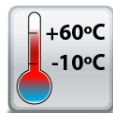


# ED-004 Ethernet to Digital I/O +RS232

4 Digital I/O Lines with RS232 Serial Port

- 4 Digital Ports independently can be In or Out
- 1 RS232 Serial Port
- 1 Ethernet Port
- User friendly software interface  
Simple web based configuration, monitoring and control
- Software APIs for VB, C# and more



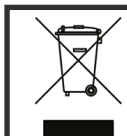
Easy to set up with LED status lights for Digital I/O lines that correspond to simple to read webpage



+5 to +30 Volt Power Input enables the device to be run from USB, a vehicle battery or the factory floor



Integral wall mount option can be used with MK-048 clips to allow DIN rail mounting



## ED-004

## Ethernet to Digital I/O +RS232

Integrate with popular software packages or use with our free APIs

LED status lights

Wall mount holes compatible with MK-048 DIN mount clips

View from webpage - no software required

Ethernet Port

Easy Wire Removable screw terminal blocks

Wide Range Input Power: +5VDC to +30VDC

IP30 Non-conducting polyamide case

-10°C to +60°C/+14°F to +140°F temperature range

Supports Modbus TCP or ASCII commands

RS232 Serial Port

4 Digital I/O Lines



### Connectors

Screw Terminals

3 way x 0.2inch/5.08mm and 10 way x 0.2inch/5.08mm pitch

Wire Thickness

0.150 inch, 3.81mm, 20 pins, 12+8 screw terminals, #26 - #16 AWG, 0.14mm<sup>2</sup>-1.3mm<sup>2</sup>

### Power Supply

Power Supply input

Unregulated +5V to +30Volts DC, reverse polarity protection

Isolation

1500VRMS Magnetic isolation from Ethernet

### Environmental

Operating Temperature

-10°C to +60°C / +14°F to +140°F

Storage Temperature

-10°C to +70°C / +14°F to +158°F

Ambient Relative Humidity

5 to 95% (non-condensing)

### Magjack LED Information

Link/Activity LED

Solid green Connection established  
Flashing Green Data communication

Speed LED

Green 100Base-Tx  
Unlit 10Base-T

### Ethernet

Ethernet Port

RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX)

Protection

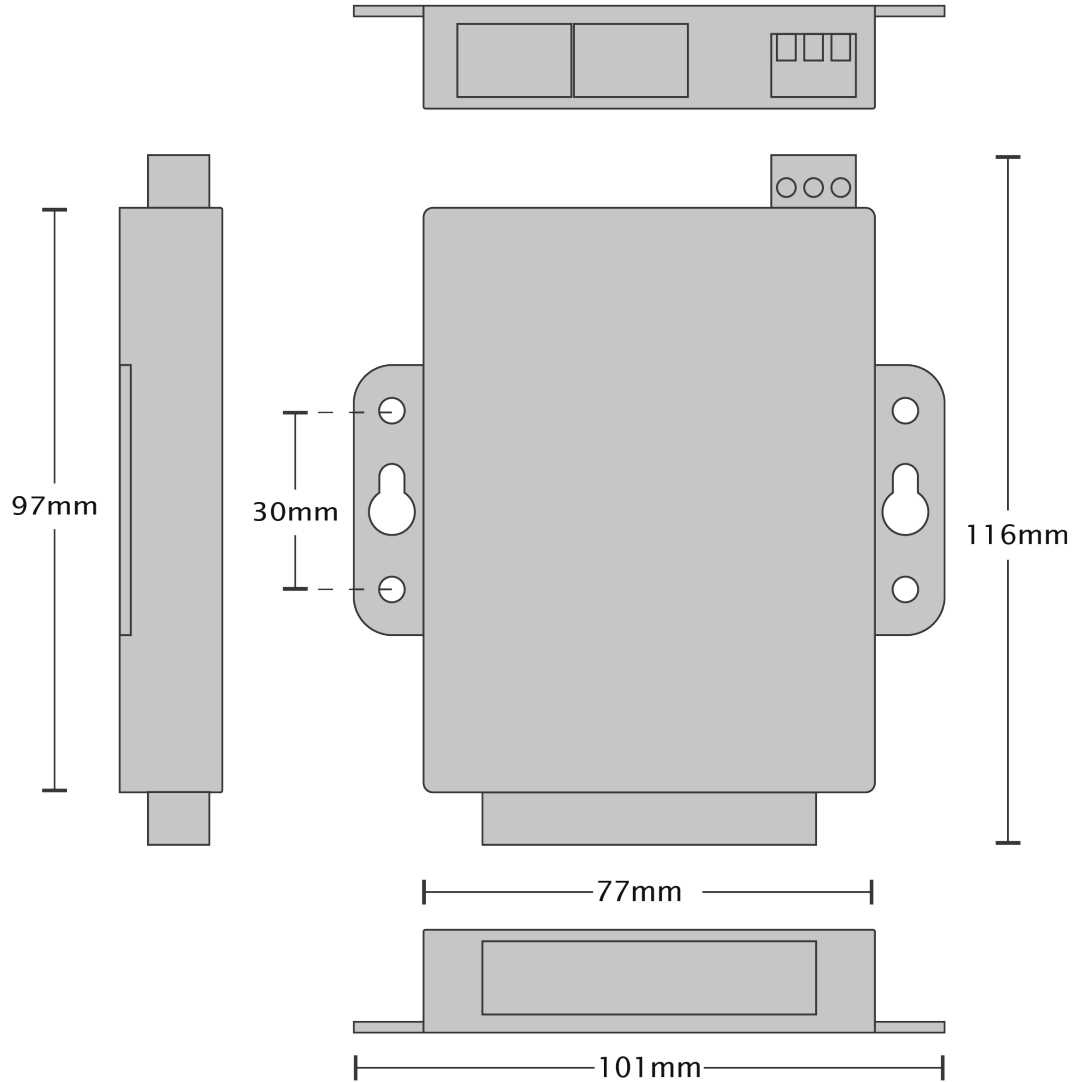
1,500 Volts magnetic isolation between ports

