Series SM and DSM Sync Modules

F-75-012

FEATURES

- Approvals: Underwriters Laboratories (UL 1971 and UL 464), New York City (MEA) and California State Fire Marshal (CSFM).
- Meets NFPA-72 (1999) requirement for Temporal Pattern when used with the Series NS Horn-Strobes and Series NH Horns.
- Uniquely designed to accept an independent strobe and audible input from the FACP and convert to a single output that connects to Fenwal’s Series NS Horn-Strobes.
- Also used to synchronize the Fenwal Series RSS and RSSP Sync Strobes.
- Compatible with all standard fire alarm panels.
- Low operating current draw.
- 3 amps per circuit current handling at 24 Vdc.

DESCRIPTION

Fenwal Series SM and DSM Sync Modules are utilized with the Series NS/NH, Series RSS, Series RSSP, and selected strobe applications with other Fenwal combination appliances.

When used with Series NS Horn Strobes, the SM and DSM provide independent operation or synchronized temporal pattern (code 3) Horn and synchronized Strobe Flash, as well as the ability to silence the horn while maintaining the strobe flash while using only a single pair of wires. Sync Modules are available in two versions: the SM12/24 for control for one Class B NAC circuit, and a dual output version, the DSM12/24 for control of either one Class A or two Class B NAC circuits.

Please read these specifications and installation instructions carefully before using, specifying or applying this product. Failure to comply with any of these instructions, cautions or warnings could result in improper application, installation and/or operation of these products in an emergency. This could result in property damage and serious injury or death.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Rated Average Current</th>
<th>Rated Peak Current</th>
<th>Rated Inrush Current</th>
<th>Strobe</th>
<th>Audible</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.0 Vdc</td>
<td>0.015</td>
<td>0.010</td>
<td>0.074</td>
<td>0.010</td>
<td>0.062</td>
</tr>
<tr>
<td>31.0 Vdc</td>
<td>0.018</td>
<td>0.012</td>
<td>0.090</td>
<td>0.012</td>
<td>0.078</td>
</tr>
<tr>
<td>24.0 VRMS</td>
<td>0.030</td>
<td>0.013</td>
<td>0.108</td>
<td>0.013</td>
<td>0.078</td>
</tr>
<tr>
<td>31.0 VRMS</td>
<td>0.040</td>
<td>0.017</td>
<td>0.122</td>
<td>0.017</td>
<td>0.086</td>
</tr>
</tbody>
</table>

WARNING

Make sure that the total current required by all appliances that are connected to an SM or DSM does not exceed 3.0 A or exceed the rating of the fire alarm control panel primary and secondary power sources and NAC circuits. Overloading these sources could result in loss of power and failure to alert occupants during an emergency. This may result in property damage and serious injury or death.

When calculating the total current, use Tables 1 & 2 to determine the highest value of “Rated Average Current” for the SM or DSM (across the listed voltage range), then add this value to the total current for any other appliances powered by the same source and include any required safety factors.

Make sure that all fuses used on NAC circuits are rated to handle the maximum inrush or peak current from all appliances on those circuits. Failure to do this may result in loss of power to the NAC circuit and the failure of all appliances on that circuit to operate, which could result in property damage and serious injury or death.
1. Non-Sync Appliances can be installed before or after a SM or DSM unless the appliance requires silencing. When silencing of a non-sync appliance is required it must be wired before the SM or DSM and be connected to the audible NAC of the FACP.

2. The audible appliance produces momentary interruption (approximately 25 ms) each time the strobe flashes.

3. Circuit #2 may be omitted if only 1 circuit is required when using the DSM.

4. Non-Sync Audible Appliances can be installed on the audible NAC. Be aware of the current requirement for the SM or DSM module. Refer to Table 3.

5. The maximum number of interconnected DSM modules is twenty (20). The total distance from the first to the last DSM shall not exceed 1,000 feet of #18 AWG wire. Use only #18 AWG wire.

6. Use SM or DSM Sync Modules only on NAC circuits with continuously applied voltage. Do not use SM or DSM Sync Modules on coded or interrupted NAC circuits in which the applied voltage is cycled on and off.

7. SM Sync Modules are rated for 3.0 amperes at 24 Vdc; DSM Dual Sync Modules are rated for 3.0 amperes per circuit. The maximum number of interconnected DSM modules is twenty (20).

8. Series NH and NS appliances draw power from the Strobe appliance circuit only.

9. Fenwal notification appliances and accessories must be used within their published specifications and must be properly specified, applied, installed, operated, maintained and operationally tested in accordance with their installation instructions at the time of installation and at least twice a year or more often and in accordance with local, state and federal codes, regulations and laws. Specification, application, installation, operation, maintenance and testing must be performed by qualified personnel for proper operation in accordance with all of the latest National Fire Protection Association (NFPA), Underwriters’ Laboratories (UL), National Electric Code (NEC), Occupational Safety and Health Administration (OSHA), local, state, county, providence, district, federal and other applicable building and fire standards, guidelines, regulations, laws and codes including, but not limited to, all appendices and amendments and the requirements of the local authority having jurisdiction (AHJ).

10. Contact Fenwal for “installation instructions” on these products. These documents do undergo periodic changes. It is important that you have current information on these products. These materials contain important information that should be read prior to specifying or installing these products including:

   • Total current required by all appliance connected to system primary and secondary power sources.

