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Sensor Distribution Box (M12 4-Pin/5-Pin Connector Type)

Line-up

Features

- Easy check operation by operation indicator (red/green)
- Single power operates several sensors
- Convenient wiring and power line
- IP67 protection structure with water-proof cover (IP52 protection structure with protection cover)
- Supports 1-signal, 2-signal (DC 4-wire)

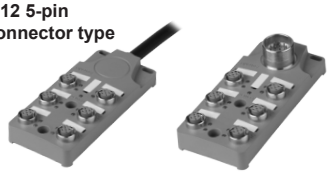
⚠ Please read "Safety Considerations" in operation manual before using.

CE

M12 4-pin connector type

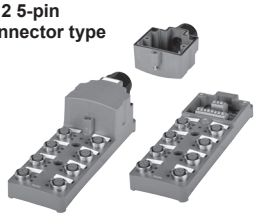
Cable type

M12 5-pin connector type

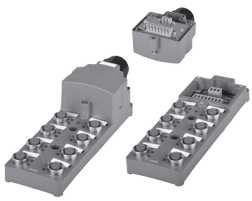


Cable type Connector type

M12 5-pin connector type



Spring terminal type



Pluggable screw terminal type

Ordering Information

PT	4	–		3D	N	5	–	5

Cable type
- Cable length

M12 4-pin connector	No mark	5m
M12 5-pin connector	5	5m
	10	10m

Pluggable screw terminal type
- Hood cover

No mark	Including hood cover
B	No hood cover

No. of M12 connector pins and case color

No mark	4-pin (yellow)
5	5-pin (blue)
5K	5-pin (black)※3

Input logic※1

N	NPN type
P	PNP type

Output type

2D	DC 2-wire (1-signal)
3D	DC 3-wire (1-signal)
4D	DC 4-wire (2-signal)※2

Connection method for external signal

No mark	Cable type
C	Connector type
S	Spring terminal type
P	Pluggable screw terminal type

Number of ports

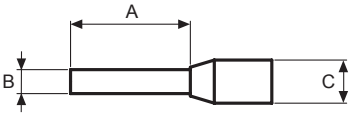
4	4-port
6	6-port
8	8-port

Item

PT	Sensor distribution box

※1: It is not applied for DC 2-wire (1-signal) type of output.
※2: Only for cable type and connector type of M12 5-pin connector type.
※3: Only for spring terminal type, pluggable screw terminal type of M12 5-pin connector type.

Terminal Specifications for Spring/Pluggable Screw Terminal Type



(unit: mm)

		A	B	C	Applicable wire
End Sleeve (ferrule terminal) crimp terminal	Spring terminal type	8	1.3 tot 1.7	3.4 to 3.8	Signal line: AWG22 (0.30mm^2) Power line: AWG17 (1mm^2)
	Pluggable screw terminal type	8 to 10			

▣ Specifications

◎ M12 4-pin connector type

Model	NPN type	PT4-2D	PT4-3DN	PT6-2D	PT6-3DN	PT8-2D	PT8-3DN
	PNP type	—	PT4-3DP	—	PT6-3DP	—	PT8-3DP
Port		4-port		6-port		8-port	
Output type※1		2-wire (1-signal),	3-wire (1-signal)	2-wire (1-signal),	3-wire (1-signal)	2-wire (1-signal),	3-wire (1-signal)
Power supply		12-24VDC⎓ (10-30VDC⎓)					
Rated current		2A (per signal), 4A (per port), 10A (total)					
Leakage current		Max. 0.5mA					
Connection life cycle		Min. 200 operations					
Insulation resistance		Over 50MΩ (at 500VDC megger)					
Dielectric strength		1,500VAC 50/60Hz for 1 min					
Vibration		1mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours					
Shock		500m/s² (approx. 50G) in each X, Y, Z direction for 3 times					
Indicator		Power indicator: Green LED, Operation indicator: Red LED					
Environment	Ambient temp.	-25 to 75, storage: -30 to 80					
	Ambient humi.	35 to 95%RH, storage: 35 to 95%RH					
Protection structure※2		IP67 (IEC standard/when mounting connector, waterproof cover) or IP52 (IEC standard/when mounting protection cover)					
Material		Case: Polybutylene terephthalate (G15%), General cable (gray): Polyvinyl chloride (PVC)					
Approval		CE					
Weight※3, ※4		Approx. 700g (approx. 660g)		Approx. 720g (approx. 680g)		Approx. 820g (approx. 780g)	

※1: Connect the sensor to the proper output type.
※2: This is not applicable when connectors and protection/waterproof covers are not mounted.
※3: The weight includes packaging. The weight in parenthesis is for unit only.
※4: The weights are for 5m cable.
※Environment resistance is rated at no freezing or condensation.

