S18-2 Plastic 18 mm Barrel Sensors Product Manual

Original Instructions
p/n: 170670 Rev. L
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ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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Chapter 1 Features

Next-generation self-contained DC-operated sensor



- Economical photoelectric sensors for cost-sensitive and high-volume installations
- Powerful and bright visible red emitter beam for easy alignment and set-up
- Highly visible output and dual-function power and stability indicators
- Wide operating temperature range: –40 °C to +70 °C (–40 °F to +158 °F)
- Robust 250° adjustment potentiometer on select models
- Stable detection in the presence of fluorescent lights for non through-beam applications

WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Models

Emitter/Receiver Models

Model		Range	Output	Connection
S18-2NAEL-2M	Emitter	25 m (82 ft)	None	2 m (6.5 ft) cable
S18-2NAEL-Q3				150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2NAEL-Q5				150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2NAEL-Q8				4-pin M12 male QD
S18-2NAEJ-2M		25 m (82 ft) with beam inhibit		2 m (6.5 ft) cable
S18-2NAEJ-Q8				4-pin M12 male QD
S18-2NAES-2M		25 m (82 ft) with adjustment		2 m (6.5 ft) cable
S18-2NAES-Q5				150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2NAES-Q8				4-pin M12 male QD
S18-2VNRL-2M	Receiver	25 m (82 ft)	Complementary NPN	2 m (6.5 ft) cable
S18-2VNRL-Q8				4-pin M12 male QD
S18-2VPRL-2M			Complementary PNP	2 m (6.5 ft) cable
S18-2VPRL-Q3				150 mm (6 in) PVC cable model with a 4-pin M8 male QD

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Model		Range	Output	Connection
S18-2VPRL-Q5				150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPRL-Q8				4-pin M12 male QD
S18-2VNRS-2M		25 m (82 ft) with adjustment	Complementary NPN	2 m (6.5 ft) cable
S18-2VNRS-Q5				150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNRS-Q8				4-pin M12 male QD
S18-2VPRS-2M			Complementary PNP	2 m (6.5 ft) cable
S18-2VPRS-Q8				4-pin M12 male QD

Polarized Retroreflective Models

Model	Range	Output	Connection
S18-2VNLP-2M	6 m (19.7 ft) with BRT-84 reflector	Complementary NPN	2 m (6.5 ft) cable
S18-2VNLP-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNLP-Q8			4-pin M12 male QD
S18-2VPLP-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPLP-9M			9 m cable
S18-2VPLP-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPLP-Q8			4-pin M12 male QD
S18-2VNLPC-2M	6 m (19.7 ft) with BRT-84 reflector, with adjustment	Complementary NPN	2 m (6.5 ft) cable
S18-2VNLPC-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNLPC-Q8			4-pin M12 male QD
S18-2VPLPC-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPLPC-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VPLPC-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPLPC-Q8			4-pin M12 male QD

Retroreflective Models

Model	Range	Output	Connection
S18-2VNLV-2M	7.5 m (24.6 ft) with BRT-84 reflector, with adjustment	Complementary NPN	2 m (6.5 ft) cable
S18-2VNLV-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNLV-Q8			4-pin M12 male QD
S18-2VPLV-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPLV-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPLV-Q8			4-pin M12 male QD

Diffuse Models

Model	Range	Output	Connection
S18-2VNDL-2M	750 mm (29.5 in) with adjustment	Complementary NPN	2 m (6.5 ft) cable

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Model	Range	Output	Connection
S18-2VNDL-9M			9 m cable
S18-2VNDL-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNDL-Q8			4-pin M12 male QD
S18-2VPDL-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPDL-9M			9 m cable
S18-2VPDL-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VPDL-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPDL-Q8			4-pin M12 male QD
S18-2VNDS-2M	300 mm (11.8 in) with adjustment	Complementary NPN	2 m (6.5 ft) cable
S18-2VNDS-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNDS-Q8			4-pin M12 male QD
S18-2VPDS-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPDS-9M			9 m cable
S18-2VPDS-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VPDS-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPDS-Q8			4-pin M12 male QD

Fixed Field Models

Model	Range	Output	Connection
S18-2VNFF30-2M	30 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF30-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNFF30-Q8			4-pin M12 male QD
S18-2VPFF30-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPFF30-9M			9 m cable
S18-2VPFF30-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF30-Q8			4-pin M12 male QD
S18-2VNFF50-2M	50 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF50-9M			9 m cable
S18-2VNFF50-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNFF50-Q8			4-pin M12 male QD
S18-2VPFF50-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPFF50-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF50-Q8			4-pin M12 male QD
S18-2VNFF75-2M	75 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF75-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF75-2M		Complementary PNP	2 m (6.5 ft) cable

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Model	Range	Output	Connection
S18-2VPFF75-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF75-Q8			4-pin M12 male QD
S18-2VNFF100-2M	100 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF100-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNFF100-Q8			4-pin M12 male QD
S18-2VPFF100-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPFF100-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF100-Q8			4-pin M12 male QD
S18-2VNFF150-2M	150 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF150-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VNFF150-Q8			4-pin M12 male QD
S18-2VPFF150-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPFF150-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF150-Q8			4-pin M12 male QD
S18-2VNFF200-2M	200 mm	Complementary NPN	2 m (6.5 ft) cable
S18-2VNFF200-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF200-2M		Complementary PNP	2 m (6.5 ft) cable
S18-2VPFF200-9M			9 m cable
S18-2VPFF200-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VPFF200-Q5			150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPFF200-Q8			4-pin M12 male QD

For a list of discontinued models, see Discontinued Models.

