SIGNAMAX CONNECTIVITY SYSTEMS
An AESP Company

Network Connectivity Systems

065-1196A series 10/100/1000BaseT/TX to 1000BaseSX/LX Switching Media Converters

Signamax Connectivity Systems' new and improved 065-1196A series 10/100/1000 Switching Media Converters provide an intelligent solution for long distance connections between legacy 10BaseT and 100BaseTX networks and 1000Base Gigabit Ethernet networks. The built-in 10/100/1000 switch enables the fiber cable connection to operate at 1000 Mbps connected to either a 10BaseT, 100BaseTX, or a 1000BaseT network, while remaining completely 1000BaseSX or 1000BaseLX standard-compliant for the fiber optic connection. The fiber connection can also operate in full duplex mode whether the RJ-45 port is connected to a full duplex switch or a half duplex legacy hub.

Improvements in the 065-1196A series Media Converters include: extremely low latency of ≤1.5 µs, FIFO, worst case; the ability to force the RJ-45 port to 100Base or 10Base full or half-duplex modes; the ability to provide auto-negotiation on the 1000Base fiber port or forced full-duplex mode where required; and the enabling or disabling of the Link Fault Signaling feature. Link Fault Signaling provides a means of propagating a link drop on either port of the media converter to the other port, enabling a connected managed switch to see the link drop and respond to it using Spanning Tree Protocol or another recovery scheme. The built-in switch and its store-and-forward switching architecture performs the network segmentation that allows the maximum fiber distance extension. Auto-MDIX capability on the twisted-pair port allows convenient connection.

KEY FEATURES

- Complies with IEEE 802.3 10BaseT, 802.3u 100BaseTX, 802.3ab 1000BaseT, 802.3z 1000BaseSX/LX.
- Extremely low latency (≤1.5 µs, FIFO, worst case) supports larger multi-hop networks.
- Gigabit transmission supports 9K bytes jumbo frames.
- Supports IEEE 802.3x Flow controls: Flow control for full duplex and back pressure for half duplex.
- Auto-Negotiation, Auto-MDI/MDIX.
- DIP switch configuration for "Link Fault Signaling" and twisted-pair auto-negotiation/forced mode.
- Full wire-speed forwarding rate.
- Packed with 12VDC external universal power supply.
- Supports wall mounting installation or use with Signamax 065-1185 media converter rack mount chassis.

ORDERING INFORMATION

Part Number	Description
065-1196A	10/100/1000BaseT/TX to 1000BaseSX Media Converter SC Multimode, 220m Span on 62.5µm Fiber / 550m Span on 50µm Fiber
065-1196AED	10/100/1000BaseT/TX to 1000BaseSX Media Converter SC Multimode, 2 km Span on 62.5µm or 50µm Fiber
065-1196ALX	10/100/1000BaseT/TX to 1000BaseLX Media Converter; SC Singlemode, 10 km Span
065-1196ALXED	10/100/1000BaseT/TX to 1000BaseLX Media Converter; SC Singlemode, 20 km Span

SPECIFICATIONS

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999 N.W. 159th Drive • Miami, FL 33169 • 800.446.2377 • 305.944.7710 • Fax: 305.949.4483

SPECIFICATIONS

- **APPLICABLE STANDARDS**

IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX
IEEE 802.3ab 1000BaseT
IEEE 802.3z 1000BaseSX
IEEE 802.3z 1000BaseLX
IEEE 802.3x Flow Control

- **PORTS**

1 - RJ-45 10/100/10000BaseT/TX port.
1 –1000BaseSX or 1000BaseLX fiber optic port, SC connectors.

