

25500639 Rev A7 1122

**Safety Message to Installers and Service Personnel  
of Emergency Vehicle Safety Equipment**

**⚠ WARNING**

People’s lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. Listed below are some other important safety instructions and precautions you should follow.

- To properly install the lighting system, you must have a good understanding of automotive systems, along with proficiency in the installation and use of safety warning equipment.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer if the seat needs to be recalibrated for proper airbag deployment.
- When drilling into a vehicle structure, ensure that both sides of the surface are clear of anything that could be damaged.
- Refer to the instructions included with the light system for the proper electrical connections.
- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at close range. Do not stare directly into this lighting product at close range, or permanent damage to your eyesight may occur.
- Frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- Refer to the instructions packed with related products for additional precautions and information.
- File these instructions in a safe place and refer to them when maintaining or reinstalling the product.

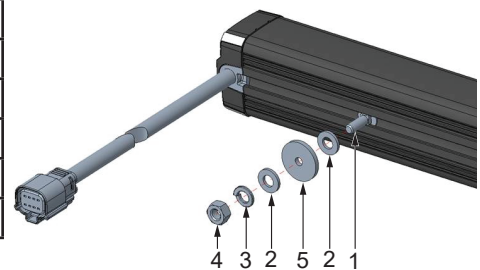
Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

**Unpacking the Product**

After unpacking the product, inspect it for damage that may have occurred in transit. If it has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of the damage. Failure to identify damage before installation could lead to the rejection of any claim. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts listed in Table 1 are included in the package. If you are missing any parts, contact Federal Signal Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

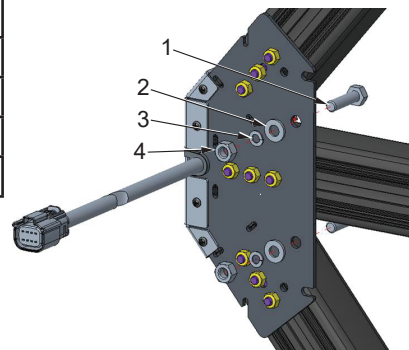
**Table 1 SignalMaster hardware set contents**

Qty	Description	Item No.
3	1/4 x 3/4 in Stainless Steel Carriage Bolt	1
6	8.2 x 16 x 2 mm (+/- 0.2 mm) Stainless Steel Flat Washer	2
3	1/4 x 7/16 x 1 mm Stainless Steel Spring washer	3
3	1/4 in Stainless Steel Elastic Stop Nut	4
3	Foam pad	5



**Table 2 Arrow hardware per contents**

Qty	Description	Item No.
4	1.25 x 30 mm Stainless Steel M8 Bolt	1
4	8.2 x 16 x 2 mm (+/-0.2 mm) Stainless Steel Flat Washer	2
4	8.2 x 13.5 x 2 mm Stainless Steel Spring Washer	3
4	Stainless Steel M8 Nut	4



**Introduction**

The 8200S SignalMaster and 8200S SignalMaster Arrow provide advanced warning and directional lights specifically for first responders. Both are available in 6-head and 8-head models.

**Installation**

Install the light assembly as described in the instructions included with the mounting kit. Route the cables to the planned location of the control unit.

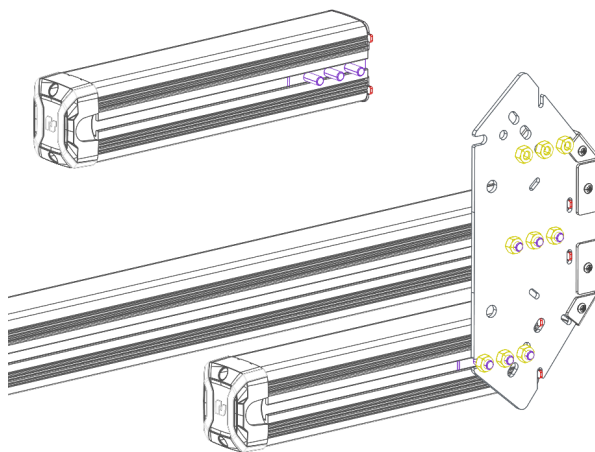
Model numbers 320320 and 320350 kits are recommended for use with the 8200S SignalMaster and 8200S SignalMaster Arrow.

