



LPX i

Precision Pressure Transmitter for the Process Industry with HART®-Communication and SIL2 (optionally)

Stainless Steel Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 400 mbar up to 0 ... 600 bar

Output signals

2-wire: 4 ... 20 mA
others on request

Special characteristics

- ▶ turn-down 1:10
- ▶ two chamber aluminium die cast case or stainless field housing
- ▶ internal or flush welded diaphragm
- ▶ HART®-communication
- ▶ explosion protection intrinsic safety (ia)

Optional versions

- ▶ explosion protection flameproof equipment (d)
- ▶ SIL2 - version according to IEC 61508 / IEC 61511
- ▶ integrated display and operating module
- ▶ special materials as Hastelloy® and Tantalum
- ▶ cooling element for media temperatures up to 300 °C

The process pressure transmitter **LPX i** has been especially designed for the process industry as well as food and pharmaceutical industry (version stainless steel field housing) and measures vacuum, gauge and absolute pressure ranges of gases, steam, fluids up to 600 bar.

Different process connections such as threads and flanges with an internal or flush welded diaphragm are available and can be combined with a cooling element for media temperatures up to 300 °C. The transmitter is as a standard equipped with HART®-communication; the customer can choose between an aluminium die cast case or a stainless field housing.

Preferred areas of use are



Oil and gas industry / chemical and petrochemical industry

Food / pharmaceutical industry

Material and test certificates

- ▶ Inspection certificate 3.1 according to EN 10204
- ▶ Test report 2.2 according to EN 10204



Pressure ranges ¹													
Nominal pressure gauge / abs. ²	[bar]	0.4	1	2	4	10	20	40	100	200	400	600	
Overpressure	[bar]	2	5	10	20	40	80	105	210	600	1000	1000	
Burst pressure ≥	[bar]	3	7.5	15	25	50	120	210	420	1000	1250	1250	

¹ on customer request we adjust the devices within the turn-down-possibility by software to the required pressure ranges
² absolute pressure possible from 1 bar

Vacuum ranges						
Nominal pressure gauge	[bar]	-0.4 ... 0.4	-1 ... 1	-1 ... 2	-1 ... 4	-1 ... 10
Overpressure	[bar]	2	5	10	20	40
Burst pressure ≥	[bar]	3	7.5	15	25	50

Output signal / Supply		
2-wire: 4 ... 20 mA with explosion protection	standard: intrinsic safety (ia) with HART [®] -communication options: flameproof equipment (d) with HART [®] -communication SIL2 / intrinsic safety (ia) with HART [®] -communication SIL2 / flameproof equipment (d) with HART [®] -communication	V _S = 12 ... 28 V _{DC} V _S = 13 ... 28 V _{DC} V _S = 12 ... 28 V _{DC} V _S = 13 ... 28 V _{DC}
Current consumption	max. 25 mA	

Performance	
Accuracy ³ performance after turn-down (TD) - TD ≤ 1:5 - TD > 1:5	≤ ± 0.1 % FSO no change of accuracy the accuracy is calculated as follows: ≤ 0.1 + 0.015 x (turn-down - 5) % FSO e.g. turn-down 9: ≤ 0.1 + 0.015 x (9 - 5) % FSO = 0.16 % FSO
Permissible load	R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω load during HART [®] communication: R _{min} = 250 Ω
Influence effects	supply: 0.05 % FSO / 10 V permissible load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Response time	100 msec – without consideration of electronic damping measuring rate 10/sec
Adjustability	electronic damping: 0 ... 100 sec offset 0 ... 90 % FSO turn-down of span up to 1:10

Thermal errors / Permissible temperatures	
Tolerance band ^{4,5}	≤ 0.2 % FSO x turn-down (in compensated range -20 ... 85 °C)
Permissible temperatures ⁶	medium: -40 ... 125 °C for filling fluid silicone oil -10 ... 125 °C for filling fluid food compatible oil without display: environment: -40 ... 80 °C storage: -40 ... 80 °C with display: environment: -20 ... 70 °C storage: -30 ... 80 °C
Permissible temperature medium for cooling element ⁷	filling fluid silicone oil overpressure: -40 ... 300 °C low pressure: -40 ... 150 °C filling fluid food compatible oil overpressure: -10 ... 250 °C low pressure: -10 ... 150 °C

⁴ an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions
⁵ for flange- and DRD-version: tolerance band offset ≤ ± 1.6 % FSO / tolerance band span ≤ ± 0.6 % FSO
⁶ max. temperature of the medium for nominal pressure gauge > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C (without cooling element).
⁷ max. temperature depends on the used sealing material, type of seal and installation

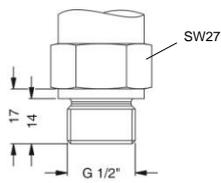
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326

Mechanical stability	
Vibration	5 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	100 g / 11 msec according to DIN EN 60068-2-27

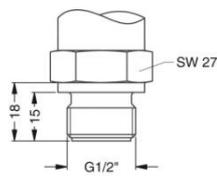
Filling fluids	
Standard	silicone oil
Options for process connections	food compatible oil according to 21CFR178.3570 (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) Halocarbon and others on request

