USING CRIMSON AS A GATEWAY TO RLC PRODUCTS

OVERVIEW

The Modular Controller Master is capable of acting as a Ethernet gateway to one or more Red Lion products that utilize the ASCII string protocol. This function can be performed whether or not system Modules are attached, allowing the Master to operate as a stand-alone device. Note that while Crimson will not normally allow you to download a database that does not contain any modules, an exception is made when the Ethernet port is enabled.

CONFIGURATION EXAMPLE

This example demonstrates how to use the Modular Controller Master to read and write data from a PAXD and PAXI, as well as perform a reset of the PAXD totalizer value. The PAXD is programmed as address 1, the PAXI is programmed as address 2. By looking at the PAXD and PAXI data sheets, the following register identifiers are found.

PAX REGISTER	IDENTIFIER
PAXD Input Display	A register
PAXD Totalizer Value	B register
PAXI Count Value	A register
PAXI Setpoint 1 Value	M register

SERIAL PORT

To establish communication with the PAXs, select the Red Lion Instrument driver from the list. Make sure that the Serial Port settings match those of the PAXs.

In the Address Map, type the appropriate strings, starting with the PAX address, followed by the identifier for the register you want to read/write. The @ symbol is used to inform the Master that the PAXs will respond with an abbreviated message. Each string must be followed by a comma.

*See the **Option Characters** table below for other valid symbols.*
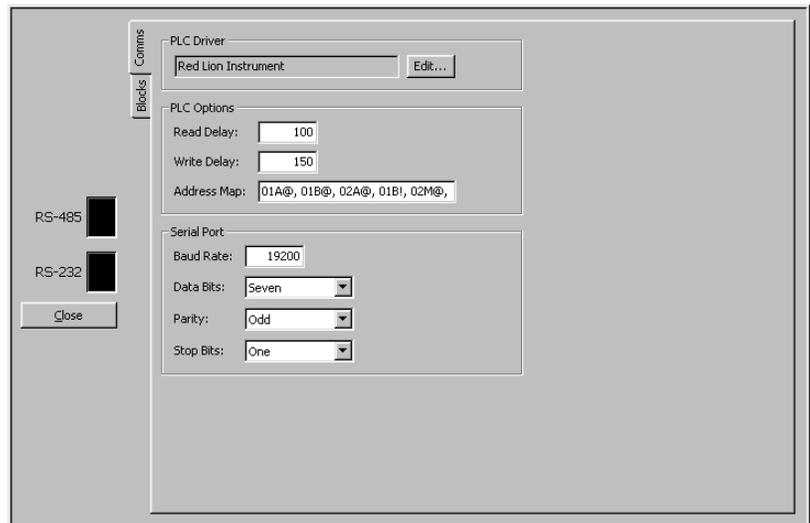
In this example, the first three strings read data. The PAXD's Input Display and Totalizer are being read by strings 01A@, 01B@,. The PAXI Count value is read via the 02A@, string. The last two string entries write data. The string 01B!, performs a reset of the PAXD Totalizer when *any new* value is written to it. The Setpoint 1 value of the PAXI is written to via the 02M@, string.

Option Description	Option Default	Option Character	Comment
Transmission Terminator	$	*	
Abbreviated Transmission	Abbreviated - No	@	Make sure Red Lion instrument is programmed to send abbreviated response
Reset	No Reset Operation	!	
Control	No Control Operation	:	
Unsigned	Signed	#	
32-bit Support	16-bit	^	

OPTION CHARACTERS

To read data from the PAX meters, create a block by entering an Address of R0, and set the Block Size to the number of variables that you've created read strings for. (In this case 3.) Set the Direction property for PLC to System.
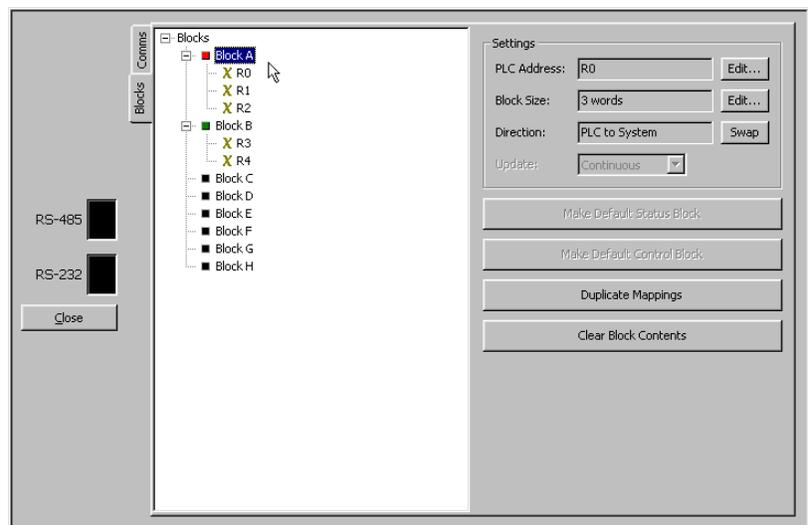

