6 Port Gigabit Ethernet Switch

10 or 100 Mbps or 1 Gbps Ethernet
X-Coded Ethernet Connectors
RS-232 Interface
P/N: AX140705

Features
- 12 or 24 VDC input power (nominal) for connection to a battery
- 6 Gigabit Ethernet ports (10 or 100 Mbps or 1 Gbps)
- Power Enable signal to power up the device (when it is constantly connected to the battery)
- Configuration via RS-232 interface
- LED indicators for power and Ethernet (link and speed)
- Surge/transient and reverse polarity protection
- 1x 5-pin A-coded and 6x 8-pin X-coded M12 connectors
- IP67

Applications
- Off-highway equipment
- Industrial automation

Ordering Part Number

6 Port Gigabit Ethernet Switch - P/N: **AX140705**

NOTE: *The device is shipped with a default password for access. It can be customized and managed by the user for secure access.*

Accessories:
- Software Support Package - P/N: **AX140910**
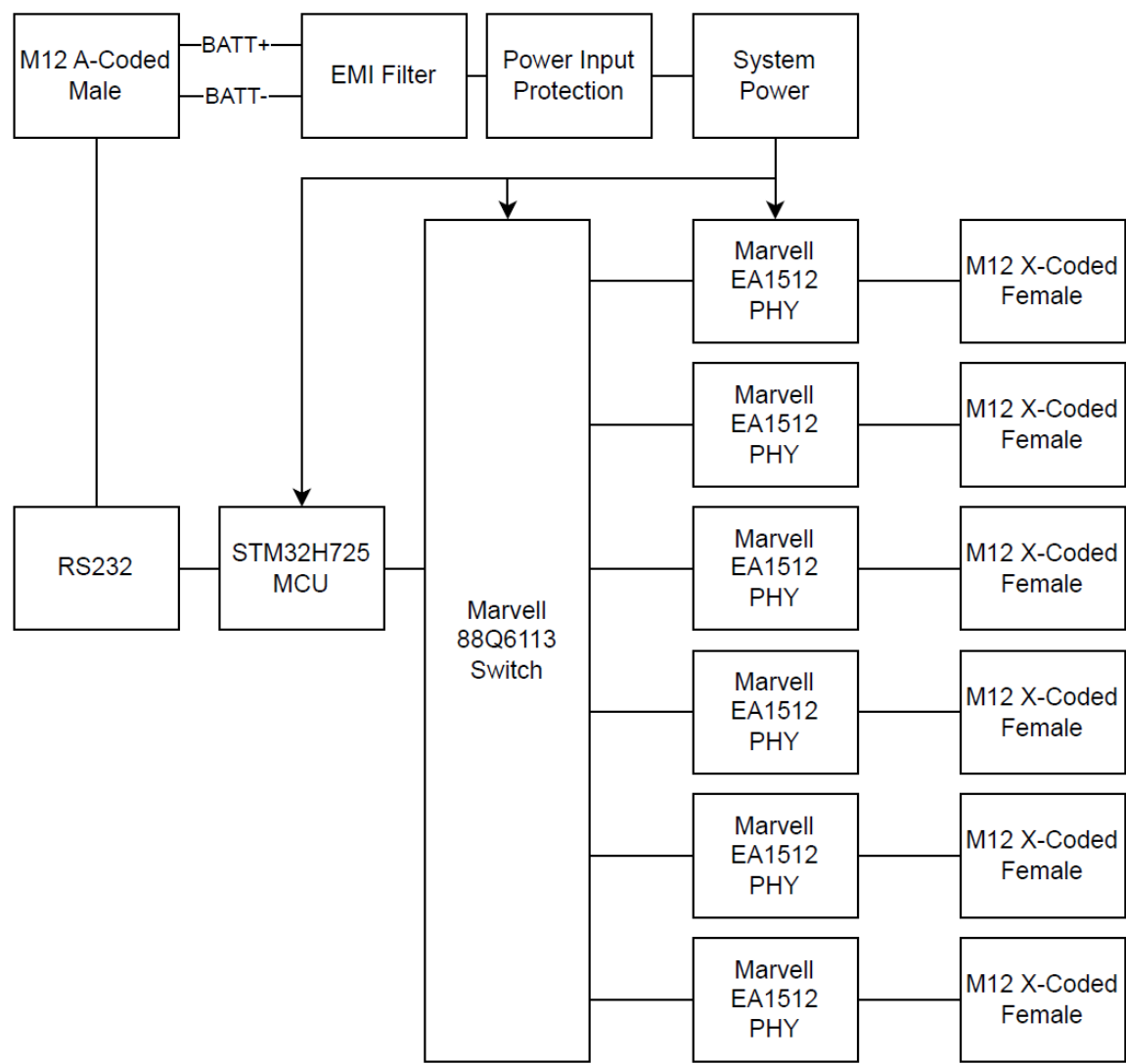- Discovery Application (`AxioDisc.exe`)

