HID Mercury
MR62e OSDP Reader Interface
Installation and Specifications

PLT-05249, A.2
May 2024

Copyright

© 2020 - 2024 HID Global Corporation/ASSA ABLOY AB. All rights reserved.

This document may not be reproduced, disseminated or republished in any form without the prior written permission of HID Global Corporation.

Trademarks

HID GLOBAL, HID, the HID Brick logo, and HID Mercury are trademarks or registered trademarks of HID Global, ASSA ABLOY AB, or its affiliate(s) in the US and other countries and may not be used without permission. All other trademarks, service marks, and product or service names are trademarks or registered trademarks of their respective owners.

Contacts

For technical support, please visit: **https://support.hidglobal.com**.

What's new

Date	Description	Revision
May 2024	Updated to new Mercury branding.	A.2

A complete list of revisions is available in **Revision history**.

Mercury

Section 01

Overview

1.1 MR62e reader interface

The HID® Mercury™ MR62e OSDP reader interface provides a network connected interface to control two physical barriers using OSDP readers and provides a solution for the OEM integrator for interfacing to OSDP readers and door hardware. The on-board Ethernet with PoE/PoE+ support enables easy installation. The MR62e supports up to four OSDP readers configured as paired or alternate readers.

Caution: For UL, the Power Sourcing Equipment (PSE) such as a PoE/PoE+ enabled network switch and/or PoE/PoE+ power injectors must be UL Listed under UL294B.

One serial 2-wire RS-485 communication port is available that can accommodate up to four OSDP readers.

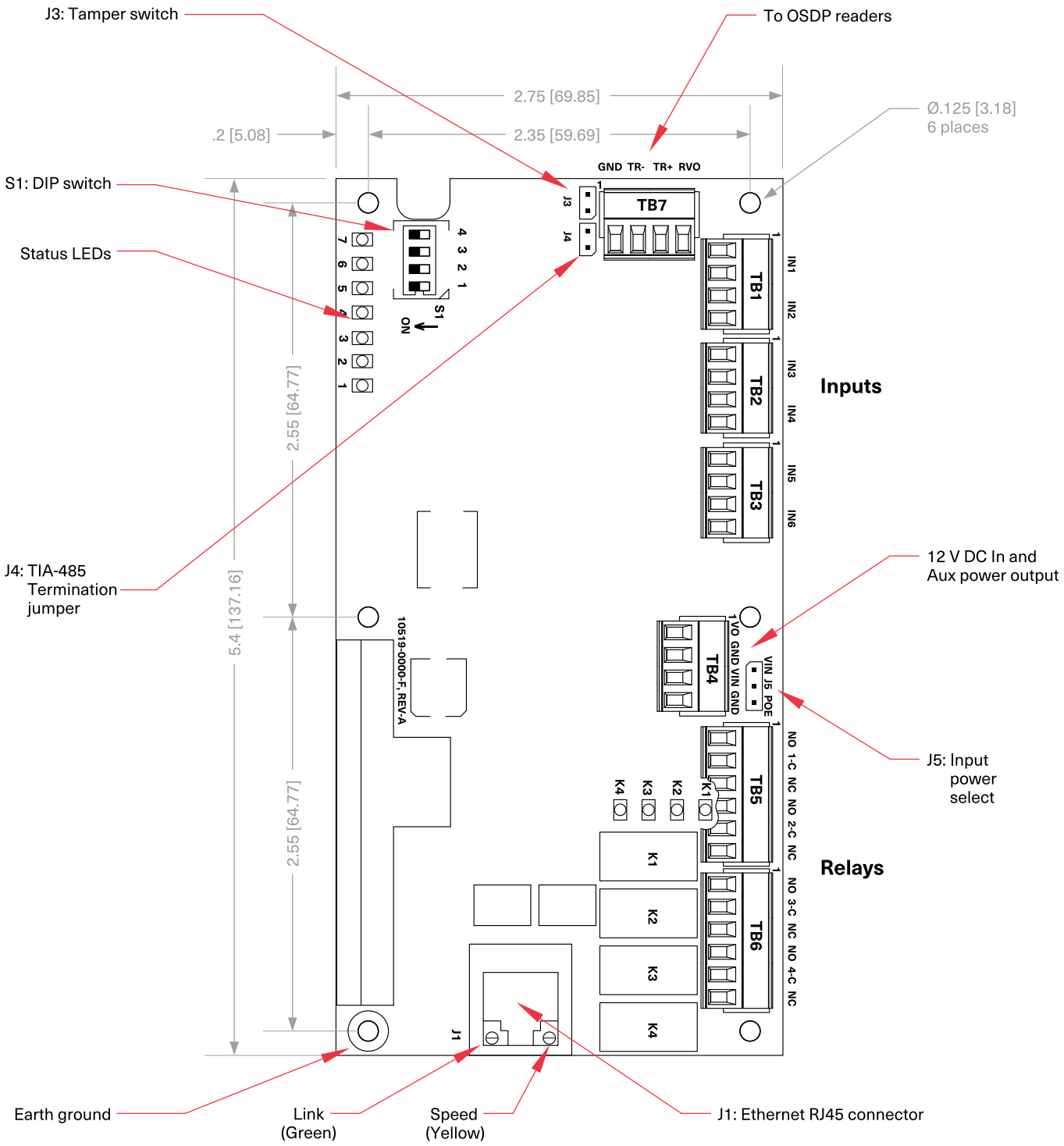
Four Form-C relay outputs can be used for door strike control or alarm signaling. The relay contacts are rated at 2 A @ 30 V DC, resistive and are in a dry contact configuration.