**Additional Steps for the 8200S SignalMaster Arrow**

To attach the arrow ends:

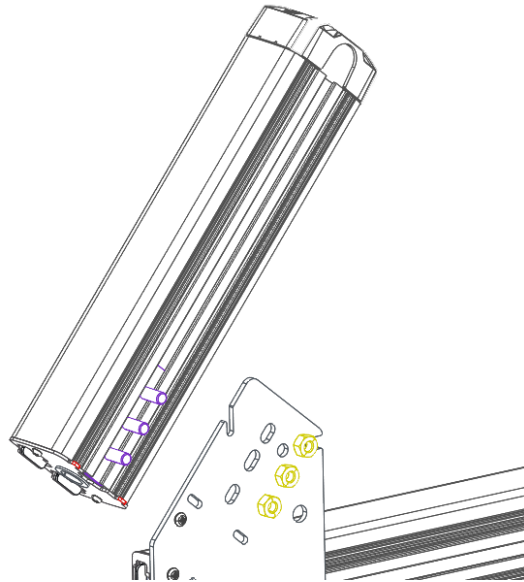
1. Loosen and remove three nuts at each short arrow extrusion.

**Figure 1 Remove Extrusion**



2. Reinstall the short extrusion as shown in Figure 2, and then tighten the nuts with a torque force of  $40 \pm 4$  lbf-in ( $45 \pm 5$  kgf-cm).

Figure 2 Reinstall extrusion



### Wiring the Unit

Harnesses that attach to the A0 connector on the 8200S are sold separately. The harness needed depends on whether you plan to use the SM CONTROL control head.

- Without the control head: Connect A1 to the 8200S and the wires to the power source. See Table 3 and Figure 3.
- With the control head: Connect A2 to the 8200S and Connector B0 to the SM CONTROL control head. Connect the wires to the power source. See Figure 4.

Figure 3 Application diagram (High current switches or relays, user-supplied)

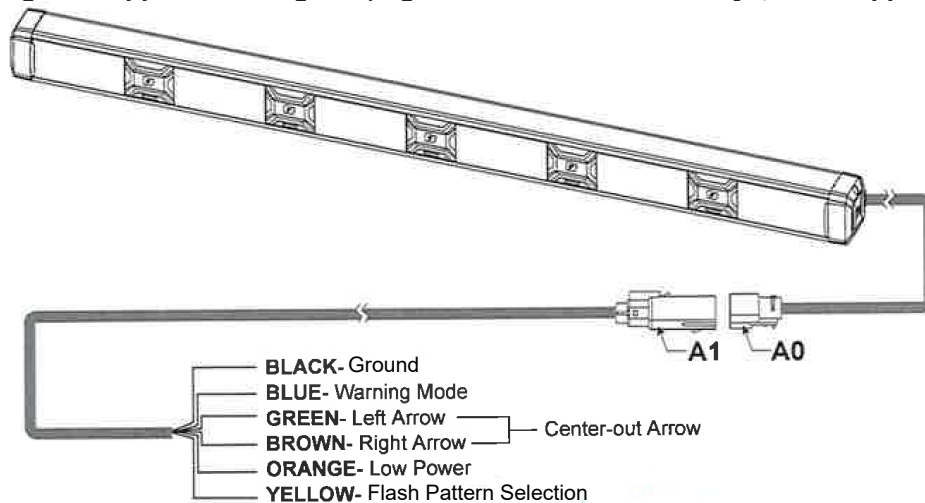
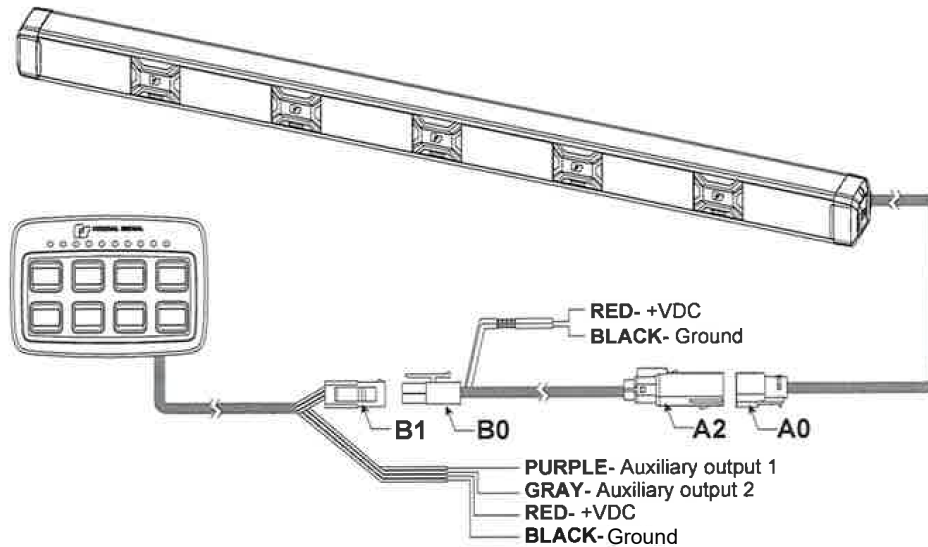