◎ M12 5-pin connector type

Type		Cable type						Connector type						Spring terminal type※1			Pluggable screw terminal type※1		
Model	NPN type	PT4-3DN5-□	PT4-4DN5-□	PT6-3DN5-□	PT6-4DN5-□	PT8-3DN5-□	PT8-4DN5-□	PT4-C3DN5	PT4-C4DN5	PT6-C3DN5	PT6-C4DN5	PT8-C3DN5	PT8-C4DN5	PT4-S3DN□	PT6-S3DN□	PT8-S3DN□	PT4-P3DN□-□	PT6-P3DN□-□	PT8-P3DN□-□
	PNP type	PT4-3DP5-□	PT4-4DP5-□	PT6-3DP5-□	PT6-4DP5-□	PT8-3DP5-□	PT8-4DP5-□	PT4-C3DP5	PT4-C4DP5	PT6-C3DP5	PT6-C4DP5	PT8-C3DP5	PT8-C4DP5	PT4-S3DP□	PT6-S3DP□	PT8-S3DP□	PT4-P3DP□-□	PT6-P3DP□-□	PT8-P3DP□-□
Port		4-port		6-port		8-port		4-port		6-port		8-port		4-port	6-port	8-port	4-port	6-port	8-port
Output type※2		3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)	4-wire (2-signal)	3-wire (1-signal)					
Power supply		12-24VDC⎓																	
Rated current		2A (per signal), 4A (per port), 10A (total)												2A (per signal), 2A (per port), 7A (total)					
Leakage current		Max. 0.5mA												—					
Current consumption		Max. 5mA																	
Connection life cycle		Min. 200 operations																	
Insulation resistance		Over 100MΩ (at 500VDC megger)																	
Dielectric strength		500VAC 50/60Hz for 1 min																	
Vibration		3mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for 2 hours																	
Shock		500m/s² (approx. 50G) in each X, Y, Z direction for 3 times																	
Indicator		Power indicator: Red LED, Operation indicator: Green LED																	
Environment	Ambient temp.	-25 to 75, storage: -30 to 80																	
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH																	
Protection structure※3		IP67 (IEC standard/when mounting connector, waterproof cover) or IP52 (IEC standard/when mounting protection cover)																	
Material		Case: Polybutylene terephthalate (G15%), Name plate: Polycarbonate, General cable (black): Polyvinyl chloride (PVC)												Case: Polybutylene terephthalate (G15%), Name Plate: Polycarbonate, Cover: Polybutylene terephthalate (G15%), Cover nut: Polyamide 6 (G15%)					
Approval		CE																	
Weight※4, ※5		Approx. 1100g (approx. 900g)	Approx. 1400g (approx. 1200g)	Approx. 1130g (approx. 930g)	Approx. 1430g (approx. 1230g)	Approx. 1160g (approx. 960g)	Approx. 1460g (approx. 1260g)	Approx. 230g (approx. 120g)	Approx. 235g (approx. 125g)	Approx. 260g (approx. 150g)	Approx. 265g (approx. 155g)	Approx. 290g (approx. 180g)	Approx. 295g (approx. 185g)	Approx. 270g (approx. 140g)	Approx. 292g (approx. 165g)	Approx. 314g (approx. 190g)	Approx. 280g (approx. 150g)	Approx. 302g (approx. 175g)	Approx. 334g (approx. 210g)

※1: Applicable cable out diameter is 10.5mm±0.3 for Spring/Pluggable screw terminal type.
※2: Connect the sensor to the proper output type.
※3: This is not applicable when connectors and protection/waterproof covers are not mounted.
※4: The weight includes packaging. The weight in parenthesis is for unit only.
※5: Cable type weights are based on 5m cable.
※Environment resistance is rated at no freezing or condensation.

