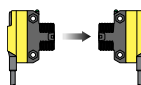
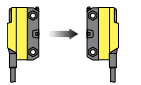
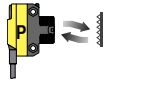
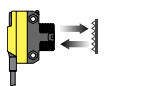
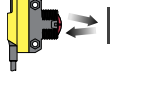
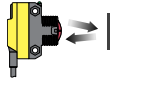
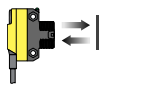


Miniature self-contained photoelectric sensors in universal-mount housing

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	Model ¹	Sensing Mode	Output Type
QS186E	 20 m (66 ft) Opposed	Emitter	QS18VN6DB	 450 mm (18 in) Diffuse	NPN
QS186EV		NPN	QS18VP6DB		PNP
QS18VN6R		PNP	QS18VN6W	 100 mm (4 in) Divergent Diffuse	NPN
QS18VP6R		PNP	QS18VP6W		PNP
QS186EB	 3 m (10 ft) Opposed	Emitter	QS18VN6FF50	 50 mm (2 in) Fixed-Field	NPN
QS18VN6RB		NPN	QS18VP6FF50		PNP
QS18VP6RB		PNP	QS18VN6FF100	 100 mm (4 in) Fixed-Field	NPN
QS18VN6LP	 3.5 m (12 ft) Polarized Retro	NPN	QS18VP6FF100		PNP
QS18VP6LP		PNP	QS18VN6FP	 220 mm (8.7 in) Individual (Opposed) 60 mm (2.4 in) Bifurcated (Diffuse) Range specified using 1.5 mm plastic fiber op- tics	NPN
QS18VN6LV	 6.5 m (21 ft) Non-Polarized Retro	NPN	QS18VP6FP		PNP
QS18VP6LV		PNP	QS18VN6F	 500 mm (20 in) Individual (Opposed) 38 mm (1.5 in) Bifurcated (Diffuse) Range specified using 3.2 mm plastic fiber op- tics	NPN
QS18VN6CV15	 16 mm (0.63 in) Convergent	NPN	QS18VP6F		PNP
QS18VP6CV15		PNP			
QS18VN6CV45	 43 mm (1.7 in) Convergent	NPN			
QS18VP6CV45		PNP			
QS18VN6D	 450 mm (18 in) Diffuse	NPN			
QS18VP6D		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

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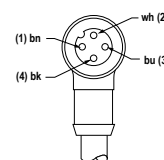
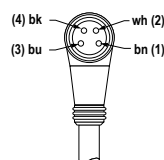
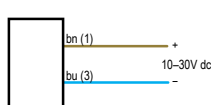
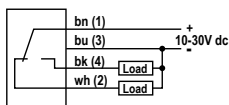
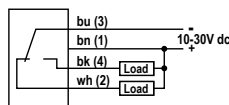
¹ Only standard 2 m (6.5 ft) cable models are listed. For 9 m (30 ft) cable, add suffix **W/30** to the model number, for example, **QS186E W/30**.

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)
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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 infra-red;
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 μ A at 30V dc

All others - less than 50 μ A 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/Off

