

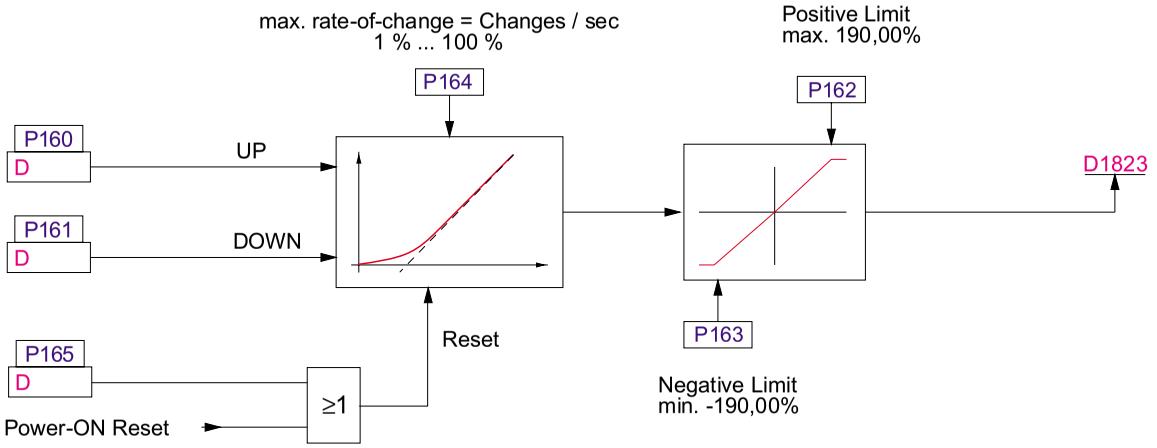
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Freely-programmable characteristic	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **40**

Rexroth Indramat

Setpoint integral memory

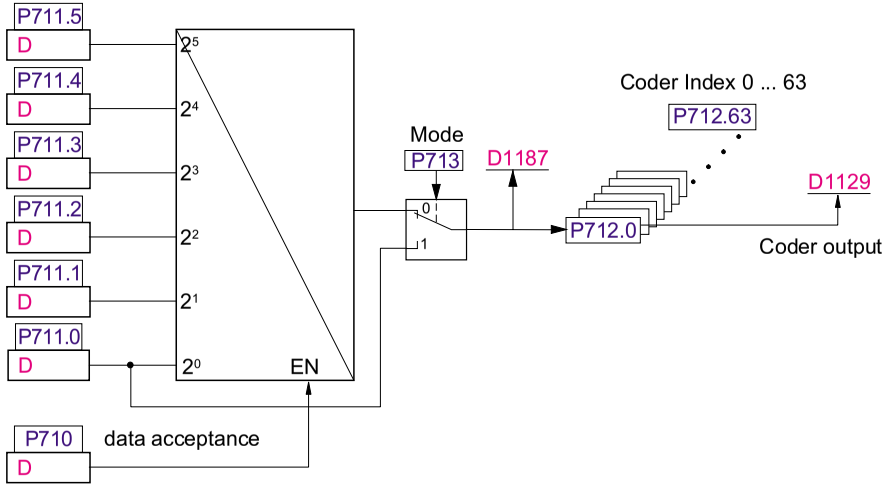
The setpoint integral memory offers a minimum motorized potentiometer function. The setpoint - UP/DOWN control is realized via two digital inputs. The rate-of-change can be set from 1% ... 100% per sec. The range for the upper and lower limit extends from +190 ... - 190%. This means, for example, that a limit can applied to +10 .. +100%.
When the power supply voltage is connected or via the control source P165, the setpoint memory contents are erased.
The rate-of-change of the setpoint integral memory has initial rounding-off.



t_A = 50 ms

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Setpoint integral memory	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **41**



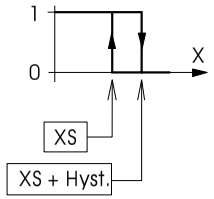
t_A = 10 ms

1	2	3	4	5	6	7	8

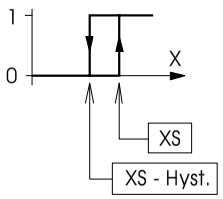
Function diagram **REFU*drive 500* - RD52** Freely-programmable coder	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **42**

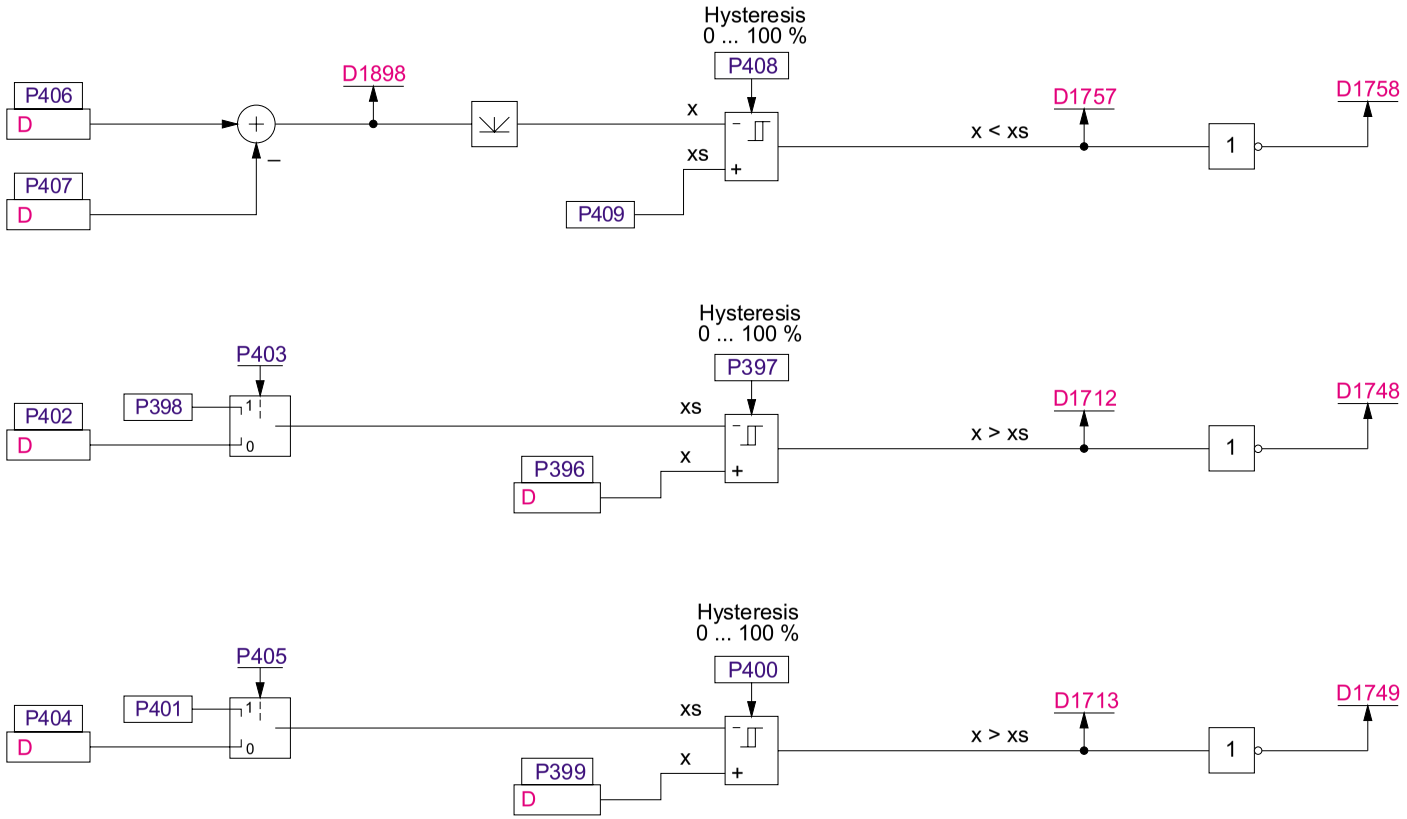
Switching diagrams of the comparators

D1757:



D1712, D1713:





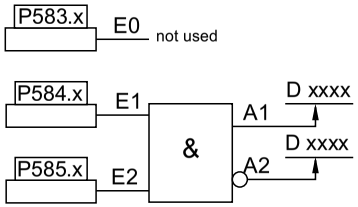
t_A: 4 T_0 / B17

1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Comparators	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **43**

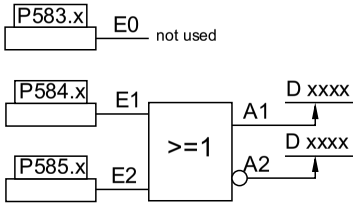
Functionen of logic modules 0...15

Function No. 0: P586.x = AND



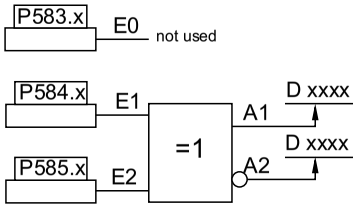
AND			
E1	E2	Q	/Q
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

Function No. 1: P586.x = OR



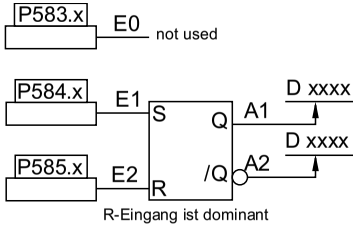
OR			
E1	E2	Q	/Q
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

