

- PLC
- HMI
- SENSOR**
- ENCODER
- COUNTER
- INFORMATION

APS-GMD Series

Features

Metal Cylinder, 2-wire/3-wire DC System

- Operation indicator LEDs visible from every direction of 360 degrees around
- Selectable between flush mount type / non-flush mount type
- NO/NPN/PNP output
- Maximum detection distance: 24 mm



- Proximity Sensor Lineup
- Selection Guide
- Outline
- Cylinder Type**
- Square Type
- Capacitive Type
- APS-GMC
- APS-GMD**
- APS-GK
- APS-30/31
- APS-CK

Type

2-wire DC System

Output Form		Operating Distance (mm)			Output Form	Model Number	Remarks
M12	Flush Mount Type	3			NO	APS3-12GMD-Z	
	Non-flush Mount Type	8			NO	APS8-12GMD-Z	
M18	Flush Mount Type	7			NO	APS7-18GMD-Z	
	Non-flush Mount Type		14		NO	APS14-18GMD-Z	
M30	Flush Mount Type		10		NO	APS10-30GMD-Z	
	Non-flush Mount Type			24	NO	APS24-30GMD-Z	






3-wire DC System

Output Form		Operating Distance (mm)			Output Form	Model Number	Remarks
M12	Flush Mount Type	3			NPN NO	APS3-12GMD-E	
					PNP NO	APS3-12GMD-E2	
M18	Non-flush Mount Type	4			NPN NO	APS4-12GMD-E	
					NPN NO	APS4-12GMD-E	
M18	Flush Mount Type	7			NPN NO	APS7-18GMD-E	
					PNP NO	APS7-18GMD-E2	
M30	Flush Mount Type	10			NPN NO	APS10-30GMD-E	
					PNP NO	APS10-30GMD-E2	

* The APS4-12GMD-E is a made-to-order product.

APS-GMD Series

2-wire DC System Flush Mount Type

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APS-GMC

APS-GMD

APS-GK

APS-30/31

APS-CK

Effective Operating Distance		3 mm ±10%	7 mm ±10%	10 mm ±10%	
Photo					
Remarks		Accessories: Hexagon nut (Single-chamfered): 2 units, toothed washer: 2 units			
Output Form	NPN NO	Model Number	APS3-12GMD-Z	APS7-18GMD-Z	APS10-30GMD-Z
		Price	Open	Open	Open
	PNP NO	Model Number			
		Price			
Rated Working Voltage		12/24 V DC (10 to 30 V DC) Allowable ripple rate: 10% p-p or less			
Standard Target Object (mm)		Iron 12 x 12 x 1 t	Iron 18 x 18 x 1 t	Iron 30 x 30 x 1 t	
Guaranteed Operating Distance		0 to 2.2 mm	0 to 5.6 mm	0 to 8.1 mm	
Reaction Material		Iron/Non ferrous metal (Operating distance changes depending on materials.)			
Hysteresis		20% or less			
Operating Cycle Frequency		300 Hz	100 Hz		
Rated Working Current		3 to 100 mA			
Voltage Drop		3 V or lower			
Off-state Current		1.0 mA or lower			
Circuit Protection		Load short-circuit protection, surge absorption circuit			
Indicator Lamp		Action indication			
Use Ambient Temperature		-25 to +70°C			
Temperature Characteristics		Within ±15% (At the operating distance at +23°C)	Within ±10% (At the operating distance at +23°C)		
Withstand Voltage		500 V AC 50/60 Hz (1 minute)			
Insulation Resistance		50 MΩ or higher (500 V DC)			
Vibration Resistance		Double amplitude: 1.5 mm, 10 to 55 Hz (2 h each for X, Y and Z direction)			
Impact Resistance		490m/s ² , within 11 ms (10 times each for X, Y and Z direction)			
Protection Level		IP67			
Case Material		Metallic part: Brass nickel plate Detector surface: PBT resin			
Lead Wire		Oilproof cable 2 m Outside diameter (Approx. ϕ 3.8) 0.3 mm ² , 2 core		Oilproof cable 2 m Outside diameter (Approx. ϕ 6) 0.5 mm ² , 2 core	
Tightening Torque		5 Nm or less	10 Nm or less	20 Nm or less	
Weight (g)		Approx. 90	Approx. 150	Approx. 250	

