Rexroth

DIAX04
Drive With Electric Gear Function

Parameter Description: ELS 06VRS

SYSTEM200

DOK-DIAX04-ELS-06VRS**-PA01-EN-P

Rexroth Indramat

Title DIAX04 Drive With Electric Gear Function

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- Box 60-06V-EN
- Based on ELS 06VRS
- 120-0800-B340-01/EN

Purpose of Documentation This following documentation describes the parameters of the firmware FWA-DIAX04-ELS-06VRS.

This documentation serves:

- for parameterization of the drive controller

Record of Revisions

Description	Release Date	Notes
DOK-DIAX04-ELS-06VRS**-PA01-EN-P	06.02	First edition

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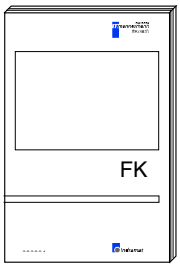
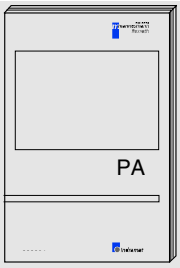
Summary of Documentation - Box



Functional Description:

Description of all implemented Function based on SERCOS-Parameters

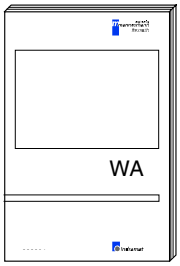
Order designation:
DOK-DIAX04-ELS-06VRS**-FK01-EN-P



Parameter Description:

A description of all parameters used in the firmware

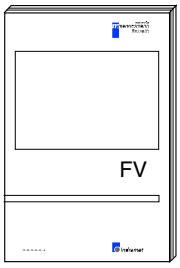
Order designation:
DOK-DIAX04-ELS-06VRS**-PA01-EN-P



Troubleshooting Guide:

-Explanation of the diagnostic states
-How to proceed when eliminating faults

Order designation:
DOK-DIAX04-ELS-06VRS**-WA01-EN-P

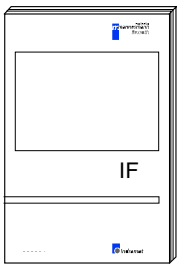


Firmware Version Notes:

Description of new and changed functions in terms of the derivatives:

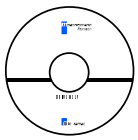
-FWA-DIAX04-ELS-06VRS-MS

Order designation:
DOK-DIAX04-ELS-06VRS**-FV01-EN-P



Drive Configuration:
-Determining the motor type
-Choosing the motor – motor feedback combination
-Choosing the desired function of the drive control device

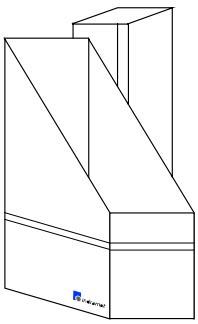
Order designation:
DOK-DIAX04-ELS-06VRS**-IF01-EN-P



CD: DRIVEHELP

Collection of Windows help systems which contain documents on firmware derivatives

Order designation:
DOK-GENERL-DRIVEHELP**-GExx-MS-D0600



Order designation
DOK-DIAX04-ELS-06VRS**-6001-EN-P

Notes

Contents

Notes

1 General Information

1.1 Using This Manual

All standard and product specific parameters are listed in this chapter in a numerically ascending order.

This chapter supplements the feature description and represents a complete description of all parameters used in the software.
The description of the individual parameters is divided into two subsections.

1) General description
This section contains the feature or meaning of the parameter and tips for setting parameters.

2) Description of attributes

The characteristic values or features listed here help to classify the parameter. They are necessary for a complete description of the parameter. However, they are not required to get a general idea of the meaning of the parameter.

1.2 Definitions

The following abbreviations are used:

Data length:

2-byte - the data length for the operating data is 2 bytes.

4-byte - the data length for the operating data is 4 bytes.

1-byte variable - this is a piece of operating data of variable length (list). The length of a data unit is 1 byte.

2-byte variable - this is a piece of operating data of variable length (list). The length of a data unit is 2 bytes.

4-byte variable - this is a piece of operating data of variable length (list). The length of a data unit is 4 bytes.

Format:

BIN - the display format for the operating data should be binary.

HEX - the display format for the operating data should be hexadecimal.

DEC_OV - The display format for the operating data should be decimal without a sign.

DEC_MV - The display format for the operating data should be decimal with a sign.

ASCII - the operating data is an ASCII string.

IDN - the operating data is an ID number (IDN).

Editability:

No - the operating data cannot be edited.

P2 - The operating data can only be edited in communications phase 2.

P23 - The operating data can only be edited in communications phases 2 and 3.

P234 - The operating data can be edited in any communications phase.

P3 - The operating data can only be edited in communications phase 3.

P4 - The operating data can only be edited in communications phase 4.

Memory:

fixed - the operating data is programmed in the drive (fixed value).

no - The operating data is not buffered in the drive; the value is undefined after the drive controller is switched on.

Param. EE - The operating data is buffered in E²prom of the programming module (DSM).

Ampl. EE - The operating data is buffered in E²prom of the drive controller.

Feedb. EE - The operating data is buffered in the E²prom of the motor feedback data memory (only in MHD- and MKD motors).

Validity check:

no - the operating data is not checked for validity.

Phase2 - the operating data is checked in the "Communications phase 3 transition check" command.

Phase3 - the operating data is checked in the "Communications phase 4 transition check" command.

Extreme value check:

no - the operating data is not checked for its extreme values when it is written to.

yes - the operating data is checked for its extreme values when it is written to.

Combination check:

no - the operating data is not checked (bitwise) for a valid combination with other parameter values when it is written to.

yes - The operating data is checked (bitwise) for a valid combination with other parameter values when it is written to.

Cyc. transmittable:

no - The operating data cannot be configured as cyclical data in the master data telegram or in the drive telegram.

AT - The operating data can be configured as cyclical data in the drive telegram.

MDT - The operating data can be configured as cyclical data in the master data telegram.

Default Value:

The default value indicates the value of the parameter loaded into fixed memory with the current version of firmware installed on the drive following the PL program load command and prior to user edits or loading saved parameter files.

Notes

2 Standard Parameters

S-0-0001, NC Cycle time (TNcyc)

The NC cycle time indicates the time intervals between new command values being made available by the numerical control.

For the SERCOS interface, the NC cycle time must be transmitted in communications phase 2 from the master to the slave; from communications phase 3 on it must be considered in the slave.

The NC cycle time must be an integral multiple of **S-0-0002, SERCOS Cycle time (Tscyc)**.

$$TNcyc = TScyc \bullet j, \quad \text{where } j = 1, 2, 3 \ldots$$

S-0-0001 - Attributes

Para. Name:	**DE**	NC-Zykluszeit (TNcyc)		
	EN	NC Cycle time (TNcyc)		
	FR	Durée de cycle de la commande numérique (TNcyc)		
	ES	Tiempo de ciclo NC (TNcyc)		
	IT	Tempo Ciclo NC (TNcyc)		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00500 / 65000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0002, SERCOS Cycle time (Tscyc)

The interface cycle time indicates the time intervals for the cyclical data transfer. The interface cycle times are set to

2 ms, ... to 65 ms in increments of 1ms.

For the SERCOS interface, the SERCOS cycle time must be transmitted from the master to the slave in communications phase 2; and from communications phase 3 on it must be activated in both.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0002 - Attributes

Para. Name:	**DE**	SERCOS-Zykluszeit (TScyc)
	EN	SERCOS Cycle time (Tscyc)
	FR	Durée de cycle de transmission SERCOS (TScyc)
	ES	Tiempo de ciclo SERCOS (TScyc)
	IT	Tempo Ciclo SERCOS (TScyc)

Function:	Parameter	**Editability:**	P2
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase2
Unit:	us	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00500 / 65000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0003, Minimum AT transmit starting time (T1min)

The slave uses this parameter value to indicate the minimum time requirement between the end of the received master synchronization telegram and the transmission of the drive telegram.

The time $T1_{min}$ is read in communications phase 2 by the master to calculate the time to send the drive telegram T1 **S-0-0006, AT Transmission starting time (T1)**.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0003 - Attributes

Para. Name:	**DE**	Sende-Reaktionszeit AT (T1min)
	EN	Minimum AT transmit starting time (T1min)
	FR	Temps de réaction à l'émission AT (T1min)
	ES	Tiempo de reacción de emision AT (T1min)
	IT	Tempo di Partenza Trasmissione mini. AT (T1min)

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	us	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0004, Transmit/receive transition time (TATMT)

This parameter indicates the time required for the slave to switch to reception of the master data telegram after sending its drive telegram.

The transmission/reception transition time is read in communications phase 2 by the master to calculate the time to send the master data telegram T2 **S-0-0089, MDT Transmit starting time (T2)**.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0004 - Attributes

Para. Name:	**DE**	Umschaltzeit Senden-Empfangen (TATMT)
	EN	Transmit/receive transition time (TATMT)
	FR	Temps de transition entre transmission et réception (TATMT)
	ES	Tiempo de conmutación emisión-recepción (TATMT)
	IT	Tempo di Transizione Trasmis./Ricez. (TATMT)

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	us	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0005, Minimum feedback acquisition time (T4min)

This is the minimum time requirement between feedback-value acquisition and the end of the master synchronization telegram. This value is indicated by the drive in such a manner that the current feedback values can be transmitted to the numerical control in the next drive telegram.

For the SERCOS interface, the master reads this value in communications phase 2 to set the acquisition starting time of the feedback values T4 **S-0-0007, Feedback acquisition starting time (T4)** for all drives.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0005 - Attributes

Para. Name:	**DE**	Mindestzeit Istwerterfassung (T4min)		
	EN	Minimum feedback acquisition time (T4min)		
	FR	Temps min. d'acquisition des données retour (T4min)		
	ES	Tiempo mínimo registro de valor real (T4min)		
	IT	Tempo di Acquisizione Feedback minimo (T4min)		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		us	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0006, AT Transmission starting time (T1)

The transmission starting time determines when the slave must send its drive telegram in communications phases 3 and 4, after the end of the master synchronization telegram.

This parameter is transmitted from the master to the slave in communications phase 2 and is active from communications phase 3 on.

The transmission time drive telegram must be set equal to or greater than the transmission reaction time **S-0-0003, Minimum AT transmit starting time (T1min)**.

The following must apply: **T1min** $\leq$ **T1**

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0006 - Attributes

Para. Name:	**DE**	Sendezeitpunkt Antriebs-Telegramm (T1)		
	EN	AT Transmission starting time (T1)		
	FR	Temps de départ de transmission de l'AT (T1)		
	ES	Punto temporal de emision telegrama de accionamiento (T1)		
	IT	Tempo di Partenza Trasmissione AT (T1)		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00012 / 65000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0007, Feedback acquisition starting time (T4)

This is the feedback acquisition starting time set by the master after the end of the master synchronization telegram. Thus, the master can set the same feedback acquisition starting time for all drives that work together. This guarantees synchronized feedback-value acquisition among the affected drives. Also, the cyclically transferred command values are processed at time T4.

For the SERCOS interface, the master must set the feedback acquisition starting time equal to or less than the difference between the **S-0-0002, SERCOS Cycle time (Tscyc)** and the polled **S-0-0005, Minimum feedback acquisition time (T4min)**.

The following must apply: **$T4 \leq T_{Scyc} - T4min$**

See also the functional description: "Configuration of the telegram send and receive times"

S-0-0007 - Attributes

Para. Name:	**DE**	Messzeitpunkt Istwerte (T4)		
	EN	Feedback acquisition starting time (T4)		
	FR	Temps de départ d'acquisition des données actuelles (T4)		
	ES	Punto temporal de medición valores reales (T4)		
	IT	Tempo di Part. Acquisizione Feedback (T4)		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00011 / 65000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0008, Command valid time (T3)

The "command valid time" indicates the time after which the drive may access new command values.

Thus, the master can set the same "command valid time" for all drives that work together. The drive activates the "command valid time" beginning with communications phase 3.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0008 - Attributes

Para. Name:	**DE**	Zeitpunkt für Sollwert gültig (T3)		
	EN	Command valid time (T3)		
	FR	Temps pour consigne valide (T3)		
	ES	Punto temporal para valor nominal valido (T3)		
	IT	Tempo di Comando Valido (T3)		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0009, Beginning address in master data telegram

This parameter displays the start address of a drive's data record in the Master Data Telegram, expressed as a byte position. It begins with 1 for the first data byte after the address field in the MDT.

The start address of the drive's data record in the MDT is transmitted to each drive by the master in communications phase 2. The address is activated beginning with communications phase 3.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0009 - Attributes

Para. Name:	**DE**	Anfangsadresse im Master-Daten-Telegramm		
	EN	Beginning address in master data telegram		
	FR	Adresse de départ dans le MDT		
	ES	Dirección inicial en telegrama de datos maestro		
	IT	Indirizzo iniziale del Telegramma Dati Master		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00001 / 65531		
Default value:		-	**Cyc. transmittable:**	-

S-0-0010, Length of master data telegram

The length of the Master Data Telegram, expressed in bytes, contains the data records of all the drives. The MDT length is transmitted by the master to all drives in communications phase 2. It is activated by the master and slave beginning with communications phase 3.

See also the functional description: "Configuration of the telegram send and receive times".

S-0-0010 - Attributes

Para. Name:	**DE**	Länge Master-Daten-Telegramm		
	EN	Length of master data telegram		
	FR	Longueur du MDT		
	ES	Longitud telegrama de datos maestro		
	IT	Lunghezza del Telegramma Dati Master		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		Byte	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00004 / 65534		
Default value:		-	**Cyc. transmittable:**	-

S-0-0011, Class 1 diagnostics

Function: Drive lock

A Class 1 diagnostic error situation discovered by the drive leads to

- the drive's error response, as described in the functional description under "Error".
- setting the static error bits to 1 for Class 1 (**S-0-0135, Drive status word**)

The drive resets the error bit back to 0 only if

- there are no errors pending in C1D
- and command **S-0-0099, C500 Reset C1D** has been started.

Parameter structure:

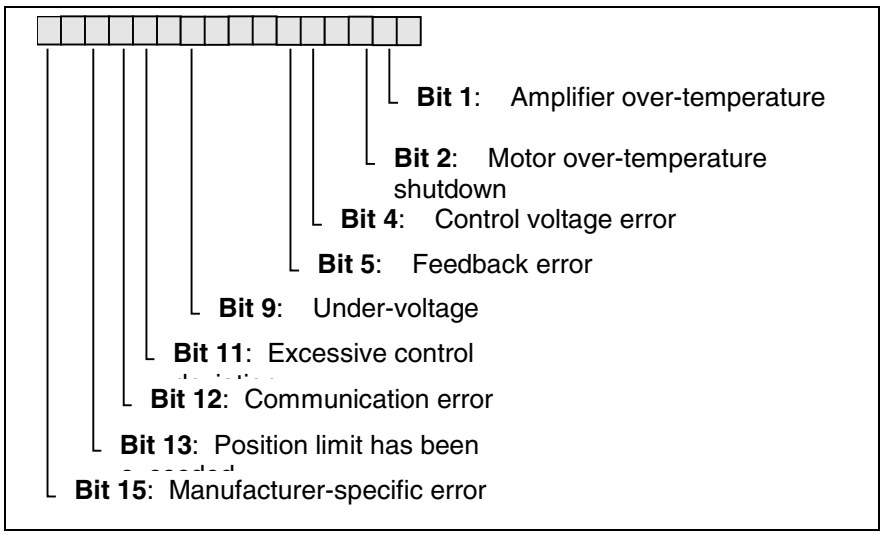


Fig. 2-1: S-0-0011, Class 1 diagnostics

See also the functional description: "S-0-0011, Class 1 diagnostics".

S-0-0011 - Attributes

Para. Name:	**DE**	Zustandsklasse 1		
	EN	Class 1 diagnostics		
	FR	Diagnostic de classe 1 (C1D)		
	ES	Diagnosticos clase 1		
	IT	Diagnostica Classe 1		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0012, Class 2 diagnostics

Function: Shutdown warning.

If a C2D warning is activated or deactivated in the drive, then the change bit (S-0-0135, **Drive status word** Bit 12) for the C2D is set.

The change bit (S-0-0135, **Drive status word** Bit 12) is not cleared by the drive until parameter S-0-0012, **Class 2 diagnostics** has been read.

Parameter structure:

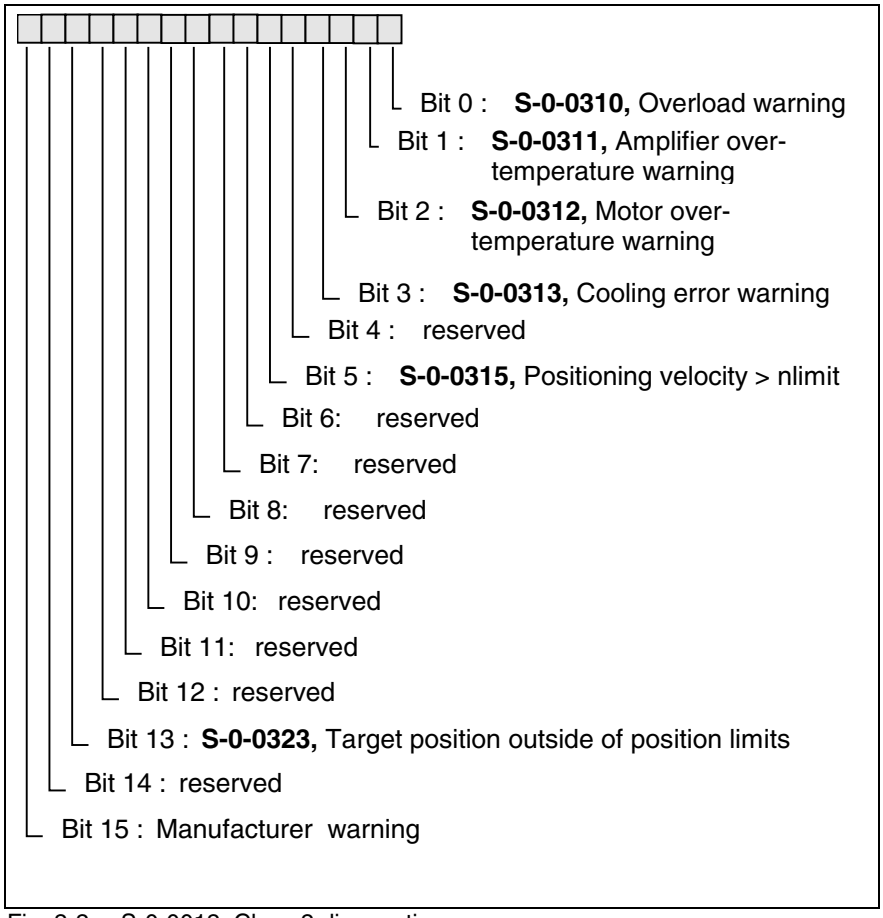


Fig. 2-2: S-0-0012, Class 2 diagnostics

See also the functional description: "S-0-0012, Class 2 diagnostics".

S-0-0012 - Attributes

Para. Name:	**DE**	Zustandsklasse 2		
	EN	Class 2 diagnostics		
	FR	Diagnostic de classe 2 (C2D)		
	ES	Diagnosticos clase 2		
	IT	Diagnostica Classe 2		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0013, Class 3 diagnostics

Function: **Operating status messages**.

If a C3D message is activated or deactivated in the drive, then the change bit (S-0-0135, **Drive status word** Bit 11) is set in the drive.

The change bit (S-0-0135, **Drive status word** Bit 11) is not reset by the drive until parameter S-0-0013, **Class 3 diagnostics** is read.

Parameter structure:

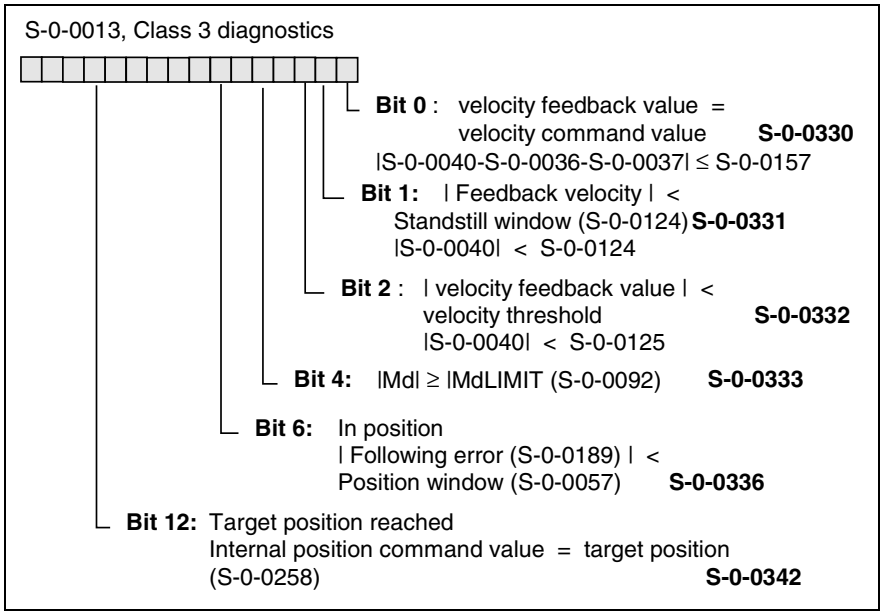


Fig. 2-3: S-0-0013, Class 3 Diagnostics

See also the functional description: "S-0-0013, Class 3 diagnostics".

S-0-0013 - Attributes

Para. Name:	**DE**	Zustandsklasse 3
	EN	Class 3 diagnostics
	FR	Diagnostic de classe 3 (C3D)
	ES	Diagnosticos clase 3
	IT	Diagnostica Classe 3

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0014, Interface status

In the three least significant bits (0, 1, 2), the current communication phase can be requested:

0010b: the drive is in **parameter mode**

0100b: the drive is in **operation mode**

If an interface error is pending, then

- one of the **bits 4-15** in **S-0-0014, Interface status** is set (Bit in 4 .. 15 = 1 => error pending)
- and **Bit 12** is set in **S-0-0011, Class 1 diagnostics**.

The communications error bits are not cleared by the drive until

- the relevant interface error is no longer pending
- and command **S-0-0099, C500 Reset class 1 diagnostic** is started.

Parameter structure:

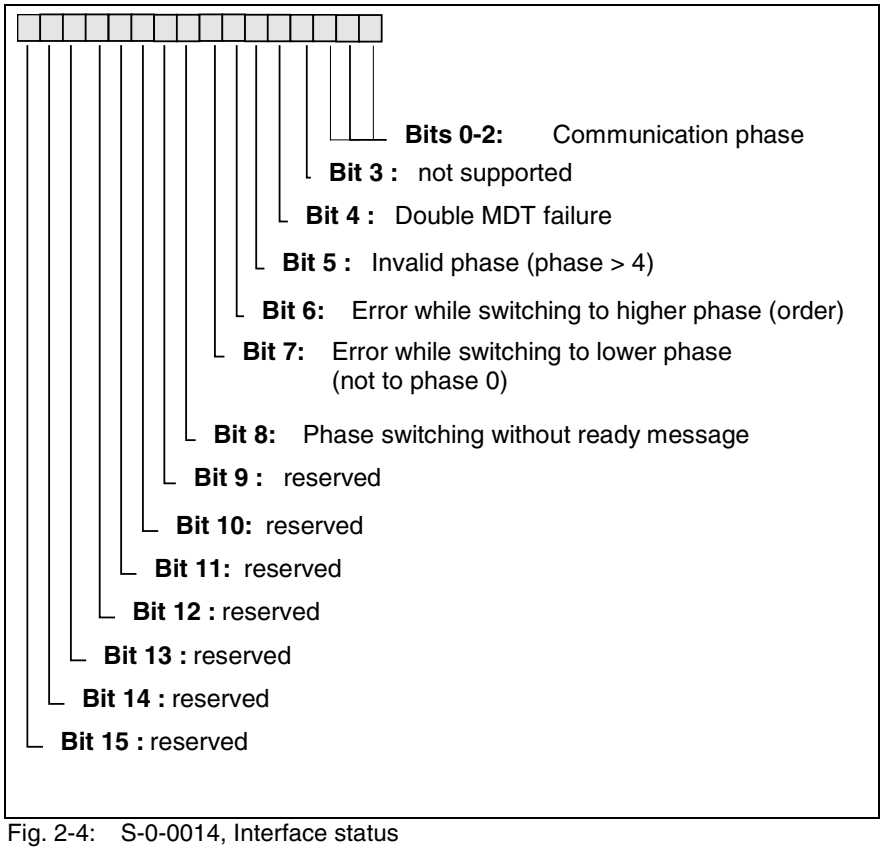


Fig. 2-4: S-0-0014, Interface status

See also the functional description: "Diagnostic of the interface Status".

S-0-0014 - Attributes

Para. Name:	**DE**	Schnittstellen-Status		
	EN	Interface status		
	FR	Etat d'interface		
	ES	Estado de interfaces		
	IT	Stato Interfaccia		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0015, Telegram type parameter

In this parameter, you can choose between priority telegrams and the configured telegram. The telegram type that is selected will be activated in the master and slave only from communications phase 3 on.

Parameter structure:

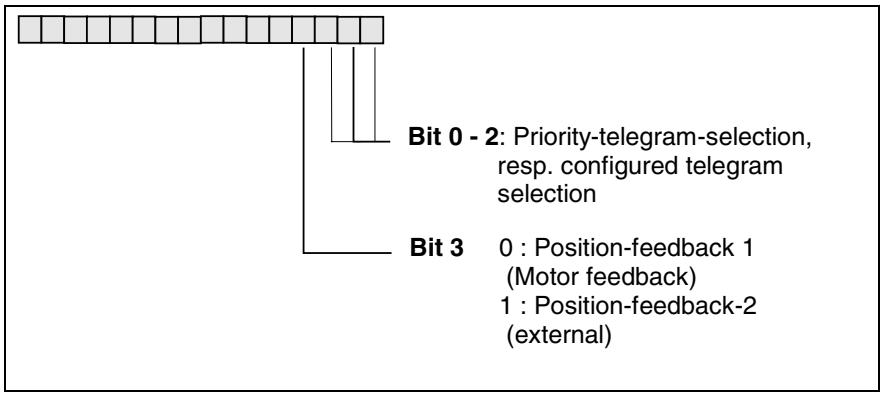


Fig. 2-5: S-0-0015, Telegram type parameter

Note: Only the bits indicated here are supported by the software.

Telegrams:

Bit 0-2:		MDT:	AT:
0	PT 0	No cyclical data	No cyclical data
1	PT 1	**DF1**: S-0-0080 Torque command	No cyclical data
2	PT 2	**DF1**: S-0-0036, Velocity command value	**DF1**: S-0-0040 Velocity feedback value
3	PT 3	**DF1**: S-0-0036, Velocity command value	**DF1**: S-0-0051/S-0-0053 Position feedback value 1
4	PT 4	**DF1**: S-0-0047, Position command value	**DF1**: S-0-0051/S-0-0053 Position feedback value 1
5	PT 5	**DF1**: S-0-0047, Position command value **DF2**: S-0-0036, Velocity command value	**DF1**: S-0-0051/S-0-0053 Position feedback value 1 **DF2**: S-0-0040 Velocity feedback value
6	PT 6	**DF1**: S-0-0036, Velocity command value	No cyclical data
7	Configurable telegram		

Fig. 2-6: Supported bits

where PT : Priority telegram
DF1/2: Data field 1/2

See also the functional description: "Configuration of Telegram Contents"

S-0-0015 - Attributes

Para. Name:	**DE**	Telegrammarten-Parameter		
	EN	Telegram type parameter		
	FR	Paramètre de type de télégramme		
	ES	Parámetros de tipo de telegrama		
	IT	Parametri Tipo Telegramma		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase2
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0016, Custom amplifier telegram configuration list

If a configured telegram is set in **S-0-0015, Telegram type parameter**, then this list will be used for application-specific configuration of the data record in the AT.

The list can contain only operating data that are listed in the parameter **S-0-0187, List of configurable data in the AT**.

See also the functional description: "Configuration of Telegram Contents"

S-0-0016 - Attributes

Para. Name:	**DE**	Konfig.-Liste Antriebs-Telegramm		
	EN	Custom amplifier telegram configuration list		
	FR	Liste de configuration d'AT		
	ES	Telegrama de accionamiento lista de config.		
	IT	Configurazione personalizzata Telegramma		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	Phase2
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0017, IDN-list of all operation data

The ID numbers for all parameters with operation data available in the drive are accessible in this IDN list.

See also the functional description: "Parameter"

S-0-0017 - Attributes

Para. Name:	**DE**	IDN-Liste aller Betriebsdaten		
	EN	IDN-list of all operation data		
	FR	Liste IDN de toutes les données d'exploitation		
	ES	Lista IDN de todos los datos operacionales		
	IT	Elenco IDN di tutti i dati operativi		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0018, IDN-list of operation data for CP2

The IDN-list contains the ID numbers of all parameters that the drive checks in the transition command for phase 3. Only when the data of the listed ID numbers are correct, can the transmission command be positively acknowledged and the transition to communications phase 3 allowed.

See also the functional description: "IDN List of Parameters"

S-0-0018 - Attributes

Para. Name:	**DE**	IDN-Liste Betriebsdaten Kommunikationsphase 2
	EN	IDN-list of operation data for CP2
	FR	Liste IDN des données d'exploitation relatives à CP2
	ES	Lista IDN de datos operacionales fase de comunicación 2
	IT	Elenco IDN di tutti i dati oper. per fase di comunicaz. 2

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	fest im Eprom
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	no

S-0-0019, IDN-list of operation data for CP3

The IDN-list contains the ID numbers of all parameters that the drive checks in the transition command for phase 4. Only when the data of the listed ID numbers are correct, can the transmission command be positively acknowledged, and the transition to communications phase 4 allowed.

See also the functional description: "IDN List of Parameters"

S-0-0019 - Attributes

Para. Name:	**DE**	IDN-Liste Betriebsdaten Kommunikationsphase 3
	EN	IDN-list of operation data for CP3
	FR	Liste IDN des données d'exploitation relatives à CP3
	ES	Lista IDN de datos operacionales para fase de comunicación 3
	IT	Elenco IDN di tutti i dati oper. per fase di comunicaz. 3

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	fest im Eprom
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	no

S-0-0021, IDN-list of invalid op. data for comm. Ph. 2

Before the drive executes a switch from phase 2 to phase 3, it must complete the corresponding command **S-0-0127, C100 Communication phase 3 transition check** that allows it to check if the communications parameters are complete and accurate.

If the drive identifies one or more IDNs as invalid, it will write the operating data that is still needed or is invalid to this IDN list. This will be displayed to the drive by command error diagnostic message **C101 Invalid communication parameter (S-0-0021)**.

See also the functional description: "IDN List of Parameters"

S-0-0021 - Attributes

Para. Name:	**DE**	IDN-Liste ungültige Betriebsdaten Phase 2
	EN	IDN-list of invalid op. data for comm. Ph. 2
	FR	Liste des IDN-données d'exploitation invalides phase 2
	ES	Lista IDN de datos de servicio no validos fase 2
	IT	Lista IDN dei Dati oper. invalidi per Comm. in Fase 2

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	-
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0022, IDN-list of invalid op. data for comm. Ph. 3

Before the drive executes a switch from phase 3 to phase 4 it must complete the corresponding command **S-0-0128, C200 Communication phase 4 transition check** that allows it to check parameters for the following conditions:

- Validity of the parameter
- The parameter value is found within the valid input range.
- Compatibility with other parameters.

If the result of a parameter check is negative, this operating data will be entered in the ID No. (IDN) list.

The drive then responds to the transition command with the communications error diagnostic messages

- **C201 Invalid Parameter(s) (->S-0-0022) or**
- **C202 Parameter limit error (->S-0-0022) or**
- **C203 Parameter calculation error (->S-0-0022)**

See also the functional description: "IDN List of Parameters"

S-0-0022 - Attributes

Para. Name:	**DE**	IDN-Liste ungültige Betriebsdaten Phase 3
	EN	IDN-list of invalid op. data for comm. Ph. 3
	FR	IDN-Liste données d'exploitation invalides phase 3
	ES	Lista IDN de datos de servicio no validos fase 3
	IT	Lista IDN dei Dati oper. invalidi per Comm. in Fase 3

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	-
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0024, Config. list of the master data telegram

If the configured telegram is set in **S-0-0015, Telegram type parameter**, then the configurable data record in the MDT will be configured application-specifically using this list.

The list can only contain operating data that are listed in parameter **S-0-0188, List of configurable data in the MDT**.

See also functional description: "Configuration of telegram contents"

S-0-0024 - Attributes

Para. Name:	**DE**	Konfig.-Liste Master-Daten-Telegramm		
	EN	Config. list of the master data telegram		
	FR	Liste de configuration du MDT		
	ES	Lista de configuración del MDT		
	IT	Lista Config. del Telegramma Dati Master		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	Phase2
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0025, IDN-list of all procedure commands

The data of the IDN-list contains the ident-numbers of all commands in the drive controller.

See also the functional description: "Commands"

S-0-0025 - Attributes

Para. Name:	**DE**	IDN-Liste aller Kommandos		
	EN	IDN-list of all procedure commands		
	FR	Liste IDN de toutes les instructions		
	ES	Lista IDN de todos los comandos		
	IT	Elenco IDN di tutti i comandi		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	fest im Eprom
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	no

S-0-0026, Configuration list signal status word

The data of this parameter contains the IDNs of the signals or bits which the signal status word (**S-0-0144**) contains.

The order of the IDNs in the configuration list determines the bit sequence, beginning with the LSB in the signal status word.

That means, the first IDN in **S-0-0026** defines the bit 0 in the parameter **S-0-0144, Signal status word**, the second IDN in **S-0-0026** defines bit 1 in the parameter **S-0-0144, Signal status word**, and so on.

Note: The signal status word is used in fieldbus drives for the internal communication between the two micro controllers (exception: **P-0-4084** = FFFFh).

See also the functional description: "Configurable signal status word"

S-0-0026 - Attributes

Para. Name:	**DE**	Konfigurations-Liste Signal-Statuswort		
	EN	Configuration list signal status word		
	FR	Liste de configuration pour mot d'état de signal		
	ES	Lista de configuración palabra de estado de señal		
	IT	Lista di Configurazione Parole di Stato Segnali		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	P3-4
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0028, MST error counter

The MST error count counts all invalid Master Synchronization Telegrams in communications phases 3 and 4.

If two MSTs fail in direct succession, then error **F401 Double MST error shutdown** will be generated and the operation will return to phase 0.

The MST error count has a limit stop [(2^16)-1]. This means that during a highly distorted transfer the MST Error count will show the value 65535 after a long time.

See also the functional description: "Error count for telegram interrupts".

S-0-0028 - Attributes

Para. Name:	**DE**	Fehlerzähler MST		
	EN	MST error counter		
	FR	Compteur de MST défectueux		
	ES	Contador de errores MST		
	IT	Contatore errori MST		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_0V	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0029, MDT error counter

This parameter counts all invalid Master Data Telegrams in communications phases 3 and 4. If two MDTs fail in direct succession, then error **F402 Double MST error shutdown** will be generated.

The MDT error counter has a limit stop at (2^16) - 1. This means that during a highly distorted transfer the MDT error count will show a value of 65535 after a long time.

See also the functional description: "Error count for telegram interrupts".

S-0-0029 - Attributes

Para. Name:	**DE**	Fehlerzähler MDT		
	EN	MDT error counter		
	FR	Compteur de MDT défectueux		
	ES	Contador de errores MDT		
	IT	Contatore errori MDT		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0030, Manufacturer version

The version of the drive firmware can be read from this parameter as plain text. The structure of the manufacturer version is defined as follows:

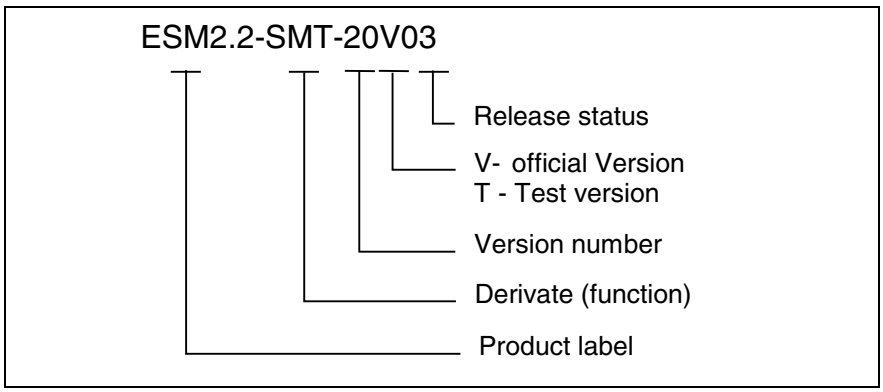


Fig. 2-7: Manufacturer Version

See also the functional description: "System overview"

S-0-0030 - Attributes

Para. Name:	**DE**	Hersteller-Version		
	EN	Manufacturer version		
	FR	Version du fabriquant		
	ES	Version de fabricante		
	IT	Versione Costruttore		
Function:		Parameter	**Editability:**	no
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0032, Primary mode of operation

The mode of operation defined in this parameter will be activated in the drive when

- The **primary mode** of operation is **selected** in the master control word (bits 8 and 9 = 00).
- The control and power sections are **ready for operation**.
- The controller enable **RF** is set.

The operating mode is selected by entering a bit list. In this bit list, certain positions have a fixed definition.

For example, bit 3 chooses whether the position control should work without lag or with a lag distance.

See also the functional description: "Position Controller".

The following applies:

Bit 3 = 0: Position control with lag distance

Bit 3 = 1: Lagless position control

Bit list:	Meaning:
0000,0000,0000,0001	Torque control
0000,0000,0000,0010	Velocity control
0000,0000,0000,x011	Position control with encoder 1 (motor encoder)
0000,0000,0000,x100	Position control with encoder 2 (ext. encoder)
0000,0000,0001,x011	Drive-controlled interpolation, encoder 1
0000,0000,0001,x100	Drive-controlled interpolation, encoder 2
0000,0010,0001,x011	Relative drive-controlled Interpolation, encoder 1
0000,0010,0001,x100	Relative drive-controlled Interpolation, encoder 2
1010,0000,0000,x010	Velocity synchronization with virtual master
1001,0000,0000,x011	Phase synchronization with virtual master, using feedback 1 (for control loops)
1001,0000,0000,x100	Phase synchronization with virtual master, using feedback 2 (for control loops)
1000,1000,0000,x011	Cam follower with virtual master, feedback 1
1000,1000,0000,x100	Cam follower with virtual master, feedback 2

Fig. 2-8: Bit list S-0-0032

See also the functional description: "Setting operating parameters."

S-0-0032 - Attributes

Para. Name:

DE Hauptbetriebsart

EN Primary mode of operation

FR Mode de fonctionnement primaire

ES Tipo de servicio principal

IT Modo operativo primario

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	yes
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0033, Secondary operating mode 1

The mode of operation defined in this parameter will be activated in the drive if:

- The secondary operation mode 1 is selected in the master control word (bits 8 and 9 = "01")
- The control and power sections are ready for operation.
- The controller enable RF is set.

The operating mode is selected by entering a bit list. In this bit list, certain positions have a fixed definition.

For example, bit 3 chooses whether the position control should work without lag or with a lag distance.

See also the functional description: "Position Controller".

The following applies:

Bit 3 = 0: Position control with lag distance

Bit 3 = 1: Lagless position control

Bit list:	Meaning:
0000,0000,0000,0001	Torque control
0000,0000,0000,0010	Velocity control
0000,0000,0000,x011	Position control with encoder 1(motor encoder)
0000,0000,0000,x100	Position control with encoder 2(ext encoder)
0000,0000,0001,x011	Drive-controlled interpolation, encoder 1
0000,0000,0001,x100	Drive-controlled interpolation, encoder 2
0000,0010,0001,x011	Relative drive-controlled Interpolation, encoder 1
0000,0010,0001,x100	Relative drive-controlled Interpolation, encoder 2
1010,0000,0000,x010	Velocity synchronization with virtual master
1001,0000,0000,x011	Phase synchronization with virtual master, using feedback 1 (for control loops)
1001,0000,0000,x100	Phase synchronization with virtual master, using feedback 2 (for control loops)
1000,1000,0000,x011	Cam follower with virtual master, feedback 1
1000,1000,0000,x100	Cam follower with virtual master, feedback 2

Fig. 2-9: Bit list S-0-003

See also the functional description: "Setting operating parameters."

S-0-0033 - Attributes

Para. Name:	**DE**	Nebenbetriebsart 1		
	EN	Secondary operating mode 1		
	FR	Mode de fonctionnement secondaire 1		
	ES	Tipo de servicio secundario 1		
	IT	Modo operativo secondario 1		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0034, Secondary operating mode 2

The mode of operation defined in this parameter will be activated in the drive if:

- The main operating mode 2 is selected in the master control word (bits 8 and 9 = "10")
- The control and power sections are ready for operation.
- The controller enable RF is set.

The operating mode is selected by entering a bit list. In this bit list, certain positions have a fixed definition.

For example, bit 3 chooses whether the position control should work without lag or with a lag distance.

See also the functional description: "Position Controller".

The following applies:

Bit 3 = 0: Position control with lag distance

Bit 3 = 1: Lagless position control

Bit list:	Meaning:
0000,0000,0000,0001	Torque control
0000,0000,0000,0010	Velocity control
0000,0000,0000,x011	Position control with encoder 1(motor encoder)
0000,0000,0000,x100	Position control with encoder 2(ext encoder)
0000,0000,0001,x011	Drive-controlled interpolation, encoder 1
0000,0000,0001,x100	Drive-controlled interpolation, encoder 2
0000,0010,0001,x011	Relative drive-controlled Interpolation, encoder 1
0000,0010,0001,x100	Relative drive-controlled Interpolation, encoder 2
1010,0000,0000,x010	Velocity synchronization with virtual master
1001,0000,0000,x011	Phase synchronization with virtual master, using feedback 1 (for control loops)
1001,0000,0000,x100	Phase synchronization with virtual master, using feedback 2 (for control loops)
1000,1000,0000,x011	Cam follower with virtual master, feedback 1
1000,1000,0000,x100	Cam follower with virtual master, feedback 2

Fig. 2-10: Bit list S-0-0034

See also the functional description: "Setting operating parameters."

S-0-0034 - Attributes

Para. Name:	**DE**	Nebenbetriebsart 2		
	EN	Secondary operating mode 2		
	FR	Mode de fonctionnement secondaire 2		
	ES	Tipo de servicio secundario 2		
	IT	Modo operativo secondario 2		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0035, Secondary operating mode 3

The mode of operation defined in this parameter will be activated in the drive if:

- The secondary operation mode 3 is selected in the master control word (bits 8 and 9 = "11")
- The control and power sections are ready for operation.
- The controller enable RF is set.

The operating mode is selected by entering a bit list. In this bit list, certain positions have a fixed definition.

For example, bit 3 chooses whether the position control should work without lag or with a lag distance.

See also the functional description: "Position Controller".

The following applies:

Bit 3 = 0: Position control with lag distance

Bit 3 = 1: Lagless position control

Bit list:	Meaning:
0000,0000,0000,0001	Torque control
0000,0000,0000,0010	Velocity control
0000,0000,0000,x011	Position control with encoder 1 (motor encoder)
0000,0000,0000,x100	Position control with encoder 2 (ext. encoder)
0000,0000,0001,x011	Drive-controlled interpolation, encoder 1
0000,0000,0001,x100	Drive-controlled interpolation, encoder 2
0000,0010,0001,x011	Relative drive-controlled Interpolation, encoder 1
0000,0010,0001,x100	Relative drive-controlled Interpolation, encoder 2
1010,0000,0000,x010	Velocity synchronization with virtual master
1001,0000,0000,x011	Phase synchronization with virtual master, using feedback 1 (for control loops)
1001,0000,0000,x100	Phase synchronization with virtual master, using feedback 2 (for control loops)
1000,1000,0000,x011	Cam follower with virtual master, feedback 1
1000,1000,0000,x100	Cam follower with virtual master, feedback 2

Fig. 2-11: Bit list S-0-0035

See also the functional description: "Setting operating parameters."

S-0-0035 - Attributes

Para. Name:	**DE**	Nebenbetriebsart 3		
	EN	Secondary operating mode 3		
	FR	Mode de fonctionnement secondaire 3		
	ES	Tipo de servicio secundario 3		
	IT	Modo operativo secondario 2		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0036, Velocity command value

This parameter is used to set the velocity command value. This together with **S-0-0037, Additive velocity command value** determines the effective velocity command value for the drive.

Note: In the position control operating modes, this parameter displays the output signal of the position controller.

See also the functional description: "Operating mode: velocity control"

S-0-0036 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Sollwert		
	EN	Velocity command value		
	FR	Valeur de consigne de vitesse		
	ES	Valor nominal de velocidad		
	IT	Valore di Velocità comandata		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		-090000.0001 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

S-0-0037, Additive velocity command value

The additive velocity command value is added to the **S-0-0036, Velocity command value** in the drive.

See also the functional description: "Operating mode: velocity control"

S-0-0037 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Sollwert additiv		
	EN	Additive velocity command value		
	FR	Valeur de consigne supplémentaire de vitesse		
	ES	Valor nominal adicional de velocidad		
	IT	Comando di Velocità addizzionale		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		-090000.0001 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

S-0-0040, Velocity feedback value

The velocity feedback value can be transferred from the drive control device to the control system either cyclically or via the service channel. Bit 7 in the parameter **P-0-0538, Motor function parameter 1** can activate a filter for the velocity feedback value.

See also functional description "Preparations for Setting the Velocity Controller"

S-0-0040 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Istwert
	EN	Velocity feedback value
	FR	Valeur de retour de vitesse
	ES	Valor real de velocidad
	IT	Feedback di Velocità

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0044	**Extreme value check:**	no
Decimal places:	S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0041, Homing velocity

The product of **S-0-0041, Homing velocity** and **S-0-0108, Feedrate override** determines the velocity for the **S-0-0148, C600 Drive controlled homing procedure** command.

If, in the case of an absolute encoder, the command "Drive controlled homing procedure" is initiated, then the drive will proceed with this velocity to the reference point (home position) that was determined with the **P-0-0012, C300 Set absolute measurement** command.

See also the functional description: "Drive controlled homing".

S-0-0041 - Attributes

Para. Name:	**DE**	Referenzfahr-Geschwindigkeit
	EN	Homing velocity
	FR	Vitesse de prise d'origine
	ES	Velocidad de puesta a cero
	IT	Velocità per Azzeramento

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	S-0-0044	**Extreme value check:**	yes
Decimal places:	S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:	0000000.0000 / 0214748.3647		
Default value:	-	**Cyc. transmittable:**	-

S-0-0042, Homing acceleration

This parameter indicates the acceleration value at which the drive executes the command **S-0-0148, C600 Drive controlled homing procedure command**.

See also the functional description: "Drive controlled homing".

S-0-0042 - Attributes

Para. Name:	**DE**	Referenzfahr-Beschleunigung
	EN	Homing acceleration
	FR	Accélération de prise d'origine
	ES	Aceleración de puesta a cero
	IT	Accellerazione per Azzeramento

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	S-0-0160	**Extreme value check:**	yes
Decimal places:	S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:	00000000.000 / 00002300.971		
Default value:	-	**Cyc. transmittable:**	-

S-0-0043, Velocity polarity parameter

This parameter is used to switch the polarity of the velocity data in relation to the application. Polarities are switched externally, at the input and output of a control system rather than inside the system.

The following applies to rotary motors:

Clockwise rotation when facing the motor shaft is the rule for a positive velocity command value and a positive polarity.

The following applies to linear motors:

The positive direction is used when the primary part is moving toward the linear motor power cable side.

Parameter structure:

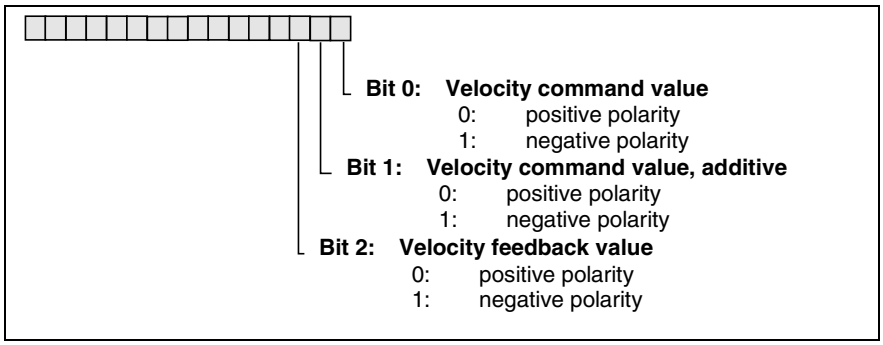


Fig. 2-12: S-0-0043, Velocity polarity parameter

Note: The bits 1 and 2 are copies of bit 0. Only changes of bit 0 have an effect. Different settings of the single bits are not possible!

See also the functional description: "Command Polarities and Actual Value Polarities".

S-0-0043 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Polaritäten-Parameter
	EN	Velocity polarity parameter
	FR	Paramètre de polarité de vitesse
	ES	Parámetros de polaridad de velocidad
	IT	Parametro Direzione Velocità

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	0x0000 / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0044, Velocity data scaling type

Various scaling types can be defined for the velocity data in the drive.

Examples: RPM → rotary
mm/min → linear

Structure of the parameter:

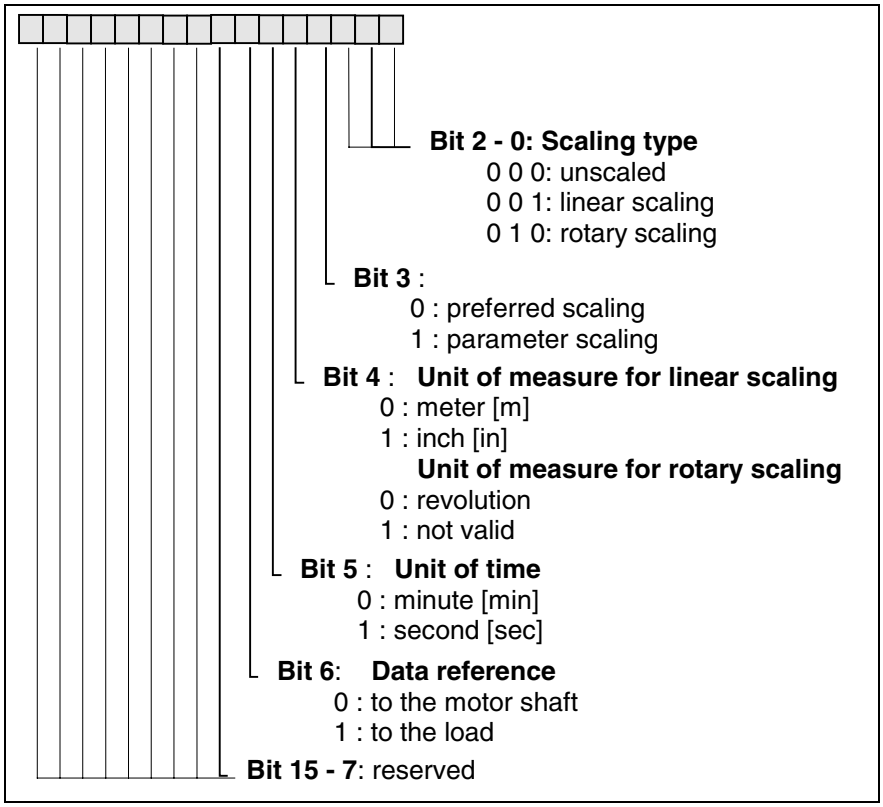


Fig. 2-13: S-0-0044, Velocity Data Scaling Type

In bit 3 it is possible to select between preferred and parameter scaling.

