



Service manual

Water-Cooled Water Chillers

DRAFT

EWVQ014KCW1N
EWVQ025KCW1N
EWVQ033KCW1N
EWVQ049KCW1N
EWVQ064KCW1N

EWLQ014KCW1N
EWLQ025KCW1N
EWLQ033KCW1N
EWLQ049KCW1N
EWLQ064KCW1N

draft – 31/03/2022 13:56

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Version log

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1 General operation



The new EWW(L)Q-KC series with R410A refrigerant has the same range extension from 14 kW to 192 kW as previous model but with a complete upgrade on the controls/switchbox.

Components	EWWQ					EWLQ				
	EWWQ014KCW1N	EWWQ025KCW1N	EWWQ033KCW1N	EWWQ049KCW1N	EWWQ064KCW1N	EWLQ014KCW1N	EWLQ025KCW1N	EWLQ033KCW1N	EWLQ049KCW1N	EWLQ064KCW1N
Compressor	1	1	1	2	2	1	1	1	2	2
Evaporator	1	1	1	1	1	1	1	1	1	1
Condenser	1	1	1	1	1	-	-	-	-	-
Thermostatic expansion valve	1	1	1	1	1	1	1	1	1	1
Main PCB	Siemens POL468.85/MCQ									
HMI	EvCO									

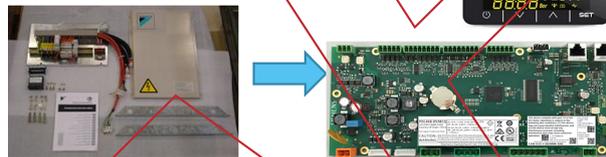
The refrigerant piping is similar to previous models EWW(L)Q-KA and EWW(L)Q-KB. Main update for the piping is that the Brine Option is now standard thanks to the low pressure sensor replacing the low pressure switch. Thanks to this the unit is suitable for multiple applications such as brine and low brine.

Component	EWW(L)Q-KA/KB	EWW(L)Q-KC
Compressor	ON/OFF	ON/OFF (same models)
Refrigerant	R410A	R410A
Expansion valve	Thermostatic expansion valve	Thermostatic expansion valve
Pressure control	Pressure switches	Pressure sensors
Plate heat exchanger	Evaporator and condenser (EWLQ condenserless model)	Evaporator and condenser (EWLQ condenserless model)

The switchbox of the EWW(L)Q-KC has been completely redesigned to be able to offer more connectivity and Daikin on Site.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units



	EWW(L)Q-KA/KB	EWW(L)Q-KC
HMI	μCS2E or pCO5+	EvCO
Controller	μCS2E or pCO5+	Integrated HMI
BMS	Modbus with EKC200J	Bacnet and Modbus from main PCB but with license
Multi Hydrocube	ECB kits with pCO	Up to 3 slaves sequenced with standard main PCB
Main PCB	μCS2E or pCO5+	Siemens POL468
Compressor inverter PCB	No	No

Stacking the Hydrocubes stays the same as previous model:

- Only for 49 and 64 sizes
- Only EWWQ models
- sizes 14 kW / 25 kW / 33 kW CANNOT be stacked each other



System [kW]	Bottom unit 1 [kW]	Middle unit 2 [kW]	Top unit 3 [kW]
98	49	49	
113	64	49	
128	64	64	
147	49	49	49
162	64	49	49
177	64	64	49
192	64	64	64

1.1 To switch between user interface and service monitoring tool

Standard user interface is installed on the unit. To install the service monitoring tool, see procedure described below.

The passwords to be used for user interface (HMI) and service monitoring tool are:

- User: 2526
- Technician: 2201

To install the service monitoring tool

- 1 Stop the unit operation via the user interface.
- 2 Change the settings on the user interface as follows:
 - Enter Technician password.
 - Navigate to menu [15.15] HMI Type.
Set to OFF.

[15.15]	HMI Type	OFF = Siemens
		ON = EvCO

- After changing, navigate to menu [20.01] Apply Changes.
Set to ON and wait until it returns to OFF.
- 3** Wait until automatic reboot is finished (ErrC is shown on the user interface display).
- 4** Turn OFF the main switch.
- 5** Remove the switch box cover, see "[3.7 Plate work](#)" [▶ 73].
- 6** Connect the LAN cable that was disconnected from the user interface to the service monitoring tool.
- 7** Turn ON the power of the unit with the main switch.

To re-install the user interface

- 1** Change the settings on the service monitoring tool as follows:
 - Enter technician password.
 - In the Main Menu, select Commission Unit > Configuration > HMI Selection.
Set to EvCO.
 - In the Main Menu, select Application Save.
Set to ON.
- 2** Turn OFF the main switch.
- 3** Disconnect the LAN cable from the service monitoring tool and remove the service monitoring tool from the unit.
- 4** Install the switch box cover (including the user interface), see "[3.7 Plate work](#)" [▶ 73].
- 5** Turn ON the power of the unit with the main switch.

1.2 To update the software of the main PCB using the service monitoring tool

To save the parameters

First all parameters of the OLD software need to be saved to be able to copy them to the new software when installed.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

- 1** Connect the service monitoring tool to the unit.
- 2** Turn ON the power of the unit via the main switch.
- 3** Enter technician password.

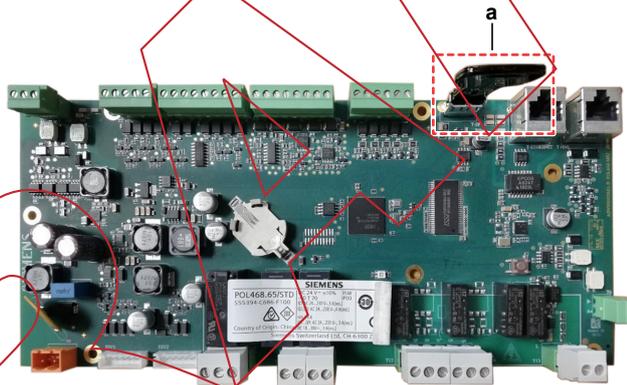


4 Insert an empty USB-drive in the USB-port.

i **INFORMATION**

USB specifications:

- Type: USB 2.0
- Maximum: 32 GB
- System: FAT32
- Current: 100 mA

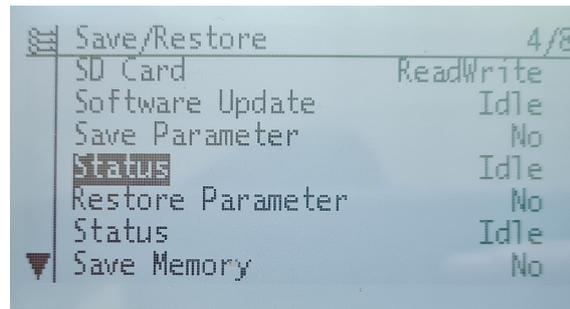


a USB-drive

5 Go to the Main Menu > Save/Restore > Save Parameter > Yes.



6 Wait for the Status to be Fail > Pass > Idle (process finished correctly).

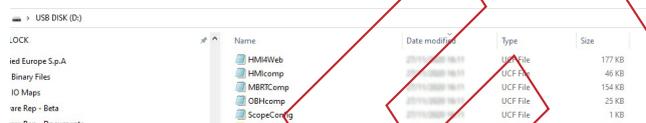


Result: The file PARAM.ucf is saved on the USB drive.

To update the software

Prerequisite: Make sure that the parameters of the OLD software have been saved (see previous procedure).

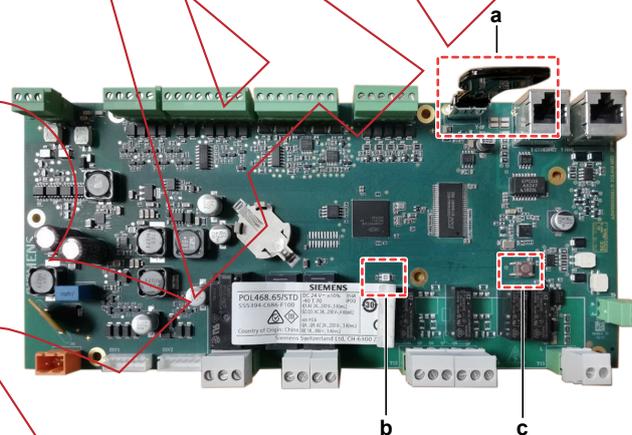
- 1 Load the files shown in the picture onto an empty USB-drive.



INFORMATION

Latest software version is available on Daikin Business Portal.

- 2 While power is ON (LED = ON), insert the USB-drive in the USB-port.



- a USB-drive
- b LED
- c Button

FOR SOFTWARE UPDATE

- 1 Go to the Main Menu > Save/Restore > Software Update > Start.

- 2 While software is updating, check the status of the LED:

Result: First the LED blinks green. Then it blinks green / red, and at the end it lights up continuously orange.

- 3 Immediately turn OFF and ON the main switch.

- 4 When done, on the user interface, check the menu > About.

Result: Software version MUST be the latest version.

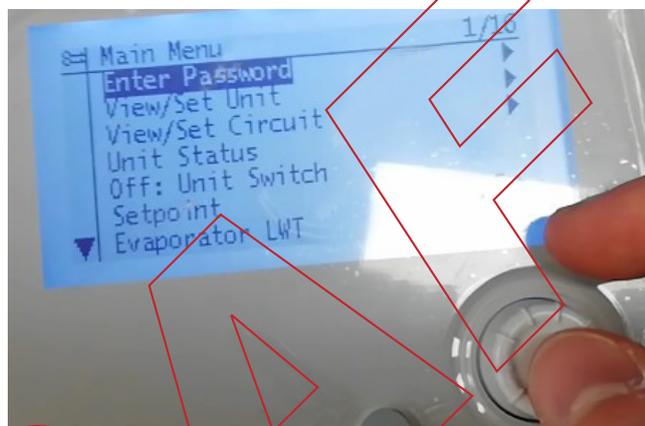
FOR SPARE PCB'S

- 1 Press the button, and keep pressed.

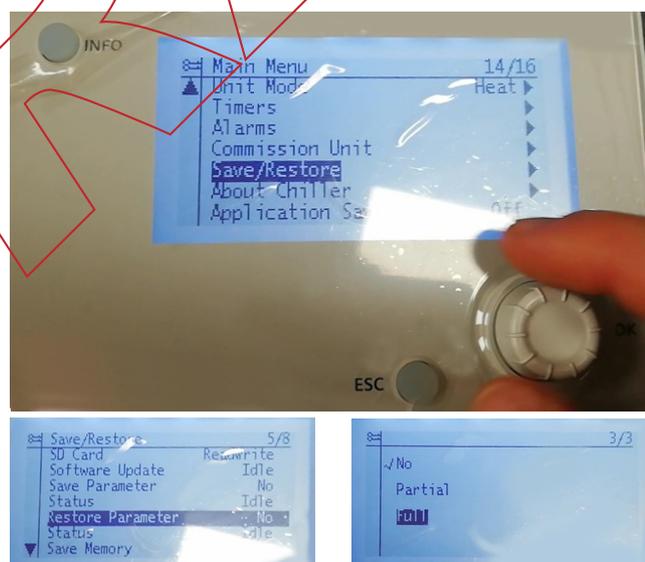
- 2 With the button still pressed, turn ON the main switch and power the unit.
Result: The LED blinks green.
- 3 Keep the button pressed.
Result: The LED blinks green / red.
- 4 Immediately release the button.
Result: The LED lights up continuously orange.
- 5 Immediately turn OFF and ON the main switch.
- 6 On the user interface, check the menu > About.
Result: Software version MUST be the latest version.

To upload the parameters

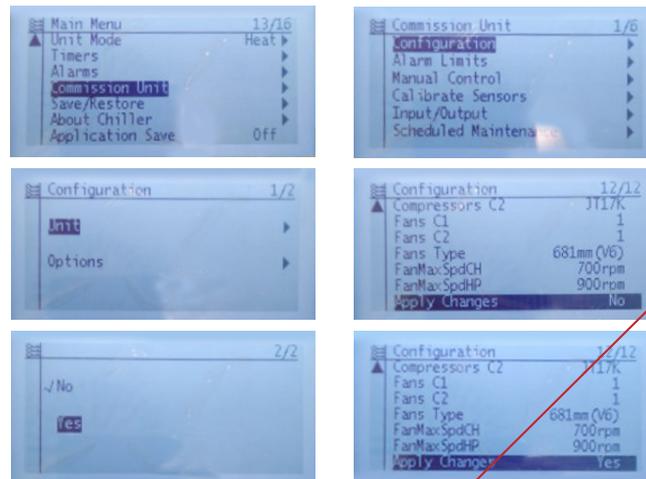
- 1 Connect the service monitoring tool to the unit.
- 2 Enter technician password.



- 3 While power is ON (LED = ON), insert the USB-drive containing the PARAM.ucf in the USB-port.
- 4 Go to the Main Menu > Save/Restore > Restore Parameter > Full.



- 5 Go to Application Save (bottom of the menu) > Yes.
- 6 Remove the USB-drive from the USB-port.
- 7 Go to Commission Unit > Configuration > Unit > Apply Changes > Yes.
Result: The parameters are updated.



1.3 To update the software of the main PCB using the user interface

To save the parameters

First all parameters of the OLD software need to be saved to be able to copy them to the new software when installed.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

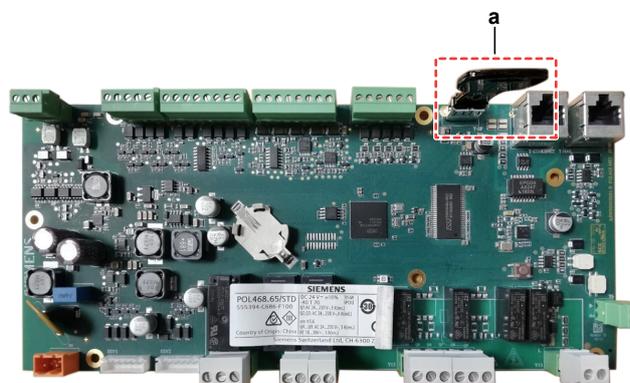
- 1 Connect the user interface (HMI) to the unit.
- 2 Turn ON the power of the unit via the main switch.
- 3 Enter technician password.
- 4 Insert an empty USB-drive in the USB-port.



INFORMATION

USB specifications:

- Type: USB 2.0
- Maximum: 32 GB
- System: FAT32
- Current: 100 mA



a USB-drive

- 5 Go to the page [20.03] Save Parameters > On.

- Wait for 30 seconds.

Result: The file PARAM.ucf is saved on the USB drive.

To update the software

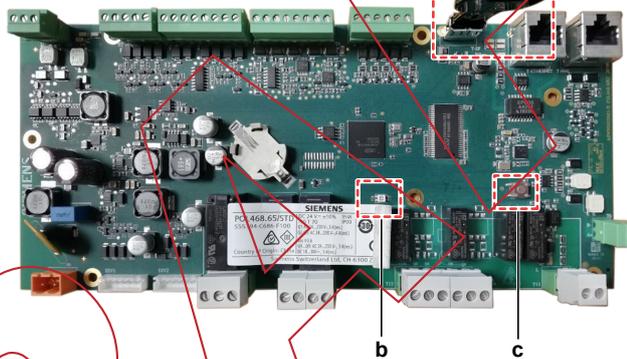
Prerequisite: Make sure that the parameters of the OLD software have been saved (see previous procedure).

- Load the files shown in the picture onto an empty USB-drive.

Name	Date modified	Type	Size
HMWeb	2021/03/09 16:11	UCF File	177 KB
HMComp	2021/03/09 16:11	UCF File	46 KB
MBRComp	2021/03/09 16:11	UCF File	154 KB
OBHComp	2021/03/09 16:11	UCF File	25 KB
ScopeConfig	2021/03/09 16:11	UCF File	4 KB

i **INFORMATION**
Latest software version is available on Daikin Business Portal.

- While power is ON (LED = ON), insert the USB-drive in the USB-port of the spare main PCB.



- a USB-drive
- b LED
- c Button

- FOR SOFTWARE UPDATE

- Use field setting [20.02] to update the software.

- While software is updating, check the status of the LED:

Result: First the LED blinks green. Then it blinks green / red, and at the end it lights up continuously orange.

- Immediately turn OFF and ON the main switch.

- When done, on the user interface, check the menu > About.

Result: Software version MUST be the latest version.

- FOR SPARE PCB's

- Press the button, and keep pressed.

- With the button still pressed, turn ON the main switch and power the unit.

Result: The LED blinks green.

- Keep the button pressed.

Result: The LED blinks green / red.

- Immediately release the button.

Result: The LED lights up continuously orange.

- 5 Immediately turn OFF and ON the main switch.
- 6 On the user interface, check the menu > About
Result: Software version MUST be the latest version.

To upload the parameters

- 1 Connect the user interface (HMI) to the unit.
- 2 Enter technician password.
- 3 While power is ON (LED = ON), insert the USB-drive containing the PARAM.ucf in the USB-port.
- 4 Go to the page [20.04] Restore Parameter > Full.
- 5 Go to page [20.00] AppSave > On.
- 6 Remove the USB-drive from the USB-port.
- 7 Go to page [20.01] Apply Changes > On.

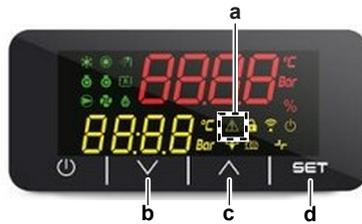
Result: The parameters are updated.

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2 Troubleshooting

2.1 To retrieve error codes and check error history

2.1.1 Via the unit user interface



- a icon
- b Down
- c Up
- d SET

In case of an error, the icon on the user interface display is blinking.

To display the error code perform as follows:

- 1 Press Up until page "7- ALMS" is displayed.



- 2 Press SET to enter this menu
- 3 Press Up/Down to select "07.00" Alarm List.
- 4 Press SET to enter the "07.00" Alarm List menu.
- 5 Press Up/Down to navigate through the different error codes (If any).

Result: The error codes are shown on the user interface display.



- a Error code

2.1.2 Via service monitoring tool

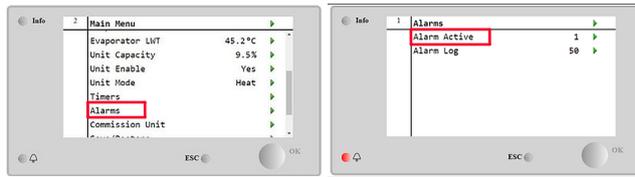
To retrieve the error codes

In case of an error, the LED on the service monitoring tool is lit.

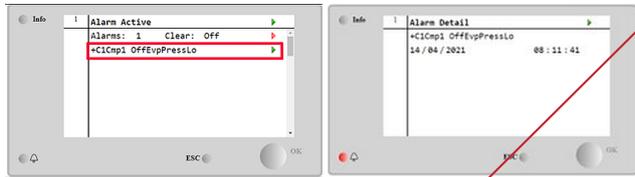
To display the string of the error code perform as follows:

- 1 In the Main Menu, select Alarms > Alarm Active.

Result: The string(s) of the active error code(s) are shown on the display.

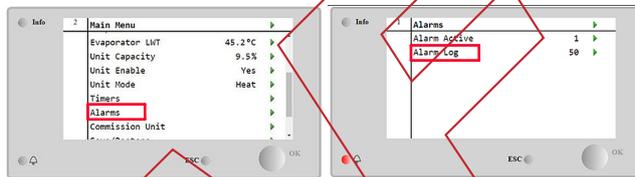


- 2 Select the desired error code string (arrow) to display the Alarm Detail screen.
Result: Date and time of the selected error are shown.

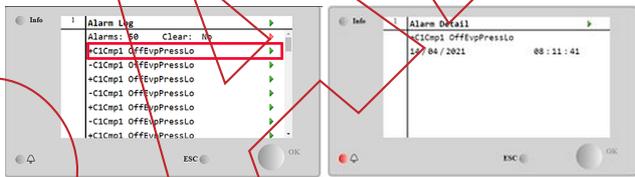


To check the error history

- 3 In the Main Menu, select Alarms > Alarm Log.
Result: The string(s) of the error code(s) are shown on the display.



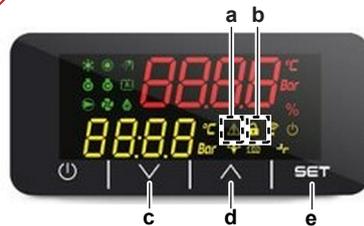
- 4 Select the desired error code string (arrow) to display the Alarm Detail screen.
Result: Date and time of the selected error are shown.



2.2 To reset error codes and clear the error history

2.2.1 Via the unit user interface

To reset the error codes



- a icon
- b icon
- c Down
- d Up
- e SET



INFORMATION

icon MUST be lit (at least User level password is needed for this) to be able to perform this action.

- 1 Press Up until page "-7- ALMS" is displayed.



- 2 Press SET to enter this menu.
- 3 Press Up/Down to select "007.1" Alarm Clear.
- 4 Press SET to enter the "007.1" Alarm Clear menu.
- 5 Press Up/Down to select On.

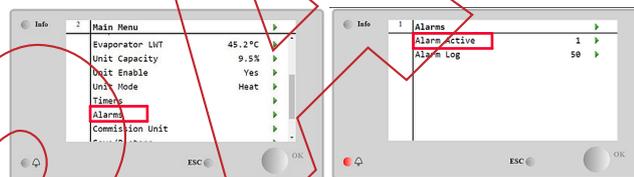


- 6 Press SET to confirm.
Result: The error codes have been reset.

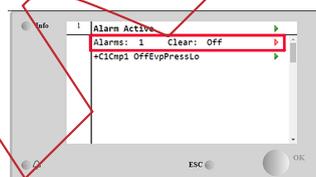
2.2.2 Via service monitoring tool

To reset the error codes

- 1 In the Main Menu, select Alarms > Alarm Active.
Result: The string(s) of the active error code(s) are shown on the display.



- 2 Select Clear (arrow) and set to On.
Result: The error code(s) have been reset.

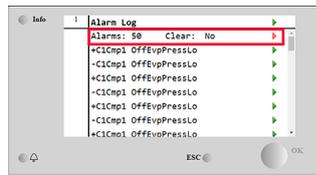


To clear the error history

- 3 In the Main Menu, select Alarms > Alarm Log.
Result: The string(s) of the error code(s) are shown on the display.



- 4 Select Clear (arrow) and set to Yes.
Result: The error code history has been deleted (cleared).



2.3 Error based troubleshooting

2.3.1 Overview of error codes

Unit alarms

Error type	Error code	Description	Error string
Unit Rapid Stop Alarm	U003	Water Flow Alarm	UnitOff EvapFlowLoss
	U004	Evaporator freezing alarm	UnitOff EvapFreeze
	U005	External alarm	UnitOff ExtAlm
	U006	Evaporator leaving water temperature sensor fault	UnitOff EvpLvgWTempSen
	U007	Evaporator entering water temperature sensor fault	UnitOff EvpEntWTempSen
	U022	Water temperature under minimum limit	UnitOff CondFreeze
	U023	Temperature sensor not detected	UnitOff CondLwtSenf
	U024	Temperature sensor not detected	UnitOff CondEwtSenf
	U025	Evaporator Pump 1 Error	UnitOff EvapPump1Fault
	U026	Evaporator Pump 2 Error	UnitOff EvapPump2Fault
	U027	Condenser Pump Error	UnitOff CondPump1Fault
Unit Alert	U001	External Event	UnitOff ExtEvent
	U010	Setpoint reset signal out of range	UnitOff BadSpOverInpt

- Unit Rapid Stop Alarm: These errors cause an immediate stop of the unit.
- Unit Alert: These errors ONLY create a visual information and an item in the alarm log. Unit continues operating.
- Error codes can be retrieved via the outdoor unit user interface.
- Error strings can be retrieved via the service monitoring tool.

Circuit 1 alarms

Error type	Error code	Description	Error string
Circuit Rapid Stop Alarm	C102	No Pressure Change at start	Cir1Off NoPrChgAtStrt
	C105	Low Evaporator Pressure Alarm	Cir1Off LowEvPr
	C107	High Discharge Temperature Alarm	Cir1Off HiDischTemp
	C110	Evaporating Pressure Sensor Fault	Cir1Off EvapPSenf
	C114	Discharge Temperature Sensor Alarm	Cir1Off DischTempSenf
	C122	Compressor Alarm	Cir1Off Compressor Alarm

- Circuit Rapid Stop Alarm: These errors cause an immediate stop of the circuit.
- Error codes and sub codes can be retrieved via the outdoor unit user interface.
- Error strings can be retrieved via the service monitoring tool.

Circuit 2 alarms

Error type	Error code	Description	Error string
Circuit Rapid Stop Alarm	C202	No Pressure Change at start	Cir2Off NoPrChgAtStrt
	C205	Low Evaporator Pressure Alarm	Cir2Off LowEvPr
	C207	High Discharge Temperature Alarm	Cir2Off HiDischTemp
	C210	Evaporating Pressure Sensor Fault	Cir2Off EvapPSenf
	C214	Discharge Temperature Sensor Alarm	Cir2Off DischTempSenf
	C222	Compressor Alarm	Cir2Off Compressor Alarm

- Circuit Rapid Stop Alarm: These errors cause an immediate stop of the circuit.
- Error codes and sub codes can be retrieved via the outdoor unit user interface.
- Error strings can be retrieved via the service monitoring tool.

Other errors

Error type	Error code	Sub code	Description	Error string
Other	ErrC	-	Communication error	-

2.3.2 Unit Rapid Stop Alarms

U003 – Water flow alarm

Trigger	Effect	Reset
Detection of water flow loss to the chiller.	Unit will stop operating.	Reset via user interface.
		Reset on network.

To solve the error code



INFORMATION

It is recommended to perform the checks in the listed order.

- 1 Perform a check of the flow switch. See "[3.4 Flow switch](#)" [▶ 59].
Possible cause: Faulty flow switch.
- 2 Check the water flow of the evaporator water circuit. See "[4.3 Water circuit](#)" [▶ 107].
Possible cause: Water flow is too low.
- 3 Check if the evaporator water circuit is clogged. See "[4.3 Water circuit](#)" [▶ 107].
Possible cause: Clogged water circuit.

- 4 Clean the water filter of the evaporator water circuit. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Clogged water filter.

- 5 Perform a check of the water pump of the evaporator water circuit. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Faulty water pump.

- 6 Perform a check of the main PCB. See "[3.6 Main PCB](#)" [▶ 67].

Possible cause: Faulty main PCB.



INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U004 – Evaporator freezing alarm

Trigger	Effect	Reset
Water temperature (entering or leaving) has dropped below a safety limit (set on monitoring tool).	Unit will stop operating.	Reset via user interface. Auto reset.

To solve the error code



INFORMATION

It is recommended to perform the checks in the listed order.

- 1 Check the water flow of the evaporator water circuit. See "[4.3 Water circuit](#)" [▶ 107].

Possible cause: Water flow is too low.

- 2 Check the inlet water temperature of the evaporator water circuit. Increase inlet water temperature as needed.

Possible cause: Inlet water temperature is too low.

- 3 Perform a check of the flow switch. See "[3.4 Flow switch](#)" [▶ 59].

Possible cause: Faulty flow switch.

- 4 Perform a check of the water pump of the evaporator water circuit. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Faulty water pump.

- 5 Check the freeze limit setpoint. See service monitoring tool.

Possible cause: The freeze limit has not been set correctly (as a function of glycol percentage).

- 6 Perform a check of the inlet water thermistor of the evaporator water circuit. See "[3.9 Thermistors](#)" [▶ 83].

Possible cause: Faulty inlet water thermistor.

- 7 Perform a check of the outlet water thermistor of the evaporator water circuit. See "[3.9 Thermistors](#)" [▶ 83].

Possible cause: Faulty outlet water thermistor.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U005 – External alarm

Trigger	Effect	Reset
Faulty external device (pump, inverter, ...) detected.	Unit will stop operating.	Auto reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Check the correct operation of the external device. See "[4.4 Manufacturer components](#)" [▶ 114].
Possible cause: Faulty external device.
- 2 Check the wiring between the external device and the unit. See "[6.2 Wiring diagram](#)" [▶ 119].
Possible cause: Faulty wiring between the external device and the unit.
- 3 Perform a check of the main PCB. See "[3.6 Main PCB](#)" [▶ 67].
Possible cause: Faulty main PCB.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U006 – Evaporator leaving water temperature sensor fault

Trigger	Effect	Reset
Outlet water thermistor (evaporator water circuit) input is out of range.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Automatic reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Perform a check of the outlet water thermistor of the evaporator water circuit. See "[3.9 Thermistors](#)" [▶ 83].
Possible cause: Faulty outlet water thermistor.
- 2 Perform a check of the main PCB. See "[3.6 Main PCB](#)" [▶ 67].
Possible cause: Faulty main PCB.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U007 – Evaporator entering water temperature sensor fault

Trigger	Effect	Reset
Inlet water thermistor (evaporator water circuit) input is out of range.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Automatic reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Check if pump control settings [15.00] and [15.04] are correctly set. Correct as needed. See "[6.7 Field settings](#)" [▶ 135].

Possible cause: Incorrect setting [15.00] or [15.04].

- 2 Perform a check of the inlet water thermistor of the evaporator water circuit. See "[3.9 Thermistors](#)" [▶ 83].

Possible cause: Faulty inlet water thermistor.

- 3 Perform a check of the main PCB. See "[3.6 Main PCB](#)" [▶ 67].

Possible cause: Faulty main PCB.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U022 – Condenser freezing alarm

Trigger	Effect	Reset
Water temperature (entering or leaving) has dropped below a safety limit ([09.07] on user interface).	Unit will stop operating.	Reset via user interface.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Check the water flow of the condenser water circuit. See "[4.3 Water circuit](#)" [▶ 107].

Possible cause: Water flow is too low.

- 2 Check the inlet water temperature of the condenser water circuit. Increase inlet water temperature as needed.

Possible cause: Inlet water temperature is too low.

- 3 Perform a check of the water pump of the condenser water circuit. See ["4.4 Manufacturer components"](#) [▶ 114].
Possible cause: Faulty water pump.
- 4 Check the freeze limit setpoint. See setting [09.07] on the user interface.
Possible cause: The freeze limit has not been set correctly (as a function of glycol percentage).
- 5 Perform a check of the inlet water thermistor of the condenser water circuit. See ["3.9 Thermistors"](#) [▶ 83].
Possible cause: Faulty inlet water thermistor.
- 6 Perform a check of the outlet water thermistor of the condenser water circuit. See ["3.9 Thermistors"](#) [▶ 83].
Possible cause: Faulty outlet water thermistor.

i **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U023 – Condenser leaving water temperature sensor fault

Trigger	Effect	Reset
Outlet water thermistor (condenser water circuit) input is out of range.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Automatic reset.

To solve the error code

i **INFORMATION**
It is recommended to perform the checks in the listed order.

- 1 For EWLQ units ONLY. Check if EWLQ unit has been correctly set at setting [14.00]. See ["6.7 Field settings"](#) [▶ 135].
Possible cause: EWWQ was set.
- 2 Perform a check of the outlet water thermistor of the condenser water circuit. See ["3.9 Thermistors"](#) [▶ 83].
Possible cause: Faulty outlet water thermistor.
- 3 Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].
Possible cause: Faulty main PCB.

i **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U024 – Condenser entering water temperature sensor fault

Trigger	Effect	Reset
Inlet water thermistor (condenser water circuit) input is out of range.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Automatic reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 For EWLQ units ONLY: Check if EWLQ unit has been correctly set at setting [14.00]. See ["6.7 Field settings"](#) [▶ 135].

Possible cause: EWWQ was set.

- 2 Check if pump control settings [15.00] and [15.04] are correctly set. Correct as needed. See ["6.7 Field settings"](#) [▶ 135].

Possible cause: Incorrect setting [15.00] or [15.04].

- 3 Perform a check of the inlet water thermistor of the condenser water circuit. See ["3.9 Thermistors"](#) [▶ 83].

Possible cause: Faulty inlet water thermistor.

- 4 Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].

Possible cause: Faulty main PCB.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

2.3.3 Unit Alerts

U001 – External event**INFORMATION**

This error is listed as a Unit alert type error, but depending on the setting [15.09], this error can ALSO be a Unit rapid stop alarm.

Trigger	Effect	Reset
Faulty external device (pump, inverter, ...) detected.	Unit will NOT stop operating.	Auto reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Check the correct operation of the external device. See ["4.4 Manufacturer components"](#) [▶ 114].

Possible cause: Faulty external device.

- 2 Check the wiring between the external device and the unit. See ["6.2 Wiring diagram"](#) [▶ 119].

Possible cause: Faulty wiring between the external device and the unit.

- 3 Check if setting [15.09] is correctly set. Correct as needed. See ["6.7 Field settings"](#) [▶ 135].

Possible cause: Incorrect setting [15.09]

- Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].

Possible cause: Faulty main PCB.

i **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

U010 – Setpoint reset signal out of range

Trigger	Effect	Reset
Setpoint Reset option has been enabled and input to the controller is out of range.	Unit will NOT stop operating.	Auto reset.

To solve the error code

i **INFORMATION**
It is recommended to perform the checks in the listed order.

- Check if settings [18.00], [18.01], [18.02] and [20.00] are correctly set. Correct as needed. See ["6.7 Field settings"](#) [▶ 135].
Possible cause: Incorrect setting [18.00], [18.01], [18.02] or [20.00].
- Check the setpoint reset input signal on the main PCB. See ["4.1 Electrical circuit"](#) [▶ 99].
Possible cause: Incorrect demand setpoint reset signal.
- Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].
Possible cause: Faulty main PCB.

i **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

2.3.4 Circuit Rapid Stop Alarms

i **INFORMATION**
Error codes C1xx are applicable for the main circuit. Error codes C2xx are applicable for the secondary circuit.

C102 & C202 – No pressure change at start

Trigger	Effect	Reset
Compressor is NOT able to start or to create a certain minimum variation of the evaporating or condensing pressures after start.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Auto reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Perform a check of the refrigerant low pressure sensor. See "[3.8 Refrigerant low pressure sensor](#)" [▶ 75]

Possible cause: Faulty refrigerant low pressure sensor.

- 2 Perform a check of the expansion valve. See Expansion valve.

Possible cause: Faulty expansion valve.