APS-GMD Series

2-wire DC System Non-flush Mount Type

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Effective Operating Distance		8 mm ±10%	14 mm ±10%	24 mm ±10%	
Photo					
Remarks		Accessories: Hexagon nut (Single-chamfered): 2 units, toothed washer: 2 units			
Output Form	NPN NO	Model Number	APS8-12GMD-Z	APS14-18GMD-Z	APS24-30GMD-Z
		Price	Open	Open	Open
	PNP NO	Model Number			
		Price			
Rated Working Voltage		12/24 V DC (10 to 30 V DC) Allowable ripple rate: 10% p-p or less			
Standard Target Object (mm)		Iron 30 x 30 x 1 t	Iron 30 x 30 x 1 t	Iron 54 x 54 x 1 t	
Guaranteed Operating Distance		0 to 6.4 mm	0 to 11.3 mm	0 to 19.4 mm	
Reaction Material		Iron/Non ferrous metal (Operating distance changes depending on materials.)			
Hysteresis		20% or less			
Operating Cycle Frequency		100 Hz			
Rated Working Current		5 to 100 mA			
Voltage Drop		3 V or lower			
Off-state Current		1.0 mA or lower			
Circuit Protection		Load short-circuit protection, surge absorption circuit			
Indicator Lamp		Action indication			
Use Ambient Temperature		-25 to +70°C			
Temperature Characteristics		Within ±10% (At the operating distance at +23°C)			
Withstand Voltage		600 V AC 50/60 Hz (1 minute)			
Insulation Resistance		50 MΩ or higher (500 V DC)			
Vibration Resistance		Double amplitude: 1.5 mm, 10 to 55 Hz (2 h each for X, Y and Z direction)			
Impact Resistance		490m/s ² , within 11 ms (10 times each for X, Y and Z direction)			
Protection Level		IP67			
Case Material		Metallic part: Brass nickel plate Detector surface: PBT resin			
Lead Wire		Oilproof cable 2 m Outside diameter (Approx. φ3.8) 0.3 mm ² , 2 core		Oilproof cable 2 m Outside diameter (Approx. φ6) 0.5 mm ² , 2 core	
Tightening Torque		5 Nm or less	10 Nm or less	20 Nm or less	
Weight (g)		Approx. 90	Approx. 150	Approx. 250	

