Allen-Bradley
by **ROCKWELL AUTOMATION**

GuardShield Muting Distribution Block

Catalog Numbers 450L-AMOD-MUT-8, 800F-MUT-2-MS

> ⚠️ **ATTENTION:** This muting distribution block is used only in combination with the Bulletin 450L GuardShield™ safety light curtains.

Summary of Changes

This publication contains updates to Table 4 on page 2.

Description

The muting distribution block allows for quick setup and fast implementation of a Bulletin 450L-E GuardShield safety light curtain in applications that require muting. The muting distribution block can be used for 2- and 4-sensor muting. The desired muting type functionality must first be set with DIP switches at the Bulletin 450L GuardShield muting connection plug-in (catalog number 450L-APR-MU-8). Details for the DIP switch settings, the confirmation procedure, and installation hints for the muting sensors are provided in publication 450L-UM001.

Figure 1 - Bulletin 450L Muting Distribution Block

The muting distribution block can be mounted to the stand with two M4 (UNC 5/32) screws. The box cannot be mounted directly on the light curtain.

Table 2 shows the setup options for the Bulletin 450L safety light curtain.

Specifications

Table 1 - Muting Distribution Block (Cat. No. 450L-AMOD-MUT-8)

Attribute	Value
Body Size	191 x 24 x 28.4 mm (7.52 x 0.94 x 1.12 in.) See Figure 10 on page 4
Material	PBT
Screw hole size	M4
Enclosure rating	IP65 (all plugs that are connected and appropriately tightened)
Operating temperature	-10...+55 °C (14...131 °F)
Supply voltage	24V DC ±20%, Class 2
Weight	140 g (4.94 oz)
Certification	c-UL-us, CE, RoHS, WEEE

Installation

Table 2 - Two Principal Installation Options

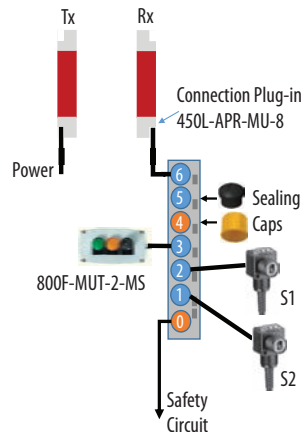| Setup	Description	Remark
1	Muting distribution block that is connected to the connection plug-in only (Cat. No. 450L-APR-MU-8 on port 6)	Two-sensor muting (see Figure 2)
2	Muting distribution block that is connected to the connection plug-in (Cat. No. 450L-APR-MU-8 on port 5) and to the cascading plug-in (Cat. No. 450L-APC-IO-8 on port 4)	Two-sensor muting (see Figure 3)
3	Muting distribution block that is connected to the connection plug-in (Cat. No. 450L-APR-MU-8 on port 5) and to the cascading plug-in (Cat. No. 450L-APC-IO-8 on port 4)	Four-sensor muting (see Figure 4)

Depending on the risk assessment, some muting applications require an override switch and a muting lamp. We offer a pre-assembled Bulletin 800F muting station with integrated muting lamp and reset/override keyswitch. This muting station allows a quick connection of these components to the muting distribution block.

For the connection examples in this document, the RightSight™ polarized retroreflective muting sensor (catalog number 42EF-P2MPB-F4) is recommended [reflector (catalog number 92-93) and tilt-swivel mounting bracket (catalog number 60-2649)]. Other sensors that we offer can also be used if the pinning and the output polarity match.

Setup 1 includes two muting sensors, a muting distribution block connected to the Bulletin 450L plug-in (catalog number 450L-APR-MU-8) only.
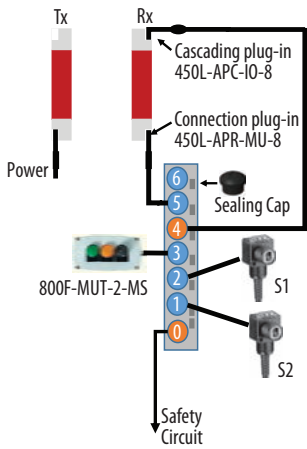
Figure 2 - Setup 1

> ⚠️ **ATTENTION:** For Setup 1 (Figure 2), if the muting distribution block is connected to the Bulletin 450L connection plug-in, only the keyswitch at the muting station (catalog number 800F-MUT-2-MS) works. The orange muting indicator and the green OSSD status indicator on the muting station are always OFF.
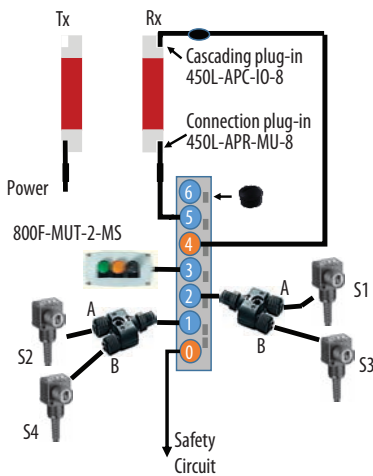
Setup 2 includes two muting sensors, a muting distribution block connected to the connection plug-in (catalog number 450L-APR-MU-8), and the cascading plug-in (catalog number 450L-APC-IO-8).

