MS Series Photoelectric Sensors

M18 (18mm) plastic with background suppression - DC

- Diffuse reflection with background suppression
- Plastic housing
- Axial cable or M12 quick-disconnect models
- NPN, PNP, N.O./N.C. selectable output
- IP67 rated

NEED CABLES?

MS Series Photoelectric Sensors Selection Chart

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions	Characteristic Curves
MS0-00-0A	Retired	50mm [1.97 in]	N.O./N.C. selectable	NPN/PNP selectable	2m [6.5 ft] axial cable	Diagram 1 or Diagram 2	Figure 1	Chart 1
MS0-00-0E	Retired				M12 [12mm] connector		Figure 2	Chart 1
MS1-00-0A	Retired	100mm [3.94 in]	N.O./N.C. selectable	NPN/PNP selectable	2m [6.5 ft] axial cable		Figure 1	Chart 2
MS1-00-0E	Retired				M12 [12mm] connector		Figure 2	Chart 2

Wiring Diagrams

Diagram 1
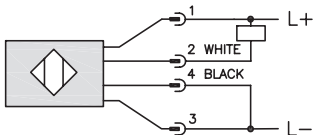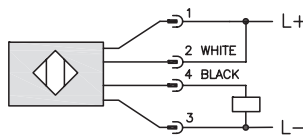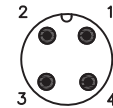**NPN Output**

Diagram 2
PNP Output

Connector
M12 Connector

Note For Diagram 1 and Diagram 2: For N.O. – Brown 1 to L+ and Blue 3 to L-
For N.C. – Blue 3 to L+ and Brown 1 to L-

Switching Element Function
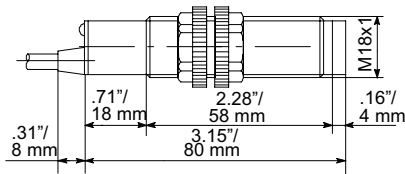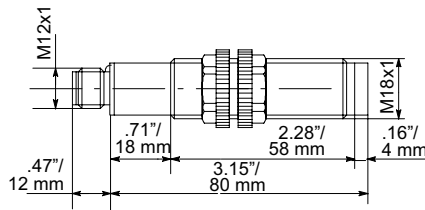
	Through-beam and Reflective Models	Diffuse Reflective Models
Light-on	N.C.	N.O.
Dark-on	N.O.	N.C.

Dimensions

(inches/mm)

Figure 1

.31"/ 8 mm · .71"/ 18 mm · 2.28"/ 58 mm · .16"/ 4 mm · 3.15"/ 80 mm · M18x1

Figure 2

.47"/ 12 mm · .71"/ 18 mm · 2.28"/ 58 mm · .16"/ 4 mm · 3.15"/ 80 mm · M12x1 · M18x1

Characteristic curves

Chart 1 (MS0)

Background suppression
Gain
White 90%
Black 6%
Distance x (mm)

Chart 2 (MS1)
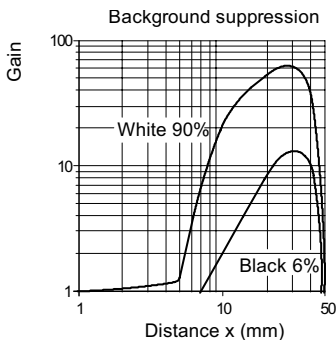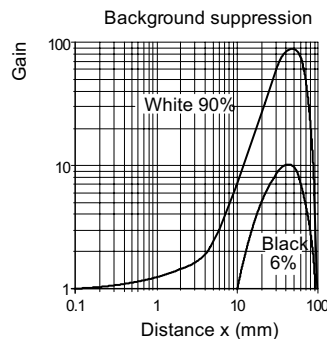

Background suppression
Gain
White 90%
Black 6%
Distance x (mm)

Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

For the latest prices, please check AutomationDirect.com.

MS Series Photoelectric Sensors

MS Series Photoelectric Sensors Specifications		
MS Series Specifications	*Standard Distance*	*Extended Distance*
Type	Diffuse reflection with background suppression	
Sensing Distance	50mm`	100mm`
Light Spot Diameter	0.6 mm @ 50mm	0.9 mm @ 100mm
Emission	Infrared (880nm)	
Sensitivity	Fixed	
Output Type	NPN/PNP selectable; N.O./N.C. selectable	
Operating Voltage	10-30VDC	
No-load Supply Current	40mA	
Operating (Load) Current	≤ 100mA	
Off-state (Leakage) Current	≤ 10µA	
Voltage Drop	≤ 1.2 volt maximum at 100mA	
Switching Frequency	80Hz	
Ripple	≤ 10%	
Time Delay Before Availability (tv)	200ms	
Short-Circuit Protection	Yes (switch auto-resets after overload is removed)	
Operating Temperature	-25 to 70°C [-13 to 158°F]	
Protection Degree (DIN 40050)	IEC IP67	
LED Indicators - Switching Status	Red (output energized)	
Housing Material	Polybutylene Terephthalate (PBT) plastic housing, polycarbonate (PC) cable exit	
Lens Material	Plexiglass 7N	
Shock/Vibration	See terminology section	
Tightening Torque	1 N•m [0.74 lb-ft]	
Weight	150g [5.29 oz]	
Connectors	2m [6.5 ft] axial cable; M12 [12mm] connector	
Agency Approvals	CE	

