



DMP 343

Industrial Pressure Transmitter

- ▶ 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 being used for measurement of very small 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.

Basis element of the pressure transmitter DMP 343 is the silicon sensor DSP 201 which is mounted on a ceramic substate.

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: II 1 G EEx ia IIC T4 (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



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Input pressure range

Nominal pressure gauge [mbar]	-1000 ... 0	10	20	40	60	100	160	250	400	600	1000
Permissible overpressure[mbar]	3000	60			300			1000			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 ¹	standard:	$\leq \pm 0.35 \% \text{ FSO}$ (BFSL: $\leq \pm 0.175 \% \text{ FSO}$)
	nominal pressure $\leq 100 \text{ mbar}$:	$\leq \pm 0.5 \% \text{ FSO}$ (BFSL: $\leq \pm 0.25 \% \text{ FSO}$)
Permissible load	current 2-wire:	$R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$
	current 3-wire:	$R_{max} = 500 \Omega$
	voltage 3-wire:	$R_{min} = 10 \text{ k}\Omega$
Influence effects	supply:	0.05 % FSO / 10 V
	load:	0.05 % FSO / k Ω

Thermal errors (Offset and Span)

Nominal pressure P_N	-1000 ... 0 mbar	$\leq 100 \text{ mbar}$	$\leq 400 \text{ mbar}$	$> 400 \text{ mbar}$
Tolerance band	$\leq \pm 0.75 \% \text{ FSO}$	$\leq \pm 1.5 \% \text{ FSO}$	$\leq \pm 1 \% \text{ FSO}$	$\leq \pm 0.75 \% \text{ FSO}$
TC, average	$\pm 0.08 \% \text{ FSO} / 10 \text{ K}$	$\pm 0.15 \% \text{ FSO} / 10 \text{ K}$	$\pm 0.12 \% \text{ FSO} / 10 \text{ K}$	$\pm 0.08 \% \text{ FSO} / 10 \text{ K}$
in compensated range	0 ... 60 °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
Option Ex-protection DX13-DMP 343	II 1 G EEx ia IIC T4 (only with 4 ... 20 mA / 2-wire) safety technical maximum values: $V_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$

Mechanical stability

Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 ms

Permissible temperatures

Medium	-25 ... 90 °C
Electronics / environment	-25 ... 85 °C
Storage	-40 ... 125 °C

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

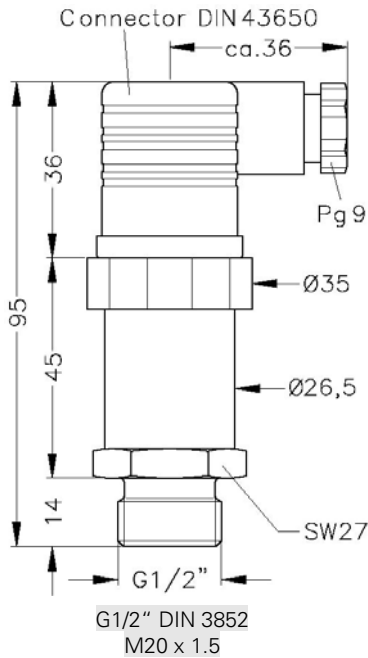
DMP 343

Industrial Pressure Transmitter

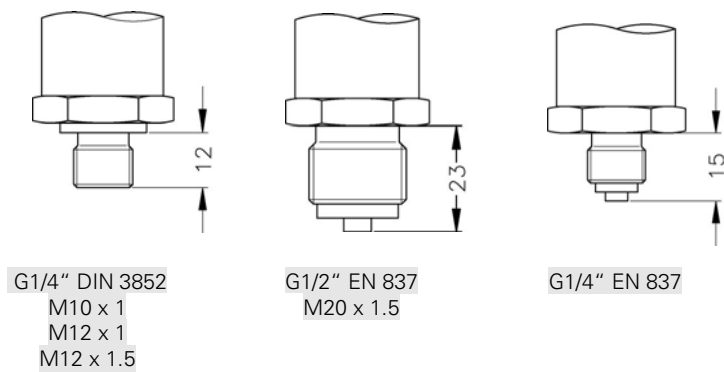
Technical Data

Mechanical connection

Standard



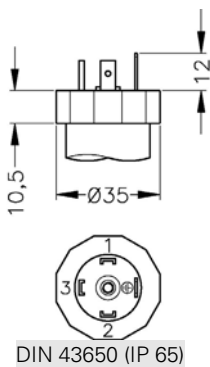
Optional



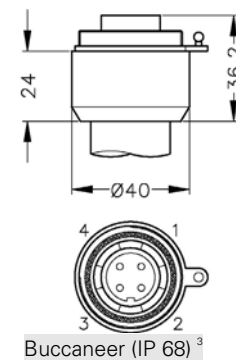
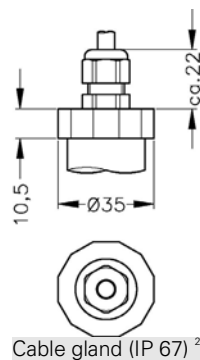
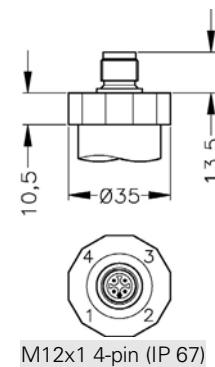
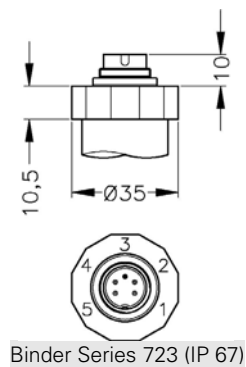
⇒ Ex-protection: total length increases by 26.5 mm!

Electrical connection

Standard



Optional



² different cable types and lengths available, standard: 2 m PVC cable (without ventilation tube), optionally cable with ventilation tube

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 ₂ O ₃ , silicon
Media wetted parts	pressure port, seals, sensor

Miscellaneous

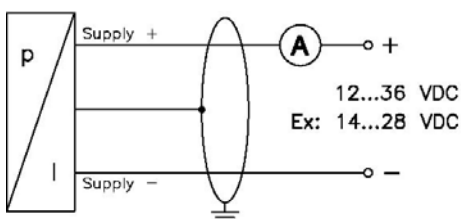
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any

Pin configuration

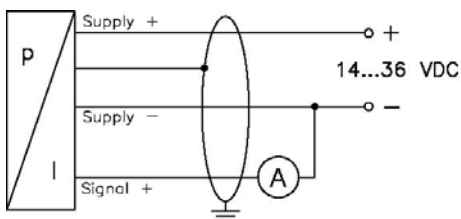
Electrical connection		DIN 43650	Binder 723 (5-pin)	M12x1 (4-pin)	Buccaneer (4-pin)	Cable colours (DIN 47100)
2-wire - system	Supply +	1	3	1	1	white
	Supply -	2	4	2	2	brown
	Ground	ground pin	5	4	4	yellow / black
3-wire - system	Supply+	1	3	1	1	white
	Supply -	2	4	2	2	brown
	Signal +	3	1	3	3	green
	Ground	ground pin	5	4	4	yellow / black

Wiring diagrams

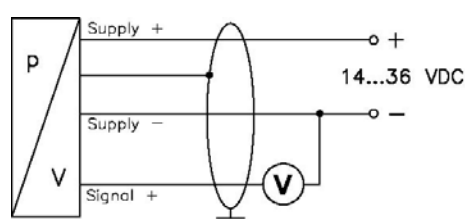
2-wire-system (current)



3-wire-system (current)



3-wire-system (voltage)



³ for gauge pressure cable with ventilation tube required

Ordering code DMP 343

DMP 343

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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	X	X	X	X																	
Output																					
4 ... 20 mA / 2-wire																			1		
0 ... 20 mA / 3-wire																			2		
0 ... 10 V / 3-wire																			3		
Intrinsic safety for zone 0 /																			E		
4 ... 20 mA / 2-wire																			X		
customer																			X		
Electrical Connection																					
Male and female plug DIN 43650																			1	0	0
Binder series 723 (5-pin)																			2	0	0
Cable gland incl. Cable ¹																			4	0	0
Buccaneer IP68 ²																			5	0	0
M12x1 (4-pin)																			M	0	0
customer																			X	X	X
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																			X	X	X
Special version																					
standard																			0	0	0
customer																			X	X	X

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

² for gauge pressure cable with ventilation tube required



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