Preferred scaling:

The following parameters are predefined in this case and cannot be changed:

- **S-0-0045, Scaling factor for velocity data**
- **S-0-0046, Scaling exponents for velocity data**

Scaling with parameter scaling means that the above parameter must be set (see section: "Preferred Scaling - Parameter Scaling").

See also functional description: "Velocity Data Display Format"

S-0-0044 - Attributes

Para. Name:	**DE**	Wichtungsart für Geschwindigkeitsdaten
	EN	Velocity data scaling type
	FR	Type de calibrage pour données de vitesse
	ES	Tipo de escala de datos de velocidad
	IT	Tipo di Scala per Dati di Velocità

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	yes
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0045, Velocity data scaling factor

This parameter defines the scaling factor for all velocity data in the drive. If preferred scaling is set with **S-0-0044, Velocity data scaling type**, this parameter will be set to 1.

See also the functional description: "Velocity Data Display Format"

S-0-0045 - Attributes

Para. Name:	**DE**	Wichtungs-Faktor für Geschwindigkeitsdaten		
	EN	Velocity data scaling factor		
	FR	Facteur de calibrage pour données de vitesse		
	ES	Factor de escala para datos de velocidad		
	IT	Fattore di Scala per Dati Velocità		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0046, Velocity data scaling exponent

The scaling exponent for all velocity data in the drive is determined in this parameter.

See also functional description: "Velocity data display format".

S-0-0046 - Attributes

Para. Name:	**DE**	Wichtungs-Exponent für Geschwindigkeitsdaten		
	EN	Velocity data scaling exponent		
	FR	Exposant de calibrage pour données de vitesse		
	ES	Exponente de escala para datos de velocidad		
	IT	Esponente per Dati Velocità		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		-00032 / 000032		
Default value:		-	**Cyc. transmittable:**	-

S-0-0047, Position command value

In the **position control** operation mode, this parameter is transferred from the control system to the drive every NC cycle time. In other operating modes, with the velocity loop closed in the drive, the active position command value of the position controller is displayed here. Then the position command is generated in the drive, depending on the active operation mode.

See also the functional description: "Operating Mode: Position Control".

S-0-0047 - Attributes

Para. Name:	**DE**	Lage-Sollwert		
	EN	Position command value		
	FR	Valeur de consigne de position		
	ES	Valor nominal de posición		
	IT	Valore di Posizione comandata		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0048, Position command value additional

If a synchronization operating mode with position control is selected, then the additional position command value is added to the **S-0-0047, Position Command Value** in the drive. This is used to establish a position offset between the master axis encoder and the slave axis.

S-0-0048 - Attributes

Para. Name:	**DE**	Lagesollwert additiv		
	EN	Position command value additional		
	FR	Valeur de consigne supplémentaire de position		
	ES	Valor nominal de posición adicional		
	IT	Valore di Posizione comandata addizionale		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0049, Positive position limit value

The positive position limit value describes the maximum extent of travel in the positive direction.

Activation The position limit value is active only when all position data refers to the homing point, i.e., the drive is homed (bit 0 is set to 1 in parameter **S-0-0403, Position feedback value status**).

The position limit values can be switched off using bit 4 in **S-0-0055, Position polarity parameter**.

Warning If a **S-0-0258, Target position** beyond the positive position limit value is set for the drive, then the drive sets warning bit 13 in **S-0-0012, Class 2 diagnostic** and generates the warning **E253 Target position out of travel range**.

If the positive position limit value is exceeded, the drive sets error bit 13 in **S-0-0011, Class 1 diagnostic**.

See also the functional description: "Axis Limit Values".

S-0-0049 - Attributes

Para. Name:	**DE**	Lage-Grenzwert positiv		
	EN	Positive position limit value		
	FR	Limite de position positive		
	ES	Valor limite de posición positivo		
	IT	Limite positivo di Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0050, Negative position limit value

The negative position limit value describes the maximum extent of travel in the negative direction.

Activation The position limit value is active only when all position data refers to the homing point, i.e. the drive is homed (bit 0 is set to 1 in parameter **S-0-0403, Position feedback value status**). The position limit values can be switched off using bit 4 in **S-0-0055, Position polarity parameter**.

Warning If a target position beyond the negative position limit value is set for the drive, then the drive sets warning bit 13 in **S-0-0012, Class 2 diagnostic** and generates the warning **E253 Target position out of travel range**.

If the negative position limit value is exceeded, the drive will set error bit 13 in **S-0-0011, Class 1 diagnostics**.

See also the functional description: "Axis Limit Values".

S-0-0050 - Attributes

Para. Name:	**DE**	Lage-Grenzwert negativ
	EN	Negative position limit value
	FR	Limite de position négative
	ES	Valor limite de posición negativo
	IT	Limite negativo di Posizione

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076	**Extreme value check:**	yes
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	-034560.0000 / 0034559.9999		
Default value:	-	**Cyc. transmittable:**	-

S-0-0051, Position feedback 1 value

Position feedback value 1 represents the current position of the motor encoder. The initialization of the position feedback happens during the execution of **S-0-0128, C200 Communication phase 4 transition check**; that means, the feedback positions are only initialized after successful execution of the command.

If an absolute encoder is present, the value in **S-0-0051, Position Feedback 1 Value** then shows the absolute position referred to the machine's zero-point, provided that during the initial start-up the command **P-0-0012, C300 Command Set absolute measurement** has been executed once.

Otherwise, the initialization value depends on whether the parameter **P-0-0019, Position start value** has been written to during the phase progression or whether the motor feedback is an absolute encoder.

See also the functional description: "Setting the Measurement System".

S-0-0051 - Attributes

Para. Name:	**DE**	Lage-Istwert Geber 1		
	EN	Position feedback 1 value		
	FR	Valeur de retour de position codeur 1		
	ES	Valor real de posición 1		
	IT	Valore di Posizione di Feedback 1		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0052, Reference distance 1

This parameter displays the distance between the machine zero-point and the homing point for the motor measurement system (Position feedback value 1). The parameter is used for the execution of the commands

S-0-0148, C600 Drive controlled homing procedure command and **P-0-0012, C300 Command Set absolute measurement**.

During the command **S-0-0148, C600 Drive controlled homing procedure command**, the distance between the homing point and the machine zero-point is written there. If homing is done with run to the homing point, the drive goes to the homing point, and **S-0-0051, Position feedback 1 value** contains the value of **S-0-0052, Reference distance 1**.

For the command **P-0-0012, C300 Command Set absolute measurement**, the desired value for **S-0-0051, Position feedback 1 value** is written there. After successful execution of 'Setting absolute

measurement', **S-0-0051, Position feedback 1 value** shows the value of **S-0-0052, Reference distance 1**.

See also the functional description: "Drive-Controlled Homing".

S-0-0052 - Attributes

Para. Name:	**DE**	Referenzmaß 1		
	EN	Reference distance 1		
	FR	Mesure de référence 1		
	ES	Medida de referencia valor de posición 1		
	IT	Distanza di Riferimento 1		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0053, Position feedback 2 value

Position feedback value 2 represents the current position of the optional/external encoder. The initialization of the position feedback happens during the execution of **S-0-0128, C200 Communication phase 4 transition check**; that means, the feedback positions are only initialized after successful execution of the command.

If an absolute optional encoder is present, the value in **S-0-0053, Position Feedback Value 2** then shows the absolute position referred to the machine's zero-point, provided that during the first setup the command **P-0-0012, C300 Command Set absolute measurement** has been executed once.

Otherwise, the initialization value depends on whether the parameter **P-0-0019, Position start value** has been written to during the phase progression or whether an existing optional feedback is an absolute encoder.

See also the functional description: "Setting the Measurement System".

S-0-0053 - Attributes

Para. Name:	**DE**	Lage-Istwert Geber 2		
	EN	Position feedback 2 value		
	FR	Valeur de retour de position codeur 2		
	ES	Valor real de posición 2		
	IT	Valore di Posizione di Feedback 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0054, Reference distance 2

This parameter displays the distance between the machine zero-point and the homing point for the external measuring system (Position feedback value 2). The parameter is used for the execution of the commands **S-0-0148, C600 Drive controlled homing procedure command** and **P-0-0012, C300 Command Set absolute measurement**.

During the command **S-0-0148, C600 Drive controlled homing procedure command**, the distance between the homing point and the machine zero-point is written there. If homing is done with run to the homing point, the drive goes to the homing point, and **S-0-0053, Position feedback 2 value** contains the value of **S-0-0054, Reference distance 2**.

For the command **P-0-0012, C300 Command Set absolute measurement**, the desired value for **S-0-0053, Position feedback 2 value** is written there. After successful execution of 'Setting absolute measurement'**, S-0-0053, Position feedback 2 value** shows the value of **S-0-0054, Reference distance 2**.

See also the functional description: "Drive-Controlled Homing".

S-0-0054 - Attributes

Para. Name:	**DE**	Referenzmaß 2		
	EN	Reference distance 2		
	FR	Mesure de référence 2		
	ES	Medida de referencia valor de posición 2		
	IT	Distanza di Riferimento 2		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0055, Position polarities

This parameter can be used to invert the polarities of the given position data. These polarities are switched outside of the control system (i.e., at the input and output of the control system).

Note: The polarity of the position must be determined during the first setup of an axis *before* establishing a zero reference for the measurement systems, because changing the polarity results in different position values.

Note the following in reference to rotary motors:

"Motor-clockwise rotation" means the motor shaft turns in a clockwise direction (facing the motor shaft) if the position command value difference and the polarity are both positive.

The following applies to linear motors:

The positive direction is used when the primary part is moving toward the linear motor power cable side

Bit 4 is used to activate or deactivate software position limits.

Parameter structure:

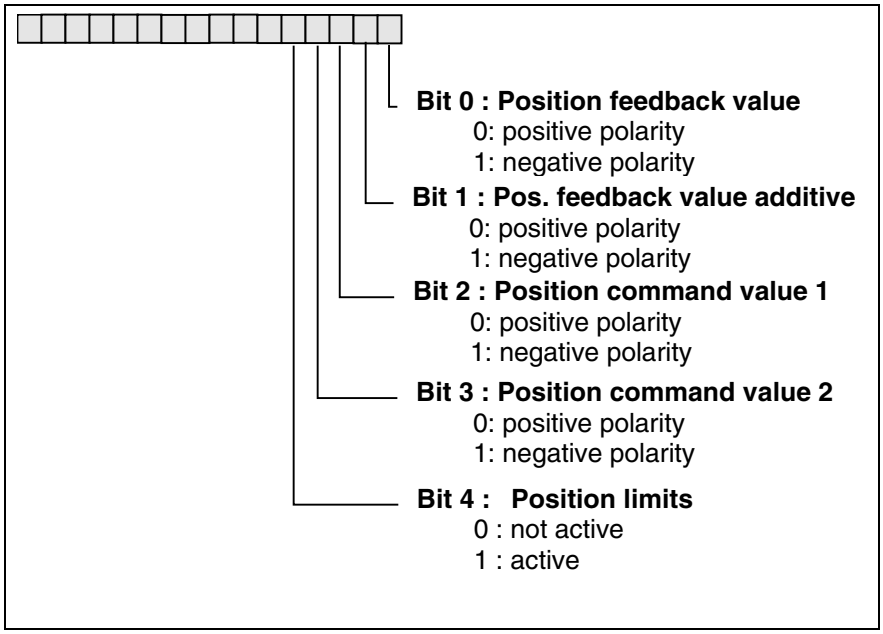


Fig. 2-14: S-0-0055, Position polarity parameter

Note: Only the bits indicated here are supported by the firmware. The setting of bits 0…3 cannot be different. Bits 1…3 will therefore be set to the value of bit 0 by the drive!

See also the functional description: "Command Polarities and Actual Value Polarities".

S-0-0055 - Attributes

Para. Name:	**DE**	Lage-Polaritäten		
	EN	Position polarities		
	FR	Polarités de position		
	ES	Polaridades de posición		
	IT	Direzioni di Posizionamento		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0057, Position window

The parameter **S-0-0057, Position window** is used for the following functions:

- Status "In Position"
  (**S-0-0013, Class 3 Diagnostics**, Bit 6 = 1)
  |Following error (S-0-0189)| < Position window (S-0-0057)
- Status "In_Target_Position"
  (**S-0-0182, Manufacturer class 3 diagnostics**, Bit 10 = 1)
  |Target pos. - act.pos. feedback value| < Position window (S-0-0057)

- Status "Final position reached"
  (S-0-0182, Manufacturer class 3 diagnostics, Bit 12 = 1)
  (|Target - act.pos. feedback value| < S-0-0057, Position window)
  && Last process block done
- Status "ITP"= In_Target_Position
  (S-0-0182, Manufacturer class 3 diagnostics, Bit 6 = 1)
  |Target - act.pos.| < Position window (S-0-0057)
  && |following error| < Position window
  && |act. speed| < Standstill window (S-0-0124)
- During the execution of the command **S-0-0148, C600 Drive controlled homing procedure command** the drive reports completion of the command, when the internal command generator has reached its target value and the difference between this value and the actual position is smaller than the position window.
- As a hysteresis window for the position limits. I.e., when the drive has gone beyond the limit, the travel range is additionally limited by the position window.
- If position limit values are active, positioning is executed to the position limit value positioning windows when the operating mode is "jogging".
- For spindle positioning command, to show that the spindle is standing in position.

See also the functional description: "S-0-0182, Manufacturer class 3 diagnostics".

S-0-0057 - Attributes

Para. Name:	**DE**	Positionierfenster		
	EN	Position window		
	FR	Fenêtre de positionnement		
	ES	Ventana de posicionamiento		
	IT	Finestra di Posizionamento		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0076, Position data scaling type

The position data scaling type determines in which format the position data is communicated between the drive and control or MMI. When position parameters (e.g. **S-0-0051, Position feedback 1 value**) are read, the drive displays them with the selected scaling. The scaling selection is usually pre-set by the control.

The following settings can be made:

Structure of the parameter:

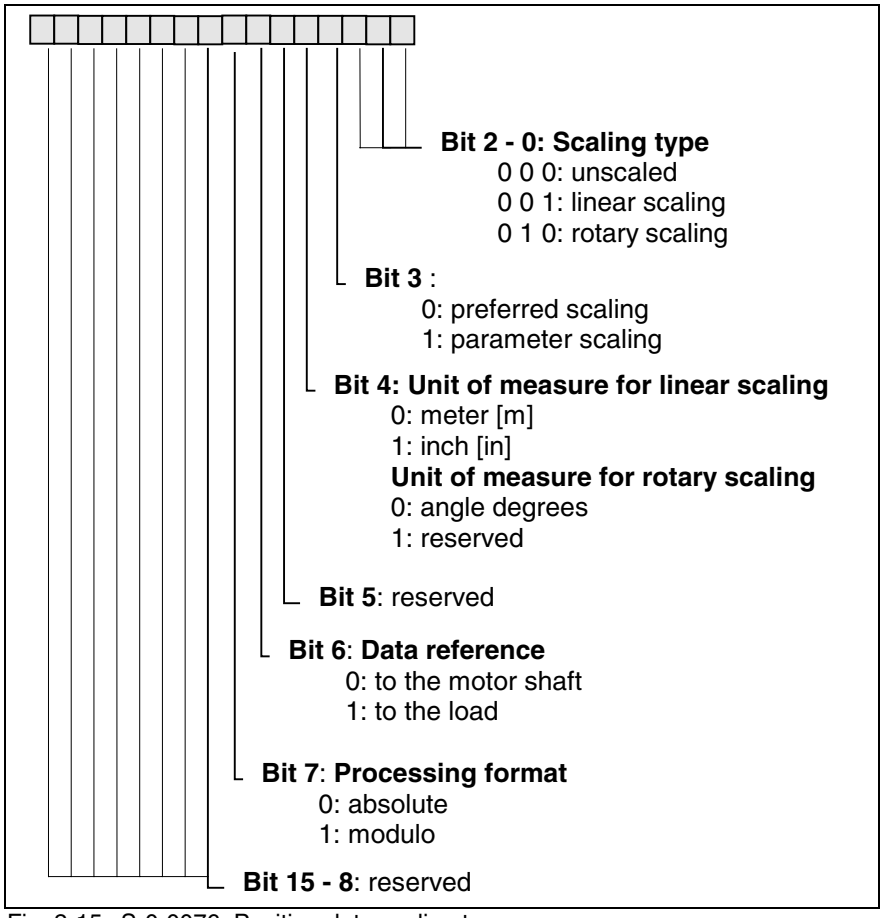


Fig. 2-15: S-0-0076, Position data scaling type

In bit 3 the selection between preferred and parameter scaling can be set.

Preferred scaling:

The following parameters are predefined and cannot be changed:

- **S-0-0077, Linear position data scaling factor,**
- **S-0-0078, Linear position data scaling exponent**
- **S-0-0079, Rotational position resolution**

Parameter scaling means that these parameter must be set for scaling (see section: Preferred Scaling - Parameter Scaling").

Note: Only the bits mentioned here are supported by the firmware. 1) See also **S-0-0045, Velocity data scaling factor**. 2) See also the example **S-0-0077, Linear position data scaling factor**.

See also the functional description: "Display Format of Position Data".

S-0-0076 - Attributes

Para. Name:	**DE**	Wichtungsart für Lagedaten
	EN	Position data scaling type
	FR	Type de calibrage pour données de position
	ES	Tipo de escala para datos de posición
	IT	Tipo di Scala per Dati Posizionamento

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	yes
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0077, Linear position data scaling factor

When linear scaling is selected, the parameter **S-0-0077, Linear position data scaling factor** together with **S-0-0078, Linear position data scaling exponent** and the selection of the physical unit m (meters) or inch in S-0-0076, determine in which unit the present position parameters in the drive are displayed.

If "preferred scaling“ is chosen in **S-0-0076, Position data scaling type** (bit 3 = 0), the values in S-0-0077 and S-0-0078 are set by the drive.

If "parameter scaling“ is chosen in **S-0-0076, Position data scaling type** (bit 3 = 1), the settings in S-0-0077 and S-0-0078 are used.

Example for the display of position data for linear scaling:

Physical position of the motor feedback equals 0.12 m (meters).

A) Selected scaling = linear preferred scaling (S-0-0077 = 1, S-0-0078 = -7). For **S-0-0051, Position feedback 1 value** the value is 1200000 (with meter unit and 7 places after the decimal).

B) Selected scaling = linear parameter scaling (S-0-0077 = 3, S-0-0078 = -7). For **S-0-0051, Position feedback 1 value** the value is 400000 (with meter unit and 7 places after the decimal).

See also the functional description: "Display Format of Position Data".

S-0-0077 - Attributes

Para. Name:	**DE**	Wichtungs-Faktor transl. Lagedaten
	EN	Linear position data scaling factor
	FR	Facteur de calibrage pour données de posit. lin.
	ES	Factor de escala datos de posición lineales
	IT	Fattore di Scala per Posizionamenti lineare

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0078, Linear position data scaling exponent

When linear scaling is selected (S-0-0076, bits 0..2 = 001), the parameter **S-0-0078, Linear position data scaling exponent** together with **S-0-0077, Linear position data scaling factor** and the selection of the physical unit m (meters) or inch in S-0-0076, determine in which unit the present position parameters in the drive are displayed.

If "preferred scaling“ is chosen in **S-0-0076, Position data scaling type** (bit 3 = 0), the values in S-0-0077 and S-0-0078 are set by the drive.

If "parameter scaling“ is chosen in **S-0-0076, Position data scaling type** (bit 3 = 1), the settings in S-0-0077 and S-0-0078 are used.

Example for the display of position data for linear scaling:

Physical position of the motor feedback equals 0.12 m (meters).

A) Selected scaling = linear preferred scaling (S-0-0077 = 1, S-0-0078 = -7). For **S-0-0051, Position feedback 1 value** the value is 1200000 (with meter unit and 7 places after the decimal).

B) Selected scaling = linear parameter scaling (S-0-0077 = 1, S-0-0078 = -6). For **S-0-0051, Position feedback 1 value** the value is 120000 (with meter unit and 6 places after the decimal).

See also the functional description: "Display Format of Position Data".

S-0-0078 - Attributes

Para. Name:	**DE**	Wichtungs-Exponent transl. Lagedaten		
	EN	Linear position data scaling exponent		
	FR	Exposant de calibrage pour données de posit. lin.		
	ES	Exponente de escala datos de posición lineales		
	IT	Esponente per Dati Posizionamento lineare		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0079, Rotational position resolution

If rotary position scaling is selected, the LSB valence for all position data will be set in this parameter.

The valence of the LSB in the drive’s position data results in

$$\text{LSB valence} = \frac{1 \text{ Revolution}}{\text{Rotational position resolution}}$$

where bit 6 of **S-0-0076, Position data scaling type** selects whether the LSB valence refers to one motor revolution or one load revolution.

If you work with preferred rotary scaling, the value in **S-0-0079, Rotational position resolution** is fixed at 3 600 000. Thus, the LSB bit of all rotary position data is fixed at 0.0001 degrees of angle.

See also the functional description: "Display format of position data".

S-0-0079 - Attributes

Para. Name:	**DE**	Rotations-Lageauflösung
	EN	Rotational position resolution
	FR	Résolution de position rotationnelle
	ES	Resolución de posición de rotación
	IT	Risoluzione per Posizionamenti circolari

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	0000000001 / 4294967295		
Default value:	-	**Cyc. transmittable:**	-

S-0-0080, Torque/Force command

The torque command values are transferred by the control system to the drive when in torque control mode.

If the velocity controller is active, the torque required for the corresponding velocity can be derived from this parameter. The evaluation depends upon the scaling of torque and force data. At present, only the percentage-based scaling is supported. The date corresponds to the current command value in respect to the motor current at standstill (S-0-0111).

100% = motor current at standstill (S - 0 - 0111)

The value can be converted to a torque or force value by multiplying the command current by the torque/force constant (P-0-0051).

See also functional description: "Torque Control".

S-0-0080 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Sollwert		
	EN	Torque/Force command		
	FR	Valeur de consigne de couple/force		
	ES	Valor nominal de par de giro/fuerza		
	IT	Comando Coppia/Forza		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0086	**Extreme value check:**	yes
Decimal places:		S-0-0086	**Combination check:**	no
Input min/max:		-0099.6 / 00099.6		
Default value:		-	**Cyc. transmittable:**	-

S-0-0084, Torque/Force feedback value

The current torque/force feedback value can be derived from this parameter.

The shown value depends on the torque/force. At present, only the percentage-based scaling is supported. The data value corresponds to the measured feedback current, where 100% is equal to the motor current at standstill, S-0-0111.

The value can be converted to a torque or force value by multiplying the command current by the torque/force constant P-0-0051.

S-0-0084 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Istwert		
	EN	Torque/Force feedback value		
	FR	Valeur de retour de couple/force		
	ES	Par de giro/valor de retroalimentación de fuerza		
	IT	Valore di Feedback Coppia/Forza		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0086	**Extreme value check:**	no
Decimal places:		S-0-0086	**Combination check:**	no
Input min/max:		-0099.6 / 00099.6		
Default value:		-	**Cyc. transmittable:**	-

S-0-0085, Torque/Force polarity parameter

The polarities for the given torque data as related to the application can be switched in this parameter.

Polarities are switched externally, at the input and output of a control system rather than inside the system.

The following applies to rotary (turning) motors:

The motor will turn in a clockwise direction (facing the motor shaft) with a positive torque command value and positive polarity.

The following applies to linear motors:

The positive direction is used when the primary part is moving toward the linear motor power cable side

Structure of the parameter:

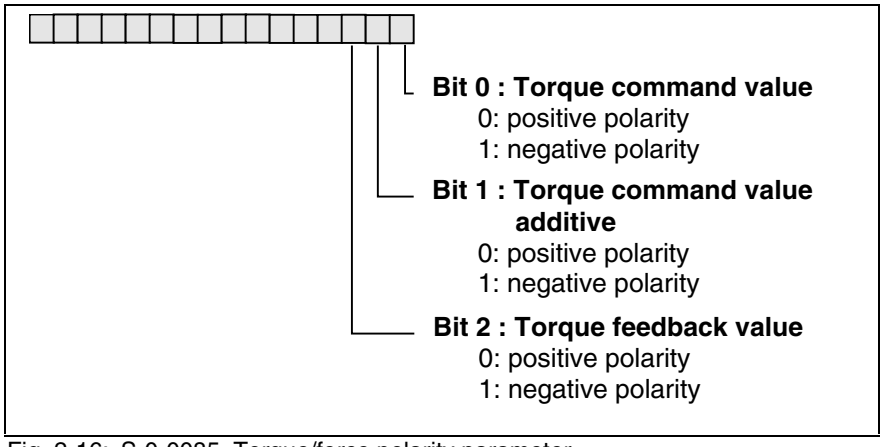


Fig. 2-16: S-0-0085, Torque/force polarity parameter

Note: If bit 0 is changed, then bits 1 - 2 will also be set to the value of bit 0 by the drive.

See also the functional description: "Command Polarities and Actual Value Polarities".

S-0-0085 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Polaritäten-Parameter		
	EN	Torque/Force polarity parameter		
	FR	Paramètre de polarité de couple/force		
	ES	Par de giro/fuerza parámetro de polaridad		
	IT	Polarità Coppia/Forza		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0086, Torque/Force data scaling type

At present, only the percentage-based scaling for torque/force data is supported.

The following applies:

100% = motor current at standstill (S - 0 - 0111)

See also the functional description: "Adjustable scaling for position, velocity, and acceleration data".

S-0-0086 - Attributes

Para. Name:	**DE**	Wichtungsart für Drehmoment/Kraftdaten		
	EN	Torque/Force data scaling type		
	FR	Type de calibrage pour données de couple/force		
	ES	Par de giro/fuerza tipo de escala de datos		
	IT	Tipo di Scala per Dati Coppia/Forza		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0088, Receive to receive recovery time (TMTSG)

This parameter defines the time needed for the slave to switch to readiness for the next master synchronization telegram after receiving a master data telegram.

The parameter is read by the control system in phase 2 to calculate the time slot parameters.

See also the functional description: "Configuration of the Telegram Send and Receive Times"

S-0-0088 - Attributes

Para. Name:	**DE**	TMTSY Erholzeit Empfangen-Empfangen		
	EN	Receive to receive recovery time (TMTSG)		
	FR	Temps de récupération entre deux réceptions (TMTSY)		
	ES	TMTSY Tiempo de recuperación recepción-recepción		
	IT	Tempo di Recupero Ricettore a Ricettore (TMTSG)		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		us	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0089, MDT Transmit starting time (T2)

This is the transmit starting time for the master data telegram after the end of a master synchronization telegram. The value is transferred from the master to the slave in communications phase 2 and is activated in phase 3.

See also the functional description: "Configuration of the Telegram Send and Receive Times"

S-0-0089 - Attributes

Para. Name:	**DE**	T2 Sendezeitpunkt MDT		
	EN	MDT Transmit starting time (T2)		
	FR	Temps du départ de transmission du MDT (T2)		
	ES	T2 Punto temporal de emision MDT		
	IT	MDT Tempo Partenza Trasmissione (T2)		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase2
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0090, Command value transmit time (TMTSG)

This is the time required by the slave to prepare the command values for the drive after reception of the master data telegram.

See also the functional description: "Configuration of the Telegram Send and Receive Times"

S-0-0090 - Attributes

Para. Name:	**DE**	TMTSG Kopierzeit Sollwerte
	EN	Command value transmit time (TMTSG)
	FR	TMTSG Temps de recopie de consigne
	ES	TMTSG Tiempo de copia valores nominales
	IT	Tempo di Trasmissione Valore comandato (TMTSG)

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	us	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0091, Bipolar velocity limit value

The "bipolar velocity limit value" describes the maximum permissible velocity, symmetrical in both directions.

The max. input value is determined by the parameter **S-0-0113, Maximum motor speed (n_{max})**. The entered value generates the maximum value for all other speed parameters.

See also the functional description: "Limiting Velocity"

S-0-0091 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Grenzwert bipolar		
	EN	Bipolar velocity limit value		
	FR	Limite de vitesse bipolaire		
	ES	Valor limite de velocidad bipolar		
	IT	Valore di Velocità Limite		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0000000.0000 / 0009014.9815		
Default value:		-	**Cyc. transmittable:**	-

S-0-0092, Bipolar torque/force limit value

This parameter describes the maximum torque symmetrically permitted in both directions (accelerating, braking).

The evaluation refers to the percentage of the motor current at standstill:

100% = motor current at standstill (S - 0 - 0111)

Note: The maximum torque also depends on parameters **P-0-0006, Overload factor** and **P-0-4011, Switching frequency**.

See also functional description: "Torque/force limiting".

S-0-0092 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Grenzwert bipolar
	EN	Bipolar torque/force limit value
	FR	Limite de couple/force bipolaire
	ES	Valor limite par de giro/fuerza bipolar
	IT	Valore di Coppia/Forza Limite

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0086	**Extreme value check:**	yes
Decimal places:	S-0-0086	**Combination check:**	no
Input min/max:	0000.0 / 0099.6		
Default value:	-	**Cyc. transmittable:**	-

S-0-0093, Torque/force data scaling factor

The scaling factor for all torque/force data in the drive is set in this parameter.

The parameter has no meaning at the present time, because only percentage-based scaling can be set for torque and force data. Therefore, only the value 1 is suitable.

See also the functional description: "Adjustable Scaling for Position, Velocity, and Acceleration Data".

S-0-0093 - Attributes

Para. Name:	**DE**	Wichtungs-Faktor für Drehmoment/Kraftdaten
	EN	Torque/force data scaling factor
	FR	Facteur de calibrage pour données de couple/force
	ES	Factor de escala para datos par de giro/fuerza
	IT	Fattore di Scala per Dati Coppia/Forza

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0094, Torque/force data scaling exponent

The scaling exponent for all torque/force data in the drive is set in this parameter.

The parameter has no meaning at the present time, because only percentage-based scaling can be set for torque and force data.

See also the functional description: "Adjustable Scaling for Position, Velocity, and Acceleration Data".

S-0-0094 - Attributes

Para. Name:	**DE**	Wichtungs-Exponent für Drehmoment/Kraftdaten
	EN	Torque/force data scaling exponent
	FR	Exposant de calibrage pour données de couple/force
	ES	Exponente de escala para datos de par de giro/fuerza
	IT	Esponente per Dati Coppia/Forza

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0095, Diagnostic message

The operating status for the drive that is relevant at the moment can be read in **text** form in this parameter.

The respective diagnostic message number from **S-0-0390, Diagnostic Message Number** will appear in front of this parameter.

Example: **"A010 Drive Halt"**

See also the functional description: "Diagnostic Message"

S-0-0095 - Attributes

Para. Name:	**DE**	Diagnose		
	EN	Diagnostic message		
	FR	Message de diagnostic		
	ES	Diagnostico		
	IT	Messaggio di Diagnosi		
Function:		Parameter	**Editability:**	no
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0096, Slave arrangement (SLKN)

For SERCOS: During initialization, the master must know which drives are available under which slave numbers in order to execute an optimal automatic time slot calculation.

The master uses this information to detect the address of the connected slave.

Example for address 3:

	Highbyte	Lowbyte
Contents S-0-0096	03	03

See also the functional description: "Setting the Drive Address of the SERCOS Interface"

S-0-0096 - Attributes

Para. Name:	**DE**	Slavekennung (SLKN)		
	EN	Slave arrangement (SLKN)		
	FR	Reconnaissance d'esclave (SLKN)		
	ES	Disposición de esclavo (SLKN)		
	IT	Preparazione Slave (SLKN)		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0097, Mask class 2 diagnostic

This Parameter can mask out pre-warnings in the **S-0-0012, Class 2 diagnostics** concerning their effect on

- the **change bit** in the drive status

When changes are made to the masked early warnings, the Class 2 diagnostic change bit will not be set in the drive status.

Note: A warning bit masked by this parameter will still be shown in parameter **S-0-0012, Class 2 diagnostic**, but will not lead to a change in the drive status word.

See also functional description: "Change bit of class 2 and 3 diagnostics in the drive status word".

S-0-0097 - Attributes

Para. Name:	**DE**	Maske Zustandsklasse 2		
	EN	Mask class 2 diagnostic		
	FR	Diagnostic de classe 2, masque		
	ES	Máscara diagnostico clase 2		
	IT	Maschera Diagnosi Classe 2		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0098, Mask class 3 diagnostic

This mask can cancel pre-warnings in the **S-0-0013, Class 3 diagnostics** concerning their effect on

- the **change bit** in the S-0-0135, drive status

When changes are made to the masked early warnings, the Class 3 diagnostic change bit will be set in the S-0-0135, Drive status.

Note: A warning cancelled by this mask will only be shown in the S-0-0013, Class 3 diagnostic.

See also the functional description: "Change bit of class 2 and 3 diagnostics in the drive status word".

S-0-0098 - Attributes

Para. Name:	**DE**	Maske Zustandsklasse 3		
	EN	Mask class 3 diagnostic		
	FR	Diagnostic de classe 3, masque		
	ES	Máscara diagnostico clase 3		
	IT	Maschera Diagnosi Classe 3		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0099, C500 Reset class 1 diagnostic

Command to **reset errors**, after the cause has been cleared.

This command can be started with

- the S1 key on the drive controller or
- by writing to the parameter **S-0-0099, C5 Reset class 1 diagnostic**

When starting the command via the parameter S-0-0099, all errors in the drive are cleared, and the drive will switch to the "ready for operation" status if no further error remains.

If the command is started with the S1 key, only one error is deleted at a time. If the drive has stored several errors (up to 4 errors), the diagnostic message that corresponds to each error will appear sequentially every time the S1 key is pressed again.

See also the function description: "Clearing Errors".

S-0-0099 - Attributes

Para. Name:	**DE**	C500 Reset Zustandsklasse 1		
	EN	C500 Reset class 1 diagnostic		
	FR	C500 Remise à zéro pour diagnostic de classe 1		
	ES	C500 Reset diagnostico clase 1		
	IT	C500 Cancellare Errori Classe 1		
Function:		Command	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0100, Velocity loop proportional gain

This parameter contains the value for the velocity loop proportional gain.

The proportional gain unit depends on the connected motor type.

Motor type:	Unit:
Rotary motor:	A•sec/rad
Linear motor:	A•min/m

Fig. 2-17: Units for the vel. loop prop. gain depending on the motor type

It is possible to load a default value for the parameter using the command "Basic load", as long as there is a motor with feedback memory (**P-0-4014, Motor type:** 1 or 5).

See also the functional description: "Setting the Velocity Controller".

S-0-0100 - Attributes

Para. Name:	**DE**	Geschwindigkeitsregler-Proportionalverstärkung		
	EN	Velocity loop proportional gain		
	FR	Gain proportionnel de la boucle de vitesse		
	ES	Amplificación proporcional de regulador de velocidad		
	IT	Guadagno proporzionale Anello di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		P-0-4014	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 6553.5		
Default value:		-	**Cyc. transmittable:**	-

S-0-0101, Velocity loop integral action time

The velocity controller forms a current command value from the difference between the velocity command value and the velocity feedback value (= speed regulation deviation).

This current command value consists of a proportional component and an integral component. The velocity loop integral action time corresponds to the time in which the integral component of the current command value is increasing on the value of the proportional component.

Definition of the integral action time

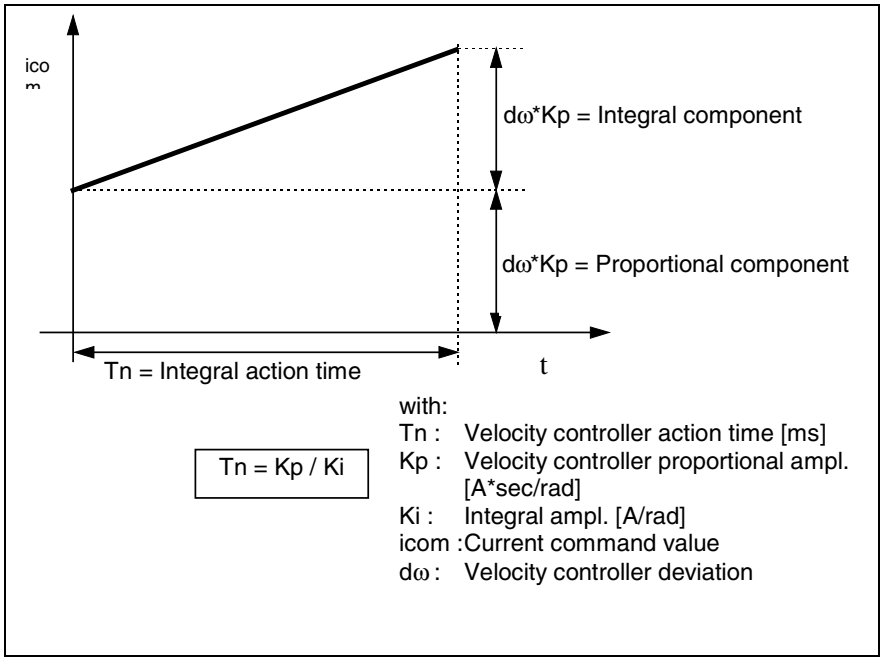


Fig. 2-18: Integral action time

The value of the time base for which the integral component is equal to the proportional component is described as integral action time. This represents the time that a pure I-controller would need until the controller output variable is equal to the output variable of a P-controller at time t=0.

The integral gain component is disabled with an input value of 0.

See also the functional description: "Setting the Velocity Controller".

S-0-0101 - Attributes

Para. Name:	**DE**	Geschwindigkeitsregler-Nachstellzeit		
	EN	Velocity loop integral action time		
	FR	Temps d'action intégral de la boucle de vitesse		
	ES	Tiempo de reajuste de regulador de velocidad		
	IT	Tempo Integrazione Anello di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 6553.5		
Default value:		-	**Cyc. transmittable:**	-

S-0-0103, Modulo value

When the modulo format is set (parameter **S-0-0076, Position data scaling type** bit 7), the modulo value determines at which numeric value the position data roll over (overflow) to 0.

See also parameter "**S-0-0393, Command value mode**"

See also the functional description: "Modulo Feature" and "Modulo Processing-Limiting Conditions".

S-0-0103 - Attributes

Para. Name:	**DE**	Modulowert		
	EN	Modulo value		
	FR	Valeur modulo		
	ES	Valor de modulo		
	IT	Valore Modulo		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0104, Position loop Kv-factor

This parameter contains the value for the proportional gain of the position controller.

It is possible to load a default value for the controller parameters using the command "Basic load". Motors with feedback memory, e.g. MKD, have appropriate values for all controller settings in their feedback. These are loaded after the initial connection (display UL) or with the command "Basic load“.

See also the functional description: "Setting the position controller".

S-0-0104 - Attributes

Para. Name:	**DE**	Lageregler Kv-Faktor		
	EN	Position loop Kv-factor		
	FR	Gain proportionnel de la boucle de position, Kv		
	ES	Regulador de posición factor Kv		
	IT	Fattore Kv Anello di Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		1000/min	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		000.00 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

S-0-0106, Current loop proportional gain 1

The current controller proportional gain is fixed for every motor-drive combination.

It depends on the type of the motor and may not be changed. It is loaded from the motor feedback after the initial connection (display UL) or using the command "Basic load".

Note: The values of the current controller set at the factory should not be altered!

See also function description: "Setting the Current Controller".

S-0-0106 - Attributes

Para. Name:	**DE**	Stromregler-Proportionalverstärkung 1		
	EN	Current loop proportional gain 1		
	FR	Gain proportionnel de la boucle de courant 1		
	ES	Amplificación proporcional 1 regulador de corriente		
	IT	Guadagno proporzionale 1 Regolatore di Corrente		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		V/A	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		000.00 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

S-0-0107, Current loop integral action time 1

The current loop integral action time is fixed for every motor-drive combination.

It depends on the type of the motor. The factory setting may not be changed. The basic setup for all controllers is loaded after the initial connection (display UL) or with the command "Basic load“. For motors without feedback memory, you can take the value from the motor’s data sheet.

See also function description: "Setting the Current Controller".

S-0-0107 - Attributes

Para. Name:	**DE**	Stromregler-Nachstellzeit 1		
	EN	Current loop integral action time 1		
	FR	Temps d'action intégral de la boucle de courant 1		
	ES	Tiempo de reajuste de regulador de corriente 1		
	IT	Tempo Integrazione 1 Anello di Corrente		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 6553.5		
Default value:		-	**Cyc. transmittable:**	-

S-0-0108, Feedrate override

The feedrate override acts on drive-controlled operation modes and motion commands, like

- command **S-0-0148, C600 Drive controlled homing procedure command**
- operating modes "Drive internal interpolation", "Relative drive internal interpolation" and "Positioning block mode" "Jog mode"
- automatic control loop setting

Note: It is possible that not all operating modes and commands have been implemented in the firmware versions.

The feedrate override has a multiplying effect on the parameters

- **S-0-0041, Homing velocity**
- **S-0-0259, Positioning velocity**
- Positioning block velocities
- Jog velocity

Note: In drives with analog interface, an analog input can be configured for the feedrate override. (See documentation "Project planning manual" for the description of the analog interface.)

See also the functional description: "Drive-Controlled Homing".

S-0-0108 - Attributes

Para. Name:	**DE**	Feedrate-Override		
	EN	Feedrate override		
	FR	Atténuateur d'avance		
	ES	Override de alimentación		
	IT	Riduzione Velocità Avanzamento		
Function:		Parameter	**Editability:**	P4
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		%	**Extreme value check:**	no
Decimal places:		2	**Combination check:**	no
Input min/max:		000.00 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

S-0-0109, Motor peak current

Specifies the maximum current, which may flow through the motor for a short period without damaging it.

Note: If the motor's peak current is less than the amplifier's peak current, the maximum output current will be automatically limited to the motor's peak current.

This value is stored in the motor feedback for MHD, MKD and MKE motors and will be uploaded from there when the amplifier is turned on for the first time. For other motor types, the value must be taken from the data sheet.

See also the functional description: "Current Limit".

S-0-0109 - Attributes

Para. Name:	**DE**	Spitzenstrom Motor
	EN	Motor peak current
	FR	Courant crête du moteur
	ES	Corriente punta de motor
	IT	Corrente di Picco Motore

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	A	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	0000000.001 / 0000500.000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0110, Amplifier peak current

Peak current available from the drive controller. The value will be set by the drive itself. This current is only available for short durations.

See also the functional description: "Current Limit".

S-0-0110 - Attributes

Para. Name:	**DE**	Spitzenstrom Verstärker
	EN	Amplifier peak current
	FR	Courant crête du variateur
	ES	Corriente punta amplificador
	IT	Corrente di Picco Azionamento

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	A	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	0000000.001 / 0000500.000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0111, Motor current at standstill

The motor current at standstill is the current from which the motor continuously generates the standstill torque according to the motor data sheet.

This value is stored in motor feedback for MHD, MKD and MKE motors and will be loaded from there when the drive controller is turned on for the first time. For other types of motors, this value must be taken from the data sheet.

$$100\%\ \text{Force/Torque value} \mathrel{\hat{=}} S-0-0111 \cdot P-0-0051$$

S-0-0111, Motor current at standstill
P-0-0051, Torque constant

Note: All torque/force data refer to this motor current at standstill = 100 % .

See also the functional description: "Motor Feedback-Data Memory"

S-0-0111 - Attributes

Para. Name:	**DE**	Stillstandsstrom Motor
	EN	Motor current at standstill
	FR	Courant du moteur à l'arrêt
	ES	Corriente de parada motor
	IT	Corrente Motore con Asse fermo

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	A	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	0000000.001 / 0000500.000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0112, Amplifier nominal current

Allowable continuous current output for the drive controller. The value will be set by the drive itself.

See also the functional description: "Current Limit"

S-0-0112 - Attributes

Para. Name:	**DE**	Nennstrom Verstärker
	EN	Amplifier nominal current
	FR	Courant nominal variateur
	ES	Corriente nominal amplificador
	IT	Corrente nominale Azionamento

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	A	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	0000000.001 / 0000500.000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0113, Maximum motor speed (nmax)

The maximum velocity for the motor cannot be exceeded. It also limits the **S-0-0091, Bipolar velocity limit** parameter.

This value is stored in the motor feedback of MHD, MKD and MKE motors and will be loaded from there when the drive controller is turned on for the first time. For other motor types, the value must be taken from the data sheet. In torque regulation, if the maximum motor speed is exceeded by more than 12.5%, the drive will be switched into a torque free state and the error message **F879 Velocity limit S-0-0091 exceeded** will result.

See also the functional description: "Limiting Velocity".

S-0-0113 - Attributes

Para. Name:	**DE**	Maximal-Geschwindigkeit des Motors
	EN	Maximum motor speed (nmax)
	FR	Vitesse maximale du moteur
	ES	Velocidad máxima del motor
	IT	Velocità massima Motore (nmax)

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	P-0-4014	**Extreme value check:**	yes
Decimal places:	P-0-4014	**Combination check:**	no
Input min/max:	000000.0000 / 214738.3647		
Default value:	-	**Cyc. transmittable:**	-

S-0-0115, Position feedback 2 type

Essential characteristics of the optional encoder (position encoder 2) are established is this parameter.

Parameter structure:

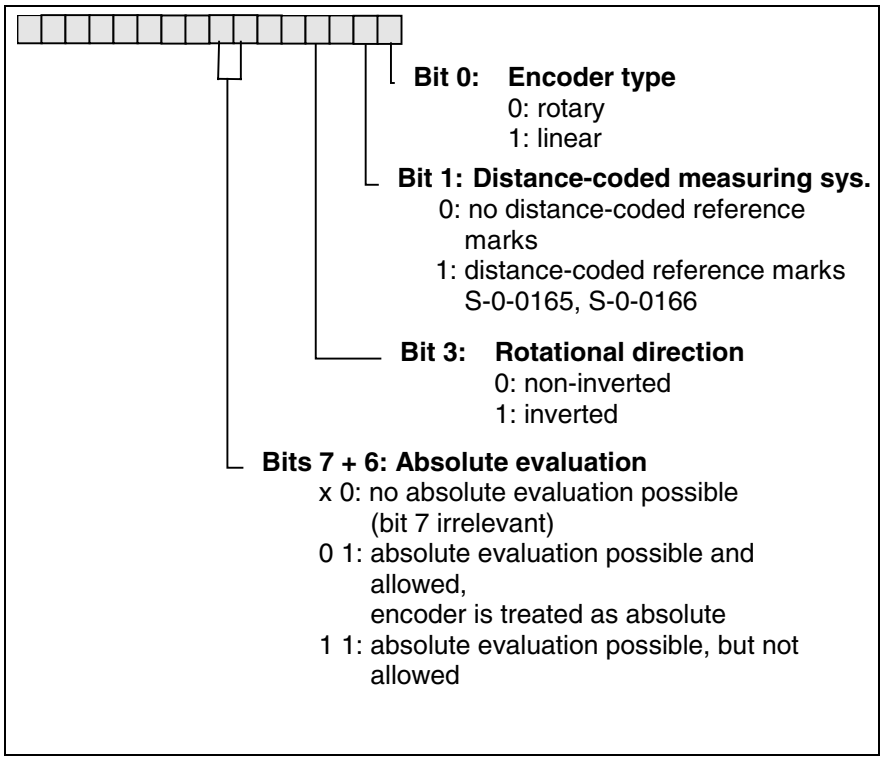


Fig. 2-19: S-0-0115, Position feedback 2 type parameter

Note: Bit 6 is generated by the drive.

Note: Bit 0 is used to switch unit and decimal places of parameter **S-0-0117, Resolution of optional encoder**.

Bit 0 = 1: Unit = mm with five decimal places.

Bit 0 = 0: Unit = number of lines per revolution without decimal places.

See also the function description: "Other Optional Encoder Characteristics".

S-0-0115 - Attributes

Para. Name:	**DE**	Lagegeberart 2		
	EN	Position feedback 2 type		
	FR	Type codeur 2		
	ES	Tipo de encoder de posición 2		
	IT	Tipo di Feedback di Posizione 2		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0116, Feedback 1 Resolution

Depending on parameter **P-0-4014, Motor type** (rotary or linear motor), the resolution of the motor encoder is indicated by **S-0-0116, Resolution of motor feedback**.

This value contains the number of lines or cycles per motor revolution for rotary motors, or the segment spacing per mm for linear motors. For motors with resolver feedback, the number of the resolver pole pairs is stored here.

See also the functional description: "Motor encoder resolution".

S-0-0116 - Attributes

Para. Name:	**DE**	Geber 1 Auflösung		
	EN	Feedback 1 Resolution		
	FR	Résolution codeur 1		
	ES	Resolución encoder 1		
	IT	Risoluzione Feedback 1		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0117, Feedback 2 Resolution

The resolution of the optional encoder contains the cycles per external encoder revolution for rotational encoders. For linear optional encoders, the segment spacing is given, in mm.

See also the functional description: "Optional Encoder Resolution".

S-0-0117 - Attributes

Para. Name:	**DE**	Geber 2 Auflösung		
	EN	Feedback 2 Resolution		
	FR	Résolution codeur 2		
	ES	Resolución encoder 2		
	IT	Risoluzione Feedback 2		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0115	**Extreme value check:**	no
Decimal places:		S-0-0115	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0121, Input revolutions of load gear

A mechanical gear is often employed between the motor and the load.

The **gear ratio** is defined by:

$$\frac{\text{S-0-0122, Output revolutions of load gear}}{\text{S-0-0121, Input revolutions of load gear}}$$

Fig. 2-20: Gear ratio

See also functional description: "Transmission ratio“ and "Modulo processing-limiting conditions".

Example:

5 motor revolutions result in 2 output gear revolutions.

⇒ S-0-0121 : 5

S-0-0122 : 2

S-0-0121 - Attributes

Para. Name:	**DE**	Lastgetriebe-Eingangsumdrehungen		
	EN	Input revolutions of load gear		
	FR	Nombre de tours d'entrée d'engrenages de charge		
	ES	Giros de entrada de engranaje de carga		
	IT	N di Giri in Ingresso al Riduttore		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Rev	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000001 / 4294967295		
Default value:		-	**Cyc. transmittable:**	-

S-0-0122, Output revolutions of load gear

A mechanical gear is often employed between the motor and the load.

The gear ratio is defined by:

$$\frac{\text{S-0-0122, Output revolutions of load gear}}{\text{S-0-0121, Input revolutions of load gear}}$$

Fig. 2-21: Gear ratio

See also functional description: "Transmission ratio" and "Modulo processing-limiting conditions".

Example:

5 motor revolutions result in 2 output gear revolutions.

⇒ S-0-0121 : 5
S-0-0122 : 2

S-0-0122 - Attributes

Para. Name:	**DE**	Lastgetriebe-Ausgangsumdrehungen		
	EN	Output revolutions of load gear		
	FR	Nombre de tours de sortie d'engrenages de charge		
	ES	Giros de salida de engranaje de carga		
	IT	N di Giri in Uscita del Riduttore		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Rev	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000001 / 4294967295		
Default value:		-	**Cyc. transmittable:**	-

S-0-0123, Feed constant

This parameter describes the conversion from rotary to linear motion. It is defined as the linear displacement of the load during one revolution of the gear drive shaft.

