

**WORLD-BEAM QS18 Models**

| Sensing Mode                       | Model*      | Output Type |
|------------------------------------|-------------|-------------|
| 20 m (66')<br>Opposed              | QS186E      | Emitter     |
|                                    | QS18VN6R    | NPN         |
|                                    | QS18VP6R    | PNP         |
| 3 m (10')<br>Opposed               | QS186EB     | Emitter     |
|                                    | QS18VN6RB   | NPN         |
|                                    | QS18VP6RB   | PNP         |
| 3.5 m (12')<br>Polarized Retro     | QS18VN6LP   | NPN         |
|                                    | QS18VP6LP   | PNP         |
| 6.5 m (21')<br>Non-Polarized Retro | QS18VN6LV   | NPN         |
|                                    | QS18VP6LV   | PNP         |
| 16 mm (0.63")<br>Convergent        | QS18VN6CV15 | NPN         |
|                                    | QS18VP6CV15 | PNP         |
| 43 mm (1.7")<br>Convergent         | QS18VN6CV45 | NPN         |
|                                    | QS18VP6CV45 | PNP         |
| 450 mm (18")<br>Diffuse            | QS18VN6D    | NPN         |
|                                    | QS18VP6D    | PNP         |
| 450 mm (18")<br>Diffuse            | QS18VN6DB   | NPN         |
|                                    | QS18VP6DB   | PNP         |

| Sensing Mode                          | Model*       | Output Type |
|---------------------------------------|--------------|-------------|
| 100 mm (4")<br>Divergent Diffuse      | QS18VN6W     | NPN         |
|                                       | QS18VP6W     | PNP         |
| 50 mm (2")<br>Fixed-Field             | QS18VN6FF50  | NPN         |
|                                       | QS18VP6FF50  | PNP         |
| 100 mm (4")<br>Fixed-Field            | QS18VN6FF100 | NPN         |
|                                       | QS18VP6FF100 | PNP         |
| 220 mm (8.7")<br>Individual (Opposed) | QS18VN6FP    | NPN         |
|                                       | QS18VP6FP    | PNP         |
| 60 mm (2.4")<br>Bifurcated (Diffuse)  | QS18VN6F     | NPN         |
|                                       | QS18VP6F     | PNP         |
| 500 mm (20")<br>Individual (Opposed)  | QS18VN6F     | NPN         |
|                                       | QS18VP6F     | PNP         |
| 38 mm (1.5")<br>Bifurcated (Diffuse)  | QS18VN6F     | NPN         |
|                                       | QS18VP6F     | PNP         |

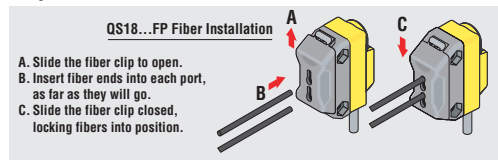
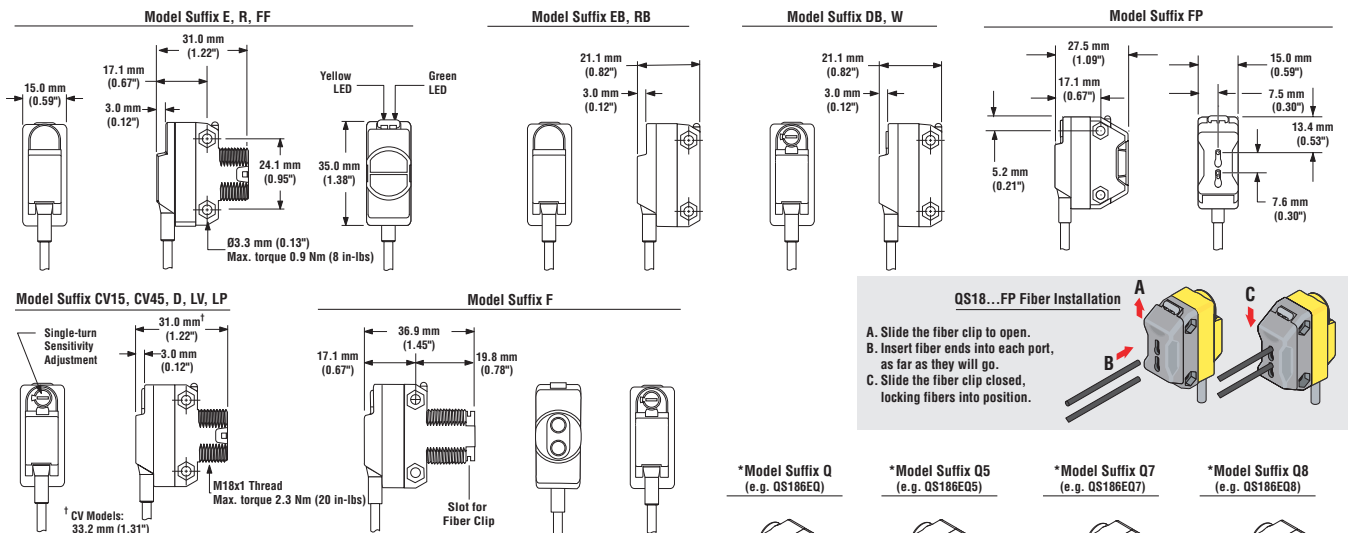
\* Only standard 2 m (6.5') cable models are listed. For 9 m (30') cable, add suffix "W/30" to the model number (e.g., QS186E W/30)

**QD models:**

- 4-pin integral Euro-style QD: add suffix "Q8" (e.g., QS186EQ8).
- 4-pin 150 mm (6") Euro-style pigtail: add suffix "Q5" (e.g., QS186EQ5).
- 4-pin integral Pico-style QD: add suffix "Q7" (e.g., QS186EQ7).
- 4-pin 150 mm (6") Pico-style pigtail: add suffix "Q" (e.g., QS186EQ).