Function No. 2: P586.x = XOR



XOR			
E1	E2	Q	/Q
0	0	0	1
0	1	1	0
1	0	1	0
1	1	0	1

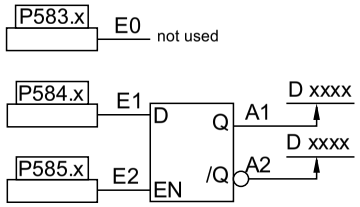
Function No. 3: P586.x = RS-memory



RS-Flipflop			
S	R	Q	/Q
0	0	n	n
0	1	0	1
1	0	1	0
1	1	0	1

n = no change

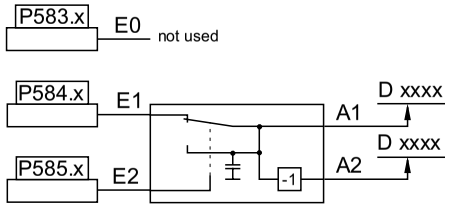
Function No. 4: P586.x = D-latch



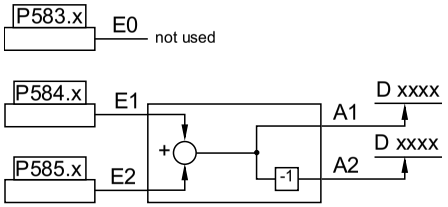
D-Latch			
D	EN	Q	/Q
0	0	n	n
0	1	0	1
1	0	n	n
1	1	1	0

n = no change

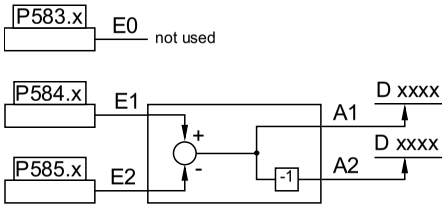
Function No. 5: P586.x = Sampel & Hold



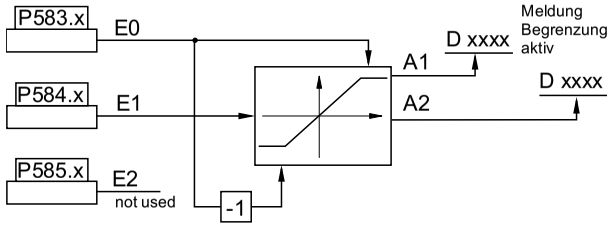
Function No. 6: P586.x = angle add



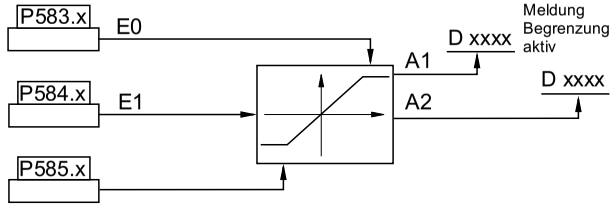
Function No. 4: P586.x = angel subtract



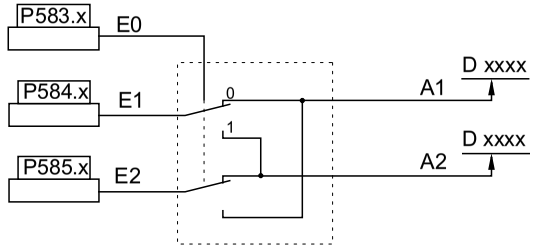
Function No. 8: P586.x = limiter, symmetrical



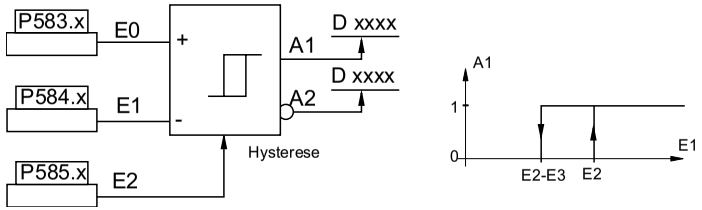
Function No. 9: P586.x = limiter, 3 inputs



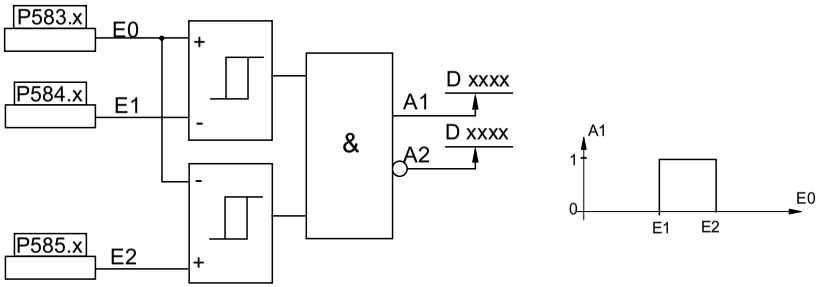
Function No. 10: P586.x = process data switch



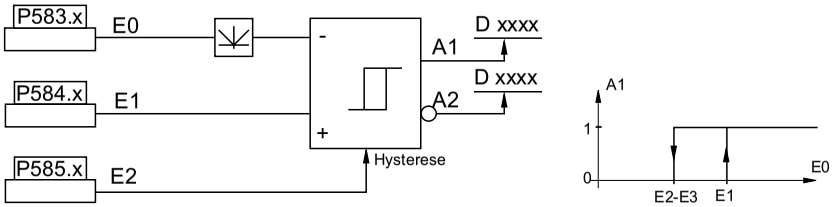
Function No. 11: P586.x = comparator



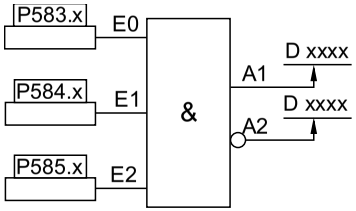
Function No. 12: P586.x = window comparator



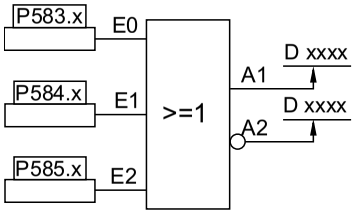
Function No. 13: P586.x = absolute value comparator



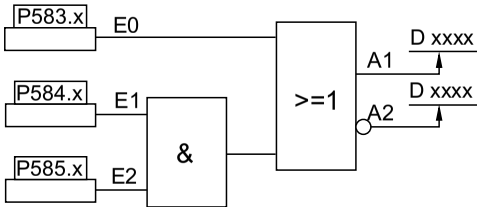
Function No. 14: P586.x = 3x AND



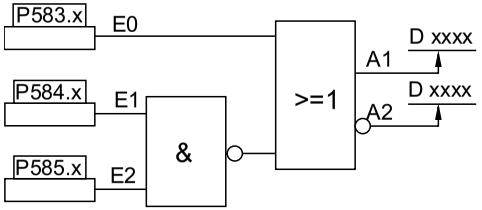
Function No. 15: P586.x = 3x OR



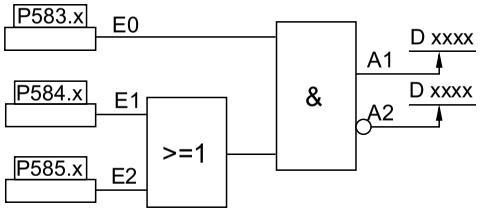
Function No. 16: P586.x = AND - OR



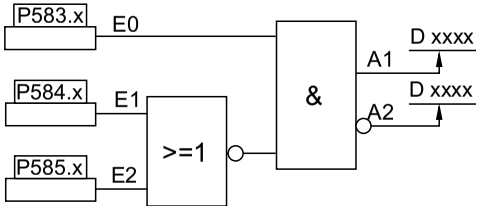
Function No. 17: P586.x = NAND - OR



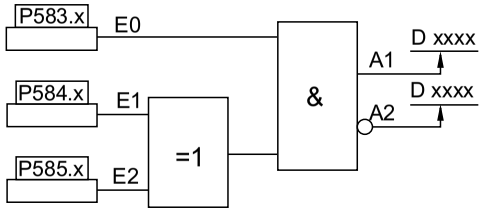
Function No. 18: P586.x = OR - AND



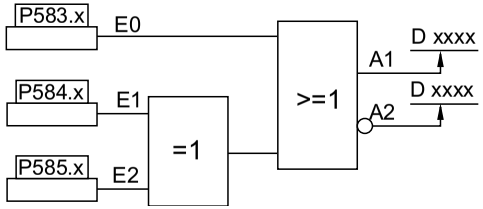
Function No. 19: P586.x = NOR - AND



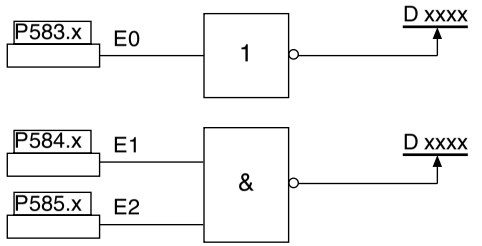
Function No. 20: P586.x = XOR - AND

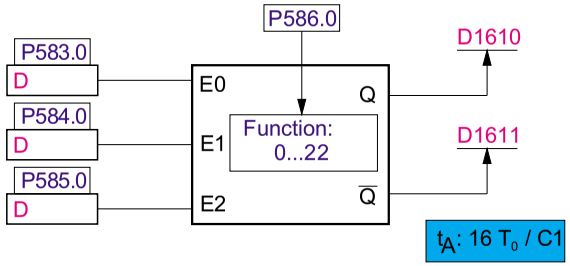


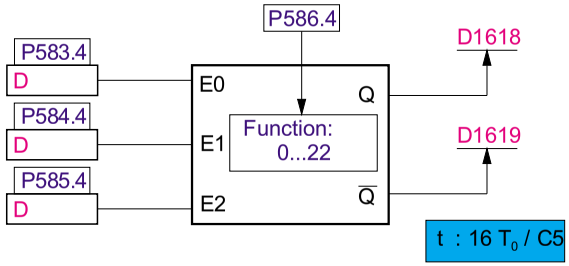
Function No. 21: P586.x = XOR - OR

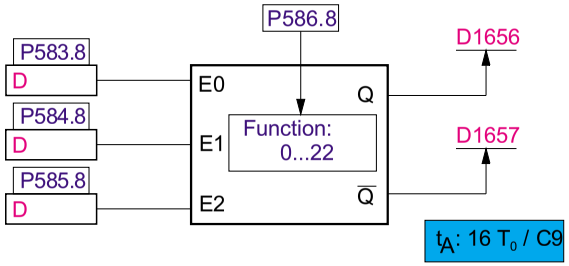


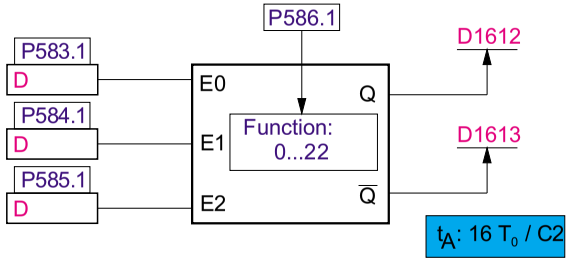
Function No. 22 : P586.x = Invert / NAND

