





QS30 Series Sensors






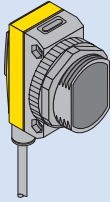
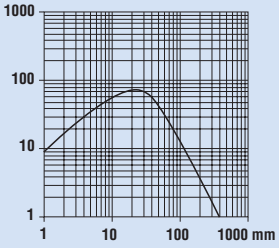
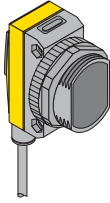
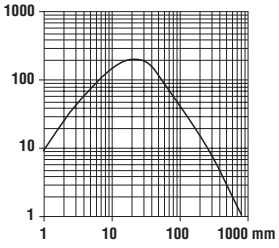
Features

- Teach-mode sensors in a compact housing, with M30 threaded nose allow versatile mounting
- Several teaching options via push-button or remote teach
- Retro-reflective, diffuse (Class 1 or 2 laser) or adjustable field (visible red LED)
- Easy to read status indicators with 8-segment bargraph display
- Bipolar digital outputs, PNP and NPN
- Selectable 30 ms OFF-delay
- Integral M12x1 connector or 2 m cable

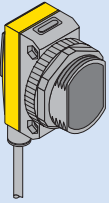
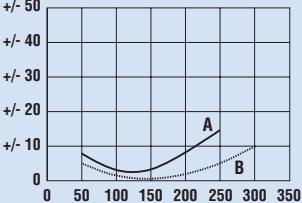
QS30 Series Detection Modes

	Diffuse Mode		Adjustable Field
	Polarised Retro-reflective Mode		Laser Models


  **QS30 Laser, Diffuse Mode, Class 1 Red 650 nm, Class 2 Red 658 nm** 

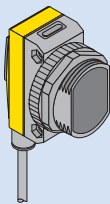
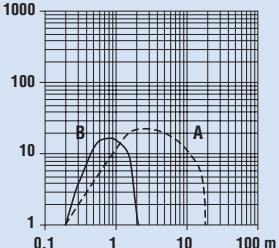
Model	View	Range	Connection	Output	P/N	Chart
QS30LD QS30LDQ Class I laser		400 mm	2 m cable	1 PNP, 1 NPN	30 702 30	
QS30LDL QS30LDLQ Class II laser		800 mm	2 m cable	1 PNP, 1 NPN	30 027 85	
		800 mm	5-pin M12x1	1 PNP, 1 NPN	30 027 86	

   **QS30 Series, Adjustable Field Mode, Red 660 nm**

Model	View	Range	Connection	Output	P/N	Chart*
QS30AF QS30AFQ		50 - 300 mm	2 m cable	1 PNP, 1 NPN	30 702 89	
		50 - 300 mm	5-pin M12x1	1 PNP, 1 NPN	30 703 81	

* cutoff deviation (mm) versus cutoff setting (90% white card): A) 6% black, B) 18% grey

   **QS30 Series, Retroreflective Mode, Red 650 nm, Class 1 Laser** 

Model*	View	Range	Connection	Output	P/N	Chart
QS30LLP QS30LLPQ QS30LLPC QS30LLPCQ Polarised		0,2 - 18 m	2 m cable	1 PNP, 1 NPN	30 029 93	
		0,2 - 18 m	5-pin M12x1	1 PNP, 1 NPN	30 029 94	
		0,2 - 18 m	2 m cable	1 PNP, 1 NPN	30 713 77	
		0,2 - 18 m	5-pin M12x1	1 PNP, 1 NPN	30 713 78	

* QS30LLP models: maximum excess gain set for long-range applications; QS30LLPC models: low-contrast set for small object detection
 A) with BRT-51X51BM reflector (included), B) with BRT-TVHG2X2 reflector (included)

