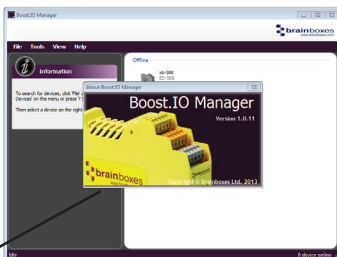


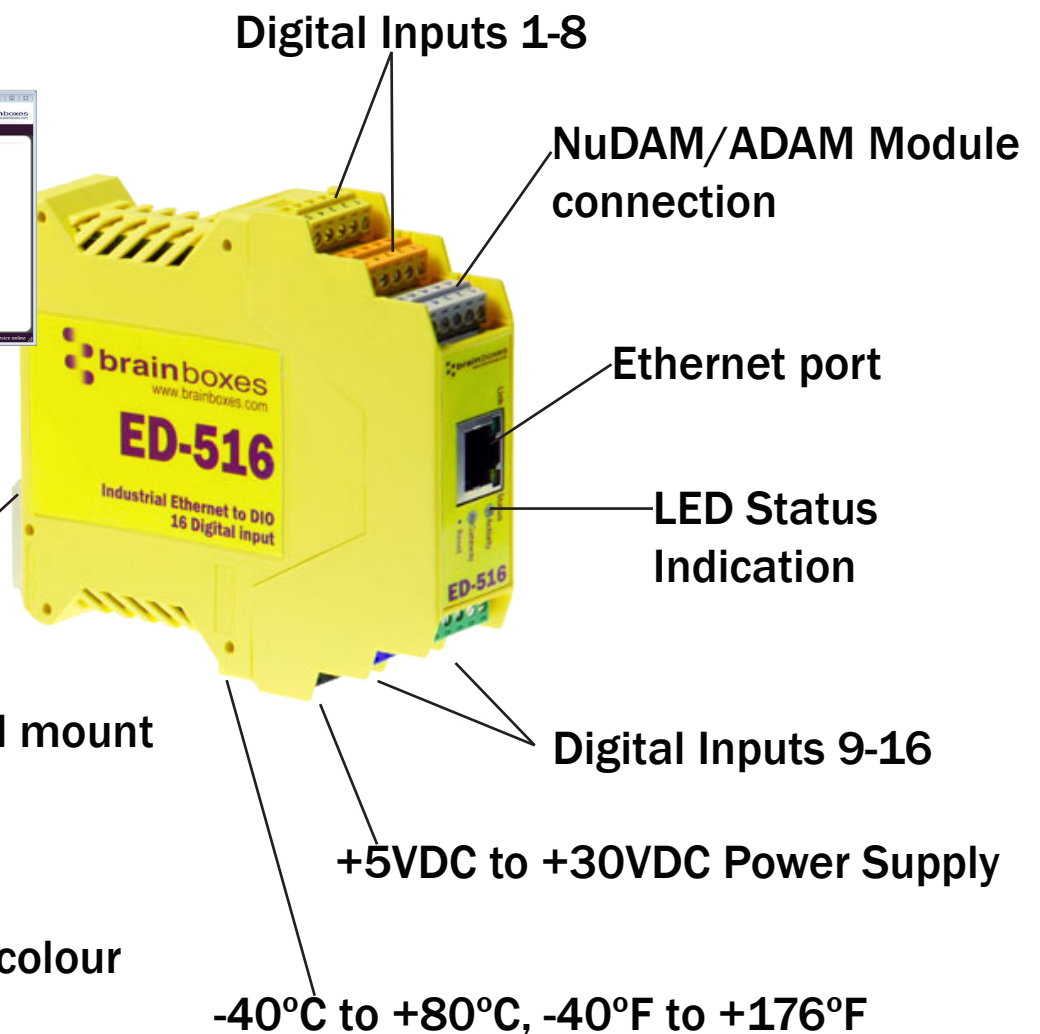
ED-516 ETHERNET TO Digital IO 16 Inputs

ED-516

- 16 Digital Inputs
- Monitor any input from TTL to high voltage high current industrial devices
- 0 to 30 Volt inputs ideal for dry/Volt free contacts or wet contacts
- Supports Modbus TCP protocol