   • Fuse ratings on signaling circuits to handle maximum inrush or peak currents from all appliances on those circuits. The time duration of the maximum strobe inrush or peak current is 2 milliseconds (ms) for 15, 15/75 and 30 CD models. 4 ms for 75 cd and 6 ms for 110 cd.

   • Composite flash rate from multiple strobes within a person’s field of view.

   • The voltage applied to these products must be within their rated input voltage range.

   • Installation in office areas and other specification and installation issues.

   • Use Strobes only on circuits with continuously applied operating voltage. Do not use Strobe on coded or interrupted circuits in which the applied voltage is cycled on and off as the Strobe may not flash.

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### Table 3: Current Consumption of the SM and DSM Modules

<table>
<thead>
<tr>
<th>Output Circuit Description of SM/DSM Module</th>
<th>SM Module</th>
<th>DSM Module</th>
<th>Current Required from FACP Audible NAC Circuit</th>
<th>Current Required from FACP Strobe NAC Circuit</th>
<th>Ref. Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class “B” with Signal Silence (single circuit)</td>
<td>Y</td>
<td>0.010</td>
<td>0.015</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Class “B” with No Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.025</td>
<td>0.025</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Class “B” with Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.008</td>
<td>0.008</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Class “B” with No Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.008</td>
<td>0.008</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Class “B” with Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.008</td>
<td>0.008</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Class “A” with Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.008</td>
<td>0.008</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Class “A” with No Audible Silence (single circuit)</td>
<td>Y</td>
<td>0.008</td>
<td>0.008</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1. Single Class “B” Circuit with Audible Silence Features

Figure 2. Single Class “B” Circuit with No Audible Silence Feature

Figure 3. Dual Class “B” Circuit with Audible Silence Feature

Figure 4. Dual Class “B” Circuit with No Audible Silence Feature

Figure 5. Single Class “A” Circuit with Audible Silence Feature

Figure 6. Single Class “A” Circuit without Audible Silence Feature
ARCHITECTS AND ENGINEERS SPECIFICATIONS

The sync control module shall be the Fenwal Series SM and DSM Sync Modules. Series SM and DSM Sync Modules shall be the master controllers for Fenwal Series NS/NH, RSS, RSSP, Horn Strobe and Sync Strobe Products where a synchronized audible/visual or visual only signal is specified. All modules shall be UL listed under Standard 464.

Series SM and DSM Modules shall be designed to interface with Series NS Horn Strobe Appliances to produce a synchronized temporal (Code 3) horn as well as synchronized strobe flash on a two-wire alarm circuit. Other synchronized products are the Fenwal Series RSS, RSSP visual only appliances and Series NH Horn Appliances.

The SM Sync Module shall incorporate two input NAC circuits for power connection from the Fire Alarm Control Panel; one for the strobe NAC circuit and one for the audible NAC circuit. DSM modules shall provide an additional strobe circuit input/output for control of either two Class "B" NAC circuits or a single Class "A" NAC circuit. Upon activation of the audible silence function at the Fire Alarm Control Panel, the audible signal component of Series NS Horn Strobe may be silenced while maintaining strobe activation.

The Series SM or DSM modules shall be designed and available in two versions; the SM 12/24 for control of a single Class "B" NAC circuit and a dual output version, the DSM 12/24 for control of either one Class "A" or two Class "B" NAC circuits. The DSM dual circuit version shall provide the additional capability of "daisy-chaining," that is, the ability to interconnect multiple DSMs for synchronous horn and strobe operation on multiple NAC circuits. Interconnection capability shall be for a maximum of 40 NAC circuits. All modules shall operate on 24 Vdc.

Rated average current requirements for the SM 12/24 shall be .025 amperes @ 24 Vdc while that for the DSM 12/24 shall be .038 amperes @ 24 Vdc. A single circuit SM Sync Module shall be capable of handling a 3 ampere load at 24 Vdc and the dual circuit DSM Sync Module shall be capable of handling a load of 3 amperes per circuit at 24 Vdc.

All versions shall be polarized for DC supervision and shall incorporate screw terminals for in/out field wiring of #12 to #18 AWG wire size. Both the SM module and DSM module shall mount to a 4-11/16-in. square x 2-1/8-in. deep backbox.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Model Numbering</th>
<th>Part Number</th>
<th>Input Voltage</th>
<th>Average Current (Amperes)* at 12/24 Vdc</th>
<th>Mounting Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM-12/24-R</td>
<td>75-000090-001</td>
<td>24</td>
<td>.025</td>
<td>4-11/16&quot; square x 2-1/8&quot; deep backbox</td>
</tr>
<tr>
<td>DSM-12/24-R</td>
<td>75-000090-002</td>
<td>24</td>
<td>.038</td>
<td>4-11/16&quot; square x 2 -1/8&quot; deep backbox</td>
</tr>
</tbody>
</table>

* Average current per actual Production Listing @ 12 & 24 Vdc Nominal Voltage

Note: For complete installation options, refer to Alarm Signals Installation Data Sheet (75-008A).

This literature is provided for informational purposes only. KIDDE-FENWAL, INC. assumes no responsibility for the product's suitability for a particular application. The product must be properly applied to work correctly. If you need more information on this product, or if you have a particular problem or question, contact KIDDE-FENWAL, INC., Ashland, MA 01721. Telephone: (508) 881-2000.