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
- SIL 2 application according to IEC 61508 / IEC 61511
- 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 gases, pressurized air 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

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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
Burst pressure [bar]	5	0.3	0.3	0.3	0.75	0.75	1.5	3	5	5	5	5

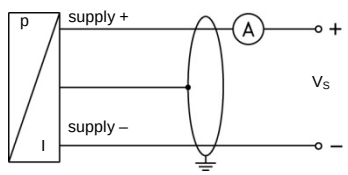
Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}
Option IS-protection	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}
Performance	
Accuracy [1]	standard: ≤ ± 0.35 % FSO nominal pressure ≤ 100 mbar: ≤ ± 0.50 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S – V_{S\ min}) / 0.02\ A]\ \Omega$ current 3-wire: R_{max} = 500 Ω voltage 3-wire: R_{min} = 10 kΩ
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec
[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]	≤ ± 0.75	≤ ± 1.5	≤ ± 1	≤ ± 0.75
in compensated range [°C]	-20 … 85	0 … 50	0 … 70	-20 … 85

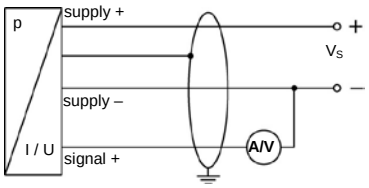
Permissible temperatures	
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity 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)
Seals (media wetted)	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 T 85°C Da
Safety technical maximum values	U_i = 28 V, I_i = 93 mA, P_i = 660 mW, C_i ≈ 0nF, L_i ≈ 0 µH, the supply connections have an inner capacity of max. 27 nF opposite the housing
Ambient temperature range	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -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 µH/m
Miscellaneous	
Option SIL 2 application	according to IEC 61508 / IEC 61511
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
CE-conformity	EMC Directive: 2004/108/EC
ATEX Directive	94/4/EG

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)

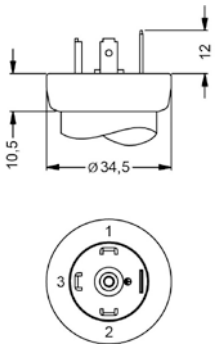


Pin configuration

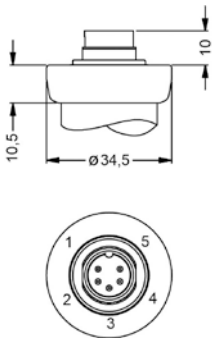
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply –	2	4	2	IN -	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT+	gn (green)
Shield	ground pin	5	4	⏚	ye/gn (yellow / green)

Electrical connections (dimensions in mm)

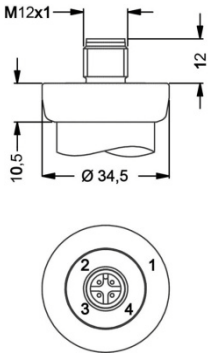
standard **option**



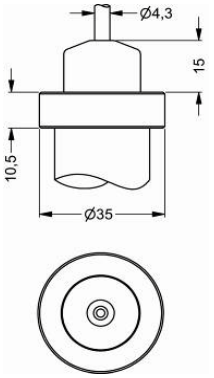
ISO 4400
(IP 65)



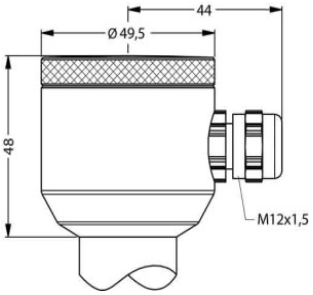
Binder Series 723 5-pin
(IP 67)



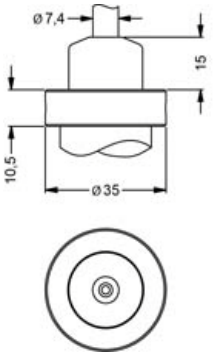
M12x1 4-pin
(IP 67)



cable outlet with PVC cable
(IP 67) [2]



compact field housing
(IP 67)



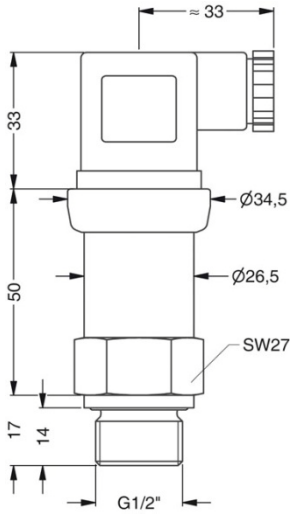
cable outlet, cable with ventilation tube
(IP 68) [3]

⇨ **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*

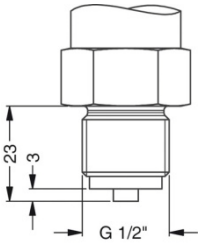
Mechanical connection (dimensions in mm)

standard

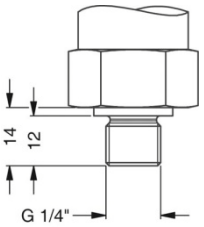


G1/2" DIN 3852
with ISO 4400

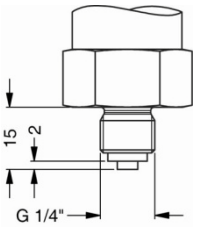
option



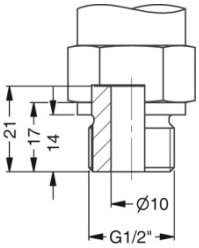
G1/2" EN 837



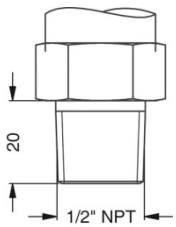
G1/4" DIN 3852



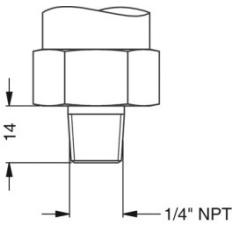
G1/4" EN 837



G1/2" open port



1/2" NPT



1/4" NPT

⇨ metric threads and others on request

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BD|SENSORS pressure measurement

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 %									3													
standard for $P_N \leq$ 100 mbar	0.5 %									5													
Electrical connection																							
	Male and female plug ISO 4400										1	0	0										
	Male plug Binder series 723 (5-pin)										2	0	0										
	Cable outlet with PVC cable [1]										T	A	0										
	Cable outlet [2]										T	R	0										
	Male plug M12x1 (4-pin) / metal										M	1	0										
	Compact field housing stainless steel 1.4305										8	5	0										
	customer										9	9	9										consult
Mechanical connection																							
	G1/2" DIN 3852													1	0	0							
	G1/2" EN 837													2	0	0							
	G1/4" DIN 3852													3	0	0							
	G1/4" EN 837													4	0	0							
	G1/2" DIN 3852 open pressure port													H	0	0							
	1/2" NPT													N	0	0							
	1/4" NPT													N	4	0							
	customer [3]													9	9	9							consult
Seals																							
	FKM																1						
	customer																9						consult
Special version																							
	standard																	0	0	0			
	customer																	9	9	9			consult

[1] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 … 70 °C), optionally cable with ventilation tube

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

[3] metric threads and others on request

0 .0 .2013

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