Specifications

Supply Voltage

10 V DC to 30 V DC for ambient temperature ≤ 55 °C

10 V DC to 24 V DC for ambient temperature > 55 °C

Supply Current (Exclusive of Load Current)

Diffuse: 16 mA

Opposed Mode Emitters: 17 mA

Opposed Mode Receivers: 8 mA

Retroreflective and Polarized Retroreflective: 16 mA

Fixed Field: 22 mA

Output Response Time

Response time is independent of signal strength

Opposed models: 1.5 milliseconds ON, 1 millisecond OFF

Retro, Polarized Retro, and Diffuse models: 1.5 milliseconds ON, 0.75 milliseconds OFF

Fixed Field models: 2 milliseconds ON, 2 milliseconds OFF

Delay on Power-up: 100 milliseconds; outputs do not conduct during this time

Output Protection Circuitry

Protected against false pulse on power-up and continuous short circuit of outputs. Short circuit protection at elevated temperature may require a power cycle to reset.

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Rating

≤ 50 mA total current for ambient temperatures > 55 °C

≤ 100 mA total current through both outputs ≤ 55 °C

OFF-State Leakage Current: < 50 µA at 30 V DC

ON-State Saturation Voltage: < 1.5 V at 10 mA; < 3.0 V at 100 mA

Output Configuration

Complementary PNP or NPN by model number

Emitter LED

Visible Red

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Repeatability

Repeatability is independent of signal strength

Opposed models: 170 microseconds

Retro, Polarized Retro, and Diffuse models: 100 microseconds

Fixed Field models: 200 microseconds

Adjustments

Diffuse (DL, DS), Emitter (ES), Receiver (RS), Polarized Retroreflective (LPC), Retroreflective (LV) models: Single turn sensitivity (gain) adjustment potentiometer

Emitter Beam Inhibit (EJ) models: Tie black wire to 10 to 30 V DC for beam inhibit

Construction

Housing, connector, gain pot driver: ABS

Front window: PMMA

Indicator windows: Clear ABS

Mounting nuts: 30% glass-filled PBT

Indicators

Three LEDs (1 green, 2 amber)

Green solid: indicates power applied and sensor ready

Green flashing: indicates marginal sensing signal

Amber solid: indicates Pin 4 (black wire) output conducting

Environmental Rating

IP67

Vibration and Mechanical Shock

All models meet Mil. Std. 202F requirements. Method 201A (Vibration; frequency 10 to 60 Hz, max., double amplitude 0.06 in acceleration 10G). Method 213B conditions H&I (Shock: 75G with unit operating; 100G for non-operation)

Operating Conditions

–40 °C to +70 °C (–40 °F to +158 °F)

95% at +50 °C maximum relative humidity (non-condensing)

Certifications

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Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

Class 2 power; UL Environmental Rating: Type 1

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

FCC Part 15 Class A for Unintentional Radiators

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada ICES-003(A)

This device complies with CAN ICES-3 (A)/NMB-3(A). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

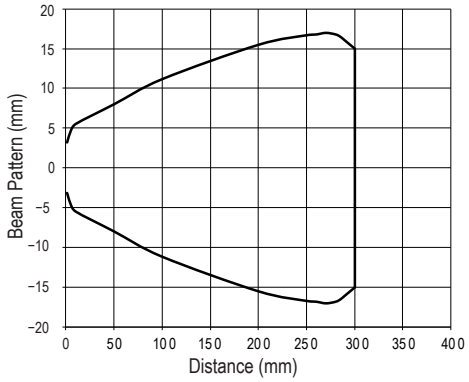
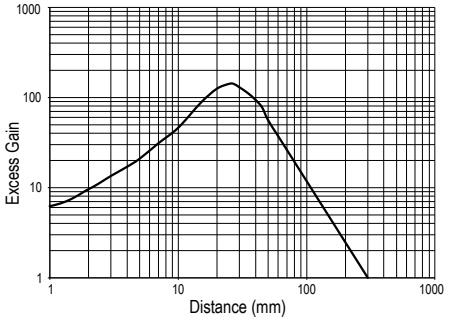
Cet appareil est conforme à la norme NMB-3(A). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

Performance Curves

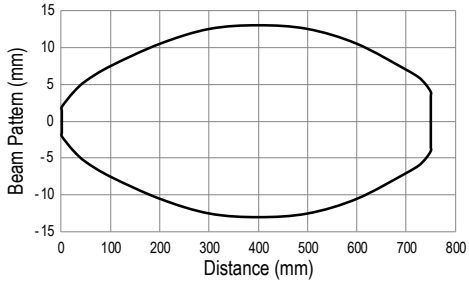
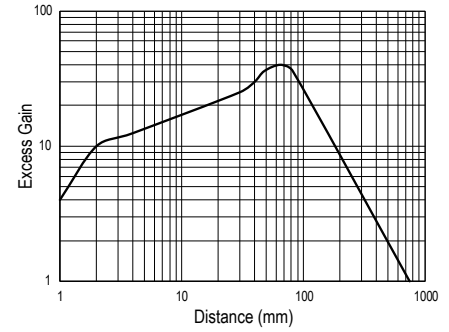
Diffuse and **fixed-field** mode sensor performance is based on the use of a 90% reflectance white test card.

