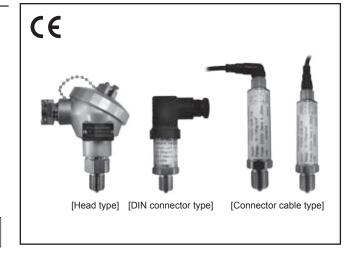
TPS20 Series

Features

- DC4-20mA analog signal (2-wire) transmission by measuring pressure of liquid, gas, and oil.
- 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 "Safety Considerations" in operation manual before using this unit.

Ordering Information

TPS20	_	G	1	5	F8	(0 to 5kgf/cm ²	
1		2	3	4	(5)	6	

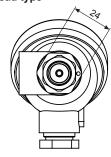
© Measurement pressure G Gauge pressure A Absolute pressure 1 Head type 2 DIN connector type 3 Connector cable type Gauge pressure Absolute pressure 1 0 to 0.2kg/fcm² — 2 0 to 0.5kg/fcm² — 3 0 to 1kg/fcm² 0 to 1kg/fcm² 4 0 to 2kg/fcm² 0 to 1kg/fcm² 5 0 to 7kg/fcm² 0 to 7kg/fcm² 6 0 to 10kg/fcm² 0 to 10kg/fcm² 7 0 to 20kg/fcm² 0 to 20kg/fcm² 8 0 to 35kg/fcm² 0 to 20kg/fcm² 9 0 to 70kg/fcm² — 6 0 to 100kg/fcm² — 7 0 to 20kg/fcm² 0 to 35kg/fcm² 9 0 to 70kg/fcm² — 6 0 to 100kg/fcm² — 7 0 to 20kg/fcm² — 8 0 to 35kg/fcm² — 9 0 to 70kg/fcm² — C 0 to 200kg/fcm² — F 0 to 30kg/fcm² — M -760mmHg to 0kg/fcm² — V -760mmHg to 10kg/fcm² — V -760mmHg to 10kg/fcm² — Y		Description	Description				
A Absolute pressure	① Item	TPS20					
A	Massurament pressure	G					
② Cable 2 DIN connector type 3 Connector cable type Absolute pressure Absolute pressure 1 0 to 0.2kgf/cm² — 2 0 to 0.5kgf/cm² — 3 0 to 1kgf/cm² 0 to 1kgf/cm² 4 0 to 2kgf/cm² 0 to 2kgf/cm² 5 0 to 7kgf/cm² 0 to 10kgf/cm² 6 0 to 10kgf/cm² 0 to 10kgf/cm² 7 0 to 20kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² — 1 0 to 30kgf/cm² — 1 0 to 30kgf/cm² — 1 0 to 35kgf/cm² — 1 0 to 35kgf/cm² — 2 0 to 35kgf/cm² — 3 0 to 35kgf/cm² — 4 0 to 35kgf/cm² — 6 0 to 35kgf/cm² — 7 <td>② Measurement presssure</td> <td>A</td> <td colspan="5">Absolute pressure</td>	② Measurement presssure	A	Absolute pressure				
3 Connector cable type		1	Head type				
Gauge pressure Absolute pressure 1 0 to 0.2kgf/cm² —— 2 0 to 0.5kgf/cm² —— 3 0 to 1kgf/cm² 0 to 1kgf/cm² 4 0 to 2kgf/cm² 0 to 2kgf/cm² 5 0 to 7kgf/cm² 0 to 2kgf/cm² 6 0 to 10kgf/cm² 0 to 10kgf/cm² 7 0 to 20kgf/cm² 0 to 10kgf/cm² 8 0 to 35kgf/cm² 0 to 20kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² —— C 0 to 200kgf/cm² —— C 0 to 200kgf/cm² —— H 0 to 350kgf/cm² —— H 0 to 350kgf/cm² —— M -760mmHg to 0kgf/cm² —— Q -760mmHg to 1kgf/cm² —— V -760mmHg to 10kgf/cm² —— X -760mmHg to 20kgf/cm² —— Y -760mmHg to 35kgf/cm² —— P R R3/8 (with adapter, PT) P R R3/8 (with adapter, PT) P R R3/8 (standard, PF) ZZ Others	③ Cable	2	DIN connector type				
