MITSUBISHI HEAVY INDUSTRIES
AIR-CONDITIONERS AUSTRALIA

SERVICE SUPPORT **HANDBOOK**

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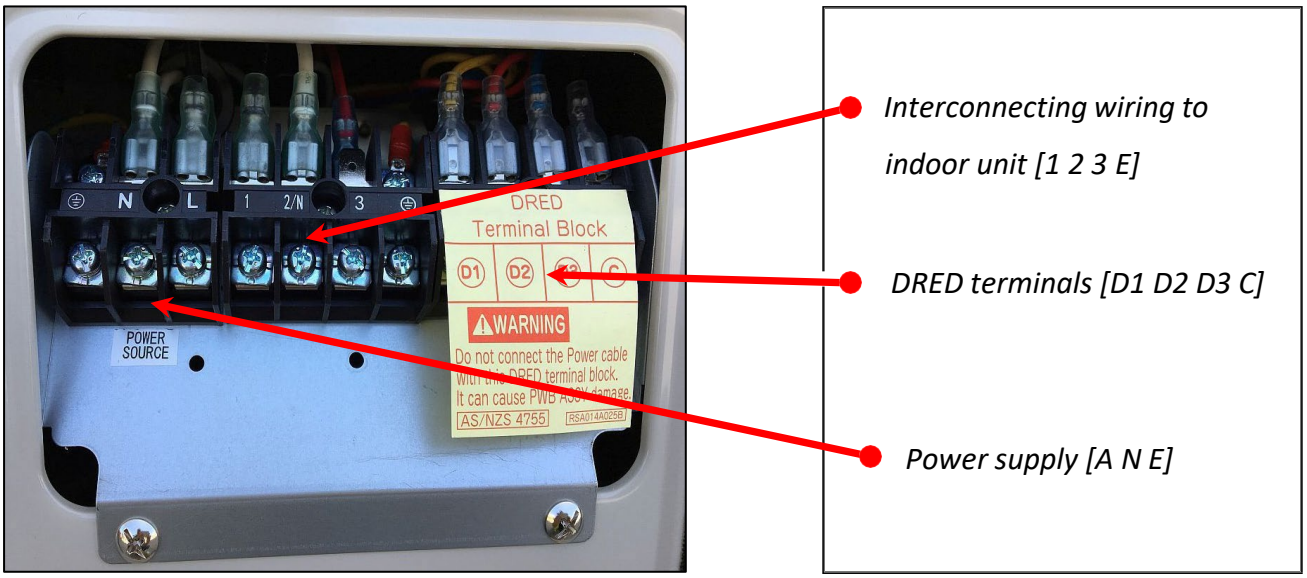
⚠ WARNING

The information contained within this '*Service Support Handbook*' is for use by qualified licensed personnel only. Additionally, the information presented here is not a replacement or substitute to the Manufacturers Technical Manual literature.

Please do not remove any covers or attempt any repair or measurement on any MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS LTD Product unless you are suitably qualified and licensed to do so.

Note that applicable models released from 2014 are DRED (AS4755) compliant. This means that the outdoor unit has 4 extra terminals as per example indicated below. Please only connect a DRED specified relay to these terminals if and where applicable. They are not to be connected to the indoor unit. The outdoor unit to indoor unit interconnecting terminal block is to the left/top on RAC products and a separate terminal block on PAC products.

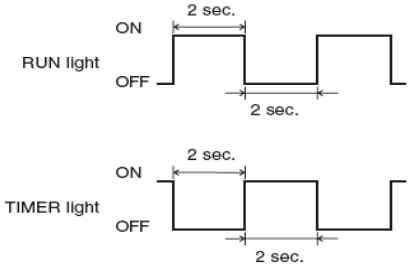
RAC products – Terminal block wiring connections – (example)



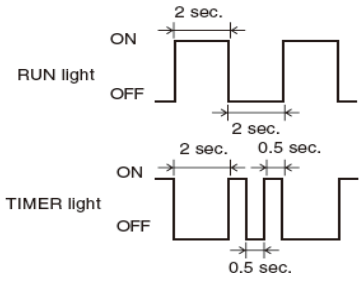
<u>RAC Products</u>

Display pattern of the indoor unit run and timer light during an external DRM input.

Display in DRED mode



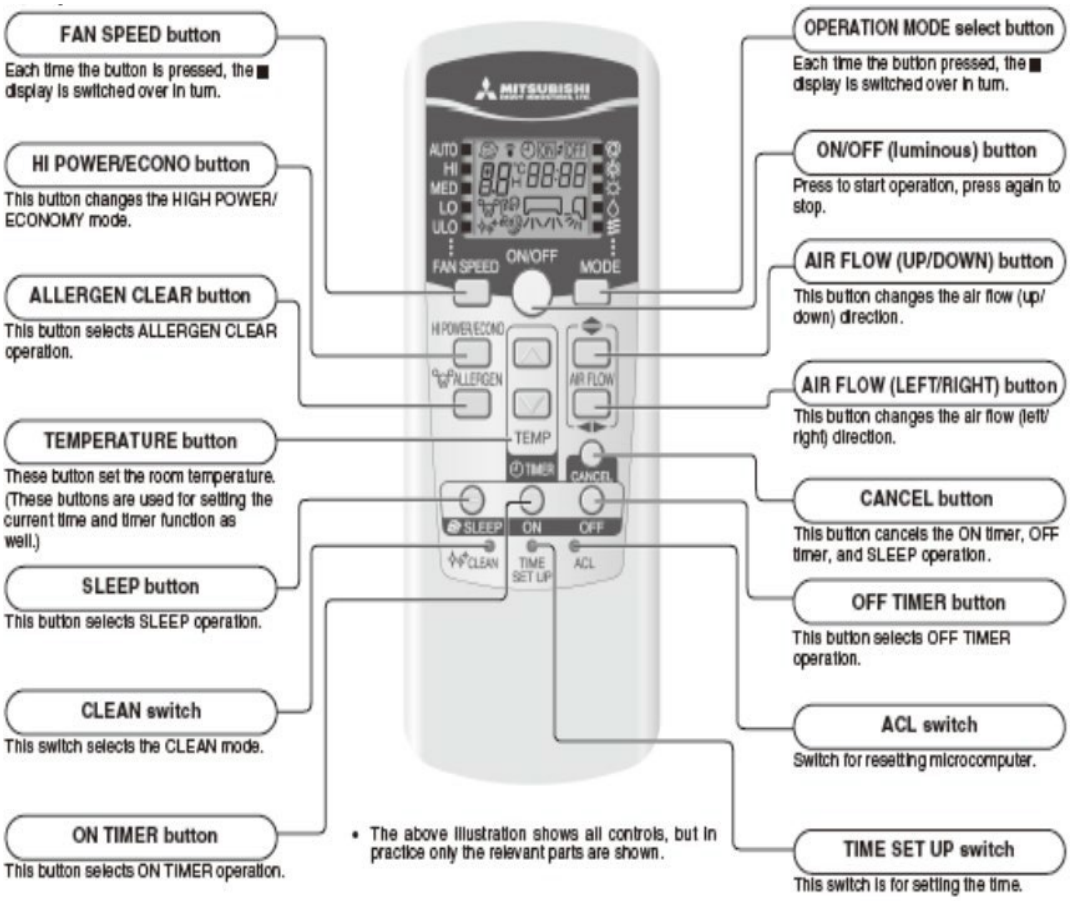
Display in DRED mode during Defrost operation



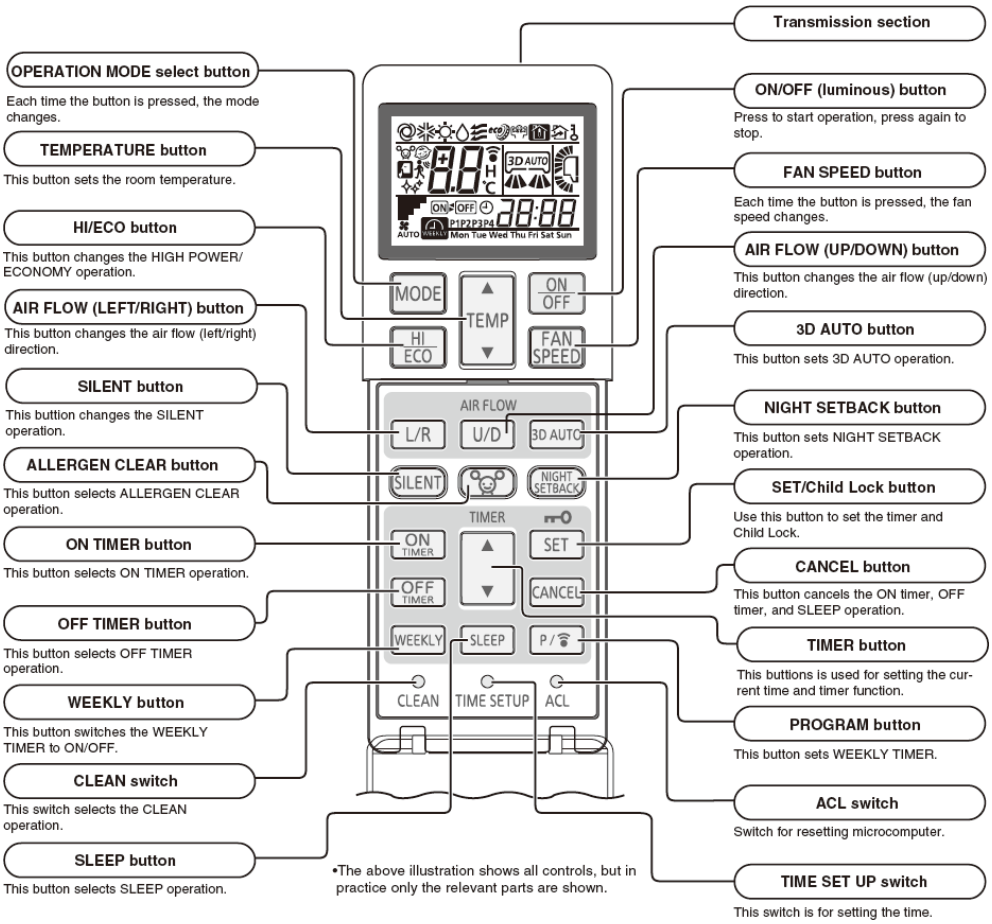
RAC Series - Remote Controls of SRK, DXK, SRF, SRR								
Before Proceeding to RAC Self Diagnosis Information, please ensure the correct Remote Control is being used								
Indoor Unit Model No.	**Circa.**	**Remote Control P/No.**	**RC Sub.**	**Refrig.**	**Cycle**	**Inverter Type**	**SC-BIKN**	**D.R.E.D.**
SRK--ZD-S	2004	RMA502A001	001C	R410A	Reverse cycle	Wall mount	No	No
SRK--ZDX-S	2005	RMA502A001	001C	R410A	Reverse cycle	Wall mount	No	No
SRK--ZFX-S		RKW502A200B		R410A	Reverse cycle	Wall mount	No	No
SRK--ZEA-S, ZEA-S1		RKW502A200	200D	R410A	Reverse cycle	Wall mount	No	No
SRK--ZG-S	2006	RKX502A001C	007C	R410A	Reverse cycle	Wall mount	No	No
SRK--ZGX-S	2007	RKW502A200B		R410A	Reverse cycle	Wall mount	No	No
SRK--ZHX-S	2008	RKX502A001C	007C	R410A	Reverse cycle	Wall mount	Yes	No
SRK80ZEA-S2	2009	RKW502A200	200D	R410A	Reverse cycle	Wall mount	Yes	No
SRK--ZIX-S		RKX502A001C	007C	R410A	Reverse cycle	Wall mount	Yes	No
SRK--ZJX-S, ZJX-S1	2010							
SRK--ZJ-S, ZJ-S1								
DXK--Z3-S		RKX502A001P	007P	R410A	Reverse cycle	Wall mount	No	No
SRK--YJ-S		RKX502A001	007	R410A	Cool only	Wall mount	No	No
SRK--ZK-S	2011	RKW502A200	200D	R410A	Reverse cycle	Wall mount	Yes	No
DXK--Z4-S								
SRK--ZL-S	2012							
DXK--ZL-S								
SRK--YL-S		RKX502A001	007	R410A	Cool only	Wall mount	No	No
DXK--ZJ-S		RKX502A001C	007C	R410A	Reverse cycle	Wall mount	Yes	No
SRK24YMA-S	2013	RLA502A700D	700T	R410A	Cool only	Wall mount	Yes	Yes
SRK--ZMA-S	2014	RLA502A700B	701R	R410A	Reverse cycle	Wall mount	Yes	Yes
DXK--ZMA-S								
SRK--ZMXA-S		RLA502A700B	701B	R410A	Reverse cycle	Wall mount	Yes	Yes
SRF--ZMXA-S		RLA502A700C	700S	R410A	Reverse cycle	Floor mount	Yes	Yes
DXK06ZM-S		RLA502A701B	700B	R410A	Reverse cycle	Wall mount	Yes	No
SRR--ZM-S	2015	RLA502A701C	700C	R-410A	Reverse cycle	Ceiling concealed	Yes	Yes
SRK--ZMP-S		RKX502A001P	007P	R410A	Reverse cycle	Wall mount	No	No
DXK--Z5-S								
SRK--ZRA-W	2017	RLA502A700R	701R	R32	Reverse cycle	Wall mount	Yes	Yes
DXK--ZRA-W								
SRK24YRA-W		RLA502A700T	701T	R32	Cool only	Wall mount	Yes	Yes
SRK--ZSA-W		RLA502A700L	701L 720	R32	Reverse cycle	Wall mount	Yes	Yes
DXK--ZSA-W								
SRK--YSA-W		RLA502A701N	700N	R32	Cool only	Wall mount	Yes	Yes
SRK--ZSXA-W	2018	RLA502A700K		R32	Reverse cycle	Wall mount	Yes	Yes
SRF--ZS-W, ZSX-W	2020	RLA502A701AF	700M	R32	Reverse cycle	Floor mount	Yes	Yes
SRR--ZS-W						Ceiling concealed	Yes	Yes
DXK—ZTLA-WF	2023	RLH502A001	N/A	R32	Reverse cycle	Wall mount	*Yes	Yes

(*) = In-built Wi-Fi cannot be used if used if SC-BIKN is connected.

RKW502A200

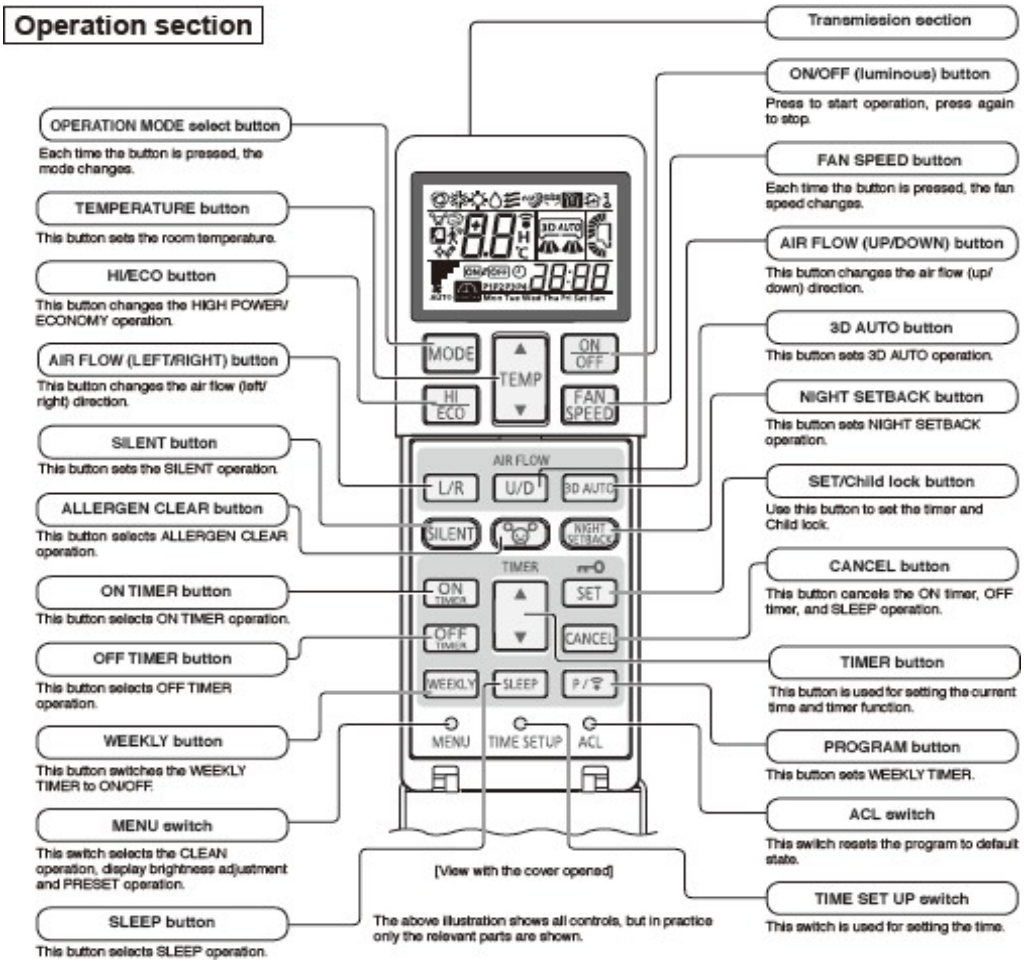


RLA502A700B / RLA502A701C



RLA502A701L

Operation section



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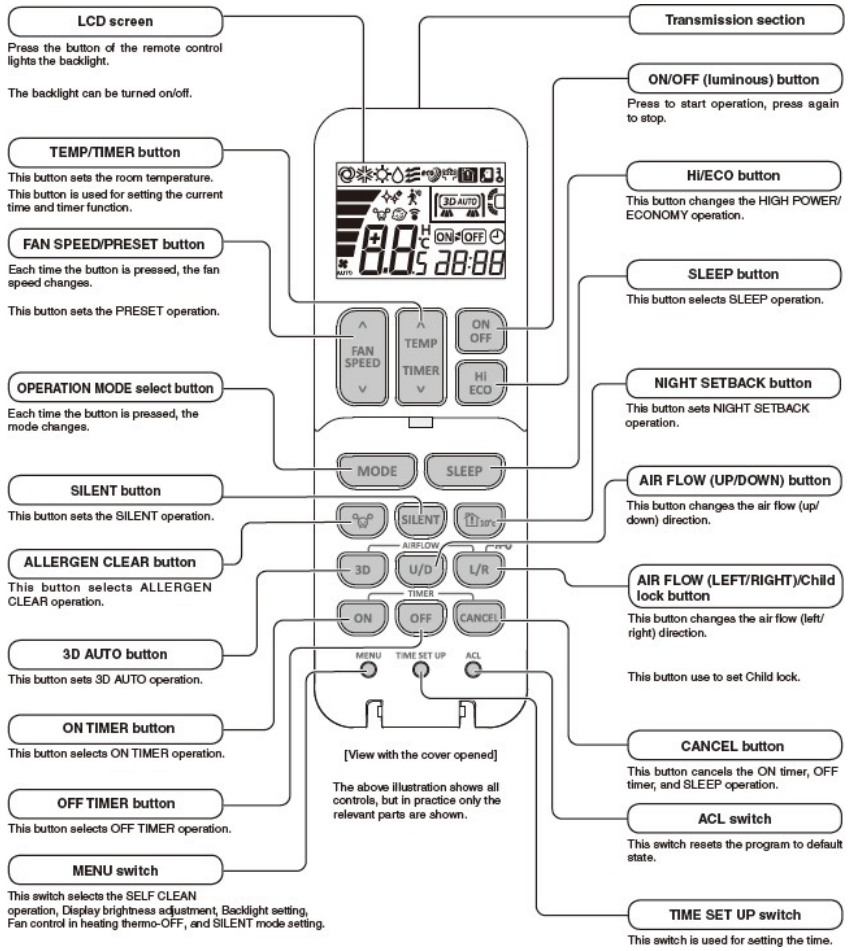


RAC Refrigerant Piping Information - Current Models

Model	Gas Type	Pre-charged Piping Length (m)	Max Piping Length (m)	Vertical Pipe Length (m)		Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Sizes (mm)	
				OU above	IU above			Liquid Pipe	Gas Pipe
SRC95ZRA-W	R32	15	30	20	20	2.00	25	9.52	15.88
SRC71,80ZRA-W SRC24YRA-W	R32	15	30	20	20	1.60	25	6.35	15.88
SRC63ZRA-W	R32	15	30	20	20	1.25	20	6.35	12.7
SRC50ZSA-W	R32	15	25	15	15	1.05	20	6.35	12.7
SRC25,35ZSA-W	R32	15	20	15	15	0.78	20	6.35	9.52
SRC20ZSA-W	R32	15	20	15	15	0.58	20	6.35	9.52
SRC18YSA-W	R32	15	25	15	15	1.05	20	6.35	12.7
SRC10,13YSA-W	R32	15	20	15	15	0.75	20	6.35	9.52
SRC50,60ZSXA-W	R32	15	30	20	20	1.30	20	6.35	12.7
SRC20,25,35ZSXA-W	R32	15	25	15	15	1.20	20	6.35	9.52
DXC33ZRA-W	R32	15	30	20	20	2.00	25	9.52	15.88
DXC24,28ZRA-W	R32	15	30	20	20	1.60	25	6.35	15.88
DXC21ZRA-W	R32	15	30	20	20	1.25	20	6.35	12.7
DXC18ZSA-W	R32	15	25	15	15	1.05	20	6.35	12.7
DXC09,12ZSA-W	R32	15	20	15	15	0.75	20	6.35	9.52
DXC06ZSA-W	R32	15	20	15	15	0.58	20	6.35	9.52
DXC05,07ZTLA-W	R32	10	20	15	15	0.43	20	6.35	9.52
DXC09,12ZTLA-W	R32	10	20	15	15	0.59	20	6.35	9.52
DXC18ZTLA-W	R32	15	25	20	20	0.90	20	6.35	12.7
DXC21,24ZTLA-W	R32	15	30	20	20	1.20	20	6.35	12.7

SCM R410A Multi Head Series – * Note that the maximum one-way piping length for individual port is 25 meters and the Difference in height between indoor units is 25 meters.

