

## Cylindrical Inductive Proximity Switch

### ■ Features

- > Surge protection □
- > Reverse polarity protection □
- > Short circuit protection (12mm - 18mm) □
- > LED Indicator □
- > 200mA output □
- > 2 meter PVC cable □
- > Nickel plated brass enclosure



### ■ Type

#### DC 3-Wire Switching 10 - 30 VDC

Appearance		Model
M08		PR08-1.5DN
		PR08-1.5DP
		PR08-1.5DN2 ※
		PR08-1.5DP2 ※
M08		PR08-2DN
		PR08-2DP
		PR08-2DN2 ※
M12		PR12-2DN
		PR12-2DP
		PR12-2DN2 ※
M12		PR12-4DN
		PR12-4DP
		PR12-4DN2 ※
M18		PR18-5DN
		PR18-5DP
		PR18-5DN2 ※
M18		PR18-8DN
		PR18-8DP
		PR18-8DN2 ※
M30		PR30-10DN
		PR30-10DP
		PR30-10DN2 ※
		PR30-10DP2 ※
M30		PR30-15DN
		PR30-15DP
		PR30-15DN2 ※
		PR30-15DP2 ※

#### AC 2-Wire Switching 90 - 250 VAC

Appearances		Model
M12		PR12-2AO
		PR12-2AC
M12		PR12-4AO
		PR12-4AC
M18		PR18-5AO
		PR18-5AC
M18		PR18-8AO
		PR18-8AC
M30		PR30-10AO
		PR30-10AC
M30		PR30-15AO
		PR30-15AC

Appearance		Model
LONG M18		PRL18-5AO
		PRL18-5AC
LONG M18		PRL18-8AO
		PRL18-8AC
LONG M30		PRL30-10AO
		PRL30-10AC
LONG M30		PRL30-15AO
		PRL30-15AC

#### DC 3-Wire Switching 10 - 30 VDC

Appearances		Model
SHORT M12		PRS12-2DN
		PRS12-2DP
SHORT M12		PRS12-2DN2 ※
		PRS12-4DN
SHORT M12		PRS12-4DP
		PRS12-4DN2 ※
LONG M18		PRL18-5DN
		PRL18-5DP
		PRL18-5DN2 ※
		PRL18-5DP2 ※
LONG M18		PRL18-8DN
		PRL18-8DP
		PRL18-8DN2 ※
		PRL18-8DP2 ※
LONG M30		PRL30-10DN
		PRL30-10DP
		PRL30-10DN2 ※
		PRL30-10DP2 □
		PRL30-15DN
LONG M30		PRL30-15DP
		PRL30-15DN2 ※
		PRL30-15DP2 □

#### DC 2-Wire Switching 20 - 30 VDC

Appearance		Model
M08		PRT08-1.5DO
		PRT08-1.5DC
M08		PRT08-2DO
		PRT08-2DC
M12		PRT12-2DO
		PRT12-2DC
M12		PRT12-4DO
		PRT12-4DC
M18		PRT18-5DO
		PRT18-5DC
M18		PRT18-8DO
		PRT18-8DC
M30		PRT30-10DO
		PRT30-10DC
M30		PRT30-15DO
		PRT30-15DC

