TECHNICAL DEPARTMENT

CHECKING THE ELECTRONIC AND ELECTRIC COMPONENTS OF OUT DOOR UNIT - iSeries

COMPRESSOR MOTOR

Check that there is no continuity (open circuit) between earth and each phase of the compressor.
Check the winding resistances of the compressor according to the table below:

Unità	**Winding Resistance (@ 20°C)**		
Compressor Model	**U - V**	**V - W**	**U - W**
G140emx **TNB306FPNMT**	1.02 Ω	1.02 Ω	1.02 Ω
G110emx **TNB306FPGMT**	0.53 Ω	0.53 Ω	0.53 Ω
G80emx, G65emx **TNB220FLHMT**	0.88 Ω	0.88 Ω	0.88 Ω
G50emx, G50BB, G50LT **SNB130FGBMT**	0.98 Ω	0.98 Ω	0.98 Ω
G42emx, G42 **SNB110FGYMT**	0.58 Ω	0.58 Ω	0.58 Ω
G30emx, G30LT, G40LT **5RS102XBE01**	0.86 Ω	0.86 Ω	0.86 Ω

FAN MOTOR

Fan for G50emx, G42emx, G30emx, G50BB, G42, G50LT, G40LT and G30LT

This motor is a BLDC motor.
Check that there is no continuity (open circuit) between earth and each phase of the fan.
Check the winding resistances of the fan according to the table below:

Model fan Motor **ZW465B57**			
Winding resistance (@20 °C)	U-V: 206 Ω	V-W: 206 Ω	U-W: 206 Ω

Fan motor for G110emx, G80emx and G65emx

This motor is a DC motor: it means that the inverter electronic to drive the motor is built into the motor and there is no direct access to motor's windings.
To check the electronic of the DC motor, follow these steps:

1. switch off the unit
2. wait two minutes
3. disconnect the cable of the DC motor from the PCB
4. open your tester
5. set your tester for ohmic test and perform the following check on the fan motor connector:

Connector pinout:

1. Red
2. –
3. –
4. Blue
5. Brown
6. White
7. Orange

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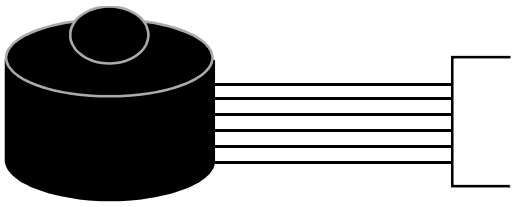
Check table:

	Terminal resistance (ohm)				Manual shaft rotation
	1 – 4	5 – 4	6 – 4	7 – 4	
Good Values	Infinity	60k	Infinity	160k	Light
Example of Bad Values	100	25	other	1k	Heavy
	10	0	other	1k	
	150	5	other	1k	
	100k	9k	other	800k	

ELECTRONIC EXPANSION VALVES

Solenoid Resistances. Measure the solenoid winding electrical resistance. If outside the allowable range, replace the solenoid.

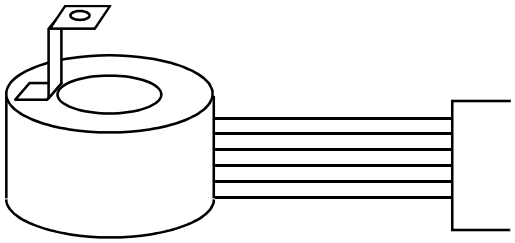
Solenoid Troubleshooting - For circuits with 1/4 inch tubing



Pins	Resistance (+/- 4 ohm)*
1 (red) – COM (+)	-
2 (blank)	-
3 (white)	3-1 : 46 ohm
4 (yellow)	4-1 : 46 ohm
5 (orange)	5-1 : 46 ohm
6 (blue)	6-1 : 46 ohm

* Resistance values at 20°C.

Solenoid Troubleshooting - For circuits with 3/8 inch tubing and for BP circuit



Pins	Resistance (+/- 3 ohm)*
1 (orange)	1-5 : 46 ohm
2 (red)	2-6 : 46 ohm
3 (yellow)	3-5 : 46 ohm
4 (black)	4-6 : 46 ohm
5 (gray) – COM-A (+)	-
6 (white) – COM-B (+)	-

* Resistance values at 20°C.