- **LED STATUS INDICATORS**

Power; LFS Status; Link Copper; Link Fiber; Copper port speed (Green = 1000Mbps, Amber = 100Mbps, off = 10Mbps);
Full/Half-Duplex indicator.
Six LEDs total

- **PERFORMANCE**

Latency: ≤1.5 µs (FIFO).
Throughput, per port: @ 1000Base: 1,488,100 pps (64-byte packets); @ 100Base: 148,810 pps (64-byte packets)
Switch Fabric Speed: 4.0 Gbps (non-blocking, wire speed performance)
Frame Buffer: 12K total (Tx buffer = 4K, Rx buffer = 4K, 8051microcontroller use = 4K).

- **DIP SWITCH SETTINGS**

No.	Down	Up	Notes
1	Disable LFS	Enable LFS	LFS: Link Fault Signaling function
2	Enable Auto-Negotiation for TX port	Enable Force mode for TX port	
3	TX port Force mode: Full-duplex	TX port Force mode: Half-duplex	
4	TX port Force mode: 100 Mbps	TX port Force mode: 10 Mbps	
5	Function reserved	Function reserved	
6	Function reserved	Function reserved	

- **FIBER INTERFACE, MULTIMODE PN 065-1196A**

Type: Laser Diode
Wavelength: 850 nm nominal.
Maximum Output: - 4.0 dBm
Minimum Output Power: - 9.5 dBm
Sensitivity: -13.5 dBm
Maximum Input Power: - 13.5
Link Power Budget: 4.0 dB

- **FIBER INTERFACE, MULTIMODE PN 065-1196AED**

Type: Laser Diode
Wavelength: 1310 nm nominal (1270 nm maximum, 1355 nm minimum)
Maximum Output Power: 0.0 dBm
Minimum Output Power: - 6.0 dBm
Sensitivity: -17.0 dBm
Maximum Input Power: 0.0 dBm
Link Power Budget: 11.0 dB

- **FIBER INTERFACE, SINGLEMODE PN 065-1196ALX**

Type: MQW Laser
Wavelength: 1300 nm nominal (1270 nm maximum, 1355 nm minimum)
Maximum Output Power: - 3.0 dBm
Minimum Output Power: - 11.0 dBm
Sensitivity: -22.0 dBm
Maximum Input Power: - 3.0 dBm
Link Power Budget: 11.0 dB

SPECIFICATIONS

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SPECIFICATIONS (continued)

- **FIBER INTERFACE, SINGLEMODE PN 065-1196ALXED**
  Type: MQW Laser
  Wavelength: 1300 nm nominal (1261 nm maximum, 1360 nm minimum)
  Maximum Output Power: - 3.0 dBm
  Minimum Output Power: - 8.0 dBm
  Sensitivity: -22.0 dBm
  Maximum Input Power: - 3.0 dBm
  Link Power Budget: 14.0 dB
  Operating Temperature: 32°F to 122°F (0°C to 50°C)
  Storage Temperature: -14°F to 158°F (-10°C to 70°C)
  Relative Humidity: 5% to 95% (non-condensing)

- **POWER**
  Power Requirement: 12 VDC
  Power Supply Provided: Primary: 100 - 240 VAC, 50/60 Hz. Secondary: 12 VDC, 600 ma, center contact positive.
  Power Consumption: 2.76 watts maximum.
  Maximum Current Consumption: 0.23A @ 12VDC.

- **ENVIRONMENTAL REQUIREMENTS**
  Operating Temperature: 32°F to 122°F (0°C to 50°C)
  Storage Temperature: -14°F to 158°F (-10°C to 70°C)
  Relative Humidity: 5% to 95% (non-condensing)

- **PHYSICAL CHARACTERISTICS**
  Case dimensions: 4.3"L x 3.16"W x 0.94"H (109.2mm x 83mm x 23.8mm)
  Fiber connector protrusion varies with model.
  Weight: 1.76 pounds (500 grams)

- **CERTIFICATIONS**
  Safety: CE Mark Class A
  EMI: FCC Part 15 Class A; VCCI Class A
  Manufactured in an ISO 9001 facility.

- **WARRANTY**
  Lifetime

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