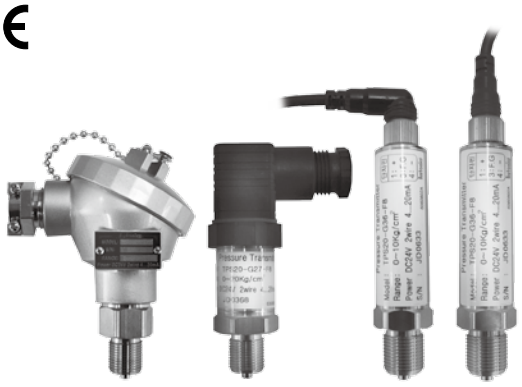
TPS20 Series

Features

- 4-20 mA analog signal (2-wire) transmission by measuring pressure of gas, liquid, and vapor
- High accuracy(±0.3%F.S.) with stainless steel diaphragm for various measurement
- Various model for installation environments
  : Head type, DIN connector type, Connector cable type
- Built-in zero-point, span adjustment (Head type)

Please read "Caution for your safety" in operation manual before using this unit.



[Head type] [DIN connector type] [Connector cable type]

Ordering information

TPS20 — G 1 1 F8 — 00

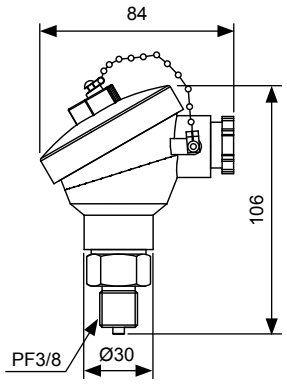
Connector cable※1	00	Not used
	2I	" I " type 2 m
	2L	" L " type 2 m
	5I	" I " type 5 m
	5L	" L " type 5 m
Pressure port	P2	PT 1/2 (with adapter)
	P8	PT 3/8 (with adapter)
	F8	PF 3/8 (Standard)
	ZZ	Others
Pressure range	1	0 to 0.2 kgf/cm² (G)
	2	0 to 0.5 kgf/cm² (G)
	3	0 to 1 kgf/cm² (G,A)
	4	0 to 2 kgf/cm² (G,A)
	5	0 to 7 kgf/cm² (G,A)
	6	0 to 10 kgf/cm² (G,A)
	7	0 to 20 kgf/cm² (G,A)
	8	0 to 35 kgf/cm² (G,A)
	9	0 to 70 kgf/cm² (G)
	A	0 to 100 kgf/cm² (G)
	C	0 to 200 kgf/cm² (G)
	F	0 to 300 kgf/cm² (G)
	H	0 to 350 kgf/cm² (G)
	M	-760 mmHg to 0 kgf/cm² (G)
	O	-760 mmHg to 1 kgf/cm² (G)
	Q	-760 mmHg to 7 kgf/cm² (G)
	V	-760 mmHg to 10 kgf/cm² (G)
	X	-760 mmHg to 20 kgf/cm² (G)
	Y	-760 mmHg to 35 kgf/cm² (G)
	Z	Others
Connector	1	Head type
	2	DIN connector type
	3	Connector cable type
Measurement presssure	G	Gauge pressure
	A	Absolute pressure
Item	TPS20	Pressure Transmitter

※1 : For ordering cable, order as TPS2I, TPS2L, TPS5I, TPS5L. (sold separately)

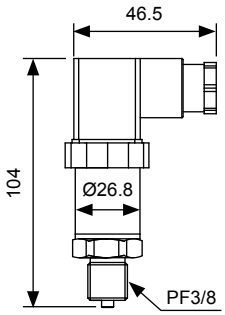
Dimensions

(unit:mm)

● **Head type**

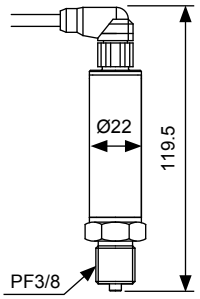


● **DIN connector type**

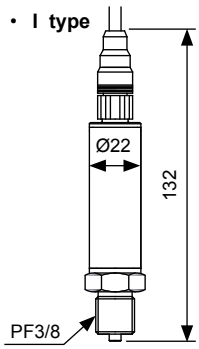


● **Connector cable type**

• **L type**



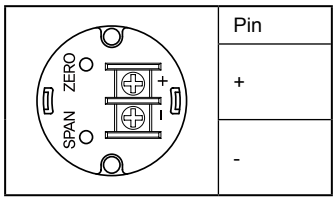
• **I type**



※ The standard pressure port for above is PF 3/8.

