TOSHIBA Leading Innovation

Technical HandBook

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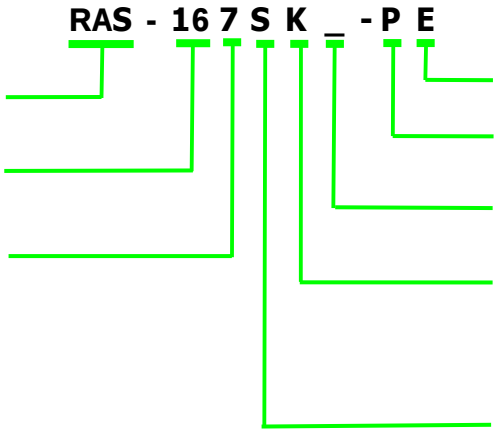
Make Up of Model Number

RAV/RAS Products



RAV = Light Commercial Range
RAS = Small Office / Domestic

Approx Duty (x 1000 = BTU)

Generation
RAV use numbers i.e. 0,1,2,3,4,5
RAS use letters i.e. U,E,S,Y

E = CE marked

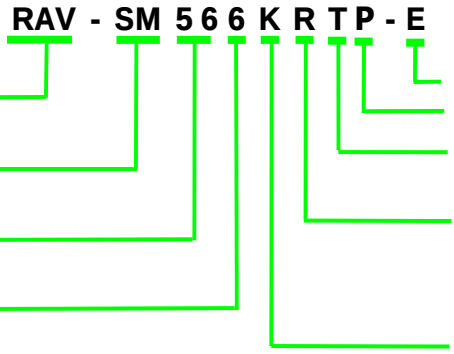
P = Made in Plymouth

Blank = Single Phase Power Supply
8 = Three Phase Power Supply

H = HP (RAV)

N = Chassis Type, K = High Wall
L = Console Type, C = Ceiling suspended
S = Low Wall, F = Tall Floor
B = Ducted Type, U = Four Way Cassette
A = Outdoor Unit TU = Two Way Cassette

Digital/Super Digital Inverter



RAV = Light Commercial Range

SM = Digital Inverter
SP = Super Digital Inverter

Nominal Duty (kW) i.e. 56 = 5.6kW

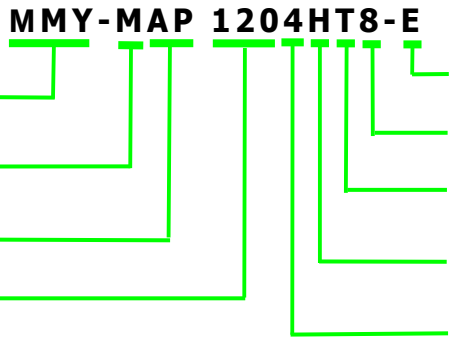
Generation: 0 = original
3 = 3rd Update etc

E = CE marked
P = Made in Thailand
T = Twin rotary compressor
V = Single rotary compressor

R = Infrared option

Style
X = Flexi (Low Wall or Under-slung)
K = Hi Wall, C = Ceiling Suspended
U = Cassette, B = Ducted
A = Outdoor

SMMSi/SHRMi



MMY = Modular Multi

M = Single module
No mark = Combined model

Refrigerant R410A

Capacity rank HP x 10

E = CE marked

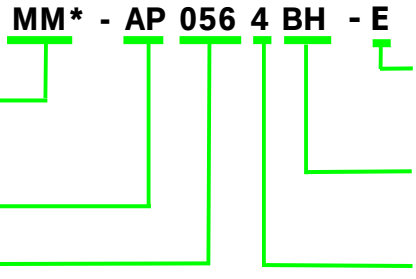
Three phase power supply

Capacity variable unit (Inverter)

H = Heat pump (two pipe)
F = Heat recovery (three pipe)

Development series

Modular Multi Indoor Units



*Style
U = Cassette, F = Tall Floor standing
D = Ducted, C = Ceiling suspended
K = High Wall, L = Floor standing

Refrigerant R410A

Capacity Rank

E = CE marked

Style
WH = 2-way discharge, H = Heat pump
SH = 1-way discharge, SPH = Slim Duct
BH = Standard duct

Development series

009= 2.8kW 012= 3.6kW 015= 4.5kW 018= 5.6kW 024= 7.1kW 027= 8kW 030= 9kW 036= 11.2kW 048= 14kW 056= 16kW

