

Intellia light sensor proximity switch INTPR-01DC

■ Features

- Shorten the time of maintenance
- Improved the noise resistance with dedicated IC (DC 3-wire type)
- Reverse power polarity (DC 3-wire), surge, overcurrent protection (DC type)
- Red LED status indication
- IP67 rated waterproof structure (IEC standard)
- Replacer for micro switches and limit switches



! Please read "Caution for your safety" in operation manual before using.



■ Specifications

● DC 2-wire type

Model	INTPR-02 DO INTPR-02 DC	INTPR-03 DO INTPR-03 DC	INTPR-01 DO INTPR-01 DC	INTPR-04 DO INTPR-04 DC	INTPR-05 DO INTPR-06 DC	INTPR-06 DO INTPR-07 DC
Sensing distance	mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of sensing distance					
Standard sensing target	12×12×1mm (Iron)		18×18×1mm (Iron)	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)
Setting distance	0 ~ 1.4mm	0 ~ 2.8mm	0 ~ 3.5mm	0 ~ 5.6mm	0 ~ 7mm	0 ~ 10.5mm
Power supply (Operation voltage)	24VDC (15-30VDC)					
Leakage current	Max. 0.6mA					
Response frequency(*1)	1.5kHz	500Hz	350Hz	400Hz	200Hz	
Residual voltage	Max. 7V					
Affection by Temp.	±10% Max. for sensing distance at +20°C within temperature range of -25 ~ +70°C					
Control output	2 ~ 100mA					
Dielectric strength	Min. 50MΩ (at 500VDC mega)					
Insulation resistance	1500VAC 50/60Hz for 1 minute					
Vibration	1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours					
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times					
Indicator	Operation indicator (Red LED)					
Ambient temperature	-25 ~ +70°C (at non-freezing status)					
Storage temperature	-30 ~ +80°C (at non-freezing status)					
Ambient humidity	35 ~ 95%RH					
Protection circuit	Surge protection circuit, Overload & Short circuit protection					
Protection	IP67 (IEC standard)					
Approval	CE					
Unit weight	Approx. 26g		Approx. 49g		Approx. 134g	

※ (*1) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

※ IEC standard item is available and add "-I" to the end of model. Ex) PRCM12-4DO-I

※ See J-48 for IEC standard connector cables and specifications.

■ Specifications

● DC 3-wire type

Model	INT12-2DN INT12-2DP INT12-2DN2 INT12-2DP2	INT12-4DN INT12-4DP INT12-4DN2 INT12-4DP2	INT18-5DN P INT18-5DP P INT18-5DN2 INT18-5DP2 P INT18-5DN P INT18-5DP INT18-5DN2 P INT18-5DP2	INT18-8DN P INT18-8DP P INT18-8DN2 INT18-8DP2 P INT18-8DN P INT18-8DP INT18-8DN2 P INT18-8DP2	INT30-10DN P INT30-10DP P INT30-10DN2 INT30-10DP2 P INT30-10DN P INT30-10DP INT30-10DN2 P INT30-10DP2	INT30-15DN P INT30-15DP P INT30-15DN2 INT30-15DP2 P INT30-15DN P INT30-15DP INT30-15DN2 P INT30-15DP2
Sensing distance	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of sensing distance					
Standard sensing target	12×12×1mm (Iron)		18×18×1mm (Iron)	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)
Setting distance	0 ~ 1.4mm	0 ~ 2.8mm	0 ~ 3.5mm	0 ~ 5.6mm	0 ~ 7mm	0 ~ 10.5mm
Power supply (Operation voltage)	12-24VDC (10-30VDC)					
Current consumption	Max. 10mA					
Response frequency(*1)	1.5kHz	500Hz	350Hz	400Hz	200Hz	
Residual voltage	Max. 1.5V					
Affection by Temp.	±10% Max. for sensing distance at +20°C within temperature range of -25 ~ +70°C					
Control output	Max. 200mA					
Dielectric strength	Min. 50MΩ (at 500VDC mega)					
Insulation resistance	1500VAC 50/60Hz for 1 minute					
Vibration	1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours					
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times					
Indicator	Operation indicator (Red LED)					
Ambient temperature	-25 ~ +70°C (at non-freezing status)					
Storage temperature	-30 ~ +80°C (at non-freezing status)					
Ambient humidity	35 ~ 95%RH					
Protection circuit	Surge, Reverse power polarity, Overcurrent protection circuit					
Protection	IP67 (IEC standard)					
Approval	CE					
Unit weight	Approx. 26g		PRCM18 : Approx. 49g PRCML18 : Approx. 73g		PRCM30 : Approx. 134g PRCML : Approx. 169g	

※ (*1) The response frequency is the average value. The standard sensing target is used and the width is set as 2 times of the standard sensing target, 1/2 of the sensing distance for the distance.

