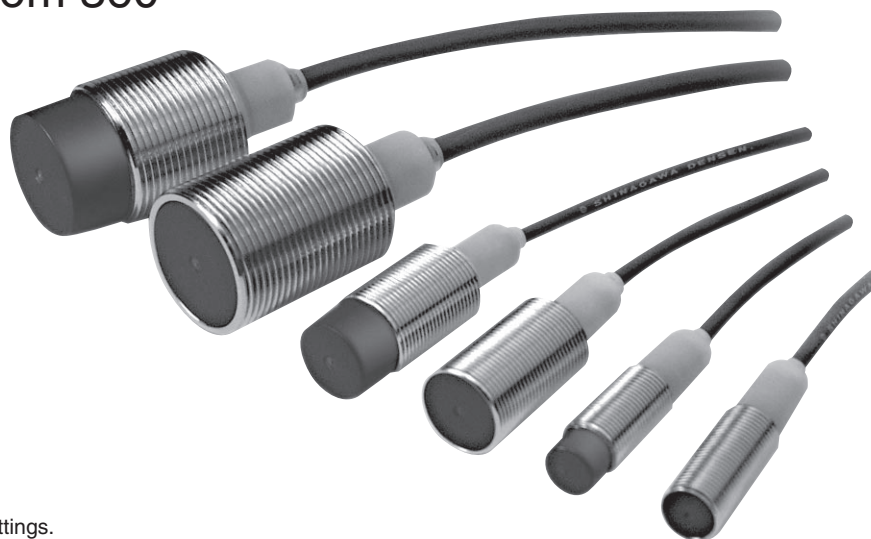


# Metal Cylindrical Type APS-GMD Series

Equipped with an Operation Indicator  
LED that is Visible from 360°



## Features

- Long operating distance

The longer operating distance allows easy settings.

- Easy-to-see operation indicator

The operation indicator is viewable from 360°, allowing easy adjustment when installing the sensor (except APS4-12GMD-E).

## Types

DC 2-wire type

Shape		Operating distance (mm)	Output type	Model number
M12	Embedded type	3	N.O.	APS3-12GMD-Z
	Non-embedded type	8	N.O.	APS8-12GMD-Z
M18	Embedded type	7	N.O.	APS7-18GMD-Z
	Non-embedded type	14	N.O.	APS14-18GMD-Z
M30	Embedded type	10	N.O.	APS10-30GMD-Z
	Non-embedded type	24	N.O.	APS24-30GMD-Z

DC 3-wire type

Shape		Operating distance (mm)	Output type	Model number
M12	Embedded type	3	NPN N.O.	APS3-12GMD-E
			PNP N.O.	APS3-12GMD-E2
	Non-embedded type	4	NPN N.O.	APS4-12GMD-E
M18	Embedded type	7	NPN N.O.	APS7-18GMD-E
			PNP N.O.	APS7-18GMD-E2
M30	Embedded type	10	NPN N.O.	APS10-30GMD-E
			PNP N.O.	APS10-30GMD-E2

\* APS4-12GMD-E is non-stock product.

