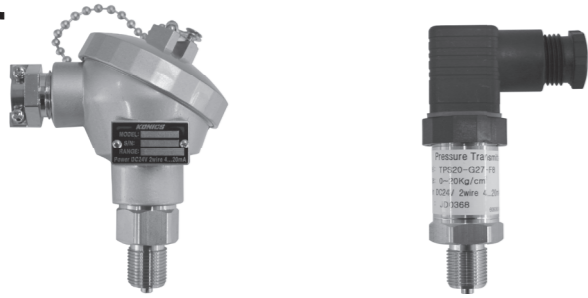


# Pressure Transmitter TPS20 SERIES

## MANUAL



Head type

DIN connector type



Connector cable type

Thank you very much for selecting Autonics products.  
For your safety, please read the following before using.

### Caution for your safety

- ※ Please keep these instructions and review them before using this unit.
- ※ Please observe the cautions that follow;
- Warning** Serious injury may result if instructions are not followed.
- Caution** Product may be damaged, or injury may result if instructions are not followed.
- ※ The following is an explanation of the symbols used in the operation manual.
- Caution:** Injury or danger may occur under special conditions.

### Warning

- In case of using this unit with machinery (Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.**  
It may cause a fire, human injury or damage to property.
- Do not use this unit in place where there are flammable or explosive gas, humidity, direct ray the light, radiant heat, vibration and impact etc.**  
It may cause a fire or explosion.
- Do not disassemble the case. Please contact us if it is required.**  
It may cause electric shock or a fire.

### Caution

- Do not apply beyond rated pressure.**  
It may cause a damage to the product.
- Please observe the rated specifications.**  
It may shorten the life cycle of the product and cause a fire.
- Do not inflow dust or wire dregs into the unit.**  
It may cause a fire or a malfunction.
- Wire it properly after checking polarity of terminal.**  
It may cause a damage to the product.
- Please contact our service center if using for the corrosive detergent.**  
It may shorten the life cycle of the product and cause a damage to the product.
- In cleaning unit, do not use water or organic solvent. And use dry cloth.**  
It may cause electric shock or a fire.

※ The above specifications are subject to change without notice.

### Ordering information

①	TPS20	②	G	③	1	④	1	⑤	F8	⑥	(0 to 5kgf/cm <sup>2</sup> )
① Item	TPS20	Description									
② Measurement pressure	G	Gauge pressure									
	A	Absolute pressure									
③ Connector	1	Head type									
	2	DIN connector type									
	3	Connector cable type									
④ Pressure range		Gauge pressure					Absolute pressure				
	1	0 to 0.2kgf/cm <sup>2</sup>					—				
	2	0 to 0.5kgf/cm <sup>2</sup>					—				
	3	0 to 1kgf/cm <sup>2</sup>					0 to 1kgf/cm <sup>2</sup>				
	4	0 to 2kgf/cm <sup>2</sup>					0 to 2kgf/cm <sup>2</sup>				
	5	0 to 7kgf/cm <sup>2</sup>					0 to 7kgf/cm <sup>2</sup>				
	6	0 to 10kgf/cm <sup>2</sup>					0 to 10kgf/cm <sup>2</sup>				
	7	0 to 20kgf/cm <sup>2</sup>					0 to 20kgf/cm <sup>2</sup>				
	8	0 to 35kgf/cm <sup>2</sup>					0 to 35kgf/cm <sup>2</sup>				
	9	0 to 70kgf/cm <sup>2</sup>					—				
	A	0 to 100kgf/cm <sup>2</sup>					—				
	C	0 to 200kgf/cm <sup>2</sup>					—				
	F	0 to 300kgf/cm <sup>2</sup>					—				
H	0 to 350kgf/cm <sup>2</sup>					—					
M	-760mmHg to 0kgf/cm <sup>2</sup>					—					
O	-760mmHg to 1kgf/cm <sup>2</sup>					—					
Q	-760mmHg to 7kgf/cm <sup>2</sup>					—					
V	-760mmHg to 10kgf/cm <sup>2</sup>					—					
X	-760mmHg to 20kgf/cm <sup>2</sup>					—					
Y	-760mmHg to 35kgf/cm <sup>2</sup>					—					
Z	Others					—					
⑤ Pressure port	P2	PT 1/2 (with adapter)									
	P8	PT 3/8 (with adapter)									
	F8	PF 3/8 (Standard)									
	ZZ	Others									
⑥ User pressure range	User pressure range *1										

