# Introduction

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## Ethernet Serial Device Servers

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## Modbus Gateways & Protocol Converters

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Connect legacy serial-equipped machines to your Ethernet LAN or WAN easily with B&B Electronics’ Ethernet serial device servers. Data from serial devices located in the farthest corners of your facility will be displayed on your office PC quickly and accurately.

- **ITS/Traffic Management**
- **Transaction Management**
- **Security**
- **Laboratory**
- **Industrial PLC/Drives/Process**
- **Energy (Solar, Wind, Sub Metering)**

### ETHERNET SERIAL DEVICE SERVERS

#### VESP211 Series
- Mini, compact design that fits just about anywhere
- Wide temperature, heavy industrial design
- Panel mount (DIN mount option)
- 1 port series supports RS-232 only, RS-422/485 only or RS-232/422/485 all in one

#### VESR900 Series
- Rugged DIN mount design
- Wide temperature industrial design
- **Class 1/Division 2** rated for oil and gas industries
- 1 and 2 port serial designs include support for RS-232/422/485
- Two Ethernet port options for easy installation
- Multi-mode and single-mode fiber port options for long run or high noise applications
- NEMA TS2 options

#### VESR321 Series
- Three-way, 2 kV isolation
- Wide temperature, heavy industrial design built for rugged applications
- DIN or panel mount design
- Two Ethernet ports
- Fiber optic port options for Ethernet connectivity
- 1 port series supports RS-232/422/485
- NEMA TS2 options

#### VESR400 Series
- Wide temperature, heavy industrial design built for rugged applications
- 4 independent serial ports supporting RS-232/422/485
- DIN or panel mount design
- Two Ethernet port options
- Fiber optic port options for Ethernet connectivity
- NEMA TS2 options

#### SSE/DSE/QSE/ESE 100/400 Series
- 1, 2, 4, or 8 serial ports - RS-232 only, RS-422/485 only and RS-232/422/485 all in one
- Optional surge protection
- Optional 5V out on serial port
- Two Ethernet port options
- 1 and 2 port designs with Wi-Fi capability available
VEST900 series serial servers

MESR900 series Protocol Converters

VFg series Protocol Converters

listed

Class 1/division 2
Certified For hazardous locations

For applications requiring Class 1/Division 2 certification, B&B Electronics has a range of connectivity and communication solutions designed to operate in hazardous environments.

- see page 470 for a complete listing of C1D2 products.

- Modbus TCP Ethernet, ASCII
- Modbus flexibility – serial & Ethernet, masters & slaves
- View messaging status in real time
- Wide operating temperature (-40 to 80 °C)
- Wide Voltage input 10 to 30 VDC
- Ultra compact IP30 metal enclosure
- Heavy industrial 61000-6-2 EMC Level 3

MESR400 Series

- Ethernet-enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, masters & slaves
- Modbus messaging priority control
- Ethernet fiber options
- NEMA TS2 options

VFG Series

- Protocol converter for Modbus, BACnet, Devicenet, Ethernet/IP, Profinis, CANOpen and more
- Supports up to 9 protocols simultaneously (with optional expansion card)
- Class 1/Division 2
- Industrial DIN mount design
- Web server VFG2000/3000 only
- Data logger VFG2000/3000 only
- Virtual HMI VGA 640 x 480 (VFG3000 only)
- Virtual HMI VGA 320 x 240 (VFG2000 only)

MESR211 Series

- Modbus/TCP, Modbus ASCII, Modbus RTU support
- Rugged wide temperature
- DIN mount design
- Class 1/Division 2 rated for oil and gas industries
- 1 and 2 port serial designs include support for RS-232/422/485
- Two Ethernet port options for easy installation
- Multi-mode and single-mode fiber port options for long run or high noise applications
- NEMA TS2 options

MESR321 Series

- Three-way isolation on data ports
- Modbus/TCP, Modbus ASCII, Modbus RTU support
- Wide temperature, heavy industrial design built for rugged applications
- DIN or panel mount design
- Two Ethernet port options
- Fiber optic port options for Ethernet connectivity

MESR900 Series

- Ethernet-enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, masters & slaves
- Modbus messaging priority control
- Ethernet fiber options
- NEMA TS2 options

VFG Series

- Protocol converter for Modbus, BACnet, Devicenet, Ethernet/IP, Profinis, CANOpen and more
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- Class 1/Division 2
- Industrial DIN mount design
- Web server VFG2000/3000 only
- Data logger VFG2000/3000 only
- Virtual HMI VGA 640 x 480 (VFG3000 only)
- Virtual HMI VGA 320 x 240 (VFG2000 only)
# Ethernet Serial Servers & Protocol Gateway

## Which Is Right For You?

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<th>1 and 2 Port Ethernet to Serial Servers</th>
<th>Isolated 1 Port Serial Servers</th>
<th>4 Port Ethernet to Serial Servers</th>
<th>1, 2, &amp; 4 Port Ethernet to Serial Servers</th>
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<td>VESR900 Series</td>
<td>VESR321 Series</td>
<td>VESR400 Series</td>
<td>SSE, DSE, QSE Series</td>
</tr>
<tr>
<td>Environment</td>
<td>Commercial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
<td>Commercial</td>
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<tr>
<td>Number of Serial Ports</td>
<td>1</td>
<td>1 or 2</td>
<td>1</td>
<td>4</td>
<td>1, 2, 4</td>
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<tr>
<td>Number of Ethernet Ports</td>
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<td>1 or 2 (fiber option)</td>
<td>(fiber option)</td>
<td>1 or 2 (fiber option)</td>
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<tr>
<td>RS-232/422/485 Modes</td>
<td>By model</td>
<td></td>
<td></td>
<td></td>
<td>By model</td>
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<tr>
<td>Power</td>
<td>10 to 30 VDC, 12VDC supplied</td>
<td>10 to 48 VDC</td>
<td>10 to 48 VDC</td>
<td>10 to 48 VDC</td>
<td>5 VDC</td>
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<tr>
<td>Isolated Serial (2KV)</td>
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<tr>
<td>Ethernet (1.5KV)</td>
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<tr>
<td>Temperature Rating</td>
<td>-40 to 80°C</td>
<td>-40 to 80°C</td>
<td>-40 to 80°C</td>
<td>-40 to 80°C</td>
<td>0 to 70°C</td>
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<tr>
<td>Direct IP Mode</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
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<td>Tunneling</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>VCOM Mode</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mounting Options</td>
<td>Panel, DIN Rail option</td>
<td>DIN Rail, Panel Option</td>
<td>Panel, DIN Rail option</td>
<td>Panel, DIN Rail option</td>
<td>Wall Mount, DIN Rail or Rack Mount Option</td>
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<tr>
<td>Modbus TCP, RTU, ASCII</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FCC, CE</td>
<td>✔</td>
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<tr>
<td>UL</td>
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<tr>
<td>UL Class 1, Division II</td>
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<td></td>
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<tr>
<td>NEMA TS2 Options</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy Industrial</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
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### Protocol Gateways

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<th>Protocol Fieldbus Gateways</th>
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<td><strong>ES Series</strong></td>
<td><strong>MESP211 Series</strong></td>
<td><strong>MESR900 Series</strong></td>
<td><strong>MESR321 Series</strong></td>
<td><strong>MESR400 Series</strong></td>
<td><strong>VFG Series</strong></td>
</tr>
<tr>
<td>Commercial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
<td>Rugged, Industrial</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>1 or 2</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1 or 2 (fiber option)</td>
<td>2 (fiber option)</td>
<td>2 (fiber option)</td>
<td>1</td>
</tr>
<tr>
<td>By model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1) 232, (1) 422/485</td>
</tr>
<tr>
<td>5 VDC</td>
<td>10 to 30 VDC, 12 VDC</td>
<td>10 to 48 VDC</td>
<td>10 to 48 VDC</td>
<td>10 to 48 VDC</td>
<td>24 VDC</td>
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</tbody>
</table>

Temperature Rating:
-40 to 80°C
-40 to 80°C
-40 to 80°C
-40 to 80°C
0 to 70°C
-40 to 80°C
-40 to 85°C
-0 to 50°C

Mounting Options:
- Panel, DIN Rail option
- DIN Rail, Panel Option
- Panel Mount, DIN Rail Option
- Panel, DIN Rail option
- DIN Rail Option

Direct IP Mode:
✔ ✔ ✔ ✔ ✔

Tunneling:
✔ ✔ ✔ ✔ ✔

VCOM Mode:
✔ ✔ ✔ ✔ ✔

FCC, CE:
✔ ✔ ✔ ✔ ✔ ✔

UL:
✔ ✔ ✔

UL Class 1, Division II:
✔ ✔

NEMA TS2 Options:
✔ ✔ ✔

Heavy Industrial:
✔ ✔ ✔

[WWW.BB-ELEC.com](http://www.bb-elec.com)
# Ultra Compact Ethernet Serial Servers

VESP211 Series

**VESP211 Serial Servers** connect serial devices (RS-232, RS-422 or RS-485) to Ethernet networks, allowing the serial device to become a node on the network. The serial port can be accessed over a LAN/WAN using Direct IP Mode, Virtual COM Port, or Paired Mode connections. VESP211 Serial Servers feature 10BaseT or 100BaseTX copper network. The product is built for use in industrial environments, featuring a heavy duty metal enclosure that is panel (standard) or DIN rail mountable (with optional adapter). The product operates from a range of DC power supply voltages and features a barrel connector.

**Ease of Use**
Configuration, upgrades and monitoring are simple, easy tasks with Vlinx™ Manager Software. It installs right on your PC giving you access to the serial server via your desktop. Manage remotely over a LAN or WAN via the built-in web server. This is helpful for off-site troubleshooting and can be done with a simple web browser.

**PRODUCT FEATURES**
- Ultra compact design fits into the tightest spaces
- RS-232, RS-422/485, and RS-232/422/485 models
- Wide operating temperature (-40 to 80°C)
- Wide voltage input (10 to 30VDC)
- IP30 metal enclosure
- Heavy industrial 61000-6-2 EMC Level 3 tested for harsh environments

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SERIAL PROTOCOL</th>
<th>SERIAL PORT</th>
<th>ETHERNET PORTS</th>
<th>ETHERNET CONNECTOR</th>
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<tr>
<td>US Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VESP211</td>
<td>RS-232/422/485</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-232</td>
<td>RS-232</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-485</td>
<td>RS-422/485</td>
<td>Removable Terminal Block</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>European Power Supply - (EU)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>VESP211-EU</td>
<td>RS-232/422/485</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-232-EU</td>
<td>RS-232</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-485-EU</td>
<td>RS-422/485</td>
<td>Removable Terminal Block</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>United Kingdom Power Supply - (UK)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VESP211-UK</td>
<td>RS-232/422/485</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-232-UK</td>
<td>RS-232</td>
<td>DB9M</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESP211-485-UK</td>
<td>RS-422/485</td>
<td>Removable Terminal Block</td>
<td>1</td>
<td>RJ45</td>
</tr>
</tbody>
</table>

**ACCESSORIES**
- EIRSP1 - Industrial Ethernet Surge Suppressor
- 232NM9 - Null Modem Crossover Cable for DTE to DTE connection
- DRAD35 - DIN Rail Adaptor Clip (pair)
- PS12VDC1A - Replacement Power Supply
Ultra Compact
Ethernet Serial Servers
VESP211 Series

SPECIFICATIONS

SERIAL TECHNOLOGY
RS-232 (DB9) TD, RD, DTR, DSR, RTS, CTS, DCD plus Signal Ground
RS-485 2-Wire Data A(-), Data B(+), GND
RS-422/485 4-Wire TDA(-), TDB(+), RDA(-), RDB(+), GND
Serial Connector RS-422 DB9M or Removable Terminal Blocks (RS-422/485 models)

Data Rate Up to 230.4 Kbps

POWER
Source Power supply included
Input Voltage 10 to 30 VDC
Connector Power Connector 5.5 X 2.1 mm
Power Consumption 2.5 Watts Max.

