

EZ-SCREEN® AC Interface Box



Datasheet

EZAC Series for use with Type 4 Emitters and Receivers



Emitter/Receiver Models

Emitter Only Models

- AC power supply for use with EZ-SCREEN Safety Light Screen sensors. Models EZAC-R.. interface with up to three receivers or two cascaded emitter/receiver pairs; models EZAC-E.. power up to four emitters
- Supplies +24 V dc power at 0.7 amps (16.8 W max. power)
- Accepts input voltages from 100 to 250 V ac (50 to 60 Hz)
- Models available with external device monitoring (EDM)—see Models table Key reset switch on EZAC-R.. models (Receiver/Pair models)
- Replaceable relay module with 8 Amp / 250 V ac/dc safety output contacts (models EZAC-R.. only)
- IP65 metal housing
- Mounts directly onto sensor housing (hardware included)
- Emitter models available for 5-pin (with Test input) or 8-pin (no Test input available) emitter connections
- Easy QD receiver and emitter hookup
- Easy QD or hard-wired power and output/EDM connections (depending on model)

Models

Emitter/Receiver Models	Outputs	EDM	Emitter/Receiver Connection	AC Power Connection	Output and EDM Connections
EZAC-R9-QE8	3 N.O.	Selectable 1- or 2-Channel or no EDM	8-Pin M12 Euro-style QD	Hard-wired	Hard-wired
EZAC-R11-QE8	2 N.O., 1 N.C.				
EZAC-R15A-QE8-QS83	1 N.O. + 1 SPDT (Form C)	1-Channel		3-pin Mini-style QD	8-pin Mini-style QD
EZAC-R8N-QE8-QS53	1 N.O., 1 N.C.	Power Monitoring		3-pin Mini-style QD	5-pin Mini-style QD
EZAC-R10N-QE8-QS53	2 N.O.				

Emitter-Only Models,	For Emitter Models	Emitter Connection	AC Power Connection
EZAC-E-QE8	SLSE...Q8 (without Test input)	8-Pin M12 Euro-style QD	Hard-wired
EZAC-E-QE5	SLSE...Q5 (with Test input)	5-Pin M12 Euro-style QD	
EZAC-E-QE8-QS3	SLSE...Q8 (without Test input)	8-Pin M12 Euro-style QD	3-Pin Mini-style QD
EZAC-E-QE5-QS5	SLSE...Q5 (with Test input)	5-Pin M12 Euro-style QD	5-Pin Mini-style QD

Overview



WARNING: Not a Stand-Alone Safeguarding Device

This Banner device is not a stand-alone point-of-operation guarding device, as defined by OSHA regulations. It is necessary to install point-of-operation guarding devices, such as safety light screens and/or hard guards, to protect personnel from hazardous machinery. Failure to install point-of-operation guards on hazardous machinery can result in a dangerous condition which could lead to serious injury or death.

The EZ-SCREEN AC Interface Box (EZAC Series) is powered by 100 to 250 V ac. EZAC-R.. models can supply one EZ-SCREEN receiver, a single emitter-receiver pair, or two cascaded emitter-receiver pairs. Emitter-only models (EZAC-E..) can supply up to four cascaded emitters, and have no output circuitry.



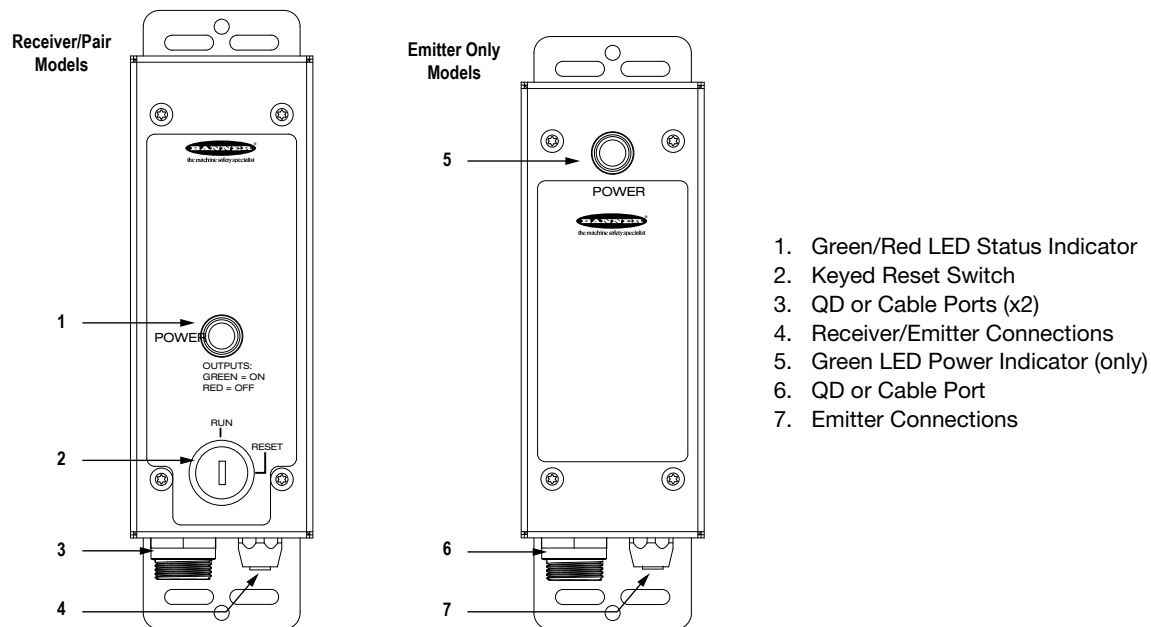
The integrated interface module, located on a replaceable PC-board, converts the EZ-SCREEN receiver OSSD output signals into isolated redundant output channels with an 8 amp / 250 V ac/dc switching capacity for ac or dc safety circuits. The outputs of the interface module follow the action of the EZ-SCREEN OSSD outputs, with a 10 millisecond response time in turning OFF, and approximately 10 millisecond delay in turning ON. All models feature external device monitoring (EDM) in the form of 1-Ch, 2-Ch or power monitoring.

All models have one 8-pin M12 Euro-style QD to connect to the EZ-SCREEN receiver or emitter. Other connections are dependent on model. Hookups, therefore, are also model-dependent; see [Wiring Diagrams](#) on page 6. See [Accessories](#) on page 16 for cabling options.

Indicators

A bicolor LED indicates the output contact status of internal relays K1 and K2. (Emitter-only models have a green Power on/off indicator.)

LED Status	Power	K1 and K2	N.O. Output	N.C. Output	Light Screen
Green	On	Energized	Closed	Open	Clear and reset
Red	On	De-energized	Open	Closed	Blocked, latched, or locked out
OFF	No ac power	De-energized	Open	Closed	Off



Configuration

Models EZAC-R9-QE8 and EZAC-R11-QE8 can be configured for 1-Channel, 2-Channel, or No EDM. The EDM slide switch setting must match the EZ-SCREEN receiver's DIP switch setting. For example, if the slide switch is set for "EDM 1-CH," then "E1" must be selected on the EZ-SCREEN receiver.

Models EZAC-R8N-QE8-QS53, EZAC-R10N-QE8-QS53, and EZAC-R15A-QE8-QS53 are preconfigured. However, the EZ-SCREEN receiver's DIP switch setting must still match the EZAC Interface EDM setting:

EZAC-R8N-QE8-QS53 – No EDM; EZ-SCREEN configuration – E2 (default)

EZAC-R10N-QE8-QS53 – No EDM; EZ-SCREEN configuration – E2 (default)

EZAC-R15A-QE8-QS53 – 1-Channel EDM; EZ-SCREEN configuration – E1

See the EZ-SCREEN manual (p/n 112852) for additional information.