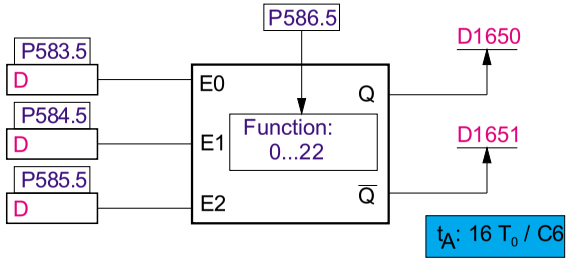


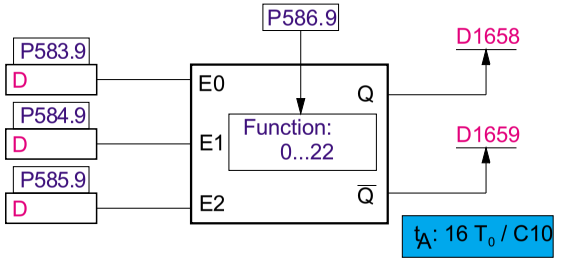


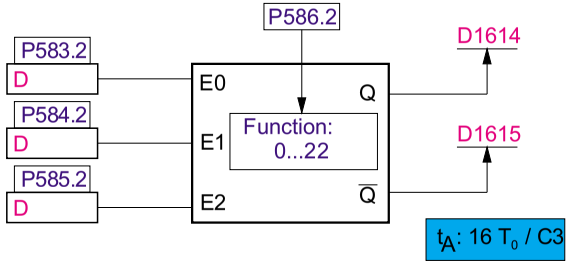


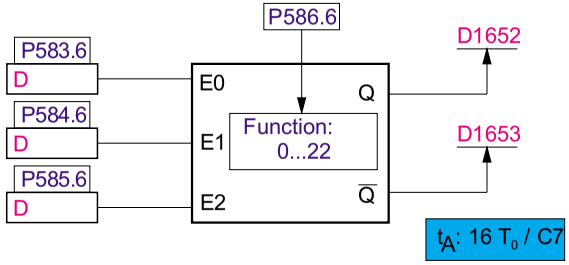


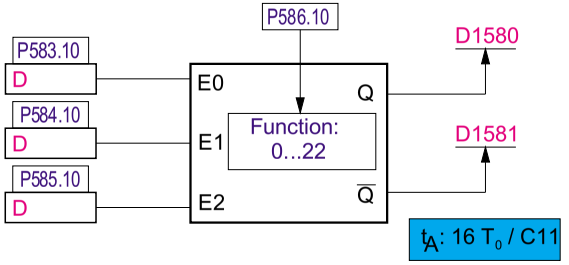


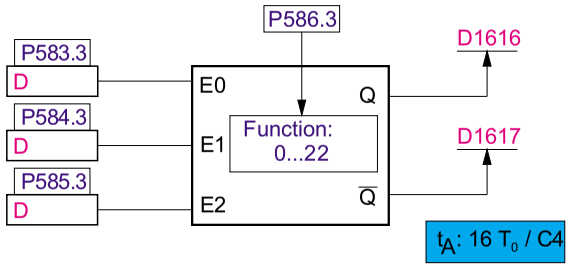


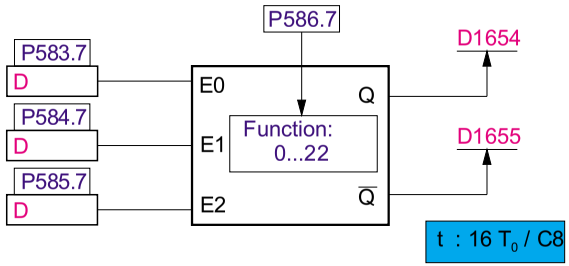


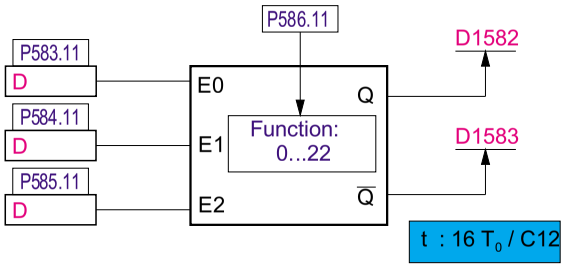






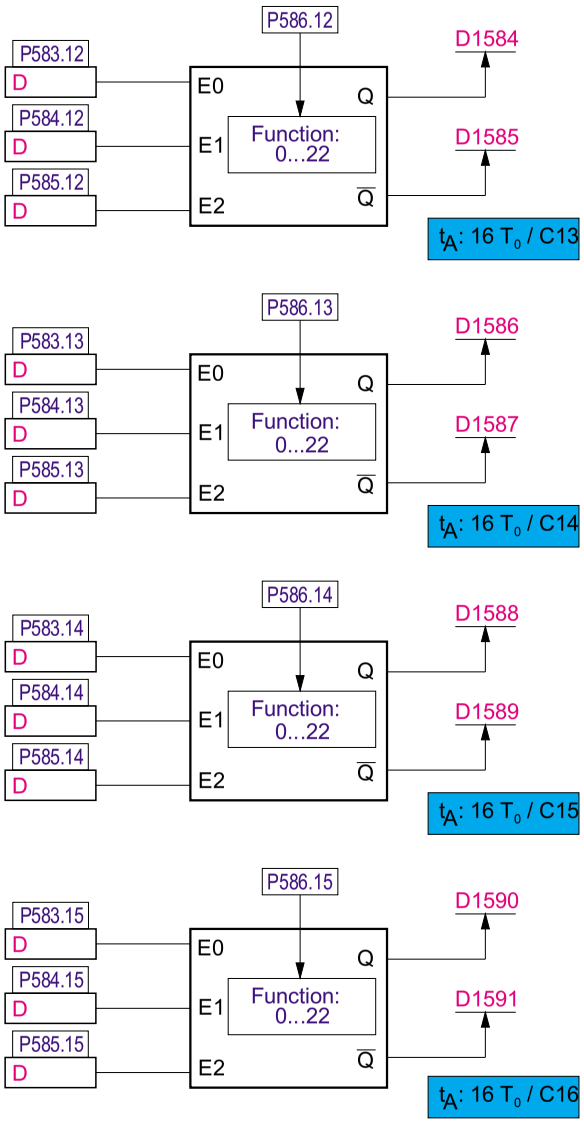


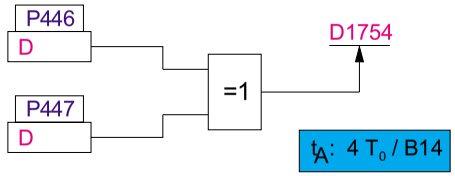




1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Logic gates	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **44**





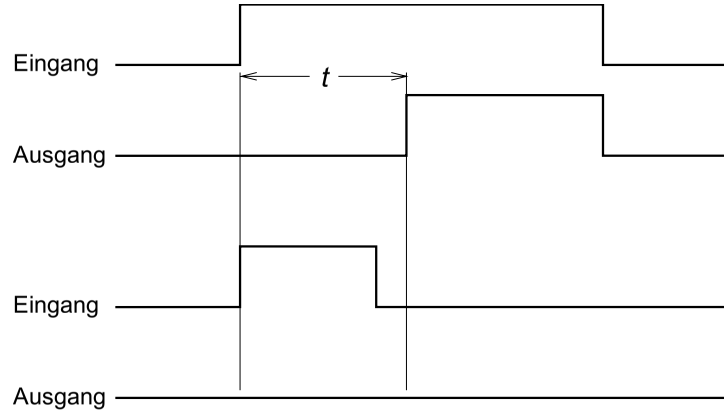
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Logic gates (continued)	Rexroth Indramat	Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **45**

Function diagrams of the timer elements:

Function 0 = switch-on delay

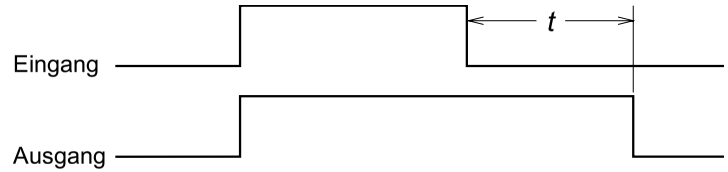
Beispiel 1:



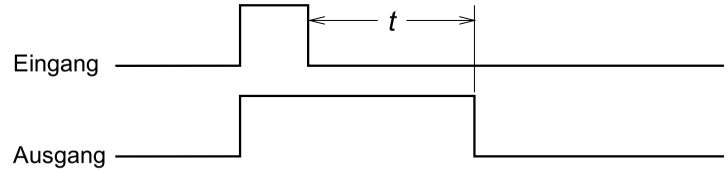
Beispiel 2:

Function 1 = switch-off delay

Beispiel 1:

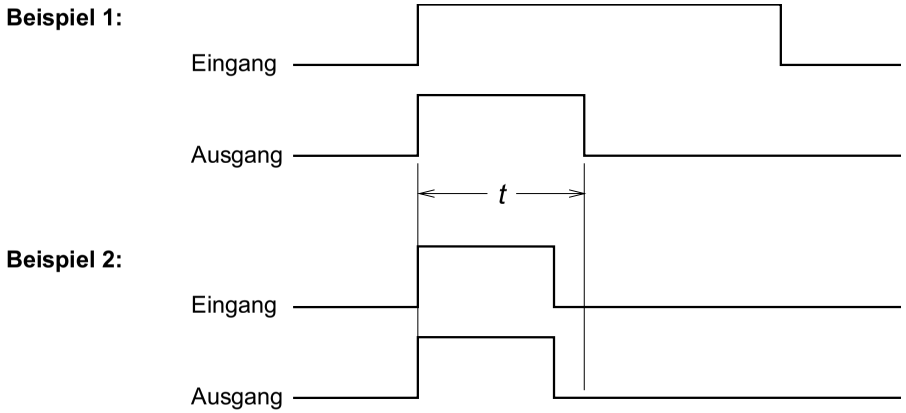


Beispiel 2:



Function 2 = pulse

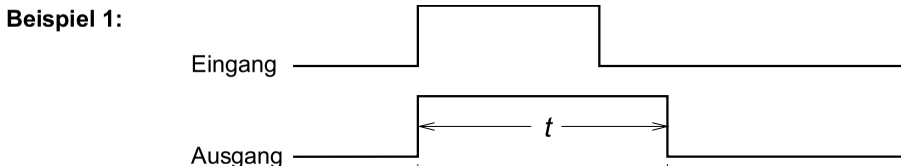
Beispiel 1:



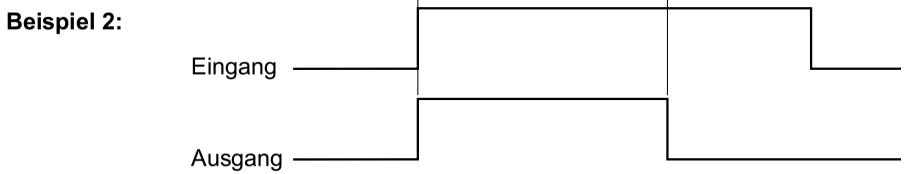
Beispiel 2:

Function 3 = extended pulse

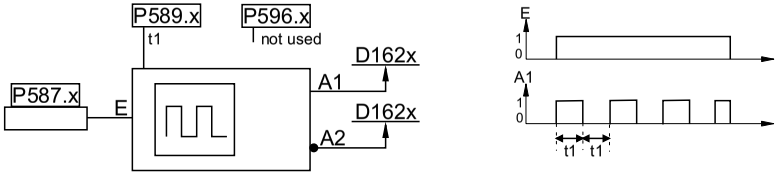
Beispiel 1:



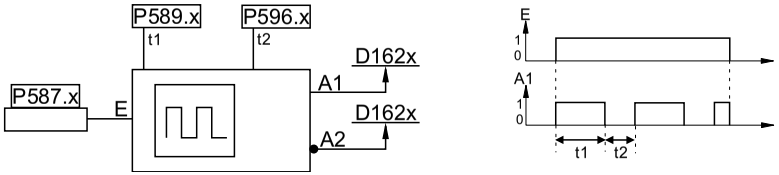
Beispiel 2:



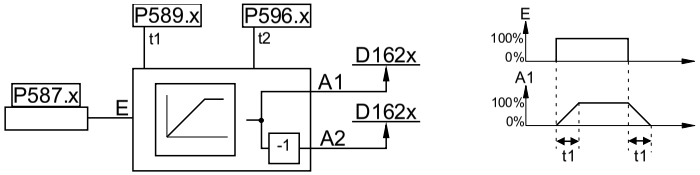
Function 4 = pulse generator, symmetrical



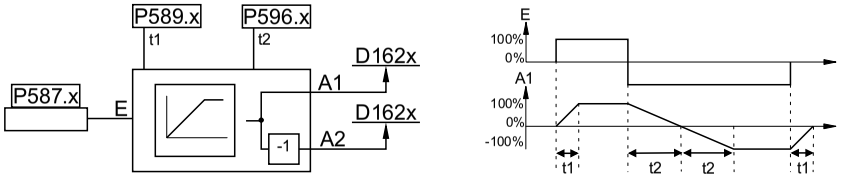
Function 5 = pulse generator, non-symmetrical



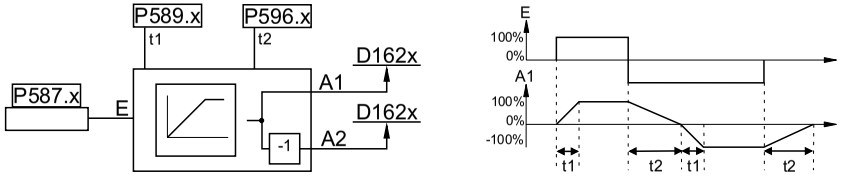
Function 6 = ramp-function generator, symmetrical



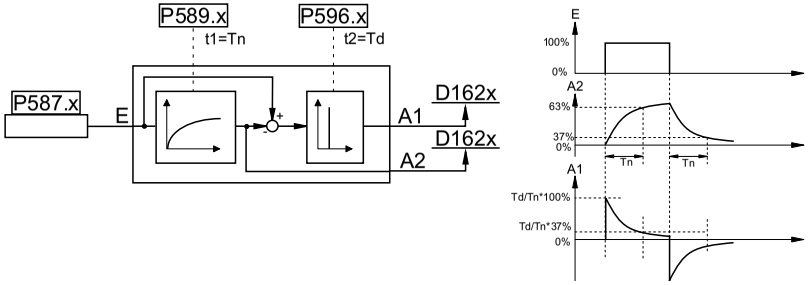
Function 7 = ramp-up generator, M direction / sign

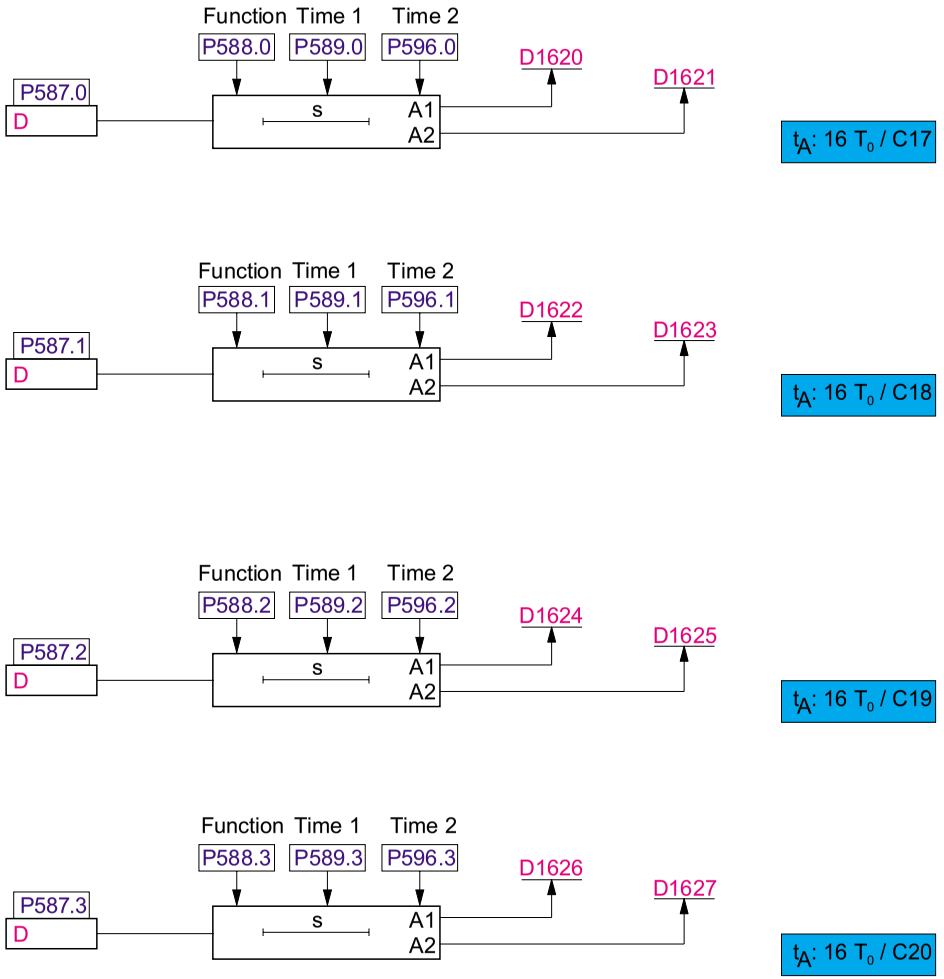


Function 8 = ramp-up generator, n direction / absolute value



Function 9 = differential element, DT1 characteristics





1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Timer elements	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **46**

Parameterizable stepping controller

A universal stepping controller is integrated to be able to implement universal sequence controls.
The stepping controller has a maximum scope of 16 steps, which can be separately parameterized.

