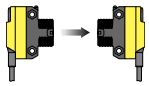
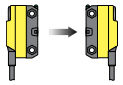
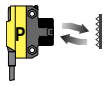
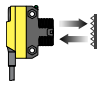
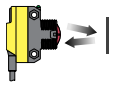
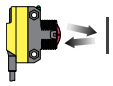
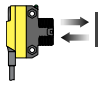
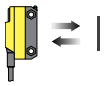
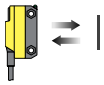
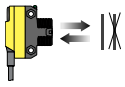
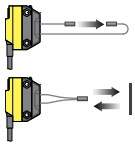
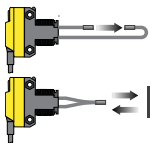
WORLD-BEAM® QS18

Miniature self-contained photoelectric sensors in universal-mount housing

For complete technical information about this product, including dimensions, accessories, and specifications, see www.bannerengineering.com and search 63908.

Models

Model[1]	Sensing Mode		Output Type
QS186E	20 m (66 ft) Opposed		Emitter
QS186EV			
QS18VN6R			NPN
QS18VP6R			PNP
QS186EB	3 m (10 ft) Opposed		Emitter
QS18VN6RB			NPN
QS18VP6RB			PNP
QS18VN6LP	3.5 m (12 ft) Polarized Retro		NPN
QS18VP6LP			PNP
QS18VN6LV	6.5 m (21 ft) Non-Polarized Retro		NPN
QS18VP6LV			PNP
QS18VN6CV15	16 mm (0.63 in) Convergent		NPN
QS18VP6CV15			PNP
QS18VN6CV45	43 mm (1.7 in) Convergent		NPN
QS18VP6CV45			PNP
QS18VN6D	450 mm (18 in) Diffuse		NPN
QS18VP6D			PNP

Model[1]	Sensing Mode		Output Type
QS18VN6DB	450 mm (18 in) Diffuse		NPN
QS18VP6DB			PNP
QS18VN6W	100 mm (4 in) Divergent Diffuse		NPN
QS18VP6W			PNP
QS18VN6FF50	50 mm (2 in) Fixed-Field		NPN
QS18VP6FF50			PNP
QS18VN6FF100	100 mm (4 in) Fixed-Field		NPN
QS18VP6FF100			PNP
QS18VN6FP	220 mm (8.7 in) Individual (Opposed) 60 mm (2.4 in) Bifurcated (Diffuse) Range specified using 1.5 mm plastic fiber optics		NPN
QS18VP6FP			PNP
QS18VN6F	500 mm (20 in) Individual (Opposed) 38 mm (1.5 in) Bifurcated (Diffuse) Range specified using 3.2 mm plastic fiber optics		NPN
QS18VP6F			PNP

QD Models:

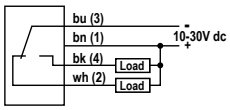
4-pin integral Euro-style QD: add suffix **Q8**, for example, **QS186EQ8**.
4-pin 150 mm (6 in) Euro-style pigtail QD: add suffix **Q5**, for example, **QS186EQ5**.
4-pin integral Pico-style pigtail QD: add suffix **Q7**, for example, **QS186EQ7**).
4-pin 150 mm (6 in) Pico-style pigtail QD: add suffix **Q**, for example, **QS186EQ**.

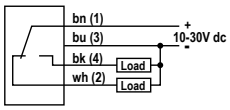
WARNING: Not To Be Used for Personnel Protection
Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor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

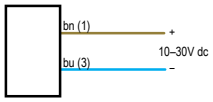
[1] Only standard 2 m (6.5 ft) cable models are listed. For 9 m (30 ft) cable, add suffix **W/30** to the model number, for example, **QS186E W/30**.

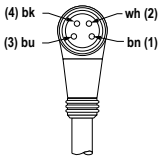
Wiring

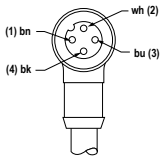
QS18 Sensors with NPN (Sinking) Outputs	QS18 Sensors with PNP (Sourcing) Outputs	QS18 Emitters	4-Pin Pico-Style Pin-Out (Cable Connector Shown)	4-Pin Euro-Style Pin-Out (Cable Connector Shown)
Cable and QD hookups are functionally identical.		QD wh and bk wires are unused.		











