

CANopen Server 4 isolated output channels for mA and Volt

DAT 7024

FEATURES

- Field bus data acquisition
- CAN open protocol
- Baud rate and Node ID configurable by dip-switch
- 4 isolated output channels
- Configurable Analogue Outputs for mA and Volt
- Isolated power source for each channel to power passive loads
- LEDs of signalling for power supply and error status
- 3 ways Galvanic Isolation
- Connection by removable screw terminals
- CE/UKCA mark
- DIN rail mounting in compliance with EN-50022



GENERAL DESCRIPTION

The DAT7024 device is a slave unit that can generate up to 4 analogue output signals. The data are transmitted by the CAN open protocol. To the outputs it is possible to connect active or passive current loop up to 20 mA or voltage signals up to 10 V.

The output channels are electrically isolated from each other.

For each channel it is provided an isolated power source for powering passive current loop.

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

The connection is made by removable screw-terminals.

The device 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 device is housed in a 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.

Connect power supply, serial bus and analogue 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 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			CAN OPEN INTERFACE	GENERAL SPECIFICATIONS
Output Type	Min	Max	Device profile in compliance with the CiA DS 301 and CiA DS 401 standards.	Supply Voltage 18 .. 30 Vdc Polarity inversion protection 60 Vdc max Consumption (Not Operative Aux) @24Vdc 90 mA typ 110 mA max Max. Consumption @24Vdc(**) 150 mA Max Consumption (**) 180 mA
Current mA	0 mA	+20 mA	Data Transmission Baud rate up to 1 Mbps Max. Distance in function of the Baud rate	ISOLATION (test time 1 minute) Power Supply / CAN 1500 Vac, 50 Hz Outputs / Power supply 1500 Vac, 50 Hz Outputs / CAN 1500 Vac, 50 Hz Output / Output 1500 Vac, 50 Hz
Voltage Volt	0 V	+10 V		ENVIRONMENTAL CONDITIONS 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
Output Accuracy (1) mA Volt		± 10 uA ± 5 mV		CONNECTIONS CAN interface Removable screw-terminals Outputs Removable screw-terminals Power Supply Removable screw-terminals
Load Resistance mA Volt		≤ 500 Ω ≥ 5 kΩ		MECHANICAL SPECIFICATIONS 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 with DIN rail standard EN-50022 Weight about 150 g.
Thermal drift (1) Full Scale		± 0,01 %/°C		CERTIFICATIONS EMC (for the Industrial Environments) 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
Auxiliary Supply (for each channel)		≥ 12 Vdc @ 20 mA		
Rise Time (from 10% to 90%)	15 ms			
Sampling Time	50 ms			

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

(**) 4 Operative Auxiliary Supply @20mA

INSTALLATION INSTRUCTIONS

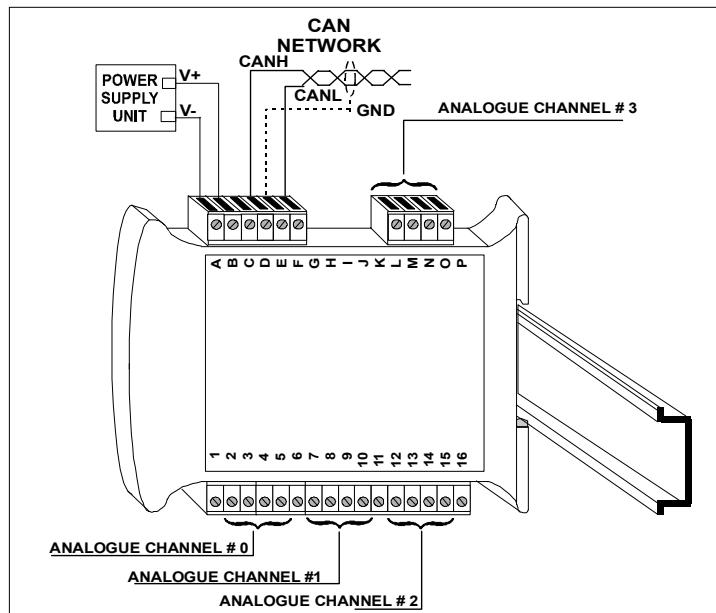
The device is suitable to be mounted on DIN rail, in vertical position.

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 supply voltage 20 Vdc.

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.

