HEATING & COOLING

Air/water inverter heat pumps with axial fans

Troubleshooting manual

Models

HWA1-A-H 02106-04349

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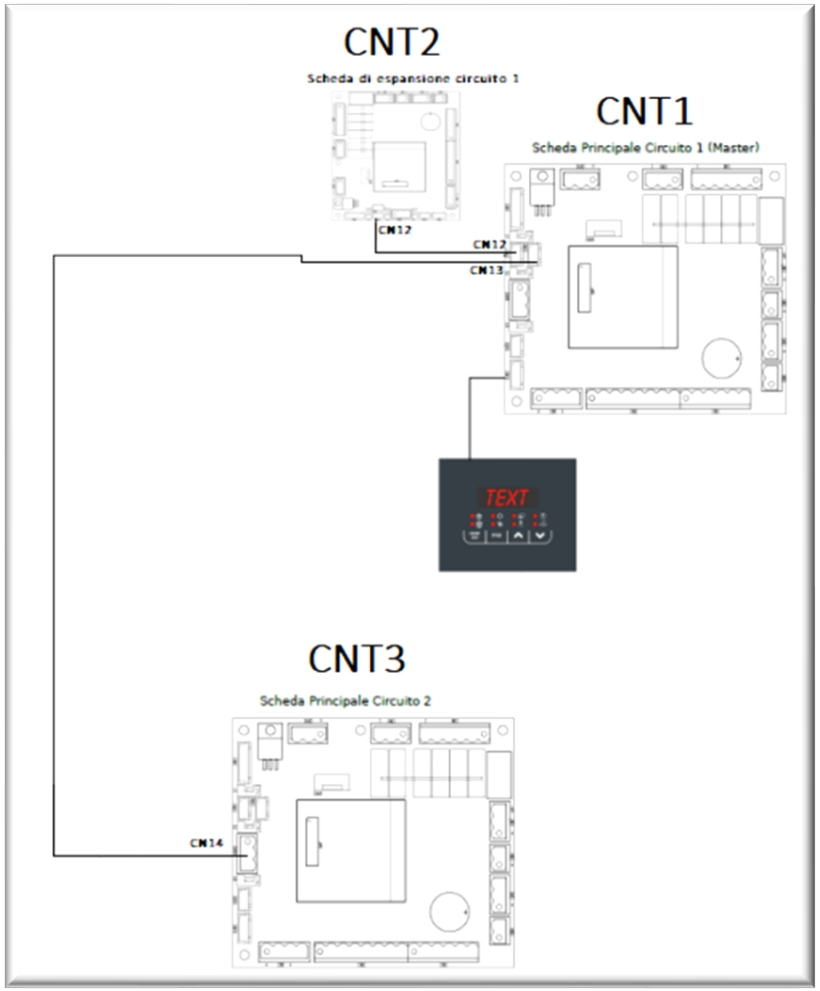
An Italian Company

HWA1 02106-04349 TROUBLESHOOTING

00	09-19-2025	MS/AA		First issue
Rev	**Date**	**Drafted**	**Approved**	**Notes**
Catalog				**Series**
MTR01410100000_00				**HWA1 A/AH TROUBLESHOOTING FOR FUNCTIONAL TESTING**

- **CONNECTIONS CONTROL BOARD – TERMINAL BLOCK – MACHINE EDGE**

HWA1 A-H 04273-04349 (2 circuits, 6 fans) Connection between boards:



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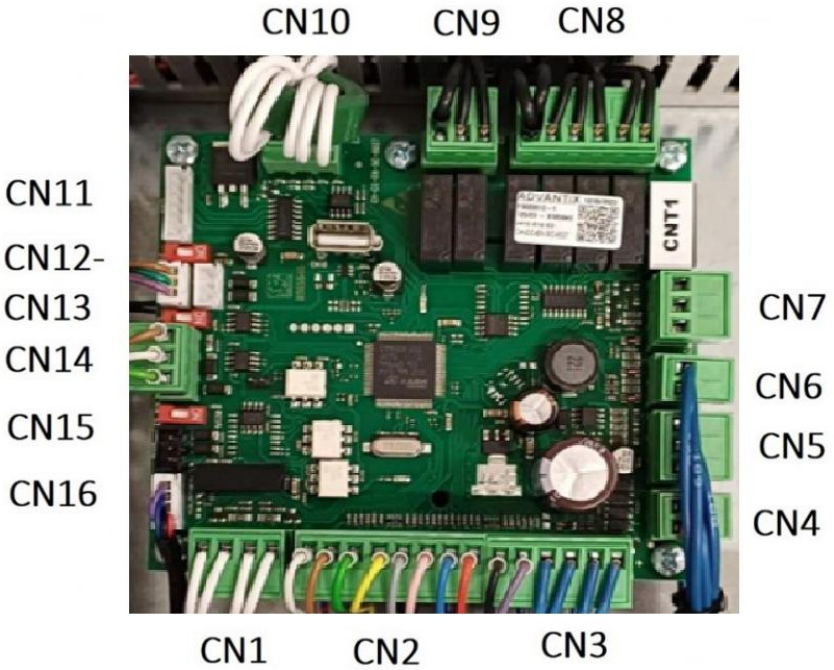
- **CNT1 (Main board circuit 1):**



CN1-1	XI-29.1	PED TR1 (Low pressure transducer)	XI-29.2	CN1-2		
CN1-3	XI-30.1	PEH TC1 (High pressure transducer)	XI-30.2	CN1-4		
CN2-1	XI-22.1	TE IE1 (H2O input probe)	XI-22.2	CN2-2		
CN2-3	XI-23.1	TE OE1 (H2O output probe)	XI-23.2	CN2-4		
CN2-5	XI-24.1	TE SD1C (Compressor suction probe 1 circuit 1)	XI-24.2	CN2-6		
CN2-7	XI-25.1	TE DT1 (Compressor discharge probe 1 circuit 1)	XI-25.2	CN2-6		
CN3-1	XI-26.1	TE EXT1 (Outdoor air sensor)	XI-26.2	CN3-2		
CN3-3	XU-5.2	TE IMP1 (remote system probe, installer load) by the installer)	XU-5.1	XU-6.1	XU-7.1	CN3-6
CN3-4	XU-6.2	2 SP1 (second set point)	XU-6.1	XU-7.1	CN3-6	
CN3-5	XU-7.2					

