DMS20S Universal Pressure Transmitter

Features

SS316L diaphragm structure
High accuracy, all stainless steel structure
Small size and light weight
Strong anti-interference,
good long-term stability
Diversified formal structures,
easy installation and use
Wide pressure range, can measure the absolute pressure, gauge pressure and sealed gauge pressure
Anti-vibration, shock resistance
Zero, full span adjustable

Applications and industries

Process control Aerospace
Automobile and medical equipment
Pipeline system

Notes:

1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.

2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.

3 Strictly follow the wiring method for wiring, otherwise it may cause product damage or other potential faults.

4 Misuse of the product may cause danger or personal injury.

Product overview

DMS20S economic pressure transmitter adopts diffused silicon pressure sensor as pressure sensing element. Through internal ASIC, the millivolt signal of sensor is transmitted into standard current signal. DMS20S can be directly connected with computer interface card, control instruments, intelligent meters or PLC etc. conveniently. Long-distance transmission can use current output. DMS20S features with small size, light weight, all stainless steel sealing structure and ability to work in corrosive environments. The product is easy to install and has extremely high vibration and shock resistance. DMS20S is widely used in process control, aviation, aerospace, automobile, medical equipment, HVAC and other fields.

Notes:

1 Do not misuse documentation.

2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

Performance parameters	
Pressure range	-100kPa…0~35kPa…100MPa
Pressure reference	Gauge pressure, Absolute pressure, Sealed gauge pressure
Accuracy	0.5%FS
Hysteresis	0.1%FS
Repeatability	0.1%FS
Temperature drift	**35kPa: ±2%FS(0℃～60℃)** **Other ranges: ±1.5%FS(-20℃～85℃)**

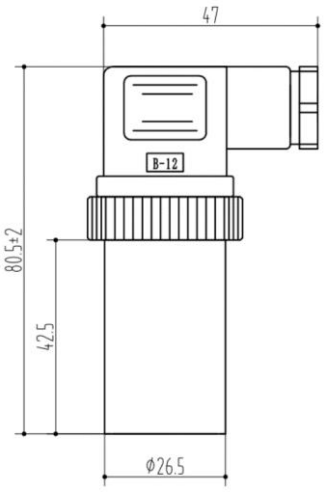
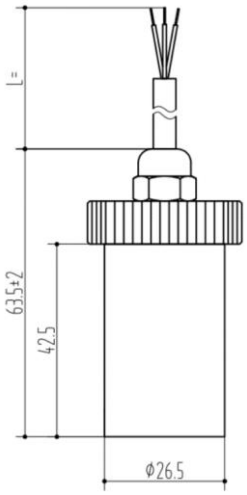
Performance parameters (cont.)

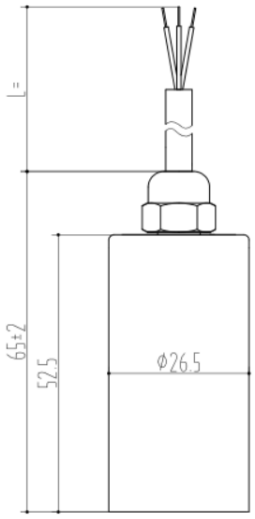
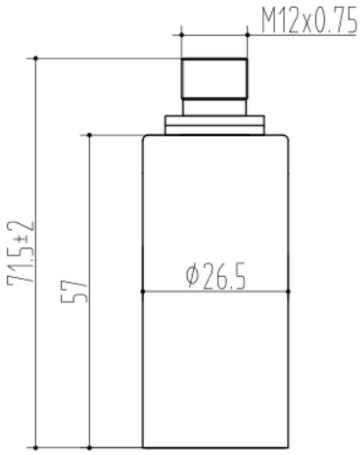
Response time	≤1ms (Up to 90%FS)
Overpressure	Refer to Table for Pressure Range Selection
Service life	≥1×10^6 pressure cycles
Ambient temperature	-20℃～85℃
Medium temp.	-30℃～105℃
Storage temp.	-40℃～125℃
EMC	Immunity: IEC 61000-6-2, Radiation: IEC 61000-6-3
Insulation resistance	≥100MΩ/500VDC(200MΩ/250VDC)
Vibration resistance	Sine curve: 20g, 25Hz～2kHz; IEC 60068-2-6 Random: 7.5grms, 5Hz～1kHz; IEC 60068-2-64
Shock resistance	Shock: 200g/1ms; IEC 60068-2-27 Free falling body: 1m; IEC 60068-2-32
Protection grade	IP65
Surge	IEC 61000-4-5 3 level
Voltage resistance	Current output：500V/AC 1min Voltage output：250V/AC 1min
Static electricity	IEC 61000-4-2 4 level
Hexagon	HEX27
Ex-proof grade	Intrinsically safe explosion-proof Exia Ⅱ CT6 (only for 4～20mA)
Net weight	150～180g

