

DMP 343

Industrial Pressure Transmitter

Without Media Isolation

accuracy according to IEC 60770:
0.35 % FSO



Nominal pressure

from 0 ... 10 mbar up to 0 ... 1000 mbar

Product characteristics

- ▶ excellent linearity
- ▶ small thermal effect
- ▶ excellent long term stability



Optional versions

- ▶ IS-version:
Ex ia = intrinsically safe for gases and dusts
- ▶ different electrical and mechanical connections
- ▶ customer specific versions

The pressure transmitter DMP 343 has been especially designed for the measurement of very low gauge pressure and for vacuum applications. Permissible media are non-aggressive, dry gases and non-aggressive, low viscos oils.

The DMP 343 features excellent thermal behaviour and outstanding long term stability. A variety of standard output signals as well as mechanical and electrical connections make the DMP 343 covering a wide field of applications.

Preferred areas of use are

-  Plant and machine engineering
-  Heating and air conditioning



Input pressure range													
Nominal pressure gauge	[mbar]	-1000 ... 0	10	16	25	40	60	100	160	250	400	600	1000
Overpressure	[bar]	3	0.2	0.2	0.2	0.5	0.5	1	2	3	3	3	3
Permissible vacuum	[bar]	-1	-0.2			-0.5			-1				
Burst pressure	[bar]	5	0.3	0.3	0.3	0.75	0.75	1.5	3	5	5	5	5

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_S = 8 \dots 32 V_{DC}$
Option IS-version	2-wire: 4 ... 20 mA / $V_S = 10 \dots 28 V_{DC}$
Options 3-wire	3-wire: 0 ... 20 mA / $V_S = 14 \dots 30 V_{DC}$ 0 ... 10 V / $V_S = 14 \dots 30 V_{DC}$

Performance	
Accuracy ¹	standard: $\leq \pm 0.35 \% \text{ FSO}$ nominal pressure $\leq 100 \text{ mbar}$: $\leq \pm 0.50 \% \text{ FSO}$
Permissible load	current 2-wire: $R_{\max} = [(V_S - V_{S \min}) / 0.02 \text{ A}] \Omega$ current 3-wire: $R_{\max} = 240 \Omega$ voltage 3-wire: $R_{\min} = 10 \text{ k}\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $\text{k}\Omega$
Response time	2-wire: $\leq 10 \text{ msec}$ 3-wire: $\leq 3 \text{ msec}$
Long term stability	$\leq \pm 0.3 \% \text{ FSO} / \text{year}$ at reference conditions, for $p_N < 100 \text{ mbar}$ $\leq \pm 0.1 \% \text{ FSO} / \text{year}$ at reference conditions, for $p_N \geq 100 \text{ mbar}$

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (offset and span)					
Nominal pressure p_N	[mbar]	-1000 ... 0	≤ 100	≤ 400	> 400
Tolerance band	[% FSO]	$\leq \pm 0.75$	$\leq \pm 1.5$	$\leq \pm 1$	$\leq \pm 0.75$
in compensated range	[°C]	-20 ... 85	0 ... 50	0 ... 70	-20 ... 85

Permissible temperatures	
Medium	-40 ... 125 °C
Electronics / environment	-40 ... 85 °C
Storage	-40 ... 100 °C

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	10 g RMS (25 ... 2000 Hz) according to DIN EN 60068-2-6
Shock	500 g / 1 msec according to DIN EN 60068-2-27

Materials	
Pressure port	stainless steel 1.4404 (316L)
Housing	stainless steel 1.4404 (316L)
Option compact field housing	stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)
Seals	FKM
Sensor	stainless steel 1.4404 (316L), silicon, epoxy or RTV, mineral glass
Media wetted parts	pressure port, seals, sensor

Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approvals DX19-DMP 343	IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135 °C Da
Safety technical maximum values	$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i \approx 0 \text{ nF}$, $L_i \approx 0 \mu\text{H}$, the supply connections have an inner capacity of max. 27 nF opposite the housing
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 ... 70 °C
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 $\mu\text{H}/\text{m}$

Miscellaneous	
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
Operational life	100 million load cycles
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

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Technical Data

Wiring diagrams

2-wire-system (current)

3-wire-system (current / voltage)

Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	compact field housing	cable colours (IEC 60757)
Supply +	1	3	1	V _{S+}	WH (white)
Supply -	2	4	2	V _{S-}	BN (brown)
Signal + (only for 3-wire)	3	1	3	S+	GN (green)
Shield	ground pin	5	4	GND	GNYE (green-yellow)