Six inputs are provided that can be used for monitoring the door contacts, exit push buttons, and alarm contacts. Input circuits can be configured as unsupervised or supervised.

The MR62e requires PoE, PoE+ or local 12 V DC for power.

The MR62e may be mounted in a 3-gang switch box; a mounting plate is supplied with the unit or be mounted in an enclosure; the supplied mounting plate has mounting holes that match the MR50 mounting footprint.

1.2 MR62e hardware



Section 02

MR62e wiring and setup

2.1 MR62e connections

TB1-1	IN1	Input 1
TB1-2	IN1	
TB1-3	IN2	Input 2
TB1-4	IN2	

TB2-1	IN3	Input 3
TB2-2	IN3	
TB2-3	IN4	Input 4
TB2-4	IN4	

TB3-1	IN5	Input 5
TB3-2	IN5	
TB3-3	IN6	Input 6
TB3-4	IN6	

TB4-1	VO	Auxiliary power output – 12 V DC
TB4-2	GND	Auxiliary power output ground
TB4-3	VIN	Input power – 12 V DC (from local power supply)
TB4-4	GND	Input power ground

TB5-1	NO	Relay K1 – Normally open contact
TB5-2	1-C	Relay K1 – Common contact
TB5-3	NC	Relay K1 – Normally closed contact
TB5-4	NO	Relay K2 – Normally open contact
TB5-5	2-C	Relay K2 – Common contact
TB5-6	NC	Relay K2 – Normally closed contact

TB6-1	NO	Relay K3 – Normally open contact
TB6-2	3-C	Relay K3 – Common contact
TB6-3	NC	Relay K3 – Normally closed contact
TB6-4	NO	Relay K4 – Normally open contact
TB6-5	4-C	Relay K4 – Common contact
TB6-6	NC	Relay K4 – Normally closed contact

TB7-1	GND	Reader power ground
TB7-2	TR-	2-Wire RS-485 TR- (B)[1]
TB7-3	TR+	2-Wire RS-485 TR+ (A)[1]
TB7-4	RVO	12 V DC Reader power output

1. Terms A & B are from the RS-485 standard.

2.2 Jumpers

Jumper	Set at	Description
J1	N/A	Ethernet connection with PoE/POE+ support.
J2	N/A	Factory use only.
J3	N/A	Tamper switch (normally open contact). See 5.1 Optional items
J4	N/A	RS-485 Termination, install only if the MR62e is at the end of the communication bus.
J5	PoE	MR62e powered from the Ethernet connection.
	VIN	MR62e powered from an external 12 V DC power source connected to TB4-3 (VIN), TB4-4 (GND).
J6 – J13	N/A	Factory use only.