Description
The AX140705 is designed for industrial and off-highway applications requiring high performance Ethernet connectivity. Each switch port can communicate at 1 Gbit/s, 100 Mbit/s, or 10 Mbit/s speeds according to IEEE 802.3 standards. The switch internal logic is not configurable, resulting in unmanaged switch functionality.

An RS-232 port can be used to configure switch ports, monitor the device performance, download and upload configuration parameters, and update application firmware.

A separate Power Enable digital signal is used to power-up the device in applications where the switch is constantly connected to the battery. The internal state of the switch is displayed by LEDs on the front panel of the housing.

Block Diagram

Technical Specifications

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 Limitations & Return Materials Process as described on https://www.axiomatic.com/service/.

Power Supply

Power Supply Input	12 or 24 VDC nominal (9 Vdc to 36 VDC power supply range)
Quiescent Current	TBD mA @ 12 VDC; TBD mA @ 24 VDC
Protections	Surge protection is provided. Reverse polarity protection up to 36 V is provided. Undervoltage protection provided. Shutdown at 6.5 V. Overvoltage protection provided. Shutdown at 57 V.

Ethernet

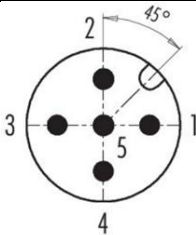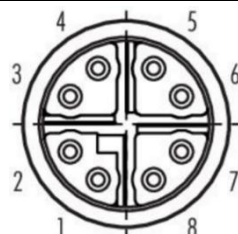| Ports	6 ports 10/100/1000BASE-T 10 or 100 Mbps or 1 Gbps transmission speed Auto-Negotiation Automatic Polarity Correction
MDIX	Auto-MDI/MDIX (crossover)
Switch	Marvell 88Q6113
PHY	Marvell 88EA1512 (10/100/1000Base-T)
Protocol	Ethernet IEEE 802.3
Protection	ESD protection for signal lines

