INSTALLATION MANUAL

Z110DI

PRELIMINARY WARNINGS

The word **WARNING** preceded by the symbol ⚠ indicates conditions or actions that put the user's safety at risk. The word **ATTENTION** preceded by the symbol ⚠ indicates conditions or actions that might damage the instrument or the connected equipment.
The warranty shall become null and void in the event of improper use or tampering with the module or devices supplied by the manufacturer as necessary for its correct operation, and if the instructions contained in this manual are not followed.

	**WARNING**: The full content of this manual must be read before any operation. The module must only be used by qualified electricians. Specific documentation is available using the QR-CODE shown on page 1.
	The module must be repaired and damaged parts replaced by the Manufacturer. The product is sensitive to electrostatic discharges. Take appropriate measures during any operation.
	Electrical and electronic waste disposal (applicable in the European Union and other countries with recycling). The symbol on the product or its packaging shows the product must be surrendered to a collection centre authorized to recycle electrical and electronic waste.

DOCUMENTATION
Z110DI

SENECA

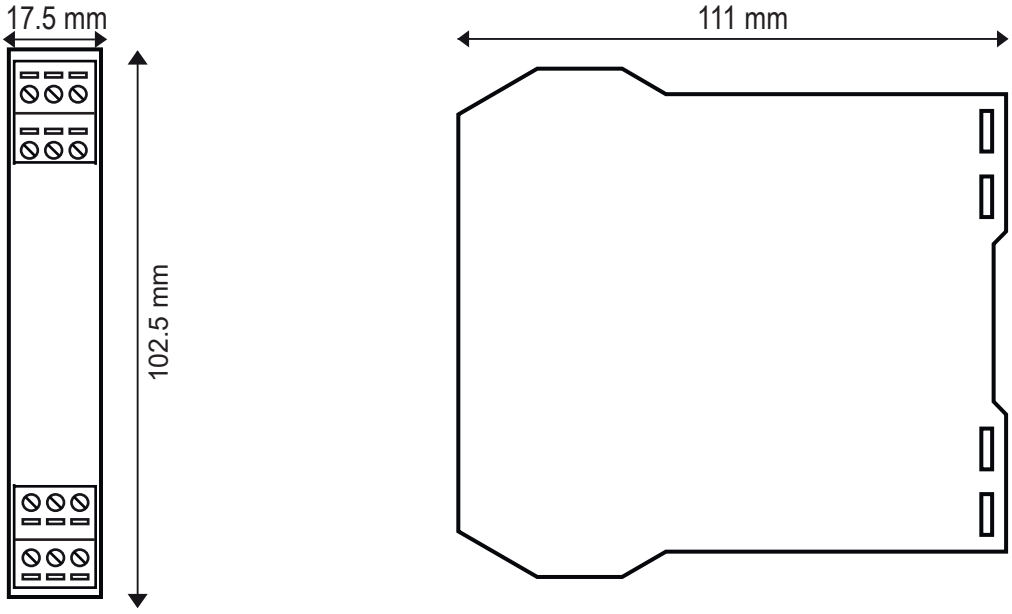
QUALITY MANAGEMENT SYSTEM
ISO 9001:2015

SENECA s.r.l.; Via Austria, 26 – 35127 – PADOVA – ITALY; Tel. +39.049.8705359 - Fax +39.049.8706287