2.3 DIP switches

The four switches on S1 DIP switch are used to configure the operating mode of the MR62e. DIP switches are read on power-up except where noted.

1	2	3	4	Definitions
OFF	OFF	OFF	OFF	Normal operating mode.
ON	X	OFF	OFF	After initialization, enable default User Name (admin) and Password (password). The switch is read on the fly, no need to reboot. See 2.12 IT security for additional information.
OFF	ON	OFF	OFF	Use factory default communication parameters.
ON	ON	OFF	OFF	Use OEM default communication parameters. Contact system manufacture for details. See 2.5 Bulk erase.
ON	ON	OFF	OFF	Bulk Erase prompt mode at power up. See 2.5 Bulk erase.

Note:
- All other switch settings are unassigned and reserved for future use.
- X = It doesn't matter if the switch is on or off.

2.4 Factory default communication parameters

Network: static IP address	192.168.0.251
Subnet mask	255.255.0.0
Default gateway	192.168.0.1

2.5 Bulk erase

The bulk erase function can be used for the following:

- Erase all configuration, sets MR62e to OEM setting (sanitize board).
- Restore to OEM default parameters.

2.5.1 Bulk erase steps

1. Set S1 DIP switches 1 and 2 to **ON**, and 3 and 4 to **OFF**.
2. Apply power to the MR62e.
3. Change DIP switches 1 or 2 to **OFF** within 10 seconds after LEDs 1 and 2, and LEDs 3 and 4 start flashing alternately at a rate of 0.5 seconds. If these switches are not changed, the MR62e will power up using the OEM default communication parameters.
4. LEDs 1 and 2 alternately flash at a 0.5 second rate while the memory is being erased.
5. Once the memory is eased, LED 1 will be on for about 3 seconds, then the MR62e will reboot.

Caution: Do not remove power during steps 3-5.

2.6 Input power

The MR62e is powered by one of two ways (jumper selected, J5):

- Power is supplied via the Ethernet connection using PoE or PoE+.
- Local 12 V DC power supply, TB4-3 (VIN), TB4-4 (GND).

2.7 Communication wiring

Communication between the controller and the MR62e is Ethernet (10Base T/100Base-TX). It is not recommended to connect the MR62e to a public intranet.

2.8 OSDP reader wiring

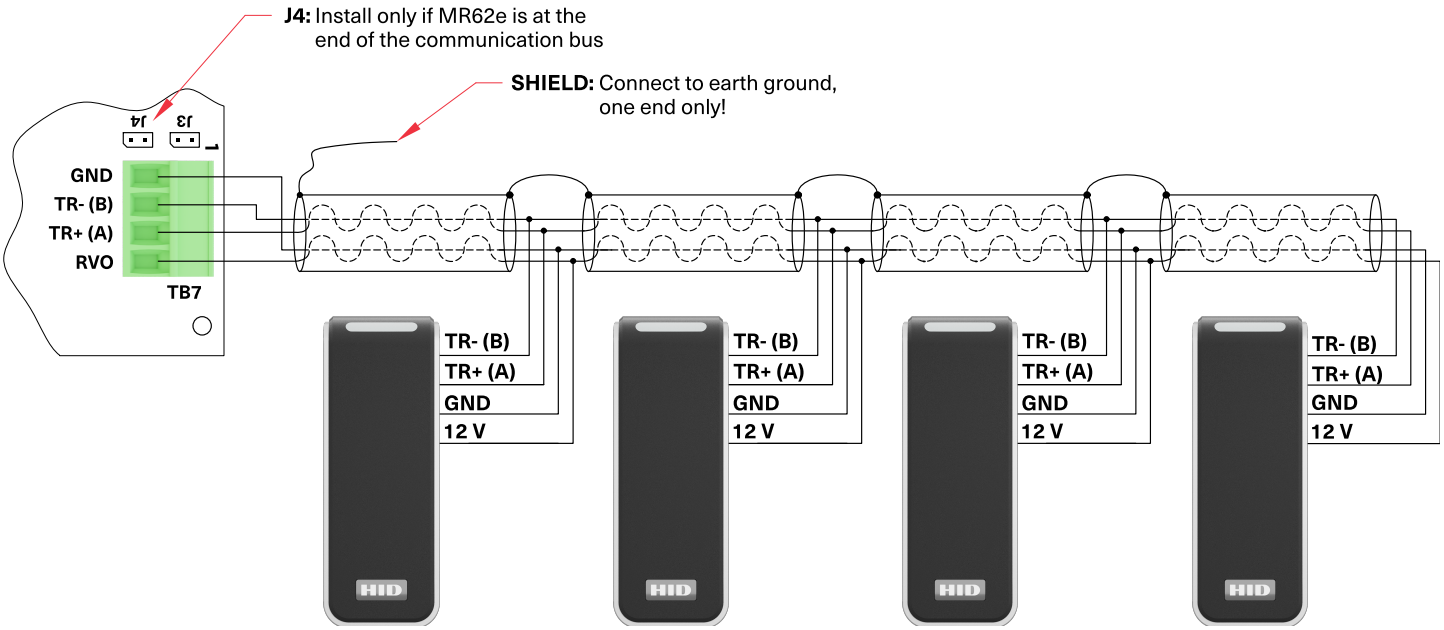
TB7 has connections for the 2-wire RS-485 OSDP communication bus and 12 V DC to power the OSDP readers. Up to four OSDP readers are supported on the MR62e. This 12 V DC output is limited to .5 A. maximum. The OSDP reader wiring diagram below shows the use of a 2-pair cable for data and power. If this cable cannot support the voltage/current requirements, a 1-pair cable of sufficient gauge must be used for power. See Specifications.