APS-GMC

APS-GMD

APS-GM

APS-GK

APS-30/31

APS-CK

APS-S/M

APS-F/U

APS-10~15

APS-CU

CS

# Metal Cylindrical Type APS-GMD Series

## DC 2-wire, Embedded Type

Effective operating distance	3 mm ±10%	7 mm ±10%	10 mm ±10%	
Dimensions (mm)				
Remarks	Accessories: hexagon nut (chamfered on one side) (2 pcs), toothed washer (2 pcs)			
Output type	NPN NO	Model number <b>APS3-12GMD-Z</b> Price ¥4,310	Model number <b>APS7-18GMD-Z</b> Price ¥5,090	Model number <b>APS10-30GMD-Z</b> Price ¥6,900
	PNP NO	Model number  Price 	Model number  Price 	Model number  Price 
Rated operating voltage	DC+12/+24 V(+10 to +30 V) Permissible ripple rate: 10%p-p or less			
Standard target object (mm)	Iron 12 × 12 × 1t	Iron 18 × 18 × 1t	Iron 30 × 30 × 1t	
Rated operating distance	0 to 2.2 mm	0 to 5.6 mm	0 to 8.1 mm	
Responding material	Iron/nonferrous metal (operating distance varies with material)			
Differential travel	20% or less			
Switching frequency	300 Hz	100 Hz		
Rated operating current	5 to 100 mA			
Voltage drop	3 V or less			
Leakage current	1.0 mA or less			
Circuit protection	Short-circuit protection circuit, surge absorption circuit			
Indicator lamp	Operation indication			
Operating temperature	-25 to +70°C			
Temperature characteristics	Within ±15% (of operating distance at +23°C)	Within ±10% (of operating distance at +23°C)		
Withstand voltage	500 VAC, 50/60 Hz (1 minute)			
Insulation resistance	50 MΩ or higher (500 VDC)			
Vibration resistance	Double amplitude: 1.5 mm, 10 to 55 Hz (2 hours in each of X, Y and Z directions)			
Impact resistance	490 m/s <sup>2</sup> , within 11 ms (10 cycles in each of X, Y and Z directions)			
Protection grade	IP67			
Casing material	Metallic part: brass nickel plated    Detection plane: PBT resin			
Lead wire	Oil-resistant cable 2.0 m Outer diameter (approx. ø3.8), 0.3 mm <sup>2</sup> 2-wire		Oil-resistant cable 2.0 m Outer diameter (approx. ø6), 0.5 mm <sup>2</sup> 2-wire	
Tightening torque	5 Nm or less	10 Nm or less	20 Nm or less	
Weight	Approx. 90 g	Approx. 150 g	Approx. 250 g	

DC 2-wire, Non-embedded Type

Effective operating distance		8 mm ±10%	14 mm ±10%	24 mm ±10%
Dimensions (mm)				
Remarks		Accessories: hexagon nut (chamfered on one side) (2 pcs), toothed washer (2 pcs)		
Output type	NPN NO	Model number <b>APS8-12GMD-Z</b> Price ¥4,310	Model number <b>APS14-18GMD-Z</b> Price ¥5,090	Model number <b>APS24-30GMD-Z</b> Price ¥6,900
	PNP NO	Model number  Price 	Model number  Price 	Model number  Price 
Rated operating voltage	DC+12/+24 V(+10 to +30 V) Permissible ripple rate: 10%p-p or less			
Standard target object (mm)	Iron 30 × 30 × 1t		Iron 54 × 54 × 1t	
Rated operating distance	0 to 6.4 mm		0 to 11.3 mm	
Responding material	Iron/nonferrous metal (operating distance varies with material)			
Differential travel	20% or less			
Switching frequency	100 Hz			
Rated operating current	5 to 100 mA			
Voltage drop	3 V or less			
Leakage current	1.0 mA or less			
Circuit protection	Short-circuit protection circuit, surge absorption circuit			
Indicator lamp	Operation indication			
Operating temperature	-25 to +70°C			
Temperature characteristics	Within ±10% (of operating distance at +23°C)			
Withstand voltage	500 VAC, 50/60 Hz (1 minute)			
Insulation resistance	50 MΩ or higher (500 VDC)			
Vibration resistance	Double amplitude: 1.5 mm, 10 to 55 Hz (2 hours in each of X, Y and Z directions)			
Impact resistance	490 m/s <sup>2</sup> , within 11 ms (10 cycles in each of X, Y and Z directions)			
Protection grade	IP67			
Casing material	Metallic part: brass nickel plated    Detection plane: PBT resin			
Lead wire	Oil-resistant cable 2.0 m Outer diameter (approx. ø3.8), 0.3 mm <sup>2</sup> 2-wire		Oil-resistant cable 2.0 m Outer diameter (approx. ø6), 0.5 mm <sup>2</sup> 2-wire	
Tightening torque	5 Nm or less		10 Nm or less	
Weight	Approx. 90 g		Approx. 150 g	

