PDS803 direct-coupled pressure transmitter

PDS803 pressure transmitter is mainly used to measure liquid, gas or steam pressure, and convert the measured value into 4-20mA d.c. current (superimposed with HART communication), PROFIBUS-PA communication signal, FF communication signal, Ethernet-APL communication signal and AutBus communication signal for output to achieve remote setting, monitoring and other functions through communication devices.



◆ Performance specification

Span ratio

Max. span ratio r (r=max. span/actual span)=100:1

Long-term stability

δ≤±0.1%FS/10 years

Span of transmitter

Span code	PDS803G gauge pressure type				PDS803A absolute pressure type			
	Minimum span	Maximum span	Measuring range	Overload limit	Minimum span	Maximum span	Measuring range	Overload limit
B	1.0 kPa	100 kPa	-100~100 kPa	600 kPa	0.5 kPa	25 kPa	0~25 kPa(A)	300 kPa(A)
C	4.0 kPa	400 kPa	-100~400 kPa	1.5 MPa	2.6 kPa	130 kPa	0~130 kPa(A)	500 kPa(A)
D	30 kPa	3000 kPa	-100~3000 kPa	4.5 MPa	5.0 kPa	500 kPa	0~500 kPa(A)	1.0 MPa(A)
E	0.2 MPa	20 MPa	-0.1~20 MPa	30 MPa	0.03 MPa	3 MPa	0~3 MPa(A)	6.0 MPa(A)
F	0.4 MPa	40 MPa	-0.1~40 MPa	60 MPa	0.2 MPa	20 MPa	0~20 MPa(A)	30 MPa(A)
G	0.7 MPa	70 MPa	-0.1~70 MPa	105 MPa	——			

Note: The long-term working pressure of PDS803G gauge pressure type is recommended to be higher than 50kPa (ABS).
According to the span code B of PD803G gauge pressure type, the recommended span is ≥10kPa.

Reference accuracy δ

PDS803G gauge pressure span code	PDS803A absolute pressure span code	Accuracy δ
B	B and C	δ≤±0.04% $\delta \leq \pm (0.004+0.0036 \frac{\text{Maximum span}}{\text{Selected span}})$ %, span ratio >10:1
C, F and G	D	δ≤±0.04% $\delta \leq \pm (0.015+0.0025 \frac{\text{Maximum span}}{\text{Selected span}})$ %, span ratio >10:1
D and E	E	δ≤±0.025% $\delta \leq \pm (0.01+0.0015 \frac{\text{Maximum span}}{\text{Selected span}})$ %, span ratio >10:1
--	F	δ≤±0.05% $\delta \leq \pm (0.015+0.0035 \frac{\text{Maximum span}}{\text{Selected span}})$ %, span ratio >10:1

