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CC200 MODBUS SLAVE (CC200-SM-MBS)

(REV 20.1.6+)

CRIOSU CONTROLS



Table of Contents

Introduction.....	2
Module Requirements	2
Modbus Slave Screen Access	3
Modbus Slave Screen.....	4
Modbus Slave Port Setup.....	4
Modbus Slave Monitor Screen.....	5
Interface	7
Protocol	7
Packet Specification	7
Hex to Binary.....	7
Ping.....	8
Registers.....	8

Introduction

Modbus Slave Control and Monitoring over a RS485 network.

Reference Document:
Modicon Modbus Protocol Reference Guide (PI_MBUS_300.pdf)

Module Requirements

Module Configuration

8 Zones ▾

- Relay Config (CC200-SM-RC)
- Relay Config Ext (CC200-SM-RCE)
- Relay Timers & Cycling (CC200-SM-RTC)
- Cooling (CC200-SM-CL)
- PV (CC200-SM-PV)
- PV Adv (CC200-SM-PV_ADV)
- VRF (CC200-SM-VRF)
- Modbus Slave (CC200-SM-MBS)
- Alarms (CC200-SM-ALM)
- Digital Input Functions (CC200-SM-IF)
- Zone Differential (CC200-SM-DIFF)
- DHW Priority (CC200-SM-DHW-P)
- Relative Humidity (CC200-SM-RH-DP)

