quick start guide

E2 Setup with XC460D Version 2.1 Controller MODBUS Device for 527-0381

Overview

This document will guide you through setting up and commissioning the XC460D MODBUS device in the E2 controller.

STEP 1: Upload the Description File (527-0381) 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.

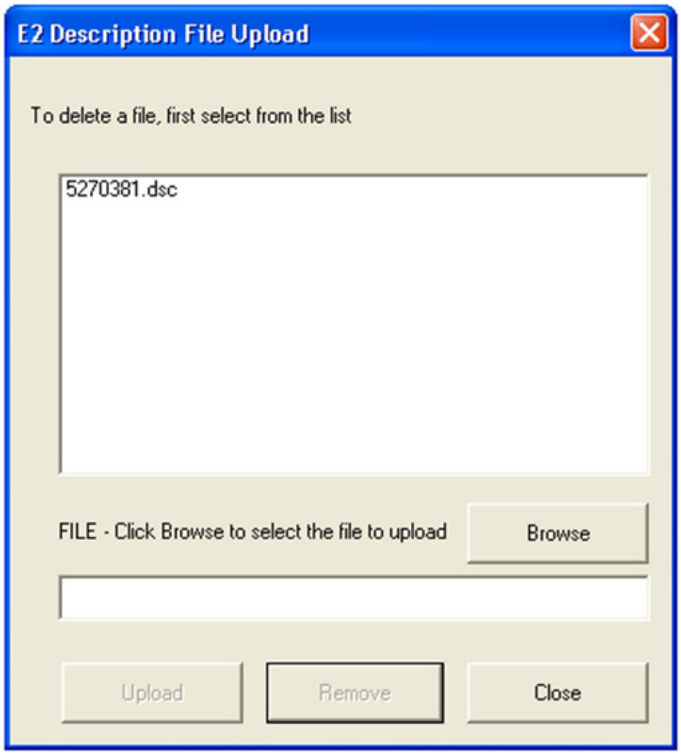

Figure 1 - E2 Description File

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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 button to save your changes.

