



Q10 Series

Miniature self-contained dc photoelectric sensors

Features

- Self-contained dc sensors in miniature right-angle housings; only 11 mm (0.43 in) thick
- Epoxy-encapsulated circuitry; IP54 (NEMA5) construction; hermetically-sealed optics
- 1.8 m (70 in) opposed range or 0.5 m (20 in) diffuse range; diffuse models have sensitivity adjustment
- Choose models for light operate or dark operate; choose either NPN (sinking) or PNP (sourcing) output models



Note: A model with a QD connector requires an optional mating cable.

Q10 Opposed Mode Emitter (E) and Receiver (R)

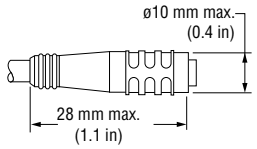
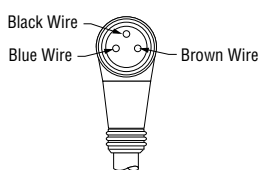
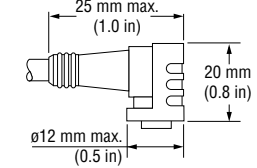
Models	Range	Cable	Supply Voltage	NPN/PNP	L.O./D.O.	Excess Gain	Beam Pattern
Q106E Q106EQ	1.8 m (70 in)	2 m (6.5 ft) 3-pin Pico QD	10-30V dc	—	—		
Q10AN6R Q10AN6RQ		2 m (6.5 ft) 3-pin Pico QD					
Q10RN6R Q10RN6RQ		2 m (6.5 ft) 3-pin Pico QD		PNP	D.O.		
Q10AP6R Q10AP6RQ		2 m (6.5 ft) 3-pin Pico QD			L.O.		
Q10RP6R Q10RP6RQ		2 m (6.5 ft) 3-pin Pico QD		D.O.			

Q10 Diffuse Mode

Models	Range	Cable	Supply Voltage	NPN/PNP	L.O./D.O.	Excess Gain	Beam Pattern
						Performance based on 90% reflectance white test card	
Q10AN6D Q10AN6DQ	0.5 m (20 in)	2 m (6.5 ft) 3-pin Pico QD	10-30V dc	NPN	L.O.		
Q10RN6D Q10RN6DQ		2 m (6.5 ft) 3-pin Pico QD			D.O.		
Q10AP6D Q10AP6DQ		2 m (6.5 ft) 3-pin Pico QD		PNP	L.O.		
Q10RP6D Q10RP6DQ		2 m (6.5 ft) 3-pin Pico QD			D.O.		