Figure 3 - Setup 2

For four sensor muting, two splitters (catalog number 879D-F5DM) Setup 3 has to be used to connect the cables of muting sensors S1-S4.

Figure 4 - Setup 3

Cable Lengths

Follow these guidelines for maximum cable lengths:

From	To	Cable Length, max [m (ft)]	Cable Cat. No. [1]
Safety controller or safety monitoring relay in the control cabinet	Port 0 of Bul. 450L muting distribution block	30 (98.4)	889D-F8NB-x [2]
Muting sensor	Port 1 or 2 of Bul. 450L muting distribution block	10 (32.8)	889D-F5NCDM-x [2]
Bul. 800F muting restart and indication box	Port 3 of Bul. 450L muting distribution block	5 (16.4)	889D-F8NBDM-x [2]
Cascading plug-in (Cat. No. 450L-APC-IO-8)	Port 4 of Bul. 450L muting distribution block	2 (6.6)	889D-F8NBDM-x [2]
Connection plug-in (Cat. No. 450L-APR-MU-8)	Port 5 or 6 of Bul. 450L muting distribution block	2 (6.6)	889D-F8NBDM-x [2]

(1)   The listed cable catalog numbers are for red cables. For other colors, visit ab.rockwellautomation.com/Connection-Devices/DC-Micro-Cordsets-and-Patchcords
(2)   Replace the x with 2 (2 m [6.6 ft]), 5 (5 m [16.4 ft]), 10 (10 m [32.8 ft]), 15 (15 m [49.2 ft]), 20 [20 m (65.6 ft]), or 30 (30 m [98.4 ft]) for additional lengths.

Pin Assignment

Table 3 - Pin Assignments for Port 0 and Port 3

Pin Number	Description for Port 0 (Male, 8-pin)		Description for Port 3 (Female, 8-pin)
	Setup 1	Setup 2	
1	–	AUX (OSSD emulation)	–
2	24V DC	24V DC	24V DC
3	Ground	Ground	Ground
4	–	External device monitoring	–
5	OSSD1	OSSD1	Reset [1]/Mute dependent override
6	OSSD2	OSSD2	Aux (muting or mute dependent override active)
7	0V	0V	0V
8	Reset (mute dependent override)	Reset (mute dependent override)	Muting lamp

(1)   If configured at the connection plug-in, catalog number 450L-APR-MU-8.

Table 4 - Pin Assignments for Port 1 and Port 2

Pin Number	Description for Port 1 (Female, 5-pin)	Description for Port 2 (Female, 5-pin)
1	24V DC	24V DC
2	Sensor 4	Sensor 3
3	0V	0V
4	Sensor 2	Sensor 1
5	Not used	Not used

The pin assignment of port 4 matches the pin assignment of the cascading plug-in catalog number 450L-APC-IO-8 (for details see 450L-UM001).

The pin assignment of port 5 and port 6 matches the pin assignment of the connection plug-in catalog number 450L-APR-MU-8 (for details see 450L-UM001).

Accessories

Figure 5 - 800F Muting Indication and Reset Block (Cat. No. 800F-MUT-2-MS)

The pre-assembled Bulletin 800F muting indication and reset block allows you to connect the muting indication, OSSD indication, and the reset/mute dependent override close to the light curtain. The use of this block is optional. The signal for reset/mute dependent overrides is also available at port 0 of the muting distribution block (see Table 3 on page 2), which is connected to the machine control.

Table 5 - Muting Indication and Reset Block for Cat. No. 800F-MUT-2-MS

Attribute	Value	
Housing	3-hole enclosure	
Size (body)	155 x 79 x 58 mm (6.10 x 3.11 x 2.28 in.)	
Enclosure rating	IP66	
Material	PBT/polycarbonate blend	
Indicators for Setup 2 (Table 2 on page 1) only	Green ON	OSSDs on
	Orange ON	Muting or mute dependent override activated. Orange Blinking (1 Hz) • 90% ON/10% OFF: Timing error • 10%-ON/90%-OFF: Sequence error
	Orange OFF	No muting
Spring loaded keyswitch	Reset [1]/mute dependent override	
Connector	M12, 8-pin male	
Weight	380 g (13.4 oz)	

(1)   If configured at the connection plug-in, use catalog number 450L-APR-MU8.

