

Round type proximity sensor

- Applied exclusive I.C for C-MOS
- Wide range of power supply voltage
(5 – 35 V DC : DC 3 wire type)
- Internal noise enhanced circuit
- Applied the 2 wire type proximity none polarity



●● Suffix code

Model	Code					Description
UP	☐	☐	☐	☐	☐	Inductive type proximity sensor
Sensing area size	8					M8
	12					M12
	18					M18
	30					M30
Structure type	RM					Round type Shield
	RD					Round type Non shield
	RLM					Long round type Shield (M8 and M12 are excluded)
	RLD					Long round type Non shield (M8 and M12 are excluded)
Sensing distance	*					Please refer to the sensing distance of each specification (unit : mm)
Power and output type		N				DC NPN output
		P				DC PNP output
		A				AC 2 wire type
		T				DC 2 wire type (Polarity)
		U				DC 2 wire type (Non polarity) ※ But M8 is excluded
Output state		A				Normal Open (NO)
		C				Normal Close (NC)
Connection structure		*				No indication (Cable type)
		CR				Relay connector type
		C				Connector type

※ M8 (Ø8) is only available with the cable type

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Specification

Inductive DC 3 wire type

Model	NPN	UP8RM-1.5N□□	UP8RD-2N□□	UP12RM-2N□□	UP12RD-4N□□
	PNP	UP8RM-1.5P□□	UP8RD-2P□□	UP12RM-2P□□	UP12RD-4P□□
	Size	M8		M12	
Shield		Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 8 X 8 X 1		Iron 12 X 12 X 1	
Sensing distance		1.5 mm	2 mm	2 mm	4 mm
Setting distance		0 ~ 1.2 mm	0 ~ 1.6 mm	0 ~ 1.6 mm	0 ~ 3.2 mm
Hysteresis		Less than 10% of sensing distance			
Response frequency		800 Hz		800 Hz	400 Hz
Power supply voltage		12 - 24 V DC (Usable voltage range 5 - 35 V DC)			
Control output		Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 1.5V			
Current consumption		Max 6 mA			
Operation indication		Red LED			
Protective circuit		Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case: stainless, Sensing surface: PBT, Cable holder: Polyester elastomer		Case: brass (chrome plating), Sensing surface: PBT, Cable holder: Polyester elastomer	
Weight	Cable type	approx. 60g	approx. 60g	approx. 70g	approx. 70g
	Relay connector type	None	None	approx. 30g	approx. 30g
	Connector type	None	None	approx. 30g	approx. 30g

Model	NPN	UP18RM-5N□□	UP18RD-8N□□	UP18RLM-5N□□	UP18RLD-8N□□
	PNP	UP18RM-5P□□	UP18RD-8P□□	UP18RLM-5P□□	UP18RLD-8P□□
	Size	M18		M18	
Shield		Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 18 X 18 X 1	Iron 25 X 25 X 1	Iron 18 X 18 X 1	Iron 25 X 25 X 1
Sensing distance		5 mm	8 mm	5 mm	8 mm
Setting distance		0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 4 mm	0 ~ 6.4 mm
Hysteresis		Less than 10% of sensing distance			
Response frequency		350 Hz	200 Hz	350 Hz	200 Hz
Power supply voltage		12 - 24 V DC (Usable voltage range 5 - 35 V DC)			
Control output		Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 1.5V			
Current consumption		Max 6 mA			
Operation indication		Red LED			
Protective circuit		Power reversely connected protective circuit, Surge protective circuit and over current protective circuit are built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 120g	approx. 120g	approx. 140g	approx. 140g
	Relay connector type	approx. 80g	approx. 80g	approx. 100g	approx. 100g
	Connector type	approx. 60g	approx. 60g	approx. 80g	approx. 80g