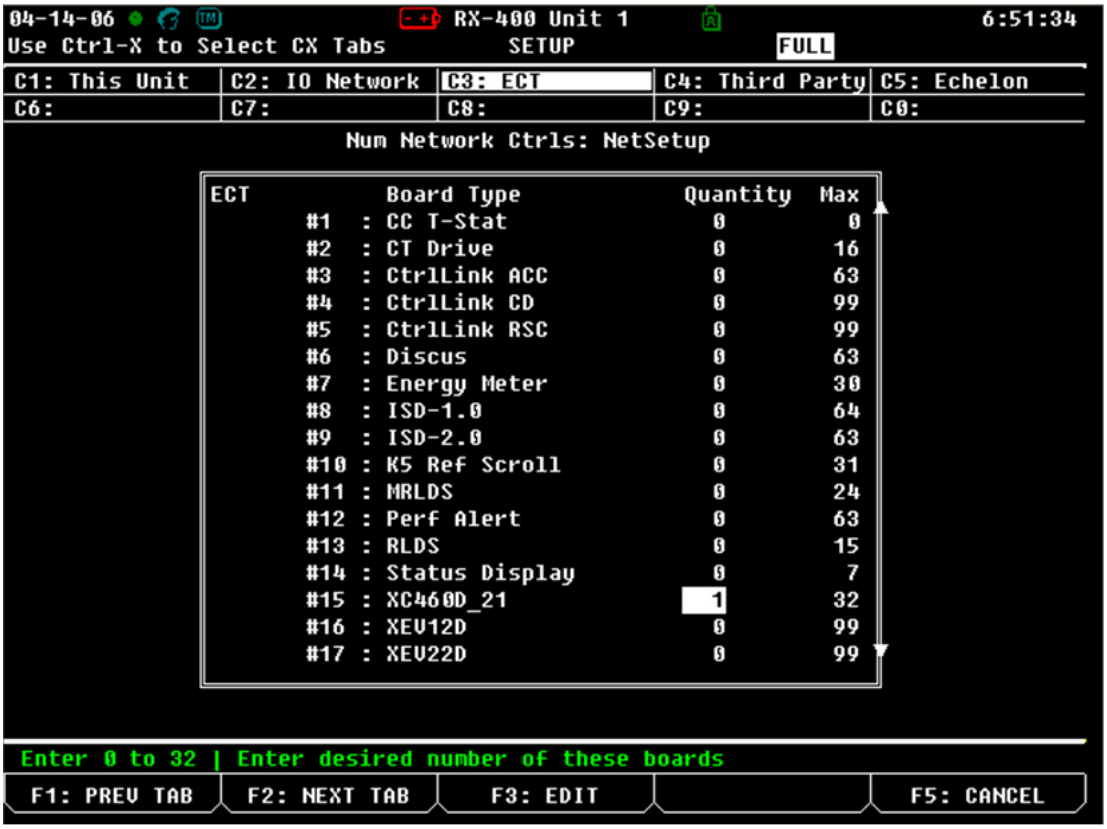

Figure 2 - Adding a Device to E2

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.