Output and power supply

Code	B1	B3	B2	B7	B12	B6
Output	4～20mA	0～5V	1～5V	0～10V	1～10V	0.5～4.5V R/M
Power supply	12~30VDC	12~30VDC	12~30VDC	12~30VDC	12~30VDC	5VDC

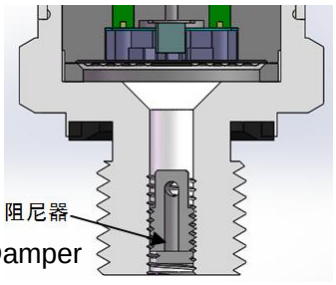
Electrical connection & wiring mode

Connector code	J5: DIN43650	J15: DIN43650 with cable
Dimension In mm		
Protection grade	IP65	IP65
Wring method (2 wire current)	Pin 1: Power supply+ (Red wire) Pin 2: Current output (Green wire)	Red wire: Power supply+ Green wire: Current output

Wring method (3 wire voltage)	Pin 1: Power supply+ (Red wire) Pin 2: Common-ground (Green wire) Pin 3: Voltage output (Yellow wire)	Red wire: Power supply+ Green wire: Common-ground Yellow wire: Voltage output
Connector code	J3：Cable outlet	J4：M12
Dimension In mm		
Protection grade	IP65	IP65
Wring method (2 wire current)	Red wire: Power supply+ Green wire: Current output	Pin 1: Power supply+(Red wire) Pin 2: Current output (Green wire)
Wring method (3 wire voltage)	Red wire: Power supply+ Green wire: Common-ground Yellow wire: Voltage output	Pin 1: Power supply+ (Red wire) Pin 2: Common-ground (Green wire) Pin 3: Voltage output (Yellow wire)

Application of damper

Applications



Cavitation, liquid hammer and pressure peak may occur in air or fluid systems with varying flow rates, such as the rapid closing of the valve or the start and stop of the pump.

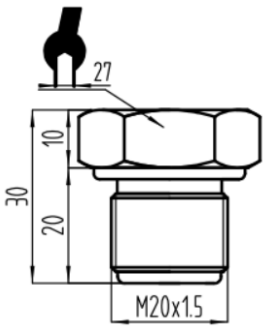
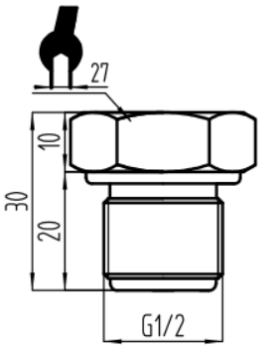
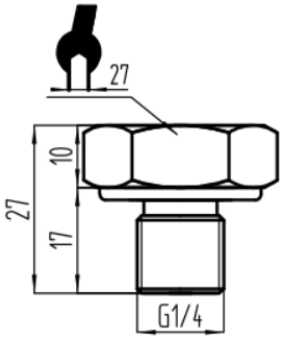
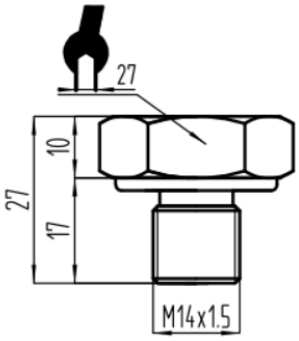
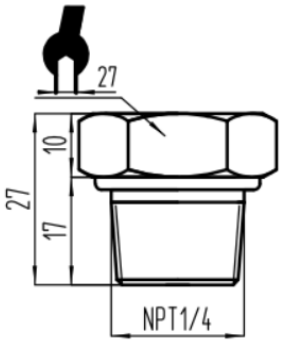
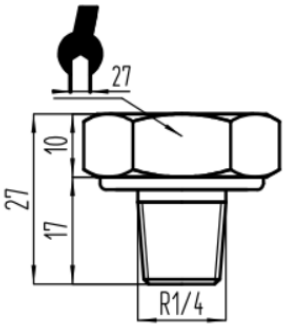
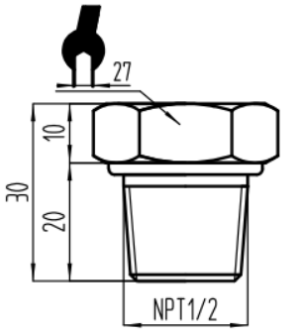
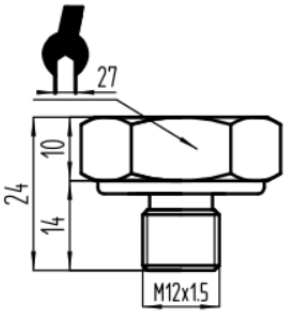
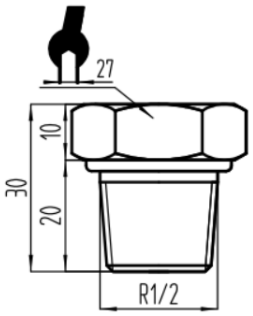
Even at relatively low operating pressures, these problems may occur at the entrance and exit.

