IS-Universal-Transmitter UniTrans with PROFIBUS PA Model IUT-10-5 with PROFIBUS PA Model IUT-11-5, flush diaphragm

Applications

- Process engineering
- Chemical engineering
- Plant construction

Special Features

- Explosion Protection EEx ia IIC T6 according to ATEX (FISCO-Model [1])
- For the use in hazardous environments:
  - gases, vapours and mist: zone 1, zone 2 and connection to zone 0
- High measuring accuracy
- Configuration via DTM [2] according to the FDT [3] concept (e.g. PACTware) or SIMATIC PDM
- Fully welded, stainless steel diaphragm

Fig. right: **Pressure transmitter IUT-10-5 with display**
Fig. left: **Pressure transmitter IUT-11-5 (flush)**

Description

Signal output PROFIBUS PA
The field bus solution for the process automation. PA enables the digital communication between automation/ process, distributed control systems and field instruments.

High measuring accuracy
Due to the internal digital signal processing the UniTrans achieves a high measuring overall deviation of 0.15 % at high measuring rates as well as pressure ranging from 400 mbar to 4000 bar.

Multifunctional display
The optional display can be adjusted mechanically and electronically, thus guaranteeing many display variations and an optimal reading from different directions. Bargraph and trend are permanently displayed.

Parameters such as language, unit, zero/span in the transducer block or the PROFIBUS out scale (function block) etc. can be set by the user via the easy-to-use menu. Operation is possible in the languages German, English or French.

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).

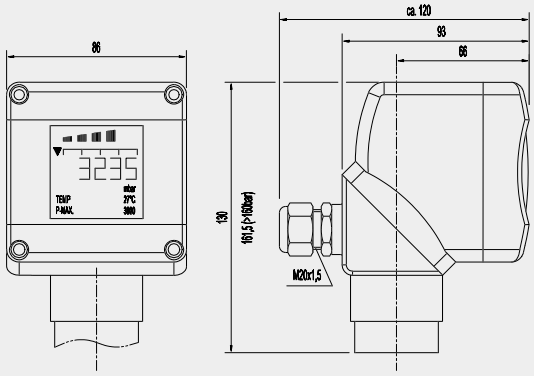
1) Fieldbus Intrinsically Safe Concept
2) Device Type Manager
3) Field Device Tool

UniTrans, Model IUT-1X see data sheet PE 86.02
Pressure transmitter with PROFIBUS DP-interface, Model D-1X-7 see data sheet PE 81.30