1 0 to 0.2kgf/cm² — 2 0 to 0.5kgf/cm² — 3 0 to 1kgf/cm² 0 to 1kgf/cm² 4 0 to 2kgf/cm² 0 to 2kgf/cm² 5 0 to 7kgf/cm² 0 to 7kgf/cm² 6 0 to 10kgf/cm² 0 to 10kgf/cm² 7 0 to 20kgf/cm² 0 to 20kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² — C 0 to 200kgf/cm² — F 0 to 300kgf/cm² — F 0 to 300kgf/cm² — H 0 to 350kgf/cm² — H 0 to 350kgf/cm² — M -760mmHg to 0kgf/cm² — Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — Y -760mmHg to 20kgf/cm² — Y -760mmHg to 35kgf/cm² — Q -760mmHg to 35kgf/cm² — V -760mmHg to 35kgf/cm² — Y -760m		3	Connector cable type				
2 0 to 0.5kgf/cm² — 3 0 to 1kgf/cm² 0 to 1kgf/cm² 4 0 to 2kgf/cm² 0 to 2kgf/cm² 5 0 to 7kgf/cm² 0 to 7kgf/cm² 6 0 to 10kgf/cm² 0 to 10kgf/cm² 7 0 to 20kgf/cm² 0 to 20kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² — 6 0 to 10kgf/cm² 0 to 35kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² — 6 0 to 300kgf/cm² — 7 0 to 200kgf/cm² — 8 0 to 300kgf/cm² — 9 0 to 300kgf/cm² — 10 to 300kgf/cm² — 11 0 to 300kgf/cm² — 12 0 -760mmHg to 0kgf/cm² — 13 0 to 300kgf/cm² — 14 0 to 350kgf/cm² — 15 0 to 300kgf/cm² — 16 0 -760mmHg to 1kgf/cm² — 17 0 -760mmHg to 7kgf/cm² — 18 0 -760mmHg to 20kgf/cm² — 19 0 -760mmHg to 35kgf/cm² — 20 0 thers 21 Others 22 Others 23 Others			Gauge pressure	Absolute pressure			
3		1	0 to 0.2kgf/cm ²	_			
4 0 to 2kgf/cm² 0 to 2kgf/cm² 5 0 to 7kgf/cm² 0 to 7kgf/cm² 6 0 to 10kgf/cm² 0 to 10kgf/cm² 7 0 to 20kgf/cm² 0 to 20kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² —— A 0 to 100kgf/cm² —— C 0 to 200kgf/cm² —— F 0 to 300kgf/cm² —— H 0 to 350kgf/cm² —— H 0 to 350kgf/cm² —— M -760mmHg to 0kgf/cm² —— O -760mHg to 1kgf/cm² —— Q -760mHg to 1kgf/cm² —— X -760mmHg to 20kgf/cm² —— X -760mmHg to 20kgf/cm² —— Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		2	0 to 0.5kgf/cm ²	_			
\$ Pressure range 5		3	0 to 1kgf/cm ²	0 to 1kgf/cm ²			
6 0 to 10kgf/cm² 0 to 20kgf/cm² 7 0 to 20kgf/cm² 0 to 20kgf/cm² 8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² — A 0 to 100kgf/cm² — C 0 to 200kgf/cm² — F 0 to 300kgf/cm² — H 0 to 350kgf/cm² — H 0 to 350kgf/cm² — M -760mmHg to 0kgf/cm² — O -760mmHg to 1kgf/cm² — Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — X -760mmHg to 35kgf/cm² — Y -760mmHg to 35kgf/cm² — X -760mmHg to 35kgf/cm² — X -760mmHg to 35kgf/cm² — Y -760mmHg to 35kgf/cm² — X -760mmHg to 35kgf		4	0 to 2kgf/cm ²	0 to 2kgf/cm ²			
Pressure range		5	0 to 7kgf/cm ²	0 to 7kgf/cm ²			
8 0 to 35kgf/cm² 0 to 35kgf/cm² 9 0 to 70kgf/cm² —— A 0 to 100kgf/cm² —— C 0 to 200kgf/cm² —— F 0 to 300kgf/cm² —— H 0 to 350kgf/cm² —— M -760mmHg to 0kgf/cm² —— O -760mmHg to 1kgf/cm² —— Q -760mmHg to 7kgf/cm² —— V -760mmHg to 10kgf/cm² —— X -760mmHg to 20kgf/cm² —— X -760mmHg to 20kgf/cm² —— Z Others P2 R1/2 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		6	0 to 10kgf/cm ²	0 to 10kgf/cm ²			
