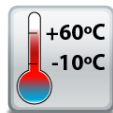# ED-038 Ethernet to Digital I/O Relay

3 Digital Input Lines and 3 Form A Relays
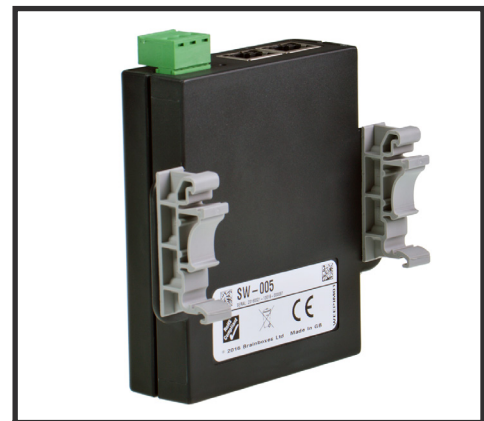
- · 3 Digital Inputs
- · 3 Form A Relay Outputs
- · 1 Ethernet Port
- · User friendly software interface Simple web based configuration, monitoring and control
- · Software APIs for VB, C# and more

IP30	+60°C -10°C	1	I□O

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

Ethernet Port

Easy Wire Removable screw terminal blocks

LED status lights

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

Wall mount holes compatible with MK-048 DIN mount clips

IP30 Non-conducting polyamide case

View from webpage - no software required

-10ºC to +60ºC/+14ºF to +140ºF 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^2-1.3mm^2

Power Supply	
Power Supply input	Unregulated +5V to +30Volts DC, reverse polarity protection
Isolation	1500VRMS Magnetic isolation from Ethernet

Environmental	
Operating Temperature	-10ºC to +60ºC / +14ºF to +140ºF
Storage Temperature	-10ºC to +70ºC / +14ºF to +158ºF
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

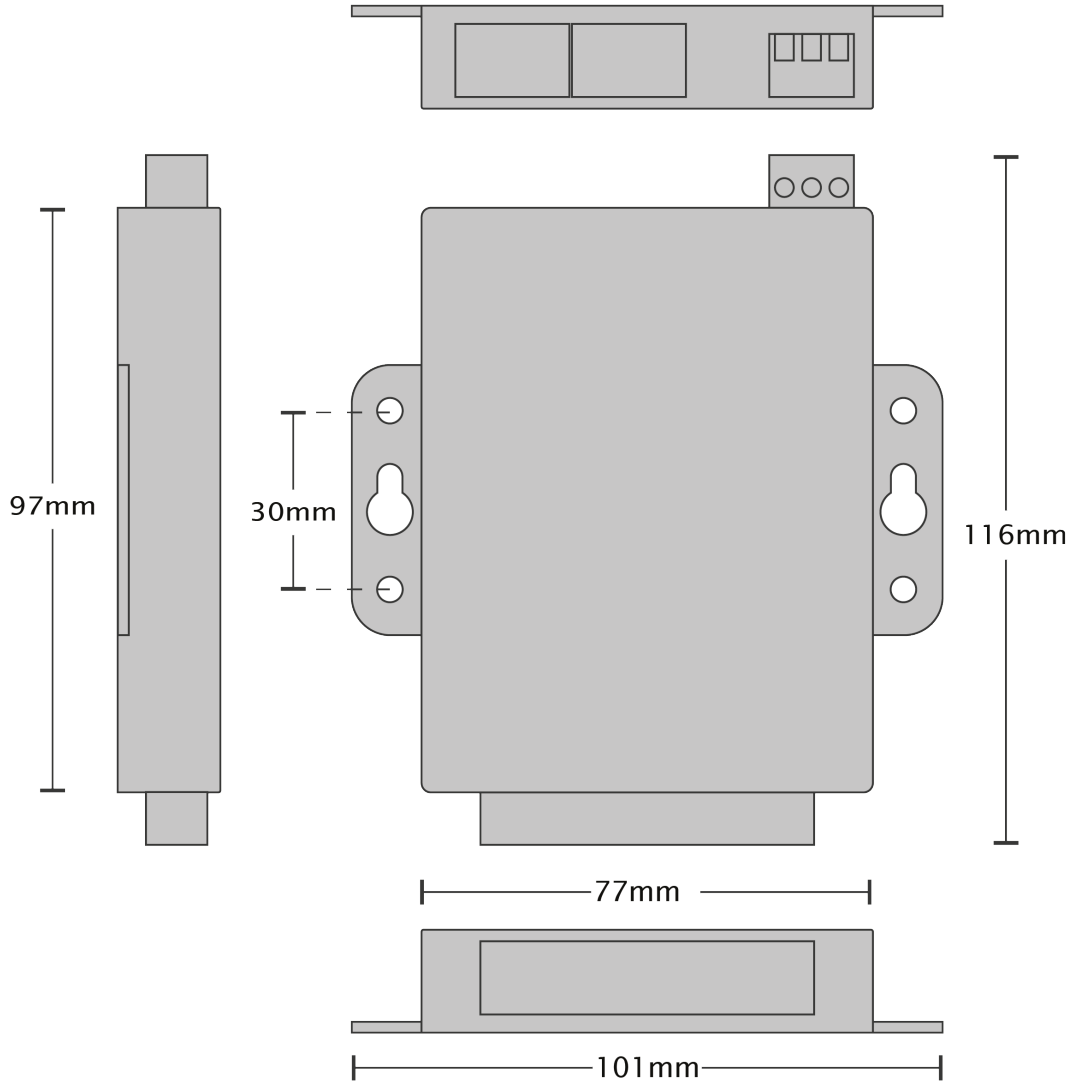| Ethernet	
Ethernet Port	RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX)
Protection	1,500 Volts magnetic isolation between ports
Housing	IP-30 rated non-conducting polyamide case

ED-038

Ethernet to Digital I/O Relay

97mm

30mm

116mm

77mm

101mm

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

Digital Channels - 3 Inputs + 3 Relay Outputs

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

Relay Outputs

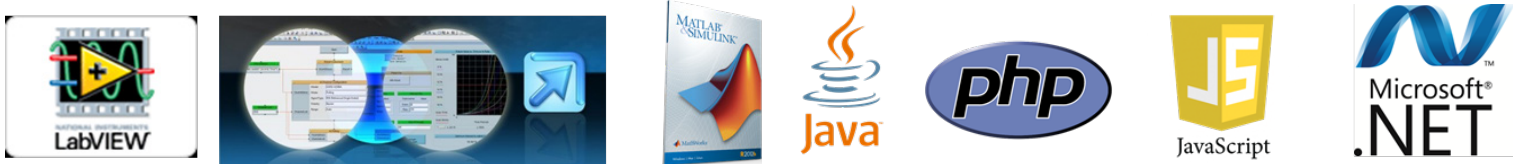|	
Relay Type	3 Form A (SPST: Single Pole Single Throw) - Normally Open When power is removed from the ED-038 the relay is Open
Contact Rating	5 A @ 30 VDC, 5 A @ 250VAC, 5 A @ 110 VAC
Inductive Load	2 A
Resistive Load	5 A
Relay On/Off Time	10ms (Max)
Expected Life	100,000 times (Typical)
Initial Contact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

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

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