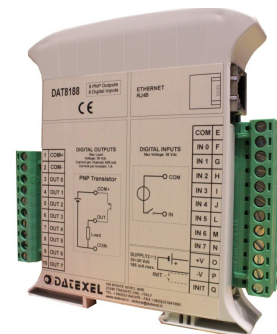


FEATURES

- Interface Ethernet 10/100 Base-T, Modbus TCP Server
- N.8 Digital inputs
- N.8 PNP outputs
- Built-in Web server to acquire the digital inputs state and drive the digital outputs via web browser
- Remotely programmable
- Connection by removable screw-terminals
- LED signalling for Link/Act Ethernet, power supply
- LED signalling for digital inputs and outputs state
- Galvanic isolation on all the ways
- EMC compliant – CE mark
- In compliance to EN-50022 DIN rail mounting



GENERAL DESCRIPTION

The device DAT8188 is a Modbus TCP server unit with 8 digital input channels and 8 PNP outputs. For the digital inputs are available up to 4 counters at 32 bit with measure of frequency up to 300 Hz. The Ethernet interface allows to read and write in real time the value of device's internal registers. The built-in Web Server of DAT8188 allows the remote visualization and acquisition of the digital inputs state, to drive the digital outputs and access to and configure the main Ethernet parameters via web browser. The device is also configurable by the software *Dev9K*, a free IDE developed by DATEXEL. The device DAT8188 realizes a full electrical isolation between the lines, introducing a valid protection against the effects of all ground loops eventually existing in industrial applications. The LEDs of signalling of Ethernet activity, input and output state and power supply allow a direct monitoring of the system functionality. The connection is made by removable screw-terminals (inputs, outputs and power supply) and RJ45 plug (Ethernet). The device is housed in a rough self-extinguishing plastic enclosure which, thanks to its thin profile of 22.5 mm only, allows a high density mounting on EN-50022 standard DIN rail.

USER INSTRUCTIONS

Before to install the device, please read the "Installation Instruction" section. To configure the device use the INIT modality. Connect the terminal INIT to the terminal -V; at the power-on the device will be automatically set in the configuration set-up (refer to the User Guide of the device). Connect power supply, serial bus, digital inputs and PNP outputs as shown in the "Wiring" section. The LEDs state depends on the working condition of the device: see the "Light Signalling" section to verify the device working state. To perform configuration and calibration operations, read the instructions in the User Guide of the device. To simplify handling or replacing of the device, it is possible to remove the wired terminals even with the device powered.

TECHNICAL SPECIFICATIONS (Typical @ 25 °C and in the nominal conditions)

<p>In compliance with Ethernet IEEE 802.3</p> <p>Network interface Ethernet 10/100Base-T Protocol Modbus TCP Max. cable length 100 meters Number of socket up to 16</p>	<p>DIGITAL INPUTS</p> <p>Channels 8 Input voltage (bipolar) 0 ÷ 3 V OFF state 10 ÷ 30 V ON state 4.7 KΩ Impedance 5 ms Sample time</p> <p>Number of counters 4 Counters register bit-length 32 bit Counters frequency up to 300 Hz Minimum pulse width 1 ms</p>	<p>POWER SUPPLY</p> <p>Power supply voltage 10 .. 30 Vdc Reverse polarity protection 60 Vdc max Consumption (standby) 60 mA tip@ 24Vdc Consumption (operative) 90 mA max@24Vdc Consumption (operative) 220 mA max@10Vdc</p>
	<p>DIGITAL OUTPUTS</p> <p>Channels 8 Type PNP Voltage 10.5+30 Vdc Max Load(*) 500 mA per channel 1 A per module Inductive Load 48 Ω – 2H max</p>	<p>ISOLATION</p> <p>Power Supply / Ethernet 1500 Vac, 50 Hz, 1 min Inputs / Power supply 1500 Vac, 50 Hz, 1 min Inputs / Ethernet 1500 Vac, 50 Hz, 1 min Input / Output 1500 Vac, 50 Hz, 1 min</p>
<p>ENVIRONMENTAL CONDITIONS</p> <p>Operative Temperature -10°C .. +60°C Storage Temperature -40°C .. +85°C Humidity (not condensed) 0 .. 90 % Maximum Altitude 2000 m Installation Indoor Category of installation II Pollution Degree 2</p>		<p>CONNECTIONS</p> <p>Ethernet RJ-45 (on terminals side) Inputs/Outputs Removable screw-terminals Power Supply Removable screw-terminals</p>
<p>MECHANICAL SPECIFICATIONS</p> <p>Material Self-extinguish plastic IP Code IP20 Wiring wires with diameter 0.8÷2.1 mm² /AWG 14-18 Tightening Torque 0.8 N m Mounting in compliance to DIN rail standard EN-50022 and EN-50035 Weight about 160g</p>		<p>EMC (for industrial environments)</p> <p>Immunity EN 61000-6-2 Emission EN 61000-6-4</p>
<p>(*) Protection against overcurrent and temperature Short-circuit current 1.7 A</p>		