Characteristic value:

Ball screw:	**Rack and pinion:**
Feed constant = pitch of screw (typical value 10.00 mm)	Feed constant = effective pitch diameter of the pinion • π = effective circumference of the pinion

Fig. 2-22: Characteristic values of the feed constant

Note: The unit is dependent on bit 4 in **S-0-0076, Position data scaling type**.

Note that: S-0-0076 bit 4 = 0 → mm/rev
S-0-0076 bit 4 = 1 → inch/rev

See also the functional description: "Feed Constant".

S-0-0123 - Attributes

Para. Name:	**DE**	Vorschubkonstante		
	EN	Feed constant		
	FR	Constante d'avance		
	ES	Constante de avance		
	IT	Costante di Avanzamento		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		5	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0124, Standstill window

The motor is considered at standstill when the velocity feedback value (S-0-0040) is below the parameterized threshold level in S-0-0124.

Bit 1 of the **S-0-0013, Class 3 diagnostics** is set during standstill.

The standstill window also works:

- if termination or interruption of a drive control command is acknowledged when the drive is at a standstill
- with drive-controlled homing, the feedback and command values are not switched until the drive is at a standstill
- with command value processing. When switching operating modes, the command value processing is initialized with velocity =0, if the velocity feedback value is smaller than the standstill window.

See also the functional description: "S-0-0182, Manufacturer class 3 diagnostics"

S-0-0124 - Attributes

Para. Name:	**DE**	Stillstandsfenster		
	EN	Standstill window		
	FR	Fenêtre d'arrêt		
	ES	Ventana de parada		
	IT	Finestra di monitorizzazione Asse fermo		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0000000.0000 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

S-0-0125, Velocity threshold nx

If the **S-0-0040, Velocity feedback value** falls below the value of the parameter **S-0-0125, Velocity threshold nx**, the drive sets the message $n_{actual} < nx$ (Bit 2 in **S-0-0013, Class 3 Diagnostics**).

See also the functional description: "S-0-0013, Class 3 diagnostics".

S-0-0125 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Schwelle nx		
	EN	Velocity threshold nx		
	FR	Seuil de vitesse nx		
	ES	Umbral de velocidad nx		
	IT	Soglia di velocità nx		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	Prog.Modul
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0 / S-0-0044		
Default value:		1000000	**Cyc. transmittable:**	no

S-0-0127, C100 Communication phase 3 transition check

The command "C100 Communication phase 3 transition check" is used to switch from the parameter mode to the operating mode.

If invalid parameters are present, then

- the drive completes the command with an error message
- and the invalid parameters are entered in parameter **S-0-0021, IDN list of invalid operating data phase 2**.

See also Function description: "Position Command Value Monitoring"

S-0-0127 - Attributes

Para. Name:	**DE**	C100 Umschaltvorbereitung auf Komm.-Phase 3		
	EN	C100 Communication phase 3 transition check		
	FR	C100 Préparation transition phase de comm. 3		
	ES	C100 Comprobación de conmutación a fase 3		
	IT	C100 Check Transizione Fase di Comunicazione 3		
Function:		Command	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0128, C200 Communication phase 4 transition check

When the command "C200 Communication phase 4 transition check" is executed, all parameters will be checked for validity and limit value violations.

If any invalid parameters or any limit values have been violated,

- the drive would end the command with an error message and
- the invalid parameter entered in parameter **S-0-0022, IDN list of invalid operating data phase 3**.

See also Function description: "Checks in the Transition Commands".

S-0-0128 - Attributes

Para. Name:	**DE**	C200 Umschaltvorbereitung auf Komm.-Phase 4		
	EN	C200 Communication phase 4 transition check		
	FR	C200 Préparation transition phase de comm. 4		
	ES	C200 comprobación de conmutación a fase 4		
	IT	C200 Check Transizione Fase di Comunicazione 4		
Function:		Command	**Editability:**	P3
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0130, Probe value 1 positive edge

The drive uses the positive edge of the input signal from **S-0-0401, Probe 1**, to store the instantaneous value of the selected signal in this parameter.

The signal to be measured is determined by parameters **P-0-0200, Signal select probe 1** and **S-0-0169, Probe control parameter**.

See also the functional description: "Probe Input Feature".

S-0-0130 - Attributes

Para. Name:	**DE**	Messwert 1 positive Flanke		
	EN	Probe value 1 positive edge		
	FR	Mesure sonde 1 flanc positif		
	ES	Valor de medición 1 flanco positivo		
	IT	Valore misurato 1 fianco positivo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:		S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0131, Probe value 1 negative edge

The drive uses the negative edge of the input signal from **S-0-0401, Probe 1**, to store the instantaneous value of the selected signal in this parameter.

The signal to be measured is determined by parameters **P-0-0200, Signal select probe 1** and **S-0-0169, Probe control parameter**.

See also the functional description: "Probe Input Feature".

S-0-0131 - Attributes

Para. Name:	**DE**	Messwert 1 negative Flanke		
	EN	Probe value 1 negative edge		
	FR	Mesure sonde 1 flanc négatif		
	ES	Valor de medición 1 flanco negativo		
	IT	Valore misurato 1 fianco negativo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:		S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0132, Probe value 2 positive edge

The drive uses the positive edge of the input signal from **S-0-0402, Probe 2**, to store the instantaneous value of the selected signal in this parameter.

The signal to be measured is determined by parameters **P-0-0201, Signal select probe 2** and **S-0-0169, Probe control parameter**.

See also the functional description: "Probe Input Feature".

S-0-0132 - Attributes

Para. Name:	**DE**	Messwert 2 positive Flanke		
	EN	Probe value 2 positive edge		
	FR	Mesure sonde 2 flanc positif		
	ES	Valor de medición 2 flanco positivo		
	IT	Valore misurato 2 fianco positivo		
Function:		Parameter	**Editability:**	-
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076/P-0-0201	**Extreme value check:**	no
Decimal places:		S-0-0076/P-0-0201	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0133, Probe value 2 negative edge

The drive uses the negative edge of the input signal from **S-0-0402, Probe 2**, to store the instantaneous value of the selected signal in this parameter.

The signal to be measured is determined by parameters **P-0-0201, Signal select probe 2** and **S-0-0169, Probe control parameter**.

See also the functional description: "Probe Input Feature".

S-0-0133 - Attributes

Para. Name:	**DE**	Messwert 2 negative Flanke		
	EN	Probe value 2 negative edge		
	FR	Mesure sonde 2 flanc négatif		
	ES	Valor de medición 2 flanco negativo		
	IT	Valore misurato 2 negativo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076/P-0-0201	**Extreme value check:**	no
Decimal places:		S-0-0076/P-0-0201	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0134, Master control word

If a **bus interface** is present (SERCOS interface, Profibus-DP, Interbus, CAN, ...), the master control word is transmitted cyclically from the master (control) to the drive. It defines important control information, like

- drive enable
- drive halt
- selection of the operation mode

The exact composition is explained in the functional description of the respective bus interface.

If there is no bus interface, the information of the master control word is given by digital inputs. In any case, the parameter **S-0-0134, Master control word** is only for diagnostic purposes.

See also the functional description: "Master Control Word".

S-0-0134 - Attributes

Para. Name:	**DE**	Master-Steuerwort		
	EN	Master control word		
	FR	Mot de contrôle maître		
	ES	Palabra de mando maestro		
	IT	Parole di Controllo Master		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0135, Drive status word

If a **bus interface** is present (SERCOS interface, Profibus-DP, Interbus, CAN, ...), the drive status word is transmitted cyclically from the slave (drive) to the control. It defines important status information, like

- class 1 errors, drive lock
- operation readiness
- active actual operation mode

The exact composition is described in the functional description of the respective bus interface. In any case, the parameter **S-0-0135, Drive status word** is only for diagnostic purposes.

See also the functional description: "Drive Status Word".

S-0-0135 - Attributes

Para. Name:	**DE**	Antriebs-Status		
	EN	Drive status word		
	FR	Etat entraînement		
	ES	Estado de accionamiento		
	IT	Parole di Stato Azionamento		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0138, Bipolar acceleration limit value

The drive decelerates at this deceleration to the velocity = 0 when the function "Drive stop" is executed, if the previously active operation mode was without drive internal command generation.

Operation modes without drive internal command generation are

- Position control
- Angular synchronization
- Stepper motor operation

and others.

See also the functional description: "Drive Halt".

S-0-0138 - Attributes

Para. Name:	**DE**	Beschleunigung bipolar
	EN	Bipolar acceleration limit value
	FR	Accélération bipolaire
	ES	Aceleración bipolar
	IT	Accellerazione bipolare

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0160	**Extreme value check:**	yes
Decimal places:	S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:	00000000.000 / 00002300.971		
Default value:	-	**Cyc. transmittable:**	-

S-0-0139, D700 Command Parking axis

Setting and enabling the command Parking Axis switches off all the monitoring functions related to the measurement system.

This affects position control, feedback monitoring and the monitoring of the position window (S-0-0057). When the command is active, the drive does not report any errors of class 1 diagnostics. The Position feedback value status (S-0-0403) is cleared by the drive. The command is acknowledged positive, when the mentioned monitors are switched off. Clearing the command switches all the mentioned monitors on again. To refer the position feedback values to the reference point again, the drive must go to the reference again.

Structure of the parameter:

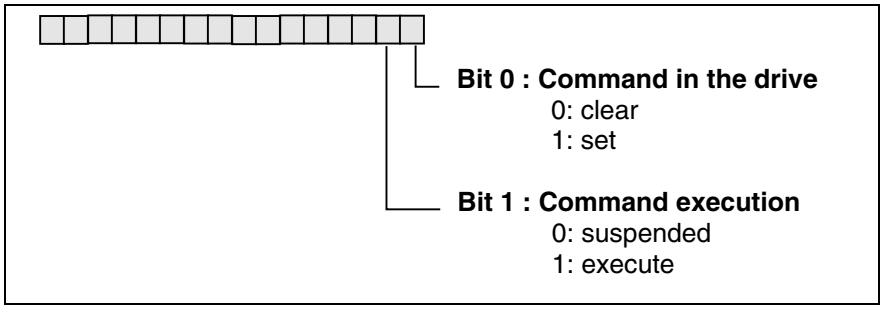


Fig. 2-23: S-0-0139, D700 Command Parking axis

See also the functional description: "Command Parking Axis".

S-0-0139 - Attributes

Para. Name:	**DE**	D700 Kommando Parkende Achse		
	EN	D700 Command Parking axis		
	FR	D700 Instruction Stationnement axe		
	ES	D700 Comando eje estacionada		
	IT	D700 Comando Stazionamento Asse		
Function:		Command	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0140, Controller type

The device type of the manufacturer can be found in **text** form in the operating data for the controller type.

Examples:

HDS02.1-W100-D

DKC01.1-040-7

See also the functional description: "Drive Controllers and Motors".

S-0-0140 - Attributes

Para. Name:	**DE**	Regelgerätetyp		
	EN	Controller type		
	FR	Type de variateur		
	ES	Tipo de regulador		
	IT	Tipo Azionamento		
Function:		Parameter	**Editability:**	no
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0141, Motor type

Here is the motor type of the connected motor in text form. The contents of the parameter is overwritten when "Loading base values“ (possible with MHD, MKD and MKE motors) with parameter S-7-0141. The diagnoses "F208 UL motor type has changed“ is based on a comparison between S-0-0141 and S-7-0141. With motors without feedback data memory it is necessary to enter the motor type.

Examples:

MKD 071B-061-KP1-BN

MKE 096B-047-GG0-KN

See also the functional description: "Systemoverview".

S-0-0141 - Attributes

Para. Name:	**DE**	Motor-Typ		
	EN	Motor type		
	FR	Type de moteur		
	ES	Tipo de motor		
	IT	Tipo Motore		
Function:		Parameter	**Editability:**	P23
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0142, Application type

A descriptive name text for the drive can be stored in this parameter (e.g., swivel axis). It has no functional significance.

See also the functional description: "Systemoverview"

S-0-0142 - Attributes

Para. Name:	**DE**	Anwendungsart		
	EN	Application type		
	FR	Type d'application		
	ES	Tipo de aplicación		
	IT	Tipo applicazione		
Function:		Parameter	**Editability:**	P234
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0143, Sercos interface version

The version of the SERCOS interface specifications is found in the operating data.

Current valid settings:

V	V 01.01:	V 01.02:
SERCOS specification German 01.00:	SERCOS English specification	SERCOS update German/English
Version 5/90	Version 4/91	Version 9/91

Fig. 2-24: S-0-0143, Version of the SERCOS interface specification

See also the functional description: "Overview of SERCOS Communication".

S-0-0143 - Attributes

Para. Name:	**DE**	Sercos-Interface Version		
	EN	Sercos interface version		
	FR	Version d'interface SERCOS		
	ES	Version de Interface Sercos		
	IT	Versione del Interfaccia Sercos		
Function:		Parameter	**Editability:**	no
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0144, Signal status word

With the help of the signal status word, real time signals can be transferred from the drive to the Control.

To do so, the signal status word must be configured as cyclic data in the Drive Telegram.

The bits in the signal status word can be defined freely with the parameters

- S-0-0026, Configuration list signal status word and
- S-0-0328, Assign list signal status word

With a parallel interface, bits 0 to 9 are illustrated directly on the digital outputs. Thus various parameters can be allocated to the digital outputs.

See also the functional description: "Configurable Signal Status Word"

S-0-0144 - Attributes

Para. Name:	**DE**	Signal-Statuswort		
	EN	Signal status word		
	FR	Mot d'état de signal		
	ES	Palabra de estado de señal		
	IT	Parole stato del segnale		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0147, Homing parameter

The processes for the **S-0-0148, C600 Drive controlled homing procedure command**, in relation to the machine layout, NC and drive installation are set in this parameter.

Structure of the parameter:

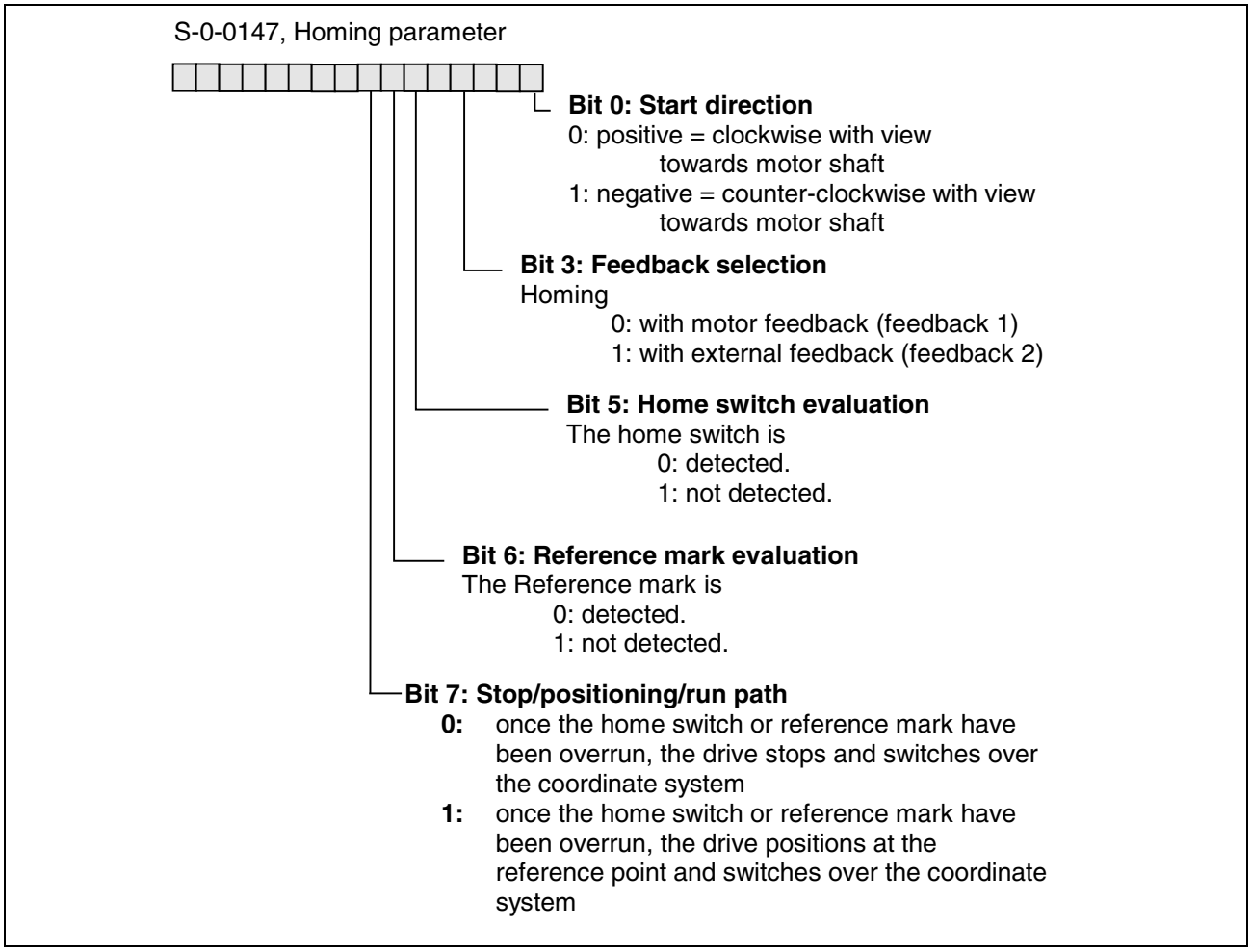


Fig. 2-25: Structure of parameter **S-0-0147, Homing parameter**

Note: In addition, for DIAX drives, bit 5 activates the monitoring of the external 24V.

See also the functional description: "Drive-Controlled Homing".

S-0-0147 - Attributes

Para. Name:	**DE**	Referenzfahr-Parameter		
	EN	Homing parameter		
	FR	Paramètre de prise d'origine		
	ES	Parámetro de puesta a cero		
	IT	Parametro Azzeramento		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0148, C600 Drive controlled homing procedure command

When this command is set and enabled, the drive switches automatically into internal position control and accelerates using the **S-0-0041, Homing acceleration** to the **S-0-0042, Homing velocity** as long as it is in operating status AF.

Bit 0 in **S-0-0403, Position feedback value status** will be deleted at first. As long as the command is active, changes in the cyclic position command values will be ignored. The process for the homing procedure can be specified with **S-0-0147, Homing parameter**. After the command has been properly executed (drive is at standstill and position feedback value is related to the homing position), the drive sets bit 0 in parameter **S-0-0403, Position feedback value status**.

The parameter **S-0-0403, Position feedback value status** reflects the signal "In_Reference“.

See also the functional description: "Drive-Controlled Homing"

S-0-0148 - Attributes

Para. Name:	**DE**	C600 Kommando Antriebsgeführtes Referenzieren
	EN	C600 Drive controlled homing procedure command
	FR	C600 Instruction Prise d'origine pilotée par entraînement
	ES	C600 Comando puesta a cero por accionamiento
	IT	C600 Comando Azzeramento comandato per l'azionamento

Function:	Command	**Editability:**	P4
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0150, Reference offset 1

This parameter describes the distance between the position encoder home reference marker 1 and **S-0-0052, Reference distance 1**.

The parameter makes it possible to shift the reference point in relation to the reference marker to be detected. If bit 7 in **S-0-0147, Homing parameter** is set to 1, then, during execution of the command **S-0-0148, C600 Drive controlled homing procedure command**, the drive goes to the reference point shifted from the reference mark by the value **S-0-0150, Reference Offset 1**.

See also the functional description: "Drive-Controlled Homing".

S-0-0150 - Attributes

Para. Name:	**DE**	Referenzmaß Offset 1
	EN	Reference offset 1
	FR	Mesure de référence 1, décalage
	ES	Medición de referencia offset 1
	IT	Azzeramento Offset 1 (Feedback Motore)

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076	**Extreme value check:**	yes
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	-034560.0000 / 0034559.9999		
Default value:	-	**Cyc. transmittable:**	-

S-0-0151, Reference offset 2

This parameter describes the distance between the position encoder home reference marker 2 and **S-0-0054, Reference distance 2**.

The parameter makes it possible to shift the reference point in relation to the reference marker to be detected. If bit 7 in **S-0-0147, Homing parameter** is set to 1, then, during execution of the command **S-0-0148, C600 Drive controlled homing procedure command**, the drive goes to the reference point shifted from the reference mark by the value **S-0-0151, Reference offset 2**.

See also the functional description: "Drive-Controlled Homing"

S-0-0151 - Attributes

Para. Name:	**DE**	Referenzmaß Offset 2		
	EN	Reference offset 2		
	FR	Mesure de référence 2, décalage		
	ES	Medición de referencia offset 2		
	IT	Azzeramento Offset 2 (Feedback esterno)		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0157, Velocity window

The Velocity window refers to the absolute value of the **S-0-0036, Velocity Command Value**.

If the velocity feedback value, in comparison with the velocity command value, is within the calculated velocity window, then the drive sets the bit 0 in **S-0-0013, Class 3 diagnostics** (Message "n_actual = n_command").

See also the functional description: "S-0-0013, Class 3 diagnostics"

S-0-0157 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Fenster
	EN	Velocity window
	FR	Fenêtre de vitesse
	ES	Ventana de velocidad
	IT	Finestra Velocità

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	Prog.Modul
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	S-0-0044	**Extreme value check:**	yes
Decimal places:	S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:	0 / S-0-0044		
Default value:	200000	**Cyc. transmittable:**	no

S-0-0159, Monitoring window

When an operating mode with internal position control is activated in the drive, the position loop is monitored. Therefore, a model value for the actual position is calculated and compared with the real actual position.

The maximum tolerated deviation between the measured and calculated position feedback value is set with the help of the parameter **S-0-0159, Monitoring window**. If the position deviation exceeds the monitoring window, then the drive sets the error **F228 Excessive deviation** in the class 1 diagnostics. The greatest deviation that occurs will always be stored in parameter **P-0-0098, Max. model deviation**.

See also the functional description: "Position Control Loop Monitoring"

S-0-0159 - Attributes

Para. Name:	**DE**	Überwachungsfenster		
	EN	Monitoring window		
	FR	Fenêtre de monitorage		
	ES	Ventana de control		
	IT	Finestra di monitoraggio		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0160, Acceleration data scaling type

Various scaling types can be set as described below for the acceleration data in the drive as defined by the bit values of this parameter.

Structure of the parameter:

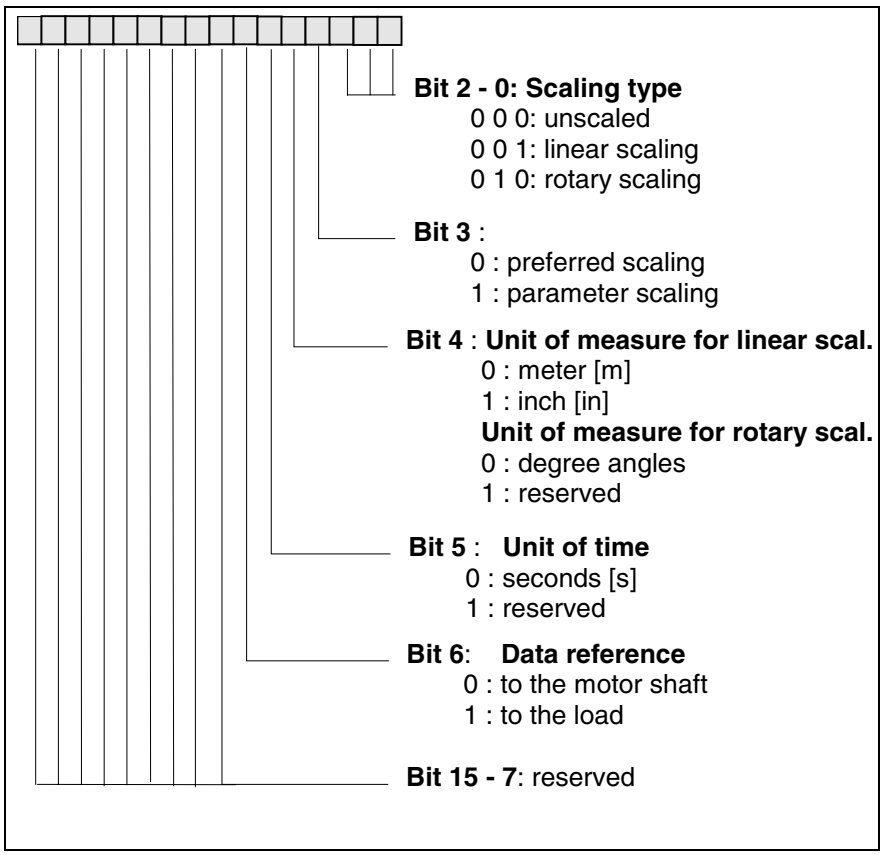


Fig. 2-26: S-0-0160, Acceleration Data Scaling Type

In bit 3 it is possible to select between preferred and parameter scaling.

Preferred scaling:

With preferred scaling, the following parameters are predefined and cannot be changed:

- **S-0-0161, Acceleration data scaling factor**
- **S-0-0162, Acceleration data scaling exponent**

Scaling with parameter scaling means that these parameters must be set

(See section: "Preferred Scaling - Parameter Scaling").

Note: Only the bits named here are supported by the product.

See also: **S-0-0044, Velocity data scaling type**

Example Suppose that loadside, linear scaling with acceleration units in M/s² is desired. The scaling on the drive should be set as follows:

Parameter		Value
S-0-0160, Acceleration data scaling type		1001001
Bit 2…0 = 001	linear scaling	
Bit 3 = 1	parameter scaling	
Bit 4 = 0	dimensional unit in meters (m)	
Bit 5 = 0	time unit in seconds (s)	
Bit 6 = 1	data referenced at load	
S-0-0161, Acceleration data scaling factor		1
S-0-0162, Acceleration data scaling exponent		-6

Now suppose that the decimal value +1234567 is stored in the relevant acceleration data register. The value will be interpreted and displayed as $+1234567x10^{-3}$ mm/s^2

- or -

as the value would be displayed in the IDN lists, +1234.567 mm/s² with respect to the load.

Note that the least significant decimal value is determined by the scaling exponent, in this example, as 10^{-6} m/s^2 or 10^{-3} mm/s^2.

See also functional description: "Velocity Data Display Format"

S-0-0160 - Attributes

Para. Name:	**DE**	Wichtungsart für Beschleunigungsdaten		
	EN	Acceleration data scaling type		
	FR	Type de calibrage pour données d'accélération		
	ES	Tipo de escala para datos de aceleración		
	IT	Tipo di Scala per Dati Accellerazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0161, Acceleration data scaling factor

When parameter scaling is set in **S-0-0160, Acceleration data scaling type**, the scaling factor for all of the acceleration data in the drive is determined by this parameter.

See also the functional description: "Velocity Data Display Format".

S-0-0161 - Attributes

Para. Name:	**DE**	Wichtungs-Faktor für Beschleunigungsdaten
	EN	Acceleration data scaling factor
	FR	Facteur de calibrage pour données d'accélération
	ES	Factor de escala para datos de aceleración
	IT	Fattore di Scala per Dati Accellerazione

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0162, Acceleration data scaling exponent

If parameter scaling is set in **S-0-0160, Acceleration data scaling type** the scaling exponent with sign for all acceleration data in the drive is determined in this parameter.

See also the functional description: "Velocity Data Display Format".

S-0-0162 - Attributes

Para. Name:	**DE**	Wichtungs-Exponent für Beschleunigungsdaten		
	EN	Acceleration data scaling exponent		
	FR	Exposant de calibrage pour données d'accélération		
	ES	Exponente de escala para datos de aceleración		
	IT	Esponente per Dati Accellerazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0165, Distance coded reference offset 1

With the help of this parameter, the greater distance between two reference markers is programmed, if a measurement system with distance coded reference markers is used.

See also the functional description: "Drive-Controlled Homing"

S-0-0165 - Attributes

Para. Name:	**DE**	Abstandskodiertes Referenzmaß 1		
	EN	Distance coded reference offset 1		
	FR	Marque de référence de distance codée 1		
	ES	Medida de referencia 1 codificada por distancia		
	IT	Misura di riferimento distanza codificata 1		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Periods	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0166, Distance coded reference offset 2

With the help of this parameter, the smaller distance between two reference markers is programmed, if a measurement system with distance coded reference markers is used.

See also the functional description: "Drive-Controlled Homing"

S-0-0166 - Attributes

Para. Name:	**DE**	Abstandskodiertes Referenzmaß 2		
	EN	Distance coded reference offset 2		
	FR	Marque de référence à distances codées 2		
	ES	Medida de referencia 2 codificada por distancia		
	IT	Misura di riferimento distanza codificata 2		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Periods	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0169, Probe control parameter

This parameter is used to specify whether one or both of the probe inputs "probe 1" (DSS: X12-E4) and "probe 2" : (DSS: X12-E5) are activated, and which edge (positive/negative) should trigger the probe data acquisition.

Structure of the parameter:

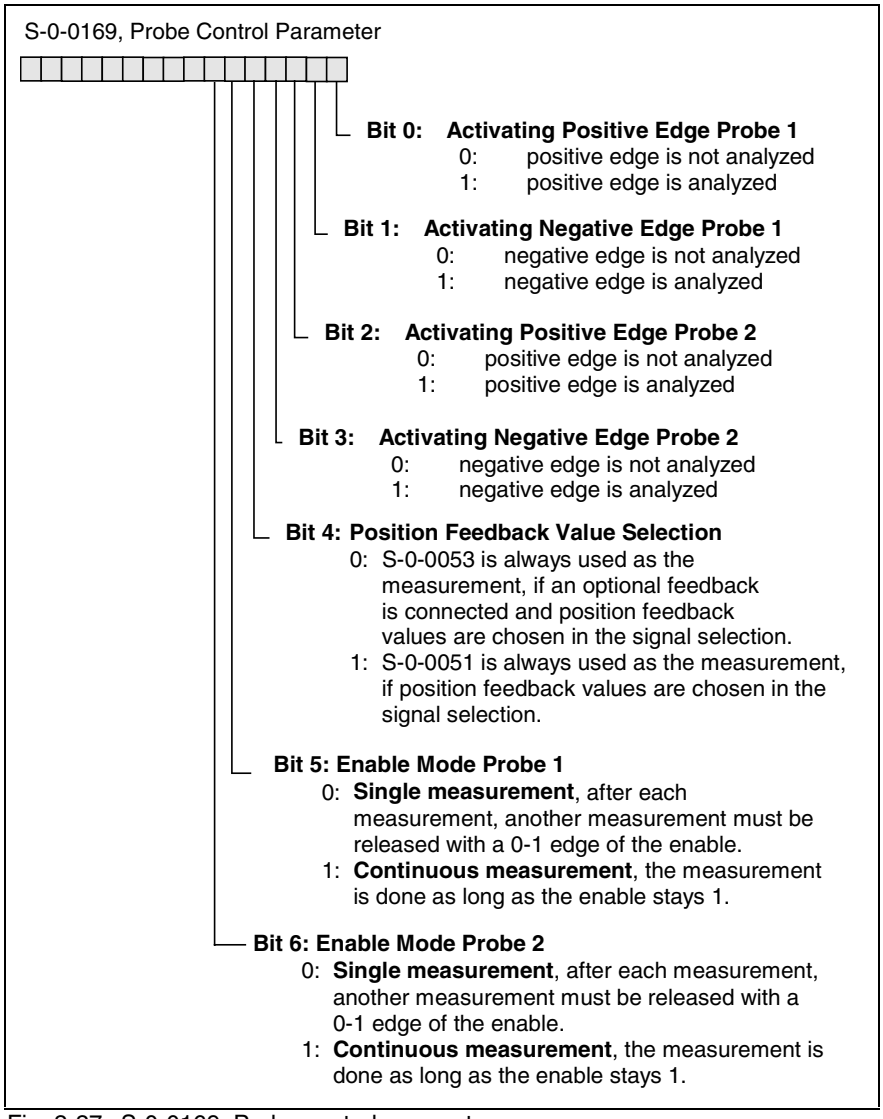


Fig. 2-27: S-0-0169, Probe control parameter

Note: Only the bits indicated here are supported by the software.

See also the functional description: "Probe Input Feature".

S-0-0169 - Attributes

Para. Name:	**DE**	Messtaster-Steuerparameter
	EN	Probe control parameter
	FR	Paramètre de contrôle de la sonde
	ES	Parámetros de mando de control de muestra
	IT	Tastatore di misura, parametro di controllo

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	yes
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0170, Probing cycle procedure command

By setting and enabling the command "probing cycle procedure," the drive reacts to the following:

- **S-0-0405, Probe 1 enable / S-0-0406, Probe 2 enable** and
- **S-0-0401, Probe 1, / S-0-0402, Probe 2.**

as is programmed in **S-0-0169, Probe control parameter**.

The NC can perform multiple measurements while this command is active. If the NC no longer wants new measurements, it clears the command.

Parameter structure:

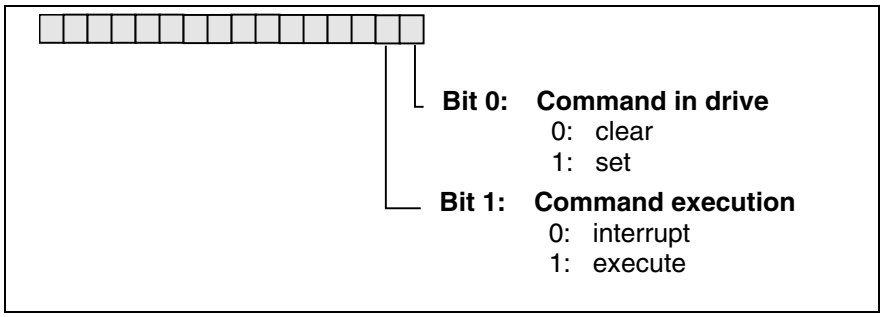


Fig. 2-28: S-0-0170, Probing cycle procedure command

Note: With bit 0, moreover, the monitoring of the external 24 V is activated.

See also the functional description: "Probe Input Feature".

S-0-0170 - Attributes

Para. Name:	**DE**	Kommando Messtasterzyklus		
	EN	Probing cycle procedure command		
	FR	Instruction Cycle mesure de sonde		
	ES	Comando ciclo de teclas de medición		
	IT	Comando per procedura di tastatore di misura		
Function:		Parameter	**Editability:**	P4
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0173, Marker position A

During the drive controlled homing with an incremental measuring system, the position of the reference marker (zero pulse) is stored in this parameter. This position feedback value still refers to the "old“ coordinate system (before switching the coordinate system with the homing procedure).

Furthermore, the recognition of the reference mark can be activated by the command **P-0-0014, D500 Command determine marker position**. Then, as soon as the next reference pulse comes from the feedback, the appropriate position value is stored in this parameter, and the command gets a positive acknowledge.

See also the functional description: "Command - detect marker position"

S-0-0173 - Attributes

Para. Name:	**DE**	Markerposition A		
	EN	Marker position A		
	FR	Position du marqueur A		
	ES	Posición de marcador A		
	IT	Posizione marker A		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	no
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		S-0-0076 / S-0-0076		
Default value:		0	**Cyc. transmittable:**	no

S-0-0177, Absolute distance 1

This parameter is used for the homing procedure of a distance coded motor feedback. It describes the offset between the zero point of the motor feedback (position of the 1st reference marker of the motor encoder) and the machine's zero-point.

Determining the right value for this parameter can be done in two steps. First, write the value 0 into S-0-0177 and proceed with the command **S-0-0148, C600 Drive controlled homing procedure command**. The position feedback value 1 in S-0-0051 then shows the actual position in reference to the motor feedback zero point.

Then, when you jog the axis to the machine's zero point, input the value of S-0-0051 indicated there into S-0-0177 with inverted sign (+ ↔ -). After another homing, the value in S-0-0051 displays the position in reference to the motor feedback's zero point.

See also the functional description: "Drive-Controlled Homing"

S-0-0177 - Attributes

Para. Name:	**DE**	Absolutmaß-Offset 1		
	EN	Absolute distance 1		
	FR	Décalage absolu 1		
	ES	Distancia absoluta 1		
	IT	Offset 1 per Dimensionamenti assoluti (Feedback Motore)		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0178, Absolute distance 2

This parameter is used for the homing procedure of a distance coded external feedback. It describes the offset between the zero point of the optional feedback (position of the 1st reference marker) and the machine's zero-point.

Determining the right value for this parameter can be done in 2 steps. First, write the value 0 into S-0-0178 and proceed the command **S-0-0148, C600 Drive controlled homing procedure command**. The position feedback value 2 in S-0-0053 then shows the actual position in reference to the external feedback's zero point. Then, when you jog the axis to the machine's zero point, input the value of S-0-0053 indicated there into S-0-0178 with inverted sign (+ ↔ -). After another homing, the value in S-0-0053 displays the position in reference to the machine's zero point.

See also the functional description: "Drive-Controlled Homing"

S-0-0178 - Attributes

Para. Name:	**DE**	Absolutmaß-Offset 2		
	EN	Absolute distance 2		
	FR	Décalage absolu 2		
	ES	Distancia absoluta 2		
	IT	Offset 2 per Dimensionamenti assoluti (Feedback esterno)		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0182, Manufacturer class 3 diagnostics

Different messages regarding operating status will be stored here. The intervals in which the bits are generated are determined by the NC cycle time. If the status of a message were to change, this would not be signaled by a change bit.

Structure of the parameter:

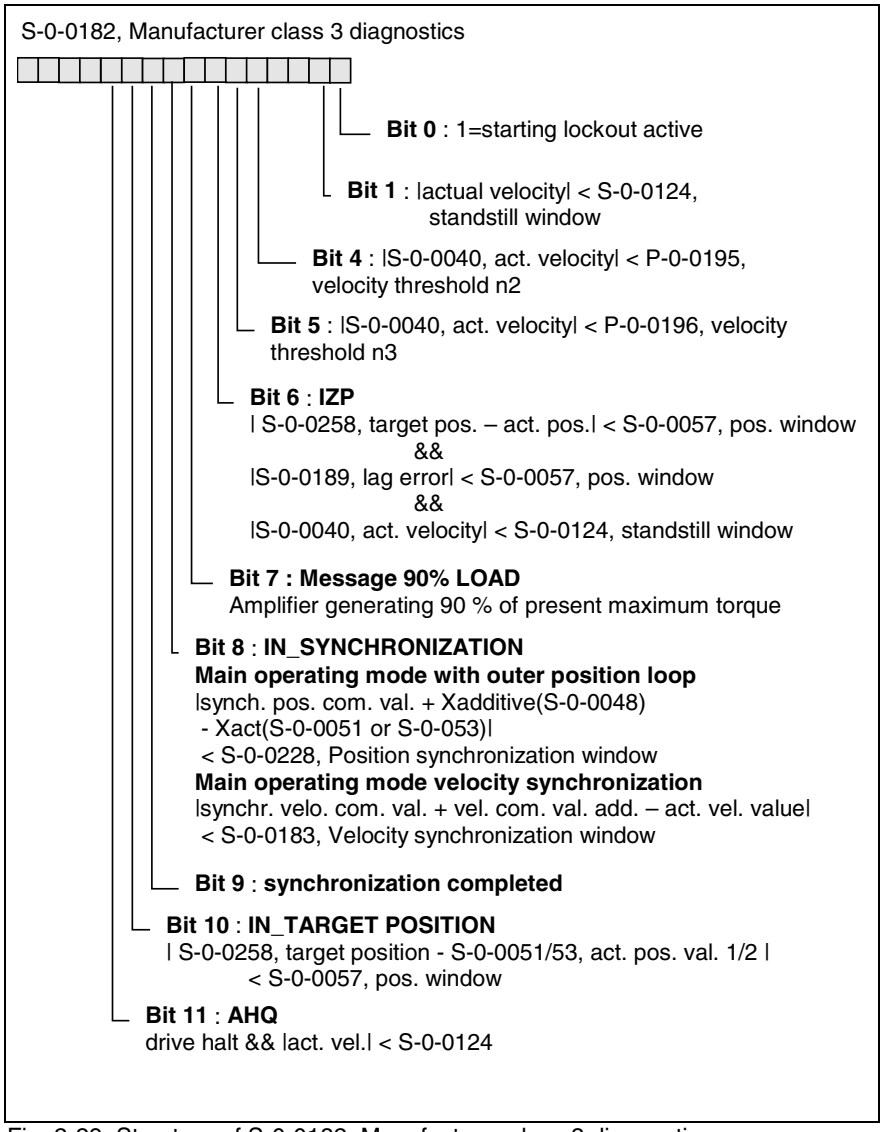


Fig. 2-29: Structure of S-0-0182, Manufacturer class 3 diagnostics

See also the functional description: "S-0-0182, Manufacturer class 3 diagnostics"

S-0-0182 - Attributes

Para. Name:	**DE**	Hersteller-Zustandsklasse 3		
	EN	Manufacturer class 3 diagnostics		
	FR	Diagnostic de classe 3 spéc. au fabriquant		
	ES	Diagnostico fabricante clase 3		
	IT	Diagnostica Classe 3 definita dal Costruttore		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0183, Velocity synchronization window

If during the operating mode "velocity synchronization" the difference between velocity command value and feedback value is smaller than the synchronization window, then bit 8 in the **S-0-0182, Manufacturer Class 3 Diagnostics** will be set.

The following applies:

Bit 8 = 1, if $| dX_{Synch} + dX_{Additive} - dX_{Feedback} | < S\text{-}0\text{-}0183$

with
- $dX_{Feedback}$: Velocity feedback value
- dX_{Synch}: Synchronized velocity command value, produced from actual master axis velocity
- $dX_{Additive}$: Additive velocity command value, S-0-0037

See also the functional description: "Dynamic synchronization in the velocity synchronization operating mode"

S-0-0183 - Attributes

Para. Name:	**DE**	Synchronlauffenster Geschwindigkeit		
	EN	Velocity synchronization window		
	FR	Fenêtre de vitesse de synchronisation		
	ES	Velocidad ventana de sincronización		
	IT	Finestra di Sincronizzazione di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0000000.0000 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

S-0-0185, Length of the configurable data record in the AT

In the operating data of the parameter with this parameter, the drive indicates the maximum length in bytes which it can process in the configurable data block of drive telegram (S-0-0016).

Note: In the actual version of the firmware, the number of data in the AT equals 24 bytes.

S-0-0185 - Attributes

Para. Name:	**DE**	Länge des konfigurierbaren Datensatzes im AT
	EN	Length of the configurable data record in the AT
	FR	Longueur du registre de données configurables dans l'AT
	ES	Longitud del registro de datos configurable en el AT
	IT	Lunghezza del record di dati configurabile in AT

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	Byte	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0186, Length of the configurable data record in the MDT

In the operating data of the parameter with this ID number, the drive indicates the maximum length in bytes which it can process in the configurable data record of the master data telegram (S-0-0024).

Note: In the actual version of the firmware, the number of data in the MDT equals 32 bytes.

See also the functional description: "Configuration of Telegram Contents".

S-0-0186 - Attributes

Para. Name:	**DE**	Länge des konfigurierbaren Datensatzes im MDT
	EN	Length of the configurable data record in the MDT
	FR	Longueur du registre de données configurables dans le MDT
	ES	Longitud del registro de datos configurable en el MDT
	IT	Lunghezza del record di dati configurabile in MDT

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	Byte	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0187, List of configurable data in the AT

This list contains the ID numbers of the operating data which can be configured in the drive telegram (AT).

- **S-0-0040, Velocity feedback value**
- **S-0-0051, Position feedback value 1 (motor feedback)**
- **S-0-0053, Position feedback value 2 (ext. feedback)**
- **S-0-0084, Torque/Force feedback value**
- **S-0-0130, Probe value 1 positive edge**
- **S-0-0131, Probe value 1 negative edge**
- **S-0-0132, Probe value 2 positive edge**
- **S-0-0133, Probe value 2 negative edge**
- **S-0-0182, Manufacturer class 3 diagnostics**
- **S-0-0189, Following error**

- **P-0-0082, Parallel I/O input 1**
- **P-0-0111, Parallel I/O input 2**
- **P-0-0113, Parallel I/O input 3**
- **P-0-0171, Parallel I/O input 4**
- **P-0-0173, Parallel I/O input 5**
- **P-0-0175, Parallel I/O input 6**
- **P-0-0202, Difference probe values 1**
- **P-0-0203, Difference probe values 2**
- **P-0-0210, Analog input 1**
- **P-0-0211, Analog input 2**

S-0-0187 - Attributes

Para. Name:	**DE**	Liste der konfigurierbaren Daten im AT		
	EN	List of configurable data in the AT		
	FR	Liste des IDN de données configurables dans l'AT		
	ES	Lista de los datos configurables en el AT		
	IT	Lista dei Dati configurabili in AT		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0188, List of configurable data in the MDT

This list contains the ID numbers of the operating data which can be configured in the Master Data Telegram.

- **S-0-0036, Velocity command value**
- **S-0-0037, Additive velocity command value**
- **S-0-0047, Position command value**
- **S-0-0080, Torque/force command**
- **S-0-0091, Bipolar velocity limit value**
- **S-0-0092, Bipolar torque/force limit value**
- **S-0-0138, Bipolar acceleration limit value**
- **S-0-0193, Positioning Jerk**
- **S-0-0258, Target position**
- **S-0-0259, Positioning Velocity**
- **S-0-0260, Positioning Acceleration**
- **S-0-0349, Jerk limit bipolar**

- **P-0-0081, Parallel I/O output 1**
- **P-0-0110, Parallel I/O output 2**
- **P-0-0112, Parallel I/O output 3**
- **P-0-0170, Parallel I/O output 4**
- **P-0-0172, Parallel I/O output 5**
- **P-0-0174, Parallel I/O output 6**
- **P-0-0400, Pos. corr., external correction value**
- **P-0-0405, Pos. corr., actual temperature, position independent**

S-0-0188 - Attributes

Para. Name:	**DE**	Liste der konfigurierbaren Daten im MDT		
	EN	List of configurable data in the MDT		
	FR	Liste des IDN de données configurables dans le MDT		
	ES	Lista de los datos configurables en el MDT		
	IT	Lista dei Dati configurabili in MDT		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0189, Following error

To this parameter, the drive writes the current difference between the position command and the position feedback value (**S-0-0051, Position feedback 1 value** or **S-0-0053, Position feedback 2 value**).

Note: If position control has not been activated, the value of the parameter is set to "0".

See also functional description: "Determining the position controller setting".

S-0-0189 - Attributes

Para. Name:	**DE**	Schleppabstand		
	EN	Following error		
	FR	Ecart de poursuite		
	ES	Error de seguimiento		
	IT	Distanza di Inseguimento		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0191, D600 Cancel reference point procedure command

Setting and enabling the command Cancel reference point clears the reference of the encoder defined by **S-0-0147, Homing Parameter**. The position feedback value status (bit 0 in S-0-0403) is cleared as well.

The command is correctly completed in the drive, when the bit "Position feedback value status“ has been set to 0 and the position value of the active feedback no longer refers to the machine’s zero point (= no longer referenced).

Parameter structure:

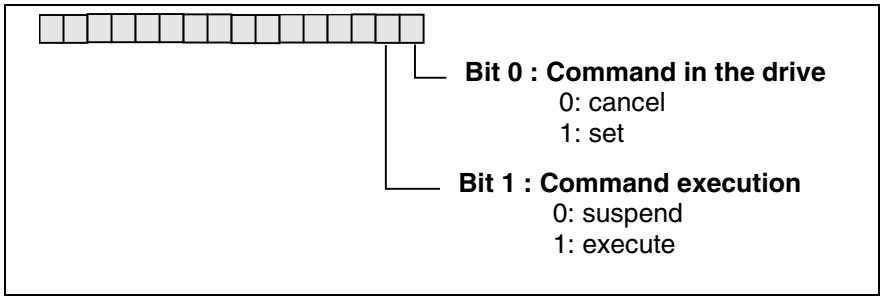


Fig. 2-30: S-0-0191, D600 Cancel reference point procedure command

See also the functional description: "Drive-Controlled Homing"

S-0-0191 - Attributes

Para. Name:	**DE**	D600 Kommando Referenzbezug löschen
	EN	D600 Cancel reference point procedure command
	FR	D600 Instruction Annullation de l'origine
	ES	D600 Comando Borrar referencia
	IT	D600 Comando Annullamento riferimento

Function:	Command	**Editability:**	P234
Data length:	2Byte	**Memory:**	no
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	0 / 3		
Default value:	0	**Cyc. transmittable:**	no

S-0-0192, IDN-list of backup operation data

The ID numbers for all operating data that must be loaded in the drive for proper operation are kept in this IDN list. Generally these are the parameters which are stored in the programming module.

The control system should use this IDN list to create a backup copy of the drive parameters.

If a customer password has been activated with the parameter S-0-0267, Password, all parameters contained in S-0-0192, IDN List of backup operation data are write protected.

See also the functional description: "IDN List of Parameters".

S-0-0192 - Attributes

Para. Name:	**DE**	IDN-Liste der zu sichernden Betriebsdaten
	EN	IDN-list of backup operation data
	FR	Liste des IDN des données d'exploitation de sauvegarde
	ES	Lista IDN de los datos de servicio de seguridad
	IT	Lista IDN dei Dati operativi salvati

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	-
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

S-0-0193, Positioning Jerk

The positioning jerk limits the acceleration change per time in the operating modes

- Drive internal interpolation,
- Relative drive internal interpolation and
- Jog mode.

Note: With the value 0, the jerk filter is off.

See also the functional description: "Functional principle Drive Internal Interpolation"

S-0-0193 - Attributes

Para. Name:	**DE**	Positionier-Ruck
	EN	Positioning Jerk
	FR	Jerk de positionnement
	ES	Posicionamiento agitación
	IT	Jerk per Posizionamento

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	S-0-0160	**Extreme value check:**	yes
Decimal places:	S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:	0000000.000 / 4000000.000		
Default value:	-	**Cyc. transmittable:**	-

S-0-0201, Motor warning temperature

If the motor temperature exceeds the motor warning temperature, then the motor warning high temperature bit will be set by the drive in **S-0-0012, Class 2 diagnostics**.

This parameter will be set by the drive at 145° for MHD, MKD and MKE motors.

See also the functional description: "Temperature Monitoring".

S-0-0201 - Attributes

Para. Name:	**DE**	Motor-Warntemperatur
	EN	Motor warning temperature
	FR	Température de préalerte du moteur
	ES	Temperatura de aviso de motor
	IT	Preallarme Temperatura Motore

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	C	**Extreme value check:**	yes
Decimal places:	1	**Combination check:**	no
Input min/max:	0045.0 / 0155.0		
Default value:	-	**Cyc. transmittable:**	-

S-0-0204, Motor shutdown temperature

If the motor temperature exceeds the motor shutdown temperature, then the motor overtemperature bit (bit 2) in **S-0-0011, Class 1 diagnostics** will be set by the drive and the error **F219 Motor overtemp. shutdown** will be generated.

In MHD, MKD and MKE motors, the drive sets this parameter at 155°.

See also the functional description: "Temperature Monitoring".

S-0-0204 - Attributes

Para. Name:	**DE**	Motor-Abschalttemperatur
	EN	Motor shutdown temperature
	FR	Température d'extinction du moteur
	ES	Temperatura de desconexion de motor
	IT	Temperatura Spegnimento per Sovratemp. Motore

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	C	**Extreme value check:**	yes
Decimal places:	1	**Combination check:**	no
Input min/max:	0145.0 / 0155.0		
Default value:	-	**Cyc. transmittable:**	-

S-0-0228, Position synchronization window

If the difference between the position command value and the feedback value is smaller than the synchronization window during the parameterized synchronization operating mode with underlying position control, then bit 8 in the **S-0-0182, Manufacturer Class 3 Status** will be set.

