



Bristol Babcock

Control Wave, Control Wave Micro

Overview

Maple Systems' **Silver Series** Operator Interface Terminals (Maple OITs) communicate with Bristol Babcock Control Wave controllers using the BSAP protocol. When configured with EZware, the Maple OIT is the master in a point-to-point single master, single slave format.

Compatible PLCs	
Family	Model
Control Wave	All
Control Wave Micro	All

Communications Cable

The Maple OIT can be connected directly to the Programming port on the PLC.

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 OIT or loss of communications can result.

PLC Settings

The Control Wave program must be designed so that any data to be retrieved from or sent to the OIT is done so through tags named as follows:

@GV.ASx (for analog signals)

@GV.DSx (for digital signals)

Where *x* is a number from 0 to 65535

Accessible PLC Memory

Register Memory

The following table lists the PLC's register memory ranges that the Maple OITs are able to access. Please note that your PLC's memory range may be *smaller* or *larger* than that supported by these OITs. The following register memory can be displayed in 16, 32, or 64 bit format on the Maple OIT.

PLC Register Type	Address Range	Format	PLC Register Description
AS	0 to 65535	dddd (d=decimal)	Analog Signal ¹
AS_Integer	0 to 65535	dddd	Analog Signal as Integer ²

Discrete Memory

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

PLC Bit Type	Address Range	Format	PLC Bit Description
DS	0 to 65535	dddd	Digital Signals ³

NOTES

¹When using AS, set the Numeric Format to Single Float.

²When using AS_Integer, set the Numeric Format to Integer, and the Number of Words to 2. AS_Integer will read/write the controller's data as Floating Point, but show the data on the OIT as Integer, with an implied decimal place of 2. For example, a value of 45.75 will be reported to the OIT as 4575. This will allow the controller's data to work with the OIT's trend and bargraph objects.

³When using DS, the address must be followed by a 0. For example, to create a reference to tag @GV.DS14, use Device Type DS, address 140.

Important Memory Considerations

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

Do not configure the OIT to write to any PLC memory address which should only be written to by the PLC.

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. Please note:

- the **Recommended Settings** column provides the recommended setting based upon the default settings most commonly used in the Bristol Babcock Control Wave controllers
- the **Options** column lists EZware's options; your PLC may not support every option

Name	Recommended Settings	Options	Important Notes
PLC type:	Bristol Babcock BSAP X.YZ		
Serial port I/F:	RS232	RS232, RS485	
Data Bits:	8	7 or 8	Must match the controller's port setting.
Stop Bits:	1	1 or 2	Must match the controller's port setting.
Baud Rate:	115200	9600,19200, 38400,57600, 115200	Must match the controller's port setting. Use the fastest baud rate supported by the PLC.
Parity:	None	Even, Odd, None	Must match the controller's port setting.
Turn Around Delay	5	0 to 999	Delay between response and next command (tens of msec).
HMI station No.:	0	0-31	Must match the address assigned to the controller's port.
PLC station No.:	1	0-31	Must match the node address assigned to the controller.
Multiple HMI:	Disable	Disable, Master, Slave	use for multiple OITs
HMI-HMI link speed:	38400	38400, 115200	use for multiple OITs
PLC time out constant (sec)	3.0	1.5 to 5.0	adjust if longer timeout is required
PLC block pack:	0	0-10	see <i>Silver Series Installation and Operation Manual</i>