Model	Gas Type	Pre-charged Piping Length (m)	Max Piping Length (m) for all rooms	Vertical Pipe Length (m)		Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Sizes (mm)	
				O/D Above	I/D Above			Liquid Pipe	Gas Pipe
SCM40ZS-S	R410A	30	30	15	15	1.90	N/A	6.35	9.52
SCM45ZS-S	R410A	30	30	15	15	1.90	N/A	6.35	9.52
SCM50ZS-S	R410A	40	40	15	15	2.50	N/A	6.35	9.52
SCM60ZM-S	R410A	40	40	15	15	2.5	N/A	6.35	9.52
SCM71ZM-S1	R410A	40	70	20	20	3.15	20	6.35	9.52
SCM80ZM-S1	R410A	40	70	20	20	3.15	20	6.35	9.52
SCM100ZM-S	R410A	50	90	20	20	6.0	20	6.35	9.52
SCM125ZM-S	R410A	50	90	20	20	6.0	20	6.35	9.52

SCM R32 Multi Head Series – *Note that the maximum one-way piping length for individual port is 25 meters and the Difference in height between indoor units is 25 meters.

Model	Gas Type	Pre-charged Piping Length (m)	Max Piping Length (m) for all rooms	Vertical Pipe Length (m)		Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Sizes (mm)	
				O/D Above	I/D Above			Liquid Pipe	Gas Pipe
SCM40ZS-W	R32	20	30	15	15	1.40	20	6.35	9.52
SCM45ZS-W	R32	20	30	15	15	1.40	20	6.35	9.52
SCM50ZS-W	R32	40	40	15	15	1.80	N/A	6.35	*9.52
SCM60ZS-W	R32	40	40	15	15	1.80	N/A	6.35	**9.52
SCM71ZS-W	R32	30	70	20	20	2.55	20	6.35	^9.52
SCM80ZS-W	R32	30	70	20	20	2.55	20	6.35	^9.52
SCM100ZS-W	R32	40	75	20	20	2.98	20	6.35	^^9.52

* 1 x variable diameter joint of ø9.52 → ø12.7 is standard accessory supplied with the outdoor unit.

** 2 x variable diameter joint of ø9.52 → ø12.7 is standard accessory supplied with the outdoor unit.

^ 3 x variable diameter joint of ø9.52 → ø12.7 and 1 x variable diameter joint of ø9.52→ø15.88 are standard accessories supplied with the outdoor unit.

^^ 3 x variable diameter joint of ø9.52 → ø12.7 and 2 x variable diameter joint of ø9.52→ø15.88 are standard accessories supplied with the outdoor unit.

If 5.0, 6.0 kW class indoor unit (gas side pipe ϕ12.7) or 7.1, 8.0 kW class indoor unit (gas side pipe ϕ15.88) is going to be connected to the service valves (ϕ9.52), variable joints available as accessories must be applied to the gas side service valves.

RAC Series – R410A Refrigerant Piping Information – Historical Models

Model No.	Pre-charged Piping Length (m)	Max Piping Length (m)	Vertical Pipe Length (m)		R410A Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Size (mm)	
			O/D Above	I/D Above			Liquid Pipe	Gas Pipe
SRC92ZMA-S	15	30	20	20	3.15	25	6.35	15.88
SRC80ZMA-S	15	30	20	20	2.2	25	6.35	15.88
SRC24YMA-S	15	30	20	20	1.8	25	6.35	15.88
SRC63,71ZMA-S	15	30	20	20	1.8	25	6.35	15.88
SRC50ZMA-S	15	25	15	15	1.35	20	6.35	12.7
SRC25,35 ZMA-S	15	15	10	10	1.15	N/A	6.35	9.52
SRC20ZMA-S	15	15	10	10	0.75	N/A	6.35	9.52
SRC50,60ZMXA-S	15	30	20	20	1.5	20	6.35	12.7
SRC20,25,35ZMXA-S	15	15	10	10	1.2	N/A	6.35	9.52
SRC18YL-S/YJ-S	15	25	15	15	1.35	20	6.35	12.7
SRC13YL-S/YJ-S	15	15	10	10	1.05	N/A	6.35	9.52
SRC10YL-S/YJ-S	10	15	10	10	0.75	20	6.35	9.52
SRC20,25,ZD/ZF/,ZG	15	15	10	10	0.9	N/A	6.35	9.52
SRC20,25ZJ-S	15	15	10	10	0.75	N/A	6.35	9.52
SRC35ZD/ZG	15	15	10	10	1.1	N/A	6.35	9.52
SRC35ZJ-S	15	15	10	10	1.05	N/A	6.35	9.52
SRC20ZJ-S1	15	15	10	10	0.75	N/A	6.35	9.52
SRC25,35ZJ-S1	15	15	10	10	1.15	N/A	6.35	9.52
SRC50ZD,ZJ-S,ZJ-S1	15	25	15	15	1.35	20	6.35	12.7
SRC20,25,35ZDX/ZFX/ZGX/ZIX /ZJX-S/ZJX-S1	15	15	10	10	1.2	N/A	6.35	9.52
SRC50,60ZFX,ZGX,ZHX,ZIX	15	30	20	20	1.4	20	6.35	12.7
SRC50,60ZJX-S	15	30	20	20	1.5	20	6.35	12.7
SRC63,71,80ZEA-S/S1/S2	15	30	20	20	1.9	25	6.35	15.88
SRC63,71,80ZK-S	15	30	20	20	1.8	25	6.35	15.88
SRC80ZL-S	15	30	20	20	2.2	25	6.35	15.88
SRC92ZL-S	15	30	20	20	3.15	25	6.35	15.88
DXC32ZMA-S	15	30	20	20	3.15	25	6.35	15.88
DXC28ZMA-S	15	30	20	20	2.2	25	6.35	15.88
DXC21,24ZMA-S	15	30	20	20	1.8	25	6.35	15.88
DXC18ZMA-S	15	25	15	15	1.35	20	6.35	12.7
DXC09,12ZMA-S	15	15	10	10	1.15	N/A	6.35	9.52
SRC17ZMP-S	10	15	10	10	0.655	20	6.35	9.52
DXC05Z5-S	10	15	10	10	0.655	20	6.35	9.52

RAC Series – R410A Refrigerant Piping Information – Historical Models Cont.								
Model No.	Pre-charged Piping Length (m)	Max Piping Length (m)	Vertical Pipe Length (m)		R410A Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Size (mm)	
			O/D Above	I/D Above			Liquid Pipe	Gas Pipe
DXC06ZM-S	15	15	10	10	0.75	N/A	6.35	9.52
DXC05Z5-S	10	15	10	10	0.655	20	6.35	9.52
DXC32ZL-S	15	30	20	20	3.15	25	6.35	15.88
DXC28ZL-S	15	30	20	20	2.2	25	6.35	15.88
DXC21,24,28Z4-S	15	30	20	20	1.8	25	6.35	15.88
DXC18Z3-S/ZJ-S	15	25	15	15	1.35	20	6.35	12.7
DXC09,12ZJ-S	15	15	10	10	1.15	N/A	6.35	9.52
DXC12Z3-S	15	15	10	10	1.05	N/A	6.35	9.52
DXC09Z3-S	10	15	10	10	0.75	20	6.35	9.52
SCM40ZG-S	30	30	15	15	1.4	N/A	6.35	9.52
SCM45ZG-S	20	30	15	15	1.6	20	6.35	9.52
SCM48ZG-S	40	40	15	15	1.95	N/A	6.35	9.52
SCM60ZG-S	30	40	15	15	2.2	20	6.35	9.52
SCM80ZG-S	40	70	20	20	3.15	20	6.35	9.52
SCM40ZJ-S	30	30	15	15	2	N/A	6.35	9.52
SCM50,60ZJ-S/ZJ-S1	40	40	15	15	2.5	N/A	6.35	9.52
SCM71,80ZJ-S/ZJ-S1	40	70	20	20	3.15	20	6.35	9.52
SCM100,125ZJ-S/ZJ-S1	50	90	20	20	6	20	6.35	9.52
SCM40ZM-S	30	30	15	15	2.0	N/A	6.35	9.52
SCM50_60ZM-S	40	40	15	15	2.5	N/A	6.35	9.52
SCM71_80ZM-S	40	70	20	20	3.15	20	6.35	9.52

PAC Series – R32 Refrigerant Piping Information - Current Models

Model	Power Supply	Gas Type	Pre-charged Piping Length (m)	Maximum Piping Length (m)	Vertical Pipe Length (m)		Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Sizes (mm)	
					O/D Above	I/D Above			Liquid Pipe	Gas Pipe
FDCA71VNX-W	1PH	R32	30	50	30	15	2.75	54	9.52	15.88
FDCA100VNA-W	1PH	R32	30	50	30(*)	15	3.3	54	9.52	15.88
FDCA100VSA-W	3PH	R32	30	50	30(*)	15	3.3	54	9.52	15.88
FDC100VNP-W	1PH	R32	15	30	20	20	1.7	20	6.35	15.88
FDC125VNP-W	1PH	R32	15	30	20	20	2.25	20	9.52	15.88
FDCA100VNP-W	1PH	R32	15	30	20	20	1.7	20	9.52	15.88
FDCA125VNP-W	1PH	R32	15	30	20	20	2.25	20	9.52	15.88
FDCA125VNX-W	1PH	R32	30	100	30(*)	15	4.0	54	9.52	15.88
FDCA125VSX-W	3PH	R32	30	100	30(*)	15	4.0	54	9.52	15.88
FDCA140VNX-W	1PH	R32	30	100	30(*)	15	4.0	54	9.52	15.88
FDCA140VSX-W	3PH	R32	30	100	30(*)	15	4.0	54	9.52	15.88
FDCA160VNX-W	1PH	R32	30	100	30(*)	15	4.0	54	9.52	15.88
FDCA160VSA-W FDCA200VSA-W FDCA250VSA-W	3PH	R32	30	< 35	30(*)	15	5.1	**^ REFER BELOW**	12.7	22.22
			30	< 70	30(*)	15	5.1		12.7	25.4
			25	< 70	30(*)	15	5.1		12.7	28.58
			18	< 35	30(*)	15	5.1		15.88	22.22
			18	< 40	30(*)	15	5.1		15.88	25.4/28.58
	Equivalent length (Le) - m					≦ 30	30＜Le≦ 40	40＜Le≦ 50	50＜Le≦ 60	60＜Le≦ 70
	Additional Refrigerant Charge - kg					0	0.44	1.31	2.18	2.85

(*) In the case of the outdoor unit is positioned higher, the dimensional limitation change from 30m to 50m is possible by changing SW5-2 of outdoor unit Control PCB to ON and refer following outdoor temperature limitation for this control.
Max *50m/15m (O/U is higher & Outdoor temperature ≦ 43°C).
^ Formula to calculate equivalent length (Le) is: Le= (length of ϕ12.7) + 1.56 × (length of ϕ15.88).
If LP size = 12.7mm, add the refrigerant shown as per the (Le) table above according to ϕ12.7 equivalent length (Le).
If LP size = 15.88mm, calculate (Le) => 1.56 x (length ϕ15.88), and add the refrigerant shown as per (Le) table above to equivalent length (Le).
Example: LP size = 15.88mm, GP size = 25.4mm, Pipe length = 25m, Calculation Result: (Le) = 0+1.56x25=39.0m, Addition Refrig Charge = 0.44kg.

PAC Series – R410A Refrigerant Piping Information – Historical Models

Model	Gas Type	Pre-charged Piping Length (m)	Maximum Piping Length (m)	Vertical Pipe Length (m)		Factory Charge (Kg)	Additional Charge (gr per m)	Pipe Sizes (mm)	
				O/D Above	I/D Above			Liquid Pipe	Gas Pipe
FDCA71VNX / VNXA	R410A	30	50	30	15	2.95	60	9.52	15.88
FDCA100VN	R410A	30	50	30	15	3.8	60	9.52	15.88
FDC100VNP	R410A	15	30	20	20	2.55	60	9.52	15.88
FDCA100VNX	R410A	30	100	30	15	4.5	60	9.52	15.88
FDCA100VSX	R410A	30	100	30	15	4.5	60	9.52	15.88
FDCA125VNX	R410A	30	100	30	15	4.5	60	9.52	15.88
FDCA125VSX	R410A	30	100	30	15	4.5	60	9.52	15.88
FDCA160VSA	R410A	30	35	30	15	7.2	120	12.7	22.22
		30	70	30	15	7.2	120	12.7	25.4/ 28.58
FDCA200VSA	R410A	30	35	30	15	7.2	120	12.7	22.22
		30	70	30	15	7.2	120	12.7	25.4/ 28.58
DXC24VNX	R410A	30	50	30	15	2.95	60	9.52	15.88
DXC34,43,48VNX	R410A	30	100	30	15	4.5	60	9.52	15.88
DXC55VS	R410A	30	35/70	30	15	7.2	120	12.7	22.22/ 28.58
FDCVA151,201HEN	R410A	30	40	30	15	1.55	20	6.35	12.7
FDCVA251HEN	R410A	30	40	30	15	1.75	20	6.35	15.88
FDCVA302HENR/HENAR	R410A	30	50	30	15	2.95	60	9.52	15.88
FDCVA402,502,602HENR/HENAR	R410A	30	50	30	15	3.8	60	9.52	15.88

RAC - SELF-DIAGNOSIS INFORMATION – Previous R410A & Current R32 Series

Inverter RAC Indoor Unit	**SRK**	ZD, ZF, ZG, ZJ, ZJ-S1, ZMA, ZSA, ZDX, ZFX, ZGX, ZHX, ZIX, ZJX, ZMXA, ZSXA, ZEA, ZE, ZK, ZL, YJ, YL, YR, YS, ZSA, ZR, ZRA, ZTLA
	SRF	ZIX, ZJX, ZJX-S1, ZMXA, ZS, ZSX
	DXK	Z3, Z4, ZJ, ZL, ZM, ZMA, ZSA, ZRA, ZTLA
Inverter RAC Outdoor Unit	**SRC**	ZD, ZF, ZG, ZJ, ZJ-S1, ZMA, ZSA, ZDX, ZFX, ZGX, ZHX, ZIX, ZJX, ZJX-S1, ZMX, ZSX, ZEA, ZE-S1, ZE-S2, ZK, ZL, YJ, YL, YR, YS, ZRA, ZTLA
	DXC	Z3, Z4, ZJ, ZL, ZMA, ZSA, ZRA, ZTLA

Indoor unit display panel		**Outdoor Control PCB, Red LED**	**Wired R/C display**	**Description of Trouble**	**Cause**	**Display (flashing) condition**
Run Light	**Timer Light**					
1-time flash	ON	--	--	Heat exchanger sensor 1 error	Broken heat exchanger sensor 1 wire, poor connector connection *Indoor PCB is faulty	When a heat exchanger sensor 1 wire disconnection is detected while operation is stopped. (If a temperature of –28ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
2-time flash	ON	--	--	Room temperature sensor error	Broken room temperature sensor wire, poor connector connection *Indoor PCB is faulty	When a room temperature sensor wire disconnection is detected while operation is stopped. (If a temperature of –45ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
3-time flash	ON	--	--	Heat exchanger sensor 2 error	Broken heat exchanger sensor 2 wire, poor connector connection. *Indoor PCB is faulty	When a heat exchanger sensor 2 wire disconnection is detected while operation is stopped. (If a temperature of –28ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
6-time flash	ON	--	E 16	Indoor fan motor error	Defective fan motor, poor connector connection	When conditions for turning the indoor unit's fan motor on exist during air conditioner operation, • Defective fan motor, poor an indoor unit fan motor speed of 300 min-1 or lower is measured for 30 seconds or longer. (The air conditioner stops.)
Keeps flashing	1-time flash	8-time flash	E 38	Outdoor air temperature sensor error	Broken outdoor air temp sensor wire, poor connector connection. • Outdoor PCB is faulty	–55ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or –55ºC or lower is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	2-time flash	8-time flash	E 37	Outdoor heat exchanger sensor error	Broken heat exchanger sensor wire, poor connector connection. • Outdoor PCB is faulty	–55ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or –55ºC or lower is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	4-time flash	8-time flash	E 39	Discharge pipe sensor error	Broken discharge pipe sensor wire, poor connector connection. • Outdoor PCB is faulty	–25ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. (The compressor is stopped.)
ON	1-time flash	1-time flash	E 42	Current cut	Compressor over current * Possible refrigerant contamination	Compressor locking, open phase on compressor output, short circuit on power transistor, closed service valve, EEV not opening
ON	2-time flash	2-time flash	E 59	Trouble of outdoor unit	Broken compressor wire • Compressor blockage	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value. (The air conditioner stops.)
ON	3-time flash	3-time flash	E 58	Current safe stop	• Overload operation • Overcharge • Compressor locking	When the compressor command speed is lower than the set value and the current safe has operated. (the compressor stops)
ON	4-time flash	1-time flash	E 51	Power transistor error	Broken power transistor	When the power transistor is judged breakdown while compressor starts. (The compressor is stopped.)
ON	5-time flash	5-time flash	E 36	Overheat of compressor	Gas shortage, defective discharge pipe sensor, service valve is closed	When the value of the discharge pipe sensor exceeds the set value. (The air conditioner stops.)
ON	6-time flash	6-time flash	E 3, E 5	Error of signal transmission	Defective power supply, Broken signal wire, defective indoor/outdoor PCB	When there is no signal between the indoor PCB and outdoor PCB for 10 seconds or longer (when the power is turned on), or when there is no signal for 7 minute 35 seconds or longer (during operation) (the compressor is stopped).
ON	7-time flash	ON	E 48	Outdoor fan motor error	Defective fan motor, poor connector connection	When the outdoor unit's fan motor speed continues for 30 seconds or longer at 75 min-1 or lower. (3 times) (The air conditioner stops.)
ON	Keeps flashing	2-time flash	E 35	Cooling high pressure protection	Overload operation, overcharge, broken outdoor heat exchange sensor wire, service valve is closed	When the value of the outdoor heat exchanger sensor exceeds the set value.
2-time flash	2-time flash	7-time flash	E 60	Rotor lock	Defective compressor Open phase on compressor Defective outdoor PCB	If the compressor motor's magnetic pole positions cannot be correctly detected when the compressor starts. (The air conditioner stops.)
4-time flash	ON		-	Trouble of wireless LAN interface	Defective wireless LAN interface boards, poor connector connection	When normal data cannot be received from wireless LAN interface for two minutes continuously
5-time flash	ON	2-time flash	E 47	Active filter voltage error	Defective active filter	When the wrong voltage connected for the power supply. When the outdoor PCB is faulty.
7-time flash	ON	2-time flash	E 57	Refrigeration cycle system control	* Service valve is closed. • Refrigerant is insufficient	When refrigeration cycle system protective control operates.
7-time flash	1-time flash	4-time flash	E 40	Service valve (gas side) closed operation	* Service valve (gas side) closed. * Possible refrigerant contamination • Defective outdoor PCB	If the output current of inverter exceeds the specifications, it makes the compressor stop. (In heating mode). After 3-minute delay, the compressor restarts, but if this anomaly occurs 2 times within 20 minutes after the initial detection.
--	--	--	E 1	Error of wired remote control wiring.	Broken wired remote-control wire, defective indoor PCB	The wired remote-control wire Y is open. The wired remote control wires X and Y are reversely connected. Noise is penetrating the wired remote-control lines. The wired remote control or indoor PCB is faulty. (The communications circuit is faulty.)