9 0 to 70kgf/cm² — A 0 to 100kgf/cm² — C 0 to 200kgf/cm² — F 0 to 300kgf/cm² — H 0 to 350kgf/cm² — M -760mmHg to 0kgf/cm² — O -760mmHg to 1kgf/cm² — Q -760mmHg to 7kgf/cm² — X -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — X -760mmHg to 35kgf/cm² — T -760mmHg to 35kgf/cm² —		7	0 to 20kgf/cm ²	0 to 20kgf/cm ²			
 ③ Pressure range A 0 to 100kgf/cm² C 0 to 200kgf/cm² F 0 to 300kgf/cm² H 0 to 350kgf/cm² M -760mmHg to 0kgf/cm² O -760mmHg to 1kgf/cm² Q -760mmHg to 7kgf/cm² V -760mmHg to 10kgf/cm² X -760mmHg to 10kgf/cm² X -760mmHg to 20kgf/cm² Y -760mmHg to 35kgf/cm² Y -760mmHg to 35kgf/cm² P 2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others 		8	0 to 35kgf/cm ²	0 to 35kgf/cm ²			
C 0 to 200kgf/cm² — H 0 to 300kgf/cm² — H 0 to 350kgf/cm² — M -760mHg to 0kgf/cm² — O -760mHg to 1kgf/cm² — O -760mHg to 1kgf/cm² — O -760mHg to 1kgf/cm² — O -760mHg to 10kgf/cm² — O -760mHg to 35kgf/cm² — O -760mHg to 35		9	0 to 70kgf/cm ²	_			
F 0 to 300kgf/cm² — H 0 to 350kgf/cm² — M -760mmHg to 0kgf/cm² — O -760mmHg to 1kgf/cm² — Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — X -760mmHg to 35kgf/cm² — Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others	④ Pressure range	А	0 to 100kgf/cm ²	_			
H		С	0 to 200kgf/cm ²	_			
M -760mmHg to 0kgf/cm² — O -760mmHg to 1kgf/cm² — Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — Y -760mmHg to 35kgf/cm² — Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		F	0 to 300kgf/cm ²	_			
O -760mmHg to 1kgf/cm² — Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — Y -760mmHg to 35kgf/cm² — Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others COTHERS P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) P8 R3/8 (with adapter, PT)		Н	0 to 350kgf/cm ²	_			
Q -760mmHg to 7kgf/cm² — V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others Others		М	-760mmHg to 0kgf/cm ²	_			
V -760mmHg to 10kgf/cm² — X -760mmHg to 20kgf/cm² — Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		0	-760mmHg to 1kgf/cm ²	_			
X		Q	-760mmHg to 7kgf/cm ²	_			
Y -760mmHg to 35kgf/cm² — Z Others P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		V	-760mmHg to 10kgf/cm ²	_			
Z Others		X	-760mmHg to 20kgf/cm ²	_			
P2 R1/2 (with adapter, PT) P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		Υ	-760mmHg to 35kgf/cm ² —				
(a) Pressure port P8 R3/8 (with adapter, PT) F8 G3/8 (standard, PF) ZZ Others		Z	Others				
§ Pressure port F8 G3/8 (standard, PF) ZZ Others		P2	R1/2 (with adapter, PT)				
ZZ Others	© Draggura no t	P8	R3/8 (with adapter, PT)				
	© Pressure poπ	F8	G3/8 (standard, PF)				
© Hear proceure range		ZZ	Others				
a osei hiessuie iailike	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 @Pressure range) ** For ordering cable, order as CID3-2, CID3-5, CLD3-2, CLD3-5. (sold separately)

