



QM26-2 Series Washdown Sensor

Original Instructions

p/n: 258881 Rev. A

27-Oct-26

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Chapter 1

Features

Stainless steel sensors for washdown and chemical compatibility



- 316L stainless steel housing with IP67, IP68, and IP69K ratings allows use in challenging washdown environments
- Multiple sensing modes, including [opposed mode](#), polarized [retroreflective mode](#) (LED and laser), clear-object retroreflective, and mechanically [adjustable field mode](#) (LED and laser), allow deployment across a wide variety of applications
- IO-Link® simplifies configuration and access to sensor process data
- ECOLAB certification confirms compatibility with cleaning and disinfecting agents used in chemically cleaned environments
- 3 mm mounting holes on 25.4 mm spacing simplify installation, streamlining both new machine builds and equipment retrofits
- -40 °C to +60 °C operating temperature permits deployment across a broad range of applications

WARNING:



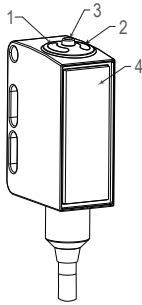
- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction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

Models

Model	Mode	Range	Output
QM26-2VKAF200VS-Q5	Adjustable Field	200 mm	Complementary Push/Pull with IO-Link
QM26-2VKLAF400-Q5	Laser Adjustable Field	400 mm	
QM26-2VKAF450-Q5	Adjustable Field	450 mm	
QM26-2EKXLPC-Q5	Expert™ Coaxial Polarized Retroreflective	3.6 m	Single push/pull with IO-Link
QM26-2VKXLLP-Q5	Laser Polarized Retroreflective	5 m	Complementary Push/Pull with IO-Link
QM26-2VKLP-Q5	Polarized Retroreflective	6 m	Complementary Push/Pull with IO-Link
QM26-2E-Q5	Opposed Mode Emitter	10 m	No output; no IO-Link
QM26-2VKR-Q5	Opposed Mode Receiver	10 m	Complementary Push/Pull with IO-Link

All the listed models have a 200 mm (7.5 in) PVC cable with a 4-pin M12 QD connector. Opposed mode sensors require an [emitter](#) and [receiver](#) pair.

Overview



Key

1. Green Indicator
2. Amber Indicator
3. Push Button
Adjustment Screw/Potentiometer (not shown)—AFxxx models
4. Optical Window

Specifications

Supply Voltage and Current

10 to 30 V DC (15% maximum ripple within specified limits);
supply current (exclusive of load current) < 15 mA

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Repeatability

AF200, AF400: 166 μ s

LP, XLPC: 110 μ s

LAF200: 55 μ s

E, R, LLP:

Indicators

Green on: Power on and sensor ready

Amber on (AF models): Object detected

Amber on (all other models): Light sensed

Amber flashing (opposed and retroreflective models): Light sensed but marginal signal

Output Configuration

XLPC model: Single PNP or NPN on pin 4 with remote input on pin 2.

All other models: Complementary PNP or NPN by model number.

Output Rating

100 mA per output

Output Protection Circuitry

Protected against false pulse at power up, overload, and short circuit of outputs

Emitter LED Wavelength

AF and laser models: 650 nm

All other models: 645 nm

Construction

Housing: 316L stainless steel

Optical Window: Coated acrylic (PMMA)

Indicator and buttons: Acetal/Copolyester

Connection

200 mm (7.5 in) PVC cable with a 4-pin M12 quick disconnect connector

Delay Before Power-Up

< 300 ms

Adjustments

AF models—Adjustment Screw

Laser polarized retroreflective and XLPC models: Push button

All other models: None

Output Response Time

AF200 and Opposed models: 0.5 ms

AF450, LP and XLPC models: 0.33 ms

Laser models: 0.17 ms

Environmental Rating

IP67, IP68, and IP69K

Chemical Compatibility

ECOLAB® certified

Operating Conditions

Opposed models: -40 °C to +65 °C (-40 °F to +149 °F)

All other models: -40 °C to +60 °C (-40 °F to +140 °F)

Storage Temperature

-40 °C to +70 °C (-40 °F to +158 °F)

