

AAC Single Beam

Description

The Area Access Control (AAC) safety single-beam is a 24V DC through-beam opto-electronic safety switch offered with two operating ranges (a short range (0.5...20 m (1.64...65.5 ft)) or a long range (15...70 m (49.2...300 ft)) system. The AAC system uses the same transmitter for both ranges and one of two receivers for a short-range or long-range system. This unique system configuration minimizes the number of cat. nos. necessary for specifying the AAC single-beam system.

The AAC safety single-beam is used as a whole-body detection device. The light beam produced between the AAC transmitter and receiver provides whole-body access detection for hazardous areas such as:

- Robotic work cells
- Processing machines
- Machining centers
- Palletizers
- Transfer lines
- High bay warehouses



Features

- Long scan range (up to 70 m (300 ft))
- Easy installation
- Die cast aluminium housing
- Heated front lens, allowing use even in outdoor applications
- Relay outputs

Specifications

Safety Ratings	
Standards	IEC 61496, Parts 1 & 2
Safety Classification	Type 4, IEC 61496; SIL 3 (IEC 61508); SIL CL3 (IEC 62061); Category 4 (EN ISO 13849); PL _e (EN ISO 13849); B _{10d} parameter: 1 x 10 ⁶ switching cycles (@ DC-13, 24V, 0.6 A); 2 x 10 ⁵ switching cycles (@ DC-13, 24V, 1.5 A) PFH _d : 4.0 x 10 ⁻⁹ ; Mission time: 20 years
Certifications	CE Marked for all applicable directives and BG
Power Supply	
Input Power, Max.	24V DC ±20%
Maximum Residual Ripple	5% of U _v , max.
Power Consumption	24V DC 8 W max.
Outputs	
Safety Outputs	2 N.O. Relays
Switching Current @ Voltage, Min.	0.02 A to 2 A
Operating Characteristics	
Response Time	< 22 ms
Status Indicators	On state, Off state, alignment
Beam Diameter	23 mm (0.91 in.)
Scanning Range	0.5...20 m (1.64...65.5) or 15...70 m (49.2...300 ft)
Synchronization	Optical
Wavelength	950 nm
Environmental	
Enclosure Type Rating	IP67 (EN 60529)
Relative Humidity	15...95%, noncondensing
Operating Temperature [C (F)]	-25...55° (-13...131°)
Vibration	5 g, 10...55 Hz per IEC 60068-2.6
Shock	10 g, 16 ms per IEC 60068-2.29
Physical Characteristics	
Front Window	Heated
Weight	Transmitter unit: approx. 0.9...1.3 kg Receiver unit: approx. 1...1.4
Housing Cross Section	50 x 156 x 116 mm (1.96 x 6.14 x 4.56 in.)
Connection Type	Terminal chamber with cable gland (PG13.5 thread)
Cable Length	50 m (164 ft) max.

Note: The external power supply must be capable of buffering brief power failures of 20 ms as specified in IEC 60204-1.

Product Selection

Selection Guide for Receiver

Operating Range	Connection Type	Cat. No.
0.5...20 m (1.64...65.5 ft)	Terminal chamber with cable gland (PG13.5 thread)	440L-R4F0020-Q
15...70 m (49.2...300 ft)		440L-R4F1570-Q








Selection Guide for Transmitter

Operating Range	Connection Type	Cat. No.
0...70 m (0...300 ft)	Terminal chamber with cable gland (PG13.5 thread)	440L-T4F2070-Q

