

IPM Check

This Engineering Bulletin is to be used if you are getting an IPM error and/or if the compressor does not start.

Some examples of an IPM error on most models:

5x Operation & 2x Timer / 6x Operation & 5x Timer / E:65 (wired remote) / E:653 (HFI) / Continuous Operation blink & 10x Timer (universal mount/ceiling suspended) / E:17 (wired remote) / 12x flashes LED 1 (condenser)

The Inverter Power Module (IPM) is located where the compressor leads attach to the printed circuit board(PCB). They are marked U,V, and W on the PCB and where the Yellow and Blue wires attach P and N.

1. Turn power off to outdoor unit and wait 3 minutes for DC voltage to discharge.
2. Check that IPM is wired correctly. (According to Schematic)
3. Check the following resistance values on the IPM. (Before taking resistance readings remove all wires connected to the IPM. On certain models the red and black wires to the ACTPM and white and black wires to CN200 on control board should also be removed.)
4. All readings on test 1 should be within +/- 20 ohms of each other and test 2 should be within values shown.
5. If the readings on Tests 1 or 2 are incorrect and the wiring is correct replace the board that contains the IPM and depending on model the ACTPM board if it has one.
6. When your IPM is bad you will also need to ohm out compressor and test outdoor fan motor according to Tech Tip #008 and confirm both are good before replacing the IPM or any other boards.

Test 1

Test 2

Place meter in (Mega Ohms)

Place meter in (Diode mode)

Terminal		Resistance Value
Tester (+)	Tester (-)	
P	U	Over 2k Ω (Including $\infty \Omega$)
P	V	
P	W	
U	P	Over 20k Ω (Including $\infty \Omega$)
V	P	
W	P	
N	U	
N	V	
N	W	
U	N	Over 2k Ω (Including $\infty \Omega$)
V	N	
W	N	

Terminal		Tester Display
Tester (+)	Tester (-)	
P	U	∞
P	V	
P	W	
U	P	0.3 V ~ 0.7 V
V	P	
W	P	
N	U	
N	V	
N	W	
U	N	∞
V	N	
W	N	

Disclaimer:

In order to perform some of these tests an electrical and/or refrigerant license is required. We strongly advise to check the Service manual for more detailed explanation. If you are not sure about these recommendations please contact us at 866-952-8324.