# PR SERIES

## ■ Specification(DC switching type)

Model	PR08-1.5DN PR08-1.5DP PR08-1.5DN2 PR08-1.5DP2	PR08-2DN PR08-2DP PR08-2DN2 PR08-2DP2	PR12-2DN PR12-2DP PR12-2DN2 PR12-2DN2 PR12-2DN2 PR12-2DN2 PR12-2DN2 PR12-2DN2	PR12-4DN PR12-4DP PR12-4DN2 PR12-4DN PR12-4DN PR12-4DN2 PR12-4DN2	PR18-5DN PR18-5DP PR18-5DN2 PR18-5DP2 PRL18-5DN PRL18-5DP PRL18-5DN2 PRL18-5DP2	PR18-8DN PR18-8DP PR18-8DN2 PR18-8DP2 PRL18-8DN PRL18-8DP PRL18-8DN2 PRL18-8DP2	PR30-10DN PR30-10DP PR30-10DN2 PR30-10DP2 PRL30-10DN PRL30-10DP PRL30-10DN2 PRL30-10DP2	PR30-15DN PR30-15DP PR30-15DN2 PR30-15DP2 PRL30-15DN PRL30-15DP PRL30-15DN2 PRL30-15DP2
Detecting distance	1.5mm ±10%	2mm ±10%	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of detecting distance							
Standard detecting target	8×8×1mm(Iron)		12×12×1mm(Iron)		18×18×1mm(Iron)	25×25×1mm(Iron)	30×30×1mm(Iron)	45×45×1mm(Iron)
Setting distance	0 to 1.05	0 to 1.4	0 to 1.4	0 to 2.8	0 to 3.5	0 to 5.6	0 to 7	0 to 10.5
Power supply (Operating voltage)	12 to 24VDC (10 to 30VDC)							
Power consumption	10mA							
Response frequency	800Hz			400Hz	350Hz	200Hz	250Hz	100Hz
Residual voltage	Max. 2V			Max. 1.5V				
Variation due to Temp. fluctuation	±10% Max. of detecting distance at +20°C within temperature range of -25 to +70°C, PR08 series:Max. ±20%							
Control output	Resistive load:200mA, Inductive load:100mA							
Insulation resistance	Min. 50MΩ (500VDC)							
Dielectric strength	1500VAC 50/60Hz for 1minute							
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours							
Shock	500ms <sup>2</sup> (50G) in X,Y,Z directions for 3 times							
Indicator	Operating indicator : red LED							
Operating temperature	-25 to +70°C (non-freezing condition)							
Storage temperature	-30 to +80°C (non-freezing condition)							
Ambient humidity	35 to 95% RH							
Protection circuit	Reverse polarity protection, surge protection circuit, overload & short-circuit protection (PR08 SERIES는 제외)							
Protection	IP67 (IEC specification)							
Insulation type(*1)	☐							
Cable	4φ, 3P, 2M				5φ, 3P, 2M			
Weight	About 36g	About 36g	PR:About 70g PRS:About 68g	PR:About 70g PRS:About 68g	PR:About 119g PRL:About 149g	PR:About 118g PRL:About 142g	PR:About 184g PRL:About 222g	PR:About 181g PRL:About 227g

## ■ Specification(AC switching type)

Model	PR12-2AO PR12-2AC	PR12-4AO PR12-4AC	PR18-5AO PR18-5AC PRL18-5AO PRL18-5AC	PR18-8AO PR18-8AC PRL18-8AO PRL18-8AC	PR30-10AO PR30-10AC PRL30-10AO PRL30-10AC	PR30-15AO PR30-15AC PRL30-15AO PRL30-15AC
Detecting distance	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of detecting distance					
Standard detecting target	12×12×1mm(Iron)		18×18×1mm(Iron)	25×25×1mm(Iron)	30×30×1mm(Iron)	45×45×1mm(Iron)
Setting distance	0 to 1.4	0 to 2.8	0 to 3.5	0 to 5.6	0 to 7	0 to 10.5
Power supply (Operating voltage)	110 to 220VAC (90 to 250VAC)					
Leakage current	Max. 2.5mA					
Response frequency	20Hz					
Residual voltage	Max. 10V					
Variation due to Temp. fluctuation	±10% Max. of detecting distance at +20°C within temperature range of -25 to +70°C					
Control output	Resistive load:150mA, Inductive load:75mA		Resistive load:200mA, Inductive load:100mA			
Insulation resistance	Min. 50MΩ (500VDC)					
Dielectric strength	1500VAC 50/60Hz for 1minute					
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours					
Shock	500ms <sup>2</sup> (50G) in X,Y,Z directions for 3 times					
Indicator	Operating indicator : red LED					
Operating temperature	-25 to +70°C (non-freezing condition)					
Storage temperature	-30 to +80°C (non-freezing condition)					
Ambient humidity	35 to 95% RH					
Protection circuit	Surge protection circuit					
Protection	IP67 (IEC specification)					
Insulation type(*1)	☐					
Cable	4φ, 2P, 2M			5φ, 2P, 2M		
Weight	About 66g	About 66g	PR:About 130g PRL:About 150g	PR:About 130g PRL:About 150g	PR:About 185g PRL:About 224g	PR:About 117g PRL:About 222g

※ The weight of above chart is net weight.

