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

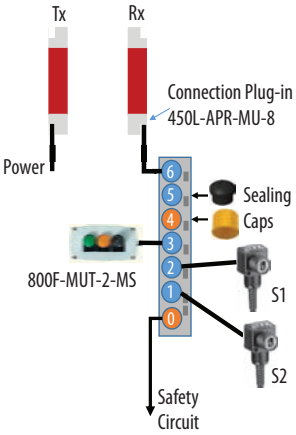
Setup	Description	Remark
1	Muting distribution block that is connected to the connection plug-in only (Cat. No. 450L-APR-MU-8 on port 6)	Two-sensor muting (see Figure 2)
2	Muting distribution block that is connected to the connection plug-in (Cat. No. 450L-APR-MU-8 on port 5) and to the cascading plug-in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

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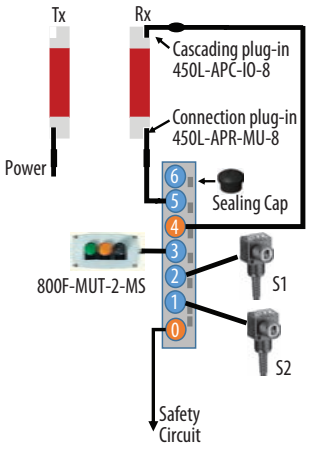
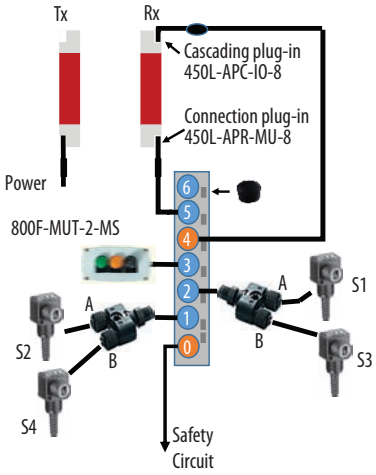
Setup 2 includes two muting sensors, a muting distribution block connected to the connection plug-in (catalog number 450L-APR-MU-8), and the cascading plug-in (catalog number 450L-APC-I0-8).

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:

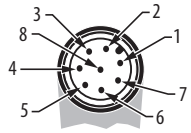
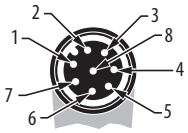
From	To	Cable Length, max [m (ft)]	Cable Cat. No. (1)
Safety controller or safety monitoring relay in the control cabinet	Port 0 of Bul. 450L muting distribution block	30 (98.4)	889D-F8NB-*x* (2)
Muting sensor	Port 1 or 2 of Bul. 450L muting distribution block	10 (32.8)	889D-F5NCDM-*x* (2)
Bul. 800F 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-I0-8)	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.

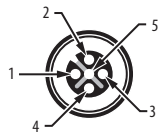
Pin Assignment

Table 3 - Pin Assignments for Port 0 and Port 3

Pin Number	Description for Port 0 (Male, 8-pin)  Setup 1	Setup 2	Description for Port 3 (Female, 8-pin) 
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-I0-8 (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.

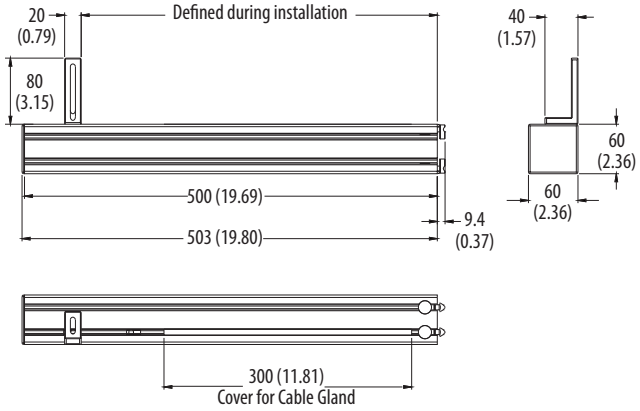
The yellow termination cap (included by default in the shipment of a Bulletin 450L muting distribution block), provides a seal rate of IP20. For applications that require a sealing rate of IP65, replace the yellow termination cap with a DC sealing cap (catalog number 889A-DCAP).

