



**FDX4100 SERIES
ETHERNET 10/100Mbps MEDIA CONVERTER**

**Architectural & Engineering
Specifications**

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A & E SPECIFICATIONS

FDX4112 ETHERNET 10/100Mbps MEDIA CONVERTER

1. ACCEPTABLE MANUFACTURER

- 1.1. Optellios, Inc., 11 Penns Trail, Suite 300, Newtown, PA 18940 USA
Telephone: 267.364.5298, Fax: 267.364.5357
Email: info@optellios.com, Internet: www.optellios.com
- 1.2. Substitutions: Not Permitted
- 1.3. All fiber optic modules shall be supplied from a single manufacturer

2. FIBER OPTIC ETHERENET 10/100Mbps MEDIA CONVRETER

- 2.1. Provide fiber optic Ethernet media converters as required. The system shall provide real-time 10/100 Base-T and 100 Base-FX performance. The system shall be used as an Ethernet media converter supporting one (1) Ethernet 100 Base-T electrical port and one (1) Ethernet 100 Base-FX optical port. The system shall have auto MDI/MDI-X operation that has the option of being forced on. The system shall be fully compatible with all standard IEEE 802.3, 802.3u, and 802.3x Ethernet protocols. The system shall have an enhanced mode to provide the back-off algorithm changed from IEEE standard 802.3 binary exponential to aggressive mode, enable half-duplex back-pressure, disable excessive collision drop, and enable jumbo frame for streaming media applications. The system requirements shall be two (2) multimode optical fibers. The system shall have a substantially wide dynamic range as to never require optical or electrical adjustments in order to operate within the given specifications. Optical attenuators shall never be required. The system shall provide local diagnostic indicators. The system shall support a remote network management option providing full interoperability with industry standard SNMP/IP protocols. All modules shall be available in both card mount and surface mount versions. All modules shall have automatic resettable polymer fuses on all power rails, which shall provide for automatic reset, as well as transient suppression on all data input/output (I/O) connections. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount modules shall have the ability to be inserted into and removed from the communication management chassis without interrupting power with no risk of damage to other modules or the communications management chassis during replacement. The system shall have an operating temperature of -40°C to +74°C, ambient, a storage temperature of -40°C to +85°C, ambient, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The system shall exceed NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The system radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications.

2.2. SPECIFICATIONS

- 2.2.1. Data: One (1) channel, bi-directional

2.3. DATA SPECIFICATIONS

- 2.3.1. Data Protocol: Ethernet
- 2.3.2. Operating Mode: Half or full-duplex
Enhanced or standard IEEE 802.3
- 2.3.3. Data Rate: 10/100 Mbps
- 2.3.4. Ethernet Compliance: IEEE 802.3, 802.3u, 802.3x

A & E SPECIFICATIONS

2.3.5. Ethernet Isolation: 1500 VRMS, One (1) minute

2.4. OPTICAL SPECIFICATIONS

2.4.1. Fiber Type: Multimode

2.4.2. Wavelength: 1300nm

2.4.3. Number of Fibers: Two (2)

2.4.4. Optical Emitter Type: LED

2.4.5. Transmitter Output Power: 40 μ w (-14 dBm)

2.4.6. Receiver Sensitivity: 1 μ w (-30 dBm)

2.4.7. Optical Power Budget: 16 dB

2.5. STATUS INDICATOR SPECIFICATIONS

2.5.1. Power

2.5.2. Data Rate

2.5.3. Auto-Negotiate

2.5.4. Operating Modes

2.5.5. Optical Link Detect

2.6. The Ethernet media converter shall be Optellios Fiber Patrol model FDX4112. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

REVISION HISTORY:

File Name:

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Date:

3/14/07

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A & E SPECIFICATIONS

FDX4131A/B ETHERNET 10/100Mbps MEDIA CONVERTER

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2.2. SPECIFICATIONS

- 2.2.1. Data: One (1) channel, bi-directional

2.3. DATA SPECIFICATIONS

- 2.3.1. Data Protocol: Ethernet
- 2.3.2. Operating Mode: Half or full-duplex
Enhanced or standard IEEE 802.3
- 2.3.3. Data Rate: 10/100 Mbps
- 2.3.4. Ethernet Compliance: IEEE 802.3, 802.3u, 802.3x
- 2.3.5. Ethernet Isolation: 1500 VRMS, One (1) minute

A & E SPECIFICATIONS

2.4. OPTICAL SPECIFICATIONS

- 2.4.1. Fiber Type: Multimode
- 2.4.2. Wavelength: 1310/1550nm
- 2.4.3. Number of Fibers: One (1)
- 2.4.4. Optical Emitter Type: Laser
- 2.4.5. Transmitter Output Power: 500 μ w (-3 dBm)
- 2.4.6. Receiver Sensitivity: 50 μ w (-13 dBm)
- 2.4.7. Optical Power Budget: 10 dB

2.5. STATUS INDICATOR SPECIFICATIONS

- 2.5.1. Power
- 2.5.2. Data Rate
- 2.5.3. Auto-Negotiate
- 2.5.4. Operating Modes
- 2.5.5. Optical Link Detect

- 2.6. The Ethernet media converter shall be Optellios Fiber Patrol model FDX4131A/B. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

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FDX4131AB_AE_REV_1.3

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A & E SPECIFICATIONS

FDX4171A/B ETHERNET 10/100Mbps MEDIA CONVERTER

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2.2. SPECIFICATIONS

- 2.2.1. Data: One (1) channel, bi-directional

2.3. DATA SPECIFICATIONS

- 2.3.1. Data Protocol: Ethernet
- 2.3.2. Operating Mode: Half or full-duplex
Enhanced or standard IEEE 802.3
- 2.3.3. Data Rate: 10/100 Mbps
- 2.3.4. Ethernet Compliance: IEEE 802.3, 802.3u, 802.3x
- 2.3.5. Ethernet Isolation: 1500 VRMS, One (1) minute

A & E SPECIFICATIONS

2.4. OPTICAL SPECIFICATIONS

- 2.4.1. Fiber Type: Single mode
- 2.4.2. Wavelength: 1310/1550nm
- 2.4.3. Number of Fibers: One (1)
- 2.4.4. Optical Emitter Type: Laser
- 2.4.5. Transmitter Output Power: 500 μ w (-3 dBm)
- 2.4.6. Receiver Sensitivity: 5 μ w (-23 dBm)
- 2.4.7. Optical Power Budget: 20 dB

2.5. STATUS INDICATOR SPECIFICATIONS

- 2.5.1. Power
- 2.5.2. Data Rate
- 2.5.3. Auto-Negotiate
- 2.5.4. Operating Modes
- 2.5.5. Optical Link Detect

2.6. The Ethernet media converter shall be Optellios Fiber Patrol model FDX4171A/B. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

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