APS-GMC

APS-GMD





APS-GK

APS-30/31

APS-CK

APS-GMD Series

3-wire DC System Flush Mount Type

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APS-GMC

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APS-30/31

APS-CK

Effective Operating Distance		3 mm ±10%	7 mm ±10%	10 mm ±10%	
Photo					
Remarks		Accessories: Hexagon nut (Single-chamfered): 2 units, toothed washer: 2 units			
Output Form	NPN NO	Model Number	APS3-12GMD-E	APS7-18GMD-E	APS10-30GMD-E
		Price	Open	Open	Open
	PNP NO	Model Number	APS3-12GMD-E2	APS7-18GMD-E2	APS10-30GMD-E2
		Price	Open	Open	Open
Rated Working Voltage		12/24 V DC (10 to 30 V DC) Allowable ripple rate: 10% p-p or less			
No-load Current		10 mA or lower			
Standard Target Object (mm)		Iron 12 x 12 x 1 t	Iron 18 x 18 x 1 t	Iron 30 x 30 x 1 t	
Guaranteed Operating Distance		0 to 2.2 mm	0 to 5.6 mm	0 to 8.1 mm	
Reaction Material		Iron/Non ferrous metal (Operating distance changes depending on materials.)			
Hysteresis		20% or less			
Operating Cycle Frequency		300 Hz	100 Hz		
Rated Working Current		Up to 200 mA			
Voltage Drop		1.5 V or lower			
Off-state Current		0.5 mA or lower			
Circuit Protection		Load short-circuit protection, surge absorption circuit, reverse connection protection circuit			
Indicator Lamp		Action indication			
Use Ambient Temperature		-25 to +70°C			
Temperature Characteristics		Within ±15% (At the operating distance at +23°C)	Within ±10% (At the operating distance at +23°C)		
Withstand Voltage		500 V AC 50/60 Hz (1 minute)			
Insulation Resistance		50 MΩ or higher (500 V DC)			
Vibration Resistance		Double amplitude: 1.5 mm, 10 to 55 Hz (2 h each for X, Y and Z direction)			
Impact Resistance		490m/s ² , within 11 ms (10 times each for X, Y and Z direction)			
Protection Level		IP67			
Case Material		Metallic part: Brass nickel plate Detector surface: PBT resin			
Lead Wire		Oilproof cable 2 m Outside diameter (Approx. ϕ 3.8) 0.3 mm ² , 3 core		Oilproof cable 2 m Outside diameter (Approx. ϕ 6) 0.5 mm ² , 3 core	
Tightening Torque		5 Nm or less	10 Nm or less	20 Nm or less	
Weight (g)		Approx. 80	Approx. 150	Approx. 250	

APS-GMD Series

3-wire DC System Non-flush Mount Type

PLC


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Effective Operating Distance	4 mm ±10%		
Photo			
Remarks	Accessories: M12 metal nut: 2 units		
Output Form	NPN NO	Model Number	APS4-12GMD-E (Made-to-order product)
		Price	Open
	PNP NO	Model Number	
		Price	
Rated Working Voltage	12/24 V DC (10 to 30 V DC) Allowable ripple rate: 10% p-p or less		
No-load Current	20 mA or lower		
Standard Target Object (mm)	Iron 12 x 12 x 1 t		
Guaranteed Operating Distance	0 to 3.2 mm		
Reaction Material	Iron/Non ferrous metal (Operating distance changes depending on materials.)		
Hysteresis	20% or less		
Operating Cycle Frequency	300 Hz		
Rated Working Current	Up to 200 mA		
Voltage Drop	3 V or lower		
Off-state Current	0.1 mA or lower		
Circuit Protection	Load short-circuit protection, surge absorption circuit, reverse connection protection circuit		
Indicator Lamp	Action indication		
Use Ambient Temperature	-25 to +70°C		
Temperature Characteristics	Within ±10% (At the operating distance at +23°C)		
Withstand Voltage	500 V AC 50/60Hz (1 minute)		
Insulation Resistance	50 MΩ or higher (500 V DC)		
Vibration Resistance	Double amplitude: 1.0 mm, 10 to 55 Hz (2 h each for X, Y and Z direction)		
Impact Resistance	294m/s ² , within 11 ms (10 times each for X, Y and Z direction)		
Protection Level	IP67		
Case Material	Metallic part: Stainless steel Detector surface: PBT resin		
Lead Wire	Oilproof cable 2 m Outside diameter (Approx. φ3.8) 0.3 mm ² , 3 core		
Tightening Torque	8 Nm or less		
Weight (g)	Approx. 100		