MECHANICAL
LED Indicators Serial Port, Ethernet, Ready LED’s
Switches Reset Button
Dimensions VESP211 - 7.938 x 5.257 x 2.209 cm (3.125 x 2.070 x 0.870 in)
Enclosure Metal, IP 30

ENVIRONMENTAL
Operating Temperature -40 to 80°C (-40 to 176°F)
Operating Humidity 10 to 95% Non-condensing
MTBF VESP211 – 186,310 hours
MTBF Calc Method Parts Count Reliability Prediction

NETWORK
Serial Memory 8 KB per port
Network Memory 4 KB
LAN 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX
Ethernet IEEE 802.3 auto detecting & auto MDI/MDI-X, 10BaseT and 100Base TX

PROTOCOLS
Protocols TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
IP Mode Static, DHCP
TCP/UDP User definable
UDP Unicast or Multicast

OTHER
Connection Mode Server, Client, VCOM, Paired
Client Connection At power up or upon data arrival
Search Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics Display PC IP, ping, test VCOM
Firmware Upgrade Vlinx Manager

CONFIGURATION SOFTWARE
Vlinx Manager Windows XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Windows 7 (32/64 bit)

REGULATORY / CERTIFICATIONS / SAFETY
Compliance FCC Part 15 Class A, CE
EMC Industrial-Hardened, 15,000 volt-protected, 61000-6-2 certified switch
UL 60950

MECHANICAL DIAGRAM

www.bb-elec.com
Take control of your serial devices with Vlinx™ VESR9xx Industrial Ethernet Serial Servers. If it has a Serial Port, it can be monitored and controlled from anywhere on your Ethernet LAN or WAN. Keep it at maximum productivity without leaving your office. Even troubleshoot it from outside your LAN via the Internet. The easy to use Vlinx™ Manager software puts access to your whole shop on your desk. Configure devices, upgrade firmware and monitor activity. Configuration changes can also be made using a web browser.

VESR92x series servers also feature an additional copper RJ45 port that allows you to connect another Ethernet device or PC work-station. This Pass-through port functions much like an unmanaged switch.

Heartbeat connectivity keeps the serial server online. If connectivity is lost it attempts to reconnect every five seconds until connection is regained. A manual reboot is not needed when communications are restored.

**PRODUCT FEATURES**
- Ethernet enable serial devices
- Direct IP, virtual COM port, or paired mode
- Ethernet pass-through port available
- Serial RS-232/RS-422/485 ports
- UL Class 1 Division 2
- NEMA TS2 (VESR901)

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SERIAL PORTS</th>
<th>SERIAL CONNECTORS</th>
<th>ETHERNET MEDIA</th>
<th>ETHERNET CONNECTORS</th>
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</thead>
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<tr>
<td>VESR901†</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>CAT 5</td>
<td>RJ45</td>
</tr>
<tr>
<td>VESR902D</td>
<td>2</td>
<td>DB9</td>
<td>CAT 5</td>
<td>RJ45</td>
</tr>
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<td>TB</td>
<td>CAT 5</td>
<td>RJ45</td>
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<td>DB9 &amp; TB</td>
<td>CAT 5</td>
<td>Two RJ45</td>
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<td>VESR922T</td>
<td>2</td>
<td>TB</td>
<td>CAT 5</td>
<td>Two RJ45</td>
</tr>
</tbody>
</table>

* For fiber options please see page 154.
† NEMA TS2

**ACCESSORIES**
- MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
- ERS35 - 1 M 35mm DIN rail, steel
- DRPM25 - 35mm DIN Rail to Panel Mount Bracket
- TBKT2 - Replacement Terminal Block, One 5 Position 5.08 mm
- TBKT1 - Replacement Terminal Block, One 2 Position 5.08 mm
### Ultra Compact Ethernet Serial Servers

**VESR900 Series - Copper Models**

### SPECIFICATIONS

#### SERIAL TECHNOLOGY
- **RS-232**: TD, RD, RTS, CTS, DTR, DSR, DTD, GND
- **RS-485 2-Wire**: Data A(-), Data B(+), GND
- **RS-422/485 4-Wire**: TDA(-), TDB(+), RDA(-), RDB(+), GND

#### Serial Connector
- DB9M or Removable Terminal Blocks

#### Data Rate
- Up to 230.4 Kbps

#### POWER
- **Source**: External
- **Input Voltage**: 10 to 48 VDC (58 VDC Maximum)
- **Power Consumption**:
  - VESR90x: 4.0 Watts Max.
  - VESR92x: 6.0 Watts Max.

#### MECHANICAL
- **LED Indicators**: Serial Port, Ethernet Link, Ready
- **Switches**: Reset Button

#### Dimensions
- VESR90x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in)
- VESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)

#### Enclosure
- 35mm DIN mount, Plastic, IP 30

#### Weight
- VESR90x: 149.7 g (0.33 lbs)
- VESR92x: 204.1 g (0.45 lbs)

#### ENVIRONMENTAL
- **Operating Temperature**: -40 to 80°C (-40 to 176°F)
- **Operating Humidity**: 10 to 95% Non-condensing

#### MTBF
- VESR90x: ~132309 hours
- VESR92x: ~102593 hours

#### MTBF Calc Method
- Parts Count Reliability Prediction

### NETWORK PHYSICAL LAYER STANDARDS
- Ethernet: IEEE 802.3 auto detecting & auto MDI/MDX, 10BaseT and 100BaseTX

### PROTOCOLS
- Protocols: TCP, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
- **IP Mode**: Static, DHCP
- **TCP/UDP**: User definable

### OTHER
- **Connection Mode**: Server, Client, VCOM, Paired
- **Client Connection**: At power up or upon data arrival
- **Search**: Serial direct COM and Ethernet Auto Search or specific IP
- **Diagnostics**: Display PC IP, ping, test VCOM, save test config (text readable)
- **Firmware Upgrade**: Vlinx Manager

### ETHERNET PASS-THROUGH PORT (VESR92X)
- **Standards**: IEEE 802.3, 802.3u, 802.3x
- **Processing Type**: Store and Forward with 802.3x full duplex, non blocking flow control
- **Flow Control**: IEEE 802.3x flow control, back pressure flow control
- **MAC Address Table**: 2K

### CONFIGURATION SOFTWARE
- **Vlinx Manager**: Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)

### REGULATORY / CERTIFICATIONS / SAFETY
- **Compliance**:
  - FCC, CE, NEMA TS2 (VESR901)
  - UL Listed, File E222870
  - UL Class 1 Division 2 Groups A, B, C, D (HAZLOC) File E245458

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### MECHANICAL DIAGRAM - VESR90X MODELS

![Mechanical Diagram VESR90X Models](image)

### MECHANICAL DIAGRAM - VESR92X MODELS

![Mechanical Diagram VESR92X Models](image)
Ultra Compact Ethernet Serial Servers
VESR900 Series - Fiber Models

Take control of your serial devices with Vlinx™ VESR9xx Industrial Ethernet Serial Servers. If it has a serial port, it can be monitored and controlled from anywhere on your Ethernet LAN or WAN. Keep it at maximum productivity without leaving your office. Even troubleshoot it from outside your LAN via the Internet. The easy to use Vlinx™ Manager software puts access to your whole shop on your desk. Configure devices, upgrade firmware and monitor activity. Configuration changes can also be made using a web browser.

Multiple fiber optic options make integration into any existing network quick. No need to purchase an extra media converter when you can choose from multi-mode SC/ST, 15km single-mode SC/ST, 40 km single-mode SC/ST, or 80 km single-mode SC/ST.

VESR92x series servers also feature an additional copper RJ45 port that allows you to connect another Ethernet device or PC work-station. This Pass-through port functions much like an unmanaged switch.

Heartbeat connectivity keeps the serial server on-line. If connectivity is lost it will attempt to reconnect every five seconds until a connection is regained. A manual reboot is not required when communications are restored.

**PRODUCT FEATURES**
- Ethernet enable serial devices
- Direct IP, virtual COM port, or paired mode
- Ethernet pass-through port available
- Ethernet fiber options
- Serial RS-232/RS-422/485 ports
- UL Class 1 Division 2

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SERIAL PORTS</th>
<th>SERIAL CONNECTORS</th>
<th>ETHERNET MEDIA</th>
<th>ETHERNET CONNECTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESR901-MC</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>Multi-mode Fiber</td>
<td>SC</td>
</tr>
<tr>
<td>VESR901-MT</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>Multi-mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR901-SC</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>Single Mode Fiber</td>
<td>SC</td>
</tr>
<tr>
<td>VESR901-ST</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR902D-MC</td>
<td>2</td>
<td>DB9</td>
<td>Multi-mode Fiber</td>
<td>SC</td>
</tr>
<tr>
<td>VESR902D-MT</td>
<td>2</td>
<td>DB9</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR902D-ST</td>
<td>2</td>
<td>DB9</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR902MC</td>
<td>1</td>
<td>DB9</td>
<td>Single Mode Fiber</td>
<td>SC</td>
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<tr>
<td>VESR902MT</td>
<td>1</td>
<td>DB9</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR902T-MC</td>
<td>2</td>
<td>TB</td>
<td>Multi-mode Fiber</td>
<td>SC</td>
</tr>
<tr>
<td>VESR902T-MT</td>
<td>2</td>
<td>TB</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR902T-ST</td>
<td>2</td>
<td>TB</td>
<td>Single Mode Fiber</td>
<td>ST</td>
</tr>
<tr>
<td>VESR921-MC</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>CAT 5, Multi-mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR921-MT</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>CAT 5, Multi-mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR921-SC</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>CAT 5, Single Mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR921-ST</td>
<td>1</td>
<td>DB9 &amp; TB</td>
<td>CAT 5, Single Mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR922T-MC</td>
<td>2</td>
<td>TB</td>
<td>CAT 5, Multi-mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR922T-MT</td>
<td>2</td>
<td>TB</td>
<td>CAT 5, Single Mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
<tr>
<td>VESR922T-ST</td>
<td>2</td>
<td>TB</td>
<td>CAT 5, Single Mode Fiber</td>
<td>One RJ45, One SC, One RJ45, One ST</td>
</tr>
</tbody>
</table>

* All serial ports are software configurable for RS-232, RS-422, or RS-485.
* 40km and 80km options available.

For Copper options please see page 152.

