

M12 5-pin Connector Distribution Boxes

PT Series
INSTRUCTION MANUAL

TCD210176AB

Autonics

Thank you for choosing our Autonics product.
Read and understand the instruction manual and manual thoroughly before using the product.
For your safety, read and follow the below safety considerations before using.
For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
Keep this instruction manual in a place where you can find easily.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.
Follow Autonics website for the latest information.

Safety Considerations

- Observe all ‘Safety Considerations’ for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.(e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, economic loss or fire.
02. Do not use the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.
Failure to follow this instruction may result in explosion or fire.
03. Do not connect, repair, or inspect the unit while connected to a power source.
Failure to follow this instruction may result in fire.
04. Check ‘Connections’ before wiring.
Failure to follow this instruction may result in fire.
05. Do not disassemble or modify the unit.
Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage.

01. Use the unit within the rated specifications.
Failure to follow this instruction may result in fire or product damage.
02. Use a dry cloth to clean the unit, and do not use water or organic solvent.
Failure to follow this instruction may result in fire.
03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.
Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in ‘Cautions during Use’. Otherwise, it may cause unexpected accidents.
- 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Since sensor distribution box is only for DC, do not use for AC.
- Connect sensor after checking whether output is NPN or PNP.
- Operate sensor after connecting load.
- Tighten the mounting screw or connector with following tightening torque.
 - Mounting screw (M4): max. 1.2 N・m
 - M12 connector: 0.6 to 0.7 N・m
 - M23 connector: 2.0 to 2.5 N・m
- Do not pull the cable which is connected to the body.
- Do not put an object on the body.
- It is hard to maintain protection structure, when consistently using the product with external power applied to the connector joint.
- Keep away from high voltage lines or power lines to prevent inductive noise.
In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line.
Do not use near the equipment which generates strong magnetic force or high frequency noise.
- If transeiver and sensor distribution box are installed closely, malfunction can occur.
- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in ‘Specifications’)
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation category II

Sold Separately

- Protection cover (CAP-PT)
- Waterproof cover (P96-M12-1)
- M23 cable connector

Product Components

- Product
- Instruction manual
- Nameplate sticker
- Bolt × 4
- Nut × 4

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

PT ① - ② ③ ④ ⑤ - ⑥

- ① No. of ports
4: 4
6: 6
8: 8
- ② External signal connection
No mark: Cable type
C: Connector type
S: Spring terminal type
P: Pluggable screw terminal type
- ③ Output type
3D: DC 3-wire (1 signal)
4D: DC 4-wire (2 signal)
- ④ Input logic
N: NPN
P: PNP
- ⑤ Case color
5: Blue
5K: Black
- ⑥ Cable length (cable type)
5: 5 m
10: 10 m
- ⑦ Hood cover (Pluggable screw terminal type)
No mark: Hood cover included
B: Hood cover excluded

Specifications

■ Cable type

Model	PT4-3D□5-□	PT4-4D□5-□	PT6-3D□5-□	PT6-4D□5-□	PT8-3D□5-□	PT8-4D□5-□
No. of port	4	4	6	6	8	8
Output type ⁰¹⁾	3-wire (1 signal)	4-wire (2 signal)	3-wire (1 signal)	4-wire (2 signal)	3-wire (1 signal)	4-wire (2 signal)
Output logic ⁰¹⁾	NPN/PNP model					
Material	Case: PBT (G15 %), name plate: PC, general cable (black): PVC					
Certification	CE EMC					
Unit weight (packaged) ⁰²⁾	≈ 900 g (≈ 1100 g)	≈ 1200 g (≈ 1400 g)	≈ 930 g (≈ 1130 g)	≈ 1230 g (≈ 1430 g)	≈ 960 g (≈ 1160 g)	≈ 1260 g (≈ 1460 g)

01) Connect the sensor to the proper output type and logic.
02) It is based on 5 m cable.

