

QS30 Series

Diffuse-Mode Laser Sensors



QS30 Laser Features

- Visible laser beam for diffuse sensing
- Available with Class 1 or long-range Class 2 laser
- Excellent optical performance throughout sensing range, even close up
- Easy-to-set Expert-style TEACH options† including Static, Dynamic, and Single-Point programming plus manual adjustment for fine-tuning
- Easy-to-read operating status indicators, with 8-segment bargraph display
- Bipolar discrete outputs, PNP and NPN
- Selectable 30 millisecond OFF-delay
- Models available with 2 m or 9 m (6.5' or 30') cable or integral quick-disconnect
- Compact housing, mounting versatility – popular 30 mm threaded nose or side-mount

†U.S. Patent #5,808,296

QS30 Laser Models

Model	Laser Class	Range	Spot Size at Focus	Cable*	Supply Voltage	Output Type	Excess Gain	Beam Pattern		
QS30LD	Class 1	400 mm (16")	Approx. 1 mm at 400 mm (0.039" at 16")	2 m (6.5') 5-wire Cable	10 - 30V dc	Bipolar NPN/PNP				
QS30LDQ				Integral 5-pin Euro-style QD						
QS30LDL	Class 2	800 mm (32")	Approx. 1 mm at 800 mm (0.039" at 32")	2 m (6.5') 5-wire Cable			10 - 30V dc	Bipolar NPN/PNP		
QS30LDLQ				Integral 5-pin Euro-style QD						

*9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g., QS30LD W/30).
A model with a QD connector requires a mating cable (see page 10).



WARNING . . . Not To Be Used for Personnel Protection

Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death.

This product 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. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

QS30 Series Diffuse-Mode Laser Sensor

QS30 Laser Overview

The QS30 is an easy-to-use, high-performance laser sensor whose many configuration options make it suitable for demanding applications. It provides high-performance sensing in low-contrast applications at relatively long range. It features static, dynamic and single-point TEACH-mode programming, in addition to manual fine adjustment, remote programming and security lockout options. A SETUP mode also may be used to change the sensor's output response (see page 8).

The sensor features two identically configured outputs, one each NPN and PNP.

The sensor's compact housing has a large, easy-to-see bar graph display plus bright LEDs for easy programming and status monitoring during operation. The sensor can be side-mounted, using its integral mounting holes, or front-mounted, via its 30 mm threaded barrel.

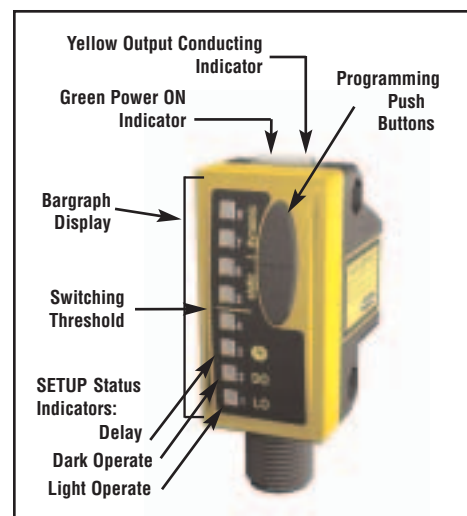


Figure 1. QS30 features

QS30 Laser Specifications

Sensing Beam	Class 1: 650 nm visible red Class 2: 658 nm visible red
Beam Size at Aperture	Approx. 2 mm
Laser Classification	Class 1 or Class 2, depending on model (see page 3)
Supply Voltage	10 to 30V dc (10% max. ripple @ 10% duty cycle) @ 35 mA max current, exclusive of load
Supply Protection Circuitry	Protected against reverse polarity, over voltage, and transient voltages
Delay at Power Up	1 second max.; outputs do not conduct during this time
Output Configuration	Bipolar: 1 current sourcing (PNP) and 1 current sinking (NPN)
Output Rating	150 mA maximum load OFF-state leakage current: < 10 μ A at 30V dc ON-state saturation voltage: NPN: < 1.0V @ 150 mA load PNP: < 2.0V @ 150 mA load
Output Protection	Protected against output short-circuit, continuous overload, transient over-voltages, and false pulse on power up
Output Response Time	500 microseconds
Repeatability	70 microseconds
Adjustments	2 push buttons and remote wire <ul style="list-style-type: none"> • <i>Expert</i> Teach programming (two-point static, dynamic, and single-point static) • Manually adjust (+/-) thresholds (from buttons only) • LO/DO and OFF-delay configuration options • Push-button lockout (from remote wire only)
Indicators	8-segment red bargraph: Signal strength relative to switch-point Green LED: Power ON Yellow LED: Output conducting
Construction	ABS plastic housing; acrylic lens cover
Environmental Rating	IP67, NEMA 6
Connections	5-conductor 2 m (6.5') PVC cable, 9 m (30') PVC cable, or 5-pin integral Euro-style quick-disconnect fitting
Operating Temperature	-10° to +50°C, 90% relative humidity @ 50°C (non-condensing)
Vibration and Mechanical Shock	All models meet Mil. Std. 202F requirements. Method 201A (Vibration: 10 to 60Hz max. double amplitude 0.06", maximum acceleration 10G). Also meets IEC 947-5-2 requirements: 30G, 11 ms duration, half sine wave.
Certifications	CE