

MBS3000 系列压力变送器

——应对压力冲击的理想选择

[北京祥顺达恒有限公司-丹佛斯压力变送器中国区总代理](#)

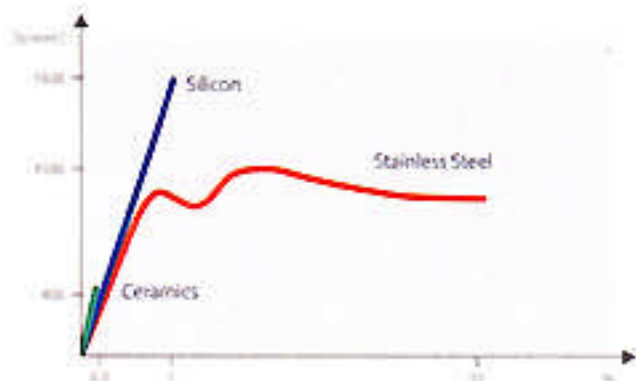


最近，丹佛斯公司推出 MBS3000 压力变送器。当前，虽然生活环境周围的空气是无偿使用的，但处理成工业应用的气体时就变得成本高昂。鉴于此，丹佛斯公司提供的 MBS3000 压力变送器控制的空气助推器可帮助降低空气治理成本。优化的空气压缩设备能节省成本并提高效率：空气压缩是现代工业生产的必不可少的因素，无论是在人力资源节省上还是在自身生产过程中。但是由于许多压缩机工作效率低于 20%，所以这些机器难以保证持续不变的空气体积和压力。当然，空气压缩机工作越多成本就越多，同样，能量消耗和内部零件的损耗都将存在。为了降低压缩机的负载和附随的成本，生产商们可以在中层加一个空气助推器，以推动空气，实现所需要的压力，保证为关键设备提供稳定的供应。因此，许多生产商转向了丹佛斯的压力变送器。理想的选择是紧凑的压力变送器 MBS3000，其设计可用于几乎所有的工业应用，甚至是在很苛刻的环境条件下都能提供可靠的压力测量。

锅炉房、网络中心、区域和家用热力等系统中的自动控制装置根据实际情况不断实时地调节温度和水的流量。在大型供热系统中，如果压力波动超出规定范围之外，将致使某些元件受到压力冲击损坏。

MBS3000 系列压力变送器是世界先进产品，采用硅压阻传感技术。与其他传感技术不同的是，这种硅压阻传感器无需抗压力冲击保护。

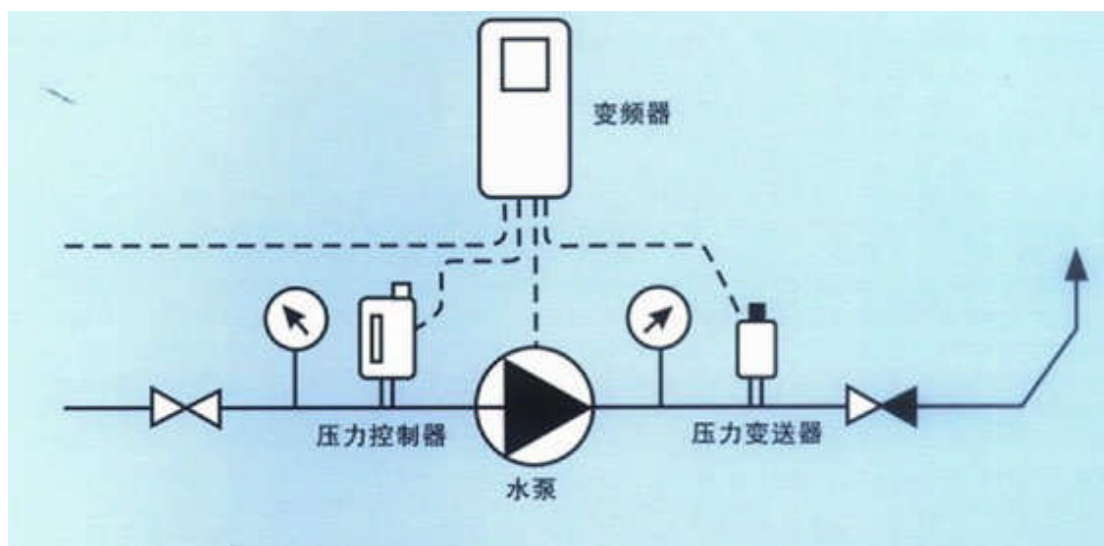
MBS3000 压力变送器能承受的过载压力约为量程的 6 倍。压力循环百万次以上。



