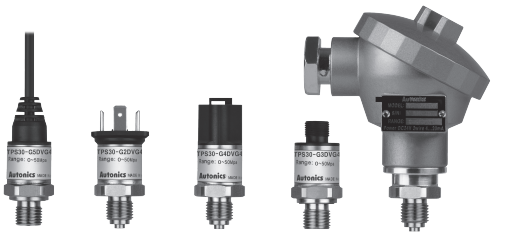
Stainless Steel Pressure Transmitter

▣ Features

- Robust build allows high or low pressure measurement in high and low temperature environments.
  : high pressure (0 to 60MPa), low pressure (0 to 2 MPa)
  : temperature range (-40 to 125℃) (may vary by model)
- For diverse applications including packaging machines, heavy machinery, factories, and shipbuilding.
- Pressure measurement of any gas, liquid, or oil.
- 316L stainless steel diaphragm for high corrosion resistance.
- Compact size allows easy installation in tight or limited spaces.
- 1ms high-speed response rate.
- Analog output: Voltage (1-5 VDC), Current (DC 4-20 mA)
- Built-in reverse polarity protection circuit.
- Various connector types
  : cable type, DIN43650-A connector type,
  DT04-3P connector type, M12 connector type, head type.
- Available thread sizes: G3/8, G1/4, R1/2
- Protection structure: IP67 (IEC standard)
  (except DIN43650-A connector type: IP65)

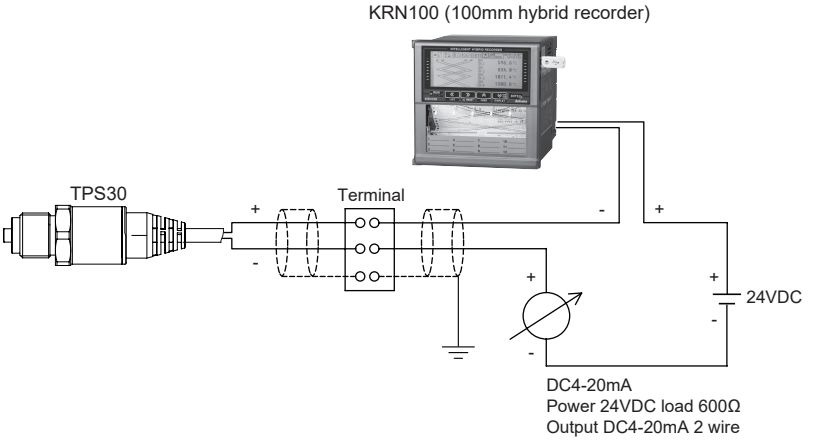


Cable type | DIN43650-A connector type | DT04-3P connector type | M12 connector type | Head type

⚠ Please read "Safety Considerations" in the instruction manual before using.

CE

▣ Example of External Connections



■ Ordering Information

TPS30 – **G** **2** **9** **V** **G8** – **00** **(0 to 0.5MPa)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

	Description		
①Item	TPS30	Pressure Transmitter	
②Measurement pressure	G	Gauge pressure, sealed gauge pressure※1	
	A	Absolute pressure	
③Cable	1	Head type	
	2	DIN43650-A connector type	
	3	M12 connector type	
	4	DT04-3P connector type	
	5	Cable type	
④Pressure range		Gauge pressure	Absolute pressure
	3	0 to 0.1MPa	0 to 0.1MPa
	4	0 to 0.2MPa	0 to 0.2MPa
	5	0 to 0.7MPa	0 to 0.7MPa
	6	0 to 1MPa	0 to 1MPa
	7	0 to 2MPa	0 to 2MPa
	8※2	0 to 3.5MPa	—
	9※2	0 to 5MPa	—
	A※2	0 to 10MPa	—
	B※2	0 to 20MPa	—
	C※2	0 to 40MPa	—
	D※2	0 to 50MPa	—
	E※2	0 to 60MPa	—
		Sealed gauge pressure※1	
	F	-0.1 to 0MPa	
	G	-0.1 to 0.1MPa	
	H	-0.1 to 0.7MPa	
	J	-0.1 to 1MPa	
	K	-0.1 to 2MPa	
	Z	Others	
⑤Output type	V	Voltage (1-5VDC) output	
	A	Current (DC4-20mA) output	
⑥Pressure port	G8	G3/8 (PF)(EN387)	
	G4	G1/4 (PF)(EN387)	
	R2	R1/2 (PT)(DIN3852)	
	N4	NPT1/4 (DIN3852)	
	ZZ※3	Others (option)	
⑦Option (connector cable)※4	00	Not used	
	2I	"I" type 2m	
	2L	"L" type 2m	
	5I	"I" type 5m	
	5L	"L" type 5m	
⑧User pressure range		User pressure range※5	