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.)]

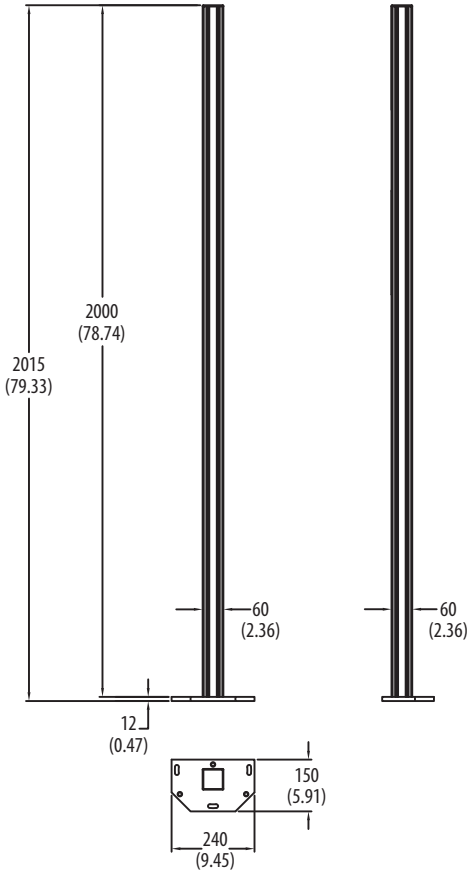
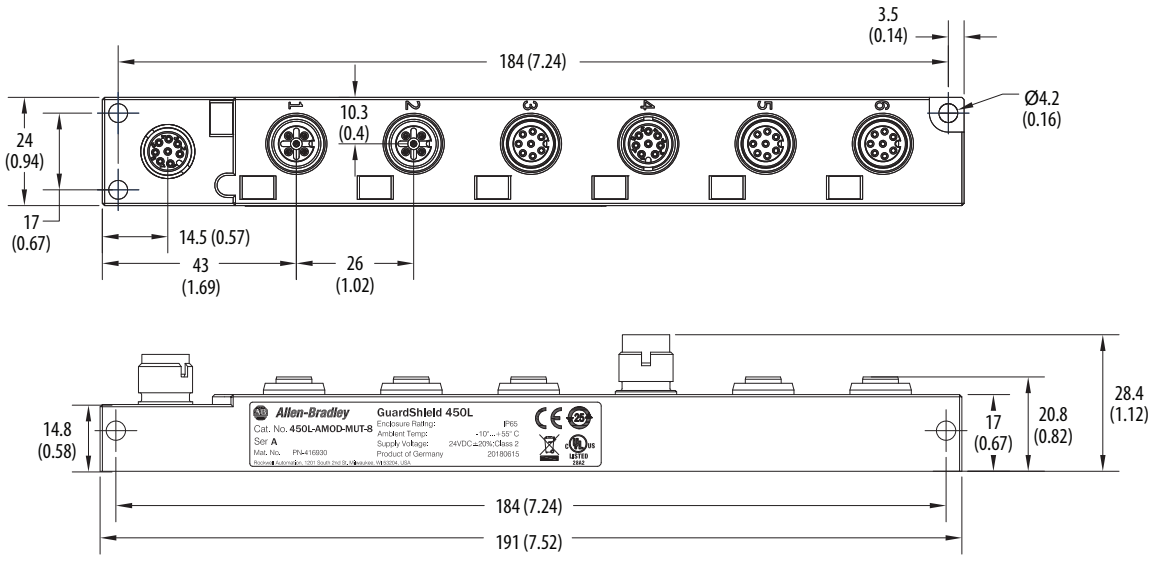


Figure 10 - Distribution Box Dimensions [mm (in.)]



Waste Electrical and Electronic Equipment (WEEE)

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

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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