INSTALLATION INSTRUCTIONS

The device is suitable for fitting to DIN rails in vertical position.
For optimum operation and long life follow these instructions:

When the devices are installed side by side it is necessary to separate them by at least 5 mm in the following case:

- If panel temperature exceeds 45°C and power supply value < 20 Vdc.

Make sure that sufficient air flow is provided for the device avoiding to place raceways or other objects which could obstruct the ventilation slits. Moreover it is suggested to avoid that devices are mounted above appliances generating heat; their ideal place should be in the lower part of the panel.
Install the device in a place without vibrations.

Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters, etc...) and to use shielded cable for connecting signals.

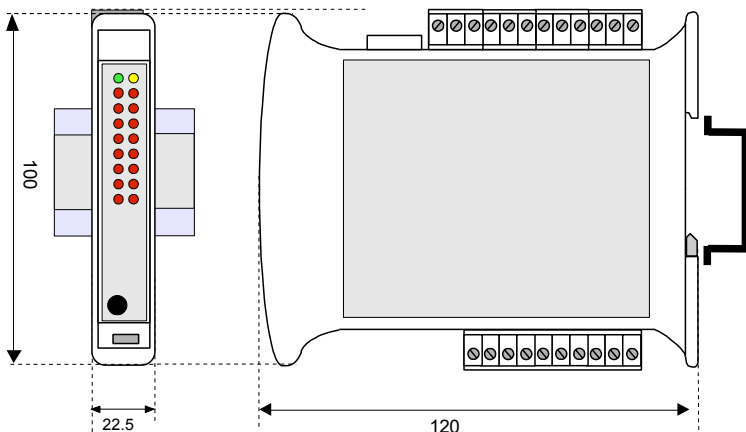
MAPPING MODBUS REGISTERS

Register Position	Description	Access
40002	Firmware [0]	RO
40003	Firmware [1]	RO
40004	Name [0]	R/W
40005	Name [1]	R/W
40007	Node ID	R/W
40011	System Flags	R/W
40012	Power Up / Safe	R/W
40013	Watchdog timer	R/W
40031	Digital Outputs	R/W
40032	Digital Inputs	RO
40033	Digital Inputs Rise Latch	R/W
40034	Digital Inputs Fall Latch	R/W
40035	Freq. Digital Input 0	RO
40036	Freq. Digital Input 1	RO
40037	Freq. Digital Input 2	RO
40038	Freq. Digital Input 3	RO
40039	32 bit Counter Digital Input 0	R/W
40041	32 bit Counter Digital Input 1	R/W
40043	32 bit Counter Digital Input 2	R/W
40045	32 bit Counter Digital Input 3	R/W

