EST-PWS

REDUNDANT POWER SUPPLY MODULE

INSTRUCTIONS FOR USE

Ver. 01 (EN) – 12/25

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INTRODUCTION

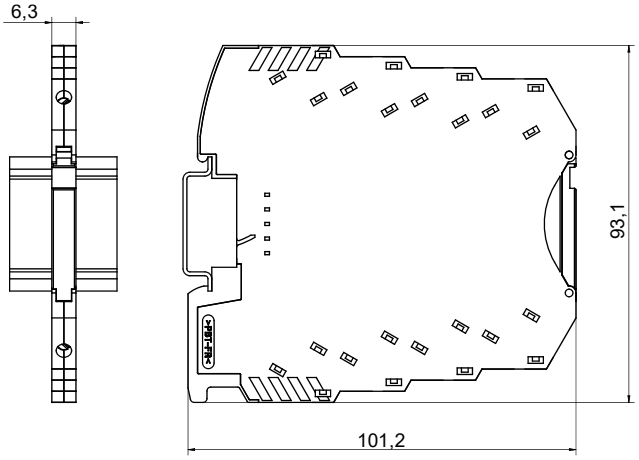
This manual contains the information required for proper installation and the instructions for use and maintenance of the product. It is therefore recommended to read it carefully and preserve it.

EL.CO. S.R.L. reserves the right to make aesthetic and functional changes at any time and without notice.

If a malfunction or failure of the device can create hazardous or dangerous situations for people, animals or property, the system must be equipped with additional security devices.

EL.CO. S.R.L. and its legal representatives do not assume any responsibility for any damage to people, things or animals deriving from tampering, improper use, incorrect use or otherwise not complying with the device's features.

1 – DIMENSIONS (mm)



2 - DEVICE DESCRIPTION

2.1 - GENERAL DESCRIPTION

The EST-PWS module provides redundant power supply and is especially designed to power multiple modules of the EST series via bus on the DIN rail. The module is an interface between an external power supply system and a bus power supply system of the EST series modules.

This device offers the following features:

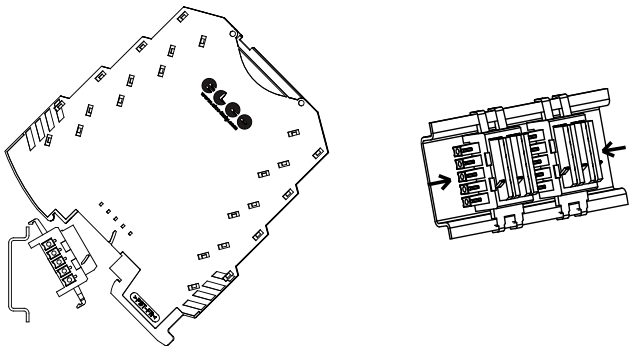
- two independent inputs ensuring the presence of power supply even if one of the two inputs is not available
- provides over-voltage protection and polarity inversion protection of the power supply to the modules, as it is provided directly by the bus system
- immediate warning by led of the lack of a source or inverted connection on the inputs of the power supply
- LC differential mode filter on inputs

3 - SMART-CONNECTION

3.1 – DESCRIPTION

The **EST-PWS** is part of the **EST** device series which includes a variety of converters and dedicated accessories. These accessories enable the usage of various additional features. Most notably, the modules can be connected together as a single batch of modules, reducing occupied space and wiring issues.

The accessory providing this feature is the **BUS BC-5P2 connector (optional),** which provides to have a bus on the DIN rail with the power supply line.