` **With 100x100mm white matte paper**
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket available in zinc plated steel or 316L stainless steel. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adapter sensors. Hexagonal nuts not included. For use with 18mm sensors.
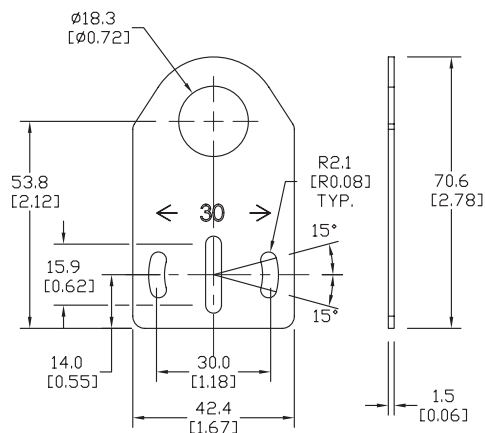
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18A	$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18A7W	$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

ST18A

Dimensions

mm [inches]

Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.
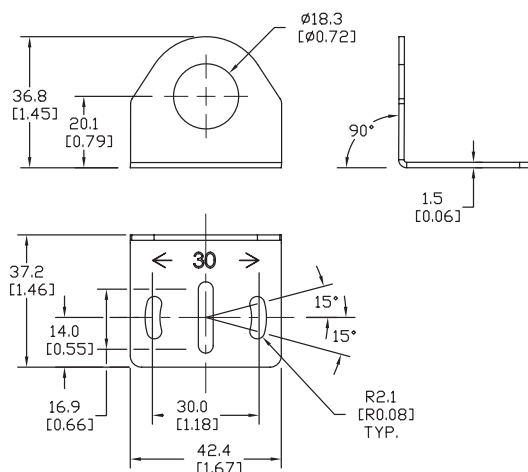
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
ST18C	$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
ST18C7W	$7.25	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

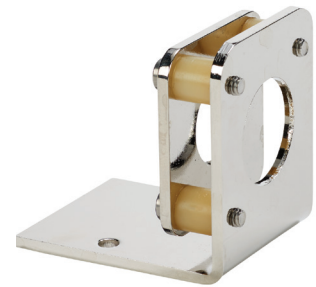**ST18C**

Dimensions

mm [inches]

Accessories for 18mm Sensors

Right-angle Fine Tune Mounting Bracket

Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 18mm sensors. Allows for fine tuning vertical and horizontal placement.

Accessories for 18mm Sensors				
Part Number	**Price**	**Description**	**Drawing Link**	**Weight [lb]**
OPT2036	$38.50	Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors.	PDF	0.02

OPT2036

Swivel Mounting Bracket

Mounting bracket, ball swivel, plastic. For use with 18mm sensors. Has a ball-joint and set screws to adjust sensor orientation. Allows angular orientation up to 15 degrees (from center) in all directions for photoelectric sensors (Will not work with C18 series).

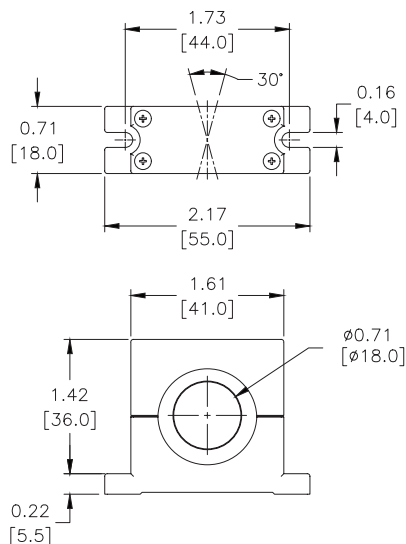| Accessories for 18mm Sensors			
Part Number	**Price**	**Description**	**Weight [lb]**
ST02	$9.50	Micro Detectors mounting bracket, ball swivel, plastic. For use with 18mm sensors.	0.06

Dimensions

mm [inches]

ST02

For the latest prices, please check AutomationDirect.com.

Accessories for 18mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2104	$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]

OPT2104, OPT2105

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
OPT2116	$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	PDF	0.15 [68.0]
OPT2117	$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.28 [127.0]

Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm [7.87 in] length), OPT2110 (300mm [11.81 in] length), and OPT2111 (500mm [19.69 in] length).

OPT2116, OPT2117

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets OPT2112 - OPT2127
Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

Mounting Rods for OPT2112-2127 Swivel Mounting Brackets				
Part Number	**Price**	**Description**	**Drawing Link**	**Weight lb (g)**
OPT2109	$13.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	$16.00	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	$21.00	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	0.98 [444.52]

Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	**Price**	**Description**	**Drawing Link**	**Weight lb [g]**
OPT2108	$16.00	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]