LG DFS-10

KEY TAKE AWAYS:

- **AC/DC VOLTAGES:**

  Both AC and DC voltages are present in an LG system. It is important to know the expected voltage for the component you are testing. Some important things to remember:

  1) Outdoor unit is powered by 240V AC
  2) Indoor unit is powered from the outdoor unit and is 240V AC
  3) Communication wire terminal 3 is 125V DC
  4) Testing communication terminal 3 to ground should be a pulsing DC voltage of 30 volts DC.
  5) Voltage measured at the compressor should be 240V AC 3 phase

- **LG FOUR WAY VALVE:**

  The default position is cooling and the voltage is 208V-230V AC

- **CHECKING WIRING FOR CH05 COMMUNICATION ERROR:**

  1) Turn power off to outdoor unit.
  2) Remove wires from the IDU and ODU.
  3) Check each wire for a short to ground by testing from each wire to ground.
  4) Wire nut the red and black wire at the IDU and check for continuity between red and black at the ODU.
  5) Wire nut the black and white at the IDU and check for continuity between black and white at the ODU.

  If wiring is faulty correct / repair as needed. If wiring checks out perform the following checks.

  1) With the wiring still disconnected at the ODU tun power back on and test DC voltage at terminals 2 & 3. You should have pulsating DC voltage between 10V-40V DC.
     a. Yes, pulsating voltage between 2 & 3 replace indoor board.
     b. No, pulsating voltage between 2 & 3 replace outdoor board.

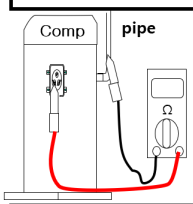
- **TESTING THE COMPRESSOR:**

Inverter System Components

Check (Comp. Phase Resistance)

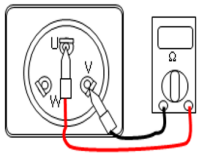
- **Must use true RMS Meter**

❖ How to check the insulation resistance between the compressor and pipe.



Terminal	Insulation Resistance
U-pipe	≥ 10MΩ
V-pipe	≥ 10MΩ
W-pipe	≥ 10MΩ

❖ How to check the U, V, and W phase resistance.



Line resistance between terminals	
U - V	0.5 ~ 3.0 Ω
V - W	0.5 ~ 3.0 Ω
W - U	0.5 ~ 3.0 Ω

1. Set Multi Meter to "Resistance" mode.
2. Measure the resistance between the terminals.
3. "0Ω" means the short of compressor phase.(Replace comp.)

※ Refer to the line resistance value for compressor type.

GA092		GA102					GKT128	GKT141	GKT176	GJT240	5RS		DA128A
MA	MC	MA	MB	MD	MF	MK	MA	MB	MF	MB	102XAA	132Z	20F
2.56	1.95	1.59	1.73	1.07	1.08	2.06	1.13	1.54	1.14	0.63	1.31	0.80	1.31

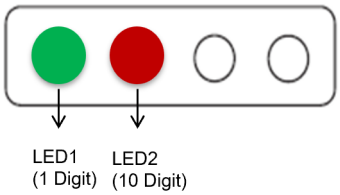
- **ERROR CODES:**

Error Codes

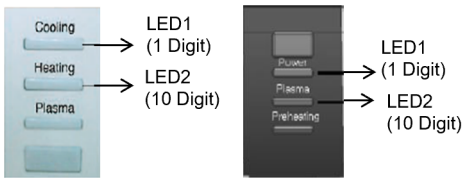
How to read Error Codes IDU

Error Code	Descriptions	Number of flashes Indoor unit	
		LED 1	LED 2
01	Indoor unit room temperature sensor error	1 time	-
02	Indoor unit inlet pipe sensor error	2 times	-
03	Wired remote control error	3 times	
04	Float switch error(optional)	4 times	-
05	Communication error between indoor & outdoor units	5 times	-
06	Indoor unit outlet pipe sensor error	6 times	-
09	Indoor unit EEPROM error	9 times	-
10	Indoor unit BLDC motor fan lock	-	1 time
12	Indoor unit middle pipe sensor error	2 times	1 time

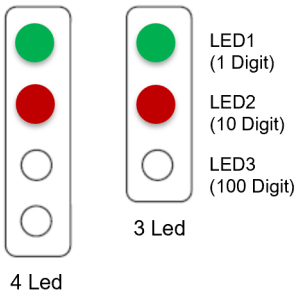
2) Type 2 (Horizontal 4 LED)
- S4, S5 Chassis



1) Type 1 (2 LED)
- SW, SB, SC Chassis



4) Type 4 - SA, SJ Chassis



3) Type 3
- SH Chassis

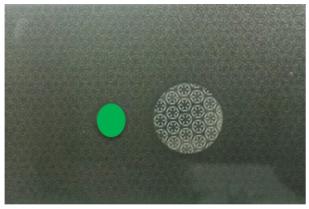
Error Codes

How to read Error Codes IDU

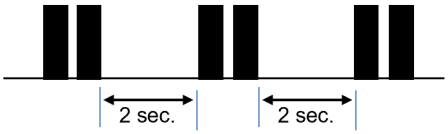
5) Type 5 (Number Display Model)

Ex) Error Code CH05

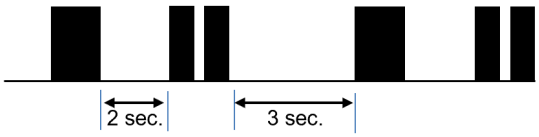
6) Type 6 (1 LED)

