MQ Series Photoelectric Sensors

M18 (18mm) plastic - AC

The MQ series is an AC diffuse photoelectric with a unique 90° optic package for mounting in space-limited applications. This series fits in a standard 18 mm mounting bracket or mounting hole, and is available in a choice of 20-250 VAC outputs in N.O. or N.C. configurations with an M12 disconnect. All MQ models include background suppression with maximum available sensing distances of 50mm or 100mm.

Features

- Diffuse with background suppression
- Models with 50mm or 100mm maximum reading distance
- M12 plug connection
- Plastic housing
- Supply voltage 20 - 253 VAC
- LED output status indicator
- Light-on / Dark-on selectable
- IP67 housing protection

NEED CABLES?

18mm AC Photoelectric Reflection Sensors with Background Suppression Selection Chart									
Part Number	Price	Voltage Range	Sensing Range	Switching Frequency	Sensing Beam	Through-Beam Component	Output Type	Connection Type
MQ0-00-0E	$69.00	20 to 253 VAC	50mm [1.96 in]	25 Hz	Infrared	N.O./N.C. background suppression	TRIAC Light-on / Dark-on selectable	M12 quick-disconnect (purchase cable separately)
MQ1-00-0E	$69.00	20 to 253 VAC	100mm [3.93 in]	25 Hz	Infrared	N.O./N.C. background suppression	TRIAC Light-on / Dark-on selectable	M12 quick-disconnect (purchase cable separately)

Wiring Diagram

1 BROWN — L1
2 WHITE
4 BLACK
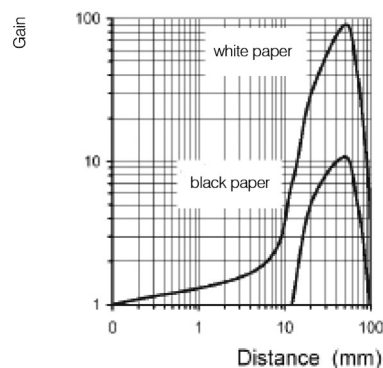3 BLUE — N

2: Teach

WH/2 — Open Light-on
L1 Dark-on
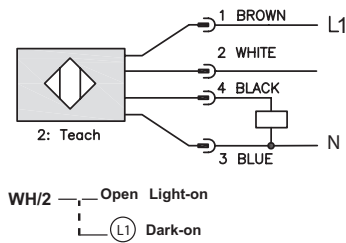
Connector

M12 Connector
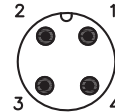
N.O.	Light -on
N.C.	Dark -on

Characteristic Curves

MQ0-00-0E
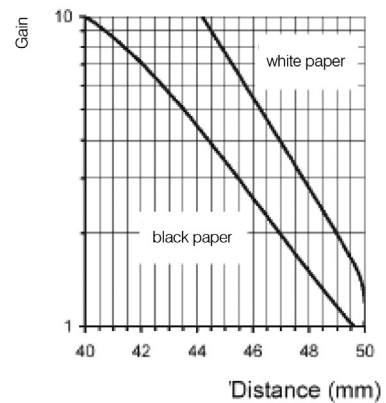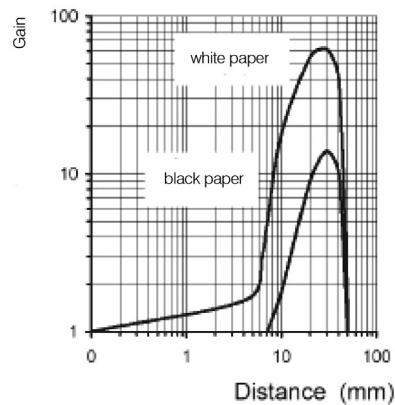
MQ1-00-0E
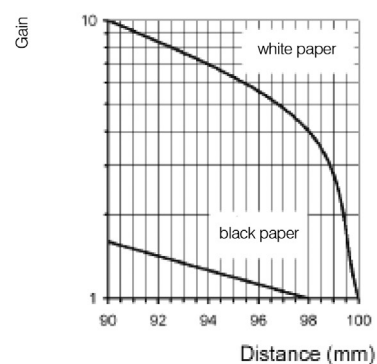
MQ Series Photoelectric Sensors