Configuration Code: 140112028101216957430058



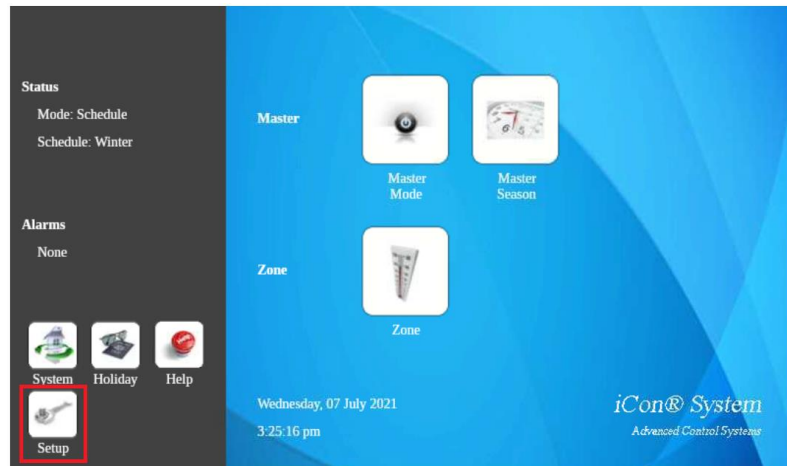
Help



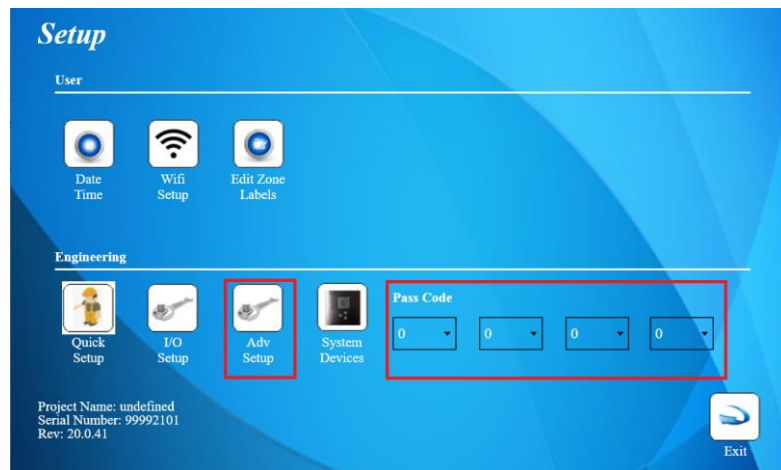
Exit

Modbus Slave Screen Access

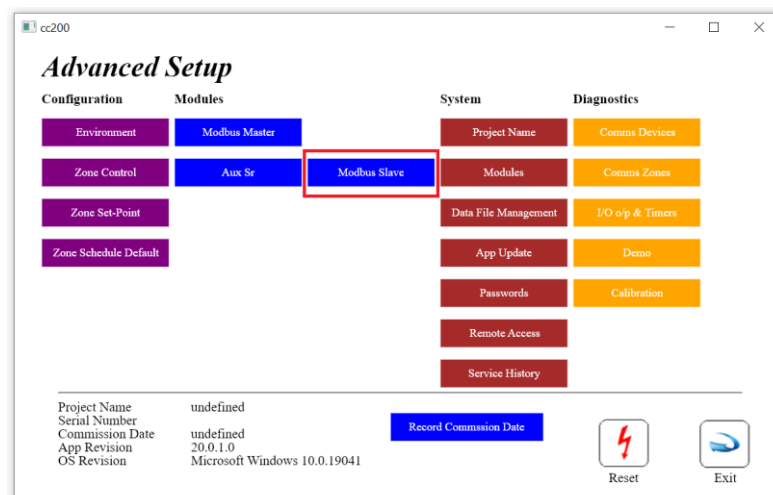
Step 1. Press “Setup” on the Home Screen



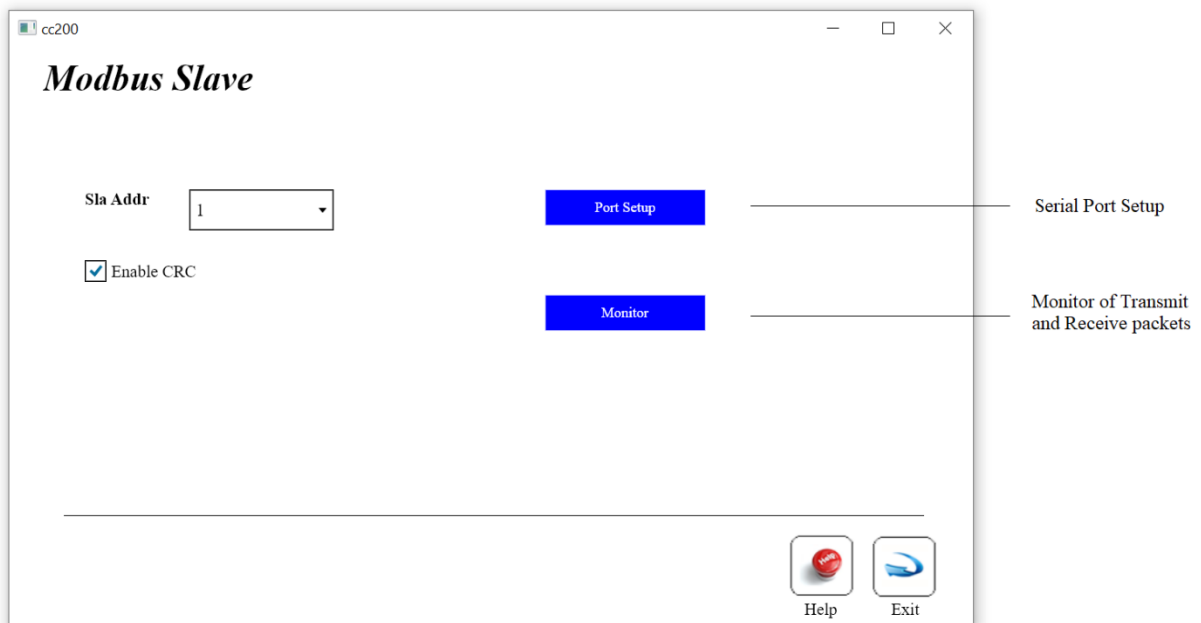
Step 2. Enter “Pass Code” and press “Advanced” on the Setup Screen



