

ELECTRONIC
AND CONTROL
PROCESS DEVICES



DAT9000 series Intelligent Units



NEW LINE 2010



UNI EN ISO 9001:2008

www.datexel.it

DAT9000 series

DATEXEL



The main functions supported are the following:

Communication:

- Read data from "slave" devices (Modbus function 04)
- Write data to "slave" devices (Modbus function 16)

Logical:

- Boolean functions (And, Or,)
- Compare (>, <, =,)
- Arithmetical function (Sum, Subtraction, Multiplication, Division)
- Calculation functions (Scaling, Exponential functions, Square root extraction, Arithmetic mean,)
- Moving and conversion of data

Process:

- Conditional statements (IF)
- Flow control (Goto, Call,)

(For the complete list of functions and their operation, refer to the Programming software User Guide).

DATEXEL has designed the DAT9000 series Intelligent units in order to offer to the market products that, thanks to their potentiality, will allow the user to monitor and control, by the MODBUS RTU Master/ Slave devices connected on RS-485 line, several types of architecture developed for medium and small size control processes and automation systems.

By the DAT9000 series units it is possible to read and write the parameters of the slave devices connected and to execute logical and mathematical functions as calculation of the arithmetic mean, square root extraction, linearization of signals, to set and control thresholds, etc..

Areas of Application



All of the DAT9000 series devices are equipped with one interface RS-485 Modbus RTU Master, one interface RS-485 Modbus RTU Slave one interface RS-232 for an eventual connection to a Modem or Panel Operator, one interface

Ethernet 10 Base-T Modbus TCP.

By means of the Ethernet interface, or by the RS-485 "SLAVE" or RS-232 ports it is possible to read and write, in real time, the internal registers of the unit and to execute the following operations:

- Programming of the Control Logic
- Monitor, request of data, programming in real time the Intelligent Unit
- Direct programming and request of data from the Slave devices connected
- Remote access for remote control and remote assistance operations (supervision, restoring, change parameters, system maintenance, etc..)



By means of the Ethernet interface, the RS 485 "Slave" port and the RS 232 port it is possible to connect the DAT9000 units to supervision systems, acquisition and recording data as SCADA systems, generic control software, PLC or panel operators.



The combination " DAT9000 Intelligent Unit + DAT3000 series remote I/O modules ", allows to realize a "System" with the following features:

DAT9000 series

DISTRIBUTED

By the connection on serial line RS 485 by Modbus RTU protocol, it is possible to manage either analogue or digital inputs and outputs using the remote I/O modules connected to the Intelligent Unit. On the RS 485, it is also possible to connect to the DAT9000 units the graphic display DAT9550 in order to visualize analogue and digital measures or alarms and to connect generic Modbus devices as valves, sensors, inverters, etc..

MODULAR

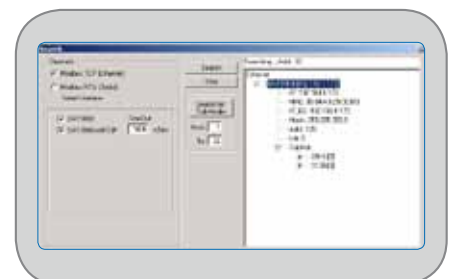
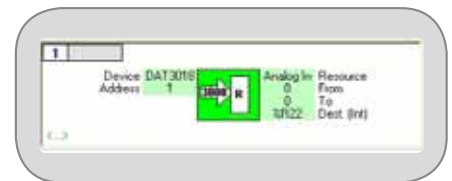
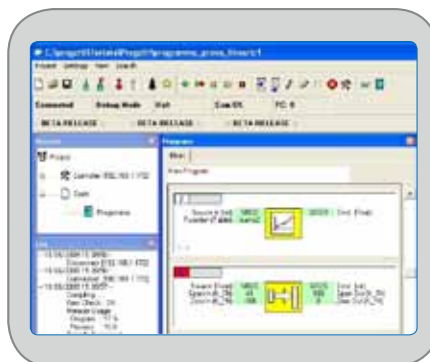
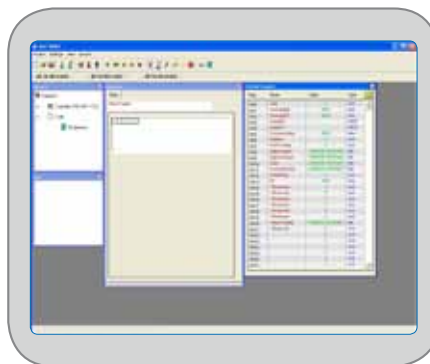
At any time it is possible to expand or modify the interfaces to the field.