- 3 Check if the refrigerant circuit is correctly charged. See "[4.2 Refrigerant circuit](#)" [▶ 101].

Possible cause: Refrigerant shortage.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

C105 & C205 – Low evaporator pressure alarm

Trigger	Effect	Reset
Evaporating pressure drops below the Low Pressure Unload.	Unit will stop operating.	Reset via user interface. Reset on network.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Check the inlet water temperature of the evaporator water circuit. Increase inlet water temperature as needed.

Possible cause: Inlet water temperature is too low.

- 2 Check the water flow of the evaporator water circuit. See "[4.3 Water circuit](#)" [▶ 107].

Possible cause: Water flow is too low.

- 3 Clean the water filter of the evaporator water circuit. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Clogged water filter.

- 4 Perform a check of the water pump of the evaporator water circuit. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Faulty water pump.

- 5 Perform a check of the refrigerant low pressure sensor. See "[3.8 Refrigerant low pressure sensor](#)" [▶ 75]

Possible cause: Faulty refrigerant low pressure sensor.

- 6 For EWLQ units: Perform a check of the condenser heat exchanger. See "[4.4 Manufacturer components](#)" [▶ 114].

Possible cause: Faulty heat exchanger.

- 7 For EWLQ units: Check if a transitory condition (e.g. staging up of an other fan) may cause the error. Wait until normal condition is recovered, or perform reset on the unit.
- 8 Check for leaks in the refrigerant circuit. Look for oil traces on the unit(s). Check the brazing points on the refrigerant piping. Perform a pressure test, see "4.2 Refrigerant circuit" [▶ 101].
Possible cause: Leak in the refrigerant circuit.
- 9 Check if the refrigerant circuit is correctly charged. See "4.2 Refrigerant circuit" [▶ 101].
Possible cause: Refrigerant shortage.
- 10 ONLY for Cool and Heat/Cool with glycol mode application: Check the low pressure unload limit setting. Check the evaporator approach and the corresponding water temperature to evaluate the low pressure unload limit.
Possible cause: Low pressure unload limit NOT set correctly.
- 11 For EWLQ units: Clean the condenser heat exchanger. See "4.4 Manufacturer components" [▶ 114].
Possible cause: Dirty heat exchanger.
- 12 Check for the presence of non-condensables and/or humidity in the refrigerant circuit. See "4.2 Refrigerant circuit" [▶ 101].
Possible cause: Non-condensables and/or humidity in the refrigerant circuit.
- 13 Check the glycol percentage in the evaporator water circuit. Take a sample from the drain port and use a refractometer to check the glycol level. Add glycol as needed.
Possible cause: Glycol level too low.
- 14 Perform a check of the expansion valve. See Expansion valve.
Possible cause: Faulty expansion valve.

 **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

C107 & C207 – High discharge temperature alarm

Trigger	Effect	Reset
Discharge temperature too high. Error CANNOT trigger if discharge thermistor fault is active.	Unit will stop operating.	Reset via user interface. Reset on network.

To solve the error code

 **INFORMATION**
It is recommended to perform the checks in the listed order.

 **DANGER: RISK OF BURNING/SCALDING**
The compressor crankcase and discharge pipes may be very hot. Be careful when getting in contact with the compressor and discharge pipes.

- 1 Check ambient conditions of the unit. See operation limits in the Databook.
Possible cause: Operation at too high temperature might lead to high temperature errors.
- 2 Perform a check of the discharge pipe thermistor. See ["3.9 Thermistors"](#) [▶ 83].
Possible cause: Faulty discharge pipe thermistor or connector fault.
- 3 Perform a check of the compressor. See ["3.2 Compressor"](#) [▶ 35].
Possible cause: Faulty compressor or miswiring of the compressor power supply cable.
- 4 Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].
Possible cause: Faulty main PCB.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

C110 & C210 – Evaporating pressure sensor fault

Trigger	Effect	Reset
Low pressure sensor is NOT operating correctly.	Unit will stop operating.	Reset via user interface.
		Reset on network.
		Auto reset.

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Perform a check of the refrigerant low pressure sensor. See ["3.8 Refrigerant low pressure sensor"](#) [▶ 75]
Possible cause: Faulty refrigerant low pressure sensor.
- 2 Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].
Possible cause: Faulty main PCB.
- 3 Perform a check of the 24 V DC auxiliary power supply. See ["3.1 24 V DC auxiliary power supply"](#) [▶ 33].
Possible cause: Faulty auxiliary power supply.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

C114 & C214 – Discharge temperature sensor alarm

Trigger	Effect	Reset
Discharge pipe thermistor is NOT operating correctly.	Unit will stop operating following normal pumpdown procedure.	Reset via user interface.
		Reset on network.
		Auto reset.

To solve the error code

i **INFORMATION**
It is recommended to perform the checks in the listed order.

- 1 Perform a check of the discharge pipe thermistor. See ["3.9 Thermistors"](#) [▶ 83].
Possible cause: Faulty discharge pipe thermistor or connector fault.
- 2 Perform a check of the main PCB. See ["3.6 Main PCB"](#) [▶ 67].
Possible cause: Faulty main PCB.

i **INFORMATION**
If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

C122 & C222 – Compressor alarm

Trigger	Effect	Reset
Disconnected contact between compressor and power supply due to a reverse phase, open phase, unbalanced phase or a current leak.	Unit will stop operating.	Reset via user interface. Reset on network.

To solve the error code

i **INFORMATION**
It is recommended to perform the checks in the listed order.

- 1 Check if the power supply is compliant with the regulations. See ["4.1 Electrical circuit"](#) [▶ 99].
Possible cause:
 - Faulty or disturbance of the power supply (power supply MUST be within range of nominal operating voltage ±4%),
 - Power drop,
 - Short circuit.
- 2 Check if any of the phases is missing on the mains power supply terminal, see "To check the power supply of the unit" in ["4.1 Electrical circuit"](#) [▶ 99]. Correct if needed.
Possible cause: Missing phase(s) on mains power supply terminal.
- 3 Check the fuses on the power supply wiring. Replace any broken fuse(s).
Possible cause: Broken fuse(s) on power supply wiring.
- 4 Using a megger device, check the solenoid valve coils (if present), pressure sensors, crankcase heater, compressor, ... if any earth leakage is found. Replace the component(s) that generate earth leakage.
- 5 Perform a check of the compressor. See ["3.2 Compressor"](#) [▶ 35].
Possible cause: Faulty compressor or miswiring of the compressor power supply cable.

**INFORMATION**

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

2.3.5 Other errors

ErrC – Communication error

Trigger	Effect	Reset
Incompatible main PCB detected.	Unit will NOT start.	Auto reset when compatible main PCB is detected.
Communication error with HMI.		

To solve the error code**INFORMATION**

It is recommended to perform the checks in the listed order.

- 1 Disconnect the user interface and connect the service monitoring tool to the unit.
 - If the main menu list is shown on the service monitoring tool, re-install the user interface and make sure settings are correct. See "[1.1 To switch between user interface and service monitoring tool](#)" [▶ 8].
 - Possible cause:** Incorrect setting on user interface or service monitoring tool.
 - If the main menu list is NOT shown on the service monitoring tool, continue with the next step.
- 2 Check via the user interface that the following parameters are set correctly:

Parameter	Value
Addr: Address	247
Lin: Timeout no communication	60
Butt: timeout	5
StoP: Modbus stop bits	1 bit
PAR: Parity	EVEn
Baud: Baud rate	57.6 (57600 bps)

- Keep the SET button pressed (7~8 seconds) until Addr is shown on the screen of the user interface.
 - Scroll to select the appropriate parameter and press the SET button (parameter value starts flashing = editable).
 - Set the desired value and press the SET button to confirm.
 - Restart the user interface by turning the power OFF and then ON again via the main switch, or by disconnecting/connecting the user interface cable or main PCB side cable.
- Possible cause:** Incorrect parameter setting.
- 3 Check if the correct spare part is installed for the main PCB. See "[3.6 Main PCB](#)" [▶ 67].

Possible cause: Incorrect spare part main PCB.

- 4 Check if correct software is installed on the main PCB and update as needed. See "3.6 Main PCB" [▶ 67].

Possible cause: Incorrect software installed on main PCB.

- 5 Perform a check of the main PCB. See "3.6 Main PCB" [▶ 67].

Possible cause: Faulty main PCB.



INFORMATION

If all procedures listed above have been performed and the problem is still present, contact the helpdesk.

DRAFT

3 Components



CAUTION

When replacing a component ALWAYS make sure the correct spare part for your unit is installed.

3.1 24 V DC auxiliary power supply

3.1.1 Checking procedures

To perform an electrical check of the 24 V DC auxiliary power supply

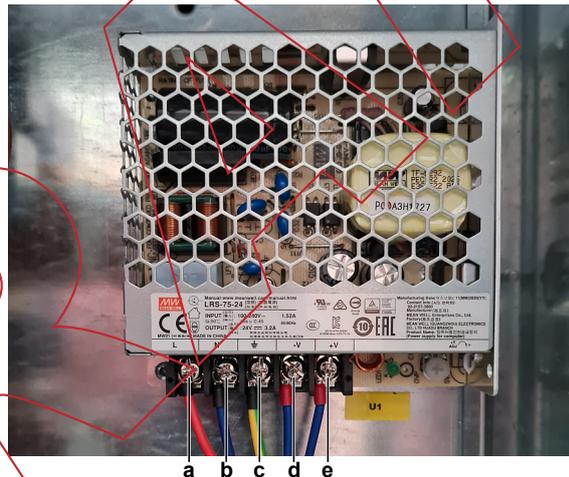
Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [p. 73].

- 1 Turn ON the power of the unit with the main switch.
- 2 Measure the output voltage between terminals -V and +V of the auxiliary power supply.

Result: The measured voltage MUST be 24 V DC.



- a Terminal L
- b Terminal N
- c Terminal GND
- d Terminal -V
- e Terminal +V

Is the measured output voltage correct?	Action
Yes	Auxiliary power supply is OK. Return to troubleshooting of the specific error code and continue with the next procedure.
No	Continue with the next step.

- 3 Measure the input voltage between terminals L and N of the auxiliary power supply.

Result: The measured voltage MUST be 230 V AC.

Is the measured input voltage correct?	Action
Yes	Replace the auxiliary power supply, see "3.1.2 Repair procedures" [▶ 34].
No	Continue with the next step.

4 Check the power supply to the unit, see ["4.1.1 Checking procedures"](#) [▶ 99].

Is the power supply to the unit correct?	Action
Yes	Correct the wiring from the main power supply terminal to the auxiliary power supply, see "6.2 Wiring diagram" [▶ 119].
No	Adjust the power supply to the unit, see "4.1.2 Repair procedures" [▶ 101].

3.1.2 Repair procedures

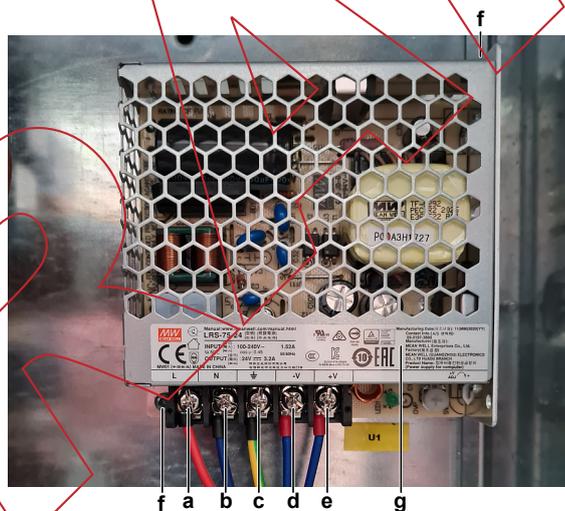
To remove the 24 V DC auxiliary power supply

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

1 Loosen the screws and disconnect all the wires from the terminals.



- a Terminal L
- b Terminal N
- c Terminal GND
- d Terminal -V
- e Terminal +V
- f Screw
- g Auxiliary power supply

2 Remove the screws that fix the auxiliary power supply to the switch box.

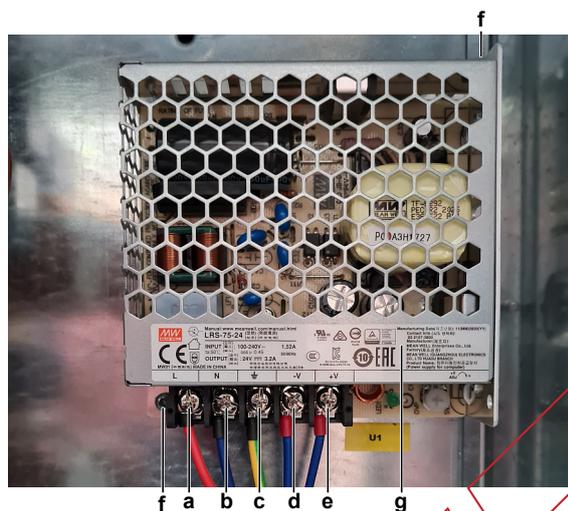
3 Remove the auxiliary power supply from the switch box.

4 To install the auxiliary power supply, see ["3.1.2 Repair procedures"](#) [▶ 34].

To install the 24 V DC auxiliary power supply

1 Install the auxiliary power supply in the correct location on the switch box.

2 Install and tighten the screws to fix the auxiliary power supply.



- a Terminal L
- b Terminal N
- c Terminal GND
- d Terminal -V
- e Terminal +V
- f Screw
- g Auxiliary power supply

3 Connect all the wires to the terminals and tighten the screws to fix the wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.2 Compressor

3.2.1 Checking procedures



INFORMATION

It is recommended to perform the checks in the listed order.

To perform an auditive check of the compressor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [[▶ 73](#)].

- 1 Open the compressor insulation (if present).
- 2 Turn ON the power using the main switch.
- 3 Start the unit operation via the user interface or service monitoring tool.
- 4 Wait for - or create condition to operate the compressor.
- 5 Listen to the compressor when it tries to operate. Judge if a mechanical lock is present.



INFORMATION

If you have a multimeter with data logging functionality, record the current in 1 of the U-V-W wires at compressor start-up. If mechanical lock is present, logged current will drastically increase to a peak value and the unit will trigger an error.



INFORMATION

If a mechanical lock is present, also check and eliminate the root cause. Mechanical lock is most likely caused by lack of lubrication (which might be related to overheat or wet operation), failing crankcase heater (if available), impurities in the refrigerant,

A mechanical lock is present on the compressor?	Action
Yes	Replace the compressor, see "3.2.2 Repair procedures" [▶ 46].
No	Perform an mechanical check of the compressor, see "3.2.1 Checking procedures" [▶ 35].

To perform a mechanical check of the compressor

Prerequisite: First perform an auditive check of the compressor, see ["3.2.1 Checking procedures"](#) [▶ 35].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

1 Before proceeding:



DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see ["To prevent electrical hazards"](#) [▶ 99].

2 Visually check:

- For oil drops around the compressor. Locate and fix as needed.
- Pipes for signs of damage. Replace pipes as needed.

3 Check that the compressor bolts are correctly fixed. Fix as needed.

4 Check that the compressor wire terminals cover is correctly installed and fixed. Correct as needed.

5 Check the compressor dampers for any damage.



a Damper

**INFORMATION**

The compressor dampers may look different.

Compressor dampers are in a good condition?	Action
Yes	Perform an electrical check of the compressor, see "3.2.1 Checking procedures" [▶ 35].
No	Replace the compressor and/or damaged dampers, see "3.2.2 Repair procedures" [▶ 46].

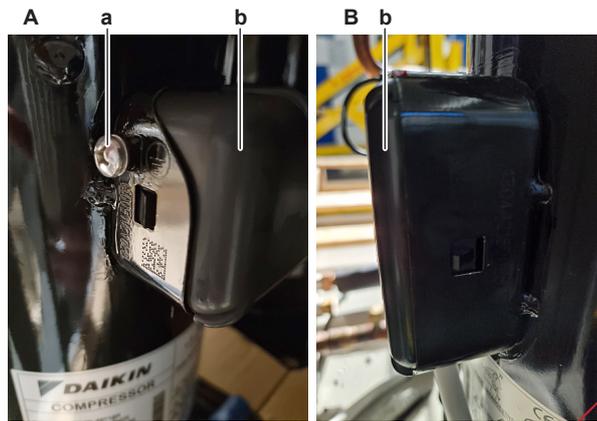
To perform an electrical check of the compressor

- 1 First perform a mechanical check of the compressor, see ["3.2.1 Checking procedures"](#) [▶ 35].

**DANGER: RISK OF ELECTROCUTION**

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see ["To prevent electrical hazards"](#) [▶ 99].

- 2 Remove the cover of the compressor wire terminals.



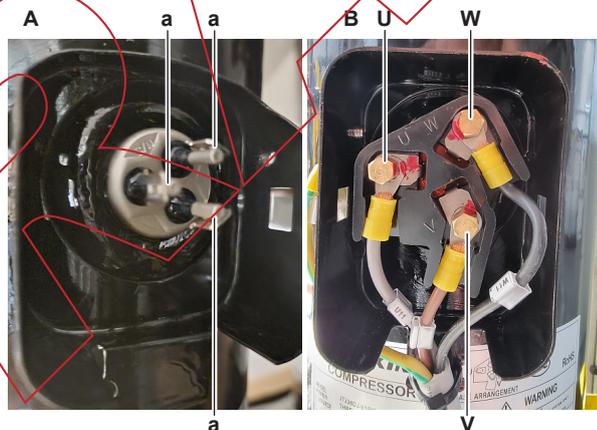
- A EWWQ/EWLQ014KCW1N units
- B EWWQ/EWLQ025~064KCW1N units
- a Screw
- b Compressor wire terminals cover

- 3 For EWWQ/EWLQ014KCW1N units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.
- 4 For EWWQ/EWLQ025~064KCW1N units:
 - Loosen and remove the 3 bolts that fix the compressor wiring.
 - Remove the wiring from the compressor wire terminals U, V and W.
 - Carefully straighten the terminal lugs.
 - Remove the black wire guide.



INFORMATION

Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



- A EWWQ/EWLQ014KCW1N units
- B EWWQ/EWLQ025~064KCW1N units
- a Faston connection
- U U
- V V
- W W



CAUTION

Before measuring the compressor motor windings resistance, measure the resistance of the multimeter probes by holding the probes against each other. If the measured resistance is NOT 0 Ω, this value MUST be subtracted from the measured winding resistance.

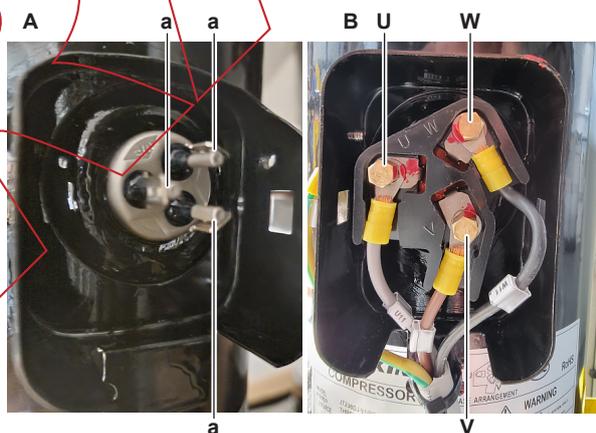
- 5 Measure the resistance between the compressor motor windings U-V, V-W and U-W.

Result: All measurements MUST be approximately the same.

Unit	Compressor	Winding resistance value (at temperature of 20°C)
EWQ/EWLQ014KCW1N	M1C	3.0 Ω±14%
EWQ/EWLQ025KCW1N	M1C	1.6 Ω±14%
EWQ/EWLQ033KCW1N	M1C	1.2 Ω±14%
EWQ/EWLQ049KCW1N	M1C + M2C	1.6 Ω±14%
EWQ/EWLQ064KCW1N	M1C + M2C	1.2 Ω±14%

Compressor motor winding measurements are correct?	Action
Yes	Continue with the next step.
No	Replace the compressor, see "3.2.2 Repair procedures" [▶ 46].

- 6 Measure the continuity of the U, V and W wires between the compressor and the contactor (with current protection). If no continuity, correct as needed, see "6.2 Wiring diagram" [▶ 119].
- 7 For EWQ/EWLQ014KCW1N units: Connect the Faston connectors to the compressor wire terminals U, V and W
- 8 For EWQ/EWLQ025~064KCW1N units:
- Install the black wire guide over the terminal lugs.
 - Bend the terminal lugs against the black wire guide.
 - Align the wiring with the compressor wire terminals U, V and W.
 - Insert and fix the 3 bolts that fix the compressor wiring.



- A** EWQ/EWLQ014KCW1N units
B EWQ/EWLQ025~064KCW1N units
a Faston connection
U U
V V
W W

- 9 Install the compressor wire terminals cover.
- 10 Install the compressor insulation (if present).
- 11 Turn ON the power using the main switch.
- 12 Start the unit operation via the user interface or service monitoring tool.



CAUTION

NEVER operate the compressor with the compressor wire terminals cover removed.

13 Wait for – or create condition to operate the compressor.

14 Once the compressor operates, measure the output voltage between the terminals 2-4, 4-6 and 2-6 of the current protection (on the compressor contactor).

Result: All measurements MUST be 400 V AC.

Voltage measurements are correct?	Action
Yes	Continue with the next step.
No	Perform a check of the compressor contactor, see " 3.2.1 Checking procedures " [▶ 35].

15 While compressor is operating, measure the current in each phase U, V and W. ALWAYS measure at the contactor side.

Result: All measurements MUST be the same.

Compressor motor winding current measurements are correct?	Action
Yes	Perform an insulation check of the compressor, see " 3.2.1 Checking procedures " [▶ 35].
No	Preventively replace the compressor, see " 3.2.2 Repair procedures " [▶ 46].

To perform an insulation check of the compressor

Prerequisite: First perform an electrical check of the compressor, see "[3.2.1 Checking procedures](#)" [▶ 35].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

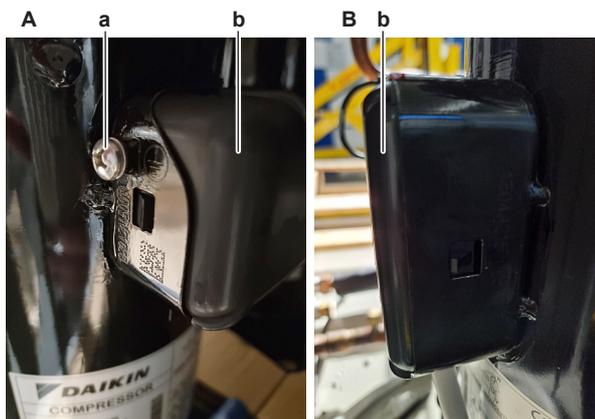
1 Before proceeding:



DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "[To prevent electrical hazards](#)" [▶ 99].

2 Remove the cover of the compressor wire terminals.



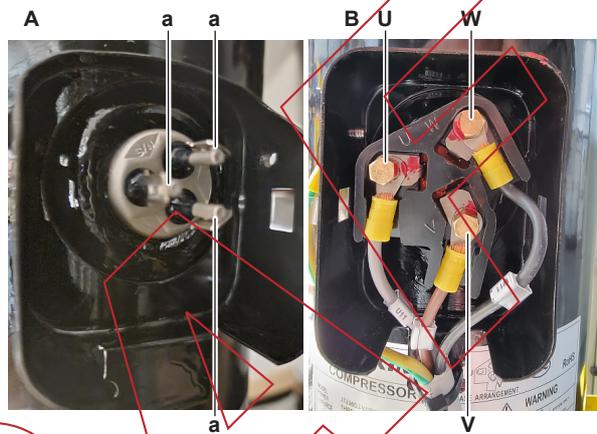
- A EWWQ/EWLQ014KCW1N units
- B EWWQ/EWLQ025~064KCW1N units
- a Screw
- b Compressor wire terminals cover

- 3 For EWWQ/EWLQ014KCW1N units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.
- 4 For EWWQ/EWLQ025~064KCW1N units:
 - Loosen and remove the 3 bolts that fix the compressor wiring.
 - Remove the wiring from the compressor wire terminals U, V and W.
 - Carefully straighten the terminal lugs.
 - Remove the black wire guide.



INFORMATION

Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



- A EWWQ/EWLQ014KCW1N units
- B EWWQ/EWLQ025~064KCW1N units
- a Faston connection
- U U
- V V
- W W

- 5 Set the Megger voltage to 500 V DC or 1000 V DC.
- 6 Measure the insulation resistance between the following terminals. The measured insulation resistance MUST be >3 MΩ.
 - U-ground,
 - V-ground,
 - W-ground.

Compressor insulation measurements are correct?	Action
Yes	Compressor is OK. Return to troubleshooting of the specific error and continue with the next procedure.
No	Replace the compressor, see "3.2.2 Repair procedures" [▶ 46].

To perform a check of the compressor contactor + current protection



INFORMATION

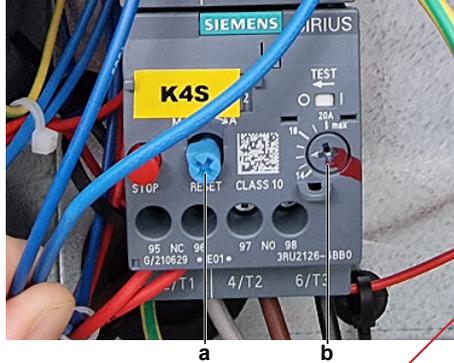
The compressor contactor and the current protection are described as 1 single part.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

- 1 Check that the RESET selector (blue) screw on the current protection is ALWAYS set to M (manual) for ALL units. Correct as needed.

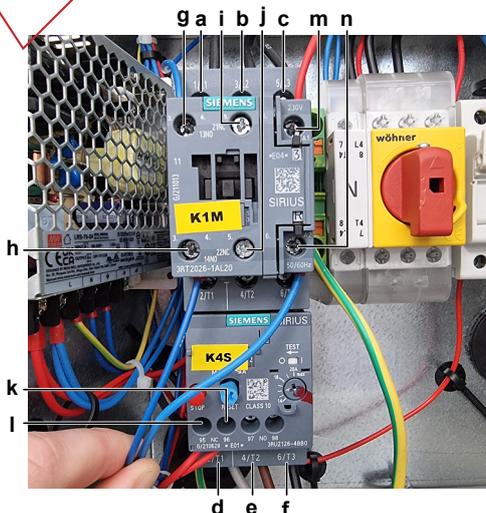


- a RESET selector screw
- b Amperage setting screw

- 2 Check that the correct current protection (spare part) is installed and that the amperage setting (screw) on the current protection is correct (see table below). Correct as needed.

Unit	K4S		K5S	
	Type	Setting	Type	Setting
EWVWQ/ EWLQ014KCW1N	S00 3RU2116-1JB0 (7; 10)	8.8 A	-	-
EWVWQ/ EWLQ025KCW1N	S0 3RU2126-4BB0 (14;20)	15.2 A	-	-
EWVWQ/ EWLQ033KCW1N	S0 3RU2126-4BB0 (14;20)	19 A	-	-
EWVWQ/ EWLQ049KCW1N	S00 3RU2116-1JB0 (7; 10)	15.2 A	S00 3RU2116-1JB0 (7; 10)	15.2 A
EWVWQ/ EWLQ064KCW1N	S0 3RU2126-4BB0 (14;20)	19 A	S0 3RU2126-4BB0 (14;20)	19 A

- 3 Turn ON the power of the unit with the main switch.



a Terminal 1

h Terminal 14NO

b Terminal 3	i Terminal 21NC
c Terminal 5	j Terminal 22NC
d Terminal 2	k Terminal 95
e Terminal 4	l Terminal 96
f Terminal 6	m Terminal A1
g Terminal 13NO	n Terminal A2

- 4** Measure the power supply voltage between the terminals 1-3, 1-5, 3-5 of the compressor contactor:

Result: The measured voltages MUST be 400 V AC \pm 10%.

Is the measured power supply voltage correct?	Action
Yes	Skip the next step.
No	Continue with the next step.

- 5** Check the power supply to the unit, see "[4.1.1 Checking procedures](#)" [▶ 99].

Does the unit receive power?	Action
Yes	Correct the wiring and/or components between the main power supply terminal and the compressor contactor, see " 6.2 Wiring diagram " [▶ 119].
No	Adjust the power supply to the unit, see " 4.1.2 Repair procedures " [▶ 101].

- 6** Measure the voltage on the compressor feedback contact. Measure between the terminals 13NO-14NO of the compressor contactor.

Result: The measured voltages MUST be:

- 24 V DC \pm 10% for K1M.
- 230 V AC \pm 10% for K2M.

Is the measured voltage correct?	Action
Yes	Skip the next step.
No	Continue with the next step.

- 7** For K1M: Measure the output voltage between terminals -V and +V of the 24 V DC auxiliary power supply.

Result: The measured voltage MUST be 24 V DC.

Is the measurement correct?	Action
Yes	Correct the wiring between the contactor terminals and the 24 V DC auxiliary power supply, see " 6.2 Wiring diagram " [▶ 119].
No	Perform a check of the 24 V DC auxiliary power supply, see " 3.1.1 Checking procedures " [▶ 33].

- 8** For K2M: Check the power supply to the unit, see "[4.1.1 Checking procedures](#)" [▶ 99].

Does the unit receive power?	Action
Yes	Correct the wiring and/or components between the main power supply terminal and the compressor contactor, see " 6.2 Wiring diagram " [▶ 119].

Does the unit receive power?	Action
No	Adjust the power supply to the unit, see "4.1.2 Repair procedures" [▶ 101].

9 Turn OFF the main switch.



DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "To prevent electrical hazards" [▶ 99].

10 Disconnect the wires from the contactor terminals 13NO and 21NC (ONLY for EWLQ units).

11 Turn ON the power of the unit with the main switch.

12 Start the unit operation via the user interface or service monitoring tool.

13 Wait for – or create condition to operate the compressor.

14 Once the compressor operates, perform the following measurements:

- Measure the output voltage between the terminals 2-4, 2-6, 4-6 on the current protection.
The measured voltages MUST be 400 V AC ± 10% (contacts closed).
- Measure the resistance between the terminals 13NO-14NO (compressor feedback signal contact) on the contactor.
The measured resistance MUST be short-circuit (contact closed).
- ONLY for EWLQ units: Measure the resistance between the terminals 21NC-22NC (crankcase heater contact) on the contactor.
The measured resistance MUST be OL (contact open).
- Measure the resistance between the terminals 95-96 on the current protection.
The measured resistance MUST be short-circuit (contact closed).

Are all measurements correct?	Action
Yes	Continue with the next step.
No	Skip the next steps and continue with the operating voltage check of the contactor.

15 Stop the compressor operation. Once the compressor has stopped, again perform the following measurements:

- Measure the output voltage between the terminals 2-4, 2-6, 4-6 on the current protection.
The measured voltages MUST be 0 V AC (contacts open).
- Measure the resistance between the terminals 13NO-14NO (compressor feedback signal contact) on the contactor.
The measured resistance MUST be OL (contact open).
- ONLY for EWLQ units: Measure the resistance between the terminals 21NC-22NC (crankcase heater contact) on the contactor.
The measured resistance MUST be short-circuit (contact closed).
- Measure the resistance between the terminals 95-96 on the current protection.
The measured resistance MUST be short-circuit (contact closed).

Are all measurements correct?	Action
Yes	Contactor is OK. Return to troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

16 Measure the operating voltage between the terminals A1-A2 on the compressor contactor.

Result: The measured operating voltage MUST be:

- 230 V AC when the compressor should be operating.
- 0 V AC when the compressor should NOT be operating.

Is the measured operating voltage of the contactor correct?	Action
Yes	Replace the compressor contactor + current protection, see " 3.2.2 Repair procedures " [▶ 46].
No	Continue with the next step.



INFORMATION

Make sure that the high pressure switch (which is wired in the operating voltage line of the compressor contactor) functions correctly, see "[3.5.1 Checking procedures](#)" [▶ 63].

17 Disconnect the wires from the following terminals:

- For K1M: COM and Q2 of the terminal block T11 on the main PCB.
- For K2M: COM and Q3 of the terminal block T11 on the main PCB.

18 Measure the resistance between these terminals on the main PCB.

Result: The measured resistance MUST be:

- Short-circuit (switch contact on main PCB = closed) when the compressor should be operating.
- OL (switch contact on main PCB = open) when the compressor should NOT be operating.

Is the measured resistance correct?	Action
Yes	Check and correct the wiring between the main power supply terminal and the operating voltage terminals of the compressor contactor, see " 6.2 Wiring diagram " [▶ 119].
No	Perform a check the main PCB, see " 3.6 Main PCB " [▶ 67].

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.2.2 Repair procedures

To remove the compressor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

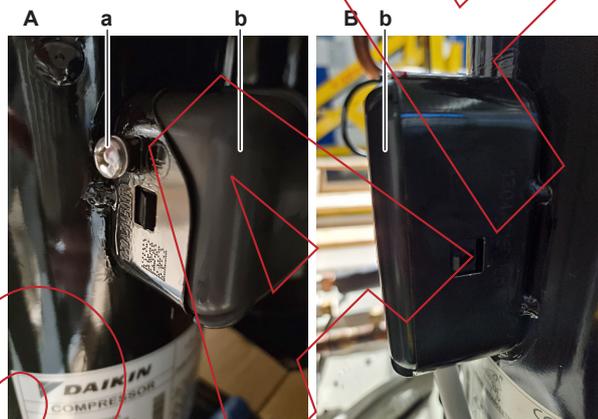
Prerequisite: Remove the compressor insulation (if present).

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 105].

- 1 If needed, remove any parts to create more space for the removal of the compressor.

 **DANGER: RISK OF ELECTROCUTION**
 Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "To prevent electrical hazards" [▶ 99].

- 2 Remove the cover of the compressor wire terminals.