Mechanical Specifications - RAS R410A Outdoor Units

Model	Pipe Sizes		Min/Max Pipe Sep	Max Height Separation	Pre-charge	Add Charge	Base Charge	Dimensions	Weight
	Liquid	Suction	(m)		(m)	(g/m)	(kg)	(mm)	(kg)
RAS Outdoor Units									
RAS-107SAV-E6	1/4	3/8	2/15	8	15	N/A	0.63	530x660x240	27
RAS-137SAV-E6									30
RAS-167SAV-E5		1/2	2/20	10	15	20	1.05	550x780x290	40
RAS-10N3AVP-E		3/8	2/25					630x800x300	41
RAS-13N3AVP-E									
RAS-16N3AVP-E		1/2							
RAS-10G2AVP-E		3/8	2/25	10	10		1.05	630x800x300	41
RAS-13G2AVP-E									
RAS-16G2AVP-E		1/2							
RAS-10N3AV2-E		3/8	2/20	10	15		0.8	550x780x290	33
RAS-13N3AV2-E									
RAS-16N3AV2-E		1/2					1.4		39
RAS-M14GVA-E		3/8	2/30	10	20		0.90	550x780x290	36
RAS-M18UAV-E		1/2					1.20		41
RAS-3M26UAV-E			70	15	40		2.40	890x900x320	69
RAS-4M27UAV-E									
RAS-5M34UAV-E1			80				2.99		75

Performance & Electrical Specifications - RAS R410A Single Splits

Model	Capacity (kW)		Energy Rating Cool/Heat	Phase	Power To	Soft Start	Max Current	Suggested Fuse Size	Interconnect Cable
	Cool	Heat							
RAS Split Systems									
RAS-107SAV-E6	2.50	3.20	A/A	1Ph + N	Outdoor	Yes	4.19	10	3Core + Earth
RAS-137SAV-E6	3.15	3.60	A/A				5.37	10	
RAS-167SAV-E5	4.40	5.20	A+/A				7.58	16	
RAS-10N3AVP-E	2.51	3.21	A+++/A+++				3.42	10	
RAS-13N3AVP-E	3.52	4.22	A++/A+				4.78	10	
RAS-16N3AVP-E	4.53	5.53	A++/A+				7.12	16	
RAS-10G2AVP-E	2.50	3.20	A+++/A+++				3.52	10	
RAS-13G2AVP-E	3.50	4.00	A+++/A+++				3.57	10	
RAS-16G2AVP-E	4.50	5.50	A++/A++				5.96	16	
RAS-10N3AV2-E	2.50	3.20	A++/A+				3.60	10	
RAS-13N3AV2-E	3.50	4.20	A++/A				5.66	10	
RAS-18N3AV2-E	5.00	5.80	A+/A				8.79	16	

Performance & Electrical Specifications - RAS R410A Multi Splits

Model	Min-Max Indoors	Capacity (kW)		Energy Rating Cool/Heat	Phase	Power To	Soft Start	Max Current	Suggested Fuse Size	Interconnect Cable
		Cool	Heat							
RAS Multi Systems										
RAS-M14GAV-E	1 – 2	1.10 - 4.50	0.90 - 5.20	A+/A	1Ph + N	Outdoor	Yes	5.47	16	3Core+Earth
RAS-M18UAV-E	2 - 2	1.40 - 6.40	0.90 - 8.30	A++/A++				7.93	16	
RAS-3M26UAV-E	2 – 3	4.10 - 9.00	2.00 - 11.2	A++/A+				11.37	20	
RAS-4M27UAV-E	2 – 4	4.20 - 9.30	3.00 - 11.7	A++/A+				11.99	20	
RAS-5M34UAV-E1	2 – 5	3.70 - 11.0	3.40 - 14.0	A++/A+				15.22	25	

RAS R410A Multi Split System Combinations Examples

Acoustic Data – RAS Indoor Units

RAS Indoor Units			
Model	High dB(A)	Med dB(A)	Low dB(A)
RAS-107SKV-E6	40	35	27
RAS-137SKV-E6	41	34	28
RAS-167SKV-E5	45	40	30
RAS-B10N3KVP-E	43	35	27
RAS-B13N3KVP-E	44	35	27
RAS-B16N3KVP-E	45	38	27
RAS-G2KVP-E	42	-	20
RAS-G2KVP-E	43	-	21
RAS-G2KVP-E	44	-	23
RAS-B10UFV-E	39	32	26
RAS-B13UFV-E	40	33	27
RAS-B18UFV-E	46	40	34
RAS-B10N3KV2-E	39	33	26
RAS-B13N3KV2-E	40	33	26
RAS-B16N3KV2-E	45	40	30