● AC 2-wire type

Model	INT12-2AO INT12-2AC	INT12-4AO INT12-4AC	INT18-5AO INT18-5AC INT18-5AO INT18-5AC	INT18-8AO INT18-8AC INT18-8AO INT18-8AC	INT30-10AO P INT30-10AC P INT30-10AO P INT30-10AC	INT30-15AO P INT30-15AC P INT30-15AO P INT30-15AC
Sensing distance	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of sensing distance					
Standard sensing target	12×12×1mm (Iron)		18×18×1mm (Iron)	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)
Setting distance	0 ~ 1.4mm	0 ~ 2.8mm		0 ~ 5.6mm	0 ~ 7mm	0 ~ 10.5mm
Power supply (Operation voltage)	100-240VAC (85-264VAC)					
Leakage current	Max. 2.5mA					
Response frequency(*1)	20Hz					
Residual voltage	Max. 10V					
Affection by Temp.	±10% Max. for sensing distance at +20°C within temperature range of -25 ~ +70°C					
Control output	5 ~ 150mA			5 ~ 200mA		
Dielectric strength	Min. 50MΩ (at 500VDC mega)					
Insulation resistance	2500VAC 50/60Hz for 1 minute					
Vibration	1mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours					
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times					
Indicator	Operation indicator (Red LED)					
Ambient temperature	-25 ~ +70°C (at non-freezing status)					
Storage temperature	-30 ~ +80°C (at non-freezing status)					
Ambient humidity	35 ~ 95%RH					
Protection circuit	Surge protection circuit					
Protection	IP67 (IEC standard)					
Approval	CE					
Unit weight	Approx. 30g		PRCM18 : Approx. 53g PRCML18 : Approx. 74g		PRCM30 : Approx. 134g PRCML30 : Approx. 169g	

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor & Driver & Controller

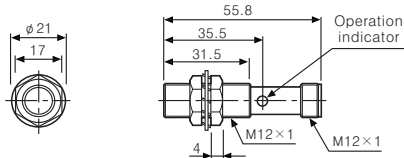
(O) Graphic panel

(P) Production stoppage models & replacement

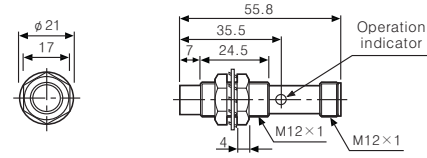
■ Dimensions

(Unit:mm)

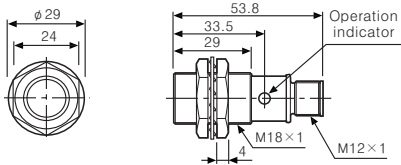
●INT(T)12-2D□



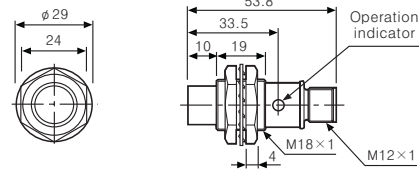
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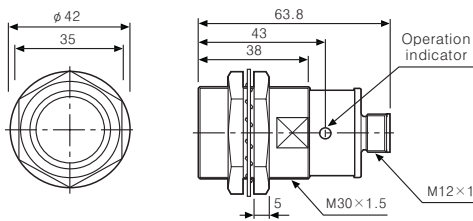
●INTPR-01D□