SCM MULTI HEAD - SELF-DIAGNOSIS INFORMATION – Previous R410A & Current R32 Series

Inverter Multi Indoor	**SRK**	ZJ, ZJX, ZK, ZMA, ZMXA, ZSA, ZRA
	SRR	ZJ-S, ZM-S
	SRF	ZJX, ZMXA, ZS, ZSX
	FDTC	VD, VF, VH
	FDUM	VF, VH
	FDEN	VD, VF, VG
Inverter Multi Outdoor	**SCM**	ZJ, ZM, ZS

Indoor unit display panel		**Outdoor main PCB, Red LED**	**Wired remote control display**	**Description of trouble**	**Cause**	**Display (flashing) condition**
Run Light	**Timer Light**					
1-time flash	ON	Stays off	-	Indoor heat exchanger sensor (1) error	Broken heat exchanger sensor 1 wire, poor connector connection. Indoor PCB is faulty	When a heat exchanger sensor 1 wire disconnection is detected while operation is stopped. (If a temperature of –28ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
2-time flash	ON	Stays off	-	Room temperature sensor error	Broken room temperature sensor wire, poor connection	When a room temperature sensor wire disconnection is detected while operation is stopped. (If a temperature of –45ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
3-time flash	ON	Stays off	-	Heat exchanger sensor (2) error	Broken heat exchanger sensor 2 wire, poor connector connection. Indoor PCB is faulty.	When a heat exchanger sensor 2 wire disconnection is detected while operation is stopped. (If a temperature of –28ºC or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
4-time flash	ON	Stays off	E 9	Drain error	Defective drain pump (DM), broken drain pump wire. Anomalous float switch operation. Defective indoor PCB faulty	If the float switch OPEN is defected for 3 seconds continuously or if float switch connector or wire is disconnected.
6-time flash	ON	Stays off	E 16	Indoor fan motor error	Defective fan motor, poor connector connection	When conditions for turning the indoor unit's fan motor on exist during air-conditioner operation, an indoor unit fan motor speed of 300 (SRF:150) min-1 or lower is measured for 30 seconds or longer. (The air conditioner stops.)
Keeps Flashing	1-time flash	8-time flash	E 38	Outdoor air temperature sensor error	Broken sensor wire, poor connection, faulty outdoor PCB	–55ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or –55ºC or higher is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps Flashing	2-time flash	8-time flash	E 37	Outdoor heat exchanger sensor error	Broken sensor wire, poor connection, faulty outdoor PCB	–55ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or –55ºC or higher is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps Flashing	4-time flash	8-time flash	E 39	Discharge pipe sensor error	Possible liquid flood back, crossed interconnect. Broken sensor wire, poor sensor contact, faulty outdoor PCB	–25ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. (The compressor is stopped.)
Keeps Flashing	5-time flash	8-time flash	E 53	Outdoor suction sensor error	Broken sensor wire, poor connection, faulty outdoor sub-P C B	–55ºC or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or –55ºC or higher is detected for within 20 seconds after power ON. (The compressor is stopped)
ON	1-time flash	1-time flash	E 42	Current Cut	Compressor locking, open phase on compressor output, short circuit on power transistor, closed service valve	The compressor output current exceeds the set value during compressor start. (The air-conditioner stops.)
ON	2-time flash	2-time flash	E 59	Trouble of outdoor unit	Broken compressor wire, broken power transistor, broken discharge sensor wire or poor connection, compressor blockage	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value. (The air-conditioner stops.)
ON	3-time flash	3-time flash	E 58	Current safe stop	Overload protection, over charged, compressor locking	When the compressor command speed is lower than the set value and the current safe has operated. (the compressor stops)
ON	4-time flash	1-time flash	E 51	Power transistor error	faulty inverter PCB, faulty main PCB or faulty fan motor	When the power transistor is judged breakdown while compressor starts. (The compressor is stopped.)
ON	5-time flash	5-time flash	E 36	Overheat of compressor	Low on gas, faulty discharge pipe senor, closed service valve	When the value of the discharge pipe sensor exceeds the set value. (The air-conditioner stops.)

Comes on	6-time flash	6-time flash	E 5	Error or signal transmission	Defective power supply, broken signal wire, faulty indoor/outdoor P.C.B.	When there is no signal between the indoor PCB and outdoor PCB for 10 seconds or longer (when the power is turned on), or when there is no signal for 7 minute 35 seconds or longer (during operation) (the compressor is stopped).
ON	7-time flash	Keeps flashing	E 48	Outdoor fan motor or main PCB	Faulty condenser fan motor or faulty main PCB	When the outdoor unit's fan motor speed continues for 30 seconds or longer at 75 min-1 or lower. (3 times) (The air conditioner stops)
ON	Keeps flashing	2-time flash	E 35	Cooling high pressure Protection	Overload protection, overc h a r g e d , broken outdoor heat exchanger sensor wire, closed service valve	When the value of the outdoor heat exchanger sensor exceeds the set value
2-time flash	2-time flash	7-time flash	E 60	Rotor lock	Faulty compressor, open phase on compressor, faulty outdoor P.C.B.	If the compressor motor's magnetic pole positions cannot be correctly detected when the compressor starts. (The air-conditioner stops.)
5-time flash	ON	2-time flash	E 47	Active filter voltage error	Defective Active Filter, incorrect power supply	When the wrong voltage connected to the power source. When the outdoor main PCB is faulty
7-time flash	ON	2-time flash	E 57	Refrigerant cycle system protective control	Closed service valve, insufficient refrigerant	When refrigeration cycle system protective control operates.
-	-	1-time flash	E 41	Power transistor overheat	Faulty power transistor or sensor.	When anomalous rise of the power transistor temperature is detected 2 times within 1 hour.
-	-	2-time flash	E 40	High pressure error	Faulty high-pressure sensor, faulty control PCB, poor air circulation.	When anomalous rise of the high-pressure sensor is detected 5 times within 1 hour. When high pressure sensor anomaly is detected for 10 minutes continuously.
-	-	1-time flash	E 45	Outdoor main or sub-P C B communication error	Outdoor sub or main PCB faulty, poor connection of wires between outdoor PCBs	Communication error for 15 minutes: Detected more than 15 seconds 4 times
-	-	8-time flash	E 54	High pressure sensor error	Faulty high-pressure sensor, faulty control PCB.	If detected for 5 second continuously within 2 minutes to 2 minutes and 20 seconds after the compressor ON, the compressor stops.
-	-	-	E 1	Communication Error between I/U-O/U Error of wired remote control wiring.	Broken wired remote-control wire/signal wire between I/U-O/U Defective indoor/outdoor unit boards.	The wired remote-control wire Y is open. The wired remote-control wires X and Y incorrectly connected. Noise is penetrating the wired remote-control lines. The wired remote control or indoor control PCB is faulty. (The communications circuit is faulty.)
Stays off	Keeps Flashing	-	E 21	Limit switch error	Defective limit switch, air inlet panel set, I/D control PCB.	Actuation of limit switch

SCM MULTI HEAD - SELF-DIAGNOSIS INFORMATION – Historical R410A Models

Inverter Multi Indoor	**SKM**	ZD, ZF, ZG
	SRRM	ZE, ZF
	STM	ZE, ZF
Inverter Multi Outdoor	**SCM**	ZD-S / ZF-S / ZG-S

Indoor unit display panel		Outdoor main PCB, Red LED	Wired Remote control display	Description of trouble	Cause	Display (flashing) condition
Run Light	Timer Light					
1-time flash	Comes on	Stays off	E 6	Indoor heat exchanger sensor (1) error	Broken heat exchanger sensor (1) Wire. Connector poor connection Disconnected sensor	Broken heat exchanger sensor (1) wire, poor connection
2-time flash	Comes on	Stays off	E 7	Room temperature sensor error	Broken room temperature sensor Wire. Connector poor connection	When room temperature sensor temperature of –20°C or under continued for more than 15 seconds while operation is stopped. (This is not displayed during operation.)
4-time flash	Comes on	Stays off	E 9	Drain abnormality (STM, SRRM only)	Drain at reverse gradient. Float switch defective	Float switch motion
5-time flash	Comes on	Stays off	E 6	Indoor heat exchanger sensor (2) error	Broken heat exchanger sensor (2) Wire. Connector poor connection Disconnected sensor	When heat exchanger sensor (2) temperature of –20°C or under continued for more than 15 seconds while operation is stopped. (This is not displayed during operation.)
6-time flash	Comes on	Stays off	E 16	Indoor fan motor error	Defective fan motor. Connector poor connection	When the air conditioner is operating and indoor fan motor is turned ON, indoor fan motor speed of 300 rpm or under continued for more than 30 seconds. (Air conditioner stops.)
7-time flash	Comes on	Stays off	E 6	Closed service valve, indoor heat exchanger sensor (1)	Closed service valve. Heat exchanger sensor (1) is disconnected.	After cooling starts, when the temperature difference at the indoor heat exchanger sensor (1) after 13 minutes and after 16 minutes is greater than –2ºC, operation is stopped.
Keeps flashing	1-time flash	Keeps flashing	E 38	Outdoor air temperature sensor	Broken outdoor air temperature sensor wire. Poor connector connection.	When outdoor air temperature sensor temperature of –20°C or under continued for more than 10 seconds while operation is stopped. (This is not displayed during operation.)
Keeps flashing	2-time flash	Keeps flashing	E 37	Outdoor heat exchanger sensor	Broken heat exchanger sensor Wire. Poor connector connection	When heat exchanger sensor temperature of –20 °C or under continued for more than 10 seconds while operation is stopped. (This is not displayed during operation.)
Keeps flashing	4-time flash	On for 4 sec & off for 4 sec	E 39	Discharge pipe sensor error	Broken discharge pipe sensor wire. Connector poor connection.	After the decision speed has been 0 rps or more for 9 continuous minutes and the discharge pipe sensor has sent a 10 second or more broken wire signal. (Compressor is stopped.)
Keeps flashing	5-time flash	Keeps flashing	E 53	Compressor suction sensor	Broken comp. suction sensor wire. Poor connector connection	When comp. suction sensor temperature of –20°C or under continued for more than 10 seconds while operation is stopped.
Comes on	4-time flash	4-time flash	E 41	Power transistor sensor error	Broken power transistor sensor wire. Connector poor connection	After the decision speed has been 0 rps or more for 9 continuous minutes and the power transistor sensor has sent a 10 second or more broken wire signal. (Compressor is stopped.)
Comes on	1-time flash	1-time flash	E 42	Current Cut	-Compressor locking -Open phase on compressor output. Short-circuit on power transistor	When converter output current which exceeds setting value is detected. (Compressor stops.)
Comes on	2-time flash	2-time flash	E 59	Trouble of outdoor unit	-Defective power transistor -Broken compressor wire -Compressor blockage	When an error with the outdoor unit causes an error stop, or when the input current is measured at 1 A or less for 3 continuous minutes or more. (Compressor is stopped.)
Comes on	3-time flash	3-time flash	E 58	Current safe stop	Overload operation Overcharge	When the decision speed is 30 rps or less and the current save has operated. (Compressor stops)
Keeps flashing	6-time flash	Keeps flashing	E 41	Power transistor error	Broken power transistor	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value continuously for 3 minutes or longer. (The air conditioner stops.)
Comes on	5-time flash	5-time flash	E 36	Overheat of compressor	Gas shortage Defective discharge pipe sensor	When discharge pipe sensor value exceeds setting value. (Compressor Stops.)
Comes on	6-time flash	6-time flash	E 5	Error or signal transmission	Defective power supply. Broken signal wire. Defective indoor/outdoor unit Circuit boards.	If serial signal cannot be sent or received for 1 minute and 55 seconds continuously.
Comes on	7-time flash	Stays on	E 48	Faulty outdoor fan motor	Defective fan motor, poor connector connection	When the outdoor unit's fan motor speed continues for 30 seconds or longer at 75 rpm or lower. (3 times) (The air conditioner stops.)
2-time flash	2-time flash	7-time flash	E 60	Compressor lock	Defective compressor Defective outdoor PCB	When the motor for the compressor does not turn 1/12 revolution 0.044 second after it has been started.
-	-	-	E 1	Error of wired remote control wiring	Broken wired remote-control wire. Defective indoor unit boards	The wired remote-control wire Y is open. The wired remote-control wires X and Y are reversely connected. Noise is penetrating the wired remote-control lines. The wired remote control or indoor control PCB is faulty. (The communications circuit is faulty.)

PAC INDOOR UNIT - SELF-DIAGNOSIS INFORMATION - Previous R410A & Current R32 Series

Inverter PAC Indoor unit	
FDT	1, 1R, V, VD, VF, VG, VH
FDTC	1, 1R, V, VD, VF, VH
FDU	1, 1R, V, VD, VF, VH
FDUA	VF, VG, VH
FDUM	1, 1R, V, VD, VF, VH
FDEN/FDE	1, 1R, V, VD, VF, VG, VH
DXU	VF

Remote control		Indoor control PCB		Outdoor control PCB		Location of trouble	Description of trouble
Error Code	**Red LED**	**Red LED**	**Green LED (1)**	**Red LED**	**Green LED (1)**		
No-indication	Stays off	Stays Off	Keeps flashing	Stays Off	Keeps flashing	Normal operation	Normal Operation
		Stays Off	Stays Off	2-time flash	Stays Off	Indoor unit power supply	Power OFF, broken wire, blown fuse, broken transformer wire
		3-time flash	Keeps flashing	Stays Off	Keeps flashing	Remote control wires	Poor connection, breakage of remote-control wire. For wire breaking at power ON, the LED is OFF.
						Remote control	Improper setting of master and slave by remote control
"WAIT" or "INSPECT I/U" Continually "Searching IU"		Stays Off	Keeps flashing	2-time flash	Keeps flashing	Indoor-outdoor unit's connection wire	Poor connection, breakage of indoor-outdoor unit's connection wire
						Remote Control	Improper setting of master and slave by Remote Controller
E 1	Keeps Flashing	Stays Off	Keeps flashing	Stays Off	Keeps flashing	Remote control wires (Noise) Indoor-outdoor unit's connection wire.	Poor connection of remote-control signal wire (White). Intrusion of noise in remote control wire. For wire breaking at power ON, the LED is OFF
						Remote control, indoor control PCB, outdoor PCB.	Defective remote control or indoor control PCB (defective communication circuit)? Defective outdoor PCB.
E 5		2-time flash	Keeps flashing	2-time flash	Keeps flashing	Indoor-outdoor unit's connection wire	Poor connection of wire between indoor-outdoor units during operation (disconnection, loose connection). Anomalous communication between indoor-outdoor units by noise, etc
		2-time flash	Keeps flashing	Stays Off	Keeps flashing	Electrical Noise	CPU Runaway on Outdoor control PCB
						Outdoor Control PCB	Occurrence of defective outdoor control PCB on the way of power source (defective communication circuit)?
		2-time flash	Keeps flashing	Stays Off	Stays Off	Outdoor Control PCB	Defective outdoor control PCB on the way of power source
						Fuse	Blown fuse
E 6		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Indoor heat exchanger temperature thermistor	Defective indoor heat exchanger temperature thermistor (defective element, broken wire, short-circuit). Poor contact of temperature thermistor connector
						Indoor control PCB	Defective indoor control PCB (Defective temperature thermistor input circuit)?
E 7		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Indoor return air temperature thermistor	Defective indoor return air temperature thermistor (defective element, broken wire, short-circuit). Poor contact of temperature thermistor connector
						Indoor control PCB	Defective indoor control PCB (Defective temperature thermistor input circuit)?
E 8		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Installation or operating condition	Heating over-load (Anomalously high indoor heat exchanger temperature
						Indoor heat exchanger temp sensor	Heating overload, faulty sensor, faulty indoor PCB
						Indoor control PCB	Defective indoor control PCB (Defective temperature thermistor input circuit)?
E 9		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Drain trouble	Defective drain pump (DM), broken drain pump wire, disconnected connector
						Float switch	Anomalous float switch operation (malfunction
						Indoor control PCB	Defective indoor control PCB (Defective float switch input circuit). Defective indoor control PCB (Defective DM drive output circuit)?
						Option	Defective option parts (At optional anomalous input setting)
E 10		Stays Off	Keeps flashing	Stays Off	Keeps flashing	No. of connected indoor units	When multi-unit control by remote control is performed, the number of units is over 16
E 11		Keeps flashing	Keeps flashing	Stays Off	Keeps flashing	Address setting error	Address setting error of indoor units
E 14		3-time flash	Keeps flashing	Stays Off	Keeps flashing	Remote controller Fault	No master assigned to slaves, incorrect wiring, broken wire between master & slave
E 16		1(2)-time flash	Keeps flashing	Stays Off	Keeps flashing	Indoor fan motor	Faulty Indoor fan motor, poor connection, faulty indoor PCB Poor Neutral connection
						Indoor power PCB	Defective indoor power PCB
E 19		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Indoor control PCB	Improper operation mode setting
E 20		1-time flash	Keeps flashing	Stays Off	Keeps flashing	Fan motor	Indoor fan motor rotation speed anomaly
						Indoor power PCB	Defective indoor power PCB
E 21		Stays Off	Keeps flashing	Stays Off	Keeps flashing	Panel switch detection	Defective/Open filter panel switch (FDT only)
E 28		Stays Off	Keeps flashing	Stays Off	Keeps flashing	Remote control temperature thermistor	Broken wire of remote-control temperature thermistor

PAC OUTDOOR UNIT - SELF-DIAGNOSIS INFORMATION - Previous R410A & Current R32 Series Cont.

Inverter PAC Outdoor		
	FDCVA	HEN, HENR, HENAR
	FDC, FDCA	VN, VNA, VNP, VNX, VNXA, VS, VSA, VSX
	DXC, DXCA	VNX, VS, VSA

Remote control		Indoor PCB LEDs		Outdoor unit LEDs		INV LED	Location of trouble	Description of trouble
Error Code	**Red LED**	**Red LED**	**Green LED (1)**	**Red LED**	**Green LED (1)**	**Yellow LED**		
E 33		Stays off	Keeps flashing	1-time flash	Keeps flashing	-	Power supply	Anomalous current on inverter primary side
E 34		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Power supply	Phase open circuit or rotation, faulty outdoor control PCB (3 Phase model). Incorrect DIP switch (Single Phase model)
E 35		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Installation or operating condition	Higher outdoor heat exchanger temperature
							Outdoor heat exchanger temperature thermistor	Defective outdoor heat exchanger temperature thermistor
							Outdoor control PCB	Defective outdoor control PCB (Defective temperature thermistor input circuit)?
E 36		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Installation or operating condition	Higher discharge temperature
							Discharge pipe temperature thermistor	Defective discharge pipe temperature thermistor
							Outdoor control PCB	Defective outdoor control PCB (Defective temperature thermistor input circuit)?
E 37		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Outdoor heat exchanger thermistor	Defective outdoor heat exchanger temperature thermistor, broken wire, or poor connector connection
							Outdoor control PCB	Defective outdoor control PCB (Defective temperature thermistor input circuit)?
E 38		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Outdoor air temperature thermistor	Defective outdoor air temperature thermistor, broken wire or poor connector Connection
							Outdoor control PCB	Defective outdoor control PCB (Defective temperature thermistor input circuit)?
E 39		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Discharge pipe temperature thermistor	Defective discharge pipe temperature thermistor, broken wire or poor connector connection
							Outdoor control PCB	Defective outdoor control PCB (Defective temperature thermistor input circuit)?
E 40		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Installation or operating condition	Rising high pressure (Operation of 63H1) • Service valve closing operation, Poor Airflow in Heating.
							Outdoor control PCB	Defective outdoor control PCB (Defective 63H input circuit)?
E 41		Stays off	Keeps flashing	1-time flash	Keeps flashing	2- or 6-time flash	Inverter PCB or radiator fin	Power transistor overheat
E 42		Stays off	Keeps flashing	1-time flash	Keeps flashing	1-or 5-time flash	Outdoor control PCB compressor	Current cut (Anomalous compressor over-current)
							Installation or operating condition	Service valve closing operation
E 45		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Outdoor control PCB	Anomalous outdoor control PCB communication
							Inverter PCB	Anomalous inverter PCB communication
E 44		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Liquid back error (Cooling mode)	Detected by under-dome superheat. When abnormal liquid back is detected 3 times within 90 minutes, the compressor stops.
E 47		Stays off	Keeps flashing	1-time flash	Keeps flashing	7-time flash	Control PCB, Power transistor	Anomalous inverter over voltage
E 48		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Outdoor fan motor	Anomalous outdoor fan motor
							Outdoor control PCB	Defective outdoor control PCB (Defective motor input circuit)?
E 49		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Installation or operating condition	Low pressure error • Service valve closing operation
							Low pressure sensor	Anomalous low pressure, broken wire of low-pressure sensor or poor connector connection
							Outdoor control PCB	Defective outdoor control PCB (Defective sensor input circuit)?
E 51		Stays off	Keeps flashing	1-time flash	Keeps flashing	2- or 6-time flash	Inverter PCB	Anomalous inverter PCB
E 53		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Suction pipe temperature thermistor	Defective suction pipe temperature thermistor, broken wire, or poor connector connection
							Outdoor control PCB	Defective outdoor PCB (Defective thermistor input circuit)?
E 54		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Low Pressure Sensor Error	Defective low-pressure sensor
							Outdoor control PCB	Defective outdoor control PCB (Defective sensor input circuit)?
E 55		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Under-dome temp thermistor	Poor connection, broken wire, faulty thermistor, faulty PCB
E 57		Stays off	Keeps flashing	1-time flash	Keeps flashing	Keeps flashing	Operation status	Shortage in refrigerant quantity
							Installation status	Service valve closing operation
E 59		Stays off	Keeps flashing	5-time flash	Keeps flashing	Stays off or 4-times flash	Compressor inverter PCB	Anomalous compressor start-up
E 60		Stays off	Keeps flashing	1-time flash	Keeps flashing	-	Compressor	Faulty compressor, faulty inverter circuit.
E 75		Stays off	Keeps flashing	Off	Keeps flashing	-	Central Controller communication error	Poor connection, broken wire, faulty controller