Media condition

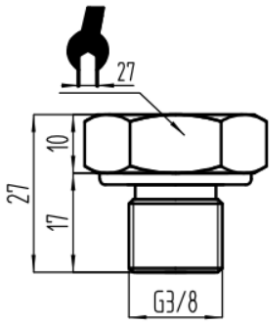
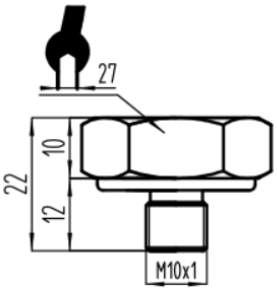
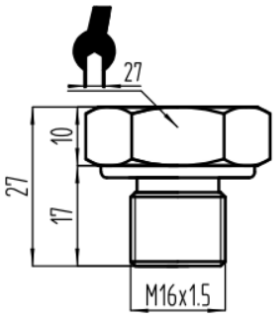
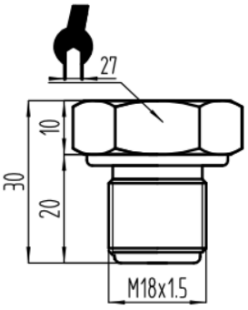
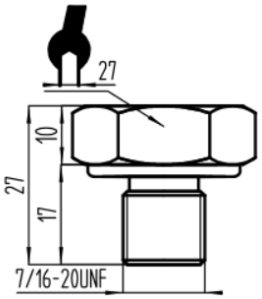
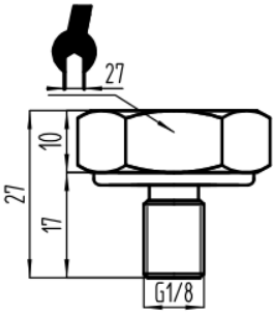
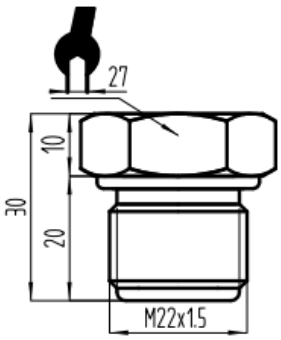
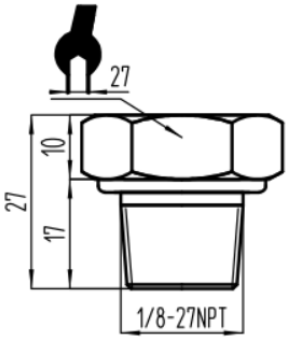
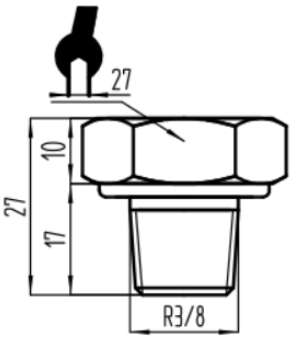
In the liquid containing particles, nozzle clogging may occur. The vertical mounting of pressure transmitter minimizes the risk of clogging because the flow of fluid happens in initial start only, the volume of the rear of the nozzle is fixed and the nozzle has a relatively large aperture (1.2 mm).