APS-GMC

APS-GMD

APS-GM

APS-GK

APS-30/31

APS-CK

APS-S/M

APS-F/U

APS-10~15

APS-CU

CS

# Metal Cylindrical Type APS-GMD Series

## DC 3-wire, Embedded Type

Effective operating distance	3 mm ±10%	7 mm ±10%	10 mm ±10%	
Dimensions (mm)				
Remarks	Accessories: hexagon nut (chamfered on one side) (2 pcs), toothed washer (2 pcs)			
Output type	NPN NO	Model number <b>APS3-12GMD-E</b> Price ¥4,310	Model number <b>APS7-18GMD-E</b> Price ¥5,090	Model number <b>APS10-30GMD-E</b> Price ¥6,900
	PNP NO	Model number <b>APS3-12GMD-E2</b> Price ¥4,310	Model number <b>APS7-18GMD-E2</b> Price ¥5,090	Model number <b>APS10-30GMD-E2</b> Price ¥6,900
Rated operating voltage	DC+12/+24 V(+10 to +30 V) Permissible ripple rate: 10%p-p or less			
No-load current	10 mA or less			
Standard target object (mm)	Iron 12 × 12 × 1t	Iron 18 × 18 × 1t	Iron 30 × 30 × 1t	
Rated operating distance	0 to 2.2 mm	0 to 5.6 mm	0 to 8.1 mm	
Responding material	Iron/nonferrous metal (operating distance varies with material)			
Differential travel	20% or less			
Switching frequency	300 Hz	100 Hz		
Rated operating current	200 mA max			
Voltage drop	1.5 V or less			
Leakage current	0.5 mA or less			
Circuit protection	Short-circuit protection circuit, surge absorption circuit, reverse connection protection circuit			
Indicator lamp	Operation indication			
Operating temperature	-25 to +70°C			
Temperature characteristics	Within ±15% (of operating distance at +23°C)	Within ±10% (of operating distance at +23°C)		
Withstand voltage	500 VAC, 50/60 Hz (1 minute)			
Insulation resistance	50 MΩ or higher (500 VDC)			
Vibration resistance	Double amplitude: 1.5 mm, 10 to 55 Hz (2 hours in each of X, Y and Z directions)			
Impact resistance	490 m/s <sup>2</sup> , within 11 ms (10 cycles in each of X, Y and Z directions)			
Protection grade	IP67			
Casing material	Metallic part: brass nickel plated    Detection plane: PBT resin			
Lead wire	Oil-resistant cable 2.0 m Outer diameter (approx. ø3.8), 0.3 mm <sup>2</sup> 3-wire		Oil-resistant cable 2.0 m Outer diameter (approx. ø6), 0.5 mm <sup>2</sup> 3-wire	
Tightening torque	5 Nm or less	10 Nm or less	20 Nm or less	
Weight	Approx. 80 g	Approx. 150 g	Approx. 250 g	

## DC 3-wire, Non-embedded Type

Effective operating distance	4 mm $\pm$ 10%		
Dimensions (mm)			
Remarks	Accessory: M12 metal nut (2 pcs)		
Output type	NPN	Model number	<b>APS4-12GMD-E</b> (non-stock product)
	NO	Price	¥5,400
	PNP	Model number	
	NO	Price	
Rated operating voltage	DC+12/+24 V(+10 to +30 V) Permissible ripple rate: 10%p-p or less		
No-load current	20 mA or less		
Standard target object (mm)	Iron 12 × 12 × 1t		
Rated operating distance	0 to 3.2mm		
Responding material	Iron/nonferrous metal (operating distance varies with material)		
Differential travel	20% or less		
Switching frequency	300 Hz max		
Rated operating current	200 mA max		
Voltage drop	3 V or less		
Leakage current	0.1 mA or less		
Circuit protection	Short-circuit protection circuit, surge absorption circuit, reverse connection protection circuit		
Indicator lamp	Operation indication		
Operating temperature	-25 to +70°C		
Temperature characteristics	Within $\pm$ 10% (of operating distance at +23°C)		
Withstand voltage	500 VAC, 50/60 Hz (1 minute)		
Insulation resistance	50 M $\Omega$ or higher (500 VDC)		
Vibration resistance	Double amplitude: 1.0 mm, 10 to 55 Hz (2 hours in each of X, Y and Z directions)		
Impact resistance	294 m/s <sup>2</sup> , within 11 ms (10 cycles in each of X, Y and Z directions)		
Protection grade	IP67		
Casing material	Metallic part: stainless steel    Detection plane: PBT resin		
Lead wire	Oil-resistant cable 2.0 m Outer diameter (approx. $\phi$ 3.8), 0.3 mm <sup>2</sup> 3-wire		
Tightening torque	8 Nm or less		
Weight	Approx. 100 g		

