

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.

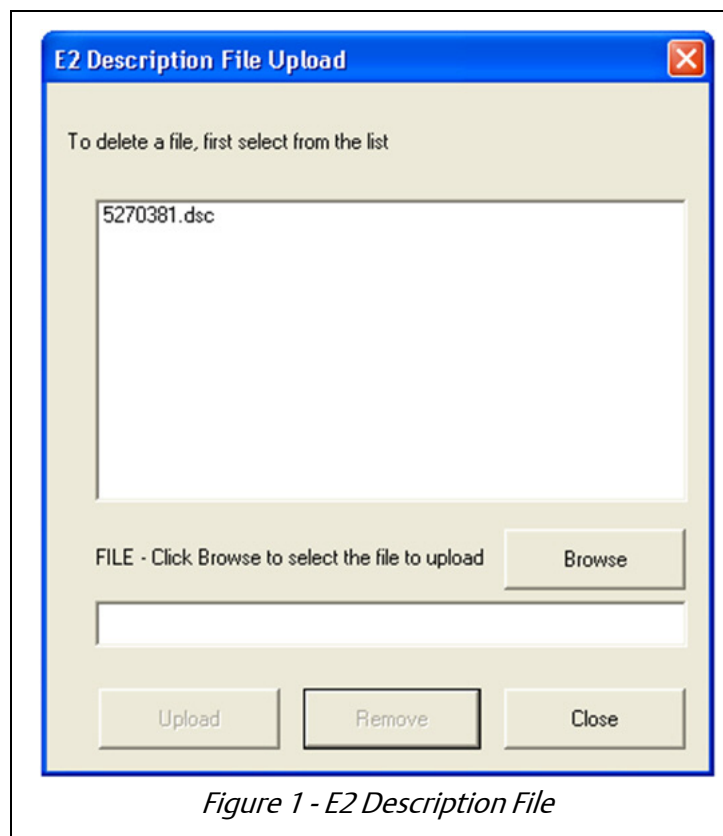


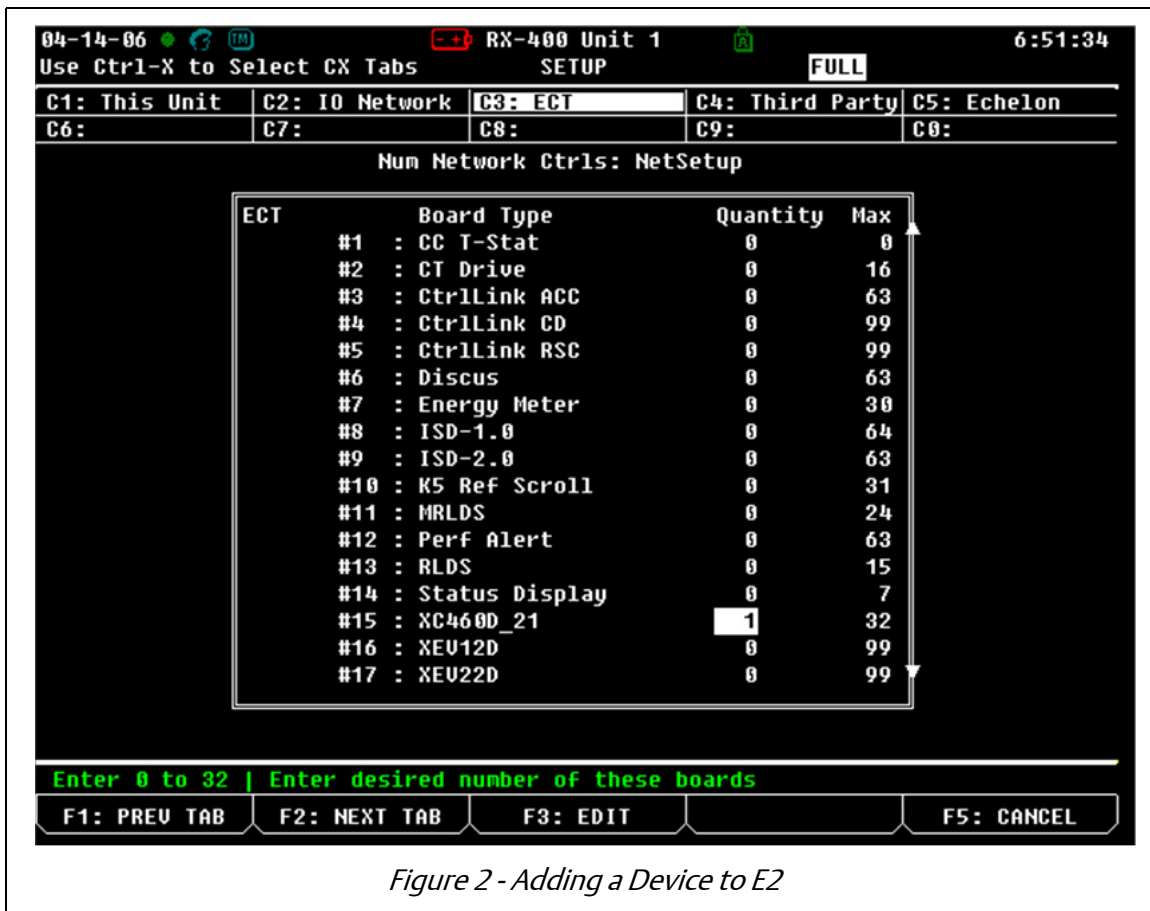


Figure 1 - E2 Description File

STEP 2: Once the Description File is Loaded, Add the Device to the E2 Controller

1. Press , **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.



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.

