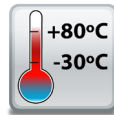# ED-588 Ethernet to Digital I/O

8 Digital Inputs and 8 Digital Outputs

- 8 Digital Inputs and 8 Digital Outputs
- Supports simple ASCII or industry standard Modbus TCP
- 1 Ethernet Port
- -30°C to +80°C/-22°F to +176°F Temperature range
- Software APIs for VB, C# and more

IP20	+80°C / -30°C	1	I⊓○	16 Line	DIN

Non conducting polyamide casing with removable numbered terminal blocks for easy wiring

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

Integral DIN mount and slim design takes up minimal cabinet space

ED-588   Ethernet to Digital I/O

Integrate with popular software packages or use with our free APIs

Easy Wire Removable screw terminal blocks

Supports Modbus TCP or ASCII commands

8 Digital Input Lines

Serial Expansion Port suitable for ADAM modules

Integral DIN rail clip with earth

Ethernet Port

View from webpage - no software required

-30°C to +80°C/-22°F to +176°F temperature range

IP20 Non-conducting polyamide case with vents

8 Digital Output Lines

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

Connectors	
Screw Terminals	3.5mm pitch, #22 - #14, 0.5mm^2-2.5mm^2 pin power supply
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

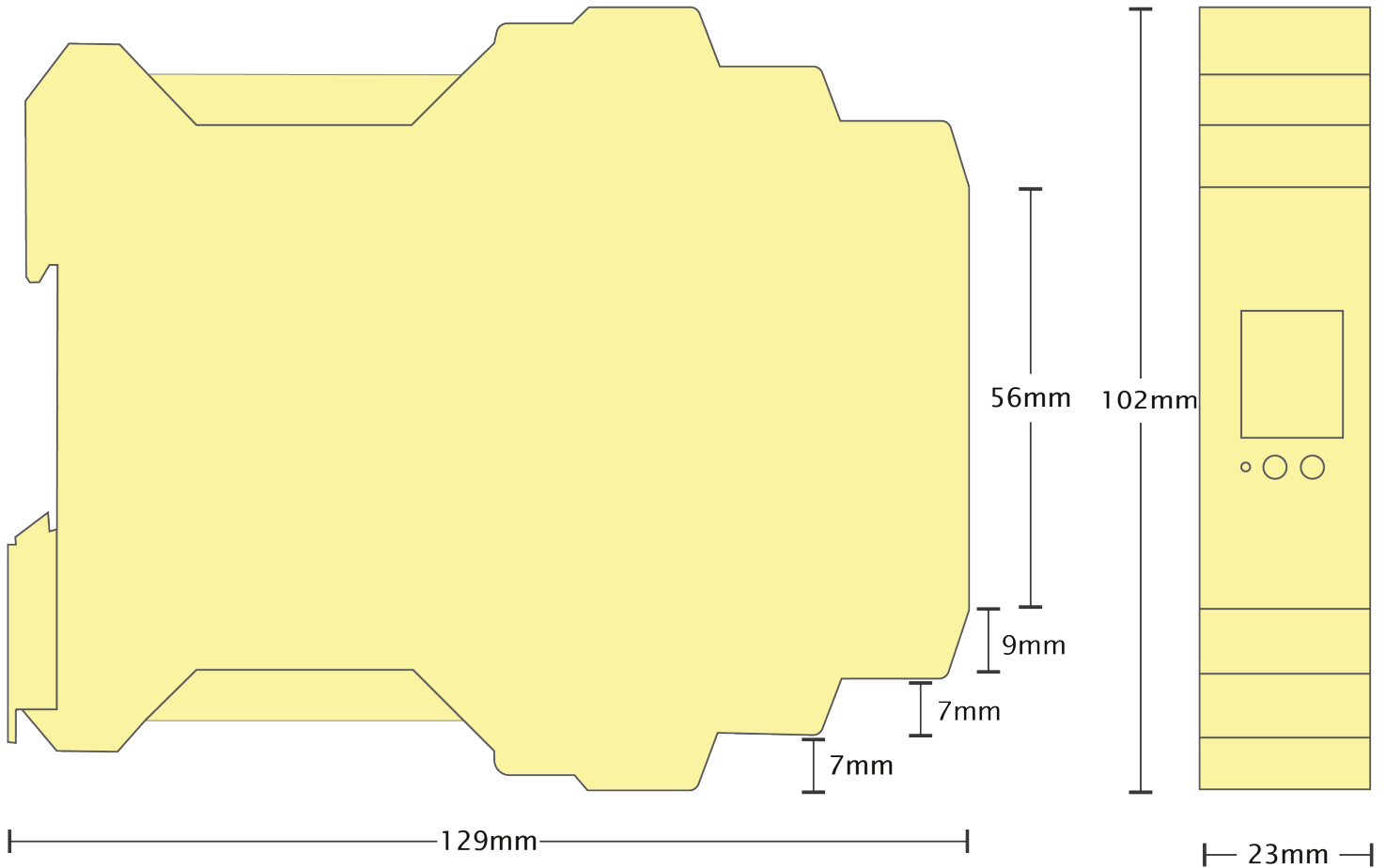| Environmental	
Operating Temperature	-30°C to +80°C / -22°F to +176°F
Storage Temperature	-40°C to +85°C / -40°F to +185°F
Ambient Relative Humidity	5 to 95% (non-condensing)