Table 3 Wiring and function without SM CONTROL

Wire Colors	Light Bar Controls	Description
Black	Ground	To chassis ground
Red	Positive (+BAT)	To +12 Vdc power source permanently for Low Current operation only. Not needed for High Current operation.
Blue	Warning Mode	<ul style="list-style-type: none"> <li>Apply to +12 Vdc to activate this function</li> <li>Lowest priority</li> </ul>
Green	Left Arrow Mode	<ul style="list-style-type: none"> <li>Apply to +12 Vdc to activate this function• Second priority (Overrides Warning Mode)</li> </ul>
Brown	Right Arrow Mode	<ul style="list-style-type: none"> <li>Apply to +12 Vdc to activate this function• Second priority (Overrides Warning Mode)</li> </ul>
Green and Brown	Center-Out Mode	<ul style="list-style-type: none"> <li>Apply +12 Vdc to both GREEN and BROWN wire to activate this function</li> <li>First priority (Overrides Warning Mode and Left/Right Arrow Mode)</li> </ul>
Orange	Low Power	<ul style="list-style-type: none"> <li>Apply to +12 Vdc to activate this function</li> <li>Low Power is available only in Warning Mode.</li> </ul>
White	LED Indicator Output / Setting	Feedback current light head status to control head.
Yellow	Flash Pattern Change	Apply to +12 Vdc momentarily to change the flash pattern during Warning Mode or Left/ Right/ Center-Out arrow mode. Refer to Flash Pattern chart.

**NOTE:** Blue, green, brown, orange, white, and yellow are all in the serial harness coming from the light head

Figure 4 Application diagram (Low current control with SM CONTROL control head)



Connect the wires as described in Tables 3 and 4.

Table 4 Wiring and function with SM CONTROL

Wire Colors	Light Bar Controls	Description
Black	Ground	To chassis ground
Red	Positive (+BAT)	To +12 Vdc power source permanently for Low Current operation only. Not needed for High Current operation.
Purple	Auxilliary Output 1*	<ul style="list-style-type: none"> <li>Apply to +12 Vdc 0.2 A Maximum</li> </ul>
Gray	Auxilliary Output 2*	<ul style="list-style-type: none"> <li>Apply to +12 Vdc 0.2 A Maximum</li> </ul>

\* These outputs can be used as triggers for activating devices attached to external relays.

