



CANopen Slave device RTD, Resistance Potentiometer
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FEATURES

- Field Bus data acquisition
- CAN open protocol
- Baud rate and ID Node programmable by dip-switch
- Configurable input for RTD, Resistance and Potentiometer
- 3 ways 2000 Vac galvanic isolation
- EMC compliance – CE Mark
- In compliance with EN-50022 DIN rail mounting

GENERAL DESCRIPTION

The device DAT 7014 is able to acquire up to 4 analogue inputs as RTD 2 / 3 wires or potentiometer sensors. The data are transmitted by the CANopen protocol.

By means of 16 bit converters, the device guarantees high accuracy and a stable measures both versus time and temperature.

The 2000 Vac galvanic isolation between inputs, power supply and data line eliminates the effects of all ground loops eventually existing and allows the use of the device in heavy environmental conditions found in industrial applications.

The DAT 7014 is housed in a rough self-extinguishing plastic enclosure of 22.5 mm thickness, suitable for DIN rail mounting in compliance with the EN 50022 standard .

COMMUNICATION PROTOCOLS

On the DAT7000 modules the following communication protocol is implemented:

CANopen Protocol: one of the most used standard communication protocol; it allows to interface the modules of DAT7000 series directly to the CAN Controllers that accept devices in compliance with the **CiA DS 301** and **CiA DS 401** standards. For communication setting, refer to the User manual.

OPERATING INSTRUCTIONS

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

Connect the power supply, the data line and the Input signals as shown in the "Wiring" section.

Refer to the "Led signalling" section to verify the correct working of the device.

To make easy the maintenance or the substitution of the device, it is possible the "hot swap" of the terminals.

INSTALLATION INSTRUCTIONS

The device DAT 7014 is suitable to be mounted on DIN rail, in vertical position.

For a correct working and a long life of the device, read the following indications.

In case of the devices are mounted side by side, please leave about 5mm between in the following situations:

- Temperature in the cabinet higher than 45 °C and high supply voltage (>27Vdc).

Avoid to place raceways or other objects which could obstruct the ventilation slits. 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.

Avoid to install the devices in a site where vibrations are present.

It is recommended to use shielded cable for connecting signals. The shield must be connected to an earth wire provided for this purpose. Moreover it is suggested to avoid routing conductors near power signal cables.

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

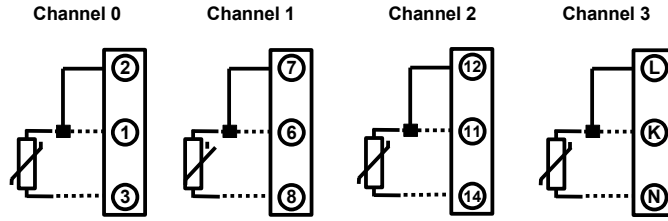
Input type	Min	Max	Input Calibration (1)	Power Supply
RTD 2,3 wires			RTD 100 Ω ±0.05 % f.s.	Supply Voltage 10 .. 30 Vdc
Pt100	-200°C	850°C	RTD 1000 Ω ±0.1 % f.s.	Current consumption 45 mA @ 24 Vdc
Pt1000	-200°C	200°C	Res. 600 Ω ±0.1 % f.s.	Polarity inversion protection 60 Vdc max
Ni100	-60°C	180°C	Pot. 2000 Ω ±0.1 % f.s.	
Ni1000	-60°C	150°C		
RES. 2,3 wires			Linearity (1)	Isolation Voltage
Low	0 Ω	500 Ω	RTD ± 0.1 % f.s.	2000 Vac 50 Hz, 1 min.
High	0 Ω	2000 Ω		(Inputs/Can Network/Power supply)
Potentiometer			Lead wire resistance influence (1)	Environmental Conditions
Nom. value	20 Ω	50 KΩ	RTD/Res.3 wires 0.05 %/Ω (50 Ω max balanced)	Operative Temperature -10°C .. +60°C
			RTD excitation current	Storage Temperature -40°C.. +85°C
			Typical 0.350 mA	Humidity (not condensed) 0 .. 90 %
			Thermal drift (1)	Maximum Altitude 2000 m
			Full scale ± 0.01 % / °C	Installation Indoor
			Sample time 40 ms	Category of installation II
			Data Transmission	Pollution Degree 2
			Baud rate up to 1 Mbps	
			Max. Distance in function of the Baud rate	Mechanical specifications
			Warm-up time 3 min.	Material Self-extinguish plastic
Device profile				IP Code IP20
In compliance with the CiA DS 301 and CiA DS 401 standard.				Wiring wires with diameter 0.8÷2.1 mm ² /AWG 14-18
				Tightening Torque 0.8 N m
				Mounting in compliance with DIN rail standard EN-50022
				Weight about 150 g.
				EMC (for industrial environments)
				Immunity EN 61000-6-2
				Emission EN 61000-6-4