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CN4-1	X12V-1	12Vac transformer	T1, pin 6			
CN4-2	X12V-2	12Vac transformer	XF-2	T2, pin 5		
CN5-1	XU-3.1	ON/OFF1 (remote ON-OFF)	XU-3.2	CN5-2		
CN5-3	XU-4.2	S/W1 (remote season change)	XU-4.1			
CN6-1	XI-21.1	DPS EV1 (water pressure switch)	XI-21.2	CN6-2		
CN8-1	RL2 (NO) + RL4 (NO)	KC1 (compressor relay coil 1 circuit 1)	T1, pin 4 (neutral)			
CN8-2	RL2 (NO) + RL5 (NO)	KC2 (compressor relay coil 2 circuit 1)	T1, pin4 (neutral)			
CN8-3	XI-16.2	YLSV1 (liquid line solenoid circuit 1)	XI-16.1	T1, pin4 (neutral)		
CN8-4	XI-17.2	RTP1 + KP1 (electropump drive coil 1)	XI-17.1	T1, pin4 (neutral)		
CN8-5	XI-18.2	YISV1 (4-way valve)	XI-18.1	T1, pin4 (neutral)		
CN8-6	XF-3 + XI-1.1 CN9-3	T1, pin2 (phase)				
CN9-1	XI-19.2 + XKA-1	RKA1 (exchanger resistance)	XKA-2 + XI-19.1	T1, pin4 (neutral)		
CN9-2	XI-20.2	YSV1 (soft start bypass circuit 1)	T1, pin4 (neutral)			
CN9-3	PHASE	-				
CN10-1	XI-27.1	MAF1 signal, PIN: GND MAF2 signal, PIN: GND MAF3 signal, PIN: GND MAF4 signal, PIN: GND				
	XI-28.1	DVB1 (thermostatic valve control board), pin:S-	EXV1C (thermostatic valve thermostatic valve)			
CN10-2	XI-27.2	MAF1 signal, PIN: analog in E1 + MAF2 signal, PIN: analog in E1 + MAF3 signal, PIN: analog in E1 + MAF4 signal, PIN: analog in E1				
CN10-3	XI-28.2	DVB1 (thermostatic valve control board), pin: S+	EXV1C (thermostatic valve)			
CN11	EXV1H (expansion valve 1 circuit 1)					
CN12-1	CN12-1 (CNT2)					

CN12-2	CN12-2 (CNT2)					
CN12-3	CN12-3 (CNT2)					
CN13-1	CN14-1 (CNT3)					
CN13-2	CN14-2 (CNT3)					
CN13-3	CN14-3 (CNT3)					
CN14-1	XU-2.1					
CN14-2	XU-1.2					
CN14-3	XU-1.1					
CN16	DISPLAY					

- **CNT2 (Circuit expansion card 1):**

CN2-1	XI-35.1	TE SD1H (Compressor suction probe 2 circuit 1)	XI-22.2	CN2-2		
CN2-3	XI-23.1	TE SD2H (Compressor suction probe 3 circuit 1)	XI-23.2	CN2-4		
CN2-5	RTP1 (pump thermal switch 1)	CN2-6				
CN2-7	RTP2 (thermal pump 2)	CN2-8				
CN3-1	RL2 (high pressure switch circuit 1)	CN3-2				
CN3-4	RL4 (thermal compressor 1 circuit 1)	CN3-6				
CN3-5	RL5 (compressor thermal 2 circuit) 1)	CN3-6				
CN4-1	X12V-1	12Vac transformer	T1, pin 6			
CN4-2	X12V-2	12Vac transformer	XF-2	T2, pin 5		
CN5-1	XI-32.2	MAF1, MAF2, MAF3, MAF4, pin 14 (thermal GND fan 1)				

CN5-2	XI-32.2	MAF1, MAF2, MAF3, MAF4, pin 11 (+ thermal fan 1)				
CN5-3	XI-32.1 XI-33.1					
CN6-1	XI-34.1					
CN6-2	XI-34.2					
CN8-1	XU-8.2	EVVU1 (electronic capillary valve 1)	XU-8.1	T1, pin4 (neutral)		
CN8-2	XU-9.2	EVVU2 (electronic capillary valve 2)	XU-9.1			
CN8-3	XU-10.2	XU-10.1	T1, pin4 (neutral)			
CN8-4	XU-11.2	SBSV1 (subcooling bypass solenoid circuit 1)	XU-11.1	T1, pin 4 (neutral)		
CN8-5	XI-31.2	RTP2 (thermal contactor contact pump 2)	KP2 (coil for electric pump 2)	T1, pin4 (neutral)		
CN8-6	XF-3 + XI-1.1 CN9-3	T1, pin2 (phase)				
CN9-1	XU-12.2	-	XU-12.1			
CN9-2	XU-13.2	-	XU-13.1			
CN9-3	XF-4	T1, pin2 (phase)				
CN11	EXV2H (valve expansion valve 2 circuit 1)					
CN12-1	CN12-1 (CNT1)					
CN12-2	CN12-2 (CNT1)					
CN12-3	CN12-3 (CNT1)					

- **CNT3 (Main circuit board 2):**

CN1-1	XI-49.1	PED TR2 (Low pressure transducer circuit 2)	XI-49.2	CN1-2		
CN1-3	XI-50.1	PEH TC2 (High pressure transducer circuit 2)	XI-50.2	CN1-4		
CN2-1	XI-44.1	TE SD3H (Suction probe circuit 2 compressor 2)	XI-44.2	CN2-2		