## Setting the Flash Pattern

To set the flash pattern:

1. Apply the blue wire to +12 Vdc to activate the Warning Mode function.
2. Tap the yellow wire to +12 Vdc momentarily to change the pattern. See the flash patterns in Table 5.

**Table 5 Flash Pattern Chart**

No.	Warning Mode	Left Arrow Mode	Right Arrow Mode	Center-Out Mode
1	Warn 1 (Default)	Left Arrow (Default)	Right Arrow (Default)	Center-Out (Default)
2	Warn 2	1 - Lamp Left	1 - Lamp Right	1 - Lamp Center-Out
3	Warn 3	2 - Lamp Left	2 - Lamp Right	2 - Lamp Center-Out
4	Warn 4	3 - Lamp Left	3 - Lamp Right	3 - Lamp Center-Out
5	Warn 5	Left Seq On/Seq Off	Right Seq On/Seq Off	Center-Out On/Seq Off
6	Warn 6	CA - Title 13 Left	CA - Title 13 Right	CA - Title 13 CenterOut
7	Warn 7	Split Left	Split Right	
8	Warn 8			
9	Warn 9			
10	Warn 10			
11	Warn 11			
12	Warn 12			
13	Warn 13			
14	Warn 14			

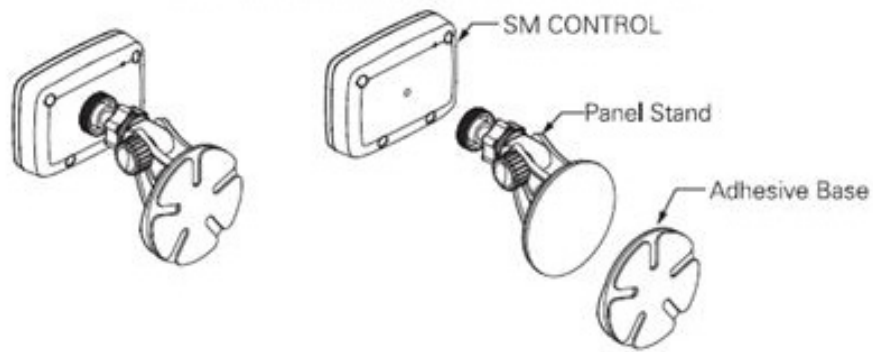
**NOTE:** For models 8200SMA16-A-FSENV, 8200SMA10-A-2-FSENV, 8200SM6-A-FSENV, and 8200SM8-A-51-FSENV, the defaults are as follows:

- Warning Mode: Warn 3
- Left: Sequence On/Off
- Right: Sequence On/Off
- Center: Sequence On/Off