**Dimensions and Features**




**Packing List:**  
 Sensor  
 M18 x 1 jam nut  
 M3 hardware packet  
 English installation sheet, P/N 63687  
 Multi-language installation sheet, P/N 63689

**M18 x 1 Jam Nut**  
 Dimensions: 24.2 mm (0.95"), 8.0 mm (0.32")

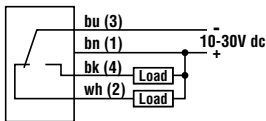
**M3 Hardware Packet Contents:**  
 2 - M3 x 0.5 x 20 mm SS Screw  
 2 - M3 x 0.5 SS Hex Nut  
 2 - M3 SS Washer

## Specifications

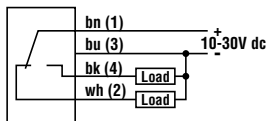
|                             |   |
|-----------------------------|---|
| <b>Supply Voltage</b>       | 10 to 30V dc (10% maximum ripple) at less than 25 mA, exclusive of load;<br>Protected against reverse polarity and transient voltages   |
| <b>Light Source</b>         | <b>Glass Fiber Optic, Opposed and Diffuse</b> mode models: 940 nm infrared;<br><b>Plastic Fiber Optic, Retroreflective, Convergent and FF</b> mode models: 660 nm visible red   |
| <b>Output Configuration</b> | Solid-state complementary (SPDT); NPN or PNP (current sinking or sourcing), depending on model;<br><b>Rating:</b> 100 mA maximum each output at 25°C<br><b>Off-state leakage current: FF Mode:</b> less than 200 µA @ 30V dc<br><b>All others:</b> less than 50 µA @ 30V dc<br><b>ON-state saturation voltage:</b> less than 1V @ 10 mA; less than 1.5V @ 100 mA<br>Protected against false pulse on power-up and continuous overload or short circuit of outputs |
| <b>Output Response</b>      | <b>Opposed Mode:</b> 750 microseconds ON; 375 microseconds OFF<br><b>FF Mode:</b> 850 microseconds ON/OFF<br><b>All others:</b> 600 microseconds ON/OFF<br>NOTE: 100 millisecond delay on power-up; outputs do not conduct during this time   |
| <b>Repeatability</b>        | <b>Opposed Mode:</b> 100 microseconds<br><b>FF Mode:</b> 160 microseconds<br><b>All others:</b> 150 microseconds  |
| <b>Adjustments</b>          | <b>Glass Fiber Optic, Plastic Fiber Optic, Convergent, Diffuse, and Retroreflective</b> mode models (only): Single-turn sensitivity (Gain) adjustment potentiometer   |
| <b>Indicators</b>           | 2 LED indicators:<br><b>Green steady:</b> Power ON <b>Green flashing:</b> Output overloaded<br><b>Yellow* steady:</b> Light sensed <b>Yellow* flashing:</b> Marginal excess gain (1.0 to 1.5x excess gain)<br><b>*NOTE: Prior to date code 0223, the output indicator was red.</b>  |
| <b>Construction</b>         | ABS housing, rated IEC IP67; NEMA 6; UL Type 1  |
| <b>Connections</b>          | 2 m (6.5') 4-wire PVC cable      4-pin Pico-style QD      4-pin Euro-style QD<br>9 m (30') 4-wire PVC cable      4-pin Pico-style 150 mm (6") pigtail QD      4-pin Euro-style 150 mm (6") pigtail QD   |
| <b>Operating Conditions</b> | <b>Temperature:</b> -20° to +70° C (-4° to +158° F)<br><b>Relative Humidity:</b> 90% @ 50° C (non-condensing)   |
| <b>Certifications</b>       |    |

## Hookups

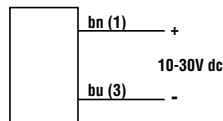
QS18 Sensors with NPN (Sinking) Outputs



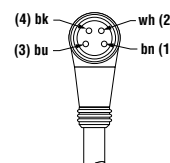
QS18 Sensors with PNP (Sourcing) Outputs



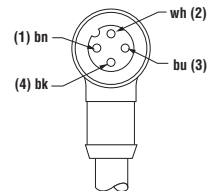
QS18 Emitters



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.

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### WARNING . . . Not To Be Used for Personnel Protection

**Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.**

These sensors do NOT include the self-checking redundant circuitry necessary to allow their 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.