

# M12 5-pin Connector Distribution Boxes



## PT Series PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

### Features

- 5-pin M12 connector type sensor distribution boxes
- Supply power to multiple sensors using a single power supply
- Simplify complicated wiring and maintenance work
- Various connection methods
  - : cable / connector / spring terminal / plug-in terminal type
- Check operation status with LED indicators (green, red LED)
- Supports 1-signal, 2-signal (DC 3-wire, 4-wire type)
- Protection structure: IP67 (with waterproof cover, sold separately)  
IP52 (with protection cover, sold separately)

### 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 or store 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.
- 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): ≤ 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 transceiver 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

### Product Components

- |           |                      |            |
|-----------|----------------------|------------|
| • Product | • Instruction manual | • Bolt × 4 |
|-----------|----------------------|------------|

### Sold Separately

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

## 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 <sup>01)</sup>	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 <sup>01)</sup>	NPN/PNP model					
Material	Case: PBT (G15 %), name plate: PC, general cable (black): PVC					
Unit weight (packaged) <sup>02)</sup>	≈ 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 <sup>01)</sup>	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 <sup>01)</sup>	NPN/PNP model					
Material	Case: PBT (G15 %), name plate: PC, general cable (black): PVC					
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 <sup>01)</sup>	3-wire (1 signal)		
Output logic <sup>01)</sup>	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		
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	PT4-3D□-□	PT4-4D□-□	PT6-3D□-□	PT6-4D□-□	PT8-3D□-□	PT8-4D□-□
No. of port	4	4	6	6	8	8
Output type <sup>01)</sup>	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 <sup>01)</sup>	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					
Unit weight (packaged)	≈ 150 g (≈ 280 g)	≈ 154 g (≈ 284 g)	≈ 175 g (≈ 302 g)	≈ 181 g (≈ 306 g)	≈ 210 g (≈ 334 g)	≈ 218 g (≈ 342 g)

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

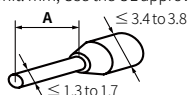
### ■ Common

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 M.Ω (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	300 m/s <sup>2</sup> (≈ 30 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 (no freezing or condensation)
Ambient humidity	35 to 95 %RH, storage: 35 to 95 %RH (no freezing or condensation)
Certification	CE
Protection structure <sup>01)</sup>	• 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.

## Wire Ferrule Specifications

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

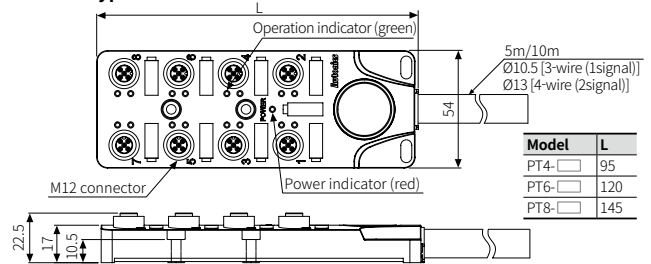


Model	A	Applicable cable
Spring terminal type	8	Signal wire: AWG22 (0.30 mm <sup>2</sup> )
Pluggable screw terminal type	8 to 10	Power wire: AWG17 (1 mm <sup>2</sup> )

## Dimensions

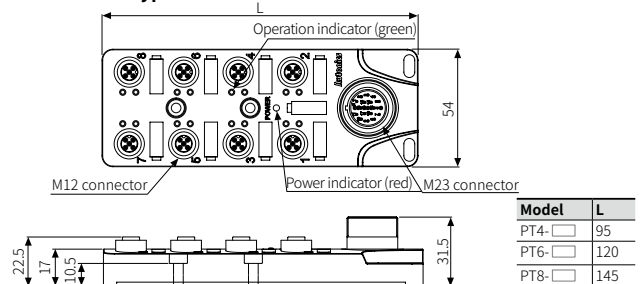
- Unit: mm, For the detailed drawings, follow the Autonics website.
- It is based on the 8-port model.

### ■ Cable type



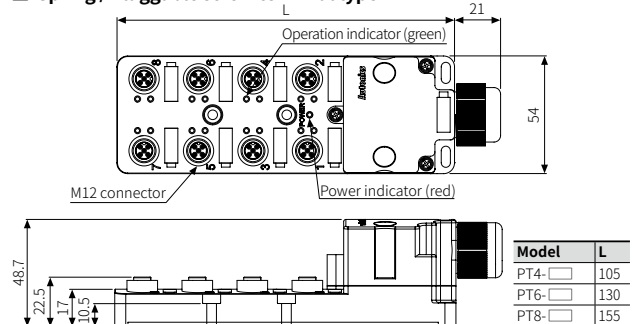
Model	L
PT4-□	95
PT6-□	120
PT8-□	145

### ■ Connector type



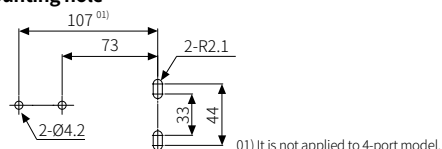
Model	L
PT4-□	95
PT6-□	120
PT8-□	145

### ■ Spring / Pluggable screw terminal type



Model	L
PT4-□	105
PT6-□	130
PT8-□	155

### ■ 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.

## 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	

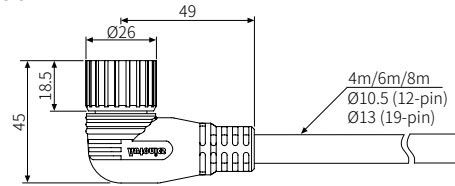
### ■ 4-wire (2 signal)

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

## Sold Separately: M23 Connector Cable

- Unit: mm, For the detailed drawings, follow the Autonics website.

### ■ Dimension



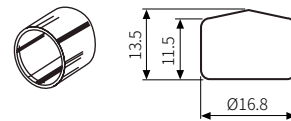
### ■ Specification

Cable length is option.

Model	CLDH12C-040	CLDH12C-060	CLDH12C-080	CLDH19C-040	CLDH19C-060	CLDH19C-080
Cable Length	4m	6m	8m	4m	6m	8m
Pin no.	12-pin			19-pin		
Pin arrangement						
Connection wiring	Pin no	Wire color	AWG	Pin no	Wire color	AWG
	1	White	AWG22	1	Purple	AWG22
	2	Green		2	Red	
	3	Yellow		3	Gray	
	4	Gray		4	Red/Blue	
	5	Pink		5	Green	AWG17
	6	Red		6	Blue	
	7	Black		7	Gray/Pink	AWG22
	8	Purple		8	White/Green	
	9	Blue	AWG17	9	White/Yellow	
	10	-		10	White/Gray	
	11	Brown		11	Black	AWG17
	12	Green/Yellow		12	Green/Yellow	
				13	Yellow/Brown	AWG22
				14	Brown/Green	
				15	White	
				16	Yellow	
				17	Pink	AWG17
				18	Gray/Brown	
				19	Brown	

## Sold Separately: Protection Cover (CAP-PT)

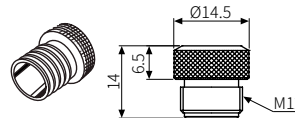
- Unit: mm, For the detailed drawings, follow the Autonics website.



- This protection cover is used for protecting connection holes from dust or particle, etc. Please push it into hole.
- If using protection covers, protection structure of the sensor distribution box is IP52.

## Sold Separately: Waterproof Cover (P96-M12-1)

- Unit: mm, For the detailed drawings, follow the Autonics website.



- This waterproof cover is used for protecting unused connection hole from water or oil, etc. Please tighten it when applying to the ports.
- If using waterproof covers, protection structure of the sensor distribution box is IP67.