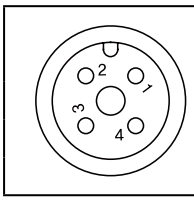
Connections

● **Head type**



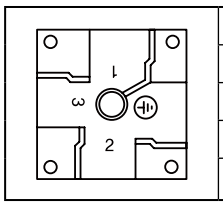
Pin
+
-

● **Connector cable type**



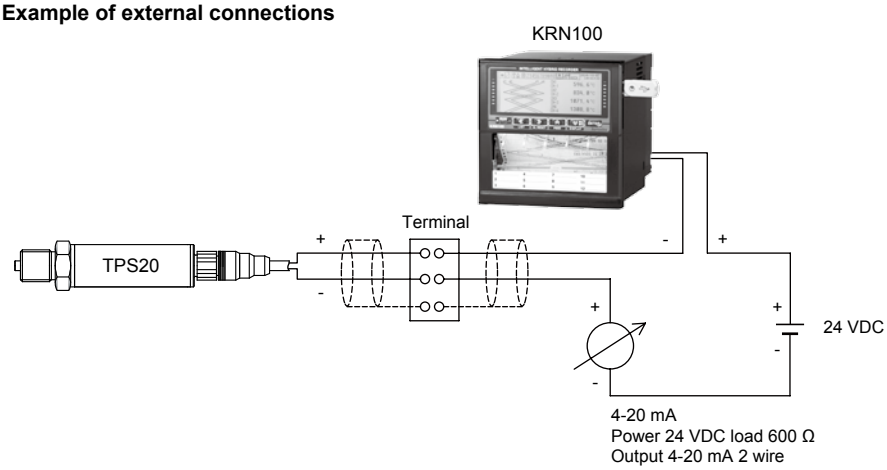
Pin	Function
1	+
2	N·C
3	F.G.
4	-

● **DIN connector type**



Pin	Function
1	+
2	-
3	N·C
⏚	F.G.

● **Example of external connections**



Specifications

Series		TPS20
Measured materials		Vapor, Liquid, Fluid (except corrosive environment of SUS316)
Measurement range		-760 mmHg to 0 to 30 kg/cm^2 (compound pressure) 0 to 0.2 to 350 kg/cm^2 (gauge pressure) 0 to 1.0 to 35 kg/cm^2 (absolute pressure)
Allowable over pressure		300% of max. span
Electrical characteristics	Power	15-35 VDC
	Output	4-20 mA
	Load resistance	Min. 600 Ω
	Power consumption	0.5 W
Accuracy	Linearity	±0.3%F.S.(-10 to 50 ℃) ±0.5%F.S.(50 to 70 ℃)
	Hysteresis	±0.3% F.S.
Temperature characteristics	ZERO	±0.03%F.S.
	SPAN	±0.03%F.S. (at 25 ℃)
Response time		Max. 100 ms
Pressure port		PF 3/8(standard), PT 3/8, PT 1/2
Environment	Ambient temperature	-10 to 70 ℃
	Ambient humidity	5 to 95% RH
Materials		Sealing : SUS316, O-ring : fluoro rubber, Diaphragm : SUS316, Connection : SUS316
Case structure		Drip-proof structure
Approval		CE
Unit weight		Approx. 320 g (based on head type)

※F.S.(Full Scale): It is rated pressure range.
※Environment resistance is rated at no freezing or condensation.

Troubleshooting

Error	Troubleshooting
No outputs	Do you supply the power? Do you wire (+, -) it correctly? Is the connection part poor?
Abnormally fluctuating output	Is power supplied properly? Is pressure supplied correctly? Is there error in pressure line?
Out of zero point output value	Is power supplied properly? Is the load resistive value of a receiver over 600 Ω? Is the measuring point and transmission distance proper? Is line resistance big? (max. 600 Ω)

Proper usage

■ Caution for using

- When installing this unit on pipe line, use the hexagon part of connections not to turn this unit with a pipe wrench. Do not use this unit with strong vibrations.
- This unit is manufactured with precisely. If you drop or shock this unit, it may lose the function. Please treat this unit carefully.
- Store this unit at the place without moisture, dust, and vibration.
- This product which does not have drive part at sensing part does not need to repair it. Even though inside of pressure pipe is normally clean, it needs to take maintenance once a year as belows.
  ① Check the broken status of outside.
  ② Check the pressure slot, cleanliness inside, and corrosion state.
  ③ Short each terminal and check the insulation resistance between the case and power. (at 100 VDC, over 10 MΩ)
  ④ Check zero, span adjustment and linearity by pressure standards.
- When removing a sensor for maintenance, follow the belows.
  ① Replace an O-ring which is used once.
  ② Be sure that diaphragm part is not damaged.
- In case of head type for connecting the power, use a crimp terminal(M3.5, min. 7.2 mm).
- The connection of this unit should be separated from the power line and high voltage line in order to prevent inductive noise.
- Install a power switch or a circuit breaker to supply or cut off the power.
- Switch or circuit breaker should be installed nearby users for convenient control.
- Do not use this unit near the high frequency instruments (high frequency welding machine & sewing machine, large capacity SCR controller).
- This unit cannot be repaired due to disassembled structure.
- This unit is fixed with bolt and nut at the both sides of case. Do not press excessive load (approx. 300kg/cm^2), or it may cause damage to this unit.
- Tighten lever of electrical connection firmly for spinning not to enter water to cable.
- Installation environment
  ① Indoor / Outdoor
  ② Altitude max. 2,000 m
  ③ Pollution Degree 2
  ④ Installation Category II