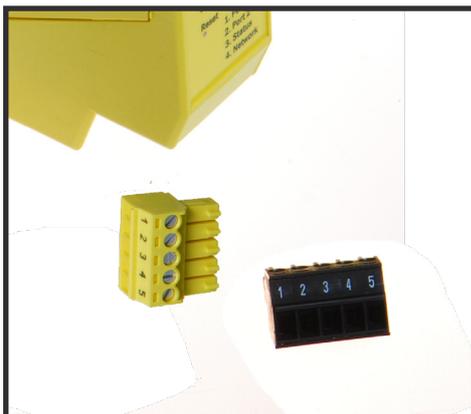
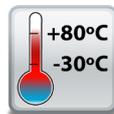


ES-511 Industrial Ethernet Serial

1xRS232/422/485 Industrial Ethernet to Serial

- 1 Serial port Selectable as RS232/422/485
- Max baud rate 1 MegaBaud, any Custom Baud Rate
- 1 10/100Base TX Ethernet Port
- -30°C to +80°C/-22°F to +176°F 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



ED-511 Industrial Ethernet to Serial

Serial Port Tunneling allows serial cable replacement over any distance, no software required

Easy Wire Removable screw terminal blocks

Integral DIN rail clip with earth

State of the art Autogating for trouble free RS485 Half Duplex flow control

IP20 Non-conducting polyamide case with vents



1 Port Serial Software selectable as RS232/422/485

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

Ethernet Port

LED status indication

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

Connectors

Screw Terminals 3.5mm pitch, #22 - #14, 0.5mm²-2.5mm² pin
Conductor Wire 28 to 16 AWG, 0.14mm to 1.5mm Max

Power Supply

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

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

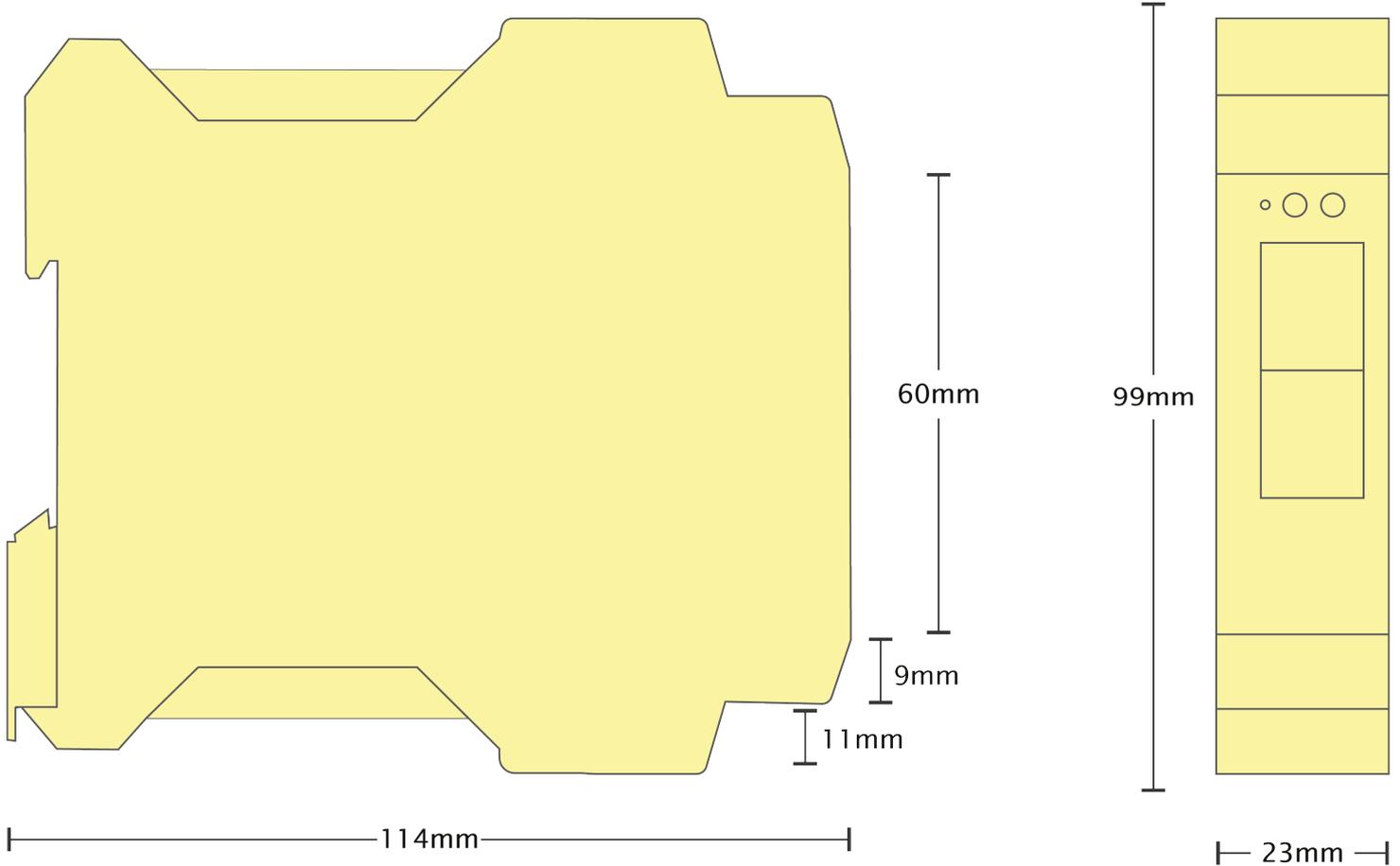
| | | |
|------------------|-------------------------------------|----------------------------|
| Status LED | Green | Device Ready |
| | Flashing Yellow | Changing Settings |
| | Flashing between Red & Green | Querying IP |
| | Flashing Green/Red | User performing Hard Reset |
| | Flashing between Green & Red/Yellow | IP address diagnostic |
| | Flashing between Green & Yellow | Initialization diagnostic |
| Serial Port LEDs | Green light on | Port Open |
| | Flashing Green | Data RX/TX |
| Network LED | Green light on | Link Established |
| | Flashing Green | Data RX/TX |