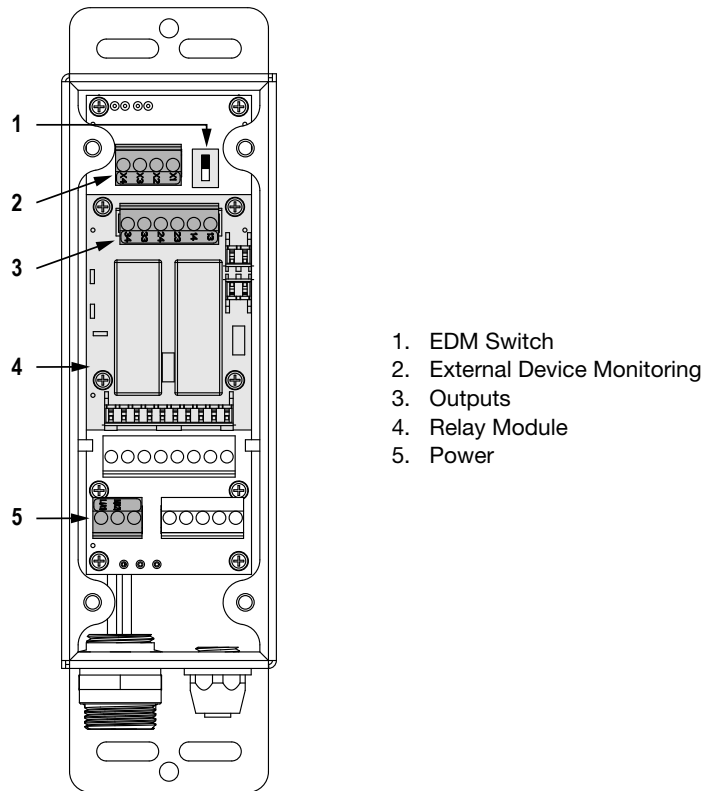


Figure 1. Internal board layout – EZAC-R.. models

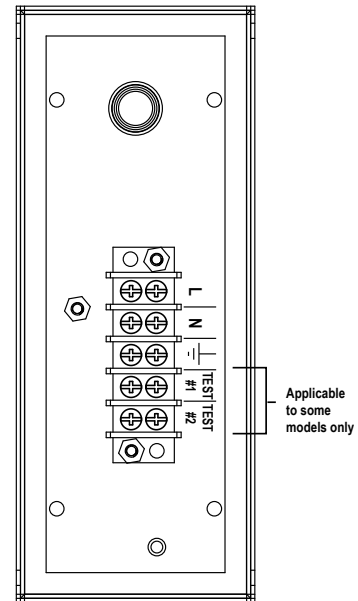


Figure 2. Inside cover – EZAC-E.. hard-wired models

Mechanical Installation

Mount the module in a convenient location that is free from heavy impulse force and high-amplitude vibration. The module and any auxiliary Reset switches must be located outside the guarded area, where the switch operator has a full unobstructed view of the entire guarded area and any associated hazards as the reset is performed. The module and any auxiliary reset switch(es) must not be reachable from within the guarded area and must be protected (through the use of rings or guards, for example) against unauthorized or inadvertent operation. Refer *Dimensions* for dimensions and mounting hole locations.

The module is designed for mounting directly to the emitter or receiver housing, if desired. The module meets IEC IP65 standards; an additional enclosure or cabinet is not required.

Electrical Installation



WARNING:

- Electrical Shock Hazard
- Failure to follow these instructions could result in serious injury or death.
- Electrical shock hazard exists when the EZ-SCREEN AC Interface Box has power applied to it and the box cover is open. Use extreme caution to avoid electrical shock during installation or servicing, or when the box cover is open to change the switch configuration or replace the relay board module.
- Always disconnect all power from the box and the guarded machine before making any connections, replacing any component, or before opening the enclosure housing of the box.

The connection for a particular box is dependent on the model. For models with EDM, this should be configured before the initial checkout and use of the light screen. EDM is configured via a combination of the electrical hookup and a sliding switch inside the box (depending on model).

All EZAC-R.. models have one 8-pin M12 Euro-style QD to connect to the EZ-SCREEN receiver and/or emitter. QD models have one 3-pin Mini-style QD for power and ground input, plus a Mini-style I/O connector (either 8-pin or 5-pin, depending on model) to connect to the safety outputs and monitoring contacts (i.e., EDM). Non-QD (hard-wired) models have two holes with 1/2" NPT threads to accommodate conduit fitting or cable gland and hard-wire cables (two cable glands and one hole plug included with box).

EZAC-E.. models have one (8-pin or 5-pin) M12 Euro-style QD to connect to the emitter, plus a 3-pin or 5-pin Mini-style connector for power and ground. Hard-wired emitter models have one hole and one cable gland.

Connection to the Guarded Machine

The wiring diagrams in *Wiring Diagrams* on page 6 show a generic connection of two safety output channels of the models EZAC-R.. AC Interface box to machine primary control elements MPCE1 and MPCE2. A machine primary control element is an electrically powered device, external to the box, which stops the machinery being controlled by immediately removing electrical power from the machine and (when necessary) by applying braking to dangerous motion.



WARNING:

- Not for Use as a Stand-Alone Safety Module
- Failure to properly connect the EZAC box to a control-reliable Primary Safety Device could result in serious injury or death.
- The EZAC box does not have the circuitry required to perform a self-check. A single fault inside the unit or in external devices (like switches or E-stop buttons) can go undetected and create an unsafe condition.
- DO NOT connect E-stop switches, 2-hand control switches, safety interlock switches, or similar devices directly to this interface module.
- Always connect pins 2 and 3 of the receiver/emitter M12/Euro-style QD connection to the monitoring input of the Primary Safeguarding Device that controls it.



WARNING: Shock Hazard and Hazardous Energy

Always disconnect power from the safety system (for example, device, module, interfacing, etc.) and the machine being controlled before making any connections or replacing any component.

Electrical installation and wiring must be made by Qualified Personnel¹ and must comply with the relevant electrical standards and wiring codes, such as the NEC (National Electrical Code), ANSI NFPA79, or IEC/EN 60204-1, and all applicable local standards and codes.

Lockout/tagout procedures may be required. Refer to OSHA 29CFR1910.147, ANSI Z244-1, ISO 14118, or the appropriate standard for controlling hazardous energy.



CAUTION: Ensure Proper Monitoring—The primary safeguarding system must be capable of external device monitoring of the EZAC-R.. models, and employ a Normally Open Reset contact. Thus, the EZ-SCREEN AC Interface Box is not intended to be used with EZSCREEN Type 2 (model numbers LS2..).

¹ A person who, by possession of a recognized degree or certificate of professional training, or who, by extensive knowledge, training and experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work.

Table 1: 8-pin Receiver and Emitter Connections

Pin	Color	Receiver Function	Emitter Function
1	Brown	+24 V dc	+24 V dc
2	Orange/Black	EDM #2	n.c.
3	Orange	EDM #1	n.c.
4	White	OSSD #2	n.c.
5	Black	OSSD #1	n.c.
6	Blue	0 V dc	0 V dc
7	Green/Yellow	GND/PE	GND/PE
8	Violet	Reset	n.c.