The following applies:

Bit 8 = 1, if $| X_{Synch} + X_{Additive} - X_{Feedback} | < S\text{-}0\text{-}0228$

with
- $X_{Feedback}$: Position feedback value S-0-0051 or S-0-0053
- X_{Synch}: Synchronized position command value, compiled from the actual master axis position
- $X_{Additive}$: Additive position command value, S-0-0048

See also functional description: "Dynamic synchronization in the phase synchronization operating mode"

S-0-0228 - Attributes

Para. Name:	**DE**	Synchronlauffenster Lage		
	EN	Position synchronization window		
	FR	Fenêtre de position de synchronisation		
	ES	Posición ventana de sincronización		
	IT	Finestra di Sincronizzazione di Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	-
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0256, Multiplication 1

The parameter **S-0-0256, Multiplication 1** determines, with which factor the signals of the motor feedback are multiplied in the drive.

The multiplication 1 depends on the parameters **S-0-0278, Maximum travel range** and **S-0-0116, Feedback 1 Resolution**. If there is an optional encoder, the **S-0-0257, Multiplication 2** is taken into account as well. The internal resolution for the motor encoder in the drive is calculated as follows:

S - 0 - 0116, Feedback 1Resolution * S - 0 - 0256, Multiplication 1

Fig. 2-31: Internal resolution for the motor encoder

See also the functional description: "Setting the drive-internal position data format"

S-0-0256 - Attributes

Para. Name:	**DE**	Vervielfachung 1		
	EN	Multiplication 1		
	FR	Multiplication 1		
	ES	Multiplicación 1		
	IT	Multiplicazione 1		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		1	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0257, Multiplication 2

The parameter **S-0-0257, Multiplication 2** determines, with which factor the signals of the optional feedback are multiplied in the drive.

The multiplication 2 depends on the parameters **S-0-0278, Maximum travel range** and **S-0-0117, Resolution of optional feedback**. The internal resolution for the optional encoder in the drive is calculated as follows:

S - 0 - 0117, Feedback 2 Resolution * S - 0 - 0257, Multiplication 2

Fig. 2-32: Internal resolution for the optional encoder

See also the functional description: "Setting the drive-internal position data format"

S-0-0257 - Attributes

Para. Name:	**DE**	Vervielfachung 2		
	EN	Multiplication 2		
	FR	Multiplication 2		
	ES	Multiplicación 2		
	IT	Multiplicazione 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		1	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0258, Target position

The target position is assigned to the drive as a command value by the controller in the operating modes with drive-controlled interpolation.

The drive moves to the target position taking into account

S-0-0259, Positioning Velocity,

S-0-0260, Positioning Acceleration and

S-0-0193, Positioning Jerk

See also the functional description: "Functional principle Drive Internal Interpolation"

S-0-0258 - Attributes

Para. Name:	**DE**	Zielposition
	EN	Target position
	FR	Position cible
	ES	Posición objeto
	IT	Posizione da raggiungere

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0076	**Extreme value check:**	yes
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	-034560.0000 / 0034559.9999		
Default value:	-	**Cyc. transmittable:**	-

S-0-0259, Positioning Velocity

The Positioning Velocity is used in the operating mode "**Drive-controlled interpolation**" to reach the **S-0-0258, Target position**.

See also the functional description: "Operating Mode: Drive Internal Interpolation"

S-0-0259 - Attributes

Para. Name:	**DE**	Positionier-Geschwindigkeit		
	EN	Positioning Velocity		
	FR	Vitesse de positionnement		
	ES	Velocidad de posicionamiento		
	IT	Velocità di Posizionamento		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0000000.0000 / 0214748.3647		
Default value:		-	**Cyc. transmittable:**	-

S-0-0260, Positioning Acceleration

The Positioning acceleration is used in the operating mode "**Drive-controlled interpolation**" to accelerate to the **S-0-0259, Positioning Velocity**.

See also the functional description: "Operating Mode: Drive Internal Interpolation".

S-0-0260 - Attributes

Para. Name:	**DE**	Positionier-Beschleunigung		
	EN	Positioning Acceleration		
	FR	Accélération de positionnement		
	ES	Aceleración de posicionamiento		
	IT	Accellerazione di Posizionamento		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0160	**Extreme value check:**	yes
Decimal places:		S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:		00000000.000 / 00002300.971		
Default value:		-	**Cyc. transmittable:**	-

S-0-0262, C700 Load defaults procedure command

When this command is set and enabled, the default parameters in the motor feedback for current, velocity and position control loop settings will be loaded and activated. These default parameters are not optimized for the specific application. They establish a stable control loop status.

ATTENTION

⇒ When this command is executed, parameters that have already been optimized may be overwritten.

See also Function description: "Load Default Feature"

S-0-0262 - Attributes

Para. Name:	**DE**	C700 Kommando Urladen		
	EN	C700 Load defaults procedure command		
	FR	C700 Instruction Chargement initial		
	ES	C700 Comando carga base		
	IT	C700 Comando Caricamento Base		
Function:		Command	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0265, Language selection

All parameter names, units and diagnostic warning messages within the drive controller are stored in several languages. This parameter determines the output language for the text.

- 0: German
- 1: English
- 2: French
- 3: Spanish
- 4: Italian

See also the functional description: "Language Selection".

S-0-0265 - Attributes

Para. Name:	**DE**	Sprach-Umschaltung
	EN	Language selection
	FR	Sélection de langue
	ES	Cambio de idioma
	IT	Selezione di Lingua

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00001		
Default value:	-	**Cyc. transmittable:**	-

S-0-0267, Password

A customer password can be activated by means of this parameter. The password serves to keep unauthorized persons from writing data to important axis-specific parameters. The parameters that are locked when the customer password has been activated are listed in parameter **S-0-0192, IDN-list of backup operation data**. Rexroth Indramat reserves the right to use a master password. The ex-works password is "007". With the password "007" data can be written to the parameters. The parameter also serves to unlock after-sales service functions.

See also the functional description: "Password".

S-0-0267 - Attributes

Para. Name:	**DE**	Passwort		
	EN	Password		
	FR	Mot de passe		
	ES	Contraseña		
	IT	Parole Chiave		
Function:		Parameter	**Editability:**	P234
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0269, Parameter buffer mode

The Parameter buffer mode is used to determine whether the data transmitted through the service channel (or serial interface) will be stored temporarily (in RAM) or permanently.

1: Data will not be stored permanently. (Data is volatile.)

0: Data will be stored permanently. (Data is resident.)

After the control voltage supply has been switched on, the drive will initialize bit 0 to 0. To activate temporary storage mode, bit 0 must be forced to 1 after switching on.

Note: For applications that write cylic or frequent updates to buffered parameters: Parameter buffer mode = 1 (temporary) should be activated by the initialization procedure in the machine control. This mode ensures that the write cycle life of the EEPROM is not exceeded. Must be re-programmed after complete power shut down.

See also the functional description: "Parameter Buffer Mode"

S-0-0269 - Attributes

Para. Name:	**DE**	Speicherungsmodus		
	EN	Parameter buffer mode		
	FR	Mode d'enregistrement		
	ES	Modo de buffer		
	IT	Buffer Modo Parametri		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00001		
Default value:		-	**Cyc. transmittable:**	-

S-0-0277, Position feedback 1 type

This parameter is used to determine the significant properties of the encoder 1.

Parameter structure:

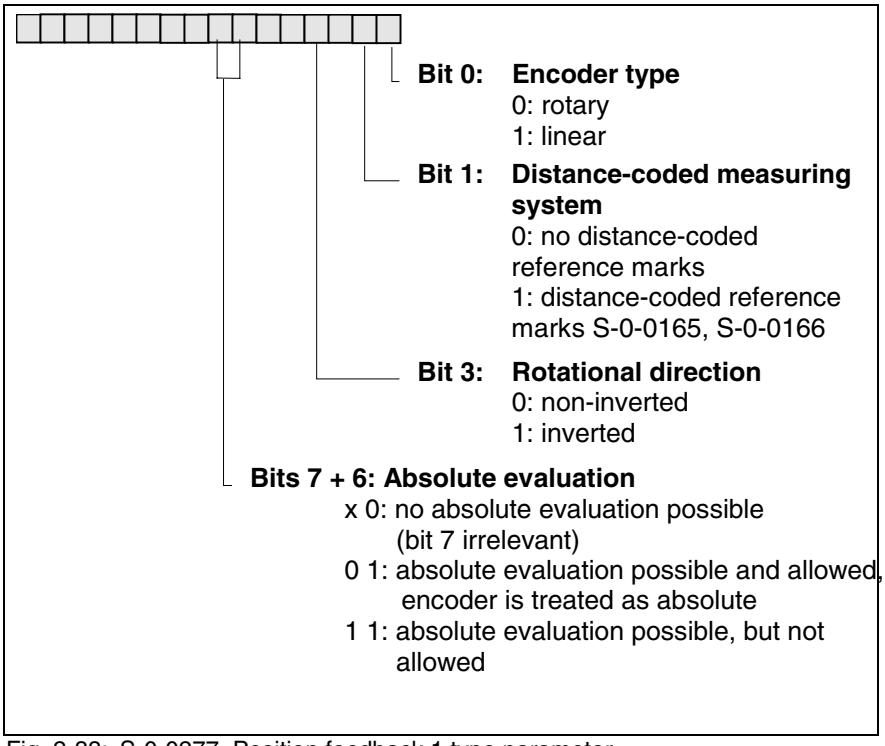


Fig. 2-33: S-0-0277, Position feedback 1 type parameter

Remark:

- If the motor has a motor feedback memory (MHD, MKD or MKE) then bits 0,1 and 3 are set to 0.
- If the motor is a linear motor, then bit 0 is set to "1".
- Depending on the absolute encoder range and the maximum travel range or modulo value, bit 6 is set to the correct value

Note: Only the bits indicated here are supported by the software

See also the functional description: "Other Motor Encoder Characteristics"

S-0-0277 - Attributes

Para. Name:	**DE**	Lagegeberart 1		
	EN	Position feedback 1 type		
	FR	Type codeur 1		
	ES	Tipo de encoder de posición 1		
	IT	Tipo di Feedback Posizione 1		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0278, Maximum travel range

The parameter **S-0-0278, Maximum travel range** defines the maximum possible mechanical move of the machine. Depending on the selected scaling, modulo or absolute format (see also **S-0-0076, Position data scaling type**), the input is unipolar (positive only) or bipolar (with sign).

The parameter **S-0-0278, Maximum travel range** affects the parameters **S-0-0256, Multiplication 1** and **S-0-0257, Multiplication 2** and therefore the internal position resolution in the drive. Moreover, the limits for velocity and acceleration of the drive internal position command generator are influenced by the maximum travel range. Among others, the max. input values for **S-0-0259, Positioning Velocity** and **S-0-0260, Positioning Acceleration** depend on the value in S-0-0278.

Note: The greater the parameterized maximum travel range, the smaller is the multiplication and the drive internal position resolution and the higher are the limits of the acceleration and velocity data.

Additionally, the parameter **S-0-0278, Maximum travel range** affects the bit 6 "Absolute readout possible“ in the respective parameter **S-0-0277, Position feedback 1 type** or **S-0-0115, Position feedback 2 type**. If the parameterized maximum travel range is greater than half the absolute numerical range of the used encoder, then the bit 6 for "Absolute readout possible“ is reset to 0. The converse is also true. Bit 6 is set to "1" as soon as a travel range less than half the absolute numerical range of the encoder is recognized.

See also the functional description: "Setting the drive-internal position data format"

S-0-0278 - Attributes

Para. Name:	**DE**	Maximaler Verfahrbereich
	EN	Maximum travel range
	FR	Champs de déplacement max.
	ES	Campo máximo de desplazamiento
	IT	Campo corsa max.

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076	**Extreme value check:**	no
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	0000000.0000 / 0214748.3647		
Default value:	-	**Cyc. transmittable:**	-

S-0-0282, Positioning command value

The control unit specifies the travel distance in the operating mode **Relative drive-internal interpolation** as a relative command value for the drive.

When the parameter **S-0-0346, Positioning command strobe** is toggled (= changed), the drive adds the travel distance to the target position. The resulting absolute target position is displayed in parameter **S-0-0258, Target position**. Then, the drive performs the travel distance with regard to

- **S-0-0259, Positioning Velocity**
- **S-0-0260, Positioning Acceleration**
- **S-0-0193, Positioning Jerk**

See also the functional description: "Operating Mode: Relative drive-internal interpolation"

S-0-0282 - Attributes

Para. Name:	**DE**	Positionier-Sollwert
	EN	Positioning command value
	FR	Consigne de positionnement
	ES	Valor nominal de posicionamiento
	IT	Valore nominale di posizionamento

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0076	**Extreme value check:**	yes
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

S-0-0292, List of all operating modes

In this list, all operation modes are named, which the drive supports. The operation modes are listed by their codings (binary values), as they are input in the parameters **S-0-0032..35** (primary and secondary operation modes).

See also the functional description: "Operating Modes".

S-0-0292 - Attributes

Para. Name:	**DE**	Liste der unterstützten Betriebsarten		
	EN	List of all operating modes		
	FR	Liste de tous les modes de fonctionnement		
	ES	Lista de todos los modos de operación		
	IT	Lista di tutti i Modi operativi		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	--
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		-- / --		
Default value:		--	**Cyc. transmittable:**	no

S-0-0298, Reference cam shift

For the drive controlled homing, if there is more than one reference marker in the travel range of the axis during homing, it is necessary to evaluate a reference switch. In this case, the 0->1 rising edge of the zero switch specifies the relevant reference marker.

To do this, the distance between zero switch and reference marker may not be below a certain value, because otherwise the reference marker is ambiguous. Therefore, the drive monitors the distance. If the distance is outside the allowed range, the command **S-0-0148, C600 Drive controlled homing procedure command** ends up with the error **C602 Distance zero switch - reference marker wrong**.

In this case, this parameter shows the distance, by which the zero switch must be shifted, to get the optimal distance.

You can either

- input the value in the parameter **S-0-0299, Home switch offset** to shift the active zero switch (virtually) referred to the real one, or
- shift the zero switch mechanically by the value displayed in S-0-0298.

If the distance between zero switch and reference marker is within the allowed range, then **S-0-0298, Reference cam shift by**.. displays a 0.

See also the functional description: "Drive-Controlled Homing"

S-0-0298 - Attributes

Para. Name:	**DE**	Verschiebung des Referenznockens		
	EN	Reference cam shift		
	FR	Décalage de la came d'origine		
	ES	Desplazamiento de la leva de referencia		
	IT	Sfasamento camma di riferimento		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0299, Home switch offset

For the drive controlled homing, if there is more than one reference marker in the travel range of the axis during homing, it is necessary to evaluate a reference switch. In this case, the 0->1 rising edge of the zero switch specifies the relevant reference marker.

To do this, the distance between zero switch and reference marker may not be below a certain value, because otherwise the reference marker is ambiguous. Therefore, the drive monitors the distance. If the distance is outside the allowed range, the command **S-0-0148, C600 Drive controlled homing procedure command** ends up with the error **C602 Distance zero switch - reference marker wrong**. In this case, the parameter **S-0-0298, Reference cam shift** shows the distance, by which the zero switch must be shifted, to get the optimal distance.

You can either

- input the value in the parameter **S-0-0299, Home switch offset** to shift the active zero switch (virtually) referred to the real one, or
- shift the zero switch mechanically by the value displayed in S-0-0298.

If the distance between zero switch and reference marker is good, then **S-0-0298, Reference cam shift** by.. displays a 0.

See also the functional description: "Drive-Controlled Homing"

S-0-0299 - Attributes

Para. Name:	**DE**	Referenzschalter-Offset		
	EN	Home switch offset		
	FR	Décalage contact origine		
	ES	Offset de interruptor de referencia		
	IT	Offset FC di Zero		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0301, Allocation of real-time control Bit 1

In order to assign a signal to the real-time control bit 1, the ID number of the signal is written to the operating data of the assignment for the real-time control bit 1.

If such an assignment is made, the assigned signal (bit 0) will be controlled by the real-time control bit 1 (= component of the master control word). If the selected IDN is not available, the drive responds with the service channel error message "IDN not available" If the programmed IDN is available but is not editable in phase 4, then the drive responds with the error message "Data not correct"

See also the functional description: "Real-Time Control and Status Bits".

S-0-0301 - Attributes

Para. Name:	**DE**	Zuweisung Echtzeitsteuerbit 1		
	EN	Allocation of real-time control Bit 1		
	FR	Allocation bit contrôle temps réel 1		
	ES	Asignación bit de mando tiempo real 1		
	IT	Allocazione del Real Time Control Bit 1		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

S-0-0303, Allocation of real-time control Bit 2

In order to assign a signal the real-time control bit 2, the ID number of the signal is written to the operating data of the assignment for the real-time control bit 2.

If such an assignment is made, the assigned signal (bit 0) will be controlled by the real-time control bit 2 (= component of the master control word).

See also the functional description: "Real-Time Control and Status Bits".

S-0-0303 - Attributes

Para. Name:	**DE**	Zuweisung Echtzeitsteuerbit 2		
	EN	Allocation of real-time control Bit 2		
	FR	Allocation bit contrôle temps réel 2		
	ES	Asignación bit de mando tiempo real 2		
	IT	Allocazione del Real Time Control Bit 2		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

S-0-0305, Allocation of real-time status Bit 1

In order to assign a signal to the real-time status bit 1, the ID number of the signal is written to the operating data of the assignment for the real-time status bit 1.

If such an assignment is made, the assigned signal (bit 0) thereafter appears in the real-time status bit 1 (= component of the drive status word). If the programmed IDN is not available, the drive responds with the service channel error message "IDN not available".

see also the functional description: "Real-Time Control and Status Bits".

S-0-0305 - Attributes

Para. Name:	**DE**	Zuweisung Echtzeitstatusbit 1		
	EN	Allocation of real-time status Bit 1		
	FR	Allocation bit état temps réel 1		
	ES	Asignación bit de estado tiempo real 1		
	IT	Allocazione del Real Time Status Bit 1		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

S-0-0307, Allocation of real-time status Bit 2

In order to assign a signal to the real-time status bit 2, the ID number of the signal is written to the operating data of the assignment for the real-time status bit 2.

If such an assignment is made, the assigned signal (bit 0) thereafter appears in the real-time status bit 2 (component of the drive status word).

See also the functional description: "Real-Time Control and Status Bits".

S-0-0307 - Attributes

Para. Name:	**DE**	Zuweisung Echtzeitstatusbit 2		
	EN	Allocation of real-time status Bit 2		
	FR	Allocation bit état temps réel 2		
	ES	Asignación bit de estado tiempo real 2		
	IT	Allocazione del Real Time Status Bit 2		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

S-0-0328, Assign list signal status word

The signal status word (S-0-0144) is configured with the parameters **S-0-0026, Configuration list signal status word** and **S-0-0328, Assign list signal status word**.

These parameters have variable length with data elements of 16 bits. In the parameter **S-0-0026, Configuration list signal status word**, the **ident number** of the parameters is set, which contains the original bit (source). The parameter **S-0-0328, Assign list signal status word** determines, which **bit** in the data is copied into the signal status word. The position in the respective configuration list determines, to which position in the signal status word the chosen bit is copied.

See also the functional description: "Configurable Signal Status Word".

S-0-0328 - Attributes

Para. Name:	**DE**	Zuweisungsliste Signal-Statuswort		
	EN	Assign list signal status word		
	FR	Liste d'assignations pour mot d'état des signaux		
	ES	Lista de asignaciones palabra de estado de señal		
	IT	Elenco delle assegnazioni parole di stato del segnale		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte var.	**Memory:**	-
Format:		DEC_OV	**Validity check:**	P3-4
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0346, Positioning command strobe

When the operation mode "Relative drive-internal interpolation" is active, the drive performs the distance parametrized in **S-0-0282, Travel distance**, as soon as the bit 0 in S-0-0346, Positioning command strobe toggles (changes).

See also, function description: "Operating Mode: Drive Controlled Positioning".

S-0-0346 - Attributes

Para. Name:	**DE**	Positioniersollwert-Übernahme		
	EN	Positioning command strobe		
	FR	Drapeau pour prise de consignes de position relatives		
	ES	Aceptación de valor nominal de posicionamiento		
	IT	Rilevamento valore nominale di posizionamento		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0347, Speed deviation

Parameter S-0-0347 indicates the difference between the velocity command value and the velocity feedback value in the velocity controller.

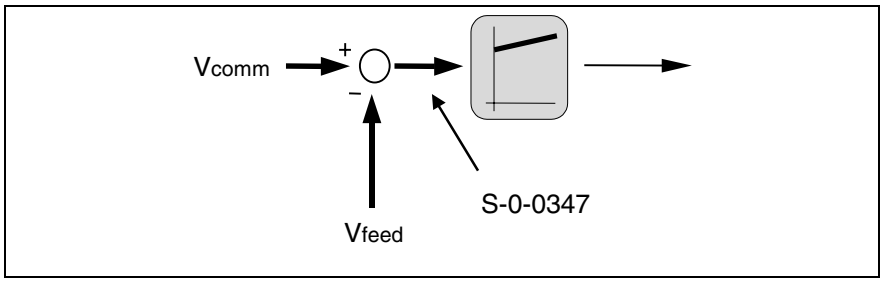


Fig. 2-34: S-0-0347, Speed deviation

See also the functional description: "Velocity Controller".

S-0-0347 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Regelabweichung		
	EN	Speed deviation		
	FR	Ecart de vitesse		
	ES	Desviación de velocidad		
	IT	Scostamento di velocità		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0044	**Extreme value check:**	no
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0348, Acceleration feedforward gain

The acceleration feedforward helps to reduce the following error during the acceleration in operation modes without following error. To do this, the current acceleration command value is multiplied by the "acceleration feedforward gain" and added to the current command value of the velocity controller.

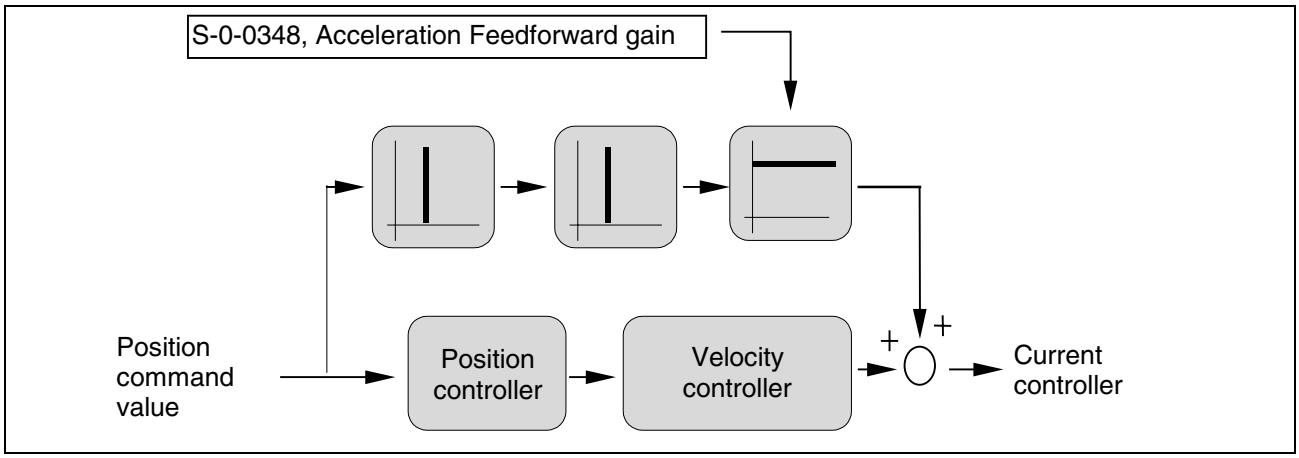


Fig. 2-35: Acceleration feedforward

Activation:

Writing a value greater than 0 to the parameter activates the acceleration feedforward.

Note: The controller functions as well without feedforward! (The standard value equals 0.) Acceleration feedforward is only possible in lagless modes (without following error).

Comparison between the different types of feedforward

The **velocity feedforward** is activated by selecting an operating mode without **lag** (following error). This creates (from the point of view of the position controller) a **feedforward of 1st order** (prop. to velocity). This means that at constant speed, the position deviation is 0. A lag results, nevertheless, during acceleration and deceleration.

The **acceleration feedforward** is activated by entering more than 0 for this parameter. It creates (from the point of view of the position controller),

a **feedforward of 2nd order** (prop. to acceleration). The position deviation is 0 as long as the correct gain is set and the acceleration is constant.

Correct input value:

$$S\text{-}0\text{-}0348 = \frac{\text{moment of inertia } \left(\text{kgm}^2\right)}{\text{torque constant } (\text{Nm/A})} * 1000$$

The moment of inertia is the total sum of the rotor and the reflected load inertia.

The factor 1000 is needed for unit mA.

Fig. 2-36: Acceleration feedforward prop. gain

See also the functional description: "Setting the Acceleration Feed Forward"

S-0-0348 - Attributes

Para. Name:	**DE**	Verstärkung Beschleunigungsvorsteuerung		
	EN	Acceleration feedforward gain		
	FR	Anticipation d'accélération, gain		
	ES	Ganancia de anticipación de aceleración		
	IT	Preregolazione accellerazione		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		P-0-4014	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 6553.5		
Default value:		-	**Cyc. transmittable:**	-

S-0-0349, Jerk limit bipolar

The Jerk limit bipolar limits the **acceleration change per time** during "Drive Halt" and with commands that generate their own position command values.

See also the functional description: "Drive Halt", "Drive-Controlled Homing"",

S-0-0349 - Attributes

Para. Name:	**DE**	Ruck-Grenzwert bipolar		
	EN	Jerk limit bipolar		
	FR	Limite de Jerk bipolaire		
	ES	Límite de sacudida bipolar		
	IT	Limite scossa bipolare		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0160	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000000.000 / 4000000.000		
Default value:		-	**Cyc. transmittable:**	-

S-0-0378, Encoder 1, absolute range

Parameter **S-0-0378 Absolute encoder 1, range** defines the range in which the encoder selected in **P-0-0074, Feedback type 1** can generate the position information absolutely.

See also Function Description: "Absolute encoder range and absolute encoder evaluation"

S-0-0378 - Attributes

Para. Name:	**DE**	Absolutbereich Geber 1		
	EN	Encoder 1, absolute range		
	FR	Codeur absolu 1, champs		
	ES	Encoder absoluto 1, campo		
	IT	Encoder assoluto 1, campo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0379, Encoder 2, absolute range

Parameter **S-0-0379, Absolute encoder 2, range** defines the range in which the encoder selected in **P-0-0075, Feedback type 2** can generate the position information absolutely.

See also functional description: "Absolute encoder range and absolute encoder evaluation".

S-0-0379 - Attributes

Para. Name:	**DE**	Absolutbereich Geber 2		
	EN	Encoder 2, absolute range		
	FR	Codeur absolu 2, champs		
	ES	Encoder absoluto 2, campo		
	IT	Encoder assoluto 2, campo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-0-0382, Intermediate bus power

Display of the DC-bus power in kW.

S-0-0382 - Attributes

Para. Name:	**DE**	Zwischenkreisleistung		
	EN	Intermediate bus power		
	FR	Puissance circuit interméd.		
	ES	Potencia de circuito intermedio		
	IT	Potenza sul Bus DC		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		kW	**Extreme value check:**	no
Decimal places:		3	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0383, Motor temperature

This parameter contains the measured motor temperature.

Remark:

For all Rexroth Indramat motors except for 2AD motors, a PTC resistor is used as a temperature sensor.

Over a large range the characteristic temperature curve is not linear. The important limits for temperature measurement are

- MKE motors 125 to 135 °C
- MKD, MHD, MHP and MPD motors 145 to 155 °C.

Within these limits the characteristic curve is linear and therefore suitable for temperature monitoring.

See also the functional description: "Temperature Monitoring".

S-0-0383 - Attributes

Para. Name:	**DE**	Motor-Temperatur		
	EN	Motor temperature		
	FR	Température moteur		
	ES	Temperatura de motor		
	IT	Temperatura Motore		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		C	**Extreme value check:**	no
Decimal places:		1	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0390, Diagnostic message number

In the parameter Diagnostic message number, the same number is stored as can be seen in the seven segment display. This makes it possible for the control to generate its own diagnostics according to the

diagnostic message number (for example in languages which are not stored as diagnostics in the drive).

Example:

Diagnostic Message:	"F822 Motor encoder failure: signal too small" in parameter S-0-0095
Seven Segment Display:	changing "F8" <=> "22"
Diagnostic message number:	"F822(hex)" in parameter S-0-0390

See also the functional description: "Diagnostic Message Number"

S-0-0390 - Attributes

Para. Name:	**DE**	Diagnose-Nummer		
	EN	Diagnostic message number		
	FR	Numéro message diagnostic		
	ES	Numero de diagnostico		
	IT	Numero Messaggio Diagnosi		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0391, Monitoring window feedback 2

This parameter defines the maximum allowable deviation of the **S-0-0051, Actual feedback 1 value** and **S-0-0053, Actual feedback 2 value**.

If this value is exceeded for longer than 20ms, then the error **F236, Excessive position feedback difference** will be generated. The monitoring can be turned off by writing 0 to this parameter.

See also the functional description: "Actual Feedback Value Monitoring".

S-0-0391 - Attributes

Para. Name:	**DE**	Überwachungsfenster Geber 2		
	EN	Monitoring window feedback 2		
	FR	Fenêtre de monitorage du codeur 2		
	ES	Ventana de control de encoder 2		
	IT	Finestra di monitoraggio del encoder 2		
Function:		Parameter	**Editability:**	P234
Data length:			**Memory:**	-
Format:			**Validity check:**	Phase3
Unit:			**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

S-0-0393, Command value mode

Structure of the parameter:

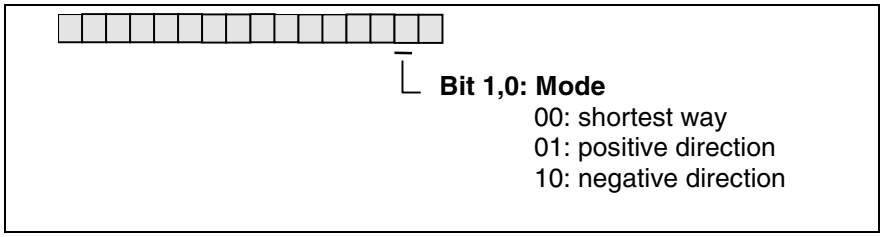


Fig. 2-37: Structure of the parameter S-0-0393

Description of Bit 1 and Bit 0:

The interpretation of position command values such as **S-0-0047, Position command value** and **S-0-0258, Target position** with modulo function activated is dependent on the selected mode. The parameter **S-0-0393, Command value mode is used** to adjust the mode. This parameter has an effect only if **S-0-0076, Position data scaling type** has been activated in the modulo format.

See also the functional description: "Processing Command Values in Modulo Format, Shortest Path - Direction Selection".

S-0-0393 - Attributes

Para. Name:	**DE**	Sollwertmodus		
	EN	Command value mode		
	FR	Mode de consigne		
	ES	Modo de valor nominal		
	IT	Modo per Valori comandati		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00002		
Default value:		-	**Cyc. transmittable:**	-

S-0-0400, Home switch

This parameter is used to assign an ID number to the home switch (external signal).

Application:

The IDN (and thus the feedback status of the home switch) can be assigned to a real-time status bit.

Structure of the parameter:

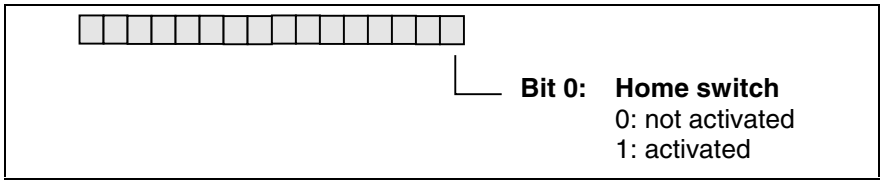


Fig. 2-38: S-0-0400, Home switch

See also the functional description: "Evaluation of the Home Switch"

S-0-0400 - Attributes

Para. Name:	**DE**	Referenzschalter		
	EN	Home switch		
	FR	Contact d'origine		
	ES	Interruptor de referencia		
	IT	FC di Zero		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0401, Probe 1

This parameter is used to assign an ID number to Probe 1 (external signal). This makes it possible to assign Probe 1 to a real-time status bit, for example.

The signal Probe 1 is only scanned by the drive and considered valid if the **S-0-0170, Probing cycle procedure command** is active and **S-0-0405, Probe 1 enable** is present.

Parameter structure:

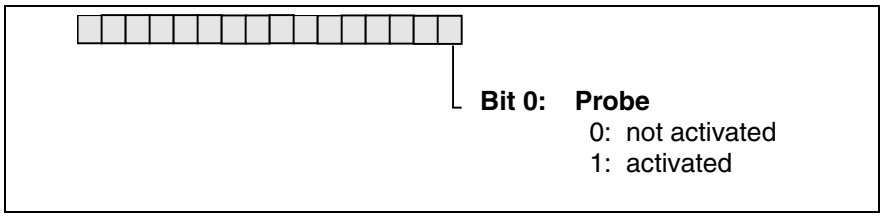


Fig. 2-39: S-0-0401, Probe 1

See also the functional description: "Probe Input Feature".

S-0-0401 - Attributes

Para. Name:	**DE**	Messtaster 1		
	EN	Probe 1		
	FR	Sonde de mesure 1		
	ES	Teclas de medición 1		
	IT	Tastatore di misura 1		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0402, Probe 2

This parameter is used to assign an ID number to Probe 2 (external signal). This makes it possible to assign Probe 2 to a real-time status bit, for example.

The signal Probe 2 is only scanned by the drive and considered valid if the **S-0-0170, Probing cycle procedure command** is active and **S-0-0406, Probe 2 enable** is present.

Parameter structure:

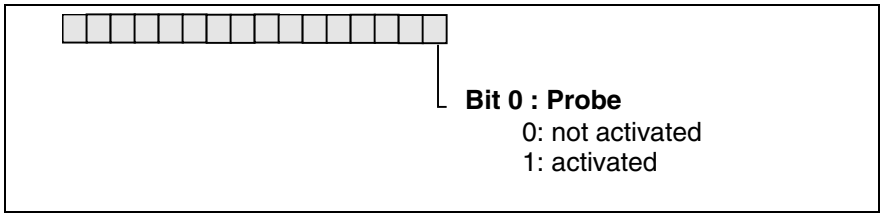


Fig. 2-40: S-0-0402, Probe 2

See also the functional description: "Probe Input Feature".

S-0-0402 - Attributes

Para. Name:	**DE**	Messtaster 2		
	EN	Probe 2		
	FR	Sonde de mesure 2		
	ES	Teclas de medición 2		
	IT	Tastatore di misura 2		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0403, Position feedback value status

Bit 0 of this parameter will be set high when the position feedback value as the determined by bit 3 (motor or external feedback) of S**-0-0147, Homing Parameter** is fixed in reference to the machine's zero point.

When the drive performs the commands **S-0-0148, C600 Drive controlled homing** procedure or **P-0-0012, C300 Command 'Set absolute measurement'**, the bit will be reset when they are started and then set to 1 again once the command has been successfully completed.

The bit for position feedback value status corresponds to the output signal "In reference". In drives with SERCOS interface, the position feedback value status can be assigned to a real-time status bit and thus be continuously communicated to the NC in the drive status word (see **S-0-0305, Allocation of real-time status bit 1**).

Structure of the parameter:

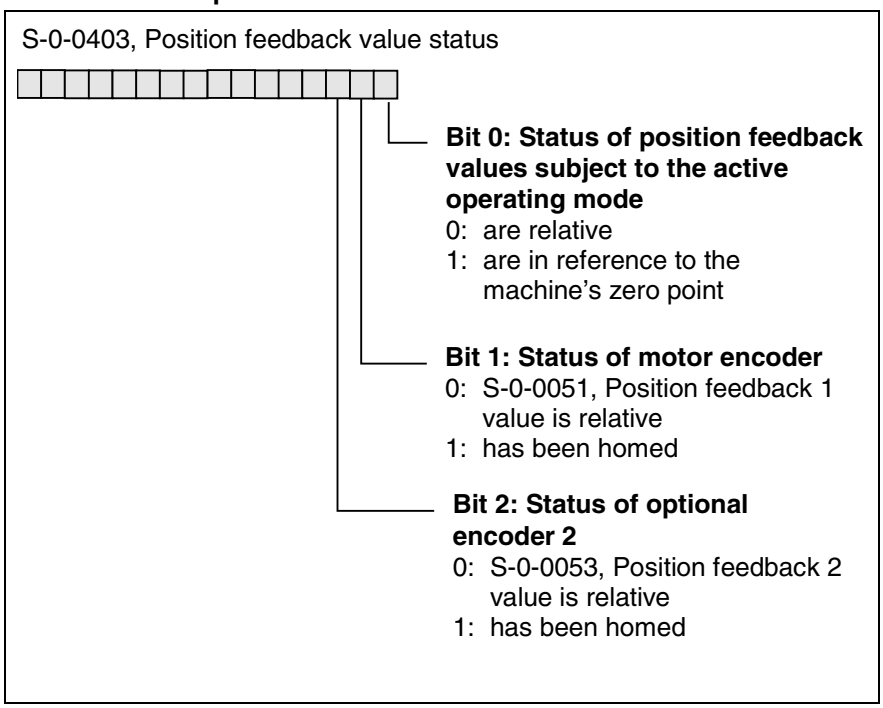


Fig. 2-41: S-0-0403, Position feedback value status

See also the functional description: "Drive-Controlled Homing".

S-0-0403 - Attributes

Para. Name:	**DE**	Status Lageistwerte		
	EN	Position feedback value status		
	FR	Etat des valeurs de retour de position		
	ES	Estado valores reales de posición		
	IT	Stato del Feedback di Posizione		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0405, Probe 1 enable

This parameter is used to enable a probe input.

Changing this signal from 0 to 1 activates the trigger mechanism for evaluating the positive and/or negative slope of the probe signal.

The probe 1 enable can be assigned to a real-time control bit and thus be communicated to the master control word in the drive.

Parameter structure:

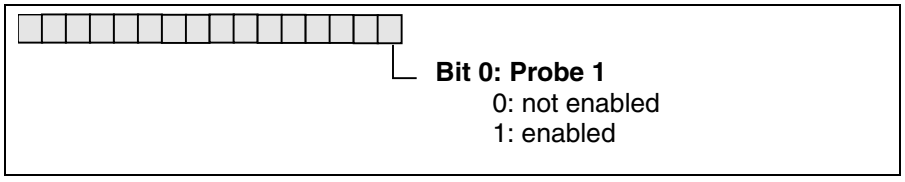


Fig. 2-42: S-0-0405, Probe 1 enable

See also the functional description: "Probe Input Feature".

S-0-0405 - Attributes

Para. Name:	**DE**	Messtaster 1 Freigabe		
	EN	Probe 1 enable		
	FR	Validation de la sonde 1		
	ES	Desbloqueo de teclas de medición 1		
	IT	Tastatore di misura 1 abilitato		
Function:		Parameter	**Editability:**	P4
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0406, Probe 2 enable

This parameter is used to enable a probe input.

Changing this signal from 0 to 1 activates the trigger mechanism for evaluating the positive and/or negative slope of the probe signal.

The probe 2 enable can be assigned to a real-time control bit and thus be communicated to the drive in the master control word.

Parameter structure:

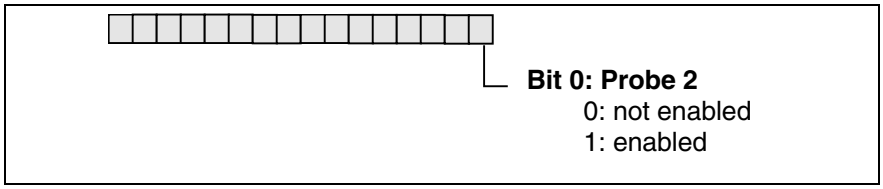


Fig. 2-43: S-0-0406, Probe 2 enable

See also the functional description: "Probe Input Feature".

S-0-0406 - Attributes

Para. Name:	**DE**	Messtaster 2 Freigabe		
	EN	Probe 2 enable		
	FR	Validation de la sonde 2		
	ES	Desbloqueo de teclas de medición 2		
	IT	Tastatore di misura 2 abilitato		
Function:		Parameter	**Editability:**	P4
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0409, Probe 1 positive latched

Bit 0 in this parameter will be set by the drive if

- the **S-0-0170, Probing cycle procedure command** is active,
- bit 0 in **S-0-0169, Probe control parameter** is set,
- **S-0-0405, Probe 1 enable** is present and
- the positive edge of **S-0-0401, Probe 1** is recognized.

The drive simultaneously stores the value of the selected signal in **S-0-0130, Probe value 1 positive edge**. The drive clears the bit if the NC clears the **S-0-0170, Probing cycle procedure command** or if **S-0-0405, Probe 1 enable** has been set from 1 to 0. The parameter "Probe 1 positive latched" can be assigned to a real-time status bit and thus be continuously communicated to the NC in the drive status word.

Parameter structure:

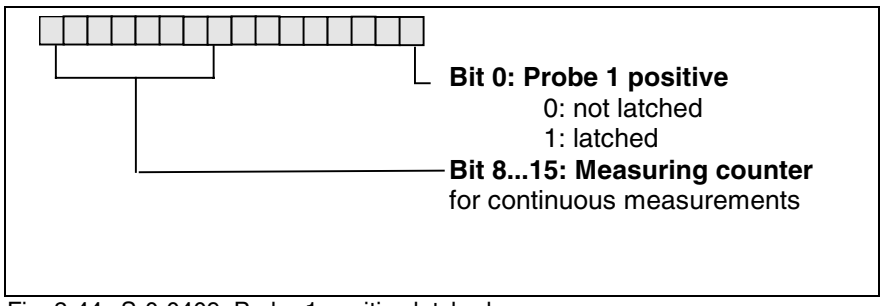


Fig. 2-44: S-0-0409, Probe 1 positive latched

See also the functional description: "Probe Input Feature".

S-0-0409 - Attributes

Para. Name:	**DE**	Messtaster 1 positiv erfasst		
	EN	Probe 1 positive latched		
	FR	Sonde 1 déclenchée sur front montant		
	ES	Teclas de medición 1 bloqueado positivo		
	IT	Tastatore di misura 1 positivo rilevato		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0410, Probe 1 negative latched

Bit 0 in this parameter will be set by the drive if

- the **S-0-0170, Probing cycle procedure command** is active,
- bit 1 in **S-0-0169, Probe control parameter** is set,
- **S-0-0405, Probe 1 enable** is present and
- the negative edge of **S-0-0401, Probe 1** is recognized.

The drive simultaneously stores the value of the selected signal in **S-0-0131, Probe value 1 negative edge**. The drive clears the bit if the

NC clears the **S-0-0170, Probing cycle procedure command** or if **S-0-0405, Probe 1 enable** has been set from 1 to 0. The parameter "Probe 1 positive latched" can be assigned to a real-time status bit and thus be continuously communicated to the NC in the drive status word.

Parameter structure:

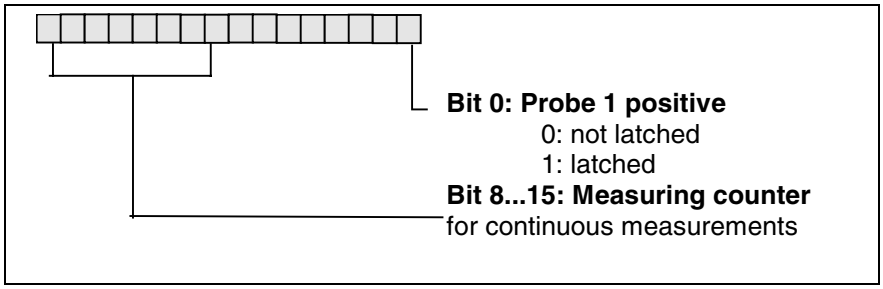


Fig. 2-45: S-0-0409, Probe 1 positive latched

See also the functional description: "Probe Input Feature".

S-0-0410 - Attributes

Para. Name:	**DE**	Messtaster 1 negativ erfasst		
	EN	Probe 1 negative latched		
	FR	Sonde 1 déclenchée sur front descendant		
	ES	Teclas de medición 1 bloqueado negativo		
	IT	Tastatore di misura 1 negativo rilevato		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0411, Probe 2 positive latched

Bit 0 in this parameter will be set by the drive if

- the **S-0-0170, Probing cycle procedure command** is active,
- bit 3 in **S-0-0169, Probe control parameter** is set,
- **S-0-0406, Probe 2 enable** is present, and
- the positive edge of **S-0-0402, Probe 2** is recognized.

The drive simultaneously stores the value of the selected signal in **S-0-0132, Probe value 2 positive edge**.

The drive clears the bit if the NC clears the **S-0-0170, Probing cycle procedure command** or if **S-0-0406, Probe 2 enable** has been set from 1 to 0. The parameter "Probe 2 positive latched" can be assigned to a real-time status bit and thus be continuously communicated to the NC in the drive status word.

Parameter structure:

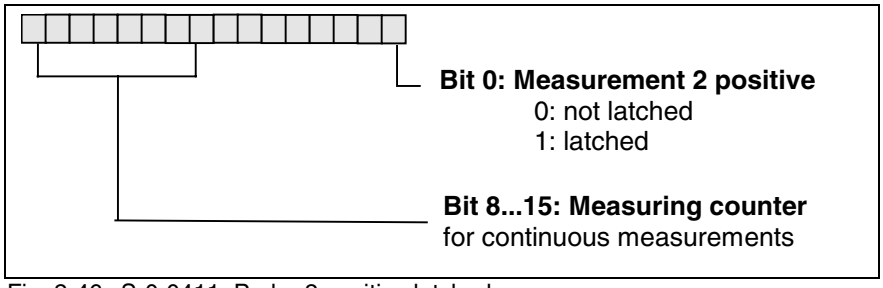


Fig. 2-46: S-0-0411, Probe 2 positive latched

See also the functional description: "Probe Input Feature".

S-0-0411 - Attributes

Para. Name:	**DE**	Messtaster 2 positiv erfasst		
	EN	Probe 2 positive latched		
	FR	Sonde 2 déclenchée sur front montant		
	ES	Teclas de medición 2 bloqueado positivo		
	IT	Tastatore di misura 2 positivo rilevato		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-0-0412, Probe 2 negative latched

Bit 0 in this parameter will be set by the drive if

- the **S-0-0170, Probing cycle procedure command** is active,
- bit 3 in **S-0-0169, Probe control parameter** is set,
- **S-0-0406, Probe 2 enable** is present, and
- the negative edge of **S-0-0402, Probe 2** is recognized.

The drive simultaneously stores the value of the selected signal in **S-0-0133, Probe value 2 negative edge**. The drive clears the bit if the NC clears the **S-0-0170, Probing cycle procedure command** or if **S-0-0406, Probe 2 enable** is set from 1 to 0. The parameter "probe 2 negative latched" can be assigned to a real-time status bit and thus be continuously communicated to the NC in the drive status word.

Parameter structure:

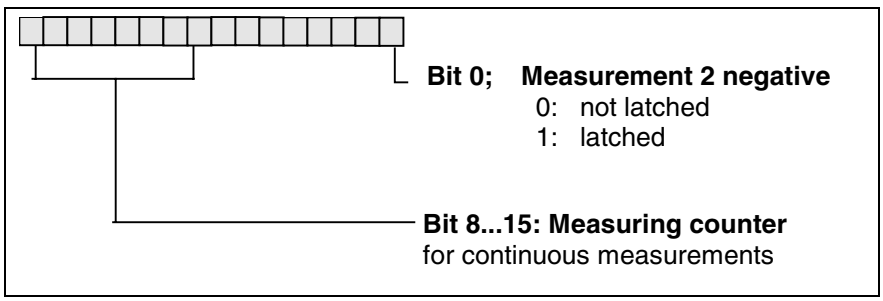


Fig. 2-47: S-0-0412, Probe 2 negative latched

See also the functional description: "Probe Input Feature".

S-0-0412 - Attributes

Para. Name:	**DE**	Messtaster 2 negativ erfasst		
	EN	Probe 2 negative latched		
	FR	Sonde 2 déclenchée sur front descendant		
	ES	Teclas de medición 2 bloqueado negativo		
	IT	Tastatore di misura 2 negativo rilevato		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

S-7-0100, Velocity loop proportional gain

This parameter contains the default value for the velocity loop proportional gain.

This value comes from the feedback data memory. With the Basic Load procedure, the S-7-xxxx parameters are copied into the S-0-xxxx parameters.

Note: S-0-0100 and S-7-0100 have different units/dimensions, e.g. for rotatory action As/rad vs. mAs/rad. The number of places after the decimal also differs.

See also the functional description "Setting the Velocity Controller" and the parameter description for S-0-0100.

S-7-0100 - Attributes

Para. Name:	**DE**	Geschwindigkeitsregler-Proportionalverstärkung		
	EN	Velocity loop proportional gain		
	FR	Gain proportionnel de la boucle de vitesse		
	ES	Amplificación proporcional de regulador de velocidad		
	IT	Guadagno proporzionale Anello di Velocità		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		mAs/rad	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0101, Velocity loop integral action time

This parameter contains the default value for the integral action time of the integrator in the velocity loop controller.

This value comes from the feedback data memory. With the Basic Load procedure, the S-7-xxxx parameters are copied into the S-0-xxxx parameters.

See also the functional description "Setting the Velocity Controller" and the parameter description for S-0-0101.

S-7-0101 - Attributes

Para. Name:	**DE**	Geschwindigkeitsregler-Nachstellzeit		
	EN	Velocity loop integral action time		
	FR	Temps d'action intégral de la boucle de vitesse		
	ES	Tiempo de reajuste de regulador de velocidad		
	IT	Tempo Integrazione Anello di Velocità		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0106, Current loop proportional gain 1

This parameter contains the appropriate value for the proportional gain of the current controller with the connected motor.

This value comes from the feedback data memory. With the Basic Load procedure, the S-7-xxxx parameters are copied into the S-0-xxxx parameters.

Note: Do not alter the values for the current controller set at the factory.

See also function description "Setting the Current Controller" and the parameter description for S-0-0106.

S-7-0106 - Attributes

Para. Name:	**DE**	Stromregler-Proportionalverstärkung 1		
	EN	Current loop proportional gain 1		
	FR	Gain proportionnel de la boucle de courant 1		
	ES	Amplificación proporcional 1 regulador de corriente		
	IT	Guadagno proporzionale 1 Regolatore di Corrente		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		V/A	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0107, Current loop integral action time 1

This parameter contains the appropriate value for the integral action time of the integrator in the current controller with the connected motor.

This value comes from the feedback data memory. With the Basic Load procedure, the S-7-xxxx parameters are copied into the S-0-xxxx parameters.

Note: Do not alter the values for the current controller set at the factory.

See also function description "Setting the Current Controller" and the parameter description for S-0-0107.

S-7-0107 - Attributes

Para. Name:	**DE**	Stromregler-Nachstellzeit 1		
	EN	Current loop integral action time 1		
	FR	Temps d'action intégral de la boucle de courant 1		
	ES	Tiempo de reajuste de regulador de corriente 1		
	IT	Tempo Integrazione 1 Anello di Corrente		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0109, Motor peak current

Value in the feedback memory which specifies the maximum current which may flow in the motor for a short period without damaging it.