The RS-485 termination jumper, J4, is only installed if the MR62e is at one end of the communication bus. Only devices at each end of the communication bus are terminated, never install termination to more than two devices on the communication bus.

Caution: When powering any remote device(s) by the MR62e, care must be taken not to exceed the maximum current available. Cable gauge must also be evaluated. See Specifications for details.

Note: For OSDP cable lengths greater than 200 ft (61 m) or EMF interference, install 120Ω +/- 2Ω resistor across RS-485 termination ends. Data 0 and Data 1 wires for Wiegand may be reused for OSDP. However, standard Wiegand cable may not meet RS-485 twisted pair recommendations. The reuse of cable works best on shorter cable lengths at lower data rates.

Typical OSDP reader wiring



2.9 Input circuit wiring

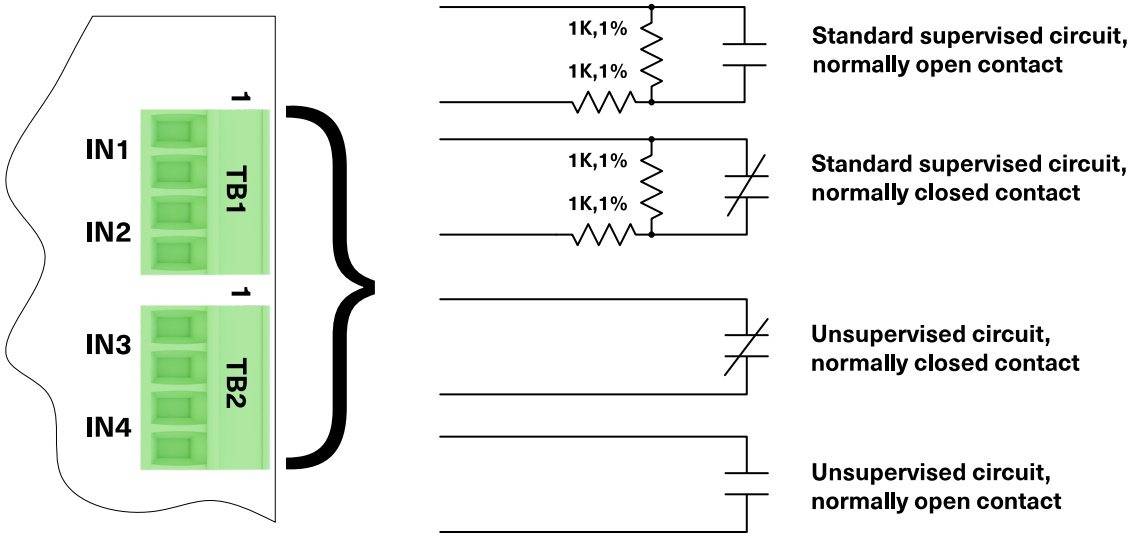
Typically, these inputs are used to monitor door position, request to exit, or alarm contacts. Input circuits can be configured as unsupervised or supervised. When unsupervised, reporting consists of only the open or closed states.