Proximity Sensor Lineup

Selection Guide

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Cylinder Type

Square Type

Capacitive Type

APS-GMC

APS-GMD

APS-GK

APS-30/31

APS-CK

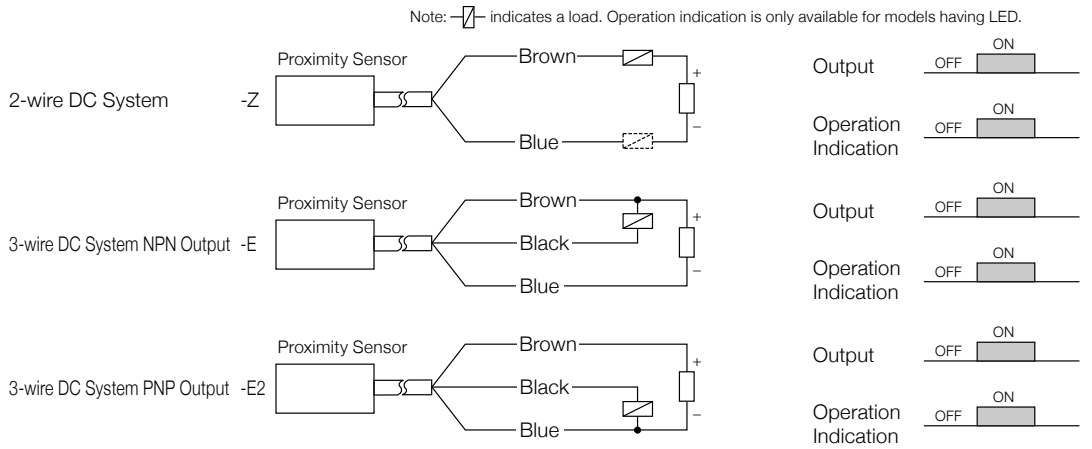
APS-GMD Series

Connection and Operation

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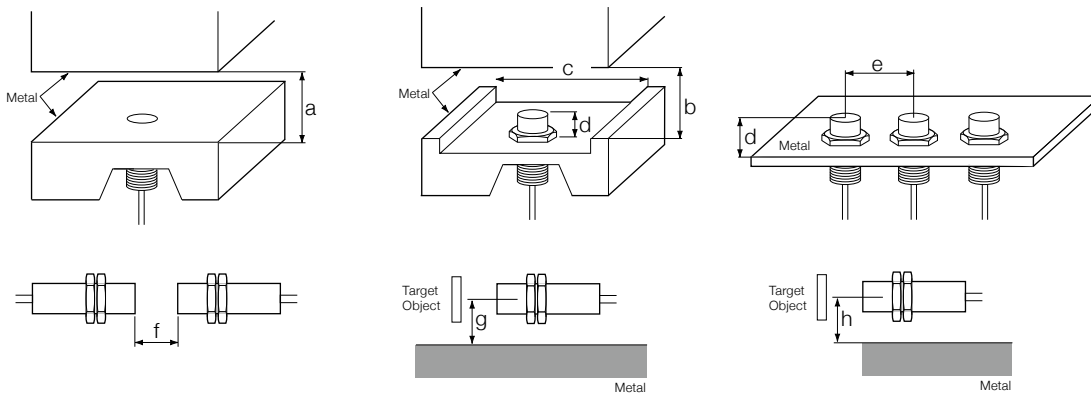
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Connection/Operation



Installation / Effects of Surrounding Metal

Since the proximity sensor is affected by surrounding metal, install it remotely enough from the described dimensions.









(Unit: mm)

Model Number	a	b	c	d	e	f	g	h
APS3-12GMD-E/E2/Z	8	—	—	—	24	30	9	6
APS7-18GMD-E/E2/Z	20	—	—	—	36	50	13.5	9
APS10-30GMD-E/E2/Z	40	—	—	—	60	100	20	15
APS8-12GMD-Z	—	20	40	15	100	120	40	20
APS14-18GMD-Z	—	40	70	22	110	200	70	35
APS24-30GMD-Z	—	90	120	32	300	350	120	60
APS4-12GMD-E	—	12	36	8	48	60	36	18

- APS-GMC
- APS-GMD**
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- APS-30/31
- APS-CK