For MHD, MKD and MKE motors, the value will be copied into the active parameter **S-0-0109, Motor peak current** when the amplifier is turned on.

See also the functional description "Setting the Current Controller" and the parameter description for S-0-0109.

S-7-0109 - Attributes

Para. Name:	**DE**	Spitzenstrom Motor		
	EN	Motor peak current		
	FR	Courant crête du moteur		
	ES	Corriente punta de motor		
	IT	Corrente di Picco Motore		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		A	**Extreme value check:**	no
Decimal places:		3	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0111, Motor current at standstill

Value in the feedback memory for the current which can continuously flow in the motor without damaging it.

For MHD, MKD and MKE motors, the value will be copied into the active parameter **S-0-0111, Motor current** at standstill when the amplifier is turned on.

See also the functional description: "Motor Feedback-Data Memory"

S-7-0111 - Attributes

Para. Name:	**DE**	Stillstandsstrom Motor		
	EN	Motor current at standstill		
	FR	Courant du moteur à l'arrêt		
	ES	Corriente de parada motor		
	IT	Corrente Motore con Asse fermo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		A	**Extreme value check:**	no
Decimal places:		3	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0113, Maximum motor speed (nmax)

Value in the feedback memory for the maximum possible motor speed.

For MHD, MKD and MKE motors, the value will be copied into the active parameter **S-0-0113, Maximum motor speed (n_{max})** when the amplifier is turned on.

See also the functional description: "Limiting Velocity".

S-7-0113 - Attributes

Para. Name:	**DE**	Maximal-Geschwindigkeit des Motors		
	EN	Maximum motor speed (nmax)		
	FR	Vitesse maximale du moteur		
	ES	Velocidad máxima del motor		
	IT	Velocità massima Motore (nmax)		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		U/min	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0116, Feedback 1 Resolution

Value in the feedback memory for resolution of the motor encoder.

For MHD, MKD and MKE motors, the value will be copied into the active parameter **S-0-0116, Feedback 1 Resolution** when the amplifier is turned on.

See also the functional description: "Motor Encoder Resolution".

S-7-0116 - Attributes

Para. Name:	**DE**	Geber 1 Auflösung		
	EN	Feedback 1 Resolution		
	FR	Résolution codeur 1		
	ES	Resolución encoder 1		
	IT	Risoluzione Feedback 1		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		Zyklen/Umdr	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0117, Feedback 2 Resolution

Value in the feedback memory for resolution of the motor encoder.

The value will be copied into the active parameter **S-0-0117, Feedback 2 Resolution** when the amplifier is turned on.

See also the functional description: "Motor Encoder Resolution".

S-7-0117 - Attributes

Para. Name:	**DE**	Geber 2 Auflösung		
	EN	Feedback 2 Resolution		
	FR	Résolution codeur 2		
	ES	Resolución encoder 2		
	IT	Risoluzione Feedback 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		Cycles/Rev	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0141, Motor type

Text in the feedback memory for the motor type.

For MHD, MKD and MKE motors, the value will be copied into the active parameter S-0-0141, Motor type when the amplifier is turned on.

The diagnostic message „F208 UL motor type has changed“ is based on a comparison between S-0-0141 and S-7-0141.

Examples:

MKD 071B-061-KP1-BN

MKE 096B-047-GG0-KN

See also the functional description: "Drive Controllers and Motors"

S-7-0141 - Attributes

Para. Name:	**DE**	Motor-Typ		
	EN	Motor type		
	FR	Type de moteur		
	ES	Tipo de motor		
	IT	Tipo Motore		
Function:		Parameter	**Editability:**	no
Data length:		1Byte var.	**Memory:**	-
Format:		ASCII	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		-	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0177, Absolute distance 1

This parameter is used for the homing procedure of an absolute motor feedback. It describes the offset between the zero point of the motor feedback and the machine's zero-point.

S-7-0177 - Attributes

Para. Name:	**DE**	Absolutgeber-Offset 1		
	EN	Absolute distance 1		
	FR	Décalage absolu 1		
	ES	Distancia absoluta 1		
	IT	Offset 1 per Dimensionamenti assoluti (Feedback Motore)		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		-	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

S-7-0178, Absolute distance 2

This parameter is used for the homing procedure of an absolute optional feedback. It describes the offset between the zero point of the optional feedback and the machine's zero-point.

S-7-0178 - Attributes

Para. Name:	**DE**	Absolutgeber-Offset 2
	EN	Absolute distance 2
	FR	Décalage absolu 2
	ES	Distancia absoluta 2
	IT	Offset 2 per Dimensionamenti assoluti (Feedback Motore)

Function:	Parameter	**Editability:**	P23
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:		**Extreme value check:**	no
Decimal places:	-	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

3 Product Specific Parameters

P-0-0004, Velocity loop smoothing time constant

The time constant that can be activated in this parameter affects the output of the velocity loop controller. It can be used to suppress quantization effects and limit the bandwidth of the velocity loop controller. The limit frequency is derived from smoothing time constant T resulting from the relationship

$$f_g = \frac{1}{2 \cdot \pi \cdot \mathrm{T}}$$

Inputting the minimum input value turns the filter off.

See also the functional description: "Setting the Velocity Controller"

P-0-0004 - Attributes

Para. Name:	**DE**	Drehzahlregler-Glättungszeitkonstante		
	EN	Velocity loop smoothing time constant		
	FR	Temps de filtrage boucle de vitesse		
	ES	Tiempo de alisamiento n.d.r.		
	IT	Tempo di Smorzamento nell'Anello di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00250 / 65500		
Default value:		-	**Cyc. transmittable:**	-

P-0-0008, Activation E-Stop function

Parameter P-0-0008 can be used to activate the E-Stop input and to select a response for bringing the drive to standstill.

Parameter structure:

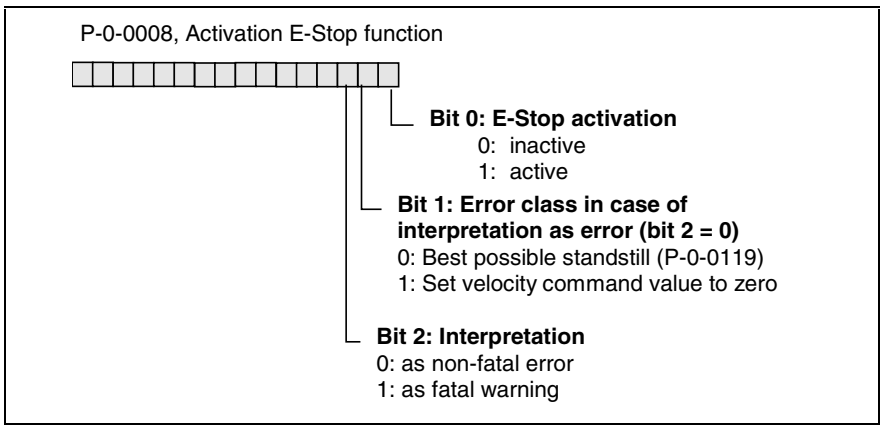


Fig. 3-1: P-0-0008, Activation E-Stop function

Note: The input polarity is always 0-active.

Note: For DIAX devices, bit 0 also activates the monitoring of the external 24V supply.

See also the functional description: "Activation and Polarity of the E-Stop Input"

P-0-0008 - Attributes

Para. Name:	**DE**	Aktivierung E-Stop-Funktion		
	EN	Activation E-Stop function		
	FR	Activation fonction Arrêt d'urgence		
	ES	Activación función parada de emergencia		
	IT	Attivazione della Funzione E-Stop		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0009, Error message number

If the drive identifies a class 1 diagnostic error, then a bit gets set in parameter **S-0-0011, Class 1 diagnostics**. Bit 13 is set in the operation status word for ''Error in class 1 diagnostic''.

Additionally, for a precise diagnosis,

- the diagnosis number is displayed in the 7-segment display and stored in parameter **S-0-0390, Diagnostic message number,**
- the plain text diagnosis is stored in parameter **S-0-0095, Diagnostic message**
- and the relevant error number is stored in parameter **P-0-0009, Error message number**.

If no error is pending, then the value of parameter **P-0-0009 Error message number** is 0.

Example for a diagnosis:

S-0-0390 F822 (hex)

P-0-0009: 822 (decimal)

S-0-0095: F822 Motor encoder failure: signal too small

7-segment display: Changing between "F8" and "22"

See also the functional description: "Error Number"

P-0-0009 - Attributes

Para. Name:	**DE**	Fehler-Nummer
	EN	Error message number
	FR	Numéro erreur
	ES	Error numero
	IT	Numero Messaggio Errore

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	no
Format:	DEC_OV	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0010, Excessive position command value

In position control mode (S-0-0032...35 = 0x0003, 0x0004, 0x000B or 0x000C), the NC sets position commands at constant intervals (all **S-0-0001, NC Cycle time (TNcyc)**). Within the drive, the difference of two sequential position commands are monitored for excessive values, i.e., the position commands must satisfy:

$$\frac{X_{Soll}(k) - X_{Soll}(k-1)}{S-0-0001} \leq S-0-0091$$

whereby:

$X_{soll}(k)$ = NC position command in current cycle
$X_{soll}(k-1)$ = NC position command in previous cycle
S-0-0091, Bipolar velocity limit value
S-0-0001, NC Cycle time (TNcyc)

Fig. 3-2: Monitoring of the position command for excessive values for in the position control mode

If the above condition is violated, then error **F237, Excessive position command difference** is triggered and the drive decelerates as set in parameter **P-0-0119, Best possible deceleration**. The error triggering excessive position command value ($X_{soll}(k)$) is stored in parameter **P-0-0010, Excessive position command value**, the last valid position command ($X_{soll}(k-1)$) in parameter **P-0-0011, Last valid position command value**.

See also the functional description: "Position Command Value Monitoring"

P-0-0010 - Attributes

Para. Name:	**DE**	Exzessiver Lagesollwert
	EN	Excessive position command value
	FR	Consigne de position excessive
	ES	Valor nominal de posición excesivo
	IT	Posizione comandata eccessiva

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	no
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0076	**Extreme value check:**	no
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0011, Last valid position command value

In position control mode (S-0-0032...35 = 0x0003, 0x0004, 0x000B or 0x000C), the NC sets position commands at constant intervals (every **S-0-0001, NC Cycle time TNcyc**). The difference of two sequential

position commands is monitored for excessive value. The position command values must satisfy the following relation:

$$\frac{X_{soll}(k)-X_{soll}(k-1)}{S-0-0001} \leq S-0-0091$$

whereby:

$X_{soll}(k)$ = NC-position command in current cycle
$X_{soll}(k-1)$ = NC-position command in previous cycle
S-0-0091, Bipolar velocity limit value
S-0-0001, NC Cycle time (TNcyc)

Fig.3-3: Monitoring of the position command for excessive values in the position control mode

If the above condition is violated, then error **F237, Excessive position command difference** is triggered, and the drive decelerates as set in parameter **P-0-0119, Best possible declaration**. The error triggering excessive position command value $X_{com}(k)$ is stored in parameter **P-0-0010, Excessive position command value**, the last valid position command $X_{com}(k-1)$ in parameter **P-0-0011, Last valid position command value**.

See also the functional description: "Position Command Value Monitoring"

P-0-0011 - Attributes

Para. Name:	**DE**	Letzter gültiger Lagesollwert		
	EN	Last valid position command value		
	FR	Dernière consigne de position valable		
	ES	Valor nominal de posición ultimo valido		
	IT	Ultima Posizione comandata valida		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	no
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0012, C300 Command Set absolute measurement

When an absolute measuring system is started for the first time, the drive will indicate a random feedback value that is not referenced to the machine zero-point.

The position feedback of this measuring system can be set to the desired value with the command "Set absolute measurement". After the "Set absolute measurement" command is executed, the position feedback value of the measurement-supplied encoder will contain a defined reference to the machine zero-point. Thereafter, the value of parameter **S-0-0403, Position feedback value status** is 1. The corresponding bit in the parameter **S-0-0403, Position feedback status** is set for the selected encoder.

All information will be available after reset because all necessary data from the absolute measurement system is buffered in feedback data memory or in parameter data memory. The position feedback value permanently retains its reference to the machine zero-point.

Parameter P-0-0012 can be used to execute this function.

See also the functional description: "Set Absolute Measuring"

P-0-0012 - Attributes

Para. Name:	**DE**	C300 Kommando Absolutmaß setzen		
	EN	C300 Command Set absolute measurement		
	FR	C300 Instruction Calage d'origine absolue		
	ES	C300 Comando Fijar medición absoluta		
	IT	C300 Comando Impostazione misura assoluta		
Function:		Command	**Editability:**	P4
Data length:		2Byte	**Memory:**	no
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0014, D500 Command determine marker position

The command **P-0-0014, D500 Command determine marker position** is used to check the detection of the reference marker of an incremental measuring system. If there is an incremental measuring system and the command has been activated, then once the reference mark is detected, the actual position of the measuring system is stored in parameter **S-0-0173, Marker position A**. It is then signalled that the command is completed. Given 2 measuring systems, the bit 3 in **S-0-0147, Homing parameter** determines which measuring system is used.

See also the functional description: "Command - detect marker position"

P-0-0014 - Attributes

Para. Name:	**DE**	D500 Kommando Markerposition ermitteln		
	EN	D500 Command determine marker position		
	FR	D500 Instruction Détermination position marqueur		
	ES	D500 Comando Determinar posición de marcador		
	IT	D500 Comando Determinazione posizione marker		
Function:		Command	**Editability:**	P4
Data length:		2Byte	**Memory:**	no
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		0 / 3		
Default value:		0	**Cyc. transmittable:**	no

P-0-0015, Memory address

This parameter can be used to select a memory address in the drive for test purposes. The content will be displayed in the parameter **P-0-0016, Content of memory address**.

P-0-0015 - Attributes

Para. Name:	**DE**	Speicheradresse		
	EN	Memory address		
	FR	Adresse mémoire		
	ES	Dirección de memoria		
	IT	Indirizzo Memoria		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / 0xffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0016, Content of memory address

This parameter displays the contents of the memory address set in parameter **P-0-0015, Memory address** (only for test purposes).

P-0-0016 - Attributes

Para. Name:	**DE**	Inhalt der Speicheradresse		
	EN	Content of memory address		
	FR	Contenu de l'adresse mémoire		
	ES	Contenido de la dirección de memoria		
	IT	Contenuto del Indirizzo di Memoria		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	no
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0018, Number of pole pairs/pole pair distance

This parameter indicates the **number of pole pairs** per motor revolution for **rotary motors**. For **linear motors**, the **length of a pole pair** must be indicated in this parameter. This value does not need to be indicated for motors with **motor feedback data memory**, like MKD.

See also the functional description: "Motor Feedback-Data Memory"

P-0-0018 - Attributes

Para. Name:	**DE**	Polpaarzahl/Polpaarweite		
	EN	Number of pole pairs/pole pair distance		
	FR	Nombre de paires de pôles/distance polaire		
	ES	Numero de par de polo/espacio de par de polo		
	IT	Numero di Coppie/Distanza Poli		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		P-0-4014	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0019, Position start value

The position start value sets a defined initialization value for position feedback values 1 and 2 in non-absolute measurement systems. During initialization of the position feedback value with command **S-0-0128, C200 Communication phase 4 transition check**, the drive checks whether the position start value has been written in communications phase 2 or 3. Only then will position feedback values 1 and 2 be set to that value. The position start value is used only for non-absolute encoders.

To preset the actual position value of the drive, the parameter **P-0-0019, Position start value** is used.

See also the functional description: "Actual Feedback Values of Non-Absolute Measurement Systems After Initialization"

P-0-0019 - Attributes

Para. Name:	**DE**	Lageanfangswert		
	EN	Position start value		
	FR	Position à la mise sous tension		
	ES	Valor inicial de posición		
	IT	Valore di Posizione di Partenza		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-214748.3648 / 0214748.3647		
Default value:		-	**Cyc. transmittable:**	-

P-0-0021, List of scope data 1

The measured values of channel 1 of the oscilloscope feature are stored in chronological sequence in parameter **P-0-0021, List of scope data 1** (the oldest scope value is the first element of the list).

See also the functional description: "Oscilloscope Feature"

P-0-0021 - Attributes

Para. Name:	**DE**	Messwertliste 1		
	EN	List of scope data 1		
	FR	Liste des valeurs mesurées 1		
	ES	Lista de valor de medición 1		
	IT	Lista Misure 1		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		P-0-0023	**Validity check:**	no
Unit:		P-0-0023	**Extreme value check:**	no
Decimal places:		P-0-0023	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0022, List of scope data 2

The measured values of channel 2 of the oscilloscope feature are stored in chronological sequence in parameter **P-0-0022, List of scope data 2** (the oldest scope value is the first element of the list).

See also the functional description: "Oscilloscope Feature"

P-0-0022 - Attributes

Para. Name:	**DE**	Messwertliste 2		
	EN	List of scope data 2		
	FR	Liste des valeurs mesurées 2		
	ES	Lista de valor de medición 2		
	IT	Lista Misure 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		P-0-0024	**Validity check:**	no
Unit:		P-0-0024	**Extreme value check:**	no
Decimal places:		P-0-0024	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0023, Signal select scope channel 1

Parameter P-0-0023 determines the signal that will be recorded by channel 1. The following fixed predefined signals are available:

Number	Signal selection	Unit of the scope data list
0 x 00	Channel not activated	--
0 x 01	Actual feedback value dependent on operating mode S-0-0051 or S-0-0053	Dependent on position scaling
0 x 02	Velocity value parameter, S-0-0040	Dependent on velocity scaling
0 x 03	Velocity control deviation (S-0-0347)	Dependent on velocity scaling

0 x 04	Following error, parameter S-0-0189	Dependent on position scaling
0 x 05	Torque/force command value parameter S-0-0080	Percent
0 x 06	Position feedback value 1, S-0-0051	Dependent on position scaling
0 x 07	Position feedback value 2, S-0-0053	Dependent on position scaling
0 x 08	Position command value	Dependent on position scaling

Fig. 3-4: P-0-0023, Signal select scope channel 1

Expanded oscilloscope recording feature:

In addition to the fixed predefined signal selection, it is also possible to record any memory address of the drive. To do this, bit 12 = 1 must be set. Bit 13 defines the data length of the memory signal in question.

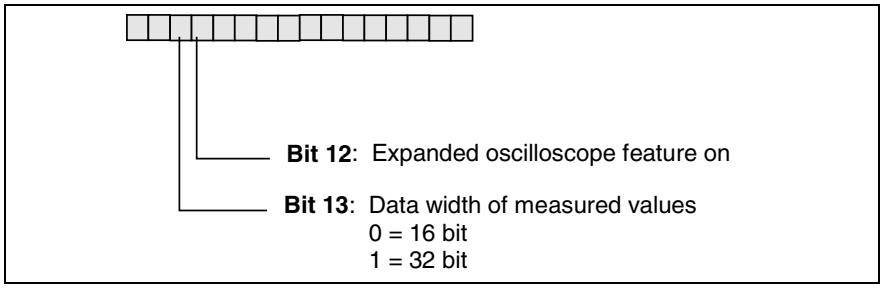


Fig. 3-5: P-0-0023 & P-0-0024, Signal select scope

See also the functional description: "Oscilloscope Feature"

P-0-0023 - Attributes

Para. Name:	**DE**	Signalauswahl 1 Oszilloskop-Funktion		
	EN	Signal select scope channel 1		
	FR	Fonction oscilloscope, sélection signal 1		
	ES	Selección de señal 1 función de osciloscopio		
	IT	Segnale Selezionato Canale 1		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x0000 / 0xffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0024, Signal select scope channel 2

Parameter P-0-0024 determines the signal that will be recorded by channel 2. The following fixed predefined signals are available:

Number	Signal selection	Unit of the scope data list
0 x 00	Channel not activated	--
0 x 01	Actual feedback value dependent on operating mode S-0-0051 or S-0-0053	Dependent on position scaling
0 x 02	Velocity value, parameter (S-0-0040)	Dependent on velocity scaling
0 x 03	Velocity control deviation S-0-0347	Dependent on velocity scaling
0 x 04	Following error, parameter S-0-0189	Dependent on position scaling
0 x 05	Torque/force command value parameter S-0-0080	Percent
0 x 06	Position feedback value 1, S-0-0051	Dependent on position scaling
0 x 07	Position feedback value 2, S-0-0053	Dependent on position scaling
0 x 08	Position command value	Dependent on position scaling

Fig. 3-6: P-0-0024, Signal select scope channel 2

Expanded oscilloscope recording feature:

In addition to the fixed predefined signal selection, it is also possible to record any memory address of the drive. To do this, bit 12 = 1 must be set. Bit 13 defines the data length of the memory signal in question.

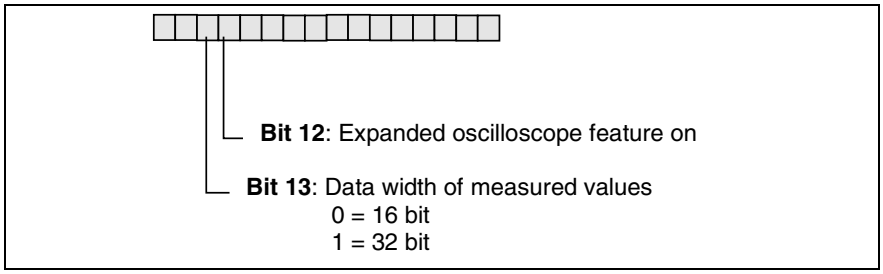


Fig. 3-7: P-0-0023, and P-0-0024, Signal select scope

See also the functional description: "Oscilloscope Feature"

P-0-0024 - Attributes

Para. Name:

DE	Signalauswahl 2 Oszilloskop-Funktion
EN	Signal select scope channel 2
FR	Fonction oscilloscope, sélection signal 2
ES	Selección de señal 2 función de osciloscopio
IT	Segnale Selezionato Canale 2

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	HEX	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	--	**Combination check:**	no
Input min/max:	0x0000 / 0xffff		
Default value:	-	**Cyc. transmittable:**	-

P-0-0025, Trigger source

Parameter **P-0-0025, Trigger source** defines the source that releases the trigger signal. You can choose between:

- an external trigger or
- an internal trigger

External trigger (P-0-0025 = 0x01)

If the external trigger is selected, then the trigger will be released by bit 0 of **P-0-0036, Trigger control word**.

Internal trigger (P-0-0025 = 0x02)

If the internal trigger is selected, then the parameterized trigger signal will be monitored for the trigger condition, and the trigger will be released as soon as the condition is met (drive-internal triggering).

See also the functional description: "Oscilloscope Feature"

P-0-0025 - Attributes

Para. Name:	**DE**	Triggerquelle Oszilloskop-Funktion
	EN	Trigger source
	FR	Source de déclenchement pour fonction oscilloscope
	ES	Origen de trigger osciloscopio
	IT	Sorgente Trigger

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00001 / 00002		
Default value:	-	**Cyc. transmittable:**	-

P-0-0026, Trigger signal selection

For internal trigger sources (**P-0-0025, Trigger source** = 2), the parameter **P-0-0026, Trigger signal selection** defines the signal that is monitored for the parameterized trigger condition. The following fixed predefined signals are available:

Trigger signal numbers	Trigger signal	Corresponding trigger level
0 x 00	Not defined	Not defined
0 x 01	Feedback value based on mode of operation	Position data P-0-0027
0 x 02	Velocity feedback value, Parameter S-0-0040	Velocity data P-0-0028
0 x 03	Velocity deviation	Velocity data P-0-0028
0 x 04	Following error, parameter S-0-0189	Position data P-0-0027
0 x 05	Torque command value, parameter S-0-0080	Torque data P-0-0029
0 x 06	Position feedback value 1, S-0-0051	Depending on position scaling
0 x 07	Position feedback value 2, S-0-0053	Depending on position scaling
0 x 08	Position command value	Depending on position scaling

Fig. 3-8: P-0-0026, Trigger signal selection

Expanded trigger signals can also be defined by setting bit 12.

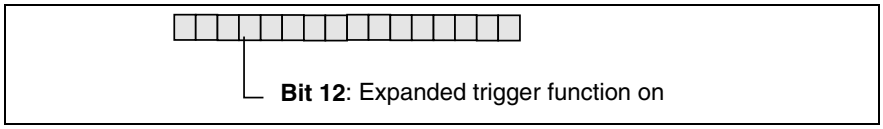


Fig. 3-9: P-0-0026, Trigger signal selection

See also the functional description: "Oscilloscope Feature"

P-0-0026 - Attributes

Para. Name:	**DE**	Triggersignalauswahl Oszilloskop-Funktion
	EN	Trigger signal selection
	FR	Fonction oscilloscope, sélection signal de déclenc.
	ES	Selección de señal de trigger función osciloscopio
	IT	Segnale di Trigger selezionato

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	HEX	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	--	**Combination check:**	no
Input min/max:	0x0000 / 0x0005		
Default value:	-	**Cyc. transmittable:**	-

P-0-0027, Trigger level for position data

If **P-0-0026, Trigger signal selection** = "1" or "4", then parameter **P-0-0027, Trigger Level for position data** determines the position value at which the trigger will be released as long as the correct edge has been recognized.

See also the functional description: "Oscilloscope Feature"

P-0-0027 - Attributes

Para. Name:	**DE**	Triggerschwelle für Lagedaten		
	EN	Trigger level for position data		
	FR	Seuil de déclenchement données de position		
	ES	Umbral de trigger para datos de posición		
	IT	Livello di Trigger per Dati di Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-214748.3648 / 0214748.3647		
Default value:		-	**Cyc. transmittable:**	-

P-0-0028, Trigger level for velocity data

If **P-0-0026, Trigger signal selection** = "2" or "3" then parameter **P-0-0028, Trigger Level for velocity data** determines the velocity feedback value at which the trigger will be released as long as the correct edge has been recognized.

See also the functional description: "Oscilloscope Feature"

P-0-0028 - Attributes

Para. Name:	**DE**	Triggerschwelle für Geschwindigkeitsdaten		
	EN	Trigger level for velocity data		
	FR	Seuil de déclenchement données de vitesse		
	ES	Umbral de trigger para datos de velocidad		
	IT	Livello di Trigger per Dati di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		-090000.0001 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

P-0-0029, Trigger level for torque/force data

If **P-0-0026, Trigger signal selection** = “5", then Parameter **P-0-0029, Trigger level for torque/force data** determines the torque/force value at which the trigger will be released as long as the correct edge has been recognized.

See also the functional description: "Oscilloscope Feature"

P-0-0029 - Attributes

Para. Name:	**DE**	Triggerschwelle für Drehmoment/Kraftdaten		
	EN	Trigger level for torque/force data		
	FR	Seuil de déclenchement données de couple/force		
	ES	Umbral de trigger para datos de par/fuerza		
	IT	Livello di Trigger per Dati Coppia/Forza		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		%	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		-0099.6 / 00099.6		
Default value:		-	**Cyc. transmittable:**	-

P-0-0030, Trigger edge

Parameter **P-0-0030 Trigger edge** defines the signal change with which a trigger event can be released.

Number	Trigger edge
1	Triggering on the positive edge of the trigger signal
2	Triggering on the negative edge of the trigger signal
3	Triggering on both the positive edge and negative edge of the trigger signal
4	Triggering if the trigger signal equals the trigger level

Fig. 3-10: Selection of trigger edges

See also the functional description: "Oscilloscope Feature"

P-0-0030 - Attributes

Para. Name:	**DE**	Triggerflanke		
	EN	Trigger edge		
	FR	Front de déclenchement		
	ES	Lado de trigger		
	IT	Fronte di Trigger		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00001 / 00004		
Default value:		-	**Cyc. transmittable:**	-

P-0-0031, Timebase

The Timebase defines the time intervals in which the probe values of the selected signals of the oscilloscope feature are sampled. Possible time intervals range from 250 µs (resp. 500 µs) to 100 ms.

Note that in general:

Recording duration = Time resolution • Size of memory [µs]

See also the functional description: "Oscilloscope Feature"

P-0-0031 - Attributes

Para. Name:	**DE**	Zeitauflösung		
	EN	Timebase		
	FR	Base de temps		
	ES	Resolución de tiempo		
	IT	Base dei Tempi		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		us	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000250 / 0000100000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0032, Size of memory

The size of memory determines the number of recorded probe values per measurement. A maximum of 512 probe values can be recorded per channel.

The memory size and time resolution together determine the recording duration. The minimum recording duration is 128 ms, and the maximum duration is 51.2 s.

Note that in general:

Recording duration = Time resolution • Size of memory [µs]

See also the functional description: "Oscilloscope Feature"

P-0-0032 - Attributes

Para. Name:	**DE**	Speichertiefe
	EN	Size of memory
	FR	Taille mémoire
	ES	Tamaño de memoria
	IT	Dimensione Memoria

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00002 / 00512		
Default value:	-	**Cyc. transmittable:**	-

P-0-0033, Number of samples after trigger

Parameter P-0-0033 defines the number of probe values, or samples, that will be entered in the probe value list after the trigger event. In this way it is possible to set a parameter to define a trigger delay. Parameter P-0-0033 is used to do this.

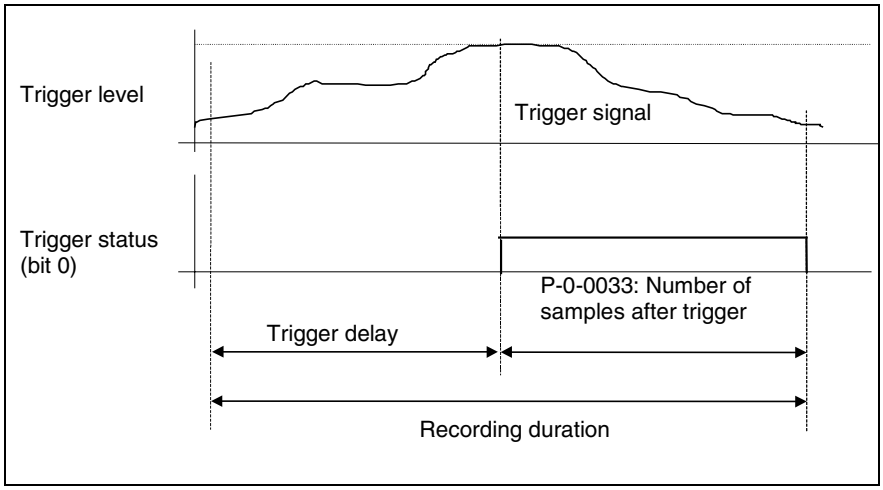


Fig. 3-11: Triggering

See also the functional description: "Oscilloscope Feature"

P-0-0033 - Attributes

Para. Name:	**DE**	Anzahl der Messwerte nach Triggerereignis
	EN	Number of samples after trigger
	FR	Nombre de mesures après déclenchement
	ES	Numero de muestras despues de trigger
	IT	Numero di Campionamenti dopo Trigger

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00512		
Default value:	-	**Cyc. transmittable:**	-

P-0-0034, Position command additional actual value

This parameter is used as the starting value for synchronization in a synchronization operating mode with underlying position control.

It contains the difference between the position feedback value and the synchronous position command value generated from the master axis position.

P-0-0034 - Attributes

Para. Name:	**DE**	Lagesollwert additiv Istwert		
	EN	Position command additional actual value		
	FR	Consigne de position additive, valeur actuelle		
	ES	Valor nominal de posición valor real		
	IT	Comando di Posizione Addizzionale		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0035, Delay from trigger to start

Parameter P-0-0035 indicates the number of cycles between the trigger event (internal) and the release of the trigger (bit 0 trigger control word) with external triggering.

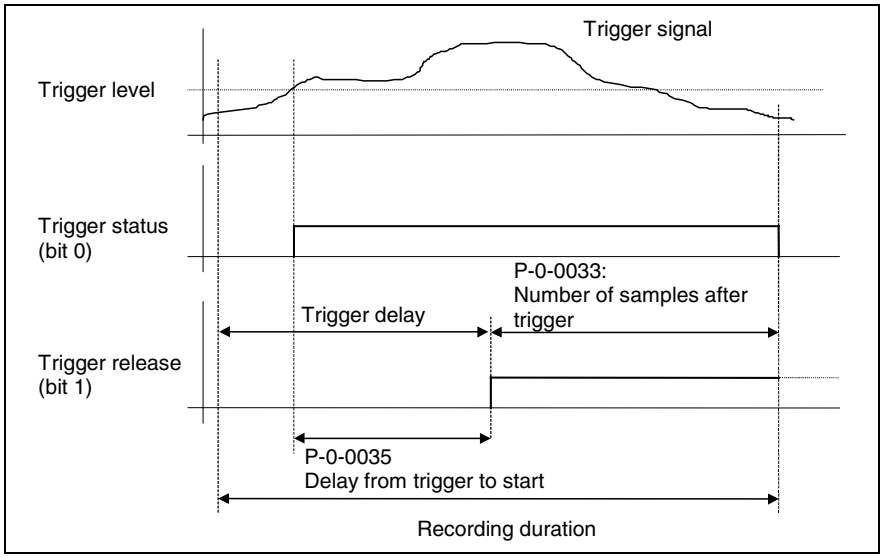


Fig. 3-12: Triggering

Since there is a delay between the transmission of the trigger event by the control system and the release of the trigger, the delay is measured by the drive and stored in parameter **P-0-0035, Delay from trigger to start**. A time-correct display of signals is ensured by using this parameter for visualizing the probe values.

See also the functional description: "Oscilloscope Feature"

P-0-0035 - Attributes

Para. Name:	**DE**	Triggersteuerversatz		
	EN	Delay from trigger to start		
	FR	Délai de déclenchement		
	ES	Retardo de mando de trigger		
	IT	Ritardo del Trigger dopo Start		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0036, Trigger control word

Parameter P-0-0036 controls the oscilloscope function.

- Bit 2 activates the function, i.e., the lists of scope data are filled with the selected data.
- Bit 1 activates trigger monitoring.
- Bit 0 can release a trigger event. If a valid edge is recognized, the probe-value memory will be completed as specified by parameter **P-0-0033, Number of samples after the trigger**, and the oscilloscope function will be deactivated by resetting bits 1 and 2 in the trigger control word.

Parameter structure:

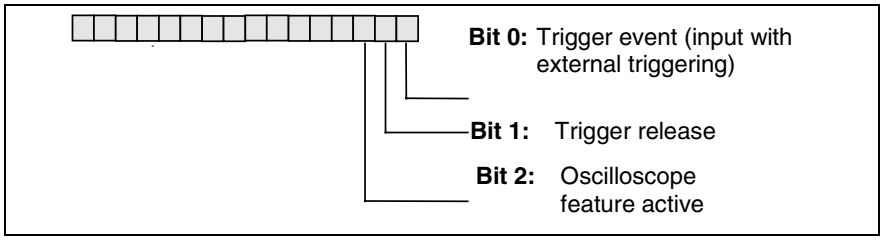


Fig. 3-13: P-0-0036, Trigger control word

See also the functional description: "Oscilloscope Feature"

P-0-0036 - Attributes

Para. Name:	**DE**	Triggersteuerwort		
	EN	Trigger control word		
	FR	Mot de contrôle déclenchement		
	ES	Palabra de mando de trigger		
	IT	Controllo Trigger		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0037, Trigger status word

Status messages for the oscilloscope function.

The parameter P-0-0037 offers various pieces of information about the current status of the oscilloscope function.

Parameter structure:

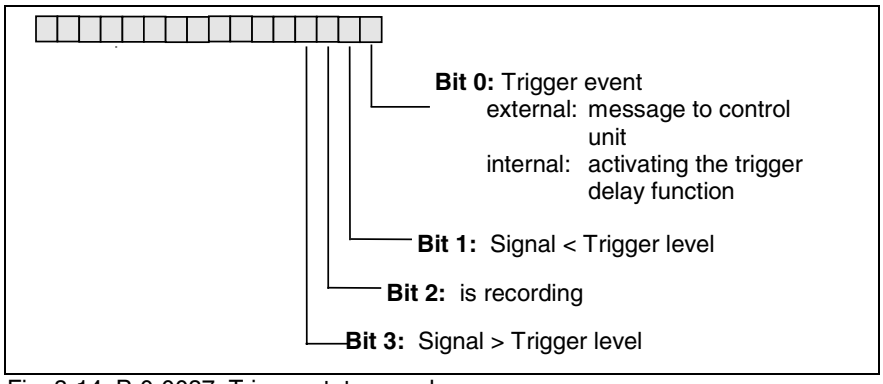


Fig. 3-14: P-0-0037, Trigger status word

See also the functional description: "Oscilloscope Feature"

P-0-0037 - Attributes

Para. Name:	**DE**	Triggerstatuswort		
	EN	Trigger status word		
	FR	Mot d'état déclenchement		
	ES	Palabra de estado de trigger		
	IT	Stato Trigger		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0051, Torque/force constant

The torque/force constant determines what drive torque or force the motor will deliver at a specific effective current. For synchronous motors, this value depends entirely on the design of the motor.

In asynchronous motors, this value is valid as long as the motor is not operated in the field-weakening range. For MHD, MKD and MKE motors, this parameter is stored in the feedback data memory and cannot be changed.

$$MA\ [Nm, N] = (P\text{-}0\text{-}0051) \bullet (S\text{-}0\text{-}0111) \bullet (S\text{-}0\text{-}0080)$$

where:

MA	=	Drive torque
P-0-0051	=	Torque/force constant, [Nm/A] or [N/A]
S-0-0111	=	Motor current at standstill [A]
S-0-0080	=	Torque/force command [%]

Fig. 3-15: Drive torque

See also the functional description: "Motor Feedback-Data Memory"

P-0-0051 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Konstante		
	EN	Torque/force constant		
	FR	Constante de couple/force		
	ES	Constante de par/fuerza		
	IT	Costante di Coppia/Forza		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		2	**Combination check:**	no
Input min/max:		000.01 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

P-0-0052, Position feedback value 3

If the control drive is operated with a master drive, the parameter P-0-0052 displays the current position of the master drive and transmits it to the control system.

The position feedback value format amounts to 2^20 increments per rotation and cannot be set.

See also the functional description: "Master Axis Feedback Analysis"

P-0-0052 - Attributes

Para. Name:	**DE**	Lage-Istwert 3		
	EN	Position feedback value 3		
	FR	Position réelle 3		
	ES	Valor real de posición 3		
	IT	Feedback di Posizione Valore 3		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		Inkr	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0053, Master drive position

The Master drive position is either

- determined in the drive by evaluating the master drive encoder (operation with real master axis), or
- given cyclically from the NC in equidistant time intervals (virtual master axis).

This parameter serves as the command value default for the control drive in the following operating modes:

- Velocity synchronization
- Phase synchronization
- Electronic cam shaft

See also the functional description: "Operating mode: electronic cam shaft with virtual master axis"

P-0-0053 - Attributes

Para. Name:	**DE**	Leitachsposition		
	EN	Master drive position		
	FR	Position axe guide		
	ES	Posición eje conductor		
	IT	Posizione Master		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		Incr	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0059, SSI-Emulator resolution

Parameter **P-0-0059, SSI-Emulator resolution** indicates with how many increments per encoder rotation the **P-0-0059, Master drive position** is transmitted over the interface (DSA) in SSI format. The SSI format of 25 bits (12 bits per rotation, 12 bits for rotations, 1 monitoring bit for transmitting errors) is not affected.

See also the functional description: "Master axis Position Output"

P-0-0059 - Attributes

Para. Name:	**DE**	SSI-Emulator-Auflösung		
	EN	SSI-Emulator resolution		
	FR	Résolution émulation codeur SSI		
	ES	Resolución de emulador SSI		
	IT	Risoluzione Emulatore SSI		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00360 / 04096		
Default value:		-	**Cyc. transmittable:**	-

P-0-0060, Filter time constant additional pos. command

If the **P-0-0155, Synchronization mode** is set, then the dynamic synchronization will be switched off after the absolute synchronization is reached for the first time. Changes to the **S-0-0048, Position command value additional** will be smoothed with a 1st order filter. The time constant of the filter can be set with this parameter.

See also the functional description: "Dynamic synchronization in the phase synchronization operating mode"

P-0-0060 - Attributes

Para. Name:	**DE**	Filterzeitkonstante Lagesollwert additiv		
	EN	Filter time constant additional pos. command		
	FR	Temps de filtrage consigne de pos. addit.		
	ES	Tiempo de filtro valor nominal posición adicional		
	IT	Tempo di Filtro su Comandi add. di Avanzamento		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		000.00 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

P-0-0061, Angle offset begin of profile

The profile (table) will be shifted by this angle in relation to the master drive position. The offset is used in the cam shaft operating mode.

P-0-0061 - Attributes

Para. Name:	**DE**	Winkelverschiebung Tabellenanfang		
	EN	Angle offset begin of profile		
	FR	Début de table de décalage angulaire		
	ES	Desplazamiento de fase inicio de tabla		
	IT	Offset del Angolo per Inizio Profili		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		Deg	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		0000000.0000 / 0000359.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0072, Cam shaft profile 1

This parameter contains a table with 1024 elements with tab(φ) support points for the cam shaft profile. The distance between the support points dφ is derived from the number of elements:

$$d\varphi = 360° / 1024 = 0.35°$$

The first element in the table is the support point for φ = 0°. The last element of the table is the support point for φ = 360° - dφ.

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0072 - Attributes

Para. Name:	**DE**	Kurvenscheibe Tabelle 1		
	EN	Cam shaft profile 1		
	FR	Tableau de profil came 1		
	ES	Perfil disco de leva tabla 1		
	IT	Tabella Profilo Camma		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte var.	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		6	**Combination check:**	no
Input min/max:		-0199.999999 / 00199.999999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0073, Cam shaft distance 2

Besides parameter P-0-0093 this parameter defines a second value for the cam shaft distance. The values of a cam shaft table given in % are multiplied by this value.

This parameter is effective only, if in **P-0-0088, Control word for synchronous operation modes** the function "Clocked pull rolls" is activated via Bit 5.

P-0-0073 - Attributes

Para. Name:	**DE**	Kurvenscheibe Hub 2		
	EN	Cam shaft distance 2		
	FR			
	ES			
	IT	Distanza Camma 2		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	Param.-E²prom
Format:		DEC_MV	**Validity check:**	P3-4
Unit:		S-0-0076	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		S-0-0076 / S-0-0076		
Default value:		-	**Cyc. transmittable:**	MDT

P-0-0074, Feedback 1 type

This parameter determines the encoder interface to which the motor encoder is connected. The number of the corresponding interface module should be entered in this parameter.

Module:	P-0-0074:	Measurement system:
-	0	None (only with rotary asynchronous motors)
Standard	1	Digital servo feed back or resolver
DLF01.1M	2	Incremental encoder with sine signals from the Heidenhain company, with either µA or 1V signals
DZF02.1M	3	Indramat gear-type encoder
DEF01.1M	5	Incremental encoder with square-wave signals from the Heidenhain company
DAG01.2M	8	Encoder with EnDat interface from the Heidenhain company
DZF03.1M	9	Gearwheel with 1Vpp signals
Standard	10	Resolver without feedback data memory
Standard + DLF01.1M	11	Resolver without feedback data memory plus incremental encoder with sine signals

Fig. 3-16: P-0-0074, Feedback 1 type

Restrictions:

Modules DLF, DZF, DRF and DEF 1 must not be operated simultaneously in a controller.
=> **Danger of Damage!**

It is not possible to combine DLF and DZF. Module DEF 2 can be used to operate an incremental encoder along with DLF or DZF.

See also the functional description: "Determining the Feedback Interface of the Motor Feedback"

P-0-0074 - Attributes

Para. Name:	**DE**	Geber-Typ 1		
	EN	Feedback 1 type		
	FR	Type de codeur 1		
	ES	Tipo de encoder 1		
	IT	Tipo di Feedback 1		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		--- / 00015		
Default value:		-	**Cyc. transmittable:**	-

P-0-0075, Feedback 2 type

This parameter determines the encoder interface to which the external encoder is connected. The number of the corresponding interface module should be entered in this parameter.

Module	P-0-0075	Measuring system
--	0	None
Standard	1	Digital servo feedback
DLF01.1M	2	Incremental encoder with sine signals from the Heidenhain Company, with either 1Vpp or 7..15uApp signals
DZF02.1M	3	Indramat gear-type encoder
DFF01.1M	4	Digital servo feedback from the Heidenhain or Stegmann companies
DEF01.1M	5	Incremental encoder with square-wave signals from the Heidenhain company
DEF02.1M	6	Incremental encoder with square-wave signals from the Heidenhain company
DAG01.2M	7	Encoder with SSI interface
DAG01.2M	8	Encoder with EnDat interface
DZF03.1M	9	Gearwheel encoder with 1Vpp signals

Fig. 3-17: P-0-0075, Feedback 2 type

Restrictions:

Modules DLF, DZF, DRF and DEF 1 must not be operated simultaneously in a controller.
=> **Danger of Damage!**

It is not possible to combine DLF and DZF. Module DEF 2 can be used to operate an incremental encoder along with DLF or DZF.

See also the functional description: "Determining the Encoder Interface of the Optional Encoder"

P-0-0075 - Attributes

Para. Name:	**DE**	Geber-Typ 2		
	EN	Feedback 2 type		
	FR	Type de codeur 2		
	ES	Tipo de encoder 2		
	IT	Tipo di Feedback 2		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00009		
Default value:		-	**Cyc. transmittable:**	-

P-0-0081, Parallel I/O output 1

Parameter **P-0-0081, Parallel I/O Output 1** displays the parallel outputs of the DEA 4.1 module. By means of this parameter the outputs of this module can be addressed.

See also the functional description: "Digital Input/Output"

P-0-0081 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 1		
	EN	Parallel I/O output 1		
	FR	Sortie parallèle 1		
	ES	Salida paralela 1		
	IT	Uscita parallela 1		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0082, Parallel I/O input 1

Parameter **P-0-0082, Parallel I/O input 1** displays the parallel inputs of the DEA 4.1 module. By means of this parameter the inputs of this module can be read.

See also the functional description: "Digital Input/Output"

P-0-0082 - Attributes

Para. Name:	**DE**	Paralleler Eingang 1		
	EN	Parallel I/O input 1		
	FR	Entrée parallèle 1		
	ES	Entrada paralela 1		
	IT	Ingressi paralleli 1		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0083, Gear ratio fine adjust

The transmission ratio of the electronic gearbox is changed by this percent value.

See also the functional description: "Operating mode: Velocity synchronization with virtual master axis"

P-0-0083 - Attributes

Para. Name:	**DE**	Feinabgleich Getriebeübersetzung		
	EN	Gear ratio fine adjust		
	FR	Ajustement fin rapport de réduction		
	ES	Ajuste fino de la reducción de engranaje		
	IT	Regolazione fina rapporto riduttore		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		%	**Extreme value check:**	yes
Decimal places:		6	**Combination check:**	no
Input min/max:		-500.000000 / +500.000000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0085, Dynamic angle offset

With this parameter, the effective master axis position can be offset dynamically as shown in the following equation:

$$\varphi_{\text{Master axis, effective}} = \varphi_{\text{Master}} + \frac{n_{\text{Master axis}}}{\text{Position control KV}} \bullet \text{dynamic angle offset}$$

Fig. 3-18: Offset of the effective master axis position

This function is available in the **cam shaft** operating mode.

The following graph shows the offset position command value and feedback value when P-0-0085 = 100 %:

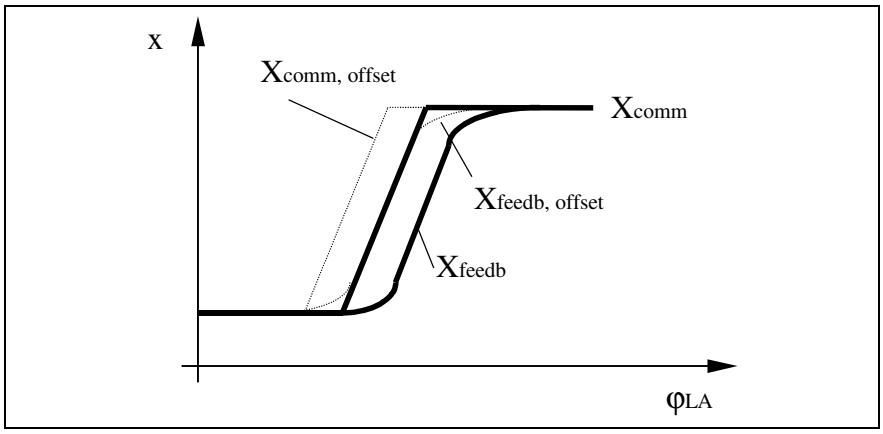


Fig. 3-19: Offset position command value and feedback value when P-0-0085 = 100%

P-0-0085 - Attributes

Para. Name:	**DE**	Dynamische Winkelverschiebung
	EN	Dynamic angle offset
	FR	Décalage angulaire dynamique
	ES	Desplazamiento angular dinamico
	IT	Offset angulario dinamico

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	%	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	000000 / 000600		
Default value:	-	**Cyc. transmittable:**	-

P-0-0087, Offset position feedback value 3

The analysis of a master axis feedback generates a position feedback value that is displayed in parameter **P-0-0052, Position feedback value 3**. The value is within a range that is defined by parameter **P-0-0765, Range of master encoder**.

With parameter **P-0-0087, Offset position feedback value 3**, an offset can be added to this position.

The following applies:

2^20 = 1048575 ⇒ 360° (real master axis)

See also the functional description: "Master Axis Feedback Analysis"

P-0-0087 - Attributes

Para. Name:	**DE**	Lageistwert 3 Offset
	EN	Offset position feedback value 3
	FR	Décalage de position réelle 3
	ES	Offset valor real de posición 3
	IT	Offset Feedback Posizione Valore 3

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	Incr	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	-0001048575 / 00001048575		
Default value:	-	**Cyc. transmittable:**	-

P-0-0088, Control word for synchronous operation modes

Settings for the operating mode cam shaft are realized by means of this parameter.

Parameter structure:

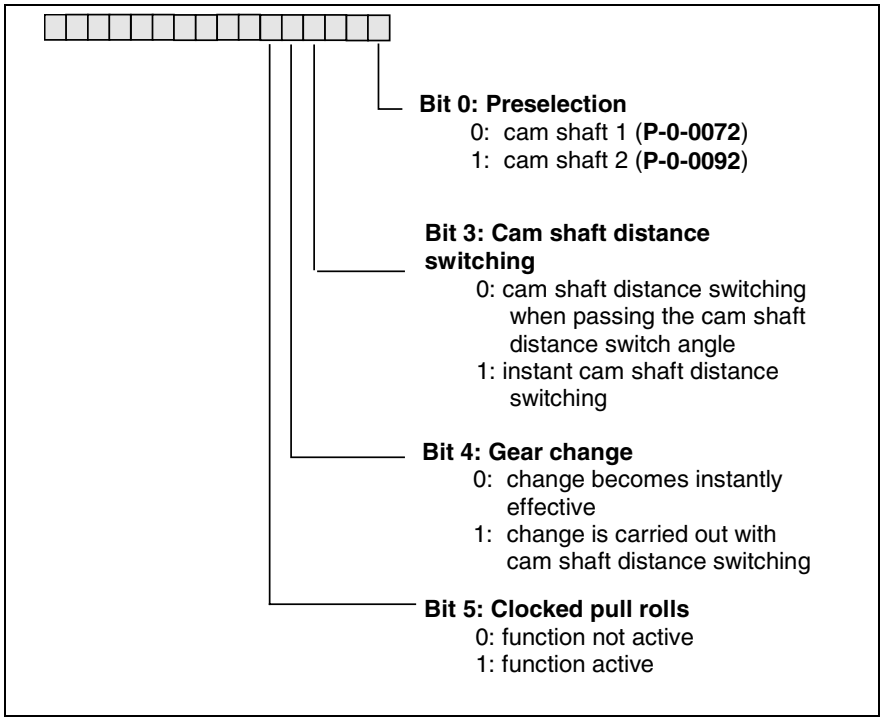


Fig. 3-20: P-0-0088, Control word for synchronous operating modes

A cam shaft profile is selected with bit 0. The profile values are to be taken from this cam shaft profile. When the operating mode is active, the drive only makes a preselection, if the cam shaft angle exceeds **P-0-0094, Cam shaft switch angle**. The active cam shaft profile can be taken from bit 0 of **P-0-0089, Status word for synchronous operating modes**.