Do not pull power from the bus or from the terminals of the modules**.** Do not connect the power supply directly to the bus connector

4 - INSTALLATION AND USE WARNINGS

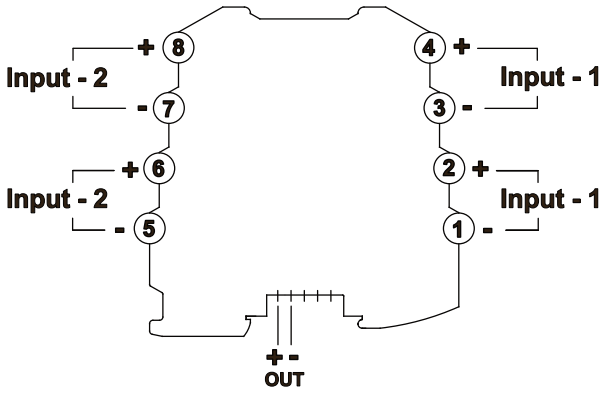
4.1 - PERMITTED USE

The device has been designed as a measurement and adjustment device in accordance with EN61010 for operation at altitudes up to 2000 m. The use of the device in applications not expressly provided for in the aforementioned standard must include all appropriate protective measures. The device CANNOT be used in hazardous (inflammable or explosive) environments without proper protection. It should be remembered that the installer must ensure that the electromagnetic compatibility rules are respected even after the device has been installed, possibly using special filters. If a failure or malfunction of the device can create hazardous or dangerous situations for persons, animals or property, the system must be equipped with additional electromechanical devices to ensure safety.

4.2 - MECHANICAL ASSEMBLY

All EST series models can be mounted vertically on a DIN rail. Avoid placing the device in environments subjected to high humidity or in the presence of polluting elements capable of introducing conductive substances inside the device. Ensure that the device has adequate ventilation and avoid installation in spaces shared with devices that can lead the device to operate outside the declared temperature ratings. Install the device as far as possible from sources that may generate electromagnetic disturbances such as motors, contactors, relays, solenoid valves etc.
An installation that does not comply with the provisions set out in this paragraph could compromise the declared protection levels.

4.3 - WIRING DIAGRAM



All (-) terminals connected toghether internally

Terminals description:

1) power supply **–** (ritorno GND)
2) power supply + : 24 V ⎓
3) power supply **–** (ritorno GND)
4) power supply + : 24 V ⎓
5) power supply **–** (ritorno GND)
6) power supply + : 24 V ⎓
7) power supply **–** (ritorno GND)
8) power supply + : 24 V ⎓

Input-1

Input-2

Device output on DIN rail bus: input voltage less internal voltage drop-out (max 300mV)

Notes:

- All terminals (-) internally connected together internally
- Terminals 2 and 4 connected together internally
- Terminals 6 and 8 connected together internally

The two power inputs of the EST-PWS accessory are not protected by a fuse. A 2.5A fuse must be installed externally in series with each power supply (T2.5A fuse, 250V in agreement with IEC 60127)

⚠ For all cases described, supply power with a generator with sufficient power to ensure that the fuse operation occurs certainly in the event of a short circuit.

4.4 – TERMINAL BLOCK SPECIFICATIONS

- Connection type: screw terminal
- Stripping length: 8 [mm]
- Conductor section: 0.2 – 2.5[mm^2] / 24 – 12 AWG