Housing

IP-30 rated non-conducting polyamide case

# ED-004

## Ethernet to Digital I/O +RS232



Terminal Block Pin Outs

PIN	FUNCTION
1	TxD
2	RxD
3	RTS
4	CTS
5	GND
6	DIO 3
7	DIO 2
8	DIO 1
9	DIO 0
10	GND

Ethernet Port Pin Outs

PIN	FUNCTION
1	RD+ / TD+
2	RD- / TD-
3	TD+ / RD+
4	NC
5	NC
6	TD- / RD-
7	NC
8	NC

Power Terminal Pin Outs

PIN	FUNCTION
1	+V
2	-V
3	Functional Earth

**Lifetime Warranty and Support:**

We can help with every aspect of your project, from getting you up and running to custom application.

## ED-004

## Ethernet to Digital I/O +RS232

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### Digital Channels - 4 Ports individually selectable as Inputs or Outputs

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#### Inputs

NPN/PNP	Individually jumper selectable pull up for NPN, active low, type sensors and pull down for PNP, active high, type sensors
Logic Level 0:	0V to +1V
Logic Level 1:	+2V to +30V
Latched Inputs:	Triggered by user programmable positive or negative edges, stays true until acknowledged
Counter Inputs:	User programmable- counts positive or negative transitions 0-65335

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#### Outputs

Maximum output current	Sinks up to 0.85 Amp per pin, 30V max load Max combined load 3.4 Amps per ED device
Characteristic:	Open drain output, protected MosFET intelligent short circuit protection up to 36V Over temperature shutdown :175°C typical 150°C min
Maximum output load Voltage	30V
ESD Production	16kV
Quick-Stop function	When a user programmable input transitions to a preconfigured high or low state then all outputs go to a user programmable known good state

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#### Serial Port - RS232

Baud Rate	From 110 - 1 MegaBaud - Any custom Baud rate accepted
Data Bits	5,6,7 or 8
Parity	Odd, Even, None, Mark or Space
Stop Bits	1 or 2
Flow Control	RTS/CTS, XON/XOFF
Tx/Rx Modes	Point to Point

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#### Power Supply

Power Supply input	Unregulated +5V to +30Volts DC, reverse polarity protection
Isolation	1500VRMS Magnetic isolation from Ethernet
Power Consumption	2.5 Watts Max : 220 mAmps@+5VDC/36mAmps@+30VDC

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## Software

### OS Compatibility

Brainboxes' software provides a TCP or Serial COM port interface. All software versions and updates available to download from our website.

