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# CANopen Server 8 digital inputs + 8 PNP outputs

# DAT 7188

## FEATURES

- **Field bus data acquisition**
- **CAN open protocol**
- **Baud rate and Node ID configurable by dip-switch**
- **8 digital inputs**
- **8 digital outputs, PNP type**
- **LEDs of signalling for inputs and outputs status**
- **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 device DAT 7188 is able to acquire up to 8 digital inputs and to drive up to 8 PNP transistor outputs. The data are transmitted by the CANopen protocol.
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, digital inputs and 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)

### DIGITAL INPUTS (WET CONTACTS)

| | |
|---|---|
| Channels | 8 |
| Input voltage | (bipolar) |
| OFF State | 0 ÷ 3 V |
| ON State | 10 ÷ 30 V |
| N° of counters | 8 @ 300 Hz (32 bits) |
| Min. Pulse width | 1 ms |
| Impedance | 4.7 KΩ |
| Sample time | 5 ms |

### DIGITAL OUTPUTS

| | |
|---|---|
| Channels | 8 |
| Type | PNP |
| Voltage | 10.5÷30 Vdc |
| Max. Load | 500 mA per channel(*)<br>1 A per module |
| Inductive Load | 48 Ω – 2H max |

(*) Protection against over-current and over-temperature
Short circuit current 1.7 A max.

### CAN OPEN INTERFACE

Device profile in compliance with the **CiA DS 301** and **CiA DS 401** standards.

**Data Transmission**

| | |
|---|---|
| Baud rate | up to 1 Mbps |
| Max. Distance | in function of the Baud rate |

### GENERAL SPECIFICATIONS

| | |
|---|---|
| Supply Voltage | 10 .. 30 Vdc |
| Polarity inversion protection | 60 Vdc max |
| Max. Consumption @24Vdc | 45 mA |
| Max Consumption | 100 mA |

**ISOLATION (test time 1 minute)**

| | |
|---|---|
| Power Supply / CAN | 2000 Vac, 50 Hz |
| Outputs / Power supply | 2000 Vac, 50 Hz |
| Inputs / Power supply | 2000 Vac, 50 Hz |
| Outputs / CAN | 2000 Vac, 50 Hz |
| Input / Output | 2000 Vac, 50 Hz |
| Inputs / CAN | 2000 Vac, 50 Hz |

**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 |

**CONNECTIONS**

| | |
|---|---|
| CAN interface | Removable screw-terminals |
| Outputs/Inputs | Removable screw-terminals |
| Power Supply | Removable screw-terminals |

**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. |

**CERTIFICATIONS**

**EMC ( for the Industrial Environments )**

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

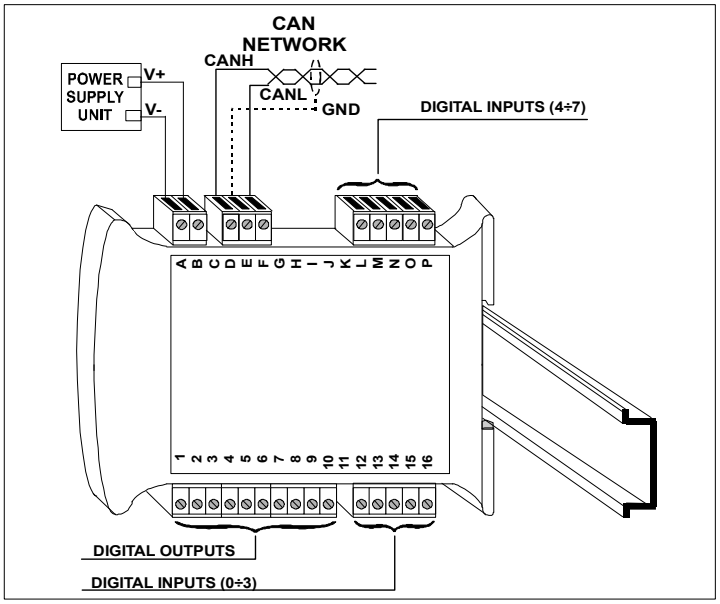
**UKCA (ref S.I. 2016 N°1091 )**

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

## 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 a spacing of about 5mm between them if the temperature in the cabinet is higher than 45 °C and 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.

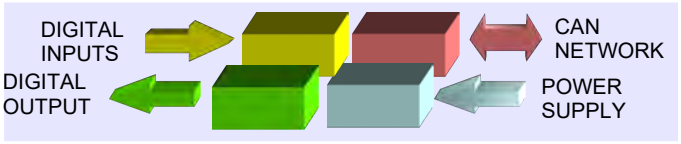
## TERMINALS OVERVIEW



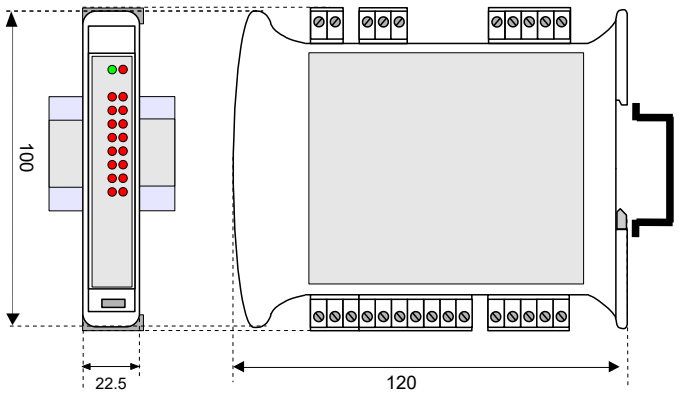

## LIGHT SIGNALLING

| 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 |
| I *n* | RED | ON | State 1Digital Inputs. |
| | | OFF | State 0 Digital Inputs. |
| O *n* | RED | ON | State 1Digital Outputs. |
| | | OFF | State 0 Digital Outputs. |