Impact of temperature

δ≤(0.06*r+0.01)%/28°C, -40°C~+80°C

Process temperature range

-40°C~+120°C（Fluorine oil： -52°~+120°）

◆Model

Model No.	code	Remarks				
PDS803	—	Pressure transmitter				
Type	G	Gauge pressure type				
	A	Absolute pressure type				
Communication protocol	H	HART (7) communication (Note 1)				
	P	PROFIBUS-PA (3.02) field bus communication				
	F	FF (6.1.1) field bus communication				
	A	Ethernet-APL communication(Note 2)				
	B	AutBus communication				
Liquid sealed in diaphragm capsule		Sealed liquid		Cleaning of measuring part		
	-1	Silicone oil		Conventional		
	-2	Silicone oil		Degreasing treatment		
	-3	Fluorine oil-52°~+120°		Degreasing treatment		
Measuring range		G gauge pressure type		A absolute pressure type		
		Span	Measuring range	Span	Measuring range	
	B	1~100kPa	-100~100kPa	0.5~25kPa(A)	0~25kPa(A)	
	C	4~400kPa	-100~400kPa	2.6~130kPa(A)	0~130kPa(A)	
	D	0.03~3MPa	-0.1~3MPa	5.0~500kPa(A)	0~500kPa(A)	
	E	0.2~20MPa	-0.1~20MPa	0.03~3.0MPa(A)	0~3.0MPa(A)	
	F	0.4~40MPa	-0.1~40MPa	0.2~20MPa(A)	0~20MPa(A)	
	G	0.7~70MPa	-0.1~70MPa			
Material of liquid contact part		Isolation diaphragm		Relevant liquid contact parts		
	S	316L		316		
	H	HC-276		316		
	C	HC-276		HC-276		
	G	316L gold plated		316		
Process connection	0	G1/2 male thread				
	1	1/2NPT female thread				
	3	M20×1.5 male thread				
	4	1/2NPT male thread				
Explosion-proof			HART	PA and FF	APL	Autbus
	-A	Non explosion-proof type	Applicable	Applicable	Applicable	Applicable
	-B	NEPSI: Intrinsic safety type Ex ia IIC T4 Ga	Applicable	Applicable	-	-
	-C	NEPSI: Intrinsic safety type Ex ia IIC T6 Ga	Applicable	-	-	-
	-D	NEPSI: Flameproof type Ex db IIC T4/T6 Gb NEPSI: Dust explosion proof Ex tb IIIC T85°C Db NEPSI:"n" explosion-proof type Ex ec IIC T6 Gc	Applicable	Applicable	Applicable	-
	-G	ATEX: Intrinsic safety type Ex II 1 G Ex ia IIC T4 Ga ATEX: Flameproof type Ex II 1/2 G Ex db IIC T6...T4 Ga/Gb	Applicable	-	-	-
	-J	IECEx: Intrinsic safety type Ex ia IIC T4 Ga IECEx: Flameproof type Ex db IIC T6...T4 Ga/Gb	Applicable	-	-	-
	-P	EAC: Intrinsic safety type 0 Ex ia IIC T4/T6 Ga X EAC: Flameproof type 0/1Ex d IIC TT6 Ga /Gb X EAC: Dust explosion proof Ex tb IIIC T80° C Db X	Applicable	-	-	-
Housing (Note 3)		Material		Electrical interface		
	1	Aluminium		1/2 NPT female thread, two electrical interfaces		
	2	Aluminium		M20×1.5 female thread, two electrical interfaces		
	3	Stainless steel		1/2 NPT female thread, two electrical interfaces		
	4	Stainless steel		M20×1.5 female thread, two electrical interfaces		
Display head (Note 4)	N	Without display				
	D	LCD display				
	E	Multi-functional LCD head (only applicable to HART7)				
Installation bracket		Type				Material
	A	Horizontal (I type) mounting bracket				Q235
	B	Horizontal (I type) mounting bracket				304
	E	Horizontal (I type) mounting bracket				316
	C	Vertical (L-shaped) bracket (applicable to pipe in horizontal installation)				Q235
	D	Vertical (L-shaped) bracket (applicable to pipe in horizontal installation)				304
	F	Vertical (L-shaped) bracket (applicable to pipe in horizontal installation)				316
	N	Without installation bracket				
Additional options	/××	Refer to the additional options table				