Pressure Transmitter

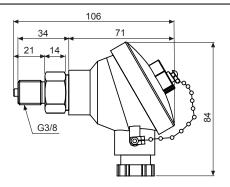
Dimensions

Head type



• DIN connector type





A. Recorders

B. Indicators

(unit: mm)

C. Converters

D. Controllers

E. Thyristor Power Controllers

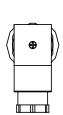
F. Pressure Transmitters

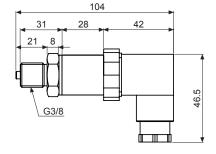
G. Temperature



H. Accessories



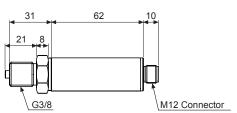




• Connector cable type







TPS30

TPS20

KT-302H

PTF30

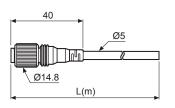
(unit: mm)

Connection Cable (Sold Separately)

XThe standard pressure port for above is G3/8.

• CID3-2 / CID3-5

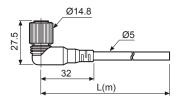




Model	L (m)	Meterial	
CID3-2	2	PVC	
CID3-5	5	PVC	

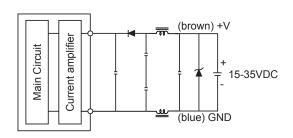
• CLD3-2 / CLD3-5





Model	L (m)	Meterial
CLD3-2	2	PVC
CLD3-5	5	TPVC

Connections



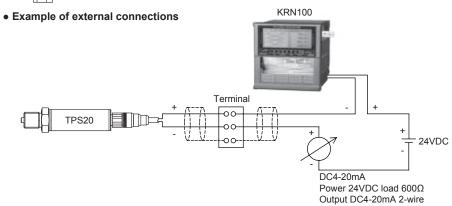
TPS20 Series

Connector

Head type		DIN connector type			Connector cable type		
	Pin		Pin	Function		Pin	Function
	_		1	+		1	+
	*		2	-		2	N-C
A DITT			3	N-C		3	F.G.
	-		(+)	F.G.		4	-

 $\ensuremath{\mathbb{X}}$ In case of head type, remove the top cover.





Specifications

Series		TPS20						
Pressure type		Gauge pressure	Absolute pressure	Compound pressure				
Rated pressur	re range	0 to 0.2 to 350kgf/cm ²	0 to 1.0 to 35kgf/cm ²	-760mmHg to 0 to 30kgf/cm ²				
Max. pressure	e range	300% of max. span						
		Liquid, gas, oil (except corrosive	environment of stainless steel type	316)				
Power supply		15-35VDC==						
Permissible vo	oltage range	90 to 110% of rated voltage						
Current consu	imption	Max. 50mA						
Response tim	е	Max. 100ms						
Protection circ	cuit	Reverse polarity protection circuit						
Current outpu	t	DC4-20mA						
Linearity		±0.3% F.S. (-10 to 50°C), ±0.5%F	S. (50 to 70°C)					
Hysteresis		±0.3% F.S.						
Temp. Zero S	hift	±0.03% F.S.						
Temp. Span Shift		±0.03% F.S. (at 25°C)						
Load resistance		Max. 600Ω						
Insulation resistance		Over 100MΩ (at 500VDC megger)						
Dielectric strength		500VAC 50/60Hz for 1 minute						
Vibration		1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours						
Shock		95m/s ²						
Tightening tor	que	Industrial plug over 5N						
Pressure port		G3/8t (standard), R3/8, R1/2						
Environment	Ambient temp.	-10 to 70°C, storage: -10 to 70°C						
Liiviioiiiieiit	Ambient humi.	5 to 95% RH, storage: 5 to 95% R	RH					
Materials		Sealing, diaphragm, connection: stainless steel type 316, O-ring: fluoro rubber						
Connection		+, -						
Case structure	e	Drip-proof structure						
Approval		C€						
Weight ^{×1}		Approx. 350g (approx. 320g) (based on head type)						

 $[\]ensuremath{\mathbb{X}}$ 1: The weight includes packaging. The weight in parenthesis is for unit only.

X F.S.(Full Scale): It is rated pressure range.

X Environment resistance is rated at no freezing or condensation.

Pressure Transmitter

Troubleshooting

Error	Troubleshooting	
No outputs	Check the power supply. Check the polarity (+, -) when wiring cable. Check the connection part.	
Abnormally fluctuating output	Check the power supply. Check the supplied pressure. Check the pressure line.	-
Out of zero point output value	Check the power supply. Check the load resistive value of current output type for a receiver is over 600Ω . Check the measuring point and transmission distance. Check the line resistance is below 600Ω .	

B. Indicators C. Converters D. Controllers E. Thyristor

A. Recorders

Controllers F. Pressure Transmitters

G. Temperature Transmitters

H. Accessories

Proper Usage

- When installing the unit on pipe line, use t he hexagon part of connections not to turn the unit with a pipe wrench. Do not use the unit with strong vibrations.
- This unit is manufactured with precisely. If you drop or shock the unit, it may lose the function. Please treat the unit carefully.
- Store the 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 below instructions.
 - 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 100VDC, over 10MΩ)
 - ④ Check zero, span adjustment and linearity by pressure standards.
- When removing a sensor for maintenance, follow the below instructions.
 - 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, max. 7.2mm)

- 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.
- · Connect the power with the crimp terminals.
- Switch or circuit breaker should be installed nearby users for convenient control.
- Do not use the unit near the high frequency instruments (high frequency welding machine & sewing machine, large capacity SCR controller).
- The unit cannot be repaired due to disassembled structure.
- The unit is fixed with bolt and nut at the both sides of case. Do not press excessive load (approx. 300kg/cm²), or it may cause damage to the unit.
- Do not pull the cables with over 30N of tension force.
- Tighten the cable connection part firmly not to enter water to the cable.
- This product may be used in the following environments.
 - ① Indoor / Outdoor
 - ② Altitude max. 2,000m
 - 3 Pollution degree 2
 - ④ Installation category II

We are not responsible for any damages and claims for careless. Must read the proper usage. TPS20

KT-302H

PTF30