Specifications		Model IUT-10-5 and Model IUT-11-5											
Pressure ranges	bar	0.4	1.6	6	16	40	100	250	600	1000	1600	2500	4000
Over pressure safety	bar	2	10	35	80	80	200	500	1200	1500	2000	3000	4400
Burst pressure	bar	2	10	35	80	400	800	1200	2400	3000	4000	5000	7000
Pressure reference		Relative pressure {-1 bar possible as lower limit of range}											
		{Absolute pressure up to 16 bar, over 16 bar on request}											
Pressure connection		See Page 3											
Materials													
■ Case		Highly resistive, fibreglass-enforced plastic (PBT); {Aluminium}											
■ Pressure conn./Diaphragm	IUT-10-5	Stainless steel 1.4571 and 2.4711 (1.4534 for pressure range > 1000 bar)											
■ Pressure conn./Diaphragm	IUT-11-5	Stainless steel 1.4571 (1.4435 for EHEDG) {Hastelloy C4}, o-ring: NBR {Viton or EPDM}											
Internal transmission fluid		Synthetical oil (only for pressure ranges up to 0 ... 16 bar or flush diaphragm units)											
		{Halocarbon oil for oxygen applications [1)]}											
		{Listed by FDA for food industry }											
Signal output		PROFIBUS PA according to Profile 3.0											
		IEC 61158-2 transmission acc. to MBP (Manchester Coding, Bus Powered)											
Bit rate	kBit/s	31.25											
Bus voltage	V DC	9 ... 32 (please consider the safety related values according to EC-type test certificate [2)]!)											
Max. current consumption	mA	12.9 (switching points current limiting FDE to 17 mA)											
Adjustability and Damping		Acc. to PROFIBUS PA-Profile											
Internal measuring rate	Hz	100											
Accuracy *	% of span	≤ 0.10 (≤ 0.3 for pressure range > 1000 bar)											
Hysteresis	% of span	≤ 0.04											
Repeatability	% of span	≤ 0.05											
1-year stability	% of span	≤ 0.1 (at reference conditions)											
Permissible temperature of		(Please consider the safety related values according to EC-type test certificate [2)]!)											
■ Medium	°C	-40 ... +105											
■ Ambient	°C	-40 ... + 80 (-20 ... +70 with display)											
■ Storage	°C	-40 ... + 85 (-35 ... + 80 with display)											
Overall deviation at +10 ... +40 °C	%	≤ 0.15 (≤ 0.6 for pressure range > 1000 bar)											
Compensated temp. range	°C	-20 ... +80											
Temperature coefficients in													
compensated temp range:		(temp. related deviations in the range +10 ... +40 °C (50 ... 104 °F) already included in the overall deviation)											
■ Mean TC	% of span	≤ 0.1 per 10 K (of zero and span)											
Ⓔx - certification acc. to FISCO-Model		The instruments are certified for environments that require category 1/2G, 2G, 3G.											
Ignition protection typre		EEx ia IIC T4								EEx ia IIC T5 / T6			
Certificate No: Display		(DMT 99 ATEX E 091 U)								(DMT 99 ATEX E 091 U)			
Certificate No: Pressure Transmitter		(DMT 02 ATEX E 103)								(DMT 02 ATEX E 103)			
Safety-related max. values:													
■ Medium temperature	°C	< 105								< 60			
■ Ambient temperature	°C	-40 ... +80								-40 ... +45			
■ Voltage U_i	V DC	24											
■ Current I_i	mA	380											
■ Power P_i	W	5.32											
■ C_i / L_i	nF / µH	Effective internal capacitance and inductivity negligibly small											
CE -conformity		Interference emission and immunity see EN 61 326											
		Declaration of conformity on request; General provisions per EN 50 014: 1997											
		Intrinsic safety 'i' per EN 50 020: 1994 (VDE 0170/ 0171 Part 7/4.96)											
		Electrical equipment of instrument group II, category 1G per EN 50 284: 1999											
Shock resistance	g	100 according to IEC 770 (mechanical shock)											
Vibration resistance	g	5 according to IEC 770 (vibration under resonance)											
Electrical connection		Locking plug M 20 x 1.5 with internal clamping block											
		(For cable diameters of 7 ... 13 mm, wire diameters up to 2.5 mm^2)											
Wiring protection		Protected against polarity crossing, short circuiting, {overvoltage}											
Protection per EN 60 529/IEC529		IP 65 {IP 67}, with aluminium case always IP 67											
Weight	kg	Approx. 0.7 (aluminium version approx. 1.0)											
Dimensions		See drawings											

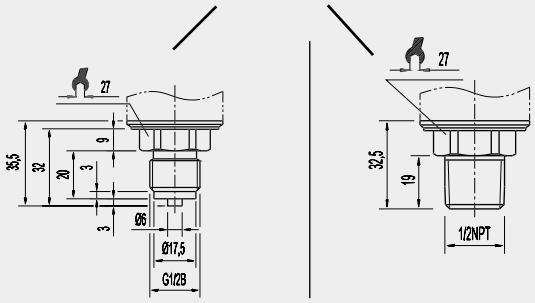
{ } Items in curved brackets are optional extras for additional price.
* Included calibration error with zero, and span, hysteresis and linearity, limit point calibrated in vertical mounting position with the pressure connection facing down.
1) The oxygen version must not be operated under medium temperatures higher than 60 °C (140 °F)
The oxygen version cannot be manufactured for negative pressure ranges and for absolute pressure ranges < 1 bar abs.
2) EC-Type test certificate is included with delivery, can bessent before delivery on request.