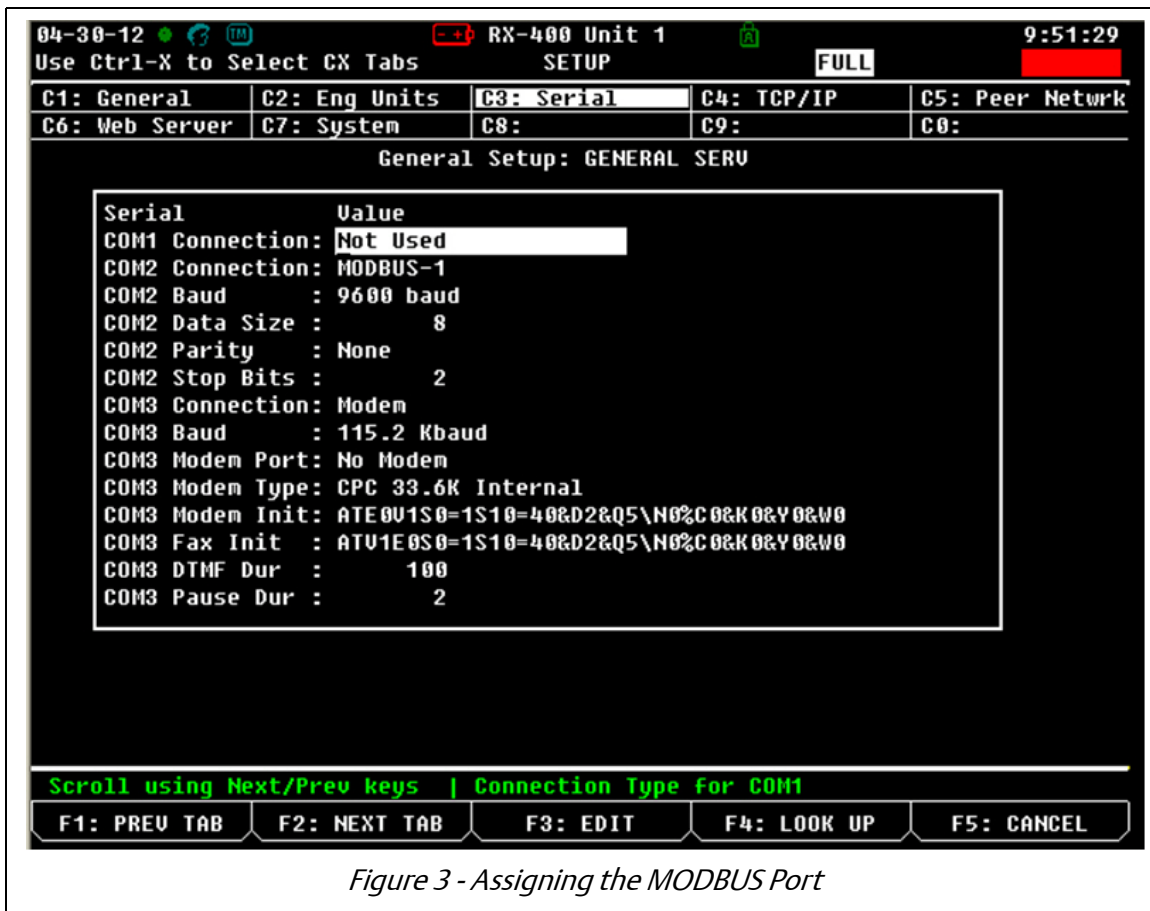


Figure 3 - Assigning the MODBUS Port

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