※ (\*1) ☐ Mark indicated that equipment protected throughout by double insulation or reinforced insulation.

## ■ Specification

Model	PRT08-1.5DO PRT08-1.5DC	PRT08-2DO PRT08-2DC	PRT12-2DO PRT12-2DC	PRT12-4DO PRT12-4DC	PRT18-5DO PRT18-5DC	PRT18-8DO PRT18-8DC	PRT30-10DO PRT30-10DC	PRT30-15DO PRT30-15DC
Detecting distance	1.5mm ±10%	2mm ±10%	2mm ±10%	4mm ±10%	5mm ±10%	8mm ±10%	10mm ±10%	15mm ±10%
Hysteresis	Max. 10% of detecting distance							
Standard detecting target	8×8×1mm(Iron)		12×12×1mm(Iron)		18×18×1mm (Iron)	25×25×1mm (Iron)	30×30×1mm (Iron)	45×45×1mm (Iron)
Setting distance	0 to 1.05	0 to 1.4	0 to 1.4	0 to 2.8	0 to 3.5	0 to 5.6	0 to 7	0 to 10.5
Power supply (Operating voltage)	24VDC (15 to 30VDC)							
Power consumption	Max. 0.9mA							
Response frequency	800Hz			400Hz	350Hz	200Hz	250Hz	100Hz
Residual voltage	Max. 7V							
Variation due to Temp. fluctuation	±10% Max. of detecting distance at +20℃ within temperature range of -25 to +70℃							
Control output	Resistive load:50mA, Inductive load:25mA							
Insulation resistance	Min. 50M $\Omega$ (500VDC)							
Dielectric strength	1500VAC 50/60Hz for 1minute							
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours							
Shock	500m/s <sup>2</sup> (50G) in X,Y,Z directions for 3 times							
Indicator	Operating indicator : red LED							
Operating temperature	-25 to +70℃ (non-freezing condition)							
Storage temperature	-30 to +80℃ (non-freezing condition)							
Ambient humidity	35 to 95% RH							
Protection circuit	surge protection circuit, overload & short-circuit protection(PRT08 SERIES는 제외)							
Protection	IP67(IEC specification)							
Insulation type(*1)	☐							
Cable	4 $\phi$ , 2P, 2M			5 $\phi$ , 2P, 2M				
Weight	About 36g	About 36g	About 63g	About 63g	About 122g	About 122g	About 181g	About 181g

※The weight of above chart is net weight.

※(\*1) ☐ "Mark indicated that equipment protected throughout by double insubtion or reinforced insulation.

# PRA SERIES

## Weld Field and Spatter Resistant Inductive Proximity Switch




### ■ Features

- > Weld Field and Spatter Resistant □
- > Teflon Coating □
- > Reverse Polarity Protection □
- > Surge Protection □
- > Overload & Short Circuit Protection □
- > LED Indicator






### ■ Type




#### DC 3-Wire Switching 10 - 30 VDC

Appearances	Model
M12 	PRA12-2DN
	PRA12-2DP
	PRA12-2DN2 ※
	PRA12-2DP2 ※
M18 	PRA18-5DN
	PRA18-5DP
	PRA18-5DN2 ※
	PRA18-5DP2 ※
M30 	PRA30-10DN
	PRA30-10DP
	PRA30-10DN2 ※
	PRA30-10DP2 ※

#### AC 2-Wire Switching 90 - 250 VAC

Appearances	Model
M12 	PRA12-2AO
	PRA12-2AC
M18 	PRA18-5AO
	PRA18-5AC
M30 	PRA30-10AO
	PRA30-10AC

#### DC 2-Wire Switching 15 - 30 VDC

Appearances	Model
M12 	PRAT12-2DO
	PRAT12-2DC
M18 	PRAT18-5DO
	PRAT18-5DC
M30 	PRAT30-10DO
	PRAT30-10DC

※Mark is option.