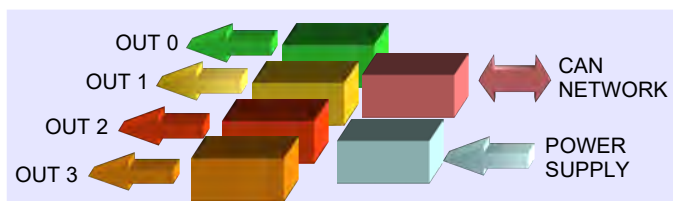
TERMINALS OVERVIEW



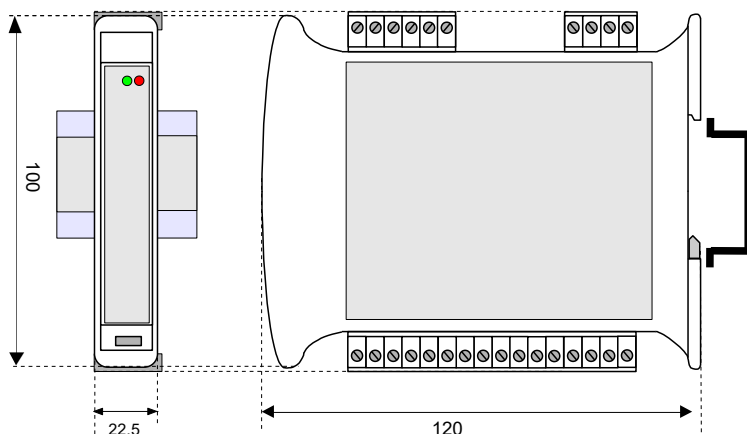
LIGHT SIGNALLING

LED	COLOUR	STATE	DESCRIPTION
RUN	GREEN	ON	Device in Operational mode
		BLINKING	Device in Pre-Operational mode
		SLOW BLINKING	Device stopped
ERR	RED	OFF	No error
		BLINKING	Communication error

ISOLATION STRUCTURE



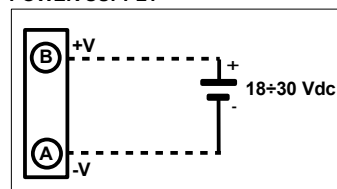
MECHANICAL DIMENSIONS (mm)



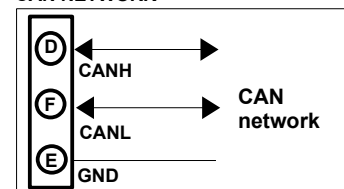
The symbol reported on the product indicates that the product itself must not be considered as a domestic waste. It must be brought to the authorized recycle plant for the recycling of electrical and electronic waste. For more information contact the proper office in the user's city, the service for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

WIRING

POWER SUPPLY

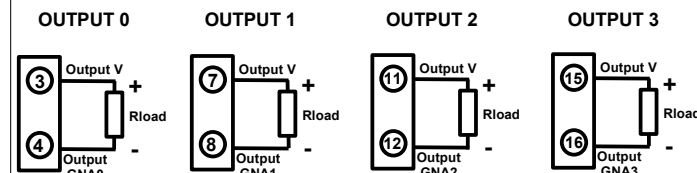


CAN NETWORK

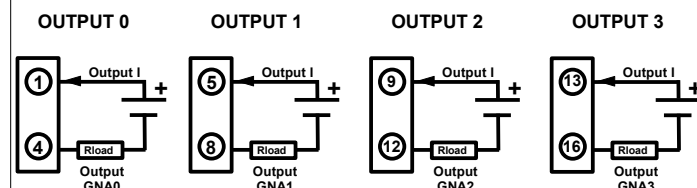


ANALOGUE OUTPUTS

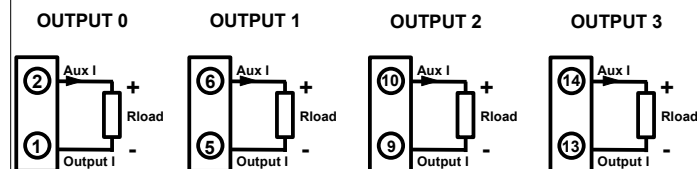
VOLTAGE



PASSIVE mA OUTPUT



ACTIVE mA OUTPUT



NOTES:

"GNA0", "GNA1", "GNA2" and "GNA3" are isolated between them.