When configured as supervised, the input circuit will report not only open and closed, but also open circuit, shorted, grounded*, and foreign voltage*.

A supervised input circuit requires two resistors are added to the circuit to facilitate proper reporting. The standard supervised circuit requires 1KΩ, 1% resistors and should be located as close to the sensor as possible. Custom end of line (EOL) resistances may be configured via the host software.

*Grounded and foreign voltage states are not a requirement of UL 294 and therefore not verified by UL.

The input circuit wiring configurations shown are supported but may not be typical:

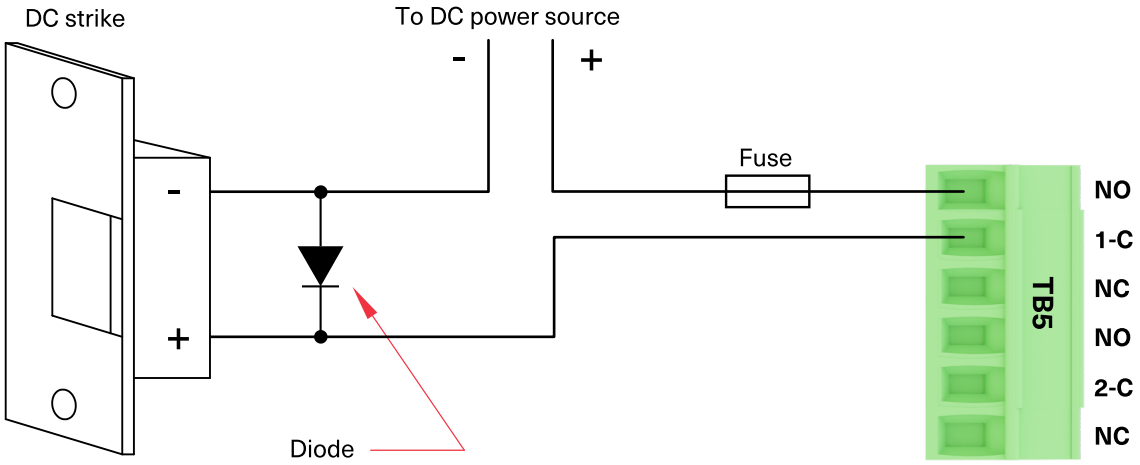


2.10 Relay circuit wiring

Four Form-C contact relays are provided for controlling door lock mechanisms or alarm signaling. The relay contacts are rated at 2 A @ 30 V DC, resistive and are in a dry contact configuration. When you are controlling the delivery of power to the door strike, the Normally Open and Common poles are used. When momentarily removing power to unlock the door, as with a mag lock, the Normally Closed and Common poles are used. Check with local building codes for proper egress door installation.

Door lock mechanisms can generate feedback to the relay circuit that can cause damage and premature failure of the relay. For this reason, a diode must be used to protect the relay. Wire should be of sufficient gauge to avoid voltage loss.

Caution: It is possible for the MR62e to provide power for a 12 V DC door strike providing the maximum current is not exceeded, see **Specifications**.



Diode selection

- Diode current rating: 1x strike count.
- Diode breakdown voltage: 4x strike voltage.
- For 12 V DC or 24 V DC strike, diode 1N4002 (100V/1A) typical.

2.11 Status LEDs

2.11.1 Power-up

LED 1 turns ON, then LEDs 2 through 7 are turned ON then OFF in sequence.