※1: The pressure is sealed gauge pressure. The unit is sealed structure. It is based on atmospheric pressure 101.3kPa (1.013bar).
※2: G1/4 is the standard pressure port. For the other pressure ranges, G3/8, R1/2 are standard pressure ports.
※3: The option ports are sold separately. In case of large amount ordering, contact the Autonics for manufacturing the requested pressure port.
※4: Only for M12 connector type.
※5: Write the desired pressure range and it is the default of user pressure range. (select "Z" at ④Pressure range)

■ Specifications

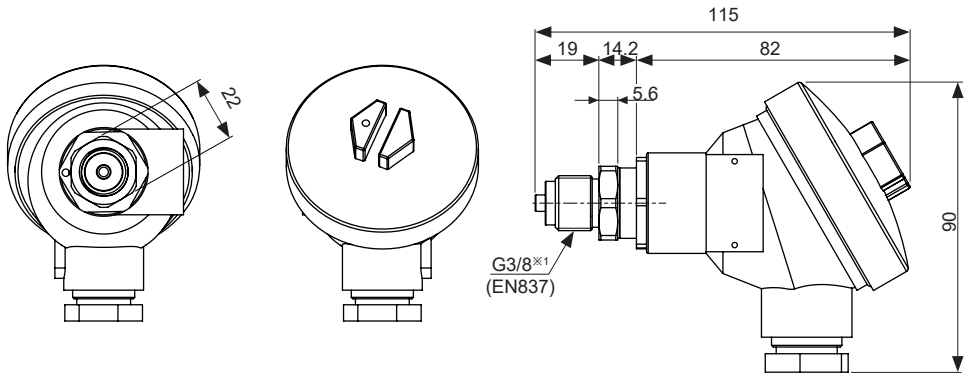
Series			TPS30															
Pressure type			Gauge pressure, absolute pressure					Sealed gauge pressure※1					Gauge pressure						
Rated pressure range (MPa)			0 to 0.1	0 to 0.2	0 to 0.7	0 to 1	0 to 2	-0.1 to 0	-0.1 to 0.1	-0.1 to 0.7	-0.1 to 1	-0.1 to 2	0 to 3.5	0 to 5	0 to 10	0 to 20	0 to 40	0 to 50	0 to 60
Expanded analog output range (MPa)			0 to 0.11	0 to 0.22	0 to 0.77	0 to 1.1	0 to 2.2	-0.1 to 0.01	-0.1 to 0.12	-0.1 to 0.78	-0.1 to 1.11	-0.1 to 2.21	0 to 3.85	0 to 5.5	0 to 11	0 to 22	0 to 44	0 to 55	0 to 66
Max. pressure range (MPa)			0.6	0.6	3	3	3	0.6	0.6	3	3	3	10	20	50	80	120	120	120
Burst pressure (MPa)			0.6	0.6	3	3	3	0.6	0.6	3	3	3	15	30	75	120	160	160	160
Measured materials			Liquid, gas, oil (inappropriate to corrosion environment for stainless steel 316L)																
Power supply			・Voltage output type: 8-36VDC⎓ (ripple P-P: max. 10%) ・Current output type: 11-36VDC⎓ (ripple P-P: max. 10%)																
Permissible voltage range			90 to 110% of rated voltage																
Current consumption			・Voltage output type: max. 20mA ・Current output type: max. 30mA																
Response time			Max. 1ms																
Protection circuit			Reverse polarity protection circuit																
Output type			・Voltage output type: 1-5VDC⎓ ・Current output type: DC4-20mA																
Compensation temperature			-10 to 80℃										0 to 80℃						
Accuracy			Max. ±0.5% F.S. (including linearity, hysteresis, reproducibility)																
Linearity			Max. ±0.2% F.S.																
Hysteresis			Max. ±0.2% F.S.																
Temp. Zero Shift			Max. ±0.1% F.S./10℃ (standard), max. ±0.25% F.S./10℃ (max.)																
Temp. Span Shift			Max. ±0.1% F.S./10℃ (standard), max. ±0.25% F.S./10℃ (max.)																
Temperature characteristics			-										-25 to 100℃: max. ±1.5% F.S. -40 to 125℃: max. ±2.5% F.S.						
Load resistance			Current output type: max. 700Ω (supplying 24VDC)																
Dielectric strength			500VAC 50/60Hz for 1 minute																
Insulation resistance			Over 100MΩ (at 500VDC megger)																
Environment	Ambient temp.	Voltage output	・Head type, DIN43650-A connector type, M12 connector type, DT04-3P connector type: -40 to 125℃, storage: -40 to 125℃ ・Cable type: -40 to 80℃, storage: -40 to 80℃																
		Current output	・Head type, DIN43650-A connector type, M12 connector type, DT04-3P connector type: -40 to 85℃, storage: -40 to 125℃ ・Cable type: -40 to 80℃, storage: -40 to 80℃																
	Ambient humidity		35 to 85%RH																
	Fluid temp.		-40 to 125℃																
Vibration			10g, 20 to 2,000Hz										20g, 20 to 2,000Hz						
Shock			100g/6ms										500g/1ms						
Tightening torque			Max. 10N·m																
Protection structure			・Head type, M12 connector type, DT04-3P connector type, cable type: IP67 (IEC standard) ・DIN43650-A connector type: IP65 (IEC standard)																
Material			Stainless steel 316L (head part of head type: aluminium diecasting), connector: polybutylene terephthalate G30, water-proof rubber: silicon																
Connection			・Voltage output type: +, -, Vout ・Current output type: +, -																
Approval			CE																
Weight※2			・Head type: approx. 330g (approx. 250g) ・DIN43650-A connector type, M12 connector type, DT04-3P connector type: approx. 130g (approx. 50g) ・Cable type: approx. 200g (approx. 120g)																