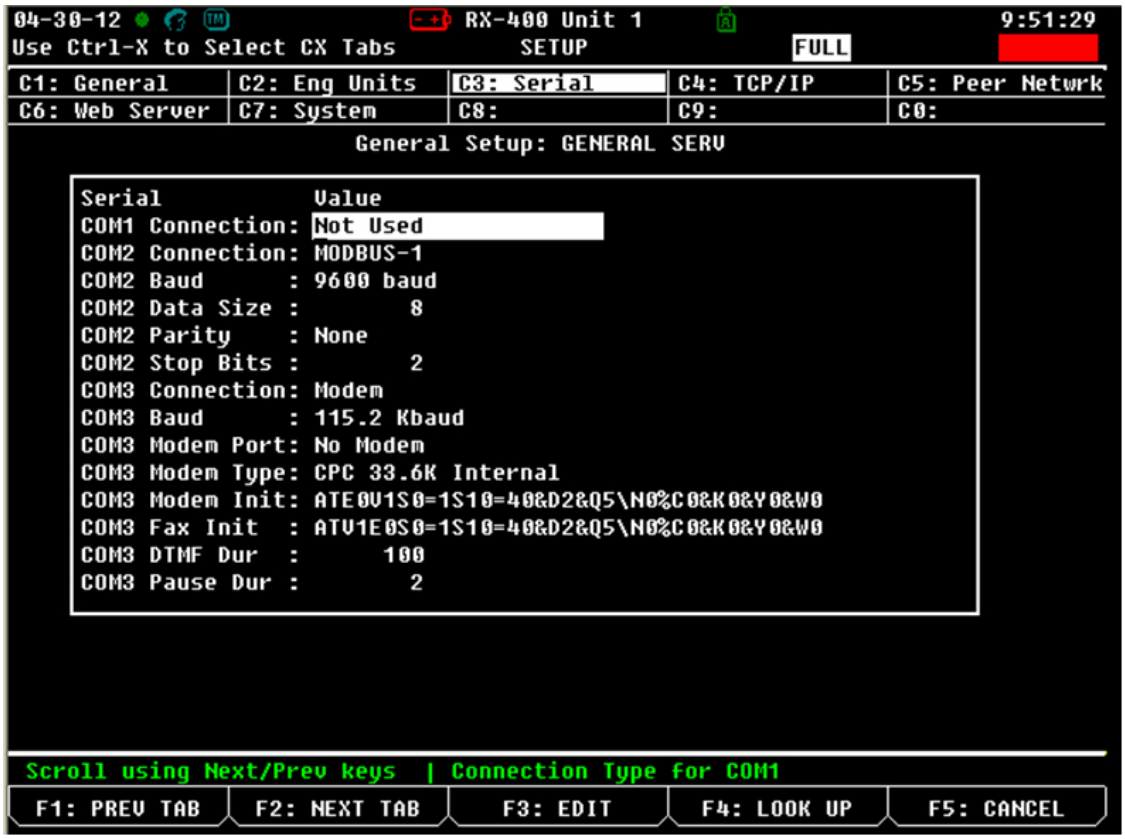

Figure 3 - Assigning the MODBUS Port

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

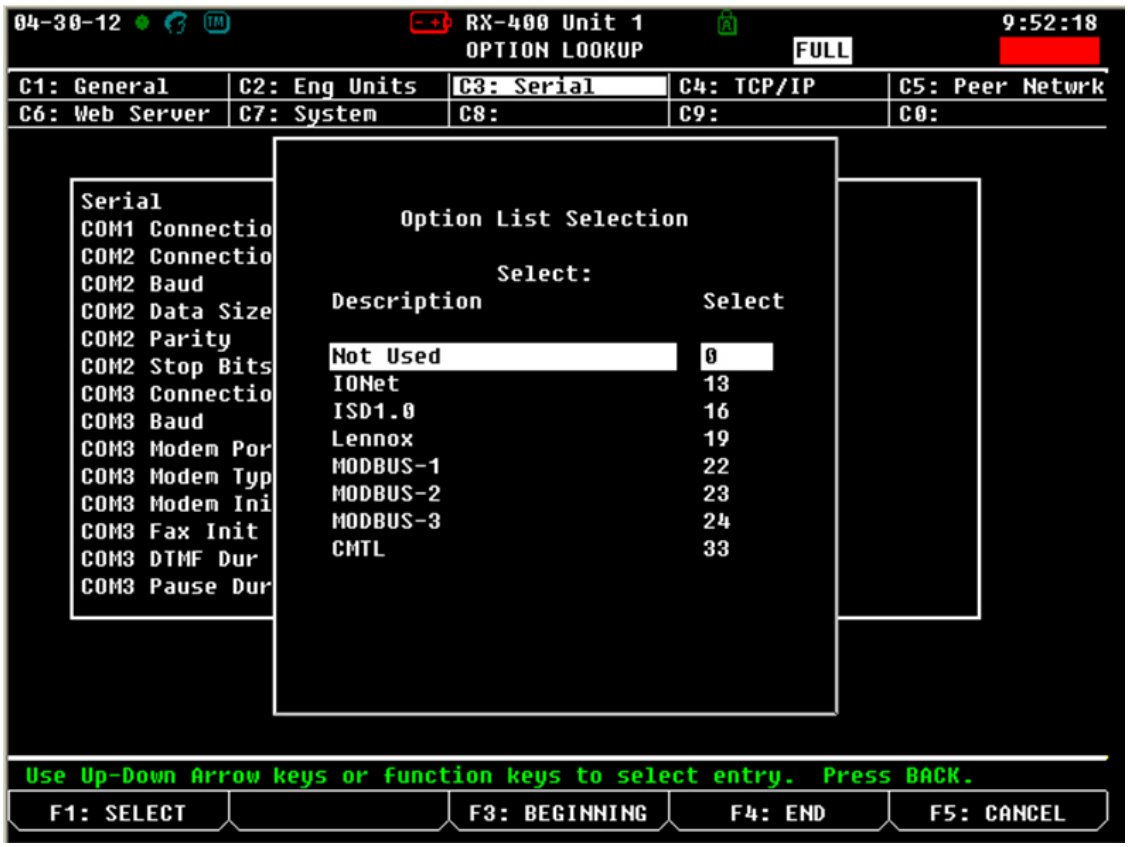

Figure 4 - MODBUS Selection

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

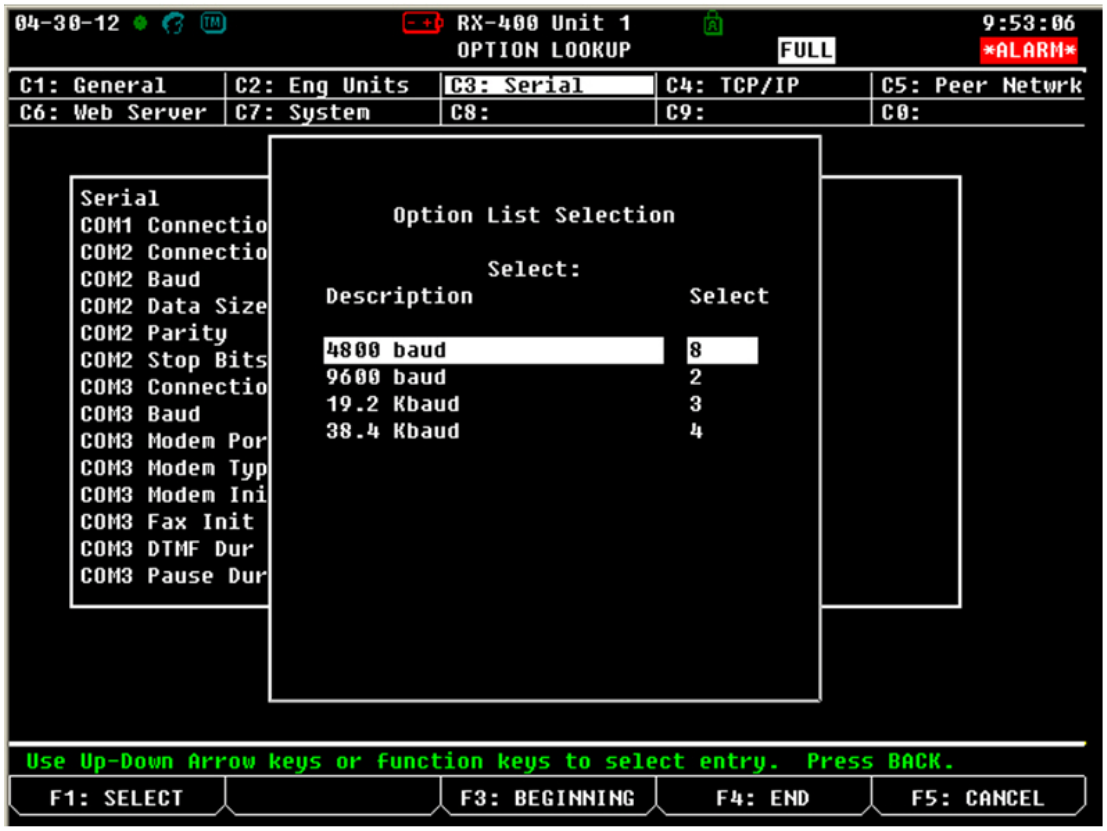

Figure 5 - Baud Rate Setting

STEP 4: Commission the Device

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