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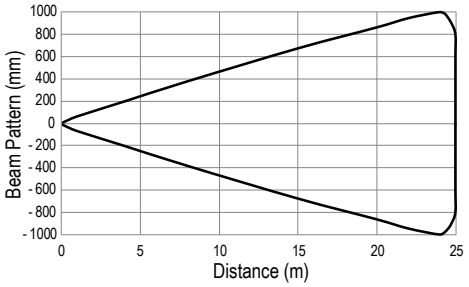
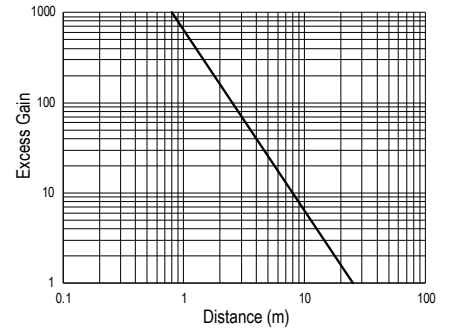
Diffuse models (300 mm range)

Beam Pattern	Excess Gain
	

Diffuse models (750 mm range)

Beam Pattern	Excess Gain
	

Emitter/receiver models (effective beam size: 15.2 mm)

Beam Pattern	Excess Gain
	

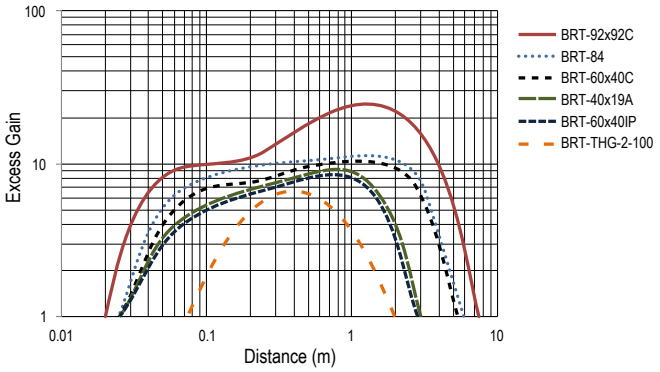
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Polarized retroreflective models

Beam Pattern



Excess Gain

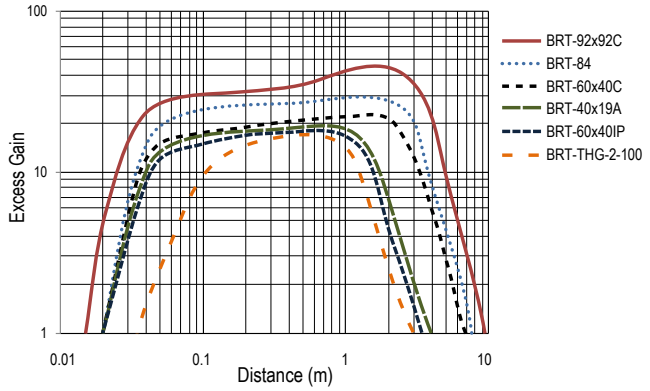


Retroreflective models

Beam Pattern

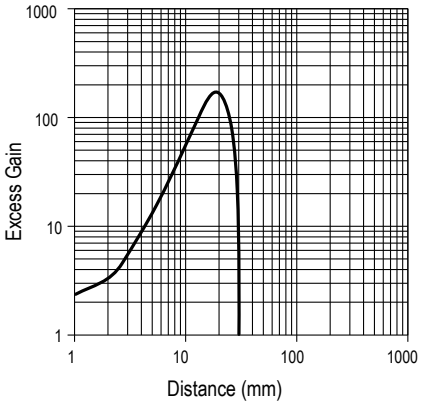


Excess Gain



Fixed-field models

Excess Gain

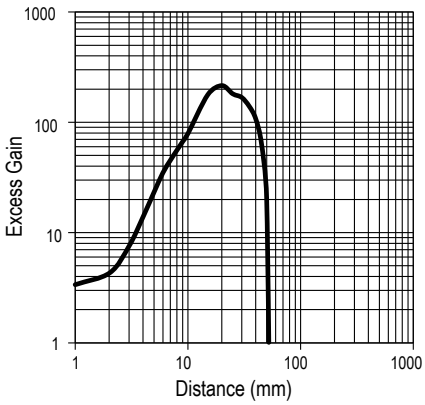


S18-2FF30

Emitter Image Size: 4.0 mm square at 15 mm and 3.5 mm square at 30 mm

18% Gray Test Card: Cutoff distance will be 98% of value shown

6% Black Test Card: Cutoff distance will be 95% of value shown



S18-2FF50

Emitter Image Size: 4 mm square at 25 mm and 3 mm square at 50 mm

18% Gray Test Card: Cutoff distance will be 98% of value shown

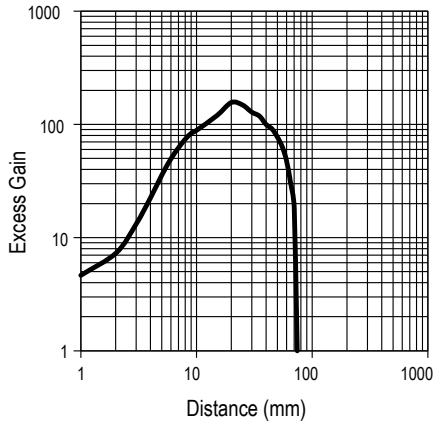
6% Black Test Card: Cutoff distance will be 95% of value shown

