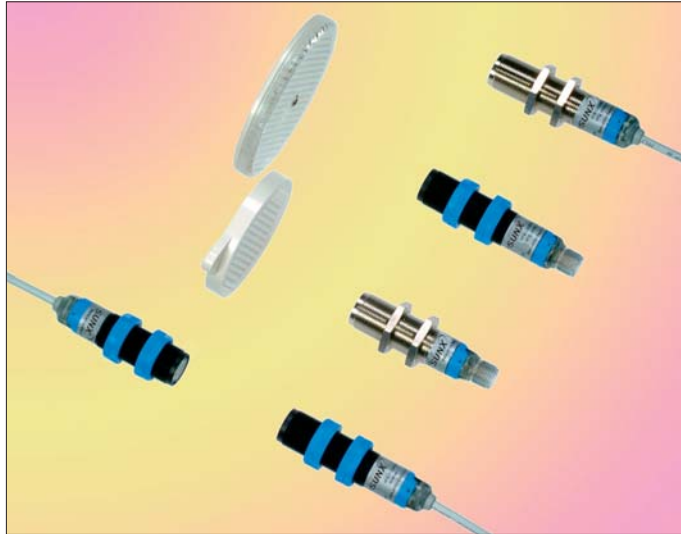


M18 SERIES

Panasonic
ideas for life

Cost-Effective Cylindrical Photoelectrical Sensors



Cylindrical Type – Complete Range of M18 Sensors

CE Marked
Conforming to EMC Directive

Cost-Effective

Thanks to a fully automated production line, M18 Series Sensors offer an excellent quality at low cost. With their widely-used M18 cylindrical shape, they grant for a quick and easy installation.

Complete Range

- Metal or plastic housing
- PNP or NPN output
- Connector or cable type
- Thru beam, retroreflective with or without polarising filter and diffuse reflective type available
- Various cables, reflectors and holders

Sensitivity Adjuster

(M18-P... and M18-D... only)



ORDER GUIDE

Type	Appearance	Sensing range	Model No. Plastic	Model No. Metal	Output	Terminal		
Thru-beam			M18-T120P-PN	M18-T120M-PN	PNP	Wire		
			M18-T120P	M18-T120M	NPN			
			M18-T120P-PN-J	M18-T120M-PN-J	PNP	Connector		
			M18-T120P-J	M18-T120M-J	NPN			
Retroreflective			M18-R020P-PN	M18-R020M-PN	PNP	Wire		
			M18-R020P	M18-R020M	NPN			
			M18-R020P-PN-J	M18-R020M-PN-J	PNP	Connector		
		M18-R020P-J	M18-R020M-J	NPN				
		With polarising filters			M18-P015P-PN		M18-P015M-PN	PNP
					M18-P015P	M18-P015M	NPN	
(with sensitivity adjuster)	M18-P015P-PN-J				M18-P015M-PN-J	PNP	Connector	
M18-P015P-J	M18-P015M-J	NPN						
Diffuse reflective			M18-D003P-PN	M18-D003M-PN	PNP	Wire		
			M18-D003P	M18-D003M	NPN			
			(with sensitivity adjuster)	M18-D003P-PN-J	M18-D003M-PN-J	PNP	Connector	
				M18-D003P-J	M18-D003M-J	NPN		

NOTE: Reflector is not supplied with the retroreflective type sensor. Please select the suitable reflector from the options.