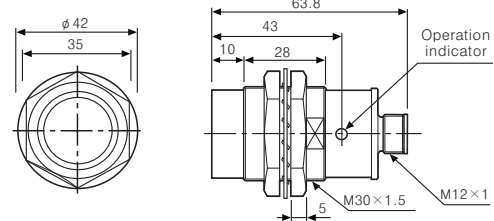
●INT(T)18-8D□



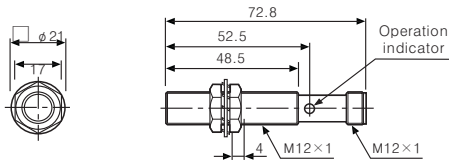
●INT(T)30-10D□



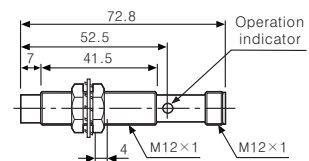
●INT(T)30-15D□



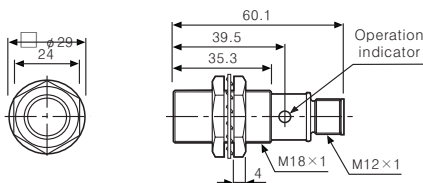
●INT12-2A



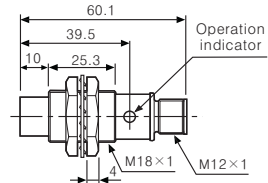
●INT12-4A



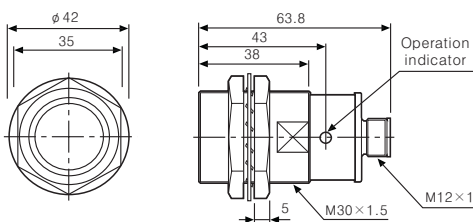
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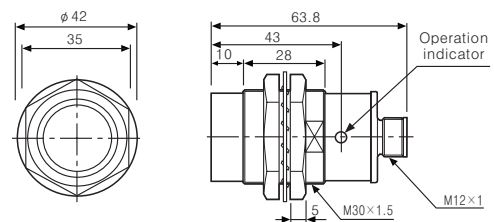
●INT18-8A



