# Carel EVD Evolution MODBUS device E2 setup for 527-0355

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

Note that open MODBUS description files require E2 firmware version 3.01FO1 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 of the description file and click Upload.
- 4. After uploading, you will need to reboot the E2 controller.

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Morris	23 Description 71 in Upland  To delay a list, for select how the 54  FLE - Och Boower to melet the file to upland  FLE - Och Boower to melet the file to upland  Coure	

Figure 1 - Description File Upload



- 1. From the E2 front panel (or via the terminal mode), press (Very), 7 (system configuration), and 9 (licensing).
- Press F1 (ADD FEATURE) and enter your license key. 2.

	Add License			-ALARH
Licensed Features- 06 For controller model Feature	/20/2011 - 14:03:48 - Re type: RX-300 Maximum In	v: 3.018 -Use l	816 License	
EUSE Area Controller Log Group Condenser Control Digital Combiner	Activate Feature		-8655-	CE44-081E
Analog Combiner Heat/Cool Control Time Schedule	Enter License key t activate a Feature:	0		
Power Monitoring Analog Sensor Ctr Loop/Sequence Ctr				
Digital Sensor Ct				
Conversion Cell	128	0		
Pulse Accunulation	16	0		
Analog Import Point	64			
HUAC Simulation	16	0		
Enter desired text				
				15: CANCEL
			^	Control Control Co

### Step 3: Once the license is activated, add the device to the E2 controller

- Press (Very), 7 (system configuration), 7 (network setup), 2 (connected I/O boards & controllers). 1.
- Press F2 (NEXT TAB) to go to the C4: third party tab. You should see the device in the list. 2. Enter the number of devices to add and press the **C** button to save your changes.

### Step 4: Assign a MODBUS port

- 1. Press (key, 7 (system configuration), 4 (remote communications), 3 (TCIP/IP setup).
- Select the COM port the device is connected to, press F4 (LOOK UP), and select the appropriate MODBUS selection. 2.

orn ocne	ral	C2: E	ing Units	C3: Serial	C4: TCP/1P	C5: Peer	Netwrk
C6:		C7: 5	iysten	C8:	C9:	C0:	
			Genera	1 Setup: GENERAL	L SERV		
Seri	a1		Value				
COHI	Connec	tion:	Serial			T	
COH	Baud		115.2 Kba	ud			
COH2	Connec	tion:	MODBUS-1				
COH2	Baud		19.2 Kbau	d			
COH2	Data S	ize :	8				
COH2	Parity		None				
COH2	Stop B	its :	1				
COH3	Connec	tion:	Hoden				
COH3	Baud		9600 baud				
COHS	Hoden	Port:	No Modem				
COH3	Hoden	Type:	CPC 33.6K	Internal			
COHS	Hoden	Init:	ATEOU1SO-	1S10-40&D2&Q5\N	0%C 0&K 0&Y 0&W 0		
COHS	Fax In	it :	ATU1E0S0-	1S10=40&D2&Q5\N	8\$C 0&K 0&Y 0&W 0		
COH3	DTHF D	ur :	100				
COHS	Pause	Dur :	2				
CONV	Connec	tion:	HODBUS-2			100	
	Baud	-	19.2 Kbau	d j			

Figure 3 - COM port selection

C1: Ge	neral	C2:	Eng Units	C3: Serial	C4: TCP/IP	C5: Peer Netwrk
C6:		C7:	System	C8:	<u> </u>	C0:
	rial HH Conne HH Boud H2 Conne H2 Baud H2 Data H2 Data H2 Paril H2 Stop H3 Hode H3 Hode H3 Hode H3 Hode H3 Gonna H3 Gonna H4 Gonna	ectio Size ty Bits ectio n Por n Typ n Ini Init ectio	Opt Descript <u>Not Used</u> IONet ISD1.0 Lennox HODBUS-1 HODBUS-3 CHTL	ion List Select; Select: ion	Select 8 13 16 19 22 23 24 33	
Use Up	H4 Paris	row ke	eys or func	tion keys to sel	ect entry. Pr	ess BACK.

Figure 4 - MODBUS selection

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

onnectio Option List Selection aud Select: Description Select
ata size 4800 baud 8   top Bits 9600 baud 2   onnectio 19.2 Kbaud 3   aud 38.4 Kbaud 4   oden Por oden Typ   oden Ini ax Init   THF Dur ause Dur   onnectio aud

Figure 5 - Baud rate selection

# Step 5: Set up the baud rate on the Carel EVD Evolution device

- 1. The baud rate can be configured using the user interface <u>(a separate device and is required for this device to</u> <u>communicate with the E2)</u> for Carel EVD Evolution. Refer to *Modifying the manufacturer parameters* section for password and instructions on configuring the baud rate and network address using the user interface device.
  - The *Configuration* tab allows you to change the network address of the device to match the E2 network address setting.
  - The Advanced > Network Settings tab allows you to change the baud rate to match the E2 baud rate setting.

#### Modifying the manufacturer parameters

The manufacturer level is used to configure all the driver parameters, service parameters, and the parameters relating to managing alarms, probes, and valve configuration.