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

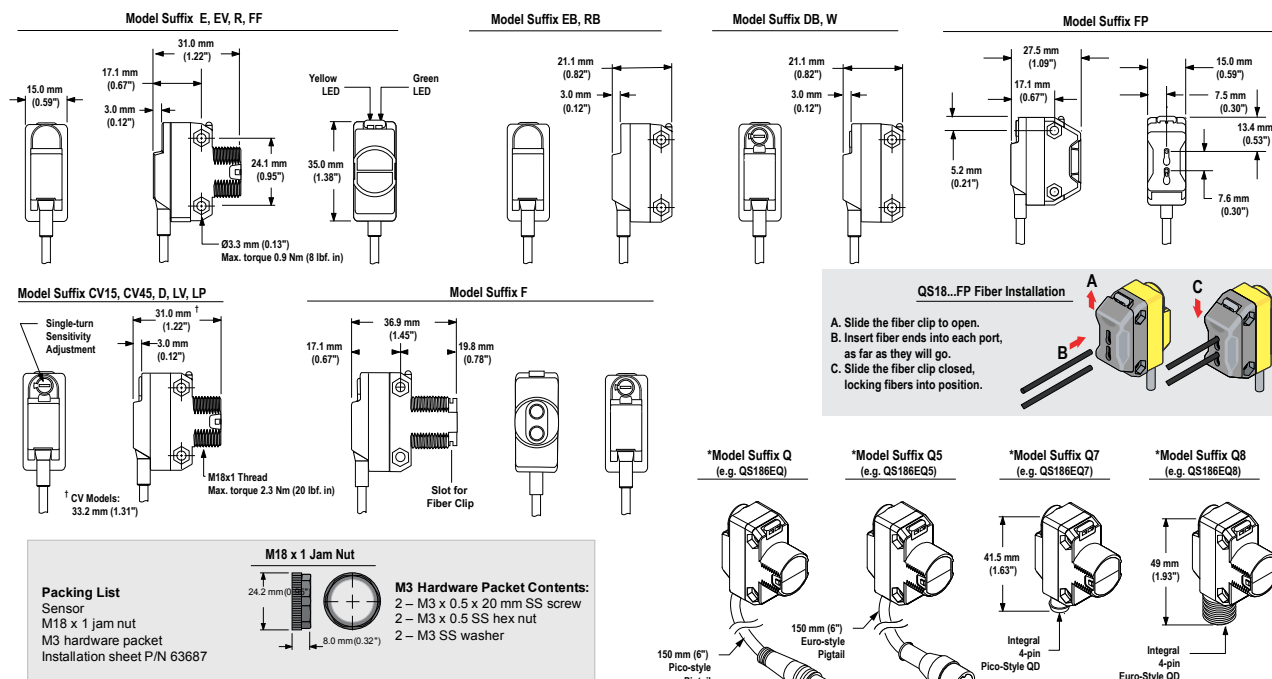
Temperature: -20 °C to +70 °C (-4 °F to +158 °F)

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.

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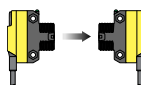
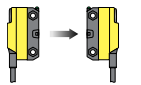
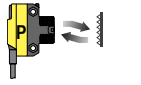
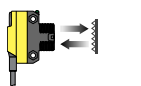
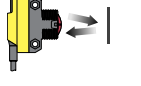
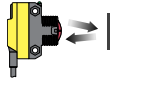
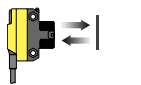
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Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.

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	Model ¹	Sensing Mode	Output Type
QS186E	 20 m (66 ft) Opposed	Emitter	QS18VN6DB	 450 mm (18 in) Diffuse	NPN
QS186EV		NPN	QS18VP6DB		PNP
QS18VN6R		PNP	QS18VN6W	 100 mm (4 in) Divergent Diffuse	NPN
QS18VP6R		PNP	QS18VP6W		PNP
QS186EB	 3 m (10 ft) Opposed	Emitter	QS18VN6FF50	 50 mm (2 in) Fixed-Field	NPN
QS18VN6RB		NPN	QS18VP6FF50		PNP
QS18VP6RB		PNP	QS18VN6FF100	 100 mm (4 in) Fixed-Field	NPN
QS18VN6LP	 3.5 m (12 ft) Polarized Retro	NPN	QS18VP6FF100		PNP
QS18VP6LP		PNP	QS18VN6FP	 220 mm (8.7 in) Individual (Opposed) 60 mm (2.4 in) Bifurcated (Diffuse) Range specified using 1.5 mm plastic fiber op- tics	NPN
QS18VN6LV	 6.5 m (21 ft) Non-Polarized Retro	NPN	QS18VP6FP		PNP
QS18VP6LV		PNP	QS18VN6F	 500 mm (20 in) Individual (Opposed) 38 mm (1.5 in) Bifurcated (Diffuse) Range specified using 3.2 mm plastic fiber op- tics	NPN
QS18VN6CV15	 16 mm (0.63 in) Convergent	NPN	QS18VP6F		PNP
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QS18VP6CV45		PNP			
QS18VN6D	 450 mm (18 in) Diffuse	NPN			
QS18VP6D		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**.