**ACCESSORIES**
- MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
- ESR35 - DIN Rail 1 Meter 35mm Steel
- DRPM25 - 35mm DIN Rail to Panel Mount Bracket
- TBKT2 - Replacement Terminal Block, One 5 Position 5.08 mm
- TBKT1 - Replacement Terminal Block, One 2 Position 5.08 mm
Ultra Compact Ethernet Serial Servers
VESR900 Series - Fiber Models

SPECIFICATIONS

FIBER OPTIC TECHNOLOGY

<table>
<thead>
<tr>
<th>VESR9xx-Mx</th>
<th>VESR9xx-Sx</th>
<th>VESR9xx-Sx40 (available)</th>
<th>VESR9xx-Sx80 (available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type / Wavelength</td>
<td>Multi-mode / 1310 nm</td>
<td>Single-mode / 1310 nm</td>
<td>Single-mode / 1310 nm</td>
</tr>
<tr>
<td>Output Power</td>
<td>(-) 19 to (-) 14 dBm</td>
<td>(-) 15 to (-) 8 dBm</td>
<td>(-) 5 to 0 dBm</td>
</tr>
<tr>
<td>Receive Sensitivity</td>
<td>~ (-) 32 dBm</td>
<td>~ (-) 32 dBm</td>
<td>~ (-) 34 dBm</td>
</tr>
<tr>
<td>Cable</td>
<td>62.5 / 125 µm</td>
<td>9 / 125 µm</td>
<td>9 / 125 µm</td>
</tr>
<tr>
<td>Connector</td>
<td>SC or ST</td>
<td>SC or ST</td>
<td>SC or ST</td>
</tr>
<tr>
<td>Range</td>
<td>2 km (1.2 miles)</td>
<td>15 km (9.3 miles)</td>
<td>40 km (25 miles)</td>
</tr>
</tbody>
</table>

SERIAL TECHNOLOGY

| RS-232 | TD, RD, RTS, CTS, DTR, DSR, DTD, GND |
| RS-485 2-Wire | Data A(-), Data B(+), GND |
| RS-422/485 4-Wire | TDA(+), TDB(+), RDA(-), RDB(+), GND |
| Serial Connector | DB9M or Removable Terminal Blocks |
| Data Rate | Up to 230.4 Kbps |

POWER

| Source | External |
| Input Voltage | 10 to 48 VDC (58 VDC Maximum) |
| Connector | Removable Terminal Block (12 – 28 AWG) |
| Power Consumption | VESR90x: 4.0 Watts Max. |
| | VESR92x: 6.0 Watts Max. |

MECHANICAL

| LED Indicators | Serial Port, Ethernet Link, Ready |
| Switches | Reset Button |
| Dimensions | VESR90x: 17.145 x 11.237 x 4.572 cm (6.750 x 4.424 x 1.800 in) |
| | VESR92x: 14.86 x 10.11 x 2.95 cm (5.85 x 3.98 x 1.16 in) |
| Enclosure | 35mm DIN mount, Plastic, IP 30 |
| Weight | VESR90x: 149.7 g (0.33 lbs) |
| | VESR92x: 204.1 g (0.45 lbs) |

ENVIRONMENTAL

| Operating Temperature | -40 to 80°C (-40 to 176°F) |
| Operating Humidity | 10 to 95% Non-condensing |
| MTBF | VESR90x: ~ 132309 hours |
| | VESR92x: ~ 102593 hours |
| MTBF Calc Method | Parts Count Reliability Prediction |

NETWORK

| Serial Memory | 8 KB per port |
| Network Memory | 4 KB |

NETWORK COMMUNICATIONS

| LAN | 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX |

NETWORK PHYSICAL LAYER STANDARDS

| Ethernet | IEEE 802.3 auto-detecting & auto MDI/MDX, 10BaseT and 100BaseTX |

PROTOCOLS

| Protocols | TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP |
| IP Mode | Static, DHCP |
| TCP/UDP | User definable |

OTHER

| Connection Mode | Server, Client, VCOM, Paired |
| Connection | At power up or upon data arrival |
| Search | Serial direct COM and Ethernet Auto Search or specific IP |
| Diagnostics | Display PC IP, ping, test VCOM, save test config (text readable) |
| Firmware Upgrade | Vlinx Manager |

ETHERNET PASS-THROUGH PORT (VESR92X)

| Standards | IEEE 802.3, 802.3u, 802.3x |
| Processing Type | Store and Forward with 802.3x full duplex, non-blocking flow control |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| MAC Address Table | 2K |

CONFIGURATION SOFTWARE

| Vlinx Manager | Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit) |

REGULATORY / CERTIFICATIONS / SAFETY

| Compliance | FCC, CE, NEMA TS2, UL Listed, File E222870, UL Class 1 Division 2 Groups A, B, C, D (HAZLOC) File E245458 |

FIBER OPTIC TECHNOLOGY

<table>
<thead>
<tr>
<th>Type / Wavelength</th>
<th>VESR9xx-Mx</th>
<th>VESR9xx-Sx</th>
<th>VESR9xx-Sx40 (available)</th>
<th>VESR9xx-Sx80 (available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-mode / 1310 nm</td>
<td>(-) 19 to (-) 14 dBm</td>
<td>(-) 15 to (-) 8 dBm</td>
<td>(-) 5 to 0 dBm</td>
<td>(-) 5 to 0 dBm</td>
</tr>
<tr>
<td>Single-mode / 1310 nm</td>
<td>~ (-) 32 dBm</td>
<td>~ (-) 32 dBm</td>
<td>~ (-) 34 dBm</td>
<td>~ (-) 34 dBm</td>
</tr>
<tr>
<td>Single-mode / 1510 nm</td>
<td>9 / 125 µm</td>
<td>9 / 125 µm</td>
<td>9 / 125 µm</td>
<td>9 / 125 µm</td>
</tr>
<tr>
<td>Connector</td>
<td>SC or ST</td>
<td>SC or ST</td>
<td>SC or ST</td>
<td>SC or ST</td>
</tr>
<tr>
<td>Range</td>
<td>2 km (1.2 miles)</td>
<td>15 km (9.3 miles)</td>
<td>40 km (25 miles)</td>
<td>80 km (49.7 miles)</td>
</tr>
</tbody>
</table>

SERIAL TECHNOLOGY

| RS-232 | TD, RD, RTS, CTS, DTR, DSR, DTD, DTD, GND |
| RS-485 2-Wire | Data A(-), Data B(+), GND |
| RS-422/485 4-Wire | TDA(+), TDB(+), RDA(-), RDB(+), GND |
| Serial Connector | DB9M or Removable Terminal Blocks |
| Data Rate | Up to 230.4 Kbps |

POWER

| Source | External |
| Input Voltage | 10 to 48 VDC (58 VDC Maximum) |
| Connector | Removable Terminal Block (12 – 28 AWG) |
| Power Consumption | VESR90x: 4.0 Watts Max. |
| | VESR92x: 6.0 Watts Max. |

MECHANICAL

| LED Indicators | Serial Port, Ethernet Link, Ready |
| Switches | Reset Button |
| Dimensions | VESR90x: 17.145 x 11.237 x 4.572 cm (6.750 x 4.424 x 1.800 in) |
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| Weight | VESR90x: 149.7 g (0.33 lbs) |
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| MTBF | VESR90x: ~ 132309 hours |
| | VESR92x: ~ 102593 hours |
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| Protocols | TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP |
| IP Mode | Static, DHCP |
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| Diagnostics | Display PC IP, ping, test VCOM, save test config (text readable) |
| Firmware Upgrade | Vlinx Manager |

ETHERNET PASS-THROUGH PORT (VESR92X)

| Standards | IEEE 802.3, 802.3u, 802.3x |
| Processing Type | Store and Forward with 802.3x full duplex, non-blocking flow control |
| Flow Control | IEEE 802.3x flow control, back pressure flow control |
| MAC Address Table | 2K |

CONFIGURATION SOFTWARE

| Vlinx Manager | Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit) |

REGULATORY / CERTIFICATIONS / SAFETY

| Compliance | FCC, CE, NEMA TS2, UL Listed, File E222870, UL Class 1 Division 2 Groups A, B, C, D (HAZLOC) File E245458 |

www.bb-elec.com
Isolated Industrial Ethernet Serial Servers
VESR321 Series

Take control of your serial devices with Vlinx™ VESR321 Isolated Industrial Ethernet Serial Servers.

Easy to use Vlinx™ Manager software puts access to your whole shop right on your desktop. Configure your serial devices, upgrade firmware and monitor activity from a single location. The data ports are isolated from one another and also from the power supply.

Multiple fiber optic options make integration into any existing network quick and easy. Choose from Multi-mode LC and Single-mode LC.

VESR321 series servers also feature an additional copper pass-through RJ45 port that functions like an unmanaged switch, allowing you to connect another Ethernet device or PC work-station.

Heartbeat connectivity keeps the serial server on-line. If connectivity is lost it attempts to reconnect every five seconds until a connection is regained. A manual reboot is not required when communications are restored.

PRODUCT FEATURES
- Three-way, 2 kV isolation
- Ethernet enable serial devices
- Direct IP, virtual COM port, or paired mode
- Ethernet pass-through port available
- Ethernet fiber options
- Serial RS-232/422/485 port
- NEMA TS2 (VESR321)

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>ETHERNET PORT</th>
<th>ETHERNET FIBER PORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESR321 †</td>
<td>2 RJ45</td>
<td>0</td>
</tr>
<tr>
<td>VESR321-ML</td>
<td>1 RJ45</td>
<td>1 LC multi-mode optical</td>
</tr>
<tr>
<td>VESR321-SL</td>
<td>1 RJ45</td>
<td>1 LC single-mode optical</td>
</tr>
</tbody>
</table>

All Models RS-232/422/485
All Models DB9 or Removable Terminal Block
Includes DIN Rail clips and Panel Mount Brackets
† NEMA TS2

ACCESSORIES
PS12BVLB-INT-MED - Medical Power supply 24VDC 1.7A
TBKT2 - Replacement Terminal block, 5 position
ERS35 - 1M DIN Rail 35mm

MECHANICAL DIAGRAM
# Isolated Industrial Ethernet Serial Servers

**VESR321 Series**

## Configuration Software
- Vlinx Manager
  - Win XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit), Windows 2008 Server

## Ethernet Pass-Through Port
- **Standards**: IEEE 802.3, 802.3u, 802.3x
- **Processing Type**: Store and Forward with 802.3x full duplex, non-blocking flow control
- **Flow Control**: IEEE 802.3x flow control, back-pressure flow control
- **MAC Address Table**: 2K

## Serial Technology
- **RS-232**: TD, RD, RTS, CTS, DTR, DSR, DTD, GND
- **RS-485**: 2-Wire Data A(-), Data B(+), GND
- **RS-422/485**: 4-Wire TDA(-), TDB(+), RDA(-), RDB(+), GND

## Serial Connector
- **DB9M RS-232, Terminal Block RS-422/485**

## Data Rate
- **Up to 230.4 Kbps**

## Emissions
- **FCC Class B**, **CISPR Class B (EN55022)**, **NEMA TS2 (VESR321)**
- **CE EN61000-6-2:2005 (Heavy Industrial)**
- **EN61000-4-2:2008 (ESD) +/-8kV Contact, +/-15kV Air**
- **EN61000-4-3:2006 (RI) 10V/m, 80-1000MHz; 3V/m, 1.3 to 2.7 GHz**
- **EN61000-4-4:2004 (EFT Burst) +/-2kV DC ports; +/-1kV signal ports**
- **EN61000-4-5:2005 (Surge) +/- 0.5 kV DC Ports, +/- 1 kV Signal Ports**
- **EN61000-4-6:2005 (CI) 10 VRMS, 0.15 to 80 MHz**
- **EN61000-4-8:2001 (Magnetic) 10A/m, 50Hz & 60Hz**

## Shock and Vibration
- **Shock**: IEC60068-2-27 50G peak, 11ms, 3 axes
- **Vibration**: IEC60068-2-6: 10-500Hz, 4G, 3 axes
- **Freefall (Drop)**: IEC60068-2-32 10 total drops from sides, corner and edges, 1M

## Fiber Optic Specifications
- **Multi-mode (2 km)**: 1310 nm, -23 to -14 dBm, <\= -31 dBm
- **Single-mode (15 km)**: 1310 nm, 15 to -8 dBm, <\= -34 dBm
- **Single-mode (40 km)**: 1310 nm, -5 to 0 dBm, <\= -34 dBm
- **Single-mode (80 km)**: 1550 nm, -5 to 0 dBm, <\= -34 dBm

* Full Fiber Product Options
  These options are possible for large projects:
  - Models with 2 fiber optic ports
  - Models with long-range fiber optic ports such as 40km and 80km single-mode

Contact B&B Electronics for more information.
Vlinx™ VESR4x4 Serial Servers connect serial devices (RS-232, RS-422 or RS-485) to Ethernet networks, allowing the serial device to become a node on the network. The serial ports can be accessed over a LAN/WAN using Direct IP Mode, Virtual COM Port, or Paired Mode connections. VESR4x4 Serial Servers feature 10BaseT or 100BaseTX copper network media and several fiber optic media options, depending on the model. Many models also feature an additional copper Ethernet pass-through port. VESR4x4 Serial Servers are built for use in industrial environments and feature heavy duty metal enclosures that are panel and DIN rail mountable. The product operates from a range of DC power supply voltages and features pluggable terminal block power connectors as well as a locking barrel connector that facilitates redundant power sources.

