

UniTrans® Universal Pressure Transmitters Type UT-10, UT-11

Datasheet UT-10, UT-11

Applications

- Process engineering
- Chemical engineering
- Plant construction

Special features

- Scaleable measuring ranges via turndown of up to 1 : 20
- Measuring range from 0 ... 5 mbar up to 0 ... 4,000 bar
- High measuring accuracy
- Fully welded, stainless steel diaphragm
- Multifunction display



Left - UT-11
Right - UT-10

Description

Turn Down

With its maximum 1 : 20 Turn Down ratio the UniTrans® can be used in many different applications. This turndown ratio eliminates the necessity of keeping several transmitters in stock; it is much easier to turn down the transmitter instead of changing transmitters (e.g. a 100 bar transmitter can be turned down to 5 bar).

High measuring accuracy

The internal, digital signal processing allows for high measuring accuracy at fast measuring rates and pressure ranges from 5 mbar to 4,000 bar.

Multifunction display

The optional display can be adjusted mechanically and electronically, thus guaranteeing many display variations and an optimal reading from different directions. Bar graph and trend are permanently displayed. Only a minor modification of the case is required in order to be able to read the display

from above. All standard units can be displayed. Two further lines are available for entering additional text (e.g. min./max. values or temperature at the sensor).

Configuration

With the easy-to-use menu, the user can set parameters such as language, unit, zero point, span or inverted signal. The UniTrans® can be used for linearization with up to 32 set points.

Signal

The UniTrans® is fed with an input power of DC 12 ... 36 V. The output signal is 4 ... 20 mA, 2-wire system. The user can program an inverted signal 20 ... 4 mA or damping (up to 40 seconds).

Specifications

Type UT-10, standard version Type UT-11, flush diaphragm

Pressure ranges ¹⁾ *	0.4 bar	1.6 bar	6 bar	16 bar	40 bar	100 bar	250 bar	600 bar	
Over pressure safety	2 bar	10 bar	35 bar	80 bar	80 bar	200 bar	500 bar	1,200 bar	
Burst pressure	2.4 bar	12 bar	42 bar	96 bar	400 bar	800 bar	1,200 bar	2,400 ³⁾ bar	
Pressure ranges ¹⁾ *	1,000 ²⁾ bar	1,600 ²⁾ bar	2,500 ²⁾ bar	4,000 ²⁾ bar					
Over pressure safety	1,500 bar	2,000 bar	3,000 bar	4,400 bar					
Burst pressure	3,000 bar	4,000 bar	5,000 bar	7,000 bar					
		{Vacuum, gauge pressure, compound range, absolute pressure are available}							
Materials									
■ Wetted parts		(other materials see WIKA diaphragm seal program)							
> Model UT-10		Stainless steel (pressure ranges > 16 bar additional Elgiloy [®])							
> Model UT-11		Stainless steel {Hastelloy [®] C4}; O-ring: NBR ⁴⁾ {FPM/FKM or EPDM}							
■ Case		Highly resistive, fiberglass-enforced plastic (PBT); {Aluminum}							
Internal transmission fluid ⁵⁾		Synthetic oil {Halocarbon [®] oil for oxygen applications} {Listed by FDA for Food & Beverage}							
Power supply U _B	DC V	12 < U _B ≤ 36							
Signal output		4 ... 20 mA, 2-wire							
Permissible max. load R _A		R _A ≤ (U _B - 12 V) / 0.023 A with R _A in Ohm and U _B in Volt							
Adjustability									
■ Zero point	%	-2.5 ... 99							
■ Span		Turndown of 1 : 20 (1 : 2 for pressure ranges > 1,000 bar)							
Internal measuring rate	Hz	100							
Accuracy	% of span	≤ 0.1 ⁶⁾ (≤ 0.3 for pressure ranges 1,000 bar)							
Behavior with turn down (1 : k)									
■ turndown of up to 1 : 5		No change of accuracy							
■ turndown of 1 : 5 to 1 : 20		The accuracy must be multiplied by the factor (k / 5) [Calculation example for TD = 1 : 15] Accuracy = 0.1 x (15 : 5) = 0.3							
Non-linearity	% of span	≤ 0.05 (≤ 0.2 for pressure ranges > 1,000 bar); (BFSL) per IEC 61298-2							
1-year stability	% of span	≤ 0.1 (at reference conditions)							
Overall deviation	%	at +10 ... +40 °C ≤ 0.15 (≤ 0.5 for pressure ranges > 1,000 bar)							
Permissible temperature of									
■ Medium *	°C	-30 ... +105 (G 1 ½ up to 30 min 140°C at an ambient temperature of < 50 °C) -30 ... +150 (G 1 according to EHEDG with cooling element)							
■ Ambience	°C	-40 ... +85 ⁷⁾ (-20 ... +70 with display)							
■ Storage	°C	-40 ... +85 (-35 ... +80 with display)							
Compensated temp. range	°C	-20 ... +80							
Temperature coefficients within compensated temp range		(the temperature related deviations in the range +10 ... +40 °C included in the overall deviation)							
■ Mean TC of zero	% of span	≤ 0.1 / 10 K							
■ Mean TC of range	% of span	≤ 0.1 / 10 K							
Damping	s	display and signal: 0 ... 40 (adjustable)							
CE-conformity									
■ Pressure equipment directive		97/23/EG (Module H)							
■ EMV directive		2004/108/EG, EN 61326 Emission (Group 1, Class B) and immunity (industrial locations)							
Shock resistance	g	100 per IEC 60068-2-27 (mechanical shock)							
Vibration resistance	g	5 per IEC 60068-2-6 (vibration under resonance)							
Wiring protection		Protected against reverse polarity, short circuiting and {overvoltage} on the instrument side							
Weight	kg	approx. 0.7 {Aluminum version approx. 1.0}							

