Industrial Computing
Products and Services

Panel PC's



Industrial PC's



SBC's



Industrial Displays



Electronic Design



dsl
Embedding the future

Why Choose DSL?

- ✓ Lifetime technical support
- ✓ Fully customisable products
- ✓ Product branding (bezel colours + company logos)
- ✓ Free pre-installation of OS and your software

Our Services

- ✓ Electronic Design
- ✓ Production Management
- ✓ Assembly and test
- ✓ Bespoke BIOS creation

sales@dsl-ltd.co.uk

or call us on +44 (0)1462 675530



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Ethernet to Digital In
ED-516

ED-516 ETHERNET TO Digital IO 16 Inputs

ED-516

- 16 Digital Inputs
- 0 to 30 Volt inputs ideal for dry/Volt free contacts or wet contacts
- Ideal for inductive, capacitive & resistive load

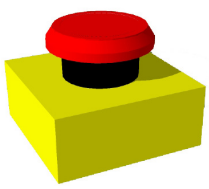


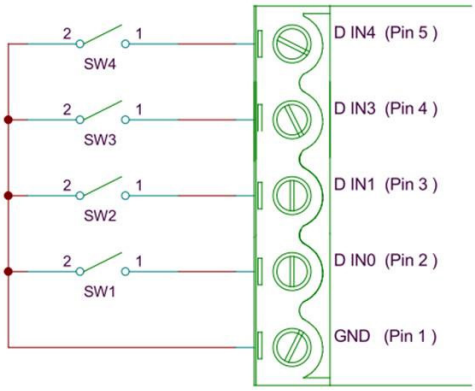
- Gateway Port for NuDAM/ADAM modules
- -30ºC to +80ºC Temperature range
- +5V to +30V DC Input Power

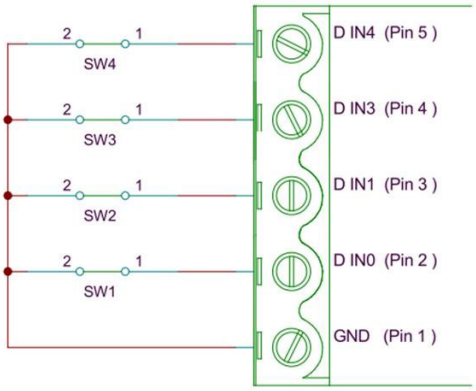
Digital Channels

Inputs	**Input Channels**	16 non-isolated input channels
	NPN/PNP	One jumper configures all inputs as either pull up for NPN, active low, type sensors or pull down for PNP, active high, type sensors
	Logic Level 0:	0V to +1V maximum
	Logic Level 1:	+2.0V to +30V maximum
	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

