QM42 Series

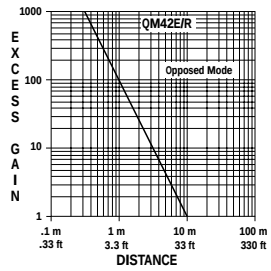
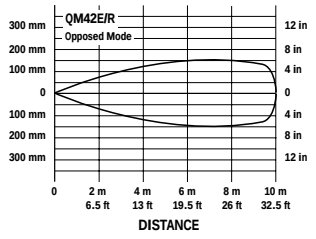
Self-contained dc photoelectric sensors in metal housings

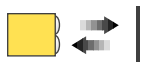
Features

- Compact, rugged, low cost self-contained sensors in metal die cast housings
- Epoxy-encapsulated circuitry; leakproof IP67 (NEMA 6) construction for harsh sensing environments
- Outstanding electrical noise immunity
- Dual LED system indicates sensor performance
- Choice of integral cable or quick disconnect connector

Infrared, 880 nm

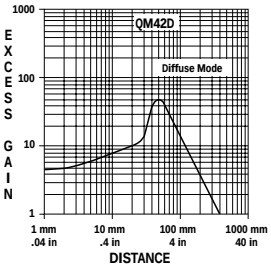
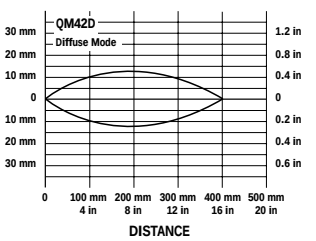
QM42 Opposed Mode Emitter (E) and Receiver (R)

Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern Effective Beam: 8 mm
QM426E **QM426EQ**	10 m (33 ft)	2 m (6.5 ft) 4-pin Euro QD	10-30V dc	—		
QM42VN6R **QM42VN6RQ**		2 m (6.5 ft) 4-pin Euro QD		NPN		
QM42VP6R **QM42VP6RQ**		2 m (6.5 ft) 4-pin Euro QD		PNP		

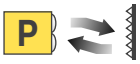


Infrared, 880 nm

QM42 Diffuse Mode

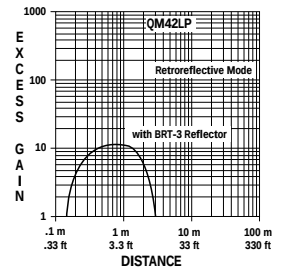
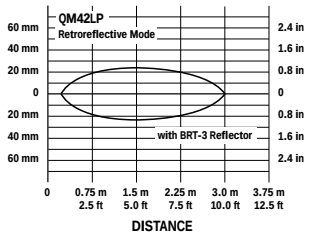
Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
					Performance based on 90% reflectance white test card	
QM42VN6D **QM42VN6DQ**	400 mm (16 in)	2 m (6.5 ft) 4-pin Euro QD	10-30V dc	NPN		
QM42VP6D **QM42VP6DQ**		2 m (6.5 ft) 4-pin Euro QD		PNP		

QM42 Series



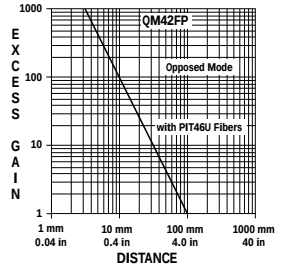
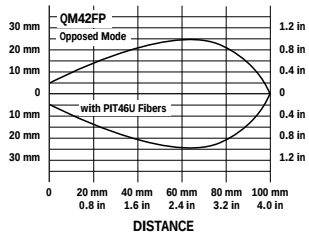
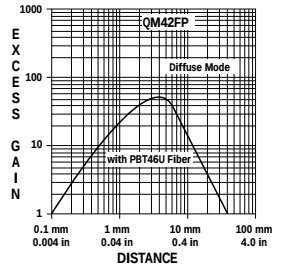
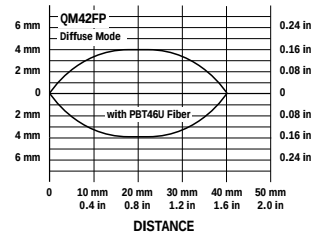
Visible red, 660 nm

QM42 Polarized Retroreflective Mode

Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
QM42VN6LP **QM42VN6LPQ**	3 m (10 ft)	2 m (6.5 ft) 4-pin Euro QD	10-30V dc	NPN		
QM42VP6LP **QM42VP6LPQ**		2 m (6.5 ft) 4-pin Euro QD		PNP		

Visible red, 660 nm

QM42 Plastic Fiber Optic Mode

Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
					Diffuse Mode Performance Based on 90% Reflectance White Test Card	
QM42VN6FP **QM42VN6FPQ**	40 mm (1.5 in)	2 m (6.5 ft) 4-pin Euro QD	10-30V dc	NPN		
QM42VP6FP **QM42VP6FPQ**		2 m (6.5 ft) 4-pin Euro QD		PNP		

