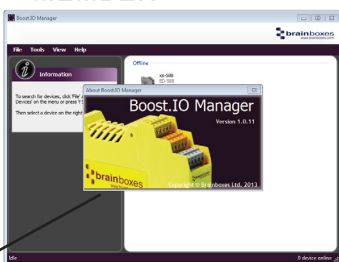


**ED-527 ETHERNET TO Digital IO 16 Outputs**

# ED-527

- 16 Digital Outputs
- Drives high current and high voltage loads - Ideal for inductive, capacitive & resistive loads
- Factory floor process control and automation
- Supports Modbus TCP protocol



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



**8 Digital Outputs**

**NuDAM/ADAM Module  
connection**

**Ethernet port**

**LED Status  
Indication**

**8 Digital Outputs**

**+5VDC to +30VDC Power Supply**

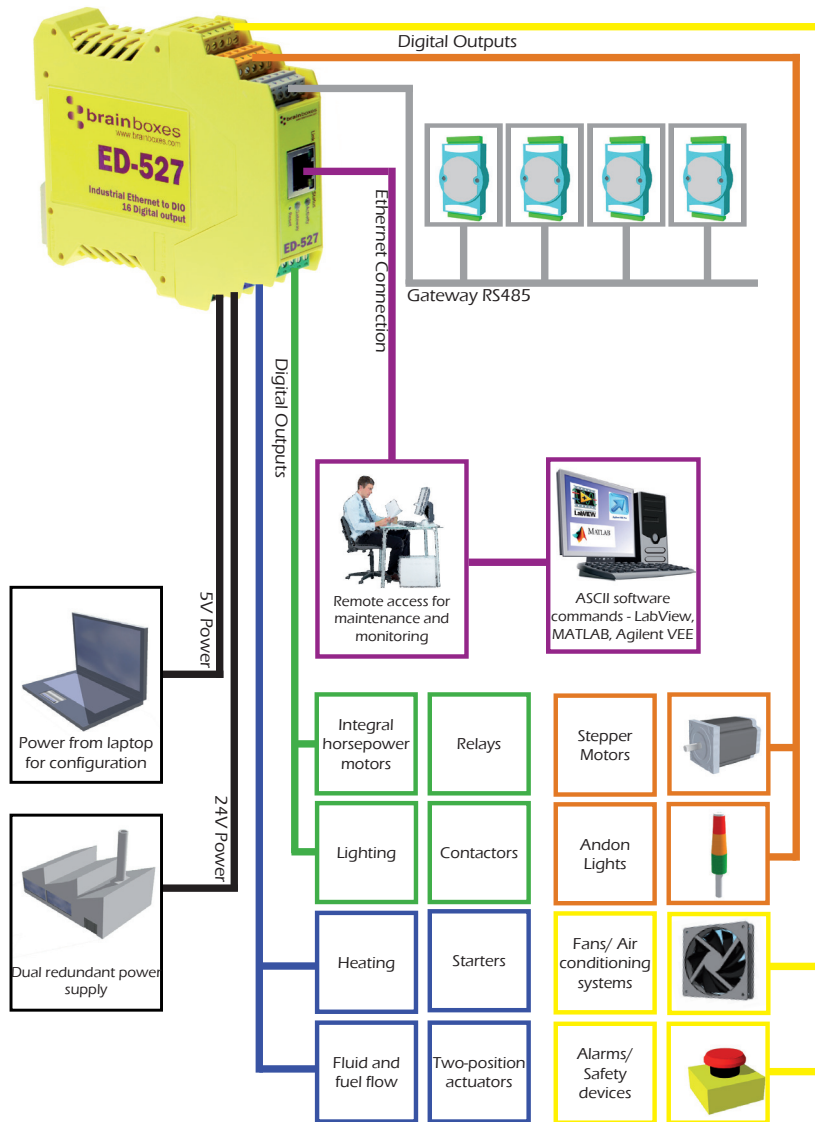
**-40°C to +80°C, -40°F to +176°F**

**Integral DIN rail mount**

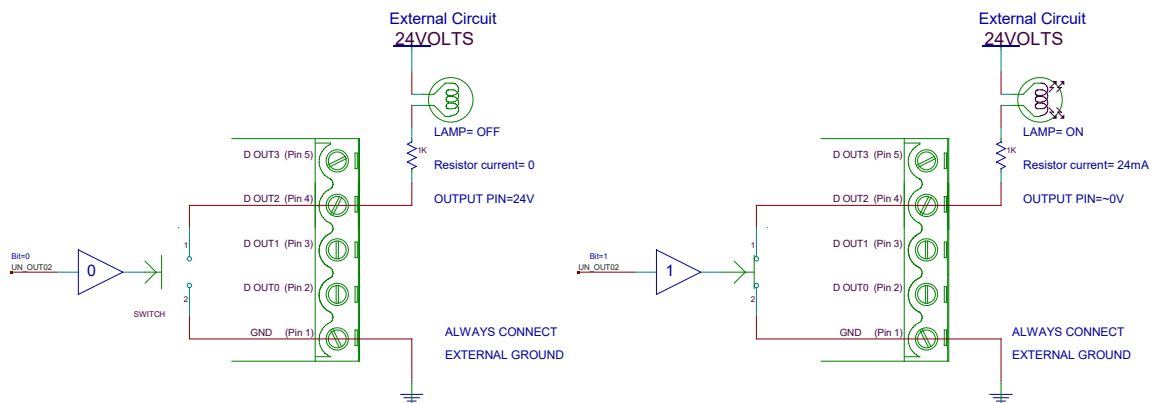
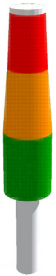


