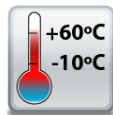


## ED-038 Ethernet to Digital I/O Relay

3 Digital Input Lines and 3 Form A Relays

- 3 Digital Inputs
- 3 Form A Relay Outputs
- 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-038

## Ethernet to Digital I/O Relay

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



3 Form A Relay Outputs    3 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

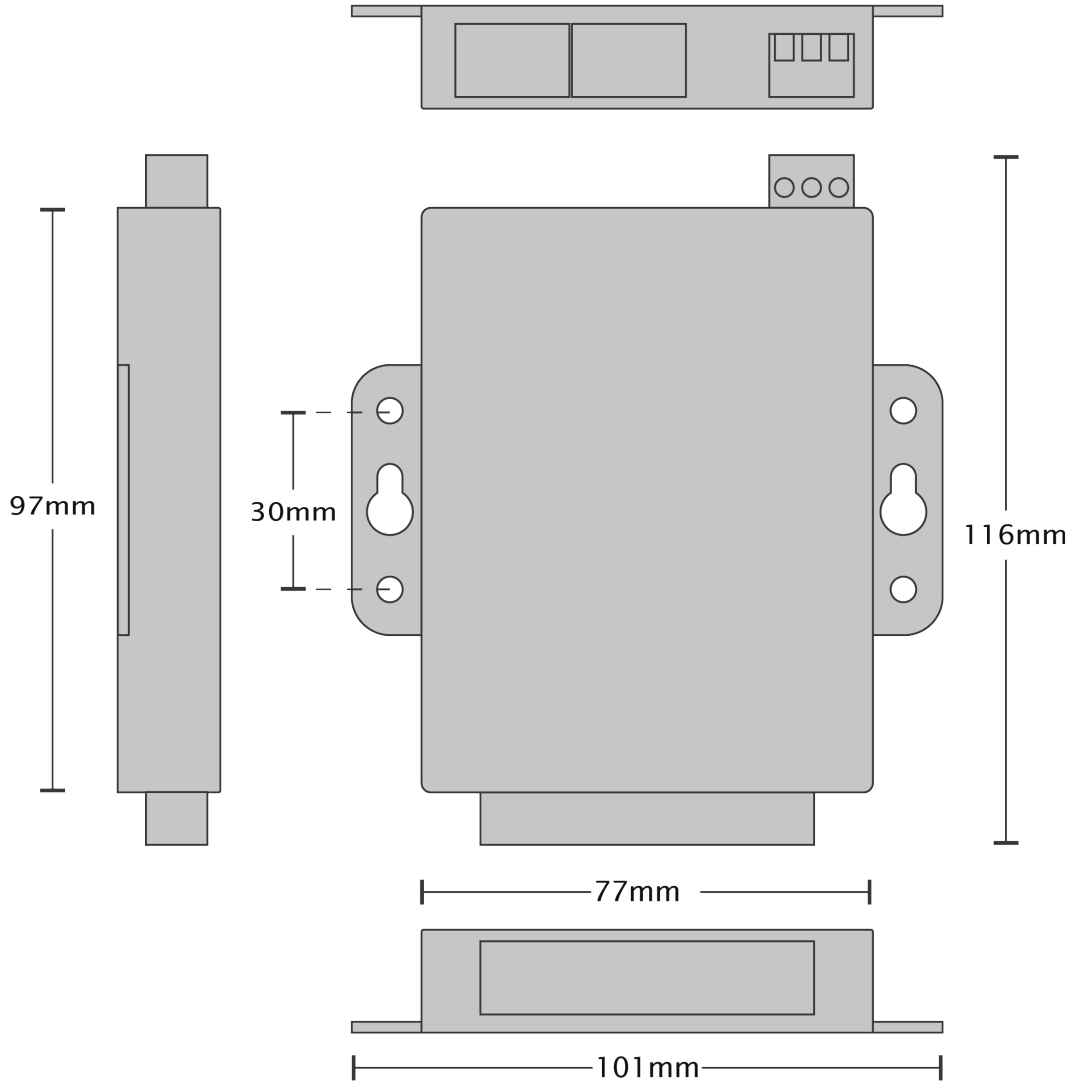
1,500 Volts magnetic isolation between ports

Housing

IP-30 rated non-conducting polyamide case

# ED-038

## Ethernet to Digital I/O Relay



Terminal Block Pin Outs

PIN	FUNCTION
1	COM 2
2	NO 2
3	COM 1
4	NO 1
5	COM 0
6	NO 0
7	DI 2
8	DI 1
9	DI 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-038****Ethernet to Digital I/O Relay**

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**Digital Channels - 3 Inputs + 3 Relay 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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**Relay Outputs**

Relay Type	3 Form A (SPST: Single Pole Single Throw) - Normally Open When power is removed from the ED-038 the relay is Open
Contact Rating	5 A @ 30 VDC, 5 A @ 250VAC, 5 A @ 110 VAC
Inductive Load	2 A
Resistive Load	5 A
Relay On/Off Time	10ms (Max)
Expected Life	100,000 times (Typical)
Initial Contact Resistance	30 milli-ohms (Max)
Pulse Output	0.3 Hz at rated load

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Serial Port - No Serial Port on this device, see ED-004 or ED-204

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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 10
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.

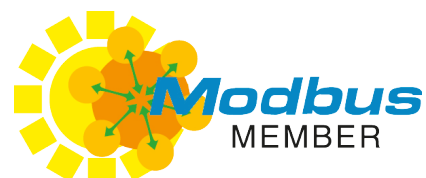
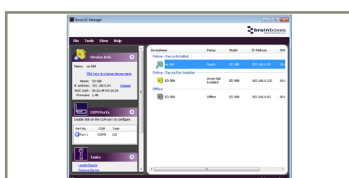
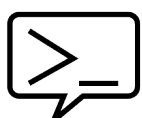
	Modbus access type	Supported Modbus function codes	Logical address	984 style address	IEC 61131 address
Read DI counter values	Holding register	3	0x0000...	40001...	%MW0...
Clear DI counters	Coil	5, 15	0x0200...	00513	%M512...
Set/read digital outputs	Coil	1, 5, 15	0x0000...	00001...	%M0...

## 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-038 Ethernet to Digital I/O Relay

### Packaging Information

Packaging	Installation CD including manual, Microsoft signed drivers & utilities, Quick Start Guide Device
Packaged Weight	0.230 kg, 8.11 ounces
Packaged Dims	160x135x49 mm, 6.3x5.3x1.9 inches
GTIN Universal Code	837324009835

### Approvals

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