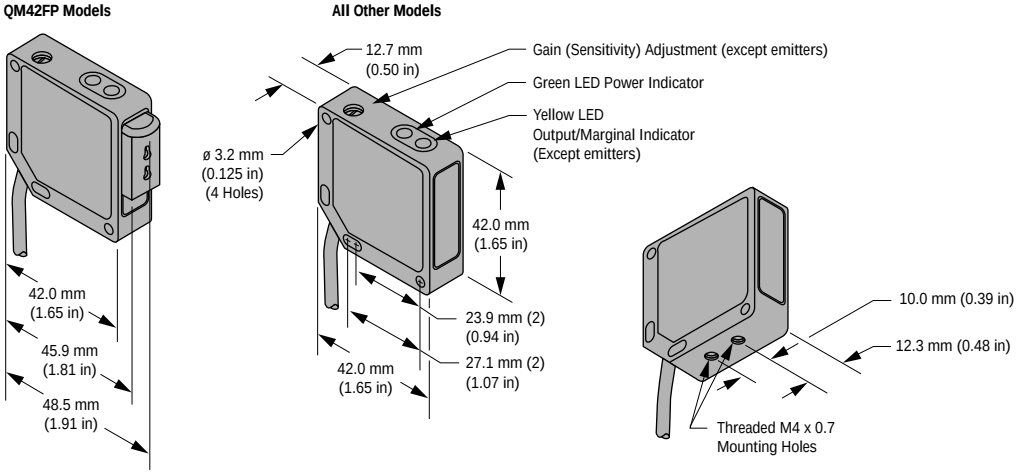
Notes:

1) 9 m (30 ft) cables are available by adding suffix **"W/30"** to the model number of any cabled sensor (e.g. **QM42VN6D W/30**).
2) A model with a QD connector requires an optional mating cable.

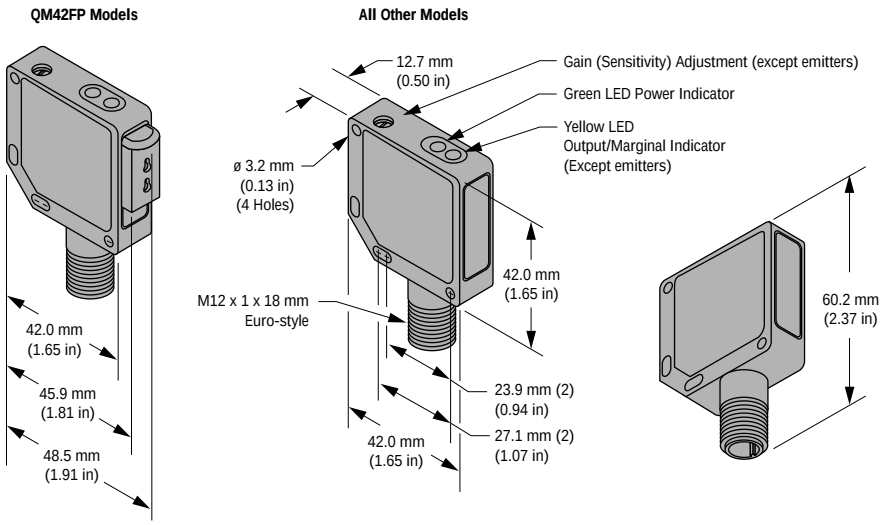
DC Product Specifications	
Sensing Beam	Infrared, 880 nm for opposed and diffuse; Visible red, 660 nm for fiber optic and retroreflective modes
Supply Voltage and Current	10 to 30V dc (10% maximum ripple) at less than: Diffuse and retroreflective models: 20 milliamps Opposed mode: 30 milliamps (emitter), 10 milliamps (receiver) Fiber optic models: 30 milliamps
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	SPDT (complementary) solid-state dc switch; Choose NPN (current sinking) or PNP (current sourcing) models. *Light operate:* N.O. output conducts when the sensor sees its own (or the emitter's) modulated light *Dark operate:* N.C. output conducts when the sensor sees dark
Output Rating	100 mA maximum (each output) **Off-state leakage current:** <5 microamps at 30V dc; **On-state saturation voltage:** <1V at 10 mA dc; <1.5V at 100 mA dc
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short-circuit of outputs Overload trip point ≥150mA, typical, at 20ºC
Output Response Time	**Diffuse and retroreflective modes:** 1 millisecond on and off **Opposed mode:** 1 millisecond on, 0.5 millisecond off **Fiber optic mode:** 0.25 millisecond on and off
Repeatability	**Diffuse and retroreflective modes:** 250 microseconds **Opposed Mode:** 120 microseconds **Fiber optic mode:** 60 microseconds
Adjustments	All models except emitters: 15-turn slotted brass GAIN (sensitivity) adjustment potentiometer (clutched at both ends of travel)
Indicators	Two LEDs: Green and Yellow GREEN **glowing steadily** = power to sensor is "on" Opposed emitters: Green power "on" GREEN **flashing** = output is overloaded YELLOW **glowing steadily** = light is sensed; normally open output "on" YELLOW **flashing** = marginal excess gain (1-1.5x) in light condition
Construction	Housings are die-cast zinc alloy with black epoxy powder paint finish; lenses are acrylic
Environmental Rating	IP67; NEMA 6
Connections	2 m (6-1/2 ft) or 9 m (30-ft) attached cable, or 4-pin euro-style quick-disconnect fitting; Cables for QD models are purchased separately
Operating Temperature	-20º to +70ºC (-7º to 158ºF); Maximum relative humidity 90% at 50ºC (non-condensing)