### ■ Specification (DC 3-Wire Switching)

Model	PRA12-2DN PRA12-2DP PRA12-2DN2 PRA12-2DP2	PRA18-5DN PRA18-5DP PRA18-5DN2 PRA18-5DP2	PRA30-10DN PRA30-10DP PRA30-10DN2 PRA30-10DP2
Detecting distance	2mm ±10%	5mm ±10%	10mm ±10%
Hysteresis	Max. 10% of detecting distance		
Standard detecting target	12×12×1mm (Iron)	18×18×1mm (Iron)	30×30×1mm (Iron)
Setting distance	0 to 1.4	0 to 3.5	0 to 7
Power supply (Operating voltage)	12 to 24VDC (10 to 30VDC)		
Power consumption	10mA		
Response frequency	800Hz	350Hz	250Hz
Residual voltage	Max. 1.5V		
Variation due to Temp. fluctuation	±10% Max. of detecting distance at +20°C within temperature range of -25 to +70°C		
Control output	Resistive load:200mA, Inductive load:100mA		
Insulation resistance	Min. 50MΩ (500VDC)		
Dielectric strength	1500VAC 50/60Hz for 1minute		
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours		
Shock	500m/s <sup>2</sup> (50G) in X,Y,Z directions for 3 times		
Indicator	Operating indicator : red LED		
Operating temperature	-25 to +70°C (non-freezing condition)		
Storage temperature	-30 to +80°C (non-freezing condition)		
Ambient humidity	35 to 95% RH		
Protection circuit	Reverse polarity protection, surge protection circuit, overload & short-circuit protection		
Protection	IP67 (IEC specification)		
Insulation type(*1)	□		
Cable	4φ, 3P, 2M	5φ, 3P, 2M	
Weight	About 70g	About 119g	About 184g

※The weight of above chart is net weight.

※(\*1) □ "Mark indicated that equipment protected throughout by double insulation or reinforced insulation.

## ■ Specification (AC Switching / DC 2-Wire Switching)

Type	AC type			DC 2wire type		
Model	<b>PRA12-2AO</b> <b>PRA12-2AC</b>	<b>PRA18-5AO</b> <b>PRA18-5AC</b>	<b>PRA30-10AO</b> <b>PRA30-10AC</b>	<b>PRAT12-2DO</b> <b>PRAT12-2DC</b>	<b>PRAT18-5DO</b> <b>PRAT18-5DC</b>	<b>PRAT30-10DO</b> <b>PRAT30-10DC</b>
Detecting distance	2mm ±10%	5mm ±10%	10mm ±10%	2mm ±10%	5mm ±10%	10mm ±10%
Hysteresis	Max. 10% of detecting distance					
Standard detecting target	12×12×1mm(Iron)	18×18×1mm(Iron)	30×30×1mm(Iron)	12×12×1mm(Iron)	18×18×1mm(Iron)	30×30×1mm(Iron)
Setting distance	0 to 1.4	0 to 3.5	0 to 7	0 to 1.4	0 to 3.5	0 to 7
Power supply (Operating voltage)	110 to 220VAC (90 to 250VAC)			24VDC (15 to 30VDC)		
Leakage current	Max. 2.5mA			Max. 0.9mA		
Response frequency	20Hz			800Hz	350Hz	250Hz
Residual voltage	Max. 10V			Max. 7V		
Variation due to Temp. fluctuation	±10% Max. of detecting distance at +20°C within temperature range of -25 to +70°C					
Control output	Resistive load:150mA, Inductive load:75mA	Resistive load:200mA, Inductive load:100mA		Resistive load:50mA, Inductive load:25mA		
Insulation resistance	Min. 50MΩ (500VDC)					
Dielectric strength	1500VAC 50/60Hz for 1minute					
Vibration	1mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours					
Shock	500m/s <sup>2</sup> (50G) in X,Y,Z directions for 3 times					
Indicator	Operating indicator : red LED					
Operating temperature	-25 to +70°C (non-freezing condition)					
Storage temperature	-30 to +80°C (non-freezing condition)					
Ambient humidity	35 to 95% RH					
Protection circuit	surge protection circuit			surge protection circuit, overload & short-circuit protection		
Protection	IP67(IEC specification)					
Insulation type(*1)	☐					
Cable	4 φ , 2P, 2M		5 φ , 2P, 2M			
Weight	About 66g	About 130g	About 185g	About 63g	About 122g	About 181g