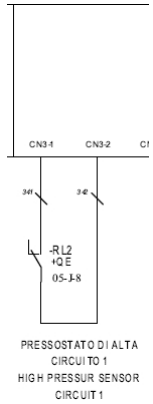
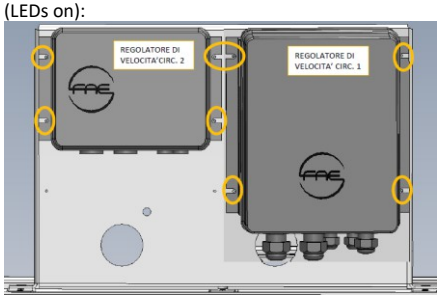
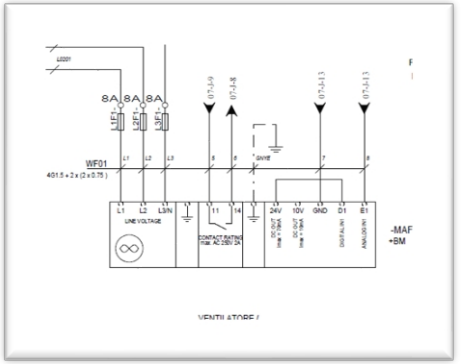
CN2-5	XI-45.1	TE SD2C (Suction probe circuit 2 compressor 1)	XI-45.2	CN2-6		
CN2-7	XI-46.1	TE DT1 (Compressor 1 circuit 1 discharge probe)	XI-46.2	CN2-6		
CN3-1	RL3 (pressure switch high pressure switch circuit 2)	TE EXT1 (Outdoor air sensor)	XI-26.2	CN3-2		
CN3-4	RL6 (thermal circuit 2 compressor 1)	CN3-6				
CN3-5	RL6 (thermal circuit 2 compressor 2)	CN3-6				
CN4-1	X12V-1	12Vac transformer	T1, pin 6			
CN4-2	X12V-2	12Vac transformer	XF-2	T2, pin 5		
CN5-1	XI-42.1	MAF5, MAF6, pin 14 (thermal GND fan 1)				
CN5-2	XI-42.2	MAF5, MAF6, pin 11 (+ thermal fan 1)				
CN6-1	XI-43.1					
CN6-2	XI-43.2					
CN8-1	RL3 (NO) + RL6 (NO)	KC3 (compressor relay coil 1 circuit 2)	T1, pin 4 (neutral)			
CN8-2	RL3 (NO) + RL7 (NO)	KC4 (compressor relay coil 2 circuit 2)	T1, pin4 (neutral)			
CN8-3	XI-37.2	YLSV2 (liquid line solenoid circuit 2)	XI-37.1	T1, pin 4 (neutral)		
CN8-4	XI-38.2	EVVU3 (electronic capillary valve 3)	XI-38.1	T1, pin4 (neutral)		
CN8-5	XI-39.2	YISV2 (4-way valve circuit 2)	XI-39.1	T1, pin4 (neutral)		
CN8-6	XF-5 + XI-1.1 CN9-3	T1, pin2 (phase)				
CN9-1	XI-40.2	SBSV2 (subcooling bypass solenoid circuit 2)	XI-40.1	T1, pin4 (neutral)		
CN9-2	XI-41.2	YSV2 (soft start bypass circuit 2)	T1, pin4 (neutral)			
CN9-3	PHASE	-				
CN10-1	XI-47.1 XI-48.1	MAF5 signal, PIN: GND MAF6 signal, PIN: GND DVB1 (thermostatic valve control board), pin:S-	EXV1C (thermostatic valve			
	XI-47.2	MAF5 signal, PIN: analog in E1 +				

		MAF6 signal, PIN: analog in E1 +				
CN10-2	XI-48.2	DVB1 (thermostatic valve control board), pin: S+				
CN10-3	XI-28.2	DVB1 (thermostatic valve control board), pin: S+	EXV1C (thermostatic valve))			
CN11	EXV3H (expansion valve 2 circuit 2)					
CN14-1	CN13-1 (CNT1)					
CN14-2	CN13-2 (CNT1)					
CN14-3	CN13-3 (CNT1)					

TROUBLESHOOTING

This manual describes the errors that may occur during functional testing. Testers MUST NOT OPEN THE ELECTRICAL PANEL: for faults involving components inside the panel, they must inform their manager, who will notify the personnel responsible for intervention.

CIRCUIT 1

Code	Description	Block	Cause	What to check	What to do
E00	Remote ON/OFF	MACHINE	Digital input enabled as remote ON/OFF not jumpered.	Check that parameter H47=2.	Close digital input (jumper) terminals XU-3.1, XU-3.2
E001	High pressure alarm	MACHINE	**Condensation pressure sensor** The pressure transducer detects a pressure higher than the "high pressure set point" (39.5 bar). It resets when the pressure drops below 29.5 bar. If the alarm occurs more than 3 times per hour, the reset becomes manual. **High pressure digital input** The ID6E digital input (connected to terminals CN3-1 and CN3-2) is declared as "high pressure circuit". A high pressure alarm is triggered when the digital input is in the active. As soon as the digital input goes inactive, the alarm resets. An NO contact (RL2, high pressure switch 1) is connected to the terminals:  PRESSOSTATO DI ALTA CIRCUITO 1 HIGH PRESSUR SENSOR CIRCUIT 1 This NO contact is controlled by the RL2 coil. When this is de-energized, the contact is open and the error is present.	• Check that the high pressure reading of the control is correct using a pressure gauge located on the high pressure charge connection • If the alarm occurs in chiller mode: check that there is no air recirculation that could increase the inlet temperature to the coil beyond the permitted limits • If the alarm occurs in chiller mode, check that the heat exchanger coil is not obstructed. • If the alarm occurs in heating mode, check the operation and fastening of the EEV thermostatic valve • Check that the fan is working correctly • If there are phase cut fans, check the wiring of the speed controllers and that the boards are powered (LEDs on):  	• Replace the EEV coil (CN11 of the CNT1 control). If the alarm reoccurs, replace the EEV valve body. • If the fan is not working, check the correct wiring on the fan board:  • If the wiring is damaged, replace it with new wiring • If the fan board wiring is correct, check the internal wiring of the panel: ▪ Signal:

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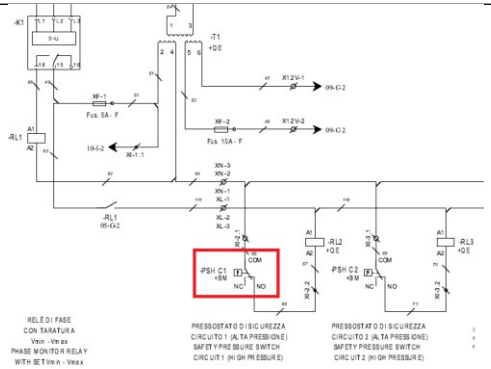
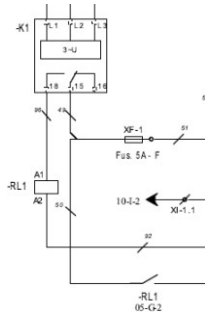
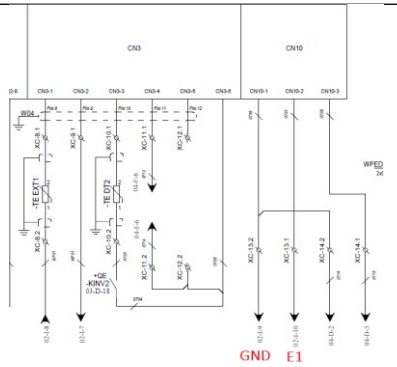


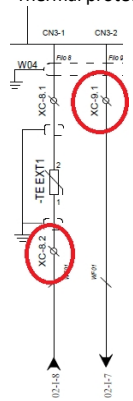
The RL2 coil is de-energized when the pressure switch is open (because the pressure has exceeded 40.5 bar).

NB: the alarm is also active when the K1 phase relay measures a voltage outside the limits, or reversed phases (RL1 coil de-energized, RL1 contact open).

