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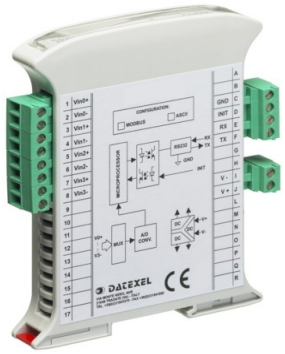
UNI EN ISO 9001:2008

Remote I/O module 2 channel V / mA output on RS-485 network

DAT 3022



FEATURES

- Field-Bus remote data acquisition
- RS-485 Master/Slave communication type
- MODBUS RTU/ASCII protocol
- 2 channel output
- Voltage or Current configurable outputs
- Watch-Dog Alarm
- Remotely Configurable
- 2000 Vac 3-way Galvanic Isolation
- High Accuracy
- EMC compliance – CE mark
- DIN rail suitable mounting - EN-50022 compliance

GENERAL DESCRIPTION

The DAT 3022 device generates up to 2 output analog signals from digital commands. Data values are transmitted with MODBUS RTU/ASCII protocol on the RS-485 network (RS-232 interface is available).
It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.
By means of a 16 bit converter, the device guarantee a high accuracy and a stable measure versus time and temperature.
To ensure the plant safety, two Watch-Dog timer alarms are provided.
The 2000 Vac isolation between input, power supply and serial line removes eventual ground-loop effects, allowing the use of the device even in the heavy environmental conditions.
DAT 3022 is in compliance with the Directive 2004/108/EC on the electromagnetic compatibility.
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 DAT3022 is designed to work with the MODBUS RTU/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, see the relative User Guide.

USER INSTRUCTIONS

Before to install the device, please read the “Installation Instruction” section.
If the module configuration is unknown, it can be hardly to establish a communication with them; connecting the INIT terminal to the GND terminal (ground), at the next power-up the device will be self-configured in the default settings (see Operating User Guide).
Connect power supply, serial bus and analog outputs as shown in the “Wiring” section.
The “PWR” LED state depending to the working condition of the device: see the "Light Signaling" section to verify the device working state.
To perform configuration and calibration operations, read the instructions in the Operating User Guide.
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 type	Min	Max
Voltage V	0 V	+10 V
Current mA	0 mA	+20 mA

Output calibration

Voltage	±10 mV
Current	±20 µA

Load resistance

Voltage	> 5 KΩ
Current	< 500 Ω

Thermal drift

Full scale	100 ppm max

Auxiliary Voltage 12V @ 20mA (2 channels)

Rise time
Analog output Slew-rate
(independent programmation for each channel)

Voltage V/s	Current mA/s
0.125	0.250
0.250	0.500
0.500	1.000
1.000	2.000
2.000	4.000
4.000	8.000
Immediate	Immediate

Data Transmission

Baud Rate	115.2 Kbps
Max distance	1.2 Km

Power Supply

Supply Voltage	18 .. 30 Vdc
Current consumption	30 mA @ 24 Vdc 600 mA max
Polarity inversion protection	60 Vdc max

Isolation

Input – RS485	2000 Vac 50 Hz, 1 min.
Supply – Input	2000 Vac 50 Hz, 1 min.
Supply – RS485	2000 Vac 50 Hz, 1 min.

Temperature & Humidity

Operating temperature	-10°C .. +60°C
Storage temperature	-40°C .. +85°C
Humidity (non condensing)	0 .. 90 %

Housing

Material	Self-extinguishing plastic
Mounting	EN-50022 DIN rail
Weight	~ 150 g.

EMC (for industrial environments)

Immunity	EN 61000-6-2
Emission	EN 61000-6-4

INSTALLATION INSTRUCTIONS

The DAT 3022 device is suitable for fitting to DIN rails in the vertical position.
For optimum operation and long life follow these instructions:

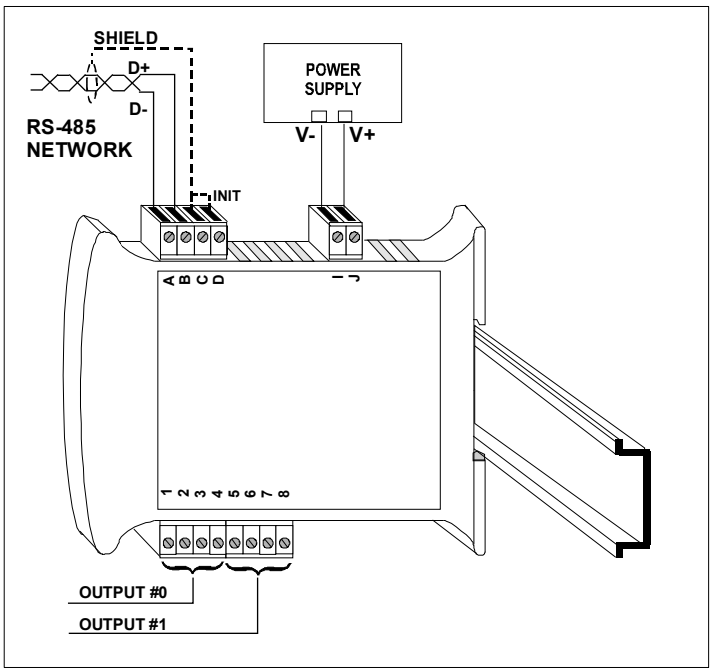
When the devices are installed side by side it may be necessary to separate them by at least 5 mm in the following case:
- If panel temperature exceeds 45°C and at least one of the overload conditions exist.
- If panel temperature exceeds 35°C and at least two of the overload conditions exists.

