

# CUP series





Capacitive type proximity sensor

- Noise resistant reinforced circuit
- Leakage current less than 2 mA
- Operating Voltage 12-24Vd.c., 20-240Va.c./d.c.

**RoHS**



## Specification

### Capacitive DC 3 wire type

Model	NPN	CUP-18R-8N□□	CUP-18RP-8N□□
	PNP	CUP-18R-8P□□	CUP-18RP-8P□□
Appearance			
Sensing distance		8 mm (Volume variation)	
Setting distance		0 ~ 6.4 mm	
Weight	Cable type	70g	70g
	Connector Cable type	30g	30g
Model	NPN	CUP-30R-15N□□	CUP-30RP-15N□□
	PNP	CUP-30R-15P□□	CUP-30RP-15P□□
Appearance			
Sensing distance		15 mm (Volume variation)	
Setting distance		0 ~ 12 mm	
Weight	Cable type	120g	120g
	Connector Cable type	80g	80g
Shield		None Shield	
Standard sensing object(mm)		Iron 50 x 50 x 1 (Grounded state)	

Hysteresis	Less than 20 % of sensing distance
Response frequency	50 Hz
Power voltage	12 - 24 V d.c. (Usable voltage range 10 - 30 V d.c.)
Control output	200 mA max (Resistive load)
Residual voltage	Max. 1.5 V
Current consumption	Max. 10 mA
Operation indication	Red LED
Protection circuit	Power reversely connected protective circuit, surge protective circuit and over current protective circuit are built-in.
Ambient temperature & humidity	-25 ~ 70 °C (less than ±10 % of sensing distance at temperature 20 °C), 35 ~ 85 % R.H
Insulation resistance	Min. 50 MΩ (500 V d.c. mega standard)
Dielectric strength	2,000 V a.c. 50/60 Hz for 1 min (between the recharging part and case)
Vibration resistance	10 - 55 Hz (1 min cycle, double amplitude : 1.5 mm 2 hours for each of X, Y and Z directions)
Shock resistance	500 m/s <sup>2</sup> 3 times to each of X, Y and Z directions
Degree of protection	IP67 (IEC 60529)
Connection structure	<ul style="list-style-type: none"> <li>•Cable type (standard cable length 2 m),</li> <li>•Connector Cable type,</li> <li>•Connector type</li> </ul>
Color	•NPN : green •PNP : navy
Material	<ul style="list-style-type: none"> <li>•CUP-18R/CUP-30R Case : brass (chrome plated)</li> <li>•Detection surface : PBT</li> <li>•CUP-18RP/CUP-30RP Integrated casing and detection surface : PBT</li> </ul>
Approval	<b>RoHS</b> (※ Only with CUP-18RP-8NC) <b>CE</b> (※ DC NPN, PNP only)

## ■ Capacitive type, DC/AC dual usage 2 wire type

Model	CUP-18R-8F□□	CUP-18RP-8F□□
Appearance		
Sensing distance	8 mm (Volume variation)	
Setting distance	0 ~ 6.4 mm	
Case	Brass (Chrome plating)	PTB resin
Color	•NO : green •NC : navy	•NO/NC : green

Weight	Cable type	70g	
	Connector Cable type	30g	
Model		CUP-30R-15F□□	CUP-30RP-15F□□
Appearance			
Sensing distance		15 mm (Volume variation)	
Setting distance		0 ~ 12 mm	
Case		Brass (Chrome plating)	PTB resin
Color		•NO : green •NC : navy	•NO/NC : green
Weight	Cable type	120g	
	Connector Cable type	80g	
Shield		None Shield	
Standard sensing object(mm)		Iron 50 x 50 x 1 (Grounded state)	
Hysteresis		Less than 20 % of sensing distance	
Response frequency		•DC : 40 Hz •AC : 20 Hz	
Power voltage		20 - 240 V a.c. 50 - 60 Hz / 20 - 240 V d.c. (usable voltage range 18 - 250 V a.c. 50 - 50 Hz, 250 V d.c.)	
Control output		Switching capacity : 5-250 mAd.c. or less (Resistive load), Residual voltage : 7 V or less(AC/DC)	
Residual voltage		Max. 7 V (AC/DC)	
Leakage current		Max. 2 mA	
Operation indication		Red LED	
Protection circuit		Surge Protection circuit built-in.	
Ambient temperature & humidity		-25 ~ 70 °C (less than ±10 % of sensing distance at temperature 20 °C), 35 ~ 85 % RH	
Insulation resistance		Min. 50 MΩ (500 V d.c. mega standard)	
Dielectric strength		2,000 V a.c. 50/60 Hz for 1 min (between the recharging part and case)	
Vibration resistance		10 - 55 Hz (1 min cycle, double amplitude : 1.5 mm 2 hours for each of X, Y and Z directions)	
Shock resistance		500 m/s <sup>2</sup> 3 times to each of X, Y and Z directions	
Degree of protection		IP67 (IEC 60529)	
Connection structure		<ul style="list-style-type: none"> <li>•Cable type (standard cable length 2 m),</li> <li>•Connector Cable type,</li> <li>•Connector type</li> </ul>	
Material		•CUP-18R/CUP-30R (Case : brass chrome plating, sensing surface : PBT resin)	

