

Pressure Transmitter-Differential Pressure Flange Diaphragm Seal

Range

Nominal range	Minimum range	Lower (LRL)	Upper (URL)
0.4bar	0.1bar	-0.4bar	0.4bar
2.5bar	0.25bar	-2.5bar	2.5bar

LRV/URV setting: LRV and URV are achieved between the upper and lower limits.
 If $URV \geq LRV$, URV must be larger than the minimum pressure;
 If $URV \leq LRV$, LRV must be larger than the minimum pressure.

Accuracy

Linear output accuracy	$TD \leq 5$	$\pm 0.2\% + \text{Diaphragm seal system effects}$	0.4bar, 2.5bar
	$TD > 5$	$\pm (0.025 * 0.045 TD)\% + \text{Diaphragm seal system effects}$	

Square root output accuracy is 1.5 times linear output accuracy.

Specifications

Accuracy	$\pm 0.2\% \text{ URL} + \text{Diaphragm seal system effects}$
Range	0.4bar to 2.5bar
Turn down ratio	100:1
Stability	$\pm 0.2\% \text{ SPAN}/10 \text{ years}$
Ambient temperature effects	The total effect per 10°C in the range of -20°C to 80°C: $(0.375 + 0.125TD)\%10^\circ\text{C}$ of SPAN
Voltage effects	When the power supply voltage changes within 18.3V to 44VDC, its zero point and range change should not exceed $\pm 0.005\% \text{ URL}/V$
Mounting position effects	The installation of the transmitter may produce a zero point error, which can be corrected by Primary Value = 0 reset without any effect on the range.
Vibration effects	< 0.1% SPAN as per GB/T18271.3/IEC61298-3
Output signal	4mA~20mA DC, HART
Protection class	IP67
Weight	With DN50 flange: About 12.6kg (excluding capillary tube) With DN80 flange: About 15.5kg (excluding capillary tube)

Environmental conditions

Items	Conditions
Operating temperature	-50°C ~85°C, With LCD display: -40°C ~70°C
Storage temperature	-50°C ~100°C, With LCD display: -40°C ~85°C
Operating humidity	5%RH~100%RH@40°C

Note: Short pipeline explosion-proof products shall have a surface temperature $\leq 80^\circ\text{C}$.

Diaphragm operating temperature

Filling oil type	Code	Medium temperature	Diaphragm ambient temperature
Normal temperature silicone oil	S	-40°C ~200°C	-40°C ~85°C
High temperature silicone oil	H	0°C ~315°C	0°C ~85°C
Low temperature silicone oil	L	-55°C ~200°C	-40°C ~85°C
Fluorocarbon oil 1	D	-20°C ~110°C	-20°C ~85°C
Fluorocarbon oil 2	E	-55°C ~85°C	-40°C ~85°C

Power supply and load requirements

Items	Conditions
Power supply voltage	HART communication protocol: 18.3V~44V DC
	Intrinsically safe HART communication protocol: 18.3V~30V DC
Load resistance	0Ω~1476Ω 250Ω~800Ω for HART communication
Transmission distance	< 1000m
Power consumption	
4mA~20mA	≤ 500mW@24V DC, 20.8mA

Note: Non intrinsically safe power supply voltage can be selected as 13V.

EMC Effects

No.	Test items	Basic standards	Test conditions	Performance ability
1	Radiated interference (housing)	GB/T 9254.1/CISPR 32	30MHz~1000MHz	Qualified
2	Conducted interference (DC power port)	GB/T 9254.1/CISPR 32	0.15MHz~30MHz	Qualified
3	Electrostatic discharge immunity test	GB/T 17626.2/IEC61000-4-2	8kV(contact), 15kV(air)	B
4	Immunity to radio frequency EM-fields	GB/T 17626.3/IEC61000-4-3	10V/m (80MHz~1GHz)	A
5	Power frequency magnetic field immunity test	GB/T 17626.8/IEC61000-4-8	30A/m	B
6	Electrical fast transient/Burst Immunity test	GB/T 17626.4/IEC61000-4-4	4kV(5/50ns,100kHz)	B
7	Surge immunity requirements	GB/T 17626.5/IEC61000-4-5	2kV(line to line) 4kV(line to ground) (1.2/50μs)	B
8	Immunity to conducted disturbances induced by radio frequency fields	GB/T 17626.6/IEC61000-4-6	3V(150kHz~80MHz)	A

Time index

Damping time constant: equals to the combined damping time of electronic components and sensor module
Electronic components damping time: 0s to 100s configurable
Sensor module damping time: (sensor isolated diaphragm and filled silicone oil): ≤ 0.2s
Turn-on time: ≤ 6s
Factory reset time: ≤ 31s
Response time: ≤ 100ms

Process connection

Standard	Specification	Outer diameter(ϕ D)	Thickness (B)	Hole circumference(ϕ K)
HG/T20592-2009	DN50PN10	165	20	125
HG/T20592-2009	DN80PN10	200	20	160
HG/T20592-2009	DN100PN10	220	20	180
RF diameter (ϕ G)	Hole diameter (ϕ H)	Quantity (n)	Corrugation diameter (ϕ M)	
102	18	4	56	
138	18	8	56	
158	18	8	56	

Process connection

Standard	Specification	Outer diameter(ϕ D)	Thickness (B)	RF diameter (ϕ G)	Hole circumference(ϕ K)
HG/T20592-2009	DN80PN10	200	20	138	160
HG/T20592-2009	DN80PN10	200	20	138	160
HG/T20592-2009	DN80PN10	200	20	138	180
HG/T20592-2009	DN50PN10	165	20	102	125
HG/T20592-2009	DN50PN10	165	20	102	125
HG/T20592-2009	DN50PN10	165	20	102	125
Quantity (n)	Hole diameter (ϕ H)	Insertion sleeve diameter (ϕ P)	Insertion sleeve length (L)	Corrugation diameter (ϕ M)	
8	18	66	50	42	
8	18	66	100	42	
8	18	66	150	42	
4	18	46	150	42	
4	18	46	50	42	
4	18	46	100	42	