FEATURES
- Field-Bus remote data acquisition
- Modbus Slave device on RS-485
- Modbus RTU/Modbus ASCII protocol
- 2 channel output
- Outputs configurable as Voltage or Current
- Watch-Dog Alarm
- Remotely Configurable
- 2000 Vac 3-ways Galvanic Isolation
- High Accuracy
- UL / CE mark
- DIN rail mounting in compliance with EN-50022

DAT 3022
Remote 2 channel V / mA output on RS-485 network

GENERAL DESCRIPTION
The DAT 3022 device generates 2 output analog signals from digital commands. The data are transmitted with MODBUS RTU/MODBUS ASCII protocol on the RS-485 network (RS-232 interface is available).

It is possible to generate voltage signals up to 10V and current signals up to 20mA, both active or passive loops.

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

To ensure the plant safety, two Watch-Dog timer alarms are provided.

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 rough self-extinguishing plastic container which, thanks to its thin profile of 17.5mm only, allows a high density mounting on EN-50022 standard DIN rail.

COMMUNICATION PROTOCOLS
The DAT3022 is designed to work with the MODBUS RTU/MODBUS ASCII protocol: standard protocol in field-bus; allows to directly interface DAT3000 series devices to the larger part of PLCs and SCADA applications available on the market.

For the protocol instructions, refer to the User Guide of the device.

USER INSTRUCTIONS
Before to install the device, please read the "Installation Instruction" section.
If the module configuration is unknown, with device powered off, connect the INIT terminal to the GND terminal (ground), at the next power on the device will be auto-configured in the default settings (refer to the User Guide of the device).

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

The "PWR" LED state depends 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.

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)

<table>
<thead>
<tr>
<th>OUTPUT (2 channels)</th>
<th>Output Accuracy</th>
<th>POWER SUPPLY</th>
<th>ISOLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output (2 channels)</strong></td>
<td><strong>Output Accuracy</strong></td>
<td><strong>Power supply voltage</strong></td>
<td><strong>Reverse polarity protection</strong></td>
</tr>
<tr>
<td><strong>Output type</strong></td>
<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
<td><strong>18 .. 30 Vdc</strong></td>
</tr>
<tr>
<td><strong>Current mA</strong></td>
<td>0 mA</td>
<td>+20 mA</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage Volt</strong></td>
<td>0 V</td>
<td>+10 V</td>
<td></td>
</tr>
<tr>
<td><strong>Output Accuracy</strong></td>
<td><strong>Current ± 20 µA</strong></td>
<td><strong>Voltage ± 10 mV</strong></td>
<td><strong>60 mA max.</strong></td>
</tr>
<tr>
<td><strong>Thermal drift</strong></td>
<td><strong>Full scale ± 0.01 % / °C</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Load resistance</strong></td>
<td><strong>Voltage ≥ 5 KΩ</strong></td>
<td><strong>Current ≤ 500 Ω</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Auxiliary Voltage (2 channels)</strong></td>
<td>&gt; 12V @ 20mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Response time</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Value V/s mA/s</strong></td>
<td><strong>00h Disabled</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>01h 0.15 0.30</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>02h 0.30 0.60</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>03h 1.20 2.40</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>04h 2.40 4.80</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>05h 4.80 9.60</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>06h 9.60 19.2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>07h 19.2 38.4</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>08h 38.4 76.8</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>09h 76.8 153</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>0Ah 153 306</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>0Bh Immediate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data Transmission</strong></td>
<td><strong>Baud Rate 115.2 Kbps</strong></td>
<td><strong>Max. distance 1.2 Km – 4000 ft</strong></td>
<td></td>
</tr>
</tbody>
</table>

MECHANICAL SPECIFICATIONS
- Material: Self-extinguishing plastic
- IP Code: IP20
- Wiring: Wires with diameter ≥ 0.8÷2.1 mm²
- Tightening Torque: 0.5 N m
- Mounting: In compliance with DIN rail standard EN-50022
- Weight: about 150 g.

CERTIFICATIONS
EMC (for industrial environments)
- Immunity: EN 61000-6-2
- Emission: EN 61000-6-4
- UL: UL 61010-1
- Canadian Standard: CSA C22.2 No 61010-1
- CCN: NRAQ/NRAQ7
- Typology: Open Type device
- Classification: Industrial Control Equipment
- File Number: E352854
INSTALLATION INSTRUCTIONS

The DAT 3022 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 in the following case:
- If panel temperature exceeds 45°C and at least one of the overload conditions exist.
- If panel temperature exceeds 35°C and at least two of the overload conditions exist.

The overload conditions are the following:
- High supply voltage: >27Vdc
- Use of the auxiliary power supply

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

RS-485 NETWORK

RS-232 NETWORK

LIGHT SIGNALLING

<table>
<thead>
<tr>
<th>LED</th>
<th>COLOUR</th>
<th>STATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR</td>
<td>GREEN</td>
<td>ON</td>
<td>Device powered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF</td>
<td>Device not powered / Wiring RS-485 cabling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAST BLINK</td>
<td>Communication in progress (blink frequency depends on baud-rate)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 second BLINK</td>
<td>Watch-Dog Alarm condition</td>
</tr>
</tbody>
</table>

MECHANICAL DIMENSIONS (mm)

HOW TO ORDER

In the order phase, it is mandatory to specify the interface type (RS485 or RS232). DAT3022 can be supplied with the configuration specified by the customer.

ORDER CODE:

DAT 3022 / 485 / mA

Interface type 485 : RS-485
232 : RS-232

Output type

= Requested

= Optional

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.

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