

Modbus Host Program for the FloBoss™ 103

The Modbus Protocol Host Emulation Program is designed to allow a FloBoss™ 103 Flow Manager to emulate the Modbus host protocol. This makes it possible to integrate the FloBoss into a Modbus host/slave system as a host. The ability to act as a Modbus slave device is already provided in the operating firmware of the FloBoss 103.

The Modbus program is loaded and configured by using ROCLINK™ 800 Configuration Software. The program can be configured so that the FloBoss unit can function as a Modbus host (master) with the ability to poll multiple Modbus slave devices. Either the American Standard Code for Information Interchange (ASCII) or the Remote Terminal Unit (RTU) mode of transmission can be used.

Modbus Compatibility

The FloBoss supports the Modbus function codes shown in Table 1. These codes use the command and response formats listed in the *Modbus Protocol Reference Guide* (January 1985), form PI-MBUS-300.

Point types and parameters for the supported Modbus function codes are selected using ROCLINK 800 software. Any point type and parameter can be selected for codes 3, 4, 6, and 16.

Codes 1, 2, 5, and 15 are restricted to status inputs and outputs. The length of data returned or transmitted depends upon the parameter selected.

Parameters in all the standard ROC point types are accessible through the Modbus protocol.

Data Link

The data link between the Modbus device and the FloBoss occurs through the selected communication port:

- EIA-232 (RS-232) for asynchronous serial communications.
- EIA-485 (RS-485) for asynchronous communications.
- Dial-up modem for communication over a telephone network.

Modbus Host Mode

The Modbus Host Mode of operation allows the FloBoss to poll Modbus devices (including other devices that have the Modbus program), receive data, and store the data in the FloBoss.

Table 1. Supported Modbus Function Codes

Code	Meaning	Action
01	Read Coil Status	Obtain current status (ON/OFF) of a group of logic coils.
02	Read Input Status	Obtain current status (ON/OFF) of a group of discrete inputs.
03	Read Output Registers	Obtain current binary value in one or more holding registers.
04	Read Input Registers	Obtain current binary value in one or more input registers.
05	Force Single Coil	Force logic coil to a state of ON or OFF.
06	Preset Single Register	Place a specific binary value into a holding register.
15	Force Multiple Coils	Force a series of consecutive logic coils to defined ON or OFF states.
16	Preset Multiple Registers	Place specific binary values into a series of consecutive holding registers.

Specification Sheet

The data can be used for parameter updates, FST program registers, and other variables. This allows a user-written program to control the polling performed by the FloBoss. The FloBoss host can also send commands to set outputs and to write data to a slave device. The interval between polls of the slave devices is configurable in seconds (Poll Timer parameter).

The Modbus Host program provides the ability to become a Modbus Master on a port. During setup, the Master Host program provides a means to configure a table of registers for which data will be requested from slave devices.

Data Transmission Modes

Two modes of data transmission are available for use in a Modbus system: ASCII and RTU. Both modes provide the same capabilities for communicating with the Modbus host and are selected depending on the equipment used. All devices in the communication network must be configured with the same mode of transmission.

In RTU mode, data is sent in 8-bit binary characters. In ASCII mode, each 8-bit character is split into two hexadecimal numbers, which are then converted into ASCII printable characters.

Modbus Configuration

After the Modbus Protocol program is selected for a FloBoss communication port and loaded into the FloBoss, it can be configured. The Modbus functionality is configured for the selected port using up to four screens: Modbus Modem, Modbus Configuration, Modbus Function Codes, and Modbus Host.

Media

The Modbus program and user manual are supplied on a CD-ROM.

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