◆Additional options

Item	Remarks		Code (Note 5)
High-end smart diagnosis	It includes the functions of detecting the blockage of pressure guide pipe, measuring the liquid contact temperature, recording events with time cut, capturing and recording process variable anomalies and forecasting and enabling health management		A10
suppressing the fluctuation	For the output of transient micro pressure fluctuation signals, an advanced composite digital filtering algorithm is adopted, which dynamically adjusts the filtering coefficients to achieve fast dynamic response of pressure signals and stable and reliable output		A11
Additional certification	EU SIL		C01
	CE		C02
	V&V		C03
	Russian SIL		C04
	Commonwealth of Independent States EAC020		C05
APL communication method	HART-IP		AH
	PROFINET		AP
Protection treatment (Note 6)	Corrosion grade C4: Moderate salt spray or moderately corrosive industrial areas (seaside or industrial zone)		P10
	Corrosion grade C5-M: High humidity and high salt spray areas (seaside and sea)		P11
	Corrosion grade C5-I: High humidity and severe corrosion area		P12
Electrical connector	Specification and dimension	Material	
	M20×1.5 electrical connector + 1 sealing plug	Plastic	G60
	1/2 NPT electrical connector + 1 sealing plug	Plastic	G61
	M20×1.5 one sealing plug	304	G62
	M20×1.5 sealing plug（EAC）	316L	G63
	1/2 NPT sealing plug（EAC）	316L	G64
	M20×1.5 flameproof electrical plug + one sealing plug	316	G70
	1/2NPT flameproof electrical connector + 1 sealing plug	316	G71
	1/2 NPT one sealing plug	304	G72
	1/2 NPT one sealing plug	316	G73
	M20×1.5 one sealing plug	316	G74
	M20×1.5 flameproof electrical plug + one sealing plug (ATEX\IECEx)	316	G75
	1/2NPT flameproof electrical connector + 1 sealing plug (ATEX\IECEx)	316	G76
	M20×1.5 flameproof electrical plug + one sealing plug (EAC)	316L	G77
	1/2NPT flameproof electrical connector + 1 sealing plug (EAC)	316L	G78
Process joint	Connection type	Material	
	1/2NPT male thread-welded pipe joint	304	G81
	1/2NPT male thread-welded pipe joint	316	H81
	1/2NPT male thread-welded pipe joint	316L	K81
	1/2NPT male thread-welded pipe joint	Q235	G91
	G1/2 female thread-welded pipe joint	304	G83
	G1/2 female thread-welded pipe joint	316	H83
	G1/2 female thread-welded pipe joint	316L	K83
	G1/2 female thread-welded pipe joint	Q235	G93
	M20×1.5 female thread-welded pipe joint	304	G80
	M20×1.5 female thread-welded pipe joint	316	H80
	M20×1.5 female thread-welded pipe joint	316L	K80
Valve manifold integration	The valve manifold and the transmitter are assembled and tested integrally before delivered from the factory.		S
Lightning prevention	Lightning prevention terminal board		F20
Lithium battery	The content of copper and zinc on the surface of medium contact parts is ≤0.5%, and the content of copper and zinc on the surface of other exposed parts is ≤1%.		LD

Quality assurance system	Comply with the Company's nuclear quality assurance system (if this option is not selected, it will conform to the ISO9001 by default).			NP
Alarm	Alarm current: 22.8mA (if this option is not selected, the alarm current is 3.6mA by default).			A1
Document	Delivery of acceptance documents (Note 7)			D1
Language	English (product manual, packing list, product note and main nameplate are all in English) Russian (product manual, packing list, product note and main nameplate are all in Russian) French (product manual, packing list, product note and main nameplate are all in French)			L01 L02 L03
Display unit	PV Unit % mA Pa kPa MPa gf/cm^2 kgf/cm^2 mmH_2O mH_2O inH_2O	Code U01 U20 U21 U22 U23 U24 U25 U26 U27 U28	PV Unit ftH_2O mbar bar psi mmHg inHg Torr Atm $i4H_2O$ (inches of water 4°C) $m4H_2O$ (millimeters of water 4°C)	Code U29 U30 U31 U32 U33 U34 U35 U36 U37 U38
Valve manifold	G8 valve manifold SICV valve manifold			See options of valve manifold

Special reminder

※: In case of any special ordering requirements, please mark “Z” after order code, and add text description.

Note 1: If Hart 6 is selected, Z shall be added for description. For SIL (functional safety) type, only Hart7 is supported.

Note 2: To select Ethernet APL Ethernet communication, you need to choose the specific APL communication method, as shown in the additional options.

Note 3: Flameproof electrical connector must be selected for flameproof transmitter, referring to additional options.

Note 4: The default display is pressure value, and the other display modes are described in "Additional Options".

Note 5: The options shall be separated with a “/”, for example “/P10/G61/K81”.

Note 6: If the housings in P11 and P12 are selected, please choose 1 or 2.

