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Ethernet to Analogue In ED-549

ED-549 ETHERNET TO ANALOGUE 8 INPUTS

ED-549

- Ideal for all kinds of industry standard sensors and transducers
- 8 Analogue Inputs + RS485 Gateway
- High-precision measurements of voltages and currents

- Great for process control applications
- -30ºC to +80ºC Temperature range
- +5V to +30V DC Input Power Supply

Key Specifications

- 8 analogue inputs, independently configurable as differential voltage inputs or current inputs
- Voltage input ranges: ±10V, ±5V, ±2.5V, ±1V, ±500mV, ±250mV, ±150mV or ±75mV
- Current input ranges: ±20mA, 0-20mA or 4-20mA
- Built-in current sense resistors for current measurement
- Analogue inputs are isolated from the power, network and RS-485 ports
- 16 bit resolution
- Measurement accuracy:
  - 0.1% of full-scale range at 25°C
  - 0.3% of full-scale range over -30 to +80°C
- Measurement rate: 12 measurements per second, divided between all enabled inputs
- Input impedance (voltage mode) > 10MΩ
- Low Noise: CMRR > 120dB
- Rejects Mains Hum: NMRR > 100dB at 50Hz and 60Hz

Connect. Configure. Control.

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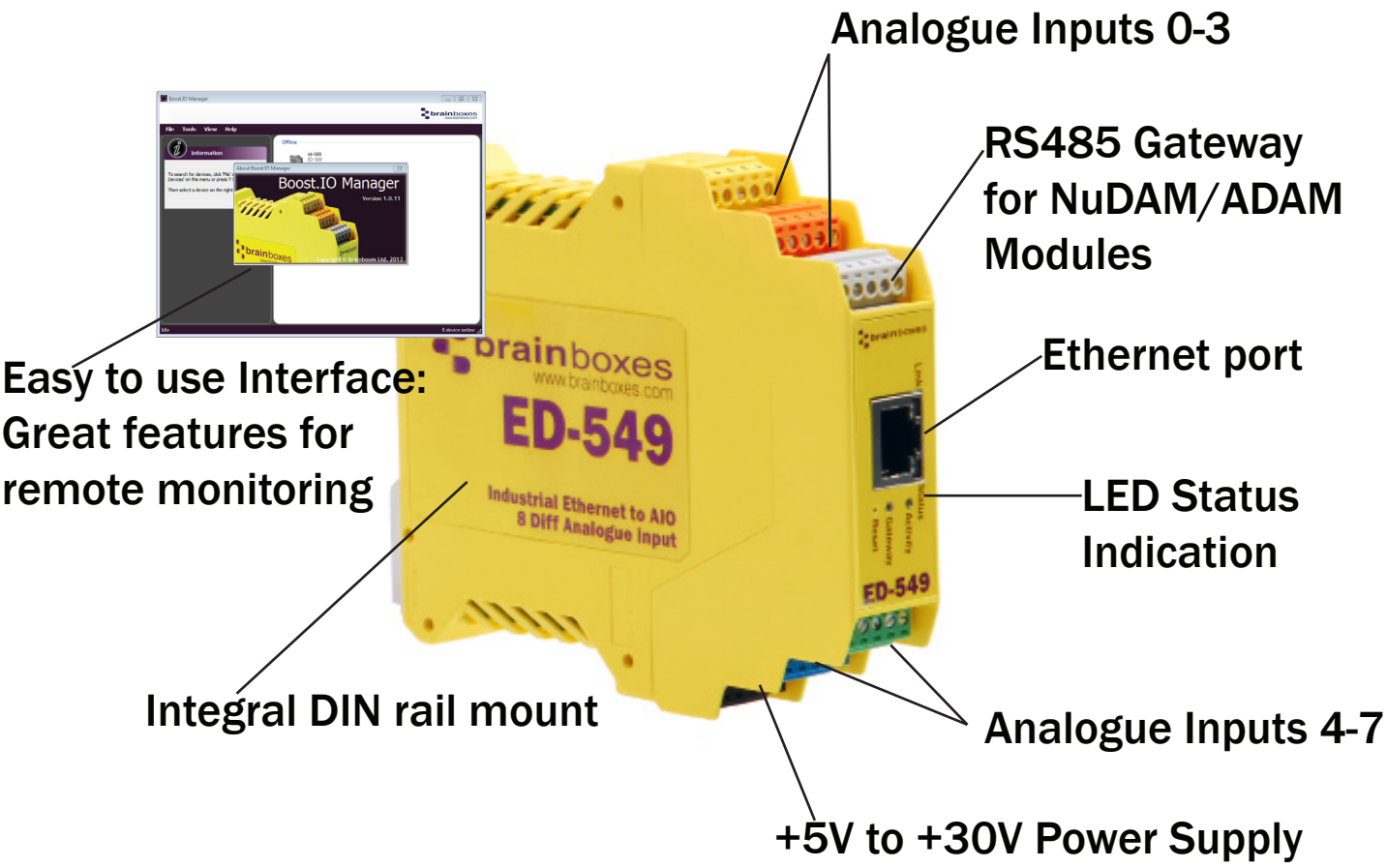

Ethernet to IO Device Server:
The Ethernet to IO device is implemented using a Windows COM port driver that is completely compatible with all popular PC packages such as LabView, MATLAB and Agilent VEE and support a range of popular APIs. Continue to get value from your existing development and process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

Slim Shape:
Small footprint 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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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 using ASCII protocols.

