brainboxes
www.brainboxes.com

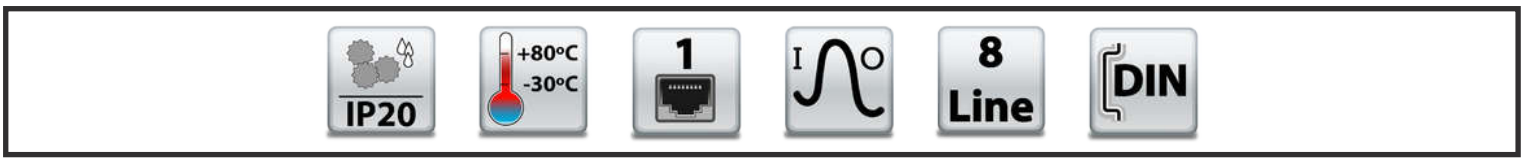
UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

ED-560 Ethernet to Analogue I/O

4 Analogue Outputs

- 4 Analogue Outputs - Selectable as either current or Voltage
- Supports simple ASCII or industry standard Modbus TCP
- 1 Ethernet Port
- -30˚C to +80˚C/-22ºF to +176ºF Temperature range







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

GB AEOF 00031/11

brainboxes
www.brainboxes.com

UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

ED-560

Ethernet to Analogue Output

Integrate with popular software packages or use with our free APIs

Easy Wire Removable screw terminal blocks

Supports Modbus TCP or ASCII commands

4 Analogue Output Lines: 12 bit

Serial Expansion Port suitable for ADAM modules



Integral DIN rail clip with earth

Ethernet Port

View from webpage - no software required

-30ºC to +80ºC/-22ºF to +176ºF temperature range

IP20 Non-conducting polyamide case with vents

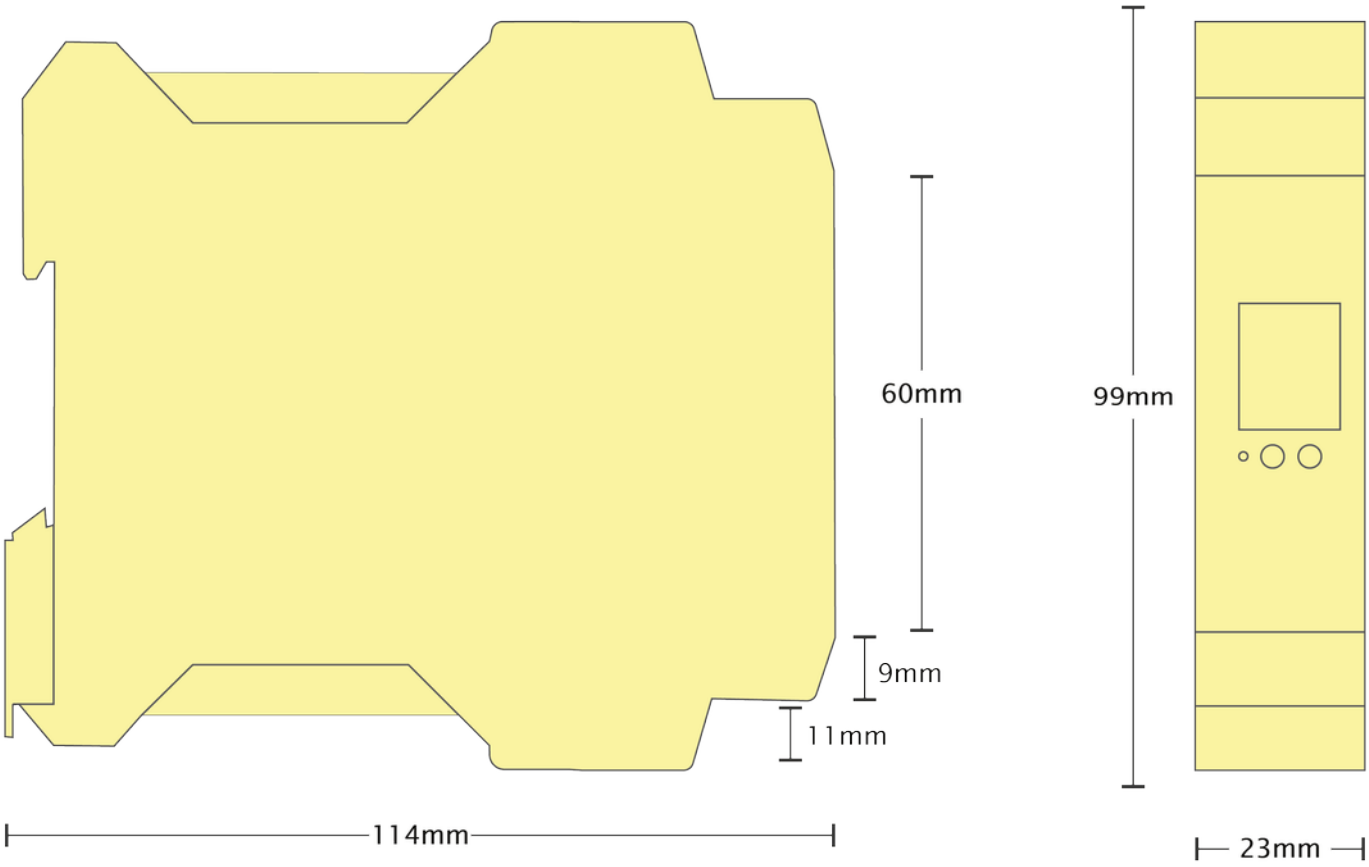
Wide Range Input Power: +5VDC to +30VDC

Connectors		
Screw Terminals	3.5mm pitch, #22 - #14, 0.5mm²-2.5mm² pin power supply	
Wire Thickness	0.150 inch, 3.81mm, 20 pins, 12+8 screw terminals, #26 - #16 AWG, 0.14mm²-1.3mm²	
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 / -22ºF to +176ºF	
Storage Temperature	-40°C to +85°C / -40ºF to +185ºF	
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	

brainboxes
www.brainboxes.com
UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

ED-560

Ethernet to Analogue Output



Terminal Block Pin Outs

Terminal Block	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Yellow	AGND	Vout 0	Vout 1	Iout 0	Iout 1
Grey	SIG GND	RS-485 D-	RS-485 D+	RS-485 D+	RS-485 D-
Green	AGND	Vout 2	Vout 3	Iout 2	Iout 3
Black	-V	+VA	+VB	-V	Func GND
Power Input +5V to +30V DC					

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.

brainboxes
www.brainboxes.com

UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

ED-560 Ethernet to Analogue Output

Analogue Channels - 4 Outputs	
IO Protocols	DCON ASCII over TCP or COM Port; Modbus TCP
