IMC-P101 Series

IEEE 802.3af PoE Ethernet-to-fiber media converters

Introduction

IMC-P101 series Ethernet-to-fiber media converters provide Ethernet media conversion from 10/100BaseT(X) to 100BaseFX (with SC or ST connectors). These converters are classified as power source equipment (PSE), and when used in this way provide up to 15.4 watts to IEEE 802.3af compliant powered devices (PDs), eliminating the need for additional wiring. The IMC-P101 converters support IEEE 802.3/802.3u/802.3x with 10/100M, full/half-duplex, and MDI/MDI-X auto-sensing, providing a complete solution for your industrial Ethernet network.

Specifications

Technology

Standards:
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X), 100BaseFX
IEEE 802.3af for Power-over-Ethernet

Interface

RJ45 Ports: 10/100BaseT(X)
Fiber Ports: 100BaseFX (SC/ST connectors)
LED Indicators: PWR1, PWR2, Fiber Link, 10/100M (TP port), PSE Indicator

DIP Switches:

<table>
<thead>
<tr>
<th>DIP No.</th>
<th>Function</th>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Auto Negotiation</td>
<td>Enable*</td>
<td>Disable</td>
</tr>
<tr>
<td>2</td>
<td>Force TP Speed</td>
<td>100 Mbps*</td>
<td>10 Mbps</td>
</tr>
<tr>
<td>3</td>
<td>Force TP Duplex</td>
<td>Full Duplex*</td>
<td>Half Duplex</td>
</tr>
<tr>
<td>4</td>
<td>Link Fault Pass Through</td>
<td>Enable*</td>
<td>Disable</td>
</tr>
<tr>
<td>5</td>
<td>Operating Mode</td>
<td>Store-and-Forward*</td>
<td>Pass Through</td>
</tr>
<tr>
<td>6</td>
<td>PSE</td>
<td>Disable</td>
<td>Enable*</td>
</tr>
<tr>
<td>7</td>
<td>P.R.R. (PD Remote Reset)</td>
<td>Enable</td>
<td>Disable*</td>
</tr>
</tbody>
</table>

* Default DIP switch setting.

Alarm Contact: One relay output with current carrying capacity of 1 A @ 24 VDC

Optical Fiber

<table>
<thead>
<tr>
<th>Fiber Cable Type</th>
<th>OM1</th>
<th>50/125 μm</th>
<th>G.652</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Distance</td>
<td>4 km</td>
<td>5 km</td>
<td>40 km</td>
</tr>
<tr>
<td>800 MHz*km</td>
<td>1300</td>
<td>1310</td>
<td></td>
</tr>
<tr>
<td>TX Range (nm)</td>
<td>1260 to 1360</td>
<td>1280 to 1340</td>
<td></td>
</tr>
<tr>
<td>RX Range (nm)</td>
<td>1100 to 1600</td>
<td>1100 to 1600</td>
<td></td>
</tr>
<tr>
<td>TX Range (dBm)</td>
<td>-10 to -20</td>
<td>0 to -5</td>
<td></td>
</tr>
<tr>
<td>RX Range (dBm)</td>
<td>-3 to -32</td>
<td>-3 to -34</td>
<td></td>
</tr>
<tr>
<td>Link Budget (dB)</td>
<td>12</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Dispersion Penalty (dB)</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note: When connecting a single-mode fiber transceiver, we recommend using an attenuator to prevent damage caused by excessive optical power. Note: Compute the “typical distance” of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Physical Characteristics

Housing: Metal
Dimensions: 144.45 x 122.3 x 51.65 mm (5.69 x 4.81 x 2.03 in)
Weight:
Product only: 525 g (1.16 lb)
Packaged: 710 g (1.56 lb)
Installation: DIN-rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:
Standard Models: 0 to 60°C (32 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
### Ethernet Media Converters and Extenders

**Ordering Information**

- **Available Models**
  - IMC-P101-M-SC: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode port with SC connector, 0 to 60°C operating temperature
  - IMC-P101-M-ST: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode port with ST connector, 0 to 60°C operating temperature
  - IMC-P101-S-SC: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode port with SC connector, 0 to 60°C operating temperature
  - IMC-P101-S-ST: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode port with ST connector, 0 to 60°C operating temperature
  - IMC-P101-M-SC-T: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode port with SC connector, -40 to 75°C operating temperature
  - IMC-P101-M-ST-T: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode port with ST connector, -40 to 75°C operating temperature
  - IMC-P101-S-SC-T: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode port with SC connector, -40 to 75°C operating temperature
  - IMC-P101-S-ST-T: PoE industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode port with ST connector, -40 to 75°C operating temperature

- **Optional Accessories** (can be purchased separately)
  - WK-51: Wall-mounting kit

**Package Checklist**

- 1 IMC-P101 media converter
- Hardware installation guide (printed)
- Warranty card

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**Power Requirements**

- **Input Voltage:** 48 VDC (46 to 57 VDC), redundant inputs
- **Input Current:** 130 mA @ 48 VDC max.
- **Connection:** Removable terminal block
- **Overload Current Protection:** 1.6 A (protects against two signals shorted together)
- **Reverse Polarity Protection:** Protects against V+V- reversal

**Standards and Certifications**

- **Safety:** UL 508
- **EMC:** EN 55022/24
- **EMI:** CISPR 22, FCC Part 15B Class A
- **EMS:**
  - EN 61000-4-2 (ESD): Contact: 8 kV, Air: 15 kV
  - EN 61000-4-3 (RS): 80 MHz to 1 GHz: 3 V/m
  - EN 61000-4-4 (EFT): Power: 4 kV, Signal: 4 kV
  - EN 61000-4-5 (Surge): Power: 2 kV, Signal: 2 kV
  - EN 61000-4-6 (CS): 150 kHz to 80 MHz: 3 V/m
  - EN 61000-4-8 (PFMF)
  - EN 61000-4-11

**Green Product:** RoHS, CRoHS, WEEE

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

**MTBF** (mean time between failures)

- **Time:** 435,210 hrs

**Warranty**

- **Warranty Period:** 5 years

**Details:** See www.moxa.com/warranty

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**Dimensions**

*Unit: mm (inch)*

- **Side View**
  - 101.4 (3.99)
  - 110.2 (4.34)
  - 40 (1.57)
  - 12.06 (0.47)

- **Front View**
  - 51.65 (2.03)
  - 51.6 (2.03)
  - 34 (1.34)
  - 30.5 (1.2)
  - 42.4 (1.67)

- **Rear View**
  - 40.8 (1.61)
  - 40.8 (1.61)
  - 34 (1.34)

- **Panel-Mounting Kit (Optional)**
  - 101.4 (3.99)
  - 51.65 (2.03)