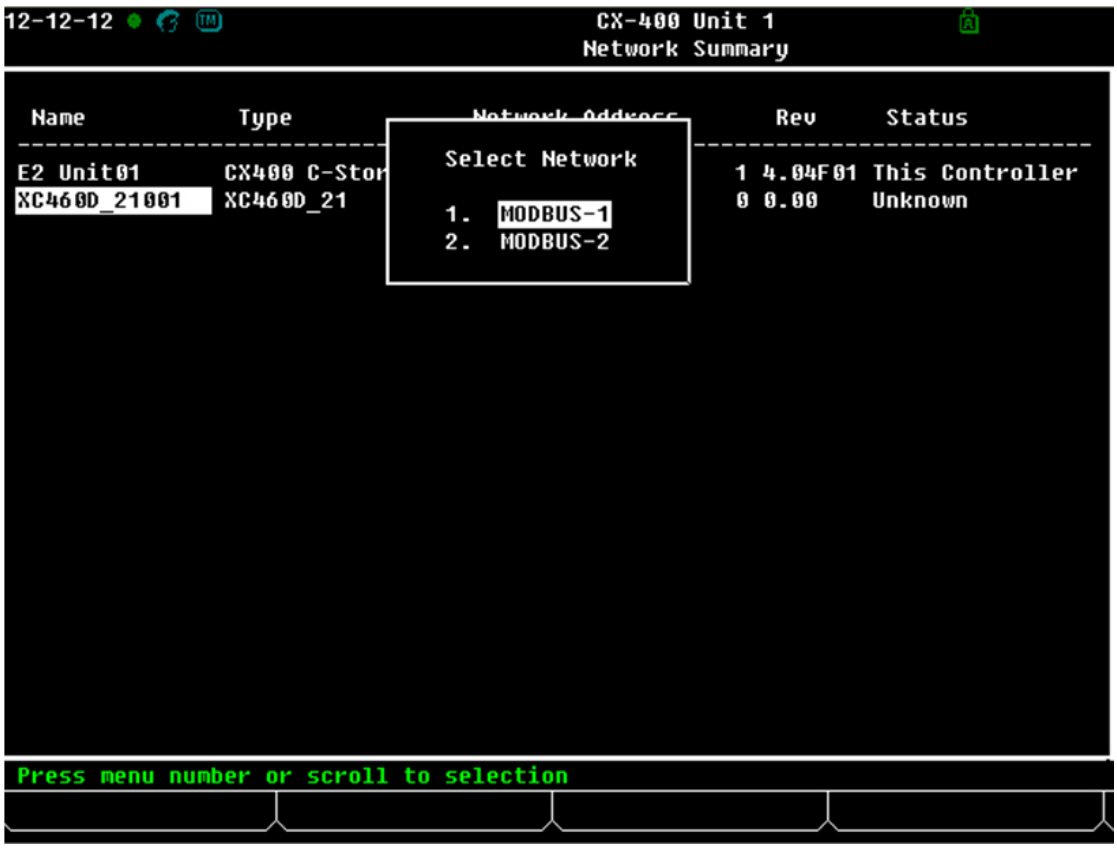

Figure 6 - Commissioning the Device

3. Select the MODBUS device address.

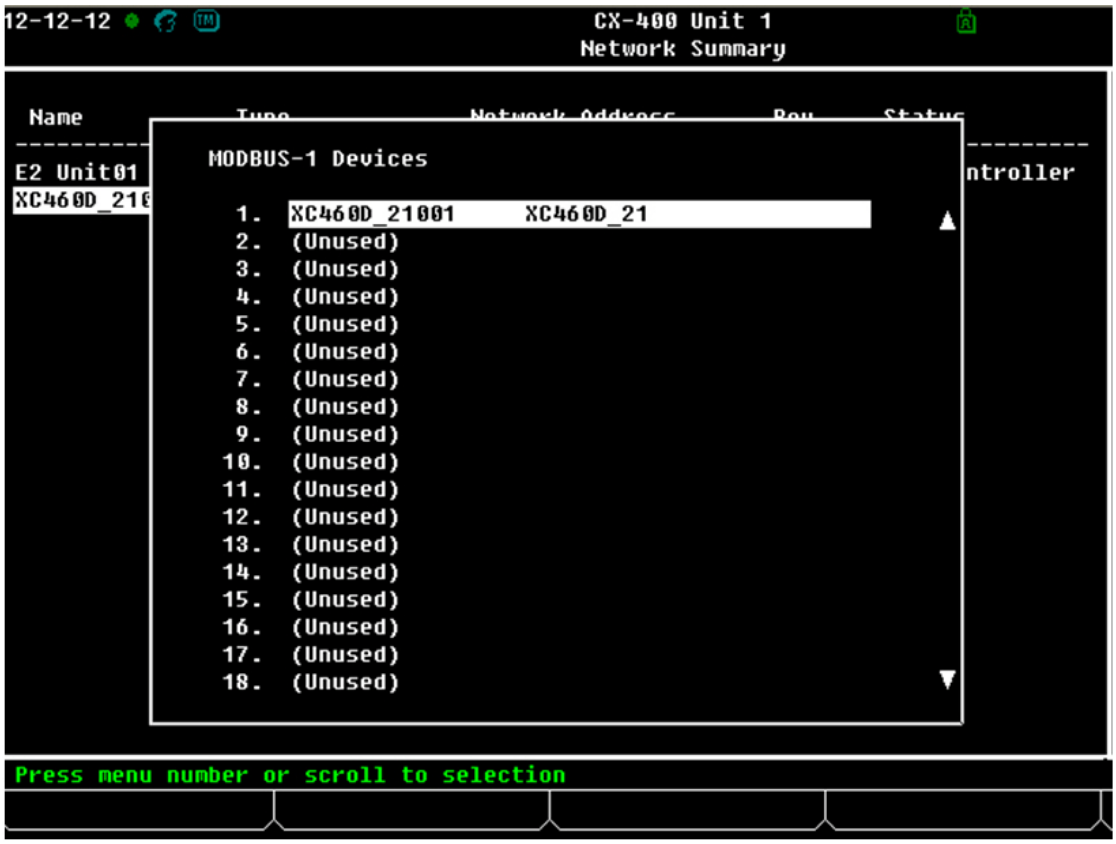

Figure 7 - Selecting MODBUS Address

Figure 8 - Selecting MODBUS Address

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

Step 5: Setting up the XC460D MODBUS Address and Wiring the Communication using TTL/RS485 Serial Converter

Figure 10 - XC460D User Interface

1. From the front display user interface, press and hold **SET** + **down arrow** key for 3 seconds. This will enter level "Pr1" parameter list, scroll until you see "Pr2", press **SET** and enter password 321. Then scroll until you see "Ad1" and set the address. Additionally, "Ad2" needs to be set to the same address as "Ad1".
2. Use a TTL/RS485 Serial Converter (318-7501) to enable communication between the device and the E2.