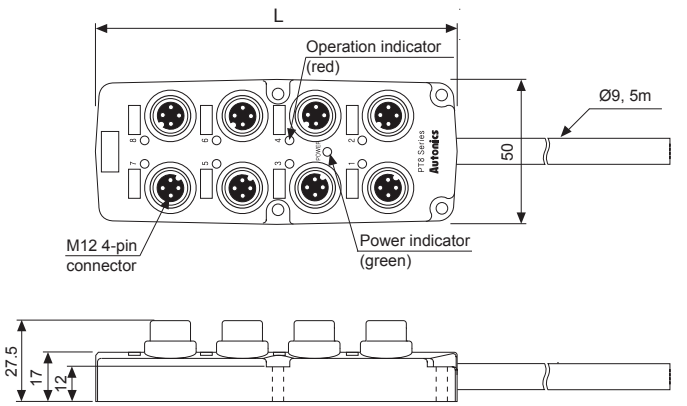
▣ Dimensions

※The below dimensions are based on 8-port.

(unit: mm)

◎ **Cable type**

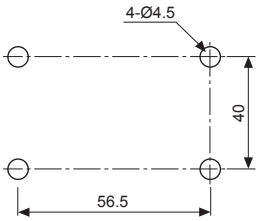
● **M12 4-pin connector type**



Model	L
PT4-□□	73
PT6-□□	98
PT8-□□	123

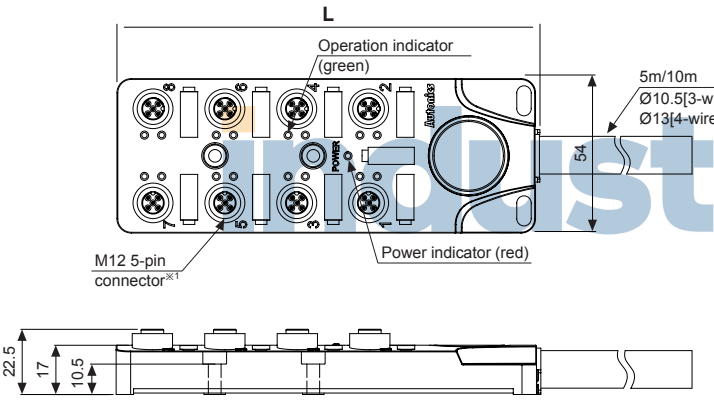
※Cable specification: Ø9, 10-wire (conductor cross section: 0.3mm², insulator diameter: Ø1.67)

● **Panel cut-out**



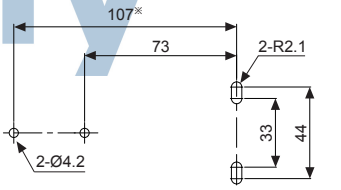
※Mounting holes are same as 4, 6, 8-port.

● **M12 5-pin connector type**



Model	L
PT4-□□□-□	95
PT6-□□□-□	120
PT8-□□□-□	145

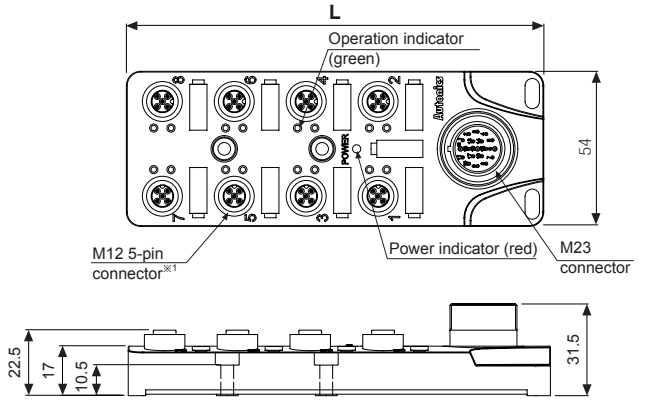
● **Panel cut-out**



※Except 4-port model.

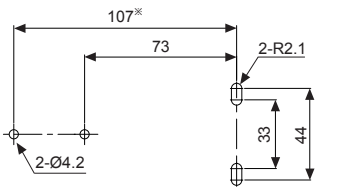
※1: When connecting L type connectors, connection direction may be different by the manufacturers of the connector.