Vibration and Shock

IEC60947-5-2

Certifications



Required Overcurrent Protection

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



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

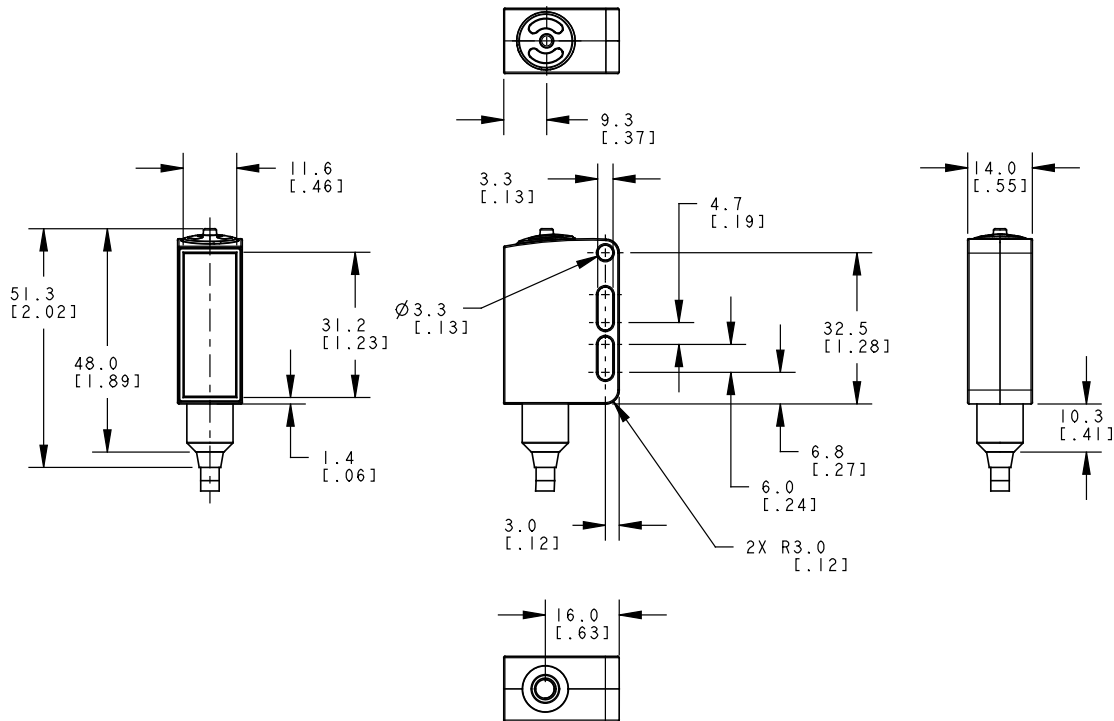
Overcurrent protection is required to be provided by end product application per the supplied table.

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.

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

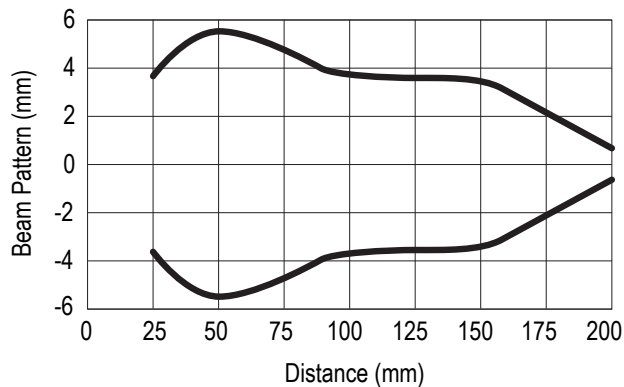
Dimensions



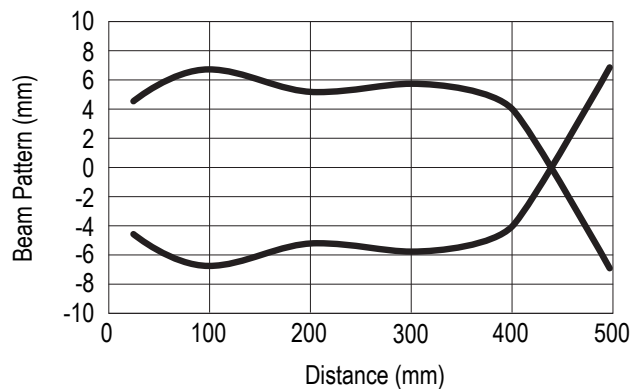
All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