Round type

Model	NPN	UP30RM-10N□□	UP30RD-15N□□	UP30RLM-10N□□	UP30RLD-15N□□
	PNP	UP30RM-10P□□	UP30RD-15P□□	UP30RLM-10P□□	UP30RLD-15P□□
	Size	M30		M30	
Shield	Shield		Non shield	Shield	Non shield
Standard sensing object(mm)	Iron 30 X 30 X 1		Iron 45 X 45 X 1	Iron 30 X 30 X 1	Iron 45 X 45 X 1
Sensing distance	10 mm		15 mm	10 mm	15 mm
Setting distance	0 ~ 8 mm		0 ~ 12 mm	0 ~ 8 mm	0 ~ 12 mm
Hysteresis	Less than 10% of sensing distance				
Response frequency	250 Hz		100 Hz	250 Hz	100 Hz
Power supply voltage	12 ~ 24 V DC (Usable voltage range 5 ~ 35 V DC)				
Control output	Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 1.5V				
Current consumption	Max 6 mA				
Operation indication	Red LED				
Protective circuit	Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built in.				
Connection structure	Cable type (standard cable length 2 m), Relay connector type, Connector type				
Material	Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer				
Weight	Cable type	approx. 170g	approx. 170g	approx. 220g	approx. 220g
	Relay connector type	approx. 130g	approx. 130g	approx. 180g	approx. 180g
	Connector type	approx. 150g	approx. 150g	approx. 200g	approx. 200g

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Inductive DC 2 wire type (Polarity/Non polarity)

Model	Polarity	UP8RM-1.5T□□	UP8RD-2T□□	UP12RM-2T□□	UP12RD-4T□□
	Non polarity	UP8RM-1.5U□□	UP8RD-2U□□	UP12RM-2U□□	UP12RD-4U□□
	Size	M8		M12	
Shield	Shield		Non shield	Shield	Non shield
Standard sensing object(mm)	Iron 8 X 8 X 1			Iron 12 X 12 X 1	
Sensing distance	1.5 mm		2 mm	2 mm	4 mm
Setting distance	0 ~ 1.2 mm		0 ~ 1.6 mm	0 ~ 1.6 mm	0 ~ 3.2 mm
Hysteresis	Less than 10% of sensing distance				
Response frequency	800 Hz			800 Hz	400 Hz
Power supply voltage	12 ~ 24 V DC (Usable voltage range 10 ~ 30 V DC)				
Control output	Open/Close capacitance : 100 mA max (Resistive load), Residual voltage : T (Polarity) : max 3.5 V, U (Non polarity) : max 5 V				
Leakage current	Max 1 mA				
Operation indication	Red LED				
Protective circuit	Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built in.				
Connection structure	Cable type (standard cable length 2m), Relay connector type, Connector type				
Material	Case: stainless, Sensing surface: PBT, Cable holder: Polyester elastomer			Case: brass (chrome plating), Sensing surface: PBT, Cable holder: Polyester elastomer	
Weight	Cable type	approx. 60g		approx. 70g	
	Relay connector type	None		approx. 30g	
	Connector type	None		approx. 30g	

Inductive DC 2 wire type

Model	Polarity	UP18RM-5T□□	UP18RD-8T□□	UP18RLM-5T□□	UP18RLD-8T□□
	Non polarity	UP18RM-5U□□	UP18RD-8U□□	UP18RLM-5U□□	UP18RLD-8U□□
	Size	M18		M18	
Shield		Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 18 X 18 X 1	Iron 25 X 25 X 1	Iron 18 X 18 X 1	Iron 25 X 25 X 1
Sensing distance		5 mm	8 mm	5 mm	8 mm
Setting distance		0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 4 mm	0 ~ 6.4 mm
Hysteresis		Less than 10 % of sensing distance			
Response frequency		800 Hz	400 Hz	800 Hz	400 Hz
Power supply voltage		12 - 24 V DC (Usable voltage range 10 - 30 V DC)			
Control output		Open/Close capacitance : 100 mA max (Resistive load), Residual voltage : T (Polarity) : max 3.5 V, U (Non polarity) : max 5 V			
Leakage current		Max 1 mA			
Operation indication		Red LED			
Protective circuit		Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 120g	approx. 120g	approx. 140g	approx. 140g
	Relay connector type	approx. 80g	approx. 80g	approx. 100g	approx. 100g
	Connector type	approx. 60g	approx. 60g	approx. 80g	approx. 80g