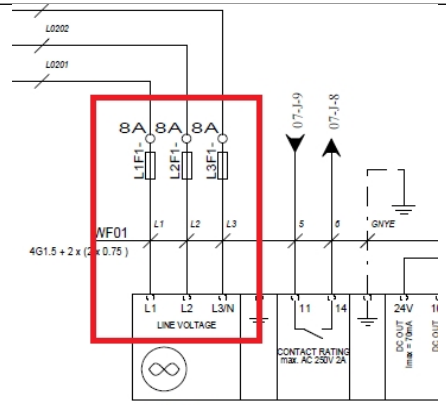




- Thermal protection:



- Power supply:

					 FAN1 • If the internal wiring of the panel is also correct, replace the fan
E002	Low pressure alarm	MACHINE	The pressure transducer detects a pressure lower than the "low pressure set point." Low pressure setpoint in cooling mode = 3.5 bar Low pressure setpoint in heating mode = 1.5 bar. The alarm resets when the pressure rises above 2 bar. If the alarm occurs more than 3 times per hour, the reset becomes manual.	• Check for gas leaks in the refrigeration circuit (leakage detector, etc.) • Check that the low pressure transducer reading is correct by placing a pressure gauge on the low pressure charge connection • If the alarm occurs in cooling mode, check that the expansion valves are working correctly: - EXV1H - EXV2H - EXV3H • Check the correct wiring, fastening, and operation of the EEV thermostatic valve, physically verifying that the change in valve steps displayed on the control panel corresponds to the actual movement of the valve • Check that the fan is working. The presence of ice on the coil in heating mode could be an indication that the fan is not working.	• If leaks have been detected: recover the remaining refrigerant, repair the leak, and restore the charge, checking the data on the technical label. • If the pressure gauge reading does not match that given by the low pressure transducer, replace the transducer • Disconnect the coils from the expansion valves and replace them with the valve-opening magnets • If the EEV valves are malfunctioning, replace the coils. If the error persists, replace the valve bodies • Make sure that the valve pipe is not blocked (or frozen, check visually) by placing the magnet on the valve and checking the effect it has on error E002. If the error persists, the pipe is blocked. If the error disappears, replace the EEV coil • If the fan is not working, check the fan power supply wiring. If the wiring is correct, replace the fan.
E003 **E013**	Compressor thermal 1 Compressor thermal 2	MACHINE	These alarms are associated with digital inputs thermal cp1 and thermal cp2. The alarm is activated when the digital input in question closes. It resets automatically when the contact returns to its rest state.	• Check the wiring at terminals CN3-3, CN3-6, and CN3-5, CN3-6, and at the NO contact terminals of compressors MC1 and MC2	• If the wiring is incorrect, align it with the wiring diagram. • If the RL4 contactor contact is open with the unit powered, replace this component

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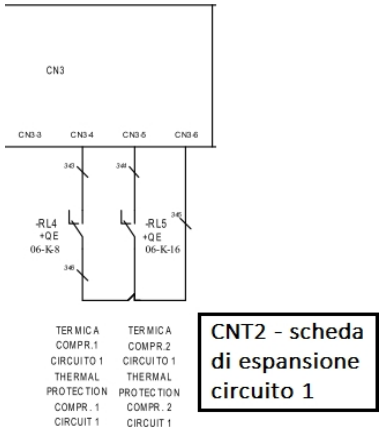

</td>
<td>
• Check the operation of the RL4 contactor; with When the unit is powered, contact RL4 must be closed.

• Check the operation of remote control switch RL5; with the unit powered, contact RL5 must be closed.

• Check the correct operation of compressors MC1 and MC2, with the machine in standby mode, by manually pressing the RTC1 or RTC2 button.
</td>
<td>
• If the RL5 remote control switch contact is open with the unit powered, replace this component

• If the compressors do not work when operated manually, check the resistance of the windings. The following compressors can be found by checking the machine list:
<table>
<tr><th>COMPRESSOR</th><th>MODEL NAME</th><th>WINDING RESISTANCE AT 25°C [Ω]</th></tr>
<tr><td>CH-CC-FD-CO-0119</td><td>ZP154KCE-TFD</td><td>1.1</td></tr>
<tr><td>CH-CC-FD-CO-0120</td><td>ZP182KCE-TFD</td><td>0.8</td></tr>
<tr><td>CH-CC-FD-CO-0096</td><td>ZP385KCE-TWD</td><td>0.5</td></tr>
<tr><td>CH-CC-FD-CO-0098</td><td>ZP485KCE-TWD</td><td>0.6</td></tr>
<tr><td>CH-CC-FD-CO-0121</td><td>ZP293KZE-TED</td><td>0.4</td></tr>
<tr><td>CH-CC-FD-CO-0122</td><td>ZP233KZE-TED</td><td>0.3</td></tr>
</table>
</td>
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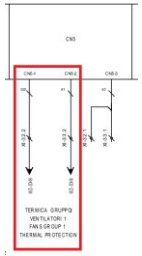
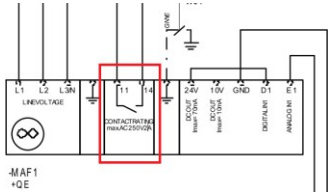
<tr>
<td>E004</td>
<td>Thermal fan</td>
<td>MACHINE</td>
<td>
Alarm associated with the digital input of the fan unit thermal switch 1



The alarm is activated when the digital input in question opens. It resets automatically when the contact returns to its rest state.



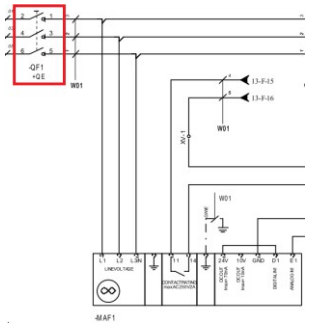
The MAF1, MAF2, MAF3, and MAF4 contacts are in series (for 6-fan units). Opening any of these contacts will trigger the alarm.
</td>
<td>
• Check continuity between terminals XI-32.2 and XI-33.2.

• If there is no continuity between these, check the terminal block of each individual fan, disconnecting the wires from terminals 11 and 14. This will identify the fan with the open contact.

• Check whether voltage is reaching terminals L1, L2, and L3.

• If there is no voltage, check the wiring.

