CAREL

EVD Evolution Series

Display mode

A) PRESS Esc one or more times to switch to the standard display.

PRESS ARROW "UP" or "DOWN" to display a graph, the wiring diagram and the main values.

PRESS "ESC" to exit the display mode.

Please note

Please read these instructions in conjunction with the parameter list and the installation manual.
It is recommended that the controllers be programmed before connecting or activating the plant to be controlled.

An automatic setup procedure appears on the EVD Evo display at startup. The 4 main parameters need to be configured and confirmed to start the driver operation.

Literature available

Installation manual:
+0302205EN EVD Evolution
+0302206EN EVD Evolution Twin
Technical leaflets:
+050004150 EVD Evolution and graphic display
+050004155 USB-tLan converter for EVD Evo
+050004165 Battery charge and battery for EVD Evo
+050004170 EVD Evolution Twin and graphic display

Meaning of the LEDs

Key:

LED	ON	OFF	Flashing
NET	Connection available	No connection	Communication error
OPEN	Opening valve	-	Driver disabled (*)
CLOSE	Closing valve	-	Driver disabled (*)
🔔	Active alarm	-	-
⏻	Driver powered	Driver not powered	-

(*) Awaiting completion of the initial configuration

Service parameters (A)

A) PRESS Esc one or more times to switch to the standard display.

B) PRESS "Prg" to display the password screen.

C) PRESS "ENTER" and enter the password "22", then PRESS "ENTER".

D) PRESS ARROW "UP" or "DOWN" until reaching the parameter to be modified.

E) PRESS "ENTER" to access the value. Then PRESS ARROW "UP" or "DOWN" to increase or decrease the value.

G) PRESS "ENTER" to save the value.

Repeat the operations D to G to set other parameters.

H) PRESS "Esc" to permanently save the new values.

Manufacturer parameters (C)

I) Follow the points A) to C) from the service parameters access with password "66", then PRESS "ENTER".

J) PRESS ARROW "UP" or "DOWN" until reaching the category wanted.

K) PRESS "ENTER" to access the first parameter in the category. Then PRESS ARROW "UP" or "DOWN" until reaching the parameter to be modified.

L) PRESS "ENTER" to access the value. Then PRESS ARROW "UP" or "DOWN" to increase or decrease the value.

M) PRESS "ENTER" to save the value.

Repeat the operations K to M to set other parameters.

N) PRESS "Esc" to permanently save the new values.

Key:

1	green
2	yellow
3	brown
4	white
8	ratiometric pressure transducer - evaporation pressure
9	NTC suction temperature
10	digital input 1 configured to enable control
11	free contact (up to 230 Vac)
12	solenoid valve
13	alarm signal

CAREL EXV

* The transformer size depends on the driver used:
For CAREL valves driver use a 20VA transformer
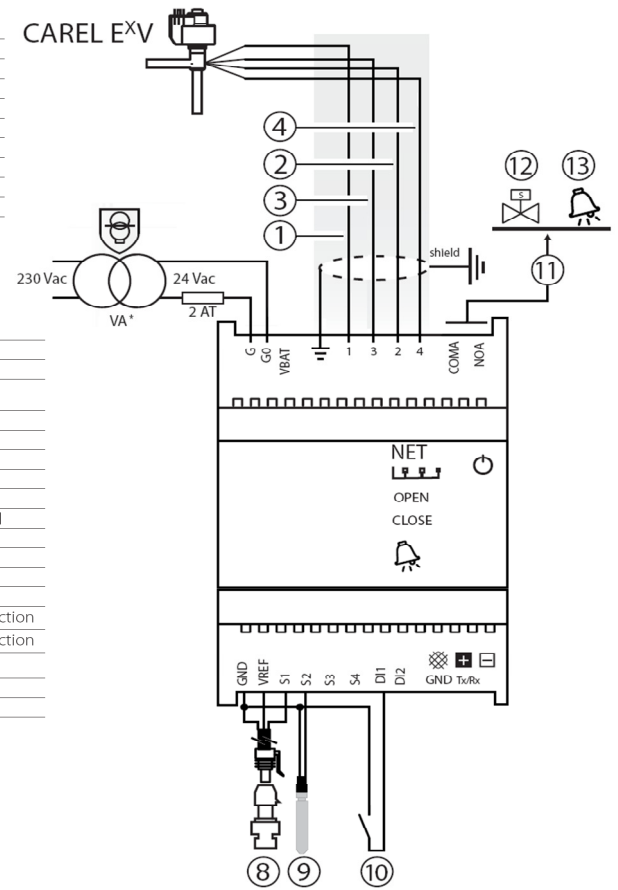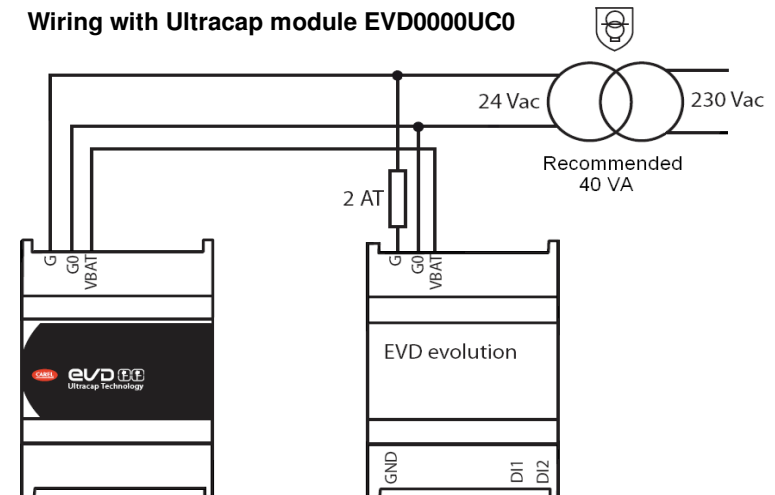For universal valves driver use a 40VA transformer