## ISOLATION STRUCTURE



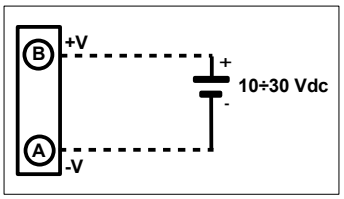

## MECHANICAL DIMENSIONS (mm)



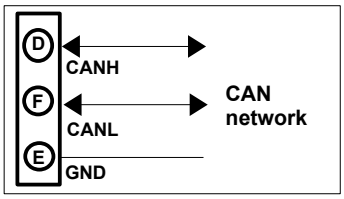

The symbol reported on the product indicates that the product itself must not be considered as a domestic waste. It must be brought to the authorized recycle plant for the recycling of electrical and electronic waste. For more information contact the proper office in the user's city, the service for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

## WIRING

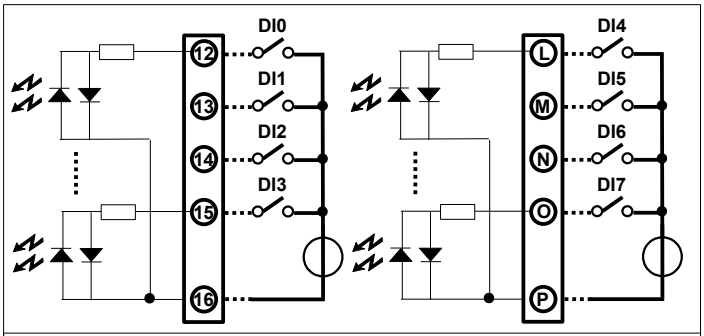
**POWER SUPPLY**




**CAN NETWORK**

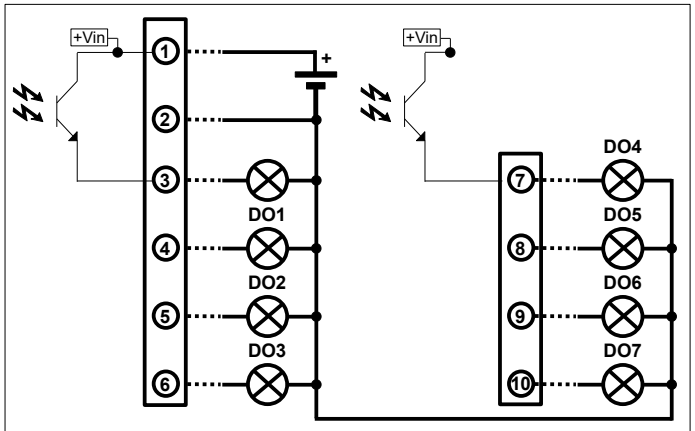



**DIGITAL INPUTS**




NOTE: Input channels are not insulated between them

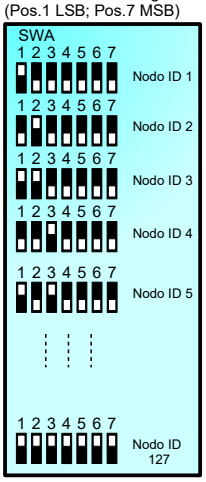
**DIGITAL OUTPUTS**



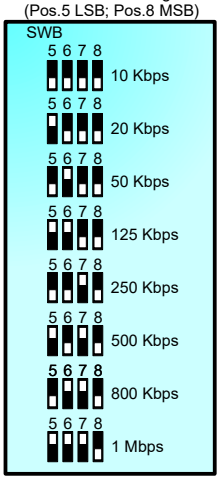

NOTES: Output channels are not insulated between them

## DIP-SWITCH CONFIGURATION TABLE

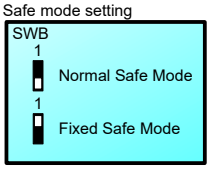
TAB.1 Address setting 1÷127 (Pos.1 LSB; Pos.7 MSB)



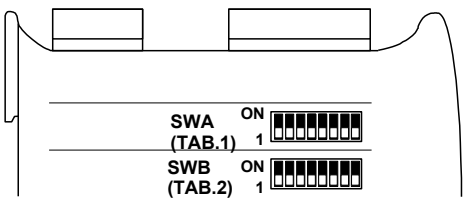

TAB.2 Bit rate setting (Pos.5 LSB; Pos.8 MSB)




TAB.3 Safe mode setting




## DIP-SWITCH POSITION




## HOW TO ORDER

**“ DAT 7188 “**