Ethernet

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

ES-511 Industrial Ethernet to Serial

Housing IP-20 rated non-conducting polyamide case



Terminal Block Pin Outs: Yellow Block= Port 1

| Yellow Block | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 |
|--------------|---------|-------|-------|-------|-------|
| RS232 | Sig GND | CTS | RxD | RTS | TxD |
| RS422/485 FD | Sig GND | RxD- | RxD+ | TxD+ | TxD- |
| RS485 HD | Sig GND | | | Data+ | Data- |

| Black Block | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 |
|-------------|-------|-------|-------|-------|----------|
| Power | -V | +V A | +V B | -V | Func 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 |

Lifetime Warranty and Support:

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

ES-511 Industrial Ethernet to Serial

1xRS232/422/485 Industrial Ethernet to Serial

Serial Port

Ports Software Selectable as RS232, RS422/485 Full Duplex, or RS485 Half Duplex

Port Settings - Software Selectable as RS232, RS422/485 Full Duplex, or RS485 Half Duplex

Baud Rate Any custom Baud rate between 60 - 1,000,000 (1 MegaBaud) can be selected

Data Bits 5,6,7 or 8

Parity Odd, Even, None, Mark or Space

Stop Bits 1, 1.5 or 2

Flow Control RTS/CTS, DSR/DTR, XON/XOFF

Tx/Rx Modes

RS232 Standard: RS232 allows point to point communication between 2 devices.

RS422 Standard: RS422 allows one transmitter and up to 10 receivers with data transmitter rates up to 10 megabits per second for distances up to 40 feet and up to 100 Kilobits per second for distances up to 4,000 feet (1219 metres). To achieve good long distance noise immunity, 2 wires are used to carry each signal, configured as a twisted pair of cables. The TXD pair and RXD pair are used to carry the data whilst the RTS pair and CTS pair lines are used for handshaking. Thus 2 twisted pairs are used without handshaking and 4 twisted pair cable is used with handshaking both these schemes allow full duplex data communications.