APS-GMC

APS-GMD

APS-GM

APS-GK

APS-30/31

APS-CK

APS-S/M

APS-F/U

APS-10~15

APS-CU

CS

# Metal Cylindrical Type APS-GMD Series

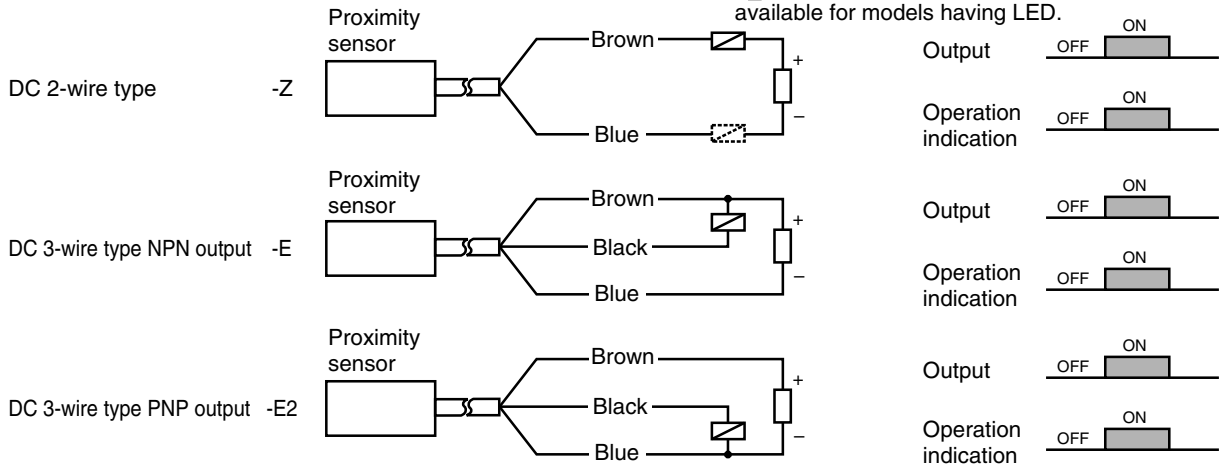
## Connection/Operation

( Target object 

Not present	Present
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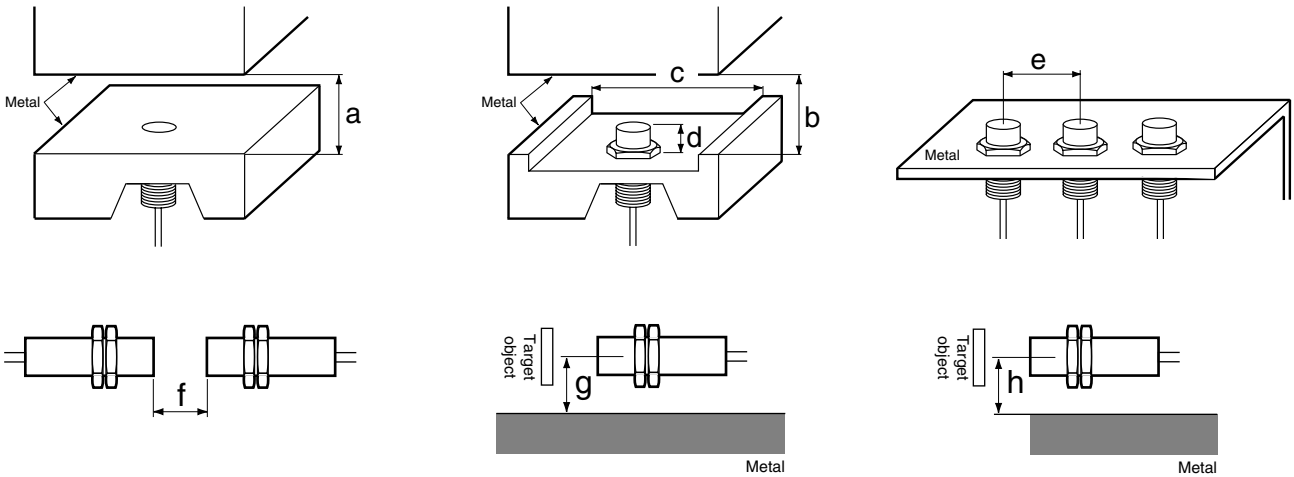
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Note: indicates a load. Operation indication is only available for models having LED.