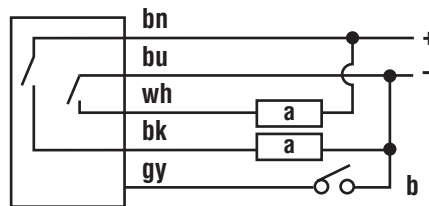
QS30 Series Specifications

Sensing Beam	QS30LD(L): Class 1 Laser, 650 nm visible red; Class 2 Laser, 658 nm visible red QS30AF: 660 nm visible red QS30LLP: Class 1 Laser, 660 nm visible red
Beam Size at Aperture	QS30LD(L): Approx. 2 mm QS30LLP: Approx. 3 mm
Supply Voltage and Current	QS30LD(L) & QS30LLP: 10 to 30 Vdc (10% max ripple at 10% duty cycle) at 35 mA max current, exclusive of load QS30AF: 10 to 30 Vdc (10% max ripple) at 45 mA max current, exclusive of load
Supply Protection Circuitry	Protected against reverse polarity, over-voltage and transient voltages
Delay at Power Up	QS30LD(L) & QS30LLP: 1 s max.; outputs do not conduct during this time QS30AF: 250 ms; outputs do not conduct during this time
Output Configuration	Bipolar: 1 PNP and 1 NPN
Output Rating	150 mA maximum load OFF-state leakage current: < 10 µA at 30 Vdc; QS30AF: < 50 µA at 30 Vdc ON-state saturation voltage: NPN: < 1 V at 150 mA load; PNP: < 2 V at 150 mA load
Output Protection Circuitry	Protected against output short-circuit, continuous overload, transient over-voltages and false pulse on power up
Output Response	QS30LD(L) & QS30LLP: 500 µs QS30AF: 1 ms
Repeatability	QS30LD(L) & QS30LLP: 70 µs QS30AF: 170 µs
Adjustments	QS30LD(L) & QS30LLP: 2 push-buttons and remote wire <ul style="list-style-type: none"> • QS30LD(L): Expert Teach programming (two-point static, dynamic and single-point static) • QS30LLP: Push-button configuration • Manually adjust (+/-) thresholds (from buttons only) • LO/DO and OFF-Delay configuration options • Push-button lockout (from remote wire only) QS30AF: 2 push-buttons and remote wire <ul style="list-style-type: none"> • Easy push-button configuration • Manually adjust (+/-) cutoff (push-buttons only) • N.O./N.C. and OFF-Delay configuration options (push-buttons only) • Push-button lockout (from remote wire only)
Indicators	QS30LD(L) & QS30LLP: 8-segment red bargraph: Signal strength relative to switch-point QS30AF: 8-segment red bargraph: Distance relative to cutoff point Green LED: Power ON Yellow LED: Output conducting

QS30 Series Specifications (cont'd)

Construction	PC/ABS blend plastic housing; acrylic lens cover, rated IP67
Connections	5-conductor 2 m PVC cable, 9 m PVC cable or 5-pin integral M12x1 quick-disconnect fitting
Operating Conditions	QS30LD(L) & QS30LLP: -10 to 50 °C, 90% relative humidity at 50 °C (non-condensing) QS30AF: -10 to +55 °C, 90% relative humidity at 55 °C (non-condensing)
Vibration and Mechanical Shock	All models meet Mil. Std. 202F requirements. Method 201A (vibration frequency 10 to 60 Hz max, double amplitude 1,5 mm, maximum acceleration 10 G). Also meets IEC 60947-5-2 requirements: 30 G, 11 ms pulse duration, half sine wave pulse shape.
Application Notes	(10) M3 x 0,5 x 28 stainless steel machine screws, nuts and washers mounting hardware included

