

E2 Setup with XC1011D Version 1.05 Controller MODBUS Device

P/N 527-0372

Overview

This document will guide you through setting up and commissioning the XC1011D MODBUS device in the E2 controller.

STEP 1: Upload the description file to the E2 controller

1. From UltraSite, connect to your E2 controller.
2. Right click on the E2 icon and select **Description File Upload**.
3. Browse to the location where the description file is saved and click **Upload**.
4. After uploading, reboot the E2 controller.

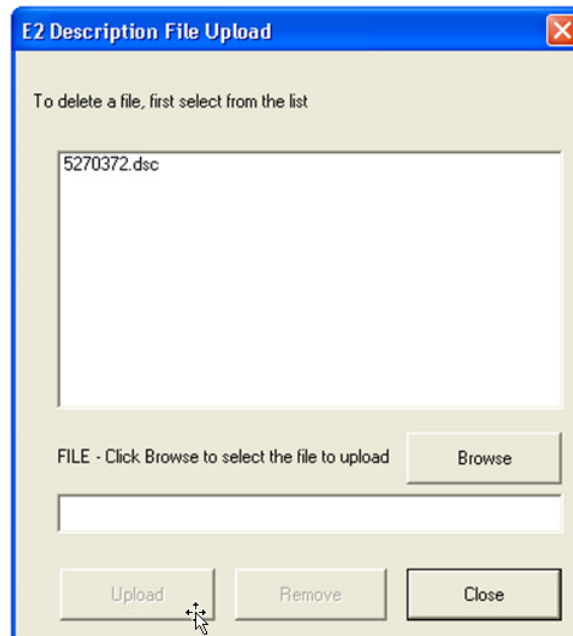


Figure 1 - E2 Description File Menu

STEP 2: Once the description file is loaded, add the device to the E2 controller

1. Press **Menu**, **7** (System Configuration), **7** (Network Setup), **2** (Connected I/O Boards & Controllers).
2. Press **F2** (NEXT TAB) to go to the **C3: ECT** tab. The device list appears on the screen. Enter the number of devices to add and press the **Home** button to save your changes.

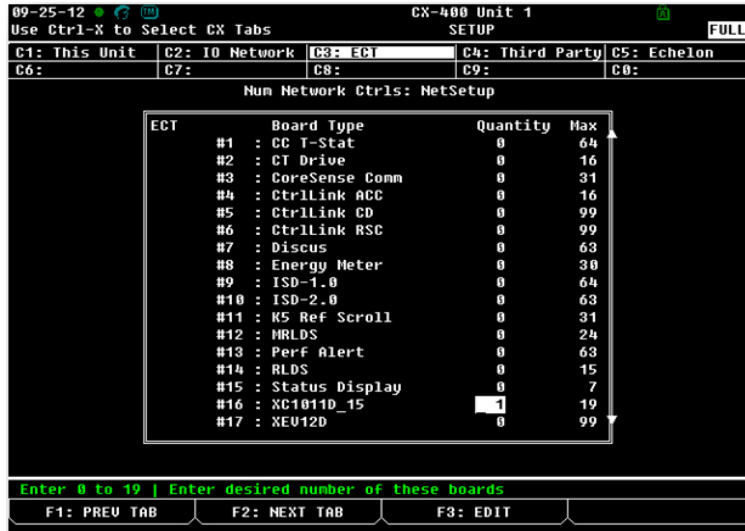


Figure 2 - E2 Device List

STEP 3: Assign the MODBUS port

1. Press **Menu**, **7** (System Configuration), **4** (Remote Communications), **3** (TCP/IP).
2. Press **F1** to go to the **C3: Serial** tab.

