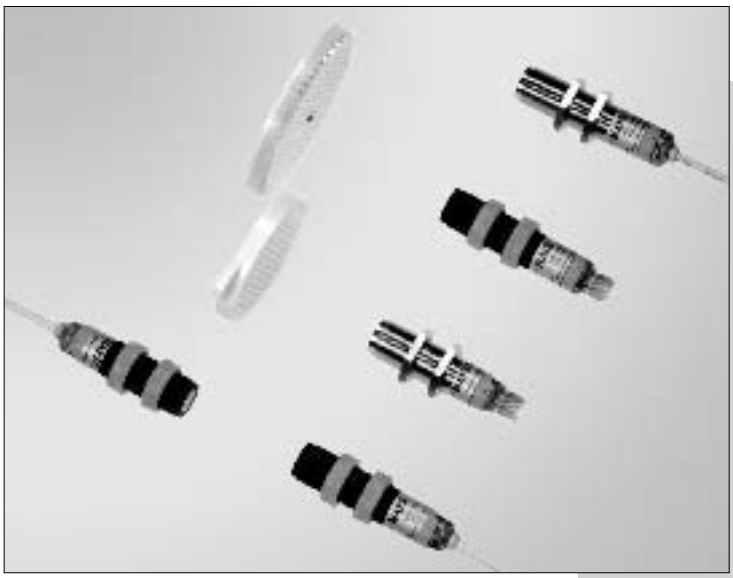
M18 SERIES
Cost-Effective Cylindrical Photoelectrical Sensors



* Original NAIS Sensor

Cylindrical Type – Complete Range of M18 Sensors

CE Marked
Conforming to EMC Directive

Cost-Effective

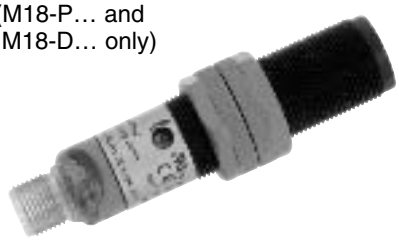
Thanks to a fully automated production line, M18 Series Sensors offer an excellent quality at reasonable cost. With their widely-used M18 cylindrical shape, they grant for a quick and easy installation.

Complete Range

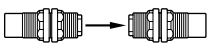
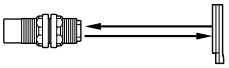
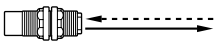
- Metal or plastic housing
- PNP or NPN output
- Connector or cable type
- Thru beam, retroreflective with or without polarizing filter and diffuse reflective type available
- Various cables, reflectors and holders

Sensitivity Adjuster

(M18-P… and M18-D… only)



ORDER GUIDE

Type	Appearance	Sensing range	Model No. Plastic	Model No. Metal	Output	Terminal
Thru-beam		12m	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		2m	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 polarizing filters		1.5m (with sensitivity adjuster)	M18-P015P-PN	M18-P015M-PN	PNP	Wire
			M18-P015P	M18-P015M	NPN	
			M18-P015P-PN-J	M18-P015M-PN-J	PNP	Connector
			M18-P015P-J	M18-P015M-J	NPN	
Diffuse reflective		0.3m (with sensitivity adjuster)	M18-D003P-PN	M18-D003M-PN	PNP	Wire
			M18-D003P	M18-D003M	NPN	
			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	
					With polarizing filters			
	Plastic	Metal	Plastic	Metal	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 to1.5m *1)		1cm to 30 cm	
Sensing object	ϕ5mm or more opaque object		ϕ35mm or more opaque or translucent object		ϕ7.5mm or more opaque or translucent object		ϕ5mm 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	5,000ℓx							
EMC	EN61000-6-2,:EN50081-2							
Voltage withstandability	500V AC 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 0.34mm², or more, cable (thru-beam type: both emitter and receiver)							
Weight	max.210g		max. 110g					

*1) with M18-RF48

OPTIONS

M18-RF48	Plastic Reflector, 48 mm
M18-RF75	Plastic Reflector, 75 mm
M18-SPS	M18 Mounting Bracket, Plastic, Flexible
M18-SPF	M18 Mounting Bracket, Plasic, Fixed
M18-ST20	M18 Mounting Bracket, Metal, L Shape 20 mm
M18-ST43	M18 Mounting Bracket, Metal, L Shape 43 mm
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

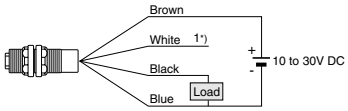


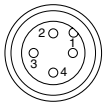
NOTE: Reflector is not supplied with the retroreflective type sensor. Please select the suitable reflector from the options.