Fiber Optic Ethernet Ports
Choose a serial server with fiber optic Ethernet ports when the application requires long distance runs or high RFI/EMI noise is present. Many applications require a high level of noise immunity and fiber eliminates this problem between devices. Fiber optic connections far exceed the 100m limitation of standard Ethernet copper ports. Multi-mode fiber can be extended up to 2km distance while single-mode fiber can run as far as 20km.

Ease of Use
Configuration, upgrades and monitoring of the serial server are simple, Easy tasks with Vlinx™ Manager Software. It installs right on your PC giving you access to the serial server via your desktop. Remotely manage the serial server over a LAN or WAN via the build-in web server. This is helpful for off-site troubleshooting and can be done with a simple web browser.

**PRODUCT FEATURES**
- Ruggedized for extreme applications
- Heavy industrial 61000-6-2 EMC tested
- IEC60068-2-27 (shock) and 600068-2-6 (vibration) tested
- Wide operating temperature (-40 to 80°C)
- Independent serial port selection for RS-232, RS-422, or RS-485
- Wide voltage input 10 to 48VDC, via terminal block or locking barrel plug
- NEMA TS2 (VESR424D)

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>ETHERNET PORTS</th>
<th>ETHERNET CONNECTOR 1</th>
<th>ETHERNET CONNECTOR 2</th>
<th>SERIAL CONNECTOR (K4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESR414D</td>
<td>1</td>
<td>RJ-45</td>
<td>---</td>
<td>DB9 Male</td>
</tr>
<tr>
<td>VESR414T</td>
<td>1</td>
<td>RJ-45</td>
<td>---</td>
<td>Terminal Block</td>
</tr>
<tr>
<td>VESR424D</td>
<td>2</td>
<td>RJ-45</td>
<td>RJ-45</td>
<td>DB9 Male</td>
</tr>
<tr>
<td>VESR424D-MC</td>
<td>2</td>
<td>Multi-mode SC</td>
<td>RJ-45</td>
<td>DB9 Male</td>
</tr>
<tr>
<td>VESR424D-MT</td>
<td>2</td>
<td>Multi-mode ST</td>
<td>RJ-45</td>
<td>DB9 Male</td>
</tr>
<tr>
<td>VESR424D-ST</td>
<td>2</td>
<td>Single-mode SC</td>
<td>RJ-45</td>
<td>DB9 Male</td>
</tr>
<tr>
<td>VESR424T</td>
<td>2</td>
<td>RJ-45</td>
<td>RJ-45</td>
<td>Terminal Block</td>
</tr>
<tr>
<td>VESR424T-MC</td>
<td>2</td>
<td>Multi-mode SC</td>
<td>RJ-45</td>
<td>Terminal Block</td>
</tr>
<tr>
<td>VESR424T-MT</td>
<td>2</td>
<td>Multi-mode ST</td>
<td>RJ-45</td>
<td>Terminal Block</td>
</tr>
<tr>
<td>VESR424T-SC</td>
<td>2</td>
<td>Single-mode SC</td>
<td>RJ-45</td>
<td>Terminal Block</td>
</tr>
<tr>
<td>VESR424T-ST</td>
<td>2</td>
<td>Single-mode ST</td>
<td>RJ-45</td>
<td>Terminal Block</td>
</tr>
</tbody>
</table>

*Mounting included: DIN Rail Kit and Panel Mount Kit
† NEMA TS2

**ACCESSORIES**

- MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
- ERS35 - 1 M DIN Rail, 35MM STEEL
## Specifications

**Serial Technology**
- RS-232 (DB9): TD, RD, DTR, DSR, RTS, CTS, DCD plus Signal Ground
- RS-232 (terminal block): TD, RD, RTS, CTS, plus Signal Ground
- RS-485 2-Wire: Data A(+), Data B(+), GND
- RS-422/485 4-Wire: TDA(+), TDB(+), RDA(+), RDB(+), GND

**Serial Connector:** DB9M or Removable Terminal Blocks

**Network Communications**
- LAN: 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX

**Network Physical Layer Standards**
- Ethernet: IEEE 802.3 auto detecting & auto MDI/MDX, 10BaseT and 100Base TX

**Protocols**
- Protocols: TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
- IP Mode: Static, DHCP
- TCP/UDP: User definable

**Other**
- Connection Mode: Server, Client, VCOM, Paired
- Client Connection: At power up or upon data arrival
- Search: Serial direct COM and Ethernet Auto Search or specific IP
- Diagnostics: Display PC IP, ping, test VCOM
- Firmware Upgrade: Vlinx Manager

**Ethernet Pass-Through Port (VESR424)**
- Standards: IEEE 802.3, 802.3u, 802.3x
- Processing Type: Store and Forward with 802.3x full duplex, non blocking flow control
- Flow Control: IEEE 802.3x flow control, back pressure flow control

**Configuration Software**
- OS Compatibility: Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Windows 7 (32/64 bit)

**Regulatory / Certifications / Safety**
- Compliance: FCC, Part 15 Class A, CE, NEMA TS2 (VESR424D)
- Shock: IEC 60068-2-27
- Vibration: IEC 60068-2-6

**Fiber Optic Technology**
- Type / Wavelength: Multi-mode / 1310 nm, Single-mode / 1310 nm
- Output Power: (-) 19 to (-) 14 dBm, (-) 15 to (-) 8 dBm
- Receive Sensitivity: < / = (-) 32 dBm, < / = (-) 32 dBm
- Cable: 62.5 / 125 µm, 9 / 125 µm
- Connector: SC or ST, SC or ST
- Range: 2 km (1.2 miles), 20 km (12.4 miles)

**Power**
- Source: External
- Input Voltage: 10 to 48 VDC (58 VDC maximum)
- Power Consumption: 6.0 Watts Max.

**Mechanical**
- LED Indicators: Serial Port, Ethernet Link, Speed
- Switches: Reset Button
- Dimensions: 17.145 x 11.237 x 4.572 cm (6.750 x 4.424 x 1.800 in)
- Enclosure: 35 mm DIN Rail, Panel Mount, metal, IP30

**Environmental**
- Operating Temperature: -40 to 80°C (-40 to 176°F)
- Operating Humidity: 10 to 95% Non-condensing
- MTBF: VESR4x4: 70273 hours
- MTBF Calc Method: Parts Count Reliability Prediction

**Network**
- Serial Memory: 8 KB per port
- Network Memory: 4 KB

---

![Mechanical Diagram](image-url)
Serial Device Servers - 1, 2 & 4 Ports

100 series: RS-232 to Ethernet (LAN)
400 series: RS-232/422-485 to Ethernet (LAN)

**Product Features**

- Built-in web server for convenient browser-based configuration and support
- Fast serial baud rates up to 921 kbps and auto-negotiating 10/100 Ethernet speed
- Serial tunneling, IP multicast, virtual COM port modes for flexibility and ease of integration
- SNMP support for simple network management
- Surge suppression and +5V Out options

**Industry-leading, Device Networking Performance**

When you need the ultimate in performance, ease of use and reliability, Quatech’s Serial Device Servers provide the highest throughput and lowest latency available. With budget-friendly prices, you won’t find a better price-to-performance ratio!

**Overcome Serial Limitations By Network Enabling Devices**

Serial devices are used in virtually all industries and are proven to be reliable and robust. But there are drawbacks – cable lengths are limited and costly, COM ports are often in short supply, and attached serial devices are not remotely accessible for monitoring and support. A Quatech Device Server overcomes all these limitations. Hardware and drivers are invisible to connected serial devices and their software applications, routing data through an IP network to “virtual” COM ports installed on the host PC.

**Installation Wizard Makes It Easy To Get Started**

An intuitive Installation Wizard gets you up and running quickly, automatically searching local and remote subnets for installed device servers in seconds. Network settings automatically assigned by DHCP servers are displayed for confirmation. Or enter a static IP address – no bother with telnet sessions, MAC address data entry or special cables. Quatech™ device servers may be managed through the Windows® Device Manager interface or a Web browser, so you can count on trouble-free configuration and maintenance long after the initial installation is completed. Models use the same drivers, manuals and installation wizard to simplify deployment and use.

**Ordering Information**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Number of Ports</th>
<th>Interface</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSE-100D</td>
<td>1</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>SSE-100D-5V</td>
<td>1</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>SSE-100D-SS</td>
<td>1</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>SSE-400D</td>
<td>1</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>SSE-400D-SS</td>
<td>1</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>DSE-100D</td>
<td>2</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>DSE-100D-5V</td>
<td>2</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>DSE-400D</td>
<td>2</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>QSE-100D</td>
<td>4</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>QSE-100D-SS</td>
<td>4</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>QSE-100M</td>
<td>4</td>
<td>RS-232</td>
<td>RJ-45 female</td>
</tr>
<tr>
<td>QSE-400D</td>
<td>4</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>QSE-400M</td>
<td>4</td>
<td>RS-232/422-485 (MEI)</td>
<td>RJ-45 female</td>
</tr>
<tr>
<td>QSE-400D-SS</td>
<td>4</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
</tbody>
</table>

**400 models**: MEI (Multi-Electrical Interface) supports RS-232, RS-422/485 on all serial ports.

**SS models**: Surge suppression of 40-A peak, 8x20 Joules transient surges, clamping voltage of 30V (RS-232) or 15.5V (RS-422/485), peak energy dissipation of 0.1 Joules

**5V models**: +5V Out at pin 9 to power external devices

**Accessories**

- PS-SDS - Replacement Wall transformer 120VAC/DC Power Supply 5VDC © 3W, 2.1 MM plug (NA Kit)
- DS-RACK-BLK - Rack Mount Kit for QSE models-Black
Serial Device Servers
1, 2 & 4 Ports

100 series: RS-232 to Ethernet (LAN)
400 series: RS-232/422-485 to Ethernet (LAN)

SPECIFICATIONS

SERIAL TECHNOLOGY

RS-232  DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS, RI
RS-485 2-Wire  Data +, Data -, GND
RS-422/485 4-Wire  AuxIn+, AuxIn-, TxD+, TxD-, AuxOut+, AuxOut-, GND

Data Rate  Up to 921.6K bps (-SS models: up to 115.2K bps)

POWER

Source  Power supply included
Input Voltage  5 VDC
Connector  Barrel
Power Consumption  4W (typical), 10W maximum