Dry/Volt free Contact Example



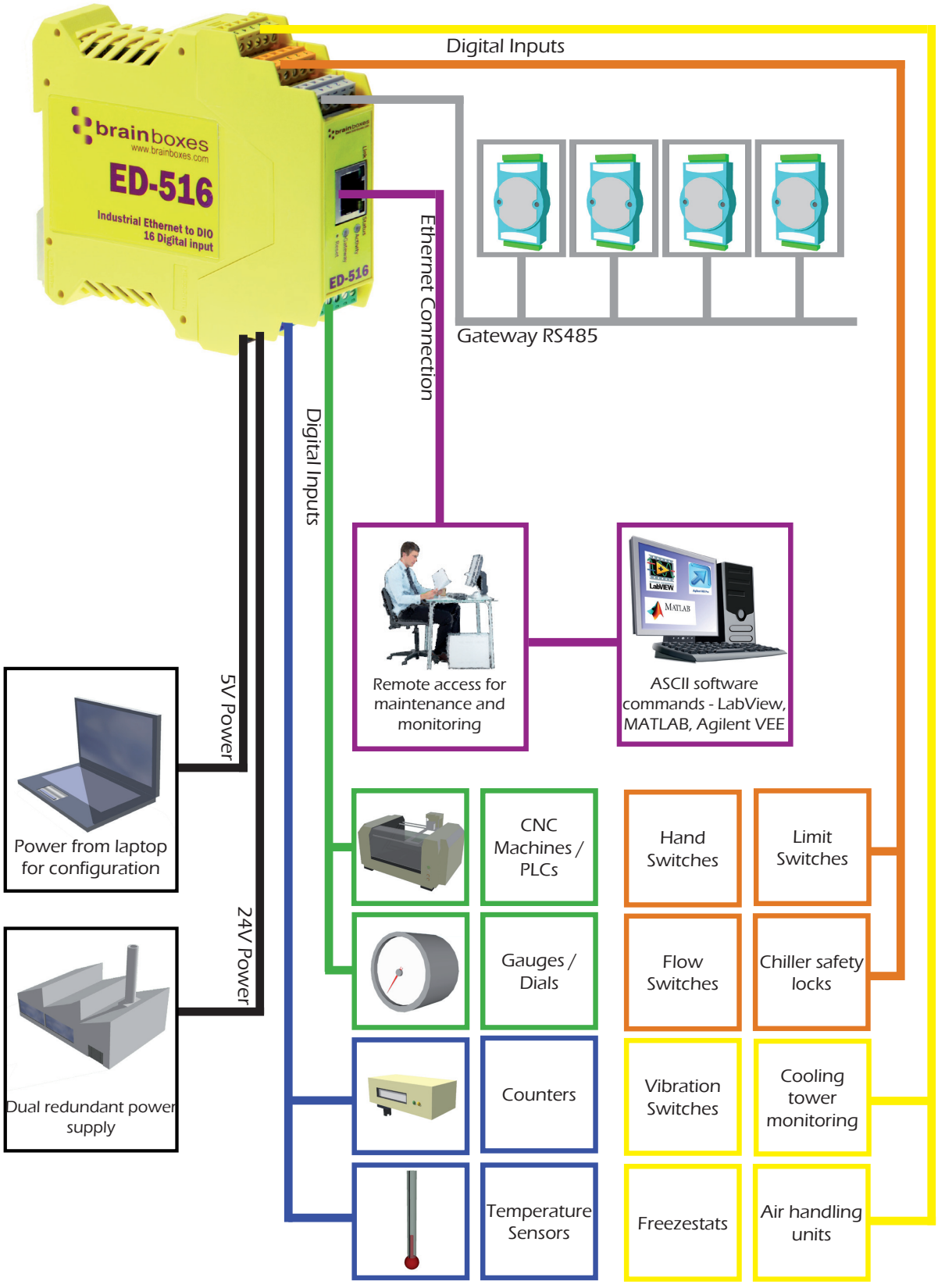




Connect, Configure, Control

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Usage Model for ED-516



ED-516 Ethernet 16 DI





8 Digital Inputs

RS485 Gateway for NuDAM/ADAM Modules

Ethernet port

LED Status Indication

Easy to use Interface: Great features for remote monitoring

Integral DIN rail mount

8 Digital Inputs

+5V to +30V Power Supply



Ethernet to DIO Device Server:
The Ethernet to DIO device is implemented using a Windows COM port driver that is completely compatible with all popular PC packages such as LabView, MATLAB and Agilent VEE and support a range of popular APIs. Continue to get value from your existing development and process control system.



Slim Shape:
Small foot print for when DIN rail space is a premium
Only 22.6mm wide



Extended Temperature Range:
-30°C to +80°C operating range copes with changing temperatures for harsh environments. Monitor CPU temperature via the web interface or programmatically using ASCII commands.



Brainboxes' Easy Wire Feature:
Removable screw terminal blocks make installation easier and quicker
Colour coded blocks and ports prevents incorrect connection
Numbered Pins simplifies wiring and removes confusion

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ED-516 Ethernet 16 DI



Grounding:
Correctly wired grounds help cut down on electromagnetic interference
5 pin terminals allow a ground on the 5th pin of each block
Functional earth connection to the DIN rail



Gateway RS485 Serial Port:
Half duplex RS485 port allows connection and control of industry standard NuDAM, eDAM and ADAM modules modules using ASCII protocols.