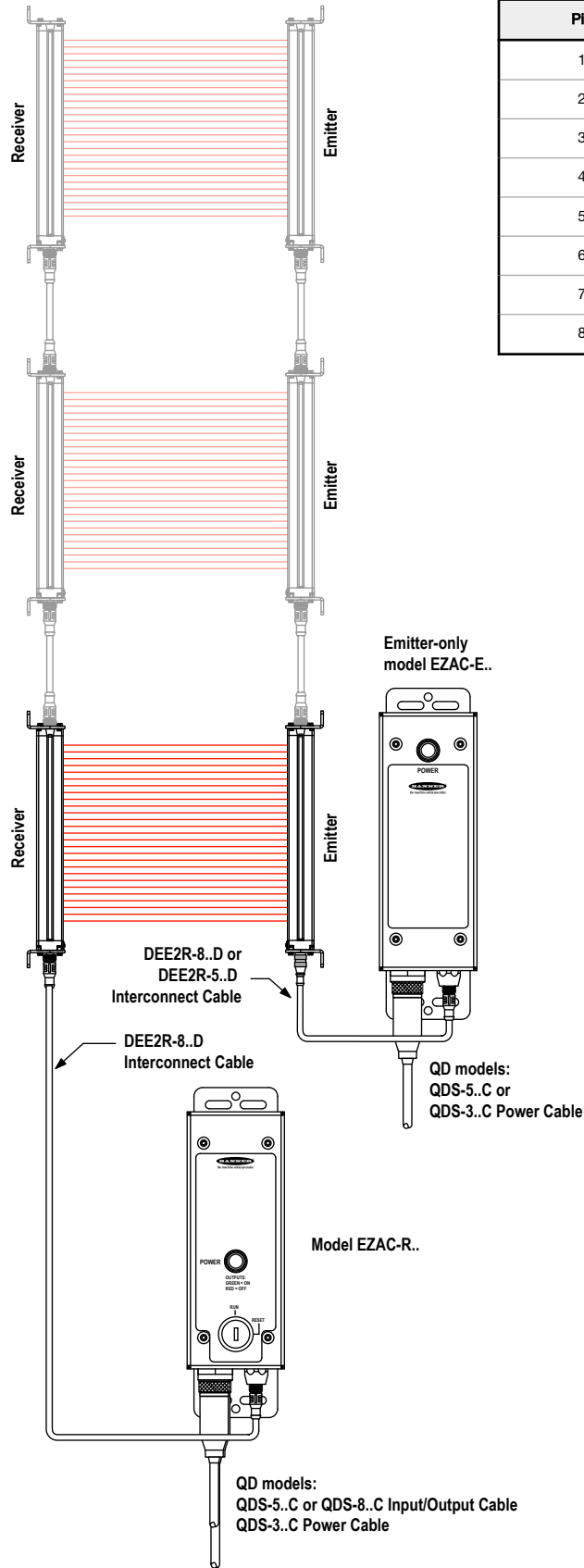


Figure 3. Emitter and Receiver Models: Connection to EZ-SCREEN

Table 2: 5-pin Emitter-Only Connection

Pin	Color	Function
1	Brown	+24 V dc
2	White	Test #2
3	Blue	0 V dc
4	Black	Test #1
5	Green/Yellow	GND/PE

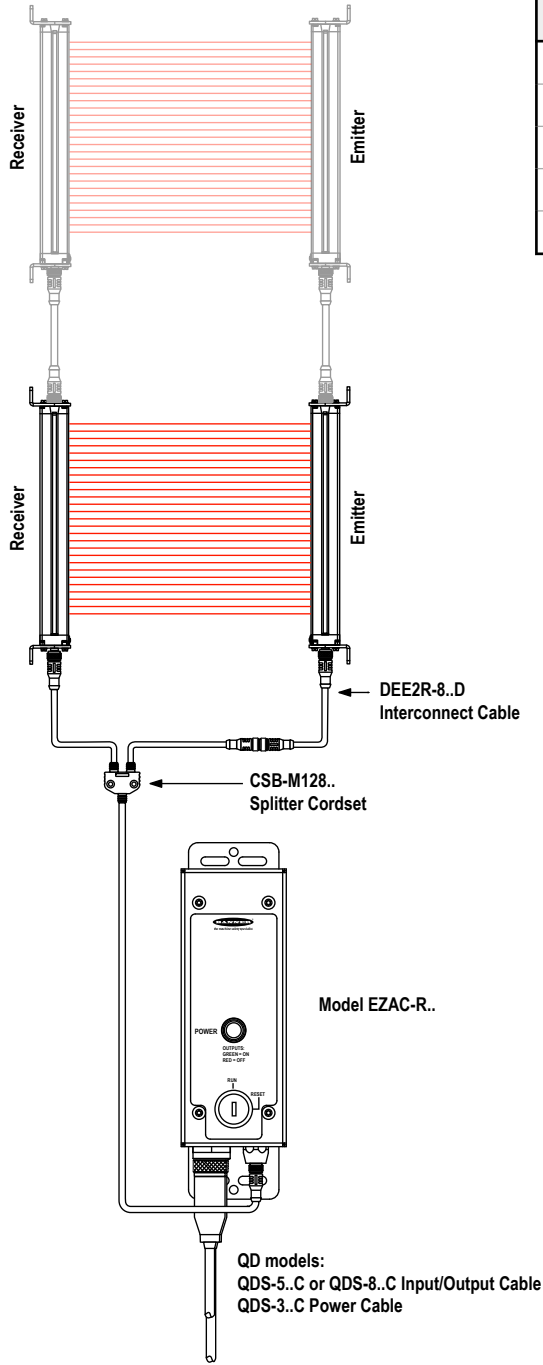


Figure 4. Emitter-only Models: Connection to EZ-SCREEN

Wiring Diagrams

Models EZAC-R9-QE8 and EZAC-R11-QE8

- Model EZAC-R9-QE8: Three N.O. relay contacts
- Model EZAC-R11-QE8: Two N.O. and one N.C. relay contact
- Selectable 1-channel or 2-channel EDM, or no EDM

- Hard-wired I/O, power and ground
- 8-pin QD sensor connection

EDM Monitoring Configuration – Models EZAC-R9-QE8 and EZAC-R11-QE8 can monitor external normally closed, forced-guided monitoring contacts. The factory default setting is “2-channel monitoring.” Jumpers are supplied to configure 1-channel EDM or No EDM.

	Selector Switch	Terminals X1–X2	Terminals X3–X4	EZ-SCREEN Receiver
No Monitoring	2-Ch.	Jumper	Jumper	E2
1-Channel Monitoring	1-Ch.	External N.C. Contacts	Jumper	E1
2-Channel Monitoring (Default)	2-Ch.	MPCE1 External N.C. Contact	MPCE2 External N.C. Contact	E2 (Default)

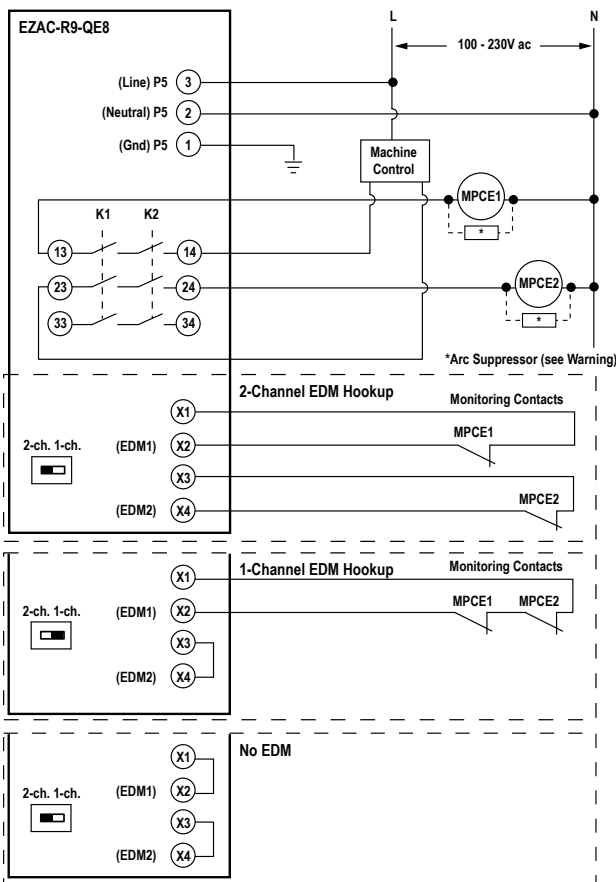
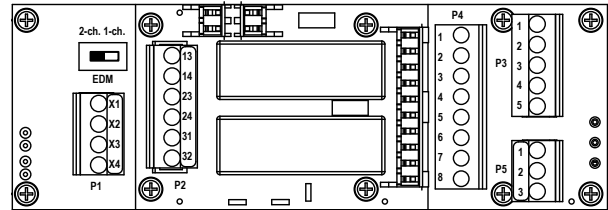
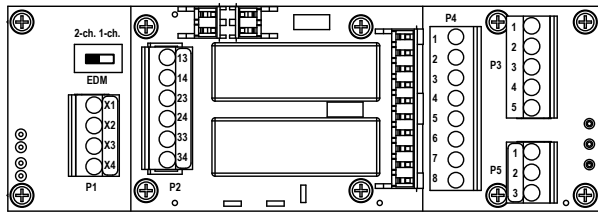


