



The BradControl™ Block I/O system provides an IP20 I/O interface solution for open network fieldbuses such as Ethernet, PROFIBUS®, and DeviceNet™. Features include expandability, high-density design & DIN rail mounting.

## Ethernet Adapter Module

### Features

- Expandable in-cabinet IP20 I/O
- Supports Modbus™ TCP (TCP/IP & UDP)
- Comprehensive selection of digital and analog I/O interfaces
- Easy field replacement of modules
- Direct wire couplings for assembly cost savings
- Space-saving construction
- High-packaging density
- DIN rail mountable
- Built-in 2-port Ethernet switch
- Web server for easy configuration and diagnostics
- Dedicated software tools
- Scrolling 4 character status display
- Pushbutton menu selection
- IP addressing via Bootp, DHCP or static
- Watchdog capable

### Typical Applications

- Machine tool industry
- Filling and packaging



### Overview

The BradControl IP20 Block I/O system is an effective way to connect industrial I/O devices to a PLC or PC controller over an industrial fieldbus network such as Modbus TCP. The BradControl I/O interface solution is comprised of a network adapter and up to 32 expansion modules mounted in an enclosure close to the field devices. The ribbon cable based expansion bus, which handles inter-module communication, operates at 11 Mbd, is permitted to be 6.5 meters in length, and accommodates a maximum of ten groups of modules.

A wide range of control system interface requirements are met with the availability of 24 VDC powered digital input, digital output, relay output, analog input and analog output modules.

### Ethernet Adapter Module

The BradControl Ethernet adapter module operates as a slave device in the Ethernet control system, gathering signals and data from local field devices through the expansion modules. The adapter module manages all communications with the expansion modules, and supplies DC power to the attached local processors.



## Diagnostics

**Net:**

- Green - Addressing completed
- Red - Addressing in progress

**I/O:**

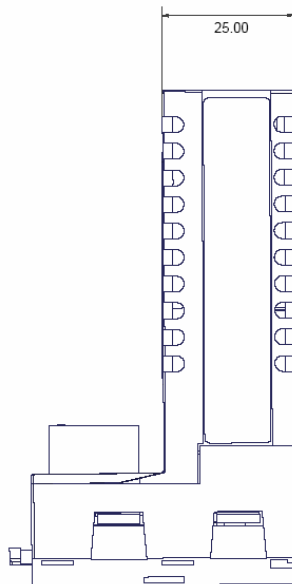
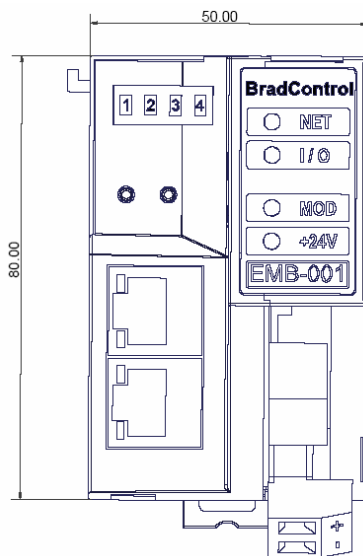
- Green - No IO error detected
- Red - Configuration or module fault

**MOD:**

- Off - no adapter fault
- Blink red- adapter fault

**24V:**

- Green - power present
- Off - no external power



## Hardware Specifications

<b>Part Number</b>	<b>BCB-EMB-001</b>
<b>Power Connection</b>	2-pole screw terminal
<b>External Voltage Supply</b>	24 V DC (+/- 5%)
<b>Supply Current Draw</b>	Maximum 1.0 Amps
<b>Adapter Module Current</b>	≤ 100 mA
<b>Expansion Module Connection</b>	7-conductor ribbon cable
<b>Output Voltage</b>	Minimum +5V, maximum +5.35V
<b>Current of Connected Modules</b>	Maximum 1.5 Amps
<b>Expansion Module Capacity</b>	32 expansion modules (note 5V supply and process data limitations)
<b>Maximum Process Data</b>	64 bytes input, 64 bytes output
<b>Fieldbus Specification</b>	Modbus TCP (TCP/IP & UDP)
<b>Fieldbus Connection</b>	2x RJ45, acting as 2-port switch
<b>Network Address</b>	LED display visible, pushbutton incrementing
<b>Network Baud Rate</b>	10/100 MB autobaud
<b>Approvals / Certifications</b>	CE, UL, CUL
<b>Mounting</b>	35mm DIN rail per EN50022-35
<b>Dimensions W x H x L (mm)</b>	50 x 80 x 94.5
<b>Protection</b>	IP20 according to IEC 60529
<b>EMC</b>	IEC 61000-6-2
<b>Operating / Storage Temperature</b>	0 to +55°C / -20 to +85°C
<b>Relative Humidity</b>	0 – 95% non-condensing

## Ordering Information

Part Number	Product Description
<b>Ethernet adapter module:</b> <b>BCB-EMB-001</b> BCB-EIP-001 BCB-EPN-001	<b>Modbus TCP – available now</b> EtherNet/IP™ – consult factory for availability ProfiNet - consult factory for availability
<b>Expansion Modules :</b> <b>BCB-Fxx-yyy</b> <b>BCB-Txx-yyy</b>	<b>Function modules (16 available)</b> <b>Terminal modules (8 available)</b>

**BradControl**<sup>TM</sup>  
from Woodhead Industries

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