



DMP 331

Industrial Pressure Transmitter for Low Pressure

Stainless Steel Sensor

accuracy according to IEC 60770: standard: 0.35 % FSO option: 0.25 / 0.1 % FSO

Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

Special characteristic

- perfect thermal behaviour
- excellent long term stability
- pressure port G 1/2" flush from 100 mbar

Optional versions

- IS-version Ex ia = intrinsically safe for gases and dusts
- SIL 2-according to IEC 61508 / IEC 61511
- pressure sensor welded
- customer specific versions

The pressure transmitter DMP 331 can be used in all industrial areas when the medium is compatible with stainless steel 1.4404 (316 L) or 1.4435 (316 L). Additional are different elastomer seals as well as a helium tested welded version available.

The modulare concept of the device allows to combine different stainless steel sensors and electronic modules with a variety of electrical and mechanical versions. Thus a diversity of variations is created, meeting almost all requirements in industrial applications.

Preferred areas of use are

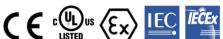


Plant and Machine Engineering **Environmental Engineering** (water - sewage - recycling)



Energy Industry















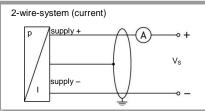
Tel: +45 4673 0008 www.nivotech.dk +45 3219 0300 info@nivotech.dk