Figure 5. Wiring—model EZAC-R9-QE8

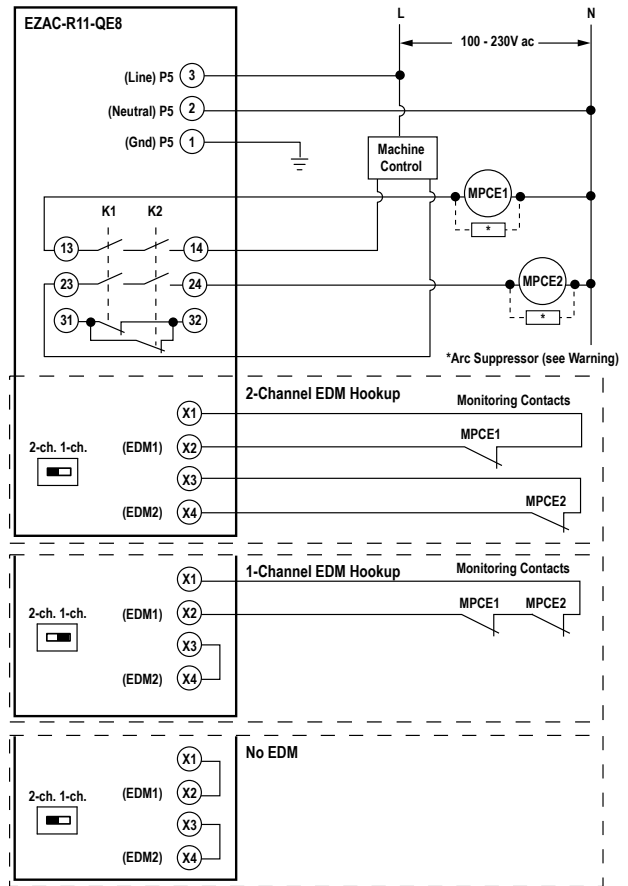


Figure 6. Wiring—model EZAC-R11-QE8

Model EZAC-R15A-QE8-QS83

- One N.O. and one SPDT (Form C) relay contact
- 1-Channel EDM (EZ-SCREEN must be configured for E1)
- QD: 8-pin Mini-style for I/O, and a 3-pin Mini-style for power and ground

EDM Monitoring Configuration— Model EZAC-R15A-QE8-QS83 is factory-set for 1-channel monitoring of external normally closed, forced-guided monitoring contacts.

**WARNING:**

- Live Voltage
- Even when EZAC box power is OFF, dangerous voltage could be present via voltage connected to outputs.
- Failure to follow these instructions could result in serious injury or death.
- Properly terminate pin 8 of the output connector (N.C. Aux output) if it is not used.

**WARNING: Use of Arc Suppressors**

If arc suppressors are used, they **MUST** be installed as shown across the coils of the Machine Primary Control Elements (MPCEs). **NEVER** install suppressors directly across the output contacts of the Safety Module. It is possible for suppressors to fail as a short circuit. **If installed directly across the output contacts of the Safety Module, a short-circuited suppressor creates an unsafe condition which could result in serious injury or death.**

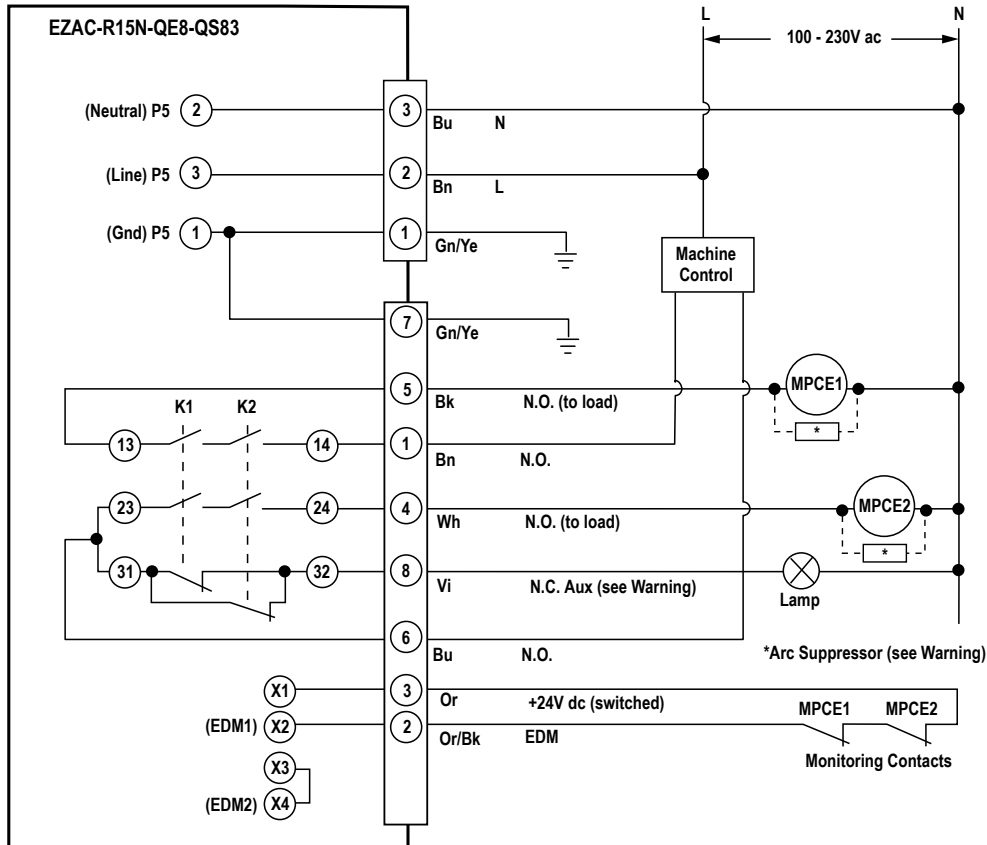


Figure 7. Wiring—model EZAC-R15A-QE8-QS83

Table 3: Mating Cable: QDS-3..C

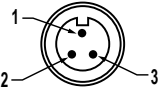
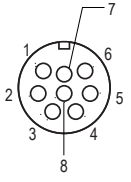
3-Pin Mini-Style Power Connector Male Face View			
	Pin	Color	Function
	1	Green/Yellow	Gnd/PE
	2	Brown	Line
	3	Blue	Neutral

Table 4: Mating Cable: QDS-8..C

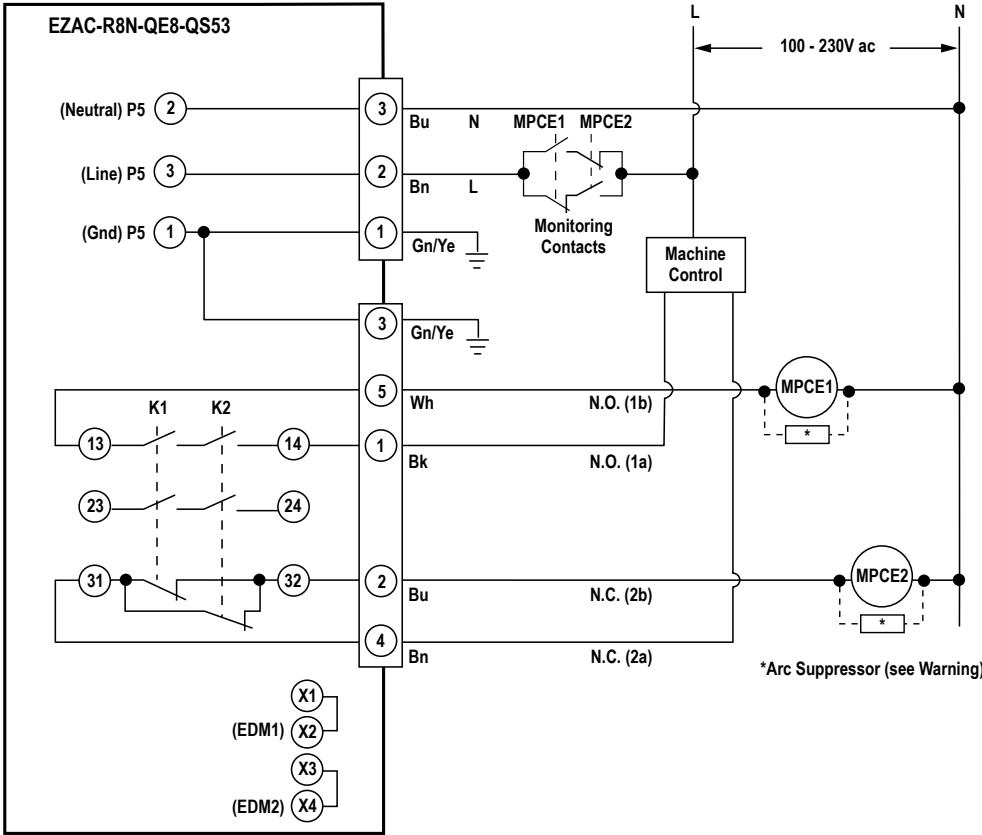
8-Pin Mini-Style Output Connector Male Face View			
	Pin	Color	Function
	1	Brown	N.O.
	2	Orange/Black	+24 V dc (EDM)
	3	Orange	EDM
	4	White	N.O. (to load)
	5	Black	N.O. (to load)
	6	Blue	Common
	7	Green/Yellow	Gnd/PE
	8	Violet	N.C. Aux.