• If the wiring is correct, check the QF1:


</td>
<td>
• If there is no voltage on L1, L2, L3:
- Fix the wiring if it is incorrect
- Replace the QF1 circuit breaker

• If voltage is present at terminals L1, L2, and L3 and contact 11, 14 is open, replace the fan
</td>
</tr>
</table>

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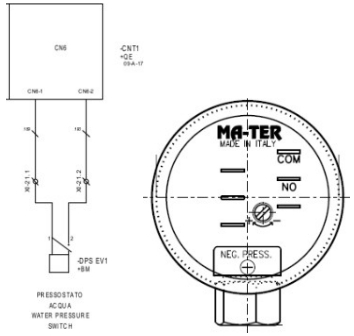
E005	Anti-freeze alarm	MACHINE	If the flow water probe (ST2) has a value lower than A08 (default 3°C). This alarm must be reset manually. In cooling mode, the alarm is immediate, while in heating mode it is activated after 2 minutes. The alarm is reset when the temperature returns to a value above 3°C.	• The flow water temperature sensor is correctly inserted in the well. • Check the temperature at the flow sensor with a reference thermometer. • Check the wiring order of phases R, S, T of P1 and P2 electric pumps • Check the correct adjustment of the testing system	• If the probe is not correctly inserted into the well, correct it • If the temperature measured by the reference thermometer differs from the temperature measured by the flow probe, the probe is defective; replace it • If the phases are not wired in the correct order, fix them • If there are problems with the system adjustment, notify maintenance personnel
E006	Flow alarm	MACHINE	If the DPS EV1 water pressure switch detects a lack of flow for a consecutive period of 10 seconds. If the alarm occurs more than 3 times per hour, the reset becomes manual. In the event of a flow error, the pump enters the post-pumping phase (lasting P02, default 2 minutes). If, during this phase, the flow returns for a period of 5 seconds, the alarm is automatically reset (only if the number of alarm activations per hour does not exceed 3).	• Check the system water pressure • Check the flow switch operation by checking the wiring:  • Check that the inlet pipes and outlet pipes on the machine • Check the condition of the system water filters	• If there is air in the hydraulic system, bleed it by performing the SFIA forcing procedure: With the machine switched OFF, once the installer password has been entered, enter the override menu (FOR) and then select SFIA. The system venting function is activated, which consists of activating the usage pump for 5 minutes. During this phase, the pump alternates between maximum and minimum speed cycles lasting 1 minute. Pressing SFIA again will interrupt the procedure. The pump will still perform a P02 post-pumping cycle (default 2 minutes). • If the problem persists, replace the water pressure switch.
E009	High exhaust temperature alarm	COMPRESSOR	If the discharge temperature associated with the compressors exceeds 120°C, the alarm is activated and the compressor is shut down. The alarm resets automatically when the discharge temperature falls below the 120°C threshold.	• Check the wiring of the exhaust probe and that the bulb is correctly inserted in the well with thermal paste present. • Check the connection of the TE DT1 probe:	• If the probe is not positioned correctly, correct it • If the refrigerant charge is incorrect, charge the correct amount of gas

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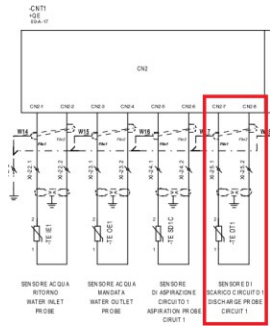
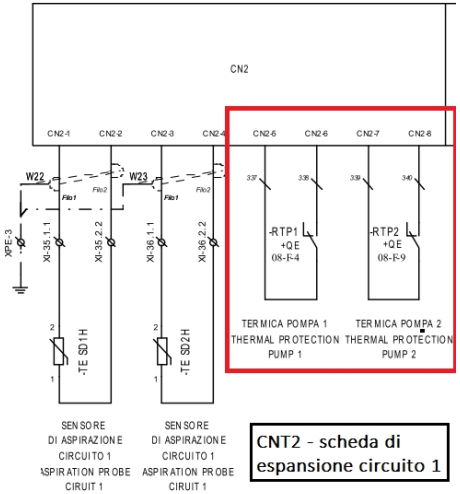
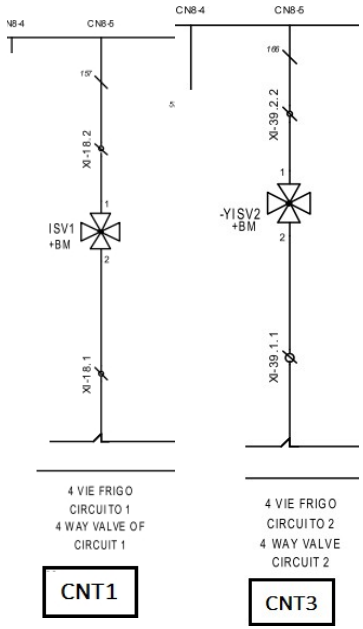
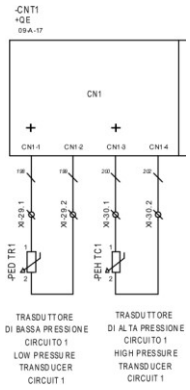
				 • Check the refrigerant charge by completely emptying the machine and weighing the gas (see the technical label for the correct amount)	
E016 **E026**	Pump 1 thermal alarm Pump 2 thermal alarm	MACHINE	Alarm associated with the "pump thermal" digital input. It is activated when the input in question switches to the active state. It resets when the contact returns to its idle state.  	• Check the wiring at terminals CN2-5, CN2-6, CN2-7, CN2-8, and at the NO contact terminals of pumps P1 and P2. • Check the operation of the RTP1 remote control switch; with the unit powered, the RTP1 contact must be closed. • Check the operation of the RTP2 remote control switch; with the unit powered, the RTP2 contact must be closed.	• If the wiring is incorrect, align it with the wiring diagram • If the RTP1 remote control switch contact is open with the unit powered, replace this component • If the RTP2 remote control switch contact is open with the unit powered, replace this component
E018	High temperature alarm during cooling	MACHINE	If the control probe reads above 55°C for more than 300 seconds, the alarm is activated. The alarm is deactivated if the temperature falls below 52°C.	• Check that the coil is correctly wired to the 4-way valve. • Check that the 4-way valve is switching correctly	• If the 4-way valve is not working properly, replace the coil. • If it still does not work after replacing the coil, replace the valve body

				• Check • Check that the installation rules described in the MUI manual have been followed	
E020	Inverted pressure transducer alarm	MACHINE	When compressors have been active for more than 20 seconds, if the suction pressure probe measures a pressure higher than the condensation pressure probe, the E020 alarm is triggered. condensation pressure probe, then alarm E020 is triggered. This alarm cannot be reset (the machine must be powered down to clear the alarm). This alarm is not managed during defrosting.	• Check the correct positioning and wiring of the low and high transducers: 	• If the wiring does not comply with the positions shown in the wiring diagram, correct it.