Dimensions in mm

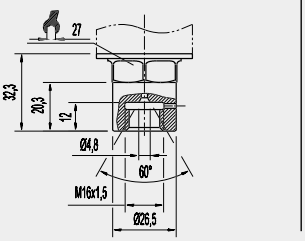


Pressure connections

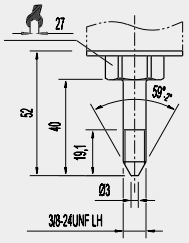
G ½ B and ½ NPT per EN 837, part 1, section 7.3



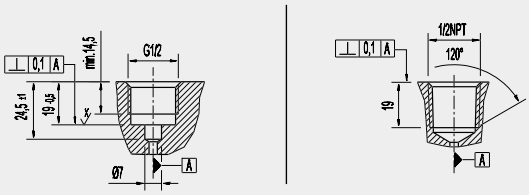
M 16x1.5 with sealing cone higher than 1600 bar



3/8”-24 UNF LH male with sealing cone higher than 1600 bar
(Accessories see PE 81.29)

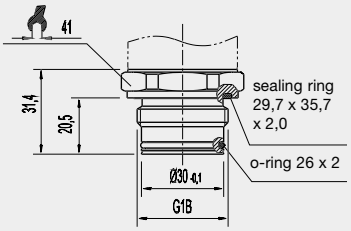


Sockets

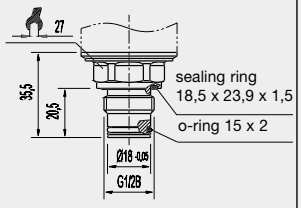


Pressure connections, flush diaphragm

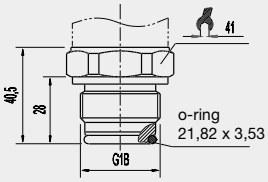
G 1 B flush diaphragm with o-ring
(0 ... 0.4 to 0 ... 1.6 bar)



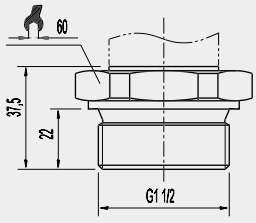
G ½ B flush diaphragm with o-ring
(0 ... 6 to 0 ... 600 bar)



G 1 flush diaphragm with o-ring according to EHEDG
(0 ... 0.4 to 0 ... 16 bar)

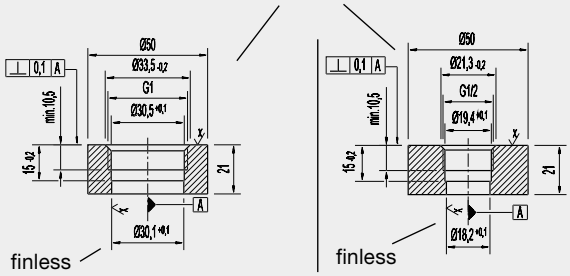


G 1 ½ flush diaphragm per ISO 228
(0 ... 0.4 to 0 ... 16 bar)

