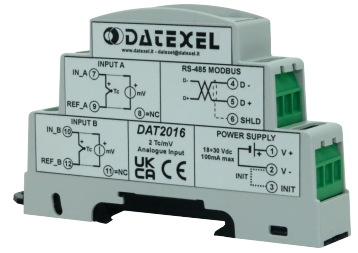


MODBUS RTU/ MODBUS ASCII SERVER DEVICE

DAT2014

FEATURES

- MODBUS RTU/ MODBUS ASCII Protocol
- 2 isolated input channels
- Configurable input for RTD and Resistance
- Watch-Dog Alarm
- Remotely Configurable
- 1000 Vac Galvanic Isolation among all of the ways
- LED of signalling on front side for power supply, INIT condition and communication
- Connection by screw terminals
- High accuracy
- CE / UKCA mark
- DIN rail mounting in compliance with EN-50022



GENERAL DESCRIPTION

The device DAT 2014 is able to convert 2 analog input signals; it is possible to connect on input 2 or 3 wires RTD and Resistance sensors. The data are transmitted with MODBUS RTU/MODBUS ASCII protocol on the RS-485 network.

The input channels are isolated between them.

The device guarantees high accuracy and stable measure versus time and temperature. To ensure the plant safety, it is provided a Watch-Dog timer alarm.

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 device is housed in a 1 module DIN rough self-extinguishing plastic box for mounting on EN-50022 standard DIN rail.

USER INSTRUCTIONS

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

If the module configuration is unknown, in order to recover the device power it off, connect the INIT terminal to V- terminal (ground) and power on the device. It will be set to the default settings (refer to the User Guide of the device).

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

The state of LEDs changes depending 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.

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

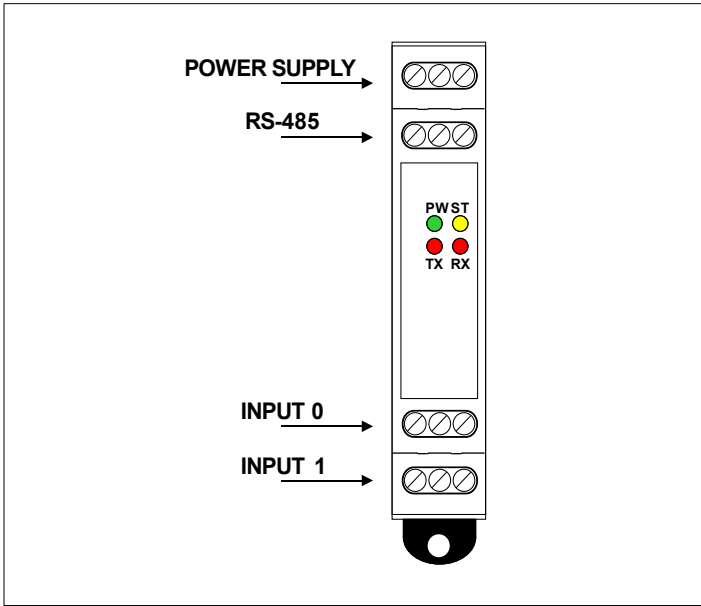
INPUT			SERIAL OUTPUT		GENERAL SPECIFICATION	
Input Type	Min	Max	Data Transmission			
RTD 2 or 3 wires			RS-485 asynchronous serial Baud Rate 115.2 Kbps Parity supported Even / Odd / None Stop bit supported 1 / 2 Max. distance 1.2 Km – 4000 ft		Power supply voltage	18 .. 30 Vdc
Pt100	-200 °C	850 °C			Reverse polarity protection	40 Vdc max
Pt1000	-200 °C	500 °C			Max. Current consumption	40 mA
Ni100	-60 °C	180 °C			ISOLATION	
Ni1000	-60 °C	180 °C			Among all the ways	1000 Vac, 50 Hz, 1 min
RES. 2 or 3 wires					ENVIRONMENTAL CONDITIONS	
Low	0 Ω	500 Ω			Operative temperature	-10°C .. +60°C
High	0 Ω	3000 Ω			Storage temperature	-40°C .. +85°C
Input calibration (1)					Humidity (not condensing)	0 .. 90 %
RTD	±0.05 % f.s.				Maximum Altitude	2000 m slm
Resistance	±0.05 % f.s.				Installation	Indoor
Linearity (1)					Category of Installation	II
RTD	± 0.1 % f.s.				Pollution Degree	2
Lead wire resistance influence					MECHANICAL SPECIFICATIONS	
RTD/res.3 wires(50 Ω max balanced)	0.05 f.s. % / Ω				Material	Self-extinguish plastic
RTD excitation current					IP Code	IP40
Typical	0.500 mA				Wiring	wires with diameter 0,08+3,3 mm ² AWG 12-28
Thermal drift (1)					Tightening Torque	0.5 N m
Full scale	± 0.01 % / °C				Mounting	in compliance with DIN rail standard EN-50022
Sample time					Weight	about 60 g.
	150 ms				CERTIFICATIONS	
Warm-up time					EMC (for the Industrial Environments)	
	3 min.				Immunity	EN 61000-6-2
					Emission	EN 61000-6-4
					UKCA (ref S.I. 2016 N°1091)	
					Immunity	BS EN 61000-6-2
					Emission	BS EN 61000-6-4

