HarshIO Ethernet I/O Modules for Motorized Drive Rollers

HarshIO IP67 I/O Modules allow Programmable Logic Controllers (PLC/PAC) to connect to Motorized Drive Rollers (MDR) over an Ethernet fieldbus without requiring a proprietary system specific to one MDR manufacturer.

Features and Advantages

- **Metallic Plate**: Functional grounding
- **Ultra-Lock M12 Connectors**: Surpasses performance and reliability of traditional threaded connectors, delivering increased productivity and cost savings
- **4x Motor Drive Roller Channels**: Control Speed, Direction and Start/Stop
- **Automatic MDR model detection**
- **2-port Ethernet Switch**: For daisy chain of EtherNet/IP network
- **Manages Ethernet ring redundancy (EIP DLR)**
- **Ethernet Metallic Plate**: Allow both ODVA and PI Ethernet grounding strategies
- **8x Digital Channels**: Each digital channel can be configured as an Input or an Output point (Pin 2 and 4)
- **Diagnostic LEDs**: Dedicated behavior for motor status. Status and troubleshooting made easy with LEDs for power, network and I/O signals
- **Ethernet Fieldbus Connectivity**: Easy replacement. Configuration via EDS/GSD File
- **3 Rotary Switches**: IP address setting
- **IP67-Seal**: Designed for plant-floor and harsh industrial applications. Eliminates ingress of dust and light jets of water
- **4-Pole and 5-Pole Power Connector Versions**: Suitable for global installation requirements
- **Ethernet Metallic Plate**: Functional grounding
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- **Ethernet Metallic Plate**: Functional grounding

Applications

- **Factory Automation**: Assembly line, Conveying, Packaging lines, Loading and unloading parts for machines
- **Food and Beverage**: Pharmaceutical, Warehouse Management, eCommerce Distribution, Grocery Distribution, Post and Parcel Distribution
- **Sorting**: Baggage Handling, Post and Parcel Sorting

Warehouse Solutions
Conveying and Sorting
Machine Loading and Unloading
Specifications

**REFERENCE INFORMATION**

**Hardware**
- IP67 housing
- Dimensions: 238 x 60 x 39mm
- Operating temperature: -30° ... +40°C without derating
- -30° ... +50°C with derating
- Storage temperature: -40° ... +90°C
- Relative Humidity: 10…95%, non-condensing
- Housing material: PBT VALOX 420 SEO Black 7701

**Power Supply**
- Connector: 1x Male Mini-Change, 5-pole or 4-pole versions available
- Protected against power crossing

**Power Requirements**
- Module logic and I/O power: 24V DC (-15/+20%), max. total 8.2A
- Module Roller auxiliary power: 24V DC (-10/+10%), max. total 8.2A
- Max. cable length: 30m (EMC compliance)
- Diagnostic LED's (under/over voltage, over current)

**Ethernet Ports**
- Connector: 2x Female, Ultra-Lock M12, D-Coded, 4-pole
- Switch 2-port, 10/100 Mbps (auto-negotiation), full duplex
- Diagnostic LED per port (Link / Speed / Activity)

**Shock and Vibration**
- MIL-STD-202F, method 204D, condition A (Vibration)
- MIL-STD-202F, method 213B, condition B (Mechanical Shock)
- MIL-STD-1344A (Thermal Shock)
- Regulatory Approvals: ODVA certified, CE, cULus, RoHS, REACH

**8x Digital channel(s)**
- Connector: Ultra-Lock M12 5-pin A-Coded Female
- Input type: PNP, Sinking, 2/3-wire sensors
- Sensor power supply: 200 mA at 20°C
- Electronic short circuit protection
- Diagnostic LED
- Input delay: 1ms (fixed)

**OUTPUT**
- Connector: Ultra-Lock M12 5-pin A-Coded Female
- Output type: PNP, Sourcing
- Output current per channel: 2A per as rated, 4A as peak
- Maximum total Output current: 8A at 25°C
- Electronic short circuit protection

**4x Motor Drive Roller channel(s)**
- Power supply: Interroll: 18 to 28 V DC
- ITOH DENKI: 21.6 to 26.4 V DC
- Output current per speed channel: 10mA
- 15 steps for speed control
- Max. cable length: 3m (EMC compliance)
- Diagnostic LED per port (default, direction, speed)

**Fieldbus**
- **ETHERNET/IP**
  - EtherNet/IP Adapter
  - RPI: 1ms minimum
  - Data access:
    - Implicit (for I/O data)
    - Explicit (for I/O + CIP objects)
  - ACD: Yes
  - IP address setting: 3 decimal rotary switches
  - IP address capabilities: DHCP, Static Address, Stored (0xF5 / 0xF6 objects)
  - EDS file
  - Integrated web server for diagnostic
  - Remote secured firmware upgradable

- **PROFINET**
  - PROFINET IO-Device (according spec. v2.3)
  - Conformance Class B (CC-B)
  - I/O update rate up to 1ms
  - Data access:
    - Cyclic (for I/O data)
    - Acyclic (for read/write alarms, module configuration and diagnostic)
  - SNMP V1/V2/V3
  - LLDP: Yes (Sender/Receiver)
  - MRP: Yes (Client)
  - Fast Start-Up: Yes
  - I&M: Yes
  - IP Address Capabilities: DCP (default) or Static
  - Easy Replacement (based on DCP/LLDP)
  - GSD File
  - Integrated web server for diagnostic
  - Remote secured firmware upgradable

**Ordering Information**

<table>
<thead>
<tr>
<th>Engineering No.</th>
<th>Order No.</th>
<th>Description</th>
<th>Power Connector</th>
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<tbody>
<tr>
<td>TCDEI-8YMP-D1U-G</td>
<td>112095-5157</td>
<td>HarshIO EtherNet/IP, 4x MDR Channels + 8x Digital IO User Configurable</td>
<td>5-pole (Mini-Change)</td>
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<td>TCDEI-8YMP-D1U-G</td>
<td>112095-5156</td>
<td>HarshIO EtherNet/IP, 4x MDR Channels + 8x Digital IO User Configurable</td>
<td>4-pole (Mini-Change)</td>
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<td>112095-5158</td>
<td>HarshIO PROFINET, 4x MDR Channels + 8x Digital IO User Configurable</td>
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www.molex.com/link/harshio.html

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