

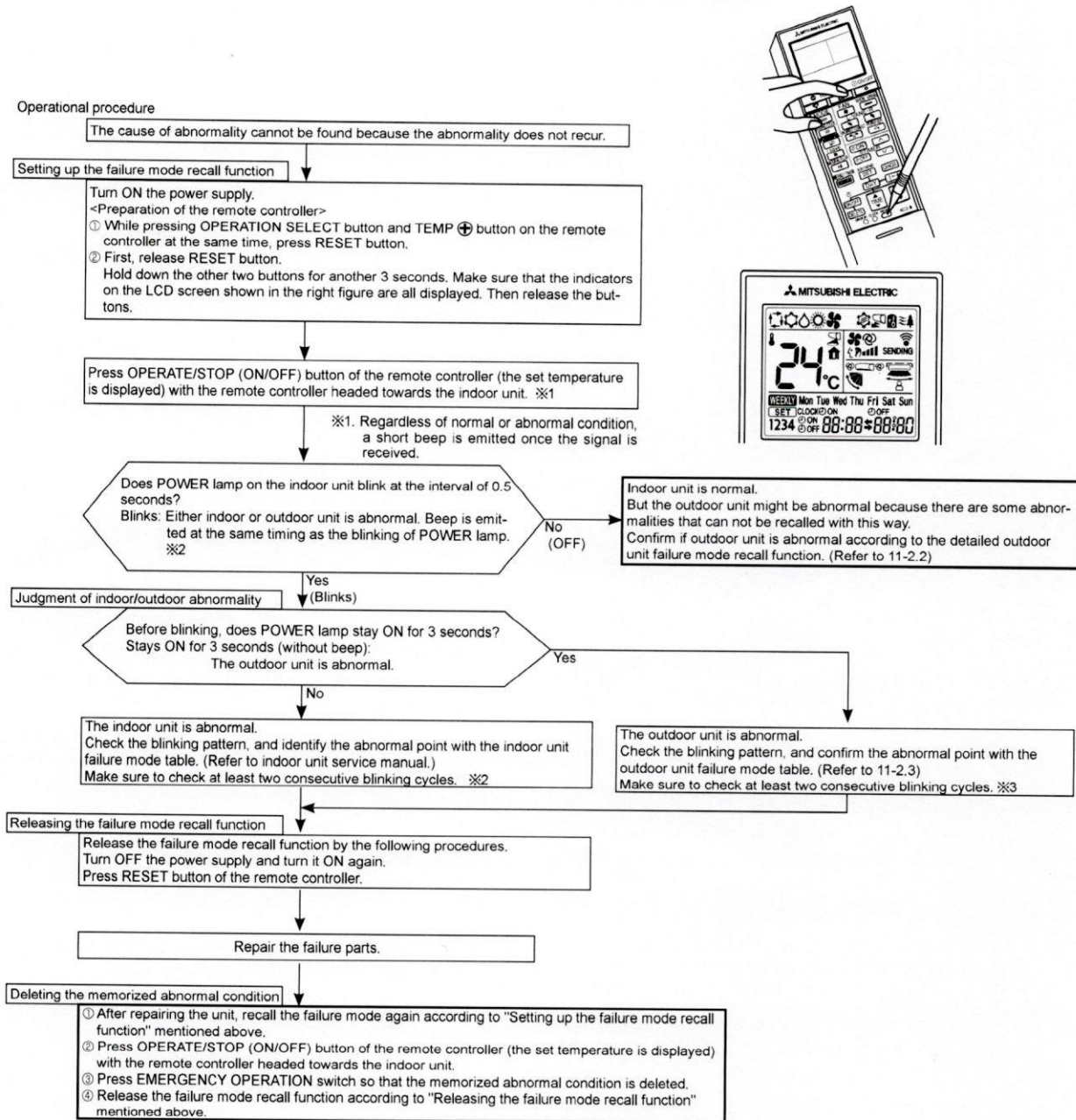
11-2. FAILURE MODE RECALL FUNCTION

Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

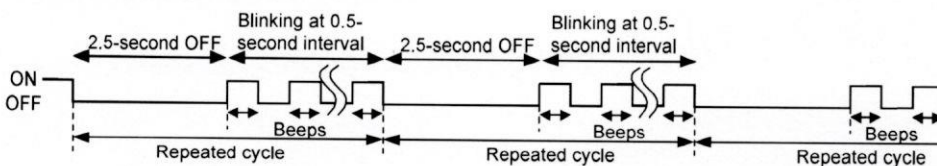
Even though LED indication listed on the troubleshooting check table (11-3.) disappears, the memorized failure details can be recalled.

1. Flow chart of failure mode recall function for the indoor/outdoor unit

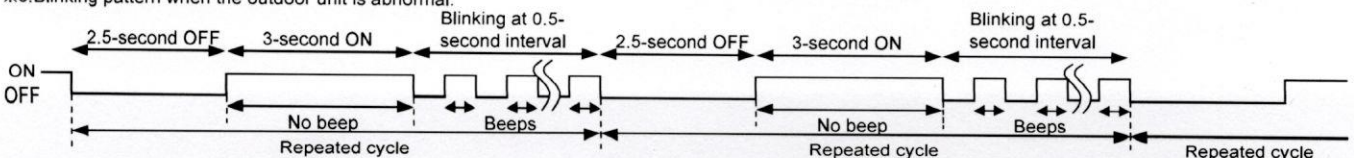


NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
 2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:

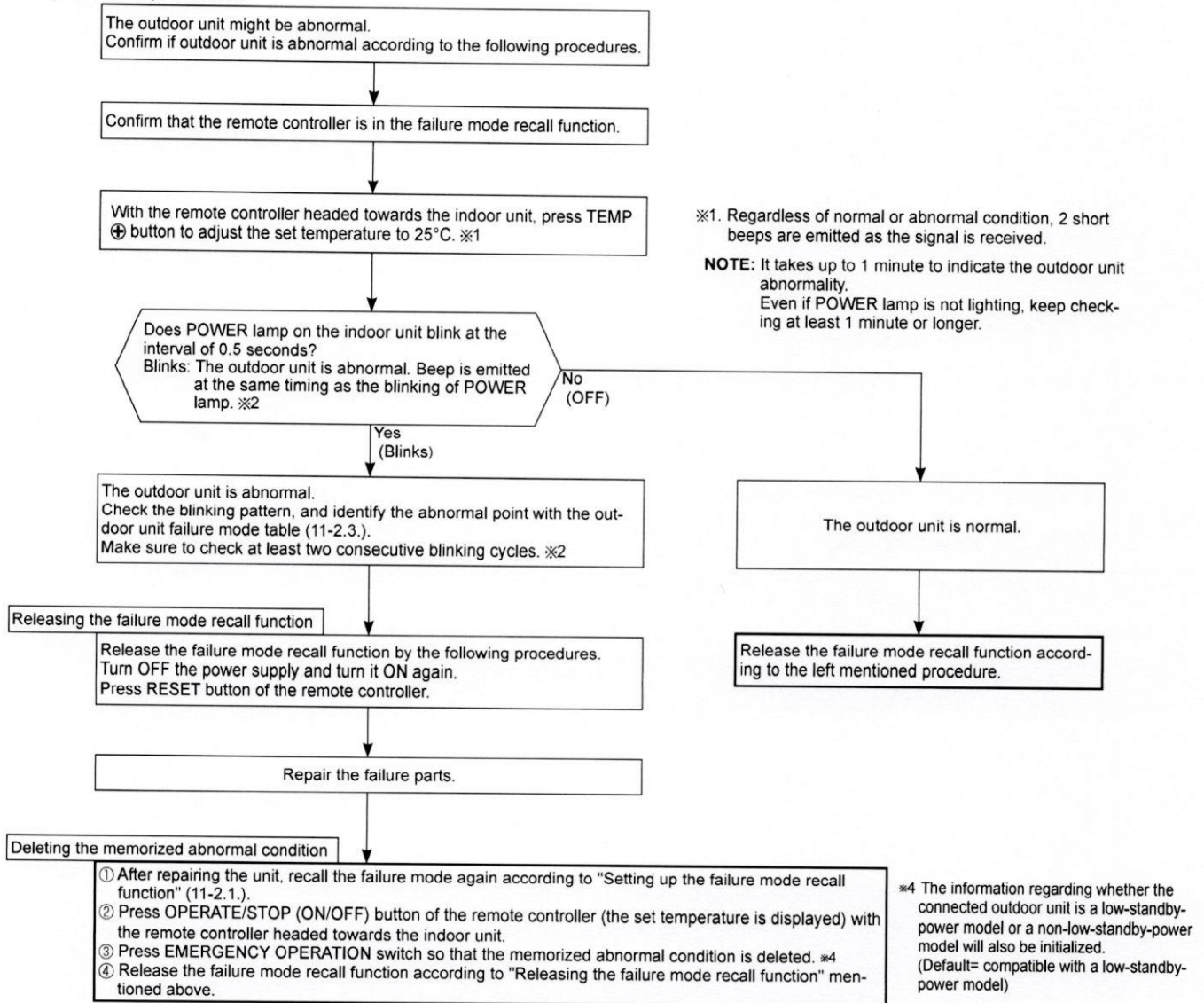


※3. Blinking pattern when the outdoor unit is abnormal:



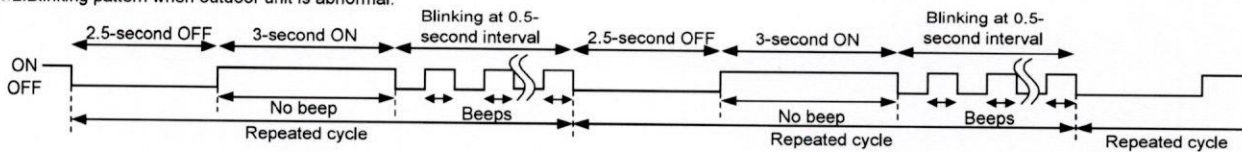
2. Flow chart of the detailed outdoor unit failure mode recall function

Operational procedure



NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when outdoor unit is abnormal:



3. Outdoor unit failure mode table

| POWER lamp (Indoor unit) | Abnormal point (Failure mode/protection) | LED indication (Outdoor P.C. board) | Condition | Remedy | Indoor/outdoor unit failure mode recall function | Outdoor unit failure mode recall function |
|--|---|--|---|---|---|---|
| OFF | None (Normal) | — | — | — | — | — |
| 1-time flash 2.5 seconds OFF | Indoor/outdoor communication, receiving error | — | Any signals from the inverter P.C. board cannot be received normally for 3 minutes. | •Refer to 11-5. ㉔ How to check miswiring and serial signal error. | ○ | ○ |
| | Indoor/outdoor communication, receiving error | — | Although the inverter P.C. board sends signal "0", signal "1" has been received 30 consecutive times. | •Refer to 11-5. ㉔ How to check miswiring and serial signal error. | | |
| 2-time flash 2.5 seconds OFF | Outdoor power system | — | Overcurrent protection cut-out operates 3 consecutive times within 1 minute after the compressor gets started. | •Reconnect connectors. •Refer to 11-5. ㉔ How to check inverter/ compressor". •Check stop valve. | ○ | ○ |
| 3-time flash 2.5 seconds OFF | Discharge temperature thermistor | 1-time flash every 2.5 seconds | Thermistor shorts or opens during compressor running. | •Refer to 11-5. ㉔ "Check of outdoor thermistors". Defective outdoor thermistors can be identified by checking the blinking pattern of LED. | ○ | ○ |
| | Defrost thermistor | — | | | | |
| | Fin temperature thermistor | 3-time flash 2.5 seconds OFF | | | | |
| | P.C. board temperature thermistor | 4-time flash 2.5 seconds OFF | | | | |
| | Ambient temperature thermistor | 2-time flash 2.5 seconds OFF | | | | |
| Outdoor heat exchanger temperature thermistor | — | | | | | |
| 4-time flash 2.5 seconds OFF | Overcurrent | 11-time flash 2.5 seconds OFF | Large current flows into power module (IC700) (FH25/35)/ IGBT module (IC700) (FH50). | •Reconnect compressor connector. •Refer to 11-5. ㉔ How to check inverter/ compressor". •Check stop valve. | — | ○ |
| | Compressor synchronous abnormality (Compressor start-up failure protection) | 12-time flash 2.5 seconds OFF | Waveform of compressor current is distorted. | •Reconnect compressor connector. •Refer to 11-5. ㉔ How to check inverter/ compressor". | — | ○ |
| 5-time flash 2.5 seconds OFF | Discharge temperature | — | Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later. | •Check refrigerant circuit and refrigerant amount. •Refer to 11-5. ㉔ Check of LEV". | — | ○ |
| 6-time flash 2.5 seconds OFF | High pressure | — | Temperature indoor coil thermistor exceeds 70°C in HEAT mode. Temperature defrost thermistor exceeds 70°C in COOL mode. | •Check refrigerant circuit and refrigerant amount. •Check stop valve. | — | ○ |
| 7-time flash 2.5 seconds OFF | Fin temperature/ P.C. board temperature | 7-time flash 2.5 seconds OFF | Temperature of fin temperature thermistor on the inverter P.C. board exceeds 75 ~ 86°C (FH25/35)/75 ~ 80°C (FH50), or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 72 ~ 85°C (FH25/35)/70 ~ 75°C (FH50). | •Check around outdoor unit. •Check outdoor unit air passage. •Refer to 11-5. ㉔ Check of outdoor fan motor". | — | ○ |
| 8-time flash 2.5 seconds OFF | Outdoor fan motor | — | Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up. | •Refer to 11-5. ㉔ Check of outdoor fan motor". Refer to 11-5. ㉔ Check of inverter P.C. board". | — | ○ |
| 9-time flash 2.5 seconds OFF | Nonvolatile memory data | 5-time flash 2.5 seconds OFF | Nonvolatile memory data cannot be read properly. | •Replace the inverter P.C. board. | ○ | ○ |
| | Power module (IC700) (FH25/35) IGBT module (IC700) (FH50) | 6-time flash 2.5 seconds OFF | The interface short circuit occurs in the output of the power module (IC700) (FH25/35)/IGBT module (IC700) (FH50). The compressor winding shorts circuit. | •Refer to 11-5. ㉔ How to check inverter/ compressor". | | |
| 10-time flash 2.5 seconds OFF | Discharge temperature | — | Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes. | •Refer to 11-5. ㉔ Check of LEV". •Check refrigerant circuit and refrigerant amount. | — | ○ |
| 11-time flash 2.5 seconds OFF | Bus-bar voltage (DC) | 8-time flash 2.5 seconds OFF | Bus-bar voltage of inverter cannot be detected normally. | •Refer to 11-5. ㉔ How to check inverter/ compressor". | — | ○ |
| | Each phase current of compressor | 9-time flash 2.5 seconds OFF | Each phase current of compressor cannot be detected normally. | | | |
| 14-time flash 2.5 seconds OFF | Stop valve (Closed valve) | 14-time flash 2.5 seconds OFF | Closed valve is detected by compressor current. | •Check stop valve. | ○ | ○ |

NOTE: Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (11-3.).