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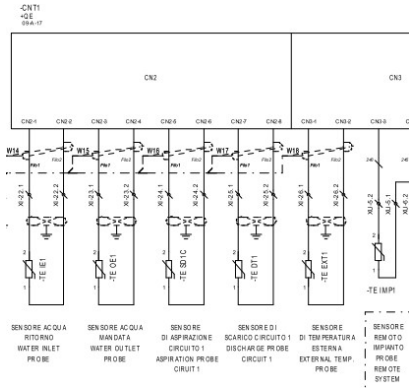
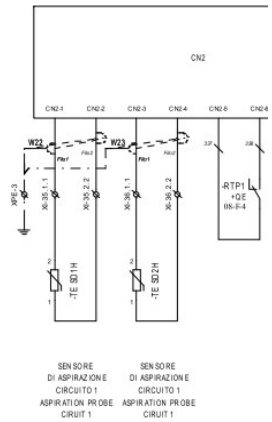
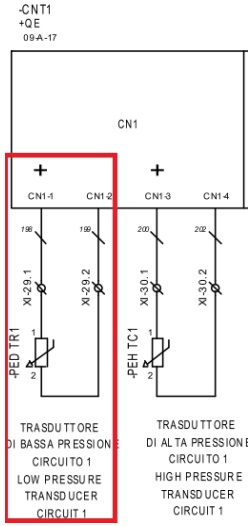
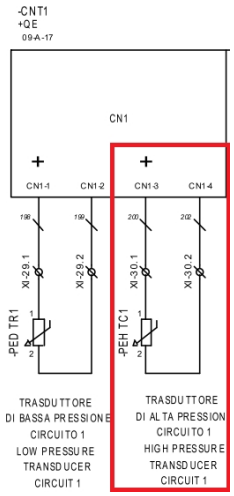
<table>
<tr>
<td>E611
E621
E631
E641
E651
E661
E671</td>
<td>Temperature sensor failure</td>
<td>E611:E651
(MACHINE)</td>
<td>E6X1
The probe connected to the STX input is faulty, or the CN2 and CN3 connectors are not wired correctly.

<table>
<tr><th>CHECK</th><th>C. no.</th><th>PIN</th><th>Name</th></tr>
<tr><td rowspan="14">CNT1
(master circuit 1)</td><td rowspan="8">CN2</td><td>1</td><td rowspan="2">TEIE1</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="2">TEOE1</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td><td rowspan="2">TESD1C</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td><td rowspan="2">TEDT1</td></tr>
<tr><td>8</td></tr>
<tr><td rowspan="6">CN3</td><td>1</td><td rowspan="2">TEEXT1</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td>TEIMP1</td></tr>
<tr><td>4</td><td>SP1</td></tr>
<tr><td>5</td><td>/</td></tr>
<tr><td>6</td><td>COM
CN3-3
CN3-4
CN3-5</td></tr>
<tr><td rowspan="8">CNT2
(circuit expansion 1)</td><td rowspan="8">CN2</td><td>1</td><td rowspan="2">TESD1H</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="2">TESD2H</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td><td>/</td></tr>
<tr><td>6</td><td>/</td></tr>
<tr><td>7</td><td>/</td></tr>
<tr><td>8</td><td>/</td></tr>
</table>

 
</td>
<td>• Check the integrity of the probes

• Check that the CN2 and CN3 connectors are correctly connected</td>
<td>• If the probes are faulty, replace them</td>
</tr>
</table>

			 **CNT2**		
E691	Low pressure transducer fault		Transducer connected to input ST9 not connected or faulty	• Check that the TRL1 transducer is connected to terminals XC-29.1 and XC-29.2 	• If the wiring is correct, replace the transducer
E701	High pressure transducer fault pressure		Transducer connected to input ST10 not connected or faulty	• Check that the TRH1 transducer is connected to terminals XC-30.1 and XC-30.2.	• If the connector is connected correctly, the transducer may be defective. Replace it.

				 -CNT1 +QE 09-A-17 CN1 CN1-1 CN1-2 CN1-3 CN1-4 198 199 207 208 XI-29.1 XI-29.2 XI-30.1 XI-30.2 -PED TR1 -PEH TC1 TRASDUTTORE DI BASSA PRESSIONE CIRCUITO 1 LOW PRESSURE TRANSDUCER CIRCUIT 1 TRASDUTTORE DI ALTA PRESSION CIRCUITO 1 HIGH PRESSURE TRANSDUCER CIRCUIT 1	

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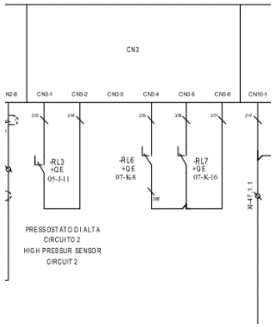
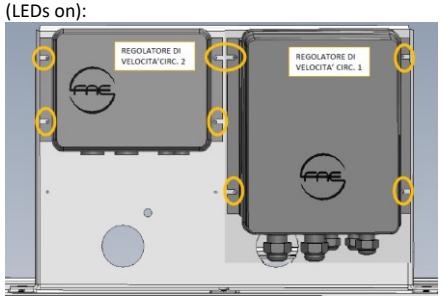
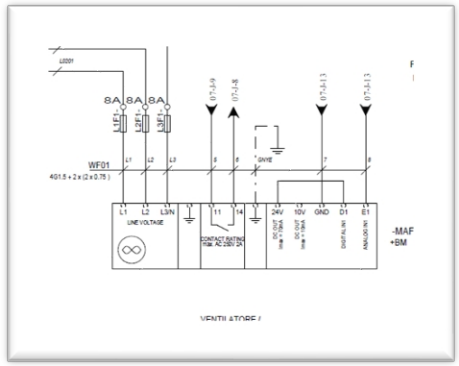
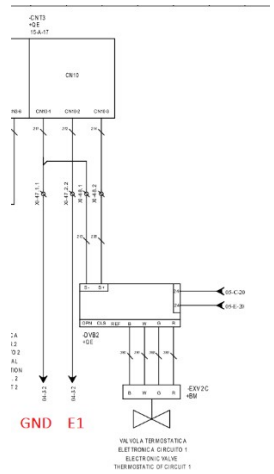
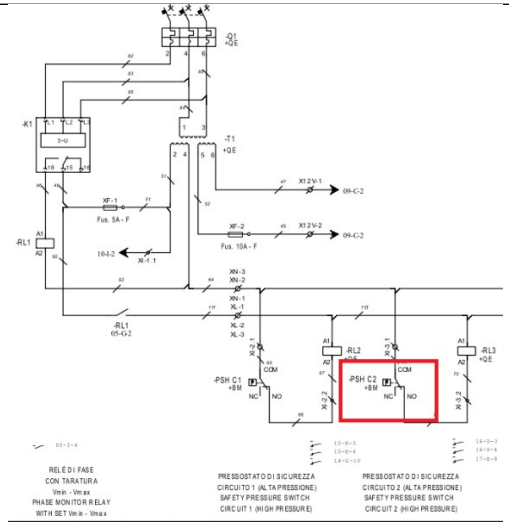
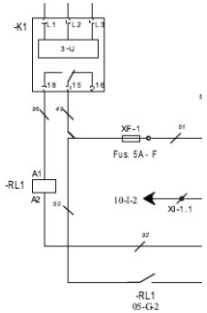
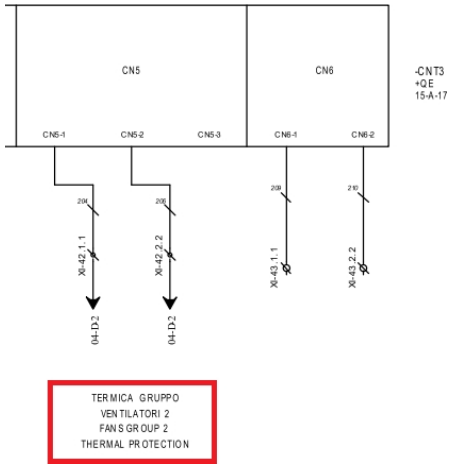
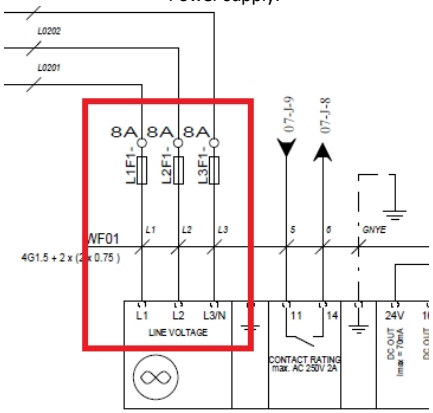
CIRCUIT 2