■ Connector type

Model	PT4-C3D□5	PT4-C4D□5	PT6-C3D□5	PT6-C4D□5	PT8-C3D□5	PT8-C4D□5
No. of port	4	4	6	6	8	8
Output type ⁰¹⁾	3-wire (1 signal)	4-wire (2 signal)	3-wire (1 signal)	4-wire (2 signal)	3-wire (1 signal)	4-wire (2 signal)
Output logic ⁰¹⁾	NPN/PNP model					
Material	Case: PBT (G15 %), name plate: PC, general cable (black): PVC					
Certification	CE EMC					
Unit weight (packaged)	≈ 120 g (≈ 230 g)	≈ 125 g (≈ 235 g)	≈ 150 g (≈ 260 g)	≈ 155 g (≈ 265 g)	≈ 180 g (≈ 290 g)	≈ 185 g (≈ 295 g)

01) Connect the sensor to the proper output type and logic.

■ Spring terminal type

Model	PT4-S3D□	PT6-S3D□	PT8-S3D□
No. of port	4	6	8
Output type ⁰¹⁾	3-wire (1 signal)		
Output logic ⁰¹⁾	NPN/PNP model		
Material	Case: PBT (G15 %), name plate: PC, cover: PBT (G15 %), cover bolt: PA6 (G15 %)		
Applicable cable out diameter	10.5 mm ± 0.3		
Certification	CE EMC		
Unit weight (packaged)	≈ 140 g (≈ 270 g)	≈ 165 g (≈ 292 g)	≈ 190 g (≈ 314 g)

01) Connect the sensor to the proper output type and logic.

■ Pluggable screw terminal type

Model	PT4-P3D□□-□	PT6-P3D□□-□	PT8-P3D□□-□
No. of port	4	6	8
Output type ⁰¹⁾	3-wire (1 signal)		
Output logic ⁰¹⁾	NPN/PNP model		
Material	Case: PBT (G15 %), name plate: PC, cover: PBT (G15 %), cover bolt: PA6 (G15 %)		
Applicable cable out diameter	10.5 mm ± 0.3		
Certification	CE EMC		
Unit weight (packaged)	≈ 150 g (≈ 280 g)	≈ 175 g (≈ 302 g)	≈ 210 g (≈ 334 g)

01) Connect the sensor to the proper output type and logic.

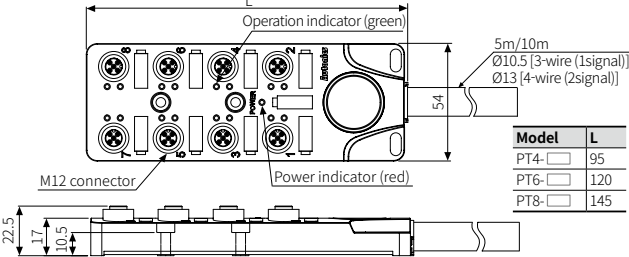
Power supply	12-24 VDC≡
Rated current	• Cable type / connector type: 2 A (per signal), 4 A (per port), 10 A (body) • Spring / pluggable screw terminal type: 2 A (per signal), 2 A (per port), 7 A (body)
Leakage current	≤ 0.5 mA (only applicable for the cable type / connector type)
Current consumption	≤ 5 mA
Connection life cycle	≥ 200 operations
Insulation resistance	≥ 100 MΩ (500 VDC≡ megger)
Dielectric strength	500 VAC~ 50/60 Hz for 1 minute
Vibration	3 mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 2 hours
Shock	500 m/s ² (≈ 50 G) X, Y, Z in each X, Y, Z direction for 3 times
Indicator	Power indicator: red / operation indicator: green
Ambient temperature	-25 to 75 °C, storage: -30 to 80 °C (a non freezing or condensation environment)
Ambient humidity	35 to 95 %RH, storage: 35 to 95 %RH (a non freezing or condensation environment)
Protection structure ⁰¹⁾	• With connector / waterproof cover: IP67 (IEC standard) • With protection cover: IP52 (IEC standard)

01) This is not applicable when connectors and protection/waterproof covers are not mounted.