## Installation and Influence of Surrounding Metals

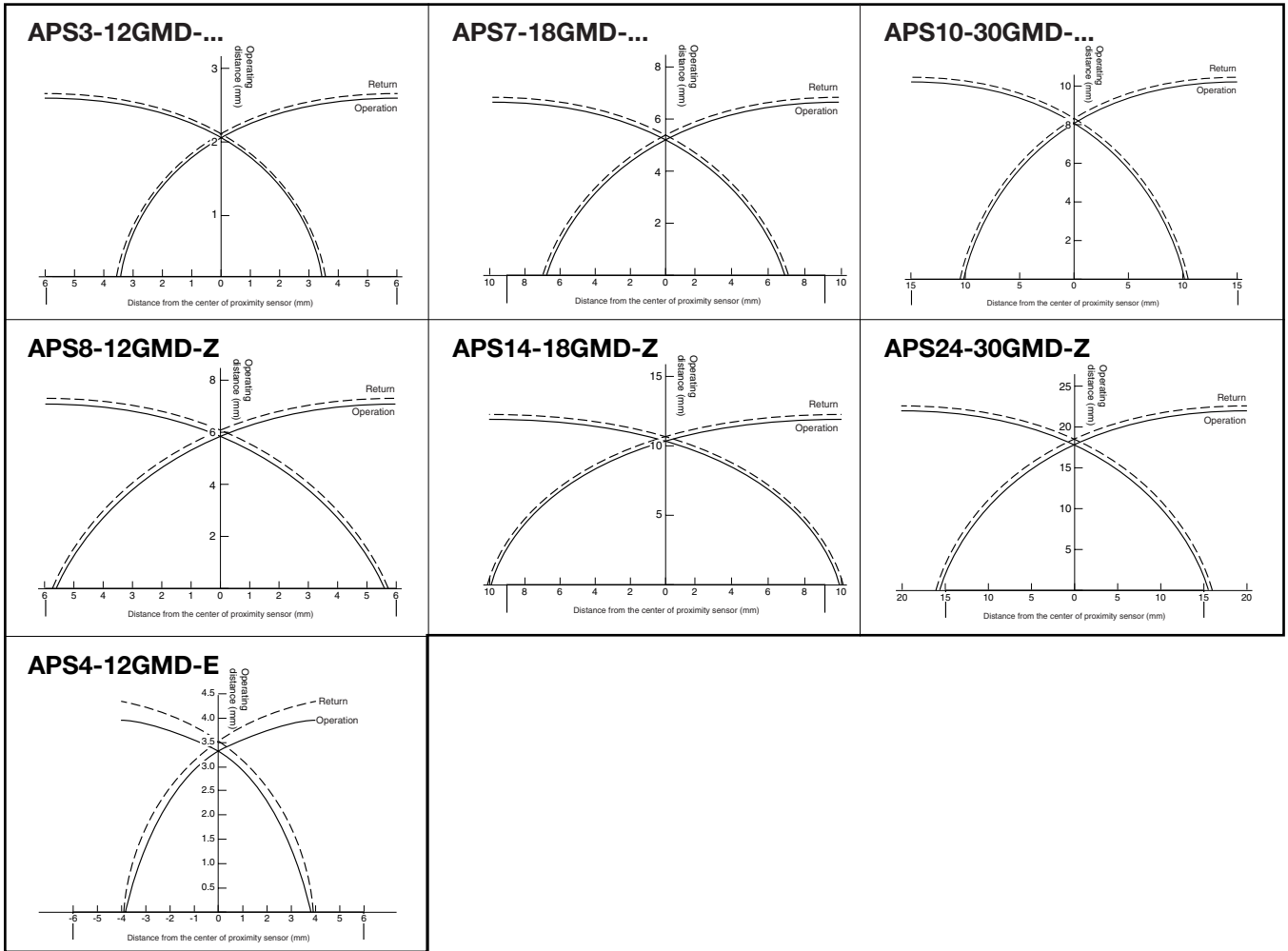
A proximity sensor is susceptible to surrounding metals. When installing the sensor, secure a sufficient distance longer than the indicated dimension.