※1: The sensor is sealed structure. It is based on atmospheric pressure 101.3kPa (1.013bar).
※2: The weight includes packaging. The weight in parenthesis is for unit only.
※Environment resistance is rated at no freezing or condensation.

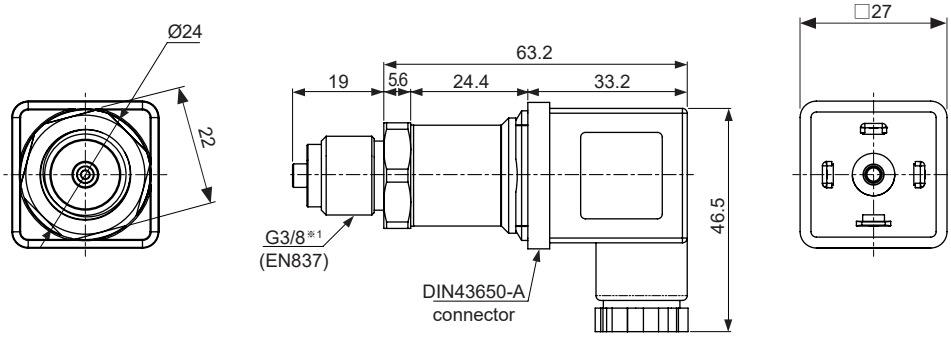
▣ Dimensions

(unit: mm)

