

TC-90/T

Electronic Temperature Volume Corrector



This product is discontinued!

Application

The desire for more individual fairness in the billing of gas consumption and rising energy prices means that in traditional flow metering with today's gas meters it is necessary to take the actual gas temperature into account when calculating the consumption. If this is not done, there will be an error of approximately 1% if the temperature deviates by only 3 °C.

Brief information

The TC-90/T is a battery-operated volume corrector with a permanently-connected temperature sensor. It registers the volume pulses from a gas meter and calculates the standard volume with the help of the temperature it measures and the fixed values for the gas pressure and the compressibility factor.

Operation

All of the data and the parameters as well as any additional information can be displayed via two keys on an 8-digit display. Operation is simplified by dividing up the data display into two levels. On the standard level, only the values for actual volume, standard volume, gas temperature, gas pressure (absolute), gas deviation law factor and the status register are displayed. On the service level, all of the values which the TC-90/T processes can be called up.

Additional functions

The TC-90/T stores the readings for the actual volume at the end of every month and also the end-of-month readings for the previous 12 months for the standard volume. The stored data can be read out via the serial interface.

In order to connect other devices for further processing, the TC-90/T has a digital output. Via this output it is possible to emit standard or actual volume pulses or signal the error status.

Setting parameters

In order to set the parameters, it is necessary to have the parameter program DBS-90 and the KD-100 connection cable unless the required parameters have been set exworks.

The parameter program allows a simple adjustment of the settings when the device is put into operation. It is also possible to read out the stored meter readings and to prepare them for further processing with the Elster evaluation software AWS-100.

Versions

The TC-90/T has a solid cast aluminium housing with a separate battery compartment. The battery can be changed without breaking the official calibration seals.

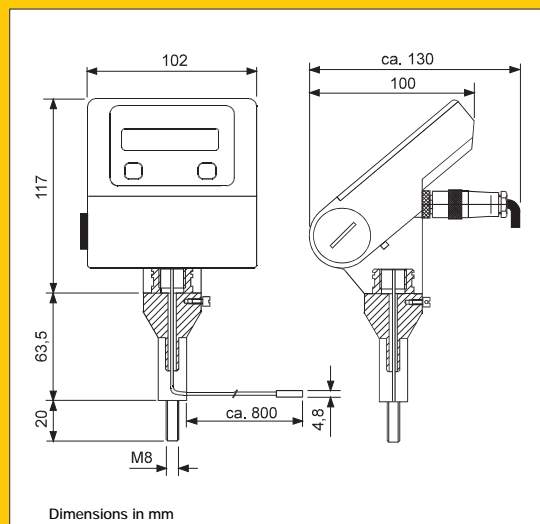
In order to find the best possible mounting position, different versions of the temperature sensor are available for the various types of gas meters (diaphragm meters, rotary meters and turbine meters).

Features

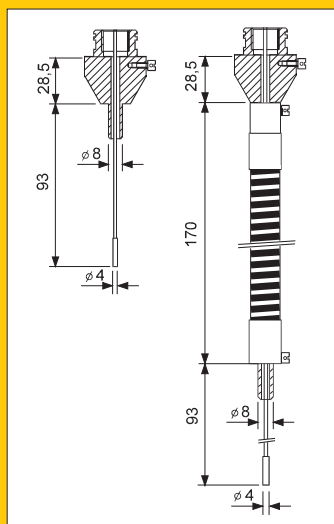
- Temperature volume corrector for meter sizes G 40 - G 250
- High accuracy
- Flow calculation
- Pressure as a fixed value
- Easy to mount
- Monthly storage of meter readings for one year
- Electronic readout of meter readings via serial interface
- Digital output
- PTB approval for national calibration
- Approved for use in Zone 1 hazardous area

Technical Data

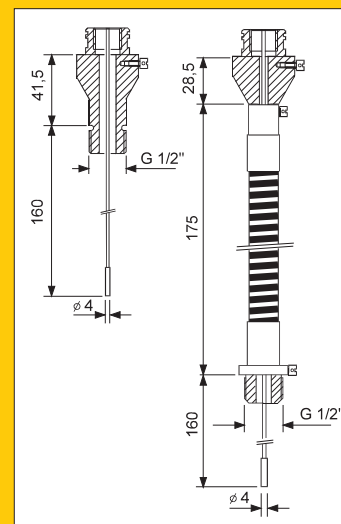
Device	Temperature volume corrector
Mechanical data	Housing: cast aluminium Enclosure rating: IP 64 Weight: approx. 800g
Ambient temperature	-20°C ... +60°C
Explosion protection	Identification: EEx ib IIB T2; registration number: BVS 95.D.2116 X
Power supply	Lithium battery module: 3.6V / 5.2Ah Operational life: > 6 years Battery change without loss of data (EEPROM)
Volume pulse inputs	2 pulse inputs for potential-free contacts with the same c_p value Pulse duration: ≥ 150 ms Pause duration: ≥ 350 ms Frequency: ≤ 2 Hz Connection: 3-pin round socket in accordance with DIN 41524
Temperature sensor	Pt-500 class B in accordance with DIN IEC 751, permanent connection to the corrector
Temperature measuring range	Gas temperature: -10°C ... +40°C
Pressure	Fixed value ≤ 6.5 bar (absolute)
Calibration switch	Button inside device, can be accessed via borehole without opening the housing
Measuring error at normal operating conditions	Actual volume: no loss of pulse Standard volume: $\leq 0.2\%$ of measured value Temperature: $\leq 0.1\%$ of measured value Flow: $\leq 5\%$
Data interface	Serial interface similar to RS 232/V.24 Connection: 6-pin round socket in accordance with DIN 41524
Signal output	Transistor output Voltage U_{max} : 30V Current I_{max} : 30mA Frequency f_{max} : 1 Hz Pulse duration t : 500ms Connection: 4-pin round plug in accordance with DIN 41524



TC-90/T - dimensions
with connecting piece version V
for temperature thermowell EBL 140/diaphragm meter



Connecting pieces
versions I and II for temperature
thermowells EBL 45...67



Connecting pieces
versions III and IV for temperature
thermowells EBL 160

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