

TRANSDUCERS

TRANSDUCERS FOR AC VOLTAGE

- Normal output characteristic.
- Live zero output.
- Suppressed zero enlarged scale (window version).

Complies with IEC 60688

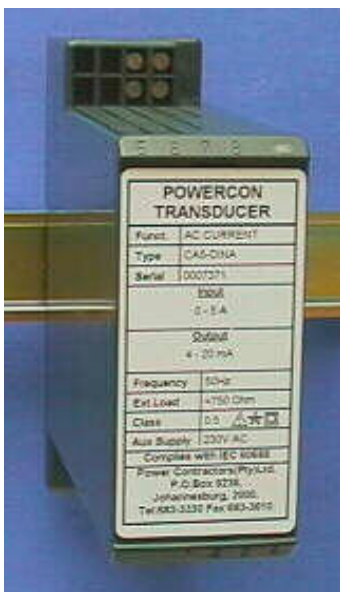


Figure 1 – DIN A Enclosure

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 "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.

MODE OF OPERATION

Refer to Figure 2.

The voltage to be measured is transformed in VT (1) 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.

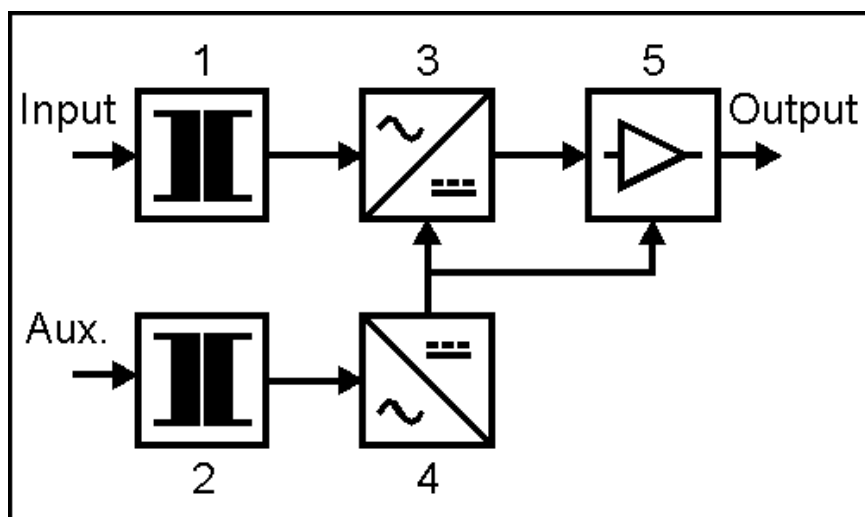


Figure 2 - Block Diagram

TECHNICAL DATA

1. Input

Input quantity: 0 – 120 / 250 / 500 / 600V.
(Other values on request.)
Frequency: 45 - 55 - 65 Hz
Consumption burden: 0.4 – 2.0VA depending on range.
Overload in terms of rated input: 1.5x indefinitely
2x 10 seconds

2. Output

Characteristic: A or C or D
Output quantity: Impressed current signal
(voltage signal on request)
Standard value: 1mA, 5mA, 20mA
Maximum load: 5kΩ, 2.5kΩ, 750Ω.
Maximum output voltage: 32V DC.
Maximum output current: 1.25x rated (typical)
2.0x rated (maximum)
Ripple: 0.5% standard
Response time: 210ms standard

3. Auxiliary power supply

Voltage: 110V or 220V AC 50 Hz ±20%.
(Other values and DC on request)
Burden: <3.5VA at rated output.

4. Accuracy

Error limit at rated conditions: ±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 ±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.

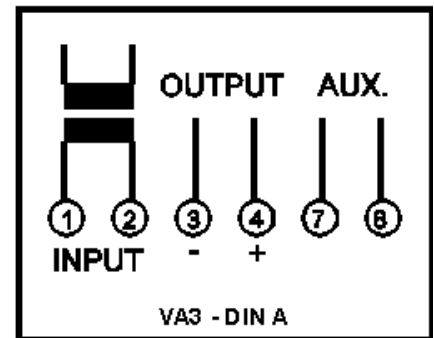
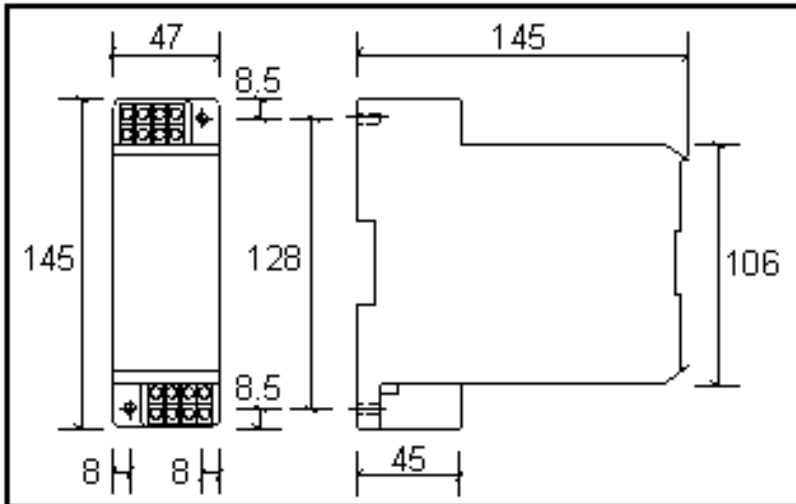
6. Physical constraints

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. 2x 2.5mm² or 1x 6mm²
DIN rail type 35/15 or chassis
Mounting:

Dimension and Connection Diagrams



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