DIP-SWITCH CONFIGURATION TABLE

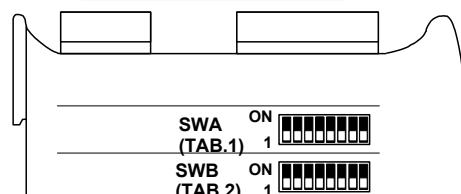
TAB.1 Address setting 1÷127 (Pos.1 LSB; Pos.7 MSB)

SWA	1	2	3	4	5	6	7	Nodo ID
1	0	0	0	0	0	0	0	Nodo ID 1
1	0	0	0	0	0	0	1	Nodo ID 2
1	0	0	0	0	0	1	0	Nodo ID 3
1	0	0	0	0	0	1	1	Nodo ID 4
1	0	0	0	0	1	0	0	Nodo ID 5
1	0	0	0	0	1	0	1	Nodo ID 6
1	0	0	0	0	1	1	0	Nodo ID 7
1	0	0	0	0	1	1	1	Nodo ID 8
1	0	0	0	1	0	0	0	Nodo ID 9
1	0	0	0	1	0	0	1	Nodo ID 10
1	0	0	0	1	0	1	0	Nodo ID 11
1	0	0	0	1	0	1	1	Nodo ID 12
1	0	0	0	1	1	0	0	Nodo ID 13
1	0	0	0	1	1	0	1	Nodo ID 14
1	0	0	0	1	1	1	0	Nodo ID 15
1	0	0	0	1	1	1	1	Nodo ID 16
1	0	0	1	0	0	0	0	Nodo ID 17
1	0	0	1	0	0	0	1	Nodo ID 18
1	0	0	1	0	0	1	0	Nodo ID 19
1	0	0	1	0	0	1	1	Nodo ID 20
1	0	0	1	0	1	0	0	Nodo ID 21
1	0	0	1	0	1	0	1	Nodo ID 22
1	0	0	1	0	1	1	0	Nodo ID 23
1	0	0	1	0	1	1	1	Nodo ID 24
1	0	0	1	1	0	0	0	Nodo ID 25
1	0	0	1	1	0	0	1	Nodo ID 26
1	0	0	1	1	0	1	0	Nodo ID 27
1	0	0	1	1	0	1	1	Nodo ID 28
1	0	0	1	1	1	0	0	Nodo ID 29
1	0	0	1	1	1	0	1	Nodo ID 30
1	0	0	1	1	1	1	0	Nodo ID 31
1	0	0	1	1	1	1	1	Nodo ID 32
1	0	1	0	0	0	0	0	Nodo ID 33
1	0	1	0	0	0	0	1	Nodo ID 34
1	0	1	0	0	0	1	0	Nodo ID 35
1	0	1	0	0	0	1	1	Nodo ID 36
1	0	1	0	0	1	0	0	Nodo ID 37
1	0	1	0	0	1	0	1	Nodo ID 38
1	0	1	0	0	1	1	0	Nodo ID 39
1	0	1	0	0	1	1	1	Nodo ID 40
1	0	1	0	1	0	0	0	Nodo ID 41
1	0	1	0	1	0	0	1	Nodo ID 42
1	0	1	0	1	0	1	0	Nodo ID 43
1	0	1	0	1	0	1	1	Nodo ID 44
1	0	1	0	1	1	0	0	Nodo ID 45
1	0	1	0	1	1	0	1	Nodo ID 46
1	0	1	0	1	1	1	0	Nodo ID 47
1	0	1	0	1	1	1	1	Nodo ID 48
1	0	1	1	0	0	0	0	Nodo ID 49
1	0	1	1	0	0	0	1	Nodo ID 50
1	0	1	1	0	0	1	0	Nodo ID 51
1	0	1	1	0	0	1	1	Nodo ID 52
1	0	1	1	0	1	0	0	Nodo ID 53
1	0	1	1	0	1	0	1	Nodo ID 54
1	0	1	1	0	1	1	0	Nodo ID 55
1	0	1	1	0	1	1	1	Nodo ID 56
1	0	1	1	1	0	0	0	Nodo ID 57
1	0	1	1	1	0	0	1	Nodo ID 58
1	0	1	1	1	0	1	0	Nodo ID 59
1	0	1	1	1	0	1	1	Nodo ID 60
1	0	1	1	1	1	0	0	Nodo ID 61
1	0	1	1	1	1	0	1	Nodo ID 62
1	0	1	1	1	1	1	0	Nodo ID 63
1	0	1	1	1	1	1	1	Nodo ID 64
1	1	0	0	0	0	0	0	Nodo ID 65
1	1	0	0	0	0	0	1	Nodo ID 66
