aurora NETWORKS

OS32M1M / OS32M2M / OS32S2S

Features

- Non-latching 2x1 optical switches (in single- and dual-packaged modules) and 2x2 optical switch
- Fast switching speed (<5 ms typical)
- Wide range of user-settable switching thresholds for analog and digital transport applications:
  - –22 to +22 dBm for 2x1 switches
  - –6 to +20 dBm for 2x2 switch
- Low insertion loss
- Dual wavelength operating windows (1280–1340 nm and 1420–1620 nm)
- 2x1 switches allow simultaneous counter-propagating signals
- Low power consumption
- Hot plug-in/out
- Local and remote status monitoring and control
- High packaging density (up to 28 modules, up to 56 switches) per chassis
- Occupies one half-depth slot

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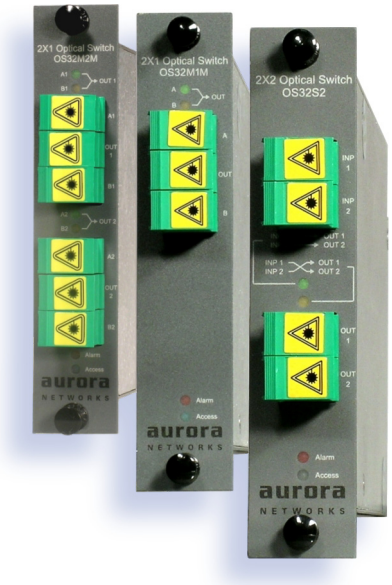
2x1 and 2x2 Optical Switches



Pictured above (L to R): OS32M2M dual-packaged 2x1 Switches, OS32M1M 2x1 Switch, and OS32S2S 2x2 Switch

The Aurora OS3200 series of 2x1 and 2x2 optical switch modules for the CH3000 platform offer fast switching times, low insertion loss and high packaging density.

These units are available as 2x1 switches in either a single or dual switch packaging configuration or as a single 2x2 switch configuration in a single-width, half-depth module. Designed to support telephony traffic over alternate routing architectures, OS3200 series switches are guaranteed to have a switching time of less than 10 milliseconds and 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. Appropriate switching hysteresis levels are established at the low end in each of two ranges to reduce "chattering" in switch behavior; threshold settings for each range can be independently set by the operator.

Additionally, the switches have been designed with a wide dynamic threshold adjustment range to support any combination of both analog and digital transmission applications. The modules are self-sensing of fiber restoration for maximum network reliability and efficiency, and are fully controllable both locally and remotely. In the dual switch configuration of model OS32M2M, each of the switches are completely independent.

In models OS32M1M and OS32M2M (2x1) switches, only light from A and B inputs are detected and used to control the switch (*i.e.*, having high isolation from any input signals that may be present at the "Out" ports).

The features of the OS3200 series of optical switches make them ideally suited to applications where high reliability is required and space and power consumption are important considerations.

OS32M1M / OS32M2M / OS32S2S

Product Specifications

Physical:

- Dimensions:
  6.5" D x 5.25" H x 1.0" W (3RU) (17 cm x 13.3 cm x 2.5 cm)
- Weight:
  1.0 lbs (0.45 kg)

Environmental:

- Operating temperature range: –20º to +65ºC (–4º to 149ºF)
- Storage temperature range: –40º to +85ºC (–40º to 185ºF)
- Humidity: 5% to 95% non-condensing

General:

- Optical connector: SC/APC
- Number of switches per module and switch configuration:

OS32M1M	1	2 x 1
OS32M2M	2	2 x 1
OS32S2S	1	2 x 2

- Switch type: non-latching
- Switching speed: <5 ms typical, 10 ms max
- Switching hysteresis: 0.5 dB
- Optical connector: SC/APC
- Hot plug-in/out

Optical:

- Wavelength
  OS32M1M and OS32M2M: dual wavelength windows
  (1280–1340 nm and 1420–1620 nm)
  OS32S2S: 1290–1620 nm
- Input power:
  OS32M1M and OS32M2M: 25 dBm max
  OS32S2S: 20 dBm max
- Insertion loss: 1.0 dB typical, 1.5 dB max
- Isolation
  OS32M1M and OS32M2M: 55 dB min
  OS32S2S: 60 dB min
- Return loss: 55 dB min
- Polarization dependent loss: <0.05 dB typical, 0.1 dB max

Power Requirements:

- Input voltage: 12 V_{DC}
- Power consumption
  OS32M1M: 1.2 W max
  OS32M2M: 1.6 W max
  OS32S2S: 1.5 W max

Local Controls and Monitoring:

- Switching threshold (user-settable, independent for each input):
  OS32M1M and OS32M2M:
  Range: –22 to +22 dBm (in 1 dB steps, accuracy ±0.75 dB)
  OS32S2S:
  Low Range: –6 to +7 dBm (in 1 dB steps)
  High Range: +7 to +20 dBm (in 1 dB steps)
- Operating mode (for OS32MxM switches only):
  Auto - switch operates based on threshold setting
  Force to A*x* (or B*x*) - switch permanently stays in position A*x* (or B*x*)
- Wavelength (OS32MxM switches only): select 1310 nm or 1550 nm region
- Locally monitored parameters: chassis slot number, powering voltage, internal temperature, input optical power, switch position ("A" or "B" for OS32MxM switches; "Bar" or "Cross" for OS32S2S switch), operating mode (Auto or Forced-to-A or -B), wavelength, with last two parameters for OS32MxM switches only

Front Panel Indicators:

- Module status LEDs:
  Red "Alarm": both inputs below threshold settings
  Blue "Access": illuminated during communication access
- Switch status LEDs:
  OS32M1M and OS32M2M:
  Green "A*x* –> OUT*x* (switch in A*x* position, or blinking if Forced to A*x*)
  Yellow "B*x* –> OUT*x* (switch in B*x* position, or blinking if Forced to B*x*)
  OS32S2S:
  Green "INP1 –> OUT1, INP2 –> OUT2" (switch in "Bar" position)
  Yellow "INP1 –> OUT2, INP2 –> OUT1" (switch in "Cross" position)
  (If both LEDs are not illuminated, switch is in "Bar" position and red " "Alarm" LED is illuminated.)

Alarms:

Service-affecting (DC failure, switch output below threshold, switch forced to Ax or Bx position) and non-service-affecting (high internal temperature, A or B input power below threshold)

Ordering Information

OS32M1M-00-AS	Single 2x1 Optical Switch
OS32M2M-00-AS	Dual-packaged 2x1 Optical Switches
OS32S2S-AS	Single 2x2 Optical Switch

NOTE
All switches are configured with SC/APC connectors.

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P/N 87-10064 (Rev F, 09/07)

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