Basic step structure

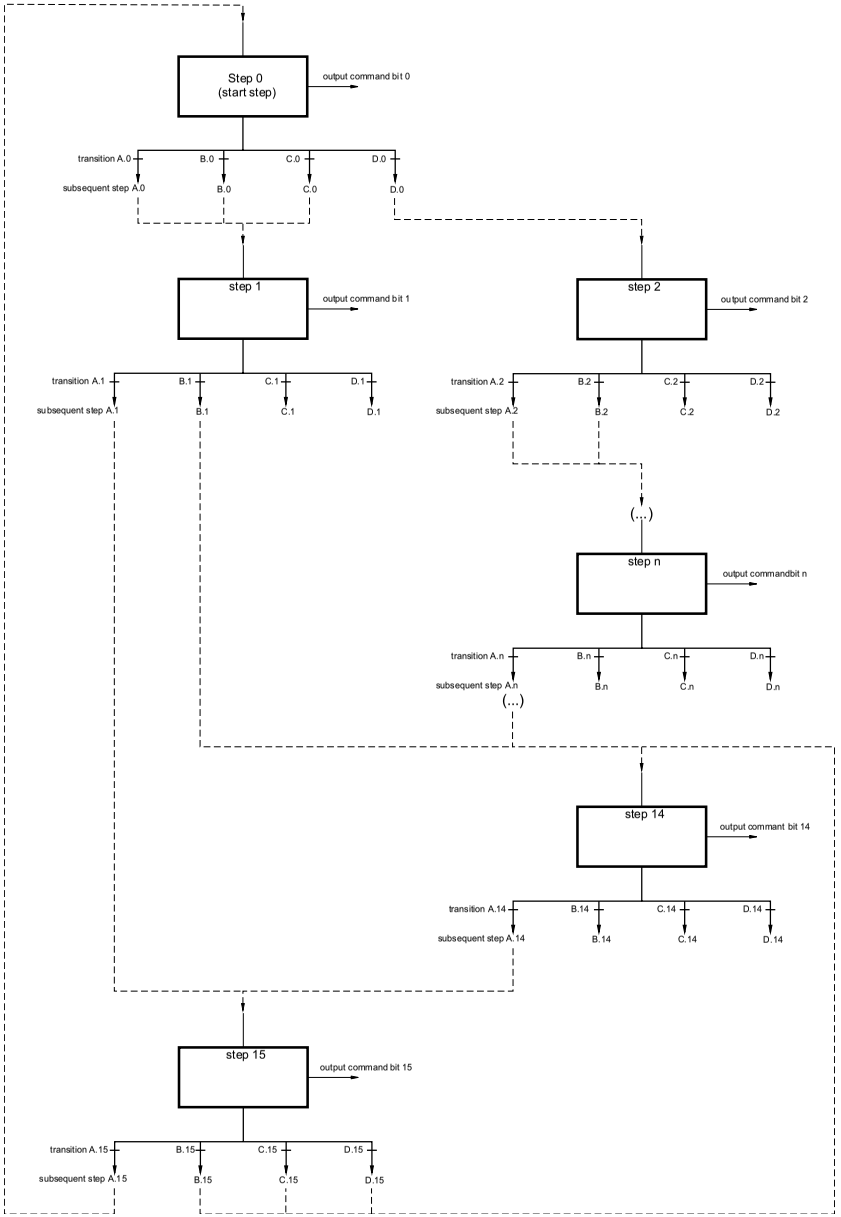
Each step comprises a defined status which is assigned to a parameterizable bit control word (P1266.n). Transitions (transition conditions) must be defined for a step change. Every transition is assigned a subsequent step, so that branches can be implemented.

This is output at D1536, as long as the appropriate status is active.

If a transition A, B, C or D is fulfilled, the step sequence jumps to the subsequent step, corresponding to the appropriate transition. If several transitions are simultaneously fulfilled, the step is made corresponding to the transition with the highest priority. Transition A has the highest priority, transition D, the lowest.

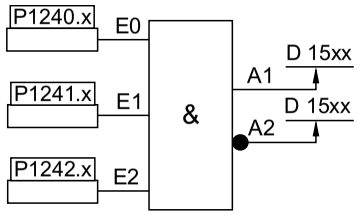
It is permissible to assign several transitions to the same subsequent step (OR logic operation).

A transition is defined by parameterizing a bit mask (P1258.n, P1260.n, P1262.n and P1264.n). Every bit of this mask is assigned the result of the logic modules. The input conditions are logically combined with the logic modules.

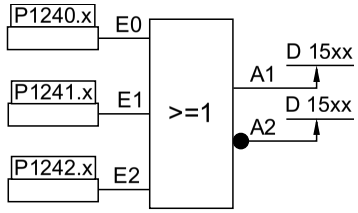


Functions of the logic modules of the stepping controller

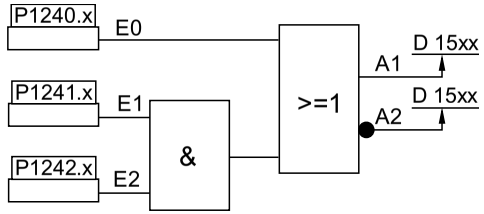
Function No. 0: P1234 = AND E1 * E2 * E3