RS485 Standard: RS485, based on the RS422 standard allows up to 32 driver/receivers pairs on a standard load or 128 low load devices per port can be connected. Whilst only one of these should be transmitting data at any time, the rest can all simultaneously listen to the data. Handshaking is performed by software protocol. Two twisted pairs form a full duplex system. Often only one twisted pair cable is used as the TXD and RXD lines are tied together; this is known as half duplex mode. Brainboxes RS422/485 products implement a state of the art hardware autogating circuit ensuring error free communications in half duplex configurations.

Industrial Ethernet to Serial RS485: receivers are 1/8th load allowing upto 256 nodes on the bus. Fail safe open circuit and short circuit protection, protects the Industrial Ethernet to Serial against wiring faults.

Line Terminating Resistor: On board RS485 line termination resistor can be enabled by a user selectable jumper. The RS422/485 line terminating resistor prevents signal reflections when the ES device is at the end of transmission line.

Bias Resistors: On board RS485 Half Duplex fail safe bias resistors enabled by user selectable jumpers. The fail safe biasing resistors pull the line to a known good state during idle times preventing phantom character detection.

Power Supply

Power Supply input Redundant DC Dual Power Inputs, reverse polarity protected +5 VDC to +30VDC

Power Consumption 1.6 Watt typical 60mA@24V - 2.9 Watt Max

Ethernet

Ethernet Port 1 x RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX)

Data Rate 10/100 Mega bits/second

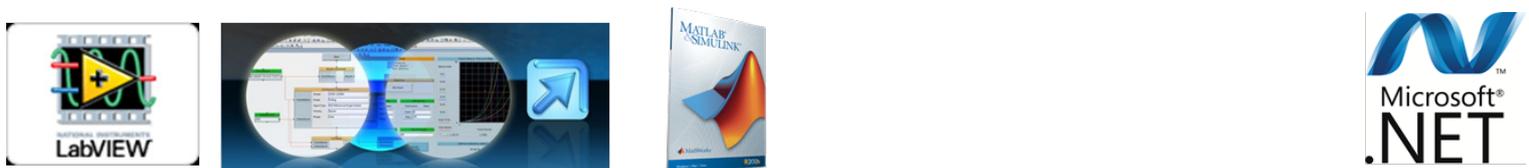
Cabling Normal / AUTO MDI/MDIX and IEEE Auto crossover support

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.Lan Manager | Lets you find, install virtual COM ports 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, and more - www.brainboxes.com |



| | |
|--------------------|--|
| Software | |
| Network Protocols | ICMP, IP, TCP, DHCP, Telnet, HTTP, RFC2217, BOOTP |
| Software Platforms | Our software drivers give Windows users local COM ports, allowing you to retain your existing software applications and connect to your devices over the network. COM Port can be assigned from COM 1 to COM 255 and the Brainboxes Ethernet to serial device remembers your COM Port assignment on reboots. For Linux/Apple OS/Android web interface allows secure configuration and control of the serial ports over a local network or the internet using any browser. You can access the device via TCP/IP sockets from any networked device like an Android tablet, PC or phone. |

ES-511 Industrial Ethernet to Serial

Packaging Information

| | |
|---------------------|--|
| Packaging | Installation CD including manual, Microsoft signed drivers & utilities, Quick Start Guide Device |
| Packaged Weight | 0.196 kg, 6.91 ounces |
| Packaged Dims | 160x135x49 mm, 6.3x5.3x1.9 inches |
| GTIN Universal Code | 837324002607 |

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 |



ES Range

Ethernet to Serial products are available in a range of formats and specifications

www.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 pre-wired screw terminal block. Suitable for use with 5V USB ports.



MK-588

6 coloured PCB connectors. Individually numbered pins; 5 x 3.5mm pitch screw connections with tension sleeve.

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