

ACTPM Check

Some examples of an Active Filter Module error on most models:

8x Operation & 2x Timer / 8x Operation & 3x Timer / 6x Operation & 4x Timer / Continuous Operation blink & 12x Timer / E:641
22x flashes LED 1 / E:19

The Active Filter Module on inverter units is a PCB that will filter the harmonic current. It's output is supplied to the IPM PCB. If the unit has been installed and operating normally but suddenly shows an communication error after a power outage or thunderstorm, you may suspect the ACTPM failure. Although your first reaction may be to replace it, test it with an ohm meter and determine if it needs a replacement. Remember to remove power and wait five minutes before unplugging the PCB for testing.

Check Points: Check Open or Short-circuit and Diode.

Remove all connectors first !!!

Check the open or short-circuit

Terminal		Resistance Value			
		Type A		Type B	
Multimeter (+)	Multimeter (-)	SACT32010 [HITACHI]		PM-604 [FGEL]	
		LACT33020 [HITACHI]		PM-703 [FGEL]	
		PM-601 [FGEL]		PM-601 [FGEL]	
		LOT No. 1302931395		LOT No. 1302931396	
+ (+IN)*	- (-IN)*	360kΩ ± 20%		360kΩ ± 20%	
- (-IN)*	N1 (N)*	0Ω		0Ω	
P	+ (+IN)*	720kΩ ± 20%		900kΩ ± 20%	
L1	L2	1.01MΩ (Ref. 1)	0.76MΩ (Ref. 2)	1.01MΩ (Ref. 1)	0.76MΩ (Ref. 2)
P	N1 (N)*	360kΩ ± 20%		540kΩ ± 20%	
L1, L2	Control Box	∞Ω		∞Ω	
L2	N1 (N)*	1.65MΩ (Ref. 1)	1.14MΩ (Ref. 2)	1.65MΩ (Ref. 1)	1.14MΩ (Ref. 2)

Check the diode

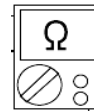
Terminal		Resistance value	
Multimeter (+)	Multimeter (-)		
L2	P	1.32MΩ (Ref. 1)	0.66MΩ (Ref. 2)
P	L2	1.01MΩ (Ref. 1)	0.76MΩ (Ref. 2)

>> If it is abnormal, replace ACTIVE FILTER MODULE.

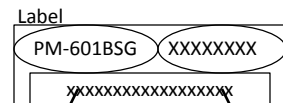
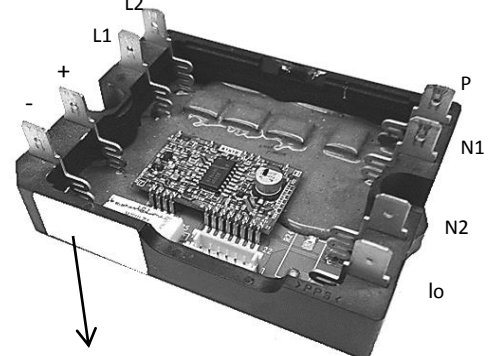
If error codes shows pointing at the ACTPM PCB:

Check the Output DC voltage (between P and N1) while compressor is stopped and while it's operating. If the output voltage while compressor is operating is less than the output voltage while compressor is stopped, Active Filter Module is defective. Error condition other than communication mentioned above will show. If ACTPM PCB is defective, always test the IPM PCB as well.

FOR DETAILS ON 4Ton system ACTPM PCB see Page 2/2



LOT No. of PM-601 [FGEL] type Label position



Model name

Lot No.(10 figures)

Standard values change depending on the meter used for testing (Type A and B are the same values).

Ref. 1

Specifications for Multimeter
Manufacturer : FLUKE
Model name : FLUKE11
Power source : DC9V

Ref. 2

Specifications for Multimeter
Manufacturer : SANWA
Model name : PM3
Power source : DC3V

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Check Points: Check Open or Short-circuit and Diode.

AOU48RLXFZ / AOU48RLXFZ1

Remove all connectors first !!!
Check the open or short-circuit.

Terminal		Resistance Value
Multimeter (+)	Multimeter (-)	
(+IN)	(-IN)	360kΩ ± 20%
(-IN)	N	0Ω
P	(+IN)	900kΩ ± 20%
L1	L2	2.03MΩ ± 20% / 4.83MΩ ± 20% (Ref. 1) (Ref. 2)
P	N	540kΩ ± 20%
L1, L2	Control Box	∞Ω
L2	N	1.69MΩ ± 20% / 1.23MΩ ± 20% (Ref. 1) (Ref. 2)

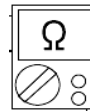
Check the diode

Terminal		Resistance Value
Multimeter (+)	Multimeter (-)	
L2	P	1.12MΩ ± 20% / 504kΩ ± 20% (Ref. 1) (Ref. 2)
P	L2	2.23MΩ ± 20% / 503kΩ ± 20% (Ref. 1) (Ref. 2)

>> If it is abnormal, replace ACTIVE FILTER MODULE.

If error codes shows pointing at the ACTPM PCB:

Check the Output DC voltage (between P and N1) while compressor is stopped and while it's operating. If the output voltage while compressor is operating is less than the output voltage while compressor is stopped, Active Filter Module is defective. Error condition other than communication mentioned above will show. If ACTPM PCB is defective, always test the IPM PCB as well.



LOT No. of PM-601 [FGEL] type Label position

Label

PM-601BSG	XXXXXXXX
XXXXXXXXXXXXXXXXXXXX	

Model name Lot No.(10 figures)

Standard values change depending on the meter used for testing (Type A and B are the same values).

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Specifications for Multimeter
Manufacturer : FLUKE
Model name: FLUKE11
Power source: DC9V

Ref. 2

Specifications for Multimeter
Manufacturer : SANWA
Model name: PM3
Power source: DC3V