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Excess Gain

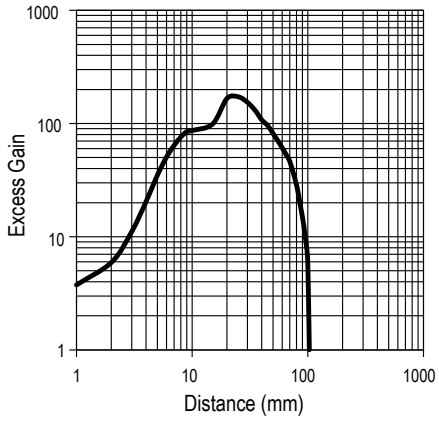


S18-2FF75

Emitter Image Size: 4.5 mm square at 37 mm and 4.0 mm square at 75 mm

18% Gray Test Card: Cutoff distance will be 98% of value shown

6% Black Test Card: Cutoff distance will be 95% of value shown

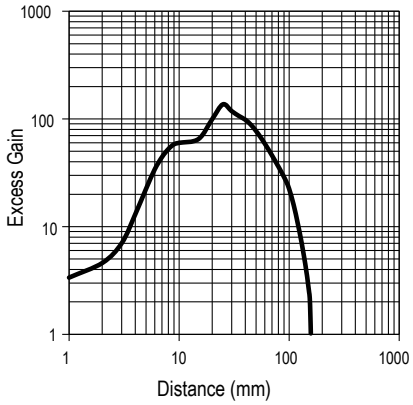


S18-2FF100

Emitter Image Size: 4.5 mm square at 50 mm and 4.5 mm square at 100 mm

18% Gray Test Card: Cutoff distance will be 95% of value shown

6% Black Test Card: Cutoff distance will be 90% of value shown

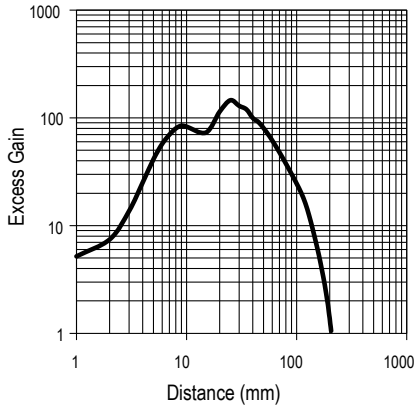


S18-2FF150

Emitter Image Size: 5 mm square at 75 mm and 8 mm square at 150 mm

18% Gray Test Card: Cutoff distance will be 90% of value shown

6% Black Test Card: Cutoff distance will be 70% of value shown



S18-2FF200

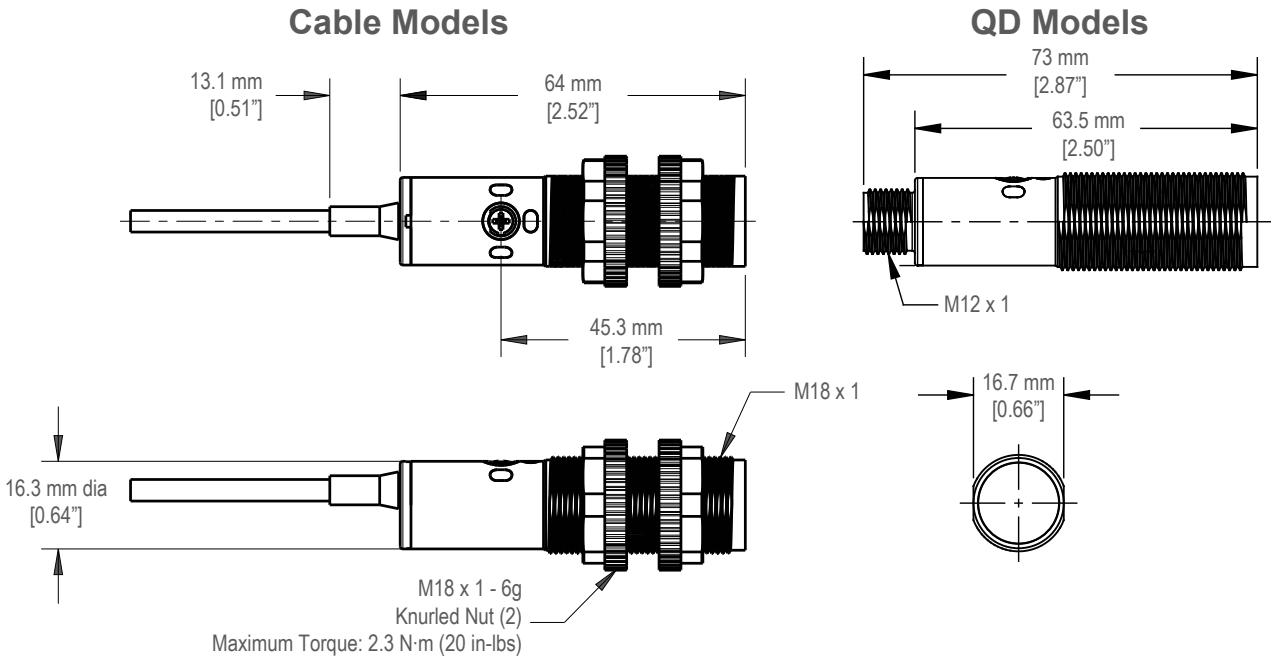
Emitter Image Size: 5 mm square at 100 mm and 8 mm square at 200 mm

18% Gray Test Card: Cutoff distance will be 85% of value shown

6% Black Test Card: Cutoff distance will be 60% of value shown

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Dimensions



All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

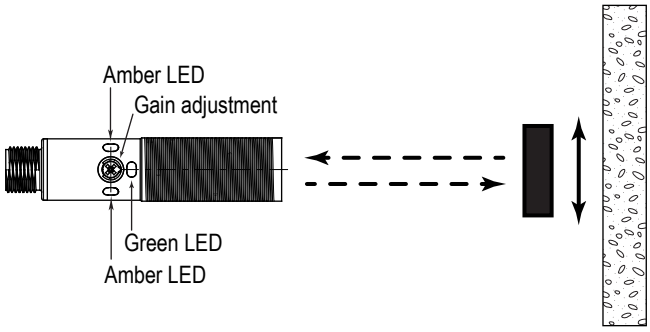
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Wiring Diagrams 12

Chapter 2 Install the S18-2 Plastic 18mm Barrel Sensor

S18-2 Features and Installation

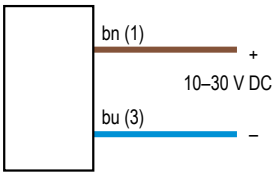


To install the S18-2 Plastic 18mm Barrel Sensor:

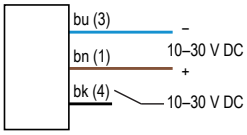
1. Align the sensor as required for the application. For the most sensitive object detection, align the sensor so that the objects move across the sensor's axis.
2. Secure the sensor to a bracket.
3. Wire sensor as shown in the wiring diagrams.
4. Adjust the gain adjuster (sensitivity pot) if necessary.