PAC INDOOR UNIT WITH RAC OUTDOOR UNIT - SELF-DIAGNOSIS INFORMATION

Inverter PAC Indoor / RAC Outdoor	**FDT**	VF, VG, VH
	FDTC	VF, VH
	FDUM	VF, VH
	SRC	ZHX, ZIX, ZJX, ZMXA, ZSA, ZSXA

Remote control		Indoor control PCB		Outdoor Control PCB	Location of trouble	Description of trouble
Error Code	Red LED	Red LED	Green LED	Red LED		
E 35	Keeps Flashing	Stays off	Keeps flashing	2-time flash	Installation, operation status	Higher outdoor heat exchanger temperature
					Outdoor heat exchanger temp sensor	Defective outdoor heat exchanger temperature sensor
					Outdoor control PCB	Defective outdoor control PCB (Defective temperature sensor input circuit)?
E 36		Stays off	Keeps flashing	5-time flash	Installation, operation status	Higher discharge temperature
					Discharge pipe temperature sensor	Defective discharge pipe temperature sensor
					Outdoor control PCB	Defective outdoor control PCB (Defective temperature sensor input circuit)?
E 37		Stays off	Keeps flashing	8-time flash	Outdoor heat exchanger temperature sensor	Defective outdoor heat exchanger temperature sensor, broken wire or poor connector connection
					Outdoor control PCB	Defective outdoor control PCB (Defective temperature sensor input circuit)?
E 38		Stays off	Keeps flashing	8-time flash	Outdoor air temperature sensor	Defective outdoor air temperature sensor, broken wire or poor connector connection
					Outdoor control PCB	Defective outdoor control PCB (Defective temperature sensor input circuit)?
E 39		Stays off	Keeps flashing	8-time flash	Discharge pipe temperature sensor	Defective discharge pipe temperature sensor, broken wire or poor connector connection
					Outdoor control PCB	Defective outdoor control PCB (Defective temperature sensor input circuit)?
E 40		Stays off	Keeps flashing	4-time flash	Installation, operation status	Service valve (gas side) closing operation
E 42		Stays off	Keeps flashing	2-time flash	Outdoor control PCB, compressor	Current cut (Anomalous compressor over-current)
					Installation, operation status	Service valve closing operation
E 47		Stays off	Keeps flashing	2-time flash	Outdoor control PCB	Defective active filter
E 48		Stays off	Keeps flashing	Keeps flashing	Fan motor	Defective fan motor
					Outdoor control PCB	Defective outdoor control PCB
E 51		Stays off	Keeps flashing	1-time flash	Power transistor, outdoor control PCB	Power transistor error
E 57		Stays off	Keeps flashing	2-time flash	Operation status	Shortage in refrigerant quantity
					Installation status	Service valve closing operation
E 58		Stays off	Keeps flashing	3-time flash	Overload operation, overcharge, compressor locking	Current safe stop
E 59		Stays off	Keeps flashing	2-time flash	Compressor, outdoor control PCB	Anomalous compressor start up
E 60		Stays off	Keeps flashing	7-time flash	Compressor	Anomalous compressor rotor lock

KX SELF-DIAGNOSIS INFORMATION

Inverter KX		LED Display				KX4, KXR4, KX6, KXR6, KXZ, KXZP, KXZR KXZ, KXZX, KXZRX, KXZW	
		Indoor control PCB		Outdoor Control PCB			
Error Code	**O/D 7 segment display**	**Green LED**	**Red LED**	**Green LED**	**Red LED**	**Location of Trouble**	**Presumable Causes**
E1		keeps flashing	stays off	keeps flashing	stays off	Communication error (indoor-remote control)	Poor or wrong connection, broken wire, intrusion of noise, faulty indoor PCB or remote control
E2		keeps flashing	keeps flashing	keeps flashing	stays off	Duplicated indoor unit address	Number of connected indoor units exceeds the limitation, duplicated indoor unit address, indoor control PWB anomaly.
E3		keeps flashing	2-time flash	keeps flashing	stays off	Outdoor unit signal line error	Power not supplied to the O/D unit, mismatch of pairing between I/D and O/D units, indoor control PWB anomaly, Outdoor control PWB anomaly, Missing local wiring.
E5		keeps flashing	2-time flash or stays off	keeps flashing	2-time flash	Communication error during operation	Unit address number setting error, remote control wires broken, poor connection/disconnection of remote-control wires, indoor control PWB anomaly
E6		keeps flashing	1 time flash	keeps flashing	stays off	Indoor heat exchanger thermistor anomaly	Anomalous connection of I/D heat exchanger temperature thermistor, I/D heat exchanger thermistor anomaly, I/D control PWB anomaly
E7		keeps flashing	1 time flash	keeps flashing	stays off	Indoor return air temperature thermistor anomaly	Anomalous connection of I/D return air temperature thermistor, I/D return air thermistor anomaly, I/D control PWB anomaly
E9		keeps flashing	1 time flash	keeps flashing	stays off	Drainage trouble	I/D control PWB anomaly, Mistake in setting of float switch, mistake in setting of optional equipment, mistake in drain piping, drain motor anomaly, disconnection/breakage of drain motor wires
E10		keeps flashing	stays off	keeps flashing	stays off	Excessive number of indoor units (more than 17 units) by controlling one remote control	Excessive number of I/D units, remote control anomaly
E11		keeps flashing	stays off	keeps flashing	stays off	Address setting error between master and slave indoor units	IU address has been set using the "Master IU address set" function of remote control
E12		keeps flashing	keeps flashing	keeps flashing	stays off	Address setting error by mixed setting method	Automatic address setting and manual address setting method are mixed when setting address of indoor units
E16		keeps flashing	1 time flash	keeps flashing	stays off	Indoor fan motor anomaly (FDT, FDTC, FDTW, FDTS, FDU, FDUM, FDK, FDUT71, FDFW series)	I/D fan motor anomaly, foreign matter at rotational area of fan propeller, fan motor anomaly, dust on control PWB, blown fuse, external noise, surge
E18		keeps flashing	1 time flash	keeps flashing	stays off	Address setting error of master and slave indoor units	Address setting error of the master indoor unit, no power to the master indoor unit, no connection of super link signal wires between master and slave indoor unit
E19		keeps flashing	1 time flash	keeps flashing	stays off	Indoor unit operation check drain motor check mode anomaly	Mistake in SW7-1 setting due to forgetting to turn off SW7-1 after indoor operation check
E20		keeps flashing	1 time flash	keeps flashing	stays off	Indoor fan motor speed anomaly (FDT, FDTC, FDTW, FDTS, FDU, FDUM, FDK, FDUT71, FDFW series)	I/D fan motor anomaly, foreign matter at rotational area of fan propeller, fan motor anomaly, dust on control PWB, blown fuse, external noise, surge
E21		keeps flashing	1 time flash	keeps flashing	stays off	Defective panel switch operation (FDT)	Defective panel switch, disconnection of wiring, defective I/D control PWB
E28		keeps flashing	stays off	keeps flashing	stays off	Remote control temperature thermistor anomaly (Thc)	Anomalous connection of remote-control temperature thermistor, remote control temperature thermistor anomaly, remote control PWB anomaly
E30		keeps flashing	Stays off	keeps flashing	1 time flash	Unmatched connection of indoor & heat source unit	**KXZW only. Check technical manual for more information.**
E31		keeps flashing	stays off	keeps flashing	1 time flash	Duplicated outdoor unit address number	Mistake in address setting of outdoor units, more than 129 I/D units connected, no setting of master/slave setting switch for combination use

E32		keeps flashing	stays off	keeps flashing	2 time flash	Open L3 phase on power supply at primary side, Phase Rotation	Anomalous power supply at primary side, outdoor control PWB anomaly
E36	E36-1	keeps flashing	stays off	keeps flashing	1 time flash	Discharge pipe temperature error, Tho-D1	Discharge pipe temperature anomaly, SV1,2 anomaly, breakage in coil, faulty main body, O/D control PWB anomaly, insufficient amount of refrigerant, insufficient airflow volume, short circuit of airflow
	E36-2	keeps flashing	stays off	keeps flashing	2 time flash	Discharge pipe temperature error, Tho-D2	
	E36-3	keeps flashing	stays off	keeps flashing	3 time flash	Liquid flooding anomaly	**KX6 product only**
E37	E37-1	keeps flashing	stays off	keeps flashing	1 time flash	Outdoor heat exchanger temperature thermistor anomaly, Tho-R1	Broken thermistor harness or the internal wire of sensing section, disconnection of thermistor harness connection, O/D control PWB anomaly
	E37-2	keeps flashing	stays off	keeps flashing	2 time flash	Outdoor heat exchanger temperature thermistor anomaly, Tho-R2	
	E37-3	keeps flashing	stays off	keeps flashing	3 time flash	Outdoor heat exchanger temperature thermistor anomaly, Tho-R3	
	E37-4	keeps flashing	stays off	keeps flashing	4 time flash	Outdoor heat exchanger temperature thermistor anomaly, Tho-R4	
	E37-5	keeps flashing	stays off	keeps flashing	5 time flash	Outdoor sub cooling coil temperature thermistor 1 anomaly, Tho-SC	
	E37-6	keeps flashing	stays off	keeps flashing	6 time flash	Outdoor sub cooling coil temperature thermistor 2 anomaly, Tho-H	
E38		keeps flashing	stays off	keeps flashing	1 time flash	Outdoor air temperature thermistor anomaly, Tho-A	
E39	E39-1	keeps flashing	stays off	keeps flashing	1 time flash	Discharge pipe temperature thermistor anomaly, Tho-D1	
	E39-2	keeps flashing	stays off	keeps flashing	2 time flash	Discharge pipe temperature thermistor anomaly, Tho-D2	
E40		keeps flashing	stays off	keeps flashing	1 time flash	High Pressure anomaly, 63H1-1, 2 activated	Short circuit of airflow at condenser side of heat exchanger/disturbance of airflow/clogging filter/fan motor anomaly, disconnection of high pressure switch connector, breakage of high pressure switch harness, closed service valves, high pressure sensor anomaly, high pressure switch anomaly
E41	E41-1	keeps flashing	stays off	keeps flashing	1 time flash	Power transistor overheat, CM1	Anomalous high temperature of power transistor is detected 5 times within 60 minutes. Power transistor anomaly, power transistor temperature thermistor anomaly, inverter PWB anomaly, outdoor fan motor anomaly, anomalous cooling fan motor for inverter
	E41-2	keeps flashing	stays off	keeps flashing	2 time flash	Power transistor overheat, CM2	
E42	E42-1	keeps flashing	stays off	keeps flashing	1 time flash	Current cut, CM1	Compressor anomaly, refrigerant leak, power transistor module anomaly, anomalous power supply for INV PWB, O/D fan motor anomaly
	E42-2	keeps flashing	stays off	keeps flashing	2 time flash	Current cut, CM2	
E43	E43-1	keeps flashing	stays off	keeps flashing	1 time flash	Excessive number of indoor units connected	Mistake in setting of I/D or O/D addresses, mistake in signal wire connection
	E43-2	keeps flashing	stays off	keeps flashing	2 time flash	Excessive total capacity of connection	
E44	E44-1	keeps flashing	stays off	keeps flashing	1 time flash	Liquid flooding anomaly, CM1	**KXZ Product only.** Mismatching of refrigerant piping and or signal wiring, overcharging of refrigerant, anomalous control of superheat, anomalous circuit of liquid refrigerant by-pass, anomalous refrigerant circuit of sub cooling coil, under dome temperature Tho-D1, D2 anomaly
	E44-2	keeps flashing	stays off	keeps flashing	2 time flash	Liquid flooding anomaly, CM2	
E45	E45-1	keeps flashing	stays off	keeps flashing	1 time flash	Communication error between inverter PWB and outdoor control PWB, INV 1	Signal wire anomaly, O/D control PWB anomaly, INV PWB anomaly, inrush current prevention resistor anomaly, defective 52C or 52X, defective diode module
	E45-2	keeps flashing	stays off	keeps flashing	2 time flash	Communication error between inverter PWB and outdoor control PWB, INV 2	

E46		keeps flashing	stays off	keeps flashing	stays off	Mixed address setting methods coexist in the same network	Mistake in the address setting, mistake in the connection of signal wire
E48	E48-1	keeps flashing	stays off	keeps flashing	1 time flash	Outdoor DC fan motor anomaly, FMO1	Broken or disconnected wire, faulty fan motor, defective inverter PWB, defective control PWB, defective power transistor, defective diode module, defective surge suppressor resistor
	E48-2	keeps flashing	stays off	keeps flashing	2 time flash	Outdoor DC fan motor anomaly, FMO2	
E49		keeps flashing	stays off	keeps flashing	1 time flash	Low pressure anomaly	Low pressure sensor (PSL) anomaly, service valves closed, EEV anomaly, insufficient refrigerant amount, clogging at EEV or strainer
E51	E51-1	keeps flashing	stays off	keeps flashing	1 time flash	Power transistor overheat, CM1	Anomalous high temperature of power transistor is detected 15 minutes continuously. Broken thermistor harness or the internal wire of sensing section, disconnection of thermistor harness connection, O/D control PWB anomaly
	E51-2	keeps flashing	stays off	keeps flashing	2 time flash	Power transistor overheat, CM2	
E53	E53-1	keeps flashing	stays off	keeps flashing	1 time flash	Suction pipe temperature thermistor anomaly, Tho-S, CM1	Broken thermistor harness or the internal wire of sensing section, disconnection of thermistor harness connection, O/D control PWB anomaly
	E53-2	keeps flashing	stays off	keeps flashing	2 time flash	Suction pipe temperature thermistor anomaly, Tho-S, CM2	
E54	E54-1	keeps flashing	stays off	keeps flashing	1 time flash	Low pressure anomaly (PSL)	Broken sensor harness, disconnection of sensor harness connection, sensor (PSH, PSL) anomaly, O/D control PWB anomaly, anomalous installation conditions, insufficient airflow volume, excessive or insufficient refrigerant amount
	E54-2	keeps flashing	stays off	keeps flashing	2 time flash	High pressure anomaly (PSH)	
E55	E55-1	keeps flashing	stays off	keeps flashing	1 time flash	Under dome temperature thermistor anomaly, Tho-C1	Broken thermistor harness or the internal wire of sensing section, disconnection of thermistor harness connection, O/D control PWB anomaly
	E55-2	keeps flashing	stays off	keeps flashing	2 time flash	Under dome temperature thermistor anomaly, Tho-C2	
E56	E56-1	keeps flashing	stays off	keeps flashing	1 time flash	Power transistor temperature anomaly, Tho-P1	
	E56-2	keeps flashing	stays off	keeps flashing	2 time flash	Power transistor temperature anomaly, Tho-P2	
E58	E58-1	keeps flashing	stays off	keeps flashing	1 time flash	Anomalous compressor by loss of synchronism, CM1	Insufficient time elapsed after the power supplied before compressor start up (unit started without crankcase heater ON), compressor anomaly, inverter PWB anomaly, power transistor anomaly
	E58-2	keeps flashing	stays off	keeps flashing	2 time flash	Anomalous compressor by loss of synchronism, CM2	
E59	E59-1	keeps flashing	stays off	keeps flashing	1 time flash	Compressor start up failure, CM1	Anomalous voltage of power supply, anomalous components for refrigerant circuit, inverter PWB anomaly, loose connection of connector or cable, compressor anomaly (motor or bearing)
	E59-2	keeps flashing	stays off	keeps flashing	2 time flash	Compressor start up failure, CM2	
E60	E60-1	Keeps flashing	Stays off	Keeps flashing	1 time flash	Rotor position detection error, CM1	**KX4 & KX6 Product**. If it fails to detect the rotor position of compressor, after changing over to the operation of compressor rotor position detection, the compressor stops. It restarts automatically after 3 minutes delay. If this anomaly occurs 4 times within 15 minutes after the initial detection, error is displayed
	E60-2	Keeps flashing	Stays off	Keeps flashing	2 time flash	Rotor position detection error, CM2	
E61	E61-1	keeps flashing	Stays off	keeps flashing	1 time flash	Communication error between the master unit and slave units, Slave unit 1	Signal wire anomaly, O/D control PWB anomaly, INV PWB anomaly, inrush current prevention resistor anomaly
	E61-2	keeps flashing	Stays off	keeps flashing	2 time flash	Communication error between the master unit and slave units, Slave unit 2	
E63		keeps flashing	Stays off	keeps flashing	1 time flash	Emergency stop. When an ON signal is inputted to the CNT terminal of I/D control PWB	Factor for emergency stop
E64	E64-4					No water pump start input Anomalous stop by the anti-freeze protection	**KXZW only. Check technical manual for more information.**
E75		keeps flashing	Stays off	keeps flashing	stays off	Central control communications error	Poor connection, broken wire, faulty controller

KX – How to Read the Error Code of FDK*KXE6F and FDK*KXZE1 Display PWB

The combination of Check indicator lamp Red Lamp LED C or "green lamp (check1)" and Red Lamp LED D or "yellow lamp (check2)" displays the error code.

The count of both lamps blinking pattern conforms to the KX Error code table (pages 16-18).

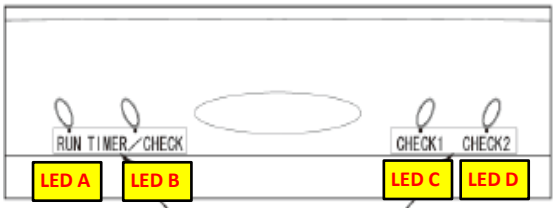
The “Red Lamp LED C or Green Lamp (check1)" corresponds to ten’s place. (multiply x 10)

The “Red Lamp LED D or Yellow Lamp (check2)" corresponds to one’s place. (multiply x 1)

**Filter Clean is displayed by a continual slow flash of the Yellow lamp (check2).

OPTION PARTS - Wireless kit (RCN-K-E・RCN-K71-E) – FDK*KXE6F Series

<FDK22-56>



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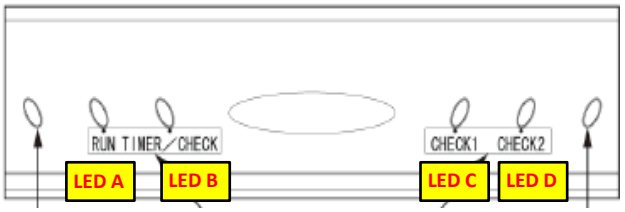
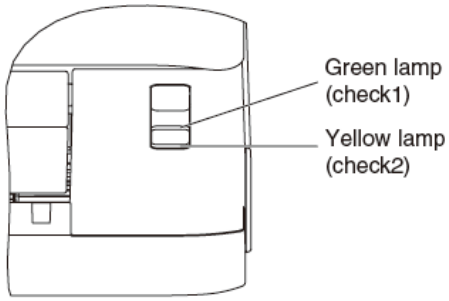
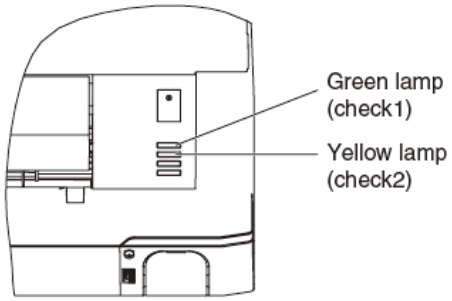


	LED	Remark	Light Receiving Section		
			FDFW	**FDK Small**	**FDK Large**
Output	LED A	Run	LED6 Green	LED2 Yellow	LED1 Yellow
	LED B	Timer	LED2 Yellow	LED6 Yellow	LED2 Yellow
	LED C	Error 10-digit	LED5 Green	LED3 Red	LED3 Red
	LED D	Error 1-digit	LED4 Green	LED8 Red	LED4 Red