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

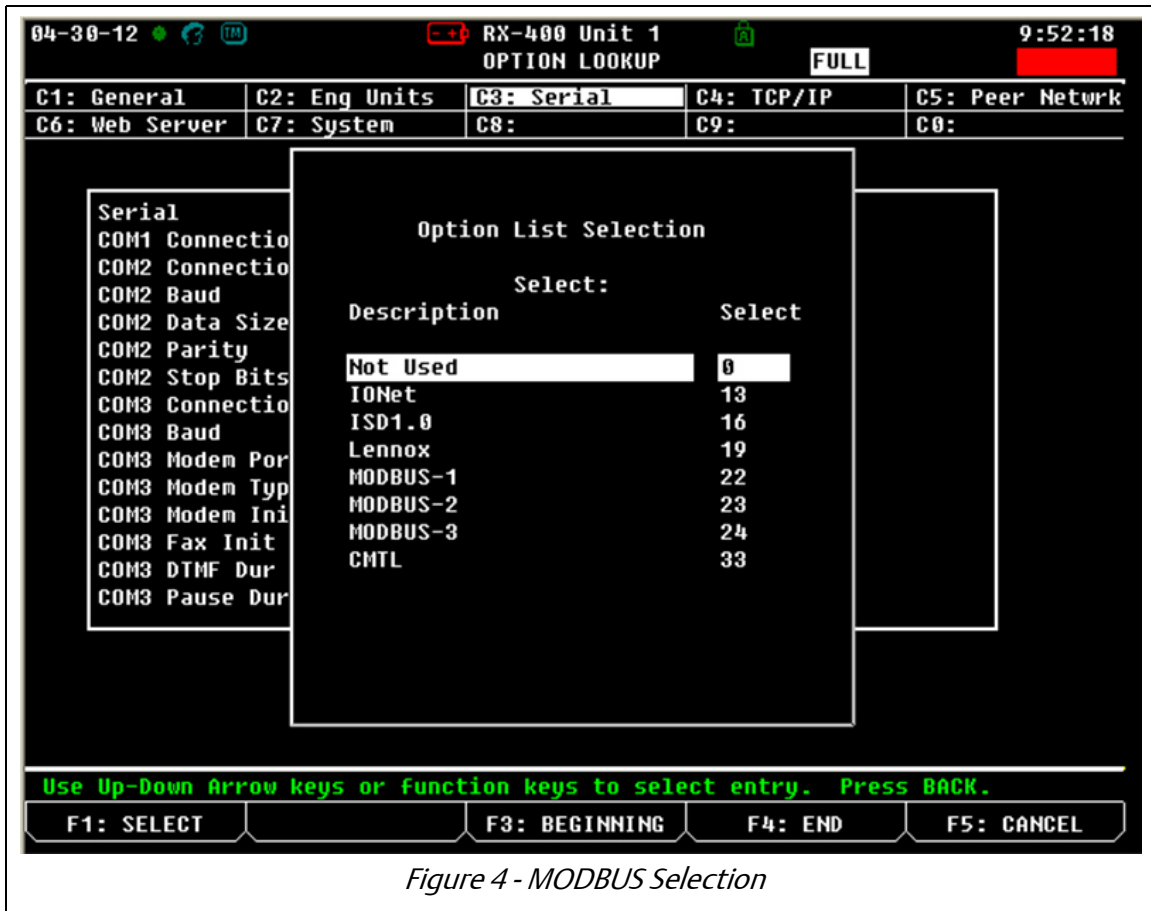


Figure 4 - MODBUS Selection

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