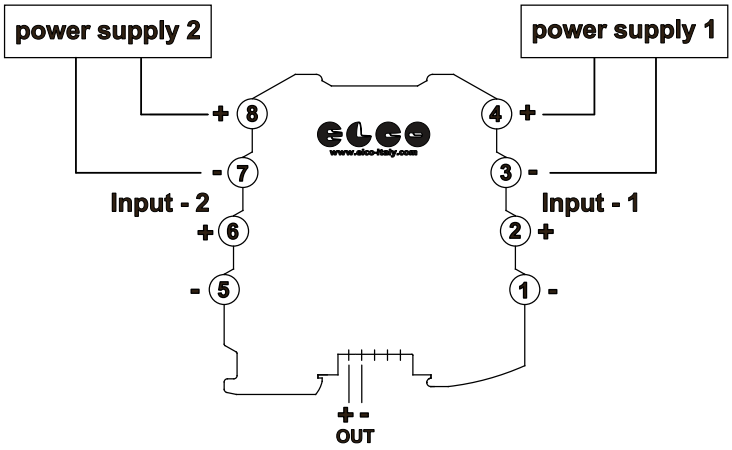
5 – OPERATION

5.1 – DESCRIPTION

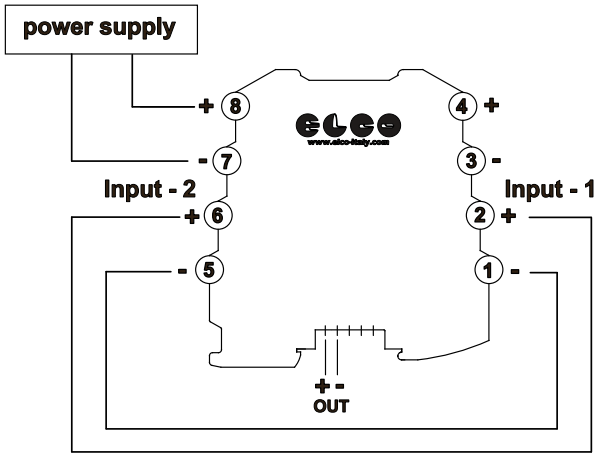
With the EST-PWS module, it is possible to supply a package of modules of the EST series: the power supply is supplied only to the EST-PWS module which, via the connector on the BC-5P bus, distributes it to the other modules of the series.

Examples of connection modes:

- Redundant power supply: 2 power supplies connected respectively on the two module inputs. In this mode the max output current that the module can provide is 1.6A



- parallel input: a power supply connected to one input which is then connected in parallel on the other. In this mode the max output current that the module can provide is 2A



5.3 – LED SIGNALING

- Input-1 green led: fixed on indicates sufficient voltage for the input. The ignition threshold is that of the models of the EST series and is 19-30 V ⎓
- Input-1 fixed on indicates sufficient voltage for the input. The ignition threshold is that of the models of the EST series and is 19-30 V ⎓
- central red led: fixed on indicates incorrect polarity or AC voltage. The ignition threshold is 2 V

6 - TECHNICAL DATA

6.1 - ELECTRICAL CHARACTERISTICS

Input:

- 2 input with negative terminal connected together
- Input-1 : 24 V ⎓ (19-30 V ⎓ max)
- Input-2 : 24 V ⎓ (19-30 V ⎓ max)
- Power: 600 mW max

Output:

- 1 output on DIN rail bus
- input voltage with 300mV drop-out max
- max output current with single input: 1.6A
- max output current with parallel input: 2A

Overvoltage category: II

6.2 – NORMATIVES

EN61010-1 safety
EN61000-6-2 EMC immunity, industrial environments
EN61000-6-4 EMC emissions, industrial environments

CE

6.3 - MECHANICAL CHARACTERISTICS

Case: PBT Plastic, UL 94 V0
Dimensions: 6,3 x 93,1 x 101,2 mm
Weight: 50 g
Installation: omega DIN guide
Connections: screw terminals and removable bus on DIN rail
Front protection degree: IP 20 (2: protected against access by solid bodies with a diameter greater than 12.5mm. 0: not protected from water or liquids)
Pollution degree: 2
Use environment: indoor
Working ambient temperature: from 0°C to +65°C
Working ambient humidity: 30÷95 %RH non-condensing
Temperature for transportation and storage: from -30°C to +80°C
Altitudine: 2000m max

6.4 – ACCESSORIES (Not included)

BC-5P2: double bus connector for DIN rial connection

7 - MAINTENANCE AND WARRANTY

7.1 - CLEANING

It is recommended to clean the device only with a cloth slightly soaked in water or a non-abrasive detergent and not containing solvents.

7.2 - WARRANTY AND REPAIR

The device is guaranteed by manufacture defects or defects in material found within 12 months from the date of delivery.
Warranty is limited to repair or replacement of the product.
Possible opening of the container, tampering with the device, or improper use and installation of the product will automatically result in the warranty being decayed.
In the event of a defective product during the warranty period or outside the warranty period, contact the EL.CO. Sales Dept. to obtain authorization for shipment.
The defective product, therefore, accompanied by the indications of the defect found, must be sent to the EL.CO. unless otherwise agreed.

8 - DISPOSAL

The device must be collected separately in accordance with current regulations on the disposal of electrical and electronic waste.