◎ **Connector type**



Model	L
PT4-C□□□	95
PT6-C□□□	120
PT8-C□□□	145

● **Panel cut-out**



※Except 4-port model.

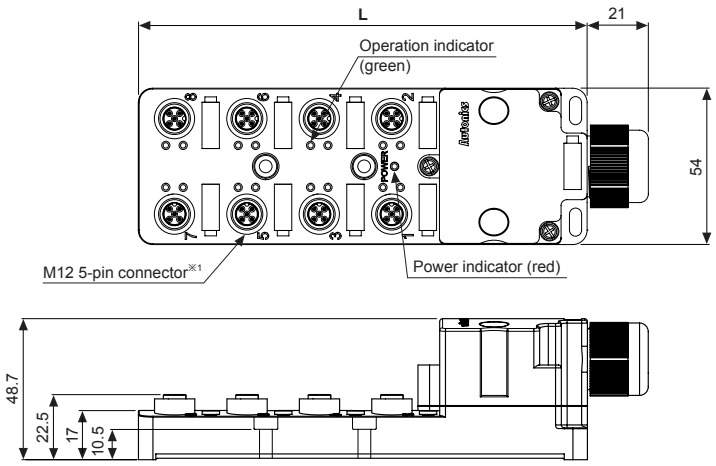
※1: When connecting L type connectors, connection direction may be different by the manufacturers of the connector.

▣ Dimensions

※The below dimensions are based on 8-port.

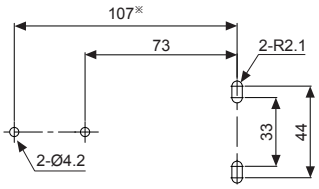
(unit: mm)

◎ **Spring terminal type/Pluggable screw terminal type**



Model	L
PT4-S□□□ PT4-P□□□-□	105
PT6-S□□□ PT6-P□□□-□	130
PT8-S□□□ PT8-P□□□-□	155

● **Panel cut-out**



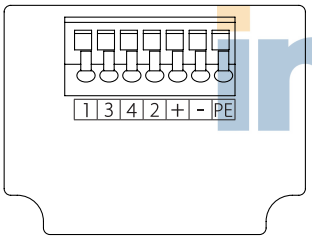
※Except 4-port model.

※1: When connecting L type connectors, connection direction may be different by the manufacturers of the connector.

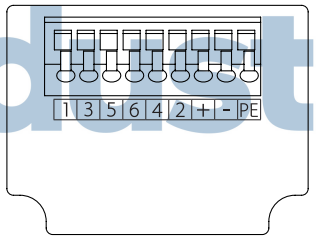
▣ Inner Connections for Spring/Pluggable Screw Terminal Type

◎ **Spring terminal type**

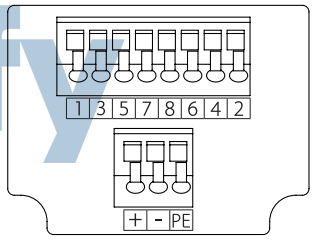
● **PT4-S3D□□**



● **PT6-S3D□□**

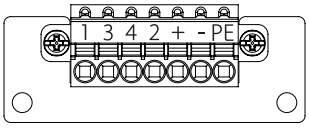


● **PT8-S3D□□**

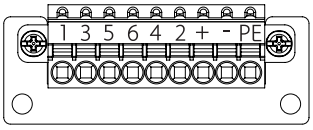


◎ **Pluggable screw terminal type**

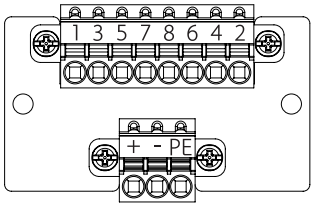
● **PT4-P3D□□-□**



● **PT6-P3D□□-□**



● **PT8-P3D□□-□**



▣ Connecting Crimp Terminals for Spring/Pluggable Screw Terminal Type

◎ **Spring terminal type**

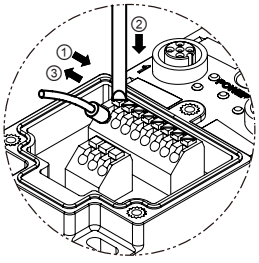
Remove bolts on the terminal cover using a tool such as a screwdriver and open the cover.

• Connection

1) Push the end sleeve (ferrule) crimp terminal towards direction ① to complete the connection.