Model	Polarity	UP30RM-10T□□	UP30RD-15T□□	UP30RLM-10T□□	UP30RLD-15T□□
	Non polarity	UP30RM-10U□□	UP30RD-15U□□	UP30RLM-10U□□	UP30RLD-15U□□
	Size	M30		M30	
Shield		Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 30 X 30 X 1	Iron 45 X 45 X 1	Iron 30 X 30 X 1	Iron 45 X 45 X 1
Sensing distance		10 mm	15 mm	10 mm	15 mm
Setting distance		0 ~ 8 mm	0 ~ 12 mm	0 ~ 8 mm	0 ~ 12 mm
Hysteresis		Less than 10 % of sensing distance			
Response frequency		250 Hz	100 Hz	250 Hz	100 Hz
Power supply voltage		12 - 24 V DC (Usable voltage range 10 - 30 V DC)			
Control output		Open/Close capacitance : 100 mA max (Resistive load), Residual voltage : T (Polarity) : max 3.5 V, U (Non polarity) : max 5 V			
Leakage current		Max 1mA			
Operation indication		Red LED			
Protective circuit		Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 170g		approx. 220g	
	Relay connector type	approx. 130g		approx. 180g	
	Connector type	approx. 150g		approx. 200g	

Round type

Inductive AC 2 wire type

Model	For AC	UP12RM-2A□□	UP12RD-4A□□
	Size	M12	M12
Shield		Shield	Non shield
Standard sensing object(mm)		Iron 12 X 12 X 1	
Sensing distance		2 mm	4 mm
Setting distance		0 ~ 1.6 mm	0 ~ 3.2 mm
Hysteresis		Less than 10 % of sensing distance	
Response frequency		20 Hz	
Power supply voltage		100 – 240 V AC (Usable voltage range 90 – 250 V AC)	
Control output		Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 10 V	
Leakage current		Max 2.2 mA	
Operation indication		Red LED	
Protective circuit		Surge protective circuit built in.	
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type	
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer	
Weight	Cable type	approx. 70g	approx. 70g
	Relay connector type	approx. 30g	approx. 30g
	Connector type	approx. 30g	approx. 30g

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Model	For AC	UP18RM-5A□□	UP18RD-8A□□	UP18RLM-5A□□	UP18RLD-8A□□
	Size	M18		M18	
Shield		Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 18 X 18 X 1	Iron 25 X 25 X 1	Iron 18 X 18 X 1	Iron 25 X 25 X 1
Sensing distance		5 mm	8 mm	5 mm	8 mm
Setting distance		0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 4 mm	0 ~ 6.4 mm
Hysteresis		Less than 10 % of sensing distance			
Response frequency		20 Hz			
Power supply voltage		100 – 240 V AC (Usable voltage range 90 – 250 V AC)			
Control output		Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 10 V			
Leakage current		Max 2.2 mA			
Operation indication		Red LED			
Protective circuit		Surge protective circuit built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 120g		approx. 140g	
	Relay connector type	approx. 80g		approx. 100g	
	Connector type	approx. 60g		approx. 80g	

Inductive AC 2 wire type

Model	For AC	UP30RM-10A□□	UP30RD-15A□□	UP30RLM-10A□□	UP30RLD-15A□□
	Size	M30		M30	
	Shield	Shield	Non shield	Shield	Non shield
Standard sensing object(mm)		Iron 30 X 30 X 1	Iron 45 X 45 X 1	Iron 30 X 30 X 1	Iron 45 X 45 X 1
Sensing distance		10 mm	15 mm	10 mm	15 mm
Setting distance		0 ~ 8 mm	0 ~ 12 mm	0 ~ 8 mm	0 ~ 12 mm
Hysteresis		Less than 10 % of sensing distance			
Response frequency		20 Hz			
Power supply voltage		100 – 240 V AC (Usable voltage range 90 – 250 V AC)			
Control output		Open/Close capacitance : 200 mA max (Resistive load), Residual voltage : Max 10 V			
Leakage current		Max 2.2 mA			
Operation indication		Red LED			
Protective circuit		Surge protective circuit built in.			
Connection structure		Cable type (standard cable length 2 m), Relay connector type, Connector type			
Material		Case : brass (chrome plating), Sensing surface : PBT, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 170g	approx. 170g	approx. 220g	approx. 220g
	Relay connector type	approx. 130g	approx. 130g	approx. 180g	approx. 180g
	Connector type	approx. 150g	approx. 150g	approx. 200g	approx. 200g

Environment

Degree of protection	IP67 (IEC standard)
Ambient temperature	-25 ~ 70 °C (Less than ± 10 % of sensing distance at temperature 20 °C)
Ambient humidity	35 ~ 85 %RH
Insulation resistance	Min 50 M Ω (500 V DC mega standard)
Dielectric strength	For 1 min at 2000 V AC 50/60 Hz (Between the recharging part and case)
Vibration resistance	10 – 55 Hz (cycle 1 min, Double amplitude : 1.5 mm 2 hours for each of X, Y and Z directions)
Shock resistance	500 % 3 times to each of X, Y and Z directions