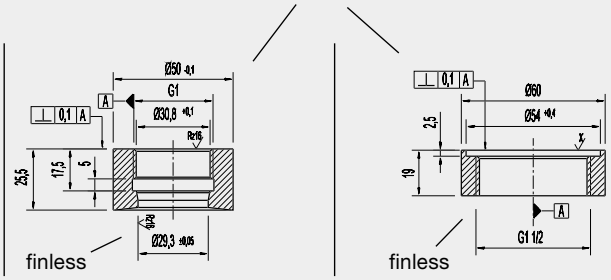


Weld-on adaptors resp. sockets for flush diaphragm pressure connection

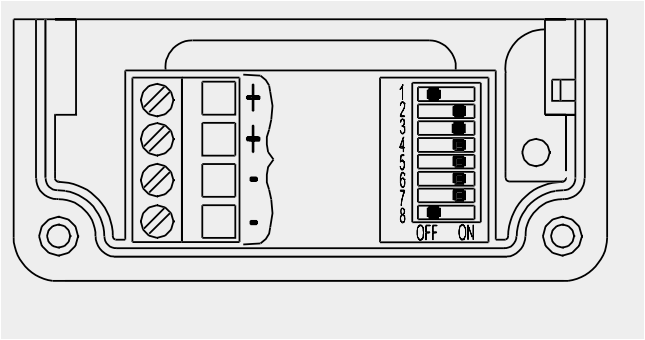
drilling after tapping



drilling after tapping



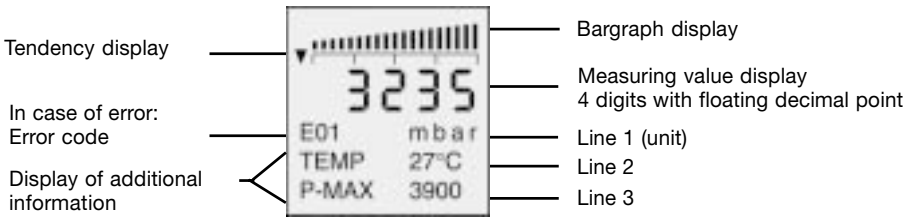
Electrical connection



Communication	
Signal	PROFIBUS PA: digital communication-
transmission	signal, 2-wire
PROFIBUS PA	Via segment coupler connection to SPS
	or PC e.g. with supplied operating software
	PACTware
	Digital display for measured value indication
PA-function	Slave
Default address	126 (for DIP switch position see picture)

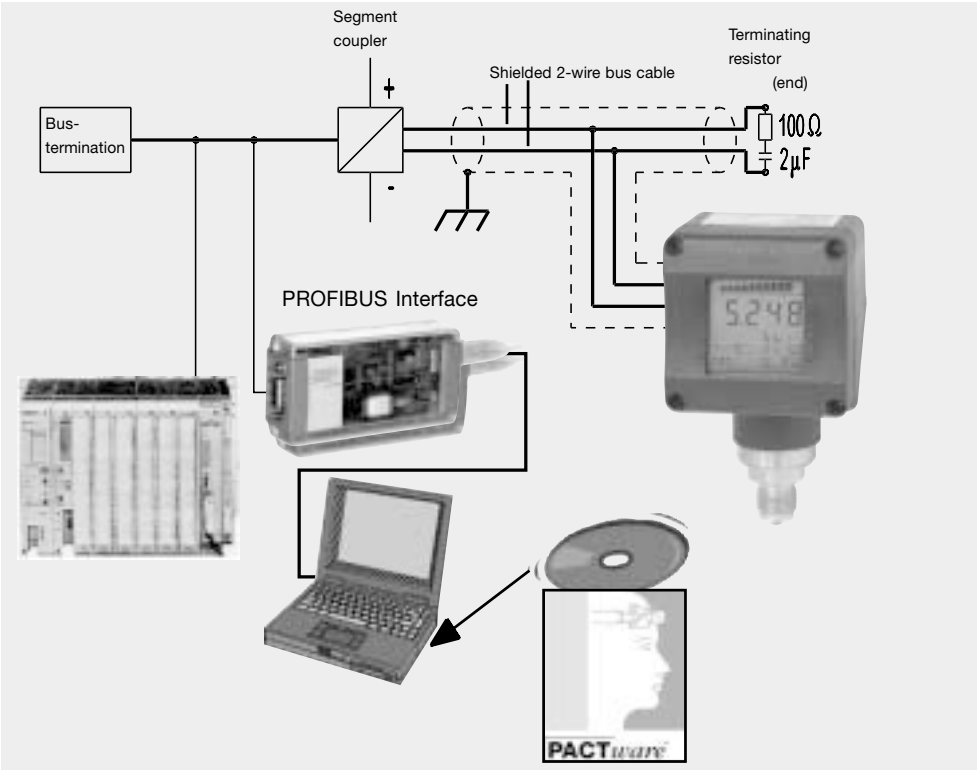
Optional display (example)

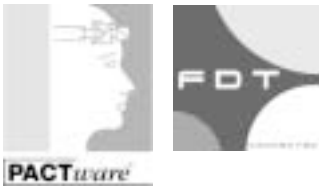
Measuring value - display mode



Communication (examples)

Communication PROFIBUS PA





The configuration software PACTware™ starter version comes supplied with the transmitter !

The PROFIBUS-Interface _is Pro USB is available from:
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Schleinufer 11
39104 Magdeburg / Germany
Tel: +49 391 544 563-10
Fax: +49 391 544 563-99
www.ifak-system.de

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Modifications may take place and materials specified may be replaced by others without prior notice.

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