



DMP 343

Industrial Pressure Transmitter for very low Pressure

- ▶ piezoresistive silicon sensor
- ▶ especially for gaseous, non-aggressive media
- ▶ accuracy:
0.175 % FSO BFSL
(0.350 % FSO IEC 60770)
- ▶ nominal pressure ranges
from 0 ... 10 mbar
up to 0 ... 1000 mbar

The pressure transmitter DMP 343 is designed for measurement of very low gauge pressure starting at 10 mbar and for vacuum applications (-1 ... 0 bar). Permissible media are gases, pressurized air and non-aggressive liquids of low viscosity.

Basic element of the pressure transmitter DMP 343 is the silicon sensor DSP 201. The ultimate sensor element is mounted on a ceramic substrate, the media coupling occurs on the backside of the piezoresistive silicon sensor. 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.

Applications:

- ▶ process control
- ▶ pneumatic control systems
- ▶ heating and air conditioning
- ▶ filter technology
- ▶ computer peripherals and systems

- ▶ small thermal effect
- ▶ excellent linearity
- ▶ good long-term stability
- ▶ option Ex-version
(only for 4 ... 20 mA / 2-wire)
TÜV 03 ATEX 2006 X
- ▶ customer specific versions:
 - special pressure ranges
 - variety of electrical and mechanical connections
 - other versions on request

Characteristics



DMP 343
Industrial Pressure Transmitter

DMP 343

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Technical Data

Input pressure range											
Nominal pressure gauge [mbar]	-1000 ... 0	10	20	40	60	100	160	250	400	600	1000
Permissible overpressure[mbar]	3000	60	60	300	300	300	1000	1000	1000	3000	3000

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_s = 12 \dots 36 V_{DC}$ Ex-protection: $V_s = 14 \dots 28 V_{DC}$
Optional	3-wire: 0 ... 20 mA / $V_s = 14 \dots 36 V_{DC}$ 0 ... 10 V / $V_s = 14 \dots 36 V_{DC}$

Performance			
Accuracy	standard:	IEC 60770 ¹	BFSL
	nominal pressure ≤ 100 mbar:	$\leq \pm 0.35$ % FSO $\leq \pm 0.5$ % FSO	$\leq \pm 0.175$ % FSO $\leq \pm 0.25$ % FSO
Permissible load	current 2-wire: $R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$ current 3-wire: $R_{max} = 500 \Omega$ voltage 3-wire: $R_{min} = 10 k\Omega$		
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $k\Omega$		
Response time	< 5 msec		

Thermal errors (Offset and Span)				
Nominal pressure P_N [mbar]	-1000 ... 0	≤ 100	≤ 400	> 400
Tolerance band [% FSO]	$\leq \pm 0.75$	$\leq \pm 1.5$	$\leq \pm 1$	$\leq \pm 0.75$
TC, average [% FSO / 10 K]	± 0.08	± 0.15	± 0.12	± 0.08
in compensated range [°C]			0 ... 60	

Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Option Ex-protection only with 4 ... 20 mA / 2-wire DX13-DMP 343	zone 0 ² : II 1 G Ex ia IIC T4 zone 20: II 1 D Ex tD A20 IP65 T 85°C safety technical maximum values: $V_i = 28 V$, $I_i = 93 mA$, $P_i = 660 mW$, $C_i \leq 1 nF$, $L_i \leq 10 \mu H$

Mechanical stability	
Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 msec

Permissible temperatures		
Medium	-25 ... 90 °C	
Electronics / environment	-25 ... 85 °C	Ex-protection: application in zone 0: -20 ... 60 °C application in zone 1 or higher: -25 ... 70 °C
Storage	-40 ... 100 °C	

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

² approved for atmospheric pressure from 0.8 bar up to 1.1 bar

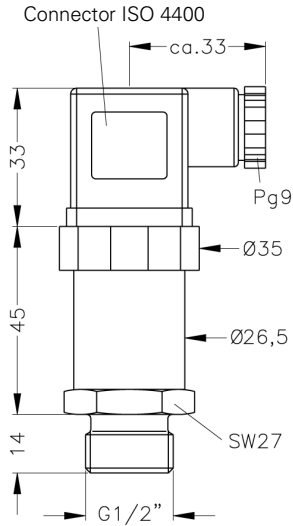
DMP 343

Industrial Pressure Transmitter

Technical Data

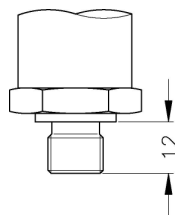
Mechanical connection (dimensions in mm)

Standard

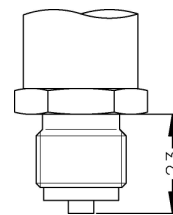


G1/2" DIN 3852
M20 x 1.5

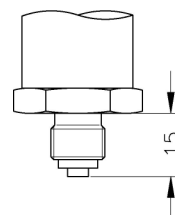
Optional



G1/4" DIN 3852
M10 x 1
M12 x 1
M12 x 1.5



G1/2" EN 837
M20 x 1.5

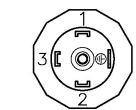
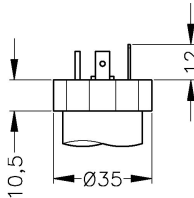


G1/4" EN 837

⇒ Ex-protection: total length increases by 20 mm!

