SensaCo Ltd.

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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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

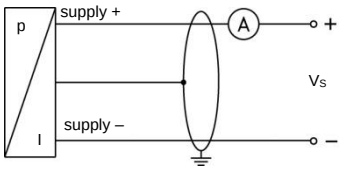
Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}
Option IS-version	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}
Performance	
Accuracy [1]	standard: ≤ ± 0.35 % FSO nominal pressure ≤ 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} = 240 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
Long term stability	≤ ± 0.3 % FSO / year at reference conditions, for p_N < 100 mbar ≤ ± 0.1 % FSO / year at reference conditions, for p_N ≥ 100 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]	≤ ± 0.75	≤ ± 1.5	≤ ± 1	≤ ± 0.75
in compensated range	[°C]	-20 … 85	0 … 50	0 … 70	-20 … 85

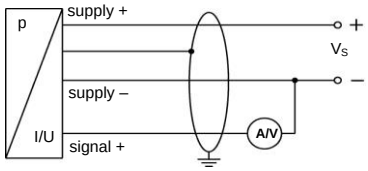
Permissible temperatures	
Medium	-40 ... 125 °C
Electronics / environment	-40 ... 85 °C
Storage	-40 ... 100 °C
Electrical protection	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
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 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
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 µH/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

Wiring diagrams

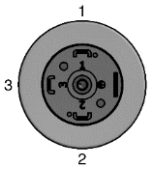
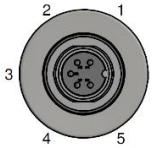
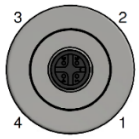
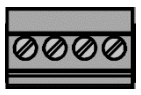
2-wire-system (current)



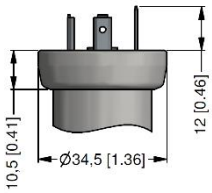
3-wire-system (current / voltage)



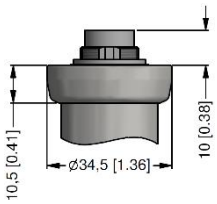
Pin configuration

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)

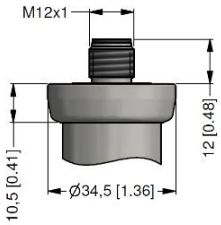
Electrical connections (dimensions mm / in)



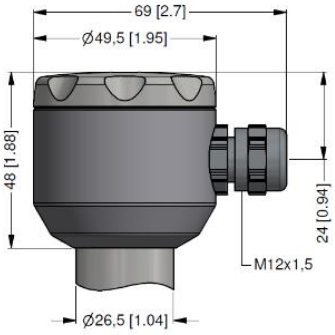
ISO 4400
(IP 65)



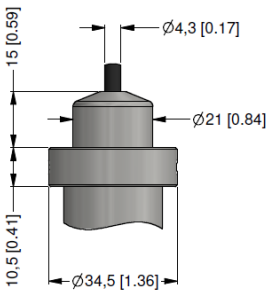
Binder series 723, 5-pin
(IP 67)



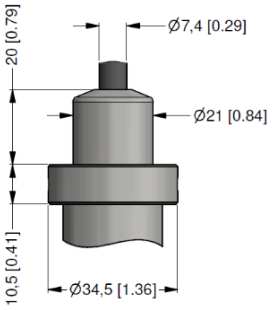
M12x1, 4-pin
(IP 67)



compact field housing
(IP 67)



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

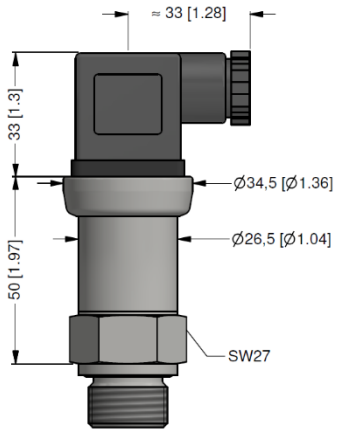


cable outlet, cable with
ventilation tube (IP 68) [3]

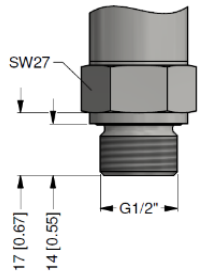
⇨ **universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request**

[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

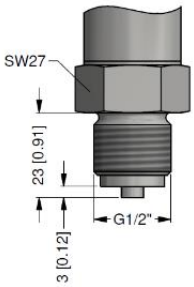
Dimensions (mm / in)



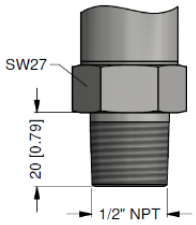
Mechanical connections (dimensions mm / in)



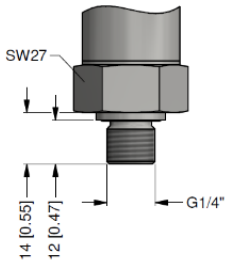
G1/2" DIN 3852



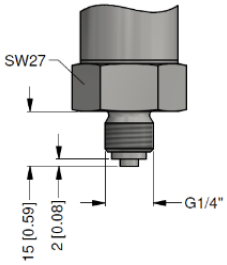
G1/2" EN 837



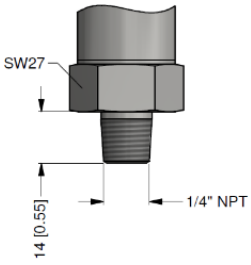
1/2" NPT



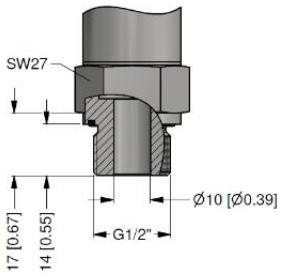
G1/4" DIN 3852



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 $p_N \le$ 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 stainless steel 1.4301 (304)	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); 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

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