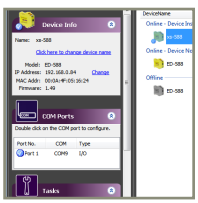


Wide Range Redundant Dual Power Input:
+5VDC to +30VDC accommodates variation in the +24VDC factory floor and allows alternative power sources. A second power supply can be fitted as a back-up to prevent down time should one power source fail.



Power from any USB Port:
Can use 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.



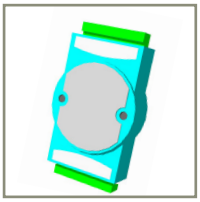


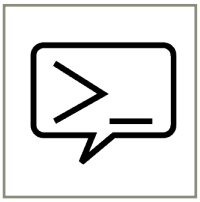
Signed Drivers and Rigorous testing:
We use continuous automated testing of our in-house drivers and software to ensure when you install one of our devices 'it just works'. Our software allows hassle free installation, configuration and monitoring via our easy to use webpage. The software gives local COM ports that are backwards compatible enabling legacy applications and the device to work with a myriad of different 3rd party software. We make all our software versions available to download from our website.

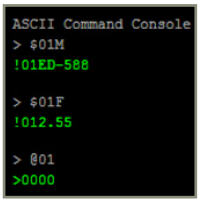


Lifetime Warranty and Support:
We can help with every aspect of your project, from getting you up and running to custom application.

ED-516 Ethernet 16 DI







Familiar ASCII Command Protocol:

The ED range of devices uses the de facto industry standard ASCII command protocol implemented in the popular ADAM/NuDAM/EDAM modules.

Typical 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

The ED device's webpage has an interactive console where any command can be entered and it is immediately executed showing the device's response.

Software Development

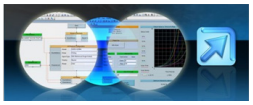
COM Port on Windows

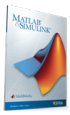
On a PC running the Microsoft Windows family of OS's the ED Boost.IO Manager provides a standard COM port interface so enabling thousands of proven legacy applications to work straight out of the box. COM port compatibility allows you to continue to get value from your existing application software investment. Moreover your engineers don't need to retrain to use the Brainboxes ED range of I/O devices.

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. You can continue to get value from your existing development and process control system. Hundreds of thousands program with these packages every day.







Software Platforms

The future is mobile, with data available everywhere on demand; Brainboxes has designed a software suite which allows you to design your new systems with mobile in mind with most popular platforms and development environments supported. With APIs and sample program code for: Microsoft .NET, C#, Visual Basic, C++, JavaScript, PHP, Java, Objective-C







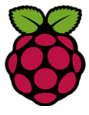


Devices Supported

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 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









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Browser Interface

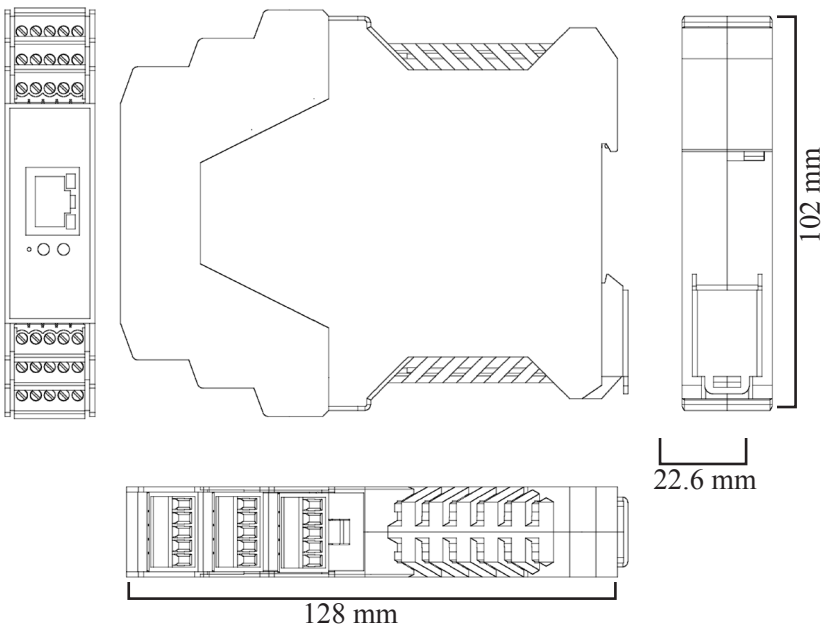
Webserver Interface	Configure IP address, monitor state of i/o lines, set the Watchdog Timers Output Reset Value, Set Power on digital output value
Programming Interface	No device driver needed, just open a TCP connection and send simple ASCII commands. Software drivers give local COM Port interface for configuration
Utility Programs	Find device, configure IP address