Dimensions

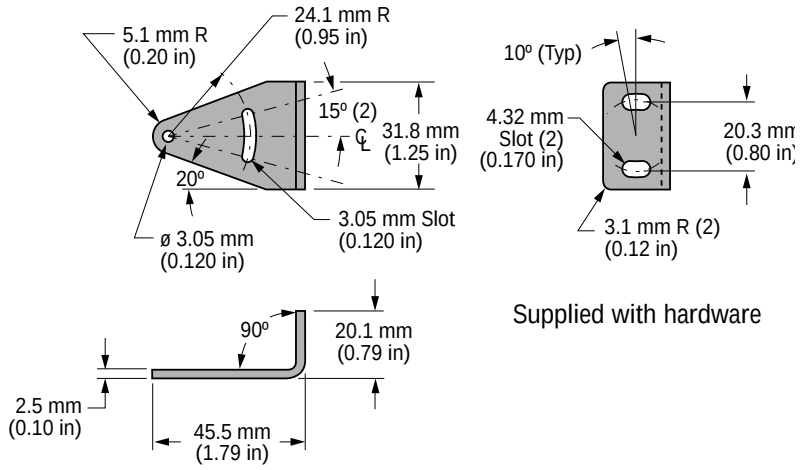
Cabled models



Quick-disconnect models



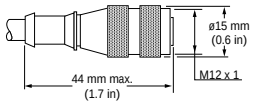
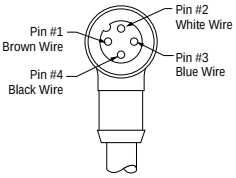
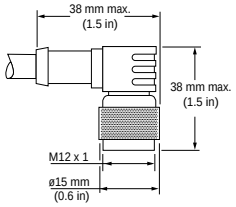
Accessory Mounting Bracket SMB19



Supplied with hardware

Quick Disconnect (QD) Cables

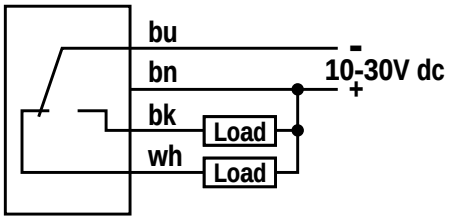
The following is the selection of cables available for the QM42 QD models

Style	Model	Length	For use with	DImensions	Pinout
4-pin Euro Style straight	**MQDC-406** **MQDC-415** **MQDC-430**	2 m (6.5 ft) 5 m (15 ft) 9 m (30 ft)	All QM42 sensors with quick-disconnect fitting		
4-pin Euro Style right-angle	**MQDC-406RA** **MQDC-415RA** **MQDC-430RA**	2 m (6.5 ft) 5 m (15 ft) 9 m (30 ft)			

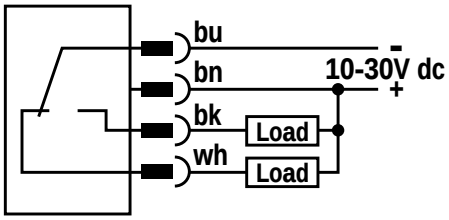
Hookup Diagrams

Sensors with NPN (Sinking) Outputs

Cabled Models

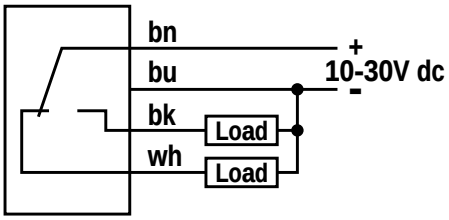


Quick Disconnect Models

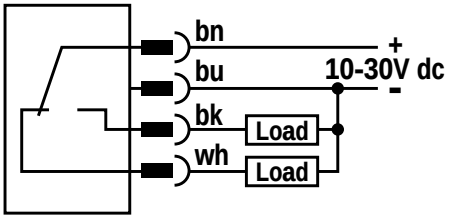


Sensors with PNP (Sourcing) Outputs

Cabled Models

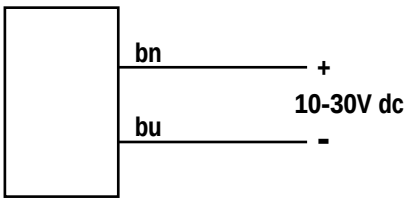


Quick Disconnect Models

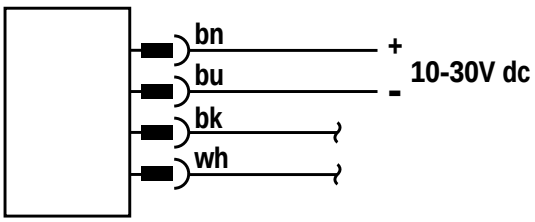


DC Emitters

Cabled Models



Quick Disconnect Models



QM42 Series

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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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