

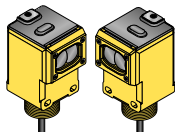
## Q45VR3 Series Sensors

Universal voltage photoelectric sensors with electromechanical relay output



### Q45VR3 Series Features

- Advanced one-piece photoelectric sensors with outstanding optical performance and extremely rugged design
- Universal supply voltage: 12 to 250V dc or 24 to 250V ac
- Electromechanical relay for economical, high-capacity switching and immunity to electrical noise
- Full line includes opposed, diffuse, retroreflective, convergent, and glass and plastic fiber optic sensing modes
- Switchable light/dark operate
- Versatile plug-in modules available for output timing logic and/or signal strength display
- Highly visible Power, Signal (AID™ System), and Output indicator LEDs
- Choice of prewired 2 m (6.5') or 9 m (30') unterminated cable or Mini-style quick-disconnect fitting
- Versatile mounting options
- Designed to withstand 1200 psi washdown; exceeds its NEMA 6P and IEC IP67 rating



Because of their extremely high excess gain, these opposed-mode sensors are an excellent option for sensing in contaminated or dirty areas, and are also the best choice for long-range sensing.



Infrared, 880 nm


### Q45VR3 Series Opposed-Mode Emitter (E) and Receiver (R) Models

Models	Range	Cable*	Supply Voltage	Output Type	Excess Gain	Beam Pattern
Q453E Emitter	60 m (200')	2-wire 2m (6.5')	Universal 12 - 250V dc or 24 - 250V ac	SPDT Electro- mechanical Relay		
Q45VR3R Receiver		5-wire 2m (6.5')				
Q453EQ Emitter		3-Pin Mini- style QD				
Q45VR3RQ Receiver		5-Pin Mini- style QD				

\* 9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g., Q453E W/30)  
A model with a QD connector requires a mating cable; see page 10.

# Q45VR3 Series

## Q45VR3 Series Specifications

<b>Supply Voltage and Current</b>	Universal voltage: 24 to 250V ac, 50/60 Hz or 12 to 250V dc (1.5 watts maximum)
<b>Supply Protection Circuitry</b>	Protected against transient voltages. DC hookup is without regard to polarity.
<b>Output Configuration</b>	SPDT (Single-Pole, Double-Throw) electromechanical relay output. All models except emitters.
<b>Output Rating</b>	<p><b>Max. switching power (resistive load):</b> 1250VA, 150W</p> <p><b>Max. switching voltage (resistive load):</b> 250V ac, 125V dc</p> <p><b>Max. switching current (resistive load):</b> 5A @ 250V ac, 5A @ 30V dc derated to 200 mA @ 125V dc</p> <p><b>Min. voltage and current:</b> 5V dc, 10mA</p> <p><b>Mechanical life of relay:</b> 50,000,000 operations</p> <p><b>Electrical life of relay at full resistive load:</b> 100,000 operations</p>
<b>Output Protection Circuitry</b>	Protected against false pulse on power-up
<b>Output Response Time</b>	15 milliseconds ON and OFF (NOTE: 100 millisecond delay on power-up. Relay is de-energized during this time.)
<b>Repeatability</b>	<p><b>Opposed mode:</b> 0.25 milliseconds</p> <p><b>All other sensing modes:</b> 0.5 milliseconds</p> <p>Response time and repeatability specifications are independent of signal strength.</p>
<b>Adjustments</b>	Light/Dark Operate select switch; and multi-turn Sensitivity control on top of sensor beneath a transparent o-ring-sealed Lexan® cover, allows precise sensitivity setting (turn clockwise to increase gain). Optional logic and logic/display modules have adjustable timing functions (see page 10).
<b>Indicators</b>	<p>Indicator LEDs are clearly visible beneath a raised transparent Lexan® dome on top of the sensor.</p> <p><b>Power (green) LED</b> lights whenever 24 to 250V ac, or 12 to 250V dc power is applied</p> <p><b>Signal (red) AID™ System LED</b> lights whenever the sensor sees its modulated light source, and pulses at a rate proportional to the strength of the received light signal</p> <p><b>Load (yellow) LED</b> lights whenever the output relay is energized</p> <p>Optional 7-element LED signal strength display module</p>
<b>Construction</b>	Molded reinforced thermoplastic polyester housing, o-ring-sealed transparent Lexan® cover, molded acrylic lenses, and stainless steel hardware. Q45s are designed to withstand 1200 psi washdown. The base of cabled models has a 1/2" NPS integral internal conduit thread.
<b>Environmental Rating</b>	NEMA 6P, IEC IP67
<b>Connections</b>	PVC-jacketed 2 m (6.5') or 9 m (30') unterminated cables, or Mini-style quick-disconnect (QD) fittings are available ("Q"- suffix models). QD cables are ordered separately. See page 10.
<b>Operating Conditions</b>	<p><b>Temperature:</b> -25° to +55° C (-13° to +131°F)</p> <p><b>Maximum relative humidity:</b> 90% at 50°C (non-condensing)</p>
<b>Application Notes</b>	Transient suppression is recommended for contacts switching inductive loads. Optional output timing modules are available. See page 10 for more information.
<b>Certifications</b>	