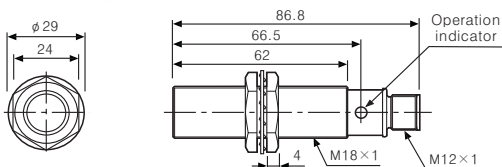
●INT30-10A□



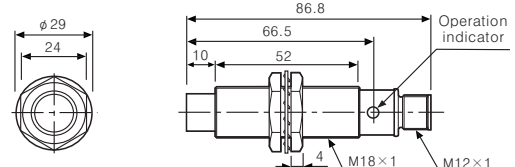
●INT30-15A□



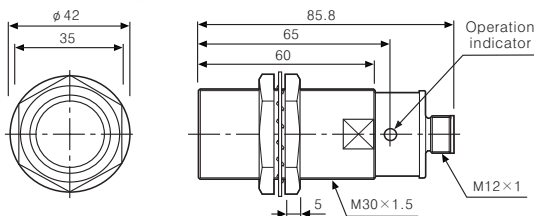
●INT18-5D□ / INT18-5A□



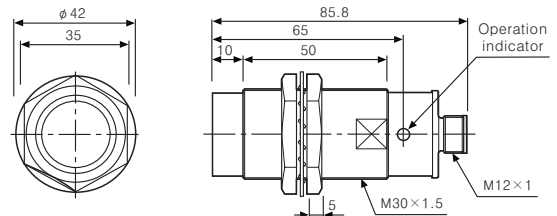
●INT18-8D□ / INT18-8A□



●INT30-10D□ / INT30-10A□

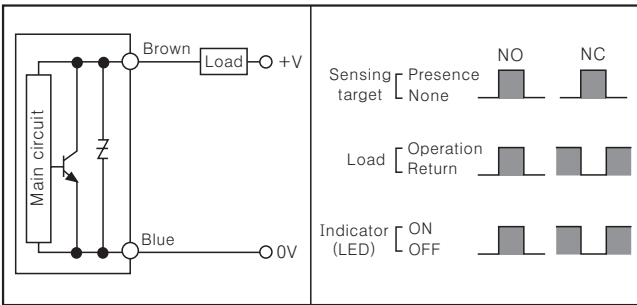


●INT30-15D□ / INT30-15A□

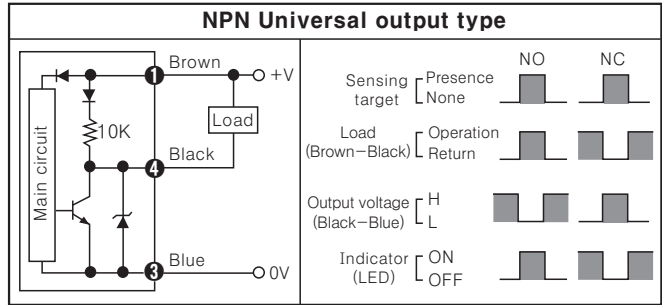


Control output diagram

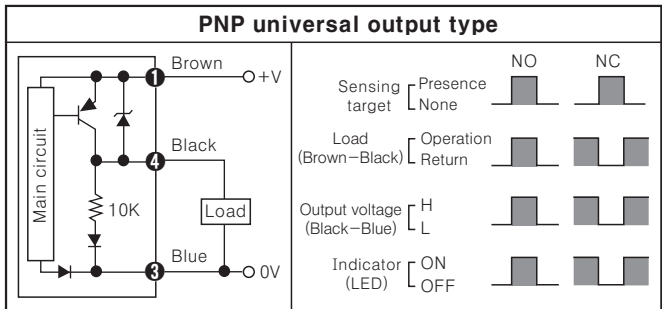
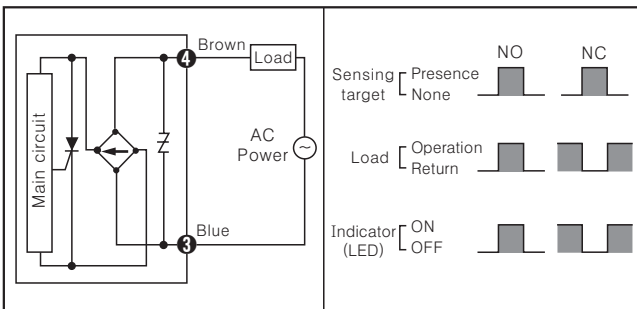
DC 2-wire type



DC 3-wire type



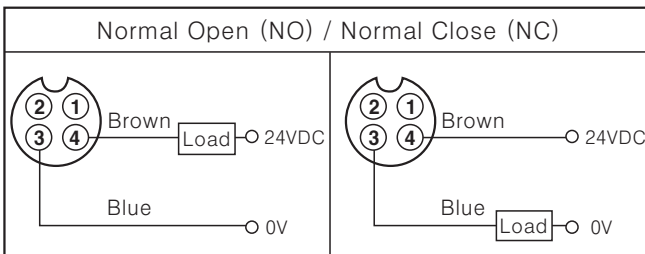
AC 2-wire type



*The number in a circle is pin no. of connector.

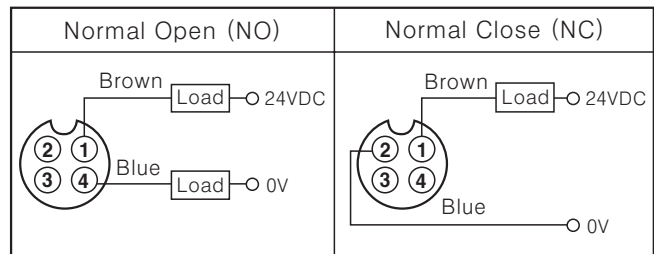
Wiring diagram

DC 2-wire type(Standard type)



*Pin ①, ② are N.C (Not Connected) terminals.
*For DC 3-wire type connector cable, it is available to use with black wire (24VDC) and blue wire (0V).

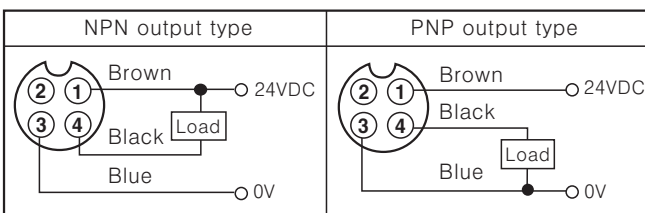
DC 2-wire type(IEC standard type)



*The pin arrangement of connector applying IEC standard is being developed.
*Please attach "I" at the end of the name of standard type for purchasing the IEC standard product. Ex) PRCMT12-4DO-I
*The connector cable for IEC standard is being developed.

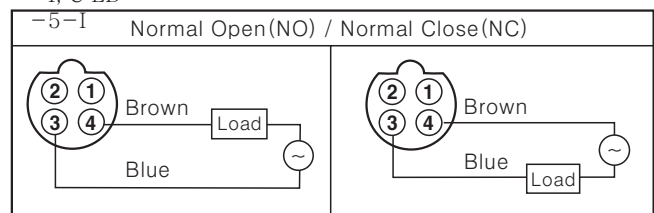
Please attach "I" at the end of the name of standard type
Ex) CID

DC 3-wire



*Please fasten the cleat of connector not to shown the thread.
(0.39~0.49N·m)

AC 2-wire



*In AC inductive type, ② and ③, ① and ④ are connected inside of the connector cable.

*Please fasten the vibration part with Teflon tape.
*See J-48 about IEC standard connector wires and specifications.