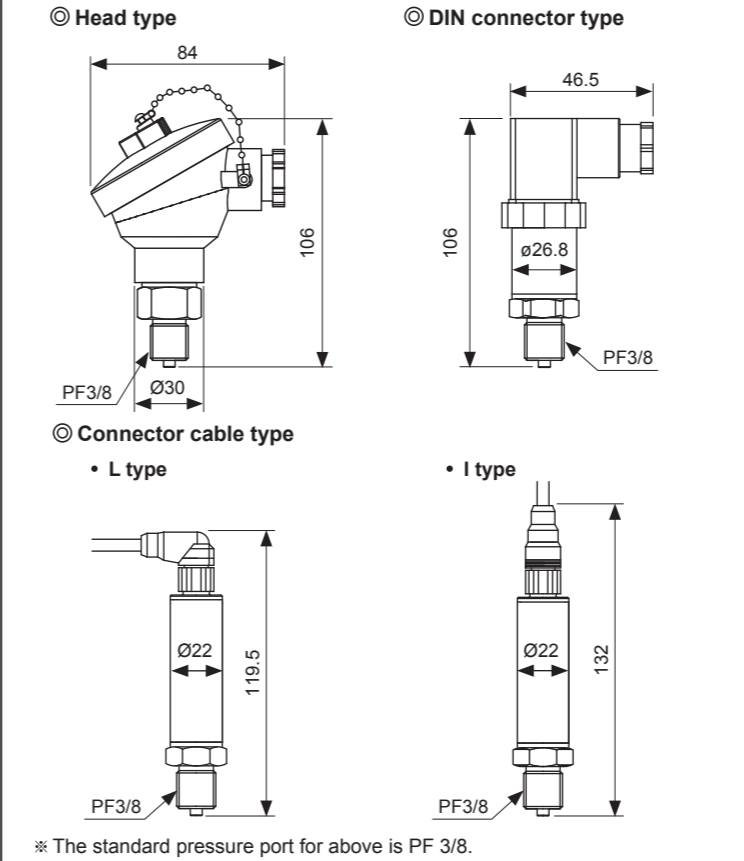
\* 1: Write the desired pressure range and it is the default of user pressure range. (Select "Z" at ④Pressure range)  
\* For ordering cable, order as CID3-2, CID3-5, CLD3-2, CLD3-5.(Sold separately)

### Specification

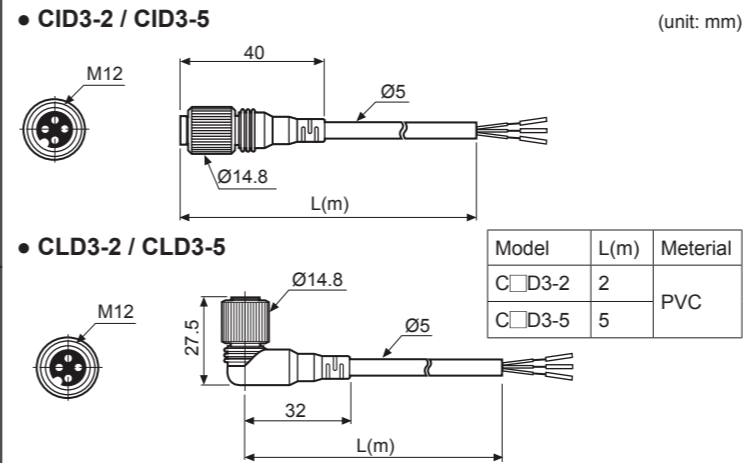
Series	TPS20	
Measured materials	Vapor, Liquid, Fluid (except corrosive environment of SUS316)	
Measurement range	-760 mmHg to 0 to 30 kg/cm <sup>2</sup> (compound pressure) 0 to 0.2 to 350 kg/cm <sup>2</sup> (gauge pressure) 0 to 1.0 to 35 kg/cm <sup>2</sup> (absolute pressure)	
Allowable over pressure	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 °C) ±0.5% F.S. (50 to 70 °C)
	Hysteresis	±0.3% F.S.
Temperature characteristics	ZERO	±0.03% F.S.
	SPAN	±0.03% F.S. (at 25 °C)
Response time	Max. 100 ms	
Pressure port	PF 3/8(standard), PT 3/8, PT 1/2	
Environment	Ambient temperature	-10 to 70 °C
	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.

### Dimensions



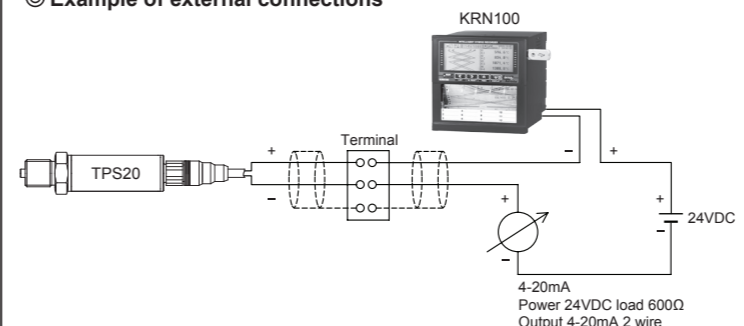
### Cable(sold separately)



### Connections

Head type		DIN connector type		Connector cable type	
Pin	Function	Pin	Function	Pin	Function
+	+	1	+	1	+
-	-	2	-	2	N-C
		3	N-C	3	F.G.
		⊕	F.G.	4	-

### Example of external connections



### 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 600Ω? Is the measuring point and transmission distance proper? Is line resistance big? (max. 600Ω)

### 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 follows.
  - Check the broken status of outside.
  - Check the pressure slot, cleanliness inside, and corrosion state.
  - Short each terminal and check the insulation resistance between the case and power.(at 100VDC, over 10MΩ)
  - Check zero, span adjustment and linearity by pressure standards.
- When removing a sensor for maintenance, follow the belows.
  - Replace an O-ring which is used once.
  - 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<sup>2</sup>), or it may cause damage to this unit.
- Tighten lever of electrical connection firmly for spinning not to enter water to cable.
- Installation environment.
  - Indoor / Outdoor
  - Altitude max. 2,000 m
  - Pollution Degree 2
  - Installation Category II

※ It may cause malfunction if above instructions are not followed.

### Major product

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connectors/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO<sub>2</sub>, Nd:YAG)
- Laser welding/soldering system
- Recorders
- Indicators
- Converters
- Controllers
- Thyristor units
- Pressure transmitters
- Temperature transmitters
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate)meters
- Display units
- Sensor controllers

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