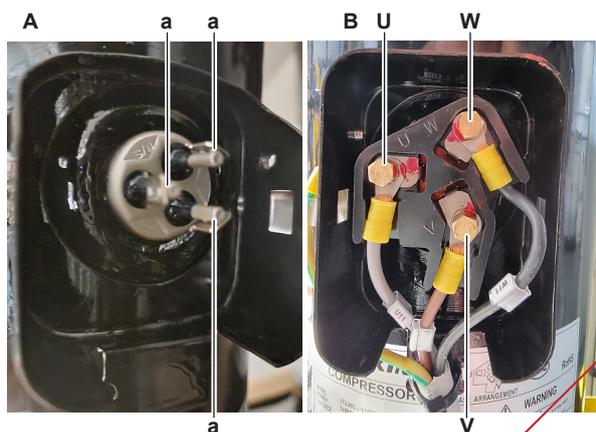


- A EWWQ/EWLQ014KCW1N units
- B EWWQ/EWLQ025~064KCW1N units
- a Screw
- b Compressor wire terminals cover

- 3 For EWWQ/EWLQ014KCW1N units: Disconnect the Faston connectors from the compressor wire terminals U, V and W.

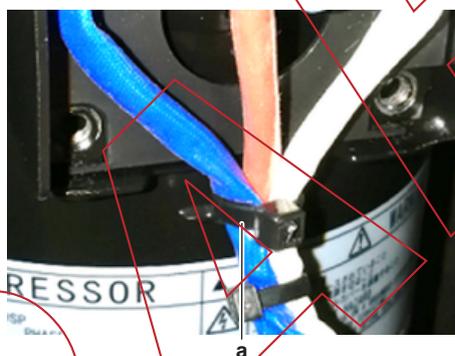
- 4 For EWWQ/EWLQ025~064KCW1N units:
 - Loosen and remove the 3 bolts that fix the compressor wiring.
 - Remove the wiring from the compressor wire terminals U, V and W.
 - Carefully straighten the terminal lugs.
 - Remove the black wire guide.

 **INFORMATION**
 Note the position of the wiring on the compressor wire terminals to allow correct connection during installation.



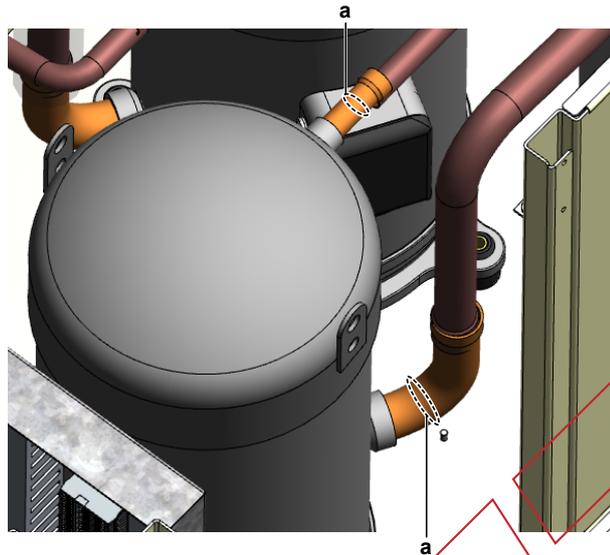
- A** EWWQ/EWLQ014KCW1N units
- B** EWWQ/EWLQ025~064KCW1N units
- a** Faston connection
- U** U
- V** V
- W** W

- 5** Cut the tie strap and remove the compressor wiring from the compressor body.



- a** Tie strap

- 6** For EWLQ units, ONLY: Remove the crankcase heater, see "[To remove the crankcase heater](#)" [▶ 56].
- 7** Supply nitrogen to the refrigerant circuit. The nitrogen pressure MUST NOT exceed 0.02 MPa.
- 8** Wrap a wet rag around the components near the compressor pipes. Heat the brazing points of the compressor pipes using an oxygen acetylene torch and remove the refrigerant pipes from the compressor pipes using pliers.



a Compressor pipe

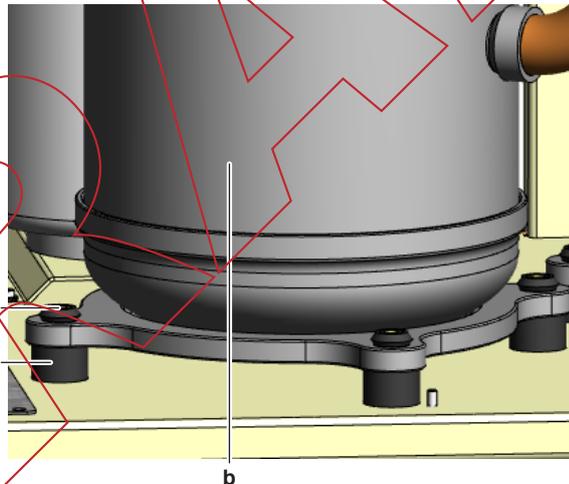
9 Stop the nitrogen supply when the piping has cooled down.



INFORMATION

It is ALSO possible to cut the component pipe(s) using a pipe cutter. Make sure to remove the remaining component pipe end(s) from the refrigerant pipes by heating the brazing point(s) of the component pipe(s) using an oxygen acetylene torch.

10 Remove the nuts and bolts and remove the compressor from the unit.



a Bolt
b Compressor
c Damper

11 Remove the 4 dampers from the compressor.



INFORMATION

The compressor dampers may look different.

12 Remove the bushings and keep them for re-use.

13 Install plugs or caps on the open pipe ends of the refrigerant piping to avoid dirt or impurities from entering the piping.

14 To install the compressor, see "[3.2.2 Repair procedures](#)" [▶ 46].

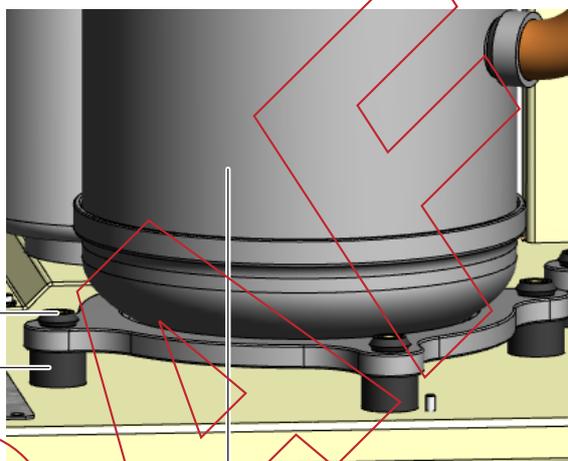
To install the compressor

- 1 Check the state of the dampers. Replace if worn.
- 2 Install the 4 dampers in the correct location on the unit.
- 3 Remove the plugs or caps from the refrigerant piping and make sure they are clean.
- 4 Remove the caps from the compressor pipes (of the new compressor).

**CAUTION**

The oil in the compressor is hygroscopic. Therefore remove the caps from the compressor pipes as late as possible.

- 5 Install the compressor on the correct location on the dampers. Properly insert the refrigerant pipes in the pipe expansions of the compressor pipes.
- 6 Install and tighten the bolts and nuts to fix the compressor to the dampers.

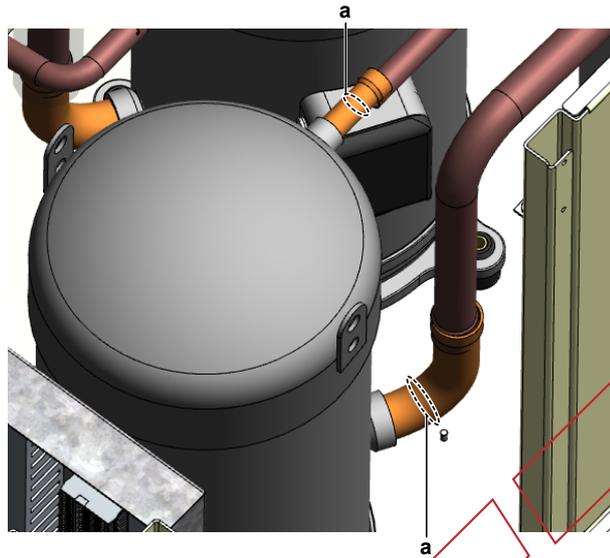


- a** Bolt
b Compressor
c Damper

**INFORMATION**

The compressor dampers may look different.

- 7 Supply nitrogen to the refrigerant circuit. The nitrogen pressure **MUST NOT** exceed 0.02 MPa.
- 8 Wrap a wet rag around the compressor pipes and any other components near the compressor and solder the compressor pipes to the refrigerant pipes.



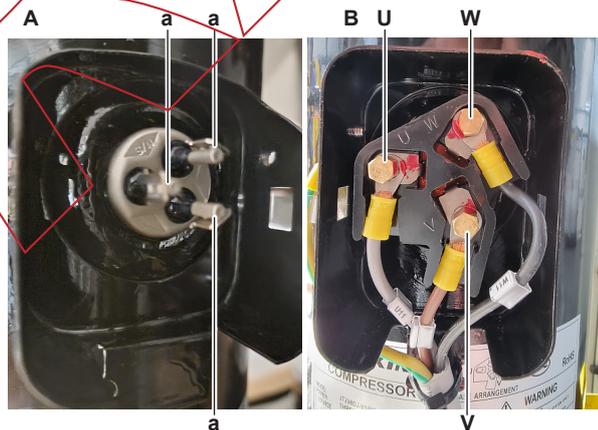
a Compressor pipe



CAUTION

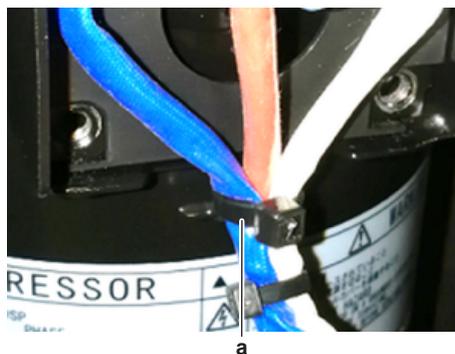
Overheating the compressor pipes (and the oil inside the compressor pipes) will damage or destroy the compressor.

- 9 After soldering is done, stop the nitrogen supply after the component has cooled-down.
- 10 For EWWQ/EWLQ014KCW1N units: Connect the Faston connectors to the compressor wire terminals U, V and W.
- 11 For EWWQ/EWLQ025~064KCW1N units:
 - Install the black wire guide over the terminal lugs.
 - Bend the terminal lugs against the black wire guide.
 - Align the wiring with the compressor wire terminals U, V and W.
 - Insert and fix the 3 bolts that fix the compressor wiring.



A EWWQ/EWLQ014KCW1N units
 B EWWQ/EWLQ025~064KCW1N units
 a Faston connection
 U U
 V V
 W W

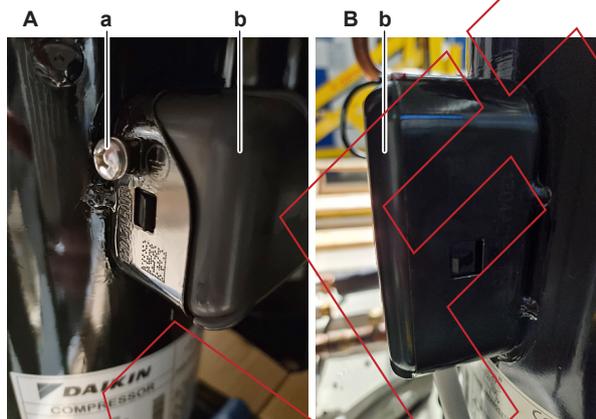
- 12 Fix the compressor wiring to the protrusion on the compressor body using a new tie strap.



a

a Tie strap

13 Install the cover of the compressor wire terminals.



A EWWQ/EWLQ014KCW1N units

B EWWQ/EWLQ025~064KCW1N units

a Screw

b Compressor wire terminals cover

14 For EWLQ units ONLY: Install the crankcase heater, see "[To install the crankcase heater](#)" [▶ 57]

15 Install the compressor insulation (if present).

16 Perform a pressure test, see "[4.2.1 Checking procedures](#)" [▶ 101].

17 Add refrigerant to the refrigerant circuit, see "[4.2.2 Repair procedures](#)" [▶ 105].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to " 3.2.1 Checking procedures " [▶ 35] of the compressor and continue with the next procedure.

To remove the compressor contactor + current protection



INFORMATION

The compressor contactor and the current protection are described as 1 single part.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

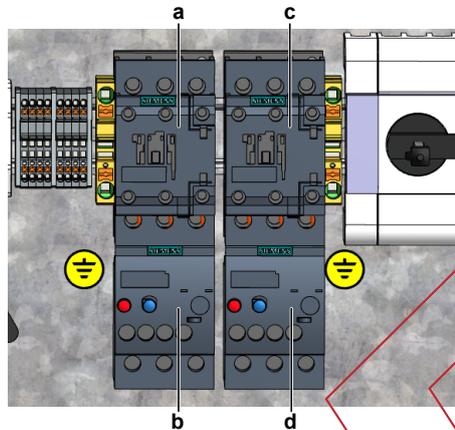
1 Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].



DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see ["To prevent electrical hazards"](#) [▶ 99].

- Loosen the screws and disconnect all wiring from the compressor contactor and current protection terminals.



- a Compressor contactor K1M
- b Current protection K4S
- c Compressor contactor K2M
- d Current protection K5S

- Remove the compressor contactor + current protection from the rail in the switch box.
- To install the compressor contactor + current protection, see ["3.2.2 Repair procedures"](#) [▶ 46].

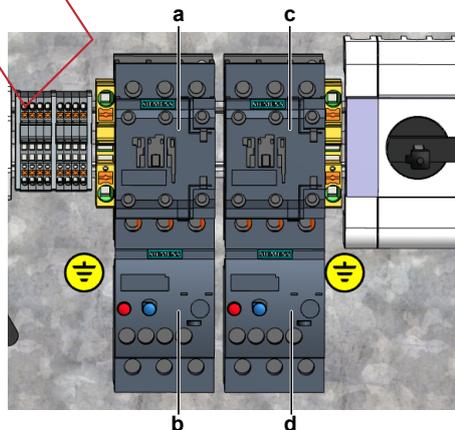
To install the compressor contactor + current protection



INFORMATION

The compressor contactor and the current protection are described as 1 single part.

- Install the compressor contactor + current protection on the correct location on the rail in the switch box.



- a Compressor contactor K1M
- b Current protection K4S
- c Compressor contactor K2M
- d Current protection K5S

- Connect all wiring to the correct compressor contactor and current protection terminals. Tighten the screws to fix the wires.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to " 3.2.1 Checking procedures " [▶ 35] of the compressor and continue with the next procedure.

3.3 Crankcase heater



INFORMATION

ONLY for EWLQ units.

3.3.1 Checking procedures



INFORMATION

It is recommended to perform the checks in the listed order.

To perform an electrical check of the crankcase heater

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

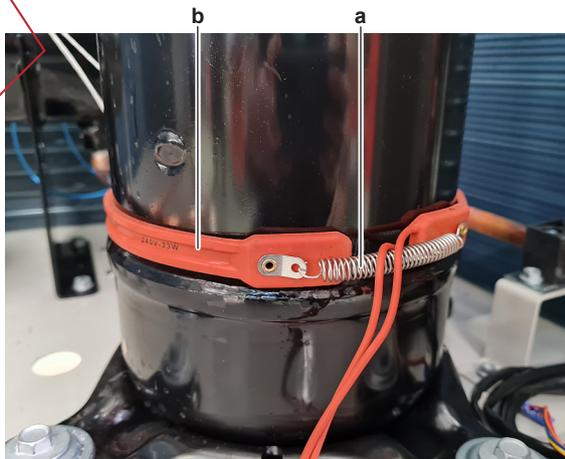
- Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].



DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "[To prevent electrical hazards](#)" [▶ 99].

- Open the compressor insulation (if present).
- Detach the spring that fixes the crankcase heater on the compressor.

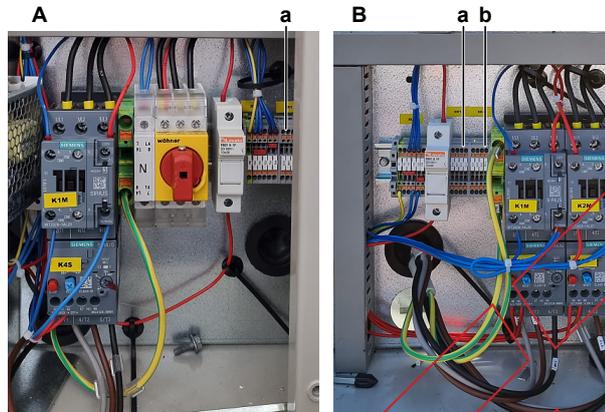


- a Spring
- b Crankcase heater

- Remove the crankcase heater from the compressor and wait for 5 minutes (until the heater element reaches ambient temperature).

5 Disconnect the wires of the crankcase heater:

- For crankcase heater E1H; disconnect the wires from terminals E1H and NH1 of terminal block XK1.
- For crankcase heater E2H, disconnect the wires from the terminals E2H and NH2 of terminal block XK2.



A EWLQ014~033KCW1N
 B EWLQ049~064KCW1N
 a Terminal block XK1
 b Terminal block XK2

6 Measure the resistance between the disconnected crankcase heater wires.

Result: The resistance MUST be 1.77 kΩ±10%.

Is the measured resistance correct?	Action
Yes	Continue with the next step.
No	Replace the crankcase heater, see "3.3.2 Repair procedures" [▶ 56].

- 7 Connect the crankcase heater wires to the appropriate terminals and install the crankcase heater on the compressor.
- 8 Turn ON the power using the main switch.
- 9 Start the unit operation via the user interface or service monitoring tool.

i **INFORMATION**
 Verify that the read-out of the discharge thermistor is correct.

- Use a contact thermometer to measure the thermistor temperature.
- Compare with the read-out via the service monitoring tool or field settings.

10 With the crankcase heater energized (compressor OFF and discharge temperature <70°C), measure the voltage between the following terminals:

Result: The measured voltage MUST be 230 V AC.

Crankcase heater	Terminals
E1H	E1H and NH1 of terminal block XK1
E2H	E2H and NH2 of terminal block XK2

i **INFORMATION**
 The compressor body temperature MUST raise at least 5°C before the crankcase heater is deactivated.

Is the measured voltage correct?	Action
Yes	Perform an insulation check of the crankcase heater, see "3.3.1 Checking procedures" [▶ 53].
No	Continue with the next step.

**INFORMATION**

Make sure that the compressor contactor functions correctly, see ["3.2.1 Checking procedures"](#) [▶ 35].

11 Disconnect the wires from the main PCB:

- For crankcase heater E1H; disconnect the wires from terminals Q2 and COM of terminal block T11 on the main PCB.
- For crankcase heater E2H, disconnect the wires from the terminals Q3 and COM of terminal block T11 on the main PCB.

**INFORMATION**

Verify that the read-out of the discharge thermistor is correct.

- Use a contact thermometer to measure the thermistor temperature.
- Compare with the read-out via the service monitoring tool or field settings.

12 With the crankcase heater energized (compressor OFF and discharge temperature <70°C), measure the resistance between the following terminals:

Result: The measurement MUST be short circuit (crankcase heater energised, switch contact on main PCB = closed).

Crankcase heater	Terminals
E1H	COM and Q2 of terminal block T11 on main PCB
E2H	COM and Q3 of terminal block T11 on main PCB

Is the measured resistance correct?	Action
Yes	Check and correct the wiring between the main power supply terminal and the crankcase heater connection points, see "6.2 Wiring diagram" [▶ 119].
No	Perform a check of the main PCB, see "3.6 Main PCB" [▶ 67].

To perform an insulation check of the crankcase heater

Prerequisite: First perform an electrical check of the crankcase heater, see ["3.3.1 Checking procedures"](#) [▶ 53].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Before proceeding:

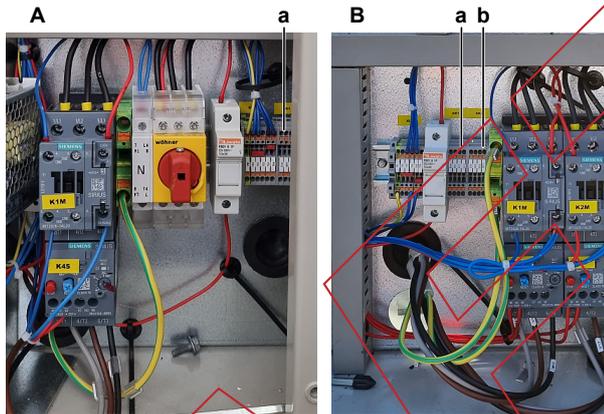


DANGER: RISK OF ELECTROCUTION

Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "To prevent electrical hazards" [▶ 99].

2 Disconnect the wires of the crankcase heater:

- For crankcase heater E1H; disconnect the wires from the terminals E1H and NH1 of terminal block XK1.
- For crankcase heater E2H, disconnect the wires from the terminals E2H and NH2 of terminal block XK2.



A EWLQ014~033KCW1N
 B EWLQ049~064KCW1N
 a Terminal block XK1
 b Terminal block XK2

3 Set the Megger voltage to at least 500 VDC.

4 Connect the Megger ground test lead directly to the crankcase heater ground wire.



CAUTION

Do NOT connect the Megger ground test lead to any other ground wire.

5 Measure the insulation resistance between the phase and ground wire. The measured insulation resistance MUST be >100 MΩ.

Is the measured insulation resistance correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the crankcase heater, see "3.3.2 Repair procedures" [▶ 56].

3.3.2 Repair procedures

To remove the crankcase heater

Prerequisite: Stop the unit operation via the user interface.

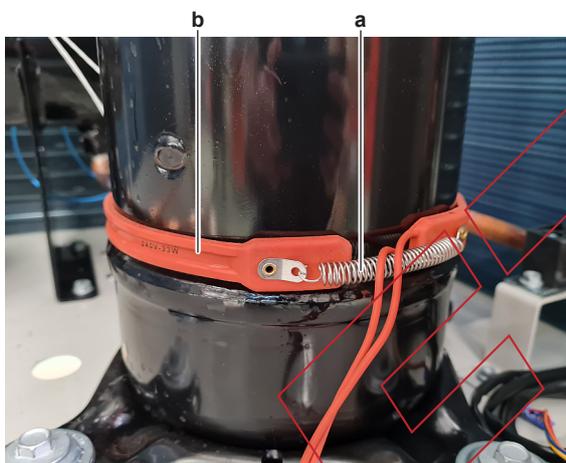
Prerequisite: Turn OFF the main switch.

1 Remove the required plate work, see "3.7 Plate work" [▶ 73].

**DANGER: RISK OF ELECTROCUTION**

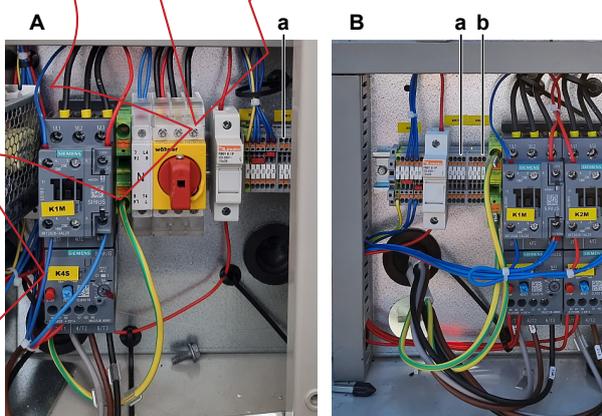
Before proceeding, confirm there is NO voltage on the OUT terminals of the compressor contactor + current protection, see "[To prevent electrical hazards](#)" [▶ 99].

- 2 Open the compressor insulation (if present).
- 3 Detach the spring that fixes the crankcase heater on the compressor.



- a Spring
b Crankcase heater

- 4 Cut all tie straps that fix the crankcase heater harness.
- 5 Disconnect the wires of the crankcase heater:
 - For crankcase heater E1H; disconnect the wires from the terminals E1H and NH1 of terminal block XK1.
 - For crankcase heater E2H; disconnect the wires from the terminals E2H and NH2 of terminal block XK2.

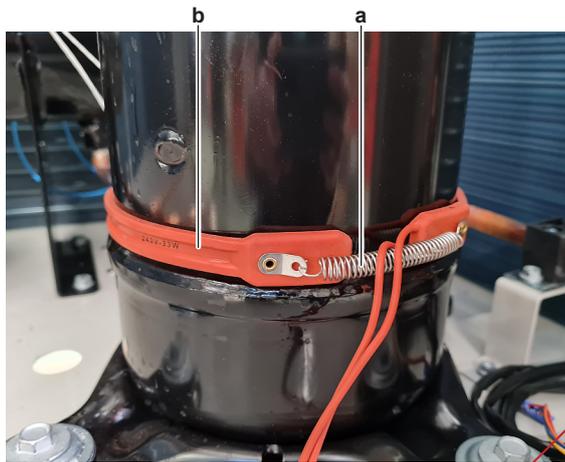


- A EWLQ014~033KCW1N
B EWLQ049~064KCW1N
a Terminal block XK1
b Terminal block XK2

- 6 Remove the crankcase heater from the unit.
- 7 To install the crankcase heater, see "[3.3.2 Repair procedures](#)" [▶ 56].

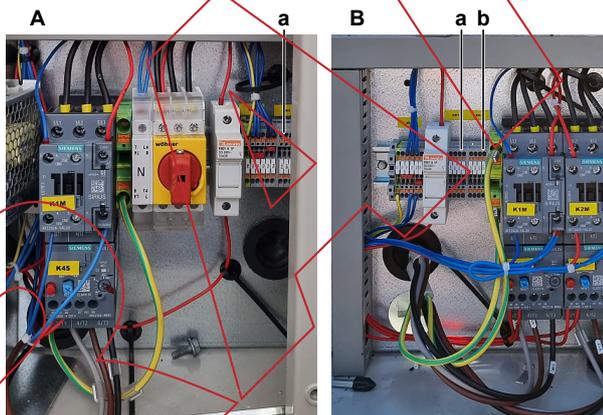
To install the crankcase heater

- 1 Install the crankcase heater on the compressor.
- 2 Attach the spring to fix the crankcase heater.



a Spring
b Crankcase heater

- 3 Route the crankcase heater harness towards the switch box.
- 4 Connect the wires of the crankcase heater:
 - For crankcase heater E1H; Connect the wires to the terminals E1H and NH1 of terminal block XK1.
 - For crankcase heater E2H, Connect the wires to the terminals E2H and NH2 of terminal block XK2.



A EWLQ014~033KCW1N
B EWLQ049~064KCW1N
a Terminal block XK1
b Terminal block XK2

- 5 Fix the crankcase heater harness using new tie straps.



INFORMATION

Replace all cable ties that were cut during removal.

- 6 Install the compressor insulation (if present).

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.4 Flow switch

3.4.1 Checking procedures

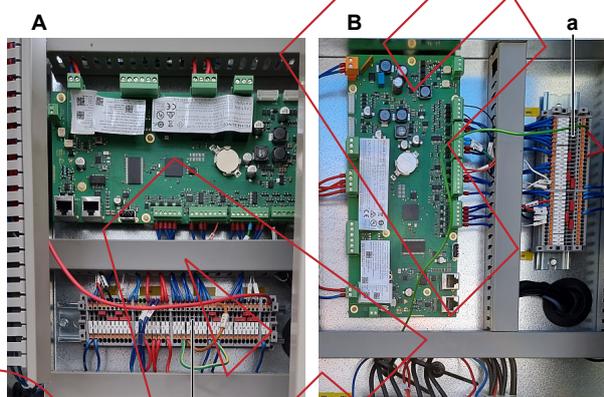
To perform an electrical check of the flow switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 The flow switch is field installed. Check that it is installed in the correct location: inlet water pipe of the evaporator heat exchanger. Correct as needed.
- 2 Check that the flow switch is correctly installed. The arrow MUST point in the direction of the water flow. Correct as needed.
- 3 Disconnect the flow switch wires from the terminals T5D2 and 703 of terminal block XRC.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XRC

- 4 Turn ON the power of the unit with the main switch.
- 5 Operate the unit with minimum water flow.
- 6 Measure the voltage (flow switch power) between the terminals T5D2 and 703 of terminal block XRC.

Result: The measured voltage MUST be approximately 24 V DC.

Is measured voltage correct?	Then
Yes	Skip the next step.
No	Continue with the next step.

- 7 Measure the output voltage between terminals -V and +V of the 24 V DC auxiliary power supply.

Result: The measured voltage MUST be 24 V DC.

Is the measurement correct?	Action
Yes	Correct the wiring between the appropriate terminals and the 24 V DC auxiliary power supply, see "6.2 Wiring diagram" [▶ 119].

Is the measurement correct?	Action
No	Perform a check of the 24 V DC auxiliary power supply, see "3.1.1 Checking procedures" [▶ 33].

8 Make sure that the unit is NOT operating, and there is NO water flow.

9 Measure the resistance between the (disconnected) flow switch wires.

Result: The flow switch MUST be open (OL).

10 Activate the water pump using the service monitoring tool as follows:

- Use technician password.
- In the Main Menu, select Unit Mode > Mode.
- Set to Test.
- In the Main Menu, select Commission Unit > Manual Control > Unit > Pump #.
- Set to ON.

11 Select ON and check (using a water flow meter) that the water flow is according to the table below:

Model	Flow switch trigger set point (L/min)
EWVQ/EWLQ014KCW1N	28~34
EWVQ/EWLQ025KCW1N	47~59
EWVQ/EWLQ033KCW1N	69~83
EWVQ/EWLQ049KCW1N	93~109
EWVQ/EWLQ064KCW1N	137~167

12 Again measure the resistance between the (disconnected) flow switch wires.

Result: The flow switch MUST be closed (0 Ω).



INFORMATION

When water flow is below flow switch trigger set point, switch MUST be open (OL).
When water flow is above flow switch trigger set point, switch MUST be closed (0 Ω).

Are flow switch measurements correct?	Action
Yes	Flow switch is OK. Return to troubleshooting of the specific error and continue with the next procedure.
No	Proceed with the next step.

13 Disconnect the flow switch wiring harness from the flow switch connector.

14 Measure the continuity of the flow switch wiring harness (between the disconnected connector and the disconnected wires).

Wiring harness is correct?	Action
Yes	Replace the flow switch, see "3.4.2 Repair procedures" [▶ 61].
No	Replace the flow switch wiring harness, see "3.4.2 Repair procedures" [▶ 61].

3.4.2 Repair procedures

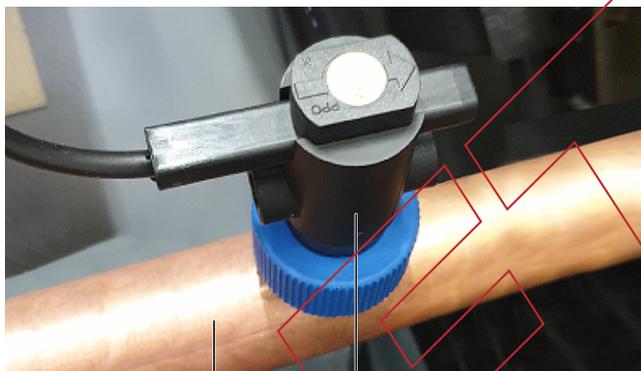
To remove the flow switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

- 1 Drain the water circuit, see "4.3.2 Repair procedures" [▶ 111].
- 2 Unscrew the flow switch and remove it from the piping.

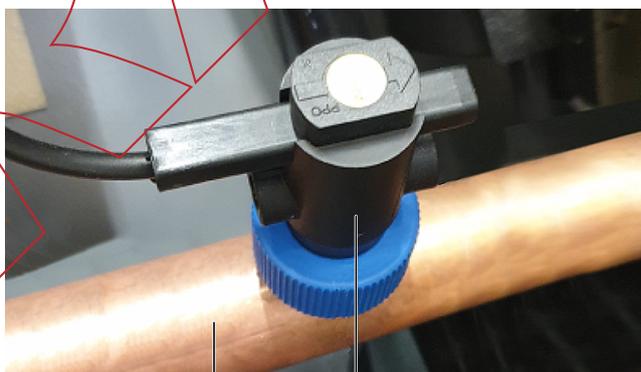


- a Flow switch
b Piping

- 3 Disconnect the flow switch connector from the flow switch wiring harness.
- 4 To install the flow switch, see "3.4.2 Repair procedures" [▶ 61].

To install the flow switch

- 1 Install (screw) the flow switch on correct location on the piping and in the correct orientation (arrow pointing in the direction of the water flow). Ensure that the O-ring is correctly installed and NOT damaged.



- a Flow switch
b Piping

- 2 Connect the flow switch connector to the flow switch wiring harness.
- 3 Open the stop valves and add water to the water circuit if needed, see "4.3.2 Repair procedures" [▶ 111].

Is the problem solved?	Action
Yes	No further actions required.

Is the problem solved?	Action
No	Return to the troubleshooting of the specific error and continue with the next procedure.

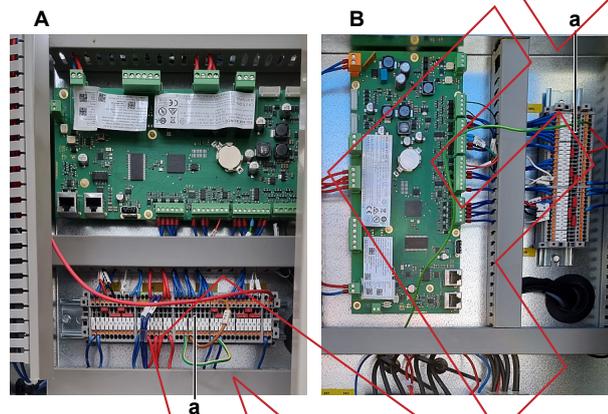
To remove the flow switch wiring harness

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 Disconnect the flow switch wiring harness from the flow switch connector.
- 2 Disconnect the wires of the flow switch wiring harness from the terminals T5D2 and 703 of terminal block XRC.

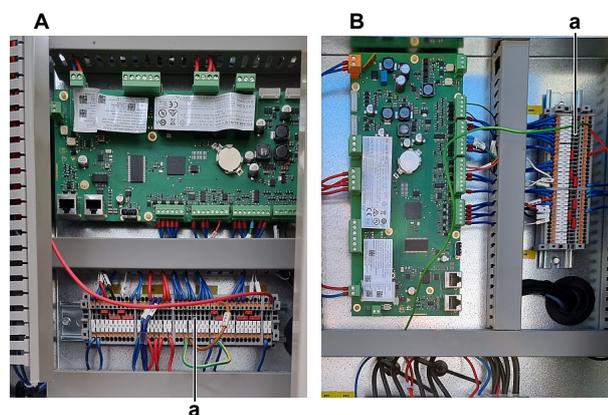


A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XRC

- 3 Cut all tie straps that fix the wiring harness.
- 4 Guide the flow switch wiring harness out of the switch box and remove the wiring harness.
- 5 To install the flow switch wiring harness, see ["3.4.2 Repair procedures"](#) [▶ 61].