APS-GMD Series

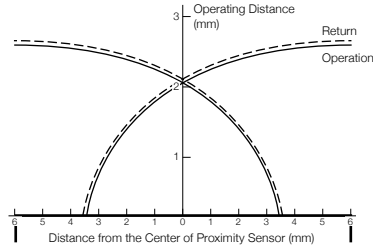
Connection and Operation

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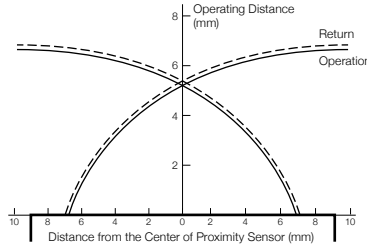
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Detection Range Diagram (Representative Examples)

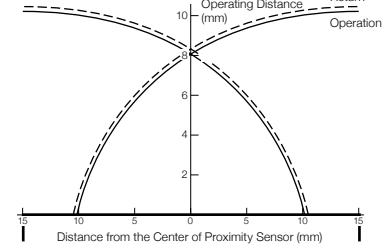
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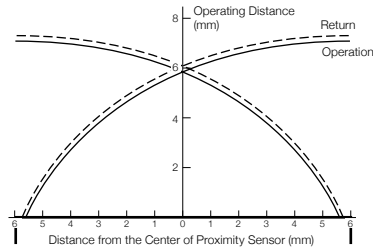
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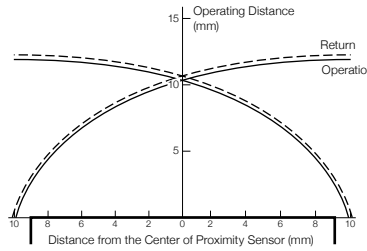
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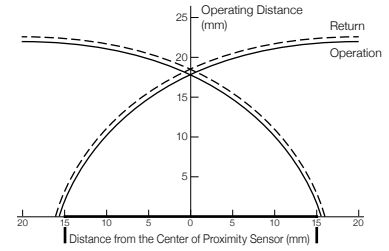
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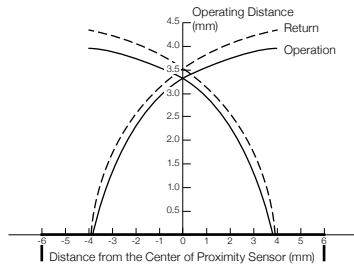
APS14-18GMD-Z



APS24-30GMD-Z

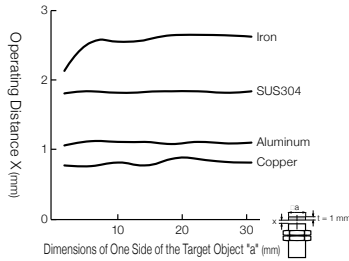


APS4-12GMD-E

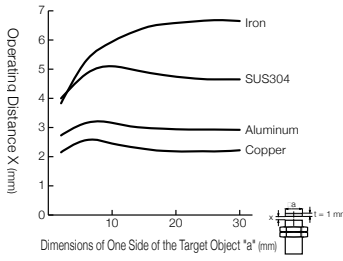


Shape Based Characteristics (Representative Examples)

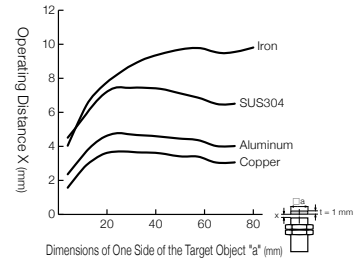
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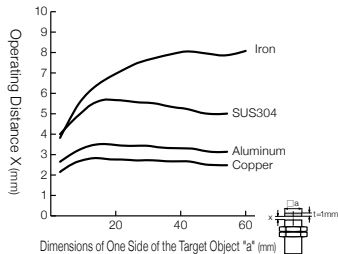
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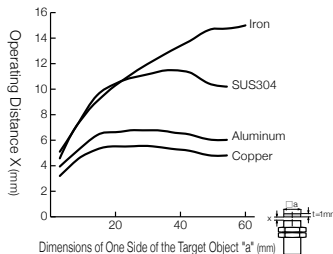
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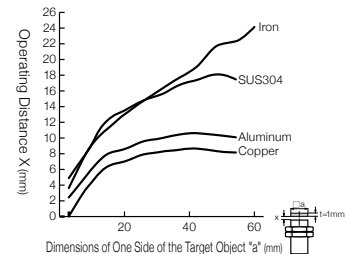
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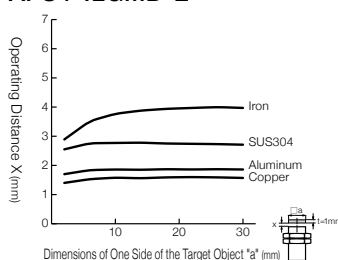
APS14-18GMD-Z



