

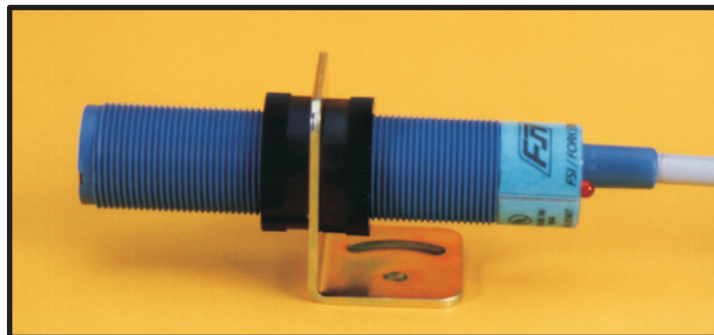
# M SERIES

## 18 mm Photoelectric Sensors

Made in  
U.S.A.

### FEATURES

- Universal AC/DC Power Supply
- NEMA 4 Potted Housing
- UL / CSA
- Easy to Mount
- SPDT Relay or SPDT FET Output
- Available in Four Operating Modes
- Made in the U.S.A



### SPECIFICATIONS

#### Input

Voltage: 10 to 30 VDC / 10 to 135 VAC 50/60 Hz.  
Current: 45 mA Max.

#### Output

##### SPDT FET:

135 VAC / 200 VDC Max.  
Short Circuit Protected Using 10 - 30 VDC  
Response time: Less than 3 ms.  
Load: 120 mA. Max.  
Switching Rate: 325 Hz. Max

##### SPDT RELAY:

Response time: Less than 5 ms.  
Load: 1.0A @ 30 VDC; 0.5A @ 120 VAC  
Switching Rate: 200 Hz. Max.

#### Mechanical

Housing: NEMA 4, Potted Non-metallic  
18 mm cylindrical, with 6 ft. cable.

#### Environment

Temp. Range: -13° to 122° F (-25° to 50° C)  
Humidity: Max. Relative Humidity 85%

#### Range

Model	Max. Distance	Min. Target Size
MD-P18(F or R)	4" (10 cm)	0.2" (5 mm)
MDL-P18(F or R)	18" (0.5 m)	0.5" (1.25 cm)
MR-P18(F or R)	12' (3.5 m)*	2.0" (5.1 cm)
MRP-P18(F or R)	12' (3.5 m)*	2.0" (5.1 cm)

\* Using 2 inch square reflector supplied with sensor.  
Target size shown equals reflector size. Detection of smaller objects possible.

### DESCRIPTION

The M Series sensors are compact, self-contained photoelectric sensors contained in an encapsulated cylindrical 18 mm threaded housing. These sensors can be powered by AC or DC and are available with either a Relay or Solid State (FET) output. The output is SPDT, which allows the M Series to operate as both a "Light On" and "Dark On" sensor. It directly inputs to counters and programmable controllers. A rear mounted red LED indicator shows target acquisition. Available in four

operating modes, these units can handle most of your sensing applications. They have a NEMA 4 rating and an operating temperature range of -13° to 122° F, so they can withstand the harshest environments. FSI is committed to manufacturing quality products and providing complete customer satisfaction.



*FSI Technologies Inc.*

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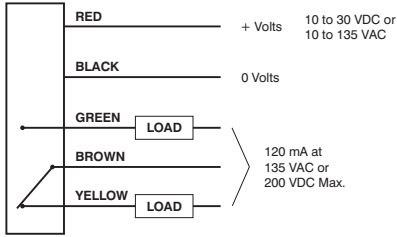
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## WIRING DIAGRAMS