Model EZAC-R8N-QE8-QS53

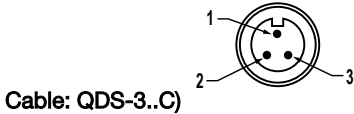
- One N.O. and one N.C. relay contact
- Power monitoring (EZ-SCREEN must be configured for E2)
- QD: 5-pin Mini-style for I/O, and a 3-pin Mini-style for power and ground



WARNING: Live Voltage. Even when the EZAC box power is OFF, dangerous voltage could be present via voltage connected to outputs, which could result in serious injury or death.

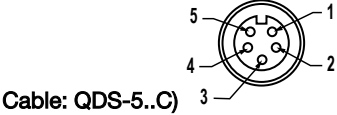


3-Pin Mini-Style Power Connector Male Face View (Mating)



Pin	Color	Function
1	Green/Yellow	Gnd/PE
2	Brown	Line
3	Blue	Neutral

5-Pin Mini-Style Output Connector Male Face View (Mating)



Pin	Color	Function
1	Black	N.O. (1a)
2	Blue	N.C. (2a)
3	Green/Yellow	Gnd/PE
4	Brown	N.C. (2b)
5	White	N.O. (1b)

Figure 8. Wiring—model EZAC-R8N-QE8-QS53

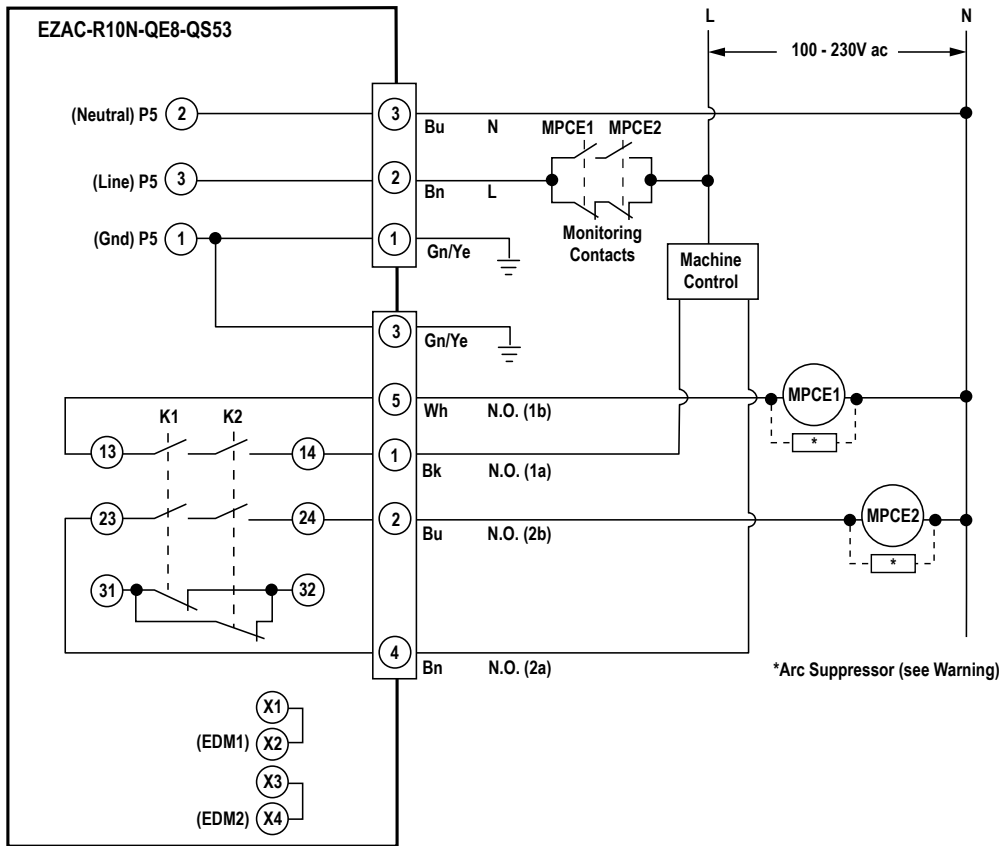
Model EZAC-R10N-QE8-QS53

- Two N.O. relay contacts
- Power monitoring (EZ-SCREEN must be configured for E2)
- QD: 5-pin Mini-style for I/O, and a 3-pin Mini-style for power and ground

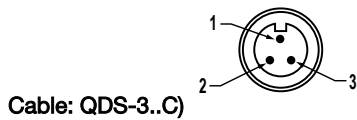


WARNING: Use of Arc Suppressors

If arc suppressors are used, they **MUST** be installed as shown across the coils of the Machine Primary Control Elements (MPCEs). **NEVER** install suppressors directly across the output contacts of the Safety Module. It is possible for suppressors to fail as a short circuit. **If installed directly across the output contacts of the Safety Module, a short-circuited suppressor creates an unsafe condition which could result in serious injury or death.**

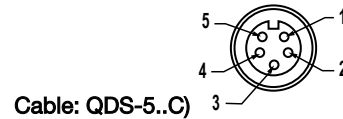


3-Pin Mini-Style Power Connector Male Face View (Mating)



Pin	Color	Function
1	Green/Yellow	Gnd/PE
2	Brown	Line
3	Blue	Neutral

5-Pin Mini-Style Output Connector Male Face View (Mating)



Pin	Color	Function
1	Black	N.O. (1a)
2	Blue	N.C. (2a)
3	Green/Yellow	Gnd/PE
4	Brown	N.C. (2b)
5	White	N.O. (1b)

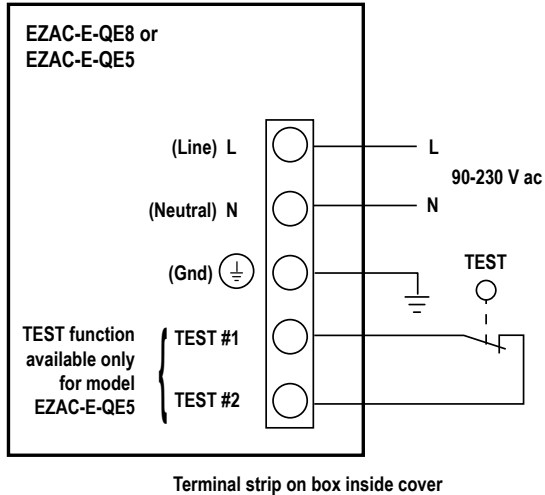
Figure 9. Wiring—model EZAC-R10N-QE8-QS53

Models EZAC-E-QE8 and EZAC-E-QE8-QS3

- Power source for emitters only
- No Test input available
- 8-pin M12 Euro-style connection to emitter, plus
 - Model EZAC-E-QE8: hard-wired power and ground inputs
 - Model EZAC-E-QE8-QS3: 3-pin Mini-style connector for power and ground inputs

**WARNING:**

- Electrical Connection
- Connection of other wiring or equipment to the box could result in serious injury or death.
- Electrical hookup must be made by a qualified electrician, and must comply with NEC (National Electrical Code) and local standards. Also, make no more connections to the EZAC.. interface box than are described in this document.