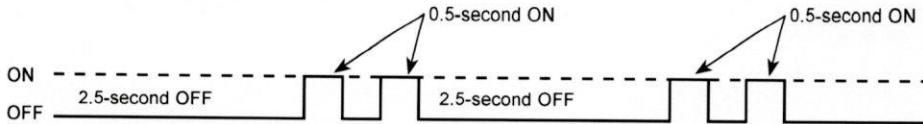
11-3. TROUBLESHOOTING CHECK TABLE

| No. | Symptom | LED indication | Abnormal point/ Condition | Condition | Remedy |
|-----|--|--|---|---|--|
| 1 | Outdoor unit does not operate. | 1-time flash every 2.5 seconds | Outdoor power system | Overcurrent protection cut-out operates 3 consecutive times within 1 minute after the compressor gets started. | <ul style="list-style-type: none"> • Reconnect connector of compressor. • Refer to 11-5.Ⓐ "How to check inverter/compressor". • Check stop valve. |
| 2 | | | Outdoor thermistors | Discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor, outdoor heat exchanger temperature thermistor or ambient temperature thermistor shorts or opens during compressor running. | • Refer to 11-5.Ⓒ "Check of outdoor thermistors". |
| 3 | | | Outdoor control system | Nonvolatile memory data cannot be read properly. (POWER lamp of the indoor unit lights up or flashes 7-time.) | • Replace inverter P.C. board. |
| 4 | | 6-time flash 2.5 seconds OFF | Serial signal | The communication fails between the indoor and outdoor unit for 3 minutes. | <ul style="list-style-type: none"> • Check connection between the inverter P.C. board and the relay P.C. board. (FH50) • Refer to 11-5.Ⓑ "How to check miswiring and serial signal error." |
| 5 | | 11-time flash 2.5 seconds OFF | Stop valve/ Closed valve | Closed valve is detected by compressor current. | • Check stop valve. |
| 6 | | 14-time flash 2.5 seconds OFF | Outdoor unit (Other abnormality) | Outdoor unit is defective. | • Refer to 11-2.2. "Flow chart of the detailed outdoor unit failure mode recall function". |
| 7 | 'Outdoor unit stops and restarts 3 minutes later' is repeated. | 2-time flash 2.5 seconds OFF | Overcurrent protection | Large current flows into power module (IC700) (FH25/35)/ IGBT module (IC700) (FH50). | <ul style="list-style-type: none"> • Reconnect connector of compressor. • Refer to 11-5.Ⓐ "How to check inverter/compressor". • Check stop valve. |
| 8 | | 3-time flash 2.5 seconds OFF | Discharge temperature overheat protection | Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later. | <ul style="list-style-type: none"> • Check refrigerant circuit and refrigerant amount. • Refer to 11-5.Ⓔ "Check of LEV". |
| 9 | | 4-time flash 2.5 seconds OFF | Fin temperature /P.C. board temperature thermistor overheat protection | Temperature of fin temperature thermistor on the heat sink exceeds 75 ~ 86°C (FH25/35)/75 ~ 80°C (FH50) or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 72 ~ 85°C (FH25/35)/70 ~ 75°C (FH50). | <ul style="list-style-type: none"> • Check around outdoor unit. • Check outdoor unit air passage. • Refer to 11-5.Ⓓ "Check of outdoor fan motor". |