QS30 Series Wiring Diagram



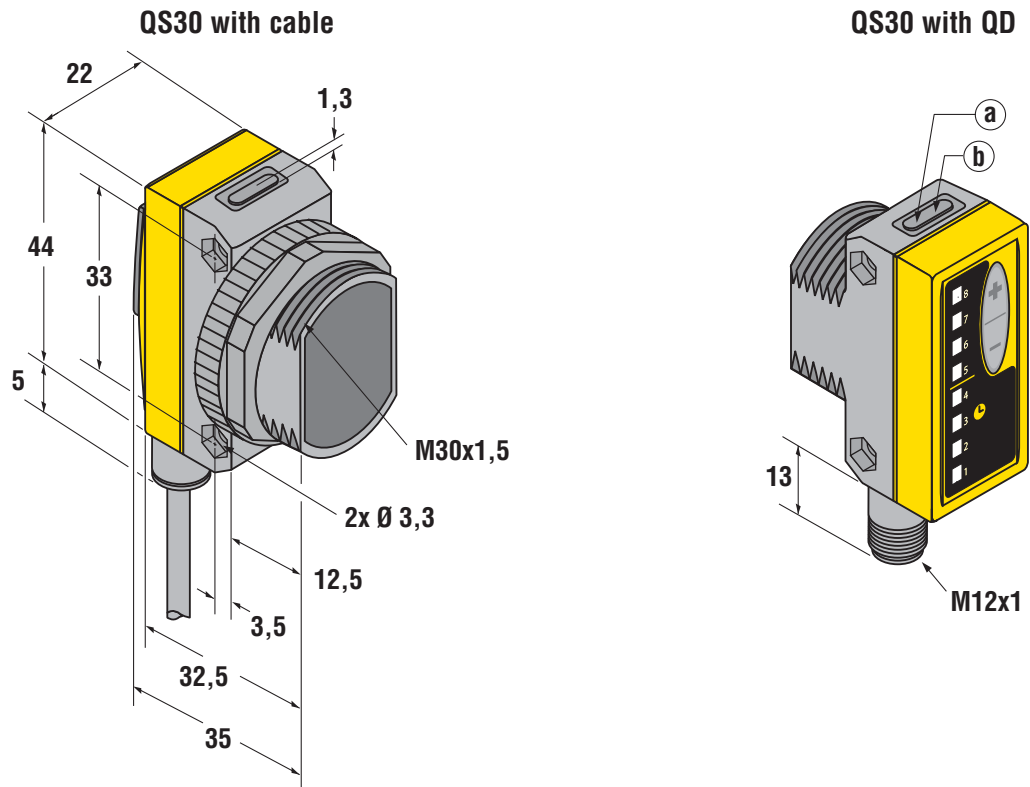
a) Load, b) Remote Teach

QS30 Series Cables & Reflectors*

Model	Length	Description	P/N
MQDC1-506	2 m	M12x1, 5-pin connector, straight	30 511 27
MQDC1-506RA	2 m	M12x1, 5-pin connector, angled	30 511 28
MQDC1-515	5 m	M12x1, 5-pin connector, straight	30 478 12
MQDC1-515RA	5 m	M12x1, 5-pin connector, angled	30 478 13
MQDC1-530	9 m	M12x1, 5-pin connector, straight	30 478 14
MQDC1-530RA	9 m	M12x1, 5-pin connector, angled	30 478 15
Model	P/N	Model	P/N
BRT-51X51BM	30 717 91 (included)	BRT-TVHG2X2	30 572 60 (included)

* large selection of reflectors available, see reflectors section page 86

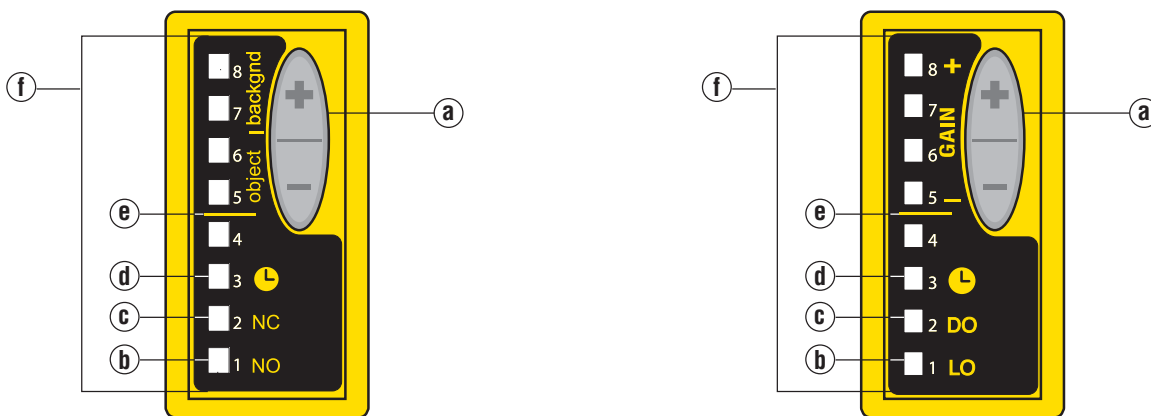
QS30 Series Dimensions (mm)



Legend:

a) Green LED, b) Yellow LED

QS30 Series Indicators



Legend:

a) Configuration push-buttons
 Setup status indicators QS30AF:
 b) Normally open N.O.
 c) Normally closed N.C.
 d) Delay
 e) Cutoff switchpoint
 f) Bargraph display

Legend:

a) Configuration push-buttons
 Setup status indicators QS30LD(L) & QS30LLP:
 b) Light operate L.O.
 c) Dark operate D.O.
 d) Delay
 e) Switching threshold
 f) Bargraph display