Modbus Router Firmware

Modbus Router is an innovative application providing highly versatile Modbus master-to-master and master-to-slave connectivity.

The Modbus Router application was designed to provide highly flexible and robust connectivity for PLCs, SCADA systems, HMIs, OPC servers and applications that require a wide range of Modbus connectivity options. Modbus Router provides functionality such as:

- Master-to-master connectivity via the Shared Memory sub-system
- Private Modbus serial bus support designed to restrict access to private Modbus devices
- Connectivity from serial Modbus masters to Modbus/TCP networks
- The ability to connect multiple types of Modbus masters to Modbus slave device(s)
- Convert from one form of Modbus, such as Modbus/TCP, to Modbus/RTU or Modbus/ASCII
- Provide connectivity from a serial Modbus master to a remote Modbus slave device
- Eliminate Modbus device ID conflicts and solve device ID configuration problems
- Enable Modbus security by blocking write messages in Read-Only Mode
- Device ID to Modbus/TCP slave via configurable IP address and TCP/IP port
- Modbus Network Bridging support
- While standard gateways provide limited connectivity for only directly connected Modbus slave devices, Modbus Router provides connectivity from multiple Modbus master types to both local and remote Modbus slaves. Simple or complex Modbus networks are easily created by combining multiple DeviceMaster UP chassis running Modbus Router and/or Modbus/TCP firmware.

Modbus Router was designed to greatly enhance system maintenance capabilities. Included are comprehensive local and remote slave device and port specific diagnostic web pages that display status, message response timing, timeout and other error counts, and overall message statistics. A serial log is also included to provide message level diagnosis.

The DeviceMaster UP configures in just minutes via embedded web pages. The included PortVision DX remote management and configuration software makes it a simple task to detect and manage every DeviceMaster UP on the network, facilitating firmware updates, troubleshooting, and remote administration.

Modbus Router firmware **supports the following controllers**:

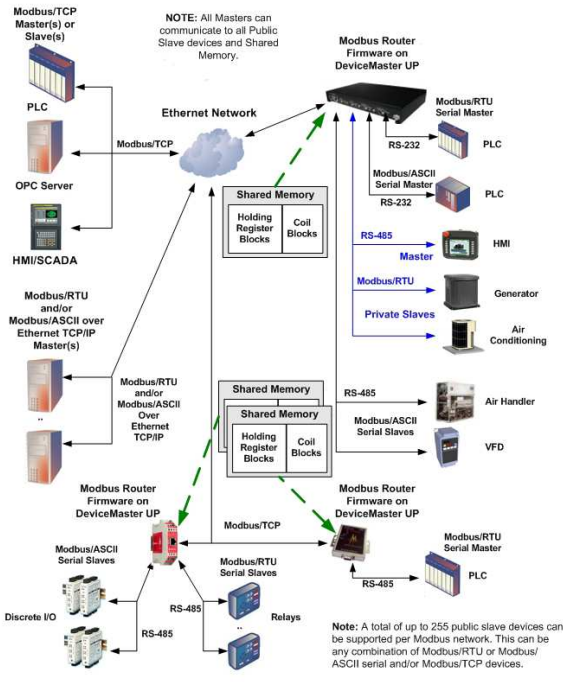
- Modbus/TCP masters
- Modbus/RTU and Modbus/ASCII serial masters
- Modbus/RTU and Modbus/ASCII over Ethernet TCP/IP masters

Modbus Router firmware **supports the following devices**:

- Modbus/TCP slaves
- Modbus/RTU and Modbus/ASCII serial slaves
- With additional gateways, both remote Modbus serial slaves and raw/ASCII devices

Modbus Router firmware is **recommended in installations that require**:

- Local (directly attached) Modbus master and/or slave connectivity
- All Modbus (No local raw/ASCII device connectivity)
- Automatic Modbus protocol translations (if needed)
- Connectivity to remote Modbus slave(s) and/or raw/ASCII device(s)
- Connecting single or multiple Modbus masters to the slave device(s)
- Master-to-master connectivity
- Isolation of serial Modbus slaves (via Private Serial Bus connectivity)
- Write protection of serial Modbus slaves
- Modbus Device ID conflict resolution



Modbus Router in a Modbus Network

Supported Interfaces:

Any **PLC, SCADA System, HMI, OPC Server or Application** that requires Modbus communications over Modbus/TCP, Com ports or Ethernet TCP/IP connections.

Modbus Router highlights:

- All masters can communicate to all public slave devices
- Supports up to **96 Modbus/TCP connections** (any combination of master and slave connections)
- Modbus/TCP masters – accepts requests on up to eight TCP/IP ports. (includes standard port 502 and seven configurable ports.)
- Modbus/TCP slaves – via configurable IP address and TCP/IP Port(s)
- Supports up to six Ethernet TCP/IP connections per Ethernet TCP/IP configuration
- The number of Ethernet TCP/IP configurations equals number of serial ports
- Supports up to **255 Public Modbus slave devices** per Modbus network. Both valid, (1-247), and reserved, (248-255), device ids are supported.
- Supports up to **255 Private Modbus slave devices** per Private Serial Bus.
- **Private Serial Bus Support** – Communication to private Modbus slave devices is restricted to the master on the same serial bus.
- **Master-to-Master Connectivity** – Provided by the Shared Memory sub-system that contains write-controlled access to eight blocks of 200 holding registers, (1600 registers total), and eight blocks of 160 coils. (1280 coils total).
- **No limit** on number of devices per serial port
- **Automatically discovers local devices and routes messages**
- **Alias Device ID** conversions provide communication to Modbus slave devices via alternate device IDs in place of the configured slave device IDs
- **Device ID Offset** conversions allow multiple slave devices with the same configured device ID to be connected to the same gateway. Device IDs can be redefined by either subtracting or adding a device ID offset.
- **Read-Only Mode** provides Modbus security by blocking all standard Modbus write messages
- Advanced device specific **diagnostic capabilities** via embedded web pages
- Modbus/RTU and Modbus/ASCII specific message handling:
  - CRC/LRC verification of all messages received on the TCP/IP and serial interfaces
  - Timing out of responses from slave Modbus devices
  - Broadcast message handling
- System monitoring to ensure gateway operation:
  - Gateway busy
  - Application message timeouts
- Advanced diagnostics web pages:
  - Public Modbus device specific statistics, response timing, and status. Up to 255 public devices per network, as known by a gateway, can be monitored simultaneously.
  - Private Modbus device specific statistics, response timing, and status. Up to 255 private devices per private serial bus, as known by a gateway, can be monitored simultaneously.
  - Serial port specific statistics and status
  - Serial port message logging
- Combined with a serial port redirector, such as the Comtrol Secure Port Redirector, can support up to six COM port connections to each Ethernet TCP/IP configuration

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Warranty Information
Comtrol offers a 30-day satisfaction guarantee and 5-year limited warranty.

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