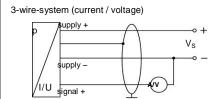
Industrial Pressure Transmitter

Input pressure range										
Nominal pressure gauge	[bar]	-10	0.10	0.16	0.25	0.40	0.60	1	1.6	
	[bar]	-	-	-	-	0.40	0.60	1	1.6	
	[bar]	5	0.5	1	1	2	5	5	10	
	barl	7.5	1.5	1.5	1.5	3	7.5	7.5	15	
Nominal pressure	[har]	2.5	4	6	10	16	25	40		
gauge / abs.	[bar]	2.5	4	0	10	16	25	40		
Overpressure	[bar]	10	20	40	40	80	80	105		
Burst pressure ≥	[bar]		25	50	50	120	120	210		
Vacuum resistance			unlimited vac	cuum resista	ance					
		$P_N < 1$ bar:	on request							
Output signal / Supply										
Standard		2-wire: 4		$V_{S} = 8$						
Option IS-protection		2-wire: 4		$V_{S} = 10$						
Options 3-wire		3-wire: 0								
		0	10 V /	V _S = 14	. 30 V _{DC}					
Performance										
Accuracy 1			nominal pres			5 % FSO				
			nominal pres			35 % FSO				
		•	nominal pres for all nomina			25 % FSO 1 % FSO				
Dames's a 'blanka d	_	•				1 % FSU				
Permissible load		current 2-wir) / 0.02 A] Ω					
		current 3-wir								
laftuage of first		voltage 3-wir					l 0 0 = -:	F00 /1 °		
Influence effects		supply: 0.05					load: 0.05 %	FSO / kΩ		
Long term stability		≤ ± 0.1 % FS		eference co	onditions					
Response time		2-wire: ≤ 10					3-wire: ≤ 3 m	isec		
¹ accuracy according to IEC 6077			nent (non-linea	arity, hysteres	sis, repeatability)					
Thermal effects (Offset and	•									
Nominal pressure P _N	[bar]		-1 0		< (0.40		≥ 0.40		
Tolerance band [%	FSO]				≤ ± 1			≤ ± 0.75		
in compensated range	[°C]		-20 85		0 .	70		-20 8	5	
Permissible temperatures										
Permissible temperatures		medium:		-40	125 °C					
		electronics	/ environmer							
		storage:		-40 1	00 °C					
Electrical protection										
Short-circuit protection		permanent								
Reverse polarity protection		no damage,	, but also no	function						
Electromagnetic compatibility	emission an	emission and immunity according to EN 61326								
Mechanical stability				according to	LIN 01320					
Vibration				according to	LN 01320					
Shock		10 g RMS (25 2000 H			0068-2-6				
Materials		10 g RMS (Hz) accordii	ng to DIN EN 6					
				Hz) accordii	ng to DIN EN 6					
Pressure port		500 g / 1 ms	sec	dz) accordir accordir	ng to DIN EN 6					
Pressure port Housing		500 g / 1 ms	sec eel 1.4404 (3	dz) accordii accordii 316 L)	ng to DIN EN 6					
Housing	<u> </u>	stainless ste	sec eel 1.4404 (3 eel 1.4404 (3	Hz) accordin accordin 316 L) 316 L)	ng to DIN EN 6	60068-2-27	oth	ers on reque	st	
Housing Option compact field housing	9	stainless ste stainless ste stainless ste	sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4305 (3	Hz) accordin accordin 316 L) 316 L)	ng to DIN EN 6	60068-2-27	oth	ers on reque:	st	
Housing	g	stainless ste stainless ste stainless ste stainless ste standard:	sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4305 (3	Hz) accordin accordin 316 L) 316 L)	ng to DIN EN 6	60068-2-27	oth	ers on reque:	st	
Housing Option compact field housing	9	stainless ste stainless ste stainless ste stainless ste standard: I options:	sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4305 (3 FKM EPDM NBR	dz) accordii accordii 316 L) 316 L) 303), cable g	ng to DIN EN 6	60068-2-27	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted)	9	stainless ste stainless ste stainless ste stainless ste standard: I options:	sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4305 (3 FKM EPDM NBR welded versie	dz) according according according according according according all 6 L) al	ng to DIN EN 6	60068-2-27	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm	9	stainless ste stainless ste stainless ste stainless ste standard: I options:	sec eel 1.4404 (3 eel 1.4404 (3 eel 1.4305 (3 FKM EPDM NBR welded versie eel 1.4435 (3	dz) according according according according according according and according accordin	ng to DIN EN 6	ckel plated	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts		stainless ste stainless ste stainless ste standard: l options: stainless ste pressure po	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versionel 1.4435 (3 ort, seals, dial	dz) according according according according according according and according accordin	ng to DIN EN 6	ckel plated	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm		stainless ste stainless ste stainless ste standard: l options: stainless ste pressure po	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versionel 1.4435 (3 ort, seals, dial	dz) according according according according according according and according accordin	ng to DIN EN 6	ckel plated	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts	ure pon	stainless ste stainless ste stainless ste standard: options: stainless ste pressure po ts according to 20 mA / 2	