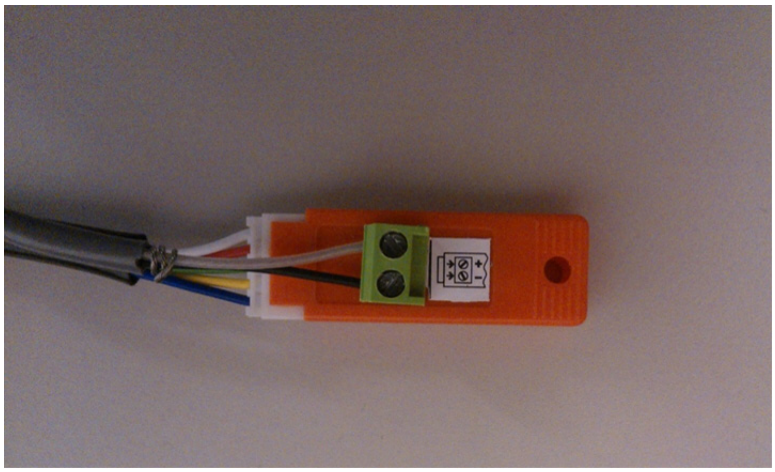

Figure 11 - TTL/RS485 Serial Converter

3. When wiring polarity, make sure the (+) RS485 side of the TTL/RS485 line is connected to the (-) side of E2 RS485. And the (-) side of the TTL/RS485 line connected to the (+) side of the E2 RS485.

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 manual.

Setpoint Parameter Definitions:

Setpoint Parameter	Definition
SEtc	setpoint for compressors
SEtF	setpoint for fans

Table 1 - Setpoint Parameter

Outputs Parameter Definitions:

Output Parameter	Definition
oA1, oA2, oA3, oA4, oA5, oA6 Outputs 1- 6 configuration:	Using these parameters 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 oA(i) parameter can work as: • Compressor: oAi = cPr, • Step: oAi = StP • Fan: oAi = FAn • Alarm: oAi = ALr • Not used: oAi = nu
CtyP Compressor Type:	It sets if compressors have the same power (homogeneous) or not. • dPo = compressor with different capacities: in this case the regulation is neutral zone. • StP = homogeneous: the regulation can be neutral zone or proportional band. • Scr = don't set it

Table 2 - Output Parameter

StP Valve Outputs Polarity:	Polarity of the outputs for capacity valves. It determines the state of the relays associated with the capacity valves (only for homogeneous and stepped-capacity compressors): • oP=valve enabled with open contact; • cL= valve enabled with closed contact.
PC1..PC6 Power of compressor 1...6:	For setting the power of single compressors. Available only if CtyP=dPo. The power is identified by a value (range 1to 255) proportional to the capacity of single compressor. E.I. 3 compressors with following capacity: 10, 20, 40 HP. The parameters have to be set in these way: PC1=10, PC2=20, PC3=40.
FtyP Freon Type:	Set the kind of freon used in the plant. r22 = R22; r404= R404A; 507= R507; 134=134; r717=r717 (ammonia)

Table 2 - Output Parameter

Inputs Parameter Definitions:

Probe 1 Configuration	
Input Parameter	**Definition**
Pbc	Probe 1 setting. Cur = 4 to 20 mA probe; ntc = NTC probe, Ptc = NTC probe.
PA04	Adjustment of read out for the Probe 1 (used only if Pbc=Cur). Corresponding to 4mA input signal, given by the suction probe (0 to 31 bar or 0 to 450 PSI or 0 to 3100KPA).
	Warning: Set a value correspondent to absolute pressure. If the transducer measures relative pressure increase the range of 1 bar.
	E.I. PP11 relative pressure transducer, range -0.5 to 12.0 bar. PA04=0.5 (-0.5+1); PA20=12.0 (11+1). PP30 relative pressure transducer, range: 0 to 30bar. PA04=1; PA20=31.
PA20	Adjustment of read out for the Probe 1 corresponding to 20mA input signal, given by the suction probe (0 to 31.0 bar or 0 to 450 PSI or 0 to 3100KPA), (See the warning for PA04).
CAL	Probe 1 calibration (-12.0 to 12.0 bar; -12.0 to 12.0°C or -20 to 20 PSI/°F).
Probe 2 Configuration	
P2P	Probe 2 presence: no = probe 2 absent; yES = probe 2 present.