Wiring Diagrams

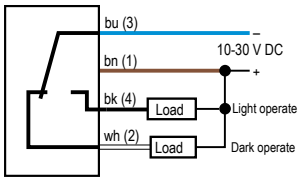
Emitter



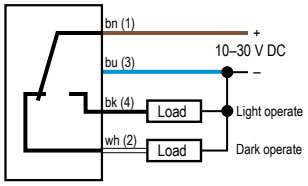
Emitter with Active High Beam Inhibit



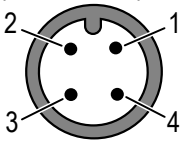
Complementary NPN



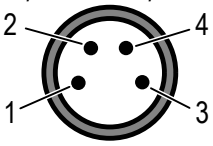
Complementary PNP



4-pin M12 male pinout



4-pin M8 male pinout



Key

1. Brown
2. White
3. Blue
4. Black

NOTE: Open lead wires must be connected to a terminal block.

In light operate (LO) mode, the output is ON when the target returns the same or more light to the sensor and OFF when the sensor detects less light than the configured/taught target. In **opposed and retroreflective sensing modes**, light operate is active when the beam is unblocked. In **diffuse, fixed field, and adjustable field sensor modes**, light operate is active when the target is present.

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In dark operate (DO) mode, the output is ON when the target returns less light to the sensor than the configured target and OFF when the sensor detects more light than the configured/taught target. In **opposed and retroreflective sensing modes**, dark operate is active when the beam is blocked. In **diffuse, fixed field, and adjustable field sensor modes**, dark operate is active when the target is absent.

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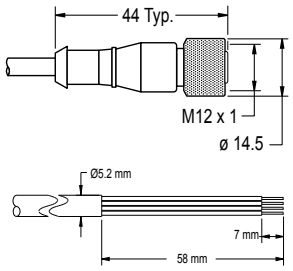
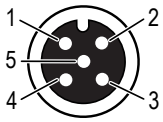
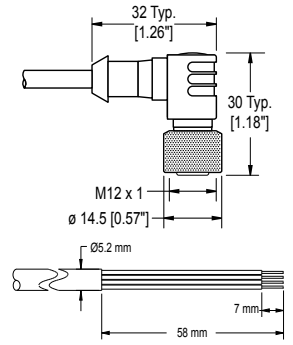
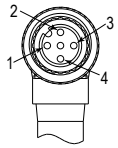
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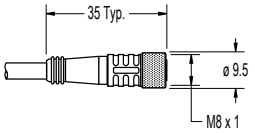
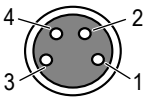
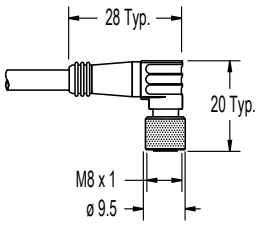
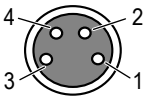
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Apertures 15
Brackets 15
Reflectors 16

Chapter 3 Accessories

Cordsets

All measurements are listed in millimeters, unless noted otherwise. The measurements provided are subject to change.

4-Pin Single-Ended M12 Female Cordsets					
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**	
MQDC-406	2 m (6.56 ft)	Straight			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Not used c UL us
MQDC-415	5 m (16.4 ft)				
MQDC-430	9 m (29.5 ft)				
MQDC-450	15 m (49.2 ft)				
MQDC-406RA	2 m (6.56 ft)	Right-Angle			
MQDC-415RA	5 m (16.4 ft)				
MQDC-430RA	9 m (29.5 ft)				
MQDC-450RA	15 m (49.2 ft)				

4-Pin Single-Ended M8 Female Cordsets					
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**	
PKG4M-2	2 m (6.56 ft)	Straight			1 = Brown 2 = White 3 = Blue 4 = Black
PKG4M-5	5 m (16.4 ft)				
PKG4M-9	9 m (29.52 ft)				
PKW4M-2	2 m (6.56 ft)	Right Angle			
PKW4M-5	5 m (16.4 ft)				
PKW4M-9	9 m (29.5 ft)				

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Apertures

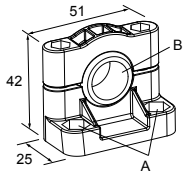
Model	Units	Aperture Description	Product
AP18SCN	3	Kit includes black acetal round apertures of 0.5 mm (0.02 in), 1.0 mm (0.04 in), and 2.5 mm (0.10 in) diameter.	
AP18SRN	3	Kit includes black acetal rectangular apertures of 0.5 mm (0.02 in), 1.0 mm (0.04 in), and 2.5 mm (0.10 in) wide. Each kit also includes a thread-on housing, Teflon® FEP® lens, and o-ring.	
APG18S	1	Kit with glass lens to protect plastic sensor lens from chemical environments and weld splatter damage.	