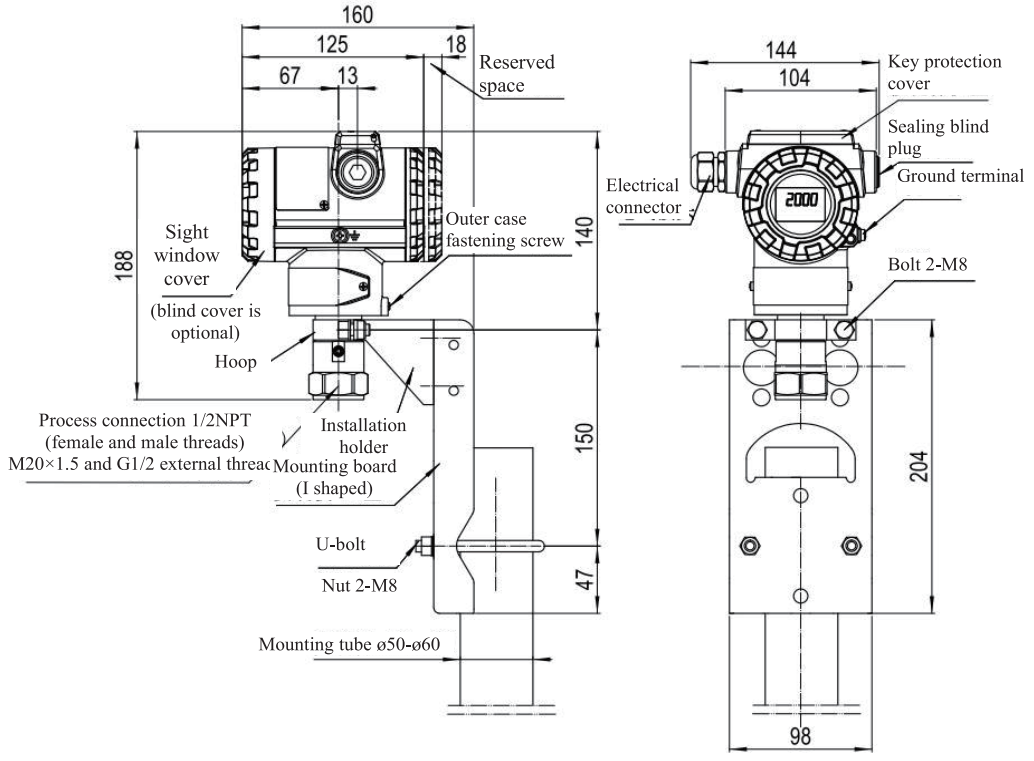
Note 7: It refers to the common materials provided by the manufacturer for inspection of products received except the standard delivery materials (such as original qualification certificate, instructions, and packing list), and a detailed list shall be provided when ordering. In case of third-party test report or other special requirements, it will be quoted separately.

Example of model

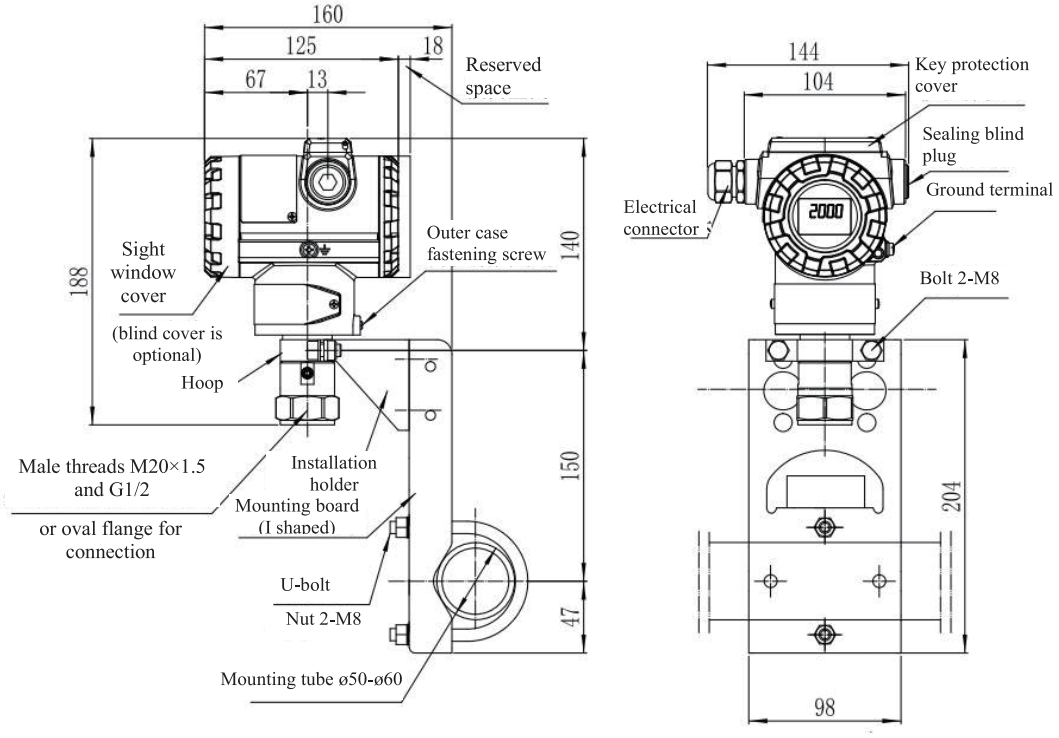
Just as PDS803GH-1DS1-A1DE/G61/S G87-MB1NL/D2/T, the models of transmitter and valve manifold shall be separated by space.