To install the flow switch wiring harness

- 1 Connect the flow switch wiring harness to the flow switch connector.
- 2 Route the other end of the flow switch harness into the switch box.
- 3 Connect the flow switch wires to the terminals T5D2 and 703 of terminal block XRC.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units

a Terminal block XRC

4 Install new tie straps to fix the flow switch wiring harness.



INFORMATION

Replace all cable ties that were cut during removal.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.5 High pressure switch

3.5.1 Checking procedures

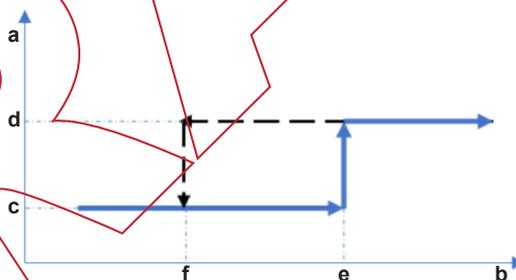
To perform an electrical check of the high pressure switch

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

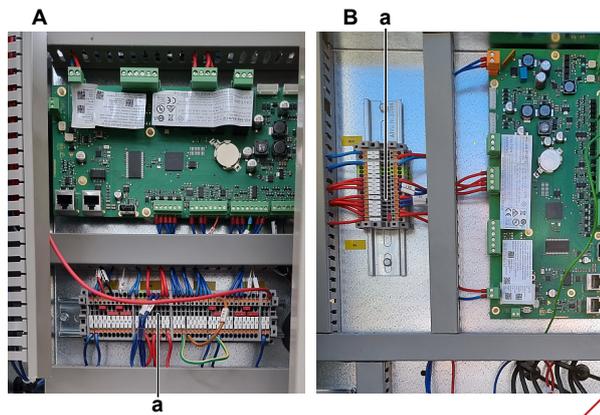
Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 Recuperate the refrigerant from the refrigerant circuit, see ["4.2.2 Repair procedures"](#) [▶ 105].
- 2 Fill the refrigerant circuit with nitrogen until pressurized just below operating pressure of the high pressure switch.



- a High pressure switch protection control
- b Pressure
- c High pressure switch closed
- d High pressure switch open
- e High pressure switch operating pressure
- f High pressure switch reset pressure

- 3 Disconnect the wires of the high pressure switch:
 - For high pressure switch S1HP; disconnect the wires from the terminals Q2.1 and Q2.2 of terminal block XL.
 - For high pressure switch S2HP; disconnect the wires from the terminals Q3.1 and Q3.2 of terminal block XL.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XL



INFORMATION

Measure the continuity of all wiring between the high pressure switch and the appropriate PCB. If NO continuity is measured, repair as needed, see "6.2 Wiring diagram" [▶ 119].

- 4** Measure the resistance between the disconnected wires of the high pressure switch.
Result: The switch MUST be closed.
- 5** Fill the refrigerant circuit with nitrogen until pressurized just above operating pressure of the high pressure switch.
- 6** Measure the resistance between the disconnected wires of the high pressure switch.
Result: The switch MUST be open.



INFORMATION

If the high pressure switch was triggered open, it will stay open until the refrigerant pressure drops below the reset pressure of the high pressure switch.

- 7** Lower the pressure of the nitrogen in the refrigerant circuit just above reset pressure of the high pressure switch.
- 8** Measure the resistance between the disconnected wires of the high pressure switch.
Result: The switch MUST be open.
- 9** Lower the pressure of the nitrogen in the refrigerant circuit just below reset pressure of the high pressure switch.
- 10** Measure the resistance between the disconnected wires of the high pressure switch.
Result: The switch MUST be closed.

High pressure switch connector measurements are correct?	Then
Yes	High pressure switch is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace the high pressure switch, see "3.5.2 Repair procedures" [▶ 65].

3.5.2 Repair procedures

To remove the high pressure switch

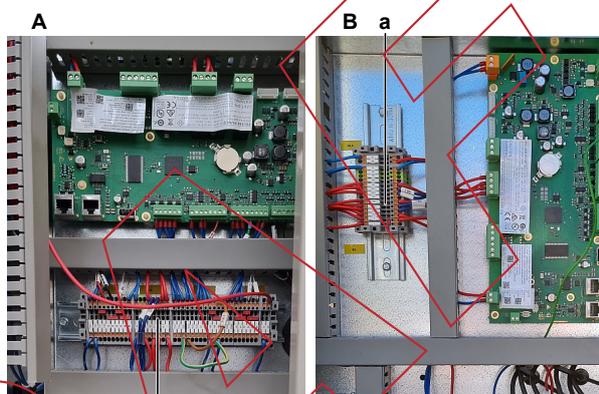
Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

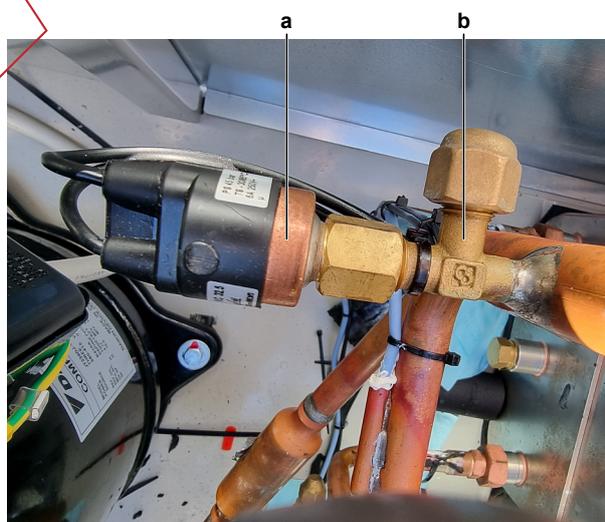
Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 105].

- 1 If needed, remove any parts to create more space for the removal of the high pressure switch.
- 2 Disconnect the wires of the high pressure switch:
 - For high pressure switch S1HP; disconnect the wires from the terminals Q2.1 and Q2.2 of terminal block XL.
 - For high pressure switch S2HP; disconnect the wires from the terminals Q3.1 and Q3.2 of terminal block XL.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XL

- 3 Route the high pressure switch wiring harness through the grommets, out of the switch box.
- 4 Cut all tie straps that fix the high pressure switch harness.
- 5 Loosen and remove the high pressure switch from the fitting.

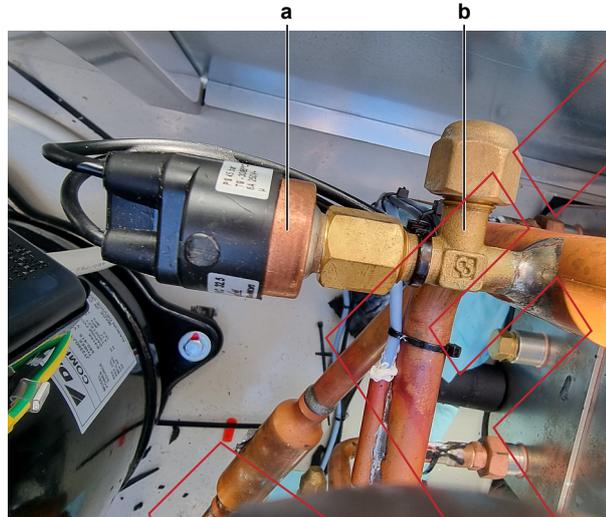


a High pressure switch
b Fitting

- 6 Remove the high pressure switch.
- 7 Install a plug or cap on the fitting to avoid dirt or impurities from entering the refrigerant piping.
- 8 To install the high pressure switch, see "[3.5.2 Repair procedures](#)" [▶ 65].

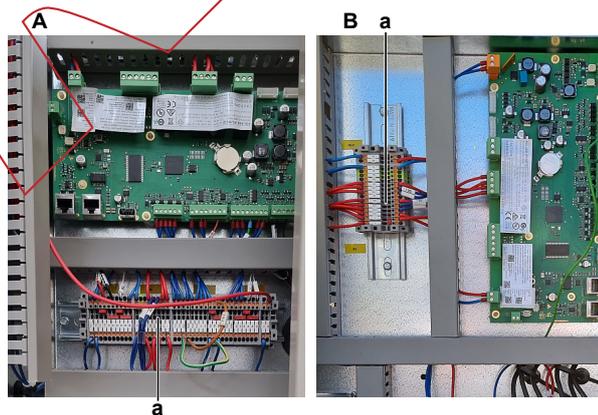
To install the high pressure switch

- 1 Remove the plug or cap from the fitting and make sure it is clean.
- 2 Install the high pressure switch in the correct location.



a High pressure switch
b Fitting

- 3 Route the high pressure switch wiring harness through the grommets, inside the switch box.
- 4 Connect the wires of the high pressure switch:
 - For high pressure switch S1HP; Connect the wires to the terminals Q2.1 and Q2.2 of terminal block XL
 - For high pressure switch S2HP; Connect the wires to the terminals Q3.1 and Q3.2 of terminal block XL.



A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XL

- 5 Install new tie straps to fix the high pressure switch harness.
- 6 Perform a pressure test, see "[4.2.1 Checking procedures](#)" [▶ 101].
- 7 Add refrigerant to the refrigerant circuit, see "[4.2.2 Repair procedures](#)" [▶ 105].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.6 Main PCB



INFORMATION

Pictures show the main PCB (mounted horizontally) for the EWWQ/ EWLQ014~033KCW1N units. Main PCB of the EWWQ/EWLQ049~064KCW1N units is mounted vertically (rotated 90° counter clockwise).

3.6.1 Checking procedures



INFORMATION

It is recommended to perform the checks in the listed order.

To check if the latest software version is installed on the main PCB

- 1 On the user interface, navigate to page [21.00] and check which software version is currently installed on the main PCB.
- 2 Go to Daikin Business Portal and check the latest software version available.

Is the latest software version installed?	Action
Yes	Return to " 3.6.1 Checking procedures " [▶ 67] of the main PCB and continue with the next procedure.
No	Update the software of the main PCB, see " 1 General operation " [▶ 6].

To perform a power check of the main PCB

Prerequisite: First check if the latest software version is installed, see "[3.6.1 Checking procedures](#)" [▶ 67].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

- 1 Turn ON the power of the unit with the main switch.
- 2 Measure the voltage between the wires on terminal block T7 of the main PCB.

Result: The measurement MUST be 24 V DC.



a Terminal block T7

Is the measurement correct?	Action
Yes	Return to " 3.6.1 Checking procedures " [▶ 67] of the main PCB and continue with the next procedure.
No	Continue with the next step.

3 Measure the output voltage between terminals -V and +V of the 24 V DC auxiliary power supply.

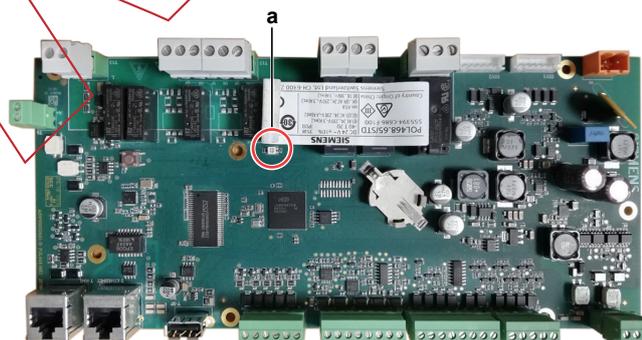
Result: The measured voltage MUST be 24 V DC.

Is the measurement correct?	Action
Yes	Correct the wiring between the main PCB and the 24 V DC auxiliary power supply, see " 6.2 Wiring diagram " [▶ 119].
No	Perform a check of the 24 V DC auxiliary power supply, see " 3.1.1 Checking procedures " [▶ 33].

To check the LED of the main PCB

Prerequisite: First check the power supply to the main PCB, see "[3.6.1 Checking procedures](#)" [▶ 67].

1 Locate the LED on the main PCB.



a LED



INFORMATION

Make sure the correct software is available on the PCB. If NOT, update using the updater tool.

2 Compare the behaviour of the led to the table below.

Color	Flash response	Function	Action
Red/green	Changes at 1 Hz	Software update mode: Download application or new firmware	Complete the update procedure (see "3.6.2 Repair procedures" [▶ 70]) and wait until update is done
Green	Continuous	Application loaded and is running	All OK
Orange	Continuous	Application loaded but is not running ^(a)	
Orange	Flashing: 50 ms on / 1000 ms off	Application not loaded ^(b)	
Red	Flashing at 2 Hz	Firmware error	Update software (see "3.6.2 Repair procedures" [▶ 70]), if persists replace PCB
Red	Continuous	Hardware fault	Replace PCB (see "3.6.2 Repair procedures" [▶ 70]).

^(a) Orange LED will appear when using the SCOPE virtual controller or other Service monitoring tools (command on the toolbar: Start application needed) and also to check during update procedure with USB drive (manual restart required).

^(b) Check the Service monitoring tool procedures.

Does the LED function correctly?	Action
Yes	Return to "3.6.1 Checking procedures" [▶ 67] of the main PCB and continue with the next procedure.
No	Perform necessary action as described in the table above.

3 After necessary action has been performed, again check the behaviour of the LED.

Does the LED function correctly?	Action
Yes	Return to "3.6.1 Checking procedures" [▶ 67] of the main PCB and continue with the next procedure.
No	Replace the main PCB, "3.6.2 Repair procedures" [▶ 70].

To check if the correct spare part is installed

- 1 First perform all earlier checks of the main PCB, see ["3.6.1 Checking procedures"](#) [▶ 67].
- 2 Visit your local spare parts webbank.
- 3 Enter the model name of your unit and check if the installed spare part number corresponds with the spare part number indicated in the webbank.

Is the correct spare part for the main PCB installed?	Action
Yes	Return to "3.6.1 Checking procedures" [▶ 67] of the main PCB and continue with the next procedure.
No	Replace the main PCB, "3.6.2 Repair procedures" [▶ 70].

To check the wiring of the main PCB

Prerequisite: First perform all earlier checks of the main PCB, see ["3.6.1 Checking procedures"](#) [▶ 67].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Check that all wires are properly connected and that all connectors are fully plugged-in.
- 2 Check that no connectors or wires are damaged.
- 3 Check that the wiring corresponds with the wiring diagram, see ["6.2 Wiring diagram"](#) [▶ 119].



INFORMATION

Correct the wiring as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to "3.6.1 Checking procedures" [▶ 67] of the main PCB and continue with the next procedure.

Problem solved?

After all checking procedures listed above have been performed:

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

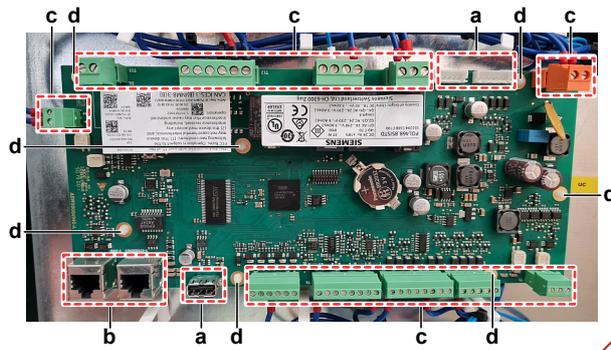
3.6.2 Repair procedures

To remove the main PCB

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].
- 2 Disconnect all connectors and LAN cables from the main PCB.

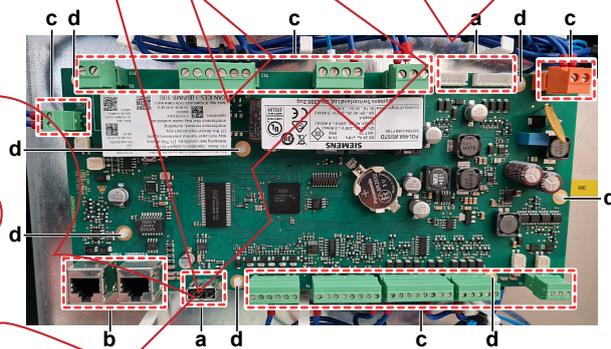


- a Connector
- b LAN terminal
- c Terminal block
- d PCB support

- 3 Disconnect all terminal blocks from the main PCB.
- 4 Carefully pull the PCB at the side and unlatch the PCB supports one by one using a small pair of pliers.
- 5 Remove the main PCB.
- 6 To install the new outdoor unit main PCB, see ["3.6.2 Repair procedures" \[▶ 70\]](#).

To install the main PCB

- 1 Install the main PCB on its correct location in the switch box.
- 2 Correctly install the main PCB on the PCB supports.



- a Connector
- b LAN terminal
- c Terminal block
- d PCB support

- 3 Connect all terminal blocks to the main PCB.
- 4 Connect all connectors and LAN cables to the main PCB.

Update software

- 1 Load the files shown in the picture onto an empty USB-drive.

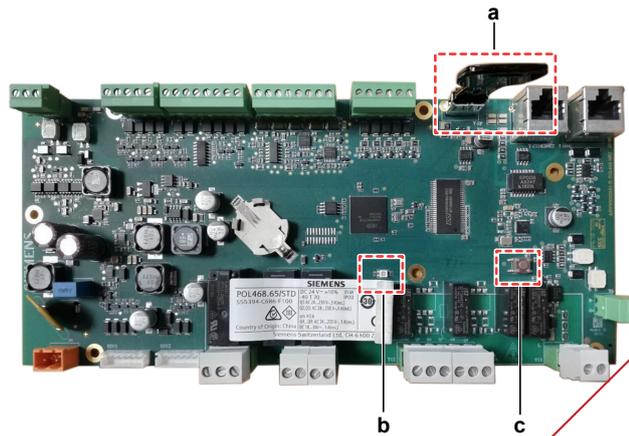
Name	Date modified	Type	Size
HMWeb	2017/10/26 16:17	UCF File	177 KB
HMComp	2017/10/26 16:17	UCF File	46 KB
MBRTComp	2017/10/26 16:17	UCF File	154 KB
OBHComp	2017/10/26 16:17	UCF File	25 KB
ScopeConfig	2017/10/26 16:17	UCF File	1 KB



INFORMATION

Latest software version is available on Daikin Business Portal.

- 2 While power is ON (LED = ON), insert the USB-drive in the USB-port.



- a USB-drive
- b LED
- c Button

▪ FOR SOFTWARE UPDATE

- 1 Update the software
 - Via the user interface: Use field setting [20.02].
 - Via the service monitoring tool: Go to the Main Menu > Save/Restore > Software Update > Start.
- 2 While software is updating, check the status of the LED:

Result: First the LED blinks green. Then it blinks green / red, and at the end it lights up continuously orange.
- 3 Immediately turn OFF and ON the main switch.
- 4 When done, on the user interface, check the menu > About.

Result: Software version MUST be the latest version.

▪ FOR SPARE PCB'S

- 1 Press the button, and keep pressed.
- 2 With the button still pressed, turn ON the main switch and power the unit.

Result: The LED blinks green.
- 3 Keep the button pressed.

Result: The LED blinks green / red.
- 4 Immediately release the button.

Result: The LED lights up continuously orange.
- 5 Immediately turn OFF and ON the main switch.
- 6 On the user interface, check the menu > About

Result: Software version MUST be the latest version.

Set parameters

- 1 When installing a new main PCB, the configuration of the unit has to be defined (technician password required):
 - Via the user interface: Navigate to page [14] Service Configuration.
 - Via the service monitoring tool: In the Main Menu, select Commission Unit > Configuration.
- 2 Find below an overview of the required settings:

Page	Name	Description
[14.00]	Unit Type	0 = None
		1 = EWWQ
		2 = EWLQ
[14.01]	Size	0 = #1 Only
		1 = #2 Only
		2 = Auto
		3 = #1 Primary
		4 = #2 Primary
[14.02]	Num Cirs	0 = 1 circuit
		1 = 2 circuits
[14.03]	N. of Restart	3
		4
		5
[14.04]	LowPressureAlarm Delay at start	0~240 s

3 Correctly set the following data for your specific unit:

Unit	[14.00]	[14.02]
EWWQ014KCW1N	1	0
EWWQ025KCW1N	1	0
EWWQ033KCW1N	1	0
EWWQ049KCW1N	1	1
EWWQ064KCW1N	1	1
EWLQ014KCW1N	2	0
EWLQ025KCW1N	2	0
EWLQ033KCW1N	2	0
EWLQ049KCW1N	2	1
EWLQ064KCW1N	2	1

Is the problem solved?	Action
Yes	No further actions required.
No	Return to " 3.6.1 Checking procedures " [▶ 67] of the main PCB and continue with the next procedure.

3.7 Plate work

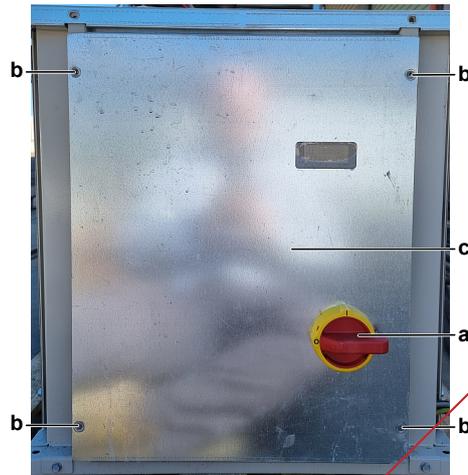
3.7.1 To remove the plate work

To remove the switch box cover

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Remove (pull out) the main switch from the unit.
- 2 Loosen and remove the 4 screws that fix the switch box cover.



- a Main switch
- b Screw
- c Switch box cover

- 3 Carefully remove the switch box cover and disconnect the wiring from the user interface.



INFORMATION

The user interface is wired to the main PCB with a LAN to 4-pin cable. This cable CANNOT be removed from the outside. Remove the switch box cover carefully so the cable does NOT break.

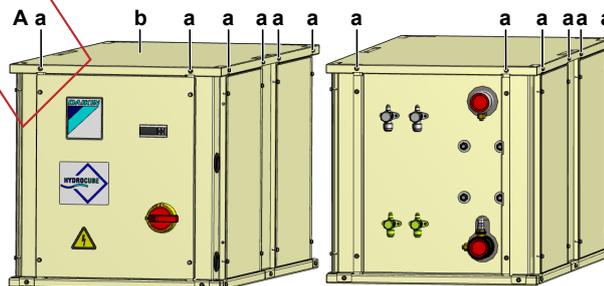
- 4 Remove the switch box cover from the unit.

To remove the top panel

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Loosen and remove the 8 screws (EWWQ/EWLQ014~033KCW1N units) or 12 screws (EWWQ/EWLQ049~064KCW1N units) that fix the top panel.



- A EWWQ/EWLQ049~064KCW1N unit
- a Screw
- b Top panel

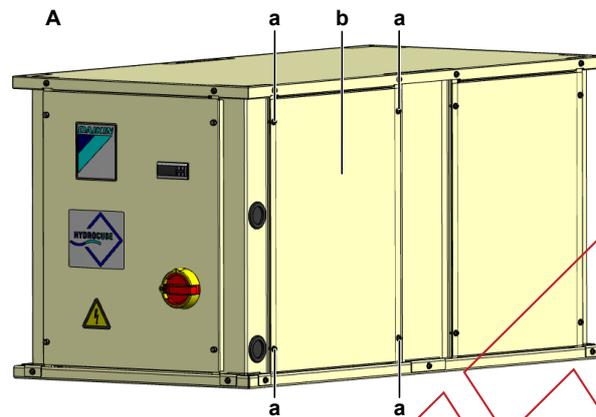
- 2 Lift and remove the top panel from the unit.

To remove the side panels

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Loosen and remove the 4 screws that fix the appropriate side panel. EWWQ/EWLQ014~033KCW1N units have 2 side panels, EWWQ/EWLQ049~064KCW1N units have 4 side panels.



- A EWWQ/EWLQ049~064KCW1N unit
 a Screw
 b Side panel

- 2 Remove the side panel.

3.8 Refrigerant low pressure sensor

3.8.1 Checking procedures



INFORMATION

Pictures show the main PCB (mounted horizontally) for the EWWQ/EWLQ014~033KCW1N units. Main PCB of the EWWQ/EWLQ049~064KCW1N units is mounted vertically (rotated 90° counter clockwise).

To perform an electrical check of the refrigerant pressure sensor

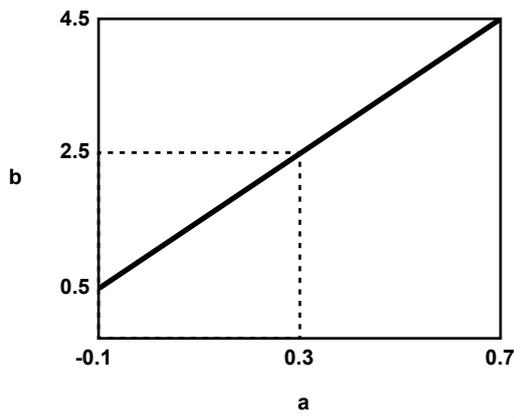
Prerequisite: Check that the pressure sensor is correctly calibrated. Perform the calibration procedure as needed, see ["3.8.2 Repair procedures"](#) [▶ 79].

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 Connect a pressure gauge to the service port of the refrigerant pressure sensor.
- 2 Turn ON the power of the unit with the main switch.
- 3 Read the pressure on the pressure gauge.
- 4 Using the graphic below, determine the expected sensor output voltage based on the pressure obtained in the previous step.



a Detected pressure (MPa)
b Output voltage (V)

V (DC)	Detected pressure MPa
0.5	-0.1
0.6	-0.08
0.7	-0.06
0.8	-0.04
0.9	-0.02
1.0	0
1.1	0.02
1.2	0.04
1.3	0.06
1.4	0.08
1.5	0.1
1.6	0.12
1.7	0.14
1.8	0.16
1.9	0.18
2.0	0.2
2.1	0.22
2.2	0.24
2.3	0.26
2.4	0.28
2.5	0.3
2.6	0.32
2.7	0.34
2.8	0.36
2.9	0.38
3.0	0.4
3.1	0.42

V (DC)	Detected pressure MPa
3.2	0.44
3.3	0.46
3.4	0.48
3.5	0.5
3.6	0.52
3.7	0.54
3.8	0.56
3.9	0.58
4.0	0.6
4.1	0.62
4.2	0.64
4.3	0.66
4.4	0.68
4.5	0.7

5 Measure the output voltage of the refrigerant pressure sensor:

- For refrigerant pressure sensor S4LP: Measure the output voltage between terminal X1 of terminal block T3 and terminal M of terminal block T2 on the main PCB.
- For refrigerant pressure sensor S5LP: Measure the output voltage between terminal X2 of terminal block T3 and terminal M of terminal block T2 on the main PCB.



- a Terminal X1 on terminal block T3
- b Terminal X2 on terminal block T3
- c Terminal M on terminal block T2
- d Main PCB

6 Check that the measured voltage is in line with the expected voltage through the read refrigerant pressure.



INFORMATION

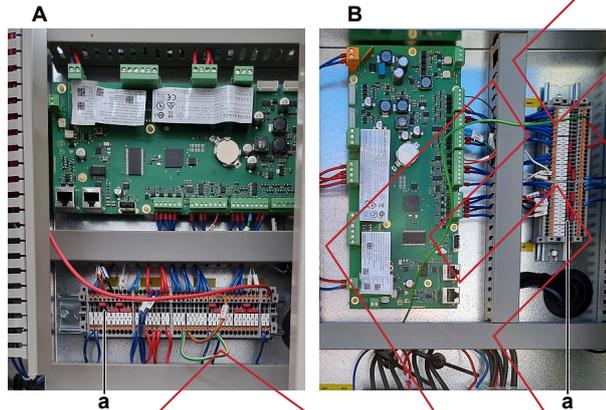
In most cases, the user interface (7-segment display) allows to monitor the low pressure.

If the measured output voltage value matches the voltage determined through the measured pressure, but the pressure is NOT correct on the user interface (7-segment display), replace the main PCB.

The measured voltage is inside the expected range?	Action
Yes	Refrigerant pressure sensor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

7 On terminal block XR, measure the voltage (sensor power supply) between terminals M and 750 to which the pressure sensor is connected.

Result: The measured voltage MUST be +5 V DC.

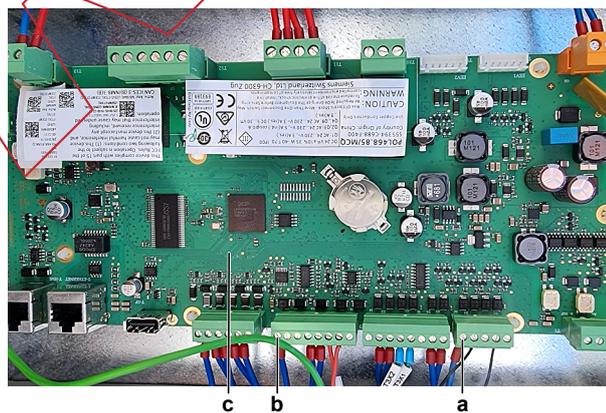


A EWWQ/EWLQ014~033KCW1N units
B EWWQ/EWLQ049~064KCW1N units
a Terminal block XR

Is the measured voltage +5 V DC?	Then
Yes	Skip the next step.
No	Continue with the next step.

8 Measure the output voltage between terminal M of terminal block T2 and terminal VDCout of terminal block T4 on the main PCB.

Result: The measured voltage MUST be +5 V DC.



a Terminal M on terminal block T2
b Terminal VDCout on terminal block T4
c Main PCB

Is the measured output voltage +5 V DC?	Then
Yes	Correct the wiring between the terminal block XR and the terminal blocks on the main PCB, see "6.2 Wiring diagram" [▶ 119].
No	Perform a check of the main PCB, see "3.6.1 Checking procedures" [▶ 67].

9 Disconnect the refrigerant pressure sensor wiring harness from the refrigerant pressure sensor.

10 Disconnect the other end of the wiring harness:

- For refrigerant pressure sensor S4LP: Disconnect the wires from the terminal X1 of terminal block T3 on the main PCB and terminals M and 750 of terminal block XR.
- For refrigerant pressure sensor S5LP: Disconnect the wires from the terminal X2 of terminal block T3 on the main PCB and terminals M and 750 of terminal block XR.

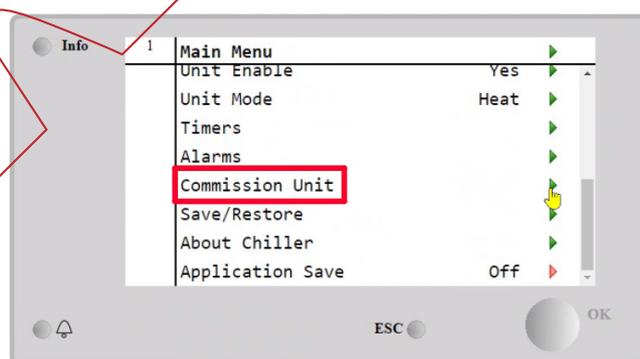
11 Measure the continuity of the refrigerant pressure sensor wiring harness.

Is the refrigerant pressure sensor wiring harness correct?	Action
Yes	Replace the refrigerant pressure sensor, see "3.8.2 Repair procedures" [▶ 79].
No	Replace the refrigerant pressure sensor wiring harness, see "3.8.2 Repair procedures" [▶ 79].

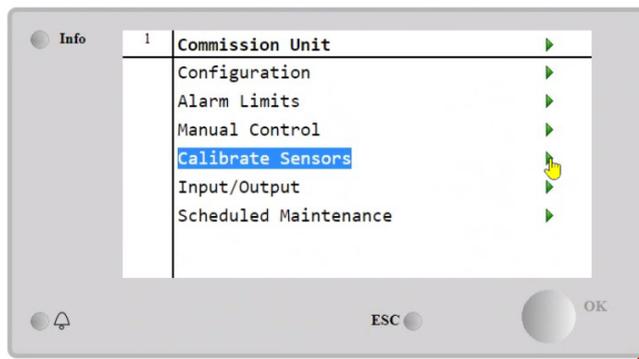
3.8.2 Repair procedures

To calibrate the refrigerant pressure sensor

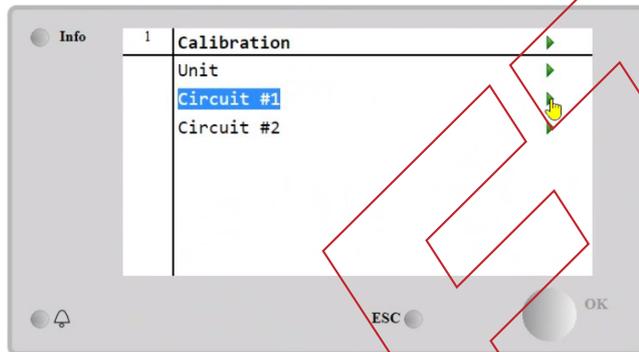
On the service monitoring tool:



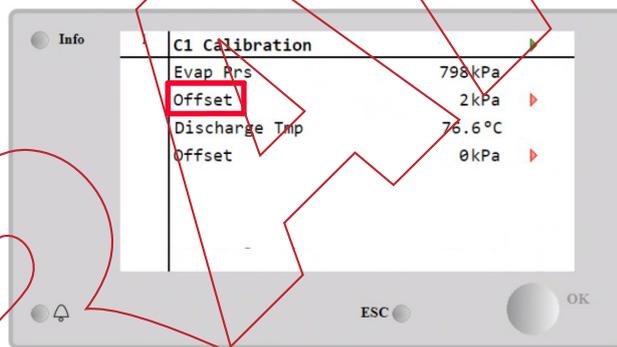
1 Select Commission Unit.



2 Select Calibrate Sensors.



3 Select Circuit #.



4 Select Offset.

5 Modify the Offset to obtain the same pressure as measured by the reference gauge.

If the required correction is out of the possible range (from -100 kPa to 100 kPa) replace the pressure sensor, see "3.8.2 Repair procedures" [▶ 79].

Is the problem solved?	Action
Yes	No further actions required.
No	Perform an electrical check of the refrigerant pressure sensor, see "3.8.1 Checking procedures" [▶ 75].

To remove the refrigerant pressure sensor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

Prerequisite: Recuperate the refrigerant from the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 105].