Materials	
Pressure port	stainless steel 1.4435 (316L)
Housing	aluminium die cast, powder-coated or stainless steel 1.4404 (316L)
Cable gland	brass, nickel plated
Viewing glass	laminated safety glass
Seals (media wetted)	thread: standard: FKM (recommended for medium temperatures ≤ 200 °C) options: FFKM (recommended for medium temperatures < 260 °C; min. permissible temperature from -15 °C, possible for p _N ≤ 100 bar); others on request welded version for pressure ports EN 837 with p _N between 1 and 40 bar DRD and flange: none, not included in the scope of delivery Clamp, Varivent [®] : none
Diaphragm	standard: stainless steel 1.4435 (316 L) options for process connections: Hastelloy [®] C-276 (2.4819); tantalum (possible from 1 bar) on request
Media wetted parts	pressure port, seal, diaphragm

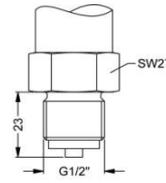
Standard pressure ports (dimensions in mm)



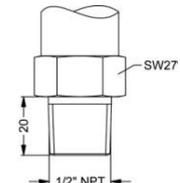
G1/2" DIN 3852



G1/2" flush (DIN 3852)
1 bar ≤ p_N ≤ 40 bar



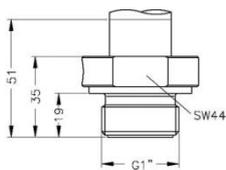
G1/2" EN 837
M20x1.5



1/2" NPT

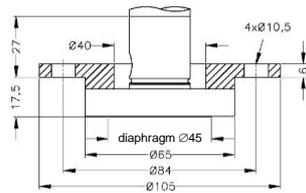
Process connections (dimensions in mm)

Inch thread (DIN 3852)



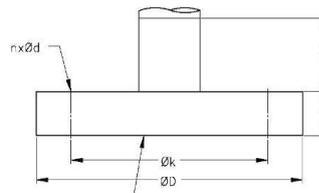
G1" flush
p_N ≤ 400 bar

DRD 10



p_N ≤ 25 bar

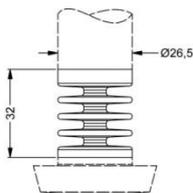
Flange (DIN 2501)



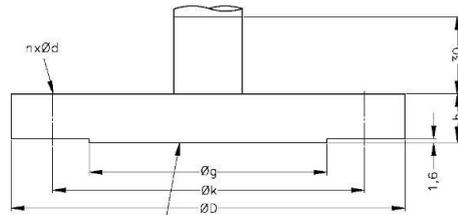
flush diaphragm ØE

dimensions in mm			
size	DN25	DN50	DN80
D	115	165	200
E	30	89	89
k	85	125	160
b	18	20	20
n	4	4	8
d	14	18	18
p _N [bar]	≤ 40	≤ 40	≤ 16

Cooling element up to 300 °C ⁷



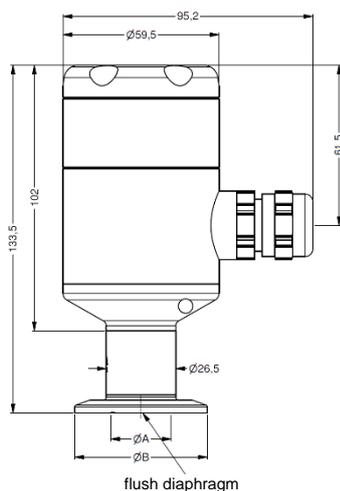
Flange (ANSI B16.5)



flush diaphragm ØE

dimensions in mm		
size	2"/150 lbs	3"/150 lbs
D	152.4	190.5
E	86	89
g	91.9	127
k	120.7	152.4
b	19.1	23.9
n	4	4
d	19.1	19.1
p _N [bar]	≤ 10	≤ 10

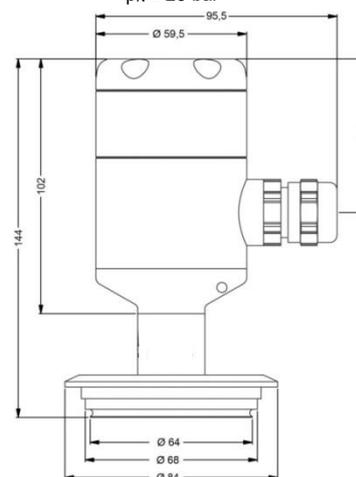
Clamp (DIN 32676)



flush diaphragm

dimensions in mm				
size	3/4"	DN25	DN32	DN50
A	14	23	32	45
B	25	50.5	50.5	64
p _N [bar]	≥ 4 ≤ 8	≥ 0.25 ≤ 16	≤ 16	≤ 16

Varivent® (DN 40/50) p_N ≤ 25 bar



⁷ max. temperature depends on the used sealing material, type of seal and installation
¹⁰ mounting flange is included in the delivery (already pre-assembled)

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