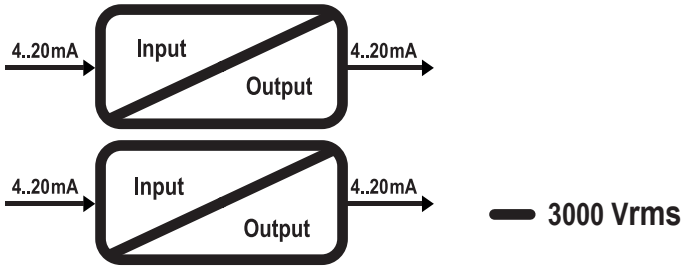
CONTACT INFORMATION

Technical support	support@seneca.it	Product information	sales@seneca.it

MODULE LAYOUT



Dimensions: 17.5 x 102.5 x 111 mm, **Weight:** 100 g; **Enclosure:** PA6, black

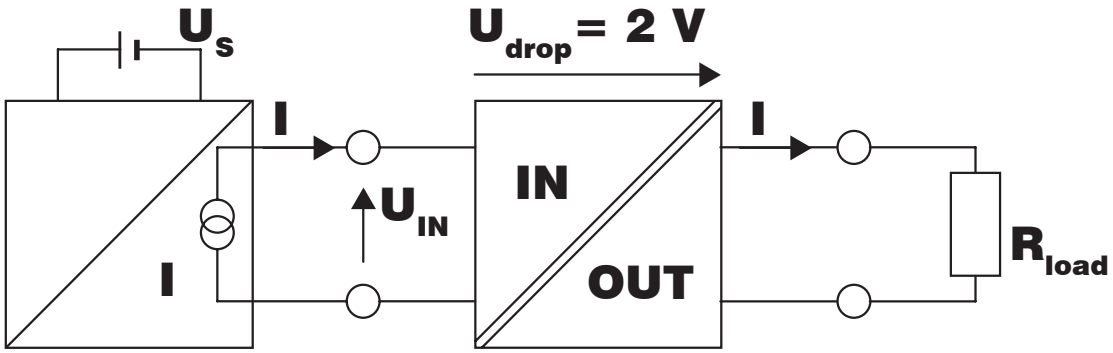
CERTIFICATIONS	CE UKCA
INSULATION	
POWER SUPPLY	Self-powered from the input loop
ENVIRONMENTAL CONDITIONS	Operating temperature: -25 °C ÷ + 70 °C; Storage temperature: -30 °C ÷ + 85 °C Humidity: 10% ÷ 90% non condensing.
ASSEMBLY	IEC EN60715, 35mm DIN rail in vertical position.
INPUT	Rated current: 4 ÷ 20mA Operating current 0.1÷ 25mA Voltage drop at 20mA < 2 V; Max. voltage 30V
OUTPUT	Applied current 4 ÷ 20 mA Max. load resistance: 1400 Ω; Max. voltage 30V
RESPONSE TIME	<1 mS (referred to 90% of the final value)
PASS-BAND	< 100 Hz
TRANSMISSION ERROR	Er% = 0,02% X (RL/100) + 0,05% + 10 uA (Within nominal range)
MINIMUM CURRENT	100 µA
TEMPERATURE DRIFT	Max. 10 ppm

The device is protected against short circuits and reverse polarity.

OPERATION

The input signal is first modulated and then electrically isolated through a transformer.
The signal is then de-modulated, filtered and made available at the output.
For correct operation, it is essential to ensure that the voltage of the current source (US) is sufficient to supply a maximum current of 20 mA, considering a voltage drop of 2 V U_{drop} on the isolator and the presence of the R_{load} load.

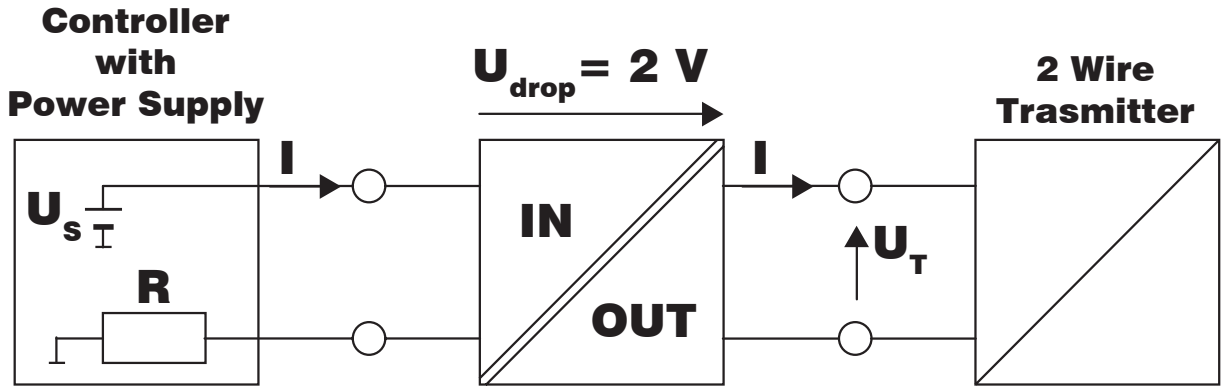
$U_S \geq U_{IN} = 2\ V + 20\ mA \times R_{load}$