**Easy wire: removable, colour  
coded terminal blocks**

## Usage Model for ED-527



## Driving an Andon Light

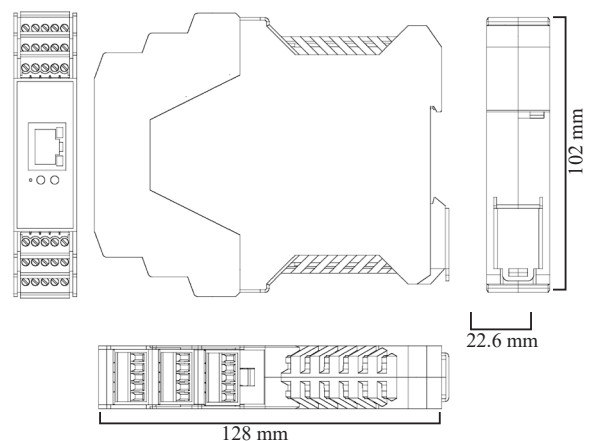


## Specification

<b>Output Channels</b>	<b>16 non-isolated output channels</b>
<b>Output Type</b>	<b>Current sink to 0V (low-side switch, open-drain MOSFET output), allowing loads at multiple voltages</b>
<b>Maximum output current</b>	<b>0.85A on all outputs simultaneously (ambient temperature <math>\leq 70^{\circ}\text{C}</math>, 1m/s airflow) 0.5A on all outputs simultaneously (ambient temperature <math>70-80^{\circ}\text{C}</math>, 1m/s airflow) Outputs can be paralleled for higher current loads</b>
<b>Maximum output load Voltage</b>	<b>36V</b>
<b>Protection</b>	<b>Intelligent short circuit protection up to 36V Over-temperature shutdown ESD Protection to 16kV</b>

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



<b>Screw Terminals</b>	<b>3.5mm pitch, #22 - #14, 0.5mm<sup>2</sup>-2.5mm<sup>2</sup> pin power supply</b>
<b>Wire Thickness</b>	<b>0.150 inch, 3.81mm, 20 pins, 12+8 screw terminals, #26 - #16 AWG, 0.14mm<sup>2</sup>-1.3mm<sup>2</sup></b>

<b>Operating Temperature</b>	<b><math>-40^{\circ}\text{C}</math> to <math>+80^{\circ}\text{C}</math>, <math>-40^{\circ}\text{F}</math> to <math>+176^{\circ}\text{F}</math></b>
<b>Storage Temperature</b>	<b><math>-40^{\circ}\text{C}</math> to <math>+85^{\circ}\text{C}</math>, <math>-40^{\circ}\text{F}</math> to <math>+185^{\circ}\text{F}</math></b>
<b>Ambient Relative Humidity</b>	<b>5 to 95% (non-condensing)</b>

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.

<b>Power Consumption</b>	<b>2.5 Watt Max</b>
--------------------------	---------------------

<b>Power Supply input Isolation</b>	Unregulated +5VDC to +30VDC, reverse polarity protection 1500 VRMS Magnetic isolation from Ethernet
<b>Ethernet Port</b>	1 x RJ45 jack, 10/100Mhz autosensing, crossover auto sensing (Auto MDIX)
<b>Protection</b>	1,500 Volts magnetic isolation between I/O ports and network
<b>Network Protocols</b>	ICMP, IP, TCP, DHCP, Telnet, HTTP
<b>Connection to Network</b>	Ethernet 10BaseT / 100BaseTX
<b>Webserver Interface</b>	Configure IP address, monitor state of I/O lines, set the Watchdog Timers Output Reset Value, Set Power on digital output value
<b>Programming Interface</b>	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.
<b>Utility Programs</b>	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
Set/read digital outputs	Coil	1, 5, 15	0x0000...	00001...	%MO...
Set/read digital outputs	Holding register	3, 6, 16	0x0020	40033	%MW32
Output overload flags	Discrete input	2	0x0400...	11025...	n/a
Output overload flags	Input register	4	0x0400	31025	n/a

### 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

<b>COM Port on Windows</b>	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.
<b>Industry Standard Packages</b>	The COM port based driver means that ED-xxx devices are completely compatible with all popular packages such as: LabView, MATLAB, Agilent VEE.
<b>Software Platforms</b>	APIs and sample program code for: Microsoft .NET, C#, Visual Basic, C++, JavaScript, PHP, Java, Objective-C
<b>Devices Supported</b>	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.
<b>Configuration Options</b>	Windows Utility, Web Interface: Boost.IO driver provides familiar Serial COM port interface
<b>OS Compatibility</b>	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
<b>Watchdog Power up</b>	On power up all outputs go to user programmable power on known good state
<b>Watchdog coms link</b>	On loss of communications link all outputs go to a user programmable watchdog comms known good state.
<b>Watchdog hardware timer</b>	If the firmware does not refresh the watchdog timer within a predetermined interval then all outputs go to a user programmable watchdog hardware good state
<b>Q-Stop function</b>	When a user programmable input transitions to a preconfigured high or low state then all outputs go to a user programmable Q-Stop known good state
<b>Industry Approvals</b>	C-Tick, AEO (C-TPAT), WEEE, RoHS
<b>Microsoft Approvals &amp; Signed Drivers</b>	Microsoft Certified Gold Partner 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

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: <a href="mailto:sales@brainboxes.com">sales@brainboxes.com</a>
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
Packaging	Microsoft signed drivers & utilities, Quick Start Guide, Device Ethernet 16 D0
Device	0.215 kg, 0.47 pounds
Packaged Weight	
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	837324003192



### Optional Accessories:



**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.