Brackets

SMB18SF

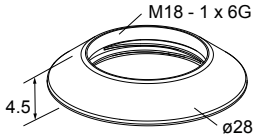
- 18 mm swivel bracket with M18 × 1 internal thread
- Black thermoplastic polyester
- Stainless steel swivel locking hardware included
- CAD Files: DXF, PDF, IGS, STP

Hole center spacing: A = 36.0
Hole size: A = ø 5.3, B = ø 18.0



SMBS18-2-1

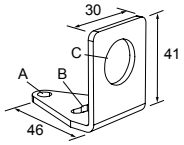
- 30% glass-filled PBT
- CAD Files: DXF, PDF, IGS, STP



SMB18A

- Right-angle mounting bracket with a curved slot for versatile orientation
- 12-ga. stainless steel
- 18 mm sensor mounting hole
- Clearance for M4 (#8) hardware
- CAD Files: DXF, PDF, IGS, STP

Hole center spacing: A to B = 24.2
Hole size: A = ø 4.6, B = 17.0 × 4.6, C = ø 18.5



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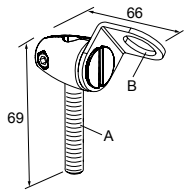
SMB18FA..

- Swivel bracket with tilt and pan movement for precision adjustment
- Easy sensor mounting to extruded rail T-slots
- Metric and inch size bolts available
- 18 mm sensor mounting hole

Hole size: B=ø 18.1

Bolt Thread (A):

SMB18FA = 3/8 - 16 × 2 in
CAD Files: DXF, PDF, IGS, STP
SMB18FAM10 = M10 - 1.5 × 50
CAD Files: DXF, PDF, IGS, STP
SMB18FAM12 = n/a; no bolt included. Mounts directly to 12 mm (½ in) rods
CAD Files: DXF, PDF, IGS, STP



For additional brackets, check the current Banner catalog or visit www.bannerengineering.com. All measurements are listed in millimeters, unless noted otherwise. The measurements provided are subject to change.

Reflectors

BRT-2X2

- Square, acrylic target
- Reflectivity factor: 1.0
- Maximum temperature: +50 °C (+122 ºF)
- Optional brackets are available
- Reflector size: 51 mm × 51 mm
- Approximate size: 51.3 mm × 61 mm
- Two 4.2 mm diameter slots for mounting
- CAD files: DXF, PDF, IGS, STP

BRT-2X2-25 Qty 25

BRT-2X2-100 Qty 100



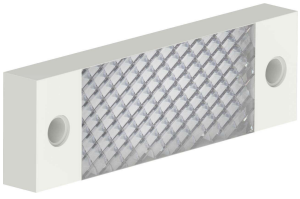
BRT-84X84A

- Square, acrylic target
- Reflectivity Factor: 2.0
- Temperature: –20 °C to +60 °C (–4 °F to +140 °F)
- Approximate size: 84 mm × 84 mm × 9 mm
- Two 4.2 mm diameter slots for mounting
- CAD Files: DXF, PDF, IGS, STP



BRT-40X19A

- Rectangular, acrylic target
- Reflectivity Factor: 1.3
- Temperature: –20 °C to +60 °C (–4 °F to +140 °F)
- Reflector size: 18 mm × 40 mm
- Approximate size: 18 mm × 60 mm × 7.3 mm
- Two 4 mm diameter mounting holes, 50 mm centers
- CAD Files: DXF, PDF, IGS, STP



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BRT-60X40C and **BRT-60X40CM** (Microprism)

- Rectangular, acrylic target
- Reflectivity Factor: 1.4
- Temperature: –20 °C to +60 °C (–4 °F to +140 °F)
- Optional brackets are available
- Approximate size: 40 mm × 60 mm
- **BRT-60X40C** CAD Files: DXF, PDF, IGS, STP
- **BRT-60X40CM** CAD Files: DXF, PDF, IGS, STP



BRT-84

- Round, acrylic target
- Reflectivity Factor: 1.4
- Temperature: –20 °C to +60 °C (–4 °F to +140 °F)
- Optional brackets are available
- Size: 84 mm diameter
- Mounting Hole: 4.5 mm diameter
- CAD files: DXF, PDF, IGS, STP



Retroreflective Tape

Model	Reflectivity Factor	Maximum Temperature	Size
BRT-THG-2-100	0.7	+60 °C (+140 °F)	50 mm (2 in) wide, 2.5 m (100 in) long

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Chapter 4 Product Support and Maintenance

Repairs and Translations (No Field-Replaceable Parts)

English

Contact Banner Engineering for troubleshooting of this device. **Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.** If the device, device part, or device component is determined to be defective by a Banner Applications Engineer, they will advise you of Banner's RMA (Return Merchandise Authorization) procedure.

```
IMPORTANT: If instructed to return the device, pack it with care. Damage that occurs in return shipping is not covered by warranty.
```

Obtain assistance with product repairs by contacting your local Banner Engineering Corp distributor or by calling Banner directly at (763) 544-3164. Access literature translated into your native language on the Banner website at www.bannerengineering.com or contact Banner directly at (763) 544-3164.

Deutsch

Wenden Sie sich zur Fehlerbehebung dieses Geräts an Banner Engineering. **Versuchen Sie nicht, Reparaturen an diesem Banner-Gerät vorzunehmen. Das Gerät enthält keine am Einsatzort auszuwechselnden Teile oder Komponenten.** Wenn ein Banner-Anwendungstechniker zu dem Schluss kommt, dass dieses Gerät, ein Teil oder eine Komponente davon defekt ist, erhalten Sie von dem Techniker Erläuterungen zu Banners RMA-Verfahren (Return Merchandise Authorization) für die Warenrückgabe.

```
WICHTIG: Wenn Sie der Techniker anweist, das Gerät zurückzusenden, verpacken Sie es bitte sorgfältig. Transportschäden bei der Rücksendung werden von der Garantie nicht abgedeckt.
```

Unterstützung bei Produktreparaturen erhalten Sie von Ihrem örtlichen Banner Engineering Corp Händler oder direkt von Banner unter Tel. (763) 544-3164. Die in Ihre Muttersprache übersetzte Literatur finden Sie auf der Banner-Website unter www.bannerengineering.com oder kontaktieren Sie Banner direkt unter Tel. (763) 544-3164.