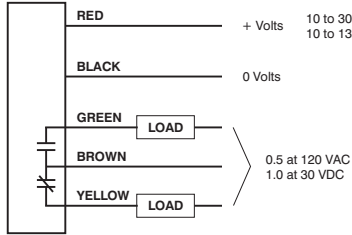
### SOLID STATE DUAL FET (SPDT) OUTPUT

Models: MD-P18F, MDL-P18F, MR-P18F & MRP-P18F



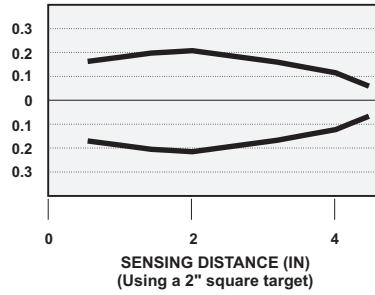
### RELAY (SPDT) OUTPUT

Models: MD-P18R, MDL-P18R, MR-P18R & MRP-P18R

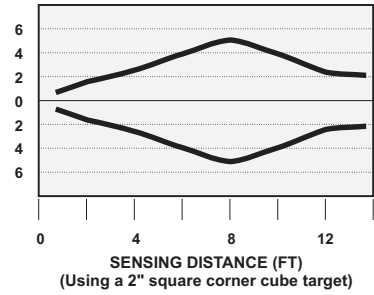


## OPERATING CHARACTERISTICS

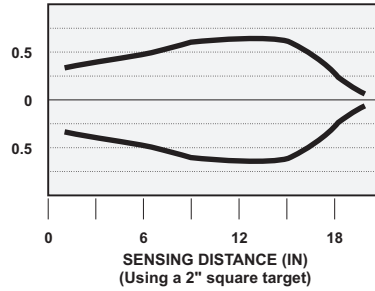
MD-P18 ( F or R )



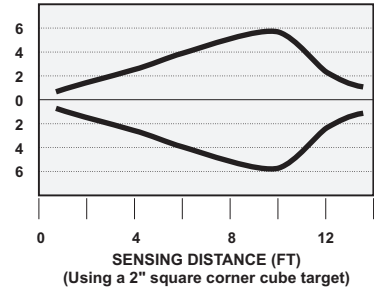
MR-P18 ( F or P )



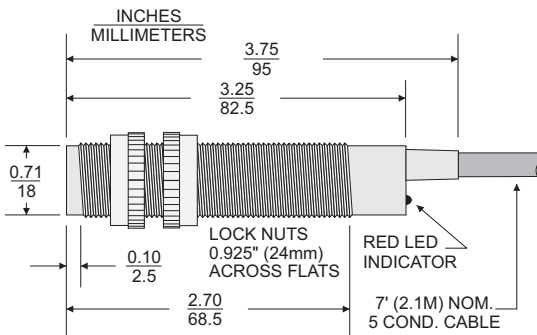
MDL - P18 ( F or R )



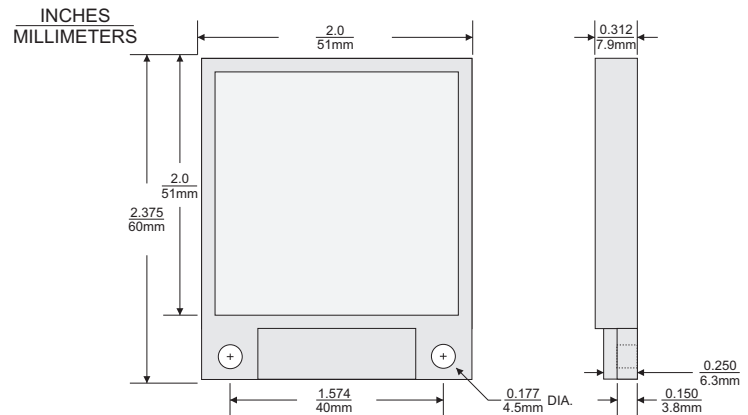
MRP-P18 ( F or R )



## DIMENSIONS



## REFLECTOR DIMENSIONS



## ORDERING INFORMATION

### MD-P18 ( F or R ) & MDL-P18 ( F or R )

The MD-P18 and MDL-P18 are diffused photoelectric sensors, utilizing an infrared modulated light source. It detects an object in its path by detecting the diffusion of transmitted light from the surface of an object. The MD-P18 has a maximum range of 4 inches (100 mm), and the MDL-P18 a maximum range of 18 inches (450 mm).

### MR-P18 ( F or R ) & MRP-P18 ( F or R )

The MR-P18 is a retroreflective photoelectric sensor which has an infrared, modulated LED light source. The MRP-P18 is a polarized retroreflective sensor which has a visible red, modulated LED light source. It senses an object by detecting the presence or absence of the transmitted beam of light after it reflects from the reflector provided with each unit. The MDP-P18 polarized unit incorporates filters so the sensor will not detect shiny surfaces other than the reflector supplied with the unit. Both the MR-P18 and the MRP-P18 have a maximum range of 12 feet (3.5 M).

Part Number: **MXX-P18-X**

- D** Diffused (Short Range)
- DL** Diffused (Long Range)
- R** Retroreflective (IR) \*
- RP** Retro polarized (red) \*
- F** SPDT FET Solid State Output
- R** SPDT Relay Output

\* Includes Reflector



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