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

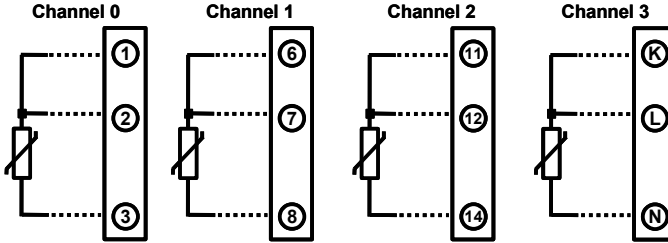
WIRING

INPUT WIRING

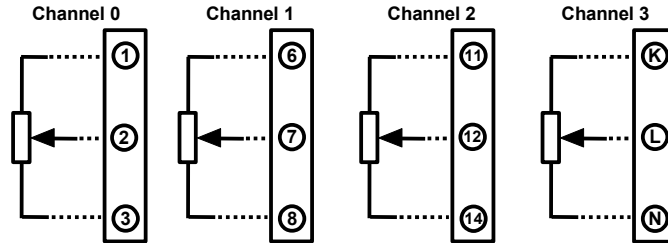
RTD/RES 2 WIRES



RTD/RES 3 WIRES



POTENTIOMETER

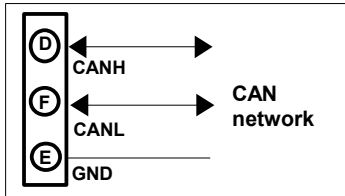


Terminals 3,8,14, and N = input negative reference.

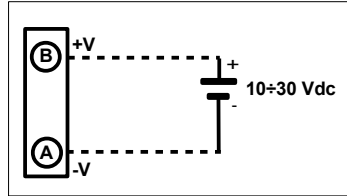
Terminals 13 and M not connected (NC).

NOTES: the input channels are not insulated between them.