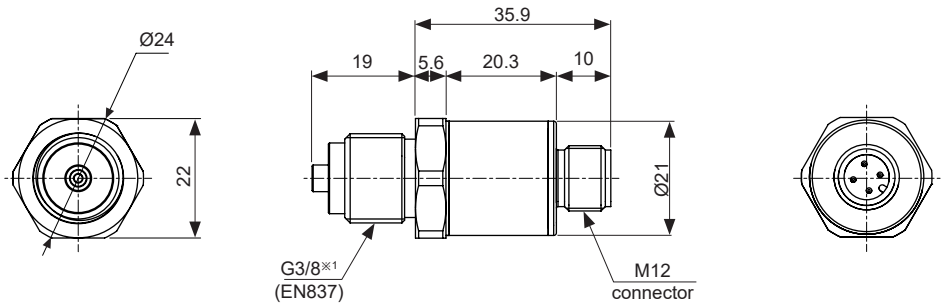
● Head type



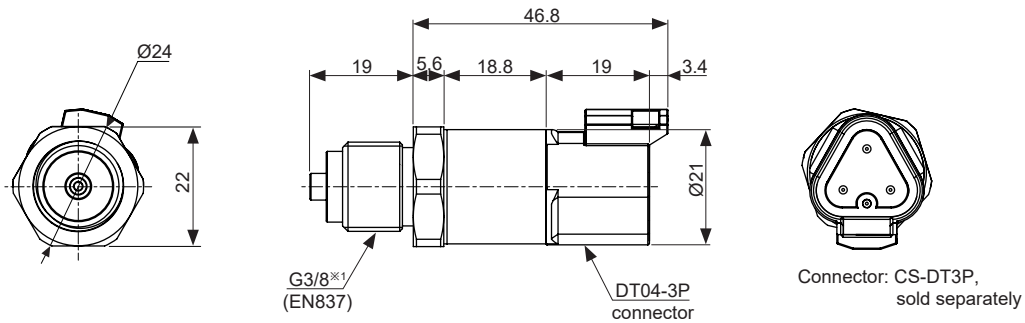
● DIN43650-A connector type



● M12 connector type



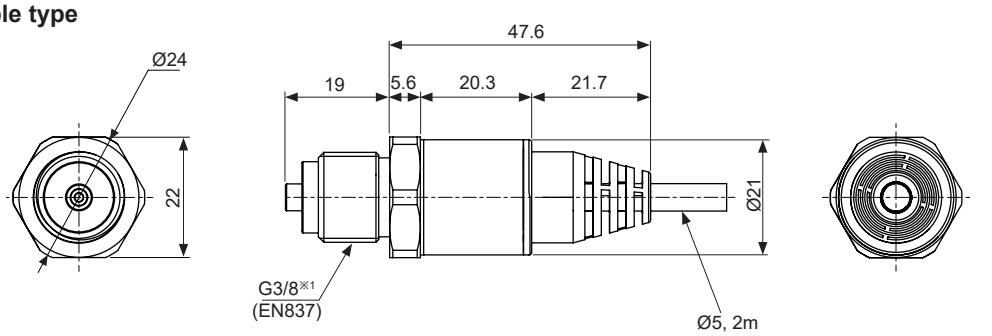
● DT04-3P connector type



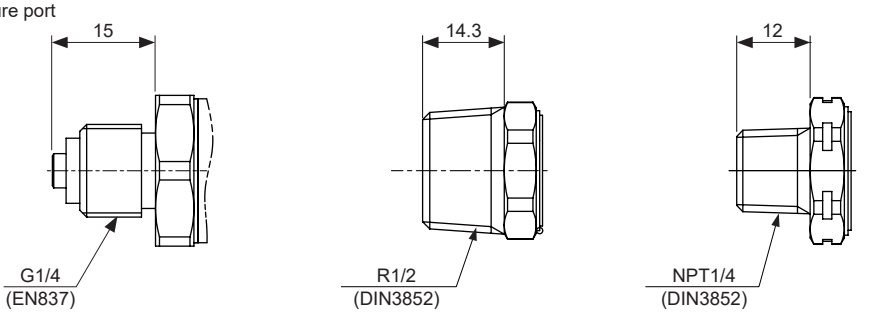
▣ Dimensions

(unit: mm)

● **Cable type**



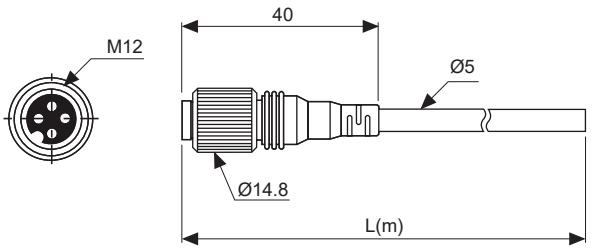
※1: Pressure port



▣ Connection Cable (Sold Separately)

(unit: mm)

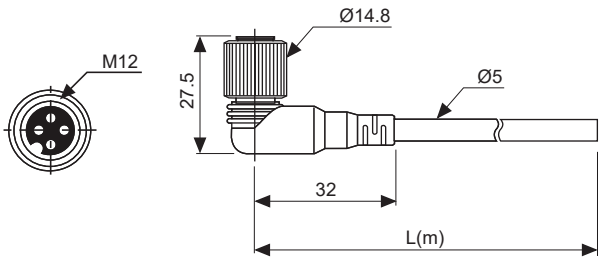
● **CID3-2/CID3-5**



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

※Only for M12 connector.