• Removal

1) Press and hold the catch above the terminal in direction ② with a flat-head screwdriver.
2) Pull and remove the end sleeve (ferrule) crimp terminal towards direction ③.



◎ **Pluggable screw terminal type**

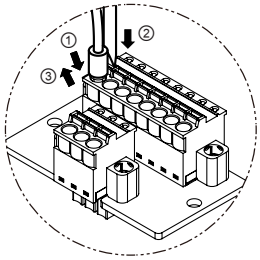
Remove bolts on the terminal cover using a tool such as a screwdriver and open the cover.
Remove the terminal also as above order.

• Connection

1) Push the end sleeve (ferrule) crimp terminal towards direction ① to complete the connection.

• Removal

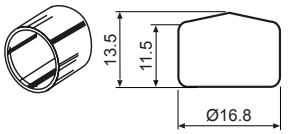
1) Press and hold the catch above the terminal in direction ② with a flat-head screwdriver.
2) Pull and remove the end sleeve (ferrule) crimp terminal towards direction ③.



▣ Sold Separately

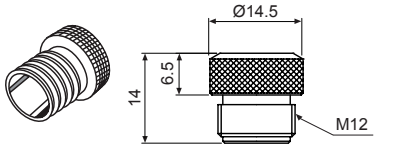
(unit: mm)

◎ Protection cover (CAP-PT)



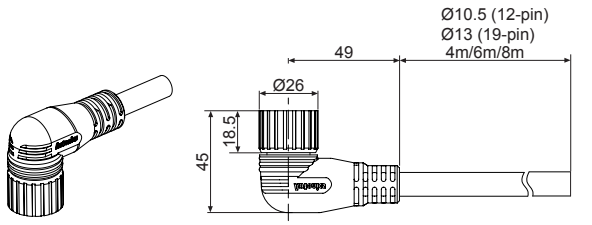
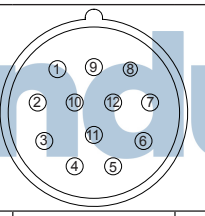
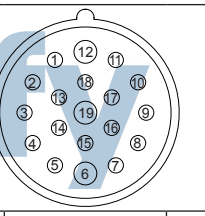
※This protection cover is used for protecting connection holes from dust or particle, etc.
Please push it into hole.
※If using protection covers, protection structure of the sensor distribution box is IP52.

◎ Waterproof cover (P96-M12-1)



※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.

◎ M23 connector cable (only for M12 5-pin connector)

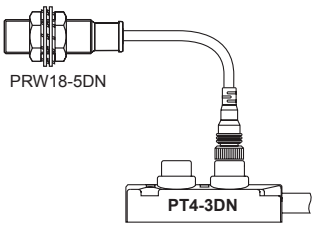
	12-pin[3-wire (1-signal)]			19-pin[4-wire (2-signal)]		
Model	**CLDH12C -040**	**CLDH12C -060**	**CLDH12C -080**	**CLDH19C -040**	**CLDH19C -060**	**CLDH19C -080**
Dimensions	 (unit: mm)					
Pin arrangement						
Cable length※1	4m	6m	8m	4m	6m	8m
Applied model	**PT4-C3DN5, PT4-C3DP5, PT6-C3DN5, PT6-C3DP5, PT8-C3DN5, PT8-C3DP5**			**PT4-C4DN5, PT4-C4DP5, PT6-C4DN5, PT6-C4DP5, PT8-C4DN5, PT8-C4DP5**		
Connection cable	Pin no.	Cable color	AWG	Pin no.	Cable 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	
	6	Red		6	Blue	AWG17
	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	
	12	Green/Yellow		12	Green/Yellow	AWG17
				13	Yellow/Brown	AWG22
				14	Brown/Green	
				15	White	
				16	Yellow	
				17	Pink	
				18	Gray/Brown	
				19	Brown	AWG17

※1: Cable length can be customized.

▣ Example of Connections

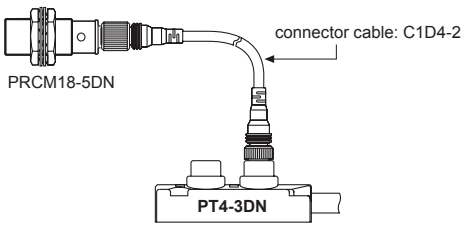
◎ **Connection with cable type sensor**

It is available to connect a cable type sensor proximity sensor (PRW Series) with a sensor distribution box directly.
When installation distance is longer, use a connector cable.



