CONTROLLER INFORMATION SHEET

Bristol Babcock

Network 3000 Series Controllers & ControlWave Controllers

Overview

Maple Systems' BLU300 Series Operator Interface Terminals (Maple OITs) communicate with the Bristol Babcock Network 3000 and ControlWave controllers using the Modbus RTU Master communications protocol. The Maple OIT is the master in a point-to-point single-master, single-slave format.

Compatible Controllers	
Family	**Model**
Network 3000	RTU 3305, RTU 3310, DPC 3330, DPC 3335
ControlWave	All

Communications Cable

The Maple OIT should be connected to the Modbus port located on the controller. A list of communications cables offered by Maple Systems as well as cable assembly instructions to assist you in assembling your own communications cable are available on our website at www.maple-systems.com/cables.htm.

WARNING: If your communications cable is not wired exactly as shown in our cable assembly instructions, damage to the Maple OIT or loss of communications can result.

Controller Settings

The Modbus port on the Network 3000 Series controllers must be set to RTU mode to communicate properly with the OIT.
The port on the ControlWave controller must be set to Gould Modbus Slave, RTU (Binary).

Accessible Controller Memory

Register Memory

The following table lists the controller's register memory ranges that Maple's OITs are able to access. Please note that your controller's memory range may be ***smaller*** or ***larger*** than that supported by Maple's OITs. The following register memory is displayable in 16-bit or 32-bit formats on the Maple OIT.

PLC Register Type	Address Range	Format	PLC Register Description
3x	1-65535	ddddd (d=decimal)	Input Registers (Read Only)
4x	1-65535	ddddd	Holding Registers
Sw3x	1-65535	ddddd	Input Registers (Word Swap)[1]
Sw4x	1-65535	ddddd	Holding Registers (Word Swap)[1]

[1] The Sw3x and Sw4x registers read and write to the same memory areas as the 3x and 4x respectively. However, these registers swap the word order when 32-bit values are used.

Discrete Memory

The following table lists the controller's discrete memory ranges that Maple's OITs are able to access. Please note that your controller's memory range may be ***smaller*** or ***larger*** than that supported by Maple's OITs. The following discrete memory is displayable in single-bit format on the Maple OIT.

PLC Register Type	Address Range	Format	PLC Register Description
0x	1-65535	ddddd (d=decimal)	Output Coils
1x	1-65535	ddddd	Input Coils (Read Only)
Bit3x	1.00-65535.15	ddddd.bb (b=bit#)	Input Register Bits (Read Only)[2]
Bit4x	1.00-65535.15	ddddd.bb	Holding Register Bits[2]

[2] The Bit3x and Bit4x coils read and write to the same memory as the 3x and 4x registers respectively. However, these coils allow access to individual bits within the memory registers. The bit number is specified by using the '.'followed by the bit number, 0-15.

BlueLeaf Communication Settings

The following table lists the communications settings that must be configured in BlueLeaf software. These settings can be found in the Tools...HMI-PLC Communications Settings menu.

Name	Default	Options	Important Notes
PLC Type	Modbus RTU Master (Modicon, etc.)		
Com Port	RS232	RS232, RS485 (2-wire only)	Tools...Set HMI-PLC Port
Baud rate	9600	115200, 57600, 38400, 19200, 9600, 4800	Must match the Modbus port settings. Use the fastest baud rate supported by both.
Parity	None	Even, Odd, None	Must match the Modbus port settings
Data bits	8	7, 8	Must match the Modbus port settings
Stop bits	1	1, 2	Must match the Modbus port settings
Net Addr:	1	0-255	Must match the Controller's port setting (configure in each object attribute).

Important Controller Memory Considerations

If your controller's memory range is smaller than the range supported by Maple's OITs, it is possible to configure the Maple OIT to monitor a controller memory address that does not exist. Since this can cause unpredictable results, when you configure the Maple OIT, please ensure that all selected controller memory addresses are valid for your controller model.
Do not configure the Maple OIT to write to any controller memory address which should only be written to by the controller.

Modbus Commands Supported

The BLU300 MODBUS RTU Master communications driver supports the following Modbus function codes:

- 01 - Read output coils (ex. 0x)
- 02 - Read input coils (ex. 1x)
- 03 - Read holding data registers (ex. 4x)
- 04 - Read input registers (ex. 3x)
- 05 - Write to output coils (ex. 0x)
- 06 - Write to holding data registers (ex. 4x)