| 10 | | 5-time flash 2.5 seconds OFF | High pressure protection | Indoor coil thermistor exceeds 70°C in HEAT mode. Defrost thermistor exceeds 70°C in COOL mode. | <ul style="list-style-type: none"> • Check refrigerant circuit and refrigerant amount. • Check stop valve. |
| 11 | | 8-time flash 2.5 seconds OFF | Compressor synchronous abnormality | The waveform of compressor current is distorted. | <ul style="list-style-type: none"> • Reconnect connector of compressor. • Refer to 11-5.Ⓐ "How to check inverter/compressor". |
| 12 | | 10-time flash 2.5 seconds OFF | Outdoor fan motor | Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up. | <ul style="list-style-type: none"> • Refer to 11-5.Ⓘ "Check of outdoor fan motor." • Refer to 11-5.Ⓙ "Check of inverter P.C. board." |
| 13 | | 12-time flash 2.5 seconds OFF | Each phase current of compressor | Each phase current of compressor cannot be detected normally. | • Refer to 11-5.Ⓐ "How to check inverter/compressor". |
| 14 | | 13-time flash 2.5 seconds OFF | Bus-bar voltage (DC) | Bus-bar voltage of inverter cannot be detected normally. | <ul style="list-style-type: none"> • It occurs with following case. Instantaneous power voltage drop. (Short time power failure) (FH50) • Refer to 11-5.Ⓚ "Check of power supply". (FH50) • Refer to 11-5.Ⓐ "How to check inverter/compressor". |
| 15 | Outdoor unit operates. | 1-time flash 2.5 seconds OFF | Frequency drop by current protection | FH25/35 When the input current exceeds approximately 10A (FH25)/10.5A (FH35), compressor frequency lowers. | The unit is normal, but check the following. <ul style="list-style-type: none"> • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled. |
| 16 | | | | FH50 Current from power outlet is nearing breaker capacity. | |
| 16 | 3-time flash 2.5 seconds OFF | Frequency drop by high pressure protection | Temperature of indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers. | | |
| | | | Indoor coil thermistor reads 8°C or less in COOL mode, compressor frequency lowers. | | |
| 17 | 4-time flash 2.5 seconds OFF | Frequency drop by discharge temperature protection | Temperature of discharge temperature thermistor exceeds 111°C, compressor frequency lowers. | <ul style="list-style-type: none"> • Check refrigerant circuit and refrigerant amount. • Refer to 11-5.Ⓔ "Check of LEV". • Refer to 11-5.Ⓒ "Check of outdoor thermistors". | |
| 18 | MUZ-FH25/35 5-time flash 2.5 seconds OFF | Outside temperature thermistor protection | When the outside temperature thermistor shorts or opens, protective operation without that thermistor is performed. | • Refer to 11-5.Ⓒ Check of outdoor thermistors. | |

