

Brad® HarshIO IP67 Ethernet Modules for EtherNet/IP featuring QuickConnect technology deliver significant operational advantages of speed and versatility for industrial robotic tool-change applications

Brad® HarshIO Ethernet modules provide a reliable solution for connecting industrial controllers to I/O devices in harsh duty environments. Machine mountable in an IP67 rated housing, HarshIO modules are ideally suited for industrial applications in harsh environments where liquids, dust or vibration may be present.

Modern industrial robots, with automatic tool change (ATC) capabilities increase the flexibility of production lines and reduce the number of robots required per cell. Achieving shorter production cycles is possible through minimising ATC time. The Brad HarshIO modules for EtherNet/IP feature QuickConnect (QC) technology. Meeting requirements from automobile manufacturers and conforming to QC Class A device requirements, the Brad HarshIO module for EtherNet/IP can power-up and operate in less than 500ms.

Advanced features such as built-in 2-port Ethernet switch, scrolling 4 character display and a flexible IP address-setup method make configuration and operation simple. Using the patented Ultra-Lock™ push-to-lock connection system, standard M12 connectors from sensing devices or actuators plug directly into the I/O module creating an IP67 environmentally sealed, Ethernet connection. For more information on Brad HarshIO modules visit www.molex.com/link/harshio.html

Brad® HarshIO 600 eIP with QuickConnect

Classic 60mm EtherNet/IP Digital I/O Modules



FEATURES AND BENEFITS

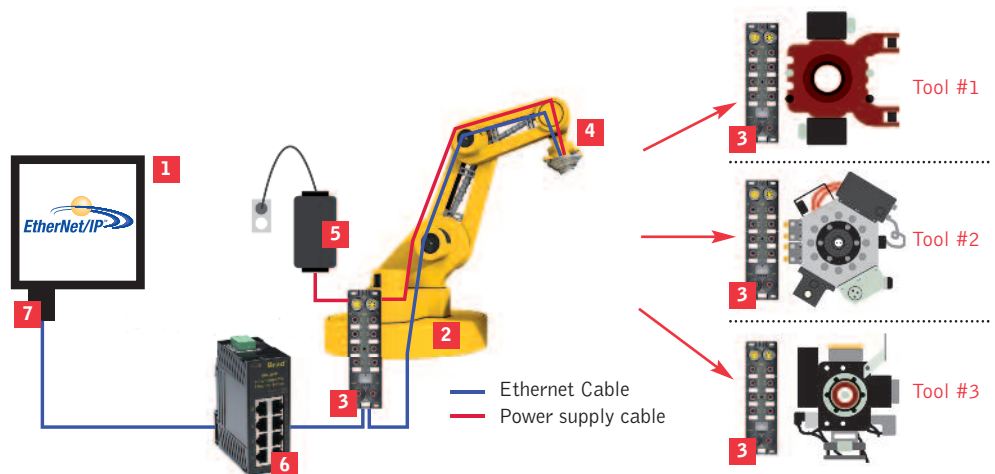
- Rated IP67 for harsh environments
- Designed for direct machine-mount applications
- Shock and vibration tested
- Overmolded module electronics
- Metallic connectors
- 4-pole or 5-pole 7/8 power connectors
- Accepts standard M12 threaded or Brad Ultra-Lock connectors
- Standard hole housing pattern allows for interchangeability with popular I/O modules
- Choice of fixed I/O 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
- Supports EtherNet/IP Adapter
- Complete module and channel diagnostics supported via EtherNet/IP
- Scrolling 4 characters status display for IP addressing and modules status
- IP addressing: DHCP or static (push button or EtherNet/IP 0xF5/0xF6 objects)
- Built-in 2-port Ethernet switch, 10/100 Mbps auto-sensing and crossover capability
- **NEW!** QuickConnect capability to start and operate the module in less than 500ms
- **NEW!** Grounding isolation between input/logic ground and output ground for application using safety relays



EtherNet/IP HarshIO Module

MARKETS AND APPLICATIONS

- Factory Automation
 - All industries using robots for repetitive tasks with precision
 - Machine tool industry
 - Automotive
 - Material handling systems
 - Filling and packaging machines
 - Steel industry



- 1. Cabinet with EtherNet/IP PLC
- 2. Robot
- 3. HarshIO eIP modules
- 4. Tool Changer
- 5. 24V power supply
- 6. Ethernet Switch
- 7. RJ45 to M12 adapter

SPECIFICATIONS

I/O Configurations:

- 16x inputs
- 12x inputs / 4x outputs
- 8x inputs / 8x outputs
- 16x outputs

I/O Connectors:

Female, Ultra-Lock™ M12, A-Coded, 5-pole

Bus Connectors:

Male, Brad Ultra-Lock™ M12, D-Coded, 4-pole

Power Connectors:

Power In: Male Mini-Change®, 4- or 5-pole
Power Out: Female, Mini-Change®, 4- or 5-pole