◎ **Connection with connector type sensor**

When connecting a connector type proximity sensor (PRCM Series) with a sensor distribution box, use only connector cable.



▣ Connectable Autonics Proximity Sensors, Photoelectirc Sensors, Door/Area Sensors

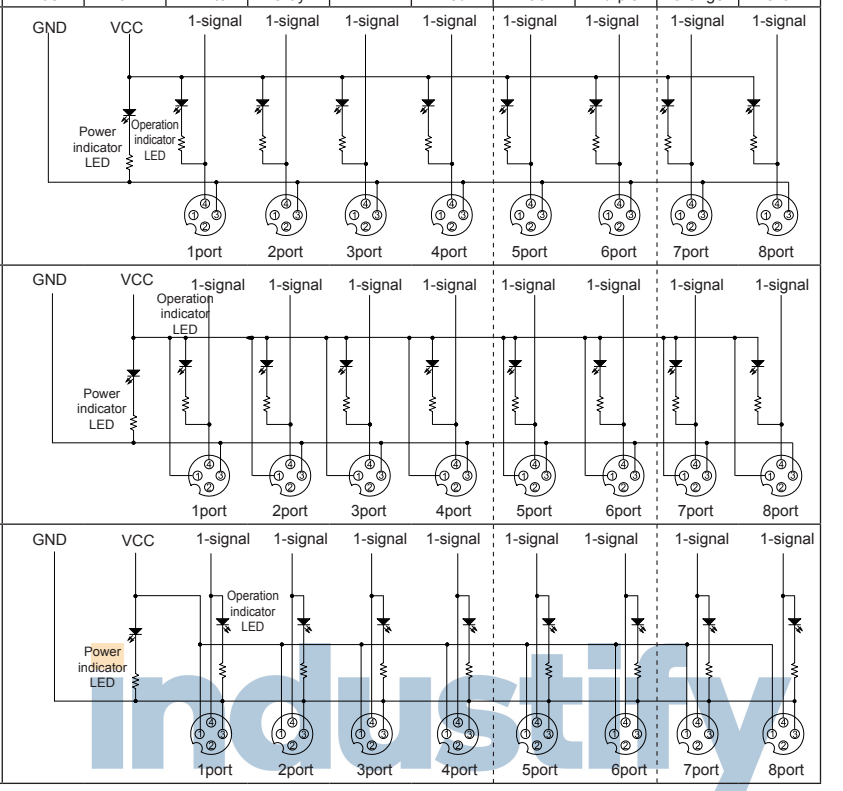
Sensor distribution box	Input logic	Proximity sensor		Photoelectric sensor	Door/Area sensor	Connection method
PT□-2D	DC 2-wire	PRCMT12-2/4DO, DC PRCMT18-5/8DO, DC PRCMT30-10/15DO, DC	PRDCMT12-4/8DO, DC PRDCMT18-7/14DO, DC PRDCMT30-15/25DO, DC	—		Use connector cable
		PRWT12-2/4DO, DC PRWT18-5/8DO, DC PRWT30-10/15DO, DC	PRDWT12-4/8DO, DC PRDWT18-7/14DO, DC PRDWT30-15/25DO, DC			Connect directly, Use connector cable
PT□-3DN PT□-3DN5-□, PT□-□3DN5	DC 3-wire NPN output type	PRCM12-2/4DN, DN2 PRCM18-5/8DN, DN2 PRCM30-10/15DN, DN2 PRCML18-5/8DN, DN2 PRCML30-10/15DN, DN2	PRDCM12-4/8DN, DN2 PRDCM18-7/14DN, DN2 PRDCM30-15/25DN, DN2 PRDCML12-4/8DN, DN2 PRDCML18-7/14DN, DN2 PRDCML30-15/25DN, DN2	BRP3M-MDT-C BR3M-MDT-C	—	Use connector cable
		PRW12-2/4DN, DN2 PRW18-5/8DN, DN2 PRW30-10/15DN, DN2 PRWL18-5/8DN, DN2 PRWL30-10/15DN, DN2	PRDW12-4/8DN, DN2 PRDW18-7/14DN, DN2 PRDW30-15/25DN, DN2 PRDWL12-4/8DN, DN2 PRDWL18-7/14DN, DN2 PRDWL30-15/25DN, DN2	—		Connect directly, Use connector cable
PT□-3DP PT□-3DP5-□, PT□-□3DP5	DC 3-wire PNP output type	PRCM12-2/4DP, DP2 PRCM18-5/8DP, DP2 PRCM30-10/15DP, DP2 PRCML18-5/8DP, DP2 PRCML30-10/15DP, DP2	PRDCM12-4/8DP, DP2 PRDCM18-7/14DP, DP2 PRDCM30-15/25DP, DP2 PRDCML12-4/8DP, DP2 PRDCML18-7/14DP, DP2 PRDCML30-15/25DP, DP2	BRP3M-MDT-C-P BR3M-MDT-C-P	—	Use connector cable
		PRW12-2/4DP, DP2 PRW18-5/8DP, DP2 PRW30-10/15DP, DP2 PRWL18-5/8DP, DP2 PRWL30-10/15DP, DP2	PRDW12-4/8DP, DP2 PRDW18-7/14DP, DP2 PRDW30-15/25DP, DP2 PRDWL12-4/8DP, DP2 PRDWL18-7/14DP, DP2 PRDWL30-15/25DP, DP2	—		Connect directly, Use connector cable
PT□-4DN5-□, PT□-□4DN5	DC 4-wire NPN output type	—		BRP100-DDT-C, BR100DDT-C, BRP400DDT-C, BR400DDT-C, BRP200DDTN-C, BR200DDTN-C	BWC40-□H, HD BWC80-□H, HD BW20-□, BW40-□	Connect directly, Use connector cable
PT□-4DP5-□, PT□-□4DP5	DC 4-wire PNP output type			BRP100-DDT-C-P, BR100-DDT-C-P, BRP400DDT-C-P, BR400DDT-C-P, BRP200DDTN-C-P, BR200DDTN-C-P	BW20-□P, BW40-□P	Connect directly, Use connector cable