Bit 3 controls the acceptance of changed values for **P-0-0093, Cam shaft distance**. If the bit is 0 and the operating mode cam shaft is active, a new value only becomes effective if the cam shaft angle exceeds **P-0-0144, Cam shaft distance switch angle**.

Bit 4 determines whether a change in a parameter of the master drive gear (**P-0-0156, P-0-0157**) is to become effective immediately or only when a changed value becomes effective for the cam shaft distance. This allows simultaneously changing cam shaft distance and master drive gear at **P-0-0144, Cam shaft distance switch angle**.

Bit 5 activates the "clocked pull rolls" function. When the function is active, the profile values are alternately multiplied with the **P-0-0073, Cam shaft distance 2** and the **P-0-0093, Cam shaft distance** in the "electronic cam shaft" mode. The **P-0-0073, Cam shaft distance 2** is used in the ranges in which the profile value differences are negative (falling profile values).

See also functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0088 - Attributes

Para. Name:	**DE**	Steuerwort Synchronbetriebsarten
	EN	Control word for synchronous operation modes
	FR	Mot de contrôle pour modes d'opération avec synchronisation
	ES	Palabra de mando disco de leva
	IT	Controllo Camma

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	0x0000 / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0089, Status word for synchronous operating modes

With bit 0 of this parameter the drive indicates the cam shaft profile from which the profile values are taken.

Bit 4 indicates the position status of **P-0-0753, Position actual value in actual value cycle**. If the position status equals one, absolute synchronization can be carried out in the command value cycle or in divisions of a command value cycle.

Parameter structure:

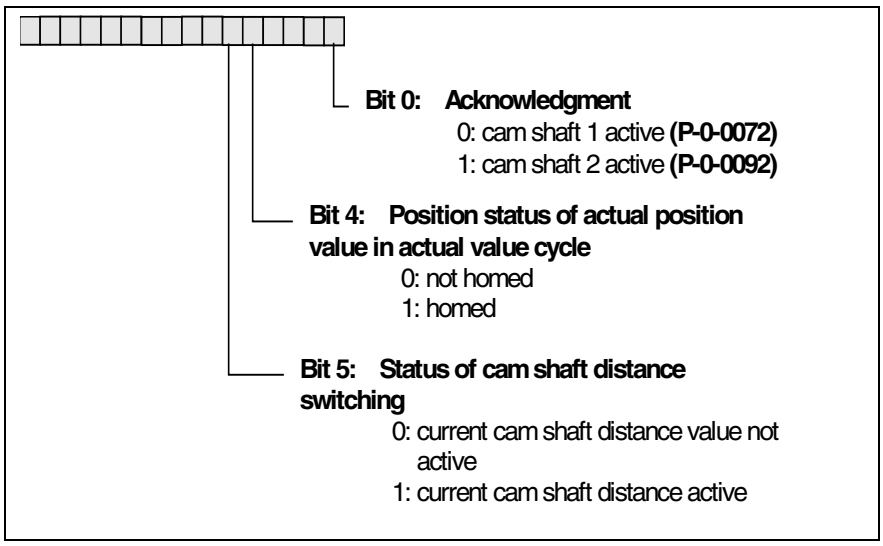


Fig. 3-21: P-0-0089, Status word for synchronous operating modes

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0089 - Attributes

Para. Name:	**DE**	Statuswort Synchronbetriebsarten
	EN	Status word for synchronous operating modes
	FR	Mot d'état came
	ES	Palabra de estado disco de leva
	IT	Stato Camma

Function:	Parameter	**Editability:**	-
Data length:	2Byte	**Memory:**	no
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	0x0000 / 0xffff		
Default value:	-	**Cyc. transmittable:**	-

P-0-0090, Travel limit parameter

Parameter P-0-0090 activates the travel limit switches. In addition, the inputs can be inverted in this parameter (0V on input Limit+/- ⇨ travel range exceeded).

Parameter structure:

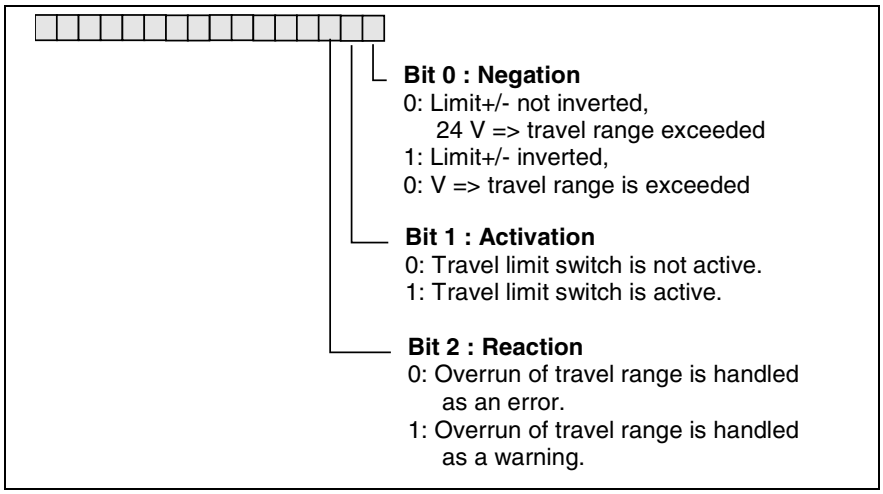


Fig. 3-22: P-0-0090, Travel limit parameter

Note: In addition, for DIAX drives, bit 1 activates the monitoring of the external 24V supply.

See also the functional description: "Travel Range Limits"

P-0-0090 - Attributes

Para. Name:	**DE**	Fahrbereichsgrenzschalter-Parameter
	EN	Travel limit parameter
	FR	Paramètres de butées hardware
	ES	Parámetro limite de desplazamiento
	IT	Parametro Limite Percorso

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	0x0000 / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0092, Cam shaft profile 2

This parameter contains a table with 1024 elements with tab(φ) data points for the cam shaft profile.

The distance between the data points dφ is derived from the number of elements:

$$d\varphi = 360° / 1024 = 0.35°$$

The first element in the table is the data point for φ = 0°. The last element of the table is the data point for φ = 360° - dφ.

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0092 - Attributes

Para. Name:	**DE**	Kurvenscheibe Tabelle 2		
	EN	Cam shaft profile 2		
	FR	Tableau de profil came 2		
	ES	Perfil disco de leva tabla 2		
	IT	Tabella Profilo Camma 2		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte var.	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		6	**Combination check:**	no
Input min/max:		-0199.999999 / 00199.999999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0093, Cam shaft distance

This parameter determines the factor with which the cam profile will be multiplied.

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0093 - Attributes

Para. Name:	**DE**	Kurvenscheibe Hub		
	EN	Cam shaft distance		
	FR	Course de la came		
	ES	Disco de leva carrera		
	IT	Distanza Camma		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0094, Cam shaft switch angle

If the Master-drive position passes this angle in a positive or negative direction, then a switch will be made to the cam-profile table that was preselected by the parameter **P-0-0088, Cam Shaft Control**.

Parameter **P-0-0089, Cam Shaft Status** will be set to the activated cam-profile table.

When the control drive is first initialized, the cam profile set in **P-0-0088** will be activated. Parameter **P-0-0089** also will be set.

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis"

P-0-0094 - Attributes

Para. Name:	**DE**	Umschaltwinkel Kurvenscheibe		
	EN	Cam shaft switch angle		
	FR	Angle de commutation came		
	ES	Angulo de conmutación disco de leva		
	IT	Angolo di Commutazione Camma		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		Deg	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		0000000.0000 / 0214748.3647		
Default value:		-	**Cyc. transmittable:**	-

P-0-0097, Absolute encoder monitoring window

During **S-0-0128, C200 Communication phase 4 transition check,** the absolute encoder monitoring compares the position saved during the last powering down with the current absolute feedback.

If the difference is greater than the value set in parameter **P-0-0097, Absolute encoder monitoring** window, the error message **F276 Absolute encoder out of allowed window** will be generated. This can happen when the axis has been **moved with the power off**, or after changing the motor.

Note: If a 0 is parametrized in parameter **P-0-0097, Absolute encoder monitoring window**, the absolute encoder monitor is deactivated.

As a standard value, 0.1 motor revolution (= 36 degrees in reference to the motor shaft) can be programmed if the axis has an electrically released brake or electrically activated braking mechanism.

See also the functional description: "Absolute encoder monitoring".

P-0-0097 - Attributes

Para. Name:	**DE**	Absolutgeber-Überwachungsfenster
	EN	Absolute encoder monitoring window
	FR	Fenêtre de monitorage du codeur absolu
	ES	Ventana de control de encoder absoluto
	IT	Finestra di monitoraggio del encoder assoluto

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076	**Extreme value check:**	yes
Decimal places:	S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:	0000000.0000 / 0034559.9999		
Default value:	-	**Cyc. transmittable:**	-

P-0-0098, Max. model deviation

The maximum model deviation is the maximum deviation between the real position feedback value and the model position feedback value calculated by the drive.

This parameter can be read out by the user to help set the parameter for **S-0-0159, Monitoring window**.

Two cases must be distinguished for determining the model position feedback value:

1. Position control with following (lag) error

In this operating mode, the controlled system is simulated by a model.

The maximum deviation between the calculated position feedback module value and the real position feedback value is stored in the parameter P-0-0098.

2. Position control without following (lag) error

In this operating mode, the position command value is compared to the position feedback value. The maximum deviation encountered is stored in P-0-0098.

Note: This parameter can be write accessed so that it can be set back to 0, for example.

See also the functional description: "Position control loop monitoring".

P-0-0098 - Attributes

Para. Name:	**DE**	Max. Modellabweichung		
	EN	Max. model deviation		
	FR	Ecart max. au modèle		
	ES	Desviación máx. del modelo		
	IT	Scostamento mass. da modello		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0099, Position command smoothing time constant

The position command smoothing time constant determines the maximum jerk possible in operation modes with closed loop position control.

The maximum jerk is determined by:

$$\text{max. jerk} = \frac{\text{2nd derivative of the position command values}}{\textbf{P-0-0099 Position command value smoothing filter time constant}}$$

Fig. 3-23: Maximum jerk

If you don't want to activate a filter, set P-0-0099 >= S-0-0001, NC Cycle time (TNcyc) (greater or equal).

See also the functional description: "Command value processing : Position Control".

P-0-0099 - Attributes

Para. Name:	**DE**	Lagesollwert-Glättungsfilter-Zeitkonstante		
	EN	Position command smoothing time constant		
	FR	Temps de filtrage consigne de pos.		
	ES	Tiempo de alisamiento posición comando		
	IT	Tempo per Smorzamento Comandi Posiz.		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		000.00 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

P-0-0108, Master drive polarity

This parameter can invert master drive position polarity. This means that an inverted, electronic gearbox can be implemented.

Parameter structure:

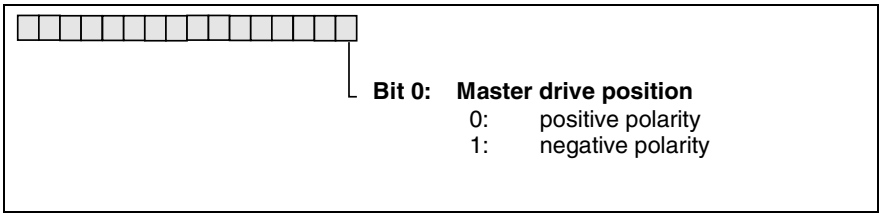


Fig.: 3-24: P-0.0108, Master Drive Polarity

See also the functional description:

- "Operating mode: Velocity synchronization with virtual master axis"
- "Operating mode: Phase synchronization with virtual master axis"

P-0-0108 - Attributes

Para. Name:	**DE**	Polarität Leitantrieb		
	EN	Master drive polarity		
	FR	Polarité entraînement guide		
	ES	Polaridad accionamiento conductor		
	IT	Polarità Master		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00001		
Default value:		-	**Cyc. transmittable:**	-

P-0-0109, Torque/force peak limit

The maximum peak torque of a drive can be limited in a manner suitable to an application with the use of parameter **P-0-0109, Torque/ force peak limit**. In other words, the parameter ensures that the max. torque specific to the application is not exceeded even if **S-0-0092, Bipolar torque/force limit value** is set exceedingly high.

See function description: "Torque/Force Limiting"“.

P-0-0109 - Attributes

Para. Name:	**DE**	Spitzendrehmoment/-Kraft-Begrenzung		
	EN	Torque/force peak limit		
	FR	Limitation couple/force crête		
	ES	Limite par/fuerza punta		
	IT	Limitazione Picco Coppia/Forza		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0086	**Extreme value check:**	yes
Decimal places:		S-0-0086	**Combination check:**	no
Input min/max:		0000.0 / 0099.6		
Default value:		-	**Cyc. transmittable:**	-

P-0-0110, Parallel output 2

The control system can use this parameter to address the outputs of the DEA 5.1 I/O card.

See also the functional description: "Digital input/output"

P-0-0110 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 2
	EN	Parallel output 2
	FR	Sortie parallèle 2
	ES	Salida paralela 2
	IT	Uscite parallele 2

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	--	**Combination check:**	no
Input min/max:	0x0000 / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0111, Parallel input 2

The input signals of DEA 5.1 are produced in this parameter.

See also the functional description: "Digital input/output"

P-0-0111 - Attributes

Para. Name:	**DE**	Paralleler Eingang 2		
	EN	Parallel input 2		
	FR	Entrée parallèle 2		
	ES	Entrada paralela 2		
	IT	Ingressi paralleli 2		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0112, Parallel output 3

The control system can use this parameter to address the outputs of the DEA 6.1 I/O card.

See also the functional description: "Digital input/output"

P-0-0112 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 3		
	EN	Parallel output 3		
	FR	Sortie parallèle 3		
	ES	Salida paralela 3		
	IT	Uscite parallele 3		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0113, Parallel input 3

The input signals of DEA 6.1 are produced in this parameter.

See also the functional description: "Digital input/output"

P-0-0113 - Attributes

Para. Name:	**DE**	Paralleler Eingang 3		
	EN	Parallel input 3		
	FR	Entrée parallèle 3		
	ES	Entrada paralela 3		
	IT	Ingressi paralleli 3		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0117, NC reaction on error

This parameter allows the NC 30 seconds to bring the drive controller to a coordinated deceleration in an error situation if the parameter is set with a "1“. The drive follows the command for this period. The drive reacts with the preset **P-0-0119, Best possible deceleration**.

This feature works for non-fatal errors.

Parameter structure:

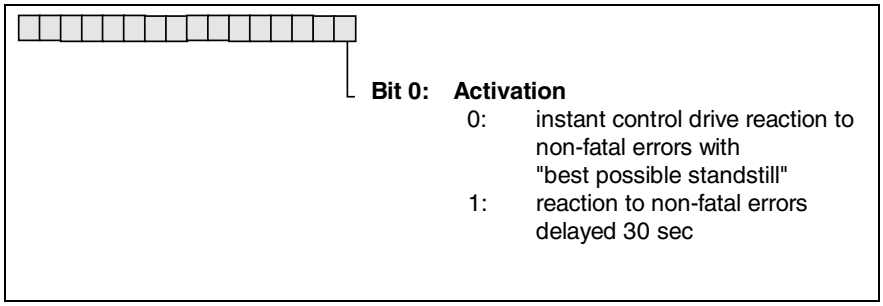


Fig. 3-25: P-0-0117, NC reaction on error

See also the functional description: "NC response in error situation"

P-0-0117 - Attributes

Para. Name:	**DE**	Aktivierung NC-Reaktion im Fehlerfall
	EN	NC reaction on error
	FR	Activation réaction CN en cas de défaut
	ES	Activación reaccion NC en caso de error
	IT	Reazione in Presenza Errore NC

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00001		
Default value:	-	**Cyc. transmittable:**	-

P-0-0118, Power off on error

How a drive error is signaled to the drive package or to the supply module, can be activated in the parameter **P-0-0118, Power off on error.**

Moreover, there are the following possibilities to set the reaction upon error:

- Power off / package reaction in case of error (bit 0)
- Condition for power up (bit 1)
- Time for switching the power off (bit 2)
- Reaction upon undervoltage (bit 3)
- Automatic clearance of undervoltage (bit 4)
- Undervoltage as fatal warning (bit 5)

Parameter structure:

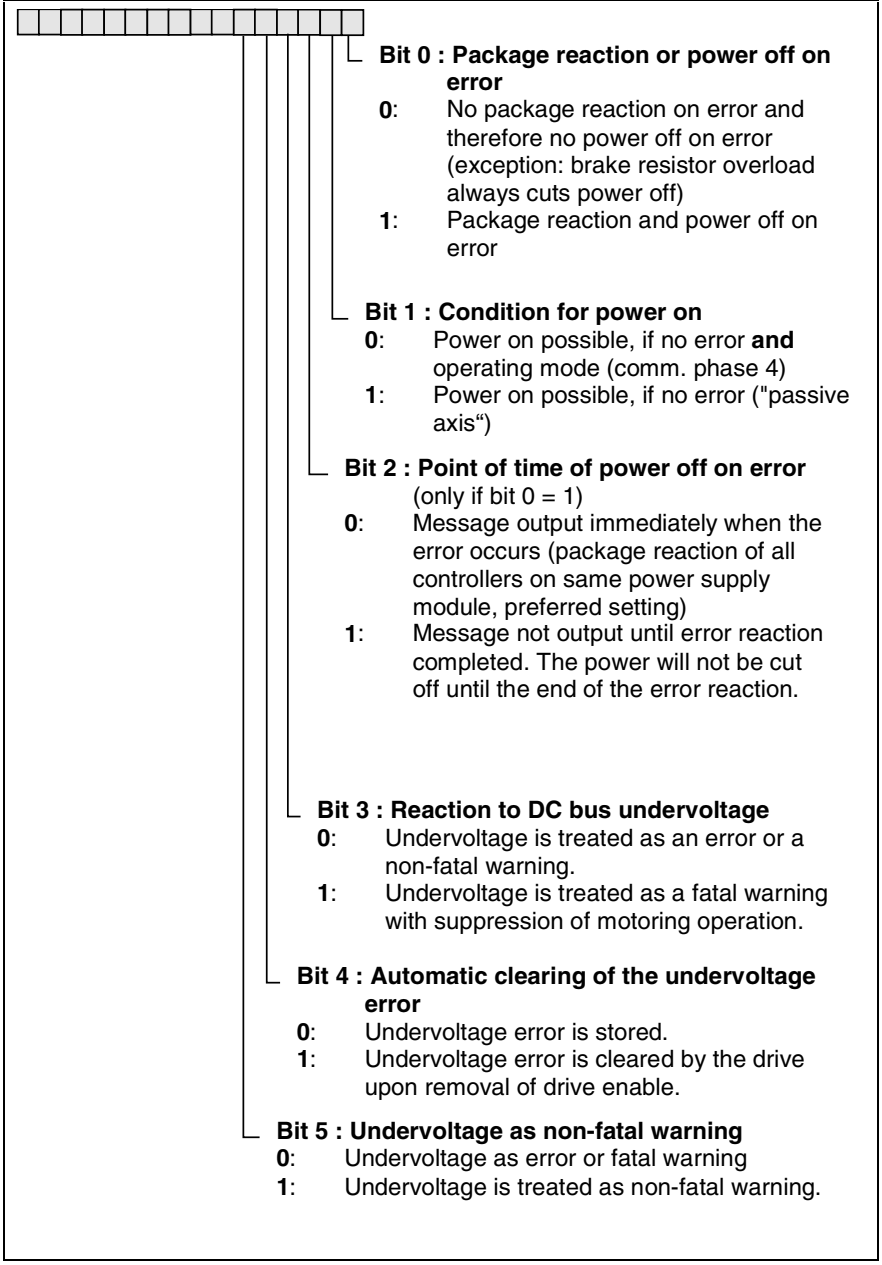


Fig. 3-26: P-0-0118, Power off on error

See also the functional description: "Power off on error".

P-0-0118 - Attributes

Para. Name:	**DE**	Leistungsabschaltung im Fehlerfall		
	EN	Power off on error		
	FR	Mise hors tension en cas de défaut		
	ES	Desconexion de potencia en caso de error		
	IT	Spegnimento Potenza in Caso di Errore		
Function:		Parameter	**Editability:**	P23
Data length:		--	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		--	**Combination check:**	no
Input min/max:		00000 / 00001		
Default value:		-	**Cyc. transmittable:**	-

P-0-0119, Best possible deceleration

This parameter specifies the type of braking to a standstill for the drive in the event of

- a non-fatal error
- an interface error
- a phase regression
- switching off the drive enable signal

P-0-0119	Reaction type:
0	**Velocity command value set to zero** The motor brakes in regard to the torque limit value. The Braking time is set in parameter P-0-0126. As soon as the braking time elapses, the motor holding brake is activated. If the velocity has previously fallen below 10 rpm (rotational motors) or below 10 mm/min (linear motors), then the motor holding brake will be engaged immediately. 150 milliseconds after the mechanical brake is set, the motor is torque free.
1	**Switch to torque-free state**
2	**Velocity command to zero with command ramp and filter** The ramp, i.e. the maximum accel., is set via **P-0-1201, Ramp 1 pitch**, the jerk filter via **P-0.1222, Velocity command filter**.

Fig. 3-27: Deceleration mode for the drive

The drive enable can be set again, at the earliest, after the operation of the error reaction.

See also the functional description: "Drive Error Reaction".

P-0-0119 - Attributes

Para. Name:	**DE**	Bestmögliche Stillsetzung		
	EN	Best possible deceleration		
	FR	Arrêt au plus vite		
	ES	La mejor parada posible		
	IT	Decellerazione massima		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00002		
Default value:		-	**Cyc. transmittable:**	-

P-0-0121, Velocity mix factor feedback 1 & 2

The Velocity mix factor parameter determines the ratio of the velocity feedback values between the motor encoder and the optional encoder.

The input is percentage-based. Note the following:

0% : The velocity controller works solely with the velocity of the motor encoder (= encoder 1).

100% : The velocity controller works solely with the velocity of the opt. encoder (= encoder 2).

If no optional encoder is available, then the parameter is set to 0% .

Note: If the optional encoder is used as the only control encoder, the value is to be set to 100%.

See also the functional description: "Setting the velocity mix factor".

P-0-0121 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Mischfaktor Geber 1 & Geber 2		
	EN	Velocity mix factor feedback 1 & 2		
	FR	Facteur de mixage vitesse codeur 1 & codeur 2		
	ES	Factor de mezcla de velocidad encoder 1 & 2		
	IT	Fattore di miscela di velocità encoder 1 & 2		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		%	**Extreme value check:**	no
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 0100.0		
Default value:		-	**Cyc. transmittable:**	-

P-0-0124, Assignment IDN -> Digital output

This parameter is used to assign a parameter value to a DEA output. If the data capacity of the assigned parameter is greater than that of the DEA port, then the higher-valued bits will be truncated.

Parameter structure:

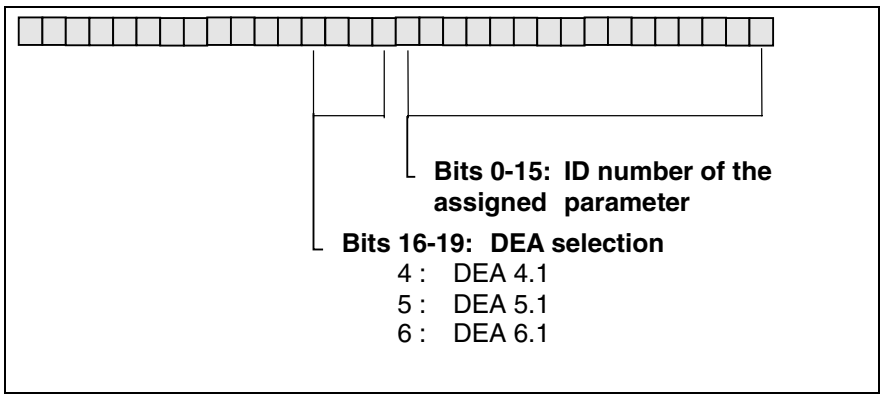


Fig. 3-28: P-0-0124, Assignment IDN -> DEA output

The contents of the parameter are written to the DEA output.

Note: If an ID number is assigned to DEA 4.1, then parameter **P-0-0081, Parallel I/O output 1** can no longer be used.

The same restriction applies to:

- Assignment DEA 5.1 <> P-0-0110, Parallel I/O output 2
- Assignment DEA 6.1 <> P-0-0112, Parallel I/O output 3

See also the functional description: "Digital input/output"

P-0-0124 - Attributes

Para. Name:	**DE**	Zuweisung Identnummer -> Digitaler Ausgang		
	EN	Assignment IDN -> Digital output		
	FR	Assignation IDN -> Sortie digitale		
	ES	Asignación número ident -> salida digital		
	IT	Assegnazione IDN -> Uscite digitale		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0125, Assignment digital input -> IDN

This parameter can be used to assign a DEA input to the value of a parameter.

The input status of the DEA is written in the corresponding parameter.

Parameter structure:

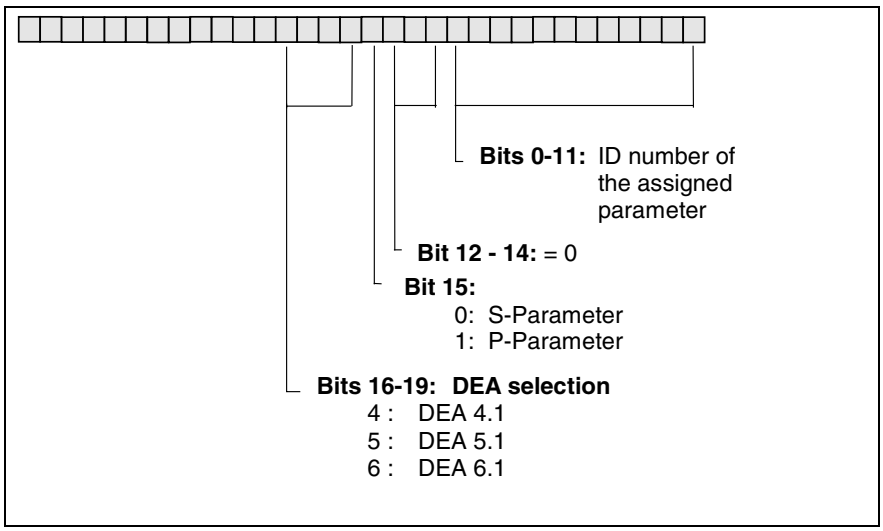


Fig. 3-29: P-0-0125, Assignment DEA-input -> IDN

Note: If a DEA is assigned an ID number using parameter P-0-0125, then the operating data of the assigned ID number will be cyclically overwritten by the DEA input.

See also the functional description: "Digital input/output"

P-0-0125 - Attributes

Para. Name:	**DE**	Zuweisung digitaler Eingang -> Identnummer		
	EN	Assignment digital input -> IDN		
	FR	Assignation entrée DEA -> IDN		
	ES	Asignación entrada DEA -> Numero de ident		
	IT	Assegnazione Ingressi DEA -> IDN		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0126, Maximum braking time

The maximum braking time for the drive is set in this parameter.

The value should always be set higher then the time needed, to decelerate the shaft from maximum velocity to zero using the error reaction "Velocity command value set to zero".

The velocity command value is switched to zero if **P-0-0119, Best possible deceleration** is set to 0 and either

- The drive enable (RF) is removed
- The drive is switched to parameter mode with RF switched on
- A drive error is recognized that still allows a reaction from the drive (all non-fatal errors)
- In the case of separately supplied devices, a drive connected to the same supply module reports an error to that module, so that the intermediate voltage is switched off.

See also functional description: "Motor holding brake"

P-0-0126 - Attributes

Para. Name:	**DE**	Maximale Bremszeit		
	EN	Maximum braking time		
	FR	Temps de freinage max.		
	ES	Tiempo máx. de frenado		
	IT	Tempo massimo di Frenata		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000500 / 0000100000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0127, Overload warning

To protect the power stage, the temperature is calculated with a temperature model for the transistor output stage. If the temperature exceeds 125 °C, then the torque-producing command current will be limited.

To avoid an unexpected disruption of the torque from the drive, a warning threshold can be set in this parameter.

If the thermal load rises above the set value, warning **E261 Continuous current limiting prewarning** will be generated.

If 100% is entered, this warning will be deactivated, because then the message **E257 Continuous current limit active** will be generated instead.

See also the functional description: "Current Limit".

P-0-0127 - Attributes

Para. Name:	**DE**	Überlastwarnung		
	EN	Overload warning		
	FR	Alerte surcharge		
	ES	Umbral de aviso de sobrecarga		
	IT	Avvertenza sovraccarico		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		%	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00100		
Default value:		-	**Cyc. transmittable:**	-

P-0-0131, Signal select position switch

This parameter can be used to activate and to select the signal for the programmable position switch.

The following values can be entered:

P-0-0131:	Function:
0	The programable limit switch is not activated.
1	The programable limit switch is activated; the reference signal is **S-0-0051, Position feedback value 1**
2	The programable limit switch is activated; the reference signal is **S-0-0053, Position feedback value 2**

Fig 3-1: Activation and signal selection for the programmable position switch

See also the functional description: "Programmable Limit Switch".

P-0-0131 - Attributes

Para. Name:	**DE**	Nockenschaltwerk-Signalauswahl		
	EN	Signal select position switch		
	FR	Boîte à cames, Sélection de signal		
	ES	Señal seleccionar interruptor de posición		
	IT	Selezione Segnale Interr. di Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00002		
Default value:		-	**Cyc. transmittable:**	-

P-0-0132, Switch on threshold position switch

This parameter list can be used to set the switch-on positions for the programmable limit switch.

It consists of **8 elements**, where element 1 is allocated for the position switch bit 1, element 2 is allocated for bit 2, and so forth.

See also the functional description: "Programmable Limit Switch"

P-0-0132 - Attributes

Para. Name:	**DE**	Nockenschaltwerk-Einschaltschwelle		
	EN	Switch on threshold position switch		
	FR	Boîte à cames, seuil d'enclenchement		
	ES	Conectar en umbral interruptor de posición		
	IT	Attivazione Interr. Mantenimento Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte var.	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0133, Switch off threshold position switch

This parameter list can be used to set the switch-off positions for the programmable limit switch.

It consists of **8 elements**, where element 1 is allocated for the position switch bit 1, element 2 is allocated for bit 2, and so forth.

See also the functional description: "Programmable Limit Switch".

P-0-0133 - Attributes

Para. Name:	**DE**	Nockenschaltwerk-Ausschaltschwelle		
	EN	Switch off threshold position switch		
	FR	Boîte à cames, seuil d' extinction		
	ES	Desconectar en umbral interruptor de posición		
	IT	Disattivazione Interr. Mantenimento Posizione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte var.	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0134, Position switch lead times

By parameterizing a rate time, a time delay can be compensated for an external, position-driven switch element. In that way, a theoretical adjustment value can be calculated from the rate time and the current drive velocity for the on- and off-switch Positions.

The programmable limit switch switches by the rate time before reaching the trigger position.

Note: The velocity must remain constant in the range between the theoretical and actual on-switch or off-switch threshold.

See also the functional description: "Programmable Limit Switch"

P-0-0134 - Attributes

Para. Name:	**DE**	Nockenschaltwerk-Vorhaltezeiten		
	EN	Position switch lead times		
	FR	Boîte à cames, temps d'anticipation		
	ES	Tiempos de anticipación del conmutador de levas		
	IT	Tempi d'azione derivativa controller camma		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte var.	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 32767		
Default value:		-	**Cyc. transmittable:**	-

P-0-0135, Status position switch

The state of the programmable position switch bits is displayed in this parameter.

Parameter structure with 8 switches:

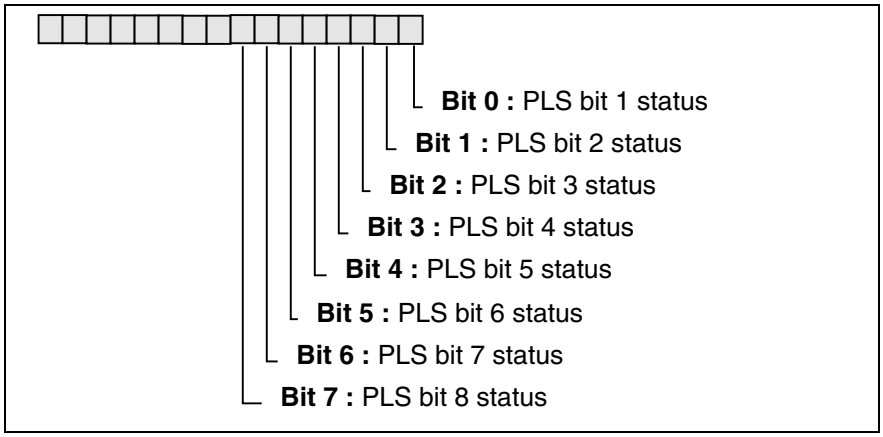


Fig. 3-1: P-0-0135, Position switches' status word

See also the functional description: "Programmable Position Switch".

P-0-0135 - Attributes

Para. Name:	**DE**	Nockenschaltwerk-Statuswort		
	EN	Status position switch		
	FR	Boîte à cames, mot d'état		
	ES	Interruptor de posición, palabra de estado		
	IT	Stato Interr. di Posizione		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0139, Analog output 1

The parameter **P-0-0139, Analog output 1** sets the voltage value for the analog output 1 of the drive controller.

See also the functional description: "Analog Output".

P-0-0139 - Attributes

Para. Name:	**DE**	Analog-Ausgang 1
	EN	Analog output 1
	FR	Sortie analogique 1
	ES	Salida analógica 1
	IT	Uscita analogica 1

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	V	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0140, Analog output 2

The parameter **P-0-0140, Analog output 2** sets the voltage value for the analog output 2 of the drive controller.

See also the functional description: "Analog Output".

P-0-0140 - Attributes

Para. Name:	**DE**	Analog-Ausgang 2
	EN	Analog output 2
	FR	Sortie analogique 2
	ES	Salida analógica 2
	IT	Uscita analogica 2

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	V	**Extreme value check:**	yes
Decimal places:	3	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0141, Thermal drive load

The parameter P-0-0141, Thermal drive load is for diagnostic purposes. In this parameter, 0% corresponds to a chip over-temperature of 0 Kelvin, 100% corresponds to the maximum chip over-temperature. The thermal load should not exceed a value of 80% for the applied operating cycles if the drive is set up correctly.

It typically takes about 10 minutes to warm up a drive controller end stage to its final temperature. To check the thermal load of a drive during installation without having to run operating cycles during this period of time, the drive controller load can be preset with 80%. This can happen by writing an arbitrary value to the parameter **P-0-0141, Thermal drive load**.

See also the functional description: "Current Limit

P-0-0141 - Attributes

Para. Name:	**DE**	Thermische Regelgeräte-Auslastung
	EN	Thermal drive load
	FR	Charge thermique variateur
	ES	Descarga termica de reguladores
	IT	Carico termico Azionamento

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	%	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00100		
Default value:	-	**Cyc. transmittable:**	-

P-0-0142, Synchronization acceleration

Acceleration or deceleration with which the synchronous velocity is reached in dynamic synchronization (ramp up and lock on).

Acceleration and delay is performed with the synchronization acceleration in the second step of dynamic synchronization (ramp up and lock on). This affects device operating modes with underlying position control. When running an angle offset, the slave drive is accelerated or decelerated with the synchronization acceleration.

This is only operational in the operating modes with electronic gear:

- velocity synchronization
- phase synchronization
- curve pattern disk (cam plate)

See also the functional description:

- "Operating mode: Operating mode: Velocity synchronization with virtual master axis"

- "Operating mode: Phase synchronization with virtual master axis"

P-0-0142 - Attributes

Para. Name:	**DE**	Aufsynchronisier-Beschleunigung
	EN	Synchronization acceleration
	FR	Accélération de synchronisation
	ES	Aceleración de sincronización
	IT	Accellerazione di Sincronizzazione

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	S-0-0160	**Extreme value check:**	yes
Decimal places:	S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:	00000000.000 / 00002300.971		
Default value:	-	**Cyc. transmittable:**	-

P-0-0143, Synchronization velocity

The velocity with which the distance (angle difference) to absolute synchronization is done in dynamic synchronization (ramp up and lock on).

This is only operative in the operating modes with **electronic gear**:

- phase synchronization
- curve pattern disk (cam plate)

See also the functional description: "Operating mode: Phase synchronization with virtual master axis"

P-0-0143 - Attributes

Para. Name:	**DE**	Aufsynchronisier-Geschwindigkeit		
	EN	Synchronization velocity		
	FR	Vitesse de synchronisation		
	ES	Velocidad de sincronización		
	IT	Velocità di Sincronizzazione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0044	**Extreme value check:**	yes
Decimal places:		S-0-0045/S-0-0046	**Combination check:**	no
Input min/max:		0000000.0000 / 0090000.0001		
Default value:		-	**Cyc. transmittable:**	-

P-0-0144, Cam shaft distance switch angle

A new value for the **P-0-0093, Cam Shaft Distance** will become active only when the table access angle passes the cam shaft switch angle. The angle for the table access is formed out of the following parameters:

- **P-0-0053, Master drive position**
- **P-0-0061, Angle offset begin of profile**
- **P-0-0085, Dynamical angle offset**
- **P-0-0108, Master drive polarity**
- **P-0-0156, Master drive gear input revolutions**
- **P-0-0157, Master drive gear output revolutions**
- **P-0-0158, Angle offset change rate**

This works only in the curve pattern disk (Cam profile) operating mode.

See also the functional description: "Operating mode: Electronic cam shaft with virtual master axis".

P-0-0144 - Attributes

Para. Name:	**DE**	Umschaltwinkel Kurvenscheibe Hub		
	EN	Cam shaft distance switch angle		
	FR	Angle de commutation profil de came course		
	ES	Angulo de conmutación distancia disco de leva		
	IT	Distanza Angolo di Commutazione Camma		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Deg	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		0000000.0000 / 0214748.3647		
Default value:		-	**Cyc. transmittable:**	-

P-0-0145, Expanded trigger level

This parameter is for service purposes only.

If bit 12, Expanded trigger level is selected using parameter **P-0-0026, Trigger signal selection**, then an address can be selected with parameter P-0-0145 that is monitored for the threshold parameter value.

Parameter structure:

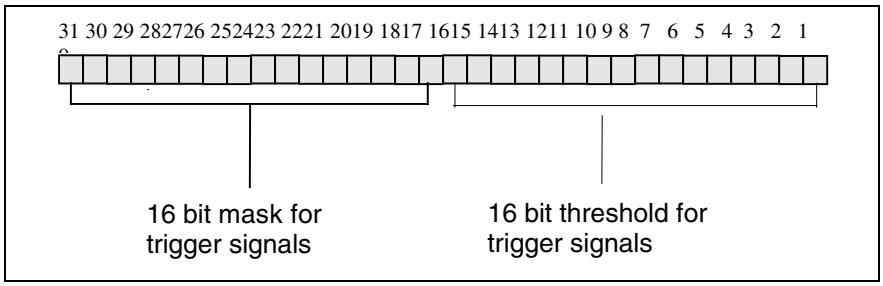


Fig. 3-30: P-0-0145, Expanded trigger level (oscilloscope function)

See also the functional description: "Oscilloscope feature".

P-0-0145 - Attributes

Para. Name:	**DE**	Triggerschwelle erw.Oszilloskopfunktion		
	EN	Expanded trigger level		
	FR	Seuil de déclenchement fonction oscill. élargie		
	ES	Umbral de trigger función ampliada de osciloscopio		
	IT	Superamento Soglia Fronte di Trigger		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0146, Expanded trigger address

This parameter is for service purposes only.

If bit 12 Expanded trigger level is selected in using parameter **P-0-0026, Trigger signal selection**, then an address can be selected with parameter P-0-0146 that is monitored for the threshold parameter value.

Parameter structure:

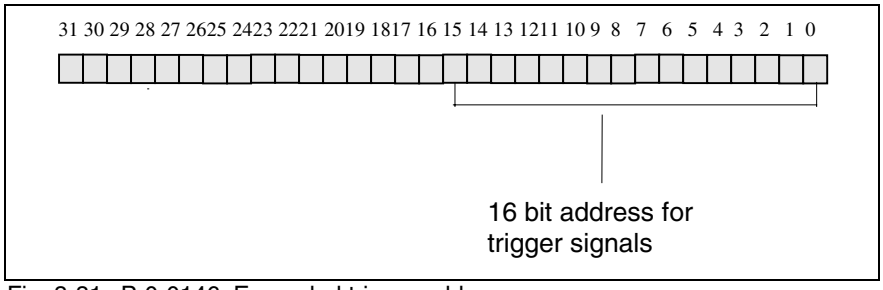


Fig. 3-31: P-0-0146, Expanded trigger address

The 16-bit value of the trigger edge is monitored. Before, the trigger signal is ANDed with the mask for trigger signals.

See also the functional description: "Oscilloscope feature".

P-0-0146 - Attributes

Para. Name:	**DE**	Triggersignaladresse erw. Oszilloskopfunktion		
	EN	Expanded trigger address		
	FR	Adresse déclenchement fonction ocilloscope élargie		
	ES	Dirección de trigger función de osciloscopio ampliada		
	IT	Indirizzo segnale trigger funzione oscilloscopio ampl.		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0147, Expanded signal K1 address

If an expanded signal selection is made with parameters **P-0-0023, Signal select scope channel 1** and **P-0-0024, Signal select scope channel 2**, then an address to be recorded can be chosen in the drive with parameter P-0-0147.

See also the functional description: "Oscilloscope feature".

P-0-0147 - Attributes

Para. Name:	**DE**	Signaladresse K1 erw. Oszilloskopfunktion		
	EN	Expanded signal K1 address		
	FR	Adresse signal K1 fonction oscill. élargie		
	ES	Dirección de señal K1 función de osciloscopio ampliada		
	IT	Indirizzo Segnale K1		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0148, Expanded signal K2 address

If an expanded signal selection is chosen with parameters **P-0-0023, Signal select scope channel 1** and **P-0-0024, Signal select scope channel 2**, then an address to be recorded can be chosen in the drive with parameter P-0-0148.

See also the functional description: "Oscilloscope feature".

P-0-0148 - Attributes

Para. Name:	**DE**	Signaladresse K2 erw. Oszilloskopfunktion		
	EN	Expanded signal K2 address		
	FR	Adresse signal K2 fonction oscill. élargie		
	ES	Dirección de señal K2 función de osciloscopio ampliada		
	IT	Indirizzo Segnale K2		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0149, List of selectable signals for oscilloscope function

The control system can read drive-supported, predefined signals with parameter P-0-0149. This permits a user interface to prepare a signal select menu using the information in the listed parameters in the drive.

List entries:	ID number of:
1	S-0-0051 or S-0-0053
2	S-0-0040
3	S-0-0347
4	S-0-0189
5	S-0-0080
6	S-0-0051
7	S-0-0053
8	S-0-0047
9	P-0-0147
10	P-0-0148

Fig. 3-32: P-0-0149, List of selectable signals for oscilloscope function

See also the functional description: "Oscilloscope feature".

P-0-0149 - Attributes

Para. Name:	**DE**	Signalauswahlliste für Oszilloskopfunktion
	EN	List of selectable signals for oscilloscope function
	FR	Liste sélection signaux pour fonction oscilloscope
	ES	Lista de selección de señal para función de osciloscopio
	IT	Lista dei Segnali validi per Funzione Oscilloscopio

Function:	Parameter	**Editability:**	no
Data length:	2Byte var.	**Memory:**	-
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0150, Number of valid samples for oscilloscope function

If the oscilloscope function is activated then the signal to be recorded is continuously fed to a value memory. If triggering occurs, then the recording procedure is stored and the value list can be read out. The oldest measured value is the first element of this list, the newest value the last.

If triggering occurs before the memory is completely filled, then a number of values at the start of the list are invalid. The number of valid values before triggering is available in parameter **P-0-0150, Number of valid samples for oscilloscope function**.

See also the functional description: "Oscilloscope feature".

P-0-0150 - Attributes

Para. Name:	**DE**	Anzahl gültiger Messwerte für Oszilloskopfunktion
	EN	Number of valid samples for oscilloscope function
	FR	Nombre de mesures valides pour fonction oscilloscope
	ES	Numero valores de medición validos para función osciloscopio
	IT	Numero dei Campionamenti validi per Funz. Oscill.

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0151, Synchronization init window for modulo format

The second step of dynamic synchronization (ramp up and lock on) establishes a path that must be crossed to reach absolute synchronization.

With rotary axes, the drive can move in a positive or negative direction.

P-0-0154, Synchronization Direction determines the direction for the drive.

If the shortest path to absolute synchronization is smaller than the synchronization window, then the shortest path will be taken and the preset synchronization direction will be ignored.

This parameter is only operative in the operating modes

- phase synchronization
- cam shaft (curve pattern disk)
- pattern transmission.

See also the functional description: "Dynamic Synchronization in the Phase Synchronization Operating Mode"

P-0-0151 - Attributes

Para. Name:	**DE**	Aufsynchronisierfenster bei Modulo-Format		
	EN	Synchronization init window for modulo format		
	FR	Fenêtre de sync. pour format modulo		
	ES	Ventana de sincronización en formato de modulo		
	IT	Inizializzazione Sincronizzazione per Formato Modulo		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		S-0-0076	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		0000000.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0153, Optimal distance home switch - reference mark

During command "Drive-controlled homing" when the home-switch edge and reference mark evaluation are activated, the distance between the home-switch edge and the reference mark is monitored. For reference marks with equal intervals, the optimal distance is half the reference mark interval. The optimal distance can be entered in parameter **P-0-0153, Optimal distance home switch - reference mark** as per the following table:

Encoder type	P-0-0153	Function
Rotational	0	The home-switch - reference mark interval is monitored. The optimal distance will be calculated internally, and is equal to 1/2 of an encoder revolution for DSF or incr. rotary encoders, or 1/2 of an encoder revolution / **S-0-0116, Rotary encoder resolution - 1** for resolvers.
Rotational	x	The home-switch - reference mark interval is monitored. Half the reference mark distance must be entered in **P-0-0153, Optimal distance home switch - reference mark**.
Linear	0	The home-switch - reference mark interval is not monitored. The linear encoder does not affect reference marks with constant intervals. The real distance between the home-switch and the reference mark must be large enough to ensure recognition of the home-switch edge, taking into account the maximum homing velocity and the cycle time for the home-switch input request.
Linear	x	The home-switch - reference mark interval is monitored. Half the reference mark distance must be entered in **P-0-0153, Optimal distance home switch - reference mark**.

Fig. 3-33: Interval monitoring, home switch - reference mark

See also the functional description: "Drive-controlled homing".

P-0-0153 - Attributes

Para. Name:	**DE**	Optimaler Abstand Referenzschalter-Referenzmarke		
	EN	Optimal distance home switch - reference mark		
	FR	Distance optimale entre contact d'origine et marque de réf.		
	ES	Distancia óptima marca de puesta a cero		
	IT	Distanza ottimale Camma di Zero		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		S-0-0076	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0154, Synchronization direction

The second step of dynamic synchronization (ramp up and lock on) establishes a path that must be crossed to reach absolute synchronization.

With rotary axes, the drive can move in a positive or negative direction.

The synchronization direction determines the direction for the drive.

P-0-0154	Function
0	shortest path
1	clockwise
2	anti-clockwise

Fig. 3-34: synchronization direction

If the shortest path to absolute synchronization is smaller than the **P-0-0151, Synchronization Init Window for Modulo Format**, then the shortest path will be taken and the preset synchronization direction will be ignored.

This parameter is only operative in the operating modes

- phase synchronization
- cam shaft (curve pattern disk)
- pattern transmission

See also the functional description: "Dynamic Synchronization in the Phase Synchronization Operating Mode"

P-0-0154 - Attributes

Para. Name:	**DE**	Aufsynchronisier-Richtung
	EN	Synchronization direction
	FR	Sens de synchronisation
	ES	Sincronización dirección
	IT	Direzione di Sincronismo

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00002		
Default value:	-	**Cyc. transmittable:**	-

P-0-0155, Synchronization mode

Structure:

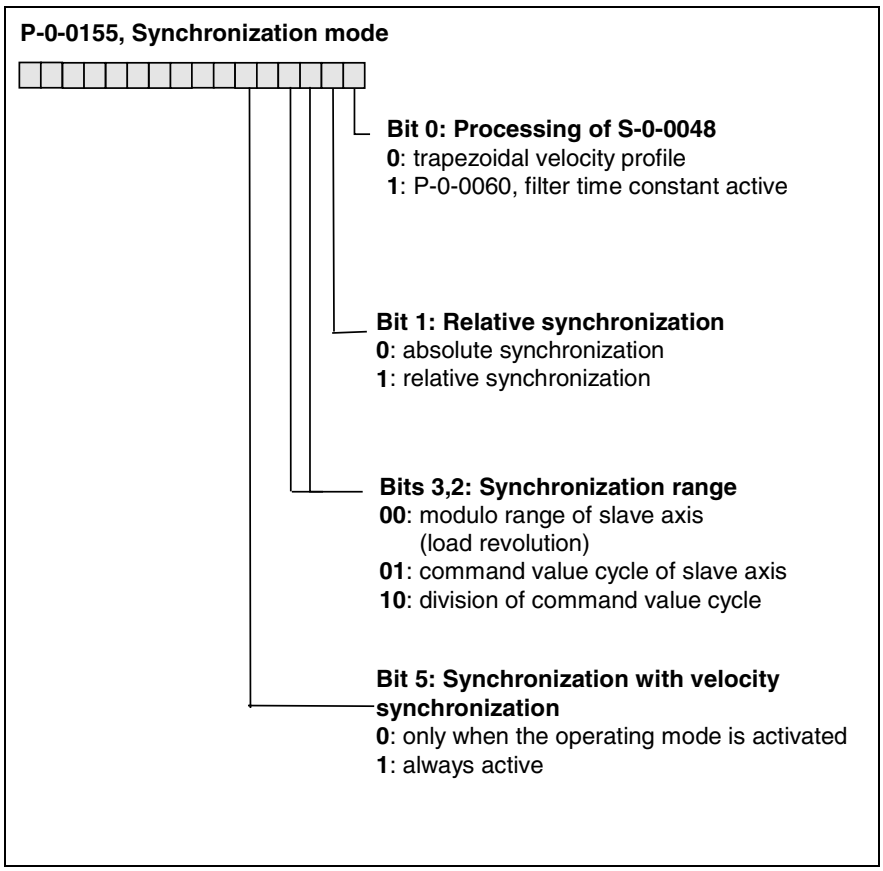


Fig. 3-35: P-0-0155, Synchronization mode

After activating one of the operating modes angle synchronization or cam shaft, the drive automatically carries out dynamic synchronization. In doing so the drive generates **S-0-0047, Position command value** considering **P-0-0142, Synchronization acceleration** and **P-0-0143, Synchronization velocity**, until the absolute synchronization (**S-0-0047** = Xsynch + **S-0-0048**) has been reached.