2.11.2 Running

LED	Description
1	On-line, encryption disabled = 0.8 second ON, 0.2 second OFF
	On-line, encryption enabled = 0.1 second ON, 0.1 second OFF, 0.1 second ON, 0.1 second OFF0.1 second ON, 0.1 second OFF0.1 second ON, 0.3 second OFF
	Off-line: 0.2 second ON, 0.8 second OFF
	Waiting for application firmware to be downloaded: .1 sec ON, .1 sec OFF
2	Input IN1 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
3	Input IN2 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
4	Input IN3 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
5	Input IN4 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
6	Input IN5 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
7	Input IN6 Status: OFF = Inactive, ON = Active, Flashing = Fault[1]
J1-Yellow	Ethernet speed: OFF = 10 Mb/S, ON = 100 Mb/S
J1-Green	OFF = No link, ON = Good link, Flashing = Ethernet activity

1. If this input is defined, every three seconds the LED is pulsed to its opposite state for 0.1 second, otherwise, the LED is off.

2.12 IT security

Ensure that the MR62e is installed securely. Create user accounts to the web configuration page using secure passwords.

Ensure all DIP switches are to be in the **OFF** position for the normal operating mode.

The MR62e is shipped from the factory with a default login account, which is enabled when DIP 1 is moved from **OFF** to **ON** (See 2.3 DIP switches). The default login user name (admin) and password (password) will be available for five minutes once the DIP switch is toggled. It is therefore important that at least one user account is defined, and the DIP switches are set to **OFF** before the MR62e is commissioned.

Configuring the MR62e with an IP address that is accessible from the public is **not** recommended.

The following options are available for enhanced network security:

- Disable SNMP.
- Zeroconf discovery.
- The web configuration module.
- Enable data encryption over the host communication port.

Mercury

Section 03

Specifications

4.1 MR62e reader interface specifications

The MR62e is for use in low voltage, Class 2 circuits only.

Power Input	PoE (12.95 W), compliant to IEEE 802.3af or PoE+ (25 W), compliant to IEEE 802.3at or 12 V DC ± 10%, 1.7 A maximum

Caution: For UL, the Power Sourcing Equipment (PSE) such as a PoE/PoE+ enabled network switch and/or PoE/PoE+ power injectors must be UL Listed under UL294B. Wiring for the 12 V input shall not extend more than 30 m from the product.

Power output	PoE: VO (TB4-1) and RVO (TB7-4), combined: 12 V DC @ .66 A maximum
	PoE+ or 12 V DC: VO (TB4-1) 12 V DC @ 1 A maximum, RVO, (TB7-4) 12 V DC @ .5 A maximum
Outputs	Four relays, Form-C contacts rated at 2 A @ 30 V DC
Inputs	Six unsupervised/supervised, End of Line resistors, 1k/1kΩ, 1%, ¼ watt standard
READER INTERFACE	
Power	12 V DC @ .5 A maximum (RVO, TB7-4)
Communication	2-Wire RS-485, OSDP protocol, four devices maximum
CABLE REQUIREMENTS	
Communication	Ethernet, Category 5, minimum
External input power	1 twisted pair, 18 AWG (if required)
Alarm inputs	1 twisted pair per input, 30Ω maximum
Relay outputs	As required for the load
Reader data and power[1]	RS-485/power: 2 twisted pair with shield, 24 AWG, 120Ω impedance 4000 feet (1220 m) maximum. or RS-485: 1 twisted pair with shield, 24 AWG, 120Ω impedance, 4000 feet (1220 m) maximum and Power: 1 pair 18 AWG[1]

1. Type of cable(s) and gauge determined by length and voltage/current requirements. Local power source may be required.

ENVIRONMENT	
Storage temperature	-55 to +85°C
Operating temperature	0 to +70°C
Humidity	5 to 95% RHNC
MECHANICAL	
Dimensions without bracket	5.5 inches (140 mm) W x 2.75 inches (70 mm) L x 0.96 inches (24 mm) H
Dimensions with bracket	5.5 inches (140 mm) W x 3.63 inches (92 mm) L x 1.33 inches (34 mm) H
Weight without bracket	4 oz. (112 g)
Weight with bracket	5 oz. (142 g)

UL294, 6th edition Performance Levels

Feature	Level
Standby Power	I
Endurance	IV
Line Security	I
Destructive Attack	I

These specifications are subject to change without notice.

4.2 Warranty

Mercury Security warrants the product is free from defects in material and workmanship under normal use and service with proper maintenance for one year from the date of factory shipment. Mercury Security assumes no responsibility for products damaged by improper handling or installation. This warranty is limited to the repair or replacement of the defective unit.