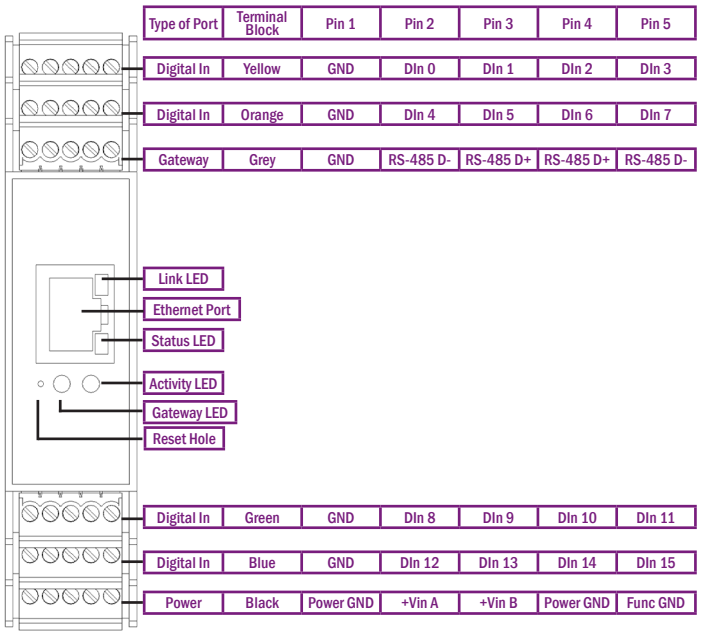
Ethernet

Ethernet Port	1 x RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX)
Protection	1,500Volts magnetic isolation between I/O ports and network
Network Protocols	ICMP, IP, TCP, DHCP, Telnet, HTTP
Connection to Network	Ethernet 10BaseT / 100BaseTX

Housing

IP-20 rated non-conducting polyamide case with integrated DIN rail mount





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 Consumption	2.5 Watt Max
Power Supply input	unregulated +5V to +30Volts DC, reverse polarity protection
Isolation	1500VRMS Magnetic isolation from Ethernet

Environmental

Operating Temperature	-30^{o}C to +80^{o}C, -22°F to +176°F
Storage Temperature	-40^{o}C to +85^{o}C, -40°F to +185°F
Ambient Relative Humidity	5 to 95% (non-condensing)

Windows 8 Compatible · Windows 7 · Certified for Windows Vista · Certified for Windows Server 2008 · CE · RoHS · AEO GB AEOF 00031/11

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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
Gateway	Flashing Red	RS-485 Comms error
	Flashing Green	RS-485
Link LED	Green light on	Network Link Established
	Flashing Green	Network Data RX/TX
Activity	Flashing Green	Output set / Input Read
	Flashing Red	Output overload

Approvals

Industry Approvals	CCC-Mark, C-Tick, Microsoft Certified Gold Partner, WEEE, RoHS, METL
Microsoft Approvals	AEO (C-TPAT)
Microsoft Signed Drivers	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 Windows Vista 32 bit & 64 bit editions

Microsoft Gold Partner

Packaging Information

Packaging	Installation CD including manual, 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

Product Support

LIFETIME SUPPORT LIFETIME WARRANTY

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

Optional Accessory Items

PW-600
Global Power supply



Power supply with connectors for UK, USA, EU and AUS mains socket. 'Tails' are suitable for connecting to screw terminal blocks

PW-650
5V from USB Power supply



USB connector fits any standard USB port, such as on a laptop or desktop PC, providing 5V power to a prewired screw terminal block useful for when you are configuring your ED device