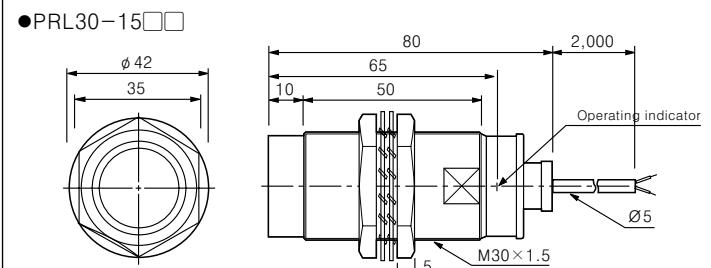
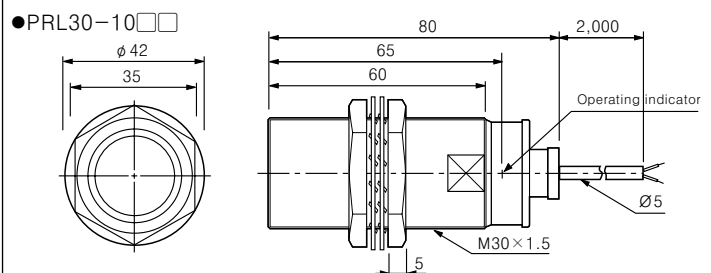
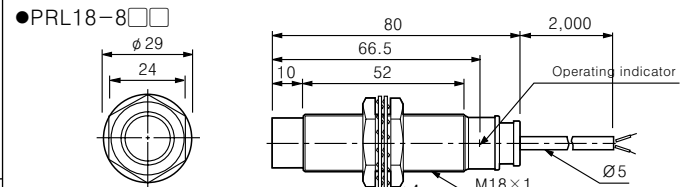
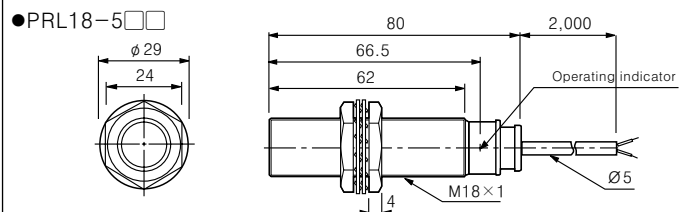
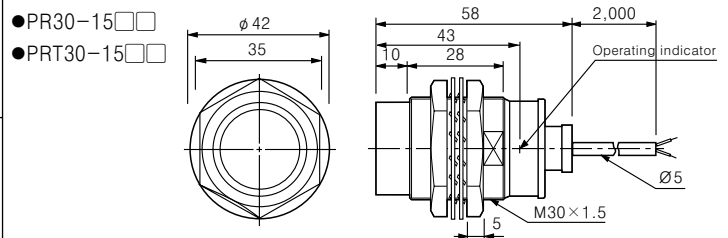
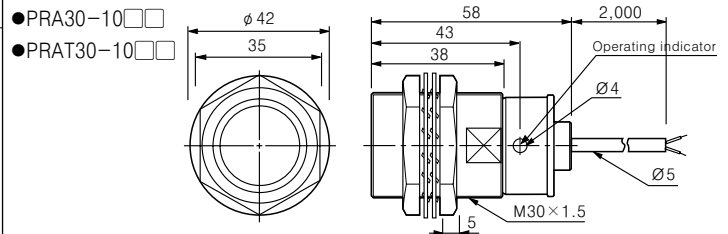
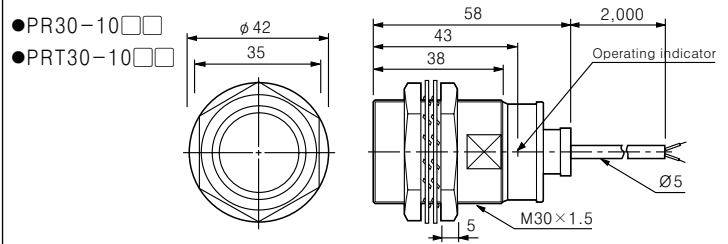
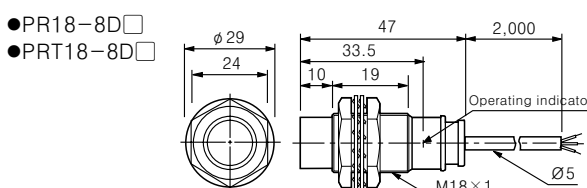
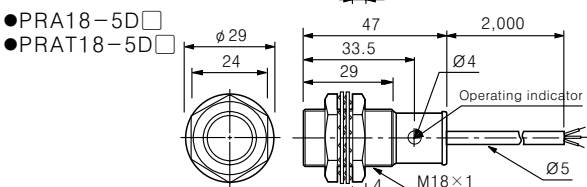
