quick start guide

E2 Setup with XC643CX Version 2.07 Controller MODBUS Device for 527-0368

Overview

The XC643CX is designed to manage one Copeland Digital compressor on a single-compressor condensing unit, or two compressors in parallel, with one digital compressor in addition to a fixed-speed compressor. The XC643CX also manages condenser fans based on pressure or temperature sensed in the low pressure suction (compressors) and high pressure (condenser) circuits. A special algorithm balances the run hours of the compressors to distribute the work load uniformly.

This document will guide you through setting up and commissioning the XC643CX MOD-BUS device in the E2 controller.

Note that this device requires E2 firmware version 3.01 or higher.

STEP 1: Upload the description file to the E2 controller.

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

Too	delete a file, first select from the list	
	5270191.dsc XC6430X.dsc	
F	TLE - Click Browse to select the file to upload	Browse
[Upload Remove	Close

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

- 5. Press (System Configuration), (Network Setup), and (Connected I/O Boards and Controllers).
- 6. Press (NEXT TAB) to go to the C3: ECT tab. You should see the device in the list. Enter the number of devices to add and press the D button to save the changes.

STEP 3: Assign the MODBUS port.

- 7. Press (System Configuration), (Remote Communications), and (TCP/IP Setup).
- 8. Press **F1** to go to the C3:Serial tab.

04-: Use	30-12 🔍 🥱 🛄 Ctrl-X to So	elect C	Tabs	RX-400 Unit SETUP	I 🙆 FULL		9:51:29
C1:	General	C2: En	g Units	C3: Serial	C4: TCP/IP	C5: Pee	r Netwrk
C6:	Web Server	C7: Sy	stem	C8:	C9:	C0:	
			Genera	1 Setup: GENER	AL SERV		
	Serial		alue				
	COM1 Conne	tion:	lot Used				
	COM2 Conne	tion: T	IODBUS-1				
	COM2 Baud	: 9	600 baud	1			
	COM2 Data 3	Size :	8				
	COM2 Parit	. : :	lone				
	COM2 Stop	Bits :	2				
	COM3 Conne	tion:	lodem				
	CUM3 Baud		15.2 KDa	iud			
	COM3 Modem	Tupo: (10 FICUEN 10 22 AV	Internal			
	COM3 Modem	Init: (TEQU190=	1010=102D205\	N6%C 62K 62V 62116		
	COM3 Fax I	it : 6	TU1FASA=	1S10=40&D2&05\	NAZCARKARYARWA		
	COM3 DTMF	Dur :	100	1010 Ions Ends I			
	COM3 Pause	Dur :	2				
Sci	roll using No	ext/Prev	keys	Connection Ty	pe for COM1		
E1	: PREU TAR	F2: N	FXT TAB	E3: EDIT	E4: LOOK UP	E5: 0	ANCEL
<u> </u>		<u> </u>		<u></u>		<u> </u>	
			Fi	aure 2 - Seri	al lab		

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9. Select the COM port to which the device is connected, press [F4] (LOOK UP) and select the appropriate MODBUS selection.

C1: General C2: Eng Units CB: Serial C4: TCP/IP C5: Peer Netw C6: Web Server C7: System C8: C9: C0: Serial Option List Selection C0: C0: C0H2 Connectio Option List Select: Description Select: C0H2 Parity Not Used O O C0H2 Stop Bits IONet 13 ISD1.0 16 C0H3 Baud IONet 10 10 IONet 10
Serial Option List Selection COM2 Connectio Select: COM2 Data Size Description COM2 Parity Not Used COM3 Connectio IONet 13 ISD1.0 COM3 Baud ISD1.0
COM3 Hoden Por Lemmux 17 COM3 Hoden Typ MODBUS-1 22 COM3 Hoden Ini MODBUS-2 23 COM3 Fax Init MODBUS-3 24 COM3 DTHF Dur CMTL 33 COM3 Pause Dur
p-Down Arrow keys or function keys to select entry. Press BACK.