Performance Curves

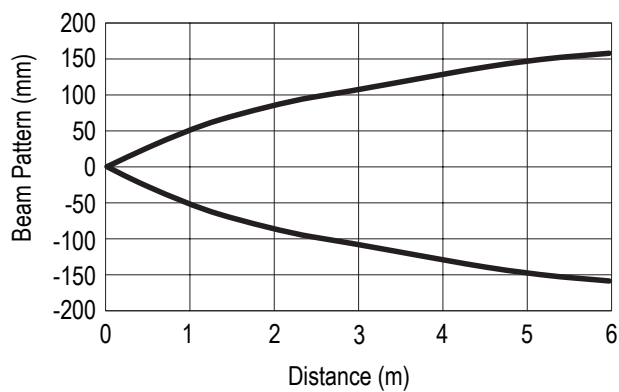
QM26-2AF200 Beam Pattern



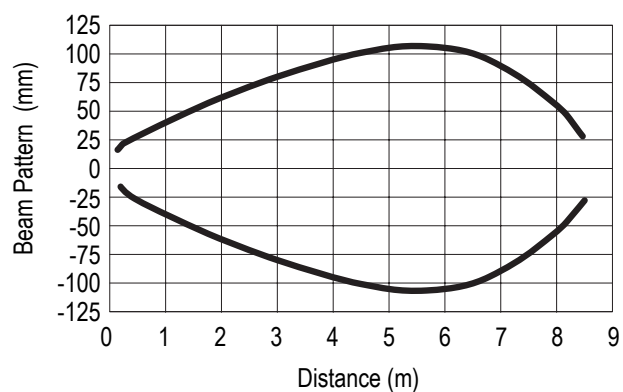
QM26-2AF400 Beam Pattern



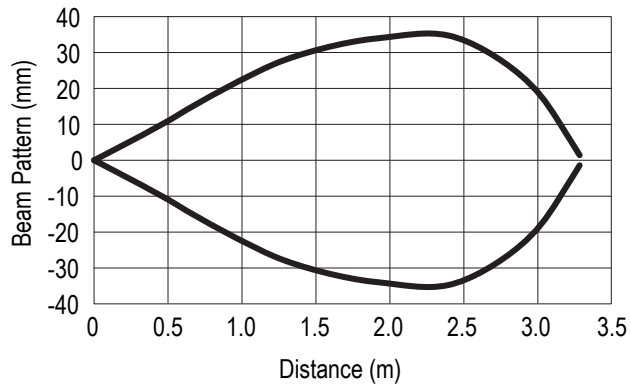
QM26-2LP Beam Pattern



QM26-2 Opposed Mode (E/R) Beam Pattern

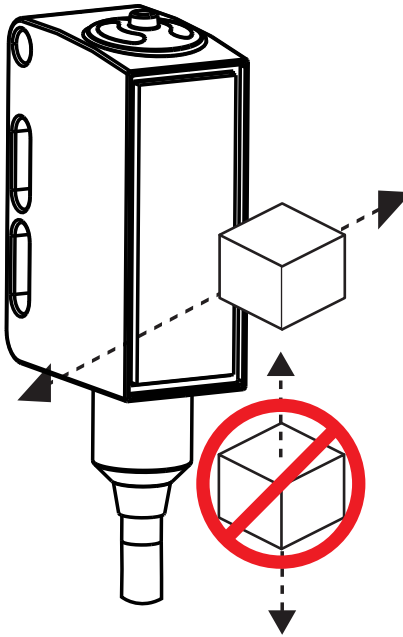


QM26-2XLPC Beam Pattern

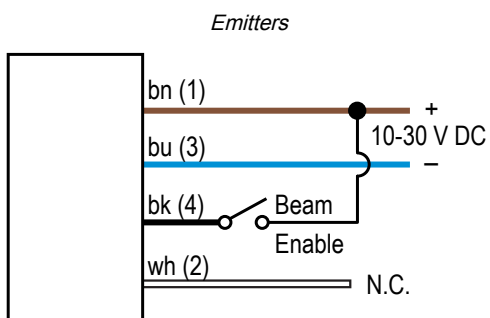


Chapter 2 Sensor Installation

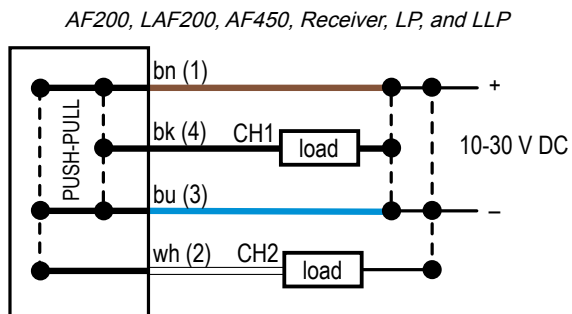
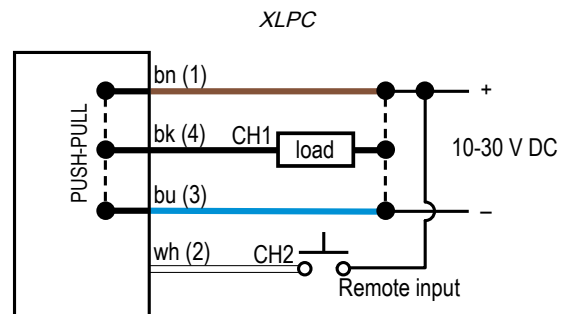
Install the sensor so that the object to be detected moves horizontally to the sensor.



Wiring Diagrams



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



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.

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.

When a sensor with a complementary push/pull output is in a light operate state, pin 4 will be PNP and pin 2 will be NPN. When the sensor is in a dark operate state, pin 4 will be NPN and pin 2 will be PNP.

Chapter 3 Sensor Configuration

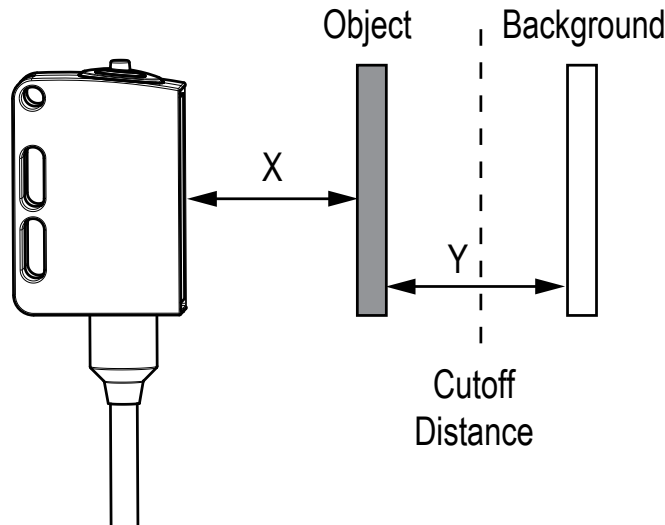
- Adjustable field [background suppression](#) models (AFxxx models) have an 8-turn adjustment screw (potentiometer) to set the background suppression distance.
- Expert™* coaxial polarized [retroreflective mode](#) models (XLPC models) are configurable using the sealed push button.
- Two-lens polarized retroreflective models (LP models) and [opposed mode](#) models require no user adjustments.

Sensor Setup

In background suppression mode, objects beyond the set cutoff distance will not be detected. Background suppression mode can be used in most situations with varying object colors and positions or with varying background conditions.