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versice seel 1.4435 (3 ort, seals, dial EN 837	dz) accordinac	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic	ckel plated s on request	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with pressor Explosion protection (only	ure pon	stainless ste stainless ste stainless ste standard: options: stainless ste pressure po ts according to 20 mA / 2	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versice seel 1.4435 (3 ort, seals, dial EN 837	dz) accordinac	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic	ckel plated s on request	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with pressu	ure pon	stainless ste stainless ste stainless ste standard: options: stainless ste pressure po ts according to 20 mA / 2	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versice seel 1.4435 (3 ort, seals, dial EN 837	dz) accordii accordii 316 L) 316 L) 303), cable g 316 L) aphragm	ng to DIN EN 6	ckel plated s on request	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with presse Explosion protection (only Approvals	ure pon	stainless ste stainless ste stainless ste stainless ste stainless ste options: stainless ste pressure po ts according to 20 mA / 2 IBExU 10 A zone 0:	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4305 (3 FKM EPDM NBR welded versicel 1.4435 (3 ort, seals, dial EN 837	dz) accordinac	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic others	ckel plated s on request	oth	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with pressor Explosion protection (only Approvals DX19-DMP 331	ure por	stainless ste stainless ste stainless ste stainless ste stainless ste options: stainless ste pressure po ts according to 20 mA / 2 IBExU 10 A zone 0: zone 20: U _i = 28 V, I _i	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4405 (3 FKM EPDM NBR welded versice seel 1.4435 (3 ort, seals, dial EN 837 sewire) ATEX 1068 X II 1G Ex ia III 1D Ex ia III 1D Ex ia III 1 = 93 mA, Pi = 100 seel 1.4405 (3 ort, seals, dial EN 837 sewire)	according accord	ing to DIN EN 6 ang to DIN EN	ckel plated s on request 0 µH,		ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with presse Explosion protection (only Approvals	ure por	stainless ste pressure po ts according to 20 mA / 2 lBExU 10 A zone 0: zone 20: U _i = 28 V, I _i the supply of	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4405 (3 FKM EPDM NBR welded versice seel 1.4435 (3 ort, seals, dial EN 837 seals,	according accord	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic others IBE 12.0027X ba C₁≈ 0 nF, L₁≈ er capacity of r	ckel plated s on request 0 µH, nax. 27 nF to	o the housing	ers on reque:	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with presso Explosion protection (only Approvals DX19-DMP 331 Safety technical maximum value of the presson of the provals Permissible temperatures for	ure port	stainless ste pressure po to according to 20 mA / 2 lBExU 10 A zone 0: zone 20: U _i = 28 V, I _i the supply of in zone 0:	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4405 (3 FKM EPDM NBR welded versices 1.4435 (3 srt, seals, dial EN 837 st.	according accord	ing to DIN EN 6 ang to DIN EN	ckel plated s on request 0 µH, nax. 27 nF to	o the housing	ers on reque	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with presse Explosion protection (only Approvals DX19-DMP 331 Safety technical maximum value permissible temperatures for environment	ure pon for 4	stainless ste pressure po to according to 20 mA / 2 lBExU 10 A zone 0: zone 20: U _i = 28 V, I _i the supply of in zone 0: in zone 1 or	sec sec seel 1.4404 (3 seel 1.4404 (3 seel 1.4405 (3 FKM EPDM NBR welded versice 1.4435 (3 ort, seals, dial EN 837 seals, dial	according accord	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic others IBE 12.0027X ba C₁≈ 0 nF, L₁≈ er capacity of r vith p _{atm} 0.8 bar	ckel plated s on request 0 μH, nax. 27 nF to	o the housing	ers on reque:	st	
Housing Option compact field housing Seals (media wetted) Diaphragm Media wetted parts 2 welded version only with presso Explosion protection (only Approvals DX19-DMP 331 Safety technical maximum value of the presson of the provals Permissible temperatures for	ure pon for 4	stainless ste pressure po to according to 20 mA / 2 lBExU 10 A zone 0: zone 20: U _i = 28 V, I _i the supply of in zone 0:	eel 1.4404 (3 eel 1.4404 (3 eel 1.4405 (3 FKM EPDM NBR welded versic eel 1.4435 (3 ort, seals, diap EN 837 E-wire) ATEX 1068 X II 1G Ex ia III = 93 mA, P _i - connections h -20 r higher: -20 citance: sig	dz) accordinac	ng to DIN EN 6 ng to DIN EN 6 gland brass, nic others IBE 12.0027X ba C₁≈ 0 nF, L₁≈ er capacity of r	0 μH, nax. 27 nF to tup to 1.1 ba	the housing r e: 160 pF/m	ers on reque:	st	

