



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

## Ethernet Discrete I/O Module

### IP67 Classic Module

#### Features

- Supports Modbus TCP (TCP/IP & UDP)
- Accepts M12 threaded connectors or BradConnectivity™ Ultra-Lock™ connection system
- Standard hole pattern allows for interchangeability with popular I/O modules
- Supports PNP & NPN input devices
- Several I/O configurations to choose from
  - TCDEM-8YYX-DIU offers 16 points of configurable I/O where the user can configure each point as either an input or output
- Visible LEDs provide maintenance personnel with the ability to easily determine I/O, module & network status
- Rated IP67 for harsh environments
- Designed for direct machine mount applications
- IP addressing via Bootp, DHCP or static (through web interface, push button & Modbus commands)
- Scrolling 4 character status display for IP addressing and module status
- Built-in 3-port Ethernet switch
  - 10/100 Mbps auto-sensing and crossover capability
- Built-in web server for remote monitoring, configuration and diagnostics
- Configurable I/O capability (through web interface & Modbus commands)
- Watchdog

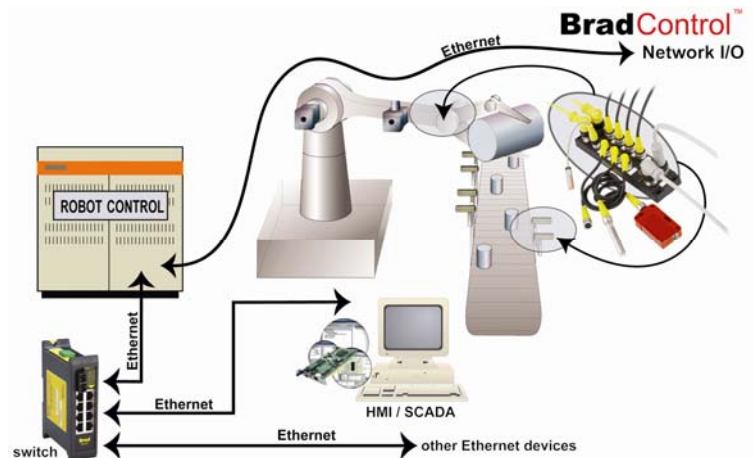
#### Typical Applications

- Machine tool industry
- Material handling systems
- Filling & packaging
- Steel industry



### I/O Systems for Harsh Duty Environments

BradControl™ Ethernet I/O modules provide a reliable solution for connecting industrial controllers to I/O devices in harsh duty environments.



Contained in an IP67 rated housing, BradControl 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 network features such as 10/100 Mbps auto-sensing, web server capabilities and a flexible IP address setup method, make configuration and operation simple. Following traditional industrial fieldbus practices, standard M12 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 Ethernet network is created using the Ultra-Lock™ connection system built into the BradControl Ethernet I/O module.

## Ethernet I/O Module



## LED Indicators

Module & Input Power (I):

**Green** –power present  
**Off** –power not connected

Output Power (O):

**Green** –power present  
**Off** –power not connected

Display Box:

Inform about Ethernet address, IO and Watchdog status

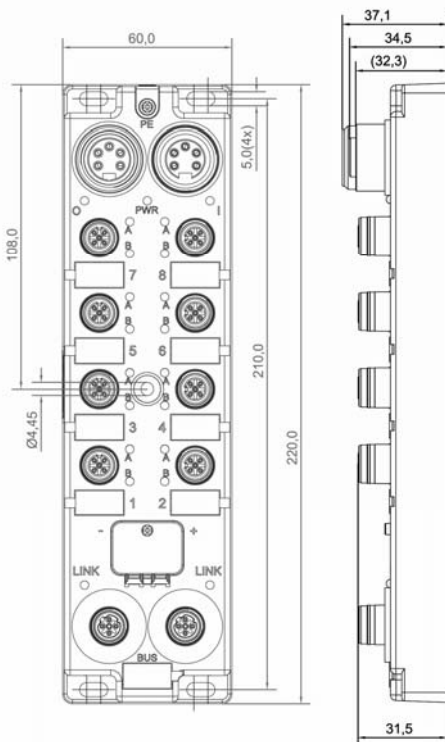
Input / Output (Ix / Ox):

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

Ethernet Link (LNK 1/2):

**Solid Green**– Ethernet link at 100 Mbit/s without activity.  
**Flashing Green**– Ethernet link at 100 Mbit/s with activity.

**Solid Yellow**– Ethernet link at 10 Mbit/s without activity.  
**Flashing Yellow** – Ethernet link at 10 Mbit/s with activity.



## Technical Information

<b>I/O Configurations</b>	16 inputs 14 inputs / 2 outputs 12 inputs / 4 outputs 8 inputs / 8 outputs Universal & user configurable input / output channels
<b>I/O Connectors</b>	Micro-Change <sup>®</sup> 5-pole M12 female BradConnectivity <sup>™</sup> Ultra-Lock <sup>™</sup> , internally threaded
<b>Ethernet Connectors</b>	2 connectors 4-pole female M12 D-Coded Ultra-Lock Acting as a switch. Crossover capability
<b>Power Connectors</b>	Power in : male Mini-Change <sup>®</sup> 5-pole Power out : female Mini-Change 5-pole
<b>Power Requirements</b>	Module & input power : 24 Vdc, Module output power : 24 Vdc (13 to 28 V), 8A max per module
<b>Communications Rate</b>	10/100 Mbps auto-sensing, auto-detecting, full duplex
<b>IP Address Capabilities</b>	BOOTP (default), DHCP, static address
<b>Protocol</b>	<ul style="list-style-type: none"> <li>Modbus (TCP &amp; UDP) Function code: 01, 02, 03, 04, 05, 06, 15, 16, 23</li> </ul>
<b>Input Type</b>	Compatible with dry contact and PNP or NPN 3-wire switches. Electronic short circuit protection
<b>Input Delay</b>	2.5 ms default or Configurable through Modbus messaging
<b>Input Device Supply</b>	200 mA per port at 25°C
<b>Output Load Current</b>	Maximum 2.0 A per channel Electronic short circuit protection
<b>Maximum Switching Frequency</b>	200 Hz
<b>Housing Dimensions</b>	60mm x 220mm x 20mm (2.36 x 8.66 x .78 inches)
<b>Mounting Dimensions</b>	37.5 mm (1.48 inches) horizontal on centers 210 mm (8.27 inches) vertical on centers Center hole
<b>Operating Temperature</b>	-20°C to 70°C (-4°F to 158°F)
<b>Storage Temperature</b>	-40°C to 85°C (-40°F to 185°F)
<b>Protection</b>	IP67 according to IEC 60529
<b>Vibration</b>	IEC 60068-2-6
<b>Mechanical Shock</b>	10G, 11ms, 3 axis
<b>Approvals</b>	CE, UL, cUL

## Ordering Information

Part Number	Product Description
TCDEM-8D0N-D1U	Digital 8 port, 16 in NPN
TCDEM-8C2N-D1U	Digital 8 port, 14 in & 2 out NPN
TCDEM-8B4N-D1U	Digital 8 port, 12 in & 4 out NPN
TCDEM-888N-D1U	Digital 8 port, 8 in & 8 out NPN
TCDEM-8D0P-D1U	Digital 8 port, 16 in PNP
TCDEM-8C2P-D1U	Digital 8 port, 14 in & 2 out PNP
TCDEM-8B4P-D1U	Digital 8 port, 12 in & 4 out PNP
TCDEM-888P-D1U	Digital 8 port, 8 in & 8 out PNP
TCDEM-8YYX-D1U	Digital 8 port, 16 I/O universal & user configurable input / output channels

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