Prerequisite: If needed, remove any parts or insulation to create more space for the removal.

- 1 Disconnect the wiring harness from the refrigerant pressure sensor.
- 2 Loosen and remove the refrigerant pressure sensor from the fitting.



- a Refrigerant pressure sensor wiring harness
- b Refrigerant pressure sensor
- c Fitting

- 3 Install a plug or cap on the fitting to avoid dirt or impurities from entering the refrigerant piping.
- 4 To install the refrigerant pressure sensor, see "[3.8.2 Repair procedures](#)" [▶ 79].

To install the refrigerant pressure sensor

- 1 Remove the plug or cap from the fitting and make sure it is clean.
- 2 Install the refrigerant pressure sensor together with a new seal in the correct location on the fitting. Make sure the seal is correctly installed.
- 3 Tighten the refrigerant pressure sensor to 12.7~15 N•m torque (in case of dry seal).



- a Refrigerant pressure sensor wiring harness
- b Refrigerant pressure sensor
- c Fitting

- 4 Connect the wiring harness to the refrigerant pressure sensor.
- 5 Perform a pressure test, see "[4.2.1 Checking procedures](#)" [▶ 101].

6 Add refrigerant to the refrigerant circuit, see ["4.2.2 Repair procedures"](#) [▶ 105].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To remove the refrigerant pressure sensor wiring harness

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 Disconnect the wiring harness connector from the refrigerant pressure sensor.
- 2 Disconnect the other end of the refrigerant pressure sensor wiring harness:
 - For refrigerant pressure sensor S4LP: Disconnect the wires from the terminal X1 of terminal block T3 on the main PCB and from the terminals M and 750 of terminal block XR.
 - For refrigerant pressure sensor S5LP: Disconnect the wires from the terminal X2 of terminal block T3 on the main PCB and from the terminals M and 750 of terminal block XR.
- 3 Route the wiring harness through the grommets out of the switch box.
- 4 Cut all tie straps that fix the wiring harness, and remove the wiring harness from the unit.
- 5 To install the refrigerant pressure sensor wiring harness, see ["3.8.2 Repair procedures"](#) [▶ 79].

To install the refrigerant pressure sensor wiring harness

- 1 Connect the wiring harness connector to the refrigerant pressure sensor.
- 2 Route the other end of the wiring harness through the grommets, inside the switch box.
- 3 Connect the other end of the refrigerant pressure sensor wiring harness:
 - For refrigerant pressure sensor S4LP: Connect the wires to the terminal X1 of terminal block T3 on the main PCB and to the terminals M and 750 of terminal block XR.
 - For refrigerant pressure sensor S5LP: Connect the wires to the terminal X2 of terminal block T3 on the main PCB and to the terminals M and 750 of terminal block XR.
- 4 Fix the wiring harness using new tie straps.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.9 Thermistors

3.9.1 Refrigerant side thermistors

Checking procedures



INFORMATION

It is recommended to perform the checks in the listed order.

To perform a mechanical check of the specific thermistor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

- 1 Locate the thermistor and remove the insulation if needed. Check that the thermistor is correctly installed and that there is thermal contact between the thermistor and the piping.

Is the thermistor correctly installed (thermal contact between the thermistor and the piping)?	Action
Yes	Perform an electrical check of the specific thermistor, see " Checking procedures " [▶ 83].
No	Correctly install the thermistor, see " Repair procedures " [▶ 85].

To perform an electrical check of the specific thermistor

Prerequisite: Check that the thermistors are correctly calibrated. Perform the calibration procedure as needed, see "[Repair procedures](#)" [▶ 85].

- 1 First perform a mechanical check of the thermistor, see "[Checking procedures](#)" [▶ 83].
- 2 Locate the thermistor.



INFORMATION

Remove the thermistor from its holder if not reachable with a contact thermometer.

- 3 Measure the temperature using a contact thermometer.

Name	Symbol	Location (PCB)	Terminal block (terminals)	Intermediate terminal block (terminals)	Reference (table)
Discharge pipe thermistor (circuit 1)	DT1	Main	T4: X5-T2: M	XR: M	A
Discharge pipe thermistor (circuit 2)	DT2	Main	T4: X6-T2: M	XR: M	A

- 4 Determine the thermistor resistance that matches the measured temperature.

Thermistor – Table A

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
-50	8330.587	40	51.279	130	2.322	220	0.289
-45	5761.987	45	41.534	135	2.025	225	0.263
-40	4037.777	50	33.828	140	1.771	230	0.239
-35	2864.682	55	27.698	145	1.553	235	0.218
-30	2056.307	60	22.795	150	1.366	240	0.199
-25	1492.489	65	18.853	155	1.204	245	0.182
-20	1094.712	70	15.666	160	1.065	250	0.167
-15	811.006	75	13.077	165	0.944	255	0.153
-10	606.555	80	10.964	170	0.838	260	0.141
-5	457.761	85	9.232	175	0.747	265	0.130
0	348.454	90	7.805	180	0.666	270	0.119
5	267.432	95	6.624	185	0.596	275	0.110
10	206.862	100	5.644	190	0.534	280	0.102
15	161.211	105	4.826	195	0.480	285	0.094
20	126.536	110	4.142	200	0.432	290	0.087
25	100.000	115	3.566	205	0.390	295	0.081
30	79.548	120	3.081	210	0.352	300	0.075
35	63.677	125	2.670	215	0.319		

- 5 Disconnect the wires from the terminals of the appropriate terminal block.
- 6 Measure the resistance between the disconnected wires.
- 7 Check that the measured resistance value matches the resistance determined through the measured temperature (earlier step in the procedure).
- E.g. DT1 thermistor:
 - Measured temperature with contact thermometer: 23.1°C,
 - Resistance value determined through temperature (using the thermistor table A):
Resistance at 23°C: 110.9 kΩ,
Resistance at 24°C: 104.6 kΩ,
 - Disconnect the wires from terminal X5 of terminal block T4 and terminal M of terminal block T2 on the main PCB and measure resistance between the wires:
Measured resistance: 110.6 kΩ,
 - Measured resistance value is inside the range. DT1 thermistor passes the check.



INFORMATION

All thermistors have a resistance tolerance of 3%.



INFORMATION

In most cases, the user interface allows to monitor the thermistors.
 If the measured resistance value matches the resistance determined through the measured temperature, but the temperature for the corresponding thermistor is NOT correct on the user interface display, replace the applicable PCB.

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Thermistor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

- 8 Disconnect the thermistor wires from the terminals of the intermediate terminal block and measure the resistance of the thermistor (between the thermistor wires).

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Correct the wiring between the terminal block on the PCB and the intermediate terminal block, see "6.2 Wiring diagram" [▶ 119].
No	Replace the specific thermistor, see "Repair procedures" [▶ 85].

Repair procedures
To calibrate the thermistor

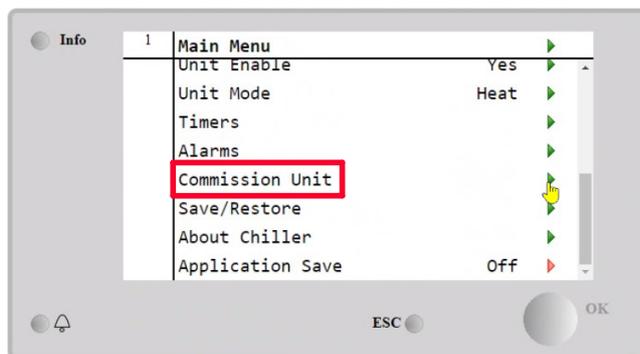
- 1 Place the sample thermistor and the unit thermistor in a container with ice.



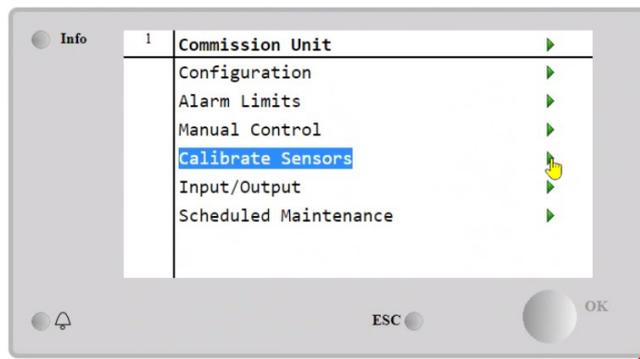
INFORMATION

Make sure to have a proper water/ice mix and wait until the water/ice temperature is stable.
 Place both thermistors in the middle of the container in order to NOT affect the readings.

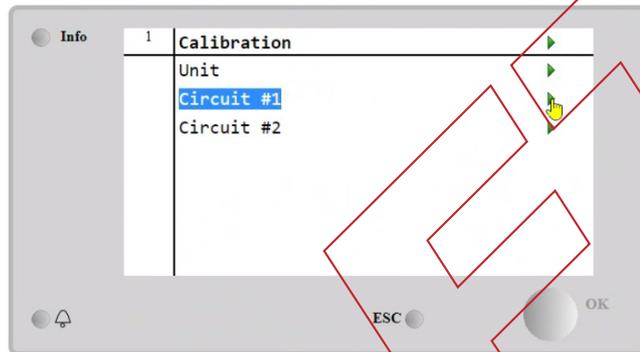
- 2 Enter technician password.
- 3 On the service monitoring tool, select Commission Unit.



- 4 Select Calibrate Sensors.



5 Select Circuit # of the specific thermistor.



6 Check the specific thermistor read-out and compare with the temperature value detected by the sample thermistor.

7 Select Offset of the specific thermistor.

8 Set the temperature difference (between thermistor read-out and sample temperature) in the offset parameter.

CAUTION
 Suction thermistor is the most crucial one because it controls the correct functioning of the expansion valve and consequent safe compressor running.

9 Save the modifications before proceeding with startup of the unit.

Is the problem solved?	Action
Yes	No further actions required.
No	Perform an electrical check of the thermistor, see " Checking procedures " [▶ 83].

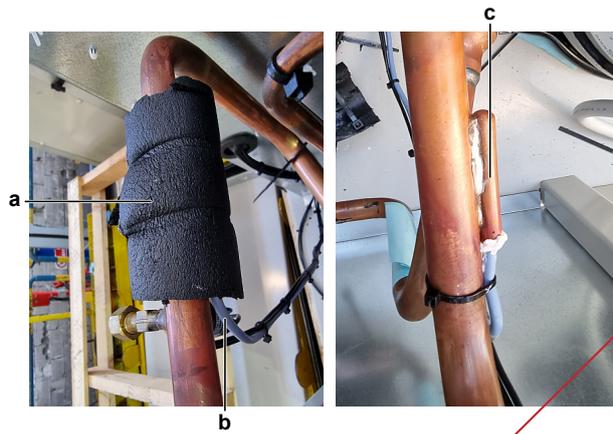
To remove the thermistor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

- 1 Locate the thermistor that needs to be removed.
- 2 Remove the thermistor from the thermistor holder as follows:
 - Cut the tie straps that fix the insulation and the thermistor wire.
 - Cut and remove the insulation.
 - Remove the thermistor from the thermistor holder.



- a Insulation
- b Thermistor wire
- c Thermistor holder

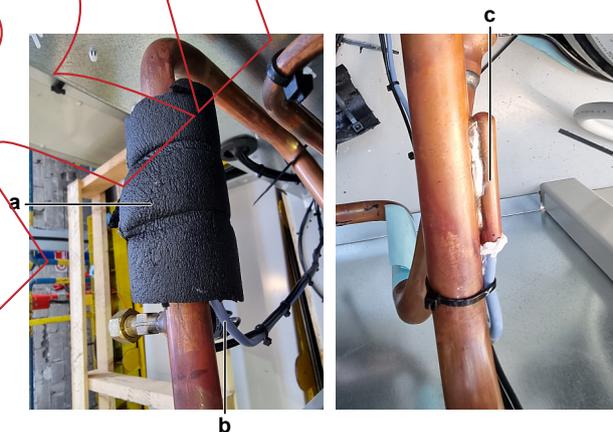
- 3 Cut all tie straps that fix the thermistor harness.
- 4 Disconnect the thermistor wires from the terminals of the appropriate terminal block(s) and remove the thermistor.

Name	Symbol	Terminal block (terminals)
Discharge pipe thermistor (circuit 1)	DT1	T4 on main PCB: X5 XR: M
Discharge pipe thermistor (circuit 2)	DT2	T4 on main PCB: X6 XR: M

- 5 To install the thermistor, see "[Repair procedures](#)" [▶ 85].

To install the thermistor

- 1 Install the thermistor in the specific thermistor holder.



- a Insulation
- b Thermistor wire
- c Thermistor holder

- 2 Route the thermistor harness towards the appropriate terminal block(s).
- 3 Connect the thermistor wires to the appropriate terminals of the terminal block(s).

Name	Symbol	Terminal block (terminals)
Discharge pipe thermistor (circuit 1)	DT1	T4 on main PCB: X5 XR: M

Name	Symbol	Terminal block (terminals)
Discharge pipe thermistor (circuit 2)	DT2	T4 on main PCB: X6 XR: M

- 4 Fix the thermistor harness using new tie straps
- 5 Install the insulation around the thermistor.
- 6 Fix the insulation and the thermistor wire using new tie straps.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.9.2 Water side thermistors

Checking procedures



INFORMATION

It is recommended to perform the checks in the listed order.

To perform a mechanical check of the specific thermistor

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].
- 2 Locate the thermistor. Check that the thermistor is correctly installed.

Is the thermistor correctly installed?	Action
Yes	Perform an electrical check of the specific thermistor, see " Checking procedures " [▶ 88].
No	Correctly install the thermistor, see " Repair procedures " [▶ 90].

To perform an electrical check of the specific thermistor

Prerequisite: Check that the thermistors are correctly calibrated. Perform the calibration procedure as needed, see "[Repair procedures](#)" [▶ 85].

- 1 First perform a mechanical check of the thermistor, see "[Checking procedures](#)" [▶ 88].
- 2 Locate the thermistor.



INFORMATION

Remove the thermistor from its holder if not reachable with a contact thermometer.

- 3 Measure the temperature using a contact thermometer.

Name	Symbol	Location (PCB)	Terminal block (terminals)	Intermediate terminal block (terminals)	Reference (table)
Inlet water thermistor – evaporator water circuit ^(a)	EEWT	Main	T2: B1-M	XR: M	A
Outlet water thermistor – evaporator water circuit	ELWT	Main	T2: B2-M	XR: M	A
Inlet water thermistor – condenser water circuit ^{(a)(b)}	CEWT	Main	T2: B3-M	XR: M	A
Outlet water thermistor – condenser water circuit ^(b)	CLWT	Main	T2: B4-M	XR: M	A

^(a) Optional

^(b) ONLY for EWWQ units.

- 4 Determine the thermistor resistance that matches the measured temperature.

Thermistor – Table A

T °C	kΩ	T °C	kΩ	T °C	kΩ	T °C	kΩ
-40	3452.75	5	254.90	50	36.62	95	8.11
-35	2478.40	10	199.56	55	30.40	100	7.01
-30	1800.31	15	157.41	60	25.36	105	6.08
-25	1322.51	20	125.04	65	21.26	110	5.29
-20	981.87	25	100.00	70	17.91	115	4.62
-15	736.31	30	80.50	75	15.16	120	4.05
-10	557.45	35	65.21	80	12.88	125	3.56
-5	425.86	40	53.14	85	11.00		
0	328.13	45	43.55	90	9.43		

- 5 Disconnect the wires from the terminals of the appropriate terminal block and measure the resistance between the disconnected wires.

- E.g. ELWT thermistor:
- Measured temperature with contact thermometer: 23.1°C,
- Resistance value determined through temperature (using the thermistor table A):
Resistance at 23°C: 100.9 kΩ,
Resistance at 24°C: 100.4 kΩ,
- Disconnect the wires from terminals B2 and M of terminal block T2 and measure resistance between the wires:
Measured resistance: 100.8 kΩ,
- Measured resistance value is inside the range. ELWT thermistor passes the check.

i **INFORMATION**
All thermistors have a resistance tolerance of 3%.

i **INFORMATION**
In most cases, the user interface allows to monitor the thermistors.
If the measured resistance value matches the resistance determined through the measured temperature, but the temperature for the corresponding thermistor is NOT correct on the user interface display, replace the applicable PCB.

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Thermistor is OK. Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

- 6** Disconnect the thermistor wires from the terminals of the intermediate terminal block and measure the resistance of the thermistor (between the thermistor wires)

Does the measured resistance of the thermistor match with the temperature determined resistance?	Action
Yes	Correct the wiring between the terminal block on the PCB and the intermediate terminal block, see "6.2 Wiring diagram" [▶ 119].
No	Replace the specific thermistor, see "Repair procedures" [▶ 90].

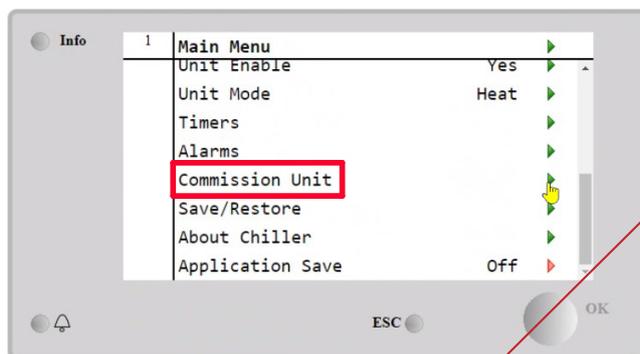
Repair procedures

To calibrate the thermistor

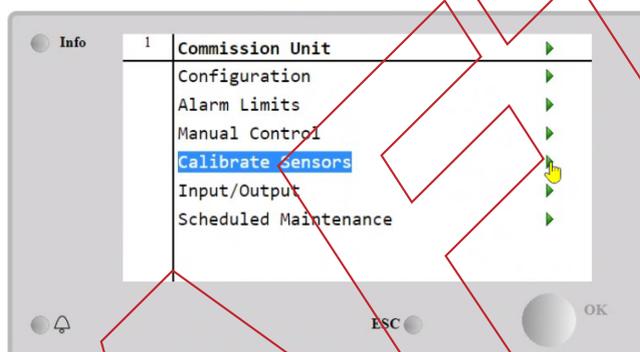
- 1** Place the sample thermistor and the unit thermistor in a container with ice.

i **INFORMATION**
Make sure to have a proper water/ice mix and wait until the water/ice temperature is stable.
Place both thermistors in the middle of the container in order to NOT affect the readings.

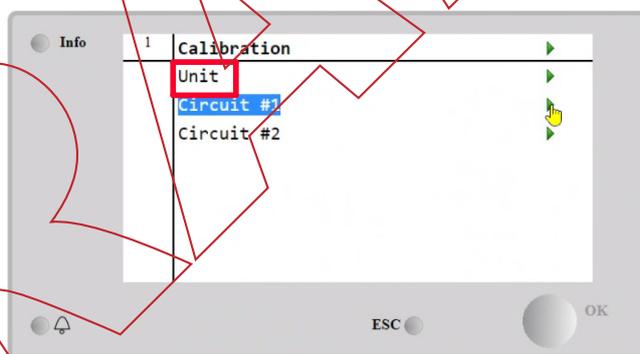
- 2 Enter technician password.
- 3 On the service monitoring tool, select Commission Unit.



- 4 Select Calibrate Sensors.



- 5 Select Unit.



- 6 Check the specific thermistor read-out and compare with the temperature value detected by the sample thermistor.
- 7 Select Offset of the specific thermistor.
- 8 Set the temperature difference (between thermistor read-out and sample temperature) in the offset parameter.
- 9 Save the modifications before proceeding with startup of the unit.

Is the problem solved?	Action
Yes	No further actions required.
No	Perform an electrical check of the thermistor, see " Checking procedures " [▶ 88].

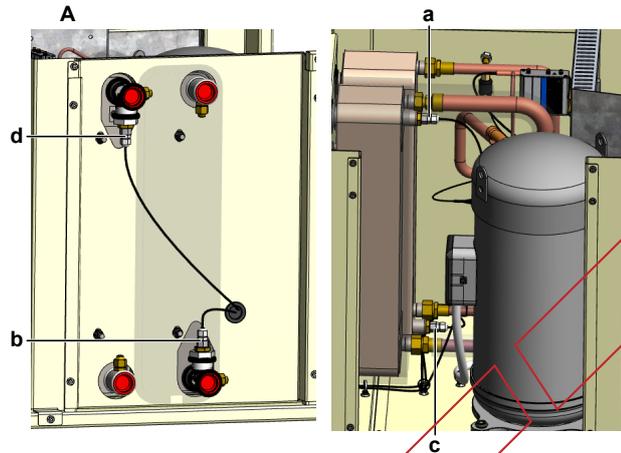
To remove the thermistor

Prerequisite: Stop the unit operation via the user interface.

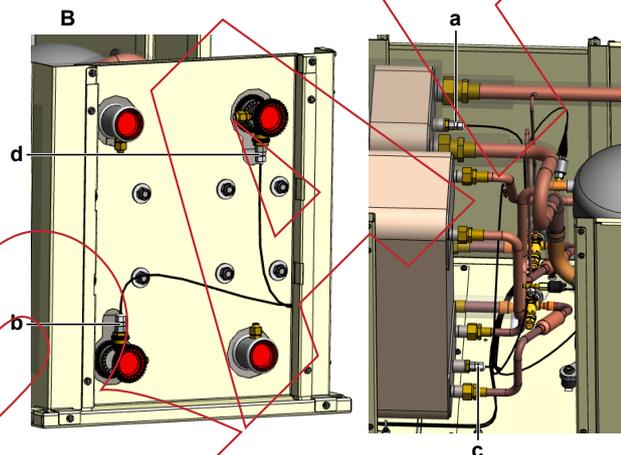
Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

- 1 Locate the thermistor that needs to be removed.
- 2 Remove the thermistor from the thermistor holder.



- A** EWWQ014~033KCW1N units
- a** Inlet water thermistor – evaporator water circuit EEWT
 - b** Outlet water thermistor – evaporator water circuit ELWT
 - c** Inlet water thermistor – condenser water circuit CEWT
 - d** Outlet water thermistor – condenser water circuit CLWT



- B** EWWQ049~064KCW1N units
- a** Inlet water thermistor – evaporator water circuit EEWT
 - b** Outlet water thermistor – evaporator water circuit ELWT
 - c** Inlet water thermistor – condenser water circuit CEWT
 - d** Outlet water thermistor – condenser water circuit CLWT

- 3 Cut the tie straps that fix the thermistor harness.
- 4 Disconnect the thermistor wires from the terminals of the appropriate terminal block(s) and remove the thermistor.

Name	Symbol	Terminal block (terminals)
Inlet water thermistor – evaporator water circuit ^(a)	EEWT	T2 on main PCB: B1 XR: M
Outlet water thermistor – evaporator water circuit	ELWT	T2 on main PCB: B2 XR: M
Inlet water thermistor – condenser water circuit ^(a) ^(b)	CEWT	T2 on main PCB: B3 XR: M

Name	Symbol	Terminal block (terminals)
Outlet water thermistor – condenser water circuit ^(b)	CLWT	T2 on main PCB: B4 XR: M

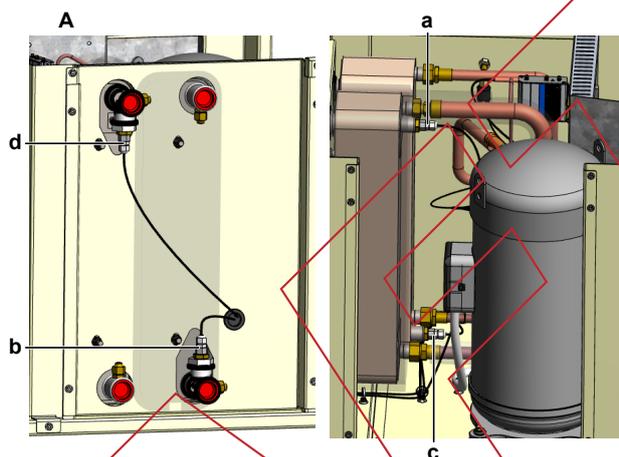
^(a) Optional

^(b) ONLY for EWWQ units.

- 5 To install the thermistor, see "Repair procedures" [▶ 90].

To install the thermistor

- 1 Correctly install the thermistor in the specific thermistor holder.



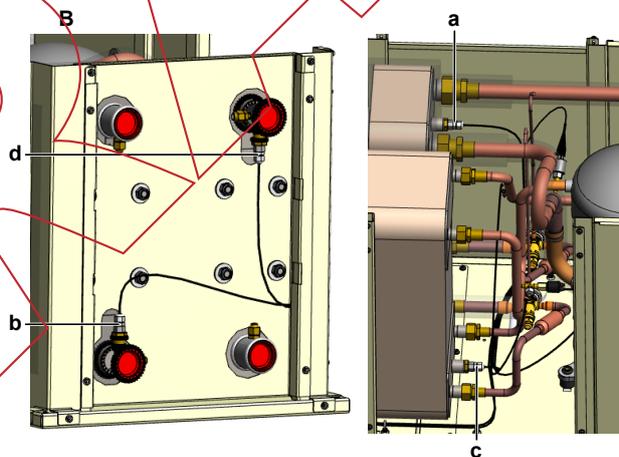
A EWWQ014~033KCW1N units

a Inlet water thermistor – evaporator water circuit EEWT

b Outlet water thermistor – evaporator water circuit ELWT

c Inlet water thermistor – condenser water circuit CEWT

d Outlet water thermistor – condenser water circuit CLWT



B EWWQ049~064KCW1N units

a Inlet water thermistor – evaporator water circuit EEWT

b Outlet water thermistor – evaporator water circuit ELWT

c Inlet water thermistor – condenser water circuit CEWT

d Outlet water thermistor – condenser water circuit CLWT

- 2 Route the thermistor harness towards the appropriate terminal block(s).
- 3 Connect the thermistor wires to the appropriate terminals of the terminal block(s).

Name	Symbol	Terminal block (terminals)
Inlet water thermistor – evaporator water circuit ^(a)	EEWT	T2 on main PCB: B1 XR: M

Name	Symbol	Terminal block (terminals)
Outlet water thermistor – evaporator water circuit	ELWT	T2 on main PCB: B2 XR: M
Inlet water thermistor – condenser water circuit ^(a) (b)	CEWT	T2 on main PCB: B3 XR: M
Outlet water thermistor – condenser water circuit ^(b)	CLWT	T2 on main PCB: B4 XR: M

^(a) Optional
^(b) ONLY for EWWQ units.

4 Fix the thermistor harness using new tie straps.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

3.10 User interface

3.10.1 Checking procedures



INFORMATION
It is recommended to perform the checks in the listed order.

To check the power supply to the user interface

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1** Remove the switch box cover, see ["3.7 Plate work"](#) [▶ 73].
- 2** Turn ON the power to the unit with main switch.
- 3** Measure the voltage between pins 1-4 on the LAN cable (that was disconnected from the user interface).

Result: The measured voltage MUST be 24 V DC.

Does the user interface receive power?	Action
Yes	Check if the user interface functions correctly, see "3.10.1 Checking procedures" [▶ 94].
No	Continue with the next step.

- 4** Check the communication wiring between the user interface and the unit PCB, see ["3.10.1 Checking procedures"](#) [▶ 94].

Is the communication wiring correct?	Action
Yes	Perform a check of the main PCB, see "3.6.1 Checking procedures" [▶ 67].

Is the communication wiring correct?	Action
No	Replace the user interface cable, see "3.10.2 Repair procedures" [▶ 96].

To check the correct functioning of the user interface

Prerequisite: First perform a power check of the user interface, see ["3.10.1 Checking procedures"](#) [▶ 94].

- Check the display for the following items:
 - Pinhole, bright spot, black spot, white spot, black line, white line, foreign particle, bubble:
The color of a small area is different from the remainder. The phenomenon does NOT change with voltage.
 - Contrast variation:
The color of a small area is different from the remainder. The phenomenon changes with voltage.
 - Polarizer defect:
Scratch, dirt, particle, bubble on polarizer or between polarizer and glass.
 - Dot defect:
The pixel appears bright or dark abnormally.
 - Functional defect:
No display, abnormal display, open or missing segment, short circuit, false viewing direction.
 - Glass defect:
Glass cracks, shaved corner of glass, surplus glass.
- Check that information is shown correctly and can be navigated through on the display of the user interface.
- Check that settings can be changed and saved, see ["3.10.2 Repair procedures"](#) [▶ 96].

Does the user interface function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

- Perform a check of the communication wiring between the user interface and the unit PCB.

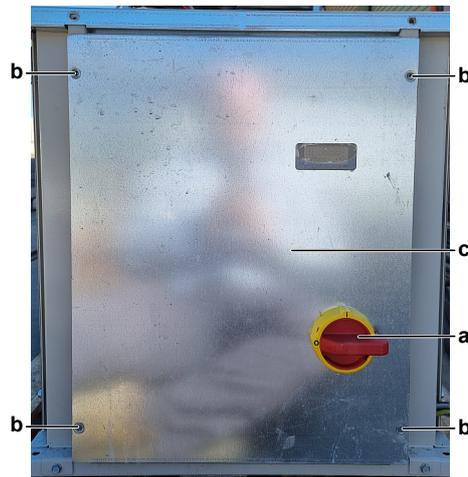
Is the communication wiring correct?	Action
Yes	Replace the user interface, see "3.10.2 Repair procedures" [▶ 96].
No	Replace the user interface cable, see "3.10.2 Repair procedures" [▶ 96].

To check the communication wiring between the user interface and the unit PCB

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- Remove (pull out) the main switch from the unit.
- Loosen and remove the 4 screws that fix the switch box cover.



- a Main switch
- b Screw
- c Switch box cover

- 3 Carefully move the switch box cover to the front without disconnecting the wiring from the user interface.
- 4 Make sure the user interface cable is firmly and correctly connected to the user interface connector 1-2-3-4 and to the LAN connector T-HMI on the main PCB, see "6.2 Wiring diagram" [▶ 119].
- 5 Disconnect the user interface cable from the user interface and main PCB and check the continuity of all wires of the user interface cable.

Is the user interface cable correct?	Action
Yes	Return to checking procedures of the specific error code and continue with the next procedure.
No	Replace the user interface cable, see "3.10.2 Repair procedures" [▶ 96].

To check the settings

- 1 See the relevant documentation (installer reference guide, ...) to check the specific setting.

Is the setting correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific setting see "3.10.2 Repair procedures" [▶ 96].

3.10.2 Repair procedures

To remove the user interface

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Remove the switch box cover (including the user interface), see "3.7 Plate work" [▶ 73].
- 2 Push the sides and remove the user interface from the switch box cover.
- 3 To install the user interface, see "3.10.2 Repair procedures" [▶ 96].

To install the user interface

- 1 Install the user interface display in the correct on the switch box cover.
- 2 Install the switch box cover on the unit, see ["3.7 Plate work"](#) [▶ 73].

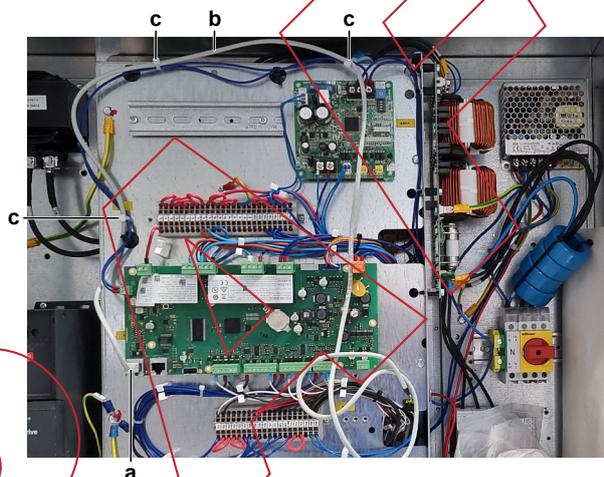
Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure

To remove the user interface cable

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Remove the main switch box cover (including the user interface), see ["3.7 Plate work"](#) [▶ 73].
- 2 Disconnect the user interface cable from the main PCB.

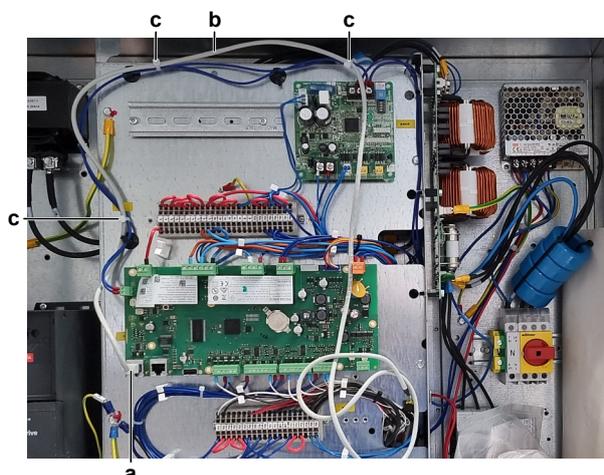


- a User interface cable connected on main PCB
 b User interface cable
 c Tie strap

- 3 Cut the tie straps that fix the user interface cable and remove the cable.
- 4 To install the user interface cable, see ["3.10.2 Repair procedures"](#) [▶ 96].

To install the user interface cable

- 1 Connect the user interface cable to the main PCB.