MECHANICAL

LED Indicators  Power, Link, Speed, Data, Status
Switches  Reset button
Dimensions, SSE/DSE  11.81 x 9.47 x 2.99 cm (4.65 x 3.73 x 1.18 in)
Dimensions, QSE  25.35 x 13.72 x 3.43 cm (9.98 x 5.40 x 1.35 in)
Enclosure  Metal

ENVIRONMENTAL

Operating Temperature  0 to +70°C (-40 to +70°C, storage)
Operating Humidity  10% to 90% non-condensing

NETWORK

SDRAM  8 MB
FLASH Memory  2 MB

NETWORK COMMUNICATIONS

LAN  10/100 Base T

NETWORK PHYSICAL LAYER STANDARDS

Ethernet  IEEE 802.3 auto-negotiating, auto MDI/MDIX

PROTOCOLS

Protocols  UDP, TCP/IP, HTTP, DHCP, ARP, ICMP, SNMP (MIB II)
IP Mode  DHCP, static IP, custom UDP
TCP/UDP  User definable
UDP  Unicast, Multicast

OTHER

Connection Mode  Normal, Tunneling, Raw TCP, Auto TCP, Raw UDP
Client Connection  Supported
Diagnostics  Port Status, Ping Test
Firmware Upgrade  Via web interface

CONFIGURATION SOFTWARE

OS Compatibility  Windows supported up to and including 32-bit/64-bit
Win7 (WHQL signed), Linux (four 2.6.27 kernel)

REGULATORY / CERTIFICATIONS / SAFETY

Compliance  FCC, CE, IC

MECHANICAL DIAGRAM

QSE MODELS

MECHANICAL DIAGRAM

SSE/DSE MODELS
Serial Device Servers - 8 port
100 series: RS-232 to Ethernet (LAN)
400 series: RS-232/422-485 to Ethernet (LAN)

Product Features
- Built-in web server for convenient browser-based configuration and support
- Fast serial baud rates up to 921 kbps and auto-negotiating 10/100 Ethernet speed
- Serial tunneling, IP multicast, virtual COM port modes for flexibility and easy integration
- SNMP support for simple network management
- Surge suppression and +5V Out options

Industry-leading, Device Networking Performance
When you need the ultimate in performance, ease of use and reliability, Quatech™ Serial Device Servers provide the highest throughput and lowest latency available. With budget-friendly prices, you won’t find a better price-to-performance ratio!

Overcome Serial Limitations By Network Enabling Devices
Serial devices are used in virtually all industries and are proven to be reliable and robust. But there are drawbacks – cable lengths are limited and costly, COM ports are often in short supply, and attached serial devices are not remotely accessible for monitoring and support. A Quatech™ Device Server overcomes all these limitations. Hardware and drivers are invisible to connected serial devices and their software applications, routing data through an IP network to “virtual” COM ports installed on the host PC.

Installation Wizard Makes It Easy To Get Started
An intuitive Installation Wizard gets you up and running quickly, automatically searching local and remote subnets for installed device servers in seconds. Network settings automatically assigned by DHCP networks are displayed for confirmation. Or enter a static IP address – no bother with telnet sessions, MAC address data entry or special cables. Quatech™ device servers may be managed through the Windows® Device Manager interface or a Web browser, so you can count on trouble-free configuration and maintenance long after the initial installation is completed. Models use the same drivers, manuals and installation wizard to simplify deployment and use.

Ordering Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Number of Ports</th>
<th>Interface</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESE-100D</td>
<td>8</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>ESE-100D-SS</td>
<td>8</td>
<td>RS-232</td>
<td>DB9 male</td>
</tr>
<tr>
<td>ESE-100M</td>
<td>8</td>
<td>RS-232</td>
<td>RJ-45 female</td>
</tr>
<tr>
<td>ESE-100M-SS</td>
<td>8</td>
<td>RS-232</td>
<td>RJ-45 female</td>
</tr>
<tr>
<td>ESE-400D</td>
<td>8</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>ESE-400D-SS</td>
<td>8</td>
<td>RS-232/422-485 (MEI)</td>
<td>DB9 male</td>
</tr>
<tr>
<td>ESE-400M</td>
<td>8</td>
<td>RS-232/422-485 (MEI)</td>
<td>RJ-45 female</td>
</tr>
<tr>
<td>ESE-400M-SS</td>
<td>8</td>
<td>RS-232/422-485 (MEI)</td>
<td>RJ-45 female</td>
</tr>
</tbody>
</table>

-400 models: Supports RS-232, RS-422/485 on all serial ports.

-SS models: Surge suppression of 40-A peak, 8x20 Joules transient surges, clamping voltage of 30V (RS-232) or 15.5V (RS-422/485), peak energy dissipation of 0.1 Joules

-Includes: CD with custom datagram utility with command line interface.

Accessories
PS-SDS - Replacement Wall transformer 120VAC/DC Power Supply, SVDC @ 3W, 2.1 MM plug (NA Kit)
DS-RACK-BLK - Rack Mount Kit for ESE models-Black
Serial Device Servers

8 port

100 series: RS-232 to Ethernet (LAN)
400 series: RS-232/422-485 to Ethernet (LAN)

SPECIFICATIONS

SERIAL TECHNOLOGY

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Ports</th>
<th>Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232</td>
<td>8</td>
<td>RS-232</td>
</tr>
<tr>
<td>RS-422/485 4-Wire</td>
<td>8</td>
<td>RS-232/422, RS-485</td>
</tr>
</tbody>
</table>

Network Communications

LAN
10/100 Base T

NETWORK PHYSICAL LAYER STANDARDS

Ethernet
IEEE 802.3 auto-negotiating, auto MDI/MDIX

PROTOCOLS

Protocols
UDP, TCP/IP, HTTP, DHCP, ARP, ICMP, SNMP (MIB II)

IP Mode
DHCP, static IP, custom UDP

TCP/UDP
User definable

UDP
Unicast, Multicast

OTHER

Connection Mode
Normal, Tunneling, Raw TCP, Auto TCP, Raw UDP

Client Connection
Supported

Diagnostics
Port Status, Ping Test

Firmware Upgrade
Via web interface

CONFIGURATION SOFTWARE

OS Compatibility
Windows supported up to and including 32-bit/64-bit Win7 (WHQL signed), Linux (four 2.6.27 kernel)

REGULATORY / CERTIFICATIONS / SAFETY

Compliance
FCC, CE, IC

MECHANICAL

Source
Power supply included

Input Voltage
5 VDC

Connector
Barrel

Power Consumption
4W (typical)

MECHANICAL

LED Indicators
Power, Link, Speed, Data, Status

Switches
Reset button

Dimensions
25.35 x 13.72 x 4.97 cm (9.98 x 5.40 x 1.96 in)

Enclosure
Metal

ENVIRONMENTAL

Operating Temperature
0 to +70°C (-40 to +70°C, storage)

Operating Humidity
10% to 90% non-condensing

NETWORK

SDRAM
8 MB

FLASH Memory
2 MB

MECHANICAL DIAGRAM

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Front

www.BB-elec.com

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Ultra Compact Modbus Gateways
MESP211 Series

Vlinx™ MESP211 series Modbus Gateways connect Modbus devices to Ethernet networks and let you monitor and control Modbus devices from anywhere on the Ethernet LAN or WAN. Supporting up to 16 masters and 32 slaves, the gateways feature an auto-detecting 10/100 Ethernet copper RJ-45 port and a serial port that supports RS-232/422/485 communications via a DB9 male or a terminal block connection. The product is built for use in industrial environments with a heavy duty metal enclosure that is panel (standard) or DIN rail mountable (with optional adapters). The product can be supplied with a DC power source ranging from 10 to 30VDC and features a barrel connector.

Ease of Use
Configuration, upgrades and monitoring of the serial server are simple, easy tasks with Vlinx Manager Software. It installs on your PC giving access to the serial server via your desktop. Remotely manage the Modbus Gateway over a LAN or WAN via the build-in web server. This is helpful for off-site troubleshooting and can be done with an ordinary web browser.

Software Support
Windows XP (32/64 bit), 2003 Server (32/64 bit), Vista 32/64 bit), 2008 Server (32/64 bit), Windows 7 (32/64 bit), Windows 8 (32/64 bit).

PRODUCT FEATURES
- Modbus TCP Ethernet, Modbus ASCII & RTU RS-232/422/485
- Modbus Flexibility – Serial & Ethernet, Masters & Slaves
- View Messaging Status in Real Time
- Wide Operating Temperature (-40 to 80 °C)
- Wide Voltage input 10 to 30 VDC
- Ultra Compact IP30 Metal Enclosure
- Heavy industrial 61000-6-2 EMC Level 3 for harsh environments

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>PROTOCOL</th>
<th>SERIAL PORT</th>
<th>ETHERNET PORT</th>
<th>ETHERNET CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESP211D</td>
<td>RS-232/422/485</td>
<td>DB9 Male</td>
<td>1</td>
<td>RJ45</td>
</tr>
<tr>
<td>MESP211T</td>
<td>RS-232/422/485</td>
<td>Removable Terminal Block</td>
<td>1</td>
<td>RJ45</td>
</tr>
</tbody>
</table>

ACCESSORIES
MDR-40-24 - 24VDC, 40 W DIN rail mount power supply
DRA035 - DIN rail adapter clip (pair)
232NM9 - Null modem crossover cable
**SPECIFICATIONS**

**POWER**
- Source: External power supply included
- Input Voltage: 10 to 30 VDC
- Connector: Barrel connector
- Power Consumption: 2.5 W

**MECHANICAL**
- LED Indicators: Serial Port, Ethernet Link, Ready LEDs
- Switches: Reset Button
- Dimensions: 7.9 x 2.2 x 5.3 (with ears 7.3) cm (3.1 x 0.9 x 2.1 [with ears 2.89] in)
- Enclosure: Panel mount, Metal, IP30, (Optional Din Rail Mount)

**ENVIROMENTAL**
- Operating Temperature: -40 to 80°C (-40 to 176°F)
- Operating Humidity: 10 to 95% Non-condensing
- MTBF: 186,310 hours
- MTBF Calc Method: Parts Count Reliability Prediction

**NETWORK**
- Serial Memory: 8 KB per port
- Network Memory: 4 KB
- LAN: 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX
- Ethernet: IEEE 802.3 auto detecting & auto MDI/MDX, 10BaseT and 100Base TX

**SERIAL TECHNOLOGY**
- RS-232: TD, RD, DTR, DSR, RTS, CTS, DCD plus Signal Ground
- RS-485 2-Wire: Data A(-), Data B(+) Signal Ground
- RS-422/485 4-Wire: TDA(-), TDB(+), RDA(-), RDB(+) Signal Ground
- Serial Connector: DB9M or Removable Terminal Blocks
- Data Rate: Up to 230.4 Kbps

**PROTOCOLS**
- Protocols: TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
- IP Mode: Static, DHCP
- TCP/UDP: User definable
- UDP: Unicast or Multicast

**OTHER**
- Connection Mode: Server, Client, VCOM, Paired
- Search: Serial direct COM and Ethernet Auto Search or specific IP
- Diagnostics: Display PC IP, ping, save test config (text readable)
- Firmware Upgrade: Vlinx Manager

**CONFIGURATION SOFTWARE**
- Vlinx Manager: Windows XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Windows 7 (32/64 bit), Windows 8 (32/64 bit)