Then create the write block by selecting a different starting Address, and enter the number of write blocks needed. (The example requires 2.) Set the Direction property for System to PLC.
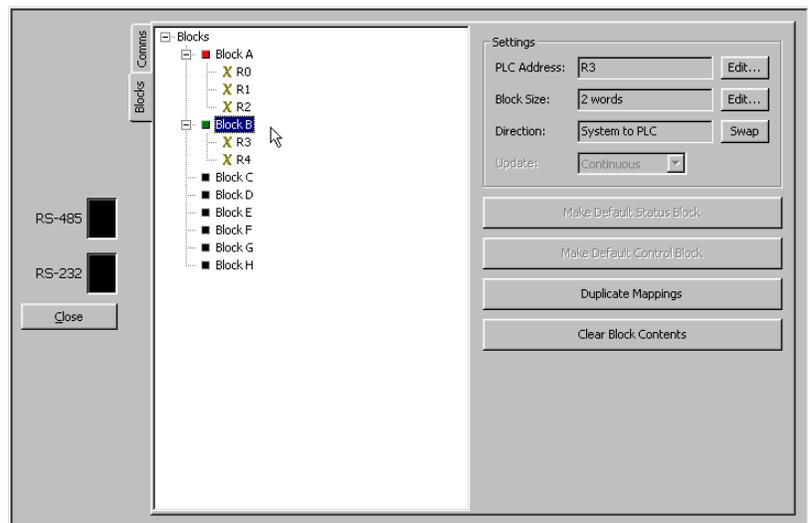
Next, configure blocks with the same Block letter on the Ethernet port, and pick an appropriate starting address. Make sure that the Block Size property matches that of the corresponding Serial Port block. The Direction property is ignored.

When used as a gateway, Modbus reads over TCP/IP of Serial Port blocks set for System to PLC will always return a value of 65535. This means that if you want to be able to read back data you have written over the TCP/IP link, you'll either need to include the same value in the read block, or *configure another block specifically for this purpose. Do not worry that this additional block will have the same addresses as the corresponding write block, as Crimson will understand which block you are referring to by the direction of the data transfer.*
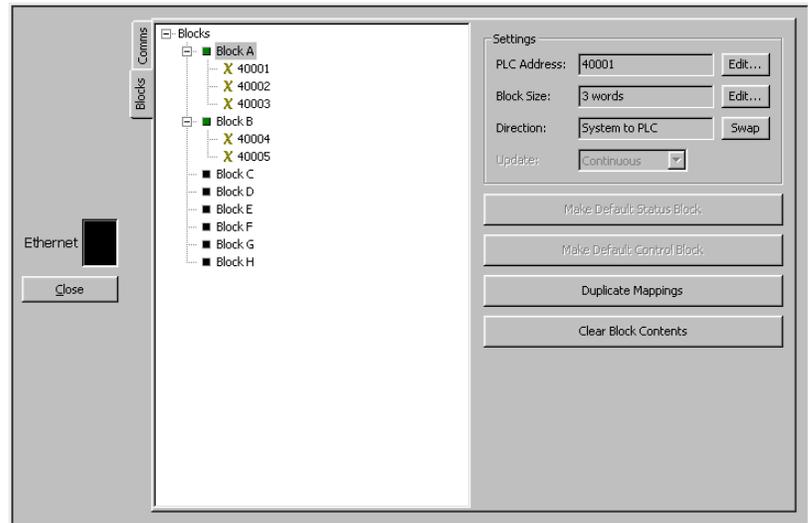
RESULT

By following the above example, the PAXs data can be accessed via Modbus TCP/IP registers 40001 through 40005. To reset the PAXD totalizer, simply write any *new value* to register 40004. If the same value is written multiple times, the reset will only occur the first time.

Computer running Modbus TCP/IP server.		Modular Controller Master				PAXD	PAXI
40001	Read ↔	40001	←	01A	Read ↔	Input Display	
40002	Read ↔	40002	←	01B	Read ↔	Totalizer	
40003	Read ↔	40003	←	02A	Read ↔		Count
40004	Write →	40004	→	01A	Write →	Reset Totalizer	
40005	Write →	40005	→	02M	Write →		Preset Value