RAS Multi-Split System Combinations Examples					
Outdoor Unit	Indoor Unit Size & Duty				
	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
RAS-M14GAV-E 4.5 kW	10 (1.95kw) 13 (2.33kw)	10 (1.95kw) 10 (1.95kw)			
RAS-M18UAV-E 5.3 kW	10 (2.55kw) 13 (2.95kw) 13 (2.55kw) 16 (3.19kw) 16 (2.85kw)	10 (2.55kw) 10 (2.15kw) 13 (2.55kw) 10 (1.91kw) 13 (2.35kw)			
RAS-3M26UAV-E 7.5 kW	10 (2.40kw) 13 (3.01kw) 16 (3.36kw) 18 (3.56kw) 13 (2.10kw) 16 (3.06kw) 18 (3.25kw) 16 (2.85kw) 18 (3.03kw) 13 (2.40kw) 16 (2.80kw) 18 (2.98kw) 16 (2.66kw) 18 (2.84kw) 16 (2.50kw) 18 (2.68kw)	10 (2.40kw) 10 (2.20kw) 10 (2.02kw) 10 (1.92kw) 13 (2.10kw) 13 (2.51kw) 13 (2.40kw) 16 (2.85kw) 16 (2.30kw) 13 (2.40kw) 13 (2.30kw) 13 (2.21kw) 16 (2.66kw) 16 (2.56kw) 16 (2.50kw) 16 (2.41kw)	10 (2.40kw) 10 (2.20kw) 10 (2.02kw) 10 (1.92kw) 10 (1.98kw) 10 (1.83kw) 10 (1.50kw) 10 (1.10kw) 10 (1.64kw) 13 (2.40kw) 13 (2.30kw) 13 (2.21kw) 13 (2.19kw) 13 (2.10kw) 16 (2.50kw) 16 (2.41kw)		
RAS-4M27UAV-E 8.0 kW	10 (1.98kw) 13 (2.48kw) 13 (2.28kw) 13 (2.00kw) 16 (2.82kw) 16 (2.61kw) 16 (2.40kw) 16 (2.50kw) 18 (3.02kw) 18 (2.80kw) 18 (2.65kw) 18 (2.68kw)	10 (1.98kw) 10 (1.81kw) 13 (2.28kw) 13 (2.00kw) 10 (1.69kw) 13 (2.15kw) 13 (2.03kw) 16 (2.50kw) 10 (1.63kw) 13 (2.00kw) 13 (1.96kw) 16 (2.42kw)	10 (1.98kw) 10 (1.81kw) 13 (1.60kw) 13 (2.00kw) 10 (1.69kw) 10 (1.50kw) 10 (1.50kw) 10 (1.50kw) 10 (1.63kw) 10 (1.51kw) 10 (1.43kw) 10 (1.45kw)	10 (1.98kw) 10 (1.81kw) 10 (1.60kw) 13 (2.00kw) 10 (1.69kw) 10 (1.50kw) 10 (1.48kw) 10 (1.50kw) 10 (1.63kw) 10 (1.51kw) 10 (1.43kw) 10 (1.45kw)	
RAS-5M34UAV-E1 10.0 kW	10 (1.98kw) 13 (2.53kw) 13 (2.36kw) 13 (2.22kw) 13 (2.09kw) 13 (2.00kw) 16 (2.91kw) 16 (2.61kw) 16 (2.58kw) 16 (2.46kw) 16 (2.33kw) 16 (2.61kw) 16 (2.49kw) 16 (2.36kw) 18 (3.13kw) 18 (2.95kw) 18 (2.80kw) 18 (2.66kw)	10 (1.98kw) 10 (1.84kw) 13 (2.36kw) 13 (2.22kw) 13 (2.09kw) 13 (2.00kw) 10 (1.50kw) 13 (2.61kw) 13 (2.12kw) 13 (2.02kw) 13 (1.92kw) 16 (2.61kw) 16 (2.49kw) 16 (2.36kw) 10 (1.69kw) 13 (2.18kw) 13 (2.06kw) 13 (1.90kw)	10 (1.98kw) 10 (1.84kw) 10 (1.20kw) 13 (2.22kw) 13 (2.09kw) 13 (2.00kw) 10 (1.50kw) 10 (1.56kw) 13 (2.12kw) 13 (2.02kw) 13 (1.92kw) 10 (1.56kw) 13 (2.04kw) 13 (1.94kw) 10 (1.69kw) 10 (1.59kw) 13 (2.06kw) 13 (1.90kw)	10 (1.98kw) 10 (1.84kw) 10 (1.20kw) 10 (1.62kw) 13 (2.09kw) 13 (2.00kw) 10 (1.50kw) 10 (1.56kw) 10 (1.55kw) 13 (2.02kw) 13 (1.92kw) 10 (1.56kw) 10 (1.49kw) 13 (1.94kw) 10 (1.69kw) 10 (1.59kw) 10 (1.50kw) 13 (1.90kw)	10 (1.98kw) 10 (1.84kw) 10 (1.20kw) 10 (1.62kw) 10 (1.53kw) 13 (2.00kw) 10 (1.50kw) 10 (1.56kw) 10 (1.55kw) 10 (1.48kw) 13 (1.92kw) 10 (1.56kw) 10 (1.49kw) 10 (1.41kw) 10 (1.69kw) 10 (1.59kw) 10 (1.50kw) 10 (1.44kw)
*** Outdoor Unit will operate with 1 indoor unit connected ***					