To ensure reliable [background suppression](#), a minimum separation distance between the object and the background is necessary. See the *Minimum Separation Distance* figure in [Performance Curves](#) to determine the minimum separation distance.

Set the cutoff distance approximately midway between the farthest object and the closest background



X: Distance to the Object

Y: Minimum Separation Between the Object and the Background

- Mount the sensor with the darkest object at the longest application distance. The distance to the object must be less than shown in the *Minimum Separation Distance* figure in [Performance Curves](#) for your object color.
- Turn the adjustment potentiometer **counter-clockwise** until the amber indicator turns **off** (8 turns maximum).
- Turn the adjustment potentiometer **clockwise** until the amber indicator turns **on**.
- Replace the darkest object with the brightest background at the closest application distance.
- Turn the adjustment potentiometer **clockwise**, counting the revolutions, until the amber indicator turns **on**.
- Turn the adjustment potentiometer **counter-clockwise** half of the number of turns from step 5. This places the cutoff distance midway between the object and the background switchpoints.

The sensor is ready for operation.

Push Button Lockout—XLPC Models

The remote input wire (pin 2/white wire) can be used to disable the sensor push button on the XLPC models to prevent unauthorized adjustment to the sensor. Connect the remote input wire (pin 2/white wire) of the sensor to the +V dc terminal to disable configuration adjustments using the push button.