There are no expressed warranties other than set forth herein. Mercury Security does not make, nor intends, nor does it authorize any agent or representative to make any other warranties, or implied warranties, and expressly excludes and disclaims all implied warranties of merchantability or fitness for a particular purpose.

Returns must be accompanied by a Return Material Authorization (RMA) number obtained from customer service, and prepaid postage and insurance.

4.3 Liability

The Interface should only be used to control exits from areas where an alternative method for exit is available. This product is not intended for, nor is rated for operation in life-critical control applications. Mercury Security is not liable under any circumstances for loss or damage caused by or partially caused by the misapplication or malfunction of the product. Mercury Security's liability does not extend beyond the purchase price of the product.

4.4 Regulatory

This device complies with part 15 of the FCC Rules. 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.

Section 05

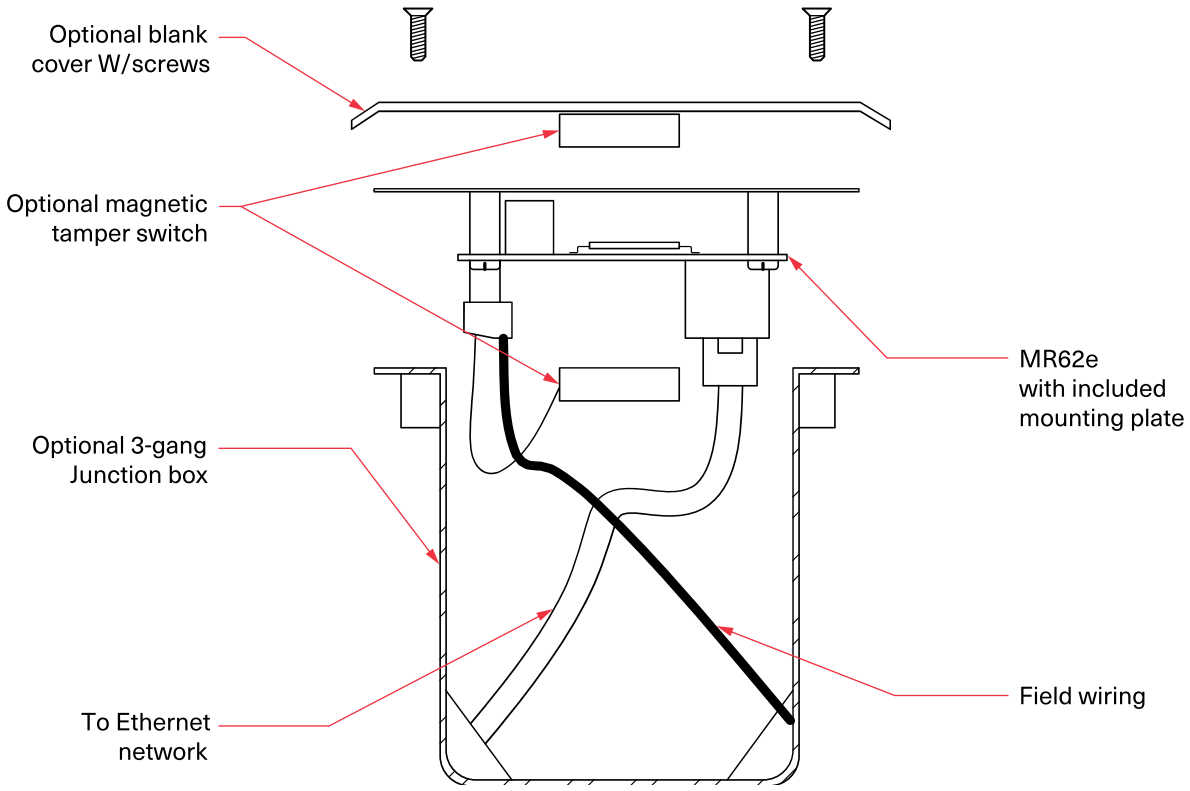
Additional mounting information

5.1 Optional items

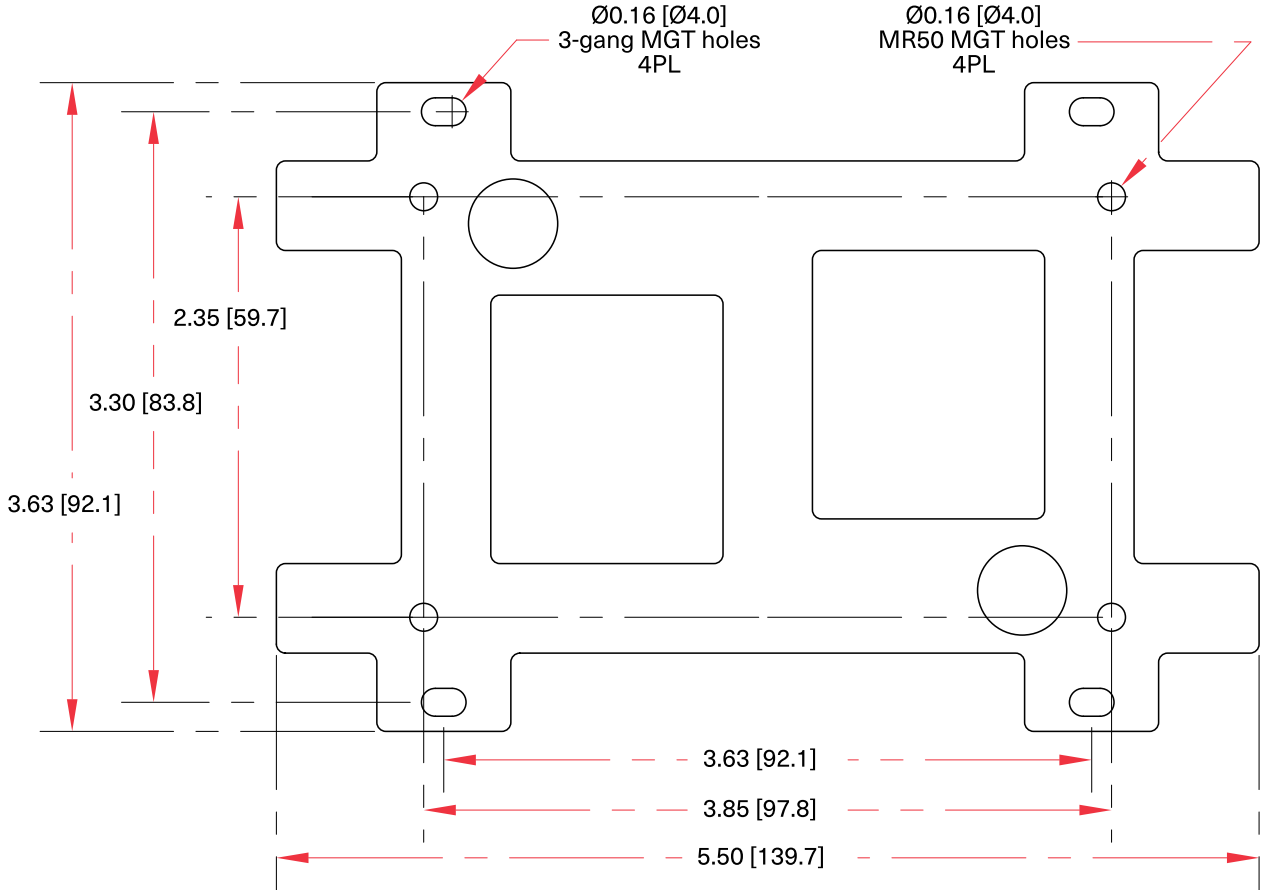
Sources for the optional items shown below:

- 3-gang stainless steel blank cover. Available from:
  - Leviton part number 84033-40
  - Graybar part number 88158404
- Magnetic switch set: G.R.I. part number: 505

Side View:



5.2 Mounting plate dimensions:



Revision history

Date	Description	Revision
May 2024	Updated to new Mercury branding.	A.2
August 2022	New branding.	A.1
October 2020	Initial release.	A.0

Mercury™

part of HID

© 2024 HID Global Corporation/ASSA ABLOY AB. All rights reserved.

PLT-05249, Rev. A.2

Part of ASSA ABLOY

For technical support, please visit: https://support.hidglobal.com