- a User interface cable connected on main PCB
- b User interface cable
- c Tie strap

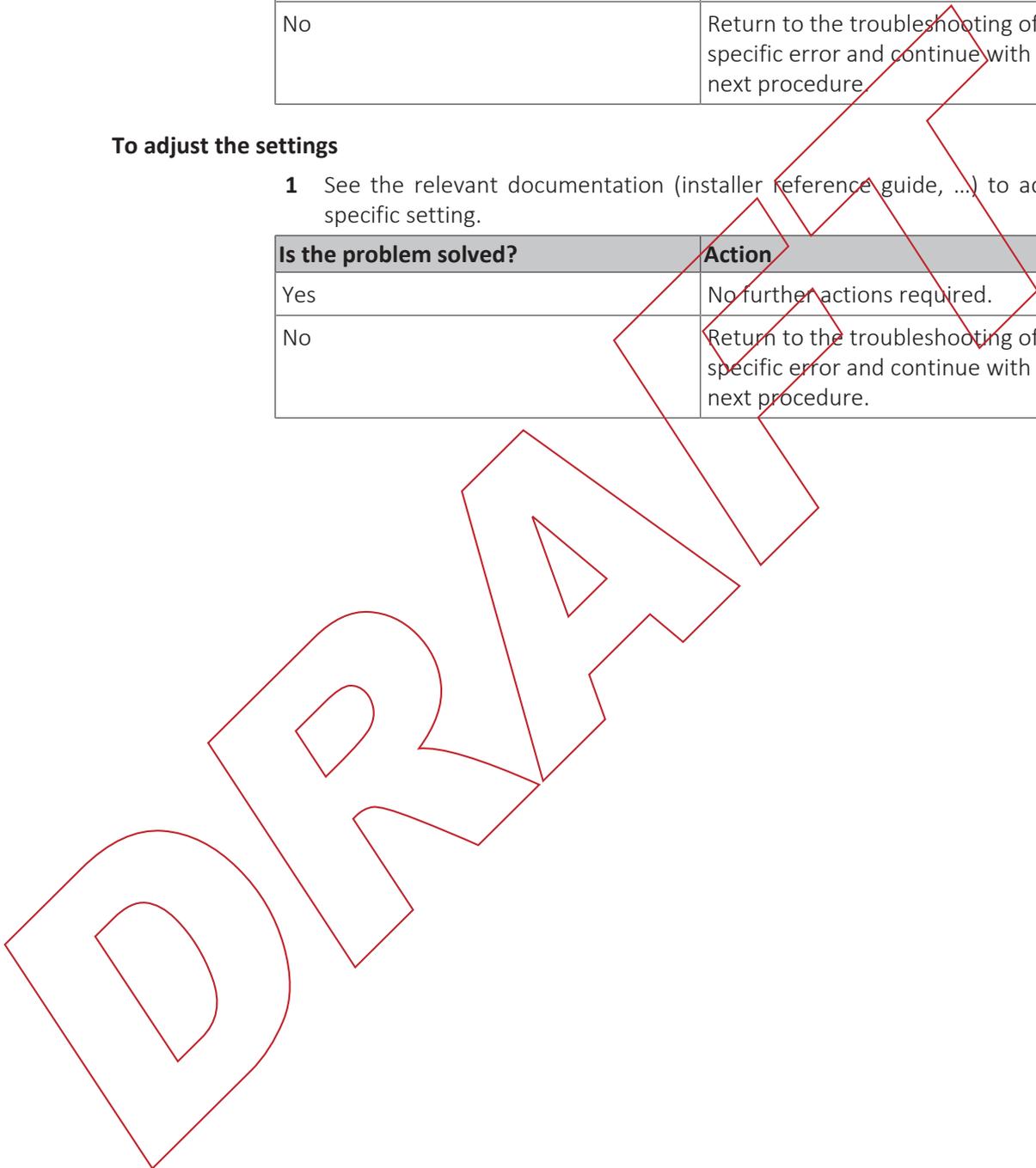
- 2 Route the user interface cable as shown and fix it using new tie straps.
- 3 Install the main switch box cover, see "3.7 Plate work" [▶ 73].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To adjust the settings

- 1 See the relevant documentation (installer reference guide, ...) to adjust the specific setting.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.



4 Third party components

4.1 Electrical circuit

4.1.1 Checking procedures

To check the power supply of the unit

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

1 Measure the insulation resistance between each power supply terminal and the ground using a megger device of 500 V DC. All measurements MUST be >1MΩ. If insulation resistance is <1MΩ, earth leakage is present.

2 Turn ON the power of the unit with the main switch.

3 Measure the voltage between the phases L1-L2-L3 on the main switch.

Result: The voltage MUST be 400 V AC ± 10%.

4 Measure the voltage between each phase and N on the main switch.

Result: The voltage MUST be 230 V AC ± 10%.

5 Unbalance between the phases MUST NOT exceed 2%.

Is the measured voltage (power supply) correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "4.1.2 Repair procedures" [▶ 101].

To check if the power supply is compliant with the regulations

1 Check that the power source is in line with the requirements described in the databook.

Is the power supply compliant with the regulations?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the power supply, see "4.1.2 Repair procedures" [▶ 101].

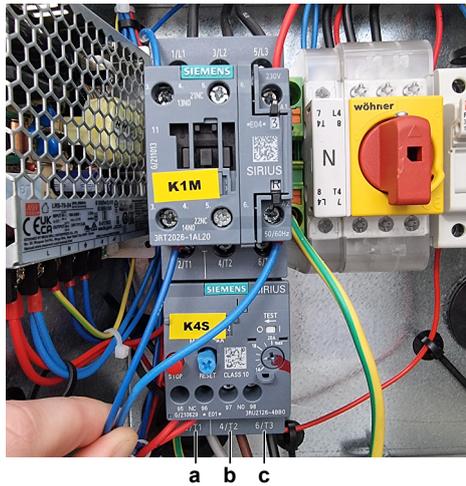
To prevent electrical hazards

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

1 Measure the output voltage between the terminals 2-4, 4-6 and 2-6 of the current protection (on the compressor contactor).

Result: All measurements MUST be 0 V AC.



- a Terminal 2
- b Terminal 4
- c Terminal 6



DANGER: RISK OF ELECTROCUTION
Confirm there is NO voltage on the terminals before proceeding.

To check the setpoint reset input signal

The setpoint reset function CAN override the chiller water temperature active setpoint when certain circumstances occur. The aim of this function is to reduce the unit energy consumption whilst maintaining the same comfort level.

To this purpose, 3 different control strategies are available (through field setting menu 18.00 in the user interface):

- Setpoint reset by an external signal (0~10 V)
- Setpoint reset by evaporator ΔT

When the external signal (0~10 V) strategy is selected, the active setpoint is calculated applying a correction based on an external 0~10 V signal. 0 V corresponds to 0°C correction, whereas 10 V corresponds to a correction of the maximum reset quantity (to be set via field setting 18.01 in the user interface).

Procedure

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

- 1 Turn ON the power of the unit with the main switch.
- 2 Make sure the setpoint reset function is correctly set (field setting menu 18.00 and 18.01 in the user interface).
- 3 Via the external controller, set the setpoint reset function to 0°C.
- 4 Measure the input voltage between terminal X3 of terminal block T3 and terminal M of terminal block T2 on the main PCB.

Result: The measured voltage MUST be 0 V.

- 5 Via the external controller, set the setpoint reset function to the maximum value.
- 6 Again measure the input voltage between terminal X3 of terminal block T3 and terminal M of terminal block T2 on the main PCB.

Result: The measured voltage MUST be 10 V.

Are the measured voltages correct?	Action
Yes	Setpoint reset input signal is OK.
No	Continue with the next step.

7 Via the external controller, leave the setpoint reset function to the maximum value.

8 Measure the output voltage between the terminals T3X3-M of terminal block XRC.

Result: The measured voltage MUST be 10 V.

9 Via the external controller, set the setpoint reset function to 0°C.

10 Again measure the output voltage between the terminals T3X3-M of terminal block XRC.

Result: The measured voltage MUST be 0V.

Output voltages on the external controller are correct?	Action
Yes	Correct the transmission wiring between the external controller terminals of terminal block XRC and the main PCB, see " 6.2 Wiring diagram " [▶ 119].
No	Perform a check of the external controller, see " 4.4.1 Checking procedures " [▶ 114].

4.1.2 Repair procedures

To adjust the power supply

- 1 Make sure that the power source is in line with the requirements described in the databook.
- 2 Adjust the power supply within 50 Hz ± 3%.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.2 Refrigerant circuit

4.2.1 Checking procedures



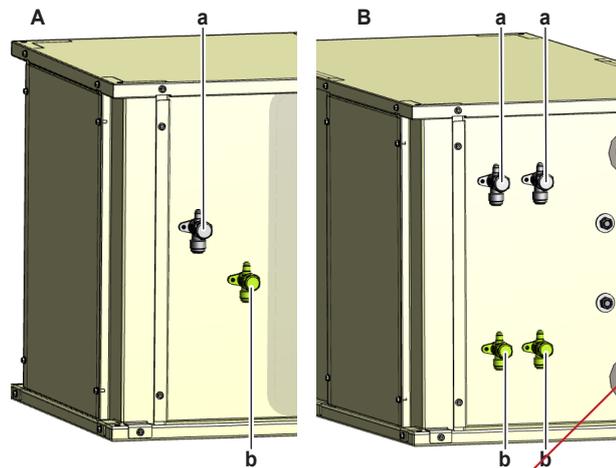
INFORMATION

It is recommended to perform the checks in the listed order.

To check if the stop valves are open

Prerequisite: Remove the required plate work, see "[3.7 Plate work](#)" [▶ 73].

- 1 Remove the caps.



- A EWLQ014~033KCW1N units
- B EWLQ049~064KCW1N units
- a Discharge stop valve
- b Liquid stop valve

2 Check if the stop valves are completely open.

The refrigerant circuit stop valves are open?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Open the stop valves of the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 105].

To check if the refrigerant circuit is clogged

Prerequisite: Stop the unit operation via the user interface.

- 1 Wait for the refrigerant to reach the outdoor temperature.
- 2 ONLY for EWLQ units: Check that all field piping is done according to the refrigeration practice and installer reference guide:
 - Correct piping diameters
 - Piping distance limits are followed
 - NO pipes are squeezed
 - NO short radius bends
- 3 Connect a manometer to the high pressure and low pressure service ports.
- 4 Activate **Cooling** operation via the user interface or service monitoring tool.
- 5 Read the pressure on the high and low pressure gauges. If there is a significant difference between high and low pressure, the refrigerant circuit might be clogged.
- 6 For EWLQ units: On the refrigerant liquid piping (between the refrigerant / water heat exchanger (evaporator) and the third party outdoor unit heat exchanger (coil)), using a contact thermometer, measure the temperature before and after every restricting device. If a big temperature difference is measured (>2.5~4K), an internal pipe obstruction may be present at this location.
- 7 For EWWQ units: On the refrigerant liquid piping (between the refrigerant / water heat exchanger (evaporator) and the refrigerant / water heat exchanger (condenser)), using a contact thermometer, measure the temperature before

and after every restricting device. If a big temperature difference is measured (>2.5~4K), an internal pipe obstruction may be present at this location.



INFORMATION

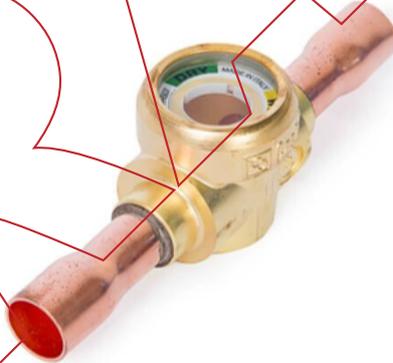
Focus on positions with a potential risk for clogging such as:

- Filters
- Valves
- Brazing points
- ...

Temperature drop found?	Action
Yes	Replace the clogged part, see "4.2.2 Repair procedures" [▶ 105].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To check if the refrigerant circuit is correctly charged

- 1 For EWWQ units: Make sure to add the refrigerant charge as specified on the label on the unit.
- 2 For EWLQ units: Use the sight glass to check if the refrigerant charge is correct:
 - Green = OK
 - Bubbles: Possibility of refrigerant shortage
 - Yellow: Humidity presence. Replace refrigerant and drier



Is the refrigerant circuit charged correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Add or recuperate refrigerant until correctly charged, see "4.2.2 Repair procedures" [▶ 105].

To check for non-condensables in the refrigerant circuit

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Wait for the refrigerant to reach the outdoor temperature.

- 2 Connect a manometer to the service port.
- 3 Measure the pressure of the refrigerant. The measured pressure converted into saturated temperature MUST be in line with the expected pressure / saturated temperature at current ambient temperature.
- 4 If the measured pressure is significantly higher (>5K), non-condensables gasses are most likely present in the refrigerant.

Any non-condensables found in the refrigerant circuit?	Action
Yes	To replace the refrigerant, see "4.2.2 Repair procedures" [▶ 105].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To perform a leak test

The leak test must satisfy the specifications of EN378-2.

- 1 Determine the leak test interval according to the F-gas law:

Leak test interval	Tonnes of CO ₂ equivalent	Refrigerant charge (kg)
12 months	5 ≤ t CO ₂ e < 50	2.4 – 24
6 months	50 ≤ t CO ₂ e < 500	24 – 240
3 months	t CO ₂ e ≥ 500	≥ 240

- For EWWQ units: Refrigerant charge and tonnes of CO₂ equivalent can be found on the refrigerant charge label on the unit.
- For EWLQ units: Check logbook for refrigerant charge and tonnes of CO₂ equivalent.
- Tonnes of CO₂ equivalent can ALSO be calculated:
 $tCO_2e = (\text{Refrigerant charge} \times \text{Global Warming Potential}) / 1000$ with Global Warming Potential = 2088.
- If tonnes of CO₂ equivalent is less than 5 tonnes, leak test is NOT required by the current law.



INFORMATION

Units with double refrigerant circuit have 2 separate circuits which are NOT mixed in the heat exchanger. Use the complete unit refrigerant charge to determine the leak test interval.

- 2 When a leak test is done, ALWAYS fill in the logbook of the unit. Keep the logbook close to the unit.
- 3 Optionally, an F-gas inspection sticker CAN be placed on the unit to indicate the next maintenance time.
- 4 Perform the two leaks tests below.

To check for leaks: Vacuum leak test

- 1 Evacuate the system from the liquid and gas piping to –100.7 kPa (–1.007 bar) (5 Torr absolute) for more than 2 hours.
- 2 Once reached, turn off the vacuum pump and check that the pressure does not rise for at least 1 minute.
- 3 Should the pressure rise, the system may either contain moisture (see vacuum drying below) or have leaks.

To check for leaks: Pressure leak test

- 1 Test for leaks by applying a bubble test solution to all piping connections.
- 2 Discharge all nitrogen gas.
- 3 Break the vacuum by pressurising with nitrogen gas to a minimum gauge pressure of 0.2 MPa (2 bar). Never set the gauge pressure higher than the maximum operation pressure of the unit.

NOTICE

ALWAYS use a recommended bubble test solution from your wholesaler.
NEVER use soap water:

- Soap water may cause cracking of components, such as flare nuts or stop valve caps.
- Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.
- Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

Problem solved?

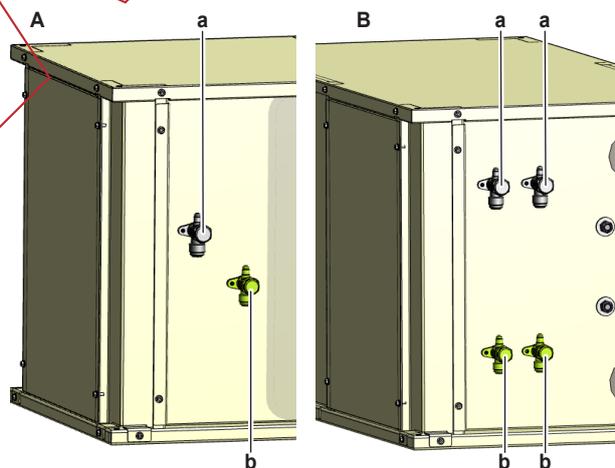
Any leaks found in the refrigerant circuit?	Action
Yes	Replace the leaking part of the refrigerant circuit, see "4.2.2 Repair procedures" [▶ 105].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.2.2 Repair procedures

To open the stop valves of the refrigerant circuit

Prerequisite: Remove the required plate work, see "3.7 Plate work" [▶ 73].

- 1 Remove the caps.



- A EWLQ014~033KCW1N units
- B EWLQ049~064KCW1N units
- a Discharge stop valve
- b Liquid stop valve

- 2 Completely open the stop valves by screwing the stop valve screw counterclockwise.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To replace the clogged/leaking part of the refrigerant circuit

- 1 See the correct procedure for the component that needs to be repaired. See also "Repair information" [▶ 106] for more details.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To recuperate the refrigerant

To add refrigerant

- 1 See the installation, operation and maintenance manual for the correct procedure.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to troubleshooting of the specific error and continue with the next procedure.

Repair information

Refrigerant piping handling

- Make sure that the applied pressure is never higher than the unit design pressure indicated on the nameplate (PS).
- Work according to the F-gas regulation and/or local regulations.
- Make sure the correct amount of refrigerant is charged after repair according to the F-gas regulation label on the unit (factory + additional where required).
- Make sure to use the appropriate equipment and tools according to the refrigerant and unit type.
- Charge non-azeotropic refrigerant (e.g. R410A) always in a liquid state.
- Make sure to use a digital scale (no charging cylinder).
- Execute correct vacuum drying procedure after repair:
 - -0.1 MPa / -760 mm Hg / -750 Torr / -1 bar for at least 1 hour.
 - Connect the unit according to the available service ports.
 - Use related field setting where necessary to open expansion valve / solenoid valve.

Refrigerant piping repair

- Make sure to cover open pipe ends during repair so no dust or moisture can enter.

- Make sure to re-apply insulation removed during repair.
- Pipe expansion / flare making:
 - Remove any burrs on the cut surface using the correct tool such as reamer or scraper (note that excessive deburring can thin the pipe walls and cause cracking of the pipe).
 - Make sure the flare has the correct size (use a flare gauge).
 - Make sure no particles remain in the piping.
 - Apply just a drop of refrigerant oil on the inner surface of the flare.
 - Make sure the flare connection is tightened with the correct torque (torque values refer to installation manual).
- Brazing:
 - Use the correct brazing tool.
 - Use a phosphor copper filler metal (silver composition of 0 to 2%). Do not use flux material.
 - Flush the piping before brazing with nitrogen to avoid oxidation of the inside of the copper tubes (nitrogen purity ≥99.99%).

4.3 Water circuit



INFORMATION

EWLQ units ONLY have 1 water circuit (evaporator water circuit).
 EWWQ units have 2 water circuits (evaporator water circuit and condenser water circuit). Check and Repair procedures described below are valid for both water circuits unless specified otherwise.

4.3.1 Checking procedures

To check the water pressure

- 1 Turn ON the power of the unit.
- 2 Read the water pressure on the field installed pressure gauge.

Result: The pressure MUST be 1~2 bar.

Is the water pressure correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Add or remove water from the water circuit until the pressure is correct, see "4.3.2 Repair procedures" [▶ 111].

To check the water flow

- 1 Turn ON the power using the main switch.
- 2 Activate **Cooling** operation via the user interface or service monitoring tool.
- 3 Use a flow meter to check the water flow.

Result: The water flow MUST be at least:

Model	Minimum flow (L/min)
EWVQ/EWLQ014KCW1N	28~34
EWVQ/EWLQ025KCW1N	47~59
EWVQ/EWLQ033KCW1N	69~83
EWVQ/EWLQ049KCW1N	93~109
EWVQ/EWLQ064KCW1N	137~167

Is the water flow correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Continue with the next step.

4 Check the water pressure, see "4.3.1 Checking procedures" [▶ 107].

Is the water pressure correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Add or remove water from the water circuit until the pressure is correct, see "4.3.2 Repair procedures" [▶ 111].

To check the glycol concentration

If the unit operates below 4°C (water temperature), a proper water / glycol mixture is required. Check the glycol concentration as follows:

- 1 Take a water sample at the field installed water drain valve.
- 2 Using a refractometer, define the glycol concentration.

Result: The glycol concentration MUST be:

Ambient temperature	Glycol concentration
-3°C	10%
-8°C	20%
-15°C	30%
-20°C	40%

- 3 Add glycol until the correct concentration in the water is reached.

This can be done in different ways:

- Use a filler kit and check the concentration using a refractometer.
- Calculate the amount of glycol to be added.

Glycol volume to be added = [(Target concentration–Measured concentration)/100] x Total water volume.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To check the water quality

- 1 Take a water sample at the field installed water drain valve.
- 2 Send the water sample to an accredited lab for testing.

Result: The water MUST comply with the following specifications:

Specifications	Water quality requirements			
	Evaporator - circulating	Evaporator - supply	Condenser - circulating	Condenser - supply
Ph (25°C)	6.8 – 8.0	6.8 – 8.0	7.0 – 8.0	7.0 – 8.0
Electrical conductivity (25°C)	<40 mS/m	<30 mS/m	<30 mS/m	<30 mS/m
Chloride ion	<50 mg Cl/L	<50 mg Cl/L	<50 mg Cl/L	<50 mg Cl/L
Sulphate ion	<50 mg SO ₄ ² /L			
M-alkalinity	<50 mg CaCO ₃ /L			
Total hardness	<70 mg CaCO ₃ /L			
Calcium hardness	<50 mg CaCO ₃ /L			
Silica ion	<30 mg SiO ₂ /L			
Iron	<1.0 mg Fe/L	<0.3 mg Fe/L	<1.0 mg Fe/L	<0.3 mg Fe/L
Copper	<1.0 mg Cu/L	<0.1 mg Cu/L	<1.0 mg Cu/L	<0.1 mg Cu/L
Sulphide ion	NOT detectable			
Ammonium ion	<1.0 mg NH ₄ ⁺ /L	<0.1 mg NH ₄ ⁺ /L	<1.0 mg NH ₄ ⁺ /L	<0.1 mg NH ₄ ⁺ /L
Remaining chloride	<0.3 mg Cl/L	<0.3 mg Cl/L	<0.25 mg Cl/L	<0.3 mg Cl/L
Free carbide	<4.0 mg CO ₂ /L	<4.0 mg CO ₂ /L	<0.4 mg CO ₂ /L	<4.0 mg CO ₂ /L

Is the water quality OK?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Replace with water of appropriate quality, see "4.3.2 Repair procedures" [▶ 111].

To check if the water circuit stop valves are open

- 1 The stop valves are located outside the unit. Check that all valves are in open position (in line with the piping).

All valves are open?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Open the specific valve(s) of the water circuit, see "4.3.2 Repair procedures" [▶ 111].

To check if the field installed air purge valves are installed on the correct locations

- 1 Check the installation outside the unit. All highest points of the installation MUST have air purge valves installed. The air purge valves MUST NOT be installed on other locations.

All air purge valves are installed on the correct locations?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Install the specific air purge valve(s) on the correct location(s) in the water circuit, see "4.3.2 Repair procedures" [▶ 111].

To check for leaks in the water circuit

- 1 Inspect the installation outside the unit and check for leaks.

A leak was found in the installation?	Action
Yes	Repair the leak in the installation, see "4.3.2 Repair procedures" [▶ 111].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To check the pressure drop on the plate heat exchanger

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

Prerequisite: Remove the required plate work, see ["3.7 Plate work"](#) [▶ 73].

- 1 On the inlet and outlet piping of the plate heat exchanger, install pressure gauges at the appropriate fittings.
- 2 Turn ON the power of the unit with the main switch.
- 3 Activate **Cooling** operation via the user interface or service monitoring tool.
- 4 Wait a few minutes until the system is operating properly.
- 5 Read the pressure on both pressure gauges and calculate the difference = pressure drop on the plate heat exchanger.
- 6 Check the water flow, see ["4.3.1 Checking procedures"](#) [▶ 107].
- 7 Using the graphic for pressure drop (see databook), determine the expected pressure drop (for your specific unit) according to the measured water flow.
- 8 Compare the measured pressure drop with the pressure drop determined using the graphic in the databook.

Is the pressure drop on the plate heat exchanger correct?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Check for the reason of incorrect pressure drop or contact your service manager.

To check the main water supply and pressure

- 1 Check that the main water supply and pressure of the installation is within the expected range (>1 bar).

Main water supply and pressure within expected range?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the main water supply of the installation, see "4.3.2 Repair procedures" [▶ 111].

To check if the water circuit is clogged

- 1 Check that all field piping is done according to the good practice and installation, operation and maintenance manual:
 - Correct piping diameters
 - Piping distance limits are followed
 - NO pipes are squeezed
 - NO short radius bends
- 2 Turn ON the power of the unit with the main switch.
- 3 Activate **Cooling** operation via the user interface or service monitoring tool.
- 4 Wait for the system to run at a more or less stable condition.
- 5 On the water circuit piping, using a contact thermometer, measure the temperature before and after every position with a potential risk for clogging. If a big temperature difference is measured, an internal pipe obstruction may be present at this location.



INFORMATION

Focus on positions with a potential risk for clogging such as:

- Filters
- Valves
- Brazing points
- ...

Temperature drop found?	Action
Yes	Replace the clogged part, see "4.3.2 Repair procedures" [▶ 111].
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.3.2 Repair procedures

To remove/drain water from the water circuit



INFORMATION

This procedure partially drains the water circuit, sufficient for component replacement.

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 Connect a drain hose to the appropriate field installed drain valve (port).

- 2 Open the drain port. Collect the drained water in the drain pan, bottle, sink,... using the installed drain hose.
- 3 To add water to the water circuit, see "[4.3.2 Repair procedures](#)" [▶ 111].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To add water to the water circuit

Prerequisite: Stop the unit operation via the user interface.

Prerequisite: Turn OFF the main switch.

- 1 To fill the water circuit, use a field supply filling kit. Make sure you comply with the applicable legislation.
- 2 Purge the water circuit, see "[4.3.2 Repair procedures](#)" [▶ 111].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To open the stop valves of the water circuit

- 1 The stop valves are located outside the unit. Open the valves by placing them in line with the piping.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To open the air purge valves of the water circuit

- 1 NO air purge valves are installed inside the unit.
- 2 Place all field installed air purge valves in the open position.
- 3 Purge the water circuit, see "[4.3.2 Repair procedures](#)" [▶ 111].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To install the field installed air purge valves on the highest points of the water circuit

Prerequisite: Stop the unit operation via the user interface.

- 1 Install field installed air purge valves on all highest points of the installation outside the unit.
- 2 Purge the water circuit, see "[4.3.2 Repair procedures](#)" [▶ 111].

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To purge the water circuit

- 1 Check that all field installed air purge valves are installed in the correct locations, see "[4.3.1 Checking procedures](#)" [[▶ 107](#)].
- 2 See "[To open the air purge valves of the water circuit](#)" [[▶ 112](#)] for detailed information about the unit air purge valves.
- 3 Run the field installed water pump ONLY as follows:
 - 10 minutes run, then 2 minutes stop. Do this 3 times.
 - 10 minutes stop.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To repair the leak in the water circuit

- 1 Repair the leak in the water circuit.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To adjust the main water supply of the installation

- 1 Adjust the main water supply of the installation to be within the expected range (>1 bar).

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

To replace the clogged part of the water circuit

- 1 See the correct procedure for the component that needs to be repaired.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.4 Manufacturer components

4.4.1 Checking procedures

To check the correct operation / setting of the manufacturer component

- 1 See the specific dealer manual to check for the correct installation, operation or setting of your component.

Does the component function correctly?	Action
Yes	Return to the troubleshooting of the specific error and continue with the next procedure.
No	Adjust the specific component, see "4.4.2 Repair procedures" [▶ 114].

4.4.2 Repair procedures

To adjust the manufacturer component

- 1 See the specific dealer manual to adjust your component.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

4.5 External factors

4.5.1 Checking procedures

To check the required space around the outdoor unit heat exchanger



INFORMATION

ONLY for EWLQ units.

- 1 Check if the space around the outdoor unit heat exchanger is sufficient. See the installation manual of the third party outdoor unit heat exchanger for the required space specifications. Adjust as needed.

Is the problem solved?	Action
Yes	No further actions required.
No	Return to the troubleshooting of the specific error and continue with the next procedure.

5 Maintenance



NOTICE

General maintenance/inspection checklist. Next to the maintenance instructions in this chapter, a general maintenance/inspection checklist is also available on the Daikin Business Portal (authentication required).

The general maintenance/inspection checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during maintenance.

5.1 Maintenance schedule

See next page.

DRAFT

Standard routine maintenance schedule

List of activities	Weekly	Monthly ^(a)	Yearly/Seasonal ^(b)
General			
Reading of operating data ^(c)	X		
Visual inspection of unit for any damage and/or loosening		X	
Verification of thermal insulation integrity		X	
Cleaning		X	
Paint where necessary			X
Analysis of water ^(d)			X
Check of flow switch operation		X	
Electrical installation			
Verification of start-up sequence			X
Verify contactor wear – Replace if necessary			X
Verify that all electrical terminals are tight – Tighten if necessary		X (Quarterly)	
Clean inside the electrical panel			X
Visual inspection of components for any signs of overheating		X	
Verify operation of compressor and electrical resistance		X	
Refrigerant circuit			
Check for any refrigerant leakage (leak test)		X	
Analyze compressor vibrations			X
Hydraulic circuit			
Check for any water leakage		X	
Check hydraulic connections		X	
Check the pressure at the exchangers water inlet		X	
Clean the water filter			X
Check the glycol concentration			X
Check the water flow rate		X	
Plate heat exchanger			
Check the cleaning of the plate heat exchanger			X

^(a) Monthly activities include all the weekly ones.

^(b) The annual (or early season) activities include all weekly and monthly activities.

^(c) Daily reading of the operating values of the unit allows maintaining high observational standards.

^(d) Check for any dissolved metals.

Routine maintenance schedule for critical application and/or highly aggressive environment

List of activities	Weekly	Monthly ^(a)	Yearly/Seasonal ^(b)
General			
Reading of operating data ^(c)	X		
Visual inspection of unit for any damage and/or loosening		X	
Verification of thermal insulation integrity		X	
Cleaning		X	
Paint where necessary			X
Analysis of water ^(d)			X
Check of flow switch operation		X	
Electrical installation			
Verification of start-up sequence			X
Verify contactor wear – Replace if necessary			X
Verify that all electrical terminals are tight – Tighten if necessary			X
Clean inside the electrical panel		X	
Visual inspection of components for any signs of overheating		X	
Verify operation of compressor and electrical resistance		X	
Measure with the Megger the compressor motor insulation			X
Refrigerant circuit			
Check for any refrigerant leakage (leak test)		X	
Analyze compressor vibrations			X
Hydraulic circuit			
Check for any water leakage		X	
Check hydraulic connections		X	
Check the pressure at the exchangers water inlet		X	
Clean the water filter			X
Check the glycol concentration			X
Check the water flow rate		X	
Plate heat exchanger			
Check the cleaning of the plate heat exchanger			X

^(a) Monthly activities include all the weekly ones.

^(b) The annual (or early season) activities include all weekly and monthly activities.

^(c) Daily reading of the operating values of the unit allows maintaining high observational standards.

^(d) Check for any dissolved metals.



CAUTION

Units placed or stored in a highly aggressive environment for long time without operation are still subject to these routine maintenance steps.

6 Technical data

6.1 Detailed information setting mode

6.1.1 Detailed information setting mode: Indoor unit

See the installer reference guide on business portal for more information.

6.1.2 Detailed information setting mode: Remote controller

See the installer reference guide on business portal for more information.

DRAFT

6.2 Wiring diagram

See the internal wiring diagram supplied with the unit. The wiring diagram is ALSO available on the Daikin Business Portal (authentication required).

