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SLC4075TechNote207_ModbusConfigurationAndFieldConnectionsOnCR1000.docx 05/09/23

Supported Modbus Protocols

The SLC4075 supports the following Modbus protocols:

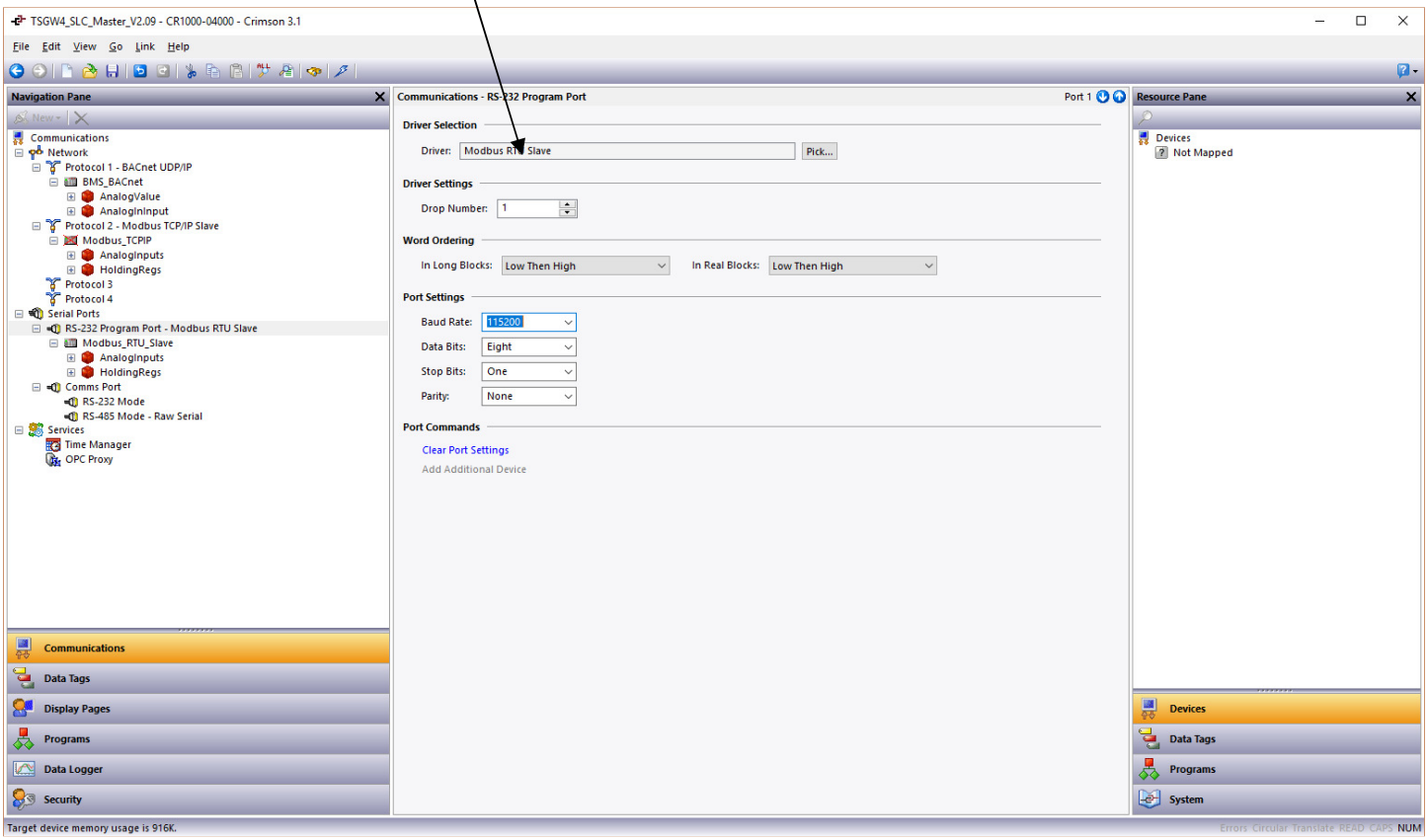
- Modbus TCP/IP Slave via the ENET connector on the SLC4075
    i. Modbus RS-485 Mode – ASCII Slave with required converter
    ii. Modbus RS-485 Mode – RTU Slave with required converter

Required Additional Hardware For Modbus – RS485

- **Modbus TCP/IP to Modbus RS485 converter**

Detailed Instructions:

1. Refer to SLC4075DatabaseAndEthernetAddressModificationProcedure.pdf for instructions to use the free Crimson 3.1 software.
2. Load your installation-specific Crimson database. Contact the boiler manufacturer if they have not provided this database.
3. For Modbus TCP/IP
    a. The only required configuration are the network parameters.
    b. Modbus TCP/IP uses Network Protocol 2 – Modbus TCP/IP Slave
4. For Modbus RS-485 RTU or ASCII Slave:
    a. Navigate to the Communications page
    b. Click on Serial Ports; RS-232 Program Port…
    c. In the center window, set the desired parameters
        i. select the desired Driver
            1. Modbus RTU Slave
            2. Modbus ADCII Slave
        ii. Select the Word Ordering
        iii. Select the Port settings
            1. Baud rates from 9600 to 115,200
    d. Change the default selections



5. Save the database.
6. Upload the database to the TSGW

For Modbus Serial:

1. Connect SLC4072 RJ12 connector to the TSGW Port A (the RJ12 closest to the edge of the TSGW enclosure)
2. Connect SLC4075-3 DB9M to SLC4070 DB9F connector.
3. Connect +10 to +30 V dc to terminals
    a. F (+) and C (-)
4. **SLC4070 is an optically-isolated RS232 to RS485 converter**
5. Note that SLC4070 has "Baud Rate" DIP switch setting. These switches control the turn-around time for half duplex communications and do not need to be changed from the 9600 baud settings, in most cases. The turn-around time is 1.04 ms.
6. **RS485 2-Wire Half Duplex**

Name	Terminal	SW-1	SW1-2	SW1-3	SW1-4
TD B(+)	H	ON	ON	ON	ON
TD A (-)	G				
Gnd	M				

7. **RS485 4-Wire Full Duplex**

Name	Terminal	SW-1	SW1-2	SW1-3	SW1-4
RDA ()	G	ON	OFF	OFF	OFF
RDB (+)	H				
TDA (-)	K				
TDB (+)	L				
Gnd	M				

8. Set the Termination switch, SW1-5, if your network requires a 120 ohm termination.

Questions, call Selectronix technical support at (425) 788-2979 or email techsupport@selectronis.us

Configuration Complete.