The yellow termination cap (included by default in the shipment of a Bulletin 450L muting distribution block), provides a seal rate of IP20. For applications that require a sealing rate of IP65, replace the yellow termination cap with a DC sealing cap (catalog number 889A-DCAP).
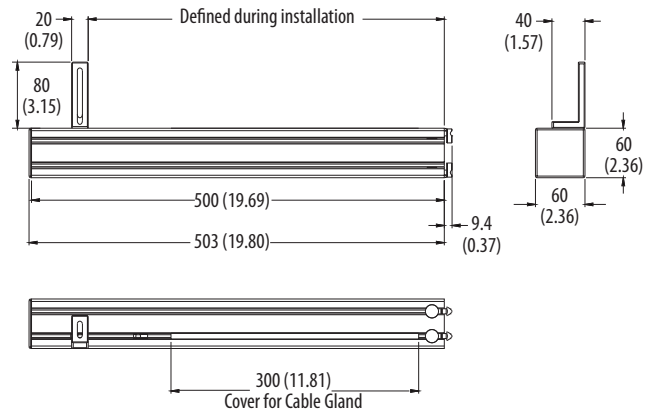
Figure 6 - IP65 Sealing Cap

Figure 7 - T-connector for Four-sensor Muting Application (Cat. No. 879D-F5DM)

Approximate Dimensions

Figure 8 - Muting Cantilever Arm (Catalog Number 445L-AMSTDMUT) Dimensions [mm (in.)]

T-slot nut and screws for the RightSight bracket (catalog number 60-2649) are shipped with the cantilever arm.

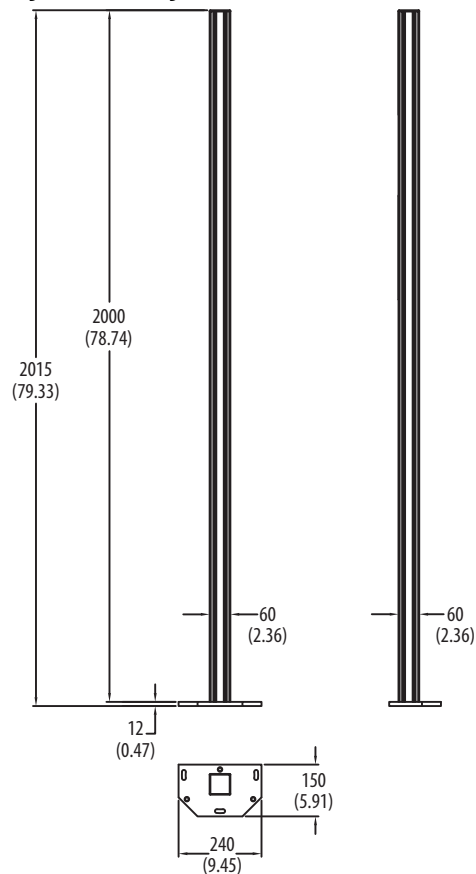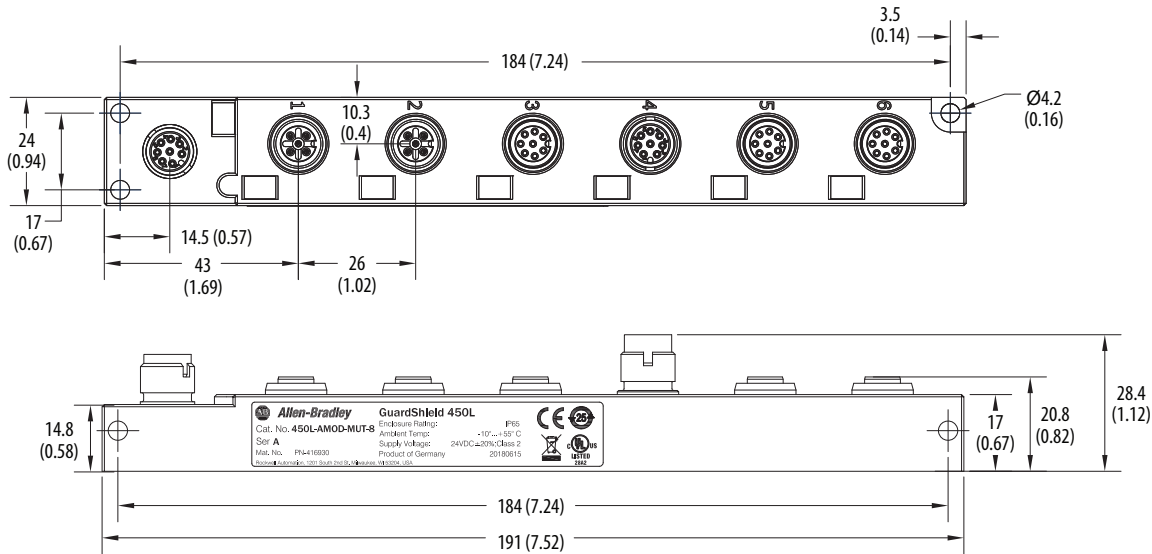**Figure 9 - Mounting Stand (Cat. No. 445L-AMSTD2M) Dimensions [mm (in.)]**

Figure 10 - Distribution Box Dimensions [mm (in.)]

Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

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