OPTION PARTS - Wireless kit (RCN-K-E2・RCN-K71-E2) – FDK*KXZE1 Series

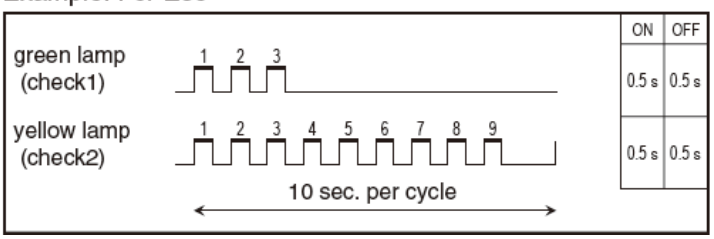


Type 15 - 56



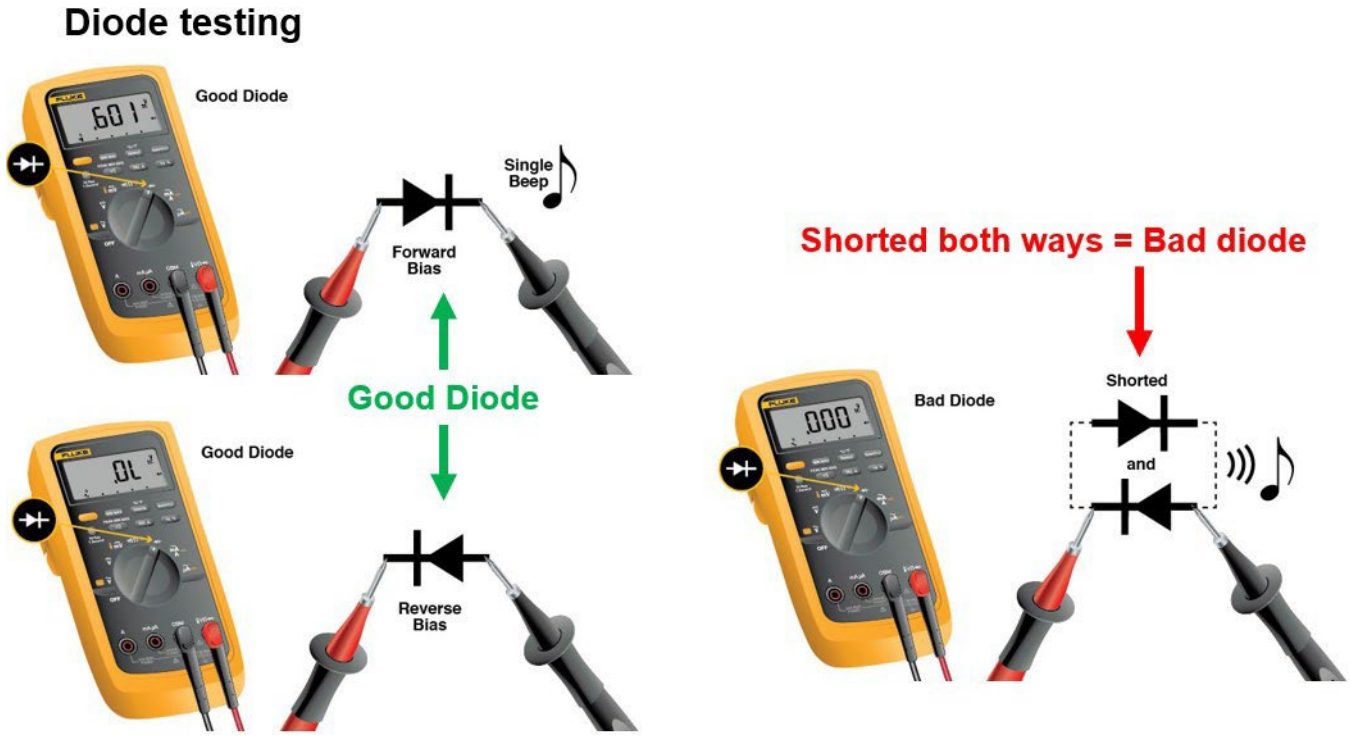
Type 71, 90

Display method
Example: For E39

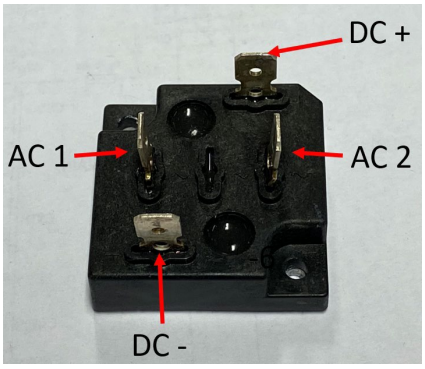


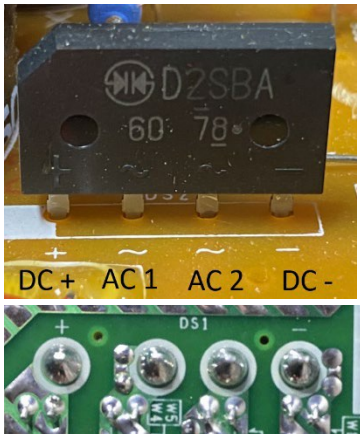
Test Procedure – 1PH & 3PH Diode Module

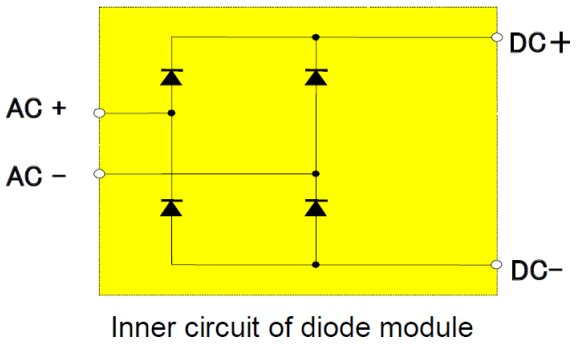
"WARNING" Power off the unit, waiting a minimum 3 minutes before removing any applicable wiring. Ensure to measure that the DC voltage has discharged sufficiently before carrying out the below testing.



Single Phase Diode Module



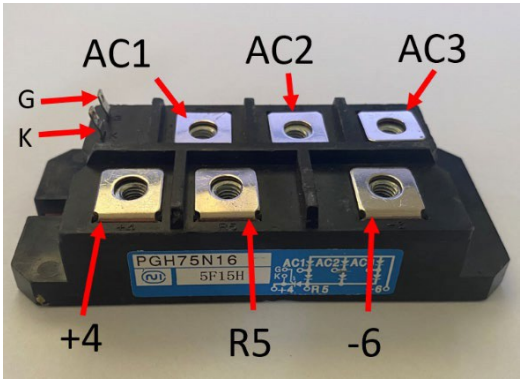


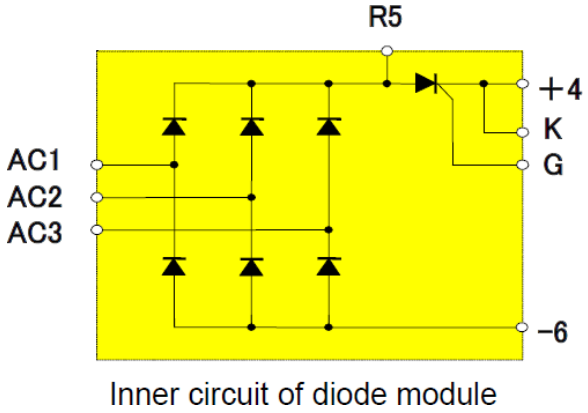


Inner circuit of diode module

Tester (+) Red	Tester (-) Black	Result with Multi-meter (Resistance)	Result with Diode Tester (Buzzer)	Result with Diode Tester (Voltage)
AC 1	DC +	Several Megohms (<10)	Beep	0.4 -0.6 vdc
AC 2	DC +	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC -	AC 1	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC -	AC 2	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC +	AC 1	Several 10 Megohms (OL)	Off	OL
DC +	AC 2	Several 10 Megohms (OL)	Off	OL
AC 1	DC -	Several 10 Megohms (OL)	Off	OL
AC 2	DC -	Several 10 Megohms (OL)	Off	OL

3 Phase Gated Diode Module

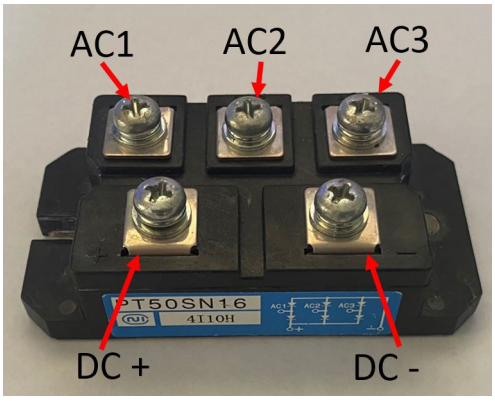


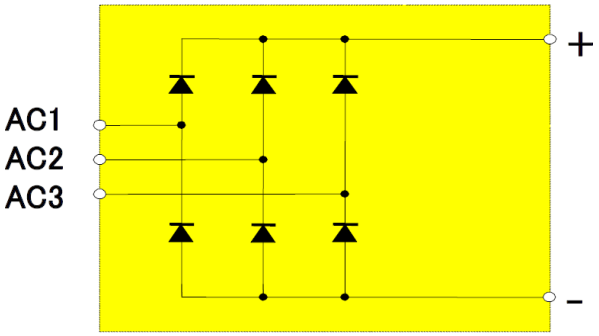


Inner circuit of diode module

Tester (+) Red	Tester (-) Black	Result with Multi-meter (Resistance)	Result with Diode Tester (Buzzer)	Result with Diode Tester (Voltage)
AC1	R5	Several Megohms (<10)	Beep	0.4 -0.6 vdc
AC2	R5	Several Megohms (<10)	Beep	0.4 -0.6 vdc
AC3	R5	Several Megohms (<10)	Beep	0.4 -0.6 vdc
-6	AC1	Several Megohms (<10)	Beep	0.4 -0.6 vdc
-6	AC2	Several Megohms (<10)	Beep	0.4 -0.6 vdc
-6	AC3	Several Megohms (<10)	Beep	0.4 -0.6 vdc
R5	AC1	Several 10 Megohms (OL)	Off	OL
R5	AC2	Several 10 Megohms (OL)	Off	OL
R5	AC3	Several 10 Megohms (OL)	Off	OL
AC1	-6	Several 10 Megohms (OL)	Off	OL
AC2	-6	Several 10 Megohms (OL)	Off	OL
AC3	-6	Several 10 Megohms (OL)	Off	OL

3 Phase Diode Module



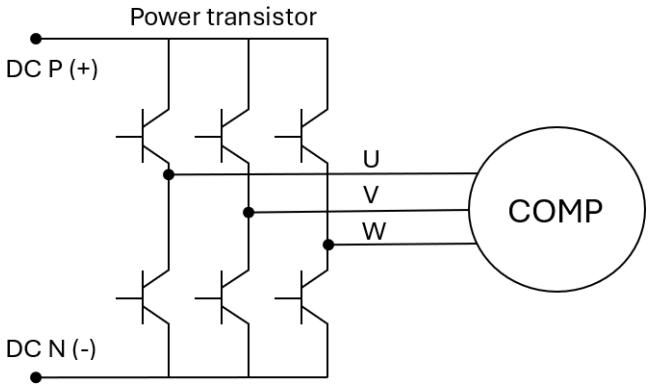


Inner circuit of diode module

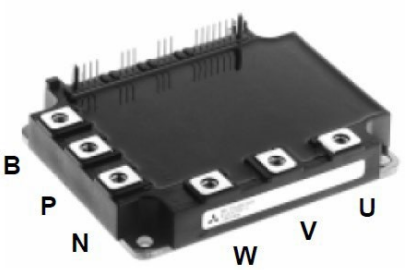
Tester (+) Red	Tester (-) Black	Result with Multi-meter (Resistance)	Result with Diode Tester (Buzzer)	Result with Diode Tester (Voltage)
AC1	DC +	Several Megohms (<10)	Beep	0.4 -0.6 vdc
AC2	DC +	Several Megohms (<10)	Beep	0.4 -0.6 vdc
AC3	DC +	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC -	AC1	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC -	AC2	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC -	AC3	Several Megohms (<10)	Beep	0.4 -0.6 vdc
DC +	AC1	Several 10 Megohms (OL)	Off	OL
DC +	AC2	Several 10 Megohms (OL)	Off	OL
DC +	AC3	Several 10 Megohms (OL)	Off	OL
AC1	DC -	Several 10 Megohms (OL)	Off	OL
AC2	DC -	Several 10 Megohms (OL)	Off	OL
AC3	DC -	Several 10 Megohms (OL)	Off	OL

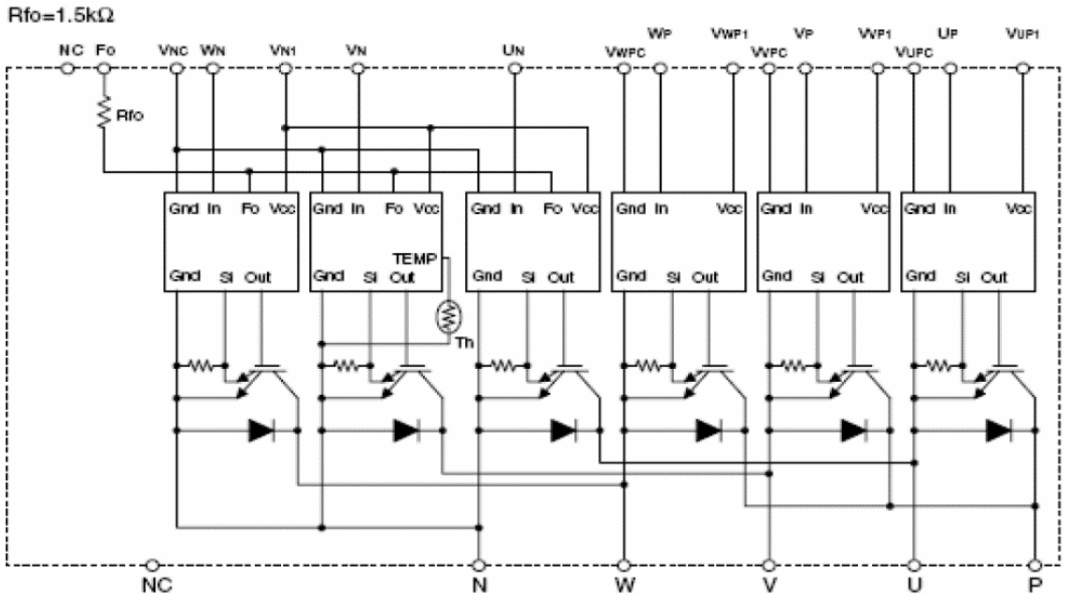
Test Procedure – Power Transistor Module (IPM)

"WARNING" Power off the unit, waiting a minimum 3 minutes before removing any applicable wiring. Ensure to measure that the DC voltage has discharged sufficiently before carrying out the below testing.



(Insulated Gate Bipolar Transistor)

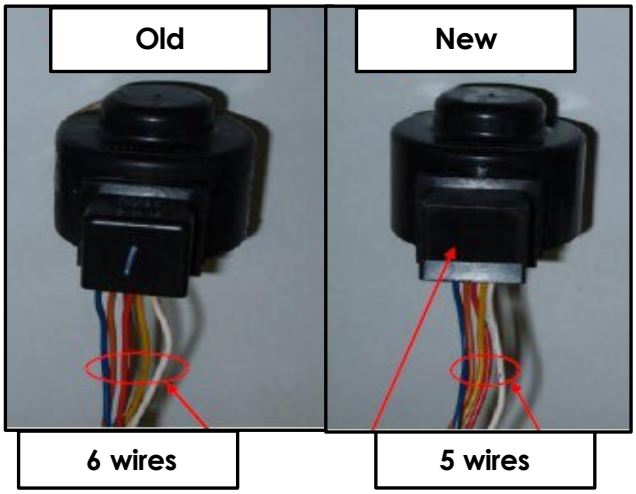




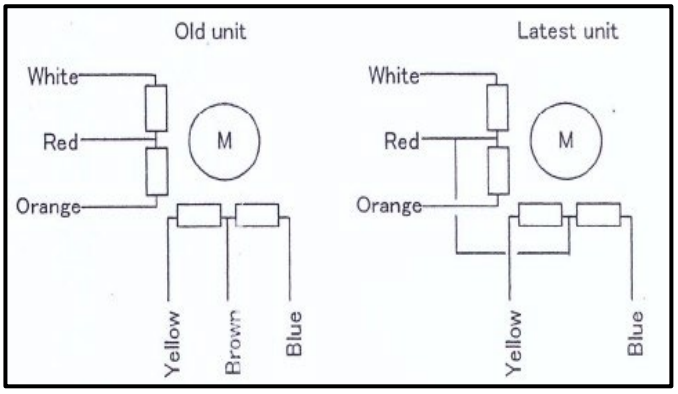
Tester (+) Red	Tester (-) Black	Result with Multi-meter (Resistance)	Result with Diode Tester (Buzzer)	Result with Diode Tester (Voltage)
DC P (+)	DC N (-)	Several 10 Megohms (OL)	Off	OL
DC N (-)	DC P (+)	Several Megohms (<10)	Beep	0.8 - 1.2 vdc
DC P (+)	U	Several 10 Megohms (OL) (Each reading to be equal)	Off	OL
	V		Off	OL
	W		Off	OL
DC N (-)	U	Several 100k (Each reading to be equal)	Beep	0.4 -0.6 vdc
	V		Beep	0.4 -0.6 vdc
	W		Beep	0.4 -0.6 vdc
U	DC P (+)	Several 100k (Each reading to be equal)	Beep	0.4 -0.6 vdc
V			Beep	0.4 -0.6 vdc
W			Beep	0.4 -0.6 vdc
U	DC N (-)	Several 10 Megohms (OL) (Each reading to be equal)	Off	OL
V			Off	OL
W			Off	OL

Test Procedure – Electronic Expansion Valve

"WARNING" Power off the unit, waiting a minimum 3 minutes before removing any applicable wiring. Ensure to measure that the DC voltage has discharged sufficiently before carrying out the below testing.

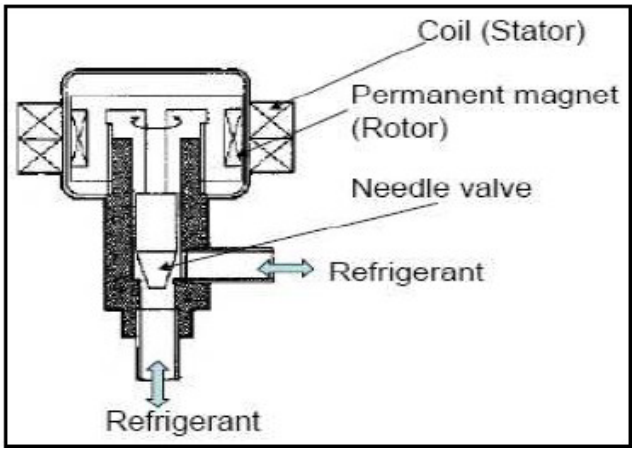


Inner Circuit of EEV Solenoid Coil



Measure the resistance points as per the following table by Multimeter.

From	To	Expected resistance	Old	New
White	Red	45 - 50 Ohms	Yes	Yes
Red	Orange	45 - 50 Ohms	Yes	Yes
Orange	White	90 - 100 Ohms	Yes	Yes
Yellow	Brown	45 - 50 Ohms	Yes	N/A
Brown	Blue	45 - 50 Ohms	Yes	N/A
Blue	Yellow	90 - 100 Ohms	Yes	Yes
Yellow	Red	45 - 50 Ohms	N/A	Yes
Red	Blue	45 - 50 Ohms	N/A	Yes
Blue	Yellow	90 - 100 Ohms	N/A	Yes



RAC & PAC DC FAN MOTOR TESTING

When testing fan motor resistance and voltage readings, check between each test point and GROUND.