SPECIFICATIONS

Type	Thru-beam		Retroreflective				Diffuse reflective	
	Plastic	Metal	Plastic	Metal	With polarising filters		Plastic	Metal
					Plastic	Metal		
PNP cable	M18-T120P-PN	M18-T120M-PN	M18-R020P-PN	M18-R020M-PN	M18-P015P-PN	M18-P015M-PN	M18-D003P-PN	M18-D003M-PN
NPN cable	M18-T120P	M18-T120M	M18-R020P	M18-R020M	M18-P015P	M18-P015M	M18-D003P	M18-D003M
PNP connector M12	M18-T120P-PN-J	M18-T120M-PN-J	M18-R020P-PN-J	M18-R020M-PN-J	M18-P015P-PN-J	M18-P015M-PN-J	M18-D003P-PN-J	M18-D003M-PN-J
NPN connector M12	M18-T120P-J	M18-T120M-J	M18-R020P-J	M18-R020M-J	M18-P015P-J	M18-P015M-J	M18-D003P-J	M18-D003M-J
Sensing range	12m		0.1m to 2m*1)		0.1m to 1.5m*1)		1cm to 30cm	
Sensing object	ø5mm or more opaque object		ø35mm or more opaque or translucent object		ø7.5mm or more opaque or translucent object		ø5mm or more opaque or translucent object	
Repeatability	0.1mm or less		0.2mm or less		0.2mm or less		0.5mm or less (setting distance: 30cm)	
Supply voltage	10 to 30V DC, reverse polarity protected							
Current consumption	Max. 30mA							
Sensitivity adjuster	Not equipped				Equipped			
Output	Max. 100mA Short circuit protection							
Output operation	Dark-ON / Light-ON (selectable via wiring)							
Response time	2ms			1ms				
Operation indicator	Yellow LED							
Emission indicator	Green LED			—				
Pollution degree	3 (industrial environment)							
Protection	IP67							
Ambient temperature	-25 to +55°C (No dew condensation or icing allowed), storage: -25 to +70°C							
Ambient humidity	35 to 85% RH							
Ambient illuminance	5,000 lx							
EMC	EN50082-1, EN61000-6-2, EN50081-2							
Voltage withstandability	500VAC for 1 minute							
Insulation resistance	20MΩ, or more, with 250VDC							
Vibration resistance	10 to 55Hz, 1 cycle/min., double amplitude 0.75mm, 10 min. on 3 axes							
Shock resistance	10G min., 4 times on 3 axes							
Emitting element	Infrared LED				Red LED		Infrared LED	
Material	Plastic type: ABS; metal type: nickel-plated brass							
Optical Material	PMMA plastic							
Connection Method	4-core cable 2m long; or M12 connector (-J)							
Cable extension	Extension up to total 100m possible with 0.34mm ² , or more, cable (thru-beam type: both emitter and receiver)							
Weight	Max. 210g			Max. 110g				

*1) With M18-RF48

OPTIONS

M18-RF48	Plastic Reflector, 48mm
M18-RF75	Plastic Reflector, 75mm
M18-SPS	M18 Mounting Bracket, Plastic, Flexible
M18-SPF	M18 Mounting Bracket, Plastic, Fixed
M18-ST20	M18 Mounting Bracket, Metal, L Shape 20mm
M18-ST43	M18 Mounting Bracket, Metal, L Shape 43mm
UZZ81220D	2m cable with M12 connector
UZZ81221D	2m cable with M12 connector, ellbow
UZZ81250D	5m cable with M12 connector
UZZ81251D	5m cable with M12 connector, ellbow

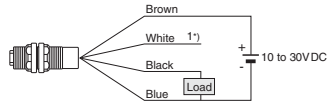


NOTE: Reflector is not supplied with the retroreflective type sensor.

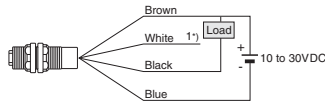
M18

I/O WIRING DIAGRAMS

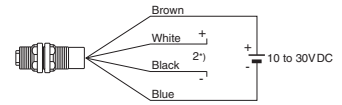
PNP output type



NPN output type



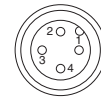
Emitter of thru-beam type



- 1 10-30VDC
- 2 Light/Dark
- 3 0V
- 4 NO (Normally Open) output



- 1 10-30VDC
- 2 Light/Dark
- 3 0V
- 4 NO (Normally Open) output

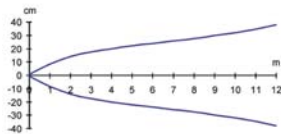


- 1 10-30VDC
- 2 Test +
- 3 0V
- 4 Test -

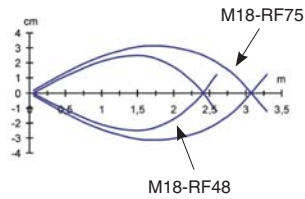
1* With the white wire not connected the diffuse reflective models function in the light mode and the retroreflective and thru-beam models in the dark mode; the light mode can be selected connecting the white wire to +VDC, the dark mode connecting it to 0VDC
 2* Emitter off with Test+ on VDC and Test- on 0V

SENSING CHARACTERISTICS (TYPICAL)

