

# QMT42 Series Long-Range Diffuse Sensors



## Datasheet

Adjustable sensing distance up to 6 meters (20 inches)



- Powerful, collimated infrared light source and special lensing for reliable long-range detection of even the darkest objects
- Low-cost, compact, rugged 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 unterminated cable or quick-disconnect connector

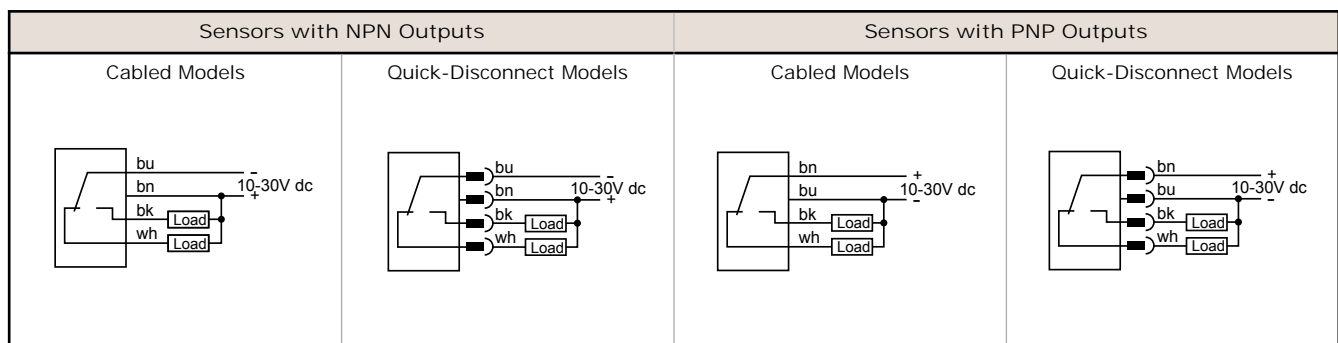


**WARNING: Not To Be Used for Personnel Protection**  
 Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

## Models

Models	Range	Cable	Supply Voltage	Output Type
QMT42VN6DX	10 mm (0.4 in) to 6 m (20 ft)	2 m (6.5 ft)	10 V dc to 30 V dc	NPN
QMT42VN6DXQ		4-pin Euro QD		
QMT42VP6DX		2 m (6.5 ft)		PNP
QMT42VP6DXQ		4-pin Euro QD		

## Wiring



# Specifications

- Sensing Beam**  
Infrared, 880 nm
- Supply Voltage and Current**  
10 to 30 V dc (10% max. ripple) at less than 40 mA
- Supply Protection Circuitry**  
Protected against reverse polarity and transient voltages
- Output Configuration**  
SPDT (complementary) solid-state dc switch; choose NPN or PNP 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 30 V dc  
ON-state saturation voltage: < 1 V at 10 mA dc; < 1.5 V 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 ≥ 130 mA, typical, at 20 °C
- 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)
- Range**  
10 mm (0.4 in) to 6 m (20 ft)
- Indicators**  
Two LEDs: Green and Amber  
Green on steady = power to sensor is ON  
Green flashing = output is overloaded  
Amber on steady = light is sensed; normally open output ON  
Amber 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**  
IEC IP67  
NEMA 6
- Connections**  
2 m (6.5 ft) or 9 m (30 ft) attached cable, or 4-pin M12/Euro-style quick-disconnect fitting; cables for QD models are purchased separately
- Operating Conditions**  
-20 °C to +55 °C (-4 °F to +131°F)  
90% at +50 °C maximum relative humidity (non-condensing)
- Certification**



# Performance

The performance is based on a 90% reflective white test card.

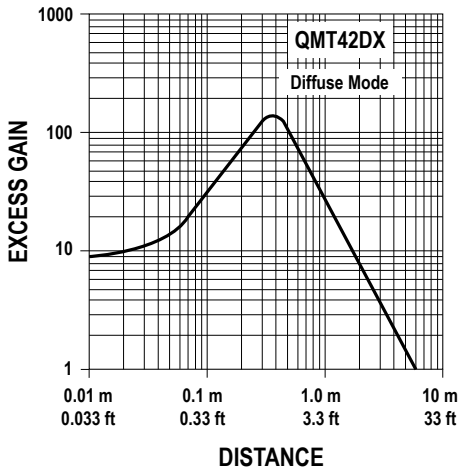


Figure 1. Excess Gain

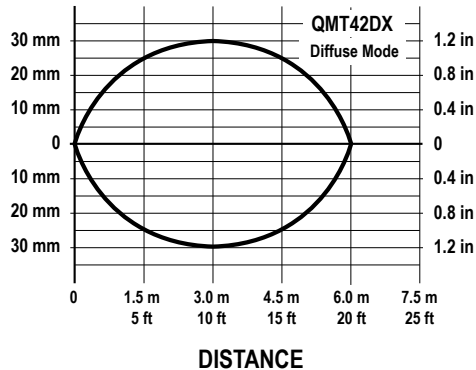


Figure 2. Beam Pattern

## Dimensions

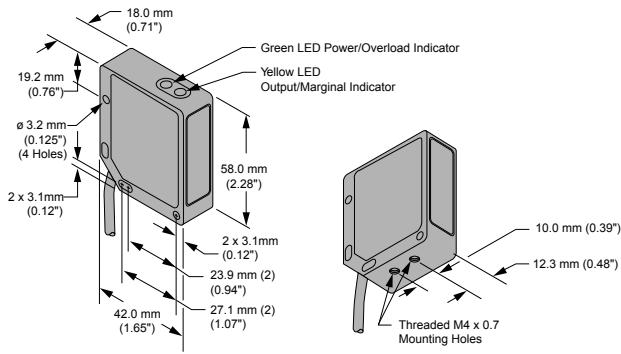


Figure 3. Cabled Models

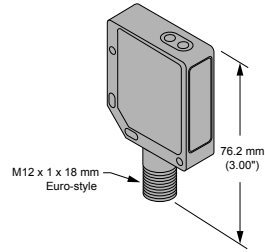


Figure 4. Quick-Disconnect Models



Figure 5. Sensitivity Control

All measurements are listed in millimeters (inches), unless noted otherwise.

## Accessories

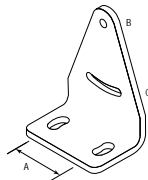
### Quick-Disconnect (QD) Cables

4-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57 m (15 ft)			
MQDC-430RA	9.14 m (30 ft)			
MQDC-450RA	15.2 m (50 ft)			

## Mounting Brackets

### SMB42T

- Stainless steel 2-axis side-mounting bracket
- Nut strap included for replacing two M3 mounting nuts

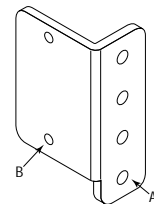


Hole center spacing: A = 20.3, B to C = 24.1

Hole size: A =  $\phi$  4.3  $\times$  20°, B =  $\phi$  3.0, C =  $\phi$  3.0  $\times$  30°

### SMB42L

- 13-ga. stainless steel
- Hardware included



Hole center spacing: A = 10.0, B = 25.4

Hole size: A =  $\phi$  3.4, B =  $\phi$  2.5