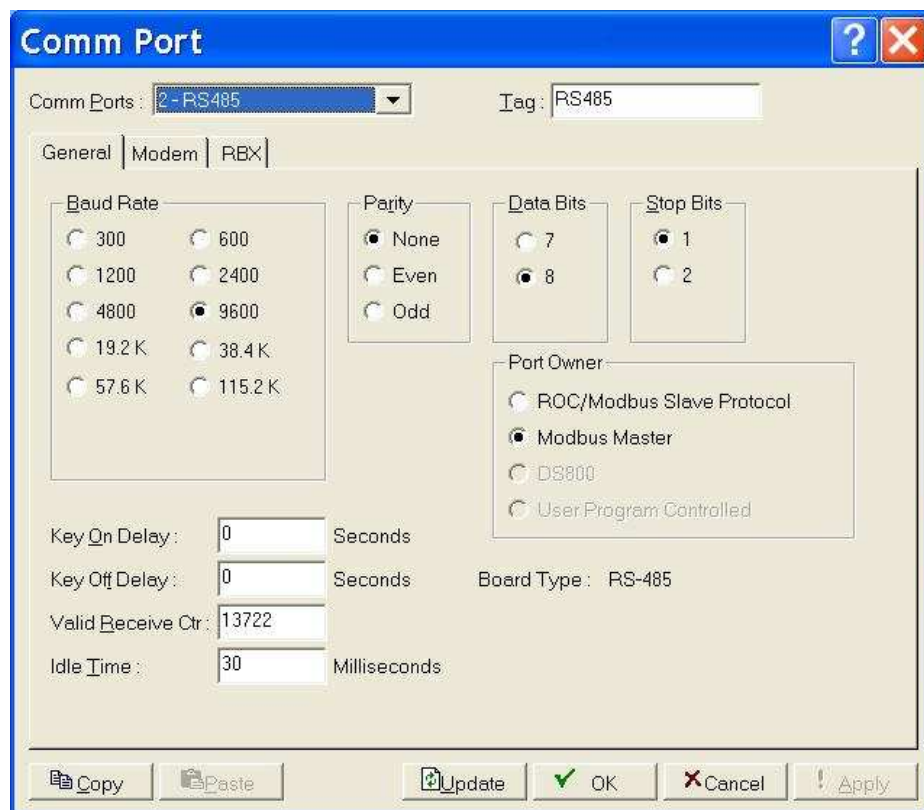


ROC FloBoss 107 to Profire 2100

First configure the RS485 communication port on the FloBoss.