Outdoor Model Type	Outdoor Unit	Combination of 4-way Air Discharge Cassette			
2 - Room Multi outdoor unit	RAS-M14GAV-E	X	X	X	X
2 - Room Multi outdoor unit	RAS-M18UAV-E	O	O	O	O
3 - Room Multi outdoor unit	RAS-3M26UAV-E	O	O	O	O
4 - Room Multi outdoor unit	RAS-4M27UAV-E	O	O	O	O
5 - Room Multi outdoor unit	RAS-5M34UAV-E1	O	O	O	O
O Combination available, X Combination unavailable					

RAS – Auto Restart Function

The indoor unit is equipped with an automatic restart facility that allows the unit to restart, at the last set operating conditions, after a power failure. The operation will resume without warning three minutes after power is restored.
This feature is not set up when these systems are shipped from the factory, therefore it will need to be activated by the installing company.

Generally the process is the same for all RAS products since approx 2001 and is as follows:

To initiate auto restart:

1. Turn the power on. Green On/Off light will flash.
2. Set the system to operate using the remote controller. Green On/Off light will be on constantly.
3. Press and hold down the temporary button for three seconds.
4. The indoor unit will bleep three times to acknowledge set up. In most cases the green light changes to orange.
5. The system will continue to operate during this set up.
6. After set up the system may be stopped using the remote controller.

To cancel auto restart:

1. The system is operating. Green On/Off light will be on constantly.
2. Stop the system operating using the remote controller. Green On/Off light will extinguish.
3. Press and hold down the temporary button for three seconds.
4. The indoor unit will bleep three times to acknowledge cancellation.
5. The system will have stopped operating.

This feature cannot be set if the timer is in operation.
The louver will not swing, if it was previously set, when the system auto restarts.

Fault Codes – RAS "N" Series

Do Not turn off the power supply before reading the fault codes, doing so will clear the diagnostic memory. Caution must be taken when removing the access covers as high voltages are present.

Fault codes are displayed through the LEDs flashing at 5 times per second. Note, the green LED will flash once per second when the system is initially powered.

More specific codes may be obtained, while in the fault mode through the wireless controller

1. Press CHK to enter service mode
2. Navigate through TIMER ▲▼ buttons until all LEDs flash, accompanied by the internal buzzer – compare the displayed code with the table below
3. Press CLR button to clear the existing fault code (controller displays 7F)
4. Press ON/OFF button to exit service mode.

Initial code / display	Code	Description
01 ● ○ ○	0C	TA sensor open or short circuit
	0d	TC sensor open or short circuit
	11	Indoor fan motor problem
	12	Indoor PCB problem
01 ● ● ○	04	Indoor to outdoor communication (includes compressor thermostat)
	05	Indoor to outdoor communication
02 ● ○ ●	14	Inverter low voltage or short circuit protection
	16	Compressor position circuit
	17	Compressor current detected during off-cycle
	18	TE or TS sensor open or short circuit
	19	Td sensor open or short circuit
	1A	Outdoor fan motor problem
	1b	TE sensor fault
	1C	Compressor drive circuit
03 ● ● ●	07	Indoor to outdoor communication (includes compressor thermostat)
	08	Indoor heat exchanger changes temperature – but in wrong direction
	1d	Compressor locked rotor current protection
	1E	Compressor - high discharge temperature
	1F	Compressor current remains too high – after current release