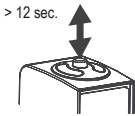
Push Button	Remote Input Wire	Result
Not available	Connect the remote input wire to +V DC for 4 ms or longer.	The push button is disabled (locked).
Not available	Disconnect the remote input wire from +V DC.	The push button is enabled (unlocked).

Select Light Operate or Dark Operate (XLPC and XLLP Models)

Follow these instructions to select light operate or dark operate mode on the XLPC and XLLP models.

Change the sensor operation to [light operate](#) or [dark operate](#) for the desired application. Use the button to configure the sensor.

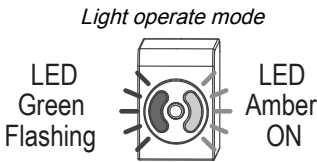
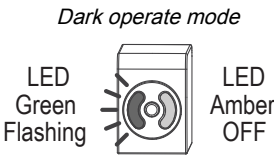
1. Press and hold the button for longer than 12 s.



The green LED flashes.



2. Continue pressing the button until the desired operation is selected, then release the button.
While the green LED continues flashing, the amber LED is on for light operate and off for dark operate.

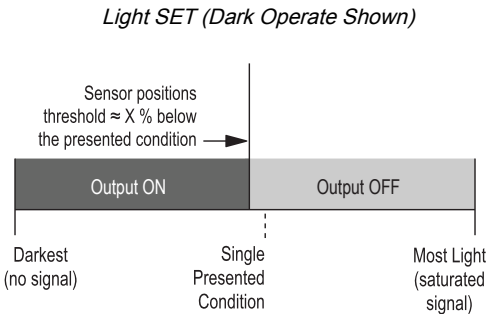


The sensor is configured for the desired mode and is ready.

Light SET—XLPC and XLLP Models

A Light SET optimizes the sensor to provide reliable detection of various objects. For most applications, the factory default setting is appropriate. Perform the Light SET only if the desired object is not reliably detected. Stable mounting of both the sensor and the reflector is required for reliable detection.

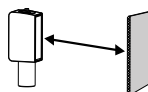
- High sensitivity (11% offset)—suitable for highly transparent bottles, thin films, and foils. See [Light SET for High Sensitivity](#).
- Medium sensitivity (18% offset)—suitable for standard bottle types and translucent objects. See [Light SET for Medium Sensitivity](#).



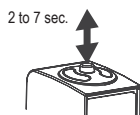
Light SET for High Sensitivity

Use High Sensitivity (11% sensitivity) for detecting highly transparent bottles, thin films, and foils with a thickness of more than 20 μm . Use the button to configure the sensor.

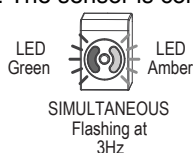
1. Clear the light path to the reflector.



2. Press the button for 2 to 7 seconds until the LEDs flash simultaneously, then release the button.



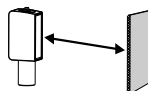
The green and amber LEDs flash simultaneously. The sensor is configured for High Sensitivity and is ready for use.



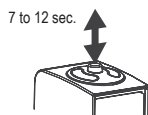
Light SET for Medium Sensitivity

Use Medium Sensitivity (18% sensitivity) for detecting standard bottle types and translucent objects. Use the button to configure the sensor.

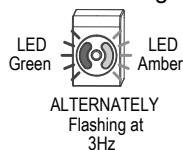
1. Clear the light path to the reflector.



2. Press the button for 7 to 12 seconds until the LEDs flash alternately, then release the button.

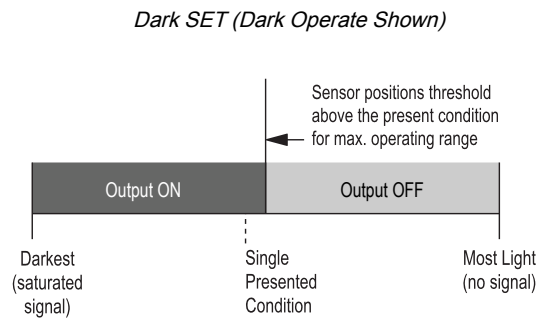


The green and amber LEDs flash alternately. The sensor is configured for Medium Sensitivity and is ready for use.



Dark SET—XLPC and XLLP Models

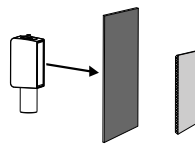
Dark SET (maximum operating range) is the factory default setting and provides maximum sensing range, ease of alignment, and reliable detection of brown or green bottles and opaque objects.



