

Automotive Ethernet Converter

P/N: AX141500

Features:

- 12V, 24Vdc input power (nominal) for connection to a battery
- 1 Automotive Ethernet port (100 Mbps)
- 1 Ethernet port (100 Mbps)
- Power, Link and Speed LED indicators
- Surge, reverse polarity, input overvoltage, and input undervoltage protection
- IP67
- Compact, 2 M12 connectors
- Suitable for high vibration and shock environments



Applications:

- Off-highway equipment, mining equipment, industrial trucks

Ordering Part Number:

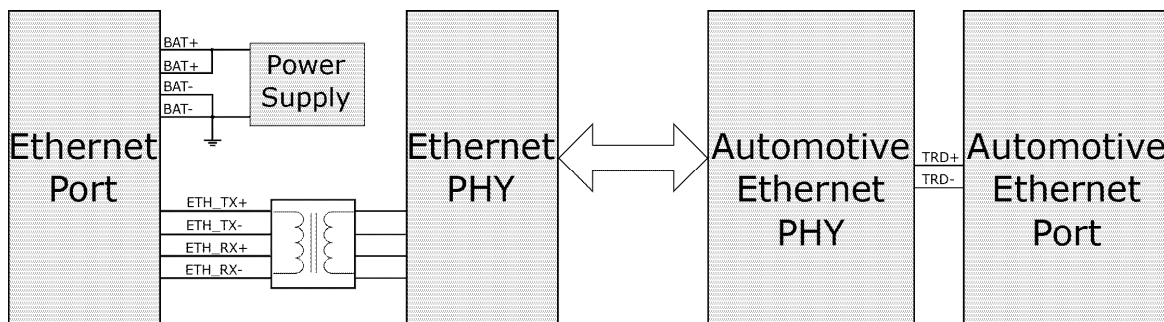
Automotive Ethernet Converter: **AX141500**

Description: The Axiomatic Automotive Ethernet Converter provides a purely physical, bi-directional conversion between Automotive Ethernet (100BASE-T1), and Ethernet (100BASE-TX) via PHY transceivers. No packets are stored or modified in this device. The converter supports a baud rate of 100 Mbit/s. Status LEDs provide information on connection link, and communication.

The converter is designed for the harsh environments of off-highway or industrial equipment.

Automotive Ethernet networks use a 2 wire, unshielded, twisted pair UTP cable and save cabling costs for the machine builder.

Functional Block Diagram



Technical Specifications:

Input

Power Supply Input - Nominal	12V, 24Vdc nominal (8...36VDC power supply range)
Protections	Surge and reverse polarity protection are provided. Input overvoltage (37V) and input undervoltage (6V) protection are provided. The unit is designed for 12Vdc based load dump.
Power Consumption	400 mW @ 12 V typical
Power LED	GREEN= Power ON OFF = Power OFF

Automotive Ethernet

Port Type	1 port 100Mbps 100BASE-T1 full-duplex
LED's	2 GREEN for Automotive Ethernet LINK: ON means connection OFF means connection is down Activity: Flashing means activity OFF means connection is down
Protection	ESD and EFT protection for signal lines
Protocol	Automotive Ethernet IEEE 802.3bw

Ethernet Port

Port Type	1 port 100 Mbit Ethernet compliant 100BASE-Tx
MDIX	Auto-MDIX
Protocols	Ethernet IEEE 802.3
Protection	ESD and EFT protection for signal lines

General Specifications

Compliance	RoHS Directive
EMC Compliance	Pending
Vibration	Random Vibration: Z-axis tracked vehicle profile (5 hr/axis in all 3 axes) Sinusoidal Component: 8.9 G Sine sweep, 2.5 hr/axis in all 3 axes
Shock	50 g, 5 impacts per test, 6-20 ms impact duration
Operating Conditions	-40 to 80°C (-40 to 176°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Protection	IP67
Weight	0.15 lb. (0.068 kg)
Enclosure and Dimensions	See dimensional drawing, Figure 2.0. Nylon 6/6, 30% glass fill UL 94V-0 Ultrasonically welded