Synchronization mode bit 0 =1

When the absolute synchronization has been reached, parameters **P-0-0142** and **P-0-0143** become ineffective.

The following changes of **S-0-0048, Position command value additional** are then smoothed by a 1st order filter. The time constant of the filter is set with parameter **P-0-0060, Filter time constant additional pos. command**.

Synchronization mode bit 0 =0

With every change of the additional position command a distance is calculated according to the equation

distance = Xsynch + **S-0-0048** – **S-0-0047**

and the drive moves in consideration of the synchronization acceleration and velocity.

Synchronization mode bit 1 =1: relative angle-synchronous axis

When activating the operating modes angle synchronization or cam shaft, the drive initializes parameter **S-0-0048, Position command value additional** in such a way that movement is not required. The drive therefore is relatively angle-synchronous.

Synchronization mode bit 1 =0: absolute angle-synchronous axis

see also functional description: "Dynamic synchronization in the phase synchronization operating mode"

P-0-0155 - Attributes

Para. Name:	**DE**	Aufsynchronisier-Modus		
	EN	Synchronization mode		
	FR	Mode de synchronisation		
	ES	Sincronización modo		
	IT	Modo di Sincronizzazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0156, Electric gear input revolutions

This parameter determines together with the parameter **P-0-0157 Master drive gear output revolutions** the master drive gear.

A master axis position (**P-0-0053**) sent to the drive will be multiplied with the master drive gear transmission ratio before the processing, and will then be limited to the standardized range of 2^20.

The master axis position and therefore also this parameter are only active in the **operation modes**

- speed synchronization
- angular synchronization
- cam shaft

P-0-0156 - Attributes

Para. Name:	**DE**	Elektronisches Getriebe Eingangsumdrehungen
	EN	Electric gear input revolutions
	FR	Transmission de l'axe guide, tours entrée
	ES	Revoluciones de entrada del engranaje maestro
	IT	N. di giri in ingresso trasmissione asse guida

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	00001 / 65535		
Default value:	-	**Cyc. transmittable:**	-

P-0-0157, Electric gear output revolutions

This parameter determines together with the parameter **P-0-0156 Master drive gear input revolutions** the master drive gear.

A master axis position (**P-0-0053**) sent to the drive will be multiplied with the master drive gear transmission ratio before the processing, and will then be limited to the standardized range of 2^20.

The master axis position and therefore also this parameter are only active in the **operation modes**

- speed synchronization
- angular synchronization
- cam shaft

P-0-0157 - Attributes

Para. Name:	**DE**	Elektronisches Getriebe Ausgangsumdrehungen
	EN	Electric gear output revolutions
	FR	Transmission de l'axe guide, tours sortie
	ES	Revoluciones de salida del engranaje maestro
	IT	N. di giri in uscita trasmissione asse guida

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	00001 / 65535		
Default value:	-	**Cyc. transmittable:**	-

P-0-0158, Angle offset change rate

In the operation mode Cam shaft, **P-0-0061, Angle Offset Begin of Profile** affects the access angle to the table. If this angular shift should be changed in a greater range, with the given increment in the active table, then a slow approach towards the new value must be done, because every change means a jump in the position command.

A new value for the parameter P-0-0061, Angle Offset Begin of Profile does not become active immediately. Outgoing from the actual value, a ramp shaped approach to the new value is done.

The approach is made on the shortest way.

The slope of the ramp is determined with the parameter P-0-0158, Phase offset velocity.

P-0-0158 - Attributes

Para. Name:	**DE**	Änderungsgeschwindigkeit Winkelverschiebung		
	EN	Angle offset change rate		
	FR	Vitesse du changement pour décalage angulaire		
	ES	Velocidad de modificación desplazamiento angular		
	IT	Velocità Cambiamento angulario		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Rpm	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0159, Slave drive feed travel

With translatory angle synchronization or electronic cam shaft, the slave axis carries out one feed per master axis revolution. Parameter **P-0-0159, Slave drive feed travel** serves to parameterize the distance that is to be traveled per master axis revolution.

P-0-0159 - Attributes

Para. Name:	**DE**	Vorschubweg Folgeantrieb		
	EN	Slave drive feed travel		
	FR	Longueur de course entraînement consécutif		
	ES	Recorrido de avance del accionamiento esclavo		
	IT	Percorso di avanzamento azionamento sequenziale		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0170, Parallel I/O output 4

Parameter **P-0-0170, Parallel I/O Output 4** displays the parallel outputs of the DEA. 8.1 I/O module which can address the outputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0170 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 4		
	EN	Parallel I/O output 4		
	FR	Sortie parallèle 4		
	ES	Salida paralela 4		
	IT	Uscita parallela 4		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x00000000 / 0xffffffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0171, Parallel I/O input 4

Parameter **P-0-0171, Parallel I/O Input 4** displays the parallel inputs of the DEA. 8.1 I/O module which can address the inputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0171 - Attributes

Para. Name:	**DE**	Paralleler Eingang 4		
	EN	Parallel I/O input 4		
	FR	Entrée parallele 4		
	ES	Entrada paralela 4		
	IT	Ingressi paralleli 4		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x00000000 / 0xffffffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0172, Parallel I/O output 5

Parameter **P-0-0172, Parallel I/O Output 5** displayes the parallel outputs of the DEA. 9.1 I/O module which can adress the outputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0172 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 5		
	EN	Parallel I/O output 5		
	FR	Sortie parallèle 5		
	ES	Salida paralela 5		
	IT	Uscita parallela 5		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x00000000 / 0xffffffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0173, Parallel I/O input 5

Parameter **P-0-0173, Parallel I/O Input 5** displayes the parallel inputs of the DEA. 9.1 I/O module which can adress the inputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0173 - Attributes

Para. Name:	**DE**	Paralleler Eingang 5		
	EN	Parallel I/O input 5		
	FR	Entrée parallèle 5		
	ES	Entrada paralela 5		
	IT	Ingressi paralleli 5		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x00000000 / 0xffffffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0174, Parallel I/O output 6

Parameter **P-0-0174, Parallel I/O Output 6** displayes the parallel outputs of the DEA. 10.1 I/O module which can adress the outputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0174 - Attributes

Para. Name:	**DE**	Paralleler Ausgang 6
	EN	Parallel I/O output 6
	FR	Sortie parallèle 6
	ES	Salida paralela 6
	IT	Uscita parallela 6

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	HEX	**Validity check:**	no
Unit:		**Extreme value check:**	no
Decimal places:	--	**Combination check:**	no
Input min/max:	0x00000000 / 0xffffffff		
Default value:	-	**Cyc. transmittable:**	-

P-0-0175, Parallel I/O input 6

Parameter **P-0-0175, Parallel I/O Input 6** displayes the parallel inputs of the DEA. 10.1 I/O module which can adress the inputs of this module.

See also the functional description: "Digital Input/Output“

P-0-0175 - Attributes

Para. Name:	**DE**	Paralleler Eingang 6		
	EN	Parallel I/O input 6		
	FR	Entrée parallèle 6		
	ES	Entrada paralela 6		
	IT	Ingressi paralleli 6		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0x00000000 / 0xffffffff		
Default value:		-	**Cyc. transmittable:**	-

P-0-0177, Absolute encoder buffer 1

All the data that the absolute encoder needs for position initialization is stored in this parameter.

See also the functional description: "Supplementary Settings for Absolute Measuring Systems".

P-0-0177 - Attributes

Para. Name:	**DE**	Absolutgeber-Puffer 1		
	EN	Absolute encoder buffer 1		
	FR	Tampon codeur absolu 1		
	ES	Buffer de encoder absoluto 1		
	IT	Buffer Encoder assoluto 1		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte var.	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		-	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0178, Absolute encoder buffer 2

All the data that the absolute encoder needs for position initialization is stored in this parameter.

See also the functional description: "Supplementary Settings for Absolute Measuring Systems".

P-0-0178 - Attributes

Para. Name:	**DE**	Absolutgeber-Puffer 2		
	EN	Absolute encoder buffer 2		
	FR	Tampon codeur absolu 2		
	ES	Buffer de encoder absoluto 2		
	IT	Buffer Encoder assoluto 2		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte var.	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0180, Rejection frequency velocity loop

To suppress the mechanical resonance frequency, a band filter can be activated at the output of the velocity controller .It is parametrized with parameters **P-0-0180, Rejection frequency velocity loop** and **P-0-0181, Rejection bandwidth velocity loop**.

P-0-0180, Rejection frequency velocity loop indicates the most attenuated frequency.

See also the functional description: "Filtering oscillations from mechanical resonance".

P-0-0180 - Attributes

Para. Name:	**DE**	Sperrfrequenz Geschwindigkeitsregler		
	EN	Rejection frequency velocity loop		
	FR	Fréquence d'arrêt, boucle de vitesse		
	ES	Frecuencia de bloqueo del regulador de velocidad		
	IT	Frequenza di blocco regolatore di velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Hz	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00150 / 01950		
Default value:		-	**Cyc. transmittable:**	-

P-0-0181, Rejection bandwidth velocity loop

To supress the mechanical resonance frequency, a band filter can be activated at the output of the velocity controller. It is parametrized with parameters

- P-0-0180, Rejection frequency velocity loop and
- P-0-0181, Rejection bandwidth velocity loop.

P-0-0181, Rejection bandwidth velocity loop sets the frequency range for the rejection frequency with an attenuation smaller than -3dB.

Example:

P-0-0180 = 500 Hz,

P-0-0181 = 200 Hz;

then: attenuation < -3dB in range of 400..600 Hz.

Parameter content	Effect of P-0-0181
-1	low pass filter with time constant P-0-0004
0	filter is off
>0	bandwidth of suppression (notch) filter

Fig. 3-36: P-0-0181, Rejection bandwidth velocity loop

See also the functional description: "Filtering oscillations from mechanical resonance".

P-0-0181 - Attributes

Para. Name:	**DE**	Bandbreite Sperrfilter Geschwindigkeitsregler		
	EN	Rejection bandwidth velocity loop		
	FR	Gamme de bande à supprimer, boucle de vitesse		
	ES	Ancho de banda a eliminar regulador de velocidad		
	IT	Larghezza Banda da sopprimere, Anello di Velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Hz	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 03900		
Default value:		-	**Cyc. transmittable:**	-

P-0-0185, Function of encoder 2

Parameter **P-0-0185,** can be used to allocate a specific functionality to an external encoder. The following functions are defined:

P-0-0185	Function of the external encoder
0	ext. encoder for control
1	Master axis encoder
2	Load side motor encoder

Fig. 3-37: Function of encoder 2

Explanation:

0) If the ext. encoder is used as a **control encoder**, it can be used to close the control loop. All modes are possible with ext. enc. The position value is set in **S-0-0053, Position feedback value 2**.

1) If the external encoder is used as a **master axis encoder**, the position is evaluated in a fixed format (2^20 Incr./turn). The position appears in the parameter **P-0-0052 Position actual value 3**.
2) If the ext. enc. is used as a **load side** motor **encoder**, then the control loop and commutation are generated via this encoder. Only **S-0-0053, Position Feedback 2 value** is supported.

P-0-0185 - Attributes

Para. Name:	**DE**	Funktion Geber 2		
	EN	Function of encoder 2		
	FR	Fonction du codeur 2		
	ES	Función del encoder 2		
	IT	Funzione del Encoder 2		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0186, Position feedback value 3, smoothing time

Determines the time constant of the moving average for smoothing the position feedback value 3. The time constants 0, 2, 4 or 8 ms can be set. When 0 is entered, there is no smoothing.

A linear set-up time compensates the averaging delay.

P-0-0186 - Attributes

Para. Name:	**DE**	Lageistwert 3, Glättung		
	EN	Position feedback value 3, smoothing time		
	FR	Position de retour 3, temps de filtrage		
	ES	Posición real 3, tiempo de alisamiento		
	IT	Posizione reale 3, Tempo di Smorzamento		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	ja
Unit:		ms	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	yes
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0190, Operating hours control section

The operating hours of the control section are displayed here. With this parameter, the entire on time of control electronics since installation of the unit can be displayed. If a class 1 error occurs, the contents of this parameter at that time is first stored in **P-0-0193, Error recorder, operating hours control section**.

See also the functional description: "Error memory and operating hour counter".

P-0-0190 - Attributes

Para. Name:	**DE**	Betriebsstunden Steuerteil		
	EN	Operating hours control section		
	FR	Heures de fonctionnement commande		
	ES	Horas de funcionamiento de la sección de control		
	IT	Ore di funzionamento della parte di controllo		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		h	**Extreme value check:**	no
Decimal places:		4	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0191, Operating hours power section

With this parameter, the entire on time of power electronics since installation of the unit can be displayed. This is the time over which the drive was operated with drive enable on.

See also the functional description: "Error memory and operating hour counter".

P-0-0191 - Attributes

Para. Name:	**DE**	Betriebsstunden Leistungsteil		
	EN	Operating hours power section		
	FR	Heures de fonctionnnement puissance		
	ES	Horas de funcionamiento de la sección de potencia		
	IT	Ore di funzionamento della parte di potenza		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		h	**Extreme value check:**	no
Decimal places:		4	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0192, Error recorder, diagnosis number

If the drive reports a class 1 error (C1D), a bit is set in **S-0-0011, Class 1 diagnostics** C1D. In the drive status word Bit 13 for "Error C1D“ is set.

Additionally, for a precise diagnosis,

- the diagnosis number is shown in the 7- segment display and stored in S-0-0390, Diagnostic message number,
- the plain text diagnosis is stored in S-0-0095, Diagnostic message,
- and the relevant error number in **P-0-0009, Error message number**.

When the error is cleared, then the diagnosis number of the error displayed **in S-0-0390, Diagnostic message number** is stored in **P-0-0192, Error recorder diagnosis number**. This parameter shows the diagnosis numbers of the last 19 errors in chronological order in the form of a stack memory. The last cleared error is on top.

The status of **P-0-0190, Operating hours control section** at the time the error was deleted is stored in **P-0-0193, Error recorder, operating hours control section**.

See also the functional description: "Error memory and operating hour counter".

P-0-0192 - Attributes

Para. Name:	**DE**	Fehlerspeicher Diagnosenummer		
	EN	Error recorder, diagnosis number		
	FR	Mémoire d'erreurs, numéro de diagnostic		
	ES	Memoria de errores, número de diagnóstico		
	IT	Memoria errori, numero diagnosi		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	-
Format:		HEX	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0193, Error recorder, operating hours control section

If the drive reports a class 1 error (C1D), then a bit is set in **S-0-0011, Class 1 diagnostics** C1D. Bit 13 for "Error C1D“ is set in the drive status word.

Additionally, for a precise diagnosis,

- the diagnosis number is shown in the 7-segment display and stored in **S-0-0390, Diagnostic message number**,
- the clear text diagnosis is stored in **S-0-0095, Diagnostic message**,
- and the relevant error number in **P-0-0009, Error message number**.

When the error is reset, then the status of **P-0-0190, Operating hours control section** at the time the error was detected is stored in **P-0-0193, Error recorder, operating hours control section**. This parameter shows the diagnosis numbers of the last 19 errors in chronological order. The first position is the counter value of the last error to occur.

The status of **P-0-0192, Error recorder diagnosis number** at the time the error was deleted is stored in **S-0-0390, Diagnostic message number**.

See also the functional description: "Error memory and operating hour counter".

P-0-0193 - Attributes

Para. Name:	**DE**	Fehlerspeicher Betriebsstunden Steuerteil
	EN	Error recorder, operating hours control section
	FR	Mémoire d'erreurs, heures de fonctionnement commande
	ES	Memoria de errores, horas de funcionamiento parte de control
	IT	Memoria errori, ore di funzionamento parte di controllo

Function:	Parameter	**Editability:**	no
Data length:	4Byte var.	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	4	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0195, Velocity threshold n2

If the **S-0-0040, Velocity feedback value** falls below the value of the parameter **P-0-0195, Velocity threshold n2**, the drive sets the message $n_{actual} < n2$ (Bit 4 in **S-0-0182, Manufacturer class 3 diagnostics**).

See also the functional description: "S-0-0182, Manufacturer class 3 diagnostics".

P-0-0195 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Schwelle n2
	EN	Velocity threshold n2
	FR	Seuil de vitesse n2
	ES	Umbral de velocidad n2
	IT	Soglia di velocità n2

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	Param.-E²prom
Format:	DEC_OV	**Validity check:**	P3-4
Unit:	S-0-0044	**Extreme value check:**	yes
Decimal places:	-	**Combination check:**	no
Input min/max:	0 / S-0-0044		
Default value:	1000000	**Cyc. transmittable:**	MDT

P-0-0196, Velocity threshold n3

If the **S-0-0040, Velocity feedback value** falls below the value of the parameter **P-0-0196, Velocity threshold n3**, the drive sets the message $n_{actual} < n3$ (Bit 5 in **S-0-0182, Manufacturer class 3 diagnostics**).

See also the functional description: "S-0-0182, Manufacturer class 3 diagnostics".

P-0-0196 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Schwelle n3
	EN	Velocity threshold n3
	FR	Seuil de vitesse n3
	ES	Umbral de velocidad n3
	IT	Soglia di velocità n3

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	Param.-E²prom
Format:	DEC_OV	**Validity check:**	P3-4
Unit:	S-0-0044	**Extreme value check:**	yes
Decimal places:	-	**Combination check:**	no
Input min/max:	0 / S-0-0044		
Default value:	1000000	**Cyc. transmittable:**	MDT

P-0-0200, Signal select probe 1

This parameter is used to select what measured quantity will be used for probe input 1.

The following signals can be selected:

P-0-0200:	Selected signal:
0	Position feedback value 1 or 2, dependent on **S-0-0169, Probe control parameter** bit 4
1	Time measurement in µs
2	Master axis position
3	Position actual value 1 or 2 with active expectation window
4	Master axis position with active expectation window
5	Profile access angle

Fig. 3-1: P-0-0200, Signal Select Probe 1

See also the functional description: "Probe feature".

P-0-0200 - Attributes

Para. Name:	**DE**	Signal-Auswahl Messtaster 1
	EN	Signal select probe 1
	FR	Sélection signal pour sonde 1
	ES	Selección de señal muestra 1
	IT	Selezione segnale Tastatore di misura 1

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	--	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 00002		
Default value:	-	**Cyc. transmittable:**	-

P-0-0201, Signal select probe 2

This parameter is used to select what measured quantity will be used for probe input 2.

The following signals can be selected:

P-0-0201:	Selected signal:
0	Position feedback value 1 or 2, dependent on **S-0-0169, Probe control parameter** bit 4
1	Time measurement in µs
2	Master axis position

Fig. 3-1: P-0-0201, Measurement quantity for the probe input 2

See also the functional description: "Probe feature".

P-0-0201 - Attributes

Para. Name:	**DE**	Signal-Auswahl Messtaster 2		
	EN	Signal select probe 2		
	FR	Sélection signal pour sonde 2		
	ES	Selección de señal muestra 2		
	IT	Selezione segnale Tastatore di misura 2		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00002		
Default value:		-	**Cyc. transmittable:**	-

P-0-0202, Difference of probe values 1

The difference between the **S-0-0130, Probe value 1 positive edge** and the **S-0-0131, Probe value 1 negative edge** of probe 1 is stored in this parameter. The value is always recalculated when a new positive or negative probe value is latched.

See also the functional description: "Probe Input Feature".

P-0-0202 - Attributes

Para. Name:	**DE**	Differenz Messwerte 1
	EN	Difference of probe values 1
	FR	Différence mesure 1
	ES	Diferencia valores de medición 1
	IT	Differenza Valori Misurati 1

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:	S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0203, Difference of probe values 2

The difference between the **S-0-0132, Probe value 2 positive edge** and the **S-0-0131, Probe value 2 negative edge** of probe 2 is stored in this parameter. The value is always recalculated when a new positive or negative probe value is latched.

See also the functional description: "Probe Input Feature".

P-0-0203 - Attributes

Para. Name:	**DE**	Differenz Messwerte 2
	EN	Difference of probe values 2
	FR	Différence mesure 2
	ES	Diferencia valores de medición 2
	IT	Differenza Valori Misurati 2

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:	S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0204, Start position for active probe

Probe 1 has the option to ignore the edge of the measuring signal at the probe 1 input.

Using **P-0-0204, Start position for active probe** and **P-0-0205, End position for active probe** opens a window. Only those positions within this window are latched.

To activate this functions one of selection numbers 3 in the signal select for probe 1 (P-0-0200) (act. Pos. Values 1 or 2 with activated window) or 4 (lead axis position with active window) is set.

P-0-0204 - Attributes

Para. Name:	**DE**	Startposition Messtasterfunktion aktiv
	EN	Start position for active probe
	FR	Position de départ pour sonde active
	ES	Posición inicial para sonda activa
	IT	Posizione iniziale per tastatore di misura attiva

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	Prog.Modul
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:	S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:	S-0-0076 / S-0-0076		
Default value:	0	**Cyc. transmittable:**	no

P-0-0205, End position for active probe

Probe 1 has the option to ignore the edge of the measuring signal at the probe 1 input.

Using **P-0-0204, Start position for active probe** and **P-0-0205, End position for active probe** opens a window. Only those positions within this window are latched.

To activate this functions one of selection numbers 3 in the signal select for probe 1 (P-0-0200) (act. Pos. Values 1 or 2 with activated window) or 4 (lead axis position with active window) is set.

P-0-0205 - Attributes

Para. Name:	**DE**	Endposition Messtasterfunktion aktiv
	EN	End position for active probe
	FR	Position finale pour sonde active
	ES	Posición final para sonda activa
	IT	Posizione finale per tastatore di misura attiva

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	Phase3
Unit:	S-0-0076/P-0-0200	**Extreme value check:**	no
Decimal places:	S-0-0076/P-0-0200	**Combination check:**	no
Input min/max:	S-0-0076 / S-0-0076		
Default value:	S-0-0076	**Cyc. transmittable:**	no

P-0-0210, Analog input 1

This parameter displays the analog voltage applied at the analog channel 1 in volts with 3 decimal places.

See also the functional description: "Analog Inputs".

P-0-0210 - Attributes

Para. Name:	**DE**	Analog-Eingang 1
	EN	Analog input 1
	FR	Entrée analogique 1
	ES	Entrada analogica 1
	IT	Ingresso analogico 1

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	V	**Extreme value check:**	no
Decimal places:	3	**Combination check:**	yes
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0211, Analog input 2

This parameter displays the analog voltage applied at the analog channel 2 in volts with 3 decimal places.

See also the functional description: "Analog Inputs".

P-0-0211 - Attributes

Para. Name:	**DE**	Analog-Eingang 2
	EN	Analog input 2
	FR	Entrée analogique 2
	ES	Entrada analogica 2
	IT	Ingresso analogico 2

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	V	**Extreme value check:**	no
Decimal places:	3	**Combination check:**	yes
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0212, Analog inputs, IDN list of assignable parameters

The digitalized values of both analog inputs are stored in

- **P-0-0210, Analog input 1** and
- **P-0-0211, Analog input 2**.

These can be allocated via settable scaling to other drive parameters or cyclically copied. The allowed parameters for allocation are listed in **P-0-0212, Analog inputs, IDN list of assignable parameters**.

See also the functional description: "Analog Inputs".

P-0-0212 - Attributes

Para. Name:	**DE**	Analog-Eingänge, IDN-Liste der zuweisbaren Parameter
	EN	Analog inputs, IDN list of assignable parameters
	FR	Entrées analogiques, liste des param.s pouvant être assignés
	ES	Entradas analógicas, lista IDN de parámetros asignables
	IT	Ingressi analogichi, Lista dei parametri assegnabili

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	IDN	**Validity check:**	no
Unit:	--	**Extreme value check:**	--
Decimal places:	--	**Combination check:**	--
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-0213, Analog input 1, assignment

The digitalized values of both analog inputs are stored in **P-0-0210, Analog input 1** and **P-0-0211, Analog input 2**. These can be allocated via settable scaling to other drive parameters or cyclically copied.

To copy cyclically the analog input 1 to a drive parameter, the ID no. of this parameter must be entered.

If the ID no. entered in **P-0-0213, Analog input 1, assignment** not in **P-0-0212, Analog inputs, IDN list of assignable parameters**, then the service channel error message "data not correct“ is generated.

Note: If the allocation is to be deleted, enter the ID no. S-0-0000.

See also the functional description: "Analog Inputs".

P-0-0213 - Attributes

Para. Name:	**DE**	Analog-Eingang 1, Zuweisung		
	EN	Analog input 1, assignment		
	FR	Entrée analogique 1, assignation		
	ES	Entrada analógica 1, asignación		
	IT	Ingresso analogico 1, assegnazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0214, Analog input 1, scaling per 10V full scale

The digitalized values of both analog inputs module are stored in the parameters **P-0-0210, Analog input 1** and **P-0-0211, Analog input 2**. These can be assigned to other drive parameters via settable scalings, i.e., copied.

If analog input 1 is cyclically copied to a drive parameter, i.e., an ID no. Has been entered in **P-0-0213, Analog input 1, assignment**, then a value of 10V of the analog voltage in terms of the assigned parameter is entered.

The unit and the number of decimal places of **P-0-0214, Analog input 1, scaling per 10V full scale** correspond to those of **P-0-0213, Analog input 1, assignment**.When inputting **P-0-0213, Analog input 1, assignment**, both unit and decimal places of **P-0-0214, Analog input 1, scaling per 10V full scale** are switched appropriately.

See also the functional description: "Analog Inputs".

P-0-0214 - Attributes

Para. Name:	**DE**	Analog-Eingang 1, Bewertung pro 10V		
	EN	Analog input 1, scaling per 10V full scale		
	FR	Entrée analogique 1, calibrage pour 10V		
	ES	Entrada analógica 1, calibrado para 10V		
	IT	Ingresso analogico 1, valutazione per 10V		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		---	**Validity check:**	no
Unit:		---	**Extreme value check:**	no
Decimal places:		---	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0215, Analog input 2, assignment

The digitalized values of both analog inputs are stored in **P-0-0210, Analog input 1** and **P-0-0211, Analog input 2**. These can be allocated via settable scaling to other drive parameters or cyclically copied.

To copy cyclically the analog input 2 to a drive parameter, the ID no. of this parameter must be entered. If the ID no. Entered in **P-0-0213, Analog input 2, assignment** not in **P-0-0212, Analog inputs, IDN list of assignable parameters**, then the service channel error message "data not correct“ is generated.

Note: If the allocation is to be deleted, enter the ID no. S-0-0000.

See also the functional description: "Analog Inputs".

P-0-0215 - Attributes

Para. Name:	**DE**	Analog-Eingang 2, Zuweisung		
	EN	Analog input 2, assignment		
	FR	Entrée analogique 2, assignation		
	ES	Entrada analógica 2, asignación		
	IT	Ingresso analogico 2, assegnazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		---	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0216, Analog input 2, scaling per 10V full scale

The digitalized values of both analog inputs are stored in the parameters **P-0-0210, Analog input 1** and **P-0-0211, Analog input 2**. These can be assigned to other drive parameters via settable scalings, i.e., copied.

If analog input 1 is cyclically copied to a drive parameter, i.e., an ID no. Has been entered in **P-0-0215, Analog input 2, assignment**, then avalue of 10V of the analog voltage in terms of the assigned parameter is entered.

The unit and the number of decimal places of **P-0-0216, Analog input 2, scaling per 10V full scale** correspond to those of **P-0-0215, Analog input 2, assignment**. When inputting **P-0-0215, Analog input 2, assignment**, both unit and decimal places of **P-0-0216, Analog input 2, scaling per 10V full scale** are switched appropriately.

See also the functional description: "Analog Inputs".

P-0-0216 - Attributes

Para. Name:	**DE**	Analog-Eingang 2, Bewertung pro 10V		
	EN	Analog input 2, scaling per 10V full scale		
	FR	Entrée analogique 2, calibrage pour 10V		
	ES	Entrada analógica 2, calibrado para 10V		
	IT	Ingresso analogico 2, valutazione per 10V		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		---	**Validity check:**	no
Unit:		---	**Extreme value check:**	no
Decimal places:		---	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0217, Analog input 1, offset

The analog channels can be processed with a DC offset. It has the unit millivolt, and this value is subtracted from the analog value.

See also the functional description: "Analog Inputs".

P-0-0217 - Attributes

Para. Name:	**DE**	Analog-Eingang 1, Offset		
	EN	Analog input 1, offset		
	FR	Entrée analogique 1, décalage		
	ES	Entrada analógica 1, offset		
	IT	Ingresso analogico 1, Offset		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		V	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0218, Analog input 2, offset

The analog channels can be processed with a DC offset. It has the unit millivolt, and this value is subtracted from the analog value.

See also the functional description: "Analog Inputs".

P-0-0218 - Attributes

Para. Name:	**DE**	Analog-Eingang 2, Offset		
	EN	Analog input 2, offset		
	FR	Entrée analogique 2, décalage		
	ES	Entrada analógica 2, offset		
	IT	Ingresso analogico 2, Offset		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	Phase3
Unit:		V	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0420, Analog output 1 signal selection

Using **P-0-0420, Analog output 1 signal selection**, an ID no. can be assigned to the analog AK1 output channel of the drive controller. The parameter with the assigned ID no. can be viewed with an oscilloscope in the form of an analog voltage. Only those ID no. contained in the list **P-0-0426, Analog outputs, IDN list of assignable parameters** can be used.

See also the functional description: "Analog Output".

P-0-0420 - Attributes

Para. Name:	**DE**	Analog-Ausgang 1, Signalauswahl		
	EN	Analog output 1 signal selection		
	FR	Sortie analogique 1, sélection de signal		
	ES	Salida analógica 1, selección de señal		
	IT	Uscita analogica 1, Scelta del Segnale		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	ja
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0 / 2^32-1		
Default value:		0	**Cyc. transmittable:**	no

P-0-0421, Analog output 1, expanded signal selection

To be able to show signals as analog voltages, but which are not in **P-0-0426, Analog outputs, IDN list of assignable parameters**, then the option of an expanded signal select is possible. This becomes active as long as no parameter is assigned via **P-0-0420, Analog output 1 signal selection**.

The following expanded signal select options are available:

- expanded signal select with permanently defined signals
- byte output
- bit output

1) Expanded signal selection with fixed signals

Internal signal numbers are assigned which are not in the drive in the form of ID numbers. These signals have permanent units making an evaluation via **P-0-0422, Analog output 1, scaling per 10V full scale** possible. The evaluation factor 1.0 equals the permanent unit. The following permanently defined signals are possible:

Signal number P-0-0421	Output signal	Reference unit: Evaluation factor 1.0000
0x00000001	motor encoder sine signal	0.5V/10V
0x00000002	motor encoder cosine signal	0.5V/10V
0x00000003	Opt. enc. sine signal	0.5V/10V
0x00000004	Opt. enc. cosine signal	0.5V/10V
0x00000005	Position command difference on the pos. controler	rot. ⇒ 1000rpm/10V lin. ⇒ 100m/min/10V
0x00000006	DC bus power	1kW/10V
0x00000007	absolute DC bus power value	1kW/10V
0x00000008	effective current	S-0-0110/10V
0x00000009	relative current	S-0-0110/10V
0x0000000a	thermal load	100 % / 10V
0x0000000b	motor temperature	150°C/10V
0x0000000c	magnetizing current	S-0-0110/10V
0x0000000d	velocity command at the velocity controller	rot. ⇒ 1000rpm/10V lin. ⇒ 100m/min/10V
FREE		
FREE		
...		
0x00000014	synchronous position command value	rot. => 360°/10V lin. => 1mm/10V
0x00000015	synchronous velocity	rot. => 1000rpm/10V lin. => 100m/min/10V
0x00000016	master axis position fine interpolation	2^20/10V
0x00000017	master axis speed in the NC cycle	rot. => 1000rpm/10V

Fig. 3-38: Signal select list with predefined signal selection

The outputs are scaling dependent and always relate to the motor shaft given position and velocity data.

2) Byte output

With this option it is possible to output memory locations of the data memory as an analog voltage. It can only be practically applied if the data storage structure is known. As this is, however, different from version to version, the function can only be used by the respective developer. The function is activated by setting bit 28 in **P-0-0421, Analog output 1, expanded signal selection**. The adress of the memory cell is defined in the least significant 24 bit of the expanded signal selection.

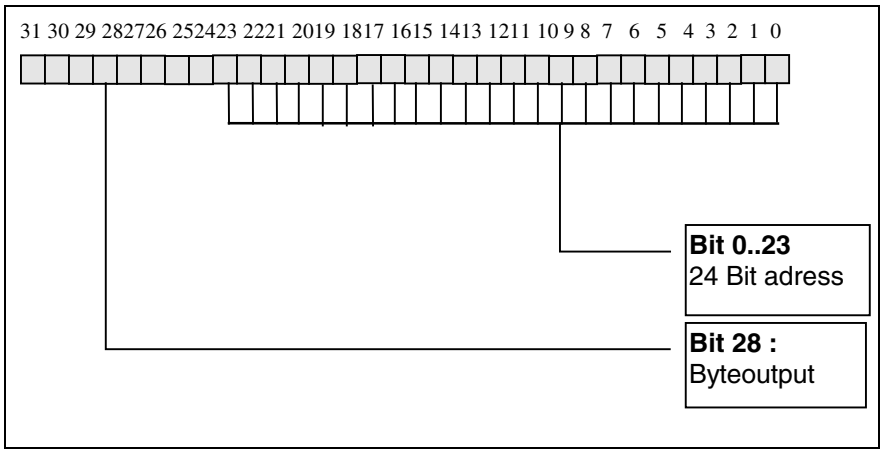


Fig. 3-39: Definition **P-0-0421, Analog output 1, expanded signal selection** with byte output

3) Bit output

With this option individual bits of the data memory can be shown as an analog voltage. If the respective bit is set, then 10V is output at the analog output. A cleared bit outputs -10V. The function is activated by setting bit 29 and inputting the desired memory address in **P-0-0421, Analog output 1, expanded signal selection**.

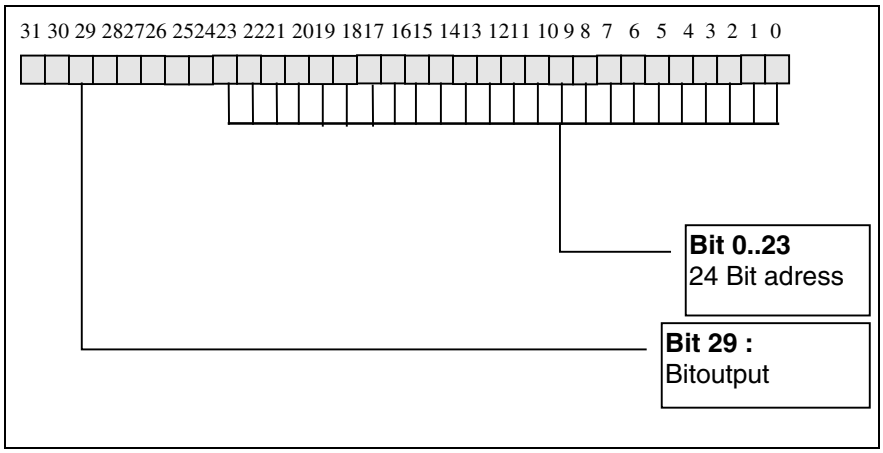


Fig. 3-40: Definition P-0-0421, Analog output 1, expanded signal selection with bit output

See also the functional description: "Analog Output".

P-0-0421 - Attributes

Para. Name:	**DE**	Analog-Ausgang 1, erweiterte Signalauswahl		
	EN	Analog output 1, expanded signal selection		
	FR	Sortie analogique 1, sélection de signal élargie		
	ES	Salida analógica 1, selección de señal ampliada		
	IT	Uscita analogica 1, Superamento Scelta		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	ja
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		0 / 2^32-1		
Default value:		1.0	**Cyc. transmittable:**	no

P-0-0422, Analog output 1, scaling per 10V full scale

The resolution of the selected signal can be varied with parameter **P-0-0422, Analog output 1 scaling per 10V full scale**. If an ID no. is assigned via **P-0-0420, Analog output 1, signal selection**, the evaluation is assigned the same unit as the parameter with the assigned ID number.

The output of pre-defined signals means that the scaling has a decimal factor of 4 decimal places. It has a permanent reference with fixed unit.

The scaling defines the least significant bit for bit and byte outputs. The input is an integer value without decimal places.

See also the functional description: "Analog Output".

P-0-0422 - Attributes

Para. Name:	**DE**	Analog-Ausgang 1, Bewertung [1/10V]		
	EN	Analog output 1, scaling per 10V full scale		
	FR	Sortie analogique 1, calibrage [1/10V]		
	ES	Salida analógica 1, calibrado [1/10V]		
	IT	Uscita analogica 1, Scala per 10V fondo scala		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	ja
Format:		P-0-0420/P-0-0421	**Validity check:**	no
Unit:		P-0-0420/P-0-0421	**Extreme value check:**	no
Decimal places:		P-0-0420/P-0-0421	**Combination check:**	no
Input min/max:		0 / 2^32-1		
Default value:		0	**Cyc. transmittable:**	no

P-0-0423, Analog output 2, signal selection

Using **P-0-0423, Analog output 2, signal selection**, an ID no. can be assigned to the analog AK2 output channel of the drive controller. The parameter with the assigned ID no. can be viewed with an oscilloscope in the form of an analog voltage. Only those ID no. contained in the list **P-0-0426, Analog outputs, IDN list of assignable parameters** can be used.

See also the functional description: "Analog Output".

P-0-0423 - Attributes

Para. Name:	**DE**	Analog-Ausgang 2, Signalauswahl		
	EN	Analog output 2, signal selection		
	FR	Sortie analogique 2, sélection de signal		
	ES	Salida analógica 2, selección de señal		
	IT	Uscita analogica 2, Scelta del Segnale		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	ja
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		0 / 2^32-1		
Default value:		1.0	**Cyc. transmittable:**	no

P-0-0424, Analog output 2, expanded signal selection

To be able to show signals as analog voltages, but which are not in **P-0-0426, Analog outputs, IDN list of assignable parameters**, then the option of an expanded signal select is possible. This becomes active as long as no parameter is assigned via **P-0-0423, Analog output 2 signal selection**.

The following expanded signal select options are available:

- expanded signal select with permanently defined signals
- byte output
- bit output

1) Expanded signal selection with fixed signals

Internal signal numbers are assigned which are not in the drive in the form of ID numbers. These signals have permanent units making an evaluation via **P-0-0425, Analog output 2, scalling per 10V full scale** possible. The evaluation factor 1.0 equals the permanent unit. The following permanently defined signals are possible:

Signal number P-0-0424	Output signal	Reference unit: Evaluation factor 1.0000
0x00000001	motor encoder sine signal	0.5V/10V
0x00000002	motor encoder cosine signal	0.5V/10V
0x00000003	Opt. enc. sine signal	0.5V/10V
0x00000004	Opt. enc. cosine signal	0.5V/10V
0x00000005	Position command difference on the pos. controller	rot. ⇒ 1000rpm/10V lin. ⇒ 100m/min/10V
0x00000006	DC bus power	1kW/10V
0x00000007	absolute DC bus power value	1kW/10V
0x00000008	effective current	S-0-0110/10V
0x00000009	relative current	S-0-0110/10V
0x0000000a	thermal load	100 % / 10V
0x0000000b	motor temperature	150°C/10V
0x0000000c	magnetizing current	S-0-0110/10V
0x0000000d	velocity command at the velocity controller	rot. ⇒ 1000rpm/10V lin. ⇒ 100m/min/10V
FREE		
FREE		
...		
0x00000014	synchronous position command value	rot. => 360°/10V lin. => 1mm/10V
0x00000015	synchronous velocity	rot. => 1000rpm/10V lin. => 100m/min/10V
0x00000016	master axis position fine interpolation	2^20/10V
0x00000017	master axis speed in the NC cycle	rot. => 1000rpm/10V

Fig. 3-41: Signal select list with predefined signal selection

The outputs are scaling dependent and always relate to the motor shaft given position and velocity data.

2) Byte output

With this option it is possible to output memory locations of the data memory as an analog voltage. It can only be practically applied if the data storage structure is known. As this is, however, different from version to version, the function can only be used by the respective developer. The function is activated by setting bit 28 in **P-0-0424, Analog output 2, expanded signal selection**. The address of the memory cell is defined in the least significant 24 bit of the expanded signal selection.

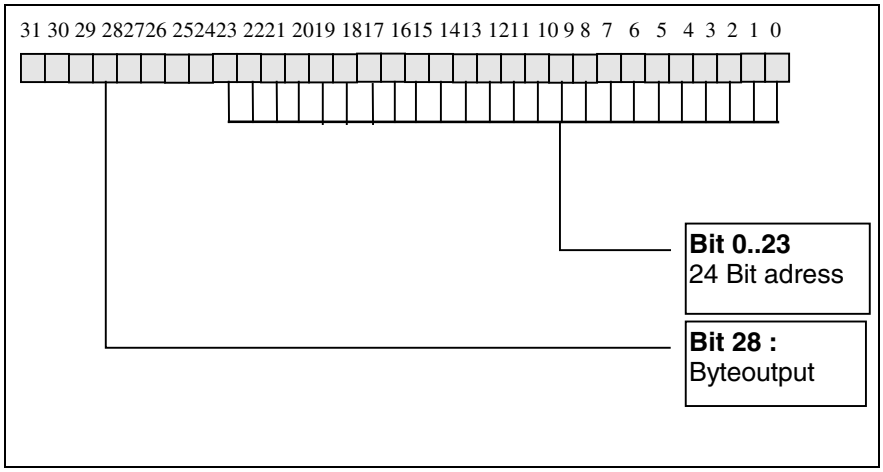


Fig. 3-42: Definition **P-0-0424, Analog output 2, expanded signal selection** with byte output

3) Bit output

With this option individual bits of the data memory can be shown as an analog voltage. If the respective bit is set, then 10V is output at the analog output. A cleared bit outputs -10V. The function is activated by setting bit 29 and inputting the desired memory address in **P-0-0424, Analog output 2, expanded signal selection**.

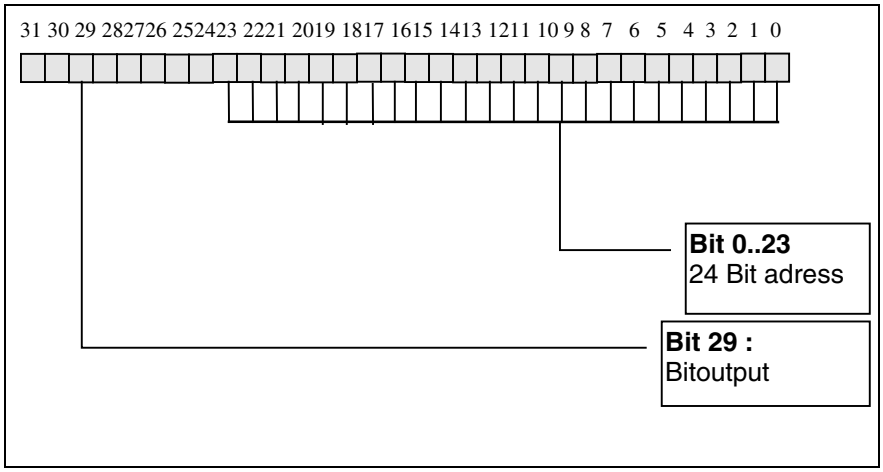


Fig. 3-43: Definition **P-0-0424, Analog output 2, expanded signal selection** with bit output

See also the functional description: "Analog Output".

P-0-0424 - Attributes

Para. Name:	**DE**	Analog-Ausgang 2, erweiterte Signalauswahl		
	EN	Analog output 2, expanded signal selection		
	FR	Sortie analogique 2, sélection de signal élargie		
	ES	Salida analógica 2, selección de señal ampliada		
	IT	Uscita analogica 2, Superamento Scelta		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	no
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		-- / --		
Default value:		--	**Cyc. transmittable:**	no

P-0-0425, Analog output 2, scaling per 10V full scale

The resolution of the selected signal can be varied with parameter **P-0-0425, Analog output 2 scaling per 10V full scale**. If an ID no. is assigned via **P-0-0423, Analog output 2, signal selection**, the evaluation is assigned the same unit as the parameter with the assigned ID number. The output of pre-defined signals means that the scaling has a decimal factor of 4 decimal places. It has a permanent reference with fixed unit. The scaling defines the least significant bit for bit and byte outputs. The input is an integer value without decimal places.

See also the functional description: "Analog Output".

P-0-0425 - Attributes

Para. Name:	**DE**	Analog-Ausgang 2, Bewertung [1/10V]		
	EN	Analog output 2, scaling per 10V full scale		
	FR	Sortie analogique 2, calibrage [1/10V]		
	ES	Salida analógica 2, calibrado [1/10V]		
	IT	Uscita analogica 2, Scala per 10V fondo scala		
Function:		Parameter	**Editability:**	P234
Data length:			**Memory:**	-
Format:		P-0-0420/P-0-0421	**Validity check:**	no
Unit:		P-0-0420/P-0-0421	**Extreme value check:**	no
Decimal places:		P-0-0420/P-0-0421	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0426, Analog outputs, IDN list of assignable parameters

The parameter P-0-0426, Analog outputs, IDN list of assignable parameters contains a list of all parameters assignable via P-0-0420, Analog output 1 signal selection and P-0-0423, Analog output 2, signal selection.

See also the functional description: "Analog Output".

P-0-0426 - Attributes

Para. Name:	**DE**	Analog-Ausgabe, IDN-Liste der zuweisbaren Parameter		
	EN	Analog outputs, IDN list of assignable parameters		
	FR	Sorties analog., liste des paramètres pouvant être assignés		
	ES	Salidas analógicas, lista IDN de los números ID asignables		
	IT	Uscite analogiche, Lista IDN dei Parametri assignabili		
Function:		Parameter	**Editability:**	no
Data length:		2Byte var.	**Memory:**	-
Format:		IDN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0502, Encoder emulation, resolution

The function Incremental encoder emulation can output the signals

- P-0-0053, Master drive position and
- S-0-0051, position feedback value 1

as incremental encoder signals. For this, the plug-in module DAE02.1 is necessary. The parameter P-0-0502, Encoder emulation, resolution defines the **line count per** emulated **revolution**.

see also the functional description: "Functional principle: Incremental Encoder Emulation"

P-0-0502 - Attributes

Para. Name:	**DE**	Geber-Emulation Auflösung		
	EN	Encoder emulation, resolution		
	FR	Emulation codeur, résolution		
	ES	Emulación de encoder, resolución		
	IT	Emulazione Encoder, Risoluzione		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		Cycles/Rev	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0503, Marker pulse offset

With this parameter, the position of the reference pulse (zero pulse) of the emulated incremental encoder output can be shifted within one (electr. or mech.) turn.

See also functional description: "Encoder emulation".

P-0-0503 - Attributes

Para. Name:	**DE**	Referenzimpuls-Offset		
	EN	Marker pulse offset		
	FR	Décalage du top 0 pour emul. codeur incr.		
	ES	Desviación impulso de referencia		
	IT	Offset Impulso di Zero		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Deg	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0505, Signal selection incremental encoder

The function Incremental encoder emulation can output the signals

- P-0-0053, Master drive position and
- S-0-0051, position feedback value 1

as incremental encoder signals. The parameter P-0-0505, Signal selection incremental encoder selects the signal for the output of the incremental encoder emulation.

Value in P-0-0505	Function
0	Incremental encoder emulation not active
1	Emulation of **P-0-0053, Master drive position**
2	Emulation of **S-0-0051, position feedback value 1**

Fig. 3-44: Function of P-0-0505, Signal selection incremental encoder emulator

P-0-0505 - Attributes

Para. Name:	**DE**	Signalauswahl Inkrementalgeber-Emulator		
	EN	Signal selection incremental encoder		
	FR	Sélection de signal pour emul. codeur incr.		
	ES	Selección de señal emulador de encoder incremental		
	IT	Emulazione Encoder incr., Selezione Segnale		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0508, Commutation offset

For synchronous motors, this parameter indicates the offset between the initial position value of the motor encoder and the resulting absolute electrical angle between the stator current vector and the rotor flux vector.

For motors with motor feedback data memory, like MKD, the commutation offset is stored in the feedback and therefore does not need to be entered.

This value must always be redetermined, if

- the motor feedback system encounters a change in its mechanical structure,
- A mechanical restructuring of primary and secondary portions takes place.

For asynchronous motors, this parameter has no meaning.

See also the functional description: "Determining the commutation offset".

P-0-0508 - Attributes

Para. Name:	**DE**	Kommutierungs-Offset		
	EN	Commutation offset		
	FR	Offset de commutation		
	ES	Offset de conmutación		
	IT	Offset di Commutazione		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

P-0-0509, Slot angle

This parameter is not currently available for use.

P-0-0509 - Attributes

Para. Name:	**DE**	Passfedernut-Winkel		
	EN	Slot angle		
	FR	Angle de clavette		
	ES	Angulo de chavetero		
	IT	Angolo sede per linguetta		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0510, Moment of inertia of the rotor

This parameter indicates the moment of inertia of the rotor without load. For motors with feedback memory (e.g. MKD), it is saved in the feedback.

See also the functional description: "Motor Feedback-Data Memory".

P-0-0510 - Attributes

Para. Name:	**DE**	Rotor-Trägheitsmoment		
	EN	Moment of inertia of the rotor		
	FR	Couple d'inertie du rotor		
	ES	Par de inercia de rotor		
	IT	Coppia di Inerzia del Rotore		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		5	**Combination check:**	no
Input min/max:		00000.00001 / 00100.00000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0511, Brake current

The brake current is monitored by the drive controller if the motor is equipped with a blocking brake and a value other than 0 is entered in this parameter. If the brake current lies outside the range

(0.4 . . . 1.6) • P-0-0511,

then error message **F268 Brake fault** will be generated.

See also the functional description: "Motor Holding Brake"

P-0-0511 - Attributes

Para. Name:	**DE**	Haltebremsenstrom		
	EN	Brake current		
	FR	Courant frein		
	ES	Corriente de freno		
	IT	Corrente Freno		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.000 / 0000500.000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0518, Amplifier nominal current 2

The parameter specifies the maximum nominal current of the amplifier at reduced peak current.

It specifies together with the parameters

- **S-0-0110, Amplifier peak current**
- **S-0-0112, Amplifier nominal current**
- **P-0-0519, Amplifier peak current 2**

the length of the peak current characteristics line for the peak current limit of the amplifier.

No value can be entered, since it is permanently programmed within the amplifier.

P-0-0518 - Attributes

Para. Name:	**DE**	Verstärker-Nennstrom 2		
	EN	Amplifier nominal current 2		
	FR	Courant nominal variateur 2		
	ES	Amplificador corriente nominal 2		
	IT	Corrente Nominale Azionamento 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.001 / 0000500.000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0519, Amplifier peak current 2

The drive offers the possibility to define a different continuous peak current characteristic line with reduced amplifier peak current, and therefore an increased amplifier continuous current.

Parameter P-0-0519 specifies an amplifier peak current for this case.

It determines the working points on the peak current characteristic line.

No value for this parameter can be entered, since it is permanently programmed in the amplifier.