**APPROVALS / CERTIFICATIONS**
- CE: EN61000-6-2:2005 (Heavy Industrial)
- EN61000-4-2:2008 (ESD) +/-8kV Contact, +/-15kV Air
- EN61000-4-3:2006 (RF) 10V/m, 80-1000MHz; 3V/m, 1.3 to 2.7 GHz
- EN61000-4-4:2004 (EFT Burst) +/-2kV DC ports; +/-1kV signal ports
- EN61000-4-5:2005 (Surge) +/- 0.5 kV DC Ports, +/- 1 kV Signal Ports
- EN61000-4-6:2005 (CI) 10 VRMS, 0.15 to 80 MHz
- EN61000-4-8:2001 (Magnetic) 10A/m, 50Hz & 60Hz
- Shock: IEC60068-2-27 50G peak, 11ms, 3 axes
- Vibration: IEC60068-2-6 10-500Hz, 4G, 3 axes
- Freefall (Drop): IEC60068-2-32 10 total drops from sides, corner and edges, 1M

**MECHANICAL DIAGRAM**

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[Image of mechanical diagram]
**Industrial Modbus Ethernet to Serial Gateways**

**MESR900 Series - Copper Models**

**PRODUCT FEATURES**
- Ethernet enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, Masters & slaves
- Modbus messaging priority control
- View messaging status in real time
- Easy configuration software
- UL Class 1 Division 2
- NEMA TS2 (MESR901)


MESR9xx gateways are built for use in industrial environments, featuring a slim IP30 DIN rail mountable case. They operate from a range of DC power supply voltages and have pluggable terminal block connectors. An external power supply, sold separately, is required. The MESR92x units have an additional Ethernet port which functions much like an Ethernet Switch, allowing pass-through connectivity for other Ethernet devices. This port can also be used to “daisy chain” multiple gateways. MESR90x units have one Ethernet port. B&B Electronics’ Vlinx™ is your number one choice for Ethernet to Serial conversion.

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SERIAL PORTS</th>
<th>SERIAL CONNECTOR</th>
<th>ETHERNET PORT</th>
<th>ETHERNET CONNECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESR901 †</td>
<td>1</td>
<td>DB9 or Terminal Block</td>
<td>(1) Copper</td>
<td>RJ45</td>
</tr>
<tr>
<td>MESR902T</td>
<td>2</td>
<td>Terminal Block</td>
<td>(1) Copper</td>
<td>RJ45</td>
</tr>
<tr>
<td>MESR921</td>
<td>1</td>
<td>DB9 or Terminal Block</td>
<td>(2) Copper</td>
<td>(2) RJ45</td>
</tr>
<tr>
<td>MESR922T</td>
<td>2</td>
<td>Terminal Block</td>
<td>(2) Copper</td>
<td>(2) RJ45</td>
</tr>
</tbody>
</table>

* For fiber options please see page 168.
† NEMA TS2

**ACCESSORIES**

- MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
- MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
- DRPM25 - 35mm DIN Rail to Panel Mount Bracket, 25mm wide
- ERS35 - DIN Rail 1 Meter 35mm Steel

---

**IN THE FIELD**

Teaming Data Systems for Portable Power
Industry: Power & Energy
Product: Modbus Gateways
www.bb-elec.com/PortablePower
MESR901 Carrier data charges may apply.

Transwestern Pipeline Maximizes Gas Chromatography Investment
Industry: Petroleum, Oil & Gas
Product: Modbus Gateways
www.bb-elec.com/Pipeline
MESR901, MESR902T Carrier data charges may apply.
Industrial Modbus
Ethernet to Serial Gateways
MESR900 Series - Copper Models

SPECIFICATIONS
SERIAL TECHNOLOGY
RS-232  TD, RD, RTS,CTS, DTR, DCD, GND
RS-485 2-Wire  Data A(+), Data B(+), GND
RS-422/485 4-Wire  TDA(+), TDB(+), RDA(+), RDB(+), GND
Serial Connector  DB9M or Removable Terminal Blocks; 12 to 28 AWG
Data Rate  Up to 230.4 Kbps

POWER
Source  External
Input Voltage  10 to 48 VDC (58 VDC Maximum)
Connector  Removable Terminal Block (12 – 28 AWG)

CONSUMPTION
MESR900x  4.0 Watts
MESR92x  6.0 Watts

MECHANICAL
LED Indicators  Serial Port, Ethernet Link, Ready
Switches  Reset Button
Dimensions
MESR900x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in)
MESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)
Weight
MESR900x: 149.7 g (0.33 lbs)
MESR92x: 204.1 g (0.45 lbs)

ENVIRONMENTAL
Operating Temperature  -40 to 80°C (-40 to 176°F)
Operating Humidity  0 to 95% Non-condensing
MTBF
MESR900x  ~ 132309 hours
MESR92x  ~ 102593 hours
MTBF Calc Method  Parts Count Reliability Prediction

NETWORK
Serial Memory  8 KB per port
Network Memory  4 KB
LAN  10/100 Mbps Auto-detecting
Ethernet  IEEE 802.3 auto detecting & auto MDI/MDX 10/100

PROTOCOLS
Protocols  TCP, IPv4, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
IP Mode  Static, DHCP
TCP Mode  User definable

OTHER
Mode  Modbus RTU Master / Slave
Modbus ASCII Master/Slave
Search  Serial direct COM and Ethernet Auto Search or specific IP
Diagnostics  Display PC IP, ping, test VCOM, save test config. (text readable)
Firmware Upgrade  Vlinx Manager

ETHERNET PASS-THROUGH PORT (MESR92X)
Standards  IEEE 802.3, 802.3u, 802.3x
Processing Type  Store and Forward with 802.3x full duplex, non blocking flow control
Flow Control  IEEE 802.3x flow control, back pressure flow control
MAC Address Table  2K

CONFIGURATION SOFTWARE
Vlinx Manager  Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)

REGULATORY / CERTIFICATIONS / SAFETY
Compliance  FCC, CE, NEMA TS2 (MESR901)
UL Listed, File E222870
UL Class 1 Division 2 Groups A, B, C, D (HAZLOC), File E245458

MECHANICAL DIAGRAM - MESR90X MODELS

MECHANICAL DIAGRAM - MESR92X MODELS

www.bb-elec.com
Industrial Modbus Ethernet to Serial Gateways
MESR900 Series - Fiber Models

**PRODUCT FEATURES**
- Ethernet enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus flexibility – serial & Ethernet, Masters & slaves
- Modbus messaging priority control
- View messaging status in real time
- Complete Ethernet fiber options
- Easy configuration software

**MESR Modbus Gateways** bridge devices on Modbus serial networks (RS-232, RS-422 or RS-485) with those on Modbus TCP networks, allowing seamless integration. Serial ports can be accessed over a LAN or WAN using Direct IP Mode connections. Supporting up to 16 masters and 32 slaves, these gateways feature autodetecting 10/100 copper and fiber optic options. Easy-to-use software is designed for Windows 2000, 2003 Server, XP, Vista, 2008 Server and Windows 7. Serial data rates up to 230 kbps ensure maximum network flexibility. MESR9xx gateways are built for use in industrial environments, featuring a slim IP30 DIN rail mountable case. They operate from a range of DC power supply voltages and have pluggable terminal block connectors. An external power supply, sold separately, is required. The MESR9x units have an additional Ethernet port which functions much like an Ethernet Switch, allowing pass-through connectivity for other Ethernet devices. This port can also be used to "daisy chain" multiple gateways. MESR90x units have one Ethernet port. B&B Electronics' Vinx™ is your number one choice for Ethernet to Serial conversion.

**MECHANICAL DIAGRAM - MESR92x MODELS**

**ACCESSORIES**
- MDR-20-24 - DIN rail mount power supply 24VDC, 1.0 A output power
- MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power
- DRPM25 - 35mm DIN Rail to Panel Mount Bracket, 25mm wide
- ERS35 - DIN Rail 1 Meter 35mm Steel
Industrial Modbus Ethernet to Serial Gateways
MESR900 Series - Fiber Models

SPECIFICATIONS

<table>
<thead>
<tr>
<th>SERIAL TECHNOLOGY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232</td>
<td>TD, RD, RTS, CTS, DTR, DSR, DTD, GND</td>
<td></td>
</tr>
<tr>
<td>RS-485 2-Wire</td>
<td>Data A(-), Data B(+), GND</td>
<td></td>
</tr>
<tr>
<td>RS-422/485 4-Wire</td>
<td>TDA(-), TDB(+), RDA(-), RDB(+), GND</td>
<td></td>
</tr>
<tr>
<td>Serial Connector</td>
<td>DB9M or Removable Terminal Blocks, 12 to 28 AWG</td>
<td></td>
</tr>
<tr>
<td>Data Rate</td>
<td>Up to 230.4 Kbps</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>FIBER OPTIC TECHNOLOGY</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Type / Wavelength</td>
<td>MESR9xx-Mx</td>
<td>MESR9xx-Sx</td>
</tr>
<tr>
<td>Output Power</td>
<td>(-) 19 to (-) 14 dBm</td>
<td>(-) 15 to (-) 8 dBm</td>
</tr>
<tr>
<td>Receive Sensitivity</td>
<td>~ (-) 32 dBm</td>
<td>~ (-) 32 dBm</td>
</tr>
<tr>
<td>Cable</td>
<td>62.5 / 125 μm</td>
<td>9 / 125 μm</td>
</tr>
<tr>
<td>Connector</td>
<td>SC or ST</td>
<td>SC or ST</td>
</tr>
<tr>
<td>Range</td>
<td>2 km (1.2 miles)</td>
<td>15 km (9.3 miles)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIBER OPTIC TECHNOLOGY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type / Wavelength</td>
<td>MESR9xx-Sx40</td>
<td>MESR9xx-Sx80</td>
</tr>
<tr>
<td>Output Power</td>
<td>(-5) to 0 dBm</td>
<td>(-5) to 0 dBm</td>
</tr>
<tr>
<td>Receive Sensitivity</td>
<td>~ (-) 34 dBm</td>
<td>~ (-) 34 dBm</td>
</tr>
<tr>
<td>Cable</td>
<td>9 / 125 μm</td>
<td>9 / 125 μm</td>
</tr>
<tr>
<td>Connector</td>
<td>SC or ST</td>
<td>SC or ST</td>
</tr>
<tr>
<td>Range</td>
<td>40 km (5 miles)</td>
<td>80 km (49.7 miles)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ENVIRONMENTAL</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40 to 80°C (-40 to 176°F)</td>
<td></td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>0 to 95% Non-condensing</td>
<td></td>
</tr>
<tr>
<td>MTBF MESR90X</td>
<td>~ 132309 hours</td>
<td></td>
</tr>
<tr>
<td>MTBF MESR92X</td>
<td>~ 102593 hours</td>
<td></td>
</tr>
<tr>
<td>MTBF Calc Method</td>
<td>Parts Count Reliability Prediction</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>NETWORK</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Memory</td>
<td>8 KB per port</td>
<td></td>
</tr>
<tr>
<td>Network Memory</td>
<td>4 KB</td>
<td></td>
</tr>
<tr>
<td>IP Port Addresses</td>
<td>5300 – Heartbeat and configuration</td>
<td></td>
</tr>
<tr>
<td>Setting in TCP Mode (paired mode)</td>
<td>8899 – MESR 9xx Update</td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>10/100 Mbps Auto-detecting</td>
<td></td>
</tr>
<tr>
<td>Ethernet</td>
<td>IEEE 802.3 auto detecting &amp; auto MDI/MDX 10/100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROTOCOLS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TCP, IPv4, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Mode</td>
<td>Static, DHCP</td>
<td></td>
</tr>
<tr>
<td>TCP</td>
<td>User definable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Modbus RTU Master / Slave</td>
<td></td>
</tr>
<tr>
<td>Modbus ASCII Master / Slave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td>Serial direct COM and Ethernet</td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td>Auto search or specific IP</td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td>Display PC IP, ping, save test config. (text readable)</td>
<td></td>
</tr>
<tr>
<td>Firmware Upgrade</td>
<td>Vlinx Manager</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETHERNET PASS-THROUGH PORT (MESR92X)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards</td>
<td>IEEE 802.3, 802.3u, 802.3x</td>
<td></td>
</tr>
<tr>
<td>Processing Type</td>
<td>Store and Forward with 802.3x full duplex, non blocking flow control</td>
<td></td>
</tr>
<tr>
<td>Flow Control</td>
<td>IEEE 802.3x flow control, back pressure flow control</td>
<td></td>
</tr>
<tr>
<td>MAC Address Table</td>
<td>2K</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONFIGURATION SOFTWARE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vlinx Manager</td>
<td>Windows 2000, XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REGULATORY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance</td>
<td>FCC, CE, NEMA TS2</td>
<td></td>
</tr>
<tr>
<td>UL Listed, File E222870</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL Class 1 Division 2 Groups A, B, C, D (HAZLOC), File E245458</td>
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<table>
<thead>
<tr>
<th>POWER</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>External</td>
<td></td>
</tr>
<tr>
<td>Input Voltage</td>
<td>10 to 48 VDC (58 VDC Maximum)</td>
<td></td>
</tr>
<tr>
<td>Connector</td>
<td>Removable Terminal Block (12 – 28 AWG)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MECHANICAL</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LED Indicators</td>
<td>Serial Port, Ethernet Link, Ready</td>
<td></td>
</tr>
<tr>
<td>Switches</td>
<td>Reset Button</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>MESR90x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in)</td>
<td>MESR92x: 14.86 x 10.11 x 2.96 cm (5.85 x 3.98 x 1.16 in)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>35mm DIN mount, Plastic, IP 30</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>MESR90x: 0.33 lbs (149.7 g)</td>
<td>MESR92x: 0.45 lbs (201.4 g)</td>
</tr>
<tr>
<td>eDrawing</td>
<td>Available on website</td>
<td></td>
</tr>
</tbody>
</table>