材料断裂点的机械应力是塑性变形 (%) 的一个函数。

丹佛 MBS3000 压力变送器采用无塑性变形的亚阻传感器，非常适合用于易产生压力冲击的场合。

MBD1000 插入式显示器



MBS3000 压力变送器恒压供水系统中经典应用

具体技术参数:

压力连接: G1/4(DIN162888)。

压力范围:

0-1bar,0-0.6bar,0-2.5bar,0-2.5bar,0-4bar,0-6bar,0-10bar,0-16bar,0-25bar,0-40bar,
0-60bar,0-100bar,0-160bar,0-250bar,0-400bar,0-600bar。

针对要求严格的工业环境而设计。

密封及与介质接触部分的材料为耐酸不锈钢(AISI316L)。

符合 EU EMC 标准。

温度补偿和激光校准。

绝压变送器

介质: 空气, 气体, 液体。

工作温度: -40 度 85 度。

与介质接触部分材料: :AIS1316L(DIN17440-1.4404)。

防护等级: IP65。

电气连接: DIN43650plugg9。

精度: 小于等于 0.5%(typ)。

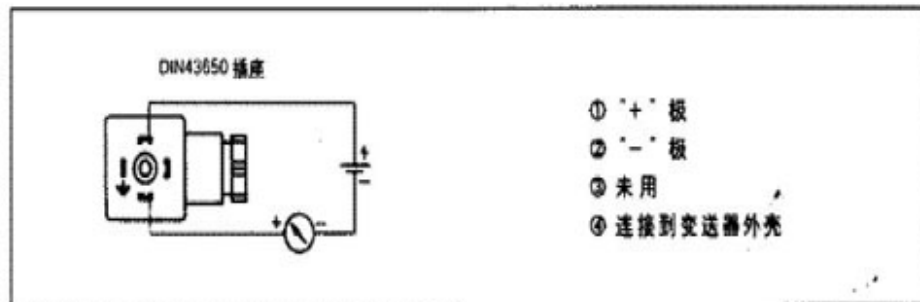
电源电压: 极性保护 10-30VDC。

输出信号: 4-20mA。

过程连接: G1/4A,(DIN16288)。

电气连接

二线:4-20mA



产品代码	060G1100	060G1162	060G1830	060G3610	060G3823	060G3813	060G4064
060G4083	060G1101	060G1163	060G1839	060G3630	060G3824	060G3815	060G4065
060G4084	060G1102	060G1164	060G1842	060G3641	060G3825	060G3814	060G4066
060G4085	060G1103	060G1315	060G1848	060G3645	060G3826	060G3816	060G4068
060G4061	060G1104	060G1317	060G1856	060G3700	060G3827	060G3817	060G4075
060G4062	060G1105	060G1349	060G1899	060G3701	060G3828	060G3818	060G4076
060G4063	060G1106	060G1412	060G1900	060G3703	060G3829	060G3819	060G4078
060G4118	060G1107	060G1413	060G1901	060G3705	060G3830	060G3820	060G4079
060G4141	060G1109	060G1414	060G1902	060G3706	060G3831	060G3821	060G4082
060G4142	060G1110	060G1423	060G1911	060G3711	060G3832	060G3822	060G5577
060G4144	060G1111	060G1429	060G1912	060G3723	060G3833	060G4471	060G4473
060G4145	060G1112	060G1430	060G1930	060G3732	060G3842	060G1634	060G3559
060G4146	060G1113	060G1445	060G1931	060G3733	060G3853	060G1650	060G3577
060G4147	060G1115	060G1446	060G1925	060G3734	060G3856	060G1667	060G3589
060G4148	060G1116	060G1447	060G1926	060G3737	060G3857	060G1676	060G3596
060G4149	060G1117	060G1452	060G1932	060G3744	060G3894	060G1682	060G3597
060G4150	060G1121	060G1454	060G1936	060G3745	060G3902	060G1720	060G3598
060G4151	060G1122	060G1456	060G1939	060G3756	060G3911	060G1722	060G3605
060G4152	060G1123	060G1457	060G1944	060G3765	060G3912	060G1796	060G3606
060G4153	060G1124	060G1539	060G1972	060G3766	060G3915	060G1806	060G3502
060G4155	060G1125	060G1540	060G1973	060G3767	060G3916	060G1829	060G3503