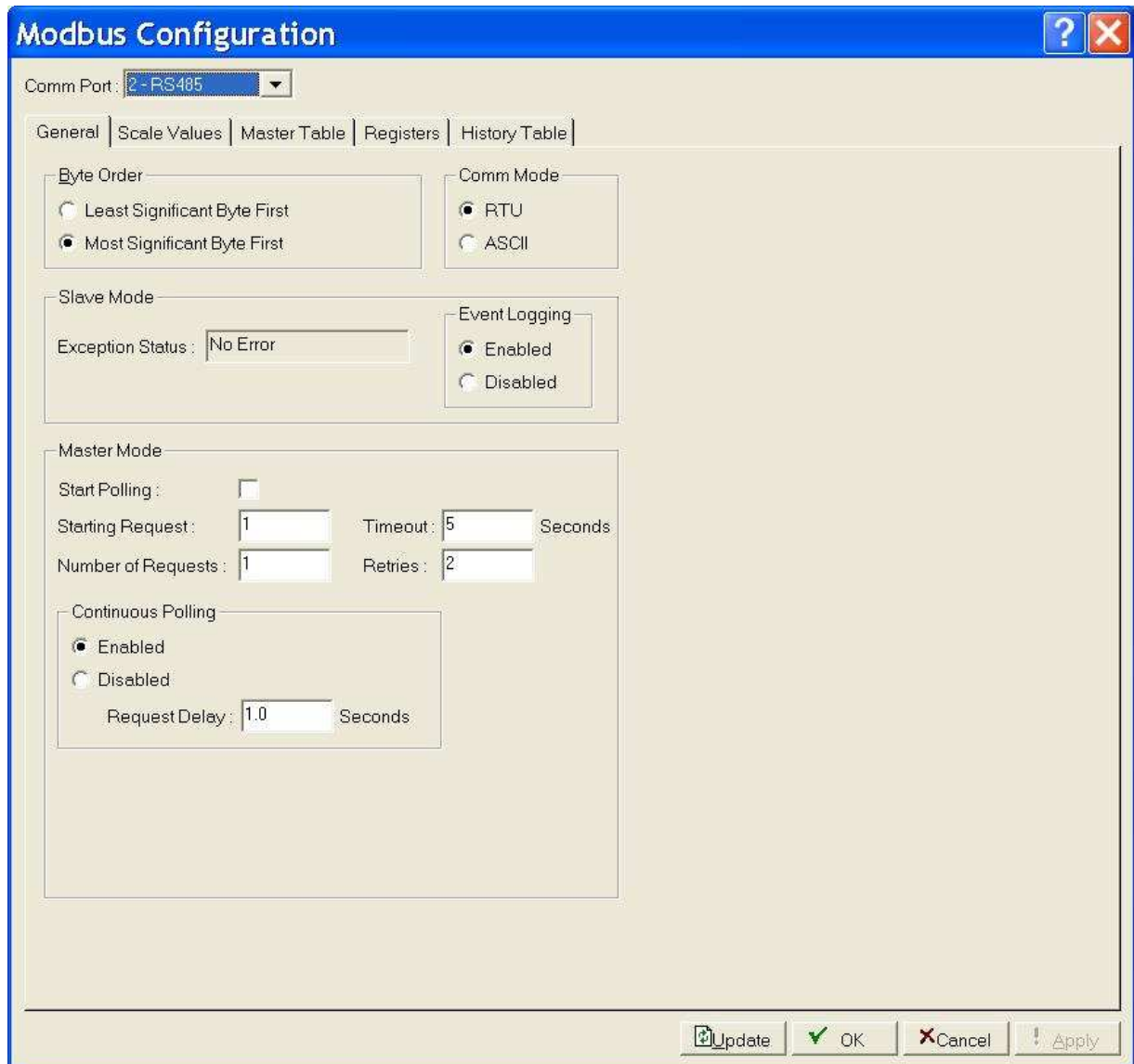
On the menu line select ROC->COMM PORTS

Set Key On Delay and Key Off Delay to zero. Set Baud Rate, Parity, Data Bits and Stop Bits as shown. Set the port owner is the Modbus Master.



Then on the menu line select CONFIGURE -> MODBUS

Select the RS485 port and with the GENERAL tab is selected set the values as below.



The image shows a 'Modbus Configuration' dialog box with a blue title bar and standard window controls. The 'Comm Port' dropdown is set to '2 - RS485'. The 'General' tab is selected, showing the following settings:

- Byte Order:** Most Significant Byte First
- Comm Mode:** RTU
- Slave Mode:** Exception Status: No Error
- Event Logging:** Enabled
- Master Mode:**
 - Start Polling:
 - Starting Request: 1
 - Timeout: 5 Seconds
 - Number of Requests: 1
 - Retries: 2
- Continuous Polling:** Enabled
- Request Delay: 1.0 Seconds

At the bottom, there are four buttons: Update, OK, Cancel, and Apply.

Select the REGISTERS tab and create the location where the received Modbus data will be stored. In this example the returned data will be stored in SOFT POINTS starting at DATA1. Use CONVERSION 26 for 16 bit signed integer.

The screenshot shows the 'Modbus Configuration' dialog box with the 'Registers' tab selected. The 'Table' dropdown is set to '1' and the 'Tag' is 'Reg Map 1'. A table lists 15 registers with their start and end register values, device parameters, indexing methods, conversion factors, and communication ports.

Index	Start Register	End Register	Device Parameter(s)	Indexing	Conversion	Comm Port
1	0	10	SFP 1, DATA1	Parameter	26	RS485
2	0	0	Undefined	Point	0	All Comm Ports
3	0	0	Undefined	Point	0	All Comm Ports
4	0	0	Undefined	Point	0	All Comm Ports
5	0	0	Undefined	Point	0	All Comm Ports
6	0	0	Undefined	Point	0	All Comm Ports
7	0	0	Undefined	Point	0	All Comm Ports
8	0	0	Undefined	Point	0	All Comm Ports
9	0	0	Undefined	Point	0	All Comm Ports
10	0	0	Undefined	Point	0	All Comm Ports
11	0	0	Undefined	Point	0	All Comm Ports
12	0	0	Undefined	Point	0	All Comm Ports
13	0	0	Undefined	Point	0	All Comm Ports
14	0	0	Undefined	Point	0	All Comm Ports
15	0	0	Undefined	Point	0	All Comm Ports

At the bottom of the dialog, there are four buttons: 'Update' (with a refresh icon), 'OK' (with a green checkmark), 'Cancel' (with a red X), and 'Apply' (with an exclamation mark).

