



[Home](#) » [BANNER](#) » **BANNER EZ-SCREEN External Device Monitoring User Guide** 

Contents [[hide](#)]

- [1 BANNER EZ-SCREEN External Device Monitoring](#)
- [2 Specifications](#)
- [3 Features](#)
- [4 External Device Monitoring \(EDM\)](#)
- [5 Understanding the Device](#)
- [6 Selecting a Safety Device with EDM](#)
- [7 Configuring and Wiring a Device with EDM](#)
- [8 FAQs](#)
- [9 Documents / Resources](#)
 - [9.1 References](#)



BANNER EZ-SCREEN External Device Monitoring



Specifications

- **Name:** External Device Monitoring (EDM) Safety Solution Guide
- **Functionality:** Monitors safety relay systems externally for enhanced safety
- **Compatibility:** Works with mechanically linked/force-guided relays/contactors

Features

- Ensures control reliability and safety compliance
- Monitors external devices like safety light curtains
- Requires normally closed, forced-guided monitoring contacts

External Device Monitoring (EDM)

In safety systems that include a safety relay (mechanically linked/force-guided relay/contactors) that is not self-monitoring, it is necessary to monitor that relay externally. This is known as External Device Monitoring (EDM). It is strongly recommended that a normally closed, forced-guided monitoring contact from each of two relays/contactors be connected to the EDM input(s). If this is done, proper operation will be verified. Monitoring these contacts is one method of maintaining control reliability (OSHA/ANSI) and Category 3 and 4 (ISO 13849-1).

External device monitoring (EDM) is a means by which a safety device (such as a safety light curtain) actively monitors the state (or status) of external devices that are controlled by the safety device. A lockout of the safety device will result if an unsafe state is detected in the external device. External device(s) may include, but are not limited to: MPCEs, captive contact relays/contactors, and safety modules. External device monitoring is necessary in safety systems with a non-self-monitoring safety relay. This is achieved by: Understanding the device that needs to be monitored Selecting a safety device that contains EDM functionality Configuring and wiring your device through EDM EDM requires the use of mechanically linked/force-guided relays/contactors with a normally closed (NC) contact for feedback monitoring. This increases the overall safety of the system by providing an extra layer of protection against potential failures of external components.

Understanding the Device

External Device Monitoring (EDM) works by having a host device with EDM connected to another device that cannot monitor itself. When connected, the host device monitors the electric signals that are either generated by itself or an external 24 V supply. The host device ensures that the EDM input is high before it allows its output to turn on. The host device ensures the EDM input returns to a high state within 250 ms of its output turning off. By monitoring these states, the host device ensures that the devices being monitored have not failed in an ON state. When the monitored device faults, a contact is welded in the on state, causing the NC contact to stay open. The host fails to receive its current, which flags that something in the monitored device has occurred. Devices in a safety monitoring system have three options:

- Device can monitor itself, but does not have EDM capability
- Device can monitor itself and has EDM capability
- Device cannot monitor itself and does not have EDM capability

Selecting a Safety Device with EDM

The following is a synopsis of Banner products and whether or not they include EDM abilities. Refer to the following list of products to determine if your device has EDM capabilities. These are not exhaustive lists. There may be other safety devices that can

monitor or need monitoring. Always consult the user manual for your device to determine if it features EDM or requires a device with EDM

EZ-SCREEN Safety Light Curtain models

Product	Has EDM?	Notes
EZ-SCREEN S4B Safety Light Curtain	Yes	Requires the 8-pin cable model and a BC-M12F8-24-x or BC-M12F8-M12M8-23-x cordset, where 'x' is the cordset length
EZ-SCREEN LP Low-Profile Safety Light Curtain	Yes	Requires the 8-pin cable model and a BC-M12F8-24-x or BC-M12F8-M12M8-23-x cordset, where 'x' is the cordset length
EZ-SCREEN LP Basic Low-Profile Safety Light Curtain	No	—
EZ-SCREEN LS Safety Light Curtain	Yes	Requires the 8-pin cable model and a BC-M12F8-24-x or BC-M12F8-M12M8-23-x cordset, where 'x' is the cordset length
EZ-SCREEN LS Safety Light Curtain (IP69K model)	Yes	—
EZ-SCREEN Type 4 Safety Light Curtain	Yes	All 8-pin models

Safety Controller Model	Has EDM?	Notes
SC10 Safety Controller	Yes	Configurable

Safety Controller Model	Has EDM?	Notes
SC26 Safety Controller	Yes	Configurable

© Banner Engineering Corp. All rights reserved. www.bannerengineering.com

Safety Controller Model	Has EDM?	Notes
SC10 Safety Controller	Yes	Configurable
SC26 Safety Controller	Yes	Configurable
XS26 Safety Controller	Yes	Configurable