P-0-0519 - Attributes

Para. Name:	**DE**	Verstärker-Spitzenstrom 2		
	EN	Amplifier peak current 2		
	FR	Courant crête variateur 2		
	ES	Amplificador corriente punta 2		
	IT	Corrente di Picco Azionamento 2		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.001 / 0000500.000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0523, Commutation, probe value

If the commutation offset for linear synchronous motors is to be set with the **P-0-0524, Commutation adjustment command**, then the setting probe value should be entered in the **P-0-0523, Commutation, probe value** parameter.

See also the functional description: "Determining the commutation offset".

P-0-0523 - Attributes

Para. Name:	**DE**	Kommutierungseinstellung Messwert		
	EN	Commutation, probe value		
	FR	Mesure réglage de commutation		
	ES	Ajuste de conmutación, valor de medición		
	IT	Commutazione, Valore di Probe		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		S-0-0076	**Extreme value check:**	yes
Decimal places:		S-0-0077/S-0-0078	**Combination check:**	no
Input min/max:		-034560.0000 / 0034559.9999		
Default value:		-	**Cyc. transmittable:**	-

P-0-0524, D300 Commutation adjustment command

Parameter P-0-0524 can activate the command for setting the commutation offset.

After the start of the command, the drive will automatically set the appropriate commutation offset for synchronous motors.

See also the functional description: "Determining the commutation offset".

P-0-0524 - Attributes

Para. Name:	**DE**	D300 Kommando Kommutierungseinstellung		
	EN	D300 Commutation adjustment command		
	FR	D300 Instruction Réglage de commutation		
	ES	D300 Comando ajuste de conmutación		
	IT	D300 Comando Regolazione di commutazione		
Function:		Command	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0525, Type of motor brake

This parameter specifies whether an electrically released or electrically engaged brake is being used. If an **MHD**, **MKE** or **MKD** motor is used, then the brake will be electrically released, if there is one. The bit 0 will be set automatically to 0. If other motor types are used, this bit must be entered during the start-up procedure.

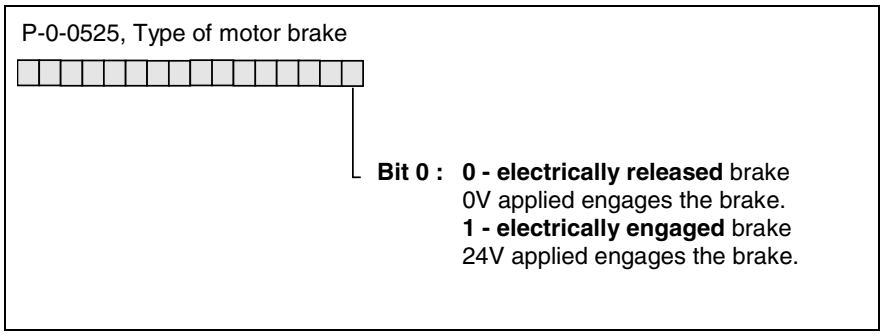


Fig. 3-45: Setting the type of motor brake

See also the functional description: "Motor Holding Brake".

P-0-0525 - Attributes

Para. Name:	**DE**	Haltebremsen-Typ		
	EN	Type of motor brake		
	FR	Type de frein		
	ES	Tipo de freno		
	IT	Tipo di Freno		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		--	**Combination check:**	no
Input min/max:		0x0000 / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-0526, Brake control delay

If a holding brake is used, the time delay between the activation of the brake and the time when it gets its full force must be set in this parameter.

It must be sure that the drive is still electrically controlled as long as the brake does not grip firmly.

This value is entered automatically when MHD, MKD or MKE motors are used. When using Indramat brakes in conjunction with asynchronous motors, then the standard value to be entered is 150 ms.

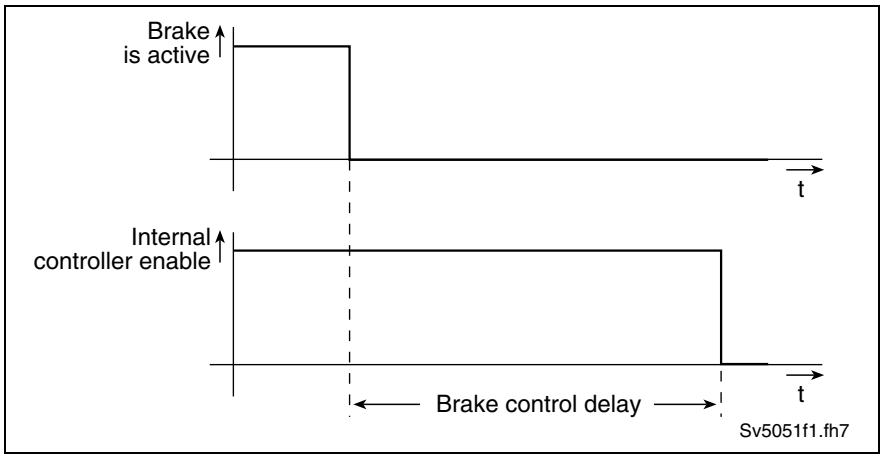


Fig. 3-46: Brake control delay

See also the functional description: "Motor Holding Brake".

P-0-0526 - Attributes

Para. Name:	**DE**	Haltebremsen-Verzugszeit		
	EN	Brake control delay		
	FR	Délai frein		
	ES	Retardo de freno		
	IT	Ritardo Freno		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000000 / 0000100000		
Default value:		-	**Cyc. transmittable:**	-

P-0-0530, Slip increase

In an asynchronous motor, the rotor resistance and consequently the rotor time constant changes with the temperature. The slip increase compensates for this change.

The slip increase per 100K(elvin) is motor-specific and is specified by Indramat for each individual motor.

See also the functional description: "Asynchronous motors".

P-0-0530 - Attributes

Para. Name:	**DE**	Schlupfanhebung		
	EN	Slip increase		
	FR	Accroissement de glissement par température		
	ES	Aumento de deslizamiento		
	IT	Incremento Slip		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		1/100K	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		001.00 / 003.00		
Default value:		-	**Cyc. transmittable:**	-

P-0-0531, Stall current factor

The stall current limit is used to limit the peak current of the motor to reasonable values when operating at high velocities. Higher currents lead only to higher losses, not to more shaft output power.

This limit value is set by Indramat. If 0 is entered, the limit is inactive.

See also the functional description: "Asynchronous Motors" and "Synchronous Motors".

P-0-0531 - Attributes

Para. Name:	**DE**	Kippstromfaktor		
	EN	Stall current factor		
	FR	Facteur du courant de décrochage		
	ES	Factor de corriente de inversión		
	IT	Fattore di Corrente di Inversione		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A/Vmin	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		0000000000 / 4294967295		
Default value:		-	**Cyc. transmittable:**	-

P-0-0532, Premagnetization factor

The pre-magnetization factor is used for application-dependent decreases in the servo magnetization current. Together with parameter **P-0-4004, Magnetizing current**, it specifies the motor's magnetization current.

Effective magnetization current =

magnetization current • pre-magnetization scaling factor

With a pre-magnetizing factor of 100%, the servo magnetization current in the motor will flow so that in the constant Torque range a, torque proportional to the moment-producing current will result.

If the magnetization current is multiplied by this factor, then the conductor losses are lower and motor noise in idle could be reduced.

See also the functional description: "Scaling factor pre-magnetizing".

P-0-0532 - Attributes

Para. Name:	**DE**	Vormagnetisierungsfaktor		
	EN	Premagnetization factor		
	FR	Facteur de pré-magnétisation		
	ES	Factor de magnetización previa		
	IT	Fattore di Premagnetizzazione		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		%	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00025 / 00100		
Default value:		-	**Cyc. transmittable:**	-

P-0-0533, Flux loop proportional gain

The flux loop controls the magnetization current in the field-weakening range.

The parameter value is set by Indramat.

See also the functional description: "Asynchronous Motors" and "Synchronous Motors".

P-0-0533 - Attributes

Para. Name:	**DE**	Feldregler Proportionalverstärkung		
	EN	Flux loop proportional gain		
	FR	Gain prop. de l'asservissement de flux		
	ES	Regulador de campo amplificación proporcional		
	IT	Guadagno prop. Anello di Flusso		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A/V	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		00.100 / 65.535		
Default value:		-	**Cyc. transmittable:**	-

P-0-0534, Flux loop integral action time

The flux loop controls the magnetization current in the field-weakening range.

The parameter value is set by Indramat.

See also the functional description: "Asynchronous Motors" and "Synchronous Motors".

P-0-0534 - Attributes

Para. Name:	**DE**	Feldregler Nachstellzeit		
	EN	Flux loop integral action time		
	FR	Part intégrale de l'asservissement de flux		
	ES	Regulador de campo tiempo de reajuste		
	IT	Tempo Integrazione Anello di Flusso		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		1	**Combination check:**	no
Input min/max:		0000.0 / 6553.5		
Default value:		-	**Cyc. transmittable:**	-

P-0-0535, Motor voltage at no load

The motor voltage in the field-weakening range is set so that it reaches a value lower than or equal to the DC bus voltage.

Under load, the motor voltage will be raised to the maximum motor voltage.

See also the functional description: "Asynchronous Motors" and "Synchronous Motors".

P-0-0535 - Attributes

Para. Name:	**DE**	Motorleerlaufspannung
	EN	Motor voltage at no load
	FR	Tension moteur á vide
	ES	Tension de marcha en vacio de motor
	IT	No Carico Tensione Motore

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	%Uzwk	**Extreme value check:**	yes
Decimal places:	1	**Combination check:**	no
Input min/max:	0050.0 / 0100.0		
Default value:	-	**Cyc. transmittable:**	-

P-0-0536, Motor voltage max.

The motor voltage in the field-weakening range is set so that it reaches a value lower than or equal to the DC bus voltage.

At full load, the motor voltage will rise to the maximum motor voltage. The output voltage will be sinusoidal up to a value of 90% .

See also the functional description: "Asynchronous motors" and "Synchronous Motors".

P-0-0536 - Attributes

Para. Name:	**DE**	Motormaximalspannung
	EN	Motor voltage max.
	FR	Tension max. moteur
	ES	Tensión máxima de motor
	IT	Tensione Motore massima

Function:	Parameter	**Editability:**	P234
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	%Uzwk	**Extreme value check:**	yes
Decimal places:	1	**Combination check:**	no
Input min/max:	0050.0 / 0100.0		
Default value:	-	**Cyc. transmittable:**	-

P-0-0537, S1 Kink speed

From the S1 kink speed on, core losses result in a drop in continuous power. This motor-specific velocity determined by Indramat is only useful for the "S1 operating mode". From this velocity on, the field is weakened early enough as to keep the motor temperature low.

See also the functional description: "Asynchronous motors".

P-0-0537 - Attributes

Para. Name:	**DE**	S1-Eckdrehzahl
	EN	S1 Kink speed
	FR	S1 Vitesse de puissance nominale = tension boucle interm.
	ES	S1-Número de revoluciones angular
	IT	Velocità limite S1

Function:	Parameter	**Editability:**	P234
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	Rpm	**Extreme value check:**	yes
Decimal places:	4	**Combination check:**	no
Input min/max:	000000.0000 / 429496.7295		
Default value:	-	**Cyc. transmittable:**	-

P-0-0538, Motor function parameter 1

Structure:

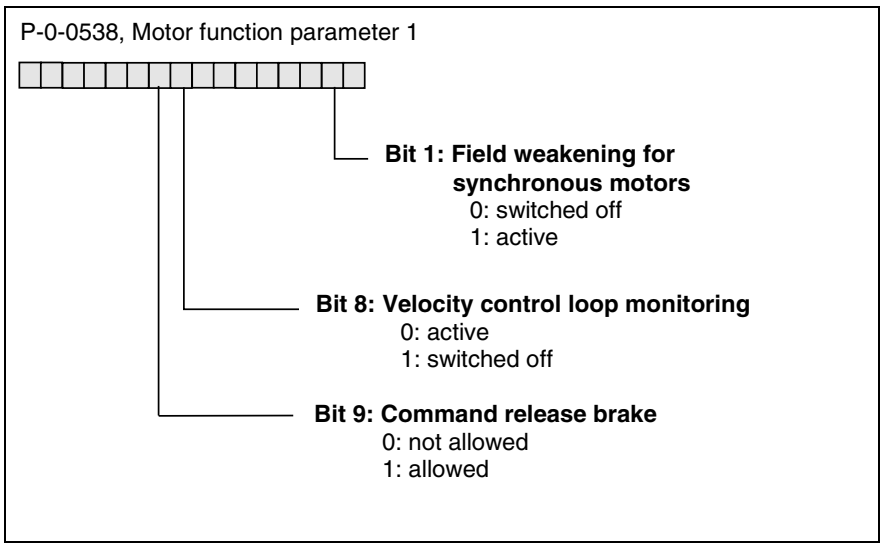


Fig. 3-47: P-0-0538, Motor function parameter 1

DANGER

Mortal injuries caused by unintentional axis movements!

⇒ If the velocity control loop monitoring function is switched off, carefully control the preset velocity command values, in order to avoid unintentional axis movements.

⇒ When you release the motor holding brake, the axis can move.

see also functional description "Velocity control loop monitoring"

see also functional description "Synchronous motors", subsection "Field weakening for synchronous motors"

see also functional description "Motor holding brake"

P-0-0538 - Attributes

Para. Name:	**DE**	Motorfunktionsparameter 1
	EN	Motor function parameter 1
	FR	Paramètre de fonctions 1 moteur
	ES	Parámetro de funciones 1 de motor
	IT	Parametro funzioni motore 1

Function:	Parameter	**Editability:**	P23
Data length:	2Byte	**Memory:**	-
Format:	BIN	**Validity check:**	Phase3
Unit:	---	**Extreme value check:**	no
Decimal places:	--	**Combination check:**	yes
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-0542, B100 Command Release motor holding brake

The command is used to release the motor holding brake when the drive enable is switched off.

The command must be enabled via the motor function parameter P-0-0538, bit 7, before activating it.

When activating the command, the motor holding brake is opened and stays open until the command is finished or until the brake is closed by another switching off the drive enable.

See also the functional description: "Motor Holding Brake".

P-0-0542 - Attributes

Para. Name:	**DE**	B100 Kommando Öffnen der Motorhaltebremse
	EN	B100 Command Release motor holding brake
	FR	B100 Instruction Lâcher frein
	ES	B100 Comando Abrir del freno de motor
	IT	B100 Comando Sblocco Freno

Function:	Command	**Editability:**	P4
Data length:	2Byte	**Memory:**	no
Format:	BIN	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	no

P-0-0750, Master axis revolutions per master axis cycle

Parameter **P-0-0750, Master axis revolutions per master axis cycle** defines the modulo range for **P-0-0053, Master drive position**. The information on the range of the master axis cycle is given to the drive with this parameter. Within this range, exceeded master axis positions can be processed correctly.

The master axis cycle is defined on the control unit side. It contains the number of master axis revolutions required in order to bring all drives, that are to follow the master axis, back to a defined position with respect to each other.

The value of this parameter normally is set to the least common multiple (LCM) of the input revolutions of the master drive gear (P-0-0156) of the respective slave axes.

P-0-0750 - Attributes

Para. Name:	**DE**	Leitachsumdrehungen pro Leitachszyklus		
	EN	Master axis revolutions per master axis cycle		
	FR	Révolutions de l'axe guide par cycle		
	ES	Revoluciones del eje conductor por ciclo		
	IT	N. di giri de l'asse guida per ciclo		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	Param.-E²prom
Format:		DEC_OV	**Validity check:**	P3-4
Unit:			**Extreme value check:**	yes
Decimal places:		-	**Combination check:**	-
Input min/max:		1 / 2048		
Default value:		1	**Cyc. transmittable:**	no

P-0-0751, Synchronization divisions per command cycle slave axis

A division of the command value cycle is defined with this parameter. The drive calculates the command value cycle from the master axis cycle and the master drive gear and can be read from parameter **P-0-0754, Command value cycle**.
The synchronization division can be selected for synchronization in parameter **P-0-0155, Synchronization mode**. The distance traveled during the synchronization process won't be longer than the defined division. The position to which the slave axis synchronizes is calculated by means of modulo division from the synchronous position command value in the command value cycle.

The synchronization division can be smaller or greater than a load revolution of the drive.

P-0-0751 - Attributes

Para. Name:	**DE**	Aufsynchronisierteilbereiche pro Sollwertzyklus Folgeachse		
	EN	Synchronization divisions per command cycle slave axis		
	FR	Divisions de synchronisation par cycle consigne axe suiveur		
	ES	Divisiones de sincronización por ciclo nominal eje seguidor		
	IT	Divisioni di sincronizzazione per ciclo comandato asse slave		
Function:		Par.	**Editability:**	-
Data length:			**Memory:**	Param.-E²prom
Format:			**Validity check:**	-
Unit:			**Extreme value check:**	-
Decimal places:		-	**Combination check:**	-
Input min/max:		1 / 32768		
Default value:		1	**Cyc. transmittable:**	no

P-0-0752, Load revolutions per actual value cycle slave axis

With modulo position scaling, the actual value cycle determines the maximum range of actual position values at the slave axis. This parameter indicates the number of load revolutions of which the actual value cycle consists. The drive then generates an actual position value that is within this range and that can be read from parameter **P-0-0753, Position actual value in actual value cycle**.
The actual value cycle is required if, in the case of phase synchronization, synchronization is to be carried out in a range greater than a load revolution. The synchronisation range can then be the command value

cycle or a division of it. For synchronization, the actual position value in the command value cycle or a division of it is deduced from the actual position value in the actual value cycle by means of modulo division. In order to always have unequivocal values, the actual value cycle has to be an integer multiple of the command value cycle. Please take this into account when defining the actual value cycle.

If several electronic gear ratios are to be set at an axis (e.g. because of different sizes), there are several command value cycles at this axis. The actual value cycle then has to be set in such a way that it complies with the least common multiple (LCM) of these command value cycles.

If the electronic gear is not to be changed, the actual value cycle is set in such a way that it complies with the command value cycle or a multiple of it.

If synchronization is to be carried out only within one load revolution (modulo range), the number of load revolutions per actual value cycle of the slave axis can be set to 1.

P-0-0752 - Attributes

Para. Name:	**DE**	Lastumdrehungen pro Istwertzyklus Folgeachse		
	EN	Load revolutions per actual value cycle slave axis		
	FR	Révolutions de charge par cycle valeur actuelle axe suiveur		
	ES	Revoluciones de carga por ciclo valor real eje seguidor		
	IT	Giri della carga per ciclo valore reale del slave		
Function:		Par.	**Editability:**	-
Data length:			**Memory:**	Param.-E²prom
Format:			**Validity check:**	-
Unit:			**Extreme value check:**	-
Decimal places:		-	**Combination check:**	-
Input min/max:		1 / 4096		
Default value:		1	**Cyc. transmittable:**	no

P-0-0753, Position actual value in actual value cycle

With the operating mode for synchronization being set and modulo position scaling, this parameter indicates a current actual position value. It is within the range determined by parameter **P-0-0752, Load revolutions per actual value cycle slave axis**.

This actual position value is set by the commands "Set absolute measuring" or "Drive controlled homing procedure" for the actual position value that has been selected in the operating mode for synchronization. If, for example, the operating mode "Phase synchronization with virtual master axis, encoder 1" has been set, **P-0-0753, Position actual value in actual value cycle** will change by analogy with actual position value-1. Its range, however, is limited to **S-0-0103, Modulo value**. The homing of actual position value-1 causes **P-0-0753, Position actual value in actual value cycle** to be set to the same value as actual position value-1.

The position status of the actual position value in the actual value cycle can be taken from bit 4 of parameter **P-0-0089, Cam shaft status**. This reference bit is cleared when the **P-0-0752, Load revolutions per actual value cycle slave axis** parameter is changed. In this case the reference bit of the assigned encoder is cleared, too.

When activating the operating mode for synchronization, the travel distance for synchronization is determined with the actual position value in the actual value cycle. The result is a limitation of the travel distance to the synchronization range (command value cycle, division of the command value cycle or modulo range) that has been set.

P-0-0753 - Attributes

Para. Name:	**DE**	Lageistwert im Istwertzyklus		
	EN	Position actual value in actual value cycle		
	FR	Positon actuelle dans cycle de valeur actuelle		
	ES	Posición real en ciclo de valor real		
	IT	Posizione reale in ciclo valore reale		
Function:		Par.	**Editability:**	-
Data length:			**Memory:**	no
Format:			**Validity check:**	-
Unit:			**Extreme value check:**	-
Decimal places:		-	**Combination check:**	-
Input min/max:		-2147483648 / 2147483647		
Default value:		-	**Cyc. transmittable:**	AT

P-0-0754, Command value cycle

The command value cycle defines the range that includes the synchronous position command values of an axis that is operated in the phase synchronization operating mode. The command value cycle is calculated by the drive. For calculation parameters

- **P-0-0750 Master axis revolutions per master axis cycle**
- **P-0-0156, Master drive gear input revolutions**
- **P-0-0157, Master drive gear output revolutions**
- **P-0-0159, Slave drive feed travel**

are used.

With rotary position scaling, the following applies:

$$\text{Command value cycle} = \text{P-0-0750} \bullet \frac{\text{P-0-0157}}{\text{P-0-0156}} \bullet 360°$$

Fig. 3-48: Command value cycle

With translatory position scaling, the following applies:

$$\text{Command value cycle} = \text{P-0-0750} \bullet \frac{\text{P-0-0157}}{\text{P-0-0156}} \bullet P-0-0159$$

Fig. 3-49: Command value cycle

If one of the parameters of the master drive gear (P-0-0156, P-0-0157) changes, the command value cycle also changes.

The command value cycle can be selected in parameter **P-0-0155, Synchronization mode** as a range for synchronization. With parameter **P-0-0751, Synchronization divisions per command cycle slave axis** a division of the command value cycle can be defined. This division can also be selected for synchronization in **P-0-0155, Synchronization mode**.

P-0-0754 - Attributes

Para. Name:	**DE**	Sollwertzyklus		
	EN	Command value cycle		
	FR	Cycle de consigne		
	ES	Ciclo de valor nominal		
	IT	Ciclo di valore comandato		
Function:		Par.	**Editability:**	-
Data length:			**Memory:**	no
Format:			**Validity check:**	-
Unit:			**Extreme value check:**	-
Decimal places:		-	**Combination check:**	-
Input min/max:		0 / 2147483647		
Default value:		-	**Cyc. transmittable:**	AT

P-0-0755, Gear reduction

This parameter is used to set a movement that is phase synchronous with the master axis, with the operating mode cam shaft being active. With an endlessly turning axis, the forward movement is realized with the linear part, the compensatory movements with the cam shaft.

Note: With the value zero in this parameter the parallel phase-synchronous movement is switched off.

The following parameters are used to calculate the additive synchronous position command values $XSynch_{Add}$.

- **P-0-0053, Master drive position**
- **P-0-0083, Gear ratio fine adjust**
- **P-0-0108, Master drive polarity**
- **P-0-0156, Master drive gear input revolutions**
- **P-0-0157, Master drive gear output revolutions**
- **P-0-0159, Slave drive feed travel**
- **P-0-0755, Gear reduction**

Depending on the type of position scaling, the following formulas are used to calculate the additive synchronous position command values $XSynch_{Add}$.

$$XSynchAdd = \pm P\text{-}0\text{-}0053 * \frac{P\text{-}0\text{-}0157 * (1 + P\text{-}0\text{-}0083)}{P\text{-}0\text{-}0156 * P\text{-}0\text{-}0755} * 360°$$

Fig. 3-50: Generation of the additive synchronous position command value with rotary scaling

$$XSynchAdd = \pm P\text{-}0\text{-}0053 * \frac{P\text{-}0\text{-}0157 * (1 + P\text{-}0\text{-}0083)}{P\text{-}0\text{-}0156 * P\text{-}0\text{-}0755} * P\text{-}0\text{-}0159$$

Fig. 3-51: Generation of the additive synchronous position command value with translatory scaling

Note: When using the parallel phase-synchronous movement, it is necessary to set the modulo position scaling.

P-0-0755 - Attributes

Para. Name:	**DE**	Untersetzung		
	EN	Gear reduction		
	FR	Rapport de réduction		
	ES	Relación de reducción		
	IT	Rapporto riduttore		
Function:		Par.	**Editability:**	-
Data length:			**Memory:**	Param.-E²prom
Format:			**Validity check:**	-
Unit:			**Extreme value check:**	-
Decimal places:		-	**Combination check:**	-
Input min/max:		1 / 32767		
Default value:		1	**Cyc. transmittable:**	no

P-0-0765, Range of master encoder

Parameter **P-0-0765, Range of master encoder** determines the absolute range of the master axis encoder. The input is a factor of 2^{20}, so that the following applies:

Modulo range of the master axis encoder = master axis range * 2^{20}.

The master axis encoder is evaluated and represented in this range, i.e. **P-0-0052, Position feedback value 3** represents the position of the master axis encoder in the format master axis encoder range * 2^{20}.

If the master axis encoder range is * 2^{20} smaller than the absolute range of representation of the master axis encoder (automatically specified by the selected encoder), bit 6 is set in parameter **S-0-0115, Position feedback 2 type** (absolute encoder evaluation is possible).

P-0-0765 - Attributes

Para. Name:	**DE**	Leitachsgeberbereich		
	EN	Range of master encoder		
	FR	Codeur axe maître, champs		
	ES	Encoder eje conductor, campo		
	IT	Encoder asse guida, campo		
Function:		Parameter	**Editability:**	P2
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	P3-4
Unit:		Rev	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	-
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-0766, Master encoder, monitoring window

The master encoder monitoring window serves to monitor the absolute master encoder. If the position of the absolute master encoder is changed, with the drive being switched off, by a value greater than the one indicated in the monitoring window, error **F276, Absolute encoder out of allowed window** is output.

With the value zero this monitoring function is switched off.

P-0-0766 - Attributes

Para. Name:	**DE**	Leitachsgeber, Überwachungsfenster		
	EN	Master encoder, monitoring window		
	FR	Codeur axe maître, fenêtre de monitorage		
	ES	Encoder eje conductor, ventana de control		
	IT	Encoder asse guida, finestra di monitoraggio		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	P3-4
Unit:			**Extreme value check:**	-
Decimal places:		0	**Combination check:**	-
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-0-1201, Ramp 1 pitch

The parameter **P-0-1201, Ramp 1 pitch**, takes effect in

- "Velocity control" operating mode and
- during the error response "Velocity command to zero with command ramp and filter".

The acceleration and delay entered here are used to create a ramp starting from the last effective command value to the new command value.

In the Velocity control operating mode, the resulting velocity command value is derived from the sum of the value resulting from the pitch function in **S-0-0036, Velocity command value** and the direct value in **S-0-0037, Additive velocity command value**.

During the error response "Velocity command value, zero-switch with ramp and filter", velocity proceeds from the current feedback velocity to 0, using the effective velocity command value with the deceleration specified by the parameter **P-0-1201, Ramp 1 pitch**.

Note: With the value in the parameter **P-0-1201, Ramp 1 pitch** = 0, the ramp is not active.

See also the functional description: "Velocity command value to zero with filter and ramp".

P-0-1201 - Attributes

Para. Name:	**DE**	Steigung Rampe 1		
	EN	Ramp 1 pitch		
	FR	Montée Rampe 1		
	ES	Rampa de velocidad		
	IT	Velocità Rampa 1		
Function:		Parameter	**Editability:**	P234
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		S-0-0160	**Extreme value check:**	yes
Decimal places:		S-0-0161/S-0-0162	**Combination check:**	no
Input min/max:		00000000.000 / 02147483.647		
Default value:		-	**Cyc. transmittable:**	-

P-0-1222, Velocity command filter

The parameter **P-0-1222, Velocity command filter** works

- in the Velocity control operating mode and
- during the error response "Velocity command value zero-switch with ramp and filter."

The time constant entered here is used in the velocity control operating mode to pass the value in **S-0-0036, Velocity command value** which is limited to the acceleration set in **P-0-1201, Ramp 1 pitch**, through a low-pass filter. This serves to smooth abrupt changes in acceleration over the course of command value changes.

The resulting velocity command value results from the sum of the sloped and filtered value in **S-0-0036, Velocity command value** and the direct value in **S-0-0037, Additive velocity command value**.

When error response "Velocity command value, to zero with ramp and filter" is executed, velocity proceeds from the current feedback velocity to 0, using the effective velocity command value with the deceleration specified by the parameter in **P-0-1201, Ramp 1 pitch**. It is also passed through the deep low filter specified by **P-0-1222, Velocity command filter**.

See also the functional description: "Velocity command value to zero with filter and ramp".

P-0-1222 - Attributes

Para. Name:	**DE**	Geschwindigkeits-Sollwert-Filter		
	EN	Velocity command filter		
	FR	Filtrage de consigne vitesse		
	ES	Filtro para valor de consigna de velocidad		
	IT	Filtro per valore nominale della velocità		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		ms	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 00999		
Default value:		-	**Cyc. transmittable:**	-

P-0-4000, Current-zero-trim phase U

This parameter serves to display the determined result of the zero-trim procedure for the current feedback sensor of phase U.

P-0-4000 - Attributes

Para. Name:	**DE**	Strommess-Nullabgleich Phase U
	EN	Current-zero-trim phase U
	FR	Réglage courant nul phase U
	ES	Compensación cero de medición de corriente fase U
	IT	Regolazione Corrente 0 Fase U

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_MV	**Validity check:**	no
Unit:	%	**Extreme value check:**	yes
Decimal places:	2	**Combination check:**	no
Input min/max:	0000.00 / 0100.00		
Default value:	-	**Cyc. transmittable:**	-

P-0-4001, Current-zero-trim phase V

This parameter serves to display the determined result of the zero-trim procedure for the current feedback sensor of phase V.

P-0-4001 - Attributes

Para. Name:	**DE**	Strommess-Nullabgleich Phase V	
	EN	Current-zero-trim phase V	
	FR	Réglage courant nul phase V	
	ES	Compensación cero de medición de corriente fase V	
	IT	Regolazione Corrente 0 Fase V	
Function:		Parameter	**Editability:** no
Data length:		2Byte	**Memory:** -
Format:		DEC_MV	**Validity check:** no
Unit:		%	**Extreme value check:** yes
Decimal places:		2	**Combination check:** no
Input min/max:		0000.00 / 0100.00	
Default value:		-	**Cyc. transmittable:** -

P-0-4002, Current-amplify-trim phase U

For trimming of the current sensor regarding its gain error, this parameter is determined in the test area for the Indramat drive controllers.

P-0-4002 - Attributes

Para. Name:	**DE**	Strommess-Verst.abgleich Phase U	
	EN	Current-amplify-trim phase U	
	FR	Réglage amplification courant phase U	
	ES	Compensación de amplif. de medición de corriente fase U	
	IT	Regolaz. Aplif. Corrente Fase U	
Function:		Parameter	**Editability:** no
Data length:		2Byte	**Memory:** -
Format:		DEC_OV	**Validity check:** Phase3
Unit:		--	**Extreme value check:** yes
Decimal places:		4	**Combination check:** no
Input min/max:		0.0000 / 6.5535	
Default value:		-	**Cyc. transmittable:** -

P-0-4003, Current-amplify-trim phase V

For trimming of the current sensor regarding its gain error, this parameter is determined in the test area for the Indramat drive controllers.

P-0-4003 - Attributes

Para. Name:	**DE**	Strommess-Verst.abgleich Phase V		
	EN	Current-amplify-trim phase V		
	FR	Réglage amplification courant phase V		
	ES	Compensación de amplif. de medición de corriente fase V		
	IT	Regolaz. Amplif. Corrente Fase V		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		4	**Combination check:**	no
Input min/max:		0.0000 / 6.5535		
Default value:		-	**Cyc. transmittable:**	-

P-0-4004, Magnetizing current

This parameter indicates the nominal or servo-magnetization current set by Indramat. The magnetizing current actually flowing is also dependent on the pre magnetization scaling factor.

See also the functional description: "Asynchronous Motors" and "Synchronous Motors".

P-0-4004 - Attributes

Para. Name:	**DE**	Magnetisierungsstrom		
	EN	Magnetizing current		
	FR	Courant de magnétisation		
	ES	Corriente de magnetización		
	IT	Corrente di Magnetizzazione		
Function:		Parameter	**Editability:**	P23
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.000 / 0000025.000		
Default value:		-	**Cyc. transmittable:**	-

P-0-4011, Switching frequency

This parameter is used to set the switching frequency of the pulse width modulation controller to **4 kHz or 8 kHz**.

See also the functional description: "Current Limit".

P-0-4011 - Attributes

Para. Name:	**DE**	Schaltfrequenz		
	EN	Switching frequency		
	FR	Fréquence de coupure		
	ES	Frecuencia de conmutación		
	IT	Frequenza di Modulazione		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		kHz	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	yes
Input min/max:		00004 / 00008		
Default value:		-	**Cyc. transmittable:**	-

P-0-4012, Slip factor

The slip factor is the most important parameter for asynchronous motors. It indicates the rotor frequency in relation to the torque-producing current. The lower the rotor time constant is, the higher the slip factor.

This parameter is set motor-specifically by Indramat.

See also the functional description: "Asynchronous motors".

P-0-4012 - Attributes

Para. Name:	**DE**	Schlupffaktor		
	EN	Slip factor		
	FR	Facteur de glissement		
	ES	Factor de deslizamiento		
	IT	Fattore di Slip		
Function:		Parameter	**Editability:**	P234
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		Hz/100A	**Extreme value check:**	yes
Decimal places:		2	**Combination check:**	no
Input min/max:		000.01 / 500.00		
Default value:		-	**Cyc. transmittable:**	-

P-0-4014, Motor type

The motor type can be selected with this parameter. The following motor types are supported:

- 1: MHD
- 2: 2AD / 1MB with NTC sensor
- 3: LSF
- 4: LAR / LAF
- 5: MKD / MKE
- 6: 2AD /1MB with PTC sensor
- 7: synchronous kit motor

Depending on motor type, the units and the decimal places are switched in several parameters.

	Linear motor Motor type = 3 or 4		Rotary motor Motor type = 1,2,5,6 or 7	
Parameter	**Unit**	**Decimal places**	**Unit**	**Decimal places**
S-0-0113	mm /min	2	U/min	4
S-0-0116	mm	5	Tp/Umdr	0
S-0-0348	mAs²/mm	1	mAs²/rad	1
P-0-0018	mm	1	pair of pols	0
P-0-0051	N/A	2	Nm/A	2
P-0-0510	kg	5	kg/m²	5
P-0-4010	kg	6	kg/m²	6

Fig. 3-52: Switching units and decimal places

See also the function description: "Setting of the Motor Type through P-0-4014, Motor Type".

P-0-4014 - Attributes

Para. Name:	**DE**	Motorart		
	EN	Motor type		
	FR	Type de moteur		
	ES	Tipo de motor		
	IT	Tipo Motore		
Function:		Parameter	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		--	**Extreme value check:**	yes
Decimal places:		0	**Combination check:**	no
Input min/max:		00001 / 00006		
Default value:		-	**Cyc. transmittable:**	-

P-0-4015, Intermediate DC bus voltage

The intermediate voltage of the DC bus is stored in the amplifier as a parameter.

The parameter cannot be edited and is only for display and for internal calculations (PWM).

P-0-4015 - Attributes

Para. Name:	**DE**	Zwischenkreisspannung
	EN	Intermediate DC bus voltage
	FR	Tension du circuit intermédiaire CD
	ES	Tensión de circuito intermedio
	IT	Tensione sul Bus DC

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	Phase3
Unit:	V	**Extreme value check:**	yes
Decimal places:	0	**Combination check:**	no
Input min/max:	00000 / 01000		
Default value:	-	**Cyc. transmittable:**	-

P-0-4035, Trim-current

In this parameter, the current value is stored with which the current measurement of the drive control is precisely adjusted in the factory. This eliminates systematical errors in the current measurement. The value has no meaning to the user and cannot be changed.

P-0-4035 - Attributes

Para. Name:	**DE**	Abgleichstrom		
	EN	Trim-current		
	FR	Courant pour le calibrage		
	ES	Corriente para calibrar		
	IT	Corrente per calibrare		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	Phase3
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.001 / 0000500.000		
Default value:		-	**Cyc. transmittable:**	-

P-0-4036, Contacted motor type

The value of parameter **S-0-0141, Motor type** is stored in this parameter every time the "Basic load" function is executed.

With every execution of the switching command from phase 3 to phase 4 (progression to operating mode), the value of parameter **S-0-0141 Motor type** from the motor feedback data memory is compared to P-0-4036. If the data differ, then a different motor has been contacted. The message "UL" will then appear on the SS display. By pressing "S1", the default control parameters of the new motor will be activated.

This feature is only relevant for motors with motor feedback data memory, such as MHD-, MKD or MKE motors.

See also the functional description: "Automatic Execution of the Load Default Feature".

P-0-4036 - Attributes

Para. Name:	**DE**	Angeschlossener Motortyp
	EN	Contacted motor type
	FR	Type du moteur raccordé
	ES	Tipo de motor conectado
	IT	Tipo di Motore collegato

Function:	Parameter	**Editability:**	P234
Data length:	1Byte var.	**Memory:**	-
Format:	ASCII	**Validity check:**	Phase3
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	- / -		
Default value:	-	**Cyc. transmittable:**	-

P-0-4045, Active permanent current

This parameter shows how much current the drive can supply in the actual combination in continual operation. Multiplying with the **P-0-0051, torque constant** of the motor yields the continual operational torque.

With this current, the device is not overloaded. It is also the current to which the current limit reduces.

This parameter is calculated by the drive control during switching to the operating mode and is not changeable.

See also the functional description: "Current Limit".

P-0-4045 - Attributes

Para. Name:	**DE**	Wirksamer Dauerstrom
	EN	Active permanent current
	FR	Courant permanent actuel
	ES	Corriente continua activa
	IT	Corrente continuativa attiva

Function:	Parameter	**Editability:**	no
Data length:	4Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	A	**Extreme value check:**	no
Decimal places:	3	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-0-4046, Active peak current

This parameter shows how much current the drive can supply in the actual combination **momentarily** (0.4 s). Multiplying with the **P-0-0051, torque constant** of the motor yields the momentary operation torque (i.e. for acceleration operations).

This parameter is calculated and preset by the drive control during switching to the operating mode. The dynamic current limiting reduces this value according to the load of the amplifier.

Determining this limit is influenced by the following current and torque limitations and settings:

ID-Nr.	Name	Unit
S-0-0109	Motor peak current	A
S-0-0110	Amplifier peak current	A
S-0-0092	Torque limit bipolar	%
P-0-0109	Torque/force peak limit	%
P-0-4004	Magnetizing current	A

Fig. 3-53: Active peak current, dependencies

See also the functional description: "Current Limit".

P-0-4046 - Attributes

Para. Name:	**DE**	Wirksamer Spitzenstrom		
	EN	Active peak current		
	FR	Courant crête actuel		
	ES	Corriente punta activa		
	IT	Corrente di Picco attiva		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		A	**Extreme value check:**	no
Decimal places:		3	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-0-4094, C800 Command Base-parameter load

With the execution of this command, all parameters in **S-0-0192, IDN list of backup operation data** are set to their base values.

If the firmware in the programming. module is replaced with another version and the parameter memory is incompatible, then error **F209 PL Load parameter default values** is generated. "**PL**" appears on the display. (At this time, the SERCOS. interface is not yet active.)

Afterwards, execute the command by pressing the S1 button.

See also the functional description: "Basic parameter block".

P-0-4094 - Attributes

Para. Name:	**DE**	C800 Kommando Basisparameter laden		
	EN	C800 Command Base-parameter load		
	FR	C800 Instruction Chargement des paramètres de base		
	ES	C800 Comando Cargar parámetros de base		
	IT	C800 Comando Caricamento parametri di base		
Function:		Command	**Editability:**	P23
Data length:		2Byte	**Memory:**	-
Format:		BIN	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		--	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-7-0018, Number of pole pairs/pole pair distance

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the number of pole pairs of the motor.

P-7-0018 - Attributes

Para. Name:	**DE**	Polpaarzahl/Polpaarweite		
	EN	Number of pole pairs/pole pair distance		
	FR	Nombre de paires de pôles/distance polaire		
	ES	Número de pares de polos/distancia del par de polos		
	IT	Numero coppia di poli/distanza coppia di poli		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	-
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		P-0-4014	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-7-0051, Torque/force constant

The Torque/Force constant indicates, how much torque or force the motor delivers at a certain real current.

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the torque constant of the motor.

P-7-0051 - Attributes

Para. Name:	**DE**	Drehmoment/Kraft-Konstante		
	EN	Torque/force constant		
	FR	Constante de couple/force		
	ES	Constante de par/fuerza		
	IT	Costante di Coppia/Forza		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		P-0-4014	**Extreme value check:**	no
Decimal places:		2	**Combination check:**	no
Input min/max:		000.01 / 655.35		
Default value:		-	**Cyc. transmittable:**	-

P-7-0508, Commutation offset

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the commutation offset of the motor. The commutation offset contains the angle of the rotor in relation to the motor encoder.

P-7-0508 - Attributes

Para. Name:	**DE**	Kommutierungs-Offset		
	EN	Commutation offset		
	FR	Offset de commutation		
	ES	Offset de conmutación		
	IT	Offset di Commutazione		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		00000 / 65535		
Default value:		-	**Cyc. transmittable:**	-

P-7-0509, Slot angle

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the slot angle of the motor.

P-7-0509 - Attributes

Para. Name:	**DE**	Passfedernut-Winkel		
	EN	Slot angle		
	FR	Angle de clavette		
	ES	Angulo de chavetero		
	IT	Angolo sede per linguetta		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_MV	**Validity check:**	no
Unit:			**Extreme value check:**	no
Decimal places:		1	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-7-0510, Moment of inertia of the rotor

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the moment of inertia of the motor's rotor.

P-7-0510 - Attributes

Para. Name:	**DE**	Rotor-Trägheitsmoment		
	EN	Moment of inertia of the rotor		
	FR	Couple d'inertie du rotor		
	ES	Par de inercia de rotor		
	IT	Coppia di Inerzia del Rotore		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		kgm^2	**Extreme value check:**	no
Decimal places:		5	**Combination check:**	no
Input min/max:		00000.00001 / 00100.00000		
Default value:		-	**Cyc. transmittable:**	-

P-7-0511, Brake current

For motors with feedback data memory, e.g. MKD, this parameter shows the value stored there for the brake current of the motor.

P-7-0511 - Attributes

Para. Name:	**DE**	Haltebremsenstrom		
	EN	Brake current		
	FR	Courant frein		
	ES	Corriente de freno		
	IT	Corrente Freno		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		A	**Extreme value check:**	yes
Decimal places:		3	**Combination check:**	no
Input min/max:		0000000.000 / 0000500.000		
Default value:		-	**Cyc. transmittable:**	-

P-7-0513, Feedback type 1

For feedbacks with data memory, e.g. motor feedbacks of MKD or MHD motors, this parameter shows the value stored there for the kind and type of the feedback.

This table shows common feedback types:

Value in P-7-0513, feedback type (decimal)	Type
0	Singleturn-Resolver (one resolver cycle absolut range)
16	Multiturn-Resolver (65536 resolver cycles absolut range)
3 oder 4	Singleturn-DSF/HSF (one encoder revolution absolut range)
19 oder 20	Multiturn-DSF/HSF (4096 encoder revolutions absolut range)
16385	Absolut linear scale with Endat-Interface
49153	Singleturn-Code-Encoder with Endat-Interface (one encoder revolution absolut range)
57345	Multiturn-Code-Encoder with Endat-Interface (4096 encoder revolutions absolut range)

P-7-0513 - Attributes

Para. Name:	**DE**	Feedback-Typ 1
	EN	Feedback type 1
	FR	Type de feedback 1
	ES	Tipo de retroalimentación 1
	IT	Tipo di Feedback 1

Function:	Parameter	**Editability:**	no
Data length:	2Byte	**Memory:**	-
Format:	DEC_OV	**Validity check:**	no
Unit:	--	**Extreme value check:**	no
Decimal places:	0	**Combination check:**	no
Input min/max:	--- / ---		
Default value:	-	**Cyc. transmittable:**	-

P-7-0517, Feedback type 2

For optional encoder with feedback data memory, this parameter shows the value stored there for the kind and type of the feedback 2.

P-7-0517 - Attributes

Para. Name:	**DE**	Feedback-Typ 2		
	EN	Feedback type 2		
	FR	Type de feedback 2		
	ES	Tipo de retroalimentación 2		
	IT	Tipo di Feedback 2		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

P-7-4028, Impulse wire feedback - offset

The offset of the impulse wires referred to the resolver is saved in this parameter. It is measured in the factory and stored in the feedback memory.

P-7-4028 - Attributes

Para. Name:	**DE**	Impulsdrahtgeber-Offset		
	EN	Impulse wire feedback - offset		
	FR	Offset codeur impulsionnel câblé		
	ES	Offset de encoder de cable de impulsos		
	IT	Offset Impulso di Zero		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-7-4029, Impulse wire feedback - PIC counter value

This parameter contains the information of the absolute position of the encoder.

The value is updated at every position initialization. The value is read-only and cannot be edited by the user.

P-7-4029 - Attributes

Para. Name:	**DE**	Impulsdrahtgeber-Zählerstand		
	EN	Impulse wire feedback - PIC counter value		
	FR	Valeur du compteur codeur à câble d'impulsions		
	ES	Nivel de contador encoder de cable de impulsos		
	IT	Stato contatore generatore di impulsi		
Function:		Parameter	**Editability:**	no
Data length:		4Byte	**Memory:**	-
Format:		HEX	**Validity check:**	no
Unit:		--	**Extreme value check:**	no
Decimal places:		0	**Combination check:**	no
Input min/max:		--- / ---		
Default value:		-	**Cyc. transmittable:**	-

P-7-4047, Motor inductance

Inductance of the motor, measured between two terminals.

This is the value from the feedback data memory. During Basic Load, the P-7 parameters are copied into the P-0 parameters.

The parameter is set at the factory and cannot be changed.

P-7-4047 - Attributes

Para. Name:	**DE**	Motor-Induktivität		
	EN	Motor inductance		
	FR	Inductance moteur		
	ES	Inductividad de motor		
	IT	Induttanza Motore		
Function:		Parameter	**Editability:**	no
Data length:		2Byte	**Memory:**	-
Format:		DEC_OV	**Validity check:**	no
Unit:		mH	**Extreme value check:**	no
Decimal places:		2	**Combination check:**	no
Input min/max:		- / -		
Default value:		-	**Cyc. transmittable:**	-

Notes

4 Index

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

V

Notes

5 Service & Support

5.1 Helpdesk

Unser Kundendienst-Helpdesk im Hauptwerk Lohr am Main steht Ihnen mit Rat und Tat zur Seite. Sie erreichen uns

- telefonisch: **+49 (0) 9352 40 50 60**
  über Service Call Entry Center Mo-Fr 07:00-18:00
- per Fax: **+49 (0) 9352 40 49 41**
- per e-Mail: **service@indramat.de**

Our service helpdesk at our headquarters in Lohr am Main, Germany can assist you in all kinds of inquiries. Contact us

- by phone: **+49 (0) 9352 40 50 60**
  via Service Call Entry Center Mo-Fr 7:00 am - 6:00 pm
- by fax: **+49 (0) 9352 40 49 41**
- by e-mail: **service@indramat.de**

5.2 Service-Hotline

Außerhalb der Helpdesk-Zeiten ist der Service direkt ansprechbar unter

+49 (0) 171 333 88 26
oder **+49 (0) 172 660 04 06**

After helpdesk hours, contact our service department directly at

+49 (0) 171 333 88 26
or **+49 (0) 172 660 04 06**

5.3 Internet

Unter **www.indramat.de** finden Sie ergänzende Hinweise zu Service, Reparatur und Training sowie die **aktuellen** Adressen *) unserer auf den folgenden Seiten aufgeführten Vertriebs- und Servicebüros.

Verkaufsniederlassungen
Niederlassungen mit Kundendienst

Außerhalb Deutschlands nehmen Sie bitte zuerst Kontakt mit unserem für Sie nächstgelegenen Ansprechpartner auf.

*) http://www.indramat.de/de/kontakt/adressen
Die Angaben in der vorliegenden Dokumentation können seit Drucklegung überholt sein.

At **www.indramat.de** you may find additional notes about service, repairs and training in the Internet, as well as the **actual** addresses *) of our sales- and service facilities figuring on the following pages.

sales agencies
offices providing service

Please contact our sales / service office in your area first.

*) http://www.indramat.de/en/kontakt/adressen
Data in the present documentation may have become obsolete since printing.

5.4 Vor der Kontaktaufnahme... - Before contacting us...

Wir können Ihnen schnell und effizient helfen wenn Sie folgende Informationen bereithalten:

1. detaillierte Beschreibung der Störung und der Umstände.
2. Angaben auf dem Typenschild der betreffenden Produkte, insbesondere Typenschlüssel und Seriennummern.
3. Tel.-/Faxnummern und e-Mail-Adresse, unter denen Sie für Rückfragen zu erreichen sind.

For quick and efficient help, please have the following information ready:

1. Detailed description of the failure and circumstances.
2. Information on the type plate of the affected products, especially type codes and serial numbers.
3. Your phone/fax numbers and e-mail address, so we can contact you in case of questions.

5.5 Kundenbetreuungsstellen - Sales & Service Facilities

Deutschland – Germany

vom Ausland: (0) nach Landeskennziffer weglassen!
from abroad: don't dial (0) after country code!

Vertriebsgebiet Mitte Germany Centre	**SERVICE**	**SERVICE**	**SERVICE**
Rexroth Indramat GmbH Bgm.-Dr.-Nebel-Str. 2 / Postf. 1357 97816 Lohr am Main / 97803 Lohr **Kompetenz-Zentrum Europa** Tel.: +49 (0)9352 40-0 Fax: +49 (0)9352 40-4885	**CALL ENTRY CENTER** **MO – FR** **von 07:00 - 18:00 Uhr** **from 7 am – 6 pm** **Tel. +49 (0) 9352 40 50 60** service@indramat.de	**HOTLINE** **MO – FR** **von 17:00 - 07:00 Uhr** **from 5 pm - 7 am** + SA / SO **Tel.: +49 (0)172 660 04 06** **oder / or** **Tel.: +49 (0)171 333 88 26**	**ERSATZTEILE / SPARES** verlängerte Ansprechzeit - extended office time - ♦ nur an Werktagen - only on working days - ♦ von 07:00 - 18:00 Uhr - from 7 am - 6 pm - **Tel. +49 (0) 9352 40 42 22**
Vertriebsgebiet Süd Germany South	Vertriebsgebiet West Germany West	Gebiet Südwest Germany South-West	Gebiet Südwest Germany South-West
Rexroth Indramat GmbH Landshuter Allee 8-10 80637 München Tel.: +49 (0)89 127 14-0 Fax: +49 (0)89 127 14-490	Bosch Rexroth AG Regionalzentrum West Borsigstrasse 15 40880 Ratingen Tel.: +49 (0)2102 409-0 Fax: +49 (0)2102 409-406	Bosch Rexroth AG Service-Regionalzentrum Süd-West Fellbacherstr.115 70736 Fellbach Tel.: +49 (0)711 54041–0 Fax: +49 (0)711 54041–147	Bosch Rexroth AG Regionalzentrum Südwest Ringstrasse 70 / Postfach 1144 70736 Fellbach / 70701 Fellbach Tel.: +49 (0)711 57 61–100 Fax: +49 (0)711 57 61–125
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Europa (West) - Europe (West)

vom Ausland: (0) nach Landeskennziffer weglassen, Italien: 0 nach Landeskennziffer mitwählen
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