Code	Description	Block	Cause	What to check	What to do
E001	High pressure alarm	MACHINE	**Condensation pressure sensor** The pressure transducer detects a pressure higher than the "high pressure set point" (39.5 bar). It resets when the pressure drops below 29.5 bar. If the alarm occurs more than 3 times per hour, the reset becomes manual. **High pressure digital input** Digital input ID6 (connected to terminals CN3-1 and CN3-2) is declared as "high pressure circuit". A high pressure alarm is triggered when the digital input is active. As soon as the digital input becomes inactive, the alarm is reset. An NO contact (RL3, high pressure switch 2) is connected to the terminals:  This NO contact is controlled by the RL3 coil. When this is de-energized, the contact is open and the error is present.	• Check that the high pressure reading of the control is correct using a pressure gauge located on the high pressure charging connection • If the alarm occurs in chiller mode: check that there is no air recirculation that could increase the inlet temperature to the coil beyond the permitted limits • If the alarm occurs in chiller mode, check that the heat exchanger coil is not blocked • If the alarm occurs in heating mode, check the operation and fastening of the EEV thermostatic valve • Check that the fan is working correctly • If there are phase cut fans, check the wiring of the speed controllers and that the boards are powered (LEDs on): 	• Replace the EEV coil (CN11 of the CNT3 control). If the alarm reoccurs, replace the EEV valve body. • If the fan is not working, check that the fan board wiring is correct:  • If the wiring is damaged, replace it with new wiring. • If the fan edge wiring is correct, check the internal wiring of the panel: ▪ Signal: 

			 The RL3 coil is de-energized when the pressure switch is open (because the pressure has exceeded 40.5 bar). NB: the alarm is also active when the K1 phase relay measures a voltage outside the limits, or reversed phases (RL1 coil de-energized, RL1 contact open). 		• Thermal protection:  • Power supply:  FAN5 • If the internal wiring of the panel is also correct, replace the fan
E002	Low pressure alarm	MACHINE	The pressure transducer detects a pressure lower than the "low pressure set point." Low pressure setpoint in cooling mode = 3.5 bar Low pressure setpoint in heating mode = 1.5 bar. It returns when the pressure rises above 2 bar.	• Check for gas leaks in the refrigeration circuit (leakage detector, etc.) • Check that the low pressure transducer reading is correct by placing a pressure gauge	• If leaks have been detected: recover the remaining refrigerant, repair the leak, and restore the charge, checking the data on the technical label • If the pressure gauge reading does not match that given by the low pressure transducer, replace the transducer

<table>
<tr>
<td></td>
<td></td>
<td></td>
<td>If the alarm occurs more than 3 times per hour, the reset becomes manual.</td>
<td>on the low pressure charging connection

• If the alarm occurs in cooling mode, check that the expansion valves are working correctly:
- EXV1H
- EXV2H
- EXV3H

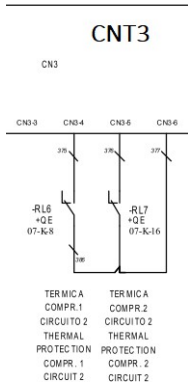
• Check the correct wiring, fastening, and operation of the EEV thermostatic valve, physically verifying that the change in valve steps displayed on the display corresponds to the actual movement of the valve

• Check that the fan is working. The presence of ice on the coil in heating mode could indicate that the fan is not working
fan.</td>
<td>• Disconnect the coils from the expansion valves and place the valve-opening magnets in their place

• If the EEV valves are found to be malfunctioning, replace the coils. If the error persists, replace the valve bodies.

• Ensure that the valve pipe is not blocked (or frozen, check visually) by placing the magnet on the valve and checking the effect it has on error E002. If the error persists, the pipe is blocked. If the error disappears, replace the EEV coil.

• If the fan is not working, check the fan power supply wiring. If the wiring is correct, replace the fan.</td>
</tr>
<tr>
<td>E003
E013</td>
<td>Compressor thermal 1
Compressor thermal 2</td>
<td>MACHINE</td>
<td>These alarms are associated with digital inputs thermal cp1 and thermal cp2. The alarm is activated when the digital input in question closes. It resets automatically when the contact returns to its rest state.

 
</td>
<td>• Check the wiring at terminals CN3-4, CN3-6, and CN3-5, CN3-6, and at the NO contact terminals of compressors MC3 and MC4

• Check the operation of the RL6 remote control switch; with
When the unit is powered, contact RL6 must be closed.

• Check the operation of remote control switch RL7; with the unit powered, contact RL7 must be closed.

