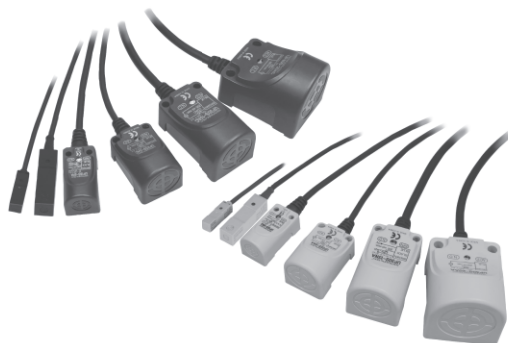


## Square type proximity sensor

- 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	<input type="checkbox"/>	S-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inductive type proximity sensor
Sensing area size	8						8 X 8 mm
	12						12 X 12 mm
	18						18 X 18 mm
	25						25 X 25 mm
	30						30 X 30 mm
	40						40 X 40 mm
Structure type	S						Square type
Sensing distance	2						2 mm (Only with UP8S-2)
	4						4 mm (Only with UP12S-4)
	5						5 mm (Only with UP18S-5, UP25S-5)
	8						8 mm (Only with UP18S-8, UP25S-8)
	10						10 mm (Only with UP30S-10)
	12						12 mm (Only with UP25S-12)
	15						15 mm (Only with UP30S-15)
	20						20 mm (Only with UP40S-20)
Power and output type	N						DC NPN output
	P						DC PNP output
	A						AC 2 wire type (But UP18S is excluded)
	T						DC 2 wire type (Polarity)
	U						DC 2 wire type (Non polarity)
Output state	A						Normal Open (NO)
	C						Normal Close (NC)
Sensing direction	*						No indication (Detect Front side)
	U						Detect upper side (Only available with the square type UP18S)
Connection structure	*						No indication (Cable type)
	CR						Relay connector type

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Proximity Sensor

Specification

Inductive DC 3 wire type

Model	NPN	UP8S-2N□□	UP12S-4N□□	UP18S-5N□□	UP18S-8N□□
	PNP	UP8S-2P□□	UP12S-4P□□	UP18S-5P□□	UP18S-8P□□
	Size	Side length 8 mm	Side length 12 mm	Side length 18 mm	Side length 18 mm
Standard sensing object(mm)	Iron 8X8X1		Iron 12X12X1	Iron 18X18X1	Iron 25X25X1
Sensing distance	2 mm		4 mm	5 mm	8 mm
Setting distance	0 ~ 1.6 mm		0 ~ 3.2 mm	0 ~ 4 mm	0 ~ 6.4 mm
Hysteresis	Less than 10 % of sensing distance				
Response frequency	800 Hz		800 Hz	800 Hz	800 Hz
Power supply voltage	12 - 24 V DC (Usable voltage range 5 - 35 V DC)				
Control output	Open/Close capacitance	100 mA max		200 mA max (Resistive load)	
	Residual voltage	1.5 V max			
Current consumption	6 mA max				
Operation indication	Red LED				
Protective circuit	Power reversely connected protective circuit, Surge protective circuit and over current protective circuit are built in. IP67(IEC standard)				
Degree of protection	IP67(IEC standard)				
Connection structure	Cable type (standard cable length 2 m), Relay connector type				
Material	Case : PBT resin, cable holder : Polyester elastomer				
Weight	Cable type	approx. 35g	approx. 45g	approx. 60g	approx. 60g
	Relay connector type	approx. 10g	approx. 15g	approx. 20g	approx. 20g

Model	NPN	UP25S-5N□□	UP25S-8N□□	UP25S-12N□□	UP30S-10N□□	UP30S-15N□□	UP40S-20N□□
	PNP	UP25S-5P□□	UP25S-8P□□	UP25S-12P□□	UP30S-10P□□	UP30S-15P□□	UP40S-20P□□
	Size	Side length 25 mm			Side length 30 mm		Side length 40 mm
Standard sensing object(mm)	Iron 25 X 25 X 1	Iron 30 X 30 X 1	Iron 35 X 35 X 1	Iron 30 X 30 X 1	Iron 45 X 45 X 1	Iron 60 X 60 X 1	
Sensing distance	5 mm	8 mm	12 mm	10 mm	15 mm	20 mm	
Setting distance	0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 9.6 mm	0 ~ 8 mm	0 ~ 12 mm	0 ~ 16 mm	
Hysteresis	Less than 10% of sensing distance						
Response frequency	350 Hz	250 Hz	200 Hz	250 Hz	100 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	1.5 V max					
Current consumption	6 mA max						
Operation indication	Red LED						
Protective circuit	Power reversely connected protective circuit, Surge protective circuit and over current protective circuit are built in.						
Degree of protection	IP67(IEC standard)						
Connection structure	Cable type (standard cable length 2 m), Relay connector type						
Material	Case : PBT resin, Cable holder : Polyester elastomer						
Weight	Cable type	approx. 80g	approx. 80g	approx. 80g	approx. 90g	approx. 90g	approx. 110g
	Relay connector type	approx. 40g	approx. 40g	approx. 40g	approx. 60g	approx. 60g	approx. 80g



## Inductive DC 2 wire type

Model	Polarity	UP8S-2T□□	UP12S-4T□□	UP18S-5T□□	UP18S-8T□□
	Non polarity	-	UP12S-4U□□	UP18S-5U□□	UP18S-8U□□
	Size	Side length 8 mm	Side length 12 mm	Side length 18 mm	Side length 18 mm
Standard sensing object(mm)		Iron 8X8X1	Iron 12X12X1	Iron 18X18X1	Iron 25X25X1
Sensing distance		2 mm	4 mm	5 mm	8 mm
Setting distance		0 ~ 1.6 mm	0 ~ 3.2 mm	0 ~ 4 mm	0 ~ 6.4 mm
Hysteresis		Less than 10 % of sensing distance			
Response frequency		800 Hz	500 Hz	500 Hz	300 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) : 3.5 V max, U (Non polarity) : 5 V max			
Leakage current		1 mA max			
Operation indication		Red LED			
Protective circuit		Power reversely connected protective circuit, Surge protective circuit and over current protective circuit are built in, IP67(IEC standard)			
Degree of protection		IP67 (IEC standard)			
Connection structure		Cable type (standard cable length 2 m), Relay connector type			
Material		Case : PBT resin, Cable holder : Polyester elastomer			
Weight	Cable type	approx. 35g	approx. 45g	approx. 60g	approx. 60g
	Relay connector type	approx. 10g	approx. 15g	approx. 20g	approx. 20g

Model	Polarity	UP25S-5T□□	UP25S-8T□□	UP25S-12T□□	UP30S-10T□□	UP30S-15T□□	UP40S-20T□□
	Non polarity	UP25S-5U□□	UP25S-8U□□	UP25S-12U□□	UP30S-10U□□	UP30S-15U□□	UP40S-20U□□
	Size	Side length 25 mm			Side length 30 mm		Side length 40 mm
Standard sensing object(mm)		Iron 25 X 25 X 1	Iron 30 X 30 X 1	Iron 35 X 35 X 1	Iron 30 X 30 X 1	Iron 45 X 45 X 1	Iron 60 X 60 X 1
Sensing distance		5 mm	8 mm	12 mm	10 mm	15 mm	20 mm
Setting distance		0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 9.6 mm	0 ~ 8 mm	0 ~ 12 mm	0 ~ 16 mm
Hysteresis		Less than 10% of sensing distance					
Response frequency		350 Hz	250 Hz	200 Hz	250 Hz	100 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 3.5V, U (Non polarity): max 5V					
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, IP67 (IEC standard)					
Degree of protection		IP67 (IEC standard)					
Connection structure		Cable type (standard cable length 2 m), Relay connector type					
Material		Case : PBT resin, Cable holder : Polyester elastomer					
Weight	Cable type	approx. 80g	approx. 80g	approx. 80g	approx. 90g	approx. 90g	approx. 110g
	Relay connector type	approx. 40g	approx. 40g	approx. 40g	approx. 60g	approx. 60g	approx. 80g

Square type

Inductive AC 2 wire type

Model	For AC	UP25S-5A□□	UP25S-8A□□	UP30S-10A□□
	Size	Side length 25 mm		Side length 30 mm
Standard sensing object(mm)		Iron 25 X 25 X 1	Iron 25 X 25 X 1	Iron 30 X 30 X1
Sensing distance		5 mm	8 mm	10 mm
Setting distance		0 ~ 4 mm	0 ~ 6.4 mm	0 ~ 8 mm
Hysteresis		Less than 10% of sensing distance		
Response frequency		20 Hz		
Power supply voltage		100 - 240 V DC (Usable voltage range 90 - 250 V DC)		
Control output	Open/Close capacitance	200 mA max (Resistive load)		
	Residual voltage	Max 10 V AC		
Leakage current		Max 2.2 mA		
Operation indication		Red LED		
Protective circuit		Surge protective circuit is built in.		
Degree of protection		IP67(IEC standard)		
Connection structure		Cable type (Standard cable length 2 m), Relay connector type		
Material		Case : PBT resin, Cable holder : Polyester elastomer		
Weight	Cable type	approx. 80g	approx. 80g	approx. 90g
	Relay connector type	approx. 40g	approx. 40g	approx. 80g

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Proximity Sensor

Model	For AC	UP30S-15A□□	UP40S-20A□□
	Size	Side length 30 mm	Side length 40 mm
Standard sensing object(mm)		Iron 45 X 45 X 1	Iron 60 X 60 X 1
Sensing distance		15 mm	20 mm
Setting distance		0 ~ 12 mm	0 ~ 16 mm
Hysteresis		Less than 10 % of sensing distance	
Response frequency		20 Hz	
Power supply voltage		100 - 240 V DC (Usable voltage range 90 - 250 V DC)	
Control output	Open/Close capacitance	200 mA max (Resistive load)	
	Residual voltage	Max 10 V AC	
Leakage current		Max 2.2 mA	
Operation indication		Red LED	
Protective circuit		Surge protective circuit is built in.	
Degree of protection		IP67(IEC standard)	
Connection structure		Cable type (Standard cable length 2 m), Relay connector type	
Material		Case : PBT resin, Cable holder : Polyester elastomer	
Weight	Cable type	approx. 90g	approx. 110g
	Relay connector type	approx. 60g	approx. 80g

Environment

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 $\Omega$ (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

○● Connection diagram (Cable type, Relay connector type)

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

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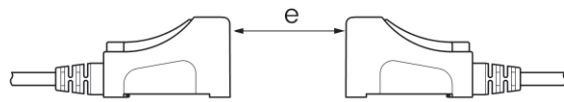
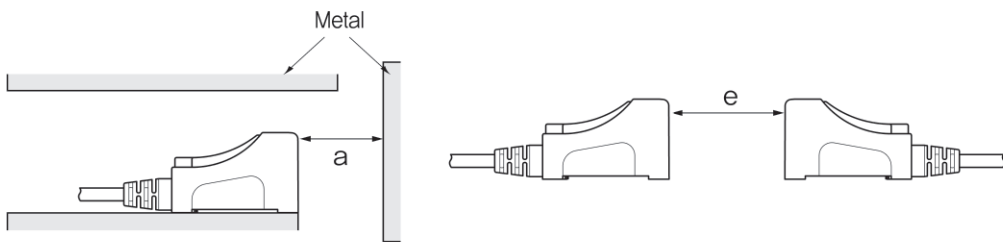
Proximity Sensor

### ●● Important features

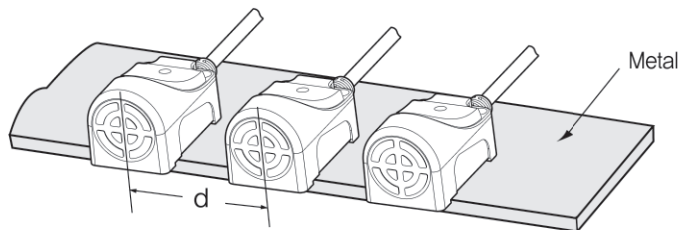
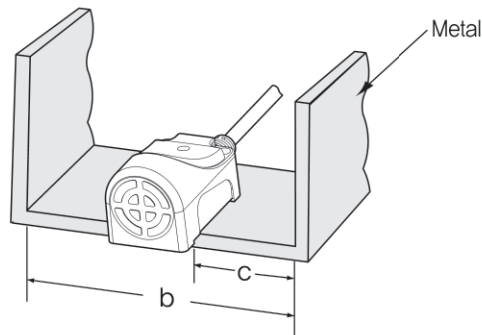
When attaching more than 1 proximity sensors in parallel direction or facing each other, it can cause the malfunction. When there are metals around the proximity sensor, it can cause malfunctions such as abnormal return due to the existence of metals around the proximity sensor. In order to avoid the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

#### Square type

Proximity sensor does get influenced by the surrounding metals so when installing it, please have a gap more than the value given in the chart.



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Sensor



● Inductive DC 3 wire type

[unit : mm]

MODEL LIST	a	b	c	d	e
UP8S-2 □□□	6	24	8	16	12
UP12S-4 □□□	12	36	12	24	24
UP18S-5 □□□	15	-	18	36	30
UP18S-8 □□□	24	54	18	36	48
UP25S-5 □□□	15	-	25	50	30
UP25S-8 □□□	24	-	25	50	48
UP25S-12 □□□	36	75	36	50	72
UP30S-10 □□□	30	-	30	60	60
UP30S-15 □□□	45	90	30	60	90
UP40S-20 □□□	60	-	40	80	120

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

[unit : mm]

MODEL LIST	a	b	c	d	e
UP8S-2 □□□	6	24	8	16	12
UP12S-4 □□□	12	36	12	24	24
UP18S-5 □□□	15	-	18	36	30
UP18S-8 □□□	24	54	18	36	48
UP25S-5 □□□	15	-	25	50	30
UP25S-8 □□□	24	-	25	50	48
UP25S-12 □□□	36	75	36	50	72
UP30S-10 □□□	30	-	30	60	60
UP30S-15 □□□	45	90	30	60	90
UP40S-20 □□□	60	-	40	80	120

● Inductive AC 2 wire type

[unit : mm]

MODEL LIST	a	b	c	d	e
UP25S-5A □□	15	54	18	36	30
UP25S-8A □□	24	54	18	36	48
UP30S-10A □□	30	90	30	60	60
UP30S-15A □□	45	90	30	60	90
UP40S-20A □□	60	120	40	80	120

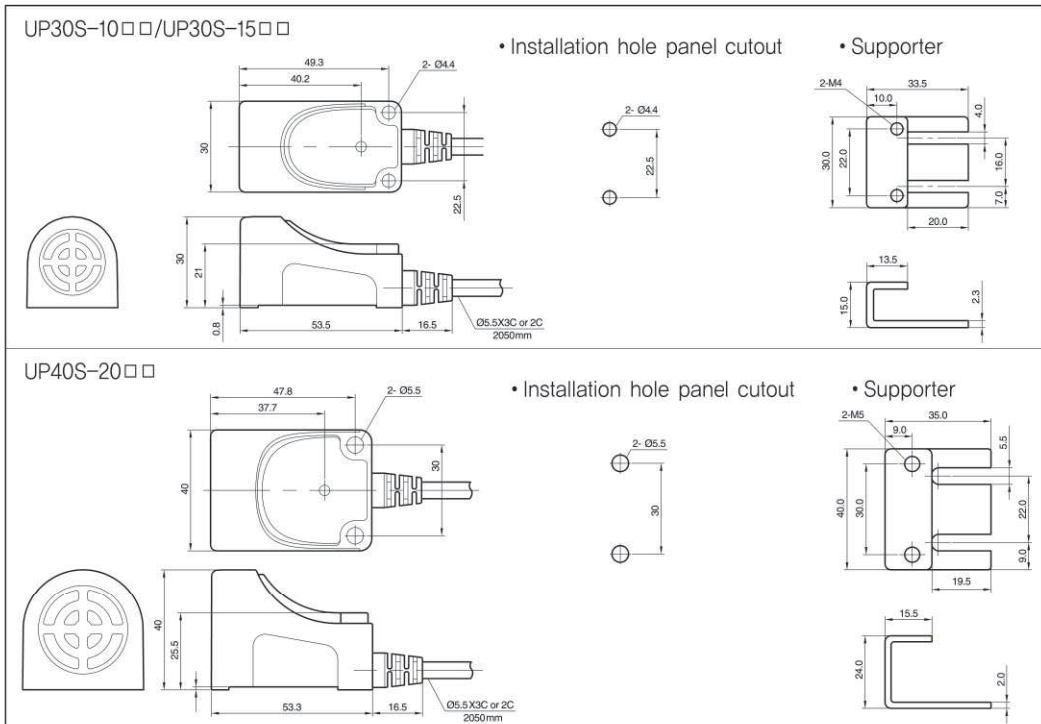
Dimension [unit : mm]

■ Cable type

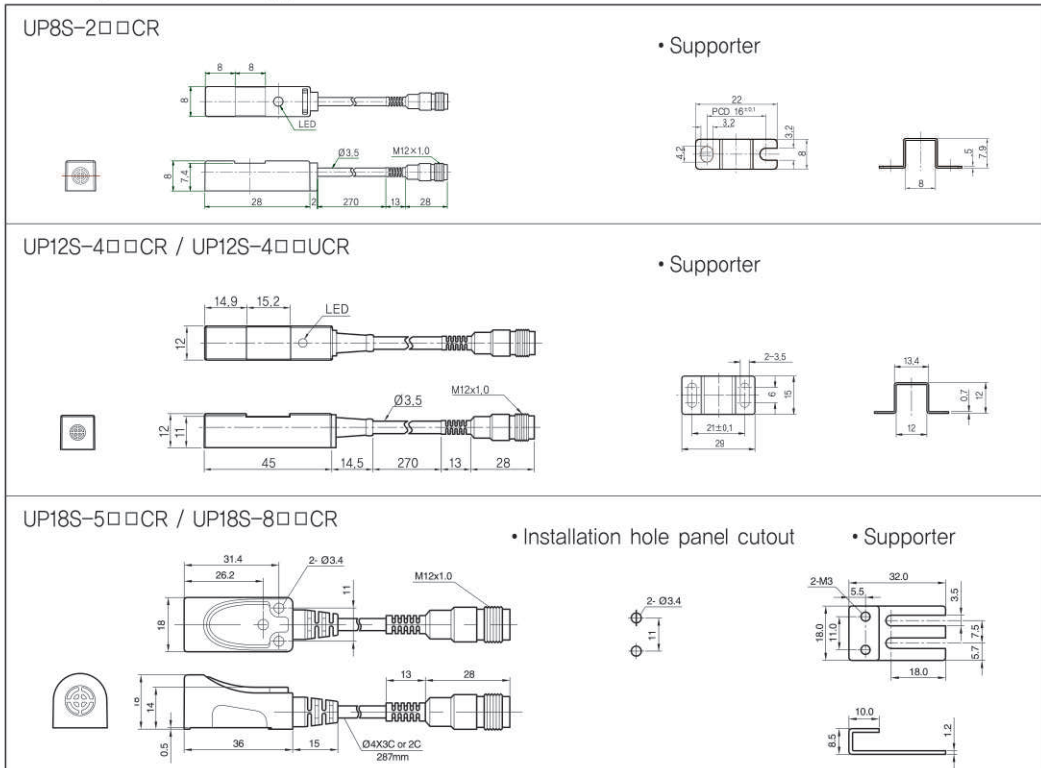
<p>UP8S-2□□</p>	<p>• Supporter</p>
<p>UP12S-4□□ / UP12S-4□□U</p>	<p>• Supporter</p>
<p>UP18S-5□□ / UP18S-8□□</p>	<p>• Installation hole panel cutout</p> <p>• Supporter</p>
<p>UP18S-5□□U / UP18S-8□□U</p>	<p>• Installation hole panel cutout</p> <p>• Supporter</p>
<p>UP25S-5□□ / UP25S-8□□ / UP25S-12□□</p>	<p>• Installation hole panel cutout</p> <p>• Supporter</p>



■ Cable type



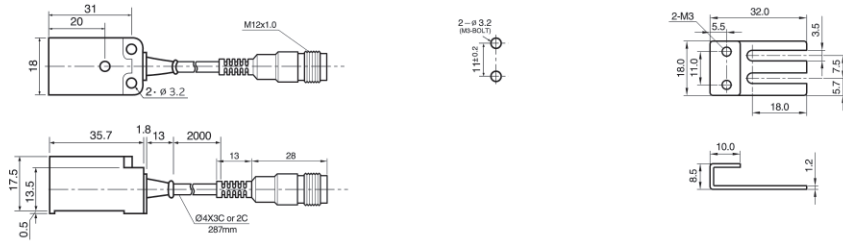
■ Relay connector type



Square type

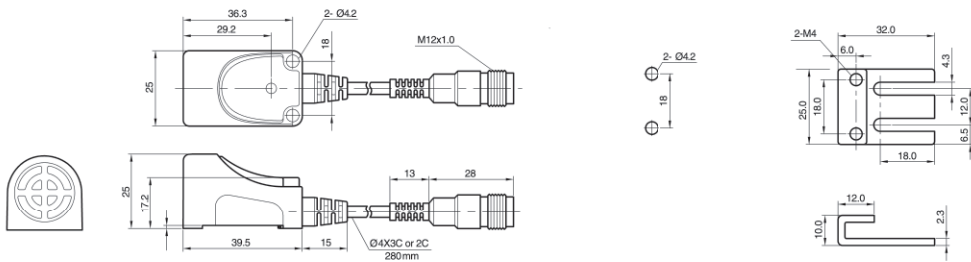
UP18S-5□□UCR / UP18S-8□□UCR

- Installation hole panel cutout
- Supporter



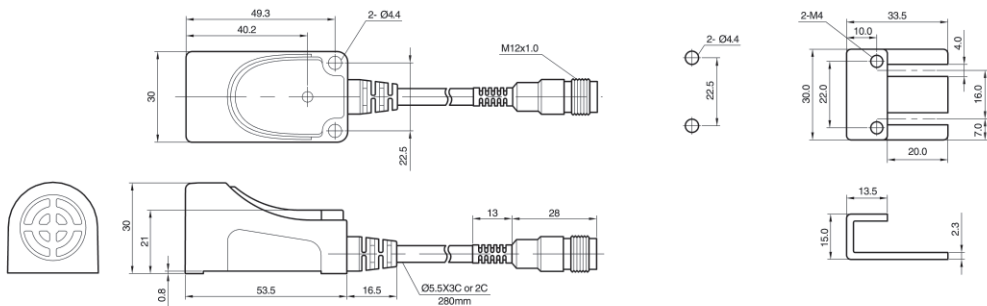
UP25S-5□□CR / UP25S-8□□CR / UP25S-12□□CR

- Installation hole panel cutout
- Supporter



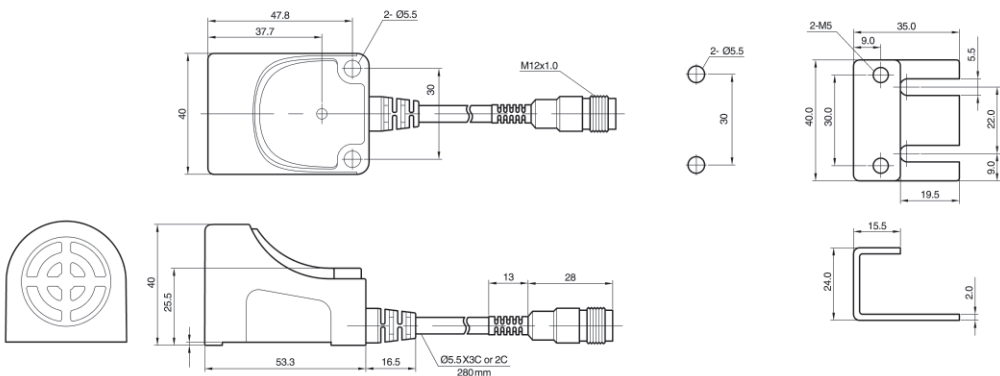
UP30S-10□□CR / UP30S-15□□CR

- Installation hole panel cutout
- Supporter



UP40S-20□□CR

- Installation hole panel cutout
- Supporter



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