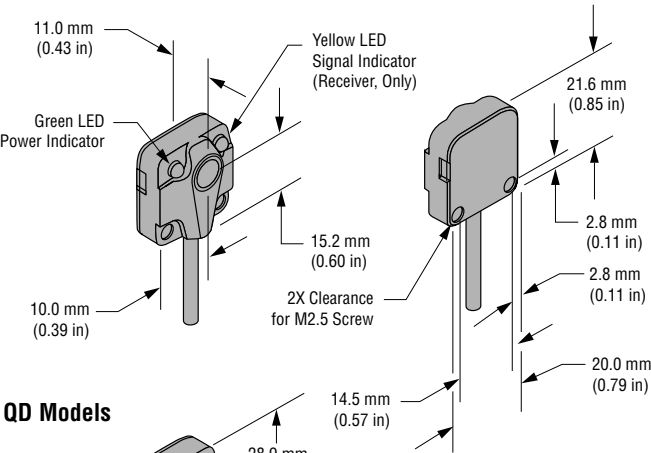
Q10 Series

Product Specifications	
Sensing Beam	Infrared, 880 nm
Supply Voltage and Current	10 to 30V dc (10% maximum ripple); Emitter or receiver: 15 mA; Diffuse models: 20 mA (exclusive of load)
Supply Protection Circuitry	Protected against reverse polarity
Output Configuration	SPST solid-state dc switch; Choose NPN (current sinking) or PNP (current sourcing) models Choose light operate (N.O.) or dark operate (N.C.) models
Output Rating	150 mA maximum Off-state leakage current: <10 microamps at 30V dc; On-state saturation voltage: <0.5V at 10 mA dc; <1.5V at 150 mA dc
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short-circuit of outputs Overload trip point ≥ 220 mA, typical, at 20°C
Output Response Time	Opposed mode: 8 ms "on", 4 ms "off"; Diffuse mode: 3 ms "on" and "off"
Repeatability	Opposed mode: 1.0 ms; Diffuse mode: 0.75 ms
Adjustments	Diffuse models (only); single-turn, top-mounted SENSITIVITY control for adjustment of system gain (turn clockwise to increase)
Indicators	Opposed mode receivers and diffuse mode sensors have two LEDs: Green and Yellow GREEN glowing steadily = power to sensor is "on" GREEN flashing = output is overloaded YELLOW glowing steadily = light is sensed YELLOW flashing = marginal excess gain (1-1.5x) in light condition Emitters have one Green LED to indicate when power to sensor is "on"
Construction	Housings are black ABS; Rated UL 94V0 Lenses are hermetically-sealed glass; lens covers are clear acrylic Circuitry is epoxy-encapsulated and completely sealed Stainless steel M2.5 mounting hardware is included
Environmental Rating	IP54 (NEMA 5)
Connections	2 m (6-1/2 ft) attached cable, or 3-pin pico-style quick-disconnect fitting; Cables for QD models are purchased separately
Operating Temperature	-40° to +70°C (-40° to 158°F); Maximum relative humidity 90% at 50°C (non-condensing)

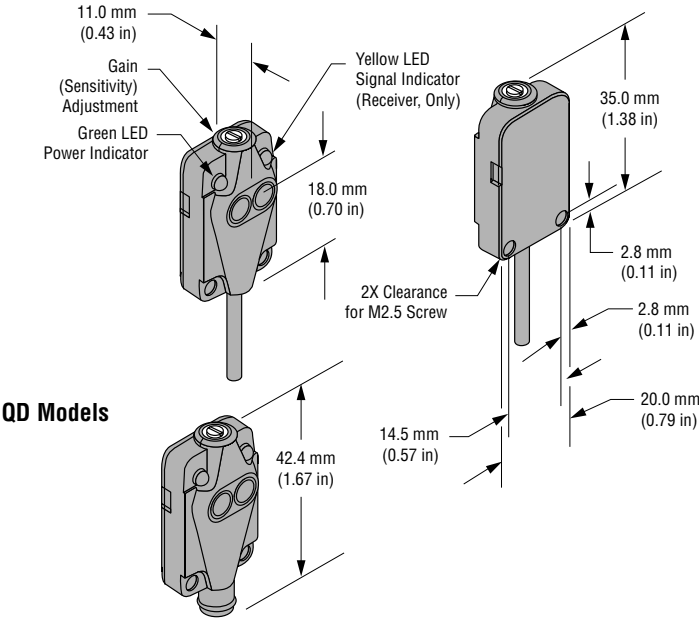
Quick Disconnect (QD) Cables					
The following is the selection of cables available for the Q10 QD models					
Style	Model	Length	For use with	Dimensions	Pinout
3-pin Pico Style straight	PKG3-2	2 m (6.5 ft)	All Q10 sensors with quick-disconnect fitting		
3-pin Pico Style right-angle	PKW3-2	2 m (6.5 ft)			