DRAFT

6.3 Piping diagram

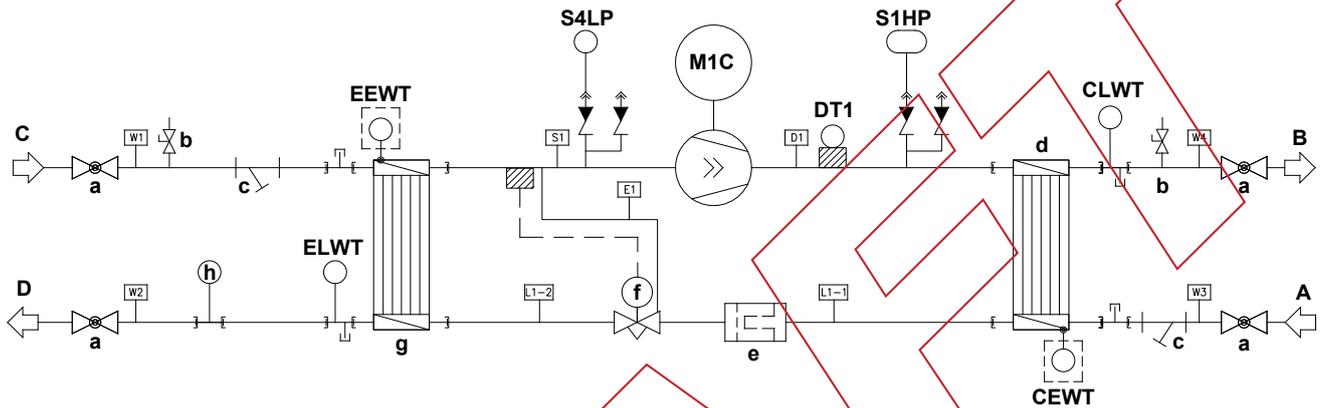
6.3.1 Piping diagram: Indoor unit

EWWQ014~033KCW1N units



INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



- A Condenser water circuit - Water IN
- B Condenser water circuit - Water OUT
- C Evaporator water circuit - Water IN
- D Evaporator water circuit - Water OUT
- a Ball valve (optional)
- b Air purge valve (optional)
- c Water filter (optional)
- d Heat exchanger (Condenser)
- e Drier filter
- f Thermostatic expansion valve
- g Heat exchanger (Evaporator)

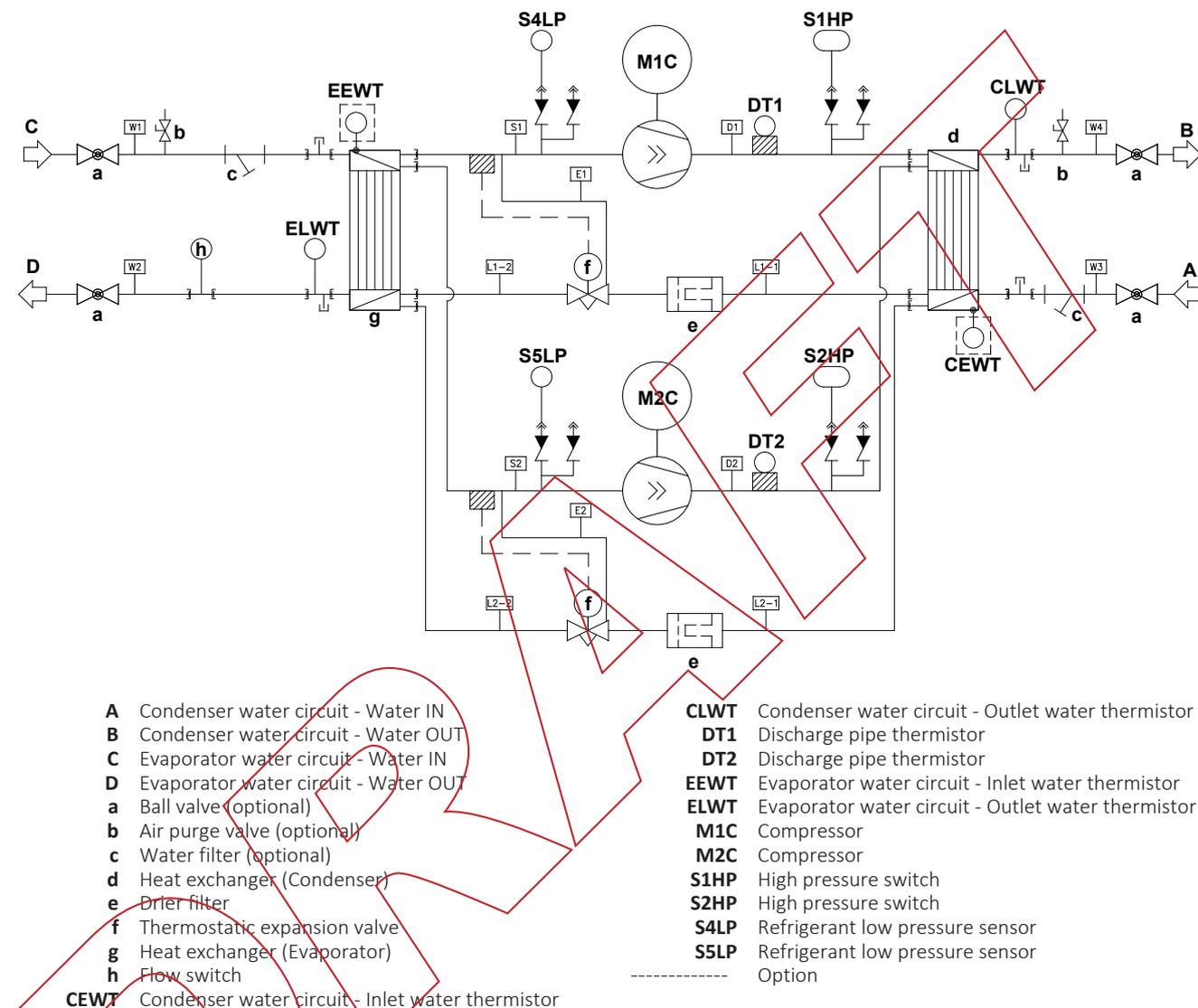
- h Flow switch
- CEWT Condenser water circuit - Inlet water thermistor
- CLWT Condenser water circuit - Outlet water thermistor
- DT1 Discharge pipe thermistor
- EEWT Evaporator water circuit - Inlet water thermistor
- ELWT Evaporator water circuit - Outlet water thermistor
- M1C Compressor
- S1HP High pressure switch
- S4LP Refrigerant low pressure sensor
- Option

EWWQ049~064KCW1N units



INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

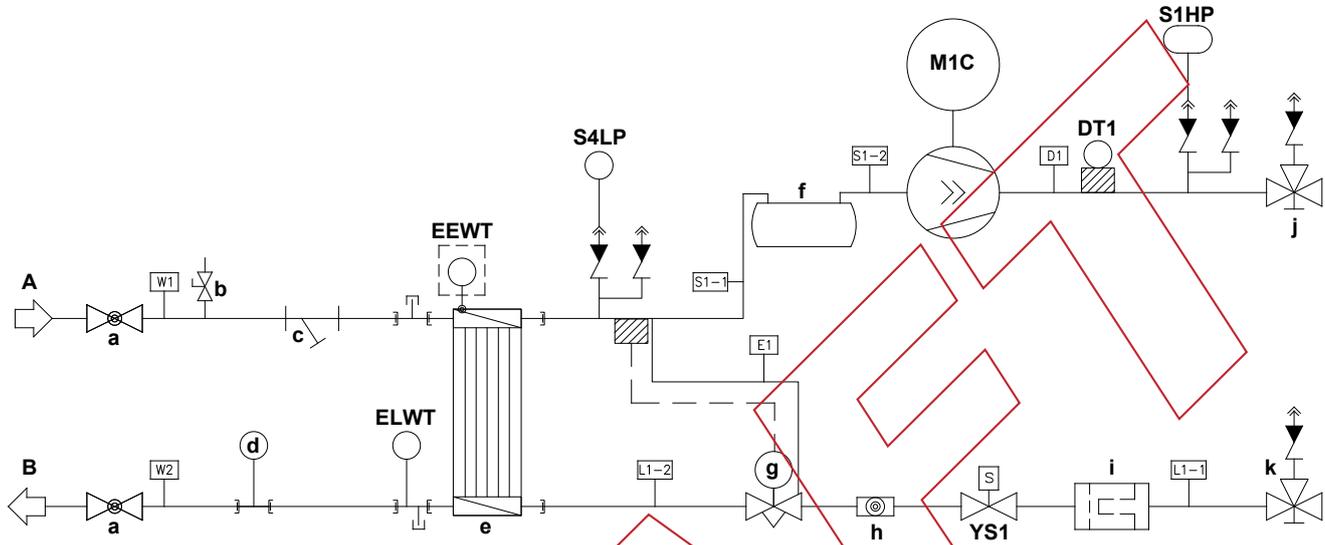


EWLQ014~033KCW1N units



INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.



- A** Evaporator water circuit - Water IN
- B** Evaporator water circuit - Water OUT
- a** Ball valve (optional)
- b** Air purge valve (optional)
- c** Water filter (optional)
- d** Flow switch
- e** Heat exchanger (Evaporator)
- f** Accumulator
- g** Thermostatic expansion valve
- h** Sight glass
- i** Drier filter

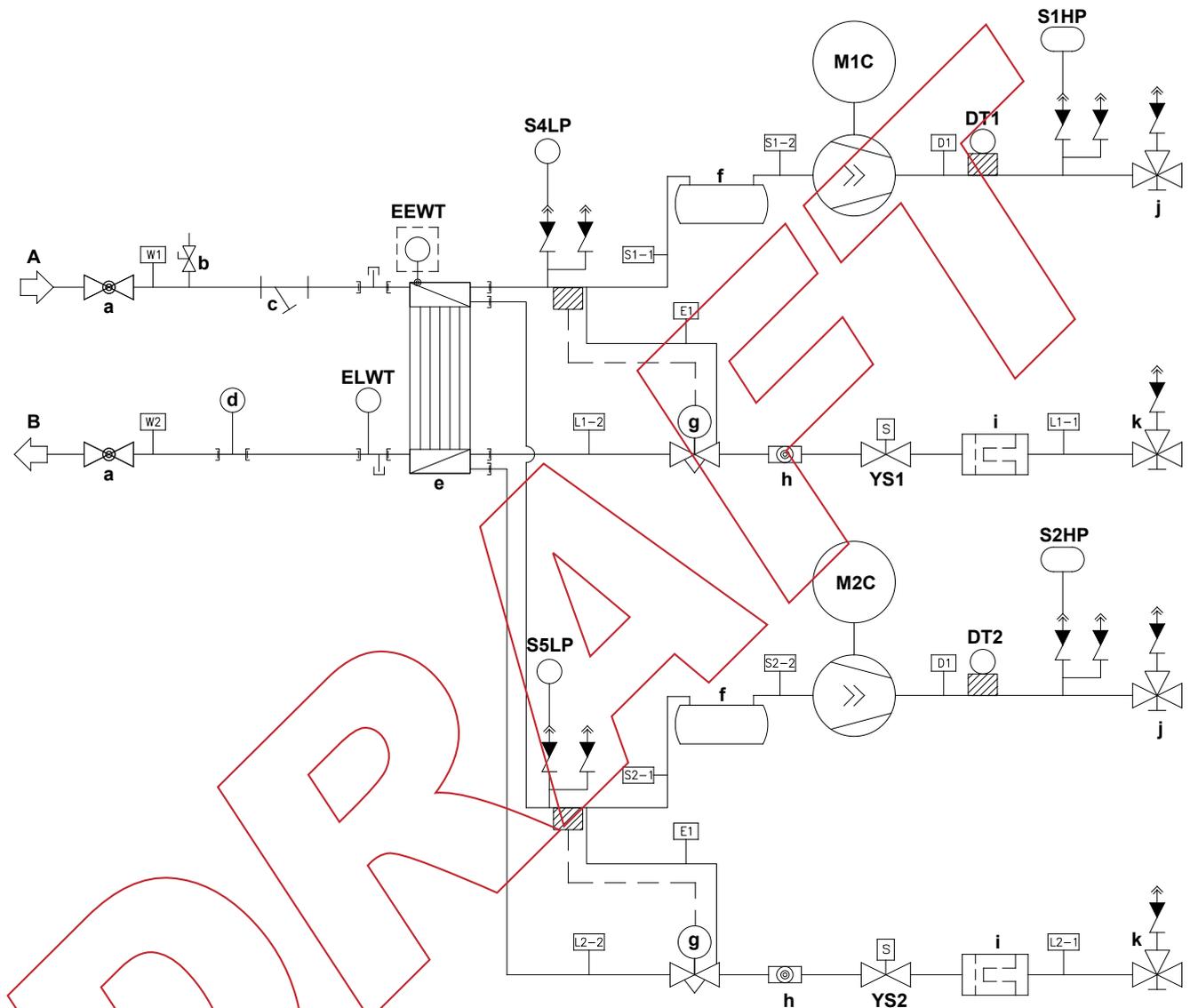
- j** Discharge stop valve
- k** Liquid stop valve
- DT1** Discharge pipe thermistor
- EEWT** Evaporator water circuit - Inlet water thermistor
- ELWT** Evaporator water circuit - Outlet water thermistor
- M1C** Compressor
- S1HP** High pressure switch
- S4LP** Refrigerant low pressure sensor
- YS1** Liquid solenoid valve
- Option

EWLQ049~064KCW1N units



INFORMATION

The diagrams shown in this manual may be incorrect due to changes/updates to the unit. Correct diagrams are supplied with the unit and can also be found in the technical data book.

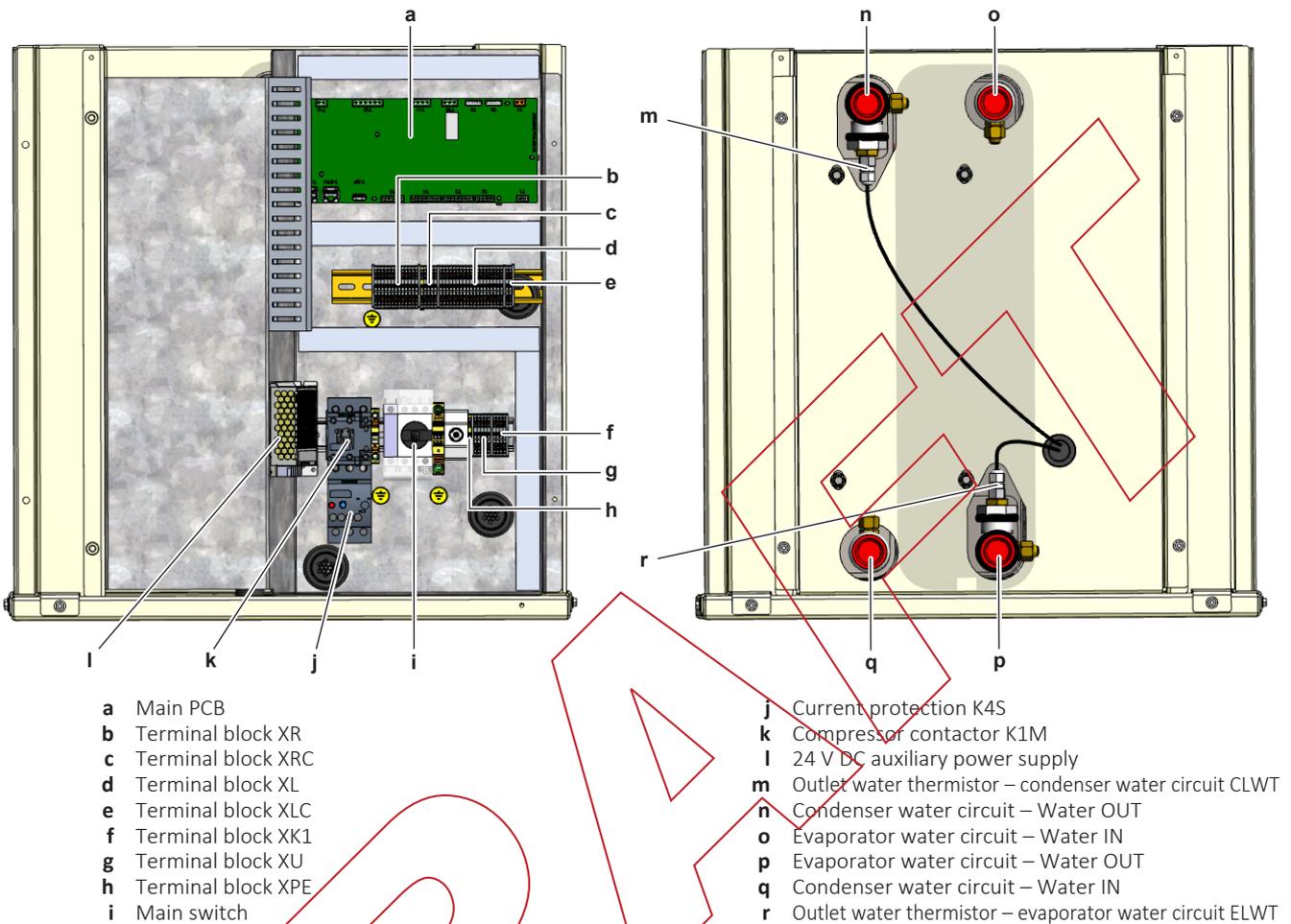


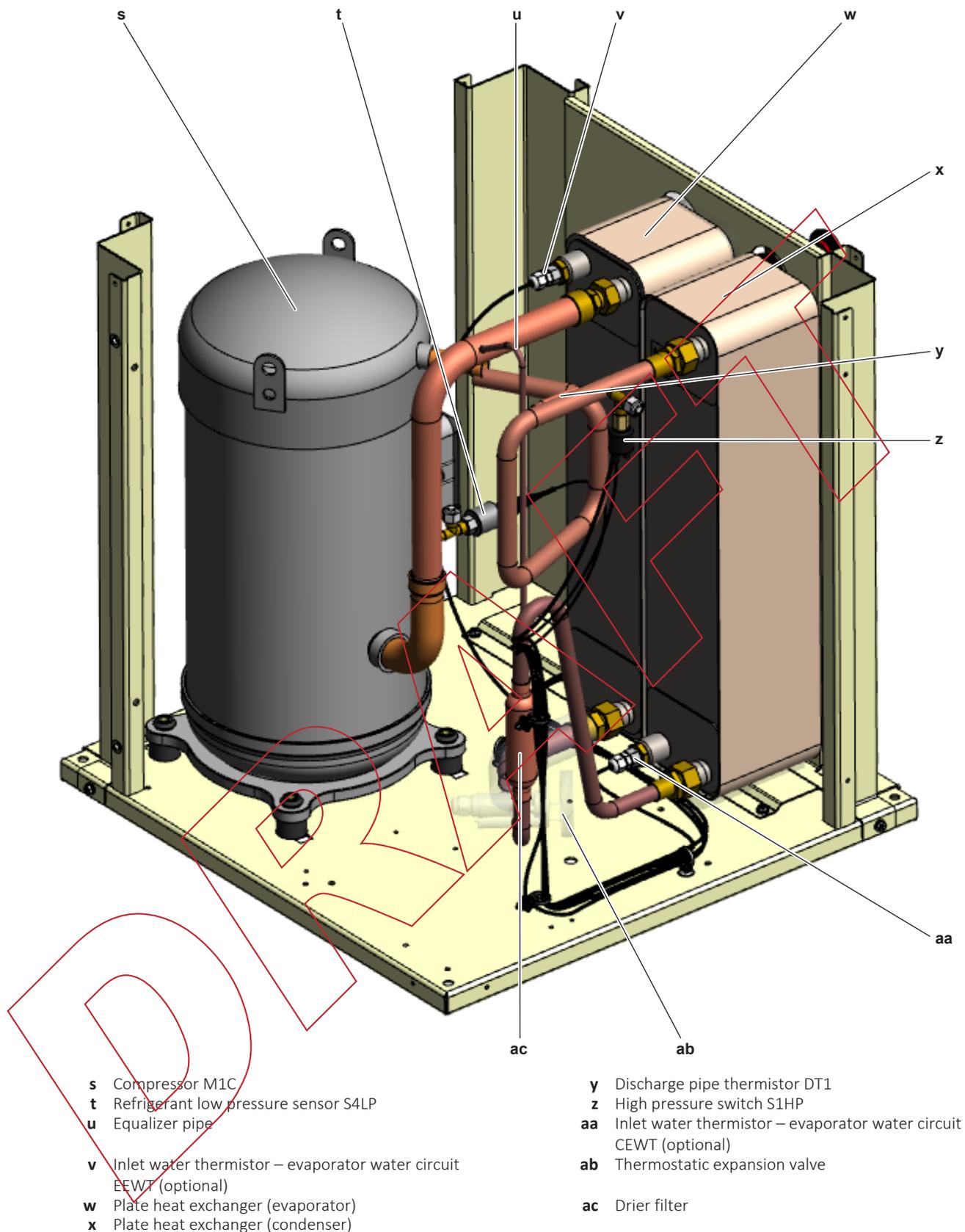
- A** Evaporator water circuit - Water IN
- B** Evaporator water circuit - Water OUT
- a** Ball valve (optional)
- b** Air purge valve (optional)
- c** Water filter (optional)
- d** Flow switch
- e** Heat exchanger (Evaporator)
- f** Accumulator
- g** Thermostatic expansion valve
- h** Sight glass
- i** Drier filter
- j** Discharge stop valve
- k** Liquid stop valve

- DT1** Discharge pipe thermistor
- DT2** Discharge pipe thermistor
- EEWT** Evaporator water circuit - Inlet water thermistor
- ELWT** Evaporator water circuit - Outlet water thermistor
- M1C** Compressor
- M2C** Compressor
- S1HP** High pressure switch
- S2HP** High pressure switch
- S4LP** Refrigerant low pressure sensor
- S5LP** Refrigerant low pressure sensor
- YS1** Liquid solenoid valve
- YS2** Liquid solenoid valve
- Option

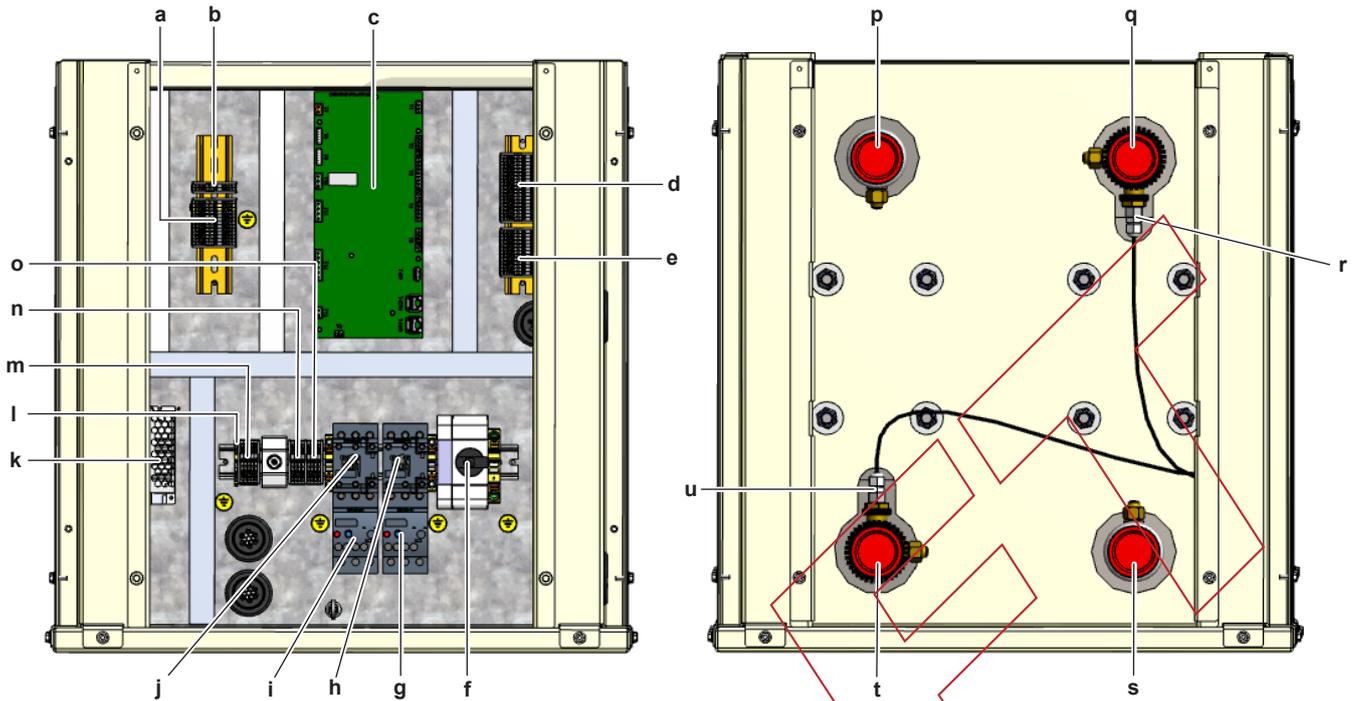
6.4 Component overview

6.4.1 Component overview: EWWQ014~033KC



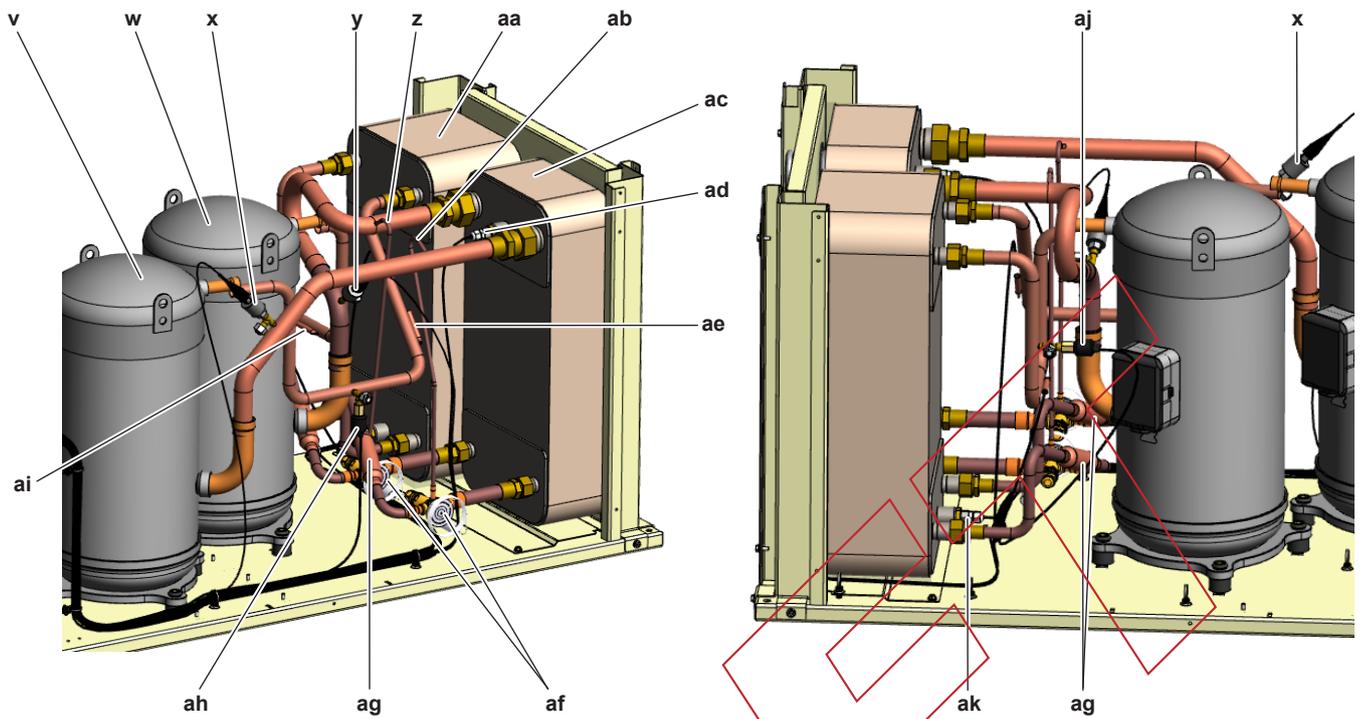


6.4.2 Component overview: EWWQ049~064KC



- a** Terminal block XL
- b** Terminal block XLC
- c** Main PCB
- d** Terminal block XRC
- e** Terminal block XR
- f** Main switch
- g** Current protection K5S
- h** Compressor contactor K2M
- i** Current protection K4S
- j** Compressor contactor K1M
- k** 24 V DC auxiliary power supply

- l** Terminal block XPE
- m** Terminal block XU
- n** Terminal block XK1
- o** Terminal block XK2
- p** Evaporator water circuit – Water IN
- q** Condenser water circuit – Water OUT
- r** Outlet water thermistor – condenser water circuit CLWT
- s** Condenser water circuit – Water IN
- t** Evaporator water circuit – Water OUT
- u** Outlet water thermistor – evaporator water circuit ELWT



v Compressor

w Compressor

x Refrigerant low pressure sensor

y Refrigerant low pressure sensor

z Equalizer pipe

aa Plate heat exchanger (condenser)

ab Equalizer pipe

ac Plate heat exchanger (evaporator)

ad Inlet water thermistor – evaporator water circuit
EEWT (optional)

ae Discharge pipe thermistor

af Thermostatic expansion valve

ag Drier filter

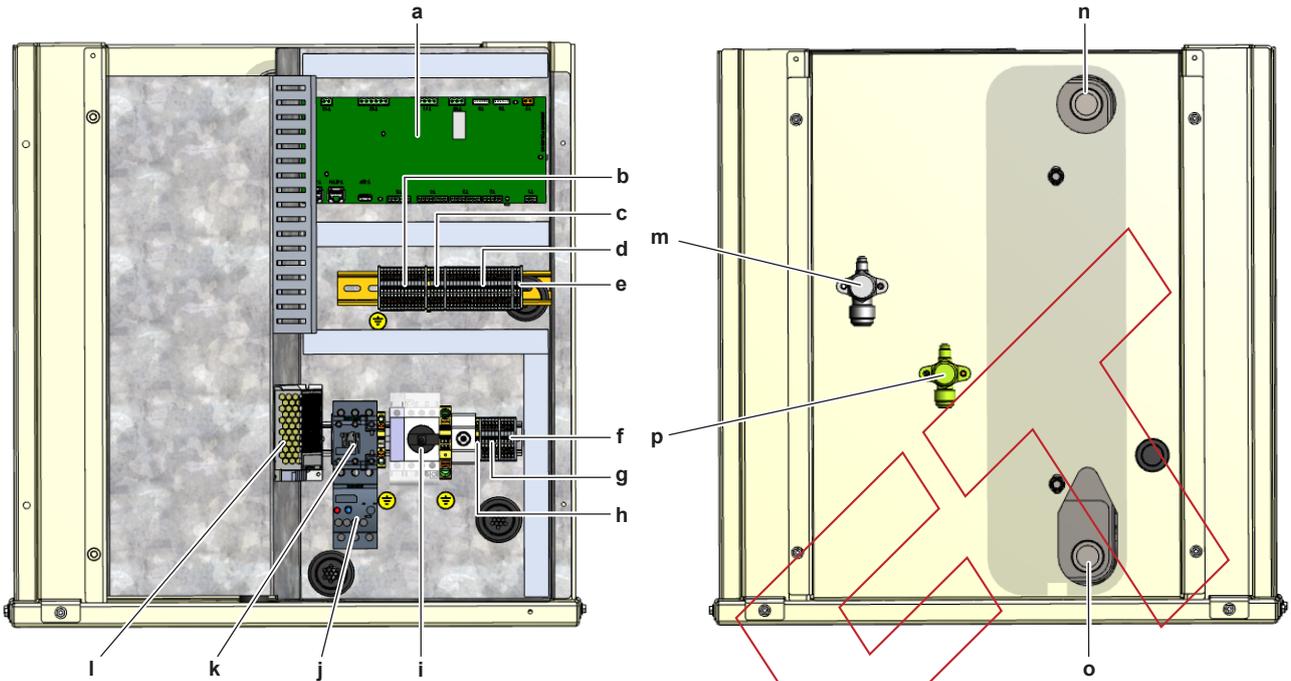
ah High pressure switch

ai Discharge pipe thermistor

aj High pressure switch

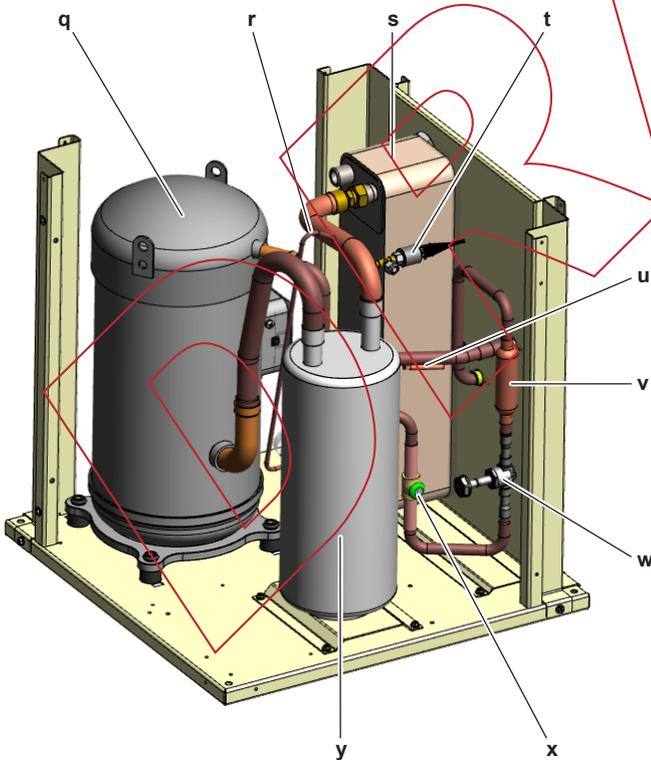
ak Inlet water thermistor – evaporator water circuit
CEWT (optional)

6.4.3 Component overview: EWLQ014~033KC

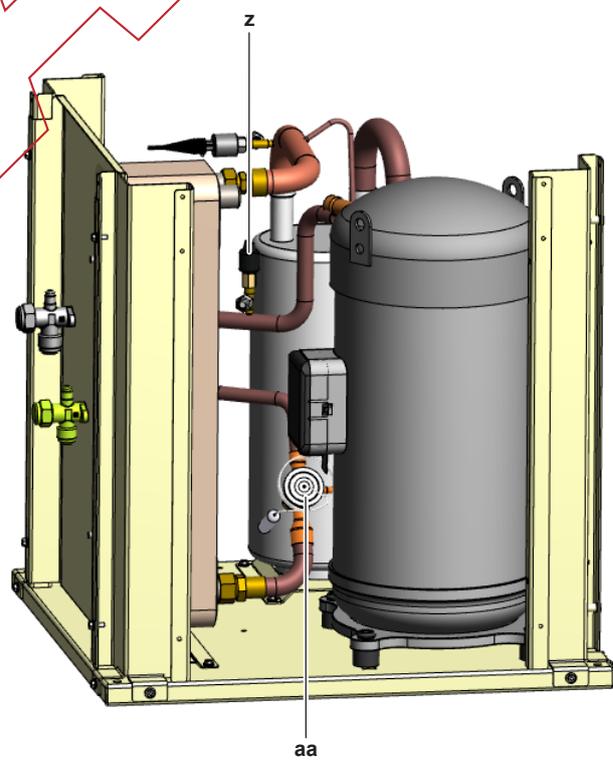


- a Main PCB
- b Terminal block XR
- c Terminal block XRC
- d Terminal block XL
- e Terminal block XLC
- f Terminal block XK1
- g Terminal block XU
- h Terminal block XPE

- i Main switch
- j Current protection K4S
- k Compressor contactor K1M
- l 24 V DC auxiliary power supply
- m Discharge stop valve
- n Evaporator water circuit – Water IN
- o Evaporator water circuit – Water OUT
- p Liquid stop valve