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

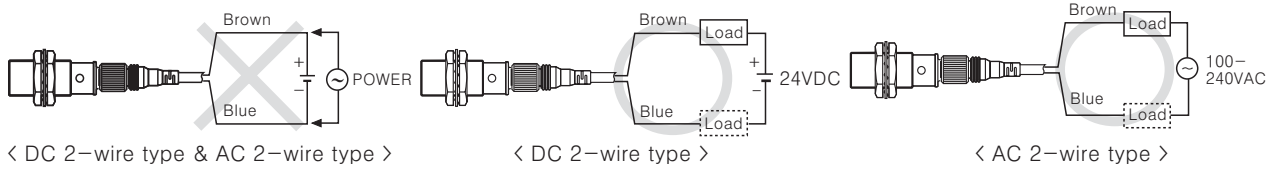
(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

■ **Proper usage**

◎ Load connections

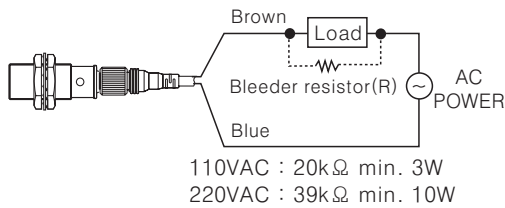


< DC 2-wire type & AC 2-wire type > < DC 2-wire type > < AC 2-wire type >

When using DC or AC 2-wire type proximity sensor, the load must be connected otherwise internal components may be damaged. And the load can be connected to either wire.

◎ In case of the load current is small

● AC 2-wire type

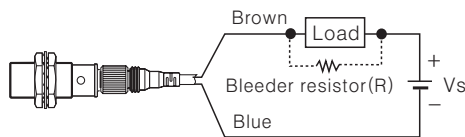


It may cause return failure of load by residual voltage. If the load current is under 5mA, please make sure the residual voltage is less than the return voltage of the load by connecting a bleeder resistor in parallel with the load as shown in the diagram.

$$R = \frac{V_s}{I} \text{ (}\Omega\text{)} \quad P = \frac{V_s^2}{R} \text{ (W)}$$

[I : Action current of load, R : Bleeder resistance, P : Permissible power]

● DC 2-wire type



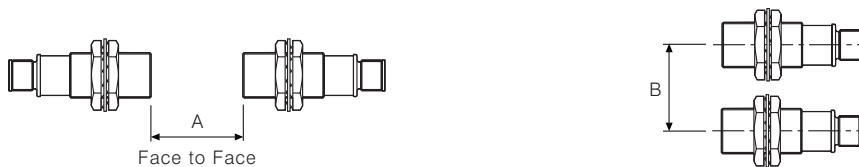
Please make the current on proximity sensor smaller than the return current of load by connecting a bleeder resistor in parallel.
※ W value of Bleeder resistor should be bigger for proper heat dissipation.

$$R = \frac{V_s}{I_o - I_{off}} \text{ (}\Omega\text{)} \quad P = \frac{V_s^2}{R} \text{ (W)}$$

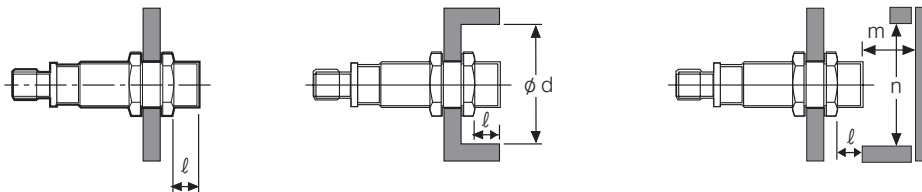
[Vs : Power supply, Io : Min. action current of proximity sensor
Ioff : Return current of load, P : Number of Bleeder resistance watt]

◎ Mutual-interference & Influence by surrounding metals

When several proximity sensors are mounted closely, malfunction of sensor may be caused due to mutual interference. Therefore, be sure to provide a minimum distance between the two sensors, as below charts.



When sensors are mounted on metallic panel, you must prevent the sensors from being affected by any metallic object except target. Therefore, be sure to provide a minimum distance as below chart.



(Unit:mm)

Model	INT12-2D□	INT12-4D□	INTPR-01D	INT18-8D□	INT30-10D□	INT30-15D
Item	INT12-2D□ INT12-2A□	INT12-4D□ INT12-4A□	INT(L)18-5D INT(L)18-5A	INT(L)18-8D□ INT(L)18-8A□	INT(L)30-10D□ INT(L)30-10A□	INT(L)30-15D INT(L)30-15A
A	12	24	30	48	60	90
B	24	36	36	54	60	90
l	0	11	0	14	0	15
φd	12	36	18	54	30	90
m	6	12	15	24	30	54
n	18	36	27	54	45	90