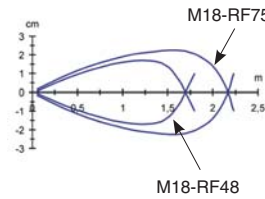
M18-T120□
Thru beam



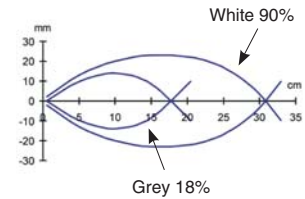
M18-R020□
Retroreflective



M18-P015□
Retroreflective with polarising filter

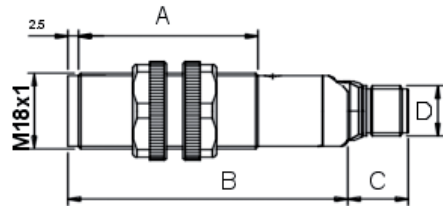


M18-D003□
Diffuse reflective



DIMENSIONS (Unit: mm)

Sensors

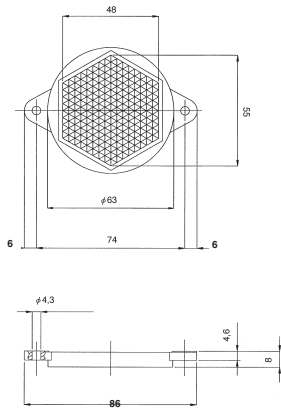


Product	A (mm)	B (mm)	C (mm)	D (mm)
M18-T120□-J (Receiver)	38	57	14.5	M12
M18-T120□-J (Emitter)	43	67	14.5	M12
M18-T120□ (Receiver)	38	57	10	ø4
M18-T120□ (Emitter)	43	67	14.5	ø4
M18-R020□-J	38	57	10	M12
M18-R020□	38	57	10	ø4
M18-P015□-J	43	67	14.5	M12
M18-P015□	43	67	14.5	ø4
M18-D003□-J	43	67	14.5	M12
M18-D003□	43	67	14.5	ø4

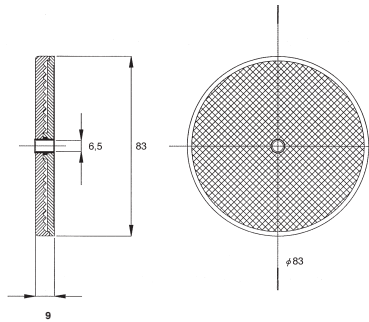
NOTE: Reflector is not supplied with the retroreflective type sensor.
 Please select the suitable reflector from the options.

Accessories

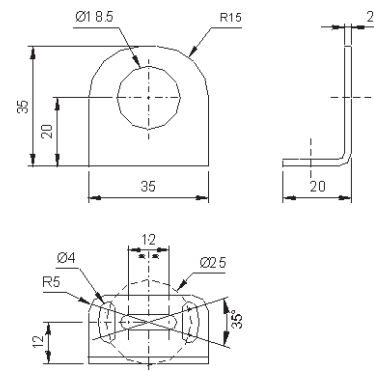
M18-RF48



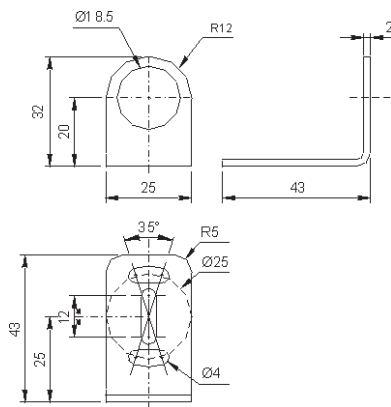
M18-RF75



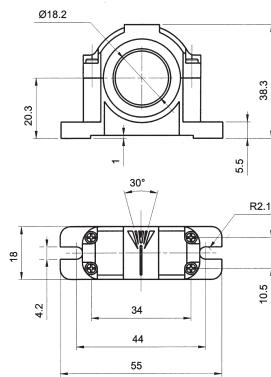
M18-ST20



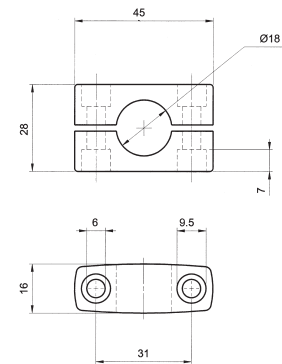
M18-ST43



M18-SPS



M18-SPF



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