OPEN

The communication protocols used for data acquisition from I/O (Modbus RTU) and for interface to the Ethernet network (Modbus TCP), are standards largely used in industry.

INTEGRATED

All the functions necessary to execute the application are integrated in the DAT9000 units and they are configurable by the software DEV9K, an easy and intuitive free IDE developed by DATEXEL and running under Windows operative system.



Software

The units of the DAT9000 series realize a full electrical isolation between the lines, introducing a valid protection against the effects of all ground loops eventually existing in industrial applications. The DAT9000 series is in compliance with the Directive 2004/108/EC on the Electromagnetic Compatibility.

Designed to be mounted on DIN rail (in compliance with the standard EN-50022) in easy way, the DAT9000 units allow the user to utilize as maximum the spaces wherein are housed, thanks to their small encumbrance (22.5 mm thickness).

The LEDs used to signal the Ethernet interface activity and the data flow on the serial line allow an easy monitoring of the system working.

For the connection of the signals are used removable screw terminals; for the connection to the Ethernet network and to the RS-232 port are used RJ45 connectors.

Thanks to this, the user can remove the devices in an easy and quickly way in order to simplify their maintenance.



The devices of the DAT9000 series are available in 4 different models:

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DAT9000



Intelligent Unit equipped with: n°1 interface RS-485 Modbus RTU Master, n°1 interface RS-485 Modbus RTU Slave, n°1 interface RS-232, n°1 interface Ethernet 10 Base-T Modbus TCP. (AVAILABLE)

DAT9000 IO



Intelligent Unit equipped with: n°1 interface RS-485 Modbus RTU Master, n°1 interface RS-485 Modbus RTU Slave, n°1 interface RS-232, n°1 interface Ethernet 10 Base-T Modbus TCP; N° 4 digital inputs and N° 2 SPDT relay outputs. (AVAILABLE)

SOME TYPICAL APPLICATIONS

- Compensation of the flow
- Tank level management
- Ovens control
- Sewage disposal plants
- Wine-making equipments
- Supervision of machines and plants
- Wells control
- Consumption monitoring
- Tanks water treatment
- Refrigerators management
- Alarms management
- Photovoltaic plants management

DAT9000 DL



Intelligent Unit equipped with: n°1 interface RS-485 Modbus RTU Master, n°1 interface RS-485 Modbus RTU Slave, n°1 RS-232 interface, n°1 interface Ethernet 10 Base-T Modbus TCP and micro SD card slot to memorize the data (Data Logger function). (AVAILABLE WITHIN DECEMBER 2010)

DAT9000 DL-IO



Intelligent Unit equipped with: n°1 interface RS-485 Modbus RTU Master, n°1 interface RS-485 Modbus RTU Slave, n°1 interface RS-232, n°1 interface Ethernet 10 Base-T Modbus TCP; N° 4 digital inputs; N° 2 SPDT relay outputs and micro SD card slot to memorize the data (Data Logger function). (AVAILABLE WITHIN DECEMBER 2010)

TECHNICAL SPECIFICATIONS



| | |
|-----------------------------------------|------------------------------------------------------|
| Power supply..... | : 18...30 Vdc |
| Current consumption | : 45 mA typ. @ 24 Vdc (standby condition); 80 mA max |
| Isolation..... | : 1500 Vac, 50 Hz, 1 min. (on all the ways) |
| Operative temperature | : -20 +60 °C |
| Storage temperature | : -40 + 85 °C |
| Relative humidity (not condensed)..... | : 0 90 % |
| Connections (Ethernet and RS-232) | : RJ 45 |
| Connections (Power supply – RS485)... | : Removable screw terminals |
| Housing | : Self-extinguishing plastic |
| Dimensions in mm (W x H x T) | : 100 x 120 x 22.5 |
| Weight..... | : About 160 gr. |



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