**Easy to use Interface:
Great features for
remote monitoring**

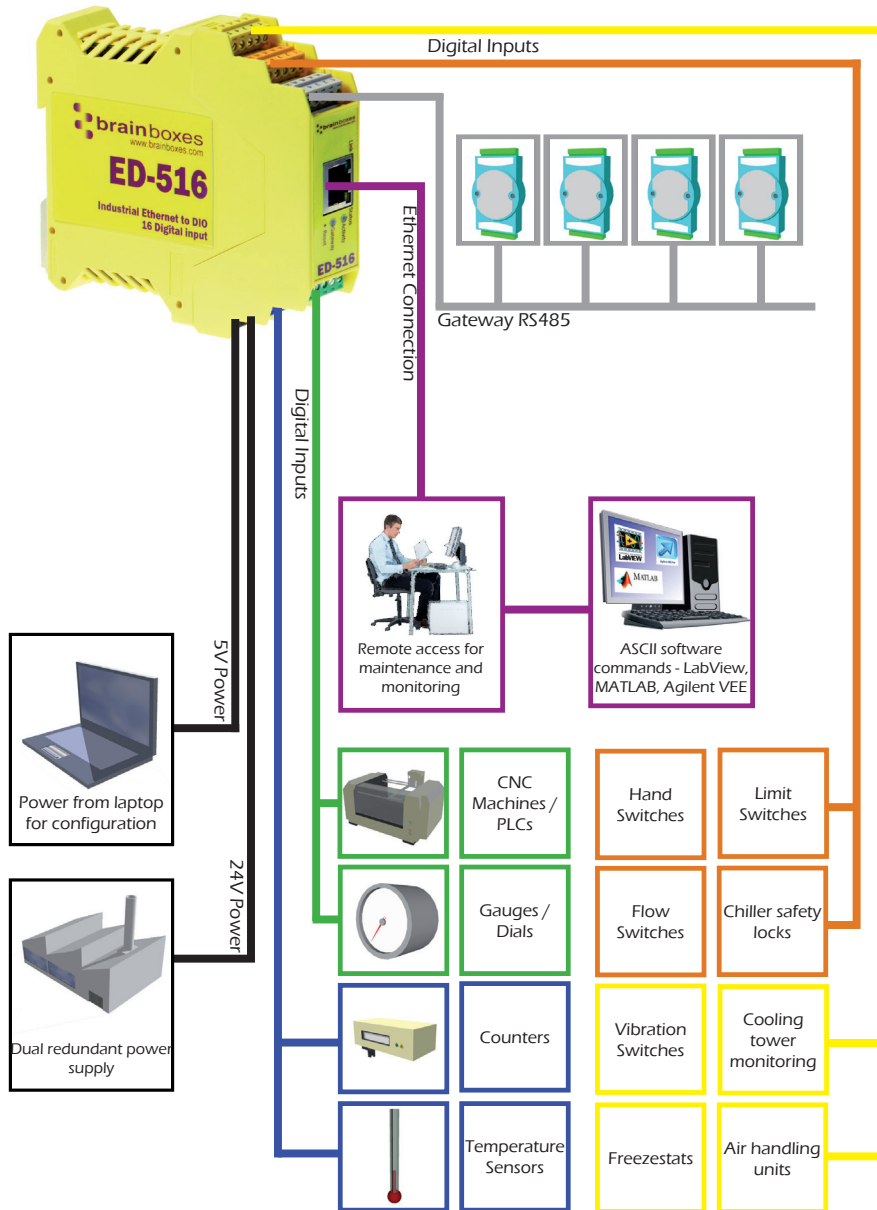


Integral DIN rail mount

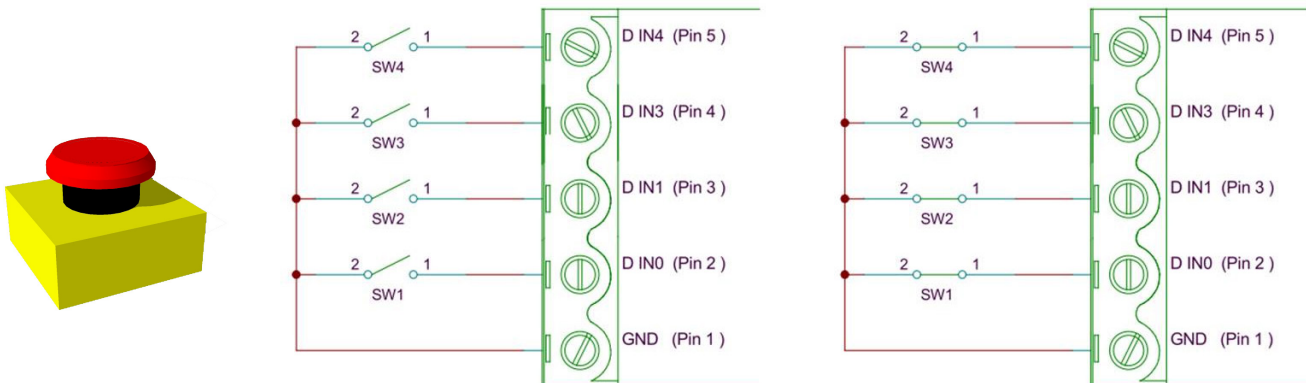


**Easy wire: removable, colour
coded terminal blocks**

Usage Model for ED-516



Dry/Volt free Contact Example

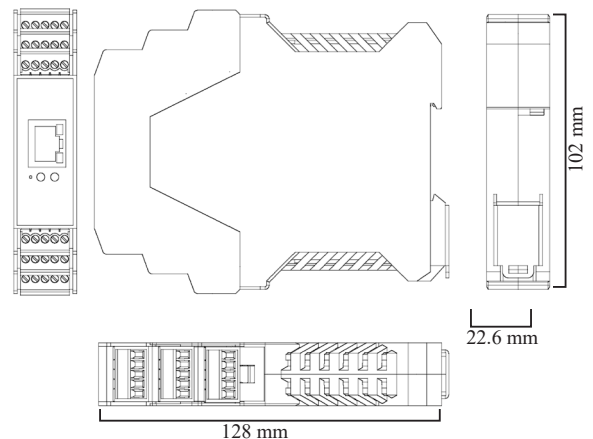


Specification

| | |
|------------------|---|
| Input Channels | 16 non-isolated input channels |
| Low Logic Level | 0V to +1.0V |
| High Logic Level | +2.0V to +30V |
| 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 |
| 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 |

IP-20 rated non-conducting polyamide case
Integrated DIN rail mount with functional earth connection
Slim shape has a small foot print for when DIN rail space is a premium

Removable screw terminal blocks make installation easier and quicker
Colour coded blocks and ports prevents incorrect connection
Numbered Pins simplifies wiring and removes confusion



| | |
|-----------------|---|
| 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 |

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

Monitor CPU temperature via the web interface or programmatically using ASCII commands.
Redundant dual power input allows a second power supply to be fitted as a back-up to prevent down time should one power source fail.
Can use a 5 Volt power from any computer USB port via optional accessory cable PW-650 - Useful for configuring the device from a laptop in the field.

| | |
|--------------------|--|
| Power Consumption | 2.5 Watt Max |
| Power Supply input | Unregulated +5VDC to +30VDC, reverse polarity protection |

| | |
|-----------------------|---|
| Isolation | 1500 VRMS Magnetic isolation from Ethernet |
| Ethernet Port | 1 x RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX) |
| Protection | 1,500 Volts magnetic isolation between I/O ports and network |
| Network Protocols | ICMP, IP, TCP, DHCP, Telnet, HTTP |
| Connection to Network | Ethernet 10BaseT / 100BaseTX |
| Webserver Interface | Configure IP address, monitor state of I/O lines, set the Watchdog Timers Output Reset Value, Set Power on digital output value |
| Programming Interface | No device driver needed, just open a TCP connection and send simple ASCII or Modbus commands. Software drivers give local COM Port interface for communication. |
| Utility Programs | Find device, configure IP address, test communication with console |

Industry Standard Modbus TCP Protocol:

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

Examples include:

| | Modbus access type | Supported Modbus function codes | Logical address | 984 style address | IEC 61131 address |
|------------------------|--------------------|---------------------------------|-----------------|-------------------|-------------------|
| Read digital inputs | Coil | 1 | 0x0020... | 00033... | %M32... |
| Read digital inputs | Discrete input | 2 | 0x0000... | 10001... | n/a |
| Read digital inputs | Input register | 4 | 0x0020 | 30033 | n/a |
| Read DI counter values | Input register | 4 | 0x0000... | 30001... | n/a |
| Read DI counter values | Holding register | 3 | 0x0000... | 40001... | %MW0... |
| Clear DI counters | Coil | 5, 15 | 0x0200... | 00513 | %M512... |

Familiar ASCII Command Protocol:

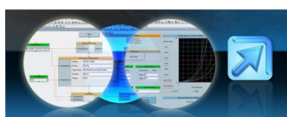
When not using Modbus the ED range of devices can use the de facto industry standard ASCII command protocol implemented in the popular ADAM/NuDAM/EDAM modules. Examples include:

| | |
|-----------|---|
| \$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 |
| @01 | read digital input output status of device 01 |
| >1A45 | device 01 digital input data= 1A (=00011010) digital output data = 45 (=01000101) |
| \$012 | read configuration of device 01 |
| !01400500 | device 01 40=typecode, 05 =gateway RS485 port is at 4800 Baud, 00=No checksum |

| | |
|---|--|
| COM Port on Windows | On a PC running the Microsoft Windows family of OS's the ED Boost.IO Manager provides a standard COM port interface so enabling thousands of proven legacy applications to work straight out of the box. |
| Industry Standard Packages | The COM port based driver means that ED-xxx devices are completely compatible with all popular packages such as: LabView, MATLAB, Agilent VEE. |
| Software Platforms | APIs and sample program code for: Microsoft .NET, C#, Visual Basic, C++, JavaScript, PHP, Java, Objective-C |
| Devices Supported | The ED sample codes running on Operating Systems such as Windows XP, Server 2008, Server 2012, Windows 7, Windows 8, and Linux based systems such as Android and Raspberry Pi allow you to run your applications on Servers, Desktops, Laptops, Tablets, Phones or low cost embedded devices, almost any device you wish. |
| Configuration Options | Windows Utility, Web Interface: Boost.IO driver provides familiar Serial COM port interface |
| OS Compatibility | Legacy COM porty drivers for: Microsoft Windows 10 32 bit & 64 bit Editions / Microsoft Windows 8 32 bit & 64 bit Editions / Microsoft Windows 7 32 bit & 64 bit Editions / Windows Server 2008 32 bit & 64 bit Editions / Server 2012/ Windows Server 2008 & Windows Server 2000/ Windows Vista 32 bit & 64 bit Editions / Windows Server 2003 32 bit & 64 bit Editions. TCP and web browser interface for other OS's & Linux, e.g. Android, Raspberry Pi |
| Industry Approvals | C-Tick, AEO (C-TPAT), WEEE, RoHS |
| Microsoft Approvals & Signed Drivers | Microsoft Certified Gold Partner Windows 10 32 bit & 64 bit Editions Windows 8 32 bit & 64 bit Editions Windows 7 32 bit & 64 bit Editions Windows Server 2008 32 bit & 64 bit Editions Windows Server 2008 & Windows 2000 |
| OEM option | Available for bulk buy OEM |
| Made In | Manufactured in the UK by Brainboxes |
| Customisable | Brainboxes operate a 'Perfect Fit Custom Design' policy for volume users. More info: sales@brainboxes.com |
| Warranty Support | Lifetime - online registration required Lifetime Web, Email and Phone Support from fully qualified, friendly staff who work in and alongside the Product Development Team |

Packaging Device Microsoft signed drivers & utilities, Quick Start Guide, Device Ethernet 16 DI
Packaged Weight 0.215 kg, 0.47 pounds

Packaged Dims 235(l) x 170(w) x 62(h) mm, 9.25(l) x 6.69(w) x 2.44(h) inches
GTIN Universal Code 837324003185



Gold
Microsoft Partner



GB AEOF 00031/11



ED Range

Remote I/O products 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.