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Isolated Industrial Modbus Ethernet to Serial Gateways
MESR321 Series

PRODUCT FEATURES
• Three-way isolation
• Ethernet-enable Modbus RS-232/422/485
• Modbus TCP, ASCII & RTU
• Modbus flexibility – serial & Ethernet, masters & slaves
• View messaging status in real time
• Ethernet fiber options
• Easy configuration software

Vlinx™ MESR321 series Modbus Gateways connect Modbus devices to Ethernet networks and let you monitor and control your Modbus devices from anywhere on your Ethernet LAN or WAN. Supporting up to 16 masters and 32 slaves, the gateways feature auto-detecting SP 10/100 copper and/or fiber optic options that include multi-mode LC and single-mode LC. The data ports are isolated from one another and also from the power supply.

The easy to use Vlinx software is compatible with Windows 2003 Server, XP, Vista, Win 7 and Windows Server 2008. It features Modbus messaging priority control and allows management through multiple TCP/IP client sessions. Serial data rates of up to 230 kbps ensure maximum network flexibility.

Featuring a slim IP30 DIN rail mountable case, MESR321 series gateways are built for use in industrial environments. They can be powered via a barrel connector or a terminal block. (An external power supply is required; sold separately.) The MESR321 has an additional Ethernet port which functions much like an Ethernet Switch, allowing pass-through connectivity for other Ethernet devices. This port can also be used to “daisy chain” multiple gateways.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>SERIAL PORT WITH DB9 AND TERMINAL BLOCK</th>
<th>ETHERNET PORTS</th>
<th>FIBER PORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESR321</td>
<td>1 (RJ45)</td>
<td>2 (RJ45)</td>
<td>0</td>
</tr>
<tr>
<td>MESR321-ML</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 LC multi-mode optical</td>
</tr>
<tr>
<td>MESR321-SL</td>
<td>1 (RJ45)</td>
<td>1 (RJ45)</td>
<td>1 LC single-mode optical</td>
</tr>
</tbody>
</table>

ACCESSORIES

CSUMB7FBG - Category 5e, 7 ft. (2.1 m), Grey cable
PS12VLB-INT-MED - Power Supply 12Vdc, Medical Grade - US, EU, UK
MDR-40-24 - DIN rail mount power supply 24VDC, 1.7 A output power

MECHANICAL DIAGRAM
**SPECIFICATIONS**

**PORT TO PORT ISOLATION**
- Serial to Ethernet: 2 kV
- Serial to Power: 2 kV
- Ethernet to Power: 1.5 kV

**POWER**
- Source: External
- Input Voltage: 10 to 48 VDC (58 VDC Maximum)
- Connector: Removable Terminal Block (12 – 28 AWG and barrel connector)
- Power Consumption: 4 W

**MECHANICAL**
- LED Indicators: Ready, Power, Serial Data, Ethernet Speed, Ethernet Link
- Switches: Reset Button (Mode)
- Dimensions: 13.823 x 8.633 x 3.500 cm (5.442 x 3.399 x 1.378 in)
- Enclosure: IP 30, Metal

**WEIGHT**
- 635 g (1.4 lbs)

**ENVIRONMENTAL**
- Operating Temperature: -40 to 80°C (-40 to 176°F)
- Operating Humidity: 10 to 95% Non-condensing
- Storage Temperature: -40 to 85°C
- MTBF: 86,882 hours
- MTBF Calc Method: Based on MIL 217F using Parts Count Reliability Prediction

**NETWORK**
- Serial Memory: 8 KB per port
- Network Memory: 8 KB
- IP Port Addresses: Setting in TCP Mode (paired mode) 8899 – MESR321x Update
- LAN: 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX
- Ethernet: IEEE 802.3 auto detecting & auto MDI/MDX, 10BaseT and 100Base TX

**PROTOCOLS**
- Protocols: TCP, IPv4, UDP, ARP, HTTP 1.0, ICMP/PING, DHCP/BOOTP
- IP Mode: Static, DHCP
- TCP: User definable

**OTHER**
- Connection Mode: Modbus RTU Master/Slave, Modbus ASCII Master/Slave
- Search: Serial direct COM and Ethernet Auto Search or specific IP
- Diagnostics: Display PC IP, ping, test VCOM, save test config (text readable)
- Firmware Upgrade: Vlinx Manager

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**SOFTWARE CONFIGURATION**
- Vlinx Manager: Win XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit), Windows 2008 Server

**ETHERNET PASS-THROUGH PORT**
- Standards: IEEE 802.3, 802.3u, 802.3x
- Processing Type: Store and Forward with 802.3x full duplex, non blocking flow control
- Flow Control: IEEE 802.3x flow control, back pressure flow control
- MAC Address Table: 2K

**SERIAL TECHNOLOGY**
- RS-232: TD, RD, RTS, CTS, DTR, DSR, DTD, Signal Ground
- RS-485 2-Wire: Data A(-), Data B(+), Signal Ground
- RS-422/485 4-Wire: TDA(-), TDB(+), RDA(-), RDB(+), Signal Ground
- Serial Connector: DB9M RS-232, Terminal Block Rs-422/485
- Data Rate: Up to 230.4 Kbps

**APPROVALS / CERTIFICATIONS**
- Emissions: FCC Class B, CISPR Class B (EN55022)
- CE: EN61000-6-2:2005 (Heavy Industrial)
- EN61000-6-2:2008 (ESD)
- EN61000-4-3:2006 (RI)
- EN61000-4-4:2004 (EFT Burst)
- EN61000-4-5:2005 (Surge)
- EN61000-4-6:2005 (CI)
- EN61000-4-8:2001 (Magnetic)
- Shock: IEC60068-2-27 50G peak, 11ms, 3 axes
- Vibration: IEC60068-2-6 10-500Hz, 4G, 3 axes
- Freefall: IEC60068-2-32 10 total drops from sides, corner and edges, 1M

**FIBER OPTIC SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Mode and Distance</th>
<th>Wavelength</th>
<th>Output Power</th>
<th>Receive Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-mode (2 km)</td>
<td>1310 nm</td>
<td>-23 to -14 dBm</td>
<td>&lt;= -31 dBm</td>
</tr>
<tr>
<td>Single-mode (15 km)</td>
<td>1310 nm</td>
<td>15 to -8 dBm</td>
<td>&lt;= -34 dBm</td>
</tr>
<tr>
<td>Single-mode (40 km)</td>
<td>1310 nm</td>
<td>-5 to 0 dBm</td>
<td>&lt;= -35 dBm</td>
</tr>
<tr>
<td>Single-mode (80 km)</td>
<td>1550 nm</td>
<td>-5 to 0 dBm</td>
<td>&lt;= -34 dBm</td>
</tr>
</tbody>
</table>

---

*Full Fiber Product Options*
These options are possible for large projects:
- Models with 2 fiber optic ports
- Models with long-range fiber optic ports such as 40km and 80km single-mode

Contact B&B Electronics for more information.
The MESR400 series Modbus Gateways bridge devices on Modbus serial networks (RS-232, RS-422 or RS-485) with those on Modbus TCP networks, allowing seamless integration. The serial ports can be accessed over a LAN or WAN using Direct IP Mode connections. Supporting up to 16 masters and 32 slaves, the gateways feature autodetecting 10/100 copper and fiber optic options. The easy to use software is designed for Win XP, Vista, Win 7 and Windows 2003/2008 Server, features Modbus messaging priority control and allows management through multiple TCP/IP client sessions. Serial data rates up to 230 kbps ensure maximum network flexibility. MESR gateways are built for use in industrial environments, featuring a slim IP30 DIN rail mountable case. They operate from a range of DC power supply voltages and have pluggable terminal block connectors.

MESR400 series gateways can be powered via a barrel connector or a terminal block. (An external power supply is required; sold separately.) An additional Ethernet port functions much like an Ethernet switch, allowing pass-through connectivity for other Ethernet devices. This port can also be used to “daisy chain” multiple gateways.