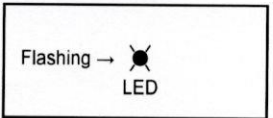
| No. | Symptom | LED indication | Abnormal point/Condition | Condition | Remedy |
|-----|---------------------------------|---------------------------------|--|---|---|
| 19 | Outdoor unit operates. | 7-time flash 2.5 seconds OFF | Low discharge temperature protection | Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes. | <ul style="list-style-type: none"> Refer to 11-5. ㉔ "Check of LEV". Check refrigerant circuit and refrigerant amount. |
| 20 | | 8-time flash 2.5 seconds OFF | MUZ-FH25/35 PAM protection PAM: Pulse Amplitude Modulation | The overcurrent flows into PFC (Power factor correction : IC820) or the bus-bar voltage reaches 394 V or more, PAM stops and restarts. | This is not malfunction. PAM protection will be activated in the following cases: 1 Instantaneous power voltage drop. (Short time power failure) 2 When the power supply voltage is high. |
| | | | MUZ-FH50 Zero cross detecting circuit | Zero cross signal cannot be detected. | <ul style="list-style-type: none"> It occurs with following cases. 1 Instantaneous power voltage drop. (Short time power failure) 2 Distortion of primary voltage •Refer to 11-5. ㉕ "Check of power supply". |
| 21 | 9-time flash 2.5 seconds OFF | Inverter check mode | The connector of compressor is disconnected, inverter check mode starts. | <ul style="list-style-type: none"> Check if the connector of the compressor is correctly connected. Refer to 11-5. ㉖ "How to check inverter/compressor". | |

NOTE: 1. The location of LED is illustrated at the right figure. Refer to 11-6.1.
 2. LED is lighted during normal operation.

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
 (Example) When the flashing frequency is "2".



Inverter P.C. board
MUZ-FH25/35VE



MUZ-FH50VE