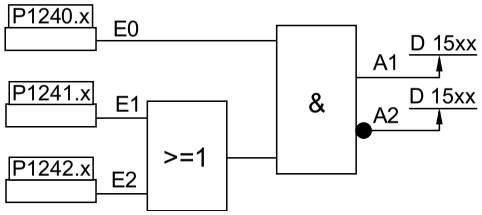
Function No. 1: P1234 = OR E1 + E2 + E3



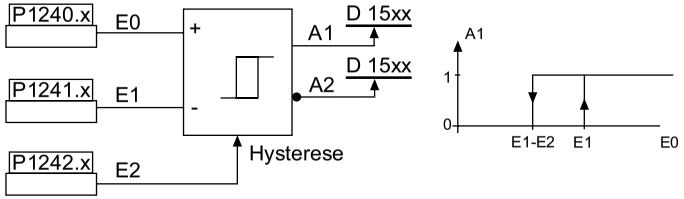
Function No. 2: P1234 = AND-OR

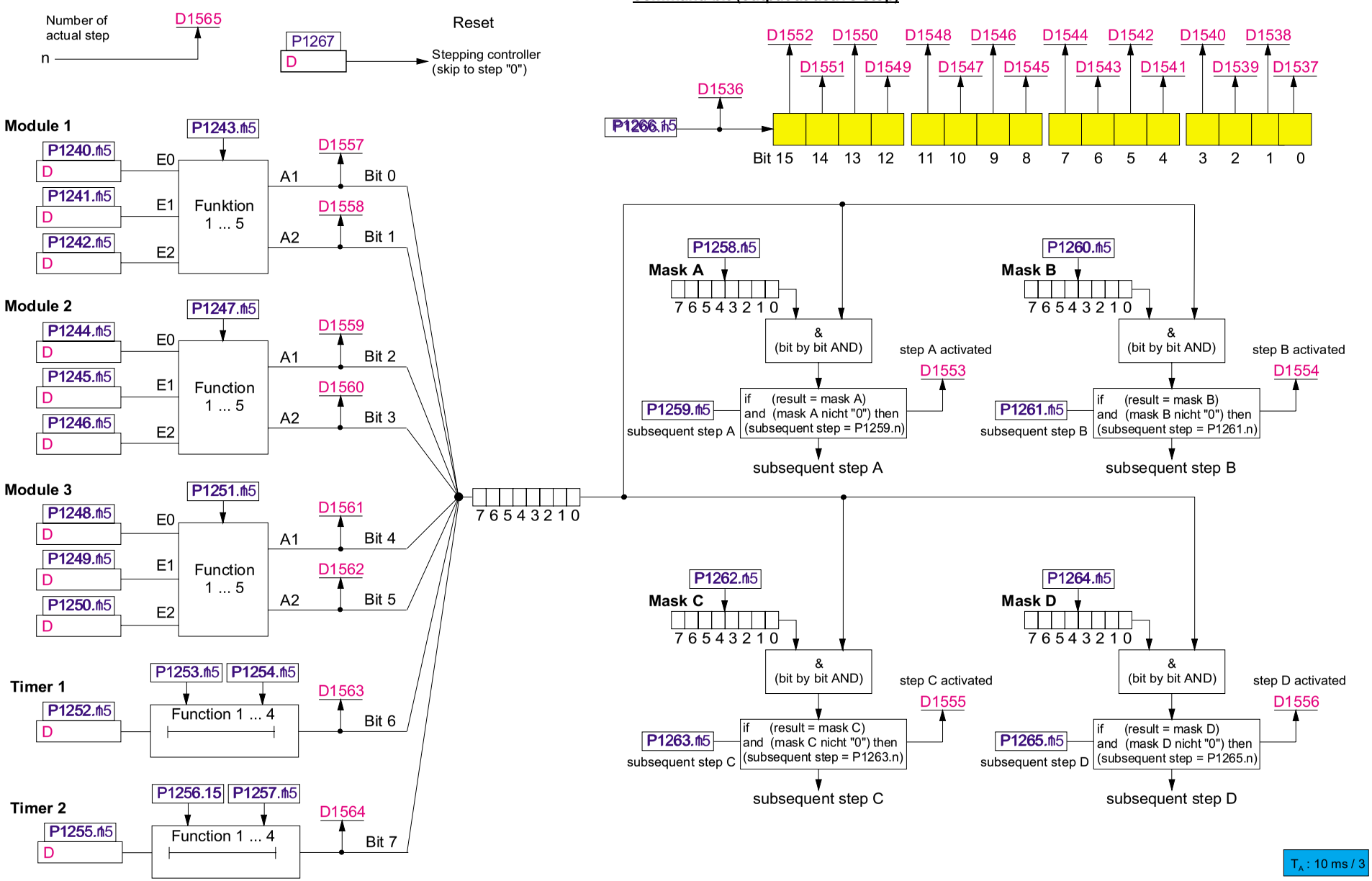


Function No. 3: P1234 = OR-AND



Function No. 4: P1234 = Comparator E1 > E2





1	2	3	4	5	6	7	8

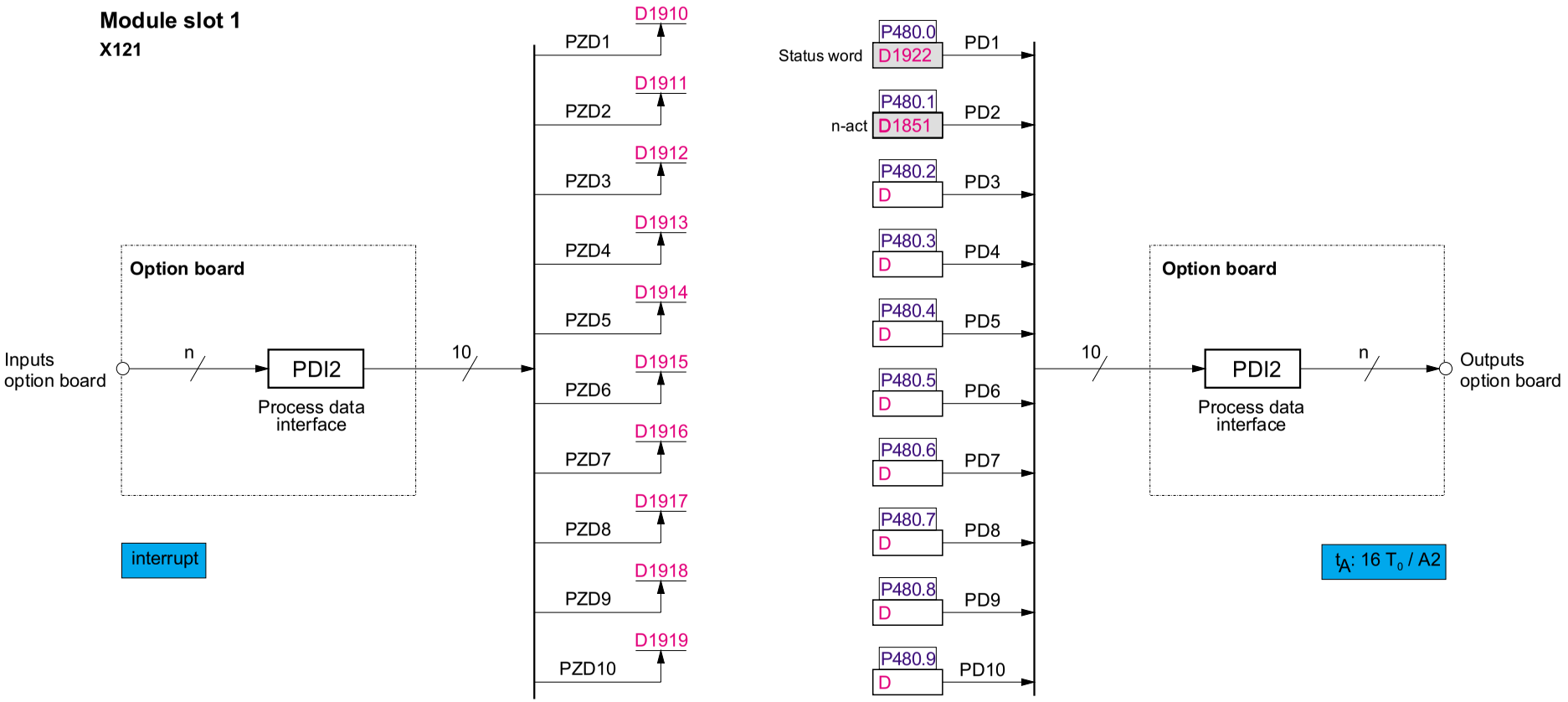
Function diagram **REFU*drive 500* - RD52** Stepping controllers	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **47**

Module location 1

Communications between the “Control board” (SR 17002) and the option card are established via the process data interface. Module location 1 is the standard location for serial interface cards. However, an option card can be inserted at each of the two option slots of the “Control board”.
An option card at slot 1 is addressed from the firmware as interface 2 (SI2).

Communications of a serial interface card via the process data interface SI2

The process data, received via the serial protocol of the interface, is converted to the process data channels of the SI2, and is available in the drive converter as D parameters. It can then be freely connected to the variable parameter sources to control (open-loop) the unit.
The drive converter sends its actual values as process data via the SI2, by connecting D parameters into the variable parameter sources for output SI2.



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Process data, interface SI2	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **48**

Module location 2

Communications between the “Control board” (SR 17002) and the option card are established via the process data interface. Module location 2 is the standard location for the terminal strip expansion (KL17037). However, an option card can be inserted at each of the two option slots of the “Control board”.
An option card at location 2 is addressed from the firmware as interface 4 (SI4).

Communications of the terminal strip expansion via the process data interface SI4

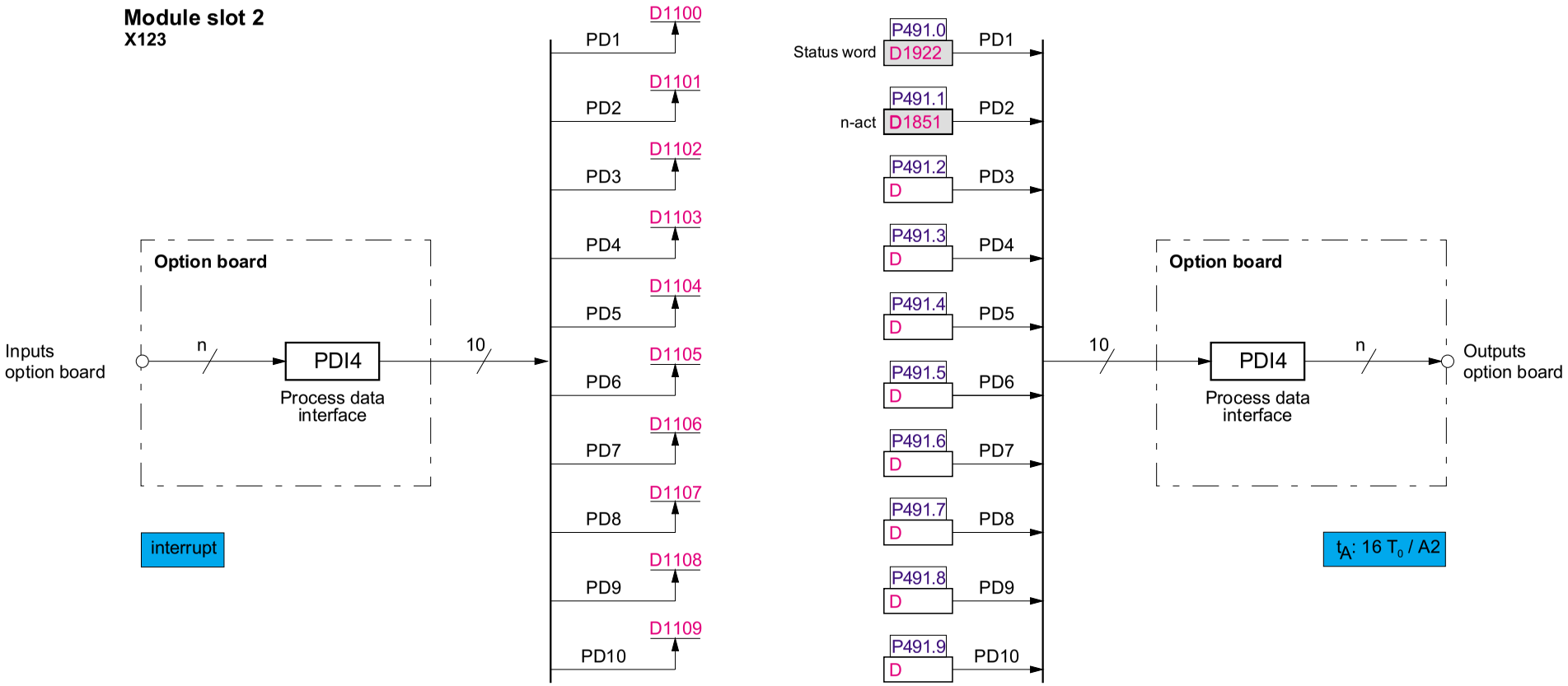
The digital inputs of the terminal strip expansion are converted on the process data channels of SS4 and are available as D parameters.

Option input	Proc. data channel	D parameter
Digital input 1	PZD1 from SI4	D1100
Digital input 2	PZD2 from SI4	D1101
Digital input 3	PZD3 from SI4	D1102
Digital input 4	PZD4 from SI4	D1103

The analog input of the terminal strip expansion is permanently connected to the firmware module for the analog input of module location 2 and is available as D1806, refer to Function Chart 08.

Signals are connected to digital and analog outputs, by connecting the appropriate D parameters into the variable parameter sources of output SI4.

