



Electro Standards Laboratories
ADVANCED SYSTEMS DESIGN & SERVICES



SPECIFICATIONS

Desktop Unit... Model 4163 (Cat No. 304163)
DIN Rail Unit... Model 4163-DIN (Cat No. 304163-DIN)
Board Unit... Model 4164 (Cat No. 304164)

Ethernet 485/232 Models 4163/4163-DIN/4164 High Speed Ruggedized Interface Converters

The Ethernet 485/232 Models 4163/4163-DIN/4164 are **RoHS compliant** high speed ruggedized Ethernet to RS485/422/232 interface converter from Electro Standards Laboratories. These units convert Ethernet 10/100 Mbps IEEE 802.3 compliant data from a standard LAN/WAN connection to a serial asynchronous data interface over RS232, or RS485/422 networks with a user selectable baud rate of up to 921,600 bps. When operating in RS485/422 mode, the converters can be configured for 2-wire half duplex or 4-wire full duplex operation. This converter provides an industrial solution for remote motoring and control of various devices from virtually anywhere over a LAN/WAN or Internet connection. Typical devices include PLC, motor controls, power monitoring, multi-drop data collection devices such as POS, barcode readers, time clocks, scales, data entry terminals, ATMs and other remote serial communications devices. Typical applications include building automation, industrial manufacturing, utilities, transportation and retail POS.

The Ethernet 485/232 Models 4163/4163-DIN/4164 are designed to operate from -40 °C to +85 °C and is a member of Electro Standards Laboratories' (ESL) rugged community media converter family. The units feature protection circuitry on all receivers and transmitters for both RS232 and RS485/422 interfaces. The unit's power input is protected from transients and features 1kVDC power supply isolation to prevent system ground loops. They also have 3750Vrms isolation between the (DB9) RS485/422/232 interface and the (RJ45) Ethernet Interface. It can be powered from a wide input range of 10VDC-36VDC. Custom models are also available for other voltage ranges such as 4.5VDC-9VDC and 19VDC-72VDC.

Other features include user selectable data rate, data bits per character, start/stop bits, parity and flow control. The unit has TX, RX and Power indicator LEDs as well as link speed and link activity LEDs on the RJ45 Ethernet connector.

The converter is available in a desktop package (Model 4163) with optional DIN rail mounting hardware. It is also available as a board only (Model 4164) with front mounted threaded brackets for rack mounting in embedded applications. In this configuration there are also dual DB9 power connectors for convenience in bused power applications.

Three configurations are available:

1. **Ethernet RS485/232 Model 4163 Desktop Unit**, for applications requiring an enclosure.
2. **Ethernet RS485/232 Model 4163-DIN Unit** for applications requiring mounting on a DIN rail.
3. **Ethernet RS485/232 Model 4164 Board Unit**, for embedded applications.



Specifications:

Ethernet Network Interface:

Connectors: RJ45
Link Speed Ethernet 10Base-T or 100Base-T (Auto Sensing)

Ethernet Network Options:

Network Protocols: ARP, UDP/IP, ICMP, Telnet, TFTP, SNMP, Auto IP, DHCP, and HTTP
Serial Port Protocols: TCP, UDP, and Telnet
Network Management: Internal Web Server, SNMP, Serial or Telnet Login
Network Security: Password Protection and Locking Features (Optional Rijndael 128, 192 or 256-bit Encryption)

Serial Bit Rate Options (user selectable):

Format: Asynchronous
Data Bits: 7 or 8
Stop Bits 1 or 2
Parity: Odd, Even, None
Flow Control: Software (XON/XOFF), None
Data Speed: Normal Mode- 300 to 230,400 bps @ -40°C to +85°C (-40°F to 185°F)
High Performance Mode - 300 to 921,600 bps @ -40°C to +75°C (-40°F to 167°F)

RS232 Serial Monitor Port:

Full Duplex RS232 Monitor Capability
Connector: 5-pin Single Row Header (Board Only)
Connector: Optional RJ45 or Customer Specified (Desktop)



Serial Copper Interface:

Connectors: DB9, Female
RS232: (DTE/DCE-Default) Jumper Selectable
Compatible with MIL-STD 188C.
RS485/422: (2-wire/4-wire Default) Jumper Selectable
Termination: RS485 120 Ohm Jumper Selectable

Serial Network Configurations:

RS232: Point-to-Point
RS485/422: Point-to-Point/Multi-Point
Multi-Point Options:
Ethernet Control - TX Disable Time depends upon Serial Bit Rate
(9.6Kbps ~ 120uSec, 230.4Kbps ~ 12uSec, 921.6Kbps ~ 5uSec)
Timer Control - Default RX Disable Time ~280uSec, (User Configurable TX Disable Time via a single thru-hole resistor)

Indicators:

Power Indicator LED
Serial DB9: TXD and RXD LEDs
Ethernet RJ45: Link Speed and Activity LEDs

Power:

Input Power: 10VDC-36VDC Standard
4.5VDC-9VDC, 19VDC-72VDC, Others at 2W.
Connectors: DC Power Jack (Desktop Unit)
Dual DB9F for Power Daisy Chaining (Board Only)
Isolation: 1kVDC for power input, 3750 Vrms between data interface.



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Ethernet RS485/232 Models 4163/4163-DIN/4164 High Speed Ruggedized Interface Converters

Specifications: (continued)

Ethernet RS485/232 Model 4163 Mechanical (Desktop Unit):

Model / Cat No: 4163 / 304163
Size: 5" x 4.25" x 1.4"
(12.7 x 10.8 x 3.6 cm)
Weight: 10.1 oz (286g)
Mounting: Desktop Standard, DIN Rail (Optional)

Ethernet RS485/232 Model 4163-DIN Mechanical (DIN Rail Mounted Unit):

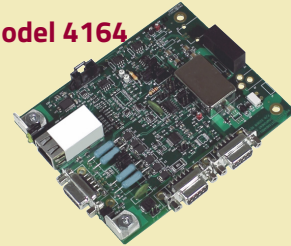
Model / Cat No: 4163-DIN / 304163-DIN
Size: 5" x 4.25" x 1.4"
(12.7 x 10.8 x 3.6 cm)
Weight: 10.1 oz (286g)
Mounting: 2 Threaded Holes Standard, DIN Rail
DIN Rail Bracket Size: 2.84" x 1.24" x 0.16"
(7.2 x 3.4 x 0.4 cm)
DIN Rail Bracket Weight: 0.9 oz (25.5g)

Ethernet RS485/232 Model 4164 Mechanical (Board Only):

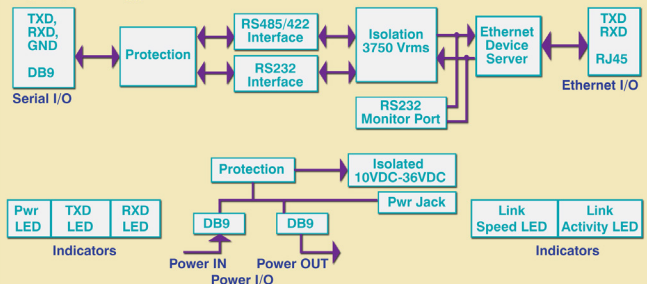
Model / Cat No: 4164 / 304164
Size: 4.8" x 3.9" x 0.63"
(12.2 x 9.9 x 1.6 cm)
Weight: 3.5 oz (99g)
Mounting: Mounting Holes, Rt Angle Brackets

Ethernet 485/232 Model 4164

(Cat No. 304164)
Board Unit



High Speed Ruggedized Ethernet-to-RS485/422/232 Converter



Ethernet 485/232 Models 4163/4163-DIN/4164 Application

