# BANNER®
the photoelectric specialist

QMT42 Series Long-Range Diffuse Sensors

Adjustable Sensing Distance of up to 6 m (20')

Features

- Powerful, collimated infrared light source and special lensing allows reliable long-range detection of even the darkest objects
- Compact, rugged, low cost self-contained sensors in metal die cast housings
- Leakproof IP67 (NEMA 6) construction for reliable sensing in harsh environments
- Outstanding electrical noise immunity
- Dual LED system indicates sensor performance
- Choice of integral cable or quick disconnect connector

Infrared, 880 nm
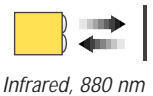
QMT42 Long-Range Diffuse Mode

Models	Range	Cable	Supply Voltage	Output Type	Excess Gain	Beam Pattern
					Performance based on 90% reflectance white test card	
QMT42VN6DX QMT42VN6DXQ	10 mm (0.4") to 6 m (20')	2 m (6.5') 4-pin Euro QD	10-30V dc	NPN		
QMT42VP6DX QMT42VP6DXQ		2 m (6.5') 4-pin Euro QD		PNP		

Excess Gain graph: QMT42DX Diffuse Mode. Excess Gain (1 to 1000) vs Distance (0.01 m / 0.033 ft to 10 m / 33 ft)

Beam Pattern graph: QMT42DX Diffuse Mode. 30 mm–30 mm (1.2 in–1.2 in) vs Distance (0 to 7.5 m / 25 ft)

⚠️ **WARNING . . . Not To Be Used for Personnel Protection**

Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.

These sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

QMT42DX Specifications

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Sensing Beam	Infrared, 880 nm
Supply Voltage and Current	10 to 30V dc (10% maximum ripple) at less than 40 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 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 ≥130mA, typical, at 20ºC
Output Response Time	1 millisecond on and off NOTE: 100 millisecond delay on power-up; outputs are non-conducting during this time
Repeatability of Response	250 microseconds
Sensing Hysteresis	Less than 20% of set sensing distance
Adjustments	4-turn slotted Gain (sensitivity) adjustment potentiometer (clutched at both ends of travel)
Indicators	Two LEDs: Green and Yellow GREEN **glowing steadily** = power to sensor is 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 acrylic polyurethane finish; lenses are acrylic
Environmental Rating	IP67; NEMA 6
Connections	2 m (6.5') or 9 m (30') attached cable, or 4-pin Euro-style quick-disconnect fitting; Cables for QD models are purchased separately
Operating Temperature	-20º to +55ºC (-4º to +131ºF); Maximum relative humidity 90% at 50ºC (non-condensing)
Certifications	Approvals in process

QMT42DX Dimensions

Cabled models
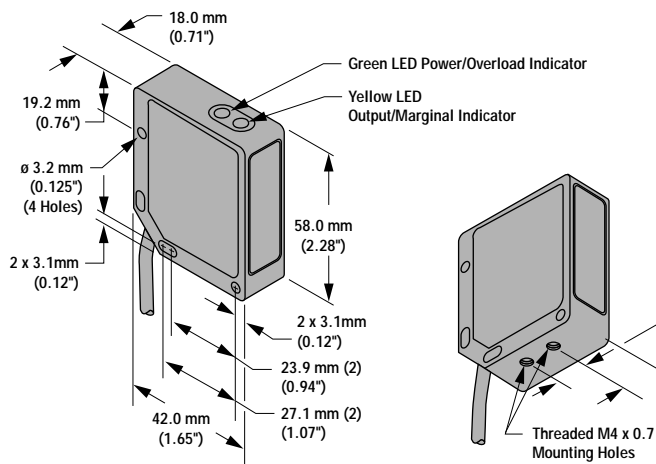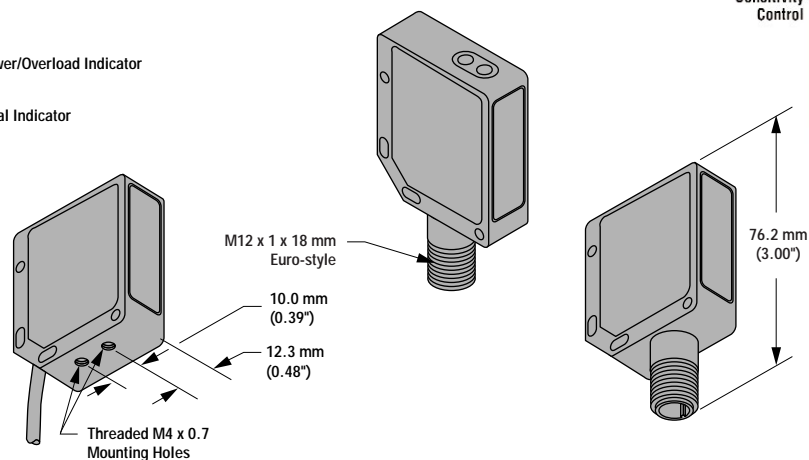
Quick-Disconnect models

QMT42DX Hookups

Sensors with NPN (Sinking) Outputs

Cabled Models

bu
bn
bk Load
wh Load
− 10-30V dc +

Quick Disconnect Models

bu
bn
bk Load
wh Load
− 10-30V dc +
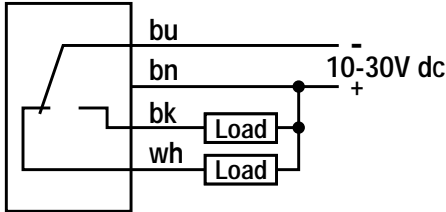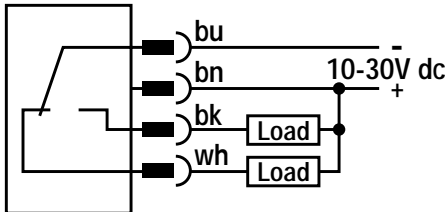
Sensors with PNP (Sourcing) Outputs

Cabled Models

bn
bu
bk Load
wh Load
+ 10-30V dc −

Quick Disconnect Models

bn
bu
bk Load
wh Load
+ 10-30V dc −
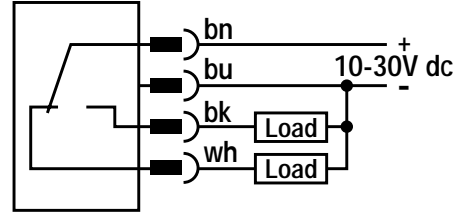
Quick-Disconnect (QD) Cables

The following is the selection of cables available for the QMT42 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') 5 m (15') 9 m (30')	All QMT42 sensors with quick-disconnect fitting	ø15 mm (0.6") 44 mm max. (1.7") M12 x 1	Pin #2 White Wire Pin #1 Brown Wire Pin #3 Blue Wire Pin #4 Black Wire
4-pin Euro-Style right-angle	MQDC-406RA MQDC-415RA MQDC-430RA	2 m (6.5') 5 m (15') 9 m (30')		38 mm max. (1.5") 38 mm max. (1.5") M12 x 1 ø15 mm (0.6")	

QMT42 Series Long-Range Diffuse Sensors

QMT42 Mounting Brackets

SMB42T	• Right-angle • Stainless steel	SMB42F	• 13 gauge • Stainless steel

SMB42L	• 13 gauge • Stainless steel	SMB42U	• 13 gauge • Stainless steel

SMB30SK	• 13 gauge • Stainless steel and PBT polyester

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WARRANTY: Banner Engineering Corporation warrants its products to be free from defects for one year. Banner Engineering Corporation will repair or replace, free of charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper application of Banner products. This warranty is in lieu of any other warranty either expressed or implied.