Check EEV PCB. If the EEV PCB is damaged, it affects the behavior of the main board. The EEV PCB can be probed at its pin out connections per the following instructions. Completely disconnect the EEV PCB from the rest of the system before testing it. Replace if out of specification.

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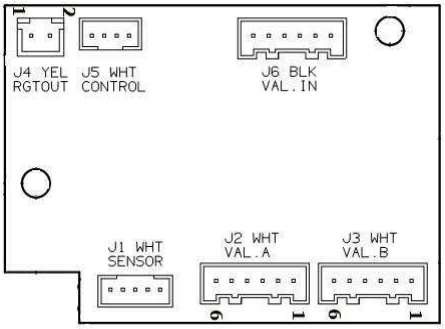
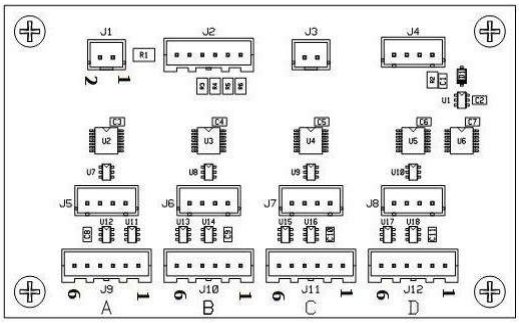


2-way PCB

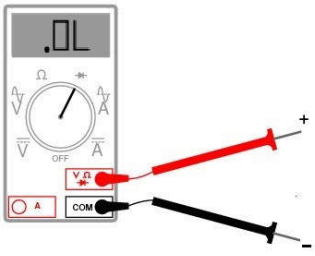


4-way PCB

EEV PCB Troubleshooting – Resistance Values
This test checks that the resistance between certain pins on the PCB is correct.

This table checks the resistances for the connectors for valves A(J2) and B(J3) on 2-way pcb, OR Connectors for valves B(J10), C(J11) and D(J12) on 4-way pcb	1 – COM (+)	Don't check
	2 – COM (+)	Don't check
	3	1-3: > 1Mohm or infinity
	4	1-4: > 1Mohm or infinity
	5	1-5: > 1Mohm or infinity
	6	1-6: > 1Mohm or infinity
This table checks the resistances for the connector for valve A(J9) on 4-way pcb	1	1-6 :> 1Mohm or infinity
	2	2-6 :> 1Mohm or infinity
	3	3-6 :> 1Mohm or infinity
	4	4-6 :> 1Mohm or infinity
	5 – COM-A (+)	-
	6 – COM-B (+)	-

* Resistance values at 20°C.



EEV PCB Troubleshooting – Diode Test
Each check for this test should result in a measurement of .0L (no voltage). If you observe any voltage (like 0.3 or 0.5 V), replace the board. Pin 1 for each connector can be identified by the square solder pad on the back of the PCB.

-Check for EEV Valves A and B on 2 way PCB or -Check for EEV Valves B, C, D on 4way PCB		
Put the negative probe on: Pin 2 of J4 on 2-way pcb, OR Pin 2 of J1 on 4-way pcb **Use the positive probe to check each pin of:** Connectors for valves A(J2) and B(J3) on 2-way pcb, OR: Connectors for valves B(J10), C(J11) and D(J12) on 4way pcb	Pins	Correct Value
	1 – COM (+)	Don't check
	2 – COM (+)	Don't check
	3	.0L (no voltage)
	4	.0L (no voltage)
	5	.0L (no voltage)
	6	.0L (no voltage)

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Check for EEV Valve A on 4-way PCB		
Put the negative probe on: Pin 2 of J1 on 4-way pcb Use the positive probe to check each pin of: Connector for valve A (J9) on 4-way pcb	Pins	Correct Value
	1	.0L (no voltage)
	2	.0L (no voltage)
	3	.0L (no voltage)
	4	.0L (no voltage)
	5 – COM-A (+)	Don't check
	6 – COM-B (+)	Don't check