Mechanical Specifications - DI / SDI R410A Single Splits

Model	Pipe Sizes		Min/Max Pipe Sep (m)	Max Height Separation	Pre-charge (m)	Add Charge (g/m)	Base Charge (kg)	Dimensions (mm)	Weight (kg)
	Liquid	Suction							
Commercial Range									
RAV-SM564ATP-E	1/4	1/2	5/30	30	20	20	1.0	550x780x290	40
RAV-SM804ATP-E	3/8	5/8				40	1.7	550x780x290	44
RAV-SM1104ATP-E			5/50		30	40	2.8	890x900x320	68
RAV-SM1404ATP-E						40	2.8	890x900x320	68
RAV-SM1603AT-E						40	3.1	1340x900x320	99
RAV-SM2244AT8-E	1/2	1 1/8	7.5/70			80	5.9	1540x900x320	134
RAV-SM2804AT8-E									
RAV-SP404ATP-E	1/4	1/2	5/30		20	20	1.0	550x780x290	40
RAV-SP564ATP-E			5/50			20	1.4	550x780x290	44
RAV-SP804ATP-E	3/8	5/8			30	40	2.1	890x900x320	63
RAV-SP1104AT-E			3/75			40	3.1	1340x900x320	93
RAV-SP1404AT-E						40	3.1	1340x900x320	93
RAV-SP1104AT8-E			3/75			40	3.1	1340x900x320	95
RAV-SP1404AT8-E						40	3.1	1340x900x320	95
RAV-SP1604AT8-E						40	3.1	1340x900x320	95

Performance & Electrical Specifications - DI / SDI R410A Single Splits

Model	Capacity kW		Ambient Range °C		Energy Rating Cool/Heat	Phase	Power To	Soft Start	Max Current	Suggested Fuse Size	Interconnect Cable
	Cool	Heat	Cool	Heat							
Commercial Range											
RAV-SM564ATP-E	5.00	5.30	46 to -15	15 to -15	A/A	1Ph + N	Outdoor	Yes	8.95	16	3Core + Earth
RAV-SM804ATP-E	6.70	7.70			A/A				11.43	16	
RAV-SM1104ATP-E	10.00	11.20			A/A				15.18	20	
RAV-SM1404ATP-E	12.00	12.80			A/A				21.30	32	
RAV-SM1603AT-E	14.00	16.00			B/A				23.90	32	
RAV-SM2244AT8-E	20.00	22.40	46 to -20	15 to -20	D/B	3Ph + N			11.51	16	
RAV-SM2804AT8-E	23.00	27.00			D/C				15.44	20	
RAV-SP404ATP-E	3.60	4.00	43 to -15	15 to -15	A/A	1Ph + N			4.98	10	
RAV-SP564ATP-E	5.30	5.60	43 to -15	15 to -20	A/A				6.55	16	
RAV-SP804ATP-E	7.10	8.00			A/A				9.02		
RAV-SP1104AT-E	10.00	11.20			A/A				10.43		
RAV-SP1404AT-E	12.50	14.00			A/A				15.76	25	
RAV-SP1104AT8-E	10.00	11.20	46 to -15	15 to -20	A/A	3Ph + N			3.72	10	
RAV-SP1404AT8-E	12.50	14.00			A/A				5.42	16	
RAV-SP1604AT8-E	14.00	16.00			B/A				6.66		

