

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

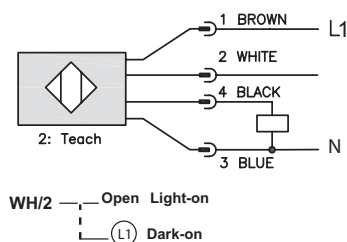
- Diffuse with background suppression
- Models with 50mm or 100mm maximum reading distance
- M12 plug connection
- Plastic housing
- Supply voltage 20 - 253 VAC
- LED output status indicator
- Light-on / Dark-on selectable
- IP67 housing protection



18mm AC Photoelectric Reflection Sensors with Background Suppression Selection Chart

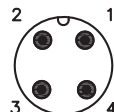
Part Number	Price	Voltage Range	Sensing Range	Switching Frequency	Sensing Beam	Through-Beam Component	Output Type	Connection Type
MQ0-00-0E	\$69.00	20 to 253 VAC	50mm [1.96 in]	25 Hz	Infrared	N.O./N.C. background suppression	TRIAC Light-on / Dark-on selectable	M12 quick-disconnect (purchase cable separately)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

Wiring Diagram



Connector

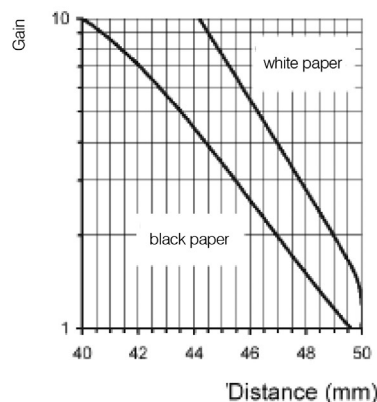
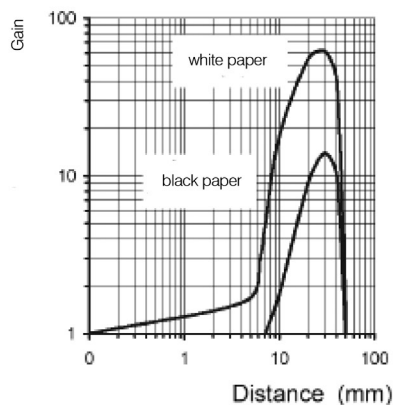
M12 Connector



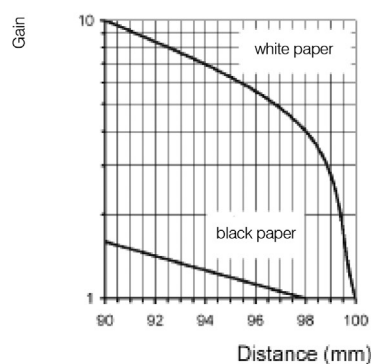
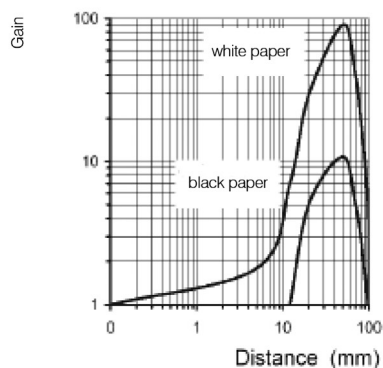
N.O.	Light-on
N.C.	Dark-on

Characteristic Curves

[MQ0-00-0E](#)



[MQ1-00-0E](#)



