ALTERNATE AND DIRECT VOLTAGE TRANSMITTER Z202-LP

GENERAL FEATURES

The Z202-LP module is a loop-powered voltage transmitter that measures the alternate (mean value adjusted to the rms value) and direct voltage input value and converts it into a current signal output. The instrument stands out for its precision class, low power consumption and wide range of configuration options.
These are its general features:

- Voltage input up to 500Vac in 5 preset ranges, which can be selected by DIP-switch.
- Each range can be set and extended to the next one, and it's possible to calibrate the instrument on any intermediate point in the continuous range of 0..500 Vac, without either over-setting the fixed ranges, or opening the instrument (multi-rev trimmer accessible from front panel).
- High precision class: 0.3 (on 300 Vac of maximum range).
- Wide range of frequency input (20 Hz..400 Hz).
- Extremely short response time (< 100 ms).
- 3750 Vac galvanic insulation between voltage input and output ports.
- Low output ripple and fast response time to input change.

TECHNICAL SPECIFICATIONS

Input Specifications

Voltage input:	Alternate voltage 0..500 Vac; direct voltage 0..540 Vdc; see the range selection table.
Maximum Voltage:	710 Vpk range independent.
Frequency:	DC / 20 Hz .. 400 Hz
Consumption:	< 1mA for any input voltage.
Insulation:	3750 Vac
Overvoltage measurement Class:	▪ CAT III up to 300 Vac towards ground. ▪ CAT II up to 300 Vac towards ground.

Loop Specifications

General Specifications:	Passive, 4..20 mA
Maximum current:	35 mA in overload conditions.
Extern power supply voltage:	From 5 to 28 Vdc.
Response time:	For a stepped variation: < 100 ms from 10 to 90 %.

Accuracy specifications (1)(2)

Range	Measurement error(3)
100 Vac / 90 Vdc	0,3 % o.m. + 70 µA
200 Vac / 180 Vdc	0,3 % o.m. + 40 µA
300 Vac / 270 Vdc	0,2 % o.m. + 30 µA
400 Vac / 360 Vdc	0,3 % o.m. + 30 µA
500 Vac / 450 Vdc	0,3 % o.m. + 30 µA

Thermal drift	150ppm / K
EMI Error	< 40 µA

(1): Maximum error must be increased by 20 µA for input voltages lower than 10 Vac or for direct voltages.
(2): The measurement errors are indicated for a sinusoidal signal.
(3): Acronyms "o.m." stands for "of measurement".

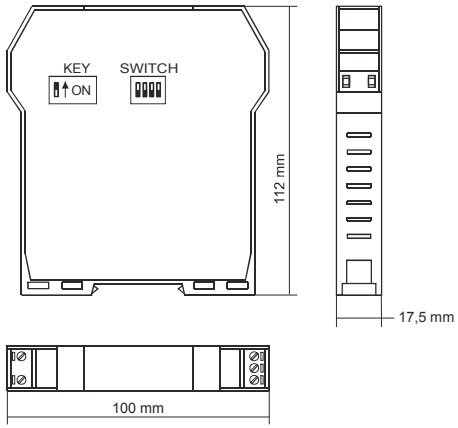
Other Specifications

Operating conditions:	Temperature: -20..65°C, humidy 30..90 % @ 40°C not-condensing. Climatic Group III. Storage Temperature : -20..85 °C. Altitude: up to 2000 m a.s.l.
International protection:	IP20
Weight, dimensions:	140 g, 100 x 112 x 17.5 mm.
Standards: CE	EN60688 (rated input voltage = 300 Vac) EN61000-6-4 (electromagnetic emission, industrial environment). EN61000-6-2 (electromagnetic immunity, industrial environment). EN61010-1 (safety).

INSTALLATION RULES

The module is designed to be installed on a DIN 46277 guide, and wired only by front terminals.
We suggest you to install the instrument vertically in order to arrange the ventilation of the module and pay attention to do not fit any objects or canals that can obstruct its ventilation louvers. Avoid fitting modules above equipment that generates heat; you are advised to fit them at the bottom of the panel or on the enclosing compartment.

Overall Dimensions / DIP-switch Position



INPUT FULL SCALE SETTINGS

ATTENTION!
BEFORE YOU ATTEMPT USING THE DIP-SWITCH, MAKE SURE THAT YOU HAVE DISCONNECTED ALL CIRCUITS AT DANGEROUS VOLTAGE.

ATTENTION!
TO ADJUST THE TRIMMER ON PANEL AN INSULATED SCREWDRIVER MUST BE USED.

The instrument satisfies standard 60688/1997; in particular, overvoltage tests of input voltage are referred to rated input voltage *give in Other Specifications.*
Voltage overloads higher than maximum voltage given in Input Specifications may damage the instrument.

The range of the instrument is established by the positions of the 4-way DIP-switch. The first three ways select one of the 5 preset ranges, while the fourth way (usually off) enables the insertion of the trimmer on panel, which gives a continuous-control extended range of 0..100 Vac (0..90 Vdc): if you rotate the trimmer clockwise you increase the output (reducing the maximum range of the instrument), else you reduce the output increasing the maximum range. If input voltage is present, *you must use an insulated screwdriver*, because the insulation of the adjusting screw is not guaranteed.
Lower voltage input is 4 Vac o 5 Vdc for any range. These values are the amplitude thresholds under which the instrument detects 0, that is transmits 4 mA.
The table below shows the combinations useful for the preset range values.

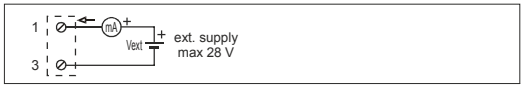
Range	DIP	Range / Trimmer	DIP
100Vac / 90 Vdc	on off 1 2 3 4	100 Vac + 0..100 Vac / 90 Vdc + 0..90 Vdc	on off 1 2 3 4
200Vac / 180 Vdc	on off 1 2 3 4	200 Vac + 0..100 Vac / 180 Vdc + 0..90 Vdc	on off 1 2 3 4
300Vac / 270 Vdc	on off 1 2 3 4	300 Vac + 0..100 Vac / 270 Vdc + 0..90 Vdc	on off 1 2 3 4
400Vac / 360 Vdc	on off 1 2 3 4	400 Vac + 0..100 Vac / 360 Vdc + 0..90 Vdc	on off 1 2 3 4
500Vac / 450 Vdc	on off 1 2 3 4	500 Vac + 0..100 Vac / 450 Vdc + 0..90 Vdc(1)	on off 1 2 3 4

(1): Maximum input voltage must not exceed 500 Vac o 710 Vpk anyway.

ELECTRICAL CONNECTIONS

ATTENTION!
BEFORE MAKING ANY CONNECTION TO THE INSTRUMENT, MAKE SURE THAT YOU HAVE DISCONNECTED ALL CIRCUITS AT DANGEROUS VOLTAGE.

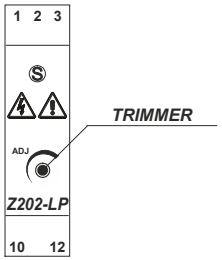
Loop connections



Voltage input connections

RANGE: See "*INPUT FULL SCALE SETTINGS*"

FRONT PANEL



Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs)
This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product, please contact your local city office,

CSQ IQNet ISO9001-2000
SENECA s.r.l.
Via Austria, 26 - 35127 - PADOVA - ITALY
Tel. +39.049.8705355 - 8705359 - Fax +39.049.8706287
e-mail: info@seneca.it - www.seneca.it