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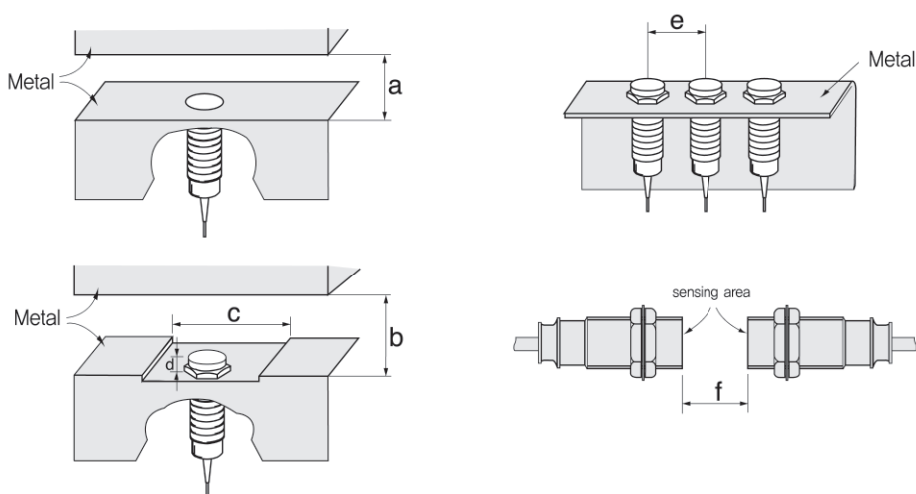
Connection diagram and operation chart

Type		Connection method		Output state																								
		Cable type	Relay connector type																									
DC open / close	N P N			<table><tr><td>Sensing object</td><td>Yes</td><td>N.O</td><td>N.C</td></tr><tr><td></td><td>No</td><td></td><td></td></tr><tr><td>LOAD</td><td>Run</td><td></td><td></td></tr><tr><td>[Brown - Black]</td><td>Return</td><td></td><td></td></tr><tr><td>Operation indicator</td><td>ON</td><td></td><td></td></tr><tr><td></td><td>OFF</td><td></td><td></td></tr></table>	Sensing object	Yes	N.O	N.C		No			LOAD	Run			[Brown - Black]	Return			Operation indicator	ON				OFF		
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P N P			<table><tr><td>Sensing object</td><td>Yes</td><td>N.O</td><td>N.C</td></tr><tr><td></td><td>No</td><td></td><td></td></tr><tr><td>LOAD</td><td>Run</td><td></td><td></td></tr><tr><td>[Black - Blue]</td><td>Return</td><td></td><td></td></tr><tr><td>Operation indicator</td><td>ON</td><td></td><td></td></tr><tr><td></td><td>OFF</td><td></td><td></td></tr></table>	Sensing object	Yes	N.O	N.C		No			LOAD	Run			[Black - Blue]	Return			Operation indicator	ON				OFF			
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LOAD	Run																											
[Black - Blue]	Return																											
Operation indicator	ON																											
	OFF																											
2 wire type none polarity			<table><tr><td>Sensing object</td><td>Yes</td><td>N.O</td><td>N.C</td></tr><tr><td></td><td>No</td><td></td><td></td></tr><tr><td>LOAD</td><td>Run</td><td></td><td></td></tr><tr><td></td><td>Return</td><td></td><td></td></tr><tr><td>Operation indicator</td><td>ON</td><td></td><td></td></tr><tr><td></td><td>OFF</td><td></td><td></td></tr></table>	Sensing object	Yes	N.O	N.C		No			LOAD	Run				Return			Operation indicator	ON				OFF			
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LOAD	Run																											
	Return																											
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AC open/ close				<table><tr><td>Sensing object</td><td>Yes</td><td>N.O</td><td>N.C</td></tr><tr><td></td><td>No</td><td></td><td></td></tr><tr><td>LOAD</td><td>Run</td><td></td><td></td></tr><tr><td></td><td>Return</td><td></td><td></td></tr><tr><td>Operation indicator</td><td>ON</td><td></td><td></td></tr><tr><td></td><td>OFF</td><td></td><td></td></tr></table>	Sensing object	Yes	N.O	N.C		No			LOAD	Run				Return			Operation indicator	ON				OFF		
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LOAD	Run																											
	Return																											
Operation indicator	ON																											
	OFF																											

Important features

When attaching more than 1 proximity sensors in parallel direction or facing each other, it can cause the malfunction. When there are metals around the proximity sensor, it can cause malfunctions such as abnormal return due to the existence of metals around the proximity sensor. In order to avoid the malfunction which caused by surrounding metals, please install it with sufficient gap from each other. (Wider than the values written in below chart)

Round type



● Inductive DC 3 wire type / DC 2 wire type (Polarity/Non polarity)

[unit : mm]

MODEL	a	b	c	d	e	f
LIST						
UP8RM-1.5 □□□	4.5	—	8	0	16	9
UP8RD-2 □□□	6	6	24	8	24	12
UP12RM-2 □□□	6	—	12	0	24	12
UP12RD-4 □□□	12	12	36	11	36	24
UP18RM-5 □□□	15	—	18	0	36	30
UP18RD-8 □□□	24	24	54	14	54	48
UP18RLM-5 □□□	15	—	18	0	36	30
UP18RLD-8 □□□	24	24	54	14	54	48
UP30RM-10 □□□	30	—	30	0	60	60
UP30RD-15 □□□	45	45	90	15	90	90
UP30RLM-10 □□□	30	—	30	0	60	60
UP30RLD-15 □□□	45	45	90	15	90	90

Round type

● Inductive AC 2 wire type

[unit : mm]

MODEL LIST	a	b	c	d	e	f
UP12RM-2A □□	6	—	12	0	24	12
UP12RD-4A □□	12	12	36	11	36	24
UP18RM-5A □□	15	—	18	0	36	30
UP18RD-8A □□	24	24	54	14	54	48
UP18RLM-5A □□	15	—	18	0	36	30
UP18RLD-8A □□	24	24	54	14	54	48
UP30RM-10A □□	30	—	30	0	60	60
UP30RD-15A □□	45	45	90	15	90	90
UP30RLM-10A □□	30	—	30	0	60	60
UP30RLD-15A □□	45	45	90	15	90	90

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Dimension (unit : mm)

■ Cable type

UP8RM-□□ (Shield)	UP8RD-□□ (Non shield)
UP12RM-□□ (Shield)	UP12RD-□□ (Non shield)
UP12RM-2A (Shield)	UP12RD-4A (Non shield)
UP18RM-5□ (Shield)	UP18RD-8□ (Non shield)
UP18RLM-5□ / UP18RLM-5A (Shield)	UP18RLD-8□ / UP18RLD-8A (Non shield)
UP18RM-5A (Shield)	UP18RD-8A (Non shield)

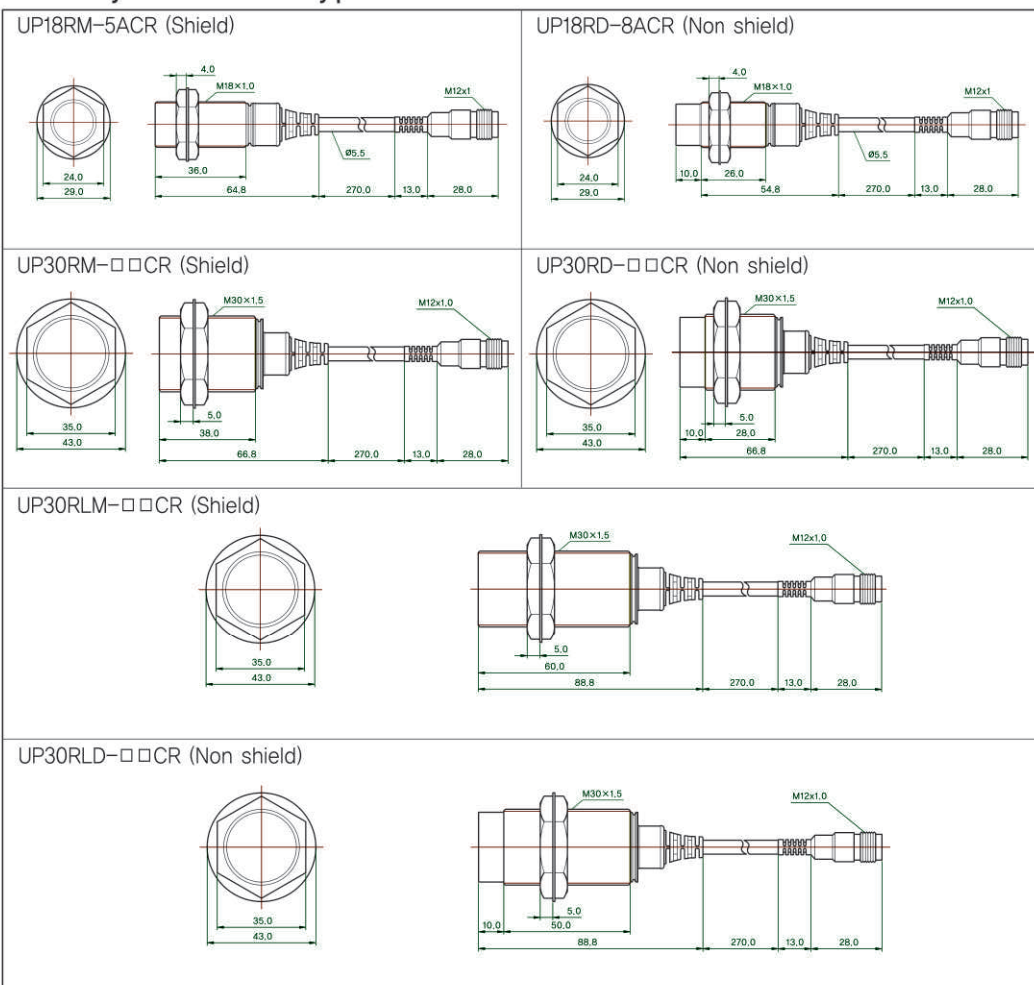
Cable type

UP30RM-□□ (Shield)	UP30RD-□□ (Non shield)
UP30RLM-□□ (Shield)	UP30RLD-□□ (Non shield)

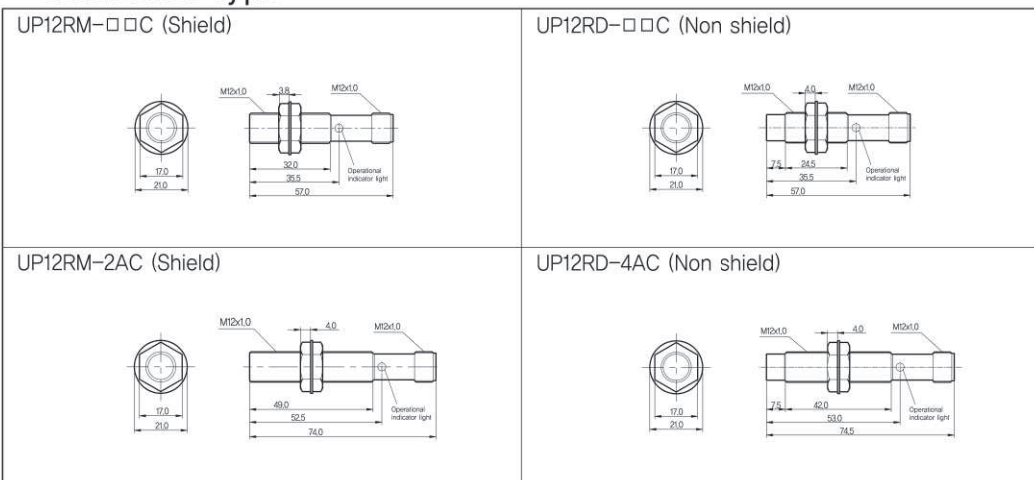
Relay connector type

UP12RM-□□CR (Shield)	UP12RD-□□CR (Non shield)
UP12RM-2ACR (Shield)	UP12RD-4ACR (Non shield)
UP18RM-5□CR (Shield)	UP18RD-8□CR (Non shield)
UP18RLM-5□CR / UP18RLM-5ACR (Shield)	UP18RLD-8□CR / UP18RLD-8ACR (Non shield)

■ Relay connector type



■ Connector type



Round type

■ Connector type

UP18RM-5□C (Shield)	UP18RD-8□C (Non shield)
UP18RLM-5□C / UP18RLM-5AC (Shield)	UP18RLD-8□C / UP18RLD-8AC (Non shield)
UP18RM-5AC (Shield)	UP18RD-8AC (Non shield)
UP30RM-□□C (Shield)	UP30RD-□□C (Non shield)
UP30RLM-□□C (Shield)	UP30RLD-□□C (Non shield)

※ M8 and M12 Long type are not available

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