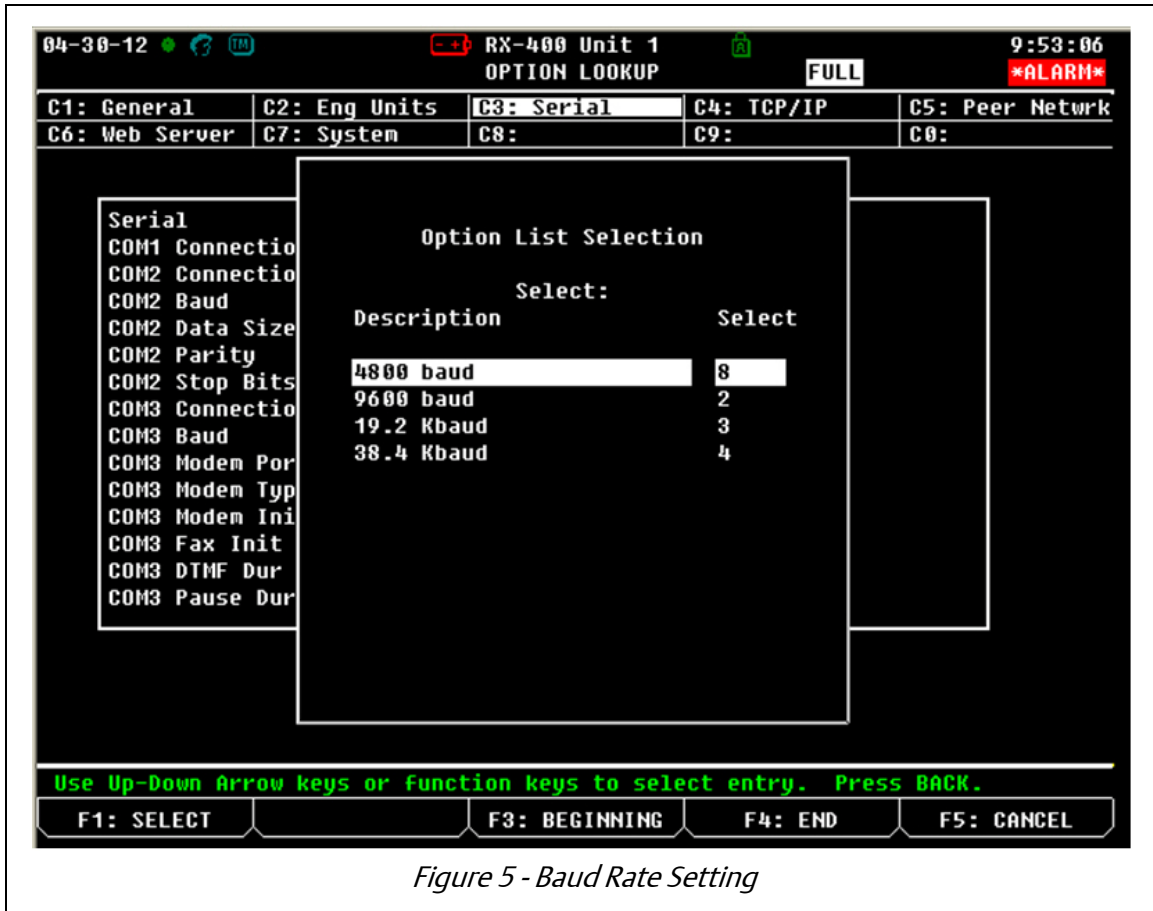


Figure 5 - Baud Rate Setting

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.

