

TRANSDUCERS

TRANSDUCER FOR AC CURRENT

- Normal output characteristic
- Live zero output
- Suppressed zero enlarged scale (window version)
- User selectable input range and auxiliary voltage supply

Complies with IEC 60688

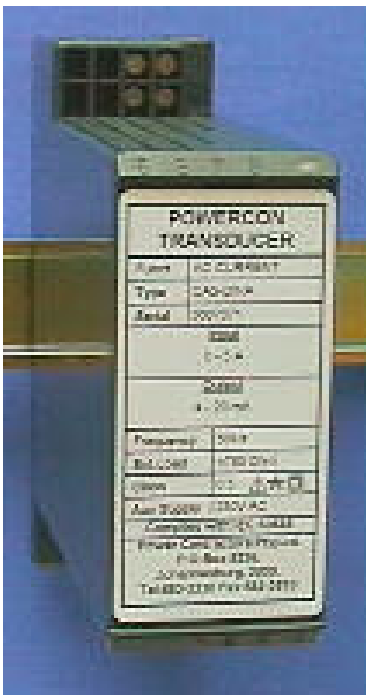


Figure 1 - DIN A Enclosure

The transducer converts an AC current 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 "arithmetic mean calibrated to RMS sinusoidal" and this transducer is therefore only suitable for undistorted sine 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.

The auxiliary voltage supply is user selectable to either 110V or 220V AC by means of a jumper. Similarly the input range may be changed to either 0-1A or 0-5A.

MODE OF OPERATION

Refer to Figure 2.

The current to be measured is transformed in and converted in the active rectifier(3). The auxiliary supply is transformed in PT (2), rectified and smoothed in (4) and is used to power the rectifier (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.

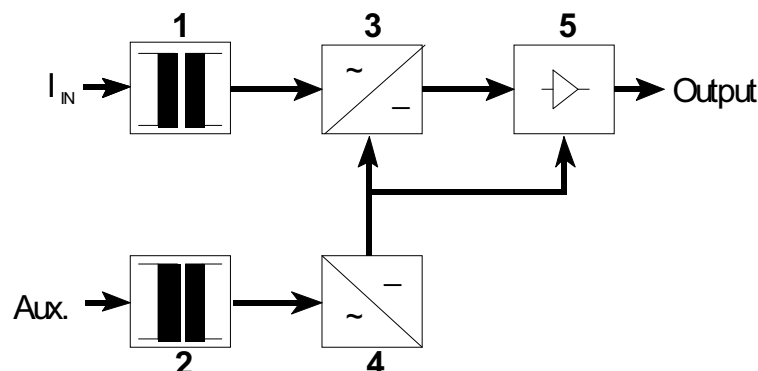


Figure 2 - Block Diagram

TECHNICAL DATA

1. Input

Input quantity: **User selectable**
 0 - 1 A or 0 - 5 A

Frequency: 45 - 55 - 65 Hz

Consumption burden: <0.3VA at rated input

Overload in terms of rated input: 1.2x indefinitely
 40x 0.5 seconds

2. Output

Characteristic: A or C or D

Output quantity: Impressed current signal (voltage signal on request)
 1mA, 5mA, 20mA

Standard values: 5 kOhm, 2.5 kOhm, 750 Ohm.

Maximum load: 32V DC

Maximum output voltage: 1.25x rated (typical)
 2.0x rated (maximum)

Maximum output current: 0.5% standard

Ripple: 210ms standard

Response time: 0.5% standard

3. Auxiliary power supply

Voltage: **User selectable**
 110 or 220V 50Hz $\pm 20\%$

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 test 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.

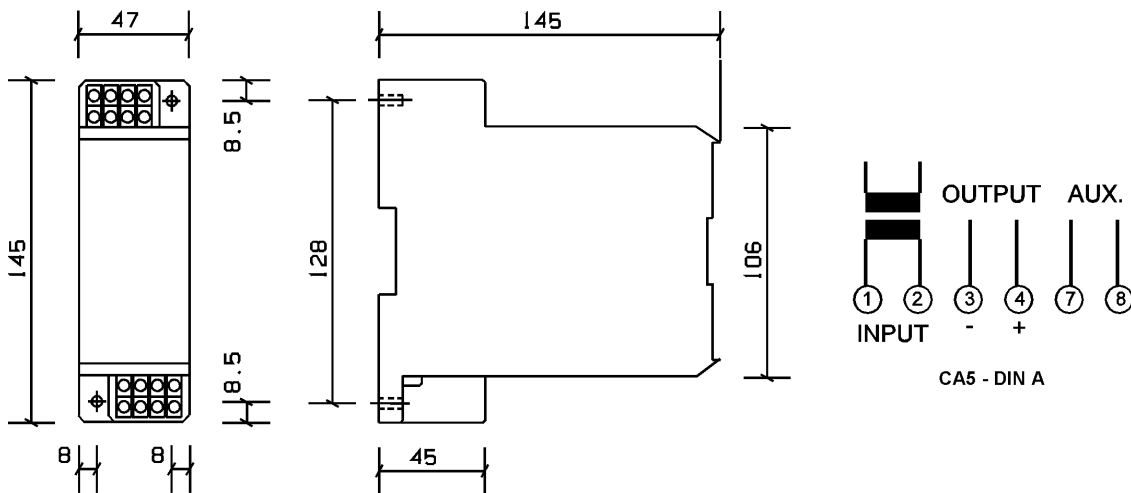
7. Enclosure

Type DIN A:

Terminals: ABS
 Double screw cage. Plated.
 Rated 10A. 2x2.5mm² or 1x6mm² cable.

Mounting: DIN rail type 35/15 or chassis

Dimension and Connection Diagrams



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