Power Requirements:

Module Input power: 24V DC (-15/+20%)
Module Output power: 24V DC (-15/+20%)
8.0A max per module

Ethernet Switch:

2-port
10/100 Mbps (auto-negotiation), full duplex
Storm Protection

Fieldbus:

EtherNet/IP Adapter
I/O update rate up to 1ms (RPI)
Data access:
Implicit messages (for I/O data)
Explicit messages (for reading module configuration and diagnostic)
Quick Connect: Yes (Class A)
ACD: Yes
Upload EDS file from Device object: Yes
IP Address Capabilities:
DHCP
Static address
EtherNet/IP 0xF5/0xF6 objects

Input Type:

Compatible with dry contact, PNP,
2/3-wire sensors
Electronic short circuit protection

Input Delay: 5ms

Input Device Supply:

140mA per port at 25°C

Output Load Current:

Maximum 2.0A per channel
Electronic short circuit protection

Maximum Switching Frequency: 200 Hz

Housing Dimensions:

600 x 220 x 20mm

Mounting Dimensions:

37.50mm horizontal on centers
210mm vertical on centers
Center hole

Operating Temperature: -25 to +70°C

Storage Temperature: -40 to +90°C

RH Operating: 5 to 95% non-condensing

EMC: IEC 61000-6-2

Protection:

IP67 according to IEC 60529, NEMA 6P

Vibration: 7g (15.7Hz to 500Hz), 3 axis

Mechanical Shock: 10g, 11ms, 3 axis

Thermal Shock: MIL-STD-1344A

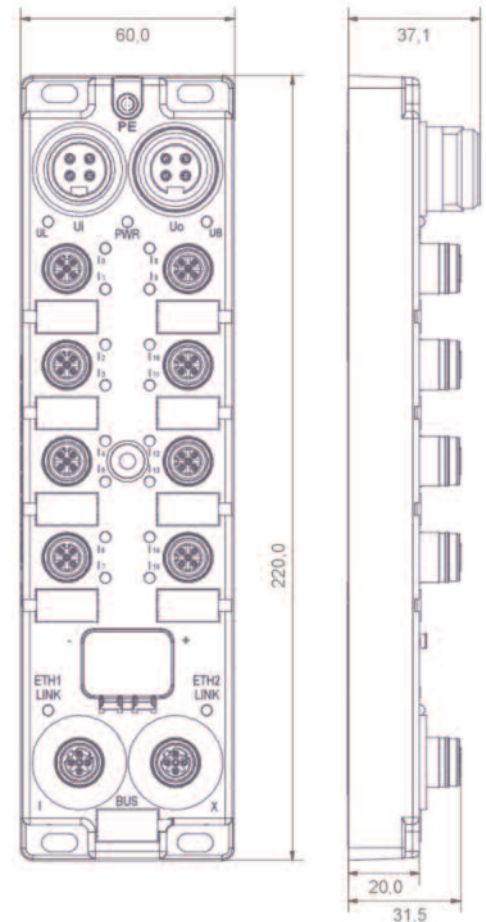
Approvals:

CE, UL, cUL, RoHS, REACH
ODVA conformance tested (pending)

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Classic 60mm

EtherNet/IP Digital I/O Modules



4-Pole, 16x Inputs module version

LED INDICATORS

Module and Input Power (UB):

Green – power present
Off – power not connected

Output Power (UL):

Green – power present
Off – power not connected

4-Digit Display:

Provides information about Ethernet IP address, I/O Status, Scanner connection, etc.

Input/Output (Ix/Ox):

Green – input/output on
Red – input/output fault
Off – input/output off

Ethernet Link (Port 1 and 2)

Solid Green – Ethernet link, 100 Mbit/s, no activity
Flashing Green – Ethernet link, 100 Mbit/s, activity
Solid Yellow – Ethernet link, 10 Mbit/s, no activity
Flashing Yellow – Ethernet link, 10 Mbit/s, activity

ORDERING INFORMATION

Order No.	Engineering No.	Description	Poles	Ports	I/O Connectors	I/O Configurations		I/O Channels				
						Input	Output					
112095-5040	TCDEI-8D0P-DYU-G	Classic 60mm	4-pole power	8	M12 Ultra-Lock	16	0	PNP				
112095-5041	TCDEI-888P-DYU-G					8	8					
112095-5043	TCDEI-8B4P-DYU-G					12	4					
112095-5042	TCDEI-80DP-DYU-G					0	16					
112095-5060	TCDEI-8D0P-D1U-G					16	0					
112095-5061	TCDEI-888P-D1U-G		8			8						
112095-5063	TCDEI-8B4P-D1U-G		12			4						
112095-5062	TCDEI-80DP-D1U-G		0			16						
			5-pole power							16	0	
										8	8	
		12		4								
		0		16								

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www.molex.com/link/harshio.html