In the MASTER TABLE tab, set the RTU ADDRESS, FUNCTION CODE 3, which will read the 400x registers in the 2100. Set SLAVE REGISTER to zero which will start reading from the 2100 at 40001 register. Set the MASTER REGISTER to zero which will store the data in the SOFT POINTS starting at zero. Set to read 6 registers.

The screenshot shows the 'Modbus Configuration' window with the 'Master Table' tab selected. The 'Comm Port' is set to '2 - RS485'. The 'Logical Point' is '1 - MastTbl 1 (RS485)' and the 'Tag' is 'MastTbl 1'. A table lists 20 rows of configuration data. The first row is selected, showing RTU Address 1, Function Code 3 (Read Holding Registers), Slave Register 0, Master Register 0, Number of Registers 6, and Comm Status 8. All other rows have Function Code 0 (Disabled).

	RTU Address	Function Code	Slave Register	Master Register	Number of Registers	Comm Status
1	1	3 - Read Holding Registers	0	0	6	8
2	0	0 - Disabled	0	0	1	0
3	0	0 - Disabled	0	0	1	0
4	0	0 - Disabled	0	0	1	0
5	0	0 - Disabled	0	0	1	0
6	0	0 - Disabled	0	0	1	0
7	0	0 - Disabled	0	0	1	0
8	0	0 - Disabled	0	0	1	0
9	0	0 - Disabled	0	0	1	0
10	0	0 - Disabled	0	0	1	0
11	0	0 - Disabled	0	0	1	0
12	0	0 - Disabled	0	0	1	0
13	0	0 - Disabled	0	0	1	0
14	0	0 - Disabled	0	0	1	0
15	0	0 - Disabled	0	0	1	0
16	0	0 - Disabled	0	0	1	0
17	0	0 - Disabled	0	0	1	0
18	0	0 - Disabled	0	0	1	0
19	0	0 - Disabled	0	0	1	0
20	0	0 - Disabled	0	0	1	0

Buttons at the bottom: Update, OK, Cancel, Apply.

Connect the ROC 107 RS-485 port connection "A" to the 2100 Comm Card "A" and "Y".
Connect the ROC 107 RS-485 port connection "B" to the 2100 Comm Card "B" and "Z".
Connect the ROC 107 GND to the 2100 Comm Card GND since the 2100 RS485 port is isolated from ground.

Set all four switches on the 2100 Comm Card to OFF.

With the above values set and downloaded to the ROC 107, the 2100 will have the RX and TX LEDs flashing once per second.

To display the returned values go to menu CONFIG->IO POINTS-> SOFT POINTS and select AUTO SCAN.

Integer Flag	Data #1	Data #2	Data #3	Data #4	Data #5	Data #6	Data #7	Data #8	Data #9	Data #10	Data #11	Data #12	Data #13	Data #14	Data #15	Data #16	Data #17	Data #18	Data #19	Data #20
0	3.0	260.0	17.0	19.0	19.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

In the above example,

- In Data #1 the unit is running and only the pilot is open resulting in the DATA #1 value being 3
- Data #2 is a combination of the Status Flags
- Data #3 is the Process High Temperature of 17C.
- Data #4 is the Process Temperature of 19C.

- Data #5 is the AUX Temperature of 19C.
- Data #6 is the Flame Quality at 100%

Note the temperatures are sent via Modbus in Celsius only, even if the Profire 2100 display is set to Fahrenheit so if a conversion to Fahrenheit is needed for display that will have to be done in the RTU or the HMI.

Note that to read the Input Status and Flags from the Profire 2100, instead of reading Modbus register 40002 and interpreting the bits, it may be easier to read the Input Status Registers 10017 to 10028.