060G4161	060G1126	060G1541	060G1983	060G3777	060G3918	060G4474	060G5539
060G4163	060G1128	060G1542	060G1986	060G3778	060G3937	060G4352	060G1141

MBS 3000 pressure transmitter for industrial applications

Features



- Designed for use in severe industrial environments
- Enclosure and wetted parts of acid-resistant stainless steel (AISI 316L)
- Pressure ranges in relative (gauge) or absolute from 1 up to 600 bar
- All standard output signals: 4 - 20 mA, 0 - 5 V, 1 - 5 V, 1 - 6 V, 0 - 10 V, 1 - 10 V
- A wide range of pressure and electrical connections
- Temperature compensated and laser calibrated
- Typical applications:
 - Pumps
 - Compressors
 - Pneumatics
 - Water treatment

Description

The compact pressure transmitter MBS 3000 is designed for use in almost all industrial applications, and offers a reliable pressure measurement, even under harsh environmental conditions.

The flexible pressure transmitter programme covers different output signals, absolute and

gauge (relative) versions, measuring ranges from 0-1 to 0-600 bar and a wide range of pressure and electrical connections.

Excellent vibration stability, robust construction, and a high degree of EMC/EMI protection equip the pressure transmitter to meet the most stringent industrial requirements.

Ordering standard programme

Plug: Pg 9 (EN 175301-803)

Supply: 9-32V

Output: 4-20 mA

Pressure connection: G 1/4 A (EN 837)

Pressure range ¹⁾ Pe	Type	Code no.
0 - 1 bar	MBS 3000 - 1011 - 1 AB04	060G1113
0 - 1.6 bar	MBS 3000 - 1211 - 1 AB04	060G1429
0 - 2.5 bar	MBS 3000 - 1411 - 1 AB04	060G1122
0 - 4 bar	MBS 3000 - 1611 - 1 AB04	060G1123
0 - 6 bar	MBS 3000 - 1811 - 1 AB04	060G1124
0 - 10 bar	MBS 3000 - 2011 - 1 AB04	060G1125
0 - 16 bar	MBS 3000 - 2211 - 1 AB04	060G1133
0 - 25 bar	MBS 3000 - 2411 - 1 AB04	060G1430
0 - 40 bar	MBS 3000 - 2611 - 1 AB04	060G1105
0 - 60 bar	MBS 3000 - 2811 - 1 AB04	060G1106
0 - 100 bar	MBS 3000 - 3011 - 1 AB04	060G1107
0 - 160 bar	MBS 3000 - 3211 - 1 AB04	060G1112
0 - 250 bar	MBS 3000 - 3411 - 1 AB04	060G1111
0 - 400 bar	MBS 3000 - 3611 - 1 AB04	060G1109
0 - 600 bar	MBS 3000 - 3811 - 1 AB04	060G1110

¹⁾ Relative/gauge

Technical data
Performance (EN 60770)