EXAMPLE: Rload is 250 Ω, so the voltage Us must be greater than 2 + 0.02 x 250 i.e. 7 V.

Another possible application: LOOP power supply with input-side current measurement.

$U_T = U_S - 2\ V - 20\ mA \times R$



EXAMPLE: The 2-wire transmitter requires a minimum Ut of 15 V and the R is 100 Ω, the minimum Us voltage must be: 15 + 100 x 0.02 + 2 i.e. 19 V.

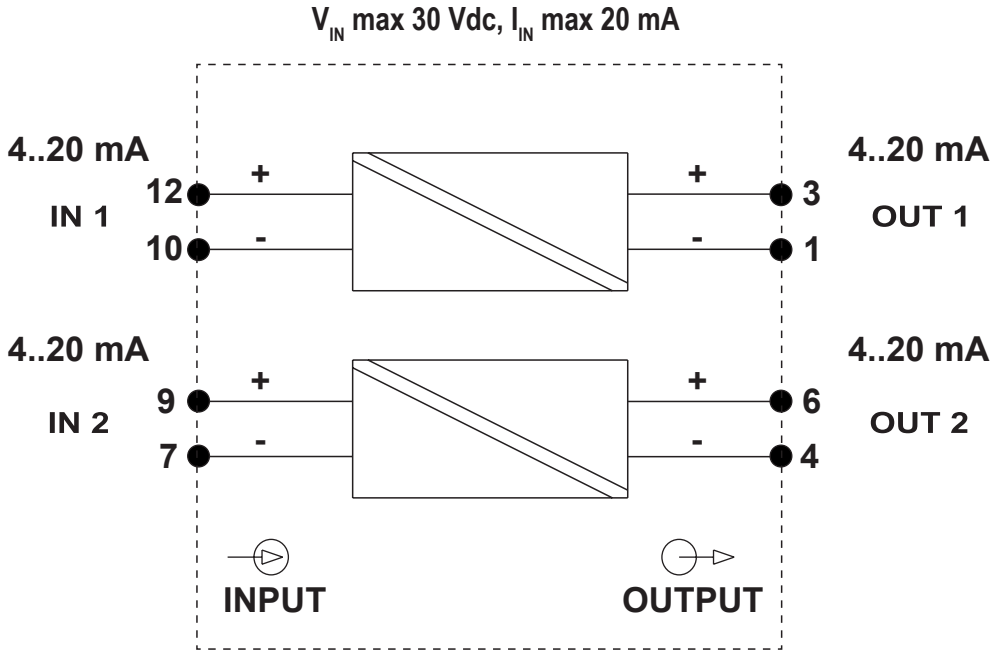
⚠ WARNING

In this condition of use the transmission error increases by 25 µA in the nominal range.

ELECTRICAL CONNECTIONS

CAUTION

To meet the electromagnetic immunity requirements:
- use shielded signal cables;
- connect the shield to a preferential instrumentation earth system;
- separate shielded cables from other cables used for power installations (transformers, inverters, motors, etc...).



PASSIVE INPUTS: connection to be used with transducers in 4-wire technique.
The transducer powers the module with a current between 4 and 20mA.

ACTIVE OUTPUTS: The module generates a current for the output loop identical to that circulating in the input loop and can drive a maximum load of 1400 ohm on the output loop.
There must be no power supply on the output loop.