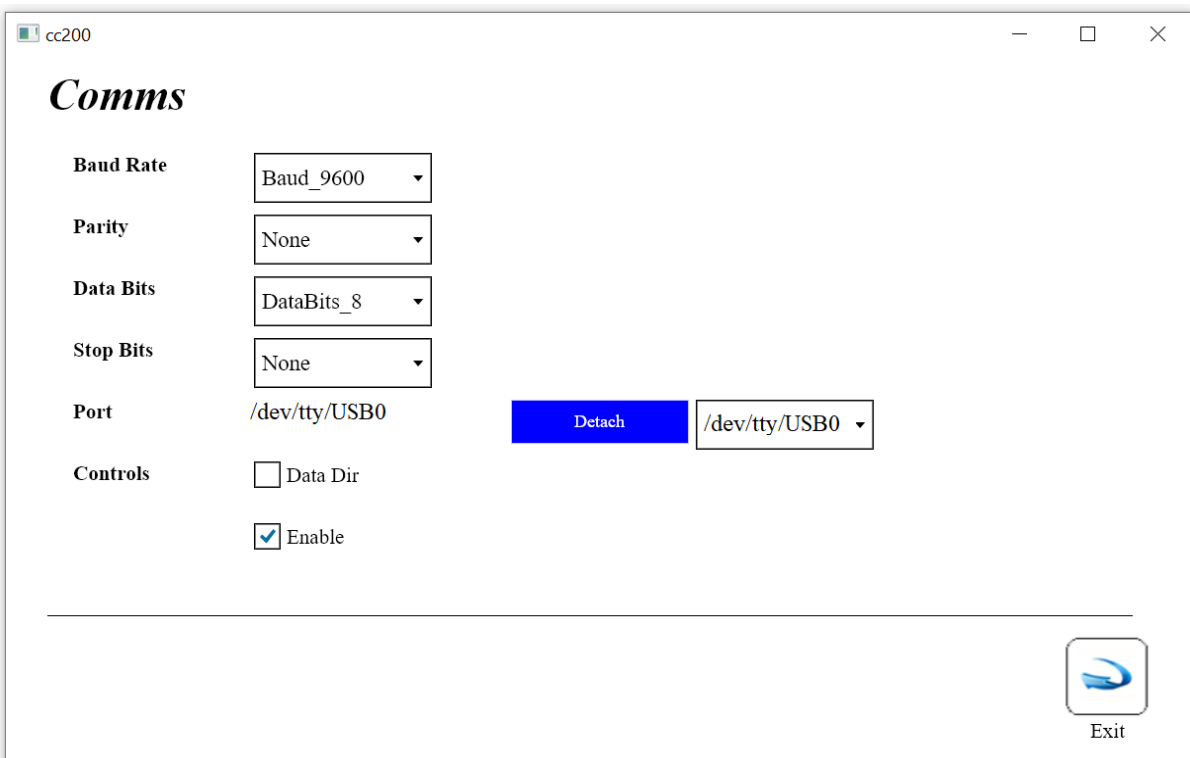
Step 3. Press “Modbus Slave”



Modbus Slave Screen



Modbus Slave Port Setup



CRC	Append two byte CRC XMT>>1,101,80<140,63> RCV<<1,101,80<8,67>
FC	Append Function Code XMT>>1,101,80,_03 RCV<<1,101,80,_03
Filter Slave Address	Limits communication to the specified slave address.

Interface

Serial Communications Interface Type: **RS485**

Electrical Characteristics: **2 wire, half duplex, multi-drop**

Baud Rate: **9600**

Data Bits: 7, **8 (default)**, 9 data bits (programmable)

Stop Bits: **1 (default)**, 1.5, 2 stop bits (programmable)

Parity: **None (default)**, Odd, even Mark, Space (programmable)

Protocol

Communications Protocol: **Modbus**

Message Format: **Binary RTU (Modbus-B)**

Maximum Communication Rate: **100 mS**

Packet Specification

Only Function Codes 3 & 6 are supported

Hex to Binary

Decimal	Hexadecimal	Binary
0	0	0
1	1	1
2	2	10
3	3	11
4	4	100
5	5	101
6	6	110
7	7	111
8	8	1000
9	9	1001
10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111

Ping

Function Code 8
Register Address 0

Slave Address, Function Code, Register Address and a data [value of 0] is returned.

Registers

Register	Data	Data Type	Unit	Range / Limit	Read/Write
1	System Mode 0:Normal 1:Heating All On 2:Heating All Off 3: Heating & DHW All Off	ENUM16	n/a	0-3	R/W
2	Season 0: Winter 1: Summer 2: Economy 3: Party 4: Vacation 5: Custom	ENUM16	n/a	0-5	R/W
3	Modbus Master Remote Control 0: Normal Operation 1: Remote Control Lock out the central station UI and take control of zone scheduling. The following should be noted carefully for remote control operation: Note1: The system will revert to Normal Operation if no master command is received over a period of 10 minutes. Note 2: A message indicating “Remote Control” will be displayed on the Home screen. Note 3:	ENUM16	n/a	0-1	R/W