Electrical Specifications - DI / SDI R410A Multi Splits

Model Outdoor	Twin Indoor	Triple Indoor	Quad Indoor	Phase	Power To	Suggested Fused Size	Inter-Connecting Cable
RAV-SM80ATP-E	**RAV-SM40*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	16	3C+E
RAV-SM1104ATP-E	**RAV-SM56*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	20	3C+E
RAV-SM1404ATP-E	**RAV-SM80*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	32	3C+E
RAV-SM1603AT-E	**RAV-SM80*T(P)-E**	**RAV-SM56*T(P)-E**	N/A	1Ph-N	Outdoor	32	3C+E
RAV-SM2244AT8-E	**RAV-SM110*T(P)-E**	**RAV-SM80*T(P)-E**	**RAV-SM56*T(P)-E**	3Ph-N	Outdoor	16	3C+E
RAV-SM2244AT8-E	**RAV-SM110*T(P)-E**	**RAV-SM80*T(P)-E**	**RAV-SM56*T(P)-E**	3Ph-N	Outdoor	16	3C+E
RAV-SM2804AT8-E	**RAV-SM140*T(P)-E**	**RAV-SM80*T(P)-E**	**RAV-SM80*T(P)-E**	3Ph-N	Outdoor	20	3C+E
RAV-SM2804AT8-E	**RAV-SM140*T(P)-E**	**RAV-SM80*T(P)-E**	**RAV-SM80*T(P)-E**	3Ph-N	Outdoor	20	3C+E
RAV-SP804ATP-E	**RAV-SM40*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	16	3C+E
RAV-SP1104AT-E	**RAV-SM56*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	16	3C+E
RAV-SP1104AT8-E	**RAV-SM56*T(P)-E**	N/A	N/A	3Ph-N	Outdoor	10	3C+E
RAV-SP1404AT-E	**RAV-SM80*T(P)-E**	N/A	N/A	1Ph-N	Outdoor	25	3C+E
RAV-SP1404AT8-E	**RAV-SM80*T(P)-E**	N/A	N/A	3Ph-N	Outdoor	16	3C+E
RAV-SP1604AT8-E	**RAV-SM80*T(P)-E**	**RAV-SM56*T(P)-E**	N/A	3Ph-N	Outdoor	16	3C+E

Acoustic Data – DI/SDI Indoor/Outdoor Units

Model Indoor	High dB(A)	Med dB(A)	Low dB(A)	Model Indoor	High dB(A)	Med dB(A)	Low dB(A)
RAV-SM562KRT-E	54	51	48	**RAV-SM566BT-E**	33	29	25
RAV-SM806KRT-E	60	56	51	**RAV-SM806BT-E**	34	30	26
RAV-SM564UTP-E	32	29	28	**RAV-SM1106BT-E**	40	36	33
RAV-SM804UTP-E	35	31	28	**RAV-SM1406BT-E**	40	36	33
RAV-SM1104UTP-E	58	53	48	**RAV-SM1606BT-E**	40	36	33
RAV-SM1404UTP-E	44	38	34	**RAV-SM567CTP-E**	37	35	28
RAV-SM1604UTP-E	45	40	36	**RAV-SM807CTP-E**	41	36	29
RAV-SM404MUT-E	55	51	46	**RAV-SM1107CTP-E**	44	38	32
RAV-SM564MUT-E	55	51	46	**RAV-SM1407CTP-E**	46	41	35
RAV-SM404SDT-E	39	36	33	**RAV-SM1607CTP-E**	46	41	35
RAV-SM564SDT-E	45	40	36	**RAV-SM2242DT-E**	54	-	-
				RAV-SM2802DT-E	55	-	-

Model Outdoor	Cooling dB(A)	Heating dB(A)	Model Outdoor	Cooling dB(A)	Heating dB(A)
RAV-SM564ATP-E	46	48	**RAV-SP404ATP-E**	45	47
RAV-SM804ATP-E	48	52	**RAV-SP564ATP-E**	47	48
RAV-SM1104ATP-E	53	54	**RAV-SP804ATP-E**	48	49
RAV-SM1404ATP-E	54	55	**RAV-SP1104AT-E**	49	50
RAV-SM1603AT-E	51	53	**RAV-SP1404AT-E**	51	52
RAV-SM2244AT8-E	56	57	**RAV-SP1104AT8-E**	49	50
RAV-SM2804AT8-E	57	58	**RAV-SP1404AT8-E**	51	52
			RAV-SP1604AT8-E	51	53

Mechanical & Electrical Data - Air-to-Air Heat Exchangers

Model (Standard)	Power Consumption Low/High (W)	(L/H) Air Volume (m^3/hr)	Static Pressure (Pa)	Specific Fan Power (W/l/s)			Dimensions H x W* x D	Weight (kg)	Duct (mm)	Suggested Fuse Size 1-ph+n	Suggested Fuse Size +Heater Kit
				Extra	High	Low					
VN-M150HE	42 - 78	110 - 150	47 - 102	0.93	0.80	0.78	900 x 900 x 290	36	100	3	10
VN-M250HE	52 - 138	155 - 250	28 - 98	0.99	0.79	0.69	900 x 900 x 290	36	150	3	10
VN-M350HE	82 - 182	210 - 350	65 - 125	0.94	0.75	0.76	900 x 900 x 290	38	150	6	10
VN-M500HE	128 - 238	390 - 500	62 - 150	0.86	0.70	0.66	1140 x 1140 x 350	53	200	6	16
VN-M650HE	178 - 290	520 - 650	61 - 107	0.81	0.72	0.66	1140 x 1140 x 350	53	200	6	16
VN-M800HE	286 - 383	700 - 800	76 - 158	0.86	0.80	0.77	1189 x 1189 x 400	70	250	6	16
VN-M1000HE	353 - 569	755 - 1000	84 - 150	1.02	0.97	0.88	1189 x 1189 x 400	70	250	6	16
VN-M1500HE	570 - 786	1200 - 1500	112 - 156	0.94	0.94	0.91	1189 x 1189 x 810	143	250	10	16
VN-M2000HE	702 - 1154	1400 - 2000	110 - 143	1.04	0.97	0.96	1189 x 1189 x 810	143	250	10	20