1	1	0	0	0	0	1	0	Nodo ID 67
1	1	0	0	0	0	1	1	Nodo ID 68
1	1	0	0	0	1	0	0	Nodo ID 69
1	1	0	0	0	1	0	1	Nodo ID 70
1	1	0	0	0	1	1	0	Nodo ID 71
1	1	0	0	0	1	1	1	Nodo ID 72
1	1	0	0	1	0	0	0	Nodo ID 73
1	1	0	0	1	0	0	1	Nodo ID 74
1	1	0	0	1	0	1	0	Nodo ID 75
1	1	0	0	1	0	1	1	Nodo ID 76
1	1	0	0	1	1	0	0	Nodo ID 77
1	1	0	0	1	1	0	1	Nodo ID 78
1	1	0	0	1	1	1	0	Nodo ID 79
1	1	0	0	1	1	1	1	Nodo ID 80
1	1	0	1	0	0	0	0	Nodo ID 81
1	1	0	1	0	0	0	1	Nodo ID 82
1	1	0	1	0	0	1	0	Nodo ID 83
1	1	0	1	0	0	1	1	Nodo ID 84
1	1	0	1	0	1	0	0	Nodo ID 85
1	1	0	1	0	1	0	1	Nodo ID 86
1	1	0	1	0	1	1	0	Nodo ID 87
1	1	0	1	0	1	1	1	Nodo ID 88
1	1	0	1	1	0	0	0	Nodo ID 89
1	1	0	1	1	0	0	1	Nodo ID 90
1	1	0	1	1	0	1	0	Nodo ID 91
1	1	0	1	1	0	1	1	Nodo ID 92
1	1	0	1	1	1	0	0	Nodo ID 93
1	1	0	1	1	1	0	1	Nodo ID 94
1	1	0	1	1	1	1	0	Nodo ID 95
1	1	0	1	1	1	1	1	Nodo ID 96
1	1	1	0	0	0	0	0	Nodo ID 97
1	1	1	0	0	0	0	1	Nodo ID 98
1	1	1	0	0	0	1	0	Nodo ID 99
1	1	1	0	0	0	1	1	Nodo ID 100
1	1	1	0	0	1	0	0	Nodo ID 101
1	1	1	0	0	1	0	1	Nodo ID 102
1	1	1	0	0	1	1	0	Nodo ID 103
1	1	1	0	0	1	1	1	Nodo ID 104
1	1	1	0	1	0	0	0	Nodo ID 105
1	1	1	0	1	0	0	1	Nodo ID 106
1	1	1	0	1	0	1	0	Nodo ID 107
1	1	1	0	1	0	1	1	Nodo ID 108
1	1	1	0	1	1	0	0	Nodo ID 109
1	1	1	0	1	1	0	1	Nodo ID 110
1	1	1	0	1	1	1	0	Nodo ID 111
1	1	1	0	1	1	1	1	Nodo ID 112
1	1	1	1	0	0	0	0	Nodo ID 113
1	1	1	1	0	0	0	1	Nodo ID 114
1	1	1	1	0	0	1	0	Nodo ID 115
1	1	1	1	0	0	1	1	Nodo ID 116
1	1	1	1	0	1	0	0	Nodo ID 117
1	1	1	1	0	1	0	1	Nodo ID 118
1	1	1	1	0	1	1	0	Nodo ID 119
1	1	1	1	0	1	1	1	Nodo ID 120
1	1	1	1	1	0	0	0	Nodo ID 121
1	1	1	1	1	0	0	1	Nodo ID 122
1	1	1	1	1	0	1	0	Nodo ID 123
1	1	1	1	1	0	1	1	Nodo ID 124
1	1	1	1	1	1	0	0	Nodo ID 125
1	1	1	1	1	1	0	1	Nodo ID 126
1	1	1	1	1	1	1	0	Nodo ID 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	0	1	20 Kbps
0	0	0	0	0	50 Kbps
0	0	0	0	1	125 Kbps
0	0	0	1	0	250 Kbps
0	0	0	1	1	500 Kbps
0	0	1	0	0	800 Kbps
0	0	1	0	1	1 Mbps

DIP-SWITCH POSITION



HOW TO ORDER

" DAT 7024 "