



# Modbus ASCII Slave

## Overview

Maple Systems' Blue Series Operator Interface Terminals (Maple OITs) communicate with any device that uses the Modbus ASCII protocol and originates messages as a master device. The Blue Series uses the **MODBUS ASCII Slave** protocol driver, to allow the slave in a point-to-point single master, single slave or single master, multiple slave format. RS485 networking is supported to connect multiple Blue Series MODBUS slave devices to a single MODBUS master device.

## Communications Cable

The Maple OIT can be connected directly to a serial port on the Host.

A list of communications cables offered by Maple Systems, as well as instructions to assist you in assembling your own cable, are available on our website at [www.maple-systems.com](http://www.maple-systems.com).

**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.

## Controller Settings

The MODBUS port on the Controller must be set to ASCII master mode in order to properly communicate with the OIT (working as a slave).

# Accessible Memory

## Register Memory

The following table lists Maple OIT register memory ranges that any host device using Modbus ASCII Slave are able to access. The memory area in the OIT are non-retentive. All data stored in the memory area is erased when power is removed from the OIT. The following register memory is displayable in 16- or 32-bit formats on the Maple OIT.

Modbus Address	Corresponding Blue Series Register Address
40001 -42048	@V0-@V2047

## Discrete Memory

Modbus Address	Corresponding Blue Series Register Address
00001-01024	@B0-@B0123

The following Modbus RTU function codes are supported by this communication driver.

Data Type	Read/Write	Description	Uses Modbus Code
0x	R	Read a coil	0x01
0x	W	Write to a single coil	0x05
0x	W	Face multiple coils	0x0F
4x	R	Read a holding register	0x03
4x	W	Preset single register	0x06
4x	W	Write to multiple registers	0x10

No support is provided for Input Status or Input Registers; therefore, function codes 0x02 and 0x04 are not supported.

# BlueLeaf Communication Setting

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.

- The **Default** column provides recommended settings based upon the default settings most commonly used in the Modbus controller.
- The **Options** column lists BlueLeaf's options; your controller may not support every option.

Name	Default	Options	Important Notes
PLC type:	Modbus Slave (ASCII Mode)		
COM Port:	RS232	RS232, RS485	Tools...Set HMI-PLC Port
Baud Rate:	9600	4800, 9600, 19200, 38400, 57600, 115200	Must match the Modbus port settings. Use the fastest baud rate supported by both.
Data Bits:	8	7 or 8	Must match the Modbus port setting.
Parity:	Even	Even, Odd, None	Must match the Modbus port setting.
Stop Bits:	1	1 or 2	Must match the Modbus port setting.
Net Addr:	1	0-255	Must match the Controller's port setting (configure in each object attribute).