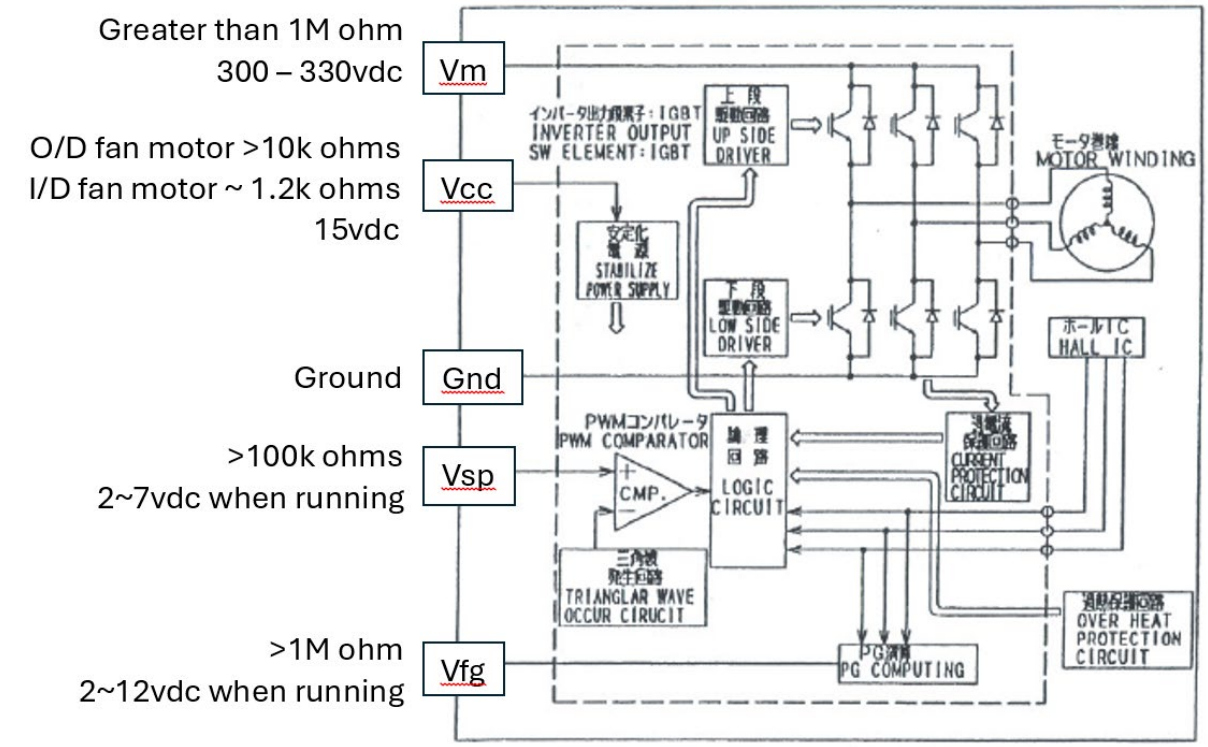
Greater than 1M ohm
300 – 330vdc

O/D fan motor >10k ohms
I/D fan motor ~ 1.2k ohms
15vdc

Ground

>100k ohms
2~7vdc when running

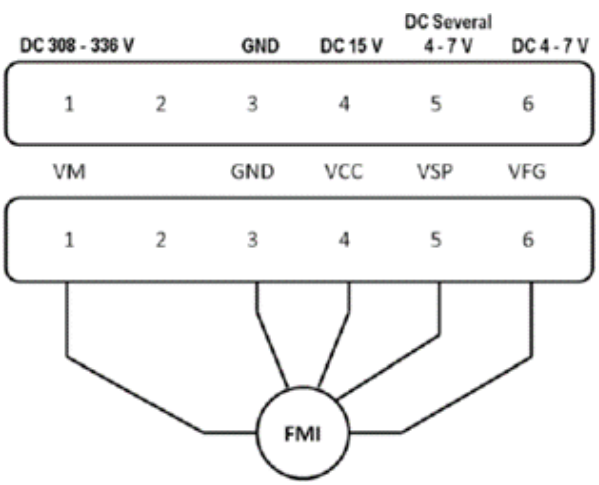
>1M ohm
2~12vdc when running

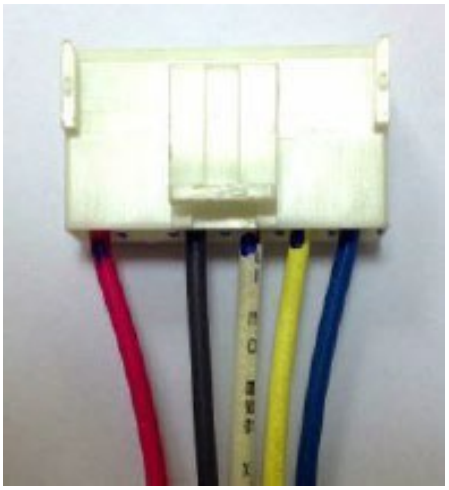


Your multi-meter must be able to read Meg Ohms. If O/L reading is recorded, reverse your probes.

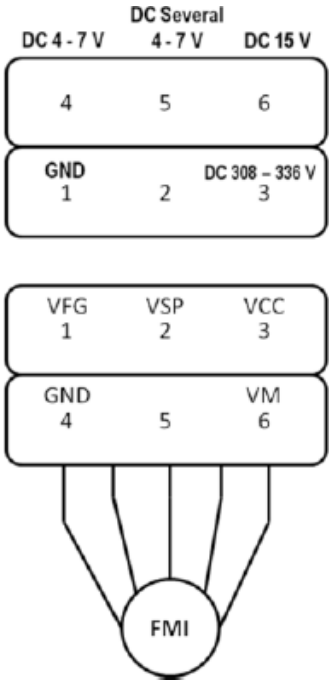
DC Fan Motor Connector		Vm	Gnd	Vcc	Vsp	Vfg
		Motor Voltage Input	Ground	Control Voltage Input	Speed Control Voltage Input	Revolution Pulse Output
TYPE A	Wire Colour	Red	Black	White	Yellow	Blue
	Pin No:	1	3	4	5	6
TYPE B	Wire Colour	Red	Blue	Brown	Orange	White
	Pin No:	6	4	3	2	1
Type C	Wire Colour	Red	Blue	Brown	Orange	White
	Pin No:	1	4	5	6	7
TYPE D	Wire Colour	Red	Black	White	Yellow	Blue
	Pin No:	6	4	3	2	1
TYPE E	Wire Colour	Red	Blue	Brown	Orange	White
	Pin No:	1	4	5	6	7

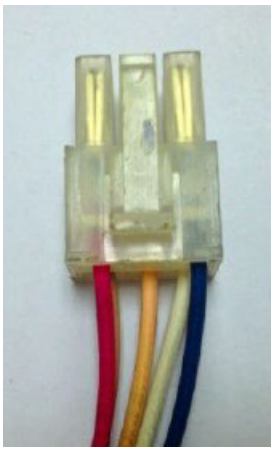
Type "A" Fan Motor



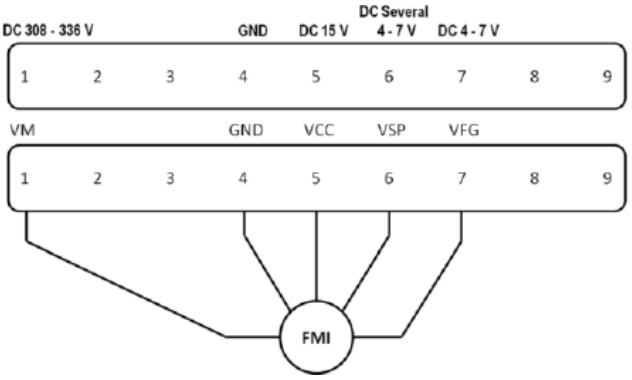


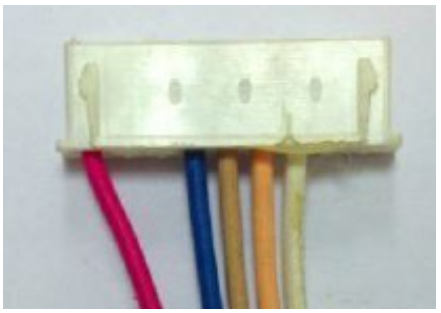
Type “B Fan Motor



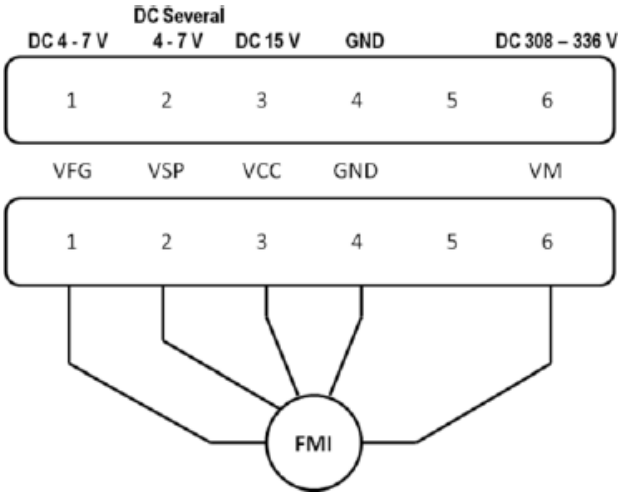


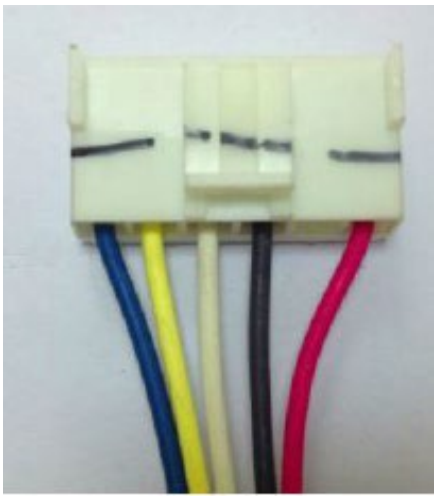
Type C” Fan Motor



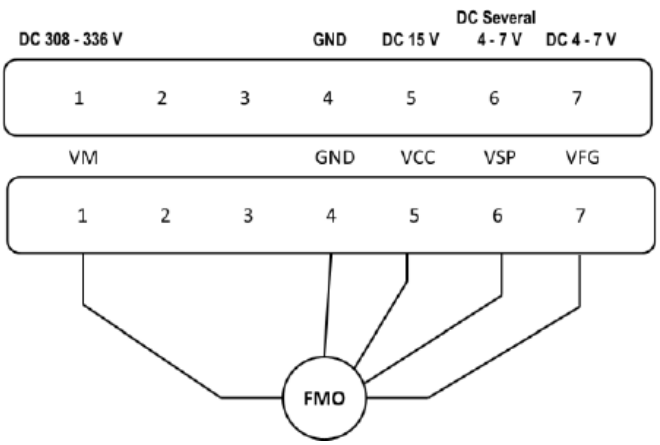


Type ‘D’ Fan Motor





Type ‘E’ Fan Motor



KX - DC FAN MOTOR TESTING

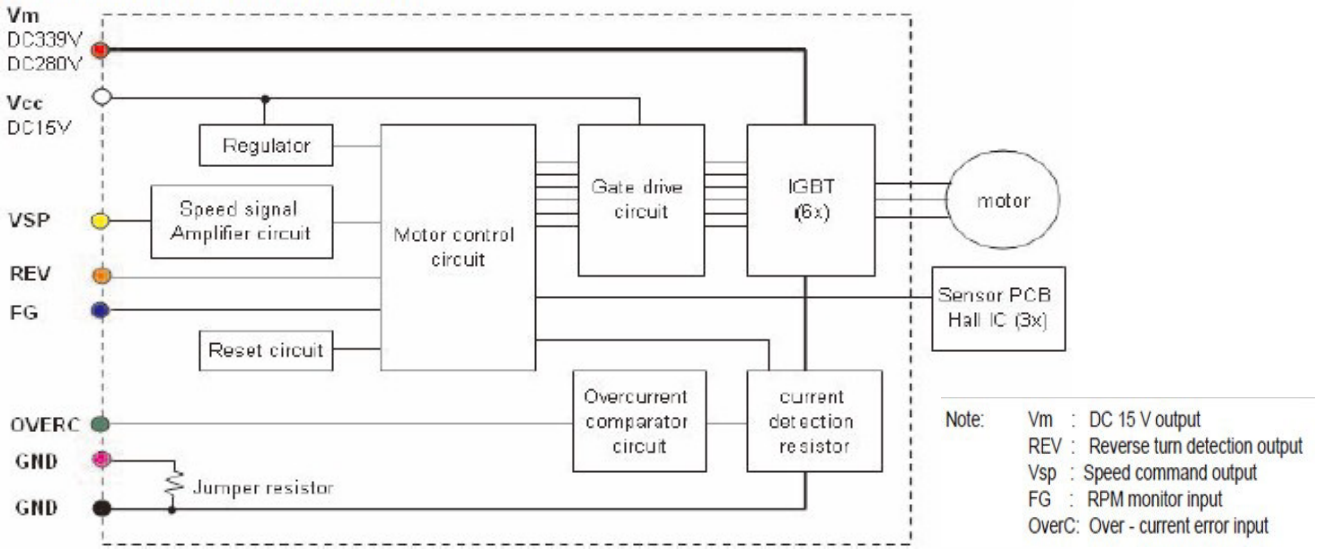
Connection Table of Power Lead Wires

No.	Color code	
1	RED	Vm
2	BLACK	GND

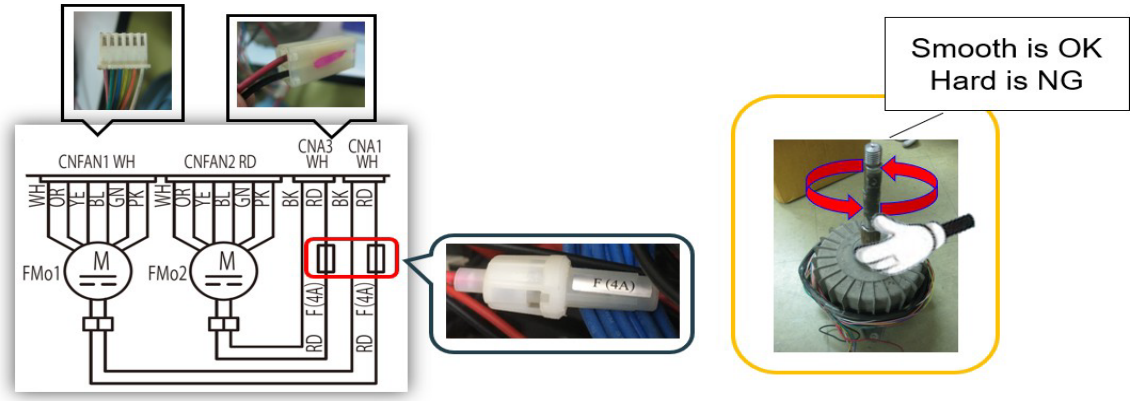
Connection Table of Sensor Lead Wires

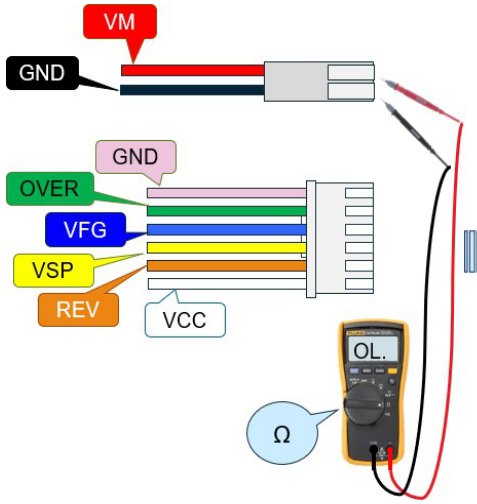
No.	Color code	
1	WHITE	Vcc
2	ORANGE	REV
3	YELLOW	VSP
4	BLUE	FG
5	GREEN	OVERC
6	PINK	GND

OUTLINE OF THE DRIVER CIRCUIT



1. Turn off the power
2. Disconnect the outdoor unit fan motor connector CNFAN & CNA
3. Check Fuse at Power cable (short is Good or open is NG)
4. Check rotation by hand (smooth or not?)





	Check point (+ -)	Resistance (Ω)
V_m	RED - BLACK	1MΩ or Higher
V_{cc}	WHITE - BLACK	7.7kΩ ± 20%
V_{sp}	YELLOW - BLACK	200kΩ ± 10%
V_{fg}	BLUE - BLACK	1MΩ or Higher
Rev	ORANGE - BLACK	1MΩ or Higher
OverC	GREEN - BLACK	1MΩ or Higher
GND	PINK - BLACK	>1-2 Ω

THERMISTOR TEMPERATURE & RESISTANCE CHARACTERISTICS

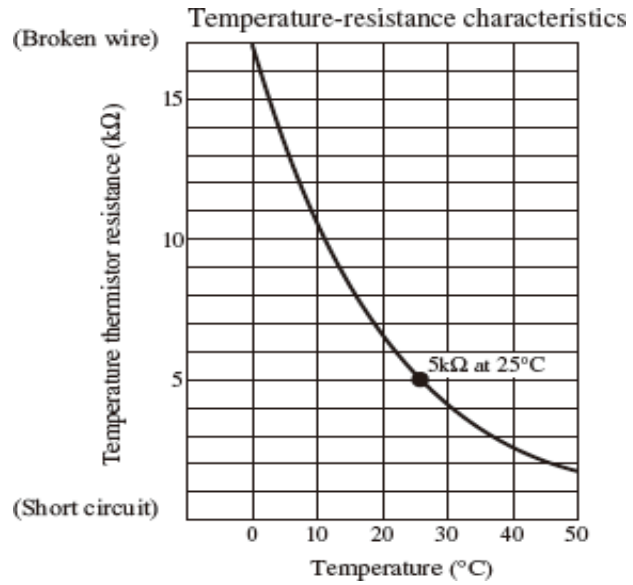
O/D Heat Exchanger [Tho-R1,R2,R3,R4]

I/D Heat Exchanger [Thi-R1,R2,R3]

Outside Air [Tho-A] RAC Product

Suction Pipe [Tho-S, Tho-H]

Return Air [Thi-A]

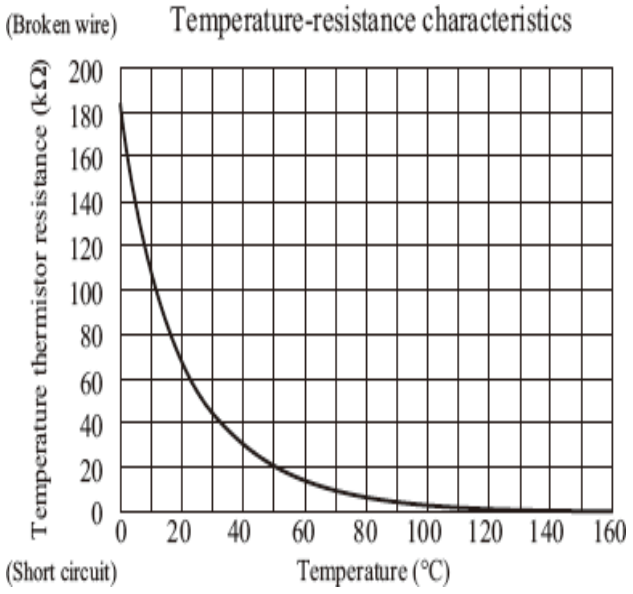


Wall Controller [ThC]

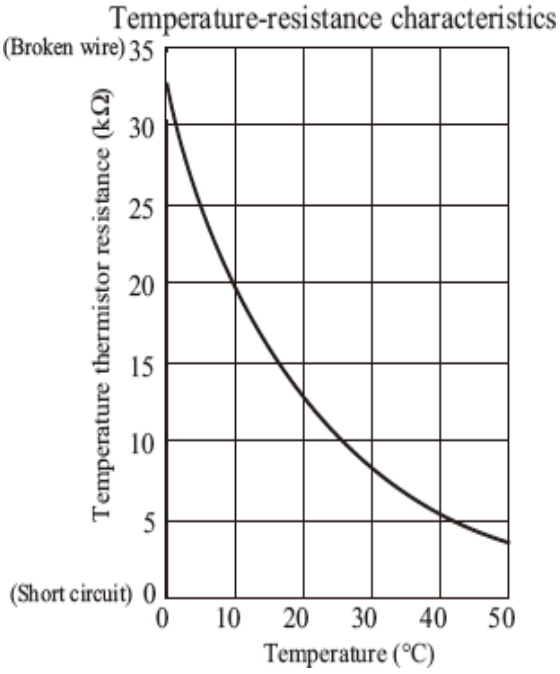
Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5

Discharge Pipe [Tho-D]

Power Transistor [Tho-P]



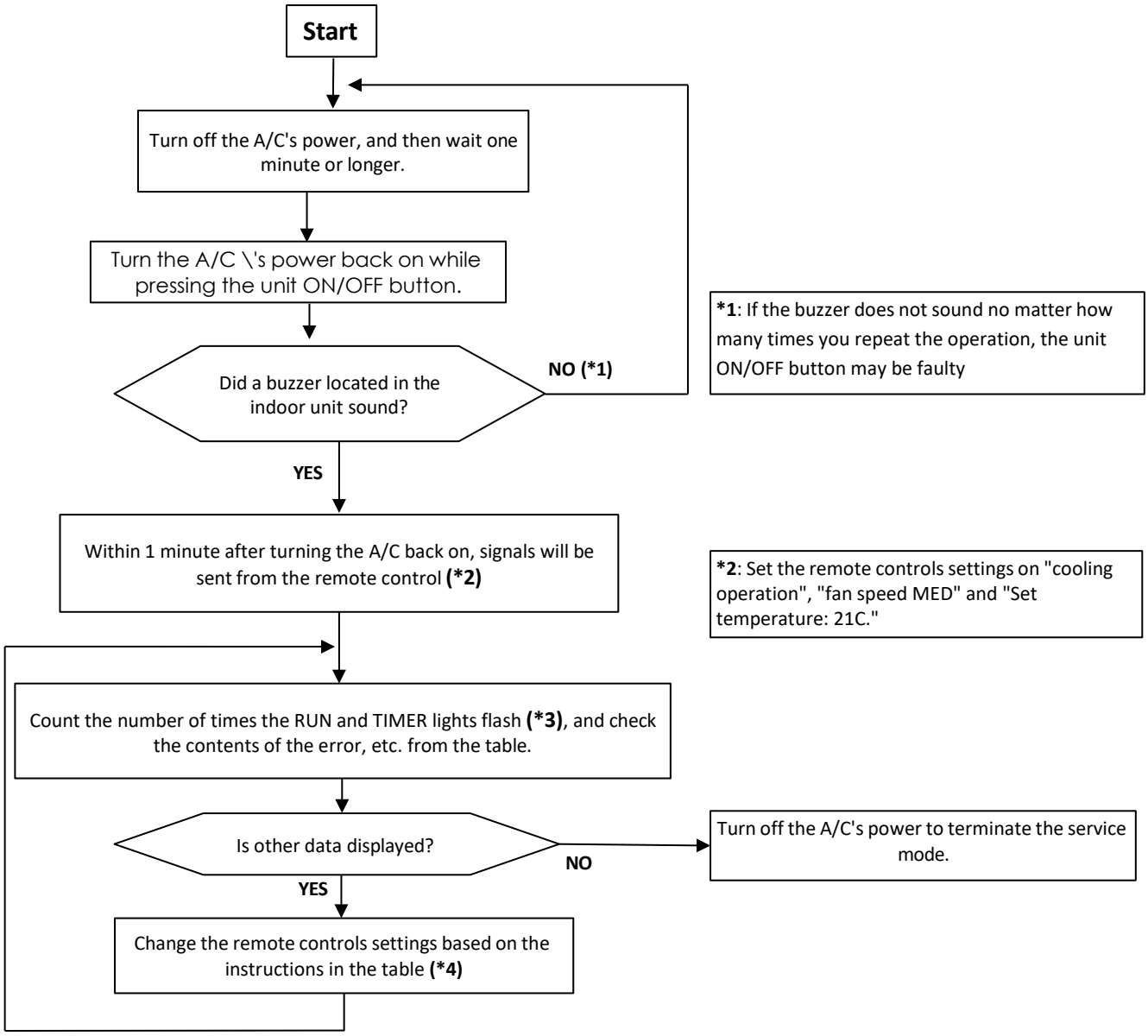
Outdoor Air [Tho-A] PAC Product



Hi-Wall Mounted Inverter Split Systems - SERVICE MODE – SRK / DXK (R410A Models only)

