

DAT 3028



FEATURES

- Field-Bus remote data acquisition
- Modbus Slave device on RS-485
- Modbus RTU/ Modbus ASCII protocol
- 8 channel output
- Outputs configurable as Voltage
- Watch-Dog Alarm
- Remotely Configurable
- 2000 Vac 3-ways Galvanic Isolation
- High Accuracy
- UL / CE mark
- DIN rail mounting in compliance with EN-50022

GENERAL DESCRIPTION

The DAT 3028 device generates 8 output analog signals from digital commands. The data are transmitted with MODBUS RTU/MODBUS ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to generate voltage signals up to 10V.

The device guarantees high accuracy and stable measure versus time and temperature.

To ensure the plant safety, two Watch-Dog timer alarms are provided.

The isolation between the parts of circuit removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.

The DAT 3028 is in compliance with the Directive UL 61010-1 for US market and with the Directive CSA C22.2 No 61010-1 for the Canadian market.

The device is housed in a rough self-extinguishing plastic container which, thanks to its thin profile of 17.5mm only, allows a high density mounting on EN-50022 standard DIN rail.

COMMUNICATION PROTOCOLS

The DAT3028 is designed to work with the MODBUS RTU/MODBUS ASCII protocol: standard protocol in field-bus; allows to directly interface DAT3000 series devices to the larger part of PLCs and SCADA applications available on the market.

For the protocol instructions, refer to the User Guide of the device.

USER INSTRUCTIONS

Before to install the device, please read the "Installation Instruction" section.

If the module configuration is unknown, with device powered off, connect the INIT terminal to the GND terminal (ground), at the next power on the device will be auto-configured in the default settings (refer to the User Guide of the device).

Connect power supply, serial bus and analogue outputs as shown in the "Wiring" section.

The "PWR" LED 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)

OUTPUT (8 channels)			Output Accuracy		POWER SUPPLY																													
Output type	Min	Max	Voltage	± 10 mV	Power supply voltage	18 .. 30 Vdc																												
Voltage			Thermal drift		Reverse polarity protection	60 Vdc max																												
Volt	0 V	+10 V	Full scale	± 0.01 % / °C	Current consumption	30 mA max.																												
			Load resistance		ISOLATION																													
			Voltage	≥ 5 KΩ	On all the ways	2000 Vac, 50 Hz, 1 min																												
			Response time		ENVIRONMENTAL CONDITIONS																													
			Slew-rate analogue output (with dedicated setting for each channel)		Operative Temperature	-10°C .. +60°C																												
			<table border="1"> <thead> <tr> <th>Value</th> <th>V/s</th> </tr> </thead> <tbody> <tr><td>00h</td><td>Disabled</td></tr> <tr><td>01h</td><td>0.15</td></tr> <tr><td>02h</td><td>0.30</td></tr> <tr><td>03h</td><td>0.60</td></tr> <tr><td>04h</td><td>1.20</td></tr> <tr><td>05h</td><td>2.40</td></tr> <tr><td>06h</td><td>4.80</td></tr> <tr><td>07h</td><td>9.60</td></tr> <tr><td>08h</td><td>19.2</td></tr> <tr><td>09h</td><td>38.4</td></tr> <tr><td>0Ah</td><td>76.8</td></tr> <tr><td>0Bh</td><td>153</td></tr> <tr><td>0Ch</td><td>Immediate</td></tr> </tbody> </table>	Value	V/s	00h	Disabled	01h	0.15	02h	0.30	03h	0.60	04h	1.20	05h	2.40	06h	4.80	07h	9.60	08h	19.2	09h	38.4	0Ah	76.8	0Bh	153	0Ch	Immediate		UL Operative Temperature	-10°C .. +40°C
Value	V/s																																	
00h	Disabled																																	
01h	0.15																																	
02h	0.30																																	
03h	0.60																																	
04h	1.20																																	
05h	2.40																																	
06h	4.80																																	
07h	9.60																																	
08h	19.2																																	
09h	38.4																																	
0Ah	76.8																																	
0Bh	153																																	
0Ch	Immediate																																	
			Data Transmission		Storage Temperature	-40°C.. +85°C																												
			Baud Rate	115.2 Kbps	Humidity (not condensed)	0 .. 90 %																												
			Max. distance	1.2 Km – 4000 ft	Maximum Altitude	2000 m																												
					Installation	Indoor																												
					Category of installation	II																												
					Pollution Degree	2																												
					MECHANICAL SPECIFICATIONS																													
					Material	Self-extinguish plastic																												
					IP Code	IP20																												
					Wiring	wires with diameter 0.8÷2.1 mm ² /AWG 14-18																												
					Tightening Torque	0.5 N m																												
					Mounting	in compliance with DIN rail standard EN-50022																												
					Weight	about 150 g.																												
					CERTIFICATIONS																													
					EMC (for industrial environments)																													
					Immunity	EN 61000-6-2																												
					Emission	EN 61000-6-4																												
					UL																													
					US Standard	UL 61010-1																												
					Canadian Standard	CSA C22.2 No 61010-1																												
					CCN	NRAQ/NRAQ7																												
					Typology	Open Type device																												
					Classification	Industrial Control Equipment																												
					File Number	E352854																												

