

# Industrial Modbus Ethernet to Serial Gateways

## MESR900 Series - Fiber Models

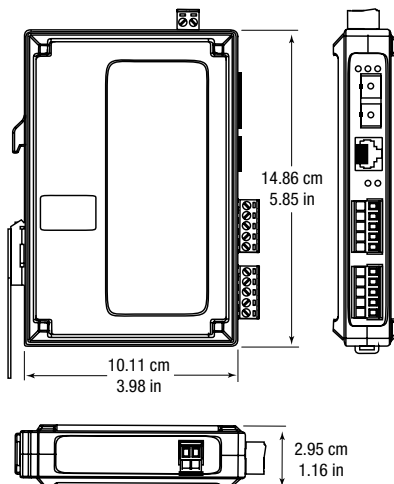


### PRODUCT FEATURES

- 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 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.

### MECHANICAL DIAGRAM - MESR92X MODELS



### ORDERING INFORMATION

| MODEL NUMBER | SERIAL PORTS | SERIAL CONNECTOR      | ETHERNET PORTS            | ETHERNET CONNECTOR |
|--------------|--------------|-----------------------|---------------------------|--------------------|
| MESR901-MC   | 1            | DB9 or Terminal Block | Multi-mode Fiber          | (1) SC             |
| MESR901-MT   | 1            | DB9 or Terminal Block | Multi-mode Fiber          | (1) ST             |
| MESR901-SC*  | 1            | DB9 or Terminal Block | Single-mode Fiber         | (1) SC             |
| MESR901-ST*  | 1            | DB9 or Terminal Block | Single-mode Fiber         | (1) ST             |
| MESR902T-MC  | 2            | Terminal Block        | Multi-mode Fiber          | SC                 |
| MESR902T-MT  | 2            | Terminal Block        | Multi-mode Fiber          | ST                 |
| MESR902T-SC* | 2            | Terminal Block        | Single-mode Fiber         | SC                 |
| MESR902T-ST* | 2            | Terminal Block        | Single-mode Fiber         | ST                 |
| MESR921-MC   | 1            | DB9 or Terminal Block | Multi-mode Fiber, Copper  | (1) SC, (1) RJ45   |
| MESR921-MT   | 1            | DB9 or Terminal Block | Multi-mode Fiber, Copper  | (1) ST, (1) RJ45   |
| MESR921-SC*  | 1            | DB9 or Terminal Block | Single-mode Fiber, Copper | (1) SC, (1) RJ45   |
| MESR921-ST*  | 1            | DB9 or Terminal Block | Single-mode Fiber, Copper | (1) ST, (1) RJ45   |
| MESR922T-MC  | 2            | Terminal Block        | Multi-mode Fiber, Copper  | (1) SC, (1) RJ45   |
| MESR922T-MT  | 2            | Terminal Block        | Multi-mode Fiber, Copper  | (1) ST, (1) RJ45   |
| MESR922T-SC* | 2            | Terminal Block        | Single-mode Fiber, Copper | (1) SC, (1) RJ45   |
| MESR922T-ST* | 2            | Terminal Block        | Single-mode Fiber, Copper | (1) ST, (1) RJ45   |

+ 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 166.

### 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

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## 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, 12 to 28 AWG |
| Data Rate         | Up to 230.4 Kbps                                |

### FIBER OPTIC TECHNOLOGY

|                     | <b>MESR9xx-Mx</b>    | <b>MESR9xx-Sx</b>     |
|---------------------|----------------------|-----------------------|
| 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)     | 15 km (9.3 miles)     |

|                     | <b>MESR9xx-Sx40</b>   | <b>MESR9xx-Sx80</b>   |
|---------------------|-----------------------|-----------------------|
| Type / Wavelength   | Single-mode / 1310 nm | Single-mode / 1510 nm |
| Output Power        | (-) 5 to 0 dBm        | (-) 5 to 0 dBm        |
| Receive Sensitivity | ~ (-) 34 dBm          | ~ (-) 34 dBm          |
| Cable               | 9 / 125 µm            | 9 / 125 µm            |
| Connector           | SC or ST              | SC or ST              |
| Range               | 40 km (5 miles)       | 80 km (49.7 miles)    |

### POWER

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

### POWER CONSUMPTION

|         |           |
|---------|-----------|
| MESR90x | 4.0 Watts |
| MESR92x | 6.0 Watts |

### MECHANICAL

|                |                                                                                                                     |
|----------------|---------------------------------------------------------------------------------------------------------------------|
| LED Indicators | Serial Port, Ethernet Link, Ready                                                                                   |
| Switches       | Reset Button                                                                                                        |
| Dimensions     | MESR90x: 11.94 x 8.03 x 2.96 cm (4.70 x 3.16 x 1.16 in)<br>MESR92x: 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         | MESR90x: 0.33 lbs (149.7 g)<br>MESR92x: 0.45 lbs (201.4 g)                                                          |
| eDrawing       | Available on website                                                                                                |

### ENVIRONMENTAL

|                       |                                    |
|-----------------------|------------------------------------|
| Operating Temperature | -40 to 80°C (-40 to 176°F)         |
| Operating Humidity    | 0 to 95% Non-condensing            |
| MTBF MESR90X          | ~ 132309 hours                     |
| MTBF MESR92X          | ~ 102593 hours                     |
| MTBF Calc Method      | Parts Count Reliability Prediction |

### NETWORK

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

### PROTOCOLS

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

### OTHER

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Mode             | Modbus RTU Master / Slave<br>Modbus ASCII Master / Slave     |
| Search           | Serial direct COM and Ethernet<br>Auto search or specific IP |
| Diagnostics      | Display PC IP, ping, 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

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