LED Indicators

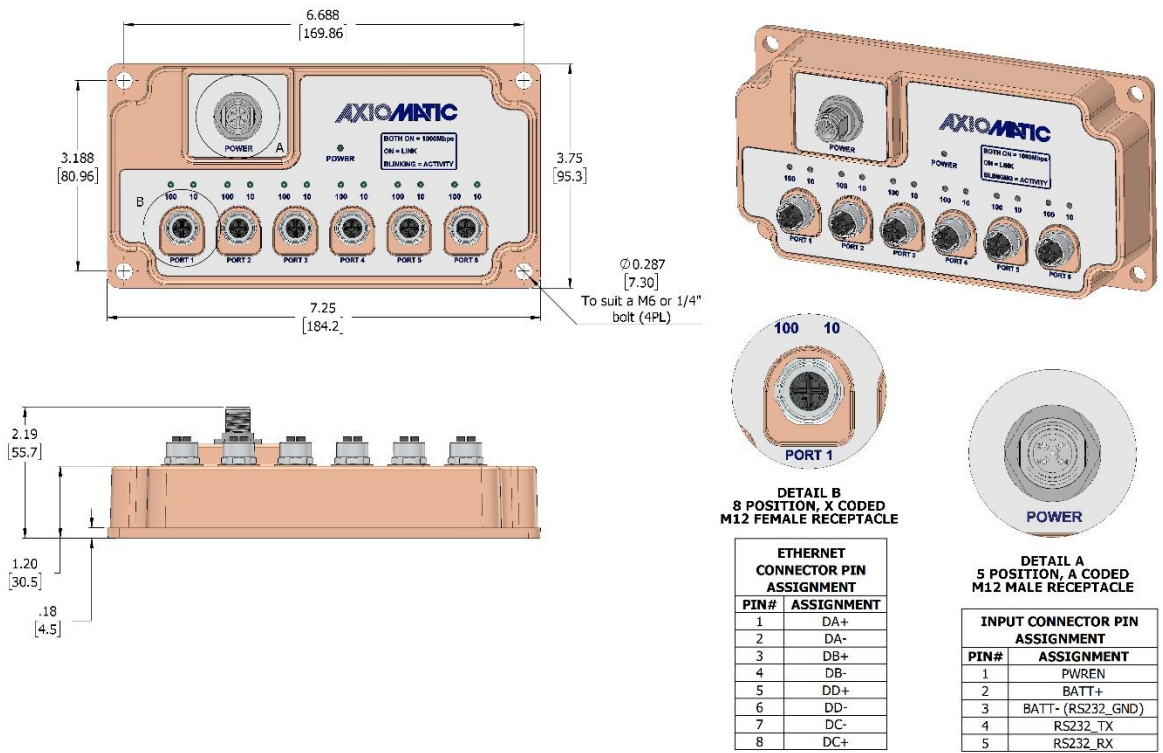| LEDs	1 green LED for Power 6 green and 6 yellow LEDs for Ethernet				
Functionality	**LED**	**Colour**	**ON**	**BLINK**	**OFF**
	Power	Green	Power on	-	No power
	Ethernet	Yellow (10 Mbps) Green (100 Mbps) Both (1 Gbps)	Link up	Activity	No link

RS-232 Interface

Port	1x port Baud rate: 115200 bit/s User interface for configuration ESD and EFT protection for signal lines
User Interface	Any terminal emulator that supports serial communication.

General Specifications

Microcontroller	STM32H725IGK3	
User Interface	RS-232	
Compliance	RoHS	
Operating Conditions	-40 to 75 °C (-40 to 167 °F)	
Storage Temperature	-40 to 85°C (-40 to 185 °F)	
Protection	IP67	
Enclosure	Cast aluminum, anodized enclosure Lexan overlay 7.25 in. x 3.75 in. x 2.19 in. (184.2 mm x 95.3 mm x 55.7 mm) L x W x H excluding mating connectors. See dimensional drawing.	
Weight	1.437 lb. (0.652 kg)	
Electrical Connections	**Power / RS-232 Connector** 1x 5-pin M12 connector (A-coded), Male, Binder P/N: **09-3441-126-05**	
	Pin / **Description**	
	1 / Power Enable	
	2 / Battery +	
	3 / Battery - (RS-232 Ground)	
	4 / RS-232 TX	
	5 / RS-232 RX	
	Ethernet Connectors 6x 8-pin M12 connector (X-coded), Female, Binder P/N: **99-3782-200-08**	
	Pin / **Description**	
	1 / DA +	
	2 / DA -	
	3 / DB +	
	4 / DB -	
	5 / DD +	
	6 / DD -	
	7 / DC -	
	8 / DC +	
Mating Connectors	Mating connectors should meet the following standard for M12 Connectors, IEC 61076-2-101:2012 and should be of equivalent coding.	

Dimensional Drawing

ETHERNET CONNECTOR PIN ASSIGNMENT

PIN#	ASSIGNMENT
1	DA+
2	DA-
3	DB+
4	DB-
5	DD+
6	DD-
7	DC-
8	DC+

DETAIL B
8 POSITION, X CODED
M12 FEMALE RECEPTACLE

DETAIL A
5 POSITION, A CODED
M12 MALE RECEPTACLE

INPUT CONNECTOR PIN ASSIGNMENT

PIN#	ASSIGNMENT
1	PWREN
2	BATT+
3	BATT- (RS232_GND)
4	RS232_TX
5	RS232_RX

Form: TDAX140705-10/01/2025