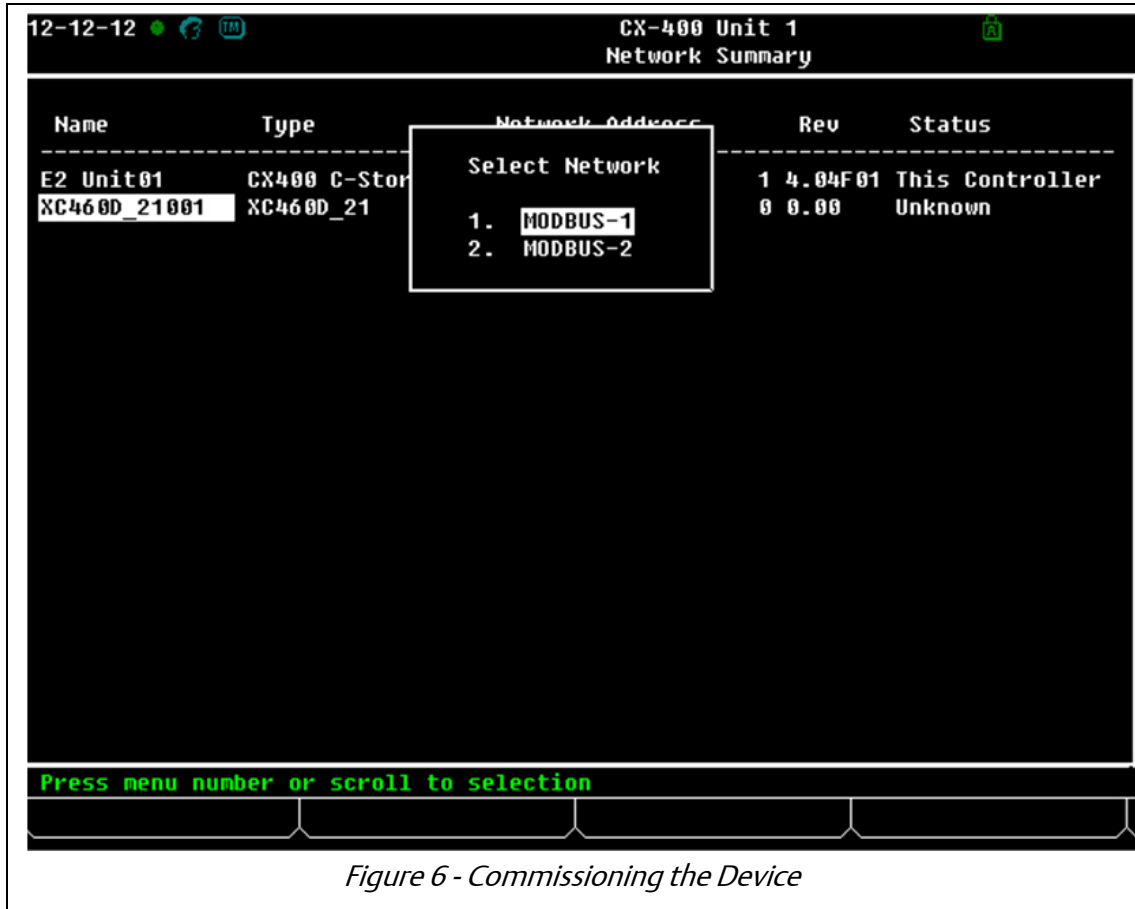


Figure 6 - Commissioning the Device

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

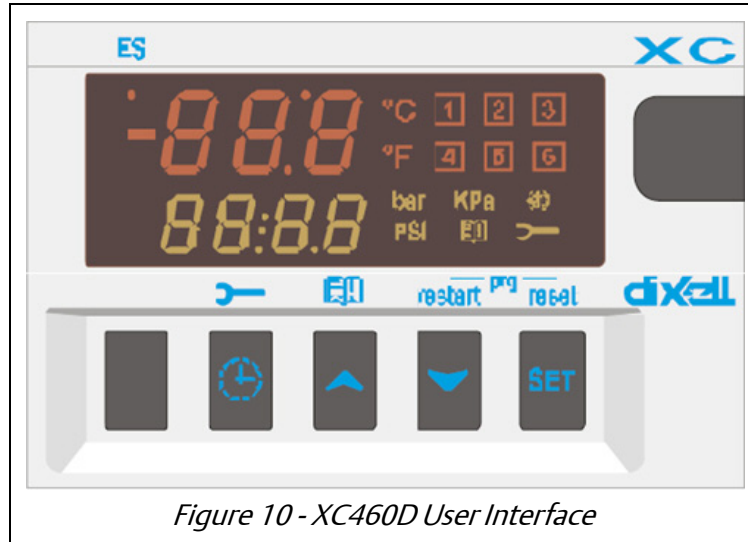


Figure 10 - XC460D User Interface

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.

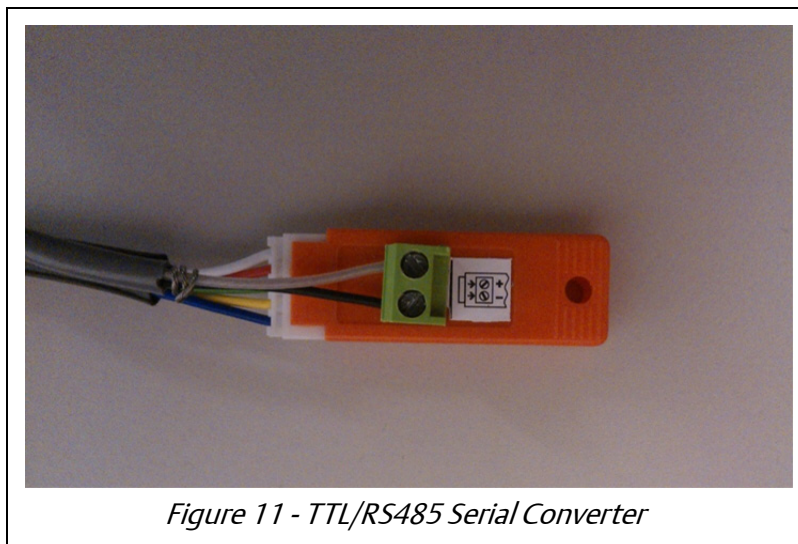


Figure 11 - TTL/RS485 Serial Converter

- 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: <ul style="list-style-type: none"> Compressor: $oA_i = cPr$, Step: $oA_i = StP$ Fan: $oA_i = FAn$ Alarm: $oA_i = ALr$ Not used: $oA_i = nu$ |
| CtyP Compressor Type: | It sets if compressors have the same power (homogeneous) or not. <ul style="list-style-type: none"> 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: | <p>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):</p> <ul style="list-style-type: none"> oP=valve enabled with open contact; cL= valve enabled with closed contact. |
| PC1..PC6 Power of compressor 1...6: | <p>For setting the power of single compressors. Available only if CtyP=dPo. The power is identified by a value (range 1 to 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.</p> |
| FtyP Freon Type: | <p>Set the kind of freon used in the plant. r22 = R22; r404= R404A; 507= R507; 134=134; r717=r717 (ammonia)</p> |

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). |
| |  <p>Warning: Set a value correspondent to absolute pressure. If the transducer measures relative pressure increase the range of 1 bar.</p> |
| | <p>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.</p> |
| 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 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. |
| 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.