IEC 60870-5-104 Server Communication Module

MVI71-104S

The MVI71-104S module is designed to address the application where a device using the IEC 60870-5-104 protocol needs to communication with the Rockwell Automation processor. As such, the IEC server module can be used as a gateway in many SCADA installations in industries such as:

- *Power*
- *Petrochemical*
- *Water treatment*
- *Oil and gas production*

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MVI71-104S

The MVI71 IEC 60870-5-104 Server Communication Module allows PLC backplane I/O compatible processors to interface easily with IEC 60870-5-104 protocol-compatible hosts.

Features and Benefits

The MVI71-104S module acts as an input/output module between the IEC 60870-5-104 Ethernet network and the Rockwell Automation backplane. The data transfer from the PLC processor is asynchronous from the actions on the network. A 4000-word register space in the module exchanges data between the processor and the Ethernet network.

General Specifications

- Single Slot – 1771 backplane compatible
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor. Sample ladder file included.
- Configuration data obtained from configuration text file downloaded to module. Sample configuration file included.

Hardware Specifications

Specification	Description
Form Factor	Single Slot 1771 chassis compatible BTR/BTW data transfer Local or remote rack
Backplane current load	800 mA @ 5 V
Operating temperature	0 to 60°C (32 to 140°F)
Storage temperature	–40 to 85°C (–40 to 185°F)
Shock	30g operational 50g non-operational
Vibration	5 g from 10150 Hz
Relative humidity	5 to 95% (non-condensing)
LED Indicators	Module status Backplane transfer status Application status Serial activity and error LED status

Specification	Description
Configuration Serial port (CFG)	DB-9M PC compatible RS-232 Hardware handshaking
Ethernet Port (Ethernet modules)	RJ45 Connector Link and activity LED indicators

Functional Specifications

The MVI71-104S module accepts data read/write commands from a master/client on the network. In addition, the module can be configured to generate unsolicited messages in either a spontaneous or cyclic fashion.

The module has 4000 words of user defined internal register space that are accessible to the protocol driver and to the PLC processor memory. Any of the supported database types can be individually located (within the total database size limit of 4000 words) and each database point is mapped within the module and can be assigned to one or more Groups. The supported database point types are:

Database Type	Description
M_SP_NA	Monitored single-point database
M_DP_NA	Monitored dual-point database
M_ST_NA	Monitored step-point database
M_ME_NA	Monitored normalized-point database
M_ME_NB	Monitored scaled-point database
M_ME_NC	Monitored short-float point database
M_IT_NA	Monitored integrated total database
C_SC_NA	Command single-point database
C_DC_NA	Command dual-point database
C_RC_NA	Command step-point database
C_SE_NA	Command normalized-point database
C_SE_NB	Command scaled-point database
C_SE_NC	Command short-float point database

IEC 60870-5-104 Server Specifications

Operating in the Server mode, the module accepts commands from a Client(s) to read/write data stored in the module's internal registers. This data is easily and continuously transferred between the MVI module and the PLC processor's data registers.

The IEC 60870-5-104 Server functionality supported by the module includes:

- The IEC 60870-5-104 communication driver is built in accordance to the approved IEC specification
- The module functions as a Server on the network supporting data read/write commands from an IEC 60870-5-104 client on the network
- One TCP server socket
- Supports unsolicited messages, either cyclic or spontaneous (cyclic rate is configurable)
- Supports clock synchronization commands from client or from the PLC
- Supports Group interrogation (Global, General 1 to 16, Global Counters, Counters 1 to 4)
- Event timestamping configurable by type (None, 24 bit, 56 bit)
- Event queue supports 99 points for each data type
- Optional user defined list of acceptable client host IP addresses
- Configurable Common ASDU address (sector) and Information Object Address
- An IEC Interoperability Document for the MVI71 is available which fully documents data types supported by the module.

Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

Compatible products include:

IEC 60970-5-104 Server Communication Module for SLC (MVI46-104S)

Visit our web site at http://www.prosoft-technology.com for a complete list of products.

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