※Standard cable type sensors can also connect a sensor distribution box by using plug type connector cable.

▣ Connections

◎ M12 4-pin connector type

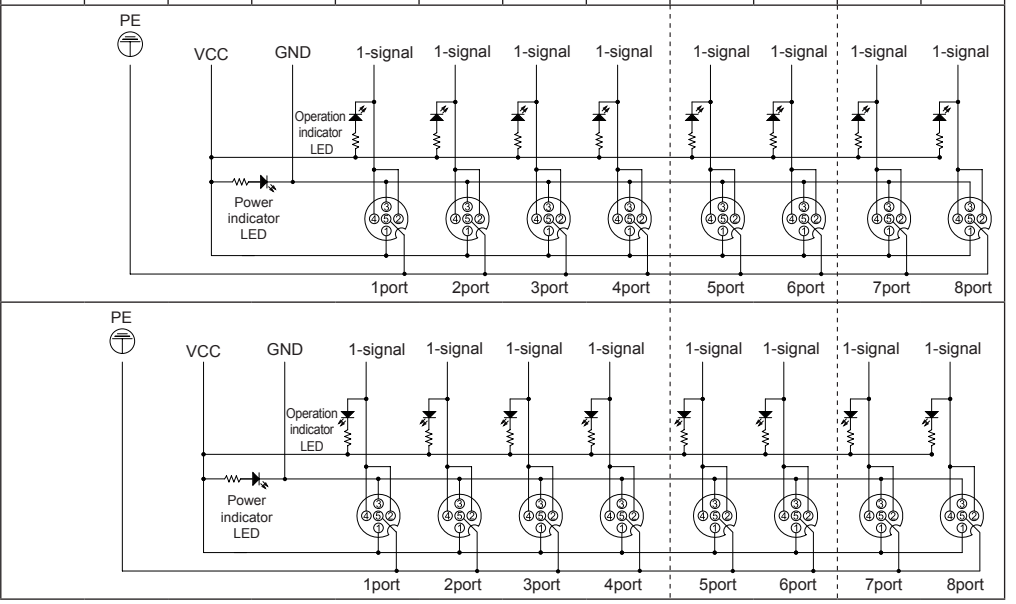
Cable color	Blue	Brown	White	Gray	Pink	Red	Black	Purple	Orange	Yellow
DC 2-wire	GND	VCC	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal
DC 3-wire NPN	GND	VCC	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal
DC 3-wire PNP	GND	VCC	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal	1-signal



