The Brad® HarshIO IP67 I/O modules provide a reliable solution for connecting industrial controllers to I/O devices in harsh environments.

Contained in an IP67 rated housing, Brad I/O modules can be machine mounted and are able to withstand areas where liquids, dust or vibration may be present. This makes them ideally suited for many applications including material handling equipment and automated assembly machinery.

Advanced module features such as short-circuit detection, and visible diagnostic LEDs offer easy-of-use and operation simple. Following traditional industrial fieldbus practices, standard M8 connectors from sensing devices or actuators plug directly into the I/O module. An environmentally sealed IP67 connection between the I/O module and the CAN network is created using the M12 Ultra-Lock® connection system which is built into the Brad HarshIO module.

Features and Benefits

- Rated IP67 for harsh environments
- Compact 30mm design allows space savings for direct machine mount applications
- Tested to vibrations and shocks
- Overmolded module electronics
- Metallic connectors
- Standard hole housing pattern allows for interchangeability with popular I/O modules
- Several I/O configurations to choose including fixed, universal and user configurable versions
- Module power supply via CAN bus
- Supports PNP and NPN input devices
- Choose from several I/O configuration module versions
- Visible diagnostic LEDs provide maintenance personnel with the ability to easily determine I/O, module and network status
- Advanced diagnostics
- Short-circuit diagnostics per I/O channel
- Complete module and channel diagnostics supported via PROFIBUS
- Supports CANopen DS401 profile
- Bus speed up to 1 Mbps
- Module addressing: 1 – 99 by rotary switches or 1 – 125 by Set_Slave_Address command
- Built-in 2-port CAN for bus wiring topology

Applications

- Machine tool industry
- Material handling systems
- Filling and packaging machines
- Steel industry

LED Indicators

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Green - power present</td>
<td>Green - power present</td>
<td>Green - no error</td>
</tr>
<tr>
<td>Off - power not connected</td>
<td>Off - power not connected</td>
<td>Single flash - warning limit reached</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digital Input/Output (Ix/Ox):</th>
<th>CANopen Network Status (NET):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Green - input/output on</td>
<td>Green - operational</td>
<td>Double flash - error control event</td>
</tr>
<tr>
<td>Red - input/output fault</td>
<td>Blinking - pre-operational</td>
<td>Triple flash - sync error</td>
</tr>
<tr>
<td>Off - input/output off</td>
<td>Single flash - stopped</td>
<td>Red - bus off</td>
</tr>
</tbody>
</table>

CANopen Certified Compact 30mm HarshIO Module
Specifications

TECHNICAL INFORMATION

I/O Configurations:
- 8 digital channels, fully configurable through ESD file

I/O Connectors:
- Female, M8, 3-pole

Bus Connectors:
- Bus In: Male, M12, A-Coded, 5-pole
- Bus Out: Female, M12, A-Coded, 5-pole

Power Connectors:
- NO - Power supply via CAN bus

Power Requirements:
- Module input power: 24V DC
- Module output power: 24V DC
  (16 to 28V), 4.0A max per module

Communication Rate:
- Auto baud,
  All CAN baud rates up to 1 MBaud

Address Settings:
- 1 – 99 by 2 rotary switches

Fieldbus Specifications:
- CANopen Slave, DS401 profile
- I/O data acces method according
  Synchronous Acyclic, Synchronous (Sync) and Asynchronous

Input Type:
- Compatible with dry contact, PNP or NPN, 2/3-wire sensors
- Electronic short circuit protection

Input Delay:
- 2.5 ms default or configurable through CANopen object parameter

Input Device Supply:
- 200mA per port at 25°C

Output Load Current:
- Maximum 2A per channel, max 4 A per module
- Electronic short circuit protection

Maximum Switching Frequency: 300 Hz

Housing Dimensions:
- 30x 175 x 20mm

Mounting Dimensions:
- 23mm horizontal on centers
- 168mm vertical on centers
- Center hole

Operating Temperature: -25 to +70°C

Storage Temperature: -25 to +85°C

RH Operating: 5 to 95% non-condensing

EMC: IEC 61000-6-2

Protection: IP67 according to IEC 60529

Vibration: IEC 60068-2-6 conformance

Mechanical Shock: 10G, 11ms, 3 axis

Approvals:
- CE, UL, cUL, CANopen Certification

Ordering Information

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Engineering No.</th>
<th>No. of Ports</th>
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<th>I/O Configurations</th>
<th>I/O Channels</th>
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<td>112098-5006</td>
<td>8</td>
<td>MB</td>
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www.molex.com/link/harshiomodules.html

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