

Proximity Sensors with Built-In Amplifier

All Metal / Heat Resistant / Mini Type

Case and detection surface with strong stainless steel one piece housing. High shock resistance allows stable detection even when coming to contact with work piece.

Proximity Sensors with Built-In Amplifier – All Metal Proximity Sensors (IP68)

RoHS10

PSAM

Accessories: Hex Nut 2 pcs.
 M 8 Thickness 4 Hex Socket 13
 M12 Thickness 4 Hex Socket 17
 M18 Thickness 4 Hex Socket 24
 M30 Thickness 5 Hex Socket 36

Part Number		Detection Distance (mm)	M x P (Fine)	L	d	Outputs
Type	M					
PSAM	8	3	8 x 1.0	45	3.5	NPN N.O.
	12	6	12 x 1.0	50	5	
	18	10	18 x 1.0			
	30	20	30 x 1.5			

Proximity Sensors with Built-In Amplifier – Heat Resistant Proximity Sensors (IP67)

RoHS10

PSHM

Part Number	Operating Ambient Temperature Range
PSHM8	0°C – +140°C
PSHM12	0°C – +150°C
PSHM18	0°C – +180°C

Accessories: Hex Nut 2 pcs.
 M8 Thickness 4 Hex Socket 13
 M12 Thickness 4 Hex Socket 17
 M18 Thickness 4 Hex Socket 24

Part Number		Detection Distance (mm)	M x P (Fine)	L ₁	L ₂	L ₃	d	Outputs
Type	M							
PSHM	8	2	8 x 1.0	55	60	—	5	NPN N.O.
	12	3	12 x 1.0	49	56	59	5	
	18	5	18 x 1.0	60	70	76	3	

Proximity Sensors with Built-In Amplifier – Mini Proximity Sensors (IP67)

RoHS10

PSMMD3

PSMM4

Accessories:
 Hex Nut 2 pcs. (PSMM4 only)
 M4 Thickness 2 Hex Socket 6

Part Number	Detection Distance (mm)	Outputs
PSMMD3	1	NPN N.O.
PSMM4		

Part Number Example	Part Number
	PSAM8
	PSHM12
	PSMM4

Proximity Sensors with Built-In Amplifier

All Metal / Heat Resistant / Mini Type, *continued*



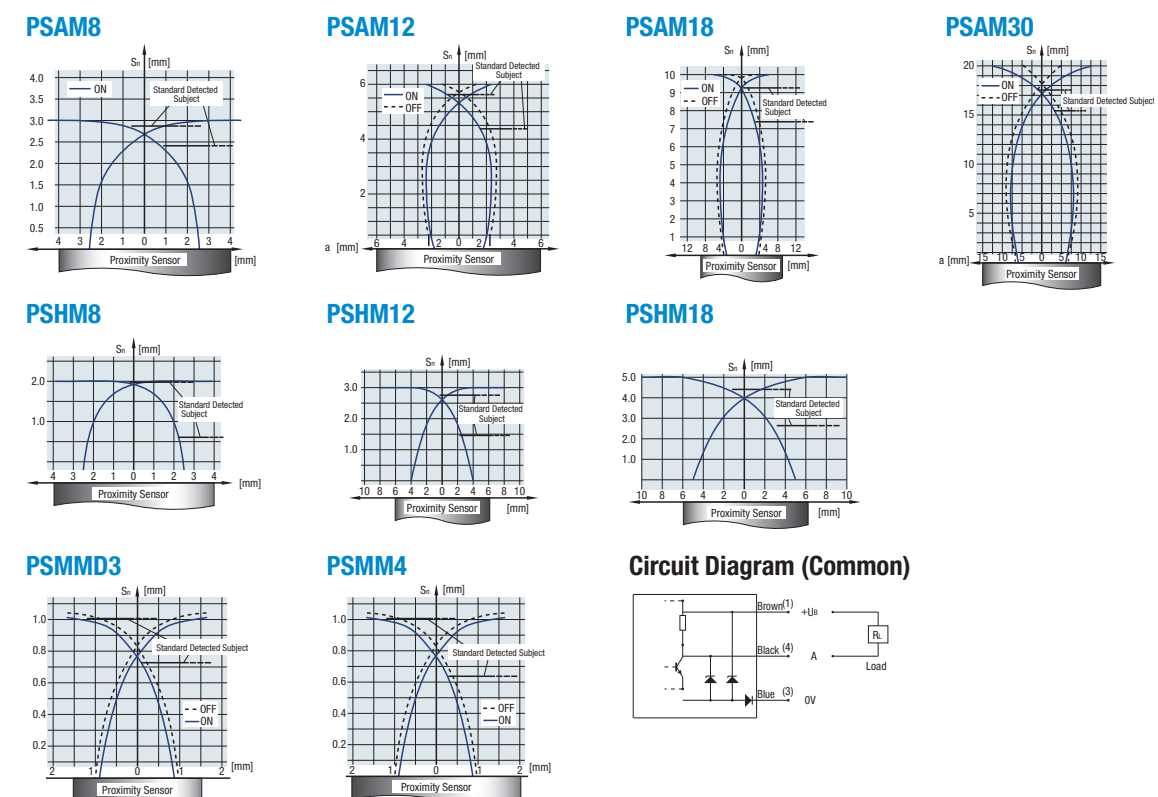
Do not use this product as a detection device for human body protection.
 (For human body protection, use products compliant with the local laws and regulations such as OSHA, ANSI, and IEC)