◆Overall and installation size of PDS803

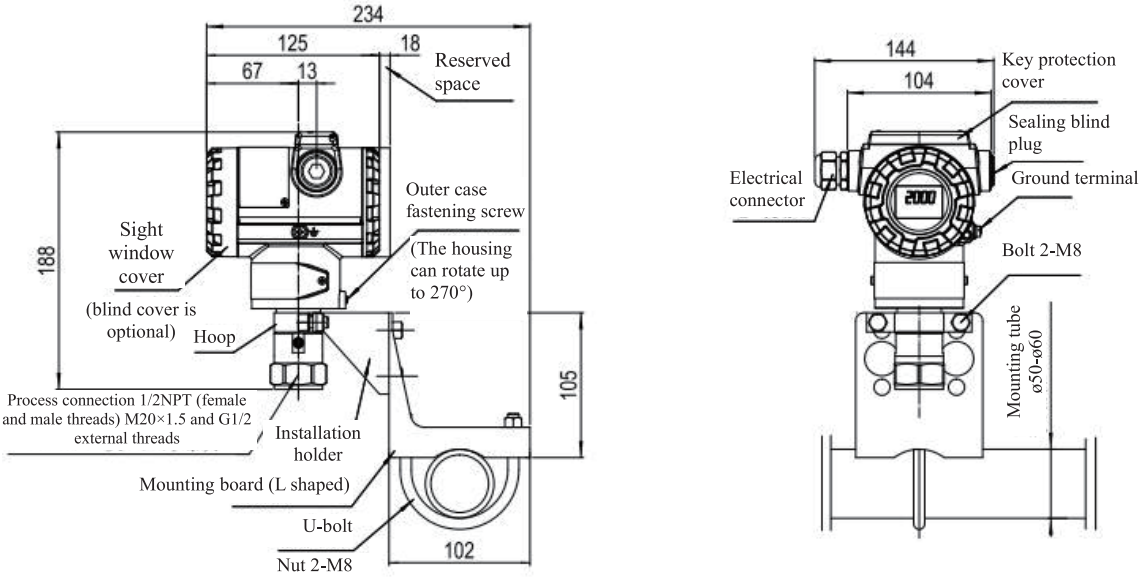
Unit: mm



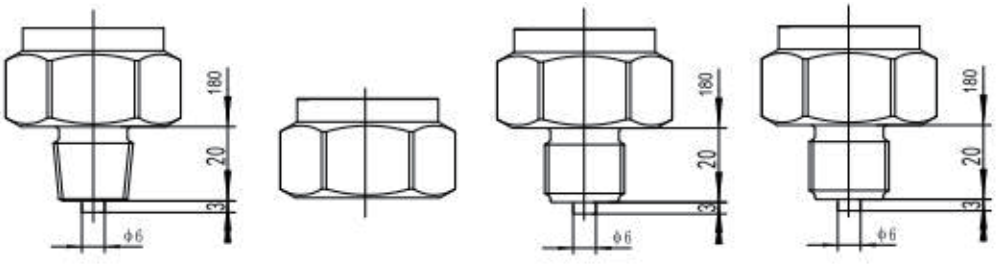
Horizontal piping mounting type (vertical mounting pipe)



Horizontal piping mounting type (horizontal mounting pipe)



Horizontal piping mounting type (horizontal mounting pipe)



Process connection: 1/2NPT male thread

Process connection: 1/2NPT female thread

Process connection: M20×1.5 male thread

Process connection: G1/2A male thread