

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-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 / k Ω													
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)													
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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Wiring diagrams					
<p>2-wire-system (current)</p>			<p>3-wire-system (current / voltage)</p>		
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	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		options			
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	
<p>⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request</p>					
<p>² standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)</p> <p>³ different cable types and lengths available, permissible temperature depends on kind of cable</p>					

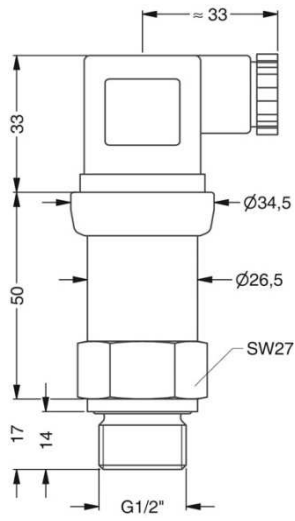
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Technical Data

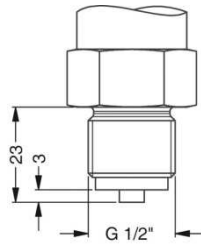
Mechanical connection (dimensions in mm)

standard

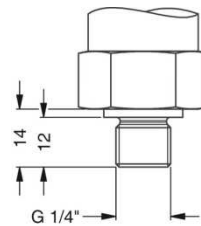


G1/2" DIN 3852
with ISO 4400

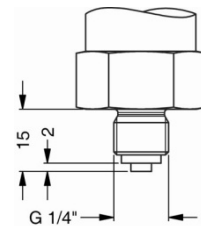
options



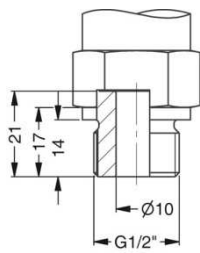
G1/2" EN 837



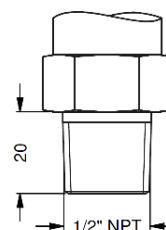
G1/4" DIN 3852



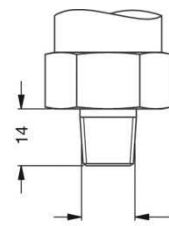
G1/4" EN 837



G1/2" open port



1/2" NPT



1/4" NPT

⇒ metric threads and others on request

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	%	FSO						3									
	standard for $p_N \leq 100$ mbar:	0.5	%	FSO						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 (IP67) ¹									T	A	0							
	cable outlet,																		
	cable with ventilation tube (IP68) ²									T	R	0							
	male plug M12x1 (4-pin) / metal									M	1	0							
	compact field housing									8	5	0							
	stainless steel 1.4301 (304)																		
	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); 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