Electrical connections (dimensions mm / in)

ISO 4400
(IP 65)

Binder series 723, 5-pin
(IP 67)

M12x1, 4-pin
(IP 67)

compact field housing
(IP 67)

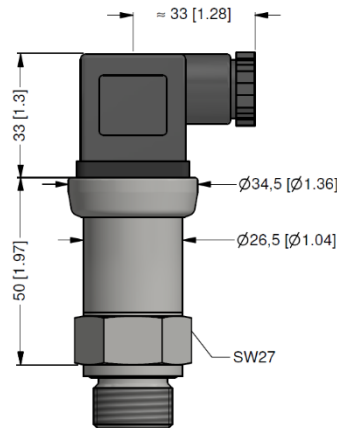
cable outlet
with PVC-cable (IP 67)²

cable outlet, cable with
ventilation tube (IP 68)³

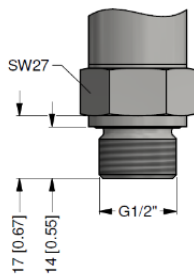
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

² standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)
³ different cable types and lengths available, permissible temperature depends on kind of cable

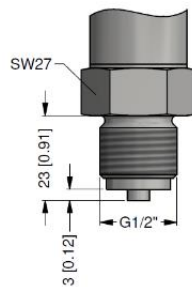
Dimensions (mm / in)



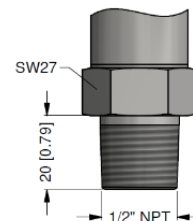
Mechanical connections (dimensions mm / in)



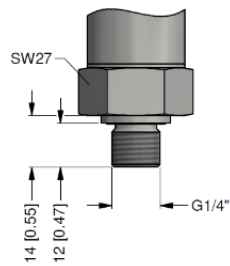
G1/2" DIN 3852



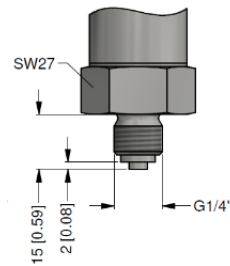
G1/2" EN 837



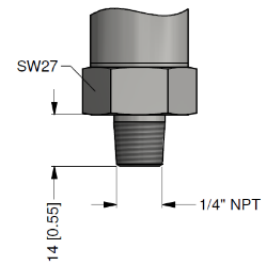
1/2" NPT



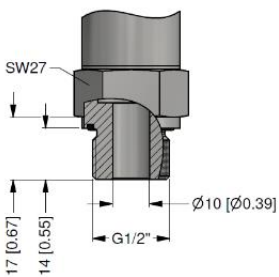
G1/4" DIN 3852



G1/4" EN 837



1/4" NPT



G1/2" DIN 3852
open port

⇓ metric threads and other versions on request

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Ordering code DMP 343

DMP 343

Pressure					
gauge	1	0	0		
Input					
[mbar]					
10	0	1	0	0	
16	0	1	6	0	
25	0	2	5	0	
40	0	4	0	0	
60	0	6	0	0	
100	1	0	0	0	
160	1	6	0	0	
250	2	5	0	0	
400	4	0	0	0	
600	6	0	0	0	
1000	1	0	0	1	
-1000 ... 0	X	1	0	2	
customer	9	9	9	9	consult
Output					
4 ... 20 mA / 2-wire				1	
0 ... 20 mA / 3-wire				2	
0 ... 10 V / 3-wire				3	
intrinsic safety 4 ... 20 mA / 2-wire				E	
customer				9	consult
Accuracy					
standard for $p_N > 100$ mbar:	0.35 % FSO			3	
standard for $p_N \leq 100$ mbar:	0.5 % FSO			5	
Electrical connection					
male and female plug ISO 4400				1	0
male plug Binder series 723 (5-pin)				2	0
cable outlet with PVC cable (IP67) ¹				T	A
cable outlet,					
cable with ventilation tube (IP68) ²				T	R
male plug M12x1 (4-pin) / metal				M	1
compact field housing				8	5
stainless steel 1.4301 (304)				9	9
customer				9	9
Mechanical connection					
G1/2" DIN 3852				1	0
G1/2" EN 837				2	0
G1/4" DIN 3852				3	0
G1/4" EN 837				4	0
G1/2" DIN 3852 open pressure port				H	0
1/2" NPT				N	0
1/4" NPT				N	4
customer ³				9	9
Seals					
FKM				1	
customer				9	
Special version					
standard				0	0
customer				9	9

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¹ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

³ metric threads and others on request