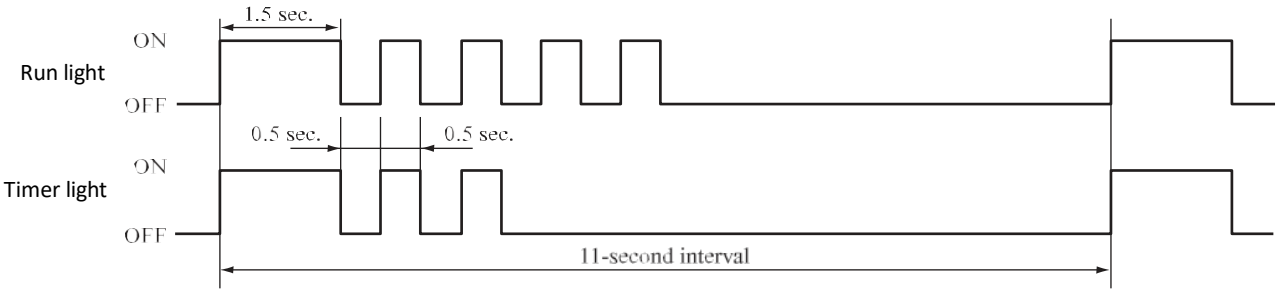
Term	Explanation
Service Mode	The service mode is the mode where service data are displayed by flashing lights when the operations described below are performed with the indoor controller
Service Data	These are the contents of error displays and protective stops which occurred I the past in the system. Error display contents and protective stop data from past anomalous operations are saved in the indoor unit controller's non-volatile memory. There are two types of data, self-diagnosis data and stop data.
Self-Diagnosis Data (Error code)	These are the data which display error display (self-diagnosis display) occurred in an indoor unit. Data are recorded for up to 5 previous occurrences. Data which is older than the 5th previous occurrence are erased. In addition, data on the temperature of each sensor are recorded when trouble occurs, so more detailed information can be checked.
Stop Data (Stop code)	These are the data which display the reason by which a stop occurred when the system performed protective stops, etc. in the past. If stop data alone are generated, the system restarts automatically. Data older than the 10th previous occasion are erased. (Important) In cases where transient stop data only are generated, the system may still be normal. However, if the same protective stop occurs frequently (3 or more times), it could lead to customer complaints

Service mode display procedure



*3: To Count the number of flashes in the service mode, count the number of flashes <u>after</u> the light lights up for 1.5 sec initially (start signal). Do not count start signal.

- In the case of current cut (example: stop code “42”)
  The RUN light (10’s digit) flashes 4 times and the TIMER light (1’s digit) flashes 2 times.
  4 x 10 + 2 x 10 = 42 > from the table, read the instructions for error code 42, “current cut”.



*4: When in the service mode, when the remote control settings (operation switching, fan speed switching, temperature setting) are set as shown in the following table and sent to the air conditioner unit, the unit switches to display of service data.

SELF-DIAGNOSTIC DATA		
Wireless Remote-Control Setting		**Contents of Output Data**
Operation Mode	**Fan Speed**	
Cooling	MED	Displays the reason for stopping display in the past (error code)
	HI	Displays the room temp sensor reading at the time the error code was displayed in the past
	AUTO	Displays indoor heat exchanger sensor temp at the time the error code was displayed in the past
Heating	LO	Displays the remote-control information at the time the error code was displayed in the past
	MED	Displays the outdoor air temp sensor reading at the time the error code was displayed in the past
	HI	Displays the outdoor heat exchanger sensor temp at the time the error code was displayed in the past
	AUTO	Displays the discharge pipe sensor temp at the time the error code was displayed in the past

Wireless remote control	**Indicates the number of occasions previous to the present the error display data are from**
Temperature setting	
21ºC	Previous time
22ºC	2nd previous time
23ºC	3rd previous time
24ºC	4th previous time
25ºC	5th previous time

Only for models that have Indoor Heat Exchanger 2	
Wireless Remote Control	**Indicates the number of occasions previous to the present the error display data are from**
Temperature setting	
26ºC	Previous time
27ºC	2nd previous time
28ºC	3rd previous time
29ºC	4th previous time
30ºC	5th previous time

(Example)

Wireless Remote-Control Setting			Displayed Data
Operation Switching	Fan Speed Switching	Temp Setting	
Cooling	Medium	21ºC	Displays the reason for the stop the previous time an error code was displayed
		22ºC	Displays the reason for the stop 2 times previous time an error was displayed
		23ºC	Displays the reason for the stop 3 times previous time an error was displayed
		24ºC	Displays the reason for the stop 4 times previous time an error was displayed
		25ºC	Displays the reason for the stop 5 times previous time an error was displayed

(ii) Stop data

Remote Control Setting			Displayed Data
Operation Switching	Fan Speed Switching	Temp Setting	
Cooling	LO	21ºC	Displays the reason for the (stop code) the previous time when the A/C was stopped by protective stop control
		22ºC	Displays the reason for the (stop code) 2 times previous when the A/C was stopped by protective stop control
		23ºC	Displays the reason for the (stop code) 3 times previous when the A/C was stopped by protective stop control
		24ºC	Displays the reason for the (stop code) 4 times previous when the A/C was stopped by protective stop control
		25ºC	Displays the reason for the (stop code) 5 times previous when the A/C was stopped by protective stop control
		26ºC	Displays the reason for the (stop code) 6 times previous when the A/C was stopped by protective stop control
		27ºC	Displays the reason for the (stop code) 7 times previous when the A/C was stopped by protective stop control
		28ºC	Displays the reason for the (stop code) 8 times previous when the A/C was stopped by protective stop control
		29ºC	Displays the reason for the (stop code) 9 times previous when the A/C was stopped by protective stop control
		30ºC	Displays the reason for the (stop code) 10 times previous when the A/C was stopped by protective stop control

(d) Operation mode, Fan speed mode information tables

(i) Operation mode

Display pattern when in Service Mode	Operation switching when there is an abnormal stop
RUN light (10's digit)	
--	AUTO
1 time flash	DRY
2 time flash	COOL
3 time flash	FAN
4 time flash	HEAT

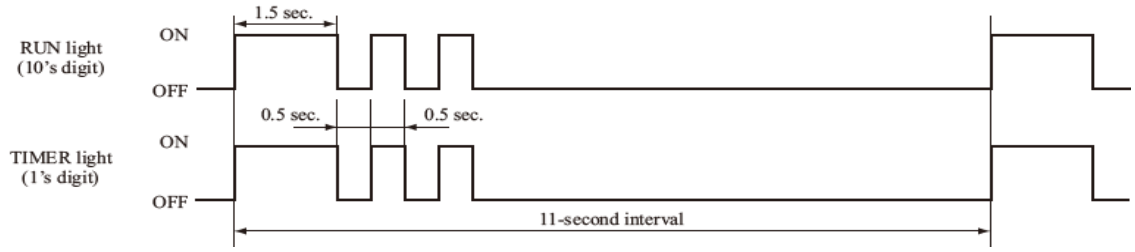
(ii) Fan Speed mode

Display pattern when in Service Mode	Fan Speed mode when there is an abnormal stop
TIMER light (1's digit)	
--	AUTO
2 time flash	HI
3 time flash	MED
4 time flash	LO
5 time flash	ULO
6 time flash	HI POWER
7 time flash	ECONO

*** If no data is recorded (error code is normal), the information display in the operation mode and fan speed mode becomes as follows;**

Mode	Display when error code is normal
Operation mode	Auto
Fan speed mode	Auto

(Example): Operation mode: COOL, Fan speed mode: HI



(e) Temperature information

(i) Room temperature sensor, indoor heat exchanger sensor, outdoor air temperature sensor, outdoor heat exchanger sensor temperature

Unit: °C

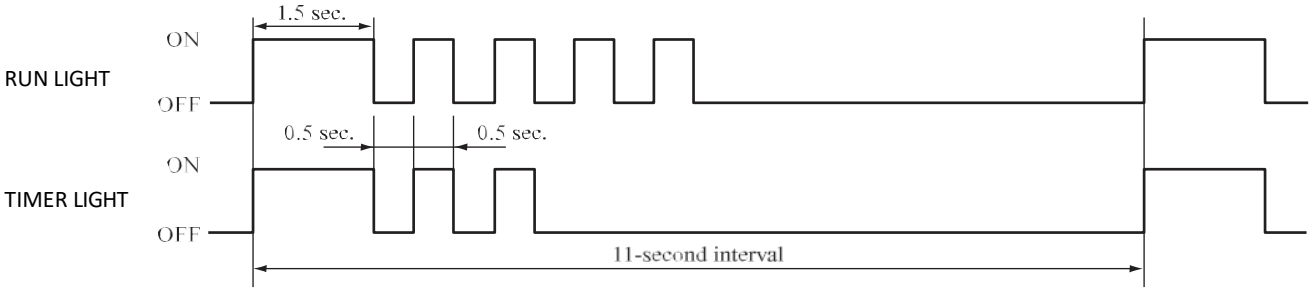
Buzzer sound	RUN light (10's digit) \ TIMER light (1's digit)	0	1	2	3	4	5	6	7	8	9
Yes (sounds for 0.1 second)	6	-60	-61	-62	-63	-64					
	5	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59
	4	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49
	3	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39
	2	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29
	1	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	0		-1	-2	-3	-4	-5	-6	-7	-8	-9
No (does not sound)	0	0	1	2	3	4	5	6	7	8	9
	1	10	11	12	13	14	15	16	17	18	19
	2	20	21	22	23	24	25	26	27	28	29
	3	30	31	32	33	34	35	36	37	38	39
	4	40	41	42	43	44	45	46	47	48	49
	5	50	51	52	53	54	55	56	57	58	59
	6	60	61	62	63	64	65	66	67	68	69
	7	70	71	72	73	74	75	76	77	78	79
	8	80	81	82	83	84	85	86	87	88	89
	9	90	91	92	93	94	95	96	97	98	99

*If no data are recorded (error code is normal), the information display in the remote control becomes as follows.

Sensor name	Sensor value displayed when the error code is normal
Room temperature sensor	-64ºC
Indoor heat exchanger sensor	-64ºC
Outdoor air temperature sensor	-64ºC
Outdoor heat exchanger sensor	-64ºC
Discharge pipe sensor	-64ºC

EXAMPLE - Outdoor air sensor temperature "42 ºC"

If the temperature is≧0, the buzzer does not sound.
Run light x4, Timer light x 2.



No Buzzer, Run light x 4, Timer light x 2

(ii) Discharge pipe sensor temperature

Unit: ºC

Buzzer sound	RUN light (10's digit)	TIMER light (1's digit) 0	1	2	3	4	5	6	7	8	9
Yes (sounds for 0.1 second)	3	-60	-62	-64							
	2	-40	-42	-44	-46	-48	-50	-52	-54	-56	-58
	1	-20	-22	-24	-26	-28	-30	-32	-34	-36	-38
	0		-2	-4	-6	-8	-10	-12	-14	-16	-18
No (does not sound)	0	0	2	4	6	8	10	12	14	16	18
	1	20	22	24	26	28	30	32	34	36	38
	2	40	42	44	46	48	50	52	54	56	58
	3	60	62	64	66	68	70	72	74	76	78
	4	80	82	84	86	88	90	92	94	96	98
	5	100	102	104	106	108	110	112	114	116	118
	6	120	122	124	126	128	130	132	134	136	138
	7	140	142	144	146	148	150				

*If no data are recorded (error code is normal), the information display in the remote control becomes as follows.

Sensor name	Sensor value displayed when the error code is normal
Discharge pipe sensor	-64ºC

SERVICE DATA RECORD FORM

Customer		Model number	
Date of Investigation		Serial number	
Content of Complaint			

Remote Control Settings			Content of displayed data	Display results			Display content
Temp setting	Operation switching	Fan speed switching		Buzzer Yes/No	RUN light (Times)	TIMER light (Times)	
21	Cooling	MED	Error code on previous occasion				
		HI	Room temperature sensor on previous occasion				
		AUTO	Indoor heat exchanger sensor 1 on previous occasion				
	Heating	LO	Remote control information on previous occasion				
		MED	Outdoor air temperature sensor on previous occasion				
		HI	Outdoor heat exchanger sensor on previous occasion				
		AUTO	Discharge pipe sensor on previous occasion				
26	Cooling	AUTO	Indoor heat exchanger sensor 2 on previous occasion				
22	Cooling	MED	Error code on 2nd previous occasion				
		HI	Room temperature sensor on 2nd previous occasion				
		AUTO	Indoor heat exchanger sensor 1 on 2nd previous occasion				
	Heating	LO	Remote control information on 2nd previous occasion				
		MED	Outdoor air temperature sensor on 2nd previous occasion				
		HI	Outdoor heat exchanger sensor on 2nd previous occasion				
		AUTO	Discharge pipe sensor on 2nd previous occasion				
27	Cooling	AUTO	Indoor heat exchanger sensor 2 on 2nd previous occasion				
23	Cooling	MED	Error code on 3rd previous occasion				
		HI	Room temperature sensor on 3rd previous occasion				
		AUTO	Indoor heat exchanger sensor 1 on 3rd previous occasion				
	Heating	LO	Remote control information on 3rd previous occasion				
		MED	Outdoor air temperature sensor on 3rd previous occasion				
		HI	Outdoor heat exchanger sensor on 3rd previous occasion				
		AUTO	Discharge pipe sensor on 3rd previous occasion				
28	Cooling	AUTO	Indoor heat exchanger sensor 2 on 3rd previous occasion				
24	Cooling	MED	Error code on 4th previous occasion				
		HI	Room temperature sensor on 4th previous occasion				
		AUTO	Indoor heat exchanger sensor 1 on 4th previous occasion				
	Heating	LO	Remote control information on 4th previous occasion				
		MED	Outdoor air temperature sensor on 4th previous occasion				
		HI	Outdoor heat exchanger sensor on 4th previous occasion				
		AUTO	Discharge pipe sensor on 4th previous occasion				
29	Cooling	AUTO	Indoor heat exchanger sensor 2 on 4th previous occasion				
25	Cooling	MED	Error code on 5th previous occasion				
		HI	Room temperature sensor on 5th previous occasion				
		AUTO	Indoor heat exchanger sensor 1 on 5th previous occasion				
	Heating	LO	Remote control information on 5th previous occasion				
		MED	Outdoor air temperature sensor on 5th previous occasion				
		HI	Outdoor heat exchanger sensor on 5th previous occasion				
		AUTO	Discharge pipe sensor on 5th previous occasion				
30	Cooling	AUTO	Indoor heat exchanger sensor 2 on 5th previous occasion				
21	Cooling	LO	Stop code on previous occasion				
22			Stop code on 2nd previous occasion				
23			Stop code on 3rd previous occasion				
24			Stop code on 4th previous occasion				
25			Stop code on 5th previous occasion				
26			Stop code on 6th previous occasion				
27			Stop code on 7th previous occasion				
28			Stop code on 8th previous occasion				
29			Stop code on 9th previous occasion				
30			Stop code on 10th previous occasion				
Judgement							
Remarks							

Note (1) In the case of indoor heat exchanger sensor 2, match from 26 to 30 the temperature setting of wireless remote control. (Refer to page 26)

ERROR CODE & STOP CODE TABLE – (PREVIOUS)

Models		SRK	ZD, ZF, ZG,	ZDX-S, ZFX-S, ZGX-S	ZEA-S, ZE-S1	YJ-S, YL-S
		DXK	Z3-S			

Flashes in Service Mode		Stop or Error Code	Error Content		Cause	Occurrence Conditions
Run	Timer		Major Category	Minor Category		
1 time	1 time	11	Current Cut	Comp software start	Comp Lock, wiring short, Comp output is open phase, Outdoor PCB faulty.	Compressor start fails 42 times in succession and the final failure is current cut.
	2 time	12		Lower than 20 rps	Service valve closed, Compressor output open phase, EEV faulty	After the compressor starts, it stops due to current cut at less than 20 rps
	3 time	13		20 rps or higher	Service valve closed, Compressor output open phase, EEV faulty	When operation is stopped by current cut at 20 rps or higher.
	4 time	14		Excessive voltage (DC 350V)	Outdoor PCB faulty, Power supply abnormal	When the DC voltage (DC 280V) exceeds 350V
	5 time	15		Short circuit in power transistor (high side)	Outdoor PCB faulty, power transistor damaged	When it is judged that the power transistor was damaged at the time the compressor started.
	6 time	16		Current cut circuit breakdown	Outdoor PCB faulty, power transistor damaged	
2 time	1 time	21	Outdoor unit error	PWM calculation results are abnormal	Compressor wires are disconnected, Power transistor is damaged	When PWM calculation results are 0% continued for 3 minutes or longer
	2 time	22		Input is 2A or lower (PWM 90% or higher)	Compressor wires are disconnected, outdoor PCB is faulty	When PWM calculation results of 90% and an input current lower than the set valve continue for 3 minutes or longer
	3 time	23		Abnormal stop 3 times in 20 minutes	Service valve is closed. Compressor output is open phase. Electronic expansion valve is faulty. Low on gas.	When an abnormal stop occurs 3 times with automatic recovery within 20 minutes after the outdoor unit's power supply was turned on.
	9 time	29	Outdoor fan motor error	Voltage drop	Power supply is faulty. Outdoor PCB is faulty	When the power supply voltage drops during operation.
	7 time	27		Outdoor unit's fan motor is abnormal (DC motor only)	Outdoor fan motor faulty. Poor connection. Faulty outdoor PCB	When a fan speed of 75rpm or lower continues for 30 seconds or longer.
3 time	1 time	31	Current Safe	Cooling current safe 1	Overcharge. Compressor lock	When there is a current safe stop in current safe mode 1 mode during cooling operation
	2 time	32		Heating current safe 1		When there is a current safe stop in current safe mode 1 mode during heating operation
	3 time	33		Cooling current safe 2		When there is a current safe stop in current safe mode 2 mode during cooling operation
	4 time	34		Heating current safe 2		When there is a current safe stop in current safe mode 2 mode during heating operation

ERROR CODE & STOP CODE TABLE – (PREVIOUS)

Models	SRK	ZD-S, ZF-S, ZG-S	ZDX-S, ZFX-S, ZGX-S	ZE-S1, ZEA-S	YL-S, YJ-S
	DXK	Z3-S			

Flashes in Service Mode		Stop or Error code	Error Content		Cause	Occurrence Conditions
Run	Timer		Major Category	Minor Category		
3 time	5 time	35	Current Safe	Cooling current safe 3	Overcharge, Compressor lock	When there is a current safe stop in current safe mode 3 mode during cooling operation
	6 time	36		Heating current safe 3		When there is a current safe stop in current safe mode 3 mode during heating operation
	7 time	37		Heating current safe 3 + 3A		When there is a current safe stop in current safe mode 3 + 3A mode during heating operation
4 time	1 time	41	Current Safe	Cooling overload 1 (outdoor temp 36~40*C)	Overcharge. Compressor lock. Overload operation	When there is a current safe stop in overload 1 mode during cooling operation
	2 time	42		Heating overload 1 (outdoor temp 5~12*C)		When there is a current safe stop in overload 1 mode during heating operation
	3 time	43		Cooling overload 2 (outdoor temp 40~45*C)		When there is a current safe stop in overload 2 mode during cooling operation
	4 time	44		Heating overload 2 (outdoor temp 12~17*C)		When there is a current safe stop in overload 2 mode during heating operation
	5 time	45		Cooling overload 3 (outdoor temp 45*C~)		When there is a current safe stop in overload 3 mode during cooling operation

	6 time	46		Heating overload 3 (outdoor temp 17*C~)		When there is a current safe stop in overload 3 mode during heating operation
5 time	OFF	50	Comp overheat	110*C	Service valve closed. Low on gas. Discharge pipe sensor is faulty	When the discharge pipe's sensor exceeds the set value
	1 time	51	Power transistor overheat	110*C	Cooling problem	When power transistor temp exceeds setting value (compressor stops).
6 time	FF	60	Seral signal error	Signal not received for 1 min & 55 sec	Power supply faulty. Incorrect wiring. Indoor/ outdoor PCB faulty	When 1 min 55sec passes without communication from either the outdoor or indoor being detected correctly
	1 time	61		Faulty interconnect wiring	Connections between indoor and outdoor are faulty. Faulty indoor/ outdoor PCB	When 10 sec passes after the power is on without communication signals from the indoor/ outdoor unit being detected correctly
	2 time	62		Serial transmission error	Indoor/ outdoor PCB faulty. Noise causing faulty operation	When 1 min 50 sec passes without communication signals from either indoor or outdoor unit being detected correctly

ERROR CODE & STOP CODE TABLE – (PREVIOUS)						
Models	**SRK**	ZD-S, ZF-S, ZG-S	ZDX-S, ZFX-S, ZGX-S	YJ-S, YL-S	ZE-S1, ZEA-S	
	DXK	Z3-S				
Flashes in Service Mode	**Stop or Error Code**	**Error content**		**Cause**	**Occurrence Conditions**	
		Major Category	**Minor Category**			
Run / **Timer**						
7 time	1 time	71	Rotor lock	Less than 16 rps	Compressor faulty. Compressor output is open phase. EEV is faulty. Overload operation. Outdoor unit PCB is faulty.	After the compressor starts, when it stops at less than 16 rps due to rotor lock
	2 time	72		16 rps or higher		When the comp stops at 16rps or higher due to rotor lock
	3 time	73		Phase switching defects (U phase)	Compressor is faulty. Compressor wiring is faulty. Outdoor unit PCB is faulty	When compressor start fails 42 times in succession and the reason for the final failure is rotor lock.
	4 time	74		Phase switching defects (V phase)		
	5 time	75		Phase switching defects (W phase or can't distinguish)		
	6 time	76		Comp software start (within 4 sec after phase switching)		
8 time	OFF	80	Protective control operation	Indoor unit fan motor is abnormal	Faulty connection. Faulty fan motor. Indoor PCB faulty	When indoor fan motor is detected to be running at 300rpm or lower.
	1 time	81		Discharge pipe sensor is abnormal (anomalous stop)	Senor wire disconnected faulty connection	When a disconnected signal (temp below 7*C) is sent for 15 sec or longer as the sensor data after the comp speed is 0rps or higher cont. for 9 min.
	2 time	82		Indoor heat exchanger sensor is abnormal (anomalous stop)	Sensor wire disconnected faulty connection during heating operation. (Compressor stops)	When a temperature of -20*C or lower is sensed cont. for 40 min
	3 time	83		Outdoor heat exchanger sensor is abnormal (anomalous stop)	Sensor wire disconnected faulty connection	When a temperature or - 50*C or lower is sensed cont. for 40 min during heating operation. Compressor stops
	4 time	84		Anti-condensation control	High humidity. Faulty humidity sensor	Anti-condensation prevention control is operating
	5 time	85		Anti-frost control	Indoor fan speed drops. Indoor heat exchanger sensor short circuit	When the anti-frost control operates, and the compressor stops during cooling operation.