Specifications

Supply Voltage
10 to 30V dc (10% maximum ripple) at less than 25 mA, exclusive of load;
Protected against reverse polarity and transient voltages

Light Source
Glass Fiber Optic, Opposed and Diffuse mode models: 940 nm infrared;
Plastic Fiber Optic, Retroreflective, Convergent and FF mode models: 660 nm visible red

Output Configuration
Solid-state complementary (SPDT): NPN or PNP (current sinking or sourcing), depending on model;
Rating: 100 mA maximum each output at 25°C
Off-state leakage current:

FF Mode - less than 200 µA at 30V dc
All others - less than 50 µA at 30V dc

ON-state saturation voltage: less than 1V at 10 mA; less than 1.5V at 100 mA
Protected against false pulse on power-up and continuous overload or short circuit of outputs

Output Response
Opposed Mode: 750 microseconds On; 375 microseconds Off
FF Mode: 850 microseconds On/Off
All others: 600 microseconds On/Of
NOTE: 100 millisecond delay on power-up; outputs do not conduct during this time

Repeatability
Opposed Mode: 100 microseconds
FF Mode: 160 microseconds
All others: 150 microseconds

Adjustments
Glass Fiber Optic, Plastic Fiber Optic, Convergent, Diffuse, and Retro-reflective mode models (only): Single-turn sensitivity (Gain) adjustment potentiometer

Indicators
2 LED indicators:
Green steady: Power On
Green flashing: Output overloaded
Yellow* steady: Light sensed
Yellow* flashing: Marginal excess gain (1.0 to 1.5x excess gain)
NOTE: Prior to date code 0223, the output indicator was red.

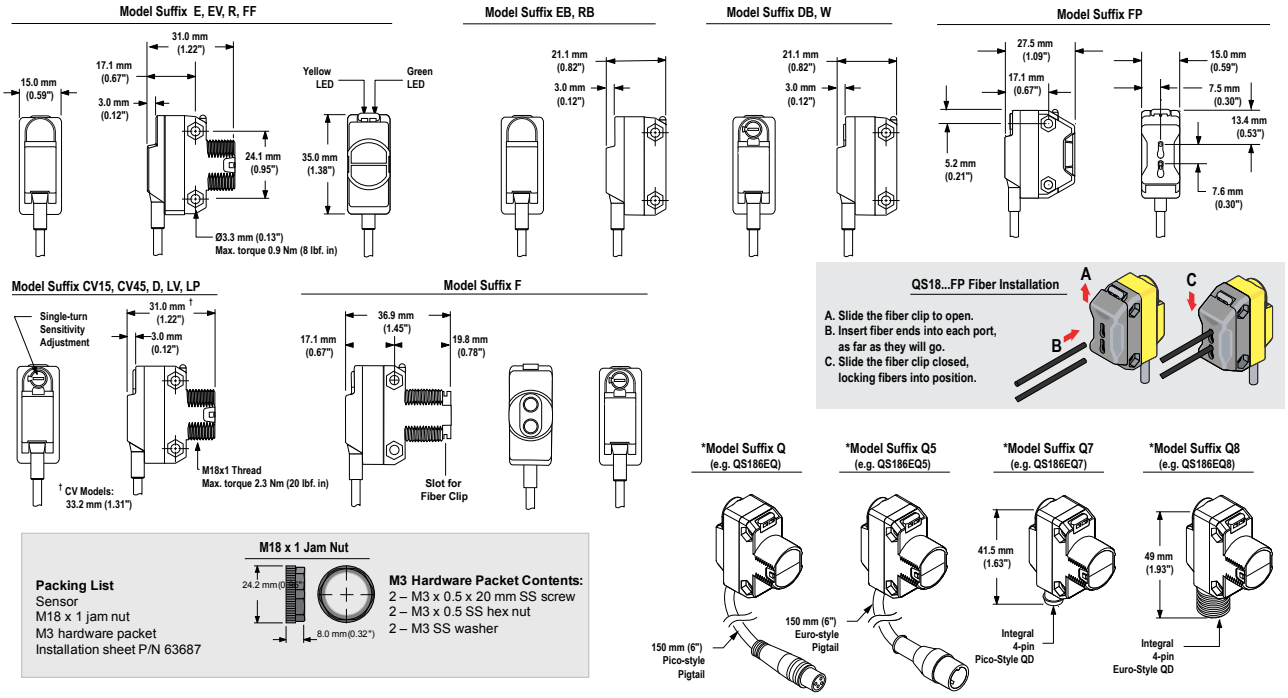
Construction
ABS housing, rated IEC IP67; NEMA 6; UL Type 1

Connections
2 m (6.5 ft) 4-wire PVC cable; 4-pin Pico-style QD; 4-pin Euro-style QD
9 m (30 ft) 4-wire PVC cable; 4-pin Pico-style 150 mm (6 in) pigtail QD; 4-pin Euro-style 150 mm (6 in) pigtail QD

Operating Conditions
Temperature: -20 °C to +70 °C (-4 °F to +158 °F)
Relative Humidity: 90% at 50 °C (non-condensing)

Certifications

Dimensions



Banner Engineering Corp Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.