Terminal	Description
G, G0	Power supply
VBAT	Emergency power supply
⏚	Functional earth
1,3,2,4	Stepper motor power supply
COM1, NO1	Alarm relay
GND	Common for the signals
VREF	Power to active probes
S1	Probe 1 (pressure) or 4 to 20 mA external signal
S2	Probe 2 (temperature) or 0 to 10 V external signal
S3	Probe 3 (pressure)
S4	Probe 4 (temperature)
DI1	Digital input 1
DI2	Digital input 2
▨	Terminal for tLAN, pLAN, RS485, Modbus® connection
⊞	Terminal for tLAN, pLAN, RS485, Modbus® connection
⊟	Terminal for pLAN, RS485, Modbus® connection
aa	service serial port (remove the cover to access)
b	serial port

The order of the valve connection cable is **1 3 2 4**.

Notes on earthing:
The shield of the valve cable MUST be earthed.
We recommend the use of 1 transformer per driver.
Respect the polarity G - G0: If earthing the secondary of the transformer (24V), only earth G0.

Wiring with Ultracap module EVD0000UC0

EVD Evolution Summary of operating parameters

Parameter	Unit	Type	Min.	Max.	Def.	New
CONFIGURATION						
Network address	-	A	1	207	198	
Refrigerant (1=R22, 2=R134a, 3=R404a, 4=R407C, 5=R410a, 6=R507a, 7=R290,	-	A	1	22	3	
8=R600, 9=R600a, 10=R717, 11=R744, 12=R728, 13=R1270, 14=R417a, 15=R422d,						
16=R413a, 17=R422a, 18=R423a, 19=R407a, 20=R427a, 21=R245Fa, 22=R407F)						
Valve (1=Carel EXV, 2=Alco EX4, 3=Al EX5, 4=Al EX6, 5=Al EX7, 6=Al EX8 330Hz,	-	A	1	22	1	
7=Al EX8 500Hz, 8=Sporlan SEI0.5-11, 9=Sp SER1.5-20,10=Sp SEI30, 11=Sp SEI50,						
12=Sp SEH100, 13=Sp SEH175,14=Danfoss ETS12.5-25B, 15=Dan ETS50B,						
16=Dan ETS100B, 17=Dan ETS250, 18=Dan ETS400, 19=2 Carel EXV together,						
20=Sporlan SER(I)G,J,K, 21=Danfoss CCM 10-20-30, 22=Dan CCM40)						
Probe S1 (default ratiometric -1 to 9.3 bar)	-	A	1	20	3	
Main control (1=centralised cold room, 2=self contained CR, 3=perturbated CR,	-	A	1	21	1	
4=subcritical CO2 CR, 5=R404a cond for subcritical CO2, 6=AC/chiller w plate						
evaporator, 7=AC/chiller w shell tube evap, 8=AC/chiller w battery coil evap,…)						
Probe S2 (default Carel NTC)	-	A	1	4	1	
Auxiliary control (default disabled)	-	A	1	23	1	
Probe S3 (default ratiometric -1 to 9.3 bar)	-	A	1	20	3	
Relay configuration (default alarm relay)	-	A	1	6	1	
Probe S4 (default Carel NTC)	-	A	1	3	1	
DI2 configuration (default disabled)	-	A	1	7	1	
Display main variable 1 (default superheat)	-	C	1	23	5	
Display main variable 2 (default valve opening)	-	C	1	23	1	
S1 probe alarm management (default valve at fixed position)	-	C	1	4	3	
S2 probe alarm management (default valve at fixed position)	-	C	1	4	3	
S3 probe alarm management (default no action)	-	C	1	3	1	
S4 probe alarm management (default no action)	-	C	1	3	1	
Unit of measure: °C/K/barg, °F/psig	-	C	-	-	°C	
DI1 configuration (default regulation start/stop)	-	A	1	7	5	
PROBES						
S1 calibration offset	bar	C	-60	60	0	
S1 calibration gain on 4-20mA	-	C	-20	20	1	
S1 pressure MINIMUM value	bar	C	-20	MAX	-1	
S1 pressure MAXIMUM value	bar	C	MIN	200	9.3	
S1 alarm MINIMUM pressure	bar	C	-20	MAX	-1	
S1 alarm MAXIMUM pressure	bar	C	MIN	200	9.3	
S2 calibration offset	°C	C	-20	20	0	
S2 alarm MINIMUM temperature	°C	C	-60	MAX	-50	
S2 alarm MAXIMUM temperature	°C	C	MIN	200	105	
S3 calibration offset	bar	C	-60	60	0	
S3 calibration gain on 4-20mA	-	C	-20	20	1	
S3 pressure MINIMUM value	bar	C	-20	MAX	-1	
S3 pressure MAXIMUM value	bar	C	MIN	200	9.3	
S3 alarm MINIMUM pressure	bar	C	-20	MAX	-1	
S3 alarm MAXIMUM pressure	bar	C	MIN	200	9.3	
S4 calibration offset	°C	C	-20	20	0	
S4 alarm MINIMUM temperature	°C	C	-60	MAX	-50	
S4 alarm MAXIMUM temperature	°C	C	MIN	200	105	

