



# Bristol Babcock

## Network 3000 Series Controllers & ControlWave Controllers

### Overview

Maple Systems' **Silver Series** Operator Interface Terminals (Maple OITs) communicate with the Bristol Babcock Network 3000 and ControlWave controllers using the Modbus RTU extend V3 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.

**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 132-bit or 64-bit formats on the Maple OIT.

Controller Register Address	Controller Register Description	Access
30001 to 39999	Input registers	Read only
40001 to 49999	Holding/output registers	Read/write

## 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.

Controller Bit Address	Controller Bit Description	Access
00001 to 09999	Discrete coils/Output	Read/write
10001 to 19999	Discrete inputs	Read only
4x_Bit (see note)	Holding/Output Registers	Read/write

**NOTE:** The 4x Bit memory area is used to read/write to individual bits in the 4x memory area. To use this feature, select the 4x\_Bit as *Device Type* for bit-type objects such as Bit Lamps. Under *Device Address*, use the format nnnbb to enter the word memory area followed by the two digit bit reference. For example, to target the 3rd bit of 40015, enter "1502" into the Device Address, (nn=15, bb=02).

# EZware Settings

The following table lists the communications settings that must be configured in EZware. These settings can be found in the **Edit-Set System Parameters** menu under the **PLC** tab.

Name	Default	Options	Important Notes
PLC Type	Modbus RTU Extend V3		See controller information sheet 1033-0045 “Modbus General Series” for more information.
Serial Port I/F	RS232	RS232, RS485	
Baud rate	9600	19200, 9600, 4800, 2400, 1200, 600, 300	Must match the Modbus port settings. Use the fastest baud rate supported by both.
Parity	None	Even, Odd, None, Mark, Space	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
HMI station no.	0	0-255	Does not apply to this protocol
PLC station no.	1	0-255	
Multiple HMI	Disable	Disable, Master, Slave	Use for multiple OITs
HMI-HMI link speed	38400	38400, 115200	Use for multiple OITs
PLC time 005 constant (sec)	3.0	1.5 to 5.0	Adjust if longer timeout required
PLC block pack	0	0 to 10	See <i>Silver Series Installation and Operation Manual</i>
Turn Around Delay	3	1-999	Turn around delay time in 10 Msec increments

# 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.

## **Accessing the 1XXXX or 3XXXX Registers**

Although the OITware-200 configuration software allows the programmer to select read/write access for 1XXXX and 3XXXX memory, these controller memory areas are designed to be read only.

## **On using Bank 8 or Bank 16 formats**

When you use these formats, each controller coil (bit) is individually displayed in terms of 1 and 0, with the lowest addressed coil displayed in the left-most position in the field. Therefore, you use coils 00001-00016, then 00016 is the least significant bit displayed in the right-most position and the 00001 is the most significant bit displayed in the left-most position. The address used must start on a word boundary, which can be determined if the first coil's address, minus 1 and then divided by 16, leaves no remainder.