• Check the correct operation of compressors MC3 and MC4, with the machine in standby mode, by manually pressing the RTC3 or RTC4 button.</td>
<td>• If the wiring is incorrect, align it with the wiring diagram

• If the RL6 remote control switch contact is open with the unit powered, replace this component

• If the contact of remote control switch RL7 is open with the unit powered, replace this component

• If the compressors do not work when operated manually, check the resistance of the windings. The following compressors can be found by checking the machine list:

<table>
<tr><th>COMPRESSOR</th><th>MODEL NAME</th><th>WINDING RESISTANCE AT 25°C [Ω]</th></tr>
<tr><td>CH-CC-FD-CO-0119</td><td>ZP154KCE-TFD</td><td>1.1</td></tr>
<tr><td>CH-CC-FD-CO-0120</td><td>ZP182KCE-TFD</td><td>0.8</td></tr>
<tr><td>CH-CC-FD-CO-0096</td><td>ZP385KCE-TWD</td><td>0.5</td></tr>
<tr><td>CH-CC-FD-CO-0098</td><td>ZP485KCE-TWD</td><td>0.6</td></tr>
<tr><td>CH-CC-FD-CO-0121</td><td>ZP293KZE-TED</td><td>0.4</td></tr>
<tr><td>CH-CC-FD-CO-0122</td><td>ZP233KZE-TED</td><td>0.3</td></tr>
</table>
</td>
</tr>
</table>

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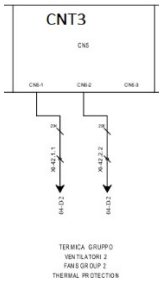
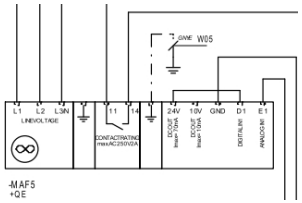
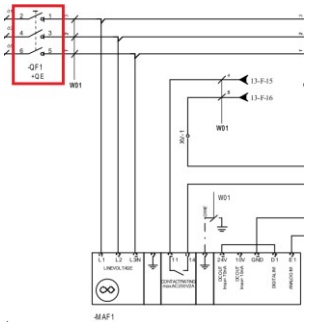
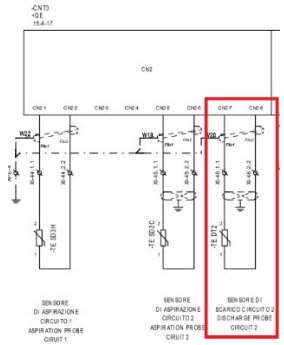
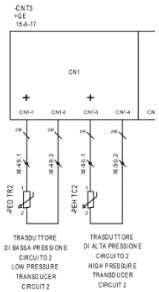
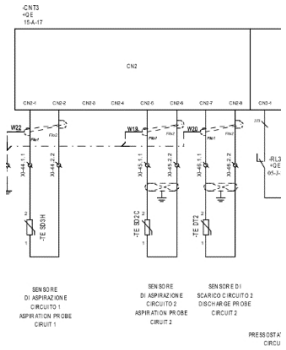
E004	Thermal fan	MACHINE	Alarm associated with the digital input for fan unit 1 thermal protection.  The alarm is activated when the digital input in question opens. It resets automatically when the contact returns to its rest state.  The MAF5 and MAF6 contacts are in series (for 6-unit fans). Opening any of these contacts triggers the alarm.	• Check continuity between terminals XI-42.1 and XI-42.2 terminals. • If there is no continuity between these, check the terminal block of each individual fan, disconnecting the wires from terminals 11 and 14. This will identify the fan with the open contact. • Check whether voltage is reaching terminals L1, L2, and L3. • If there is no voltage, check the wiring • If the wiring is correct, check the QF1: 	• If there is no voltage on L1, L2, L3: - Fix the wiring if it is incorrect - Replace the QF1 circuit breaker • If voltage is present at terminals L1, L2, and L3 and contacts 11 and 14 are open, replace the fan
E009	High exhaust temperature alarm	COMPRESSOR	If the discharge temperature associated with the compressors exceeds 120°C, the alarm is activated and the compressor is blocked. The alarm resets automatically when the exhaust temperature drops back below the 120°C threshold.	• Check the wiring of the exhaust probe and that the bulb is correctly inserted in the well with thermal paste. • Check the connection of the TE DT2 probe: 	• If the probe is not positioned correctly, correct it • If the refrigerant charge is incorrect, charge the correct amount of gas

<table>
<tr><td></td><td></td><td></td><td></td><td>• Check the refrigerant charge by completely emptying the machine and weighing the gas (see the technical label for the correct quantity).</td><td></td></tr>
<tr><td>E020</td><td>Pressure transducer reversal alarm</td><td>MACHINE</td><td>When compressors have been active for more than 20 seconds, if the suction pressure sensor measures a pressure higher than the condensation pressure sensor, alarm E020 is triggered. This alarm cannot be reset (the machine must be powered down to clear the alarm).
condensing pressure probe, then alarm E020 is triggered. This alarm cannot be reset (the machine must be powered down to clear the alarm).

This alarm is not managed during defrosting.</td><td>• Check the correct positioning and wiring of the low and high transducers:
 
</td><td>• If the wiring does not comply with the positions shown in the wiring diagram, correct it</td></tr>
<tr><td>E611
E631
E641</td><td>Temperature probe failure</td><td>E611:E651
(MACHINE)</td><td>E6X1
The probe connected to the STX input is faulty, or the CN2 and CN3 connectors are not wired correctly.

<table><tr><th>CHECK</th><th>C. no.</th><th>PIN</th><th>Name</th></tr><tr><td rowspan="8">CNT3
(master
circuit 2)</td><td rowspan="8">CN2</td><td>1</td><td rowspan="2">TESD3H</td></tr><tr><td>2</td></tr><tr><td>5</td><td rowspan="2">TESD2H</td></tr><tr><td>6</td></tr><tr><td>7</td><td rowspan="2">TEDT2</td></tr><tr><td>8</td></tr></table>
 
</td><td>• Check the integrity of the probes.

• Check that the CN2 connectors are correctly connected</td><td>• If the probes are defective, replace them</td></tr>
</table>

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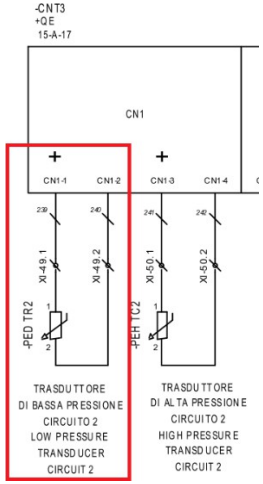
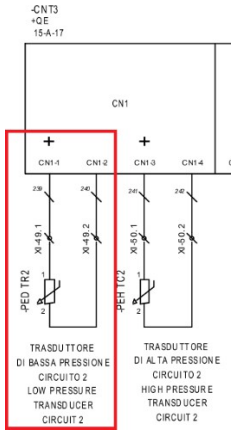
E691	Low pressure transducer fault		Transducer connected to input ST9 not connected or faulty	• Check that the TRL1 transducer is connected to terminals XC-29.1 and XC-29.2 	• If the wiring is correct, replace the transducer
E701	High pressure transducer fault		Transducer connected to input ST10 not connected or faulty	• Check that the TRH1 transducer is connected to terminals XC-30.1, XC-30.2 	• If the connector is connected correctly, the transducer may be faulty. Replace