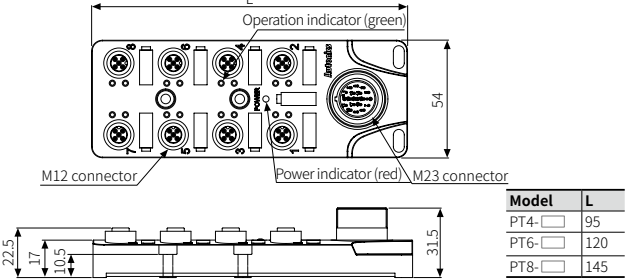
Dimensions

- Unit: mm, For the detailed drawings, follow the Autonics website.
- It is based on the 8-port model.

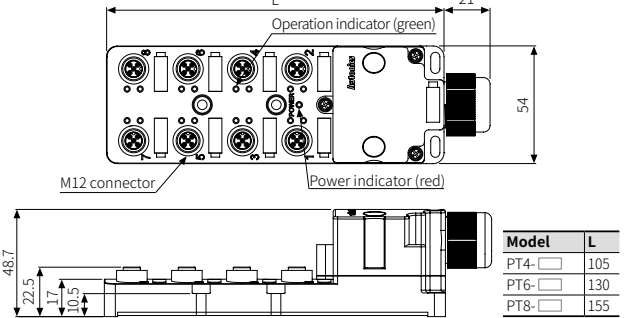
■ Cable type



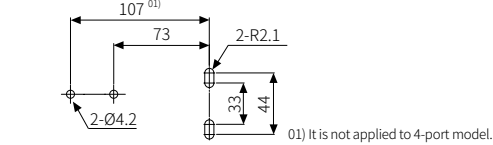
■ Connector type



■ Spring / Pluggable screw terminal type



■ Mounting hole



01) It is not applied to 4-port model.

Spring / Pluggable Screw Terminal Connections

■ Connection

Model	PT4-□	PT6-□	PT8-□
Spring terminal type			
Pluggable screw terminal type			

■ Wiring

After removing the terminal cover using a tool such as a (-) driver, connect/disconnect the wires.

- Connecting
Insert the wire ferrule into the terminal hole.
- Removing
1. Put the (-) screwdriver at the groove on the clamp lever and press it.
2. Pull the cable to disassemble.

■ Wire Ferrule Specifications

- Unit: mm, Use the UL approved wire ferrule.

Model	A	Appliable cable
Spring terminal type	8	Signal wire: AWG22 (0.30 mm ²) Power wire: AWG17 (1 mm ²)
Pluggable screw terminal type	8 to 10	

Connections

- It is based on the 8-port model.
- When connecting L type connectors, connection direction may be different by the manufacturers of the connector.

■ 3-wire (1 signal)

3-wire (1 signal) NPN	Cable type (cable color)	Connector type (M23 plug pin no.)	Spring/Pluggable screw terminal type (pin no.)	3-wire (1 signal) PNP
	Green/Yellow	12	PE	
	Brown	11	+	
	Blue	9, 10	-	
	White	1	1	
	Green	2	2	
	Yellow	3	3	
	Gray	4	4	
	Pink	5	5	
	Red	6	6	
	Black	7	7	
	Purple	8	8	

■ 4-wire (2 signal)

4-wire (2 signal) NPN	Cable type (cable color)	Connector type (M23 plug pin no.)	4-wire (2 signal) PNP
	Green/Yellow	12	
	Brown	19	
	Blue	6	
	White	15	
	Gray/Pink	7	
	Green	5	
	Red/Blue	4	
	Yellow	16	
	White/Green	8	
	Gray	3	
	Brown/Green	14	
	Pink	17	
	White/Yellow	9	
	Red	2	
	Yellow/Brown	13	
	Black	11	
	White/Gray	10	
	Purple	1	
	Gray/Brown	18	