Temperature Transducer

Features:

- Normal Output Characteristic
- Live Zero Output
- Compact size (Width 50mm x Height 70mm x Depth 103mm)

The transducer converts the temperature, as measured by a separate resistance temperature detector (usually a Pt100), into a load independent DC current or voltage signal, which may be used to drive a number of remotely installed instruments.

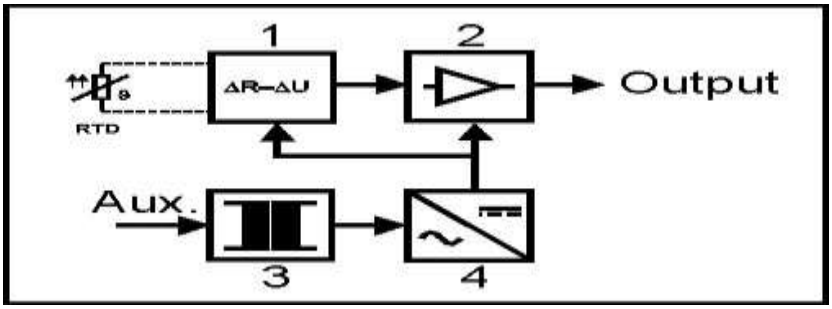
The remote RTD is connected to the transducer in 2 wire or 3 wire mode, the 3 wire connection being used when lead resistance compensation is required.

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

Internal jumpers allow selecting either 115V or 230V AC auxiliary supply.

Mode of Operation:

The external RTD forms part of a sensitive bridge circuit (1), which by means of a constant sensing current is able to transform small changes in input resistance into larger changes in output voltage. This output voltage is referenced and amplified (2) into a load independent current or voltage output signal.
The auxiliary supply is transformed in (3), rectified and smoothed in (4) and is used to power the bridge measuring and output circuits.



Block diagram

TECHNICAL DATA

1. Input

Sensor:	Pt100 DIN standard. Other sensors on request.
Standard Range:	0 – 50/100/150/200 C

2. Output

Output quantity:	Impressed current or voltage signal
Standard values:	0-1mA, maximum load 10k 0-5mA, maximum load 2k 0-10mA, maximum load 1k 0-20mA maximum load 500 4-20mA, maximum load 500 0-10V, minimum load 1k .

3. Auxiliary power supply

Voltage:	115 or 230V 50Hz ±20% 24V, 48V, 110V DC –5+20%
Burden:	AC 3.0VA at rated output DC 5.0W at rated output

4. Accuracy

Error limit at rated conditions:	±1% of range at 23 C
Linearity error:	0.5%
Long term drift:	0.25%
Temperature shift:	400ppm/ C
Variation with auxiliary supply:	0.05% for variation specified above

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

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	ABS
Terminals:	Screw type with wire protection. Plated. Rated 20A. 1x4mm² cable.
Mounting:	DIN rail type46277 or Chassis

Dimension and Connection Diagrams