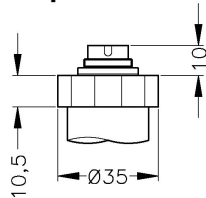
Electrical connection (dimensions in mm)

Standard

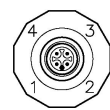
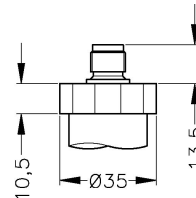


ISO 4400 (IP 65)

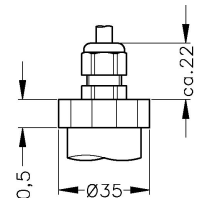
Optional



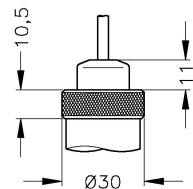
Binder Series 723 (IP 67)



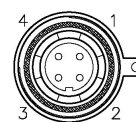
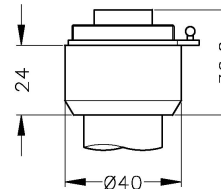
M12x1 4-pin (IP 67)



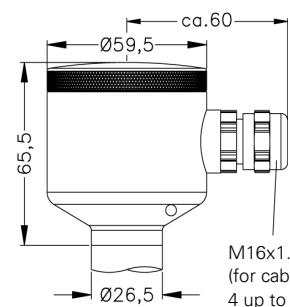
Cable gland (IP 67)^{3,4}



Cable outlet (IP 68)³



Buccaneer (IP 68)⁵



Field housing (IP 67)

M16x1.5
(for cable-Ø
4 up to 11 mm)

³ different cable types and lengths available

⁴ standard: 2m PVC cable without ventilation tube, optionally cable with ventilation tube

⁵ cable with ventilation tube required

DMP 343

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Technical Data

Materials

Pressure port	stainless steel 1.4571 (316Ti)
Housing	stainless steel 1.4301 (304)
Seals (media wetted)	FKM
Sensor	stainless steel 1.4305 (303) , RTV, ceramics Al_2O_3 , silicon
Media wetted parts	pressure port, seals, sensor

Miscellaneous

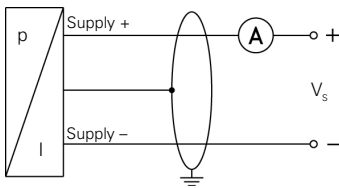
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μ H/m
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any

Pin configuration

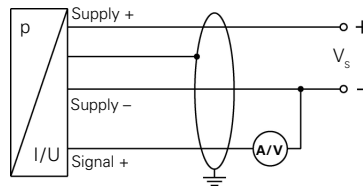
Electrical connection		ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	Buccaneer (4-pin)	Field housing	Cable colours (DIN 47100)
2-wire -system	Supply +	1	3	1	1	IN +	white
	Supply -	2	4	2	2	IN -	brown
	Ground	ground pin	5	4	4	\equiv	yellow / green (shield)
3-wire -system	Supply +	1	3	1	1	N +	white
	Supply -	2	4	2	2	IN -	brown
	Signal +	3	1	3	3	OUT +	green
	Ground	ground pin	5	4	4	\equiv	yellow / green (shield)

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)



This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.

Ordering code DMP 343

DMP 343



Pressure																						
	gauge	1	0	0																		
Input	[mbar]																					
	10	0	1	0	0																	
	20	0	2	0	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																	on request	
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	
																						on request
Accuracy																						
	standard for P _N > 100 mbar	0,35	%																		3	
	standard for P _N ≤ 100 mbar	0,5	%																		5	
Electrical connection																						
	Male and female plug ISO 4400																					1 0 0
	Binder series 723 (5-pin)																					2 0 0
	Cable gland incl. cable ^{1, 2}																					4 0 0
	Cable outlet ¹																					T R 0
	Male plug Buccaneer IP68 ³																					5 0 0
	M12x1 (4-pin)																					M 0 0
	Field housing stainless steel																					8 0 0
	customer																					9 9 9
																						on request
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
	customer																					9 9 9
																						on request
Special version																						
	standard																					0 0 0
	customer																					9 9 9
																						on request

¹ different cable types and lengths deliverable
² standard: 2 m PVC cable without ventilation tube, optionally cable with ventilation tube
³ cable with ventilation tube required

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