The overload conditions are the following:
- High supply voltage: >27Vdc
- Use of the auxiliary power supply

Make sure that sufficient air flow is provided for the device avoiding to place racewais 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.

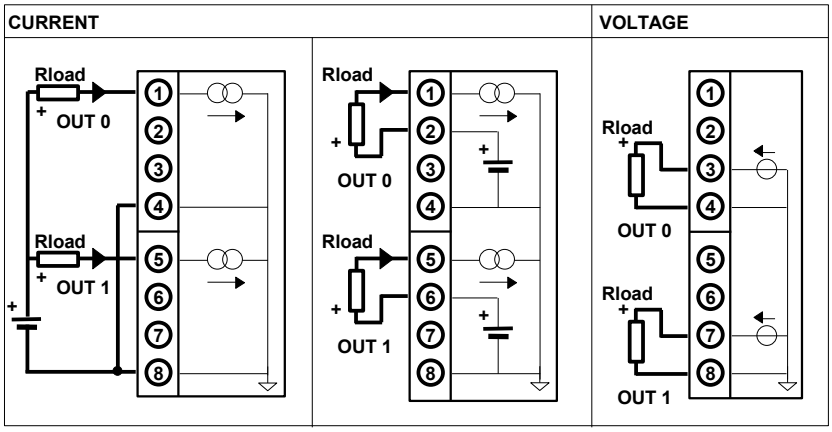
Moreover it is suggested to avoid routing conductors near power signal cables (motors, induction ovens, inverters etc...) and to use shielded cable for connecting signals.

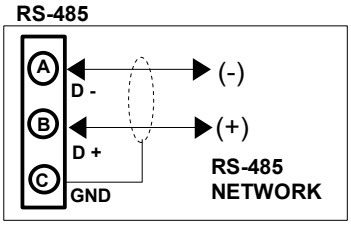
CABLING

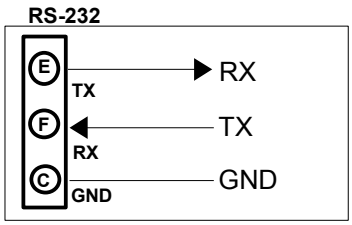


WIRING

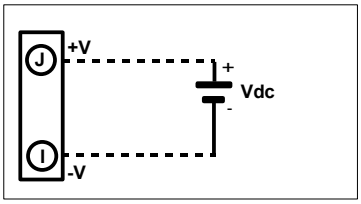
ANALOG OUTPUT WIRING



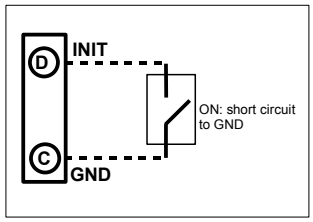




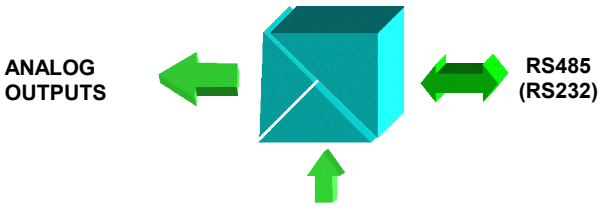
POWER SUPPLY WIRING



INIT WIRING



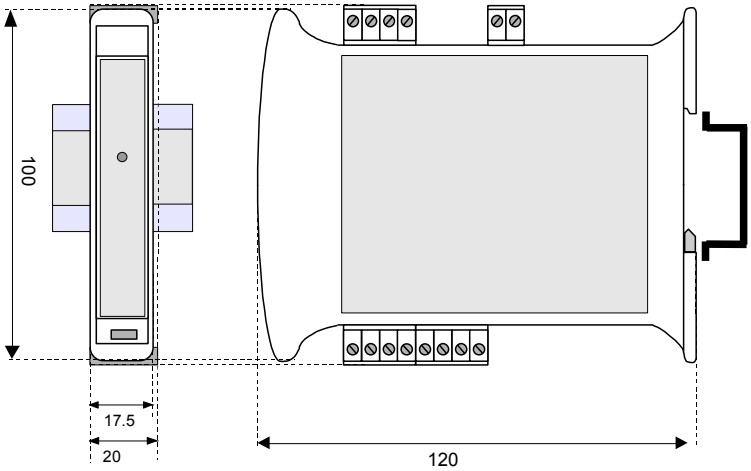
ISOLATION DIAGRAM



LIGHT SIGNALING

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)



HOW TO ORDER

In the order phase, it is mandatory to specify the interface type (RS485 or RS232) .
DAT3022 can be supplied with the configuration specified by the customer.
Please refer to the "Technical Specification" setion for the output type available.

ORDER CODE:

DAT 3022 / 485 / mA

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

Output type

= Requested
= Optional

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