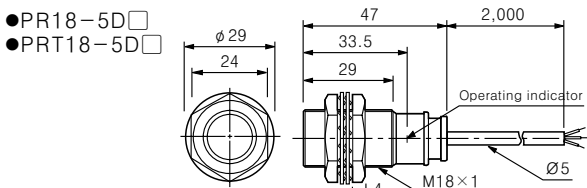
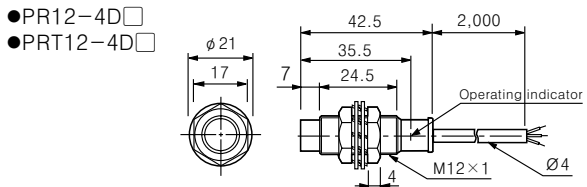
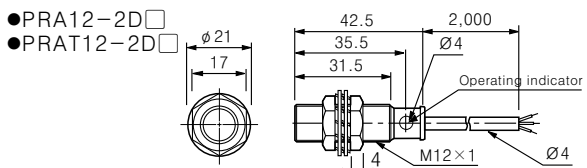
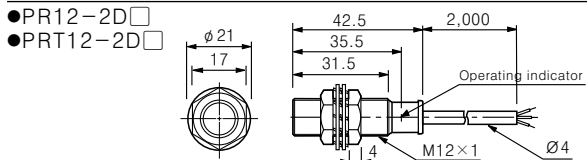
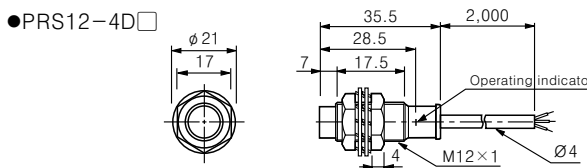
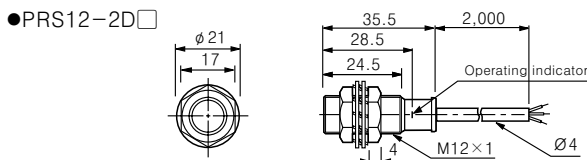
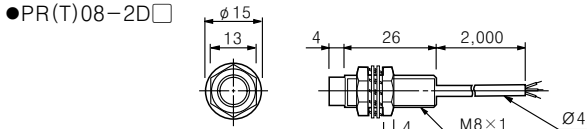
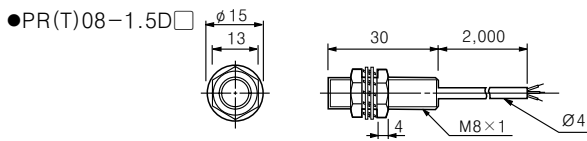
※The weight of above chart is net weight.