#### Microsoft

Legacy COM port drivers for Microsoft OS up to latest Windows 11

#### Other

TCP and web browser interface for other OSs & Linux, e.g. Android, Raspberry Pi



### Boost.IO Manager

Lets you find, install and upgrade devices

### Industry Standard Packages

The COM port based driver means devices are compatible with popular packages such as: LabVIEW, MATLAB, Agilent VEE. So you can continue to get value from your existing development and process control system.

### Software Platforms

APIs and sample program code for: Microsoft .NET, C#, Visual Basic, C++, JavaScript, PHP, Java, Objective-C, Python and more - www.brainboxes.com



## Modbus

Device works as a Modbus TCP server. Modbus TCP can be used on the input and output lines.

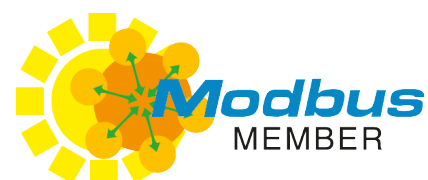
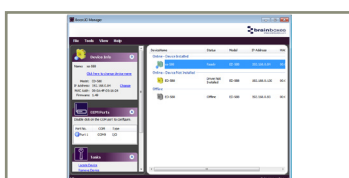
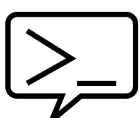
	Modbus access type	Supported Modbus function codes	Logical address	984 style address	IEC 61131 address
Read DI counter values	Holding register	3	0x0000...	40001...	%MW0...
Clear DI counters	Coil	5, 15	0x0200...	00513	%M512...
Set/read digital outputs	Coil	1, 5, 15	0x0000...	00001...	%M0...

## ASCII

The ED device's webpage has an interactive ASCII console where any command can be entered and it is immediately executed showing the device's response.

\$01M	read the name of device address 01
!01ED-588	device 01 replies that its name is ED-588
\$01F	read firmware version number of device address 01
!012.54	firmware version of device 01 is 2.54

Full command tables can be found in the device manual



## ED-004

## Ethernet to Digital I/O +RS232

### Packaging Information

Packaging	Microsoft signed drivers & utilities, Quick Start Guide, Device
Packaged Weight	0.222 kg, 7.83 ounces
Packaged Dims	160x135x49 mm, 6.3x5.3x1.9 inches
GTIN Universal Code	837324009859

### Approvals

Industry Approvals	Microsoft Certified Gold Partner, WEEE, RoHS, AEO (C-TPAT), CE, UKCA
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### Product Support

Warranty	Lifetime - online registration required
Support	Lifetime Web, Email and Phone Support from fully qualified, friendly staff who work in and alongside the Product Development Team

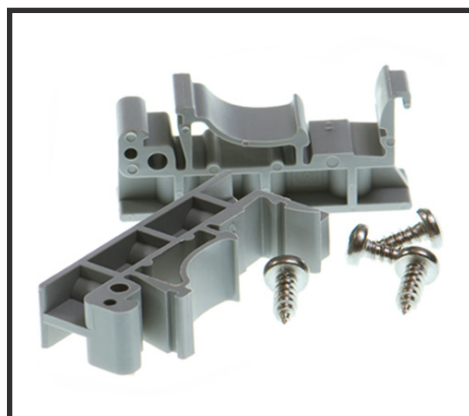
### Additional Information

OEM option	Available for bulk buy OEM
Made In	Manufactured in the UK by Brainboxes Winner 2005 European Electronics Industry Awards 'Manufacturer of the Year'
Customisable	Brainboxes operate a 'Perfect Fit Custom Design' policy for volume users. More info:sales@brainboxes.com



### PW-600

Power supply with connectors for UK, USA, EU and AUS mains socket. 'Tails' are suitable for connecting to screw terminal blocks.



### MK-048

DIN Rail Mounting Kit Enables device to be clipped onto a DIN rail.



### ED Range

Remote I/O products available in a range of formats and specifications.

[www.brainboxes.com](http://www.brainboxes.com)