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-20 rated non-conducting polyamide case

ED-588

Ethernet to Digital I/O

56mm

102mm

9mm

7mm

7mm

129mm

23mm

Terminal Block Pin Outs

Terminal Block	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Yellow	-V	DOut 0	DOut 1	DOut 2	DOut 3
Orange	-V	DOut 4	DOut 5	DOut 6	DOut 7
Grey	SIG GND	RS-485 D-	RS-485 D+	RS-485 D+	RS-485 D-
Green	-V	DIn 0	DIn 1	DIn 2	DIn 3
Blue	-V	DIn 4	DIn 5	DIn 6	DIn 7
Black	-V	+VA	+VB	-V	Func GND
Power Input +5V to +30V DC 100mA@24V 2.5W Max					

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

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

ED-588   Ethernet to Digital I/O

Digital Channels - 8 Inputs and 8 Outputs

Inputs

NPN/PNP	One jumper configures all inputs with either pull-up for NPN (contact closes to 0V) type sensors, or pull-down for PNP (close to V+) type sensors
Logic Level 0:	-30V to +1V
Logic Level 1:	+2.0V to +30V
Input counting	User programmable – counts positive or negative transitions Up to 250Hz count rate 16-bit (65335 count) or 32-bit (4.2 billion count) counters Counter values persist over power-off periods
Input latching	Triggered by user programmable positive or negative edges, stays true until acknowledged
Debouncing	User programmable debouncing for noisy contact inputs

Outputs

Maximum output current	0.85A on all outputs simultaneously (ambient temperature ≤ 70°C, 1m/s airflow) 0.5A on all outputs simultaneously ambient temperature 70-80°C, 1m/s airflow) Outputs can be paralleled for higher current loads
Output Type	Current sink to 0V (low-side switch, open-drain MOSFET output), allowing loads at multiple voltages
Maximum output load Voltage	36V
Production	Intelligent short circuit protection up to 36V Over-temperature shutdown ESD Protection to 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

Serial Expansion Port - RS485

Half Duplex RS485 port allows connection and control of industry standard NuDAM, eDAM and ADAM modules using ASCII protocols.

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

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

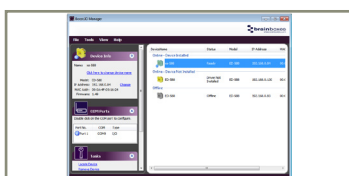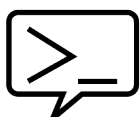Device works as a Modbus TCP server. Modbus TCP can be used on the input and output lines.

Examples from Modbus Tables	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-588

Ethernet to Digital I/O

Packaging Information

Packaging	Installation CD including manual, Microsoft signed drivers & utilities, Quick Start Guide Device
Packaged Weight	0.234 kg, 8.25 ounces
Packaged Dims	160x135x49 mm, 6.3x5.3x1.9 inches
GTIN Universal Code	837324003178

Approvals

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

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.

PW-650
Power supply with USB connector and prewired screw terminal block. Suitable for use with 5V USB ports.

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

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