Recommended Logic Interfaces

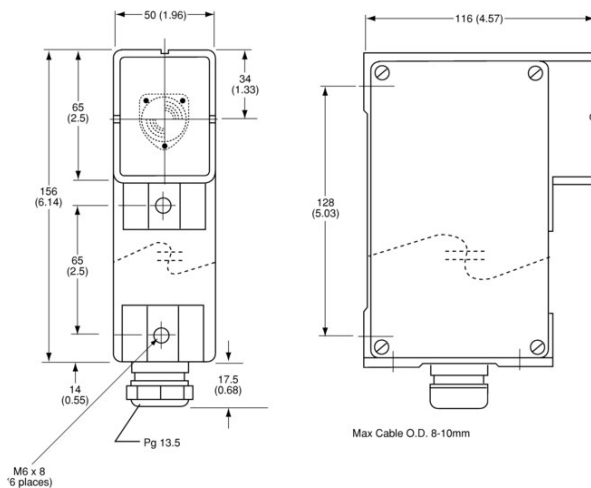
Description	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. Page No.	Cat. No.
Single-Function Safety Relays for 2 N.C. Contact Switch							
MSR127RP	3 N.O.	1 N.C.	Removable (Screw)	Monitored Manual	24V AC/DC	MSR127RP/TP	440R-N23135
MSR127TP	3 N.O.	1 N.C.	Removable (Screw)	Auto./Manual	24V AC/DC	MSR127RP/TP	440R-N23132
MSR126	2 N.O.	None	Fixed	Auto./Manual	24V AC/DC	MSR126R/T	440R-N23117
Modular Safety Relays							
MSR210P Base 2 N.C. only	2 N.O.	1 N.C. and 2 PNP Solid State	Removable	Auto./Manual or Monitored Manual	24V DC from the base unit	MSR210P	440R-H23176
MSR220 Input Module	–	–	Removable	–	24V DC	MSR220P	440R-H23178
MSR310P Base	MSR300 Series Output Modules	3 PNP Solid State	Removable	Auto./Manual Monitored Manual	24V DC	MSR310P	440R-W23219
MSR320P Input Module	–	2 PNP Solid State	Removable	–	24V DC from the base unit	MSR320P	440R-W23218
Muting Modules							
MSR22LM	2 N.O.	1 N.C.	Removable	Auto./Manual	24V DC	MSR22LM	440R-P23071
MSR42 (requires optical interface to configure 445L-AF6150)	2 PNP	2 PNP, configurable	Removable	Auto./manual or manual monitored	24V DC	MSR42 Micro 400 Controller/Muting Module	440R-P226AGS-NNR

Accessories

Description	Cat. No.
 Laser alignment tool (standard GuardShield)	440L-ALAT
 Adaptor for alignment aid on AAC	440L-ALBRK1
 Mounting bracket for AAC	440L-AMBRK4
 Corner mirror for scanning range 0...30 m	440L-AMIRR1
 Mounting kit for 440L-AMIRR1	440L-AMKIT
 Mounting bracket for mirror 440L-AMIRR1	440L-AMBRK1
 Glass corner mirror, 45° angle 0...30 m	440L-AMIRR2

Approximate Dimensions

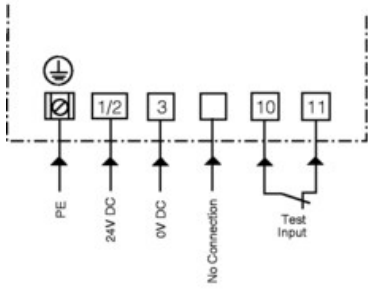
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



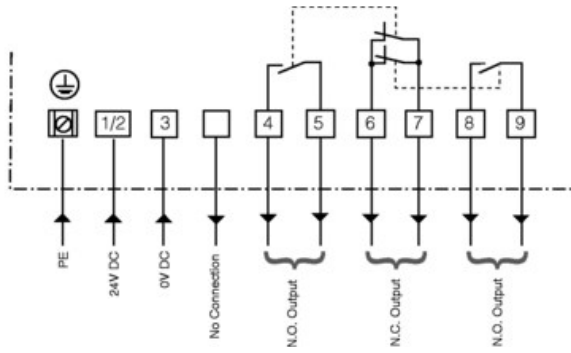
Typical Wiring Diagrams

Wiring diagram is not intended to be used for installation purposes.