Wide Range Redundant Dual Power Input:
+5VDC to +30VDC accommodates variation in the +24VDC factory floor supply 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.

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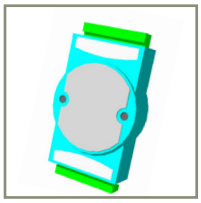

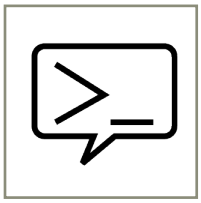

Familiar ASCII Command Protocol:

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 the device address 01
!01ED-549	Device with address 01 replies that its name is ED-549
$01F	Read firmware version number of device address 01
!013.50	Device with address 01 replies with the firmware version 3.50
#010	Reads the analogue input of channel 0 from device address 01
>+04.987	Analogue input data from the channel specified
$0150F	Enable channels 0-3 and disable channels 4-7 of the device address 01
!01	Command was successfully sent to device address 01

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 8.1 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 XP / Windows Server 2012 & R2 / 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

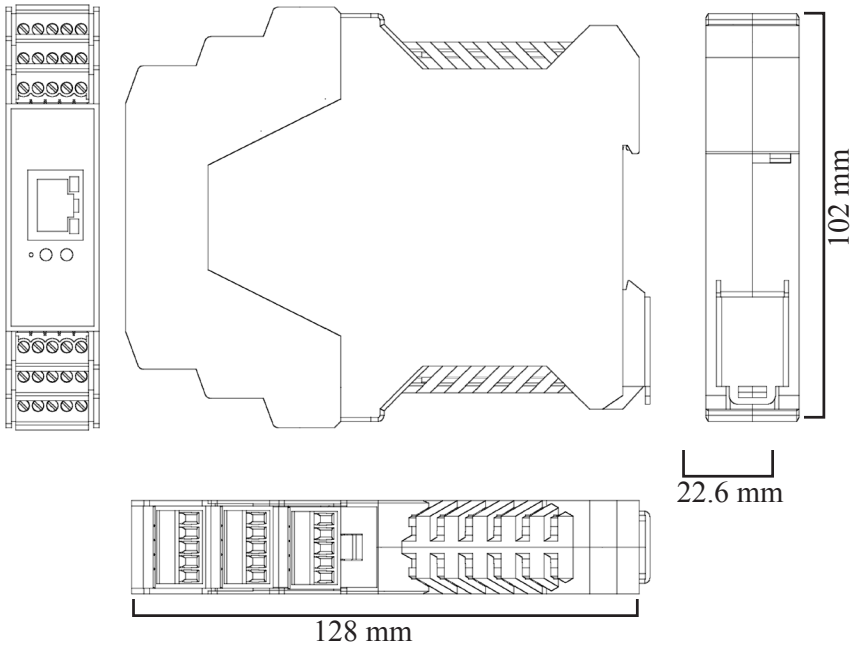
Webserver Interface	Configure IP address, monitor state of i/o lines
Programming Interface	No device driver needed, just open a TCP connection and send simple ASCII commands. Software drivers give local COM Port interface for configuration
Utility Programs	Find device, configure IP address

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, HTTP
Connection to Network	Ethernet 10BaseT / 100BaseTX

Housing

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



Terminal Block	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5
Yellow	AGND	AIn 0-	AIn 0+	AIn 1-	AIn 1+
Orange	AGND	AIn 2-	AIn 2+	AIn 3-	AIn 3+
Grey	GND	RS-485 D-	RS-485 D+	RS-485 D+	RS-485 D-
Green	AGND	AIn 4-	AIn 4+	AIn 5-	AIn 5+
Blue	AGND	AIn 6-	AIn 6+	AIn 7-	AIn 7+
Black	Power GND	+Vin A	+Vin B	Power GND	Func GND
Input +5V to +30V DC 100mA@24V 2.5W Max					

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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 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°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)

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	Input Read
	Flashing Red	Input Error

Approvals

Industry Approvals	C-Tick, AEO (C-TPAT), WEEE, RoHS
Microsoft Approvals	Microsoft Certified Gold Partner
Microsoft Signed Drivers	Windows 8 & 8.1 32 bit & 64 bit Editions Windows 7 32 bit & 64 bit Editions Windows XP 32 bit & 64 bit Editions Windows Server 2012 & R2 32 bit & 64 bit Editions Windows Server 2008 32 bit & 64 bit Editions Windows Server 2008 R2 & Windows 2000 Windows Vista 32 bit & 64 bit editions

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Packaging Information

Packaging	Installation CD including manual, Microsoft signed drivers & utilities, Quick Start Guide
Device	Ethernet 8 AI
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	837324003369

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

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

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