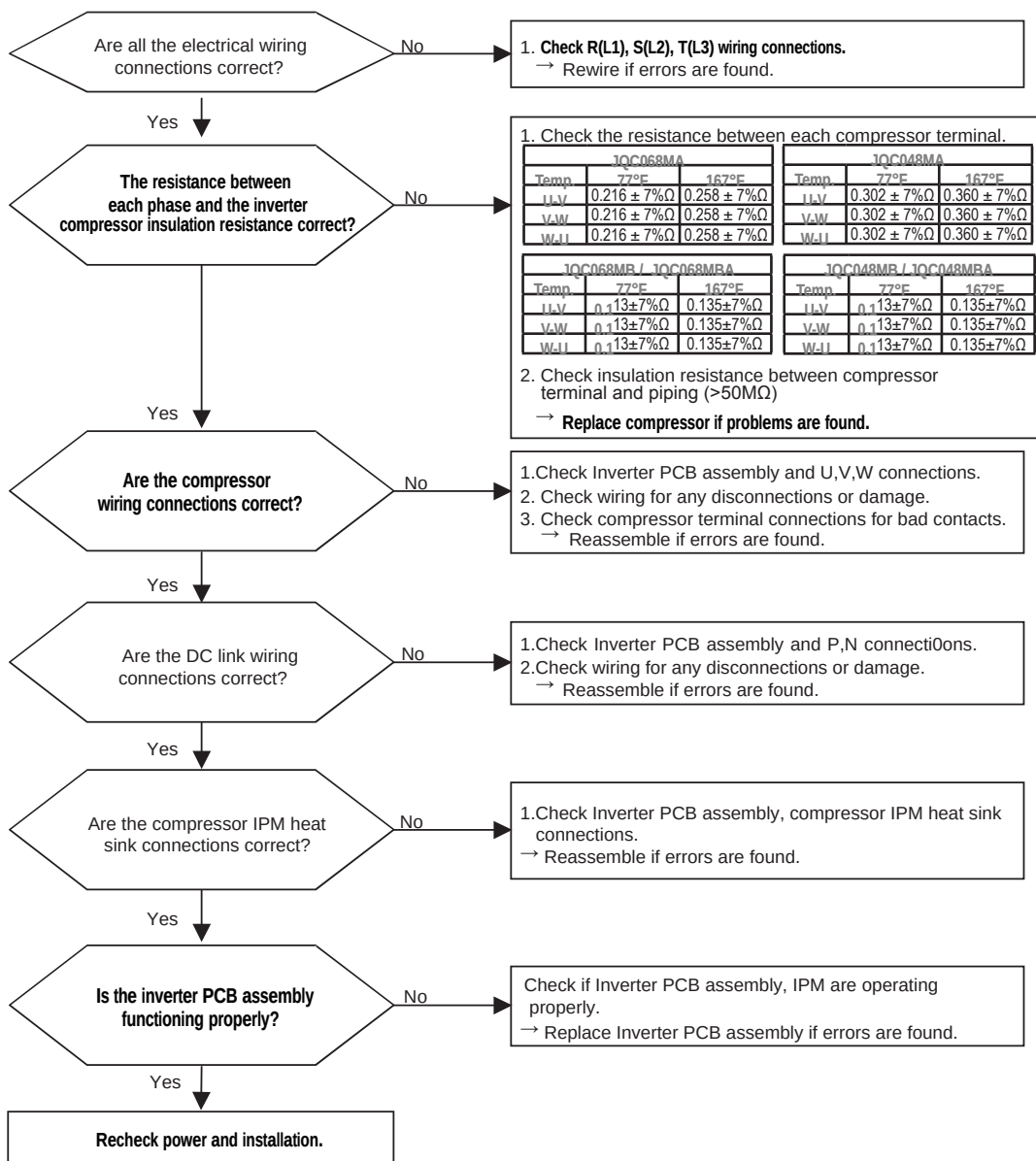


Error No. 21

⚠ WARNING Please refer to the Safety Precautions on pages 4-7 for more detail to prevent injury or death regarding the operation and service troubleshooting of the Multi V product.