Transmitter

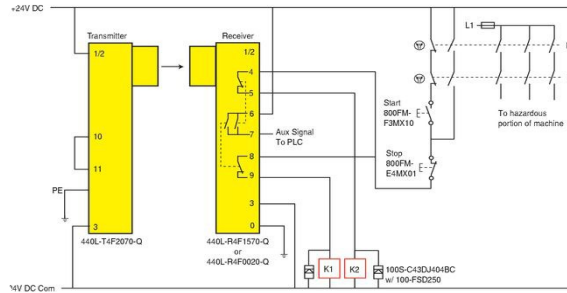
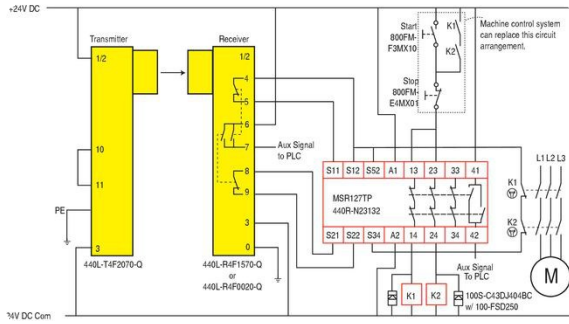


Receiver



24V DC supply with terminal chamber

Transmitter

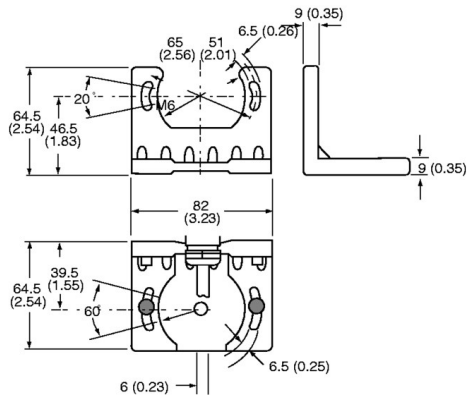


AAC Accessories

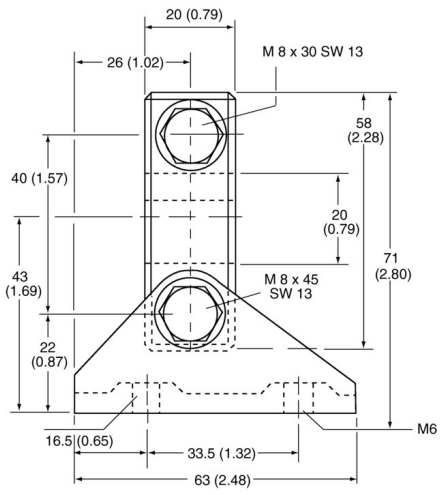
Approximate Dimensions

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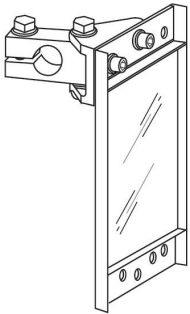
AAC Mounting Bracket 440L-AMBRK4



Mounting Bracket 440L-AMBRK1

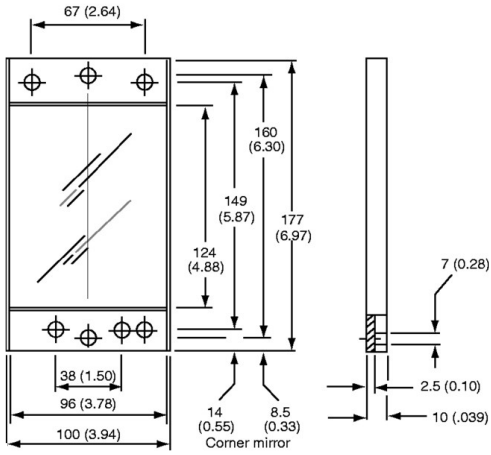


Mounting Bracket 440L-AMBRK1 Mounted to Mirror 440L-AMIRR1



Shown with bracket 440L-AMBRK1
Mounted to mirror 440L-AMIRR1

Mirror 440L-AMIRR1



Mirror 440L-AMIRR2