(1) Referred to input Span (difference between max. and min. values)

INSTALLATION INSTRUCTIONS

The 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 if panel temperature exceeds 45°C. 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.

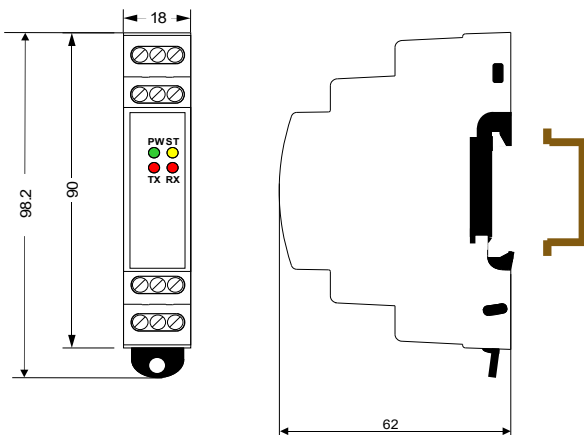
CABLING



LIGHT SIGNALLING

LED	COLOR	STATE	DESCRIPTION
PW	GREEN	ON	Device powered
		OFF	Device not powered
		BLINK	~1 sec. - Watch-Dog alarm condition active
RX	RED	BLINK	RS-485 data reception in progress
		OFF	No data reception from RS-485
TX	RED	BLINK	RS-485 data transmission in progress
		OFF	No data transmission to RS-485
ST	YELLOW	BLINK	~1 sec. - Device in INIT mode
		OFF	Standard working

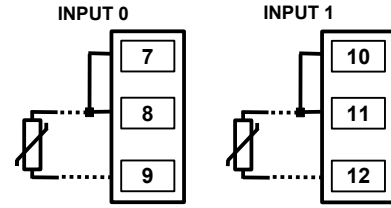
MECHANICAL DIMENSIONS (mm)



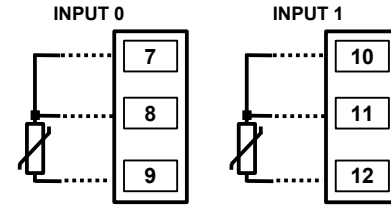
WIRING

ANALOG INPUTS

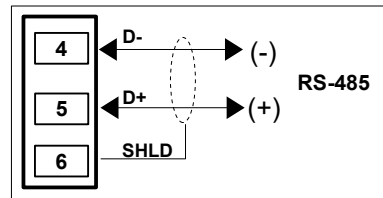
RTD/RES 2 WIRES



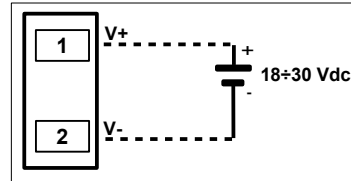
RTD/RES 3 WIRES



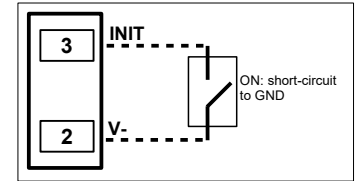
RS-485



POWER SUPPLY(*)

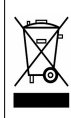
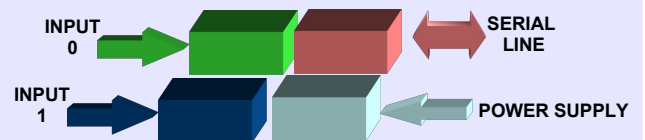


INIT



(*) Note: the device must be powered using a power supply unit classified NEC class 2 or SELV with limited energy

ISOLATION STRUCTURE



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.

HOW TO ORDER

The device can be supplied with the input configuration specified by the customer. Refer to section "Technical Specifications" for the available input type

DAT2014 / Pt100 Input type