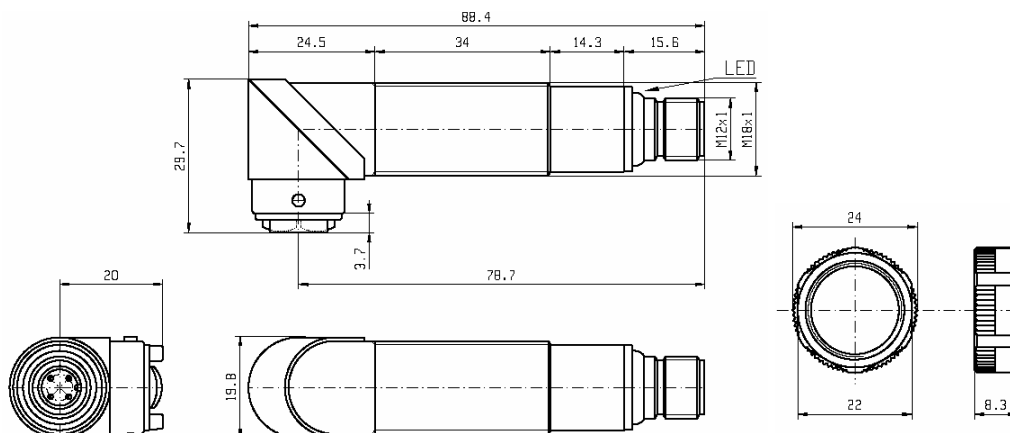
MQ Series Photoelectric Sensors

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.

Axial Mounting Bracket

ST18A

Dimensions

Technical drawing of a mechanical part, likely a valve or plug, showing dimensions in millimeters (mm) and inches (in). The part features a central vertical slot, a top circular feature, and a bottom flange. Dimensions are provided in mm with corresponding inch equivalents in brackets.

Key dimensions and tolerances:

- Top circular feature diameter: $\varnothing 18.3$ [0.72]
- Overall height: 53.8 [2.12]
- Height of central slot: 15.9 [0.62]
- Height of bottom flange: 14.0 [0.55]
- Radius of bottom flange: R2.08 [R0.08] TYP.
- Angle of bottom flange: 15°
- Width of central slot: 30.0 [1.18]
- Overall width: 42.4 [1.67]
- Height of side flange: 70.6 [2.78]
- Width of side flange: 1.5 [0.06]

ST18C

Dimensions

Technical drawing of a mechanical part, showing three views: front view, side view, and top view. Dimensions are provided in millimeters (mm) and inches (in).

Front View:

- Overall height: 36.8 mm [1.45]
- Height of the central circular feature: 20.1 mm [0.79]
- Central circular feature diameter: $\varnothing 18.3$ [Ø0.72]

Side View:

- Angle: 90°
- Thickness: 1.5 mm [0.06]

Top View:

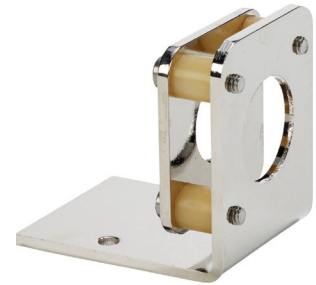
- Overall width: 42.4 mm [1.67]
- Overall height: 37.2 mm [1.46]
- Central slot width: 30 mm
- Slot depth: 14.0 mm [0.55]
- Slot radius: R2.1 [R0.08] TYP.
- Slot angle: 15°
- Slot depth: 16.9 mm [0.66]
- Slot width: 30.0 mm [1.18]

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]
<u>OPT2036</u>	\$38.50	Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors.	<u>PDF</u>	0.02

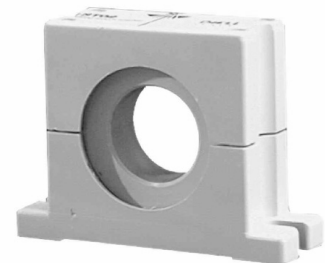


[OPT2036](#)

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).

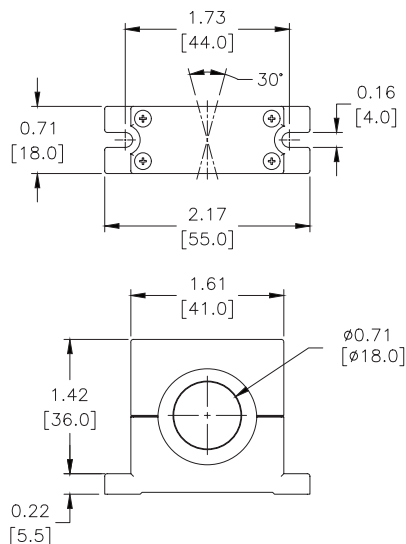
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight [lb]
ST02	\$9.50	Micro Detectors mounting bracket, ball swivel, plastic. For use with 18mm sensors.	0.06



[ST02](#)

Dimensions

mm [inches]



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]



[OPT2116](#), [OPT2117](#)

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).

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]