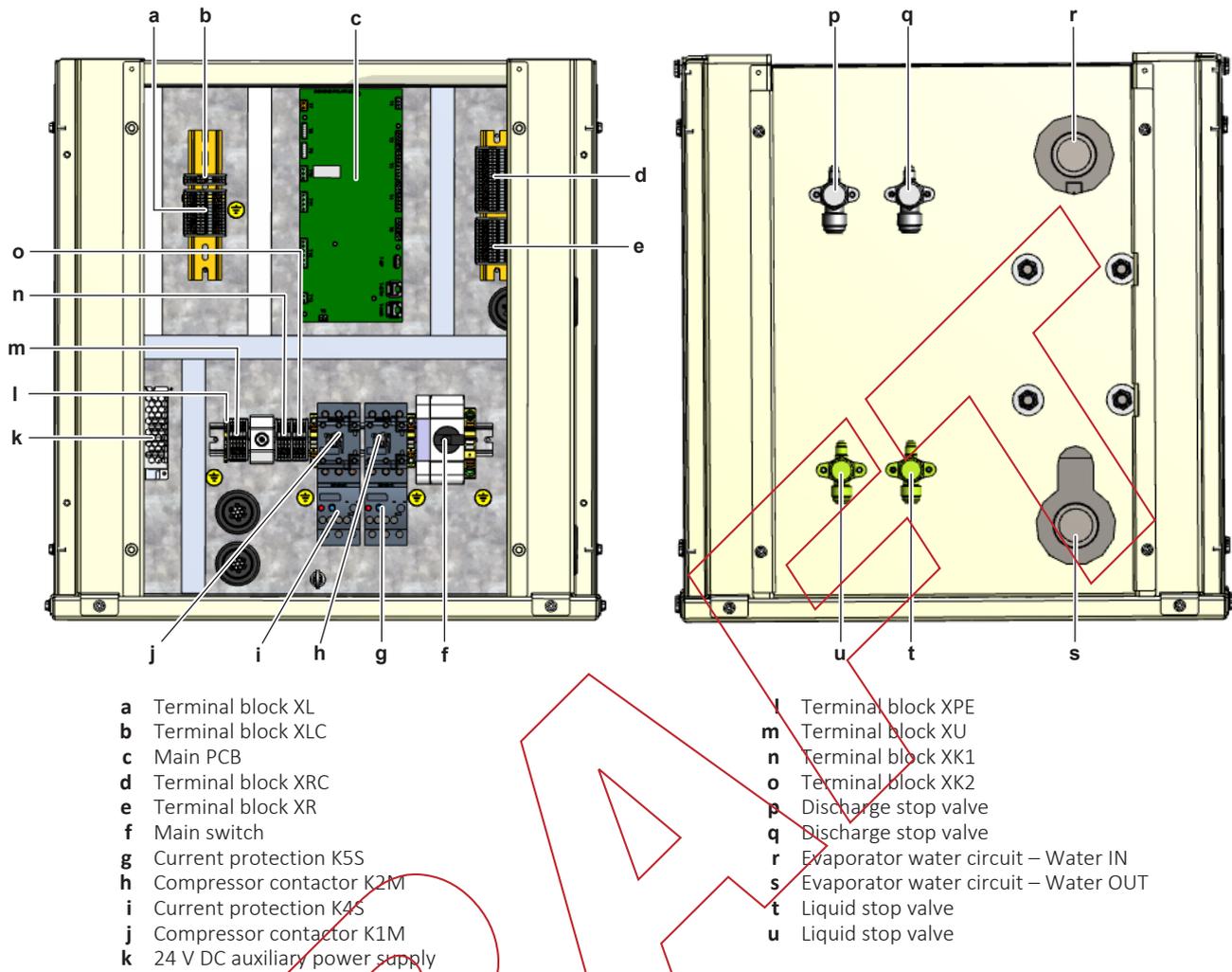


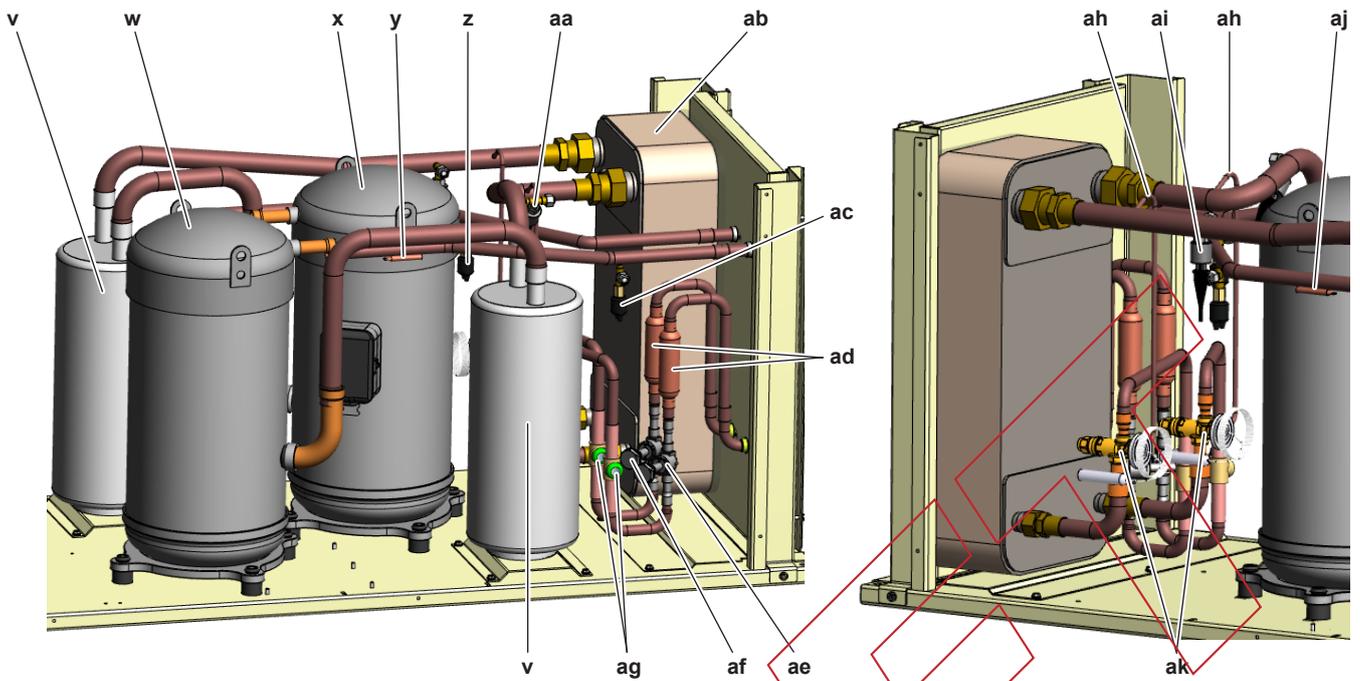
- q Compressor M1C
- r Equalizer pipe
- s Plate heat exchanger (evaporator)
- t Refrigerant low pressure sensor S4LP
- u Discharge pipe thermistor DT1
- v Drier filter
- y Accumulator
- x Sight glass



- w Solenoid valve YS1
- z High pressure switch S1HP
- aa Thermostatic expansion valve

6.4.4 Component overview: EWLQ049~064KC





- v** Accumulator
- w** Compressor
- x** Compressor
- y** Discharge pipe thermistor
- z** High pressure switch
- aa** Refrigerant low pressure sensor
- ab** Plate heat exchanger (evaporator)
- ac** High pressure switch

- ad** Drier filter
- ae** Solenoid valve
- af** Solenoid valve
- ag** Sight glass
- ah** Equalizer pipe
- ai** Refrigerant low pressure sensor
- aj** Discharge pipe thermistor
- ak** Thermostatic expansion valve

6.5 Field information report

See next page.

DRAFT

In case a problem occurred on the unit which could not be resolved by using the content of this service manual or in case you have a problem which could be resolved but of which the manufacturer should be notified, we advise you to contact your distributor.

To facilitate the investigation, additional information is required. Please fill out the following form before contacting your distributor.

FIELD INFORMATION REPORT	
Key person information	
Name:	Company name:
Your contact details	
Phone number:	E-mail address:
Site address:	
Your reference:	Date of visit:
Claim information	
Title:	
Problem description:	
Error code:	Trouble date:
Problem frequency:	
Investigation steps done:	
Insert picture of the trouble.	
Current situation (solved, not solved,...):	
Countermeasures taken.	
Comments and proposals:	
Part available for return (if applicable):	

Application information

Application (house, apartment, office,...):

New project or reimbursement:

Heat emitters (radiators / under floor heating / fan coils /...):

Hydraulic layout (simple schematic):

Unit / Installation information

Model name:

Serial number:

Installation / commissioning date:

Software version hydro PCB A1P

Software version hydro PCB A5P

Software version user interface:

Software version outdoor PCB:

Minimum water volume:

Maximum water volume:

Brine composition and mixture:

Brine freeze up temperature:

Space heating control (leaving water temperature, room thermostat, external room thermostat):

Space heating setpoint:

Domestic hot water control (reheat only, schedule only, reheat + schedule):

Domestic hot water setpoint:

Provide pictures of the field settings overview (viewable on the user interface).

6.6 Service tools

- 1 For an overview of the available service tools, check the Daikin Business Portal (authentication required).
- 2 Go to the tab After-sales support on the left navigation pane and select Technical support.



- 3 Click the button Service tools. An overview of the available service tools for the different products is shown. Also additional information on the service tools (instruction, latest software) can be found here.

6.7 Field settings

6.7.1 User interface parameters

The table below shows the complete user interface structure from the main menu to any single parameter including the screen saver pages.

Typically, the user interface is composed by pages, containing the parameters, accessible from the main menu. In some cases there is a two-level structure where a page contains sub-pages instead of parameters.

For more information about the parameters and how to set them, see the operating manual.

Menu	Parameter	Sub-parameter	Read/Write	Password level
[0] Password	[00.00] Enter PSW	N/A	W	0
[1] Unit	[01.00] UEN	N/A	W	0
	[01.01] C1EN	N/A	W	0
	[01.02] C2EN	N/A	W	0
[2] Mode	[02.00] Available Modes	N/A		2
[3] Capacity	[03.00] C1_Cap	N/A	R	0
	[03.01] C2_Cap	N/A	R	0
[4] Net	[04.00] Source Control	N/A	W	1
	[04.01] En	N/A	R	0
	[04.02] C.SP	N/A	R	0
	[04.03] H.SP	N/A	R	0
	[04.04] Mode	N/A	R	0
[5] Setp	[05.00] C1	N/A	W	0
	[05.01] C2	N/A	W	0
	[05.02] H1	N/A	W	0
	[05.03] H2	N/A	W	0
[6] Tmps	[06.00] In	N/A	R	0
	[06.01] Out	N/A	R	0
	[06.02] CondIn	N/A	R	0
	[06.03] CondOut	N/A	R	0
	[06.04] Syst	N/A	R	0
	[06.05] System Heat	N/A	R	0
[7] Alms	[07.00] Alarm List	N/A	R	0
	[07.01] Alarm Clear	N/A	W	1

Menu	Parameter	Sub-parameter	Read/Write	Password level
[8] Pump	[08.00] RecT	N/A	W	1
	[08.01] Standby Speed	N/A	W	1
	[08.02] Speed	N/A	R	1
	[08.03] Max Speed	N/A	W	1
	[08.04] Min Speed	N/A	W	1
	[08.05] Speed 1	N/A	W	1
	[08.06] Pump Ti	N/A	W	1
	[08.07] Setpoint DT	N/A	W	1
	[08.08] EvapDT	N/A	R	1
	[08.09] EvapPumpRunHours 1	N/A	R	1
	[08.10] EvapPumpRunHours 2	N/A	R	1
	[08.11] EvapPumpMode	N/A	W	2
	[08.12] EvapManual Speed	N/A	W	1
	[08.13] Evap ThermoOffStandbySp	N/A	W	1
	[08.14] CondStandbySpd	N/A	W	
	[08.15] CondPumpSpeed(CondVfpOut)	N/A	R	1
	[08.16] CondMaxSpd	N/A	W	1
	[08.17] CondMinSpd	N/A	W	1
	[08.18] CondSpd1	N/A	W	1
	[08.19] Cond Pump Ti(CondParamKD)	N/A	W	1
	[08.20] NomCondDT	N/A	W	1
	[08.21] CondDT	N/A	R	
	[08.22] CondPumpRunHours 1	N/A	R	1
	[08.23] CondPumpMode	N/A	W	2
	[08.24] CondManual Speed	N/A	W	1
	[08.25] Cond ThermoOffStandbySp	N/A	W	1

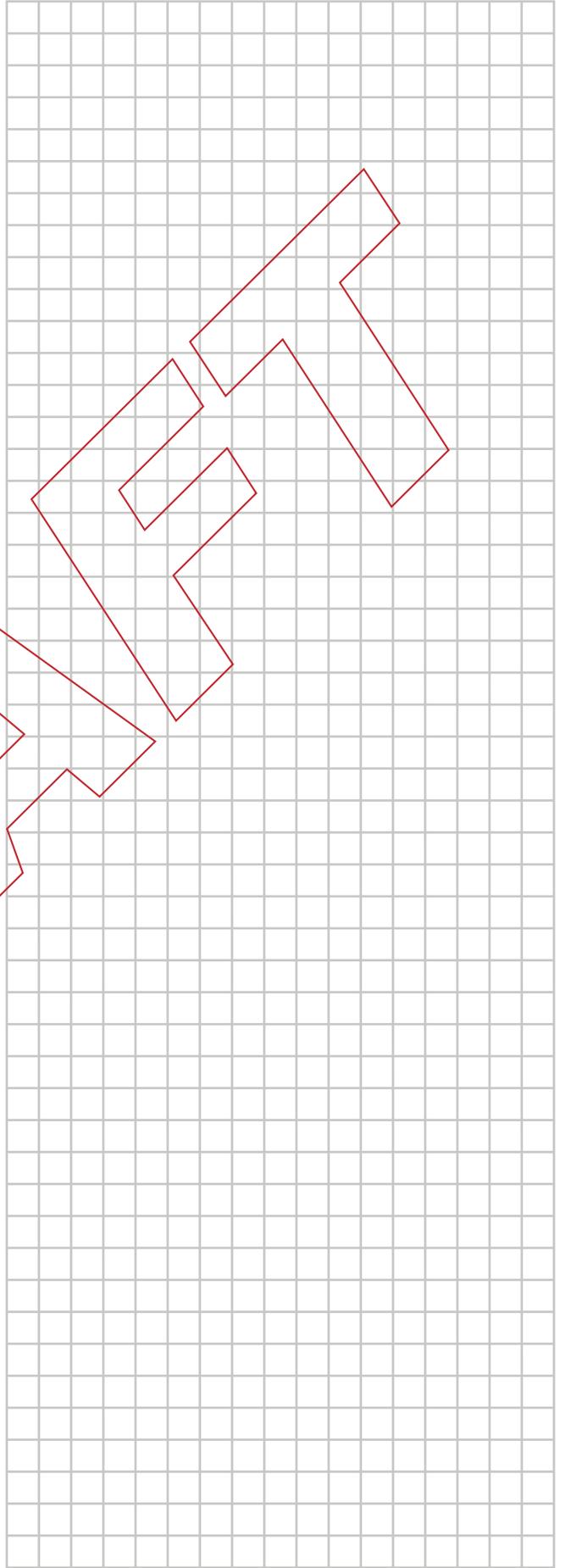
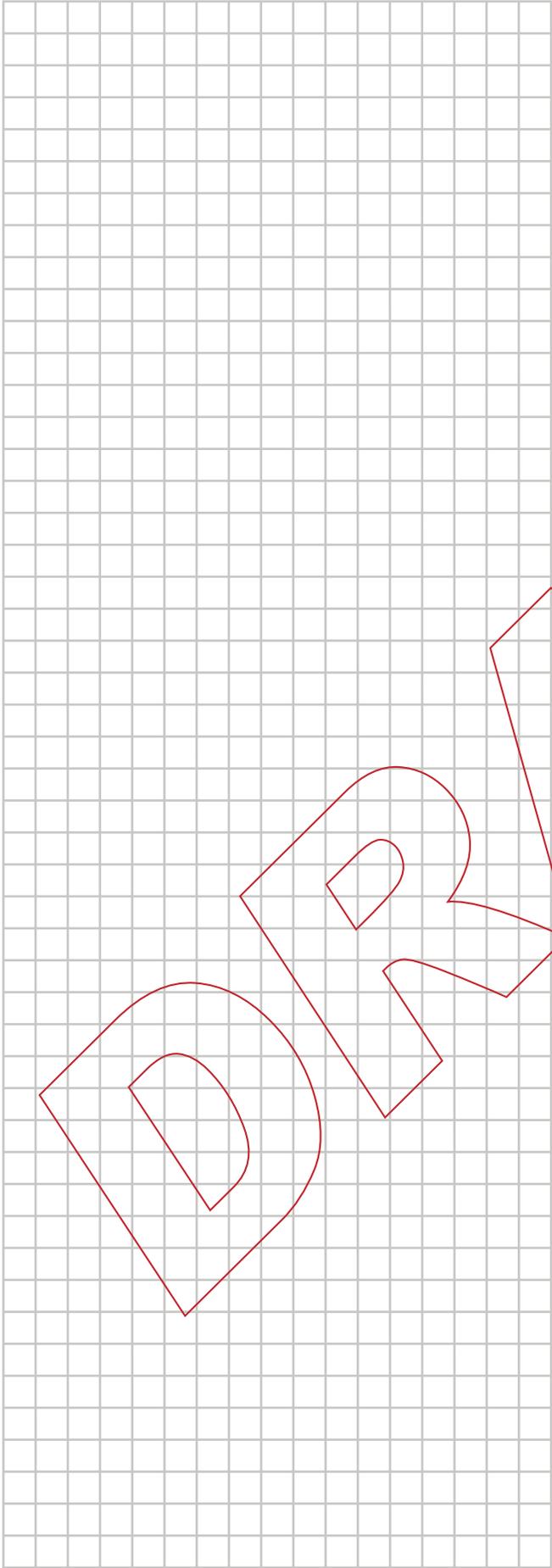
Menu	Parameter	Sub-parameter	Read/Write	Password level
[9] Thermostatic control	[09.00] Startup	N/A	W	1
	[09.01] Shutdown	N/A	W	1
	[09.02] Stage up	N/A	W	1
	[09.03] Stage down	N/A	W	1
	[09.04] Stage up delay	N/A	W	1
	[09.05] Stage dn delay	N/A	W	1
	[09.06] Evap Freeze	N/A	W	2
	[09.07] CondFreeze	N/A	W	2
	[9.08] Low Press Unld	N/A	W	2
	[09.09] Thermo Ctrl	N/A	W	0
[10] Date	[10.00] Day	N/A	W	0
	[10.01] Month	N/A	W	0
	[10.02] Year	N/A	W	0
[11] Time	[11.00] Hour	N/A	W	0
	[11.01] Minute	N/A	W	0
[12] DoS	[12.00] Enable	N/A	W	0
	[12.01] State	N/A	R	0
[13] IPst	[13.00] DHCP	N/A	W	0
	[13.01] Actual IP	N/A	R	0
	[13.02] Actual Mask	N/A	R	0
	[13.03] Manual IP		R	0
	[13.03.0] IP#1		W	0
	[13.03.1] IP#2		W	0
	[13.03.2] IP#3		W	0
	[13.03.3] IP#4		W	0
	[13.04] Manual Mask		W	0
	[13.04.0] Msk#1		W	0
	[13.04.1] Msk#2		W	0
[13.04.2] Msk#3		W	0	
[13.04.3] Msk#4		W	0	
[14] Service Configuration	[14.00] Unit Type	N/A	W	2
	[14.01] Evap Ctrl	N/A	W	2
	[14.02] Num Cirs	N/A	W	2
	[14.03] N. of Restart	N/A	W	2
	[14.04] LowPressureAlarm Delay at start	N/A	W	2

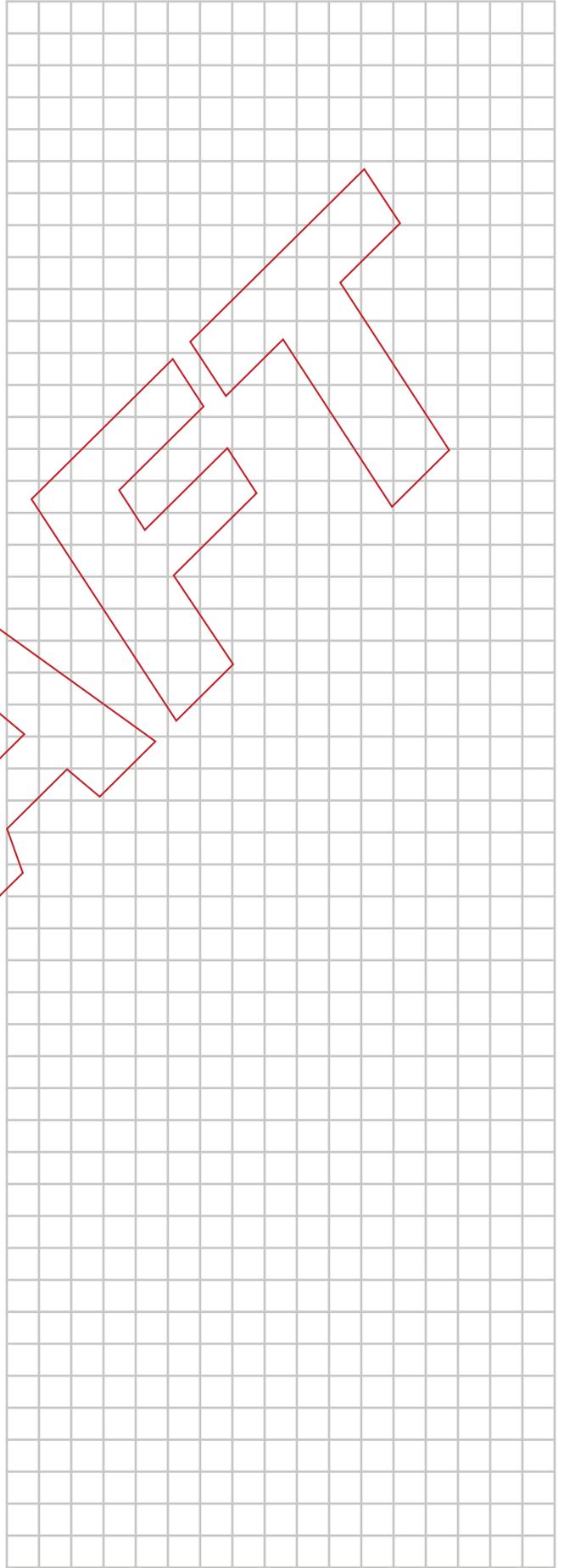
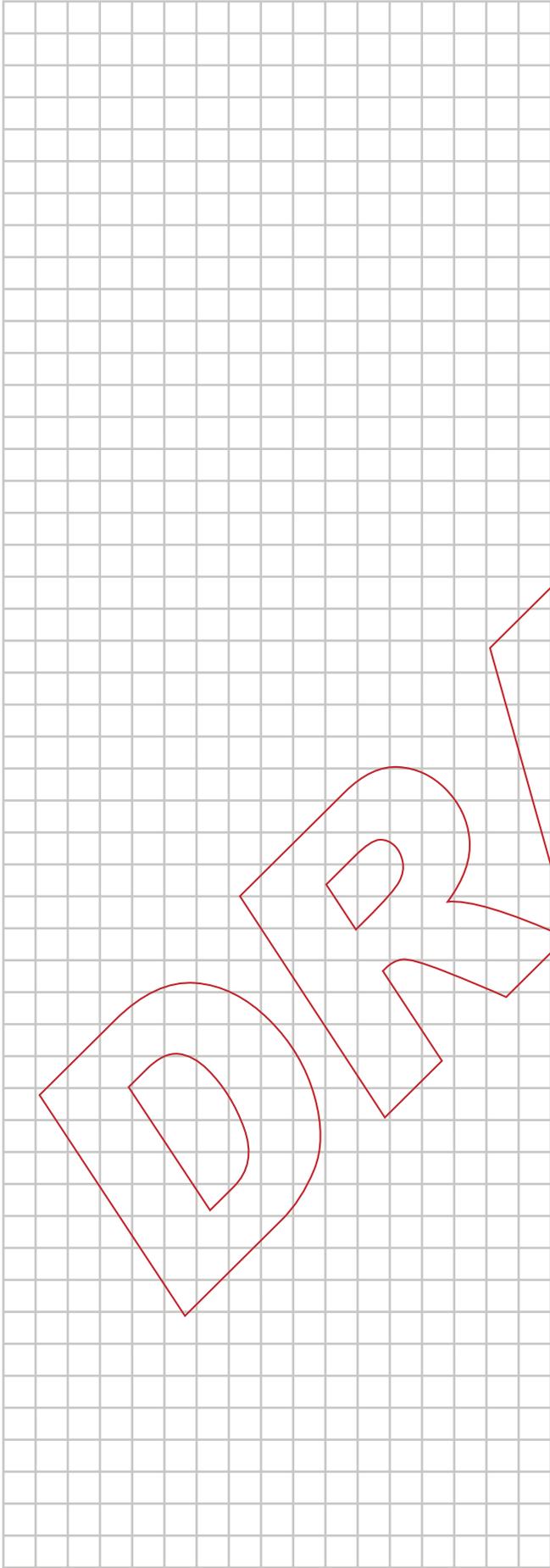
Menu	Parameter	Sub-parameter	Read/Write	Password level
[15] Customer Configuration	[15.00] Pump Ctrl Type	N/A	W	1
	[15.01] EvapCtrlMeas	N/A	W	1
	[15.02] EvapCtrlDev	N/A	W	1
	[15.03] EWTSenEn	N/A	W	2
	[15.04] CondCtrl Type	N/A	W	1
	[15.05] CondCtrlMeas	N/A	W	1
	[15.06] CondCtrlDev	N/A	W	1
	[15.07] Address	N/A	W	1
	[15.08] Ext Alm	N/A	W	1
	[15.09] SCM Number of Units	N/A	W	1
	[15.10] WRVBehav	N/A	W	1
	[15.11] WRVCoolDel	N/A	W	1
	[15.12] WRVHeatDel	N/A	W	1
	[15.13] Evap Setpoint DeltaT	N/A	W	1
	[15.14] Cond Setpoint DeltaT	N/A	W	1
[15.15] HMI Type	N/A	W	1	
[16] Master/Slave (Available only for Master unit))	[16.00] Start Up Limit	N/A	W	1
	[16.01] Shut Dn Limit	N/A	W	1
	[16.02] Stage Up Time	N/A	W	1
	[16.03] Stage Dn Time	N/A	W	1
	[16.04] Threshold	N/A	W	1
	[16.05] Threshold Down	N/A	W	1
	[16.06] PrioSlave#1	N/A	W	1
	[16.07] PrioSlave#2	N/A	W	1
	[16.08] PrioSlave#3	N/A	W	1
	[16.09] MasterPriority	N/A	W	1
	[16.10] Master Enable	N/A	W	1
	[16.11] Standby Chiller	N/A	W	1
	[16.12] Cycling Type	N/A	W	1
	[16.13] Interval Time	N/A	W	1
	[16.14] Switch Time	N/A	W	1
	[16.15] Temp Compensation	N/A	W	1
	[16.16] Tmp Cmp Time	N/A	W	1
[16.17] Alarm Code	N/A	R	1	

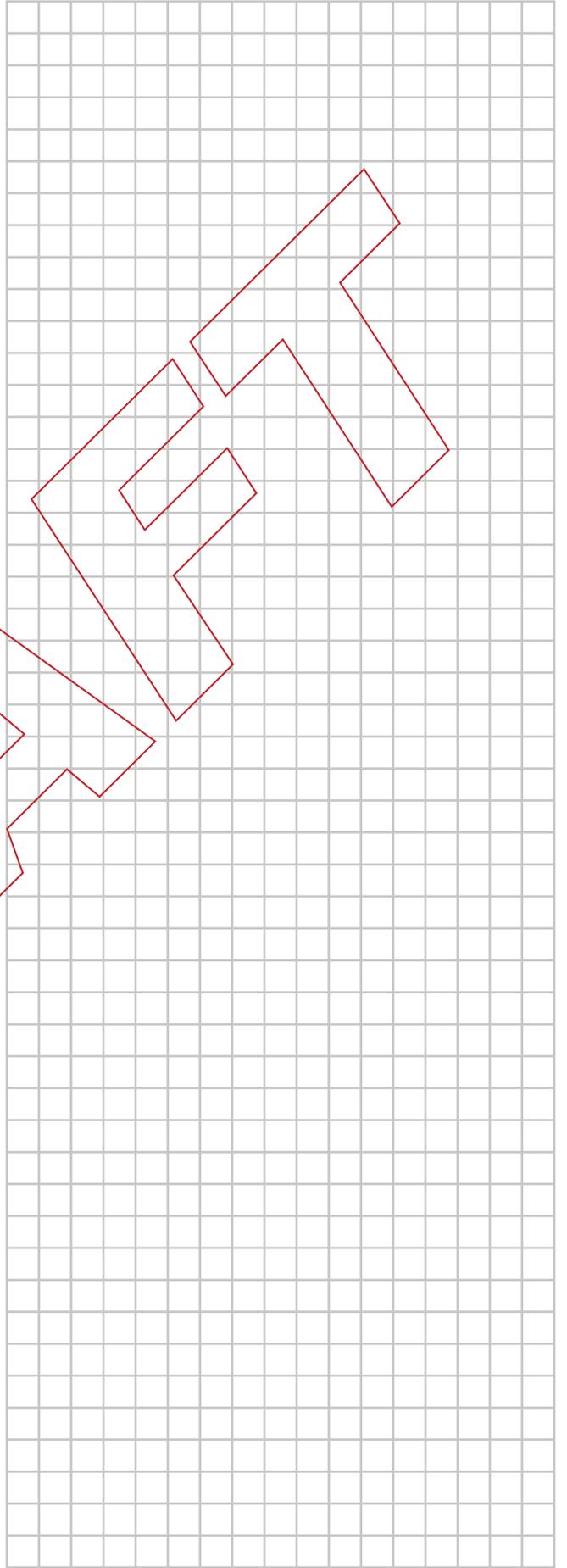
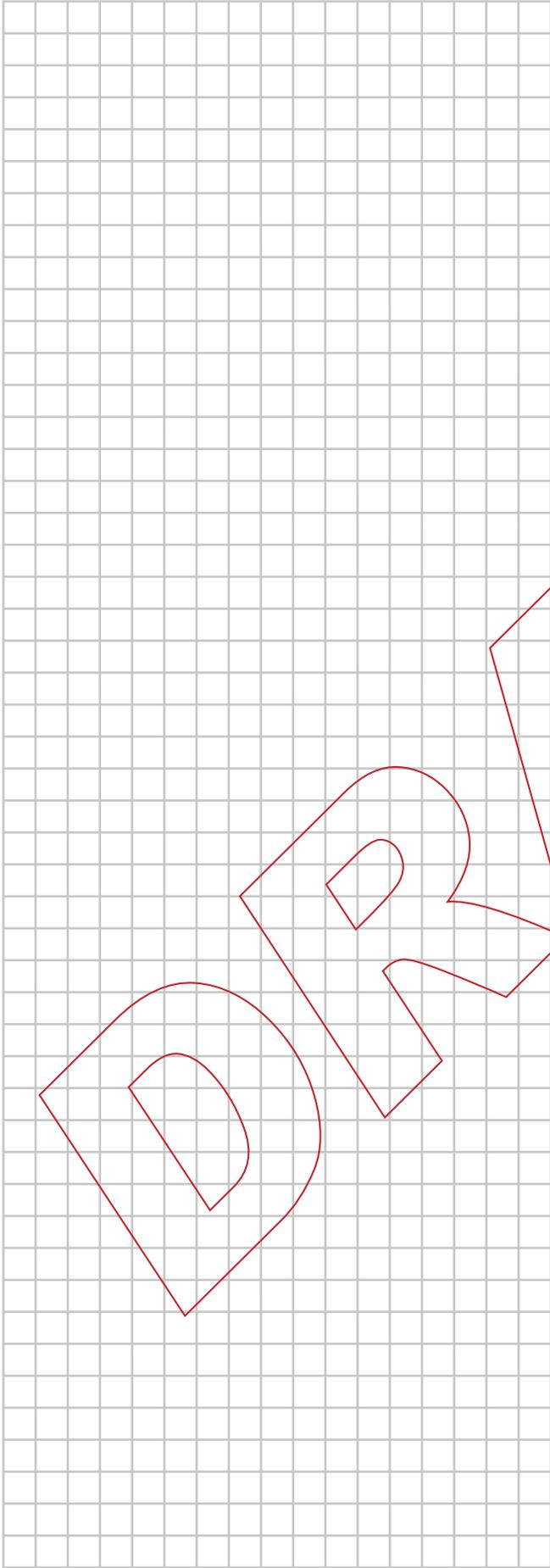
Menu	Parameter	Sub-parameter	Read/Write	Password level
[17] Scheduler	[17.00] Monday		W	1
		[17.00.0] Time 1	W	1
		[17.00.1] Value 1	W	1
		[17.00.2] Time 2	W	1
		[17.00.3] Value 2	W	1
		[17.00.4] Time 3	W	1
		[17.00.5] Value 3	W	1
		[17.00.6] Time 4	W	1
		[17.00.7] Value 4	W	1
	[17.01] Tuesday		W	1
		[17.01.0] Time 1	W	1
		[17.01.1] Value 1	W	1
		[17.01.2] Time 2	W	1
		[17.01.3] Value 2	W	1
		[17.01.4] Time 3	W	1
		[17.01.5] Value 3	W	1
		[17.01.6] Time 4	W	1
		[17.01.7] Value 4	W	1

	[17.06] Sunday		W	1
		[17.06.0] Time 1	W	1
		[17.06.1] Value 1	W	1
		[17.06.2] Time 2	W	1
		[17.06.3] Value 2	W	1
		[17.06.4] Time 3	W	1
		[17.06.5] Value 3	W	1
		[17.06.6] Time 4	W	1
		[17.06.7] Value 4	W	1
[18] Setpoint reset	[18.00] Reset Type	N/A	W	1
	[18.01] Max Reset DT	N/A	W	1
	[18.02] Start Reset DT	N/A	W	1

Menu	Parameter	Sub-parameter	Read/Write	Password level
[19] Protocol Communication	[19.00] Mb Address	N/A	W	1
	[19.01] Mb BAUD	N/A	W	1
	[19.02] Mb Parity	N/A	W	1
	[19.03] Mb 2StopBit	N/A	W	1
	[19.04] Mb Timeout	N/A	W	1
	[19.05] BN Address	N/A	W	1
	[19.06] BN BAUD	N/A	W	1
	[19.07] BN Device ID (X.XXX.---)	N/A	W	1
	[19.08] BN Device ID (-.---.XXX)	N/A	W	1
	[19.9] BN Port (X.---)	N/A	W	1
	[19.10] BN Port(-X.XXX)	N/A	W	1
	[19.11] BN Timeout	N/A	W	1
	[19.12] Licence Mngr	N/A	R	1
	[19.13] BacNETOverRS	N/A	W	1
	[19.14] BacNET-IP	N/A	W	1
	[19.15] BasProtocol	N/A	W	1
[19.16] BusPolarization	N/A	W	1	
[20] PLC	[20.00] AppSave	N/A	W	1
	[20.01] Apply Changes	N/A	W	1
	[20.02] Software Update	N/A	W	2
	[20.03] Save Parameters	N/A	W	2
	[20.04] Restore Parameter	N/A	W	2
[21] About	[21.00] App Vers	N/A	R	0
	[21.01] BSP	N/A	R	0
[25] Screen Saver	- LWT (String Up) - Setpoint Act (String Dn)	- Unit Cap (String Up) - Actual Mode (String Dn)	R	0







DRAFT

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