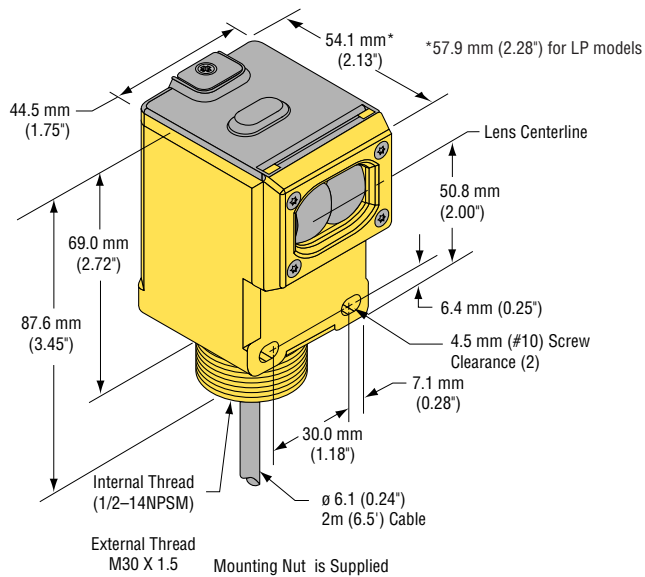
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# Q45VR3 Series

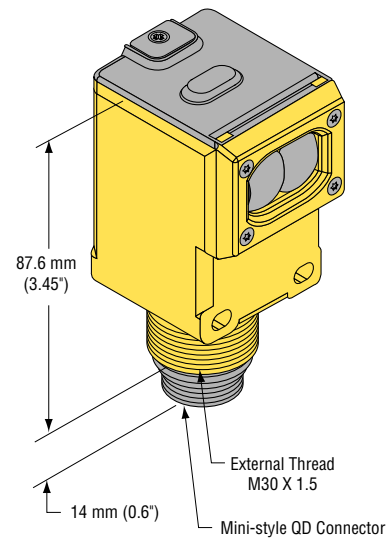
## Q45VR3 Series Dimensions

### Q45VR3 Series Sensors – Opposed, Retro, and Diffuse Sensing Modes (model suffix E, R, D, DL, DX, LP & LV)

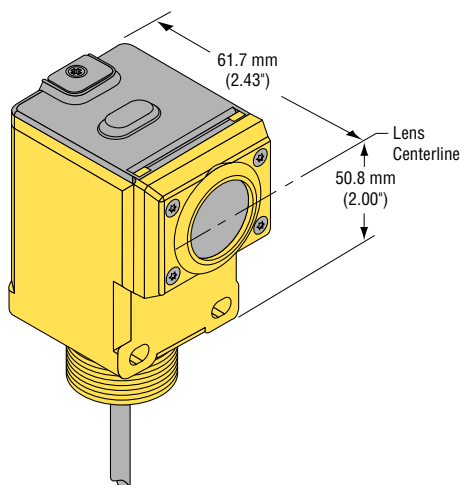
#### Cabled



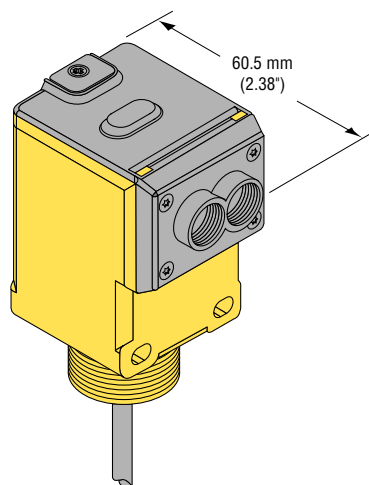
#### Quick-Disconnect



#### Convergent Sensing Mode (model suffix CV & CV4)



#### Glass Fiber Optic (model suffix F and FV)



#### Plastic Fiber Optic (model suffix FP)