Description	4 Analogue Outputs
Output Isolation	Yes, Outputs Isolated from Power, Network and Gateway Port
Voltage Output Range	0-10V
Current Output Ranges	0-20mA or 4-20mA
Current Output Type	Sink (requires external power source)
Output Resolution	12 bit
Watchdog	Sets outputs to predefined values on timeout
Max Output Load Current (Voltage Mode)	±5mA
Max Output Load Voltage (Current Mode)	30V
Dropout Voltage (Current Mode)	2.8V
Output Accuracy	0.1% of FSR @ 25 ˚C (77 ˚F)
Output Drift (Voltage Mode)	Zero drift less than 30µV/˚C, span drift less than 25ppm/˚C
Output Drift (Current Mode)	Zero drift less than 0.2µA/˚C, span drift less than 25ppm/˚C
Output Slew Rate	Voltage Mode: 170 kV/s, Current Mode: 4.3A/s
Output Settling Time	Voltage Mode: 350µs, Current Mode: 4 µs

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

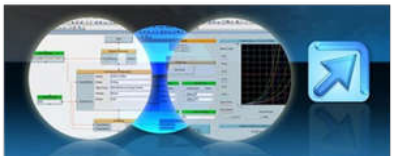
Power Supply	
Power Supply input	Unregulated +5V to +30Volts DC, reverse polarity protection
Isolation	1500VRMS Magnetic isolation from Ethernet

brainboxes
www.brainboxes.com
UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

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.

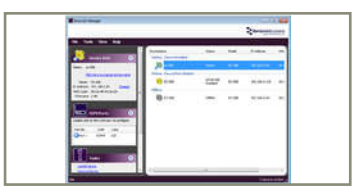
Examples from Modbus Tables	Modbus access type	Supported Modbus function codes	Logical address	984 style address	IEC 61131 address
Read DI counter values	Holding register	3	0x0000...	40001...	%MW0...
Clear DI counters	Coil	5, 15	0x0200...	00513	%M512...
Set/read digital outputs	Coil	1, 5, 15	0x0000...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



brainboxes
www.brainboxes.com

UK +44 (0)151 220 2500 // USA +1 855 958 2502 // JAPAN +81-3-3683-0509
www.brainboxes.com // sales@brainboxes.com

ED-560

Ethernet to Analogue Output

Packaging Information	
Packaging	Installation CD including manual, Microsoft signed drivers & utilities, Quick Start Guide Device
Packaged Weight	0.197 kg, 6.95 ounces
Packaged Dims	160x135x49 mm, 6.3x5.3x1.9 inches
GTIN Universal Code	837324003505
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.

www.brainboxes.com

© Brainboxes 2017