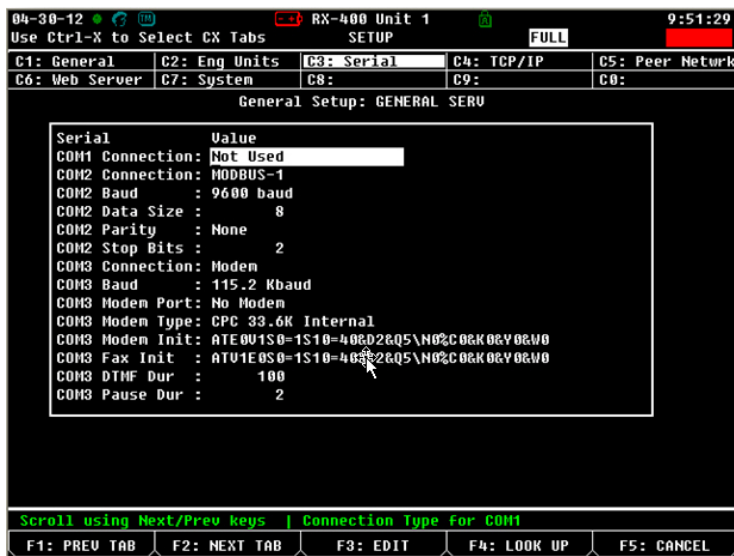


Figure 3 - Serial Tab

- Select the COM port where the device is connected, press **F4** (LOOK UP) and select the appropriate MODBUS selection.

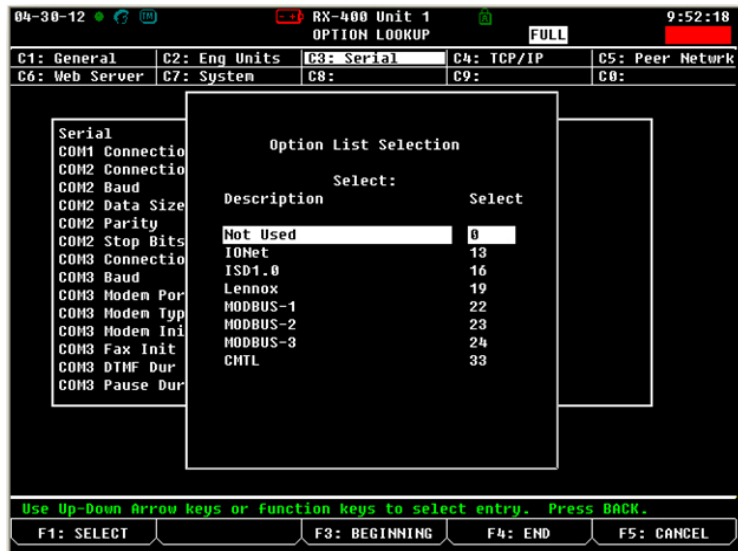


Figure 4 - Option List Selection

- Set the Baud rate for the chosen port. Press **F4** to look up the appropriate speed.

STEP 4: Commission the device.

- Press **Menu**, **7** (System Configuration), **7** (Network Setup), **1** (Network Summary).
- Highlight the device name using the UP and DOWN arrow key on the front panel and press **F4** (COMMISSION). Select the MODBUS port where you will assign the device, and then select the MODBUS device address.