Terminal strip on box inside cover

Figure 10. Wiring—models EZAC-E-QE8 (Hard-wired)

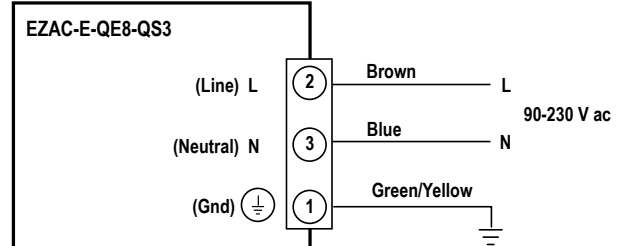
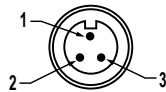


Figure 11. Wiring—model EZAC-E-QE8-QS3 (3-pin Mini-style QD)

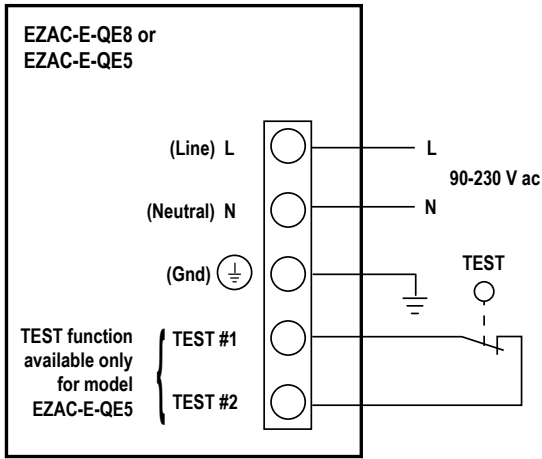
3-Pin Mini-Style Power Connector Male Face View (Mating Cable: QDS-3..C)



Pin	Color	Function
1	Green/Yellow	Gnd/PE
2	Brown	Line
3	Blue	Neutral

Models EZAC-E-QE5 and EZAC-E-QE5-QS5

- Power source for emitters only
- Test input available
- 5-pin M12 Euro-style connection to emitter, plus
 - Model EZAC-E-QE5: hard-wired power, ground and test inputs
 - Model EZAC-E-QE5-QS5: 5-pin Mini-style connector for power, ground inputs, and test inputs



Terminal strip on box inside cover

Figure 12. Wiring—models EZAC-E-QE5 (Hard-wired)

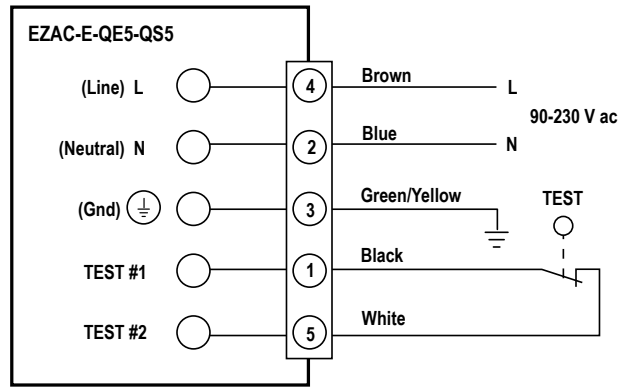
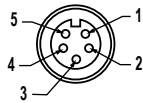


Figure 13. Wiring—EZAC-E-QES-QS5 (5-pin Mini-style QD)

5-Pin Mini-Style Power Connector Male Face View (Mating Cable: QDS-5..C)



Pin	Color	Function
1	Black	TEST #1
2	Blue	Neutral
3	Green/Yellow	Gnd/PE
4	Brown	Line
5	White	TEST #2

Checkout Procedures

Initial Checkout Procedure



CAUTION:

- Disconnect Power Prior to Checkout
- Failure to follow these instructions could result in serious injury or death.
- Before performing the initial checkout, make certain all power is disconnected from the machine to be controlled. Dangerous voltages may be present along the box wiring barriers whenever power to the machine control elements is ON.
- Exercise extreme caution whenever machine control power is or may be present. Always disconnect power to the machine control elements before opening the box enclosure.

The EZ-SCREEN AC Interface box can be used safely only when its operation is controlled via an appropriate primary safeguarding device (such as the Banner EZ-SCREEN light screen) and connected to the interface according to the wiring diagrams.

1. Remove the power that controls (and is switched by) the machine primary control elements.
2. Verify that the AC Interface Box indicator LED is ON either Green or Red. Verify that the primary safety device controlled by the box is operating correctly, according to its product documentation and manufacturer's recommendations.
3. Confirm proper connection of the box to the controlled primary safety device according to the appropriate wiring diagram; see [Wiring Diagrams](#) on page 6.

- Verify that all box output contacts follow exactly the operation of the safety output contacts of the controlled Primary Safety Device, when the primary safety device is operated according to its product documentation and manufacturer's recommendations.

Refer to EZ-SCREEN or primary safeguarding device literature for full checkout procedures.

Periodic Checkout Procedure

Perform the Initial Checkout Procedure according to the intervals specified by the product documentation of the primary safety device controlling the interface module integrated within the EZAC box.

Repairs

Do not attempt any repairs to this Banner device, other than replacing the relay module with an original Banner replacement relay module. Other than the relay module, this Banner device contains no field-replaceable components. For other problems, contact Banner Engineering for troubleshooting of this device. If the device 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.

Replacement relay modules are dependent on the AC Interface Box model.

EZAC Box Model Number	Replacement Output Relay Contact Module Model
EZAC-R9-QE8	EZAC-RM-1
EZAC-R10N-QE8-QS53	
EZAC-R11-QE8	EZAC-RM-2
EZAC-R15A-QE8-QS83	
EZAC-R8N-QE8-QS53	

Specifications

Input Voltage and Current

100–230 V ac \pm 15%
 Input current: typical 0.37 A at 100 V ac in; 0.23 A at 200 V ac in
 Inrush current: typical 15 A at 100 V ac in (5 ms maximum); 30 A at 200 V ac in (5 ms maximum)

Output Voltage and Current

24 V dc at 0.7 A (16.8 W)
 SELV; capable of buffering 20 ms power interruptions

Input Channels

24 V dc \pm 15%; 40 mA per channel (pin 4 and pin 5 in [Figure 2](#) on page 3)

Supply Protection Circuitry

Protected against transient voltages

Output High Current Rating (Models EZAC-R.. only)

If higher loads must be switched through one or more of the contacts, the minimum and maximum values of the contact(s) changes to:

Minimum voltage: 15 V ac/dc	Maximum voltage: 250 V ac/dc
Minimum current: 250 mA ac/dc	Maximum current: 8 A
Minimum power: 5 W (5 VA)	Maximum power: 200 W (2000 VA)

Output Life (Models EZAC-R.. only)

Mechanical life: 50,000,000 operations
 Electrical life: 100,000 operations (typical at 200 W [2000 VA] switched power, resistive load)

Output Configuration (Models EZAC-R.. only)

Each normally open output channel is a series connection of contacts from two forced-guided (positive-guided) relays, K1 - K2. The normally closed contact is a parallel connection of contacts from K1-K2.

Contacts: AgNi, 5 μ m gold-plated

Low Current Rating: **Caution:** The 5 μ m gold-plated contacts allow the switching of low current/low voltage. In these low-power applications, multiple contacts can also be switched in series (that is, "dry switching")

To preserve the gold plating on the contacts, the following max. values should not be exceeded at any time:

Minimum voltage: 1V ac/dc	Maximum voltage: 60V ac/dc
Minimum current: 5 mA ac/dc	Maximum current: 300 mA
Minimum power: 5 mW (5 mVA)	Maximum power: 7 W (7 VA)

Feedback Contact Rating (Y1-Y2, Y3-Y4):

Minimum voltage: 1 V ac/dc	Maximum voltage: 60 V ac/dc
Minimum current: 5 mA ac/dc	Maximum current: 300 mA
Minimum power: 5 mW (5 mVA)	Maximum power: 7 W (7 VA)



Note: Transient suppression is recommended when switching inductive loads. Install suppressors across load. Never install suppressors across output contacts.

Output Response Time

10 ms (max.)

Status Indicators

Models EZAC-R.. : One bicolor (red/green) LED indicator on box cover indicates the power and output status of internal relays K1 and K2
 Models EZAC-E.. : One green LED indicator on box cover indicates the power status (on when power is on).

Construction

Welded steel box with yellow polyester powder paint finish

Environmental Rating

IEC IP65

Vibration Resistance

10 to 50 Hz at 0.35 mm displacement per IEC 68-2-6

Mounting

Box provides flanges for screw mounting; can be mounted directly to EZ-SCREEN receiver or emitter housing.