## Installing the SM CONTROL Control Head

### Option1: Adhesive Control Head Mount

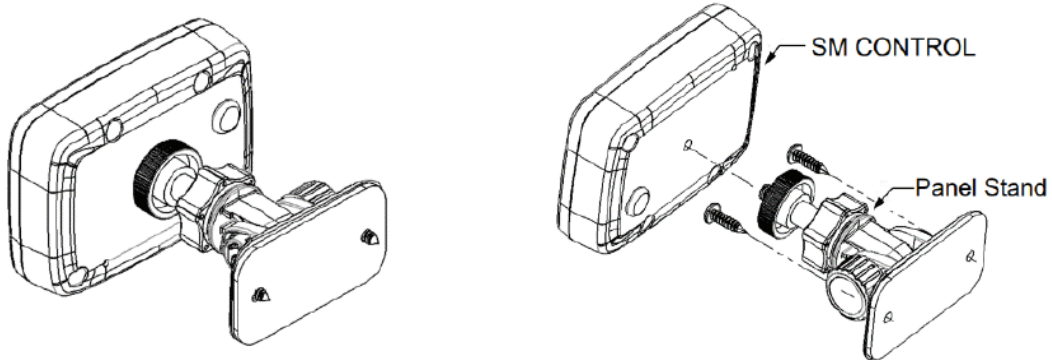
Figure 5 SM CONTROL Control Head Mount



### Option 2: Permanent Mount

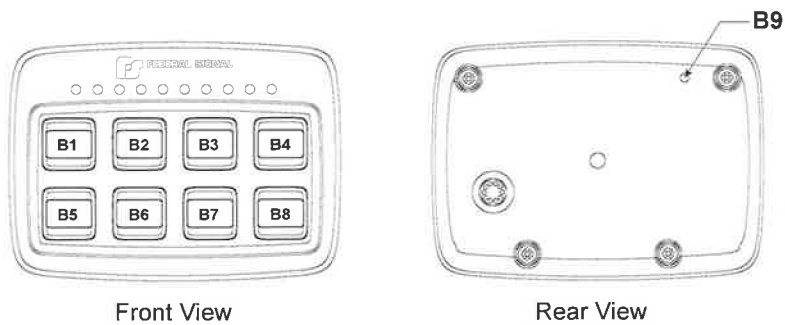
Assemble the included panel stand and select a location where the control head is easily accessible by the driver. Place the mount on the surface and screw on both screws to secure the mount. Once the mounting stand is fitted, fasten the control panel tightly onto the stand. The full assembly, including the control head and the permanent mount, is shown below in Figure 6.

Figure 6 SM CONTROL Control Head Permanent Mount



## Wiring and Operation of SM CONTROL Control Head

Figure 7 SM CONTROL Control Head



**Table 6 Cable Harness and Button Function on SM CONTROL Control Head**

<b>Button</b>	<b>Function</b>	<b>Button Type/Operation</b>
-	Ground	
-	Positive (+BAT)	
B1*	Left Arrow Mode	ON/OFF
B2*	Center-Out Mode	ON/OFF
B3*	Right Arrow Mode	ON/OFF
B4**	Warning Mode	ON/OFF
B5	Low Power	ON/OFF
B6	Auxiliary Output 1	ON/OFF
B7	Auxiliary Output 2	ON/OFF
B8	OFF	ON/OFF. Press once to turn on/off SM CONTROL control head.
B9	Flash Pattern	Momentary button. Press once to change the flash pattern. Press quickly three times to reset the pattern

\*B1-B3 are mutually exclusive.

\*\*Arrow mode will override the warning mode.

### **Getting Technical Support**

For technical support, please contact:

Federal Signal Corporation  
 Service Department  
 Phone: 1-800-433-9132  
 Email: empSERVICEinfo@fedSIG.com

### **Getting Repair Service**

The Federal Signal factory provides technical assistance with any problems that cannot be handled locally. Any product returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization (RMA). Obtain an RMA from a local Distributor or Manufacturer's Representative. Provide a brief explanation of the service requested or the nature of the malfunction.

Address all communications and shipments to the following:

Federal Signal Corporation  
 Service Department  
 2645 Federal Signal Dr.  
 University Park, IL 60484-3167

## Ordering Replacement Parts

To order the replacement parts in Table 7:

Customer Support  
Federal Signal Corporation  
Phone: 1-800-264-3578

**Table 7 Replacement parts**

Description	Part Number
Amber SML Service Head	8200SMZ-A
3-inch Spacer, Wide	8200SMZ-SPCRW
2-inch Spacer, Narrow	8200SMZ-SPCRN

## Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at [www.fedsig.com/SSG-Warranty](http://www.fedsig.com/SSG-Warranty). A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to [info@fedsig.com](mailto:info@fedsig.com) or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



2645 Federal Signal Drive  
University Park, Illinois 60484-3167

[www.fedsig.com](http://www.fedsig.com)

Customer Support

Police/Fire-EMS: 800-264-3578 • +1 708 534-3400

Work Truck: 800-824-0254 • +1 708 534-3400

Technical Support: 800-433-9132 • +1 708 534-3400

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