Option output	Proc. data channel	Var. parameter source
Relay output 1	PZD1 from SI4	P491.0
Relay output 2	PZD2 from SI4	P491.1
Relay output 3	PZD3 from SI4	P491.2
Relay output 4	PZD4 from SI4	P491.3
Analog output 1	PZD5 from SI4	P491.4
Analog output 2	PZD6 from SI4	P491.5



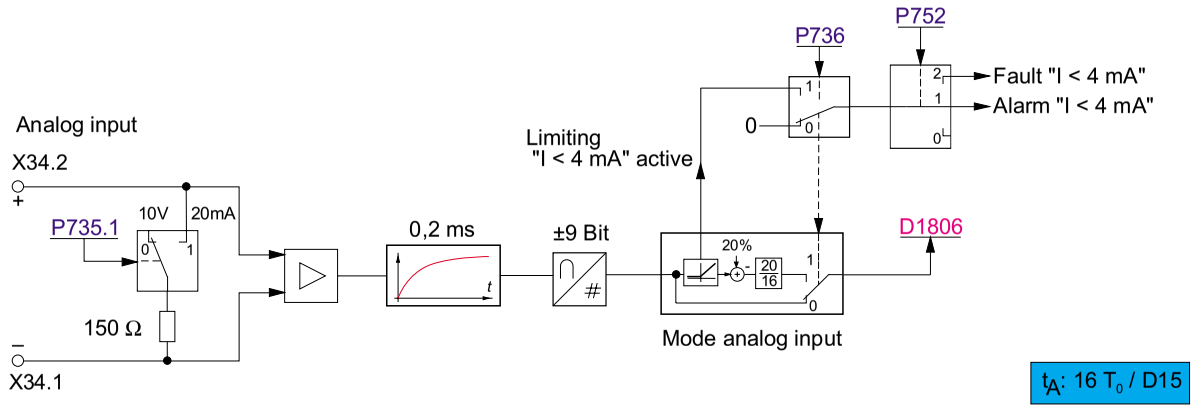
1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Process data, interface SI4	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **49**

Module locations for the extended control terminal strip

The SR 17002 control board has 2 module locations. A firmware module is provided for an analog input for each module location. In this case, the expanded control terminal strip option must be installed in the unit. The setpoint of the optional analog inputs (D1805 or D1806) can be further processed using the input blocks (function chart, Sheet 09).

Terminal strip extension KL17037 at option slot 2



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Analog inputs (extended control terminal strip)	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **50**

Interface description

Option board SL21058 (SynchroLink) is required to activate interface SI7. This board can be inserted both at module location 1 or 2. The process data parameters are not changed as a result of this. Parameters from SI2 and SI4 are not valid for SynchroLink.

Interface structure
10 pieces of process data, 16-bit wide can be transferred. It is possible to combine process data to form 32-bit wide data. A maximum of four 32-bit process data and two 16-bit process data can be configured.

Example of data transfer
When sending, PZD1 should be transferred as a 32-bit value and PZD3, PZD4 and PZD5 as 16-bit value.
Furthermore, when receiving PZD1 this should be interpreted as 32-bit value, and PZD3, PZD4 and PZD5, as 16-bit value.

SENDING

⇒ In order that PZD1 (P493.0) is recognized as 32-bit value, D1800 must be written into P493.1. The other PZDs are automatically recognized as 16-bit value.

RECEIVING

⇒ In order that PZD1 (D1130) is recognized as 32-bit value, it must be connected with a source parameter which is 32 bit wide.

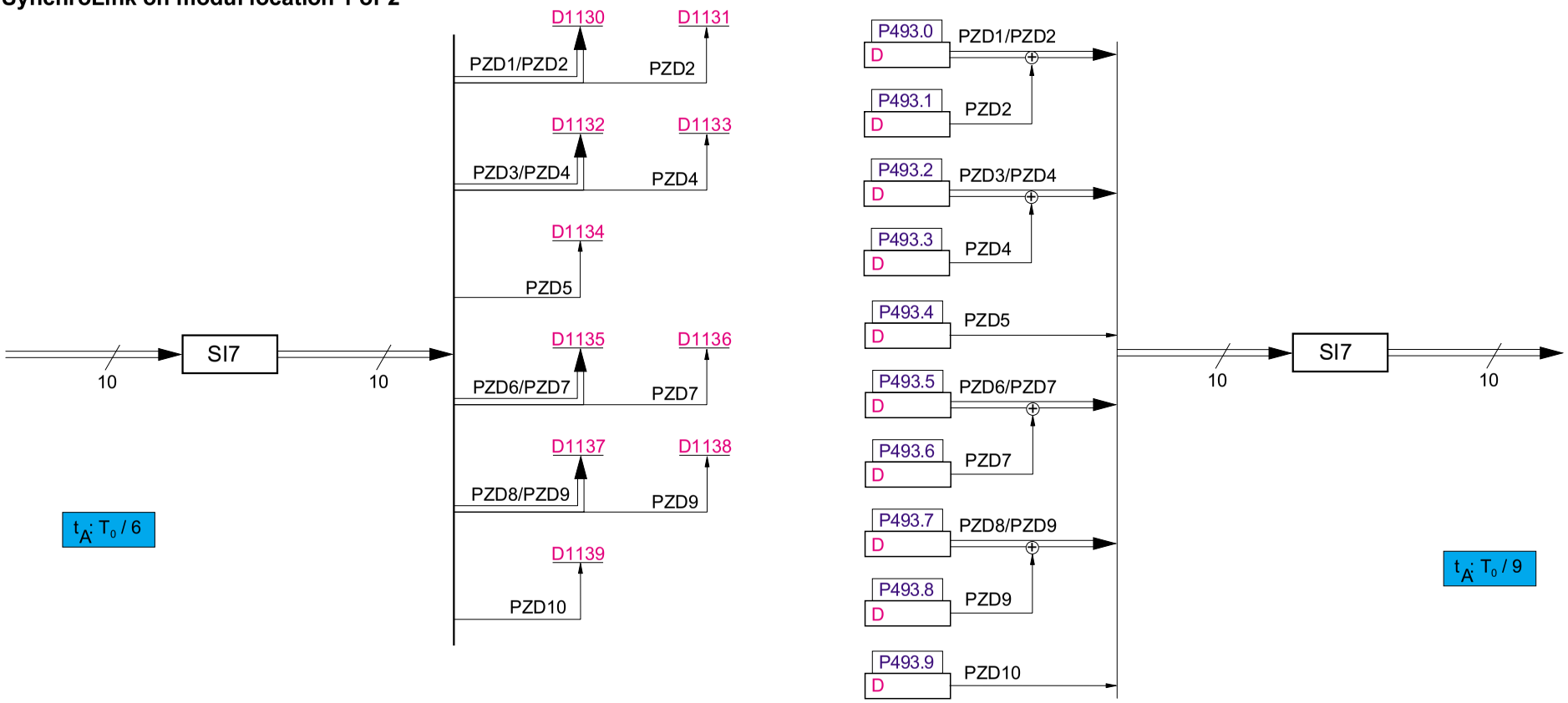
⇒ In order that PZD3 (D1132) is recognized as 16-bit value, it must be connected with a source parameter, which is also only 16 bit wide.

⇒ PZD4 (D1133) and PZD5 (D1134) are already defined as 16 bit-wide data.
Note: The lower 16 bit of the 32-bit value from D1131 are located in D1130.

Interface monitoring
The SynchroLink interface is monitored using parameters P496 and P497. To do this, the “Rx monitoring time” is set in 1 ms increments in P497. The shortest monitoring time is 1 ms, the longest monitoring time is 60 seconds.
If data transfer is not recognized in the selected time, the action, which is activated in P496, is executed. P496 (Rx monitoring mode) provides 5 various actions.

No action	Monitoring is not active
Warning	The unit initiates a warning
Fault	The unit issues a warning
Warning & Clear Data	A warning is initiated and parameters D1130 to D1139 are set to 0x0000.
Fault & Clear Data	A fault is initiated and parameters D1130 to D1139 are set to 0x0000.

SynchroLink on modul location 1 or 2



1	2	3	4	5	6	7	8

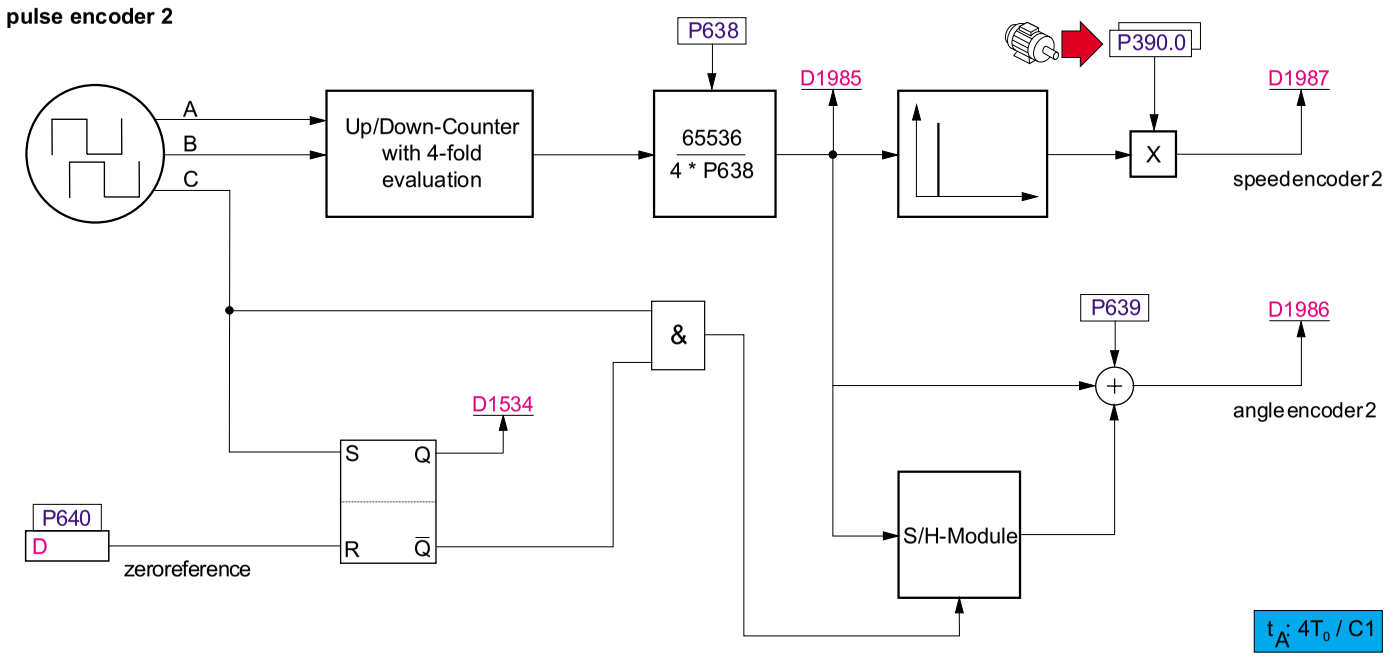
Function diagram **REFU*drive 500* - RD52** Synchronous Link SI7 (SynchroLink)	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **51**

Encoder input 2 for option G1 / G3

The encoder input (pulse encoder 2) is evaluated via parameters P637 ... P640:

P637: Selects the special function, encoder 2
P638: Pulse number, pulse encoder 2nd value range 100 ... 8000
P639: Offset for angle, encoder 2
P640: Input (source) for zero pulse reset

The following function module is only processed when appropriately selected via P637 (as for the position controller). It is processed in time sector 4 T_0-C, directly in front of the position controller.



