# Intrinsically Safe Temperature / Resistance Transmitter

## Product features

- Pt100 / Pt500 / Pt1000 inputs
- Resistance / potentiometer inputs
- 2 / 3 / 4 wire measurement
- -200 - +800 °C / 0-4000 ohm input ranges
- 0-20 mA / 4-20 mA / 0-10 V / 2-10 V output ranges
- 0.03% accuracy
- Easy configuration via IR transmission
- 19-35 VDC supply voltage
- TS-35 rail mounting, 12.5 mm width

## Type designation

| DT1310 | | | OUTPUT | | |
|---|---|---|---|---|---|
| | | | **IA** | **IP** | **U** |
| | | | 0 / 4-20 mA active configurable | 0 / 4-20 mA passive configurable | 0 / 2-10 V configurable |
| INPUT | **Pt100** | Pt100 0-400 ohm | ● | ● | ● |
| | **Pt500** | Pt500 0-2000 ohm | ● | ● | ● |
| | **Pt1000** | Pt500, Pt1000 0-4000 ohm | ● | ● | ● |

The **DT1310 … Intrinsically Safe Temperature / Resistance Transmitter** provide signal transmission and conversion between Pt100 / Pt500 / Pt1000 sensor or resistance / potentiometer, – operate in potentially explosive area (zone 0, zone 1) – and the signal procession unit – operates in the safe area.

The transmitter feature complete 3-way isolation: the input to output and power supply circuits are isolated using state-of-the-art planar transformer design. The output signal may be 0-20 mA, 4-20 mA, 0-10 V, 2-10 V.

The Pt100 / Pt500 / Pt1000 / resistance / potentiometer can be connected to the input either with 2 / 3 or 4 wire.

The module features complete configuration of sensor input variables and process signal outputs.

Some of the configuration options are: sensor type, resistance range, signal output scaling, 2 / 3 or 4 wire measuring mode, signal filtering, calibrated sensor curve fitting, etc. The configuration software is capable of storing all the parameters for future reconfigurations. The configuration parameters are downloaded from the PC to the DT1310 ... via wireless transmission.

Datcon provides a low cost USB-IR interface for this purpose, and a free of charge configuration software. Front panel LED indicators help the troubleshooting.

The overall full-scale accuracy of the module is < 0.1% and the temperature coefficient is < 50 ppm / °C.

The supply voltage range is 19-35 VDC, thus the transmitter is insensitive to the supply voltage change.

The transmitter's ambient temperature range is -20°C to +50°C.

The module can be mounted on standard 35 mm DIN-rail and also features keyed plug-in terminals for easy and safe wiring.

**Safety data:**

The connection terminals of the supply voltages are isolated from each other, the isolation is in compliance with the standard EN 61010-1, taking into consideration the following:

| | |
|---|---|
| Pollution level: | 2 |
| Measurement category: | II |

**Intrinsical safety data:**

| | |
|---|---|
| Certification: | BKI 18 ATEX 0004 X |
| Protection marking: | ⟨Ex⟩ II (1) GD  [EEx ia]  IIC   (-20 °C < Ta < +50 °C) |

**Safety data:**

| Type | Uo [V] | Io [mA] | Po [mW] | IIC Co [uF] | IIC Lo [mH] |
|---|---|---|---|---|---|
| DT1310 ... | 8.75 | 3.6 | 8 | 5 | 1000 |

$U_m$:  250 $V_{eff}$

**Input parameters:**

| | |
|---|---|
| Input signal: | Pt100 / Pt500 / Pt1000 sensor / resistance / potentiometer |
| Connection: | 2 / 3 / 4 wire |
| Measurement range: | -200 °C - +800 °C @ Pt100 / Pt500 / Pt1000 |
| | 0-4000 ohm @ resistance / potentiometer |

**Output parameters:**

| | |
|---|---|
| Output type: | DC current or DC voltage |
| Ranges: | 0-20 mA / 4-20 mA / 0-10 V / 2-10 V |
| Burden (current output): | 700 ohm (max.) |
| Load (voltage output): | 500 ohm |
| Output current max.: | 20.8 mA |
| Error: | 0.1 °C + 0.05% (max.) |
| Temperature-coefficient: | 50 ppm / °C (max.) |

**Display:**

| | |
|---|---|
| Display: | 2 LED (power on, configuration mode) |

**Configuration:**

| | |
|---|---|
| Configuration: | infra transmission |

**Power supply:**

| | |
|---|---|
| Supply voltage: | 19-35 VDC |
| Consumption: | 1.4 W |

**Ambient conditions:**

| | |
|---|---|
| Operating temperature range: | -20 - +50 °C |
| Relative humidity: | 90% (max., non-condensing) |
| Place of installation: | safe area, cabinet |
| Installation: | vertical (horizontal rail position) |

**Electromagnetic compatibility (EMC) accordance with the standard EN 61326**

| | |
|---|---|
| Immunity: | industrial area |
| Noise emission: | Group 1, Class B |

**General data:**

| | |
|---|---|
| Housing: | terminal assembly box, rail mounting on TS-35 rail, material: polyamide PA6.6 |
| Connection: | plug-in screw terminal |
| Connection cable: | 0.25-1.5 mm² (max.) |
| Dimensions: | 12.5 × 99 × 115 mm (width × height × depth) |
| Weight: | 0.15 kg |
| Protection: | IP 20 |

Detailed information see in operating instructions. The Manufacturer maintains the right to change the technical data!

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**DATCON**

IPARI ELEKTRONIKAI KFT.