LIGHT SIGNALLING

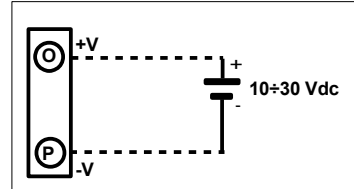
LED	COLOUR	STATE	DESCRIPTION
PWR	GREEN	ON	Device powered
		OFF	Device not powered
		BLINK	Watchdog alarm
STS	YELLOW	OFF	Device in RUN modality
		BLINK	Device in INIT modality
I n	RED	ON	Digital Inputs High Level (1)
		OFF	Digital Inputs Low Level (0)
O n	RED	ON	Digital Outputs High Level (1)
		OFF	Digital Outputs Low Level (0)

MECHANICAL DIMENSIONS (mm)

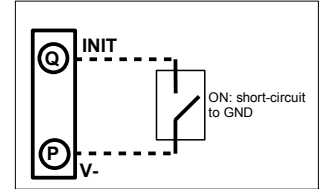


CONNECTIONS

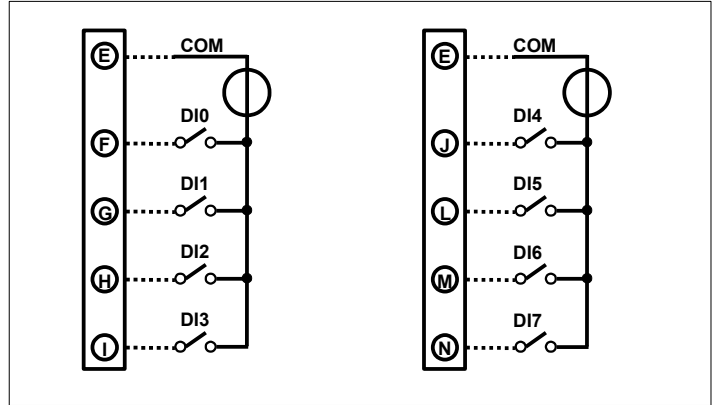
POWER SUPPLY



INIT

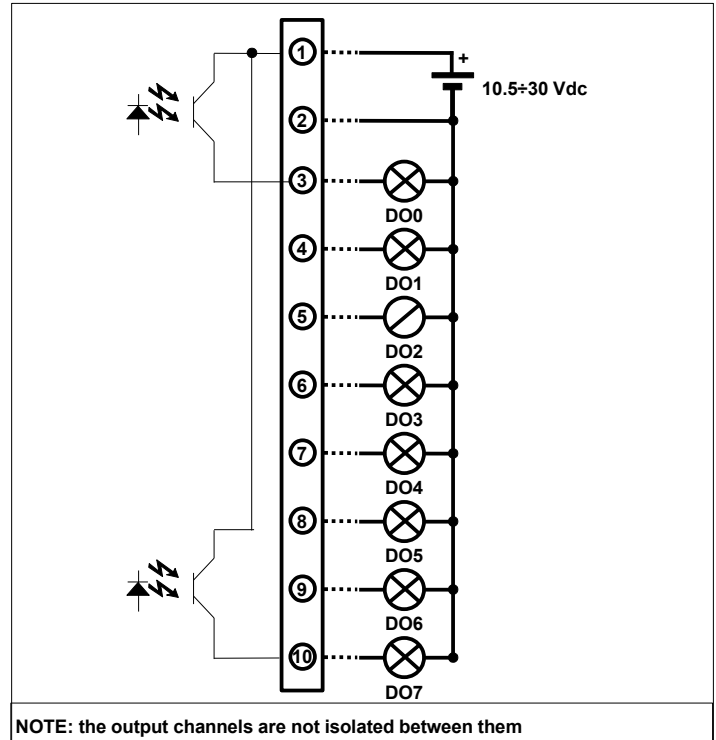


DIGITAL INPUTS



NOTE: the input channels are not isolated between them

DIGITAL OUTPUTS



NOTE: the output channels are not isolated between them

HOW TO ORDER

“ DAT 8188 “

Note: the device is provided with default configuration as:

IP address: 192.168.1.100

Modbus address: 1