Dimensions

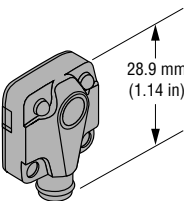
Opposed Mode Models



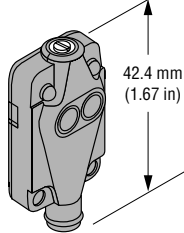
Diffuse Mode Models



QD Models



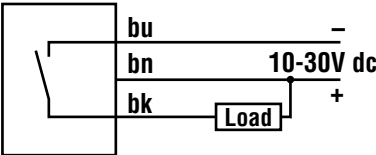
QD Models



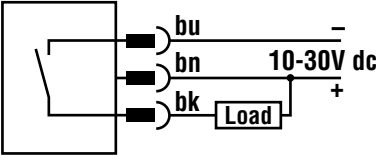
Hookup Diagrams

Sensors with NPN Outputs

Cabled Hookup

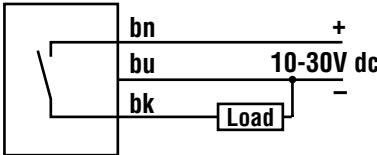


Quick-Disconnect Hookup

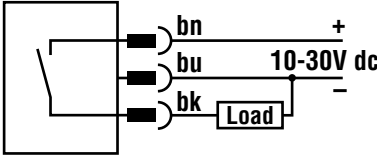


Sensors with PNP Outputs

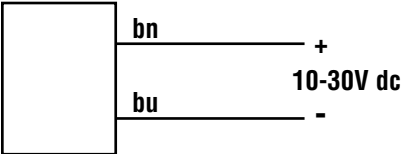
Cabled Hookup



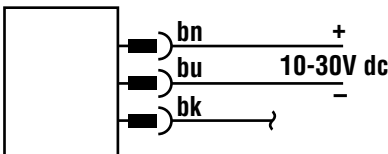
Quick-Disconnect Hookup



Cabled Emitters



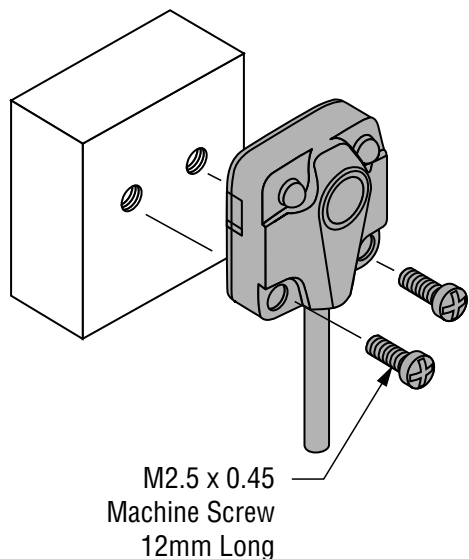
Quick-Disconnect Emitters



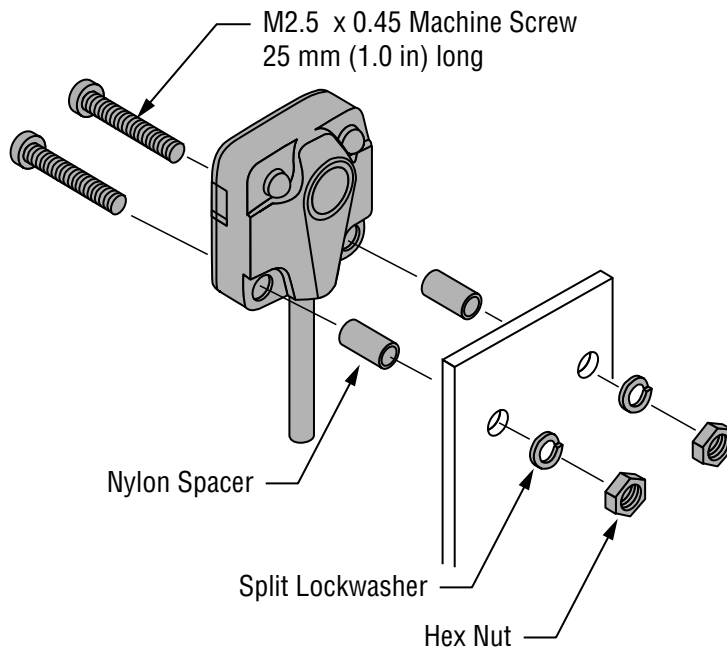
Q10 Series

Mounting Specifications

Flat Mounting



Stand-off Mounting



All hardware shown is supplied with each sensor.



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WARNING These photoelectric presence sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can result in either an energized or a de-energized sensor output condition.

Never use these products as sensing devices for personnel protection. Their use as a safety device may create an unsafe condition which could lead to serious injury or death.

Only MINI-SCREEN™, MULTI-SCREEN™, MACHINE-GUARD and PERIMETER-GUARD Systems, and other systems so designated, are designed to meet OSHA and ANSI machine safety standards for point-of-operation guarding devices. No other Banner sensors or controls are designed to meet these standards, and they must NOT be used as sensing devices for personnel protection.

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