1	2	3	4	5	6	7	8

Function diagram **REFU*drive 500* - RD52** Encoder card G1/G3 - Encoder input 2	Rexroth Indramat		Date: 2002-07-23	Firmware: FWC-SR1700-200-05VRS-MS	Sheet No. **52**

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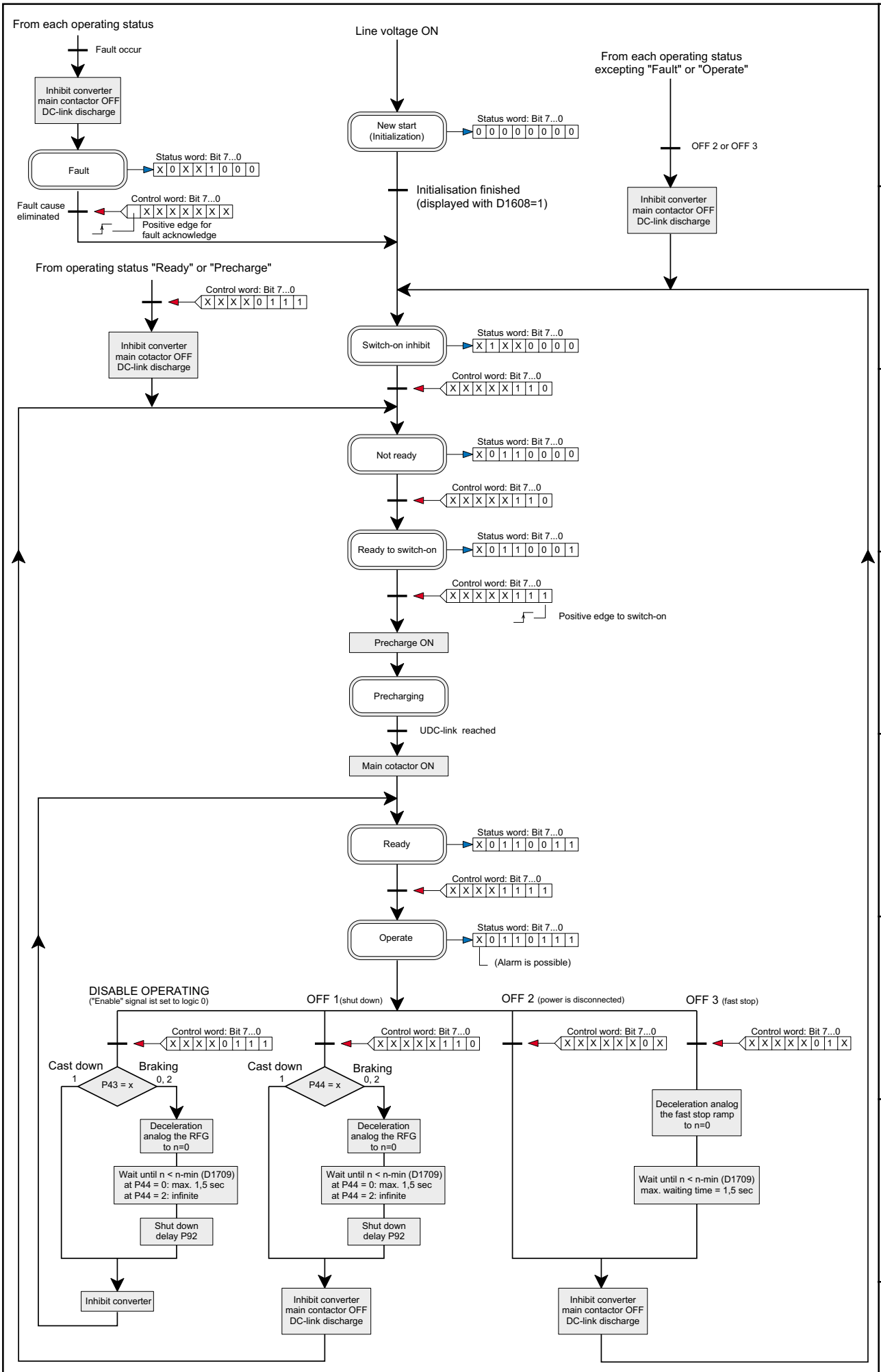


Control word: D1920 (refer sheet No. 02)

Status word: D1922 (refer sheet No. 03)

1 2 3 4 5 6 7 8

Sheet No. **53**

Firmware: FWC-SR1700-200-05VRS-MS

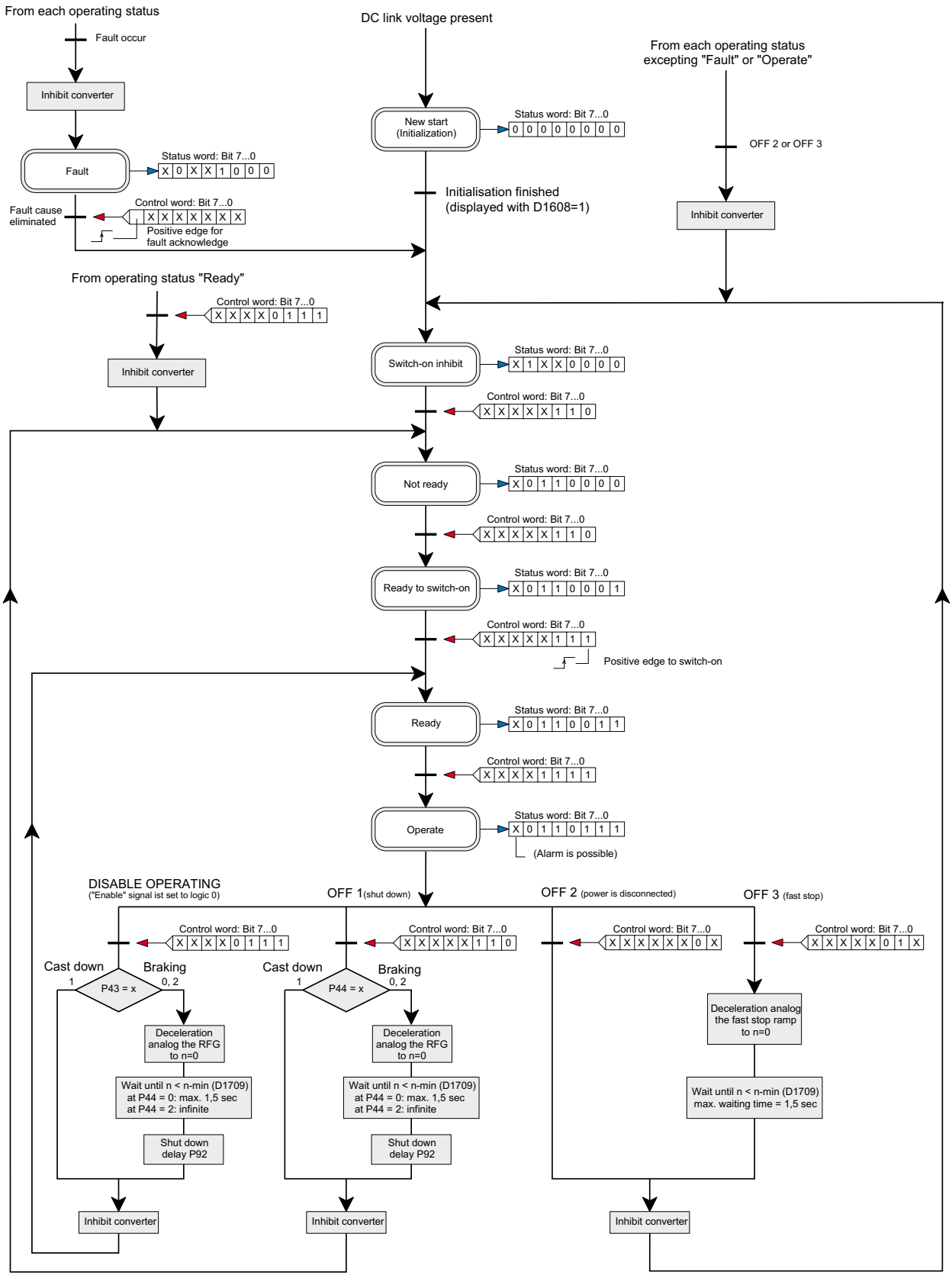
Date: 2002-07-23

Rexroth Indramat

Function diagram **REFU*drive 500* - RD52**

Control and status word diagram, drive converter

Rexroth Indramat



Control word: D1920 (refer sheet No. 02)
Status word: D1922 (refer sheet No. 03)

1 2 3 4 5 6 7 8

Function diagram **REFU*drive 500* - RD52**
Control and status word diagram, inverter

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Date: 2002-07-23

Firmware: FWC-SR1700-200-05VRS-MS

Sheet No. **54**

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