

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



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Technical Data

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-protection		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													
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		$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i \approx 0 \text{ nF}$, $L_i \approx 0 \text{ }\mu\text{H}$, 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											
CE-conformity		EMC Directive: 2014/30/EU											
ATEX Directive		2014/34/EU											

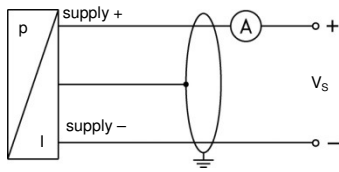
DMP 343

Industrial Pressure Transmitter

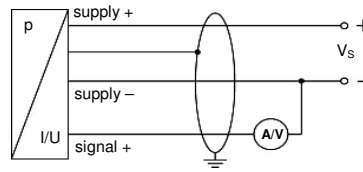
Technical Data

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)



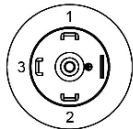
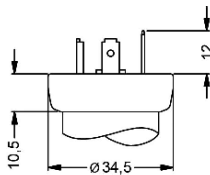
Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colour (IEC 60757)
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	⊥	gnye (green-yellow)

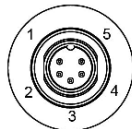
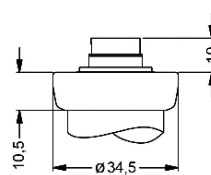
Electrical connections (dimensions in mm)

standard

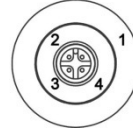
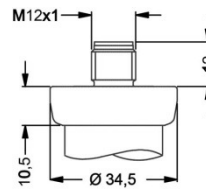
option



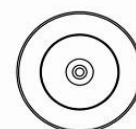
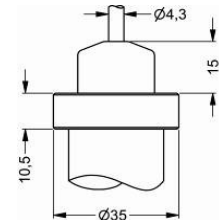
ISO 4400 (IP 65)



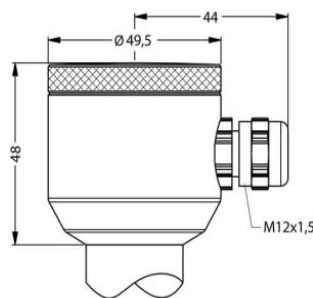
Binder Series 723 5-pin (IP 67)



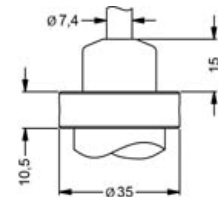
M12x1 4-pin (IP 67)



cable outlet with PVC cable (IP 67)²



compact field housing (IP 67)



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

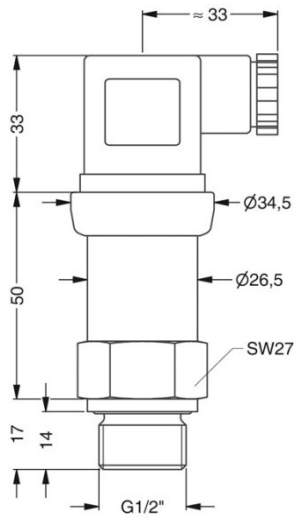
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

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

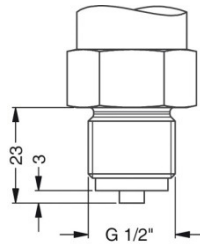
Mechanical connection (dimensions in mm)

standard

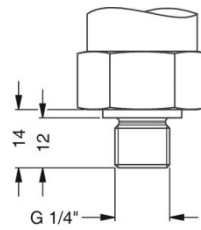


G1/2" DIN 3852
with ISO 4400

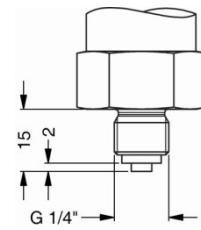
option



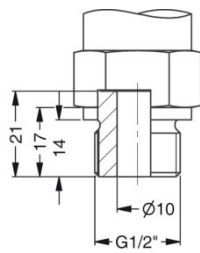
G1/2" EN 837



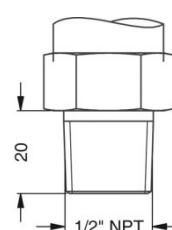
G1/4" DIN 3852



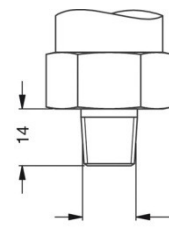
G1/4" EN 837



G1/2" open port



1/2" NPT



1/4" NPT

⇒ metric threads and others on request

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Ordering code DMP 343

DMP 343

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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								8	5	0								
	stainless steel 1.4305																		
	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