APS24-30GMD-Z



APS4-12GMD-E



APS-GMD Series

Dimensions

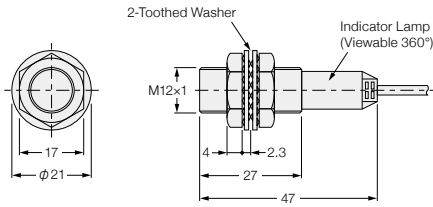
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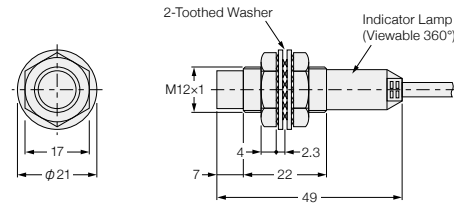
- APS-GMC
- APS-GMD
- APS-GK
- APS-30/31
- APS-CK

Dimensions (Unit: mm)

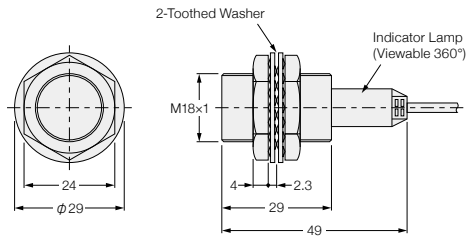
APS3-12GMD-Z
APS3-12GMD-E



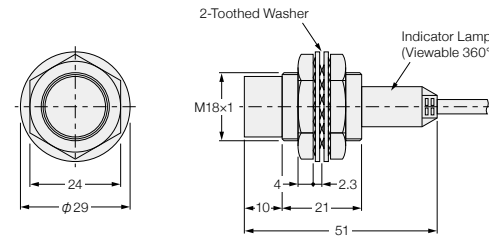
APS8-12GMD-Z



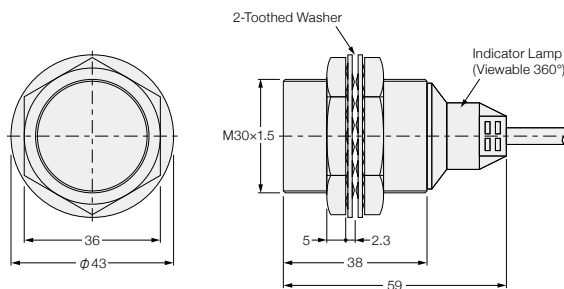
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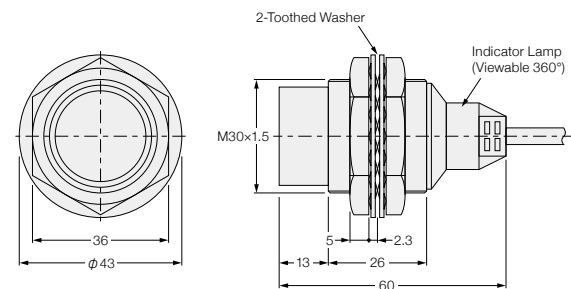
APS14-18GMD-Z



APS10-30GMD-Z
APS10-30GMD-E



APS24-30GMD-Z



APS4-12GMD-E