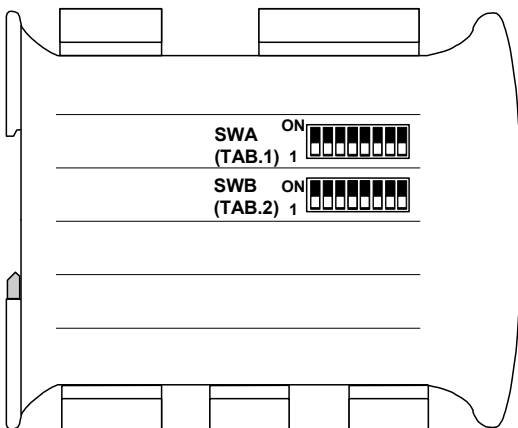
CAN NETWORK WIRING



POWER SUPPLY WIRING



DIP SWITCH POSITION



DIP-SWITCH CONFIGURATION TABLES

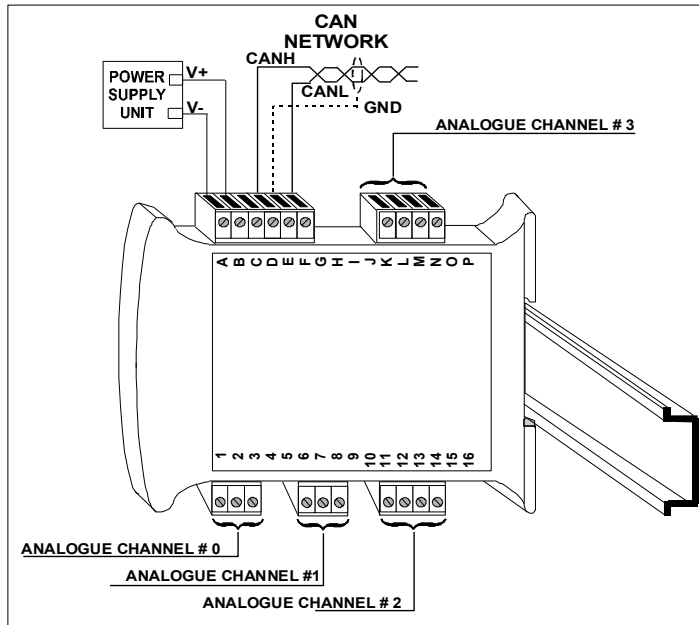
TAB.1 Address setting 1-127
(Pos.1 LSB; Pos.7 MSB)

SWA	1	2	3	4	5	6	7	Addr
1	0	0	0	0	0	0	0	Addr 1
1	1	0	0	0	0	0	0	Addr 2
1	0	1	0	0	0	0	0	Addr 3
1	0	0	1	0	0	0	0	Addr 4
1	0	0	0	1	0	0	0	Addr 5
1	0	0	0	0	1	0	0	...
1	0	0	0	0	0	1	0	...
1	0	0	0	0	0	0	1	Addr 127

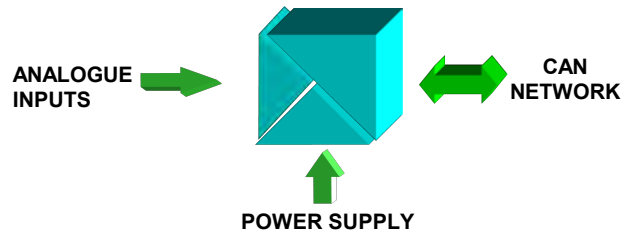
TAB.2 Bit rate setting
(Pos.5 LSB; Pos.8 MSB)

SWB	5	6	7	8	Bit Rate
0	0	0	0	0	10 Kbps
0	0	0	1	0	20 Kbps
0	0	0	1	1	50 Kbps
0	0	1	0	0	125 Kbps
0	0	1	1	0	250 Kbps
0	1	0	0	0	500 Kbps
0	1	0	1	0	800 Kbps
0	1	1	0	0	1 Mbps

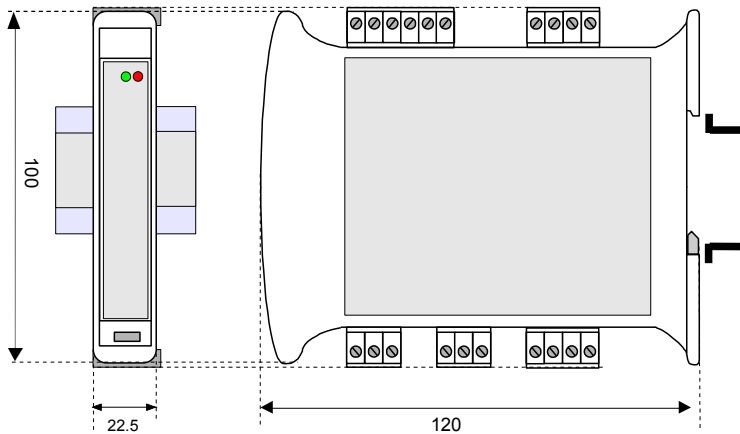
CABLING



ISOLATION STRUCTURE



MECHANICAL DIMENSIONS (mm)



LED SIGNALLING

LED	COLOR	STATE	DESCRIPTION
RUN	GREEN	ON	Device in Operational mode
		BLINKING	Device in Pre-Operational mode
		SLOW BLINKING	Device stopped
ERR	RED	OFF	No error
		ON	Bus off
		BLINKING	Invalid configuration



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
DAT 7014