Model (DX Coil)	Capacity		Power Consumption Low/High (W)	(L/H) Air Volume (m^3/hr)	Static Pressure (Pa)	Specific Fan Power (W/l/s)			Dimensions H x W* x D	Weight (kg)	Duct (mm)	Suggested Fuse Size 1-ph+n
	Cool	Heat				Extra	High	Low				
MMD-VN502HEXE	4.10	5.53	235 - 300	440 - 500	115 - 120	1.08	1.01	0.96	430 x 1140 x 1690	84	200	6
MMD-VN802HEXE	6.56	8.61	335 - 505	640 - 800	105 - 120	1.14	1.05	0.94	430 x 1189 x 1739	100	250	6
MMD-VN1002HEXE	8.25	10.90	485 - 550	820 - 950	105 - 135	1.04	1.03	1.06	430 x 1189 x 1739	101	250	6

Model (DX Coil & Humidifier)	Capacity		Humidifier (Kg/hr)	Power Consumption Low/High (W)	(L/H) Air Volume (m^3/hr)	Static Pressure (Pa)	Specific Fan Power (W/l/s)			Dimensions H x W* x D	Weight (kg)	Duct (mm)	Suggested Fuse Size 1-ph+n
	Cool	Heat					Extra	High	Low				
MMD-VNK502HEXE	4.10	5.53	3.0	240 - 305	440 - 500	85 - 95	1.10	1.03	0.98	430 x 1140 x 1690	91	200	6
MMD-VNK802HEXE	6.56	8.61	5.0	350 - 530	640 - 800	85 - 105	1.19	1.09	0.98	430 x 1189 x 1739	111	250	6
MMD-VNK1002HEXE	8.25	10.90	6.0	520 - 575	820 - 950	90 - 115	1.09	1.07	1.14	430 x 1189 x 1739	112	250	6

*** Width dimension excludes 200mm electrical box**

Digital/Super Digital R410A Replacement Technology Refrigerant Pipe Sizing

Existing piping connection with different diameter gas and liquid line is possible using the criteria detailed below

Liquid Pipe Size in" or mm		1/4 - 6.4 (STD)						3/8 - 9.5 (1-size large)			
Gas Pipe Size in" or mm		3/8 - 9.5 (1-size smaller)		1/2 - 12.7 (STD)		5/8 - 15.9 (1-size larger)		1/2 - 12.7 (STD)		5/8 - 15.9 (1-size larger)	
Maximum Pipe Distance		Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged
		m	m	m	m	m	m	m	m	m	m
RAV-DI Series 4	SM56*			30	20	30	20	20	10	20	10
RAV-SDI Series 4	SP40*	30	20	30	20	30	20	20	10	20	10
	SP56*			50	20	50	20	20	10	20	10

Liquid Pipe Size in" or mm		1/4 - 6.4 (1-size smaller)				3/8 - 9.5 (STD)						1/2 - 12.7 (1-size larger)			
Gas Pipe Size in" or mm		1/2 - 12.7 (1-size smaller)		5/8 - 15.9 (STD)		1/2 - 12.7 (1-size smaller)		5/8 - 15.9 (STD)		3/4 - 19.1 (1-size larger)		5/8 - 15.9 (STD)		3/4 - 19.1 (1-size larger)	
Maximum Pipe Distance		Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged
		m	m	m	m	m	m	m	m	m	m	m	m	m	m
RAV-DI Series 4	SM80*	20	20	20	20	30	20	30	20	30	20				
	SM110*							50	30	50	30	25	15	25	15
	SM140*							50	30	50	30	25	15	25	15
RAV-DI Series 3	SM160*							50	30	50	30	25	15	25	15
RAV-SDI Series 4	SP80*	30	20	30	20	50	30	50	30	50	30				
	SP110*							75	30	75	30	25	15	25	15
	SP140*							75	30	75	30	25	15	25	15