(in mm)

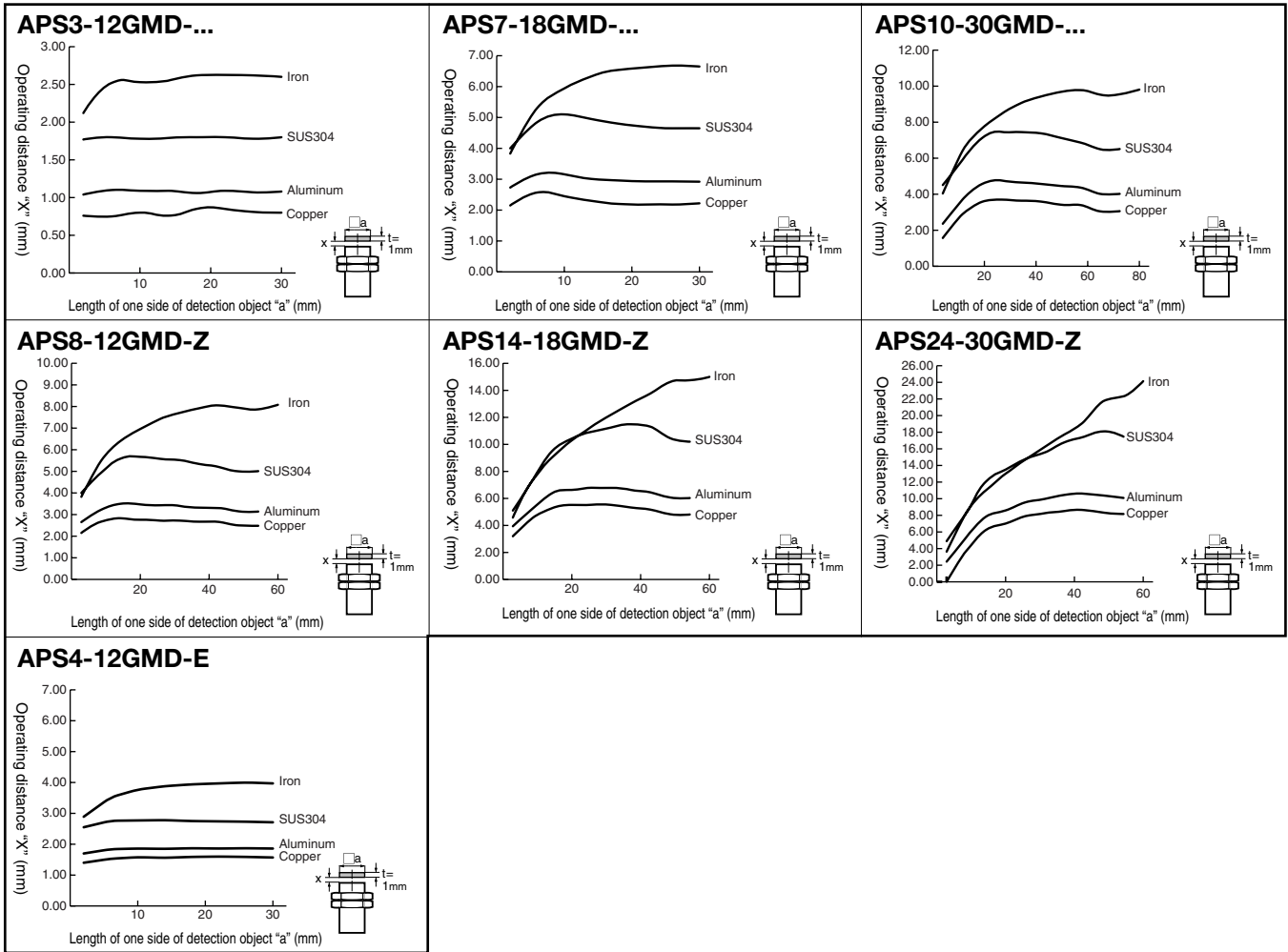
Model number	a	b	c	d	e	f	g	h
<b>APS3-12GMD-E / E2 / Z</b>	8	-	-	-	24	30	9	6
<b>APS7-18GMD-E / E2 / Z</b>	20	-	-	-	36	50	13.5	9
<b>APS10-30GMD-E / E2 / Z</b>	40	-	-	-	60	100	20	15
<b>APS8-12GMD-Z</b>	-	20	40	15	100	120	40	20
<b>APS14-18GMD-Z</b>	-	40	70	22	110	200	70	35
<b>APS24-30GMD-Z</b>	-	90	120	32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

Detection Area Diagrams (Representative Examples)



APS-GMC
APS-GMD
APS-GM
APS-GK
APS-30/31
APS-CK
APS-S/M
APS-F/U
APS-10~15
APS-CU
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Shape Characteristics (Representative Examples)



APS-GMC

APS-GMD

APS-GM

APS-GK

APS-30/31

APS-CK

APS-S/M

APS-F/U

APS-10~15

APS-CU

CS