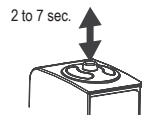
Dark SET for Maximum Operating Range

Use the button to configure the sensor.

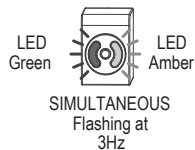
1. Block the light path to the reflector.



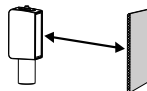
2. Press the button for 2 to 7 seconds until the LEDs flash simultaneously, then release the button.



The green and amber LEDs flash simultaneously.



3. Clear the light path to the reflector.

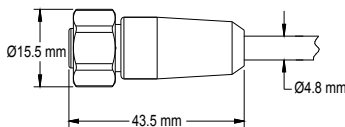
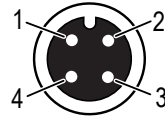


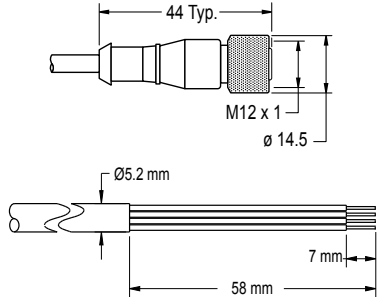
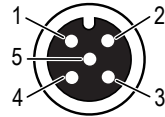
The sensor is configured for Dark SET (maximum operating range) and is ready for use.

Chapter 4 Accessories

Cordsets

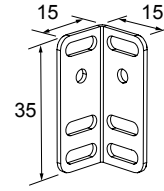
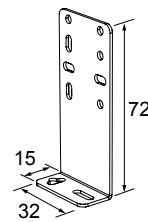
All measurements are listed in millimeters, unless noted otherwise. The measurements provided are subject to change.

4-Pin Single-Ended M12 Female Washdown, Stainless Steel Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0406	2 m (6.56 ft)	Straight		 <p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-WDSS-0415	5 m (16.4 ft)			
MQDC-WDSS-0430	9 m (29.5 ft)			

4-Pin A-Code Single-Ended M12 Female Cordsets (datasheet p/n 235937)				
Model	Length	Dimensions (mm)	Pinout (Female)	
BC-M12F4-22-1	1 m (3.28 ft)		 <p>1 = Brown 2 = White 3 = Blue 4 = Black 5 = Unused</p> <p></p>	
BC-M12F4-22-2	2 m (6.56 ft)			
BC-M12F4-22-5	5 m (16.4 ft)			
BC-M12F4-22-8	8 m (26.25 ft)			
BC-M12F4-22-10	10 m (30.81 ft)			
BC-M12F4-22-15	15 m (49.2 ft)			
BC-M12F4-22-20	20 m (65.61 ft)			
BC-M12F4-22-25	25 m (82.02 ft)			
BC-M12F4-22-30	30 m (98.42 ft)			

Brackets

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

SMBLSTDLQ26 <ul style="list-style-type: none"> Adjustable right-angle metal bracket 304 stainless steel CAD Files: DXF, PDF, IGS, STP 	
SMBLSTQ26 <ul style="list-style-type: none"> Right-angle bracket 304 stainless steel CAD Files: DXF, PDF, IGS, STP 	

Reflectors

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

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

- Rectangular, acrylic target
- Reflectivity Factor: 1.4
- Temperature: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Optional brackets are available
- Approximate size: 40 mm $\times$ 60 mm
- **BRT-60X40C** CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)
- **BRT-60X40CM** CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)



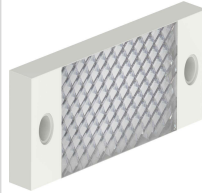
BRT-92X92C

- Square, acrylic target
- Reflectivity Factor: 3.0
- Temperature: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Optional brackets are available
- Reflector size: 92 mm $\times$ 92 mm
- Approximate size: 100 mm $\times$ 100 mm $\times$ 9 mm
- Two 3.5 mm diameter mounting holes
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)



BRT-40X19A

- Rectangular, acrylic target
- Reflectivity Factor: 1.3
- Temperature: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Reflector size: 18 mm $\times$ 40 mm
- Approximate size: 18 mm $\times$ 60 mm $\times$ 7.3 mm
- Two 4 mm diameter mounting holes, 50 mm centers
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)