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>ETHERNET PORT 1</th>
<th>ETHERNET PORT 2</th>
<th>SERIAL PORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MESR424D †</td>
<td>RJ45</td>
<td>10/100 RJ45</td>
<td>RS-232/422/485 (DB9 male)</td>
</tr>
<tr>
<td>MESR424D-MT</td>
<td>RJ45</td>
<td>Multi-mode (ST)</td>
<td>RS-232/422/485 (DB9 male)</td>
</tr>
<tr>
<td>MESR424D-SC</td>
<td>RJ45</td>
<td>Single-mode (SC)</td>
<td>RS-232/422/485 (DB9 male)</td>
</tr>
<tr>
<td>MESR424T</td>
<td>RJ45</td>
<td>10/100 RJ45</td>
<td>RS-232/422/485 (Terminal Block)</td>
</tr>
<tr>
<td>MESR424T-MT</td>
<td>RJ45</td>
<td>Multi-mode (ST)</td>
<td>RS-232/422/485 (Terminal Block)</td>
</tr>
<tr>
<td>MESR424T-SC</td>
<td>RJ45</td>
<td>Single-mode (SC)</td>
<td>RS-232/422/485 (Terminal Block)</td>
</tr>
<tr>
<td>All Models</td>
<td>10/100 Mbps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>† NEMA TS2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ACCESSORIES

- **MDR-40-24** - 24VDC, 40W, DIN rail mount, power supply
- **PS12VLB-INT-MED** - 12 VDC power supply, locking barrel
- **232NM9** - Null modem crossover cable, 3.1 m or 10 ft.
- **C5UMB7FBG** - Ethernet cable

### PRODUCT FEATURES

- Ethernet-Enable Modbus RS-232/422/485
- Modbus TCP, ASCII & RTU
- Modbus Flexibility – Serial & Ethernet, Masters & Slaves
- Modbus Messaging Priority Control
- View Messaging Status in Real Time
- Ethernet Fiber Options
- NEMA TS2 (MESR424D)
**SPECIFICATIONS**

**POWER**
- **Source**: External
- **Input Voltage**: 10 to 48 VDC (58 VDC max)
- **Connector**: Removable terminal block (12 – 28 AWG) and barrel connector
- **Power Consumption**: 6 W

**MECHANICAL**
- **LED Indicators**: Serial Port, Ethernet Link, Speed
- **Switches**: Reset Button
- **Dimensions**: 4.57 x 12.2 x 17.1 cm (1.8 x 4.4 x 6.75 in)
- **Enclosure**: Panel Mount, Metal, IP 30, (Optional 35mm DIN Rail mount)

**ENVIRONMENTAL**
- **Operating Temperature**: -40 to 80°C (-40 to 176° F)
- **Operating Humidity**: 10 to 95% Non-condensing
- **Storage Temperature**: -40 to 85°C
- **MTBF**: 70,273 hours
- **MTBF Calc Method**: Parts Count Reliability Prediction

**NETWORK**
- **Serial Memory**: 8 KB per port
- **Network Memory**: 8 KB
- **LAN**: 10/100 Mbps Auto-detecting, 10BaseT or 100BaseTX
- **Ethernet**: IEEE 802.3 auto detecting & auto MDI/MDX, 10/100

**MECHANICAL DIAGRAM**

**SERIAL TECHNOLOGY**
- **RS-232 (DB9)**: TD, RD, DTR, DSR, RTS, CTS, DCD plus Signal Ground
- **RS-232 (terminal block)**: TD, RD, RTS, CTS plus Signal Ground
- **RS-485 2-Wire**: Data A(-), Data B(+), GND
- **RS-422/485 4-Wire**: TDA(-), TDB(+), RDA(-), RDB(+), GND
- **Serial Connector**: DB9M or removable terminal blocks
- **Data Rate**: Up to 230.4 Kbps

**FIBER OPTIC TECHNOLOGY**
- **Type / Wavelength**: Multi-mode / 1310 nm, Single-mode / 1310 nm
- **Output Power**: (-)19 to (-) 14 dBm, (-) 15 to (-) 8 dBm
- **Receive Sensitivity**: < (-) 32 dBm, <(-) 32 dBm
- **Cable**: 62.5 / 125 µm, 9 / 125 µm
- **Connector**: SC or ST
- **Range**: 2 km (1.2 mi), 12.4 miles (20 km)

**PROTOCOLS**
- **Protocols**: TCP, IPv4, UDP, ARP, HTTP 1.0, HTTP 1.1, ICMP/PING, DHCP/BOOTP
- **IP Mode**: Static, DHCP
- **TCP Mode**: User definable

**SOFTWARE CONFIGURATION**
- **OS Compatibility**: Windows XP (32/64 bit), 2003 Server (32/64 bit), Vista (32/64 bit), 2008 Server (32/64 bit), Win 7 (32/64 bit), Windows 2008 Server

**ETHERNET PASS-THROUGH PORT**
- **Standards**: IEEE 802.3, 802.3u, 802.3x
- **Processing Type**: Store and Forward with 802.3x full duplex, non blocking flow control
- **Flow Control**: IEEE 802.3x flow control, back pressure flow control

**APPROvals / CERTIFICATIONS**
- **Emissions**: FCC Part 15 Class A
- **CE**: NEMA TS2 (MESR424D)
- **Shock**: IEC60068-2-27
- **Vibration**: IEC60068-2-6

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Four Port Industrial Modbus Gateways
MESR400 series
The Vlinx™ ConnectPro Gateway provides the functionality of a Protocol Converter, a Data Logger, a Virtual HMI and an Ethernet Gateway all in one powerful package. Three built-in independent serial ports and a 10/100 Base-TX Ethernet port allow discrete devices to communicate seamlessly. CompactFlash card slot allows configuration files to be created at a central location and distributed to field-installed units. The USB port may be used for fast file downloads, or mounting a CompactFlash card as a PC external drive. DIN rail mounting saves time and panel space and makes industrial installation easy.

**PRODUCT FEATURES**
- Converts multiple serial and Ethernet protocols simultaneously
- Extensive built-in driver list for easy mapping to PLCs, PCs, and SCADA systems
- 10Base-T/100Base-TX Ethernet port supports four simultaneous protocols; up to nine (with expansion card)
- Independent serial ports provide unlimited integration methods

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>WEB SERVER</th>
<th>WITH VIRTUAL HMI</th>
<th>DATA LOGGING</th>
<th>ONBOARD SDRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFG1000</td>
<td>No</td>
<td>No</td>
<td>2 MB</td>
<td></td>
</tr>
<tr>
<td>VFG2000</td>
<td>QVGA (320x240)</td>
<td>Yes</td>
<td>2 MB</td>
<td></td>
</tr>
<tr>
<td>VFG3000</td>
<td>VGA (640x480)</td>
<td>Yes</td>
<td>8 MB</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPANSION CARD OPTIONS</th>
<th>INTERFACE</th>
<th>CONNECTOR</th>
<th>BAUD/FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>VFG9000-CAN</td>
<td>CANopen</td>
<td>Terminal Block</td>
<td>up to 1Mbps</td>
</tr>
<tr>
<td>VFG9000-CEL</td>
<td>GSM/GPRS Cellular</td>
<td>SMA male</td>
<td>850/1900, 900/1800</td>
</tr>
<tr>
<td>VFG9000-PBDP</td>
<td>Profibus DP</td>
<td>DB9 female</td>
<td>up to 12Mbps</td>
</tr>
<tr>
<td>VFG9000-DN</td>
<td>DeviceNet</td>
<td>Terminal Block</td>
<td>up to 500Kbps</td>
</tr>
<tr>
<td>VFG9000-ENET</td>
<td>Ethernet</td>
<td>RJ-45</td>
<td>10/100Mbps</td>
</tr>
</tbody>
</table>

**PROTOCOLS SUPPORTED**

For complete list, visit [www.bb-elec.com/ConnectPro](http://www.bb-elec.com/ConnectPro)

- ABB Com
- ACTech Simple Servo, UDP
- ADAM4000 Modules
- Allen Bradley DF1
- Allen Bradley DF1 TCP
- Allen Bradley DF1 PCC/EIP
- Allen Bradley DH485
- Allen Bradley Ethernet IP
- Allen Bradley Ultra 3000
- BACnet 802.3, MS/TP, UDP/IP
- Banner PresencePlus
- CANOpen
- Control Techniques
- Device Net
- GE SNP, SNP-X, TCP/IP
- Hitachi H
- Honeywell IPC620 PLC
- IDEC Micro 3 Series / ONC
- IDEC Micro Smart Series
- IMO G Series, K Series
- Icron Modline
- Kollmorgen AC Drives
- Encapsulated Modbus over Ethernet
- Modbus TCP/IP, RTU, ASCII
- Omron C Series PLC
- Omron FINS Ethernet, Serial
- Phoenix Contact nanoLC Serial, TCP/IP
- Schneider Uni-Telway, TSX-47
- Siemens S5, S7 200, S7 300/400
- Siemens Ti500
- Square D Symax
- Toshiba PL
**ConnectPro Gateways**

**VFG1000/2000/3000**

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SERIAL TECHNOLOGY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232</td>
<td>RJ-45</td>
</tr>
<tr>
<td>RS-485 2-Wire</td>
<td>RJ-45, TxA, TxB, TxEN, GND</td>
</tr>
<tr>
<td>RS-422/485 4-Wire</td>
<td>RJ-45, TxA, TxB, RxA, RxB, TxEN, GND</td>
</tr>
<tr>
<td>Serial Connector</td>
<td>RS-422/485 (RJ-45)</td>
</tr>
<tr>
<td>Programming</td>
<td>USB 1.1 (type B) and RS-232 (RJ-12)</td>
</tr>
<tr>
<td>Data Rate</td>
<td>Up to 115,200 bps, software selectable</td>
</tr>
</tbody>
</table>

**POWER**

<table>
<thead>
<tr>
<th>Source</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Connector</td>
<td>Removable terminal block</td>
</tr>
</tbody>
</table>

**MECHANICAL**

<table>
<thead>
<tr>
<th>LED Indicators</th>
<th>STS, TX/RX, Ethernet, CF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>13.46 x 10.54 x 7.85 cm (5.30 x 4.15 x 3.09 in)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>High-impact plastic, stainless steel (DIN mountable)</td>
</tr>
</tbody>
</table>

**ENVIRONMENTAL**

<table>
<thead>
<tr>
<th>Operating Temperature</th>
<th>0° to 50°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Humidity</td>
<td>80% relative, noncondensing</td>
</tr>
</tbody>
</table>

**NETWORK**

| Onboard user memory                | 4MB of non-volatile flash memory |
| Onboard SDRAM                       | 2MB, 8MB (VFG3000) |
| Memory Cards                        | Compact Flash, Type II slot for Type 1 and Type II cards Used for optional data base storage only |

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**NETWORK COMMUNICATIONS**

<table>
<thead>
<tr>
<th>LAN</th>
<th>10/100 MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Physical Layer Standards</td>
<td>Ethernet</td>
</tr>
<tr>
<td>Ethernet</td>
<td>10Base-T, 100Base-TX (wired as NIC), RJ-45</td>
</tr>
</tbody>
</table>

**PROTOCOLS**

<table>
<thead>
<tr>
<th>Protocols</th>
<th>See supported protocol list on first page</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Mode</td>
<td>DHCP</td>
</tr>
<tr>
<td>TCP/IP</td>
<td></td>
</tr>
</tbody>
</table>

**REGULATORY / CERTIFICATIONS / SAFETY**

<table>
<thead>
<tr>
<th>Certifications/Compliances</th>
<th>FCC, CE, cUL Listed, Class 1 Division 2 (Groups A, B, C, D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UL Listed, File #E222870, UL508, CSA 22.2 No. 14-M05 and File #E245458, ANSI/ISA 12.12.01-2007, CSA 22.2</td>
</tr>
<tr>
<td></td>
<td>LISTED by Und. Lab. Inc. to U.S. and Canadian safety standards</td>
</tr>
<tr>
<td></td>
<td>IEC 61010-1, EN 61010-1</td>
</tr>
<tr>
<td></td>
<td>EN 61326: 2006; EN 61000-4 (-2, -3, -4, -5, -6); EN 55011</td>
</tr>
</tbody>
</table>

**EMC**

<table>
<thead>
<tr>
<th>EN 61010-1, EN 61010-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 61326: 2006; EN 61000-4 (-2, -3, -4, -5, -6); EN 55011</td>
</tr>
</tbody>
</table>

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**MECHANICAL DIAGRAM**

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**MECHANICAL**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.85 cm</td>
</tr>
<tr>
<td>3.09 in</td>
</tr>
<tr>
<td>13.46 cm</td>
</tr>
<tr>
<td>5.30 in</td>
</tr>
<tr>
<td>10.54 cm</td>
</tr>
<tr>
<td>4.15 in</td>
</tr>
</tbody>
</table>