MQ Series Photoelectric Sensors Specifications	
Type	*18mm Diffuse with Background Suppression, 90° Radial Optic*
Model Series	MQ0/MQ1
Sensing Distance	50mm / 100mm
LightSpot Diameter	0.6 mm @ 50mm / 0.9 mm @ 100mm
Emission	Infrared (C880nm)
Sensitivity	Fixed
Output Types	TRIAC
Operating Voltage	20 - 253 VAC
No Load Supply Current	40mA
Operating (Load) Current	< 300mA
Off-state (Leakage) Current (max)	m1.5 mA @ 250 VAC
Voltage Drop	3V @ 300mA
Switching Frequency	25 Hz
Ripple	<10%
Time Delay Before Availability (tv)	200ms
Short-circuit Protection	Yes
Operating Temperature	-13 to 158°F [-25 to 70°C]
Protection Degree (DIN 40050)	IP67
LED Indicators - Switching Status	Yellow Output State
Housing Material	Polybutylene Terephthalate (PBT)
Lens Material	Polymethyl methacrylate (PMMA)
Shock/Vibration	See terminology section
Tightening Torque	1 N•m [0.74 lb-ft]
Weight	34.473 g [1.216 oz]
Connectors	M12 quick-disconnect
Agency Approvals	UL Recognized E130644, CE

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Dimensions

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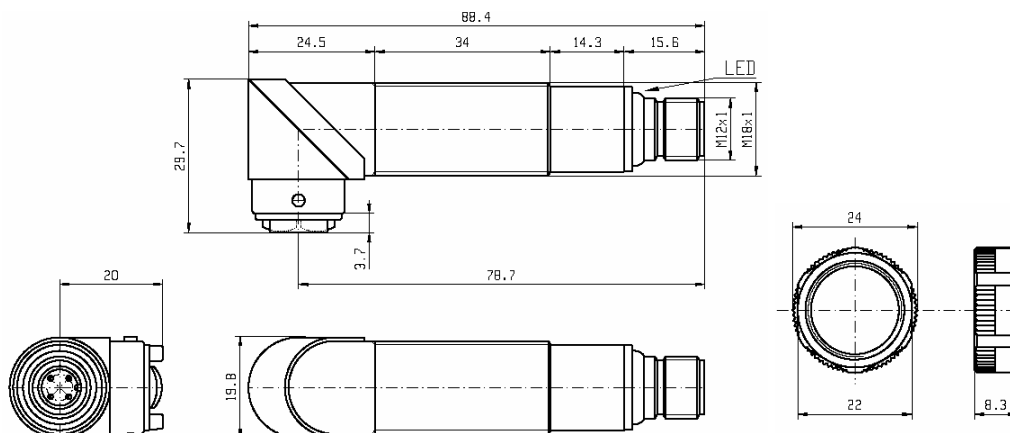
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

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]

Sensor Accessories

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.

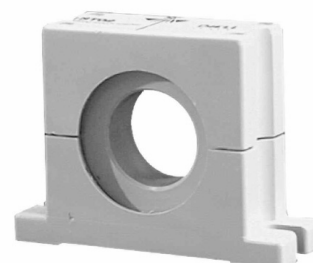| Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight [lb]
OPT2036	$38.50	Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors.	PDF	0.02
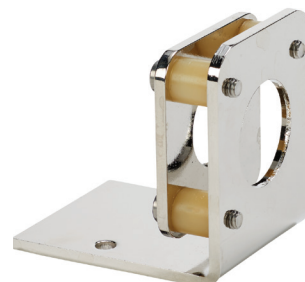
OPT2036

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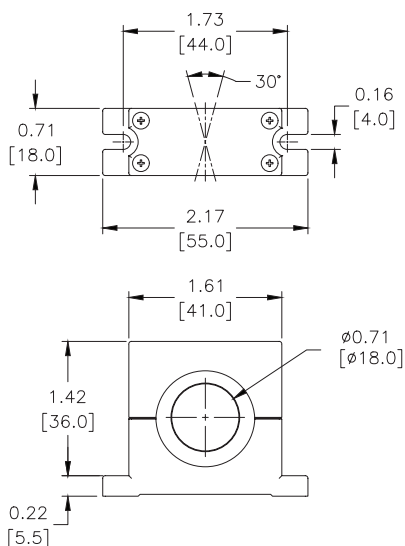
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST02	$9.50	Micro Detectors mounting bracket, ball swivel, plastic. For use with 18mm sensors.	0.06

Dimensions

mm [inches]

1.73 [44.0]
30°
0.16 [4.0]
0.71 [18.0]
2.17 [55.0]

1.61 [41.0]
ø0.71 [ø18.0]
1.42 [36.0]
0.22 [5.5]

ST02

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]