**FEATURES**
- Field Bus data acquisition
- CAN open protocol
- Baud rate and ID Node programmable by dip-switch
- 16 digital inputs
- Led of signalling for inputs status
- Four ways 2000 Vac galvanic isolation
- EMC compliance – CE Mark
- In compliance to EN-50022 DIN rail mounting

**GENERAL DESCRIPTION**
The device DAT 7148 is able to acquire up to 16 digital inputs. The data are transmitted by the CANopen protocol. 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 7148 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 are implemented the following communication protocols:
- 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 7148 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)**

<table>
<thead>
<tr>
<th>Device profile</th>
<th>Digital Inputs</th>
<th>Power supply</th>
<th>Environmental Conditions</th>
<th>Mechanical specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>In compliance with the CIA DS 301 and CIA DS 401 standard.</td>
<td>Channels 16</td>
<td>Supply Voltage 10..30 Vdc</td>
<td>Operative Temperature -10°C .. +60°C</td>
<td>Material Self-extinguish plastic</td>
</tr>
<tr>
<td>Input voltage (bipolar)</td>
<td>OFF State 0 ± 3 V</td>
<td>Current consumption 45 mA @ 24 Vdc</td>
<td>Storage Temperature -40°C.. +85°C</td>
<td>IP Code IP20</td>
</tr>
<tr>
<td>ON State 10 + 30 V</td>
<td>N° of counters 8 @ 300 Hz</td>
<td>Reverse Polarity protection 60 Vdc max</td>
<td>Humidity (not condensed) 0..90 %</td>
<td>Wiring wires with diameter 0.8÷2.1 mm² /AWG 14-18</td>
</tr>
<tr>
<td>Min. Pulse width 1 ms</td>
<td>Impedance 4.7 KΩ</td>
<td>Maximum Altitude 2000 m</td>
<td></td>
<td>Tightening Torque 0.8 N m</td>
</tr>
<tr>
<td>Sampling time 5 ms</td>
<td></td>
<td>Installation Indoor</td>
<td></td>
<td>Mounting in compliance with DIN rail standard EN-50022</td>
</tr>
<tr>
<td>Data Transmission Baud rate up to 1 Mbps</td>
<td></td>
<td>Category of installation II</td>
<td></td>
<td>Weight about 150 g.</td>
</tr>
<tr>
<td>Max. Distance in function of the Baud rate</td>
<td>Isolation Voltage 2000 Vac 50 Hz, 1 min. (Inputs/Can Network/Power supply)</td>
<td>Pollution Degree 2</td>
<td></td>
<td>EMC (for industrial environments)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Immunity EN 61000-6-2</td>
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<td>Emission EN 61000-6-4</td>
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</table>
Datexel reserves its right to modify the characteristics of its products totally or in part without notice at any time.

**POWER SUPPLY WIRING**

```
+V
10÷30 Vdc
GND
```

**CAN NETWORK WIRING**

```
CANH ← → CANL
```

**DIGITAL INPUT WIRING**

- **SWA** (TAB.1)
  - ON
- **SWB** (TAB.2)
  - 1

<table>
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<th>Addr</th>
<th>SWA</th>
<th>SWB</th>
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<tr>
<td>15</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**LED SIGNALLING**

- **RUN**
  - GREEN
  - ON: Device in Operational mode
  - BLINKING: Device in Pre-Operational mode
- **ERR**
  - RED
  - OFF: No error
  - ON: Bus off
  - BLINKING: Invalid configuration

**MECHANICAL DIMENSIONS (mm)**

- Width: 120 mm
- Height: 22.5 mm
- Depth: 10 mm

**LED STATES**

- ON
- OFF
- BLINKING

**ISOLATION STRUCTURE**

- **DIGITAL INPUTS**
- **CAN NETWORK**
- **POWER SUPPLY**

**HOW TO ORDER**

- **DAT 7148**