CE Compliant

Specifications

Type	All Metal Type				Heat Resistant			Mini Type	
Part Number	PSAM8	PSAM12	PSAM18	PSAM30	PSHM8	PSHM12	PSHM18	PSMMD3	PSMM4
Size	M8	M12	M18	M30	M8	M12	M18	M3	M4
Detection Distance	3 mm	6 mm	10 mm	20 mm	2 mm	3 mm	5 mm	1 mm	
Output Format / Operation Mode	NPN / N.O. (Normally Open)				NPN / N.O. (Normally Open)			NPN / N.O. (Normally Open)	
Power Supply	DC (3-Wire Type)				DC (3-Wire Type)			DC (3-Wire Type)	
Cable	Ø3.5	Ø5			Ø3	Ø3		Ø3	
	Polyurethane 2 m	Polyurethane 2 m			Silicon 2 m	Teflon 2 m		Polyurethane 2 m	
Structure of Detecting Head (How to Use)	Shielded Type (Embedded use allowable)				Shielded Type (Embedded use allowable)			Shielded Type (Embedded use allowable)	
Detected objects	All Metal Compensation factor when iron (FE360) as 1. (Ref. value) Aluminum: 1 Copper: 0.8 (0.9 for M8) Brass: 1.3 Stainless Steel 1 mm Thick: 0.5 (0.3 for M8) Stainless Steel 2mm Thick: 0.9 (0.6 for M8)				All Metal Compensation factor when iron (FE360) as 1. (Ref. value) Aluminum: 0.25 (0.2 for M12, and 0 for M8) Copper: 0.2 (0.15 for M12, and 0 for M8) Brass: 0.35 (0.15 for M12, and 0.25 for M8) Stainless Steel: 0.7 (0.65 for M12, and 0.6 for M8)			All Metal Compensation factor when iron (FE360) as 1. (Ref. value) Aluminum: 0.5 Copper: 0.45 Brass: 0.6 Stainless Steel: 0.8	
Hysteresis	15% of effective detection distance Sr or less				3–15% of effective detection distance Sr		2–20% of effective detection distance Sr		10% of effective detection distance Sr or less
Supply Voltage Range	10–30V DC				10–30V DC			10–30V DC	
Output Current	200 mA Max.				120mA (≤100°C)	120mA (≤100°C)	150 mA	100 mA Max.	
					80mA (>100°C)	70mA (>100°C)			
Supply Current at No Load	10 mA Max.				10 mA Max.			10 mA Max.	
Max. Frequency Response	800 Hz	600 Hz	200 Hz	120 Hz	600 Hz	500 Hz	400 Hz	3000 Hz	
Operating Ambient Temperature Range	-25→+70°C				0°C→+140°C	0°C→+150°C	0°C→+180°C	-25→+70°C	
LED Operation Indicator Lamp	Detecting in Stable Range: ON Detecting in Unstable Range: Blink				—			ON	
Protection structure	IP68				IP67			IP67	
Built-In Protection Circuit	Short Circuit Protection • Over Current Protection Reverse Polarity Protection • Induction Protection EMC Protection / Power-ON Reset				Short Circuit Protection • Over Current Protection Reverse Polarity Protection • Induction Protection EMC Protection / Power-ON Reset			Short Circuit Protection • Over Current Protection Reverse Polarity Protection • Induction Protection EMC Protection / Power-ON Reset	
Case Material	303 Stainless Steel				303 Stainless Steel			303 Stainless Steel	
Tightening Torque (Nm)	4	10	50	150	4	10	20	—	0.8
Feature	1. Long range detection. 2. Nonferrous metals (Aluminum, Brass etc.) detection distance equivalent of iron. 3. The case and detection surface made of strong stainless steel one piece housing, resistant to shocks and stable detection possible even when coming to contact with objects. 4. Dusts on detecting surface can be cleaned with a metallic brush. 5. It can be used as the proximity sensor for welding spatter measures. 6. Highly water and drip resistant (IP68), and is suitable in cleaning solution splashes. Applicable for use in water.				1. Built-in amplifier for easy installation. 2. Highly water and drip resistant (IP67), and is suitable in high temperature environments and coolant splashes. 3. Robust stainless steel case.			1. Although this is extremely small, its detection distance is 1 mm. 2. This compact design allows installation in limited spaces. 3. Robust stainless steel case.	

Detection Range Characteristics



Circuit Diagram (Common)