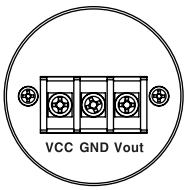
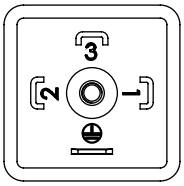
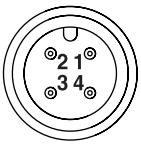
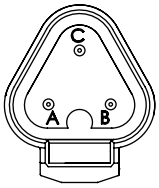
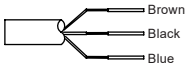
● **CLD3-2/CLD3-5**



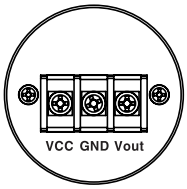
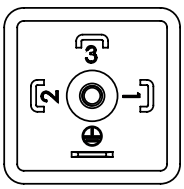
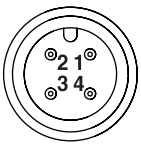
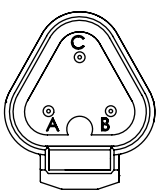
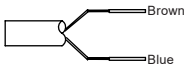
Model	L(m)	Material
CLD3-2	2	PVC
CLD3-5	5	

▣ Connectors

● Voltage output type

Pin type	Head type	DIN43650-A connector type	M12 connector type	DT04-3P connector type	Cable type
					
Func.	Pin				
+	+	1	1	A	Brown
-	-	⏚	3	C	Blue
Vout	Vout	2	4	B	Black
N·C	—	3	2	—	—

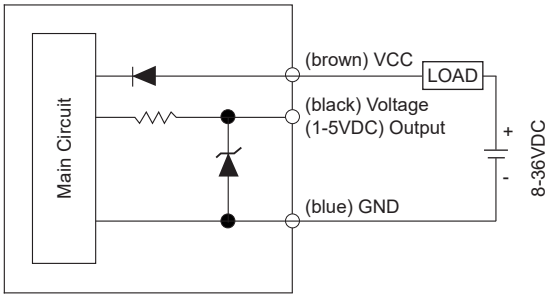
● Current output type

Pin type	Head type	DIN43650-A connector type	M12 connector type	DT04-3P connector type	Cable type
					
Func.	Pin				
+	+	1	1	A	Brown
-	-	⏚	3	C	Blue
N·C	Vout	2, 3	2, 4	B	—

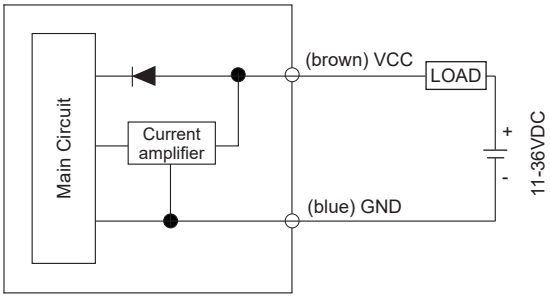
※In case of head type, remove the top cover.

▣ Connections

● Voltage (1-5VDC) output type



● Current (DC4-20mA) output type



※Cable color is only for cable type.

▣ Troubleshooting

Error	Troubleshooting
No outputs	Check the power supply. Check the polarity (+, -) when wiring the 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 700Ω. (when supplying 24VDC) Check the measuring point and transmission distance. Check the line resistance is below 700Ω.

▣ Proper Usage

- 8-36VDC, 11-36VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- When installing the unit on pipe line, use the hexagon part of connections not to turn the unit with a pipe wrench. Do not use the unit with strong vibrations.
- The 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 500VDC, over 100MΩ)
  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.
- 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/cm^2), 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 Indoors / Outdoors
  ② Altitude max. 2,000m
  ③ Pollution degree 2
  ④ Installation category II