Français

Pour plus d'informations sur le dépannage du produit, contactez Banner Engineering. **Ne tentez pas de réparer ce dispositif Banner. Il ne contient aucun composant ou pièce qui puisse être remplacé sur place.** Si un ingénieur de Banner conclut que le dispositif ou l'une de ses pièces ou composants est défectueux, il vous informera de la procédure à suivre pour le retour des produits (RMA).

```
Important : Si vous devez retourner le dispositif, emballez-le avec soin. Les dégâts occasionnés pendant le transport de retour ne sont pas couverts par la garantie.
```

Pour vous aider lors de la réparation de produits, contactez votre distributeur Banner local our appelez directement Banner au (763) 544-3164. La documentation traduite dans votre langue est disponible sur le site internet de Banner www.bannerengineering.com ou contactez directement Banner au (763) 544-3164.

Italiano

Per le procedure di individuazione e riparazione dei guasti di questo dispositivo, contattare Banner Engineering. **Non tentare di riparare questo dispositivo Banner, in quanto non contiene parti o componenti sostituibili dall'utente.** Se il dispositivo, una parte del dispositivo o un componente del dispositivo viene riscontrato difettoso da un tecnico Banner, il nostro personale vi comunicherà la procedura da seguire per ottenere l'autorizzazione al reso.

```
Importante: Se si ricevono istruzioni di rispedire il dispositivo al produttore, imballarlo con cura. I danni dovuti al trasporto non sono coperti dalla garanzia.
```

Per assistenza nelle riparazioni dei prodotti, contattare il distributore locale Banner Engineering Corp o contattare direttamente Banner al numero (763) 544-3164. È possibile accedere alla documentazione tradotta nella propria lingua madre sul sito Web Banner all'indirizzo www.bannerengineering.com o contattare direttamente Banner al numero (763) 544-3164.

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Español

Comuníquese con Banner Engineering para solucionar de problemas de este dispositivo. **No intente ninguna reparación a este dispositivo de Banner, contiene piezas o componente que no se pueden cambiar en terreno.** Si algún ingeniero de aplicaciones de Banner determina que el dispositivo, alguna de las piezas o alguno de los componentes del dispositivo está defectuoso, le informará el procedimiento de autorización de devolución de mercancía (RMA, por sus siglas en inglés) de Banner.

Importante: Si se le solicita devolver el dispositivo, empáquelo con cuidado. Puede haber daños durante el envío de devolución que no estén cubiertos por la garantía.

Para reparaciones de productos, por favor contacte a su distribuidor local de Banner Engineering o llame a Banner directamente al 00 1 (763) 544-3164. Vea la literatura traducida en su idioma en el sitio web Banner en www.bannerengineering.com o comuníquese con Banner directamente al 00 1 (763) 544-3164.

中国人

如需对本装置进行故障排查，请联系邦纳。**请勿尝试自行维修该邦纳装置；本装置不包含任何可在现场更换的部件或组件。** 若经邦纳应用工程师确认设备、设备部件或组件存在缺陷，他们将告知您邦纳退货授权 (RMA) 流程。

重要注意事项： 如被要求退回装置，请妥善包装后寄回。退货运输过程中发生的损坏不在保修范围内。

请联系当地的 Banner Engineering Corp 经销商或直接致电 Banner +1 (763) 544-3164，以获得产品维修帮助。请访问邦纳网站 www.bannerengineering.com 或直接拨打 +1 (763) 544-3164 联系邦纳，获取翻译成您母语的资料。

한국인

이 장치의 문제를 해결하려면 Banner Engineering에 문의하십시오. **이 Banner 장치에는 현장에서 교체할 수 있는 부품 또는 구성품이 없으므로 수리를 시도하지 마십시오.** Banner 애플리케이션 엔지니어가 장치, 장치 부품 또는 장치 구성품에 결함이 있는 것으로 판정하면, Banner의 RMA(제품 반송 승인)절차에 대해 안내해 드립니다.

중요: 제품을 반송하도록 안내 받으셨다면 잘 포장해주십시오. 반송 도중에 발생한 손상은 보증 서비스가 적용되지 않습니다.

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日本語

この装置のトラブルシューティングについては、バナーエンジニアリングにお問い合わせください。**このバナー装置には、現場では交換できない部品またはコンポーネントが含まれているため、修理を試みてはいけません。** バナーのアプリケーションエンジニアが装置、装置の部品、または装置のコンポーネントに欠陥があると判断した場合、バナーのRMA（返品承認）手続きについてお知らせします。

重要 ： 返品を指示された場合は、装置を丁寧に梱包してください。返品時に発生した破損は保証の対象外となります。

製品の修理については、最寄りのBanner Engineering Corp代理店にお問い合わせいただくか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。バナーのウェブサイト（www.bannerengineering.com）でお客様の言語に翻訳された資料にアクセスするか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。

čeština

Pro řešení problémů se zařízením kontaktujte společnost Banner Engineering. **Neprovádějte žádné opravy zařízení Banner. Neobsahují žádné komponenty nebo části, které by byly vyměnitelné.** Pokud je zařízení, jeho část nebo díl označen technikem společnosti Banner jako poškozený, bude Vám doporučeno vyplnit reklamační RMA protokol.

Důležité: Pokud byl vydán požadavek na vrácení zařízení, pečlivě ho zabalte. Poškození vzniklé při dopravě není považováno za záruční opravu.