◎ M12 5-pin connector type

● 3-wire (1-signal)

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



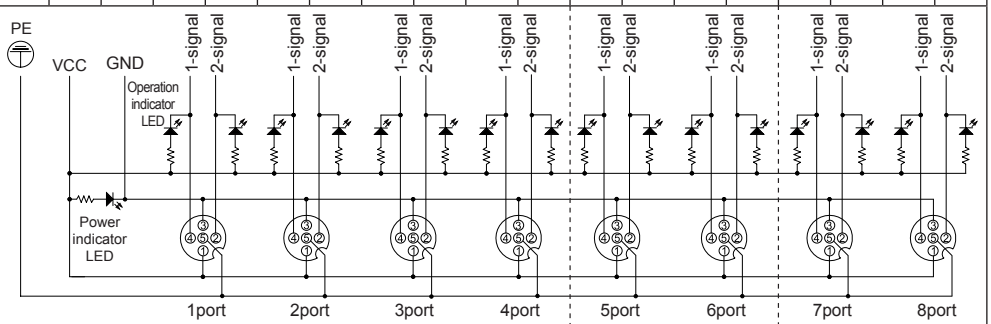
▣ Connections

◎ **M12 5-pin connector type**

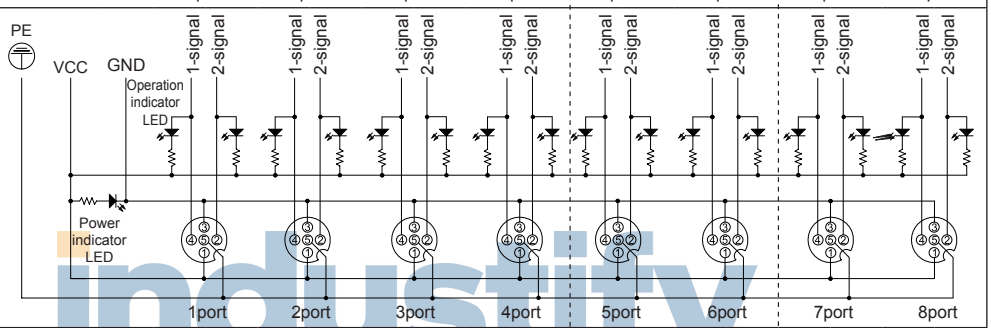
● **4-wire (2-signal)**

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

DC 4-wire NPN



DC 4-wire PNP



▣ Cautions during Use

1. This connection box is only for DC. Do not use this unit for AC.
2. Use DC 2-wire, DC 3-wire, DC 4-wire separately. DC 3-wire, DC 4-wire are separated by NPN type and PNP type.
3. Do not use the same conduit with cord of this unit and electric power line and power line. Also avoid the same connection.
4. Be sure that wire power cable (brown: +, blue: -) properly.
5. Check the voltage variation range of power not to over the rated specifications for power input.
6. In case of M12 4-pin connector type, the power indicator (green LED) does not operate when polarity is not correctly connected.
7. In case of M12 5-pin connector type, Tighten the screws and connector with the proper tightening strength.
   (M4 mounting screw: max. 1.2N·m / M12 Connector: 0.6 to 0.7N·m / M23 Connector: 2.0 to 2.5N·m)
   When tightening is bad, protection is not effective and it may loose by vibration.
8. If transceiver is close to wire connections, it may cause malfunction.
9. When take out the connector from the box, cut off the power.
10. It might cause malfunction, if particle of metal etc. inflow in to engaging.
11. Do not use this unit when external force loaded on contact block and connection of cover. It may cause loss of efficiency of protection.
12. Follow the connections when wiring the signals. After connecting loads, operate proximity sensors.
13. Check the operation indicator when operating the sensors.
14. Do not use in place there are water or oil etc.
15. Main body is made by plastic, therefore do not put heavy load on this product.
16. Please avoid below environment for long-term storage.
    ① Lots of dust or high humidity
    ② Ammonia or sulfide gas