

Intrinsically Safe Process Indicators

Product features

- Display in engineering units
- 4 1/2 digit LCD, 20.5 mm character height
- 4-20 mA loop powered
- Min. / Max. values detection
- 2 isolated limit outputs
- 0.03% accuracy, ± 20 ppm / $^{\circ}\text{C}$
- Intrinsically safe (zone 1, 2)
- Easy on-site configuration
- DT9000: IP 65
DT9002: IP 65 front
IP 30 rear



The **DT9000, DT9002 Intrinsically Safe Process Indicators** enable linear process variables to be displayed in engineering units in even the most hazardous plant areas (zone 1, zone 2). Two isolated outputs are available with different operating modes for limit signaling or for simple control purposes. Both indicators are loop-powered from 4-20 mA signals, dropping less than 2 V at 20 mA.

Large 4 1/2-digit, 20.5 mm height liquid crystal display make process variables easily visible at a distance.

A label defining the appropriate engineering unit is attached to the right of the display. Both indicators can be set up to reverse the display „direction” (i.e. to produce a decreasing displayed value for a rising signal input) and to display a decimal point if required.

Easy on-site configuration through the front panel keypad is a major advantage of the microcontroller-based technology.

The settings of zero and full-scale values are non-interactive, making the configuration process rapid and simple.

The configuration parameters: scaling, decimal point position, display refresh rate, signal filtering, limit modes, limit values, etc. are stored in EEPROM. A two level password protects the settings from unauthorised changes.


The DT9000 is housed in a moulded polycarbonate case which is dust-tight and houseproof to IP 65 to allow for installation in the field or on the control panel. The DT9002 is housed in a DIN standard 144 × 72 mm ABS case with IP 65 protection from the front and IP 30 protection from the back side, for installation on the control panel.

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

Intrinsic safety data:

Certification: BKI 15 ATEX 0027 X
 Protection marking:  II 1G Ex ia IIC T6 Ga (-20 °C < Ta < +60 °C)
 Input safety data: Ci=10 nF, Li=0, Ui=30 V, Ii=100 mA, Pi=0.75 W
 Limit outputs safety data: Ci=0, Li=0, Ui=10 V, Ii=16 mA, Pi=40 mW, Uo=10 V, Io=0.2 mA, Po=0.5 mW

Input parameters:

Input signal: DC current
 Characteristics: linear
 Measurement range: 4-20 mA
 Overrange: 3.5-20.5 mA
 Sampling: 15 measurement / sec.
 Number of averaged samples: 1; 2; 4; 8; 16; 32 (selectable)
 On input terminals: < 2.2 V @ I= 4 mA, < 2 V @ I= 20 mA
 Accuracy: 0.03% @ Ta = 23 °C ±2 °C

Output parameters:

Output: 2 limit outputs
 Output type: optically isolated passive switching transistor
 Leakage current: I < 0.1 mA @ 9 V
 Voltage drop: U < 1 V @ 10 mA
 Load rating: 10 V, 16 mA max. (Ex safety data)
 Refreshing time: same as the display refreshing time
 Hysteresis: 0 - ±999

Display:

Display: 4 1/2 digit, 7 segments, decimal point and negative sign
 Display unit: LCD, 20.5 mm character height
 Range: -19999 - +19999
 Decimal point: its position can be selected, or it can be switched off
 Display refreshing time: 0.1; 0.3; 0.5; 1.0; 2.0 sec. (selectable)

Manual controls:

Manual controls: 3 membrane push-buttons on the front cover

Power supply:

Power supply: 4-20 mA loop-powered, reverse polarity protected

Ambient conditions:

Operating temperature range: -20 - +60 °C
 Relative humidity: 90% (max., non-condensing)
 Place of installation: potentially explosive area, zone 1, zone 2, safe area

Electromagnetic compatibility (EMC)

accordance with the standard EN 61326-1

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

General data:

Housing:	DT9000: moulded polycarbonate case, installable as a field or panel instrument	DT9002: DIN standard ABS case, installable as a panel instrument
Connection:	DT9000: IP 65 cable entry, push-in direct connection	DT9002: push-in direct connection
Connection cable:	0.25-1.5 mm ² (max.)	0.25-1.5 mm ² (max.)
Dimensions:	DT9000: 167 × 87 × 90 mm (width × height × depth)	DT9002: 144 × 72 × 75 mm (width × height × depth)
Weight:	0.8 kg	0.4 kg
Protection:	IP 65	IP 65 (front), IP 30 (rear)

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