10. Set the baud rate for the chosen port. Press **F4** to look up the appropriate speed.

		OPTION LOOKUP	FULL	-	*ALARM*
C1: General	C2: Eng Units	C3: Serial	C4: TCP/IP	C5: Peer	Netwrk
C6: Web Server	C7: System	C8:	C9:	C0:	
Serial COH1 Connect COM2 Baud COM2 Data Si COM2 Parity COM2 Stop Bi COM3 Connect COM3 Baud COM3 Moden T COM3 Moden T COM3 Fax Ini COM3 Fax Ini COM3 DIMF Du COM3 Pause D	tio Opt: ize Descript: its 4800 bau 9600 bau 19.2 Kbau 19.2 Kbau 19.3 Kbau 19.1 10 10 11 11 11 11	ion List Selectio Select: ion d ud ud	n Select 2 3 4		
Use Up-Down Arro	ow keys or funct	ion keys to sele	ct entry. Press	BACK.	
F1: SELECT		F3: BEGINNING	F4: END	F5: CA	INCEL
	Figuro A	- Satting the P	Raud Pata		

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STEP 4: Commission the device.

- 11. Press 🐠 , 🖻 (System Configuration), 🖥 (Network Setup), 🖥 (Network Summary).
- 12. Highlight the device name using the UP or DOWN arrow key on the E2 front panel and press [F4] (COMMISSION). Select the MODBUS port that you will be assigning the device to, and then select the MODBUS device address.



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

STEP 5: Wire the device using TTL/RS485 Serial Converter and set the address.

13. To set the address on the device, enter the level Pr2 parameter list. Press and hold the **SET** + ★ keys on the device for three seconds to enter level Pr1 parameter list. Scroll to **Pr2** and enter the password, **3210**. Scroll to **Adr** and then set the address.

14. Use a TTL/RS485 Serial Converter to enable communication between the device and the E2.



15. Make sure to *reverse* the wiring polarity between the TTL/RS485 and the E2.

- Connect the (+) RS485 side of the TTL/RS485 line to the (-) RS485 side of the E2.
- Connect the (-) side of the TTL/RS485 line to the (+) RS485 side of the E2.

Parameter Quick Start Guide

Pre-Set Value According to Refrigerant Type

PSIG								
	R-404A	R-22	R-410A	R-507	R-134A	CO2	R-407A	R-407C
SETC	55	43	78	55	17	159	42	37
SETF	220	181	295	220	114	369	194	179
LSE	30	23	58	34	-1	139	21	17
HFE	75	63	98	75	37	178	62	58
LSF	170	131	245	169	63	319	143	130
HSF	270	231	345	269	163	419	243	230
Pbd	10	10	10	10	10	10	10	10
Pb	58	58	58	58	58	58	58	58

Parameter	Value	Description	Range
SEtc	55	Setpoint for compressors	(low limit setpoint) LSE - HSE (high limit set- point)
SEtF	220	Setpoint for fans	(low limit setpoint) LSF - HSF (high limit set- point)
OA2	CPr	Output 2 configuration	nu, CPr
OA3	Fan	Output 3 configuration	nu, Fan
OA4	Fan	Output 4 configuration	nu, Fan
FtyP	404	Refrigerant type	r22, 134, 404, 407A, 407C, 410, 507, CO2
P2C	YES	Probe P2 presence	NO, YES
dEU	Pr4	Select probe temp or pressure type	tPr (NTC temp), Pr4 (4-20mA), Pr5 (0.5- 4.5V)
Pbd	10	Compressor control bandwidth	1.0-150.00 PSI
inC	300	PI integration time	0-999 seconds
tdS	20	Cycle modulation time for digital comp	10-40 seconds
don	0:00:30	Delay between compressors start	0-99.5 minutes, resolution in seconds
Pb	58	Proportional bandwidth for fan	1.0-150.00 PSI

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