	6 time	86	Protective control operation	High pressure control	Heating overload. Indoor fan speed drops. Indoor heat exchanger sensor short circuit	When high pressure control operates during heating operation and the comp stops.
	7 time	87		Comp overheating protection control	Short of gas. Discharge pipe sensor is faulty. Closed service valve.	When compressor overheating protective control operates and the compressor stops.
	8 time	88		Refrigeration cycle system protective control	Service valve closed. Short of gas.	When refrigerant cycle system protective control operates.

ERROR CODE & STOP CODE TABLE – (CURRENT)							
Models		SRK	ZJ-S, ZJ-S1, ZMA-S, ZRA-W, ZSA-W	ZHX-S, ZIX-S, ZJX-S, ZMXA-S, ZSXA-W	ZK-S, ZL-S	YRA-W, YSA-W	
		SRR	ZM-S				
		DXK	ZJ-S, Z4-S, ZL-S, ZMA-S, ZRA-W, ZSA-W				
Flashes in Service Mode		Stop or Error Code	Error Content	Cause	Occurrence Conditions		
Run	Timer						
OFF	OFF	0	Normal	-	-		
	1 time	01	Error of wired remote- control wiring	Broken wired remote-control wire, defective indoor PCB	The wired remote control wire Y is open. The wired remote control wires X and Y are reversely connected. Noise is penetrating the wired remote- c o n t r o l lines. The wired remote control or indoor PCB is faulty.		
	5 time	05	Cannot receive signals for 35 sec (if communications have recovered	Power supply is faulty. Power supply cables and signal lines are improperly wired. Indoor/ outdoor PCBs are faulty.	When 35 sec passes without communications signals from either the outdoor or indoor unit being detected correctly		
3 time	5 time	35	Cooling high pressure control	Cooling overload operation. Outdoor fan speed drops. Outdoor heat exchanger sensor is short circuit.	When the outdoor heat exchanger sensor's value exceeds the set value.		
	6 time	36	Compressor overheat (115*C)	Low on gas. Discharge pipe sensor is faulty. Service valve is closed	When the discharge pipes sensor value exceeds the set value.		
	7 time	37	Outdoor heat exchanger sensor is abnormal.	Outdoor heat exchanger faulty. Poor connections	When a temp of -55*C or lower is sensed cont. for 20 sec while the power is on or after the outdoor units speed has continued at 0rps or higher for 2 min. (The comp stops)		
	8 time	38	Outdoor air temp sensor is abnormal	Outdoor air temp sensor wire is faulty. Poor connection	When a temp of -55*C or lower is sensed cont. for 20 sec while the power is on or after the outdoor units speed has continued at 0rps or higher for 2 min. (The comp stops)		
	9 time	39	Discharge pipe sensor is abnormal (anomalous stop	Discharge pipe sensor wire is faulty. Poor connection	When a temp of -25*C or lower is sensed cont. for 20 sec after the outdoor units speed has continued at 0rps or higher for 10 min. (the comp stops)		
4 time	OFF	40	Service valve (gas side) closed	Service valve closed, or faulty outdoor PCB	If the inverter output current exceeds set value within 80 seconds, after compressor ON in heating		
	2 time	42	Current cut	Service valve closed. Compressor locked/faulty. Outdoor PCB faulty. EEV faulty.	Compressor start fails 42 times in succession and final reason for failure is current cut.		
	7 time	47	Active filter voltage error	Defective active filter.	When the wrong voltage connected for the power supply. When the outdoor control PCB is faulty.		
	8 time	48	Outdoor fan motor abnormal	Poor connection. Faulty fan motor. Faulty PCB.	When a fan speed of 75rpm or lower continues for 30 sec or longer.		

ERROR CODE & STOP CODE TABLE – (CURRENT) – continued						
Models	SRK	ZJ, ZMA, ZSA, ZRA	ZHX, ZIX, ZJX, ZMXA, ZSXA	ZK, ZL	YRA, YSA	
	SRR	ZM				
	DXK	ZJ, Z4, ZL, ZMA, ZSA, ZRA				

Flashes in Service Mode		Stop or Error Code	Error Content	Cause	Occurrence Conditions
Run	Timer				
5 time	1 time	51	Short circuit in the power transistor (high side) Current cut circuit breakdown	Outdoor PCB is faulty, power transistor damaged	When it is judged that the power transistor was damaged at the time the compressor started.
	7 time	57	Refrigeration cycle system protective control	Service valve closed. Short of gas.	When the refrigeration cycle protective control operates
	8 time	58	Current safe	Refrigerant is overcharged. Compressor locked. Overload operation.	When there is a current safe during operation.
	9 time	59	Compressor wiring is disconnected. Voltage drop. Low speed protective control	Compressor wiring is disconnected. Power transistor is damaged. Power supply construction is defective. Outdoor PCB is faulty.	When the current is 1A or less at the time the compressor started. When the power supply voltage drops during operation. When the outdoor unit's speed is lower than 26rps for 60 min.
6 time	OFF	60	Rotor lock	Overload operation. Faulty compressor. Faulty EEV. Faulty outdoor PCB.	After the compressor starts, when the compressor stops due to rotor lock.
	1 time	61	Connection lines between the indoor & outdoor are faulty.	Connection line is faulty. Indoor or outdoor PCBs are faulty.	When 10 sec passes after the power on without communications signals from the indoor or outdoor being detected correctly.
	2 time	62	Serial signal error	Indoor or outdoor unit PCBs are faulty. Noise causing faulty operation.	When 7 min 35 sec passes without communication signals from indoor or outdoor unit being detected correctly.
8 time	OFF	80	Indoor fan motor is faulty	Indoor fan motor is faulty. Poor connection. Faulty indoor PCB.	When the indoor fan motor is detected to be running at 300 rpm or lower
	2 time	82	Indoor heat exchanger sensor abnormal	Indoor heat exchanger sensor wire faulty. Poor connection.	When a temp of -28*C or lower is sensed cont. for 40 min during heating.
	4 time	84	Anti-condensation control	High humidity condition. Faulty humidity sensor.	Anti-condensation prevention control is operating.
	5 time	85	Anti-frost control	Indoor fan speed drops. Indoor heat exchanger sensor is faulty	When the anti-frost control operates and the compressor stops during cooling operation.
	6 time	86	Heating high pressure control	Heating overload operation. Indoor unit fan speed drops. Indoor heat exchanger sensor is short circuit.	When high pressure control operates during heating operation and the compressor stops.
	7 time	87	Drain trouble	Defective drain pump (DM), broken drain pump wire, anomalous float switch operation, defective indoor PCB	If the float switch OPEN is detected for 3 seconds continuously or if the float switch connector or wire is disconnected

RC-EXZ3A Menu List

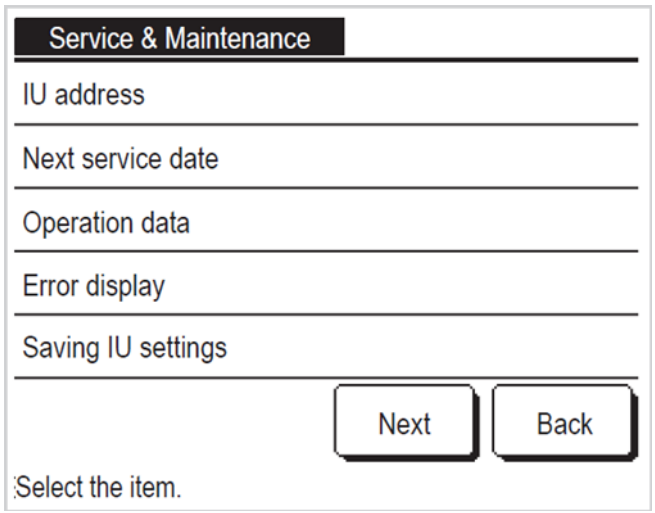
○: operable ×: not operable

R/C operations			Main	Sub
Run/Stop, Change set temp, Change flap direction, Auto swing, Change fan speed operations			○	○
High power operation, Energy-saving operation			○	○
Silent mode control			○	×
Useful functions	Individual flap control		○	×
	Anti draft setting		○	×
	Timer		○	○
	Favorite setting		○	○
	Weekly timer		○	×
	Home leave mode		○	×
	External ventilation		○	○
	Select the language		○	○
	Silent mode control		○	×
Energy-saving setting			○	×
Filter	Filter sign reset		○	○
User setting	Initial settings		○	○
	Administrator settings	Permission/ Prohibition setting	○	×
		Outdoor unit silent mode timer	○	×
		Setting temp range	○	×
		Temp increment setting	○	×
		Set temp display	○	○
		R/C display setting	○	○
		Change administrator password	○	○
		F1/F2 function setting	○	○

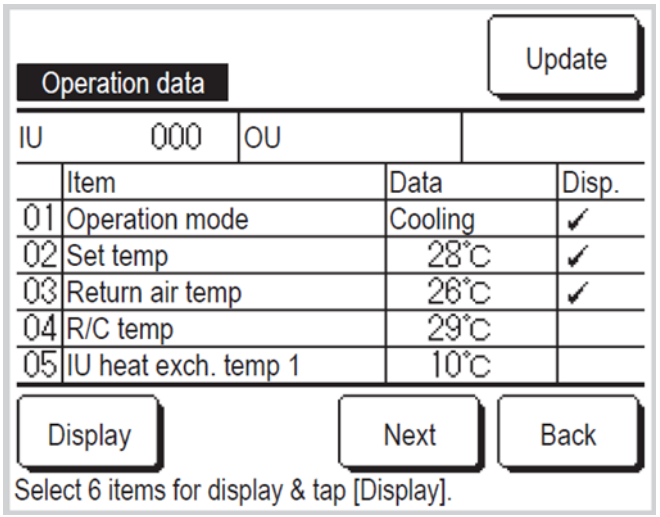
R/C operations				Main	Sub
Service setting	Installation settings	Installation date		○	×
		Company information		○	○
		Test run		○	×
		Duct unit settings		○	×
		Change auto-address		○	×
		Address setting of main IU		○	×
		IU back-up function		○	×
		Motion sensor setting		○	×
	R/C function settings	Main/Sub of R/C		○	○
		Return air temp		○	×
		R/C sensor		○	×
		R/C sensor adjustment		○	×
		Operation mode		○	×
		°C / °F		○	×
		Fan speed		○	×
		External input		○	×
		Upper/lower flap control		○	×
		Left/right flap control		○	×
		Ventilation setting		○	×
		Auto-restart		○	×
		Auto temp setting		○	×
		Auto fan speed		○	×
	IU settings			○	×
	Service & Maintenance	IU address		○	○
		Next service date		○	×
		Operation data		○	×
		Error display	Error history	○	○
			Display/erase anomaly data	○	×
			Reset periodical check	○	○
		Saving IU settings		○	×
		Special settings	Erase IU address	○	×
			CPU reset	○	○
			Restore of default setting	○	×
			Touch panel calibration	○	○
		Indoor unit capacity display		○	×

TOP screen | Menu ⇒ | Service setting ⇒ | Service & Maintenance ⇒ | Service password

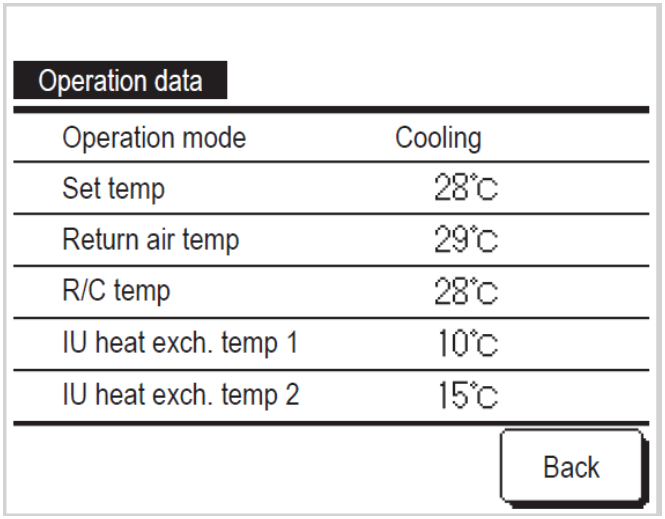
Pic A



Pic B



Pic C



Operation data at the time of reading is displayed (Pic B). Press the “Update” button to update the data.

To automatically update data and display, up to six items can be selected. Tap the “Display” button after selecting six items changes the display (Pic C) and will update every continually.

See next page for Operation Data list.

Operation data can be checked with remote control unit operation.

① Press the CHECK button.
The display change " OPER DATA ▼ "

② Press the (SET) button while " OPER DATA ▼ " is displayed.

③ When only one indoor unit is connected to remote controller, " DATA LOADING " is displayed (blinking indication during data loading).
Next, operation data of the indoor unit will be displayed. Skip to step ⑦.

④ When plural indoor units is connected, the smallest address number of indoor unit among all connected indoor unit is displayed.
[Example]:
" SELECT I/U " (blinking 1 seconds) → " I/U000 ▲ " blinking.

⑤ Select the indoor unit number you would like to have data displayed with the ▲ ▼ button.

⑥ Determine the indoor unit number with the (SET) button.
(The indoor unit number changes from blinking indication to continuous indication)
" I/U000 " (The address of selected indoor unit is blinking for 2 seconds.)
↓
" DATA LOADING " (A blinking indication appears while data loaded.)
Next, the operation data of the indoor unit is indicated.

⑦ Upon operation of the ▲ ▼ button, the current operation data is displayed in order from data number 01.
The items displayed are in the above table.
*Depending on models, the items that do not have corresponding data are not displayed.

Number		Data Item
01		(Operation Mode)
02	SET TEMP ___℃	(Set Temperature)
03	RETURN AIR ___℃	(Return Air Temperature)
04	SENSOR ___℃	(Remote Controller Thermistor Tempeature)
05	THI-R1 ___℃	(Indoor Heat Exchanger Thermistor / U Bend)
06	THI-R2 ___℃	(Indoor Heat Exchanger Thermistor /Capillary)
07	THI-R3 ___℃	(Indoor Heat Exchanger Thermistor /Gas Header)
08	I/U FANSPEED ___	(Indoor Unit Fan Speed)
09	DEMAND ___Hz	(Frequency Requirements)
10	ANSWER ___Hz	(Response Frequency)
11	I/U EEV ____P	(Pulse of Indoor Unit Expansion Value)
12	TOTAL I/U RUN ____H	(Total Running Hours of The Indoor Unit)
21	OUTDOOR ___℃	(Outdoor Air Temperature)
22	THO-R1 ___℃	(Outdoor Heat Exchanger Thermistor)
23	THO-R2 ___℃	(Outdoor Heat Exchanger Thermistor)
24	COMP ___Hz	(Compressor Frequency)
25	HP ___MPa	(High Pressure)
26	LP ___MPa	(Low Pressure)
27	Td ___℃	(Discharge Pipe Temperature)
28	COMP BOTTOM ___℃	(Comp Bottom Temperature)
29	CT ___AMP	(Current)
30	TARGET SH ___℃	(Target Super Heat)
31	SH ___℃	(Super Heat)
32	TDSH ___℃	(Discharge Pipe Super Heat)
33	PROTECTION No.	(Protection State No. of The Compressor)
34	O/U FANSPEED ___	(Outdoor Unit Fan Speed)
35	63H1	(63H1 On/Off)
36	DEFROST	(Defrost Control On/Off)
37	TOTAL COMP RUN ___H	(Total Running Hours of The Compressor)
38	O/U EEV1 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVC)
39	O/U EEV2 ____P	(Pulse of The Outdoor Unit Expansion Valve EEVH)

⑧ To display the data of a different indoor unit, press the AIR CON NO. button, which allows you to go back to the indoor unit selection screen.

⑨ Pressing the ⏻ON/OFF button will stop displaying data.
Pressing the (RESET) button during remote control unit operation will undo your last operation and allow you to go back to the previous screen.

⊙If two (2) remote controllers are connected to one (1) inside unit, only the master controller is available for trial operation and confirmation of operation data. (The slave remote controller is not available.)

●Details of Compressor protection status No. 33

No.	Contents of display	Reference page
"0"	Normal	
"1"	Discharge pipe temperature protection control	P.153, (6).(a).(i)
"2"	Discharge pipe temperature anomaly	P.153, (6).(a).(ii)
"3"	Current safe control of inverter primary current	P.155, (6).(f)
"4"	High pressure protection control	P.153, (6).(b).(i), P.154, (6).(c).(i)
"5"	High pressure anomaly	P.153, (6).(b).(ii)
"6"	Low pressure protection control	P.154, (6).(e).(i)
"7"	Low pressure anomaly	P.154, (6).(e).(ii)
"8"	Anti-frost prevention control	P.155, (6).(j)
"9"	Current cut	P.155, (6).(f)
"10"	Power transistor protection control	P.155, (6).(g)
"11"	Power transistor anomaly (Overheat)	P.155, (6).(h)
"13"	Spare	
"14"	Dewing prevention control	P.156, (6).(k)
"15"	Current safe control of inverter secondary current	P.155, (6).(f)
"16"	Stop by compressor rotor lock	
"17"	Stop by compressor startup failure	P.156, (6).(o)
"18"	Active filter anomaly	

Note(1) Operation data display on the remote controller.
・Data is dispalyed until canceling the protection control.
・In case of multiple protections controlled, only the younger No. is displayed.
Note(2) Common item.
① In heating mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "4" is displayed.
② In cooling and dehumidifying mode.
During protection control by the command signal for reducing compressor frequency from indoor unit, No. "8" is displayed.

MHIAA - Contact Details			
Australia	Phone		1300 138 007
	Web		mhiaa.com.au
	Email	QLD/NT	techsupport_qldnt@mhiaa.com.au
		NSW/ACT	techsupport_nswact@mhiaa.com.au
		VIC/TAS/SA	techsupport_victassa@mhiaa.com.au
		WA	techsupport_wa@mhiaa.com.au
New Zealand	Phone		0800 138 007
	Web		mhiheatpumps.co.nz
	Email		techsupport_nz@mhiheatpumps.co.nz

MRE Spare Parts PTY. LTD.	Ph. + 61 2 9600 7444	info@mrespares.com.au
	Fax. + 61 2 9600 8044	mrespares.com.au
Address	U5/376 Newbridge Road, Moorebank, NSW Australia 2170	

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