Accuracy (incl. non-linearity, hysteresis and repeatability)	±0.5% FS (typ.) ±1% FS (max.)
Non-linearity BFSL (conformity)	≤ ±0.5% FS
Hysteresis and repeatability	≤ ±0.1% FS
Thermal zero point shift	≤ ±0.1% FS/10K (typ.) ≤ ±0.2% FS/10K (max.)
Thermal sensitivity (span) shift	≤ ±0.1% FS/10K (typ.) ≤ ±0.2% FS/10K (max.)
Response time	< 4 ms
Overload pressure	6 × FS (max. 1500 bar)
Burst pressure	> 6 × FS (max. 2000 bar)
Durability, P: 10-90% FS	>10×10 ⁶ cycles

Electrical specifications

	Nom. output signal (short-circuit protected)		
	4 – 20 mA	0 - 5, 1 - 5, 1 - 6 V	0 - 10 V, 1 - 10 V
Supply voltage [U _B], polarity protected	9 → 32 V	9 → 30 V	15 → 30 V
Supply - current consumption	–	≤ 5 mA	≤ 8 mA
Supply voltage dependency	≤ ±0.05% FS/10 V		
Current limitation	28 mA (typ.)	–	
Output impedance	–	≤ 25Ω	
Load [R _L] (load connected to 0V)	R _L ≤ (U _B - 9V)/0.02Ω	R _L ≥ 10 kΩ	R _L ≥ 15 kΩ

Environmental conditions

Medium temperature range	–40 → +85°C	
Ambient temperature range (depending on electrical connection)	see page 3	
Compensated temperature range	0 → +80°C	
Transport temperature range	–50 → +85°C	
EMC - Emission	EN 61000-6-3	
EMC Immunity	EN 61000-6-2	
Insulation resistance	> 100 MΩ at 100 V	
Mains frequency test	SEN 361503	
Vibration stability	Sinusoidal	15.9 mm-pp, 5 Hz-25 Hz
		20 g, 25 Hz - 2 kHz
		Random 7.5 g _{rms} , 5 Hz - 1 kHz
		IEC 60068-2-6
Shock resistance	Shock	500 g / 1 ms
	Free fall	
		IEC 60068 - 2 - 27
		IEC 60068 - 2 - 32
Enclosure (depending on electrical connection)	see page 3	

Mechanical characteristics

Materials	Wetted parts	DIN 17440 - 1.4404 (AISI 316 L)
	Enclosure	DIN 17440 - 1.4404 (AISI 316 L)
	Pressure connection	see page 3
	Electrical connections	see page 4
Weight (depending on pressure connection and electrical connection)	0.2 - 0.3 kg	

Ordering of special versions

MBS 3000 -

Measuring range

0 - 1 bar	1 0
0 - 1.6 bar	1 2
0 - 2.5 bar	1 4
0 - 4 bar	1 6
0 - 6 bar	1 8
0 - 10 bar	2 0
0 - 16 bar	2 2
0 - 25 bar	2 4
0 - 40 bar	2 6
0 - 60 bar	2 8
0 - 100 bar	3 0
0 - 160 bar	3 2
0 - 250 bar	3 4
0 - 400 bar	3 6
0 - 600 bar	3 8

Pressure reference

Gauge (relative)	1
Absolute	2

A B 0 4
A B 0 6
A B 0 8
A C 0 4
A C 0 8
G B 0 4

Pressure connection

G 1/4 A (EN 837)
G 3/8 A (EN 837)
G 1/2 A (EN 837)
1/4 - 18 NPT
1/2 - 14 NPT
DIN 3852-E-G 1/4
Gasket: DIN 3869-14 NBR

Electrical connection

Figures refer to plug and standard PIN configuration - see page 4
 Plug Pg 9 (EN175301-803)
 *) Plug, AMP Econoseal, J series, male, excl. female plug
 Screened cable, 2 m
 *) Plug, IEC 947-5-2, M12 x 1, male, excl. female plug
 Plug ISO 15170-A1-3.2-Sn, male, excl. female plug
 *) Plug, AMP Superseal 1.5 series male, excl. female plug