The effect of medium viscosity on response time is small. Even if the viscosity reaches 100 CST, the response time will not exceed 4ms.

Pressure connection

Thread code	**C1: M20×1.5-6g**	**C2: G1/2**	**C3: G1/4**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm
Thread code	**C4: M14×1.5**	**C5: NPT1/4, Z1/4**	**C6: R1/4, PT1/4, ZG1/4**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm
Thread code	**C7: NPT1/2, Z1/2**	**C8: M12×1.5**	**C10: R1/2, PT1/2, ZG1/2**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm

Pressure connection

Thread code	**C15: G3/8**	**C20: M10×1**	**C22: M16×1.5**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm
Thread code	**C23:M18×1.5**	**C11:7/16-20UNF**	**C14：G1/8**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm
Thread code	**C27:M22×1.5**	**C18:1/8-27NPT**	**C13：R3/8、PT3/8、ZG3/8**
Dimension In mm			
Recommended torque	15～25Nm	15～25Nm	15～25Nm

Note: The torque depends on all kinds of factors, such as gasket material, kitting material, thread lubrication and pressure.

Pressure range selection

Pressure range code	Pressure reference	Pressure range	Overpressure	Burst pressure	NOTES
35k	G, A	0～35kPa	300%FS	600%FS	
70k	G	0～70kPa	300%FS	600%FS	
100k	G, A	0～100kPa	200%FS	500%FS	
250k	G, A	0～250kPa	200%FS	500%FS	
400k	G, A	0～400kPa	200%FS	500%FS	
600k	G, A	0～600kPa	200%FS	500%FS	
1M	G, A, S	0～1MPa	200%FS	500%FS	
1.6M	G, S	0～1.6MPa	200%FS	500%FS	
2.5M	G, S	0～2.5MPa	200%FS	500%FS	
4M	S	0～4MPa	200%FS	400%FS	
6M	S	0～6MPa	200%FS	400%FS	
10M	S	0～10MPa	200%FS	400%FS	
16M	S	0～16MPa	200%FS	400%FS	
25M	S	0～25MPa	150%FS	400%FS	
40M	S	0～40MPa	150%FS	300%FS	
60M	S	0～60MPa	150%FS	300%FS	
100M	S	0～100MPa	150%FS	300%FS	
(-100～0)k	Omission	-100～0kPa	300kPa	600kPa	
(0～-100)k	Omission	0～-100kPa	300kPa	600kPa	
NP100k	Omission	-100～100kPa	300kPa	600kPa	

Note 1: G stands for gauge pressure, A, absolute pressure, S, sealed gauge pressure.

Accessory

Name	Appearance	Description	Material No.
M4 damper		Refer to “Application of damper”	100030100027
LCD12 display gauge		1. LCD display 2. Green backlight	100040100008

Accessory (cont.)

LCD display gauge		1. Nixie tube display 2. Backlight	100040101000
Hirschmann plug made in China		Made in China	100040301005
Imported Hirschmann plug		Imported	100040301013
X12 circular miniconnector （set）		Thread M12×0.75	100040304005

How to order

DMS20S - 35k G B1 C3 J5

- DMS20S: Product model
- 35k: Refer to “Pressure range selection”
- G: G: Gauge pressure; A: Absolute pressure; S: Sealed gauge pressure
- B1: B1: 4～20mA; B2: 1～5V; B3: 0～5V; B6: 0.5～4.5V R/M; B7: 0～10V; B12: 1～10V
- C3: C1: M20×1.5-6g; C2: G1/2; C3: G1/4; C4: M14×1.5; C5: NPT1/4, Z1/4; C6: R1/4, PT1/4, ZG1/4; C7: NPT1/2, Z1/2; C8: M12×1.5; C10: R1/2, PT1/2, ZG1/2; C15: G3/8; For details please see thread code.
- J5: J5: DIN43650; J15: DIN43650 with cable; J3: Cable outlet; J4: M12

Example: DMS20S-35kGB1C3J5

Refer to product model DMS20S, pressure range 0～35kPa, pressure reference gauge pressure, output signal 4～20mA, pressure connection G1/4, electrical connector DIN43650.

Ordering tips

1. Please ensure the compatibility between the measured medium and the contacting part of the product when placing an order.
2. For the pressure range between 1～35kPa, the product can be customized.
3. For the pressure range between 25～100MPa, with the superstrong pressure impact for the application on site, the product can be customized.