Operating Conditions

0 °C to +50 °C (+32 °F to +122 °F)
 90% at +50 °C maximum relative humidity (non-condensing)

Application Notes

The box offers a field-replaceable relay module

Certifications



E239562

Dimensions

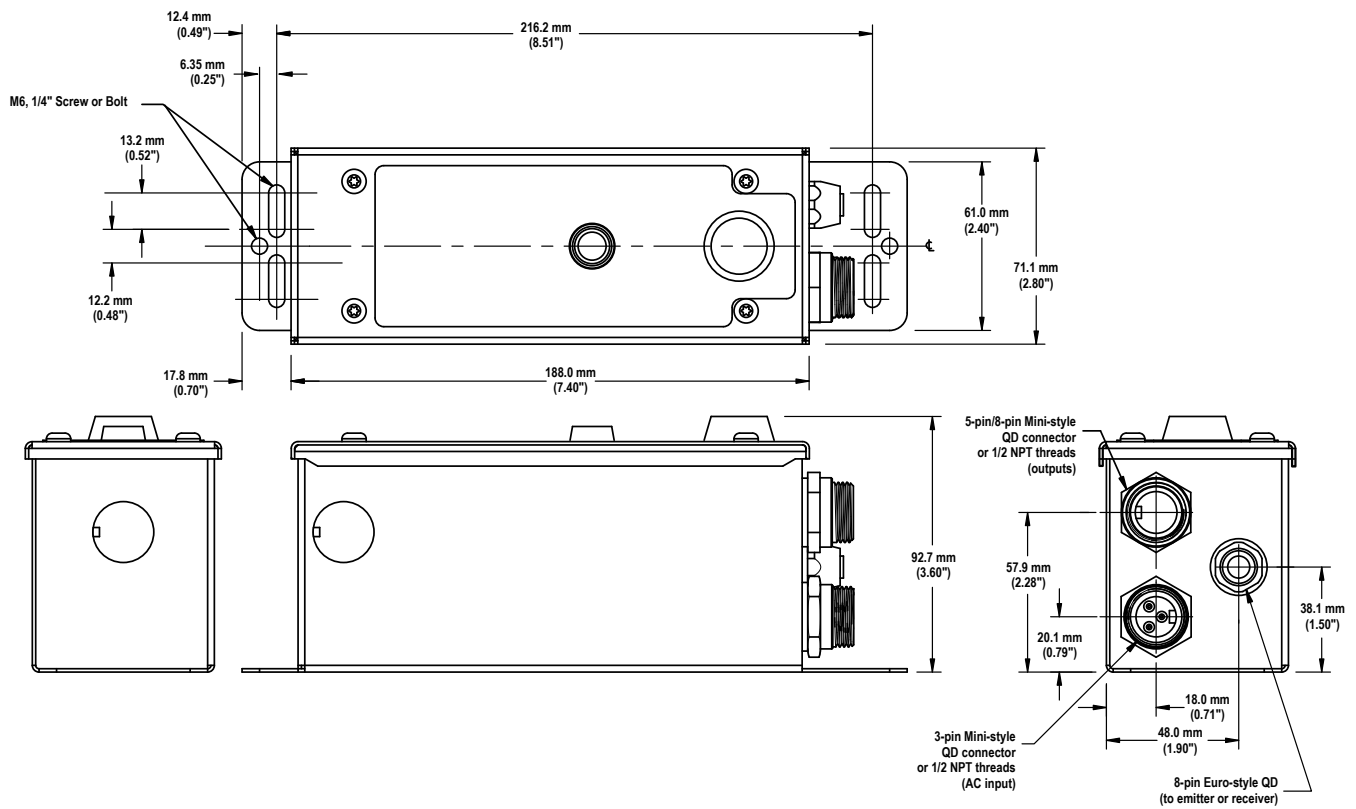


Figure 14. Model EZAC-R.. EZ-SCREEN AC Interface Box

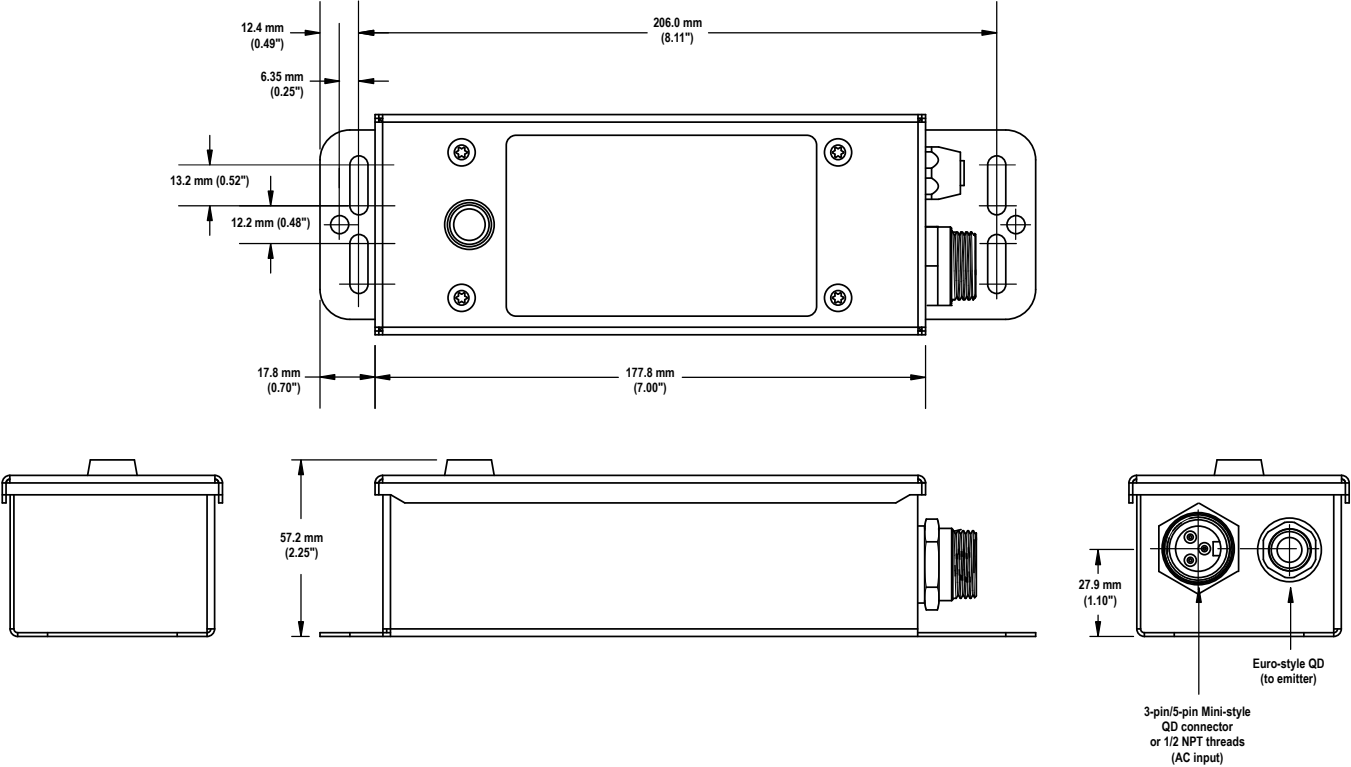


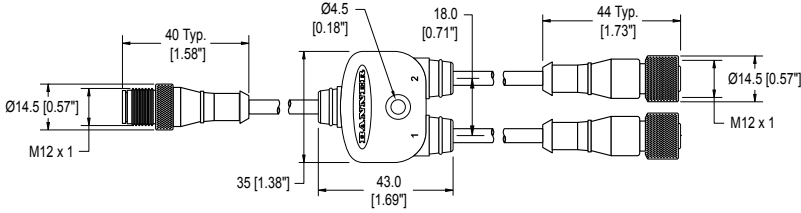
Figure 15. Model EZAC-E.. EZ-SCREEN AC Interface Box

Accessories

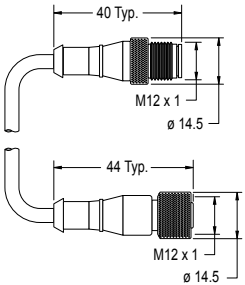
EZ-SCREEN Safety Light Screen Receiver and Emitter Cordsets

Splitter Cables (for Q8 emitters and receivers)

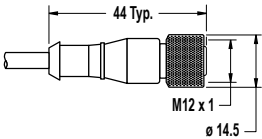
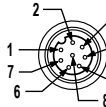
8-Pin Threaded M12/Euro-Style Splitter Cordsets—Flat Junction			
Model	Trunk (Male)	Branches (Female)	Pinout
CSB-M1280M1280	No trunk	No branches	<p>Male</p> <p>Female</p> <p>1 = Brown 2 = Or/Bk 3 = Orange 4 = White 5 = Black 6 = Blue 7 = Gn/Ye 8 = Violet</p>
CSB-M1281M1281	0.3 m (1 ft)	2 x 0.3 m (1 ft)	
CSB-M1288M1281	2.44 m (8 ft)		
CSB-M12815M1281	4.57 m (15 ft)		
CSB-M12825M1281	7.62 m (25 ft)		
CSB-UNT825M1281	7.62 m (25 ft) Unterminated		