INSTALLATION INSTRUCTIONS

The DAT 3028 is suitable for fitting to DIN rails in the vertical position. For optimum operation and long life follow these instructions:

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

- If panel temperature exceeds 45°C and at least one of the overload conditions exist.

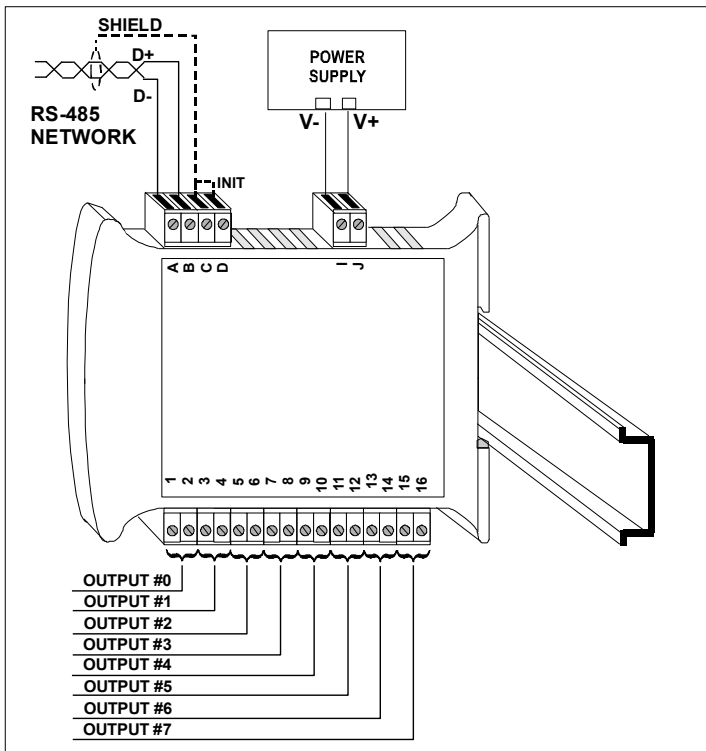
The overload conditions are the following:

- High supply voltage: >27Vdc

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.