Figure 5 - Modbus Device Address

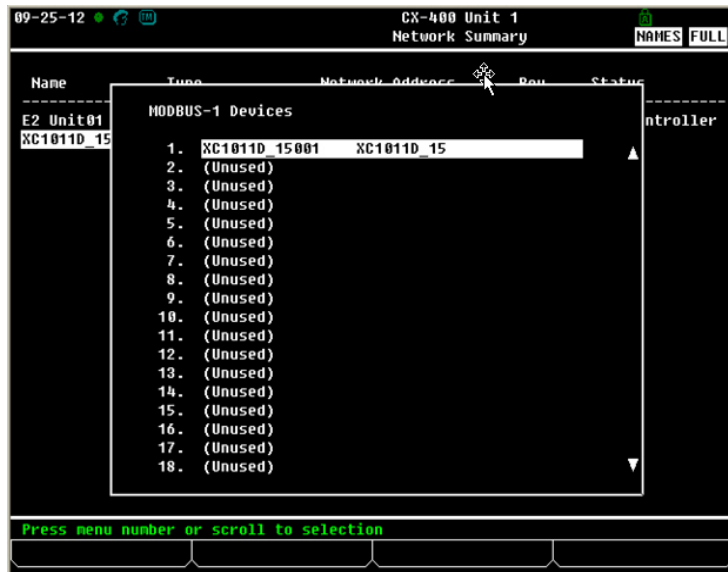


Figure 6 - Modbus Devices

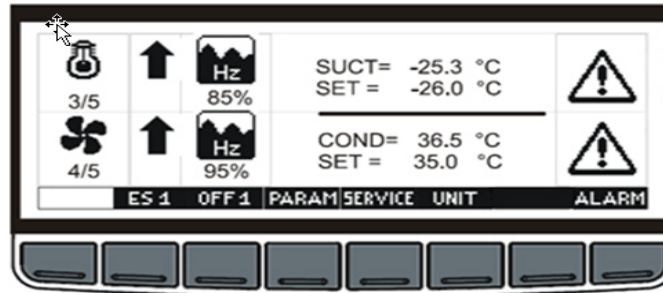


Figure 7 - Physical Address Setting

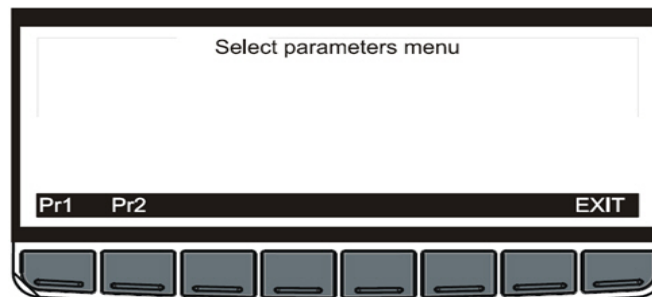
- Once the device is addressed and wired properly, the device should come online.

Step 5: Setting up the MODBUS address and wiring the XC1011D.

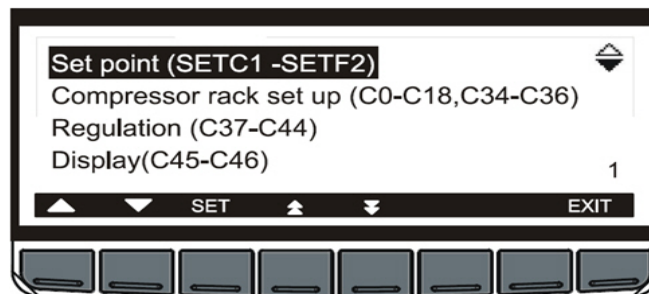
1. From the front display user interface, press the **PARAM** key to enter the parameter screen.



2. Press the **Pr1** key to enter the parameter groups.



3. In the parameter group screen, press the up arrow in the far left to display the other (OT-OT9) parameter group.



4. Press the **SET** key to enter the other (OT-OT9) parameter group.
5. Scroll down to view the OT7 parameter. This is the parameter for MODBUS address. Change the address to the desired number.
6. When wiring the RS485 com wire from the device to the E2 make sure to:
 - Connect pin 60 (+ RS485) of the XC1011D to the (-) RS485 side of E2
 - Connect pin 61 (- RS485) of the XC1011D to the (+) RS485 side of E2

Parameter Quick Start Guide

This is a quick start parameter list to program the device. It will help you set up your setpoint, outputs and inputs. For any additional configuration settings and information, please refer to the XC1011D manual.

Setpoint parameter definitions:

SETC1: setpoint for suction group 1

SETF1: setpoint for delivery (condenser group) 1

SETC2: setpoint for suction group 2

Compressor Rack Setup Parameters

This section defines and sets up your output.

C0, Kind of plant: it sets the kind of plant.

The following table shows the kind of plant can be set and which probes have to be used

Table 1: Plant Parameters Definitions

C0	Kind of Plant	Pb1	Pb2	Pb3	Pb4
0A1d	Only condenser fan	-	-	Delivery 1	-
1A0d	Only compressors	Suction 1	-	-	-
1A1d	Compressors and fans 1 circuit	Suction 1	-	Delivery 1	-
0A2d	Fans of circuit 1 and 2	-	-	Delivery 1	Delivery 2
2A0d	Compressors of circuit 1 and 2	Suction 1	Suction 2	-	-
2A1d	Compressors of circuit 1 and 2 - 1 condenser	Suction 1	Suction 2	Delivery 1	-
2A2d	Compressors of circuit 1 and 2 - Fans of circuit 1 and 2	Suction 1	Suction 2	Delivery 1	Delivery 2