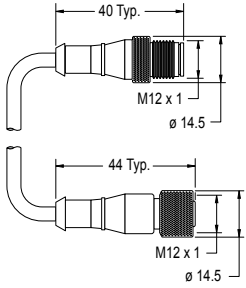
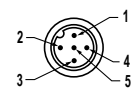
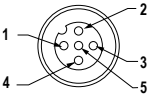
Double-Ended Cables (for Q8 emitters and receivers)

8-Pin Threaded M12/Euro-Style Cordsets—Double Ended																														
Model ²			Length	Style	Dimensions	DEE8-..D Pinout																								
8-pin/8-pin	8-pin/4-pin ³	8-pin/5-pin ⁴																												
DEE2R-81D	DEE8-41D	DEE8-51D	0.3 m (1 ft)	Female Straight/ Male Straight		<p>8-Pin Female to 5-Pin Male</p> <table border="0"> <tr> <td>1</td><td>←→</td><td>1</td> </tr> <tr> <td>2</td><td>←→</td><td></td> </tr> <tr> <td>3</td><td>←→</td><td></td> </tr> <tr> <td>4</td><td>←→</td><td>2</td> </tr> <tr> <td>5</td><td>←→</td><td>4</td> </tr> <tr> <td>6</td><td>←→</td><td>3</td> </tr> <tr> <td>7</td><td>←→</td><td>5*</td> </tr> <tr> <td>8</td><td>←→</td><td></td> </tr> </table>	1	←→	1	2	←→		3	←→		4	←→	2	5	←→	4	6	←→	3	7	←→	5*	8	←→	
1	←→	1																												
2	←→																													
3	←→																													
4	←→	2																												
5	←→	4																												
6	←→	3																												
7	←→	5*																												
8	←→																													
DEE2R-83D	-	-	0.91 m (3 ft)																											
DEE2R-88D	DEE8-48D	DEE8-58D	2.44 m (8 ft)																											
DEE2R-815D	DEE8-415D	DEE8-515D	4.57 m (15 ft)																											
DEE2R-825D	DEE8-425D	DEE8-525D	7.62 m (25 ft)																											
DEE2R-850D	-	-	15.2 m (50 ft)																											
DEE2R-875D	-	-	22.9 m (75 ft)																											
DEE2R-8100D	-	-	30.5 m (100 ft)																											

Single-Ended Cables (for separate SLSE..Q8 emitter hookup)

8-Pin Threaded M12/Euro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
QDE-815D	4.57 m (15 ft)	Straight		 <p>1 = Brown 5 = Black 2 = Or/Bl 6 = Blue 3 = Orange 7 = Gn/Ye 4 = White 8 = Violet</p>
QDE-825D	7.62 m (25 ft)			
QDE-850D	15.2 m (50 ft)			
QDE-875D	22.9 m (75 ft)			
QDE-8100D	30.5 m (100 ft)			

Double-Ended Cables (for SLSE..Q5 emitter with TEST hookup)

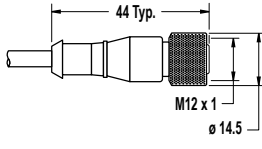
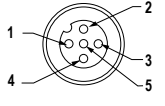
5-Pin Threaded M12/Euro-Style Cordsets—Double Ended				
Model	Length	Style	Dimensions	Pinout
DEE2R-51D	0.31 m (1 ft)	Female Straight/ Male Straight		Male
DEE2R-53D	0.91 m (3 ft)			
DEE2R-58D	2.44 m (8 ft)			Female
DEE2R-515D	4.57 m (15 ft)			
DEE2R-525D	7.62 m (25 ft)			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Green/Yellow
DEE2R-550D	15.2 m (50 ft)			
DEE2R-575D	22.9 m (75 ft)			
DEE2R-5100D	30.5 m (100 ft)			

² Standard cordsets are yellow PVC with black overmold. For black PVC and overmold, add suffix "B" to model number (example, DEE2R-81DB)

³ For connection to safety BUS gateway/node, a "smart" self-monitored safety module, safety controller or safety PLC. DEE8-4..D do not have the pin 5 GND/chassis connection. GND/chassis connection should be made via the mounting hardware.

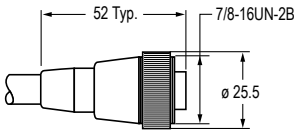
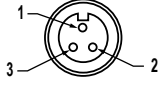
⁴ For connection to safety BUS gateway/node, a "smart" self-monitored safety module, safety controller or safety PLC.

Single-Ended Cables (for SLSE..Q5 emitter hookup)

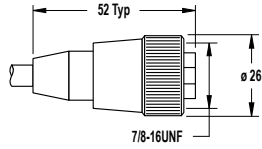
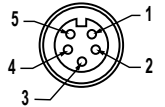
5-Pin Threaded M12/Euro-Style Cordsets—with Green/Yellow Ground Wire				
Model	Length	Style	Dimensions	Pinout (Female)
QDE-515D	4.57 m (15 ft)	Straight		 <p>1 = Brown 2 = White 3 = Blue 4 = Black 5 = Green/Yellow</p>
QDE-525D	7.62 m (25 ft)			
QDE-550D	15.2 m (50 ft)			
QDE-575D	22.9 m (75 ft)			
QDE-5100D	30.5 m (100 ft)			

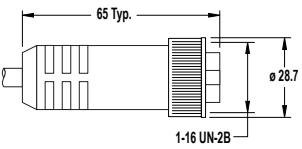
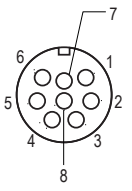
Power and Input/Output Cordsets⁵

Power Cordsets

3-Pin Mini-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
QDS-315C	4.57 m (15 ft)	Straight		 <p>1 = Green/Ye 2 = Brown 3 = Blue</p>
QDS-325C	7.62 m (25 ft)			
QDS-350C	15.2 m (50 ft)			
QDS-375C	22.9 m (75 ft)			
QDS-3100C	30.5 m (100 ft)			

Input/Output Cordsets

5-Pin Mini-Style Cordsets—with Green/Yellow Grounding Wire				
Model	Length	Style	Dimensions	Pinout (Female)
QDS-515C	4.75 m (15 ft)	Straight		 <p>1 = Black 2 = Blue 3 = Green/Yellow 4 = Brown 5 = White</p>
QDS-525C	7.62 m (25 ft)			
QDS-550C	15.2 m (50 ft)			

8-Pin Mini-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
QDS-815C	4.51 m (15 ft)	Straight		
QDS-825C	7.62 m (25 ft)			
QDS-850C	15.2 m (50 ft)			

⁵ Unterminated bulk cable is available (UTB-3...C, UTB-5...C, UTB-8...C) in 7.62 m (25 ft), 15.25 m (50 ft), 30.48 m (100 ft), and 76.2 m (250 ft) lengths.

8-Pin Mini-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
QDS-875C	22.9 m (75 ft)			1 = Brown 2 = Orange/Black 3 = Orange 4 = White 5 = Black 6 = Blue 7 = Green/ Yellow 8 = Violet

Unterminated Bulk Cable

Unterminated Bulk Cable		
Model Number	Length	Description
UTB-325C	7.62 m (25 ft)	3-conductor, unterminated bulk cable, 20 gauge wire
UTB-350C	15.25 m (50 ft)	
UTB-3100C	30.48 m (100 ft)	
UTB-3250C	76.2 m (250 ft)	
UTB-525C	7.62 m (25 ft)	5-conductor, unterminated bulk cable, 20 gauge wire
UTB-550C	15.25 m (50 ft)	
UTB-5100C	30.48 m (100 ft)	
UTB-5250C	76.2 m (250 ft)	
UTB-825C	7.62 m (25 ft)	8-conductor, unterminated bulk cable, 20 gauge wire
UTB-850C	15.25 m (50 ft)	
UTB-8100C	30.48 m (100 ft)	
UTB-8250C	76.2 m (250 ft)	

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