Miscellaneous							
according to IEC 61508 / IEC 61511							
signal output current: max. 25 mA	signal output voltage: max. 7 mA						
approx. 140 g							
any ⁴							
> 100 x 10 ⁶ pressure cycles							
EMC Directive: 2004/108/EC							
94/9/EG							
	signal output current: max. 25 mA approx. 140 g any ⁴ > 100 x 10 ⁶ pressure cycles EMC Directive: 2004/108/EC						

Wiring diagrams





Pin configuration

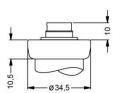
Electrical connection	ISO 4400	Binder 723	M12x1 / metal	field	cable colours
	130 4400	(5-pin)	(4-pin)	housing	(DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply –	2	4	2	IN -	bn (brown)
Signal + (for 3-wire)	3	1	3	OUT+	gn (green)
Shield	ground pin	5	1		ye/gn
			7		(yellow / green)

Electrical connections (dimensions in mm)

standard

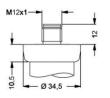
ISO 4400 (IP 65)

option



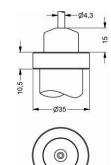


Binder Series 723 5-pin (IP 67)

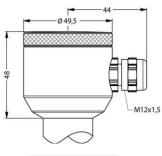




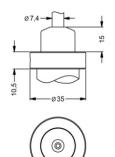
M12x1 4-pin (IP 67)



cable outlet with PVC cable (IP 67) 5



compact field housing (IP 67)



cable outlet, cable with ventilation tube (IP 68)

only for 4 ... 20 mA / 2-wire, not in combination with the accuracy 0.1%
 Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges $P_N \le 1$ bar.

universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

⁵ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)
⁶ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connections (dimensions in mm) standard for accuracy 0.1 %; SIL- and SIL-IS-version standard for accuracy 0.35 / 0.25 % ≈33-Ø34,5 33 Ø34,5 83 -Ø26,5 Ø26,5 SW27 SW27 17 17 4 G1/2" G1/2" G1/2" DIN 3852 with ISO 4400 G1/2" DIN 3852 with ISO 4400 option O-Ring 5 4 G1/2" G1/2" EN 837 G1/2" open port G1/2" DIN 3852 with flush sensor 12 4 15 20 G 1/4" G 1/4' 1/4" NPT G1/4" DIN 3852 G1/4" EN 837 1/2" NPT 1/4" NPT ⇒ metric threads and other versions on request



OrderingcodeDMP331 **DMP 331** Pressure 1 1 0 1 1 1 gauge absolute 1 Input [bar] 0 0 0 0.10 1 6 0 0 0.16 0 0 0 5 0.25 2 0.40 0 0 0 0 0 1 6 0 1 5 0 1 0 0 1 0 0 1 0 0 2 6 0 2 5 0 2 0 0 2 1 0 2 9 9 9 0.60 6 1.0 1.6 1 2.5 4 4.0 6.0 10 16 2 25 40 -1 ... 0 customer consult 4 ... 20 mA / 2-wire 1 0 ... 20 mA / 3-wire 0 ... 10 V / 3-wire Intrinsic safety 4 ... 20 mA / 2-wire SIL2 4 ... 20 mA / 2-wire 2 3 E This dokument contains product specification; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice 1S SIL2 with intrinsic safety 4 ... 20 mA / 2-wire ES customer 9 consult Accuracy standard for P_N≥ 0.4 bar 0.35 % 3 standard for P_N< 0.4 bar 0.5 % 5 option 1 for $P_N \ge 0.4$ bar 0.25 % 2 option 2 0.1 % 2 customer 9 consult Electrical connection Male and female plug ISO 4400 1 0 0 Male plug Binder series 723 (5-pin) 2 0 0 T A 0 T R 0 Cable outlet with PVC cable 3 Cable outlet 4 Male plug M12x1 (4-pin) / metal M 1 0 Compact field housing 8 5 0 stainless steel 1.4305 customer 9 9 9 consult Mechanical connection G1/2" DIN 3852 G1/2" EN 837 2 0 0 G1/4" DIN 3852 3 0 0 G1/4" EN 837 0 0 G1/2" DIN 3852 F 0 0 with flush sensor G1/2" DIN 3852 open pressure port Н 0 0 1/2" NPT N 0 0 N 4 0 1/4" NPT customer 9 9 9 consult **EPDM** 3 NBR 5 without (welded version) 5 2 consult customer 9 Special version 0 0 0 9 9 9 standard customer consult

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¹ absolute pressure possible from 0.4 bar

² not in combination with SIL

³ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C), others on request

⁴ cable with ventilation tube (code TR0 = PVC cable), different cable types and lengths available, price without cable

⁵ welded version only with pressure ports according to EN 837