Error No.	Description	Details	Causes
21 Master: 211 Slave 1: 212 Slave 2: 213	Outdoor unit inverter board IPM fault error.	- Inverter driver detects overcurrent (CT sensor on the IGBTM PCB). - Error code is determined by overcurrent in any one phase of compressor.	- Detected by the CT sensor on the IGBT PCB. - Overcurrent in compressor U-V-W phases. - Damaged compressor. - Damaged IPM on inverter board. - Compressor disconnected. - Damaged or disconnected cooling fan. - Damaged inverter board – input voltage too low. For 208-230V: On 068 compressors = 143A for a minimum of 3μs; on 048 compressors = 96A for a minimum of 3μs. For 460V: On 068 compressors = 80 A for a minimum of 3μs; On 048 compressors = 56A for a minimum of 3μs. Also, see tables below.



Note:

See the "Checking the Inverter Insulated-Gate Bipolar Transistor Module" and the "Checking the Phase Diode Bridge" pages in the "Troubleshooting Main Components" section.

Note:

Always apply heat transfer paste to the new inverter PCB heat sink before installing. For instructions, see "Replacing the Inverter PCB Heat Sink" page later in this section.

Error No. 21, continued.



WARNING Please refer to the Safety Precautions on pages 4-7 for more detail to prevent injury or death regarding the operation and service troubleshooting of the Multi V product.

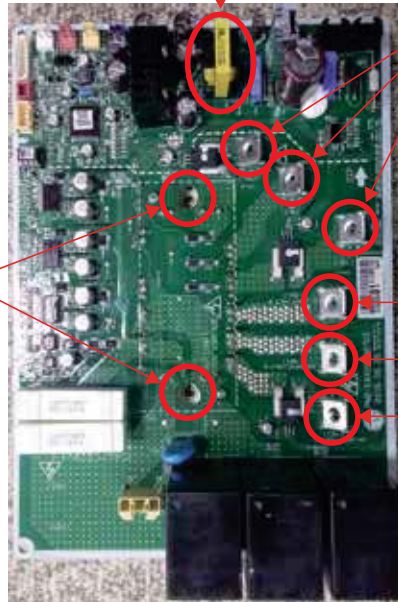
Measuring the resistance between each compressor terminal.



P and N Terminals.

Compressor wiring connections.

* Heat Sink Screws.



R

S

T

Check DC link connections.

Note:

Images here are representative of system components. Actual component appearance depends on model and system type.

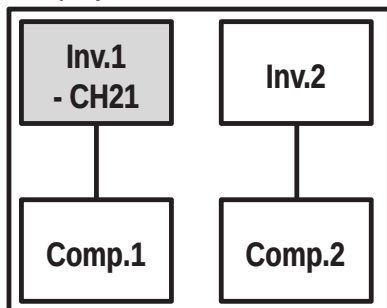
Table 78: Error No. 21 Checkpoint Details.

Cause	Check	Checklist				App.
		Check Point	Normal	Abnormal	Defective Parts	
Under Voltage (15V)	15V Voltage Measurement (Inverter connector)	Voltage	14.5V ~ 15.5V	14V ↓	Inverter PCB	A2 (Power ON)
Inverter PCB Damaged	Check Inverter PCB appearance	Appearance	Good	Damage	Inverter PCB	B1 (Power Off)
	Measure 5V, 15V line	5V, 15V Resistance	10kΩ↑	1kΩ↓ ~ 0Ω		
	IGBTM (Check IGBT)	P-U, V, W / N-U, V, W	0.38V ~ 0.7V	Non-normal		
	Inverter Drive Circuit (Check diode)	Diode	0.38V ~ 0.7V	Non-normal		

Figure 72: Two Compressor Additional Check Procedure (Same Capacity Inverter Only).

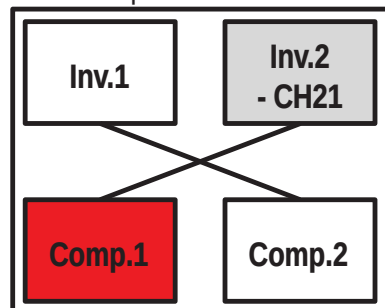
Standard Connection.

Example: Inverter 1, CH21 displayed.



Cross Connections after Operation.

If Inverter 2 has CH21 displayed, then Comp. 1 is defective.



or

If Inverter 1 consistently displays CH21, then Inverter 1 is defective.