Parameter	Unit	Type	Min.	Max.	Def.	New
CONTROL						
Superheat set point	K	A	LSH	180	11	
Valve opening at start-up	%	A	0	100	50	
Valve opened in standby (0=disabled=valve closed, 1=enabled=valve open 25%)	-	C	0	1	0	
Start-up delay after defrost	min	C	0	60	10	
Hot gas bypass temperature set point	°C	A	-60	200	10	
Hot gas bypass pressure set point	bar	A	-20	200	3	
EPR pressure set point	bar	A	-20	200	3.5	
PID proprtional gain	-	C	0	800	15	
PID integral time	s	C	0	1000	150	
PID derivative time	s	C	0	800	5	
LowSH protection threshold	K	A	-40	SH st	5	
LowSH protection integral time	s	C	0	800	15	
LOP protection threshold	°C	A	-60	MOP	-50	
LOP protection integral time	s	C	0	800	0	
MOP protection threshold	°C	A	LOP	200	50	
MOP protection integral time	s	C	0	800	20	
Enable manual valve position	-	A	0	1	0	
Manual valve position	step	A	0	9999	0	
ADVANCED						
High Tcond threshold	°C	A	-60	200	80	
High Tcond integral time	s	C	0	800	20	
Modul thermostat set point	°C	A	-60	200	0	
Modul thermostat differential	°C	A	0.1	100	0.1	
Modul thermostat Shset offset	K	C	0	100	0	
CO2 regul 'A' coefficient	-	C	-100	800	3.3	
CO2 regul 'B' coefficient	-	C	-100	800	-22.7	
Start manual tuning (0=no, 1=yes)	-	C	0	1	0	
Tuning method	-	C	0	255	50	
Network settings (0=4800, 1=9600, 2=19200)	bit/s	C	0	2	2	
ALARM CONFIGURATION						
Low superheat alarm timeout (LowSH) (0=alarm DISABLED)	s	C	0	18000	300	
Low evap temp alarm timeout (LOP) (0=alarm DISABLED)	s	C	0	18000	300	
High evap temp alarm timeout (MOP) (0=alarm DISABLED)	s	C	0	18000	600	
High cond temp alarm timeout (High Tcond) (0=alarm DISABLED)	s	C	0	18000	600	
Low suction temperature alarm threshold	°C	C	-60	200	-50	
Low suction temp alarm timeout (0=alarm DISABLED)	s	C	0	18000	300	
VALVE						
EEV minimum steps	step	C	0	9999	50	
EEV maximum steps	step	C	0	9999	480	
EEV closing steps	step	C	0	9999	500	
EEV nominal step rate	step/s	C	1	2000	50	
EEV nominal current	mA	C	0	800	450	
EEV holding current	mA	C	0	250	100	
EEV duty cycle	%	C	1	100	30	
EEV opening synchronisation	-	C	0	1	1	
EEV closing synchronisation	-	C	0	1	1	