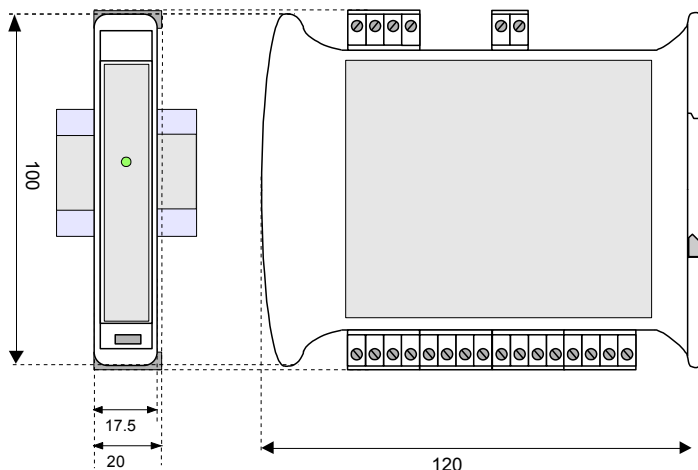
CABLING



LIGHT SIGNALLING

LED	COLOUR	STATE	DESCRIPTION
PWR	GREEN	ON	Device powered
		OFF	Device not powered / Wrong RS-485 cabling.
		FAST BLINK	Communication in progress (blink frequency depends to baud-rate)
		1 second BLINK	Watch-Dog Alarm condition

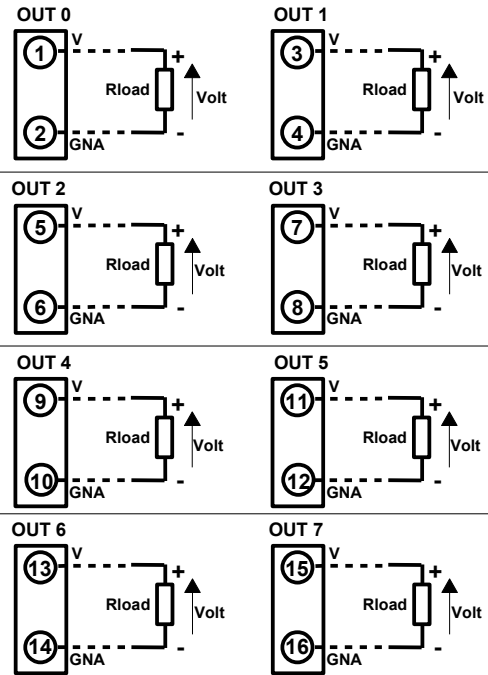
MECHANICAL DIMENSIONS (mm)



WIRING

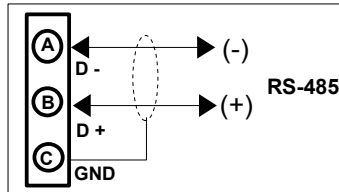
ANALOG OUTPUTS

VOLTAGE

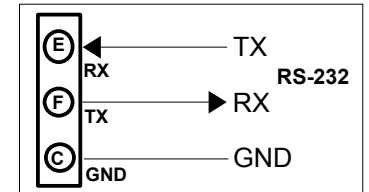


Note: the output channels are not isolated between them. Terminals GNA of channels connected between them.

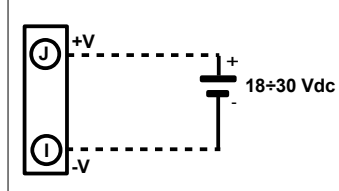
RS-485 NETWORK



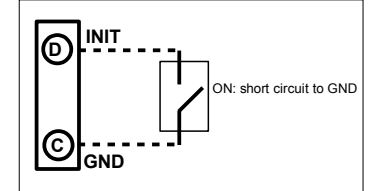
RS-232 NETWORK



POWER SUPPLY (*)



INIT



(*) Note: for UL installation the device must be powered using a power supply unit classified NEC class 2 or SELV

(**) Note: for RS232 version INIT and GND are inverted between them

ISOLATION STRUCTURE



HOW TO ORDER

In the order phase, it is mandatory to specify the interface type (RS485 or RS232). DAT3028 can be supplied with the configuration specified by the customer.

ORDER CODE:

DAT 3028 / 485

Interface type
485 : RS-485
232 : RS-232

■ = Requested
□ = Optional



The symbol reported on the product indicates that the product itself must not be considered as a domestic waste. It must be brought to the authorized recycle plant for the recycling of electrical and electronic waste. For more information contact the proper office in the user's city, the service for the waste treatment or the supplier from which the product has been purchased.