M-18

I/Q WIRING DIAGRAMS

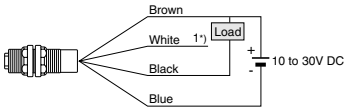
PNP output type

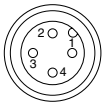




1 10-30VDC
2 Light/Dark
3 NO output
4 0V

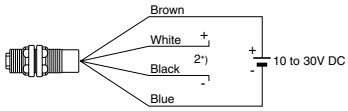
NPN output type

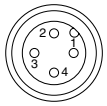




1 10-30VDC
2 Light/Dark
3 NO output
4 0V

Emitter of thru-beam type



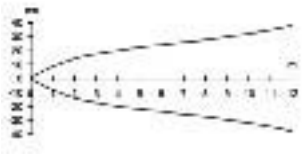


1 10-30VDC
2 Test +
3 Test -
4 0V

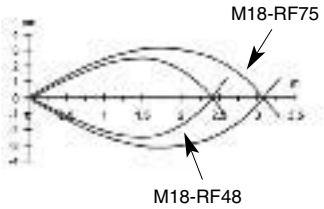
1* With the white wire not connected the diffuse reflective models function in the light mode and the retroreflective and thru-beam models in the dark mode; the light mode can be selected connecting the white wire to +VDC, the dark mode connecting it to 0VDC
2* Emitter off with Test+ on VDC and Test-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

SENSING CHARACTERISTICS (TYPICAL)

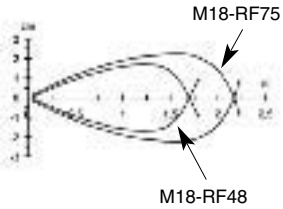
M18-T120□
Thru beam



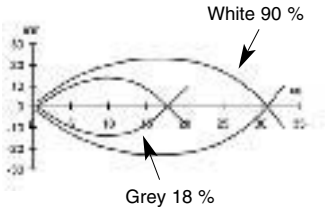
M18-R020□
Retroreflective



M18-P015□
Retroreflective with polarizing filter

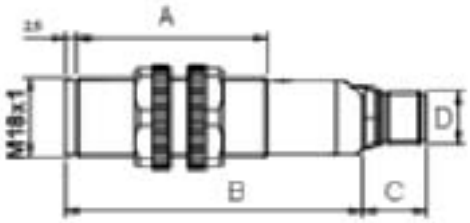


M18-D003□
Diffuse reflective



DIMENSIONS (Unit: mm)

Sensors



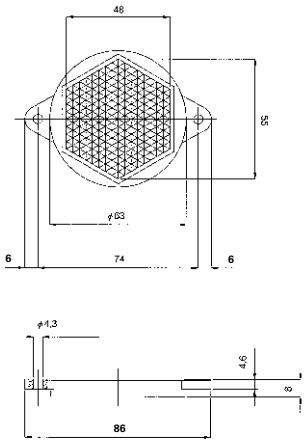
Product	A (mm)	B (mm)	C (mm)	D (mm)
M18-T120□-J (Receiver)	38	57	14,5	M12
M18-T120□-J (Emitter)	43	67	14,5	M12
M18-T120□ (Receiver)	38	57	10	ϕ 4
M18-T120□ (Emitter)	43	67	14,5	ϕ 4
M18-R020□-J	38	57	10	M12
M18-R020□	38	57	10	ϕ 4
M18-P015□-J	43	67	14,5	M12
M18-P015□	43	67	14,5	ϕ 4
M18-D003□-J	43	67	14,5	M12
M18-D003□	43	67	14,5	ϕ 4

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

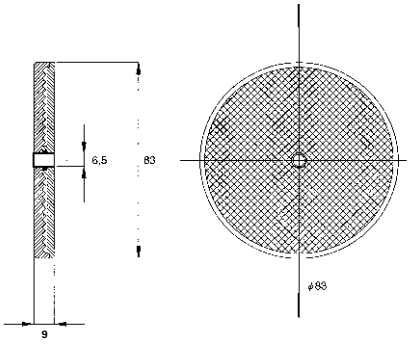
DIMENSIONS (Unit: mm)

Accessories

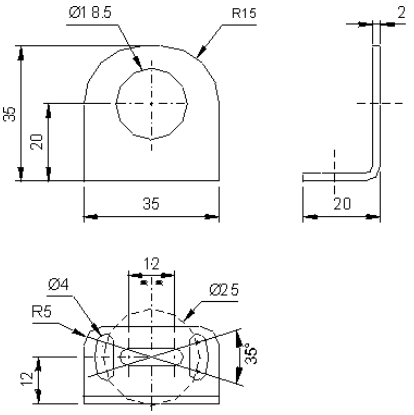
M18-RF48



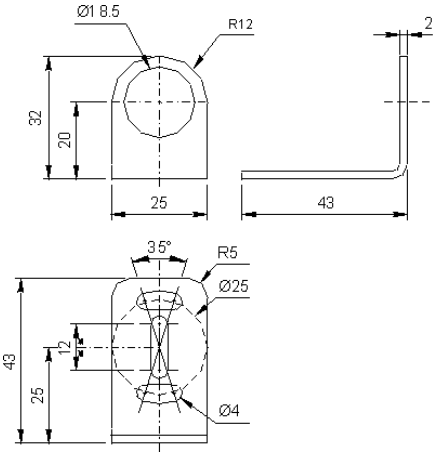
M18-RF75



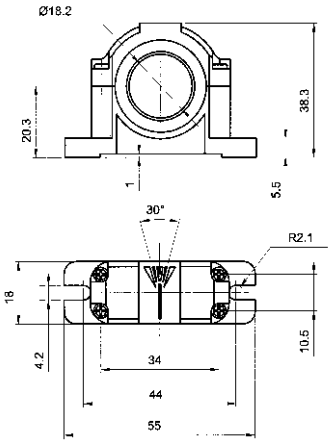
M18-ST20



M18-ST43



M18-SPS



M18-SPF