Safety Module models

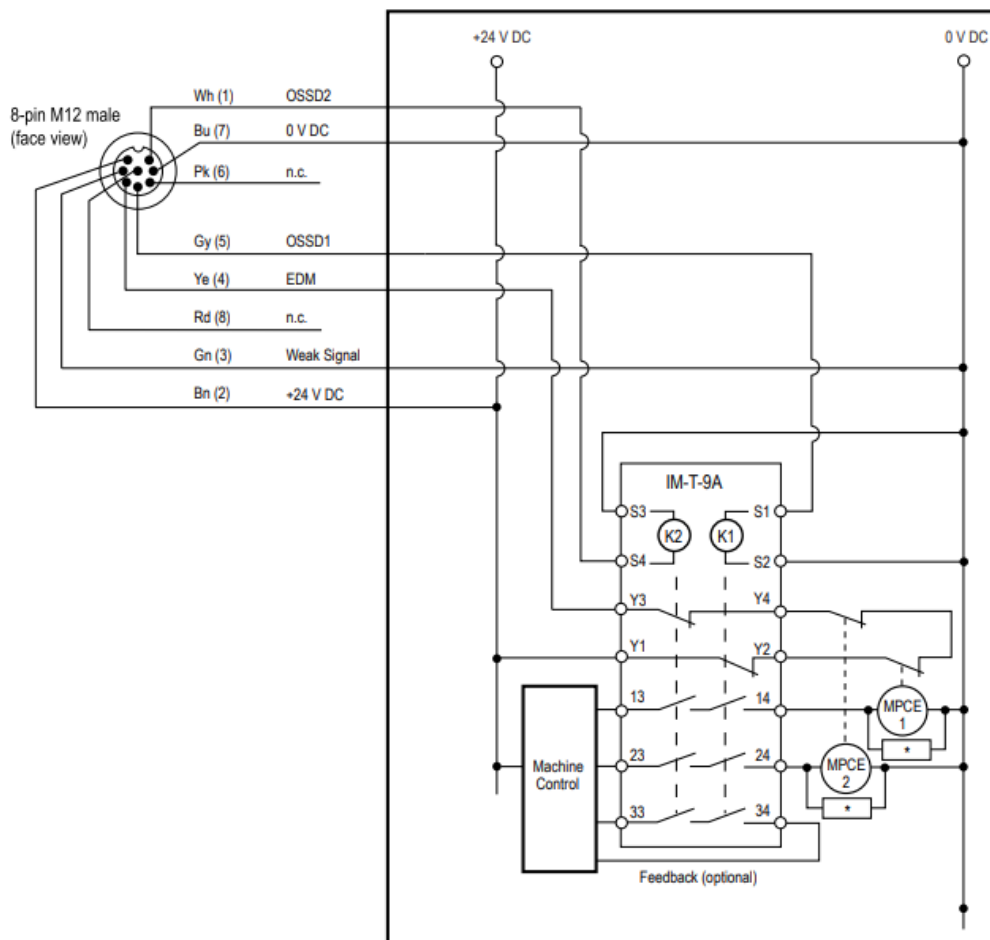
Safety Module Model	Has EDM?	Notes
UM Series Universal Module	Yes	—
IM-T Series Interface Module	No	This device needs to be monitored
SR-IM Series Interface Module	No	This device needs to be monitored
ES Series Emergency Stop & GM Series Guard Module	Yes	—



Configuring and Wiring a Device with EDM

The following example shows a general wiring of a light curtain to an IM module,

including an EDM wiring option. Locate the wiring diagrams for the host and/or monitored device. For this example, the host device is an EZ-SCREEN S4B Light Curtain (product manual p/n 230287) with an 8-pin removable disconnect wired to an IM-T-9A Interface Module (product manual p/n 62822).



In this case, the yellow wire from the host device is used for monitoring the IM-T-9A K2 contact by connecting your wire to Y3. A jumper wire is then used from Y4 to Y2 on the IM-T-9A, which uses the same EDM wire to monitor the K1 contact when Y1 is connected to +24V. This jumper wire can also be used to monitor other devices, shown as Machine Primary Control Elements (MPCE).

FAQs

What is External Device Monitoring (EDM)?

EDM is a safety feature that actively monitors external devices controlled by safety systems to ensure safe operation.

How does EDM enhance system safety?

By using mechanically linked/force-guided relays/contactors with monitoring contacts, EDM adds an extra layer of protection against potential failures.

Documents / Resources



[BANNER EZ-SCREEN External Device Monitoring \[pdf\]](#) User Guide
EZ-SCREEN External Device Monitoring, EZ-SCREEN, External Device Monitoring, Device Monitoring, Monitoring

References

- [User Manual](#)

■ BANNER

🔍 BANNER, Device Monitoring, External Device Monitoring, EZ-SCREEN, EZ-SCREEN External Device Monitoring, Monitoring

Leave a comment

Your email address will not be published. Required fields are marked *

Comment *

Name

Email

Website

☐ Save my name, email, and website in this browser for the next time I comment.

Post Comment

Search:

e.g. whirlpool wrf535swhz

Search

[Manuals+](#) | [Upload](#) | [Deep Search](#) | [Privacy Policy](#) | [@manuals.plus](#) | [YouTube](#)

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.