Table 2: Relay Parameters Definitions

C1... C11 Relay 1...11 configuration	By means of parameter C0 and C1...C11 the plant can be dimensioned according to the number and type of compressors and/or fans and the number of steps for each one.
Each relay according to the configuration of the C(i) parameter can work as:	
Frq1	frequency compressor circuit 1
Frq2	frequency compressor circuit 2
CPr1	compressor circuit 1
CPr2	compressor circuit 2
Screw1	screw compressor - circuit 1
Screw2	screw compressor - circuit 2
StP	step of the previous compressor
FrqF1	inverter fan circuit 1

Table 2: Relay Parameters Definitions

FrqF2	inverter fan circuit 2
FAn1	fan circuit 1
FAn2	fan circuit 2
ALr	alarm
ALr1	alarm 1
ALr2	alarm 2
AUS1	auxiliary output 1
AUS2	auxiliary output 2
AUS3	auxiliary output 3
AUS4	auxiliary output 4
onF	on / off relay
nu	relay not used

Table 3: Relay Parameters Definitions

Plant with 2 suction groups and 1 delivery (Condenser group):	By means of parameter C0 and C1...C11 the plant can be dimensioned according to the number and type of compressors and/or fans and the number of steps for each one.
Suction Group 1:	2 compressor without valves (unloader), 1 compressor with 1 valve
Delivery 1:	3 fans
Suction Group 2:	4 compressor
Set parameters:	
C0 =	2A1d
C1 =	CPr1
C2 =	CPr1
C3 =	CPr1
C4 =	Stp
C5 =	Fan1
C6 =	FAn1
C7 =	FAn1
C8 =	Cpr2
C9 =	Cpr2
C10 =	Cpr2
C11 =	Cpr2

Table 4: Additional Output Parameter Definitions

C17	Valve output polarity - circuit 1: valve polarity: polarity of the outputs for capacity valves. It determines the state of the relays associated with the capacity valves: <ul style="list-style-type: none"> • P = valve enabled with open contact • cL = valve enabled with closed contact
C18	Valve output polarity - circuit 2: valve polarity: polarity of the outputs for capacity valves. It determines the state of the relays associated with the capacity valves: <ul style="list-style-type: none"> • oP = valve enabled with open contact • cL = valve enabled with closed contact
C34	Kind of gas: set the kind of freon used in the plant <ul style="list-style-type: none"> • r22 = R22 • r404 = R404A • 507 = R507 • 134 = 134 • r717 = r717 (ammonia) • co2 = CO2 • 410 = r410

Table 5: Inputs Parameter Definitions

A11	Kind of probe of P1 & P2: it sets the kind of probes for suction sections: <ul style="list-style-type: none"> • Cur = 4 to 20 mA probe • Ptc = Ptc probe • ntc = NTC probe • rAt = ratiometric probe (0 to 5V)
A12	Adjustment of read out for the probe 1 at 4mA/0V: (-1.00 to AI3 bar; -15 to AI3 PSI; -100 to AI3 KPA)
A13	Adjustment of read out for the probe 1 at 20mA/5V: (AI2 to 100.00 bar; AI2 to 750 PSI; AI2 to 10000 KPA)
A15	Adjustment of read out for the probe 2 at 4mA/0V: (-1.00 to AI6bar; -15 to AI6 PSI)
A16	Adjustment of read out for the probe 2 at 20mA/5V: (AI5 to 51.00 bar; AI5 to 750 PSI)
A18	Kind of probe of P3 & P4: it sets the kind of probes for delivery sections: <ul style="list-style-type: none"> • Cur = 4 to 20 mA probe • Ptc = Ptc probe • ntc = NTC probe • rAt = ratiometric probe (0 to 5V)
A19	Adjustment of read out for the probe 3 at 4mA/0V: (-1.00 to AI10bar; -15 to AI10 PSI; -100 to AI10 KPA)
A110	Adjustment of read out for the probe 3 at 20mA/5V: (AI9 to 100.00 bar; AI9 to 750 PSI; AI9 to 10000 KPA)
A112	Adjustment of read out for the probe 4 at 4mA/0V: (-1.00 to AI13bar; -15 to AI13 PSI; -100 to AI13 KPA)
A113	Adjustment of read out for the probe 4 at 20mA/5V: (AI12 to 100.00 bar; AI12 to 750 PSI; AI12 to 10000 KPA)

NOTE After configuring or changing a parameter through E2, E2 will reboot the XC1011D device to save and committed changes.

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 For Technical Support call **833-409-7505** or email ColdChain.TechnicalServices@Copeland.com