

TRANSDUCERS

TRANSDUCER FOR AC VOLTAGE (*True RMS*)

- Normal output characteristic
- Live zero output

Complies with IEC60688

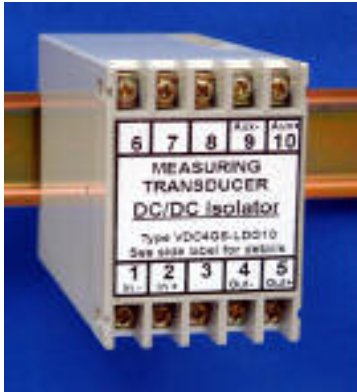


Figure 1 – LDG10 Housing

The transducer converts an AC voltage into a load independent DC current or voltage signal which may be used to drive a number of remotely installed instruments.

The measuring principle is "true RMS" and this transducer is therefore suitable for distorted and undistorted AC wave measurements.

The normal response time is suitable for indicating instruments and recorders. A lower ripple - slower response version for data loggers can be supplied.

The output is protected against over-voltages due to surges or accidental contact with insulation testers or the mains supply.

MODE OF OPERATION

Refer to Figure 2.

The voltage to be measured is transformed in VT (1) and converted to DC in the RMS/DC converter(3). The auxiliary supply is transformed in VT (2), rectified and smoothed in (4) and is used to power the converter (3), output amplifier (5) and to provide the offset voltage for the live zero version. The output amplifier (5) provides either a load independent current (with maximum burden) or a load independent voltage (with minimum burden) signal.

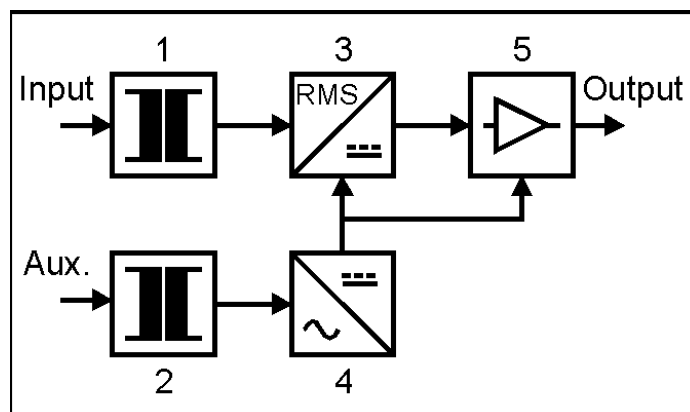


Figure 2 - Block Diagram

TECHNICAL DATA

1. Input

Input quantity: 0 - 120 / 250 / 500 / 600 V
(other values available on request)

Frequency: 45 - 55 - 65 Hz

Consumption burden: 0.4 - 1.2VA depending on range

Overload in terms of rated input: 1.2x indefinitely
1.5x 10 seconds

2. Output

Characteristic: A or C or D

Output quantity: Impressed current signal (voltage signal on request)

Standard values: 1mA, 5mA, 20mA

Maximum load: 5k Ohm, 2.5k Ohm, 750 Ohm.

Maximum output voltage: 32V DC

Maximum output current: 1.25x rated (typical)
2.00x rated (maximum)

Ripple: 0.5% standard

Response time: 210ms standard

3. Auxiliary power supply

Voltage: 110 or 220V 50Hz $\pm 20\%$ (other values and DC on request)

Burden: <3.5VA at rated output

4. Accuracy

Error limit at rated conditions: $\pm 0.5\%$ of range at 23 C and 45-55 Hz sinusoidal wave, form factor 1.11

Linearity error: 0.05%

Long term drift: 0.25%

Temperature shift: 400ppm/ C

Variation with auxiliary supply: 0.05% for $\pm 20\%$ variation

5. Protection

Impulse tests between isolated sets of terminals: 5kV (0.5J 1.2/50 wave) IEC standard

Voltage withstand rating between sets of terminals: 4kV 50Hz AC for 1 minute

Power voltage across output: 220V 50Hz indefinitely

Surge across output terminals: 5kV 25J 1kV 4J

Personal hazard: Enclosure IP40
Terminals IP20
Double insulated, no lethal potentials exposed with top cover removed.

6. Physical constraints

Working temperature: -25 to 13 to 33 to 55 C

Storage temperature: -55 to 75 C (above dewpoint)

Relative humidity: 80%

Variation due to external magnetic field (worst case): 0.05% at 400A/m 50Hz

Position: Surface mounting in any position indoors.

7. Enclosure

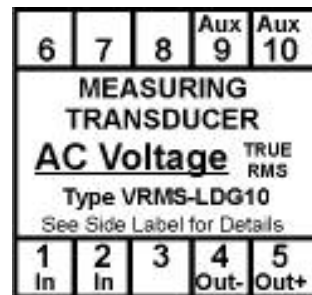
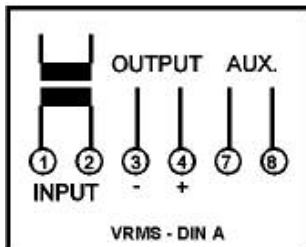
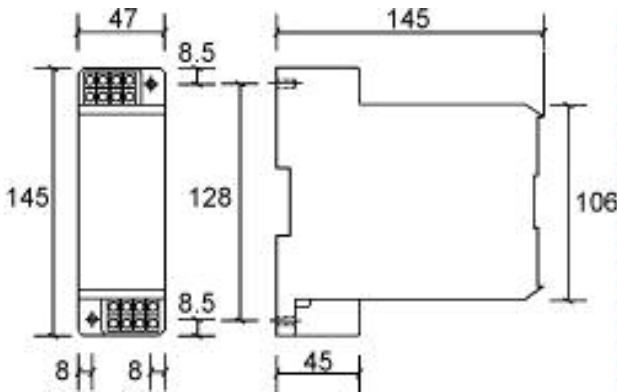
Type LDG10
Terminals: ABS
Screw type with wire protection. Plated. Rated 20A. 1x4mm² cable. DIN rail type 46277 or Chassis

Mounting:

Type DIN A:
Terminals: ABS
Double screw cage. Plated. Rated 10A. 2x2.5mm² or 1x6mm² cable. DIN rail type 35/15 or chassis

Mounting:

Dimension and connection diagrams



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