※(\*1)☐Mark indicated that equipment protected throughout by double insubtion or reinforced insulation.

# PR(A) SERIES

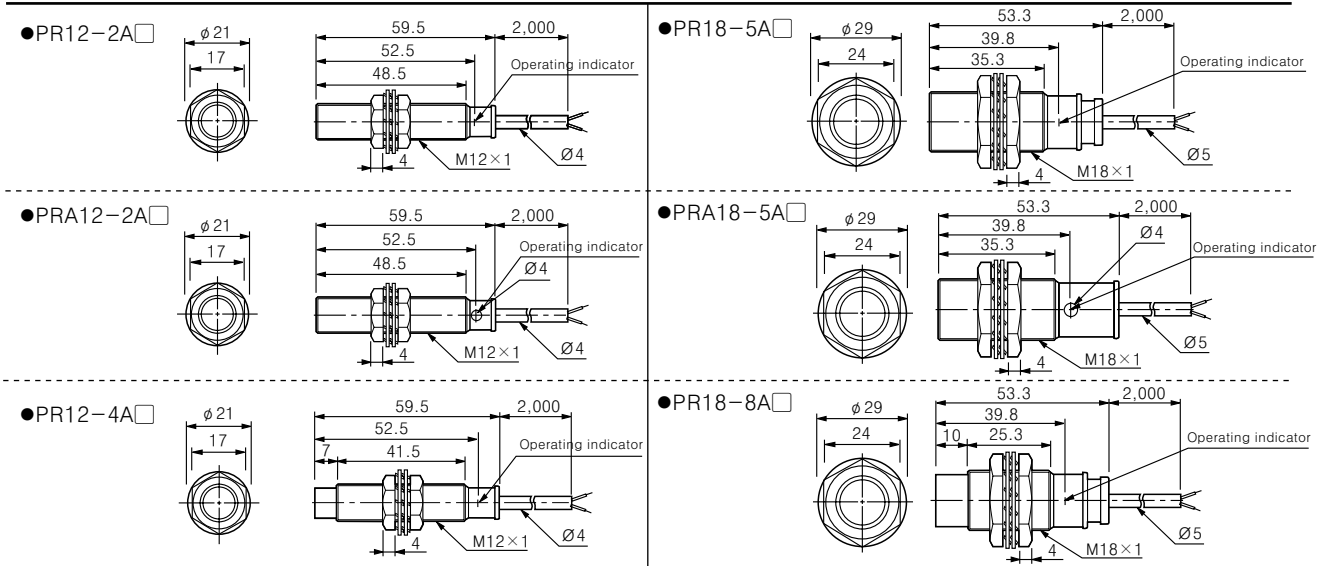
## Dimensions

Unit:mm



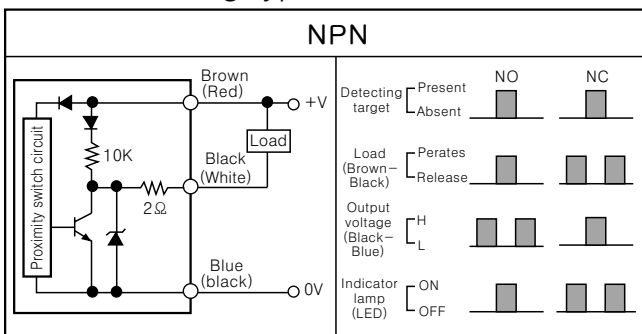
## ■ Dimensions

Unit:mm

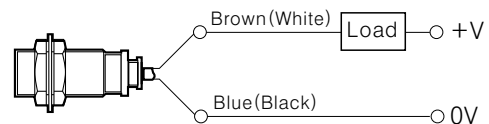
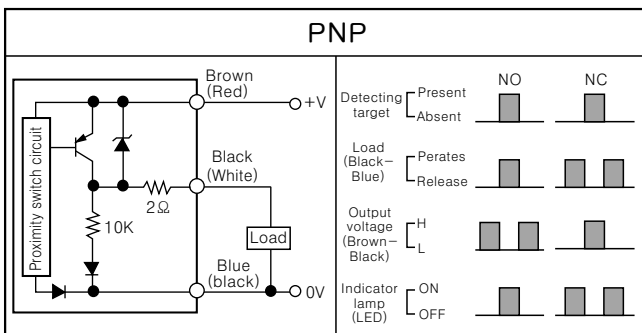
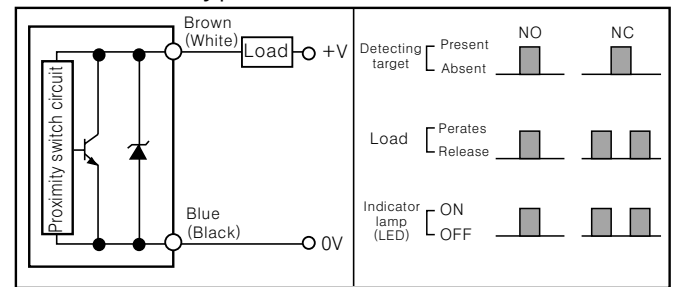


## ■ Control output circuit & operating load

### ◎ DC switching type



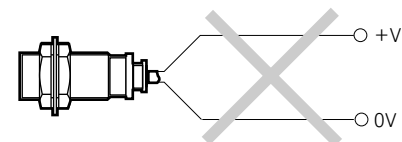
### ◎ DC 2wire type



< DC 2wire standard >

## ■ Power connection

The load must be connected.



When the load is connected with proximity switch, please connect the Brown(White) color wire at +V, the Blue(Black) color wire at 0V.