{ } Items in curved brackets are optional extras for additional price.

* In an oxygen version model UT-11 is not available. In an oxygen version model UT-10 is only available in gauge pressure ranges from 0.4 bar up to max. 1000 bar and with media temperatures between -20 ... +60 °C / -4 ... +140 °F.

1) Other measuring ranges (e. g. 4 bar) can be set via the respective Turn down. Even when the measuring range is present by us on (e. g. 4 bar) the standard range of (6 bar) can be set again by a reset.

2) Only Type UT-10.

3) For Type UT-11: the value specified in the table applies only when sealing is accomplished with the sealing ring underneath the hex. Otherwise max. 1500 bar applies.

4) O-ring made of FPM/FKM {EPDM} for Model UT-11 with integrated cooling element.

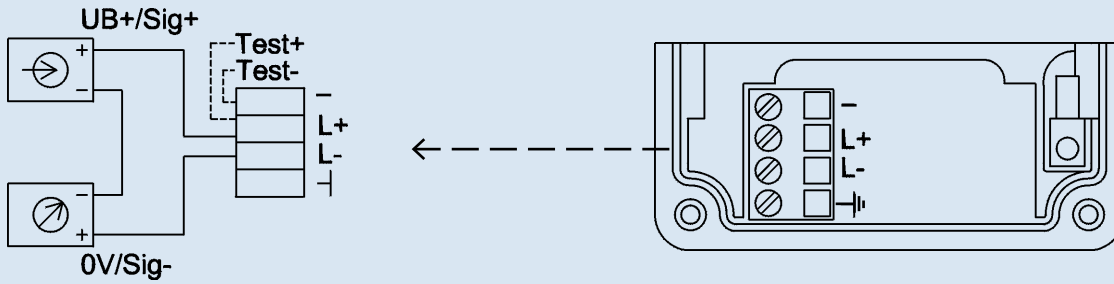
5) Not for UT-10 with pressure ranges > 25 bar

6) Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with lower pressure connection.

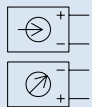
7) -40 °C only with Aluminium case.

Electrical connection

2-wire

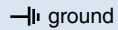


Legend:



Power supply

Load (e.g. display)



ground

L - supply minus

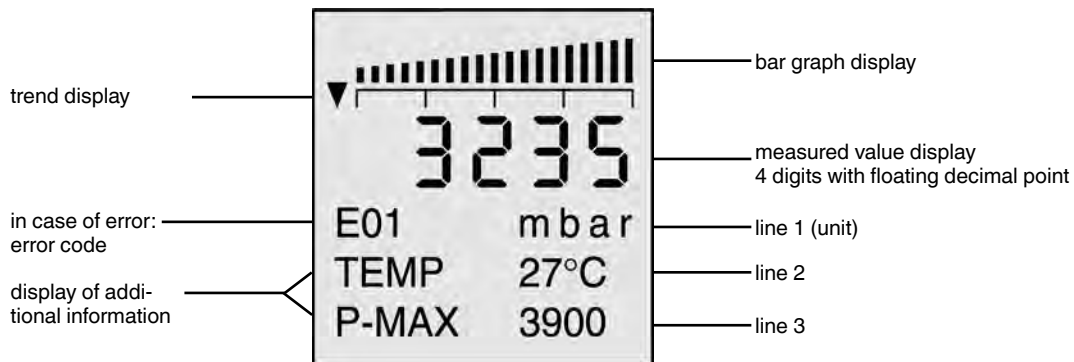
L + supply plus



test circuit; connect meter between the clamps L+ and I

} 2-wire

Random example of the optional display



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