**Headend Optics Platform (CH3000)**

**OS32M1H-00**

**High Sensitivity 2x1 Optical Switch**

**FEATURES**

- Non-latching 2x1 optical switch with high sensitivity
- Wide range of user-settable switching thresholds: $-32$ to $+21$ dBm
- Fast switching time ($< 10$ ms typical)
- Low insertion loss
- Dual wavelength operating windows (1270–1360 nm and 1430–1620 nm)
- Low power consumption
- Hot plug-in/out
- Local and remote status monitoring and control
- High packaging density (up to 28 switches per chassis)
- Occupies one half-depth slot

**PRODUCT OVERVIEW**

The ARRIS OS32M1H-00-AS 2x1 optical switch module for the CH3000 platform offers high sensitivity, fast switching time, low insertion loss and high packaging density.

Particularly well suited to protect long distance bi-directional links (using CWDM in the return path), this switch is designed to support traffic over alternate routing architectures and is guaranteed to have a switching time of less than 15 milliseconds. It will only switch to the secondary fiber route when the primary route optical input is below threshold setting and optical power on the alternate route is above threshold setting. Only light from A and B inputs is detected and used to control the switch (i.e., having high isolation from any input signals that may be present at the “Out” ports). Alternatively, the mode of operation may be set by the user to force operation using only the switch’s “A” or “B” position.
The switch has been designed with a wide dynamic threshold adjustment range to support any combination of both analog and digital transmission applications. The module is self-sensing of fiber restoration for maximum network reliability and efficiency, and is fully controllable both locally and remotely.

The features of the OS32M1H-00 optical switch, including its single-width, half-depth design, makes it ideally suited to applications where high reliability is required and space and power consumption are important considerations.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>6.6&quot; D x 5.25&quot; H x 1.0&quot; W (3RU) (17 cm x 13.3 cm x 2.5 cm)</td>
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<tr>
<td>Weight</td>
<td>1.0 lbs (0.45 kg)</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>−20°C to +65°C (−4°F to 149°F)</td>
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<tr>
<td>Storage temperature range</td>
<td>−40°C to +85°C (−40°F to +185°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% non-condensing</td>
</tr>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Optical connector</td>
<td>SC/APC</td>
</tr>
<tr>
<td>Switch configuration</td>
<td>2x1</td>
</tr>
<tr>
<td>Switch type</td>
<td>non-latching</td>
</tr>
<tr>
<td>Switching time</td>
<td>&lt; 10 ms typical, 15 ms max</td>
</tr>
<tr>
<td>Switching hysteresis</td>
<td>0.5 dB</td>
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<tr>
<td></td>
<td>Hot plug-in/out</td>
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<tr>
<td><strong>Optical</strong></td>
<td></td>
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<tr>
<td>Wavelength</td>
<td>dual wavelength windows (1263.5–1357.5 nm and 1423.5–1617.5 nm)</td>
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<td></td>
<td><strong>NOTE:</strong> The switch will pass all wavelengths within the two passbands of 1263.5–1357.5 nm and 1423.5–1617.5 nm in both directions. However, the unit's sensor and switching function will only respond to wavelengths outside the range 1520-1584 nm (i.e., comprising the 1530-1565 C-band plus narrow guard bands). For example, a CWDM channel at 1570 nm would not be properly detected.</td>
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<tr>
<td>Insertion loss</td>
<td>1.5 dB max</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>55 dB min</td>
</tr>
<tr>
<td>Return loss</td>
<td>55 dB min</td>
</tr>
<tr>
<td>Polarization dependent loss</td>
<td>0.1 dB max</td>
</tr>
<tr>
<td>Spectral flatness</td>
<td>0.5 nm max (for both wavelength ranges)</td>
</tr>
<tr>
<td>Power handling, max (any input port)</td>
<td>22 dBm</td>
</tr>
<tr>
<td><strong>Power Requirements</strong></td>
<td></td>
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<tr>
<td>Input voltage</td>
<td>12 Vdc</td>
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<tr>
<td>Power consumption</td>
<td>1.2 W</td>
</tr>
<tr>
<td><strong>Local Controls and Monitoring</strong></td>
<td></td>
</tr>
<tr>
<td>Switching threshold</td>
<td>• Range: −32 to +21 dBm (in 1 dB steps, accuracy ± 1.00 dB)</td>
</tr>
<tr>
<td></td>
<td>• Hysteresis: 0.5 dB</td>
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<tr>
<td>Operating modes</td>
<td>• Auto - switch operates based on threshold setting</td>
</tr>
<tr>
<td></td>
<td>• Force to A (or B) - switch permanently stays in position A (or B)</td>
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<tr>
<td>Locally monitored parameters</td>
<td>chassis slot number, powering voltage, internal temperature, input optical power, switch position (&quot;A&quot; or &quot;B&quot;), operating mode (Auto or Forced-to-A or -B)</td>
</tr>
<tr>
<td><strong>Front Panel Indicators</strong></td>
<td></td>
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<tr>
<td>Module status LEDs</td>
<td>• Red &quot;Alarm&quot;: input below threshold setting</td>
</tr>
<tr>
<td></td>
<td>• Blue &quot;Access&quot;: illuminated during communication access</td>
</tr>
<tr>
<td>Switch status LEDs</td>
<td>• Green &quot;A → OUT&quot; (switch in A position, or blinking if Forced to A)</td>
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<tr>
<td></td>
<td>• Yellow &quot;B → OUT&quot; (switch in B position, or blinking if Forced to B)</td>
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<tr>
<td><strong>Alarms</strong></td>
<td>Service-affecting (DC failure, switch output below both input thresholds, switch forced to A or B position) and non-service-affecting (high internal temperature, A or B input power below threshold)</td>
</tr>
</tbody>
</table>
ORDERING INFORMATION

OS32M1H-00 - AS

High Sensitivity 2x1 Optical Switch

RELATED PRODUCTS

CH3000 Chassis  Optical Patch Cords
Optical Transmitters  Optical Passives
BP Back plates  Installation Services

Customer Care

Contact Customer Care for product information and sales:
• United States: 866-36-ARRIS
• International: +1-678-473-5656

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