Pokud produkt potřebuje opravu, vyžádejte si pomoc od místního distributora společnosti Banner Engineering Corp nebo přímo na telefonním čísle (763) 544-3164. Dokumentaci přeloženou do vašeho jazyka si vyhledejte na webových stránkách společnosti Banner na adrese www.bannerengineering.com nebo se obraťte přímo na společnost Banner na telefonním čísle (763) 544-3164.

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Polski

W celu rozwiązania problemów z urządzeniem należy skontaktować się z działem technicznym firmy Banner Engineering. **Pod żadnym pozorem nie próbuj naprawiać tego urządzenia firmy Banner; nie zawiera ono części ani elementów, które można wymieniać samodzielnie.** Jeśli urządzenie, jego część lub element zostaną uznane za wadliwe przez inżyniera technicznego Banner, poinformuje on użytkownika o firmowej procedurze zwrotu towaru (RMA) firmy Banner.

Ważne: Jeśli urządzenie ma zostać zwrócone, należy je starannie zapakować. Uszkodzenia powstałe podczas odsyłki nie są objęte gwarancją.

Aby uzyskać pomoc w zakresie naprawy produktu, należy skontaktować się z lokalnym dystrybutorem Banner Engineering Corp lub zadzwonić bezpośrednio do firmy Banner pod numer (763) 544-3164. Dostęp do literatury przetłumaczonej na swój język ojczysty można uzyskać na stronie internetowej firmy Banner pod adresem www.bannerengineering.com lub kontaktując się bezpośrednio z firmą Banner pod numerem (763) 544-3164.

Português

Entre em contato com a Engenharia da Banner para a solução de problemas deste dispositivo. **Não tente fazer nenhum reparo neste dispositivo Banner; ele não contém peças ou componentes substituíveis em campo.** Se um técnico de aplicações da Banner determinar que o dispositivo, peça ou componente do dispositivo está com defeito, ele o informará sobre o procedimento de RMA (Autorização de Devolução de Mercadoria) da Banner.

Importante: Se for instruído a devolver o dispositivo, embale-o com cuidado. Os danos ocorridos no transporte de devolução não são cobertos pela garantia.

Obtenha assistência para reparos do produto entrando em contato com o distribuidor local da Banner Engineering Corp ou ligando diretamente para a Banner no telefone (763) 544-3164. Acesse a literatura traduzida para seu idioma nativo no site da Banner em www.bannerengineering.com ou entre em contato diretamente com a Banner pelo telefone (763) 544-3164.

Türkçe

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Discontinued Models

The following models are no longer available for order but are still covered by the information in this document.

Emitter/Receiver Models

Model		Range	Output	Connection
S18-2NAEL-9M	Emitter	25 m (82 ft)	None	9 m cable
S18-2NAEJ-9M		25 m (82 ft) with beam inhibit		9 m cable
S18-2NAEJ-Q3				150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2NAEJ-Q5				150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2NAES-9M		25 m (82 ft) with adjustment		9 m cable
S18-2NAES-Q3				150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VNRL-9M	Receiver	25 m (82 ft)	Complementary NPN	9 m cable
S18-2VNRL-Q3			Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VNRL-Q5			Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M12 male QD
S18-2VPRL-9M			Complementary PNP	9 m cable

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Model		Range	Output	Connection
S18-2VNRS-9M		25 m (82 ft) with adjustment	Complementary NPN	9 m cable
S18-2VNRS-Q3			Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 male QD
S18-2VPRS-9M			Complementary PNP	9 m cable
S18-2VPRS-Q3			Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPRS-Q5			Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M12 male QD

Polarized Retroreflective Models

Model	Range	Output	Connection
S18-2VNLP-9M	6 m (19.7 ft) with BRT-84 reflector	Complementary NPN	9 m cable
S18-2VNLP-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPLP-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNLPC-9M	6 m (19.7 ft) with BRT-84 reflector, with adjustment	Complementary NPN	9 m cable
S18-2VNLPC-Q3			150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPLPC-9M		Complementary PNP	9 m cable

Retroreflective Models

Model	Range	Output	Connection
S18-2VNLV-9M	7.5 m (24.6 ft) with BRT-84 reflector, with adjustment	Complementary NPN	9 m cable
S18-2VNLV-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPLV-9M		Complementary PNP	9 m cable
S18-2VPLV-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD

Diffuse Models

Model	Range	Output	Connection
S18-2VNDL-Q3	750 mm (29.5 in) with adjustment	Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNDS-9M	300 mm (11.8 in) with adjustment	Complementary NPN	9 m cable
S18-2VNDS-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD

Fixed Field Models

Model	Range	Output	Connection
S18-2VNFF30-9M	30 mm	Complementary NPN	9 m cable
S18-2VNFF30-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPFF30-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF50-Q3	50 mm	Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPFF50-9M		Complementary PNP	9 m cable
S18-2VPFF50-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF75-9M	75 mm	Complementary NPN	9 m cable
S18-2VNFF75-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF75-Q8		Complementary NPN	4-pin M12 male QD
S18-2VPFF75-9M		Complementary PNP	9 m cable

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Model	Range	Output	Connection
S18-2VPFF75-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF100-9M	100 mm	Complementary NPN	9 m cable
S18-2VNFF100-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPFF100-9M		Complementary PNP	9 m cable
S18-2VPFF100-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF150-9M	150 mm	Complementary NPN	9 m cable
S18-2VNFF150-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VPFF150-9M		Complementary PNP	9 m cable
S18-2VPFF150-Q3		Complementary PNP	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF200-9M	200 mm	Complementary NPN	9 m cable
S18-2VNFF200-Q3		Complementary NPN	150 mm (6 in) PVC cable model with a 4-pin M8 QD
S18-2VNFF200-Q8		Complementary NPN	4-pin M12 male QD

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