BRT-60X40IP69K

- Rectangular, acrylic target (color is amber)
- Reflectivity Factor: 0.7
- Temperature: -20°C to $+140^{\circ}\text{C}$ (-4°F to $+284^{\circ}\text{F}$)
- Chemically resistant
- IP69K washdown rated
- Optional brackets are available
- Approximate size: 40 mm $\times$ 60 mm
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)



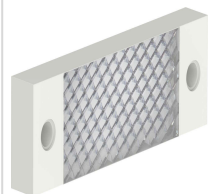
BRT-60X40C-PS

- Rectangular, polystyrene target
- Reflectivity Factor: 1.1
- Temperature: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Optional brackets are available
- Chemically compatible with hydrogen peroxide
- Yellow back
- Approximate size: 40 mm $\times$ 60 mm



BRT-40X19A-PS

- Rectangular, polystyrene target
- Reflectivity Factor: 1.0
- Temperature: -20°C to $+60^{\circ}\text{C}$ (-4°F to $+140^{\circ}\text{F}$)
- Chemically compatible with hydrogen peroxide
- Yellow back
- Reflector size: 18 mm $\times$ 40 mm
- Approximate size: 18 mm $\times$ 60 mm $\times$ 7.3 mm
- Two 4 mm diameter mounting holes, 50 mm centers



Model	Reflectivity Factor	Maximum Temperature	Size
BRT-THG-2-100	0.7	$+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$)	50 mm (2 in) wide, 2.5 m (100 in) long

Chapter 5 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 ou 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.

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 포장해주시십시오. 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、修理を試みてもいけません。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 reklamční 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.

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

Bu cihazda sorun giderme işlemleri için Banner Engineering ile iletişime geçin. **Bu Banner cihazını onarmaya çalışmayın; cihaz sahada değiştirilebilir parça veya bileşen içermez.** Bir Banner Uygulama Mühendisi tarafından cihazın, cihazın bir parçasının veya bir cihaz bileşeninin kusurlu olduğu tespit edilirse, Banner RMA (İade Mal Yetkilendirme) prosedürü hakkında bilgilendirilirsiniz.

ÖNEMLİ: İade etmeniz istenirse, cihazı dikkatli bir şekilde paketleyin. İade nakliyesinde meydana gelecek hasarlar garanti kapsamında değildir.

Yerel Banner Engineering Corp distribütörünüzle iletişime geçerek veya doğrudan (763) 544-3164 numaralı telefondan Banner'ı arayarak ürün onarımlarıyla ilgili yardım alın. Ana dilinize çevrilmiş dokümanlara www.bannerengineering.com adresindeki Banner web sitesinden erişilebilir veya (763) 544-3164 numaralı telefondan doğrudan Banner ile iletişime geçebilirsiniz.

Contact Us

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For worldwide locations and local representatives, visit www.bannerengineering.com.

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For patent information, see www.bannerengineering.com/patents.

Glossary

adjustable field mode

In adjustable-field background suppression sensors, the receiver element produces two currents. The ratio of the two currents changes as the received light signal moves along the length of the receiver element. The sensing cutoff distance relates directly to this ratio, which is adjustable using a potentiometer or push button. In adjustable field sensing modes, light operate is active when the target is present and dark operate is active when the target is absent.

background suppression

Teaching the sensor the background condition allows the sensor to ignore any background when it is detecting the target.

dark operate

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.

emitter

For photoelectric sensors, an emitter contains the light source, usually an LED, and an oscillator that modulates the LED at a high rate of speed. The emitter sends a modulated light beam to the receiver.

light operate

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.

opposed mode

In opposed-mode sensing, the sensor's emitter and receiver are housed in two separate units. The emitter is placed opposite the receiver so that the light beam goes directly from the emitter to the receiver. An object is detected when it breaks the working part of the light beam, known as the effective beam. In opposed sensing modes, light operate means the output is on when the beam is unblocked and dark operate means the output is on when the beam is blocked.

receiver

For photoelectric sensors, a receiver decodes the light beam and switches an output device that interfaces with the load.

retroreflective mode

A retroreflective sensor contains both the emitter and receiver elements. The effective beam is established between the emitter, the retroreflector, and the receiver. As with an opposed-mode sensor, an object is sensed when it interrupts or "breaks" the effective beam. In retroreflective sensing modes, light operate means the output is on when the beam is unblocked and dark operate means the output is on when the beam is blocked.