	<p>The Home Screen Master Mode, Master Schedule, Zone, DHW and Vacation buttons will be locked out.</p> <p>The System, Help and Setup buttons will remain active.</p> <p>Note 4: The following will be de-activated:</p> <ul style="list-style-type: none"> (a) Zone Optimization (b) UFH, UPROBE Boost <p>Note 5: All scheduling will be controlled remotely by</p> <ul style="list-style-type: none"> (a) Setting the Zone Mode to “schedule” [0] or “schedule Ht&Cool” [6] (b) Setting the Zone Set-Point (c) Setting the Zone Schedule State <p>Note 6: The Zone SP and Mode registers must be read before written to as there parameters may be changed at the sensor.</p>				
4-39	Unused				
40 - 71	<p>Zone 1-32 Status</p> <p>Mask 0x00001 : Heating 0x00002 : Schedule 0x00004 : Cooling 0x00008 : Cooling Fan Speed 1 0x00010 : Cooling Fan Speed 2 0x00020 : Cooling Fan Speed 3 0x00040 : Heat, Cooling 0x00080 : Req 0x00100 : Comms Error</p> <p>Register 40 ...Zone 1 Status Register 41 ...Zone 2 Status ... Register 71 ...Zone 32 Status</p>	UINT16	n/a	n/a	R
72 - 74	Unused				
75	Zone 1-16 Schedule Request	UINT16	n/a	n/a	W

	Mask 0x00001 : Zone #1 0x00002 : Zone #2 .. 0x08000 : Zone #16				
76	Zone 17-32 Schedule Request Mask 0x00001 : Zone #17 0x00002 : Zone #18 .. 0x08000 : Zone #32	UINT16	n/a	n/a	W
77-79	Unused				
80-111	Zone 1-32 Set-Point Register 80 ...Zone 1 Set-Point Register 11 ...Zone 2 Set-Point ... Register 111 ...Zone 32 Set-Point	UINT16	°C	0-90	R/W
112-119	Unused				
120-151	Zone Temperature Ch1 (Zone Types: 0:UFH, 2:RAD) Ch2 (Zone Types 1:UPROBE, 3:PROBE, 4:DHW) Note “0” is returned for Zone type: SCHED Register 120 ...Zone 1 Temperature Register 121 ...Zone 2 Temperature ... Register 151 ...Zone 32 Temperature	INT16	°C	na	R
152-159	Unused				
160-191	Zone 1-32 Mode 0: Schedule 1: Scheduled Heating & Auto Cooling 2: Stop 3: Disable 4: OffForToday	ENUM16	n/a	0-10	R/W

	5: OnFor1Hr 6: OnFor2Hr 7: OnFor3Hr 8: Boost 9: Constant On 10: Constant Off Register 160 ...Zone 1 Mode Register 161 ...Zone 2 Mode ... Register 191 ...Zone 32 Mode				
192-199	Unused				
200	IO Module Status Mask 0x00001 : IO 1 Comms Error 0x00002 : IO 2 Comms Error .. 0x00080 : IO 8 Comms Error	UINT16	n/a	n/a	R
201-209	Unused				
210-218	IO Module Relay 1-16 Status Mask: 0x00001 : Relay 1 OPEN(ON) 0x00002 : Relay 2 OPEN(ON) .. 0x08000 : Relay 16 OPEN (ON) Register 210...IO Module 1 Relay Status Register 211...IO Module 2 Relay Status ... Register 218...IO Module 8 Relay Status	UINT16	n/a	n/a	R
219	Unused				
220-228	IO Module Digital Input 1-8 Status Mask: 0x00001 : Input 1 OPEN(ON) 0x00002 : Input 2 OPEN(ON) .. 0x00080 : Input 8 OPEN (ON) Register 180 ...IO Module 1 Input Status Register 181 ...IO Module 2 Input Status ... Register 228 ...IO Module 8 Input Status	UINT16	n/a	n/a	R

229	Unused				
230	PV Module Status Mask 0x00001 : IO 1 Comms Error 0x00002 : IO 2 Comms Error .. 0x00080 : IO 8 Comms Error	UINT16	n/a	n/a	R
240-263	PV Module DAC Output Register 240 ...IO Module 1 DAC Output #1 Register 241 ...IO Module 1 DAC Output #2 ... Register 247 ...IO Module 1 DAC Output #8 Register 247 ...IO Module 2 DAC Output #1 .. Register 263 ...IO Module 8 DAC Output #8	UINT16	n/a	n/a	R
264-269	Unused				
270	Alarm 1-8 Status Mask: 0x00001 : Alarm 1 (Active) 0x00002 : Alarm 2 (Active) .. 0x00080 : Alarm 8 (Active)	UINT16	n/a	n/a	R