Table 3 - Setpoint Parameter

Pbc2	Probe 2 setting. Cur = 4 to 20 mA probe; ntc = NTC probe, Ptc = NTC probe.
FA04	Adjustment of read out for the Probe 2 (used only if Pbc2=Cur). Corresponding to 4mA input signal, given by the suction probe (0 to 31 bar or 0 to 450 PSI or 0 to 3100KPA).
	Warning: Set a value correspondent to absolute pressure. If the transducer measures relative pressure increase the range of 1 bar.
	E.I. PP11 relative pressure transducer, range -0.5 to12.0 bar. PA04=0.5 (-0.5+1); PA20=12.0 (11+1). PP30 relative pressure transducer, range: 0 to 30bar. PA04=1; PA20=31.
FA20	Adjustment of read out for the Probe 2 corresponding to 20mA input signal, given by the suction probe (0 to 31.0 bar or 0 to 450 PSI or 0 to 3100KPA), (See the warning for PA04).
FCAL	Probe 2 calibration (-12.0 to 12.0 bar; -12.0 to 12.0°C or -20 to 20 PSI/°F)

Table 3 - Setpoint Parameter

Setpoints & Outputs Parameter List:

Fans parameters
Compressor parameters
Commons parameters

Name	°C	°F	bar	PSI	Level	Description	Range
SEtc	-18,0	0	2,3	33	--	Set point for compressors	LSE ÷ HSE
SEtF	35,0	95	15,1	220	--	Set point for fans	LSF ÷ HSF
oA1	CPr	CPr	CPr	CPr	Pr2	Outputs 1 configuration	cPr / FAn / StP / ALr / LLn / nu
oA2	CPr	CPr	CPr	CPr	Pr2	Outputs 2 configuration	cPr / FAn / StP / ALr / LLn / nu
oA3	CPr	CPr	CPr	CPr	Pr2	Outputs 3 configuration	cPr / FAn / StP / ALr / LLn / nu
oA4	FAN	FAN	FAN	FAN	Pr2	Outputs 4 configuration	cPr / FAn / StP / ALr / LLn / nu
oA5	FAN	FAN	FAN	FAN	Pr2	Outputs 5 configuration	cPr / FAn / StP / ALr / LLn / nu
oA6	FAN	FAN	FAN	FAN	Pr2	Outputs 6 configuration	cPr / FAn / StP / ALr / LLn / nu
ctYP	SPo	SPo	SPo	SPo	Pr2	Compressor type	SPo / dPo / Scr
StP	CL	CL	CL	CL	Pr2	Valve outputs polarity	oP / cL
Pc1	20	20	20	20	Pr2	Power of compressor 1	0 ÷ 255
Pc2	20	20	20	20	Pr2	Power of compressor 2	0 ÷ 255
Pc3	20	20	20	20	Pr2	Power of compressor 3	0 ÷ 255
Pc4	20	20	20	20	Pr2	Power of compressor 4	0 ÷ 255
Pc5	20	20	20	20	Pr2	Power of compressor 5	0 ÷ 255
Pc6	20	20	20	20	Pr2	Power of compressor 6	0 ÷ 255
FtYP	404	404	404	404	Pr2	Freon Type	r22 / 404 / 507 / 134 / 717

Figure 12 - Setpoints & Outputs Parameter List

Inputs Probes Parameter Lists:

Pbc	Cur	Cur	Cur	Cur	Pr2	Probe 1 setting	cur / Ptc / ntc
PA04	0,5	7	0,5	7	Pr2	Adjustment of read out for the Probe at 4mA	0.0 bar o 0 PSI ÷ PA20
PA20	12,0	174	12,0	174	Pr2	Adjustment of read out for the Probe at 20mA	PA04 ÷ 51.0 bar o 750 PSI
cAL	0	0	0	0	Pr2	Probe 1 calibration	-12.0 ÷ 12.0 °C o bar / -20 ÷ 20 °F o PSI
P2P	yES	yES	yES	yES	Pr2	Second probe presence	no / YES
Pbc2	Cur	Cur	Cur	Cur	Pr2	Probe 2 setting	cur / Ptc / ntc
FA04	1	14	1	14	Pr2	Adjustment of read out for the Probe at 4mA	0.0 bar o 0 PSI ÷ FA20
FA20	31	450	31	450	Pr2	Adjustment of read out for the Probe at 20mA	FA04 ÷ 51.0 bar o 750 PSI
FcAL	0	0	0	0	Pr2	Probe 2 calibration	-12.0 ÷ 12.0 °C o bar / -20 ÷ 20 °F o PSI

Figure 13 - Inputs Probes Parameter Lists

NOTE: After configuring or changing a parameter through E2, the E2 will reboot the XC460D device to save and commit changes.