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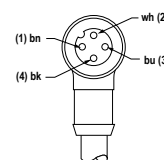
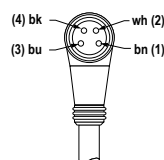
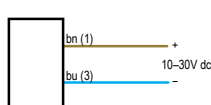
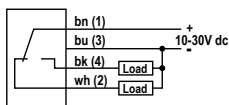
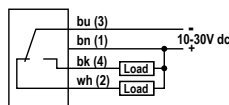
¹ Only standard 2 m (6.5 ft) cable models are listed. For 9 m (30 ft) cable, add suffix **W/30** to the model number, for example, **QS186E W/30**.

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)
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Specifications

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Operating Conditions

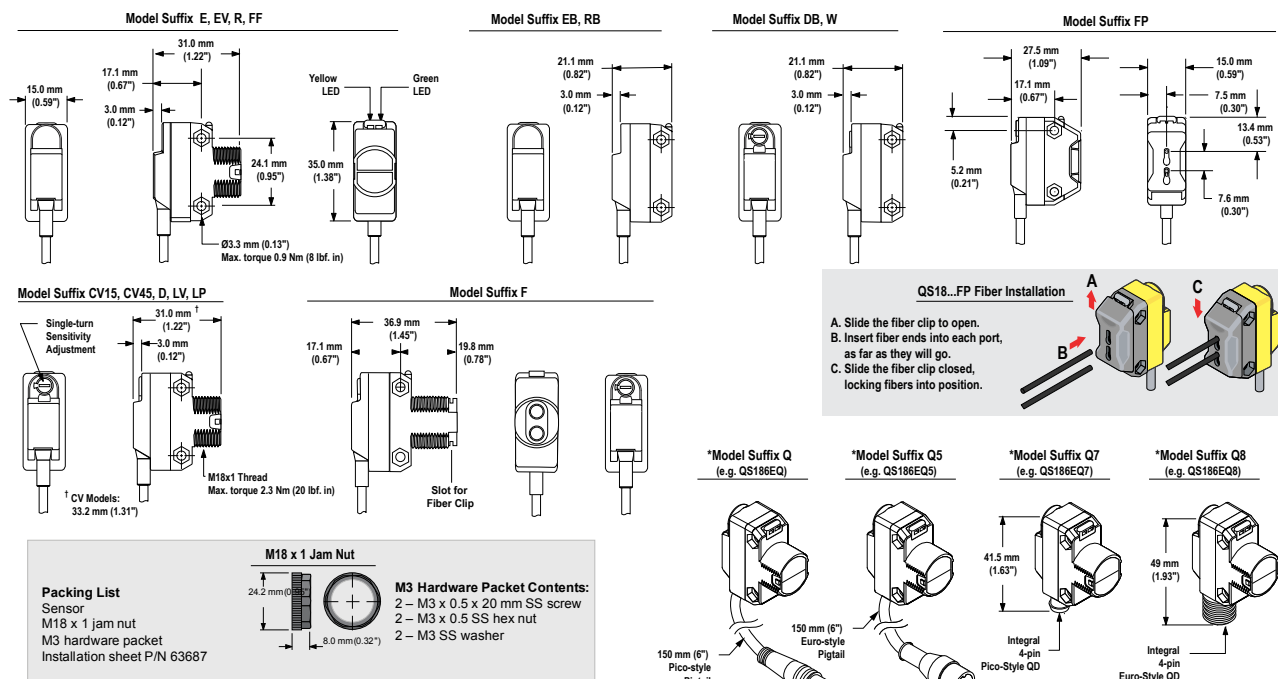
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Certifications



Dimensions



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