After fitting the display on top of the expansion valve:

To modify a manufacturer parameter using the user interface device:

- 1. Press the **Esc** key several times to enter the standard display.
- 2. Press the Prg key to show the PASSWORD request screen.

3. Press the **Enter** key and enter the password for the manufacturer level: **66**, starting with the right-most digit and pressing **Enter** after each digit.

PASSWORD 0001
Prg Esc

Figure 6 - Enter manufacturer level password

4. If the password entered is correct, the list of parameter categories is displayed (Figure 7):

CONFIGURATION     PROBES     CONTROL     SPECIAL     ALARM CONFIGURATION     VALVE	
Prg Esc 🕇 🔶	

Figure 7 - Parameter categories

- 5. Press the UP or DOWN key to select and press Enter to access the first parameter.
- 6. Press the UP or DOWN key to select the parameter to be set and press Enter to go to the parameter value.
- 7. Press the UP or DOWN key to change the parameter value.
- 8. Press Enter to save the new value.
- 9. Repeat steps 6, 7, and 8 to modify the other parameters.
- 10. Press **Esc** to exit the screen.

- 11. Go to the list of parameter categories (*Figure 7*).
- 12. Select Configuration and press Enter to access the first parameter, Network address (Figure 8).



Figure 8 - Configuration > Network Address

- 13. Press Enter to move to the parameter value.
- 14. Press the UP or DOWN key to configure the value (Figure 9).

Configuration Network address	1/3
Prg Es	

Figure 9 - Network address value

15. Press Enter to confirm and save the new value (Figure 10).

Configuration Network address	1/3
Prg Esc 🕇 🔶	P

Figure 10 - Confirming the new parameter value

16. Press the UP or DOWN key to access the refrigerant parameter.

Prg Esc	

Figure 11 - Refrigerant parameter

# Step 6: After configuring the baud rate, the device must be commissioned

- 1. Press (Menu), 7 (system configuration), 7 (network setup), 1 (network summary).
- 2. Highlight the device and press **F4** (COMMISSION). Select the MODBUS port that you will be assigning the device and then select the MODBUS device address.

Nane	Туре	Notwork Adde	ess	Rev	Status
E2 Unit01 EVSE001	RX300-Refrî EVSE	Select Network 1. MODBUS-1 2. MODBUS-2	1	3.01816 0.00	This Controller

Figure 12 - Network Summary screen

HODBUS-1 Devices		ntroller
51155 0.04	ENC	
2 (linused)	LOSE	
2 (Unused)		
h (linused)		
5 (linused)		
6 (linused)		
7 (linused)		
R (linused)		
9 (linused)		
10. (linused)		
11. (linused)		
12 (linused)		
13. (linused)		
th. (linused)		
15. (linused)		
16. (Unused)		
17. (Unused)		
18. (Unused)		<b>V</b>
	1. <u>EUSE 001</u> 2. (Unused) 3. (Unused) 4. (Unused) 5. (Unused) 6. (Unused) 7. (Unused) 8. (Unused) 10. (Unused) 11. (Unused) 12. (Unused) 13. (Unused) 14. (Unused) 15. (Unused) 16. (Unused) 17. (Unused) 18. (Unused)	1.   EUSE 001   EUSE     2.   (Unused)     3.   (Unused)     4.   (Unused)     5.   (Unused)     6.   (Unused)     7.   (Unused)     9.   (Unused)     10.   (Unused)     11.   (Unused)     12.   (Unused)     13.   (Unused)     14.   (Unused)     15.   (Unused)     16.   (Unused)     17.   (Unused)     18.   (Unused)

Figure 13 - MODBUS port assignment

06-20-11 🔍 🕜 📟		RX-300 Unit 1	14:24:5 •ALARH
Nane E2 Unit01 EVSE001	Tunn	EUSE001 Natural Address Davi	etstar ntroller
	Setting Physi	cal Address for: EVSE001	
	Specify Physi Addre	cal Address OF Controller	
Enter value and	Press ENTER to	Set Address	ES: CANCEL

Figure 14 - Device Physical Address setting

# Step 7: After assigning the MODBUS address of the device and verifying that the connections are wired properly, the device should go online

• Make sure the polarity is reversed on the E2.



Figure 15 - Wiring diagram

Controller Name			
Carel EV0001			
INDIVIDUAL TEMPERATURES	-99.0		
S1 Frude	-06.0	DI1 Statuc	055
S2 Probe	-22 8	DI2 Status	OFF
Sh Probe	6.00	Probe S1 01arm	000
34 11000	-00-3	Probe S2 Alarn	ON
Superheat A	681 7	Probe S2 Alarm	01
Superheat B	601.7	Probe S4 Alarm	ON
UALUE A			
Regulation Backup (Supervisor)	OFF	Regulation Backup (Supervisor	) OFF
Control Setpoint A	0	Control Setpoint B	0
Valve Opening A	8	Valve Opening B	9
Suction Temp A	-86.3	Suction Temp B	-86.3
Current Unit Cooling Capacity	8	Current Unit Cooling Capacity	0
Evaporator Temperature A	-688	Evaporator Temperature B	-688
Evaporator Pressure A	-33.0	Evaporator Temperature B	-33.0

Figure 16 - E2 Carel status screen



#### About Copeland

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