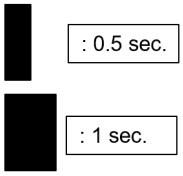


Ex) Error Code CH02



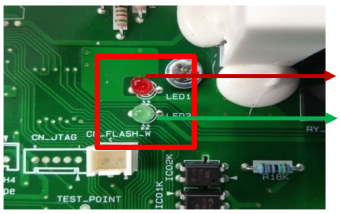
Ex) Error Code CH12



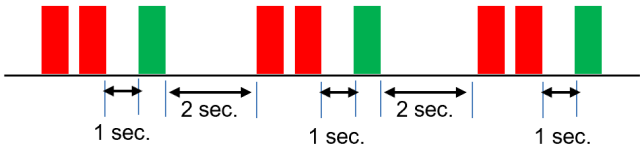


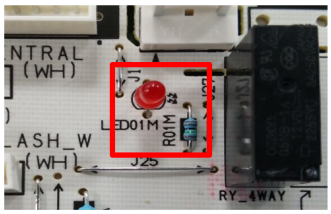
Error Codes

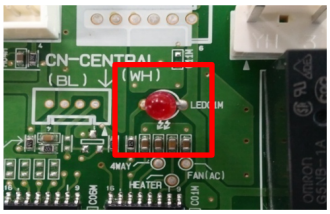
How to read Error Codes ODU

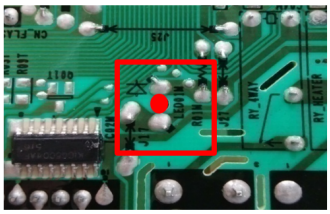


Ex) Error Code CH21 Dual LED

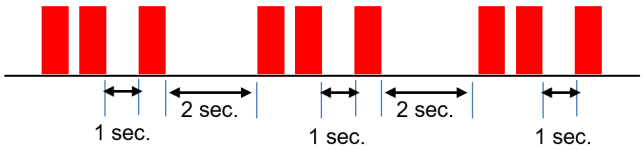








Ex) Error Code CH21 Single LED



Error Codes

- Error Codes may also be displayed at a wall controller/s.
- Depending on the controller the complete error code will be displayed or it will be flashed in a sequence.

Indoor Error

Error Code	Contents	Case of Error
01	Indoor Room sensor error	Indoor Room Temperature Sensor Open/short
02	Indoor in-piping sensor error	Indoor Inlet Pipe Sensor open/short
03	Remote controller error	Between Indoor and Remote controller communication poorly
04	Drain Pump error	Malfunction of drain pump
05	Communcation error between in and out	Between Indoor and Outdoor communication poorly
06	Indoor Out-Piping sensor error	Indoor Outlet Pipe Sensor open/short
07	Differnt mode operation	Different operation mode
09	EEPROM Check Sum Error	Check sum mismatching
10	Indoor BLDC Fan Lock	Indoor Fan is not operating

Error Codes

Outdoor Error

Error Code	Contents	case of Error
21	DC Peak (IPM Fault)	Over Rated Current
22	CT 2 (Max CT)	Input Over Current
23	DC Link Low Volt.	DC Link Volt is below 140Vdc
	DC Link High Volt.	DC Link Volt is above 420Vdc
24	Pressure Switch Error	Low/High Pressure switch open
25	Low Voltage/Over Voltage	Abnormal AC Volt Input
26	DC Compressor Position Error	Compressor Starting Fall Error
27	PSC/PFC Fault Error	Over Inverter PCB input current
29	COMP Over Current	Over Inverter Compressor Current
32	D-Pipe High	D-Pipe Temp. High
35	Low Pressure Error	Excessive decrease of Low Pressure
39	Communication Error	Communication Error Between PFC Micom and INV Micom

39	Communication Error	Communication Error Between PFC Micom and INV Micom
40	CT Sensor (Open/Short)	CT Circuit Malfunction
41	INV. D-Pipe Sensor Error	Open/Short
43	High Pressure Sensor Error	Open/Short
44	Outdoor Air Sensor Error	Open/Short
45	Cond. Mid-Pipe Sensor Error	Open/Short
46	Suction Pipe Sensor Error	Open/Short
48	Cond. Out-Pipe Sensor Error	Open/Short
51	Capacity Over	Over combination
52	Signal Error (Inverter PCB <-> Main PCB)	Communication Poorly
53	Signal Error (Indoor <-> Outdoor)	Communication Poorly
54	3-Phase Wrong wiring	3-Phase Wrong Wring of Outdoor Unit (Reverse Phase/Omission of Phase)
60	EEPROM Check Sum Error	Check Sum Mismatching
61	Cond. Pipe Sensor High	Cond. Temp. High
62	Heaksink Sensor High	Heatsink Temp. High
65	Heaksink Sensor Error	Open/Short
67	Outdoor BLDC Fan Lock	Outdoor Fan is not Operating
73	PFC Fault Error(S/W)	Over Current of Outdoor Unit PFC

- **HELP IS ONLY A PHONE CALL AWAY:**

  LG Tech Support 1-888-346-1923

  API of Manchester 1-603-668-7810 (ask for parts)

  Bryan Feather LG Sales/Tech Support Cell 1-401-640-8953

  Nick Pantazelos LG Sales/Tech Support Cell 1-603-247-6797

  Jason LeBlanc LG Training/Tech Support Cell 1-603-703-8525

  ***Please have the model number(s) of the equipment you are working on ready and be prepared to give us information from the LGMV tool!