Liquid Pipe Size in" or mm		1/2 - 12.7 (STD)				5/8 - 15.9 (1-size larger)			
Gas Pipe Size in" or mm		7/8 - 22.2 (1-size smaller)		1 1/8 - 28.6 (STD)		7/8 - 22.2 (1-size smaller)		1 1/8 - 28.6 (STD)	
Maximum Pipe Distance		Length	Pre-charged	Length	Pre-charged	Length	Pre-charged	Length	Pre-charged
		m	m	m	m	m	m	m	m
RAV-DI Series 4	SM224*	70	30	70	30	50	20	50	20
	SM280*	70	30	70	30	50	20	50	20

Common Refrigerants For Existing Plant
R12
R134A
R22
R404A
R407C
R417A

Smaller Pipe Sizes (Performance capacity is reduced due to the effect of gas pipe size being smaller than standard connection)

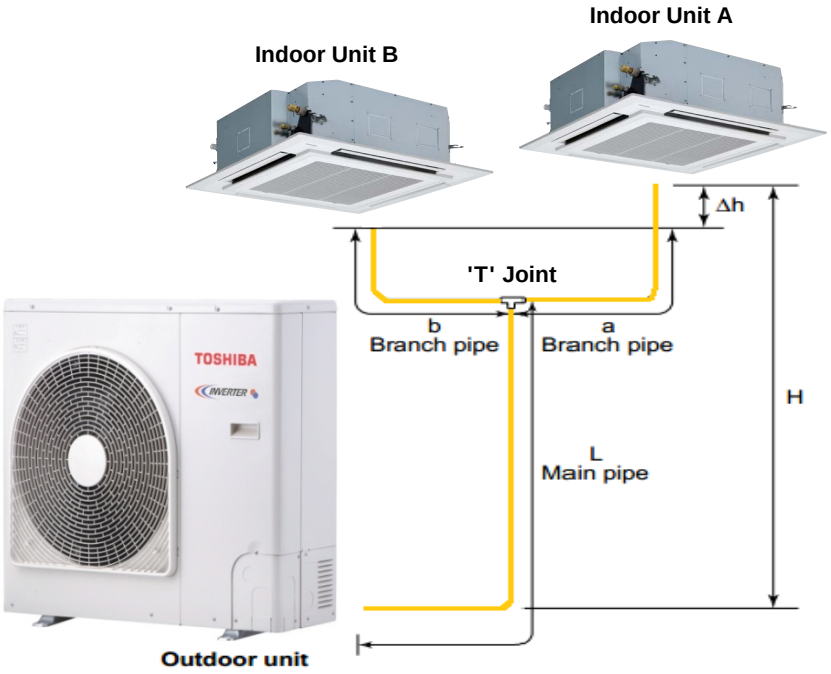
Normal Pipe Sizes

Larger Pipe Sizes

Not Compatible

Digital / Super Digital Inverter Multi Split System Combinations

	1 x Outdoor Unit	2 x Indoor Units
Twin Split Systems	RAV-SM804ATP-E RAV-SP804ATP-E	RAV-SM404MUT-E RAV-SM404SDT-E RAV-SM406BT-E
	RAV-SM1104ATP-E RAV-SP1104AT-E RAV-SP1104AT8-E	RAV-SM564UTP-E RAV-SM564MUT-E RAV-SM567CTP-E RAV-SM566BT-E RAV-SM564SDT-E RAV-SM566KRT-E
	RAV-SM1404ATP-E RAV-SP1404AT-E RAV-SP1404AT8-E	RAV-SM804UTP-E RAV-SM807CTP-E RAV-SM806BT-E RAV-SM806KRT-E
	RAV-SM1603AT-E RAV-SP1604AT8-E	RAV-SM804UTP-E RAV-SM807CTP-E RAV-SM806BT-E RAV-SM806KRT-E
	RAV-SM2244AT8-E	RAV-SM1107CTP-E RAV-SM1104UTP-E RAV-SM1106BT-E
	RAV-SM2804AT8-E	RAV-SM1407CTP-E RAV-SM1404UTP-E RAV-SM1406BT-E
Triple Split Systems	**1 x Outdoor Unit**	**3 x Indoor Units**
	RAV-SM1603AT-E RAV-SP1604AT8-E	RAV-SM564UTP-E RAV-SM564MUT-E RAV-SM567CTP-E RAV-SM566BT-E RAV-SM564SDT-E RAV-SM566KRT-E
	RAV-SM2244AT8-