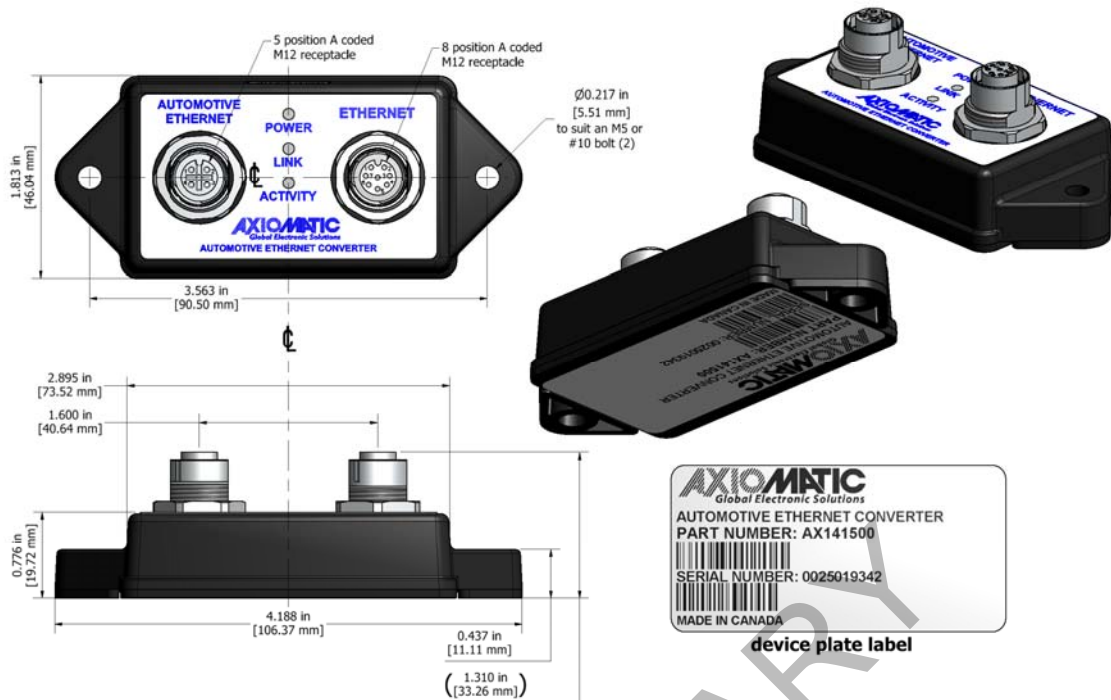
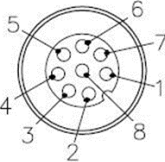
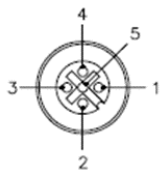


Figure 2.0. Dimensional Drawing

<p>Electrical Connections</p>	<p>1 Phoenix Contact M12 8-pin connector (A-coded), P/N: 1441817 (Connector 1) Ethernet Port: Power In, Ethernet</p> <table border="1" data-bbox="589 974 1002 1188"> <thead> <tr> <th>PIN#</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Power IN</td> </tr> <tr> <td>2</td> <td>Power GND</td> </tr> <tr> <td>3</td> <td>Power GND</td> </tr> <tr> <td>4</td> <td>Ethernet TX+</td> </tr> <tr> <td>5</td> <td>Ethernet TX-</td> </tr> <tr> <td>6</td> <td>Ethernet RX+</td> </tr> <tr> <td>7</td> <td>Ethernet RX-</td> </tr> <tr> <td>8</td> <td>Power IN</td> </tr> </tbody> </table>  <p>1 Phoenix Contact M12 5-pin connector (A-coded), P/N: 1441778 (Connector 2) Automotive Ethernet Port: Automotive Ethernet</p> <table border="1" data-bbox="589 1276 1002 1486"> <thead> <tr> <th>PIN#</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TRD-</td> </tr> <tr> <td>2</td> <td>TRD+</td> </tr> <tr> <td>3</td> <td>NC</td> </tr> <tr> <td>4</td> <td>NC</td> </tr> <tr> <td>5</td> <td>NC</td> </tr> </tbody> </table> 	PIN#	Description	1	Power IN	2	Power GND	3	Power GND	4	Ethernet TX+	5	Ethernet TX-	6	Ethernet RX+	7	Ethernet RX-	8	Power IN	PIN#	Description	1	TRD-	2	TRD+	3	NC	4	NC	5	NC
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<p>Mating Connectors</p>	<p>Mating connectors should meet the following standard for M12 Connectors, IEC 61076-2-101:2012. They should be A-coded.</p>																														

Specifications are indicative and subject to change. Actual performance will vary depending on the application and operating conditions. Users should satisfy themselves that the product is suitable for use in the intended application. All our products carry a limited warranty against defects in material and workmanship. Please refer to our Warranty, Application Approvals/Limitations and Return Materials Process as described on www.axiomatic.com/service.html.

Form: TDAX141500-08/27/19