Output signal

4 - 20 mA
0 - 5 V
1 - 5 V
1 - 6 V
0 - 10 V
1 - 10 V

*) Gauge versions only available as sealed gauge versions

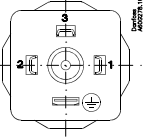
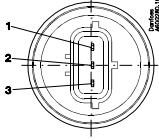
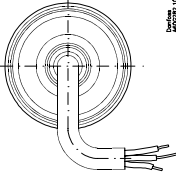
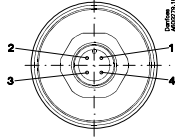
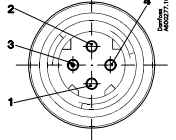
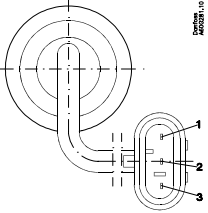
Preferred versions

Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information.

Dimensions / Combinations

Type code	1	2	3	5	7	8
	EN175301-803, Pg 9	AMP Econoseal	2 m screened cable	EN 60947 - 5 - 2 M12x1;4-pin	ISO 15170 - A1 - 3.2 - Sn	AMP Superseal
	G 1/4" A (EN 837)	G 3/8" A (EN 837)	G 1/2" A (EN 837)	1/4" - 18 NPT	1/2" - 14 NPT	DIN 3852-E-G 1/4" Gasket: DIN 3869-14
Type code	AB04	AB06	AB08	AC04	AC08	GB04

Electrical connections

Type code, page 3					
1	2	3	5	7	8
EN 175301-803, Pg 9 	AMP Econoseal J series (male) 	2 m screened cable 	EN 60497-5-2 M12x1 4-pin 	ISO 15170-A1-3.2-Sn (Bayonet plug) 	AMP Superseal 1.5 series (male) 
Ambient temperature					
-40 → +85 °C	-40 → +85 °C	-30 → +85 °C	-25 → +85 °C	-40 → +85 °C	-40 → +85 °C
Enclosure					
IP 65	IP 67	IP 67	IP 67	IP 67 / IP 69K	IP 67
Materials					
Glass filled polyamid, PA 6.6	Glass filled polyamid, PA 6.6 ¹⁾	Poliolyfin cable with PE shrinkage tubing	Nickel plated brass, CuZn/Ni	Glass filled polyester, PBT	Glass filled polyamid, PA 6.6 ²⁾
Electrical connection, 4 - 20 mA output (2 wire)					
Pin1: + supply Pin 2: ÷ supply Pin 3: Not used Earth: Connected to MBS enclosure	Pin 1: + supply Pin 2: ÷ supply Pin 3: not used	Brown wire: + supply Black wire: ÷ supply Red wire: Not used Orange: Not used Screen: Not connected to MBS enclosure	Pin 1: + supply Pin 2: Not used Pin 3: Not used Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3: Ventilation Pin 4: Not used	Pin 1: + supply Pin 2: ÷ supply Pin 3 Not used
Electrical connection, 0 - 5V, 1 - 5 V, 1 - 6 V, 0 - 10 V, 1 - 10 V output					
Pin 1: + supply Pin 2: ÷ supply Pin 3: Output Earth: Connected to MBS enclosure	Pin 1: + supply Pin 2: ÷ supply Pin 3: Output	Brown wire: Output Black wire: ÷ supply Red wire: + supply Orange: Not used Screen: Not connected to MBS enclosure	Pin 1: + supply Pin 2: Not used Pin 3: Output Pin 4: ÷ supply	Pin 1: + supply Pin 2: Output Pin 3: Ventilation Pin 4: ÷ supply	Pin 1: + supply Pin 2: ÷ supply Pin 3: Output

¹⁾ Female plug: Glass filled polyester, PBT

²⁾ Wire: PETFE (teflon)
Protection sleeve: PBT mesh (polyester)