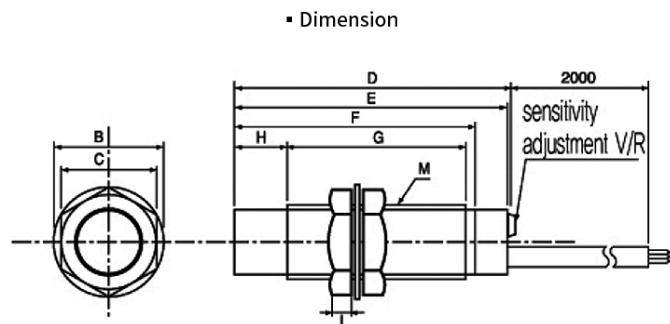
## Suffix code

Model	Code						Content
CUP-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Capacitive Type Proximity Sensor
Sensing area size	18						M18
	30						M30
Structure type	R						Round type (Brass chrome plating case)
	RP						Round type (Plastic case)
Sensing distance		8					8 mm (only with CUP-18□-8)
		15					15 mm (only with CUP-30□-15)
Power and output type			N				DC NPN output
			P				DC PNP output
			F				AC/DC 2 wire type (dual usage) (no polarity)
Output state				A			Normal Open (NO)
				C			Normal Close (NC)
Connection structure							None (Cable type)
					CR		Connector Cable type

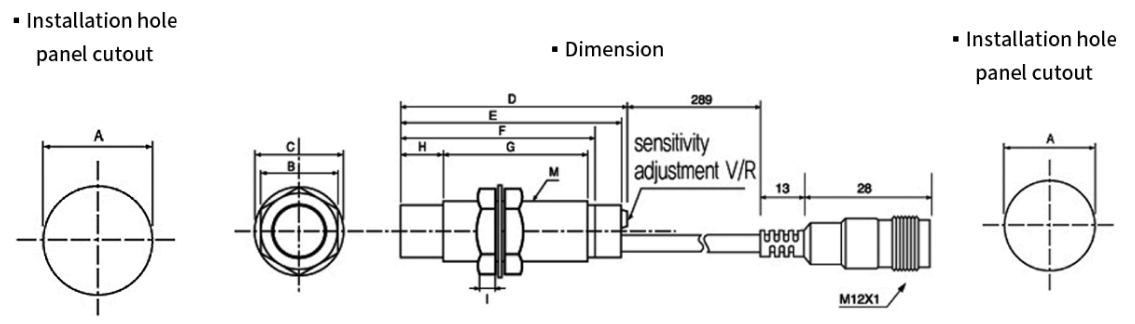
## Dimension

[Unit : mm]

### ■ Cable type



### ■ Relay connector type



[Unit : mm]

Model	M	A	B	C	D	E	F	G	H	I
CUP-18R-8□□	M18X1	19	23	29	75.5	74.5	-	52	10	4
CUP-18R-8□□-CR										
CUP-18RP-8□□-CR	M18X1	19	24.1	-	75.5	74.5	62	44.3	13	6
CUP-18RP-8□□-CR										
CUP-30R-15□□	M30X1.5	31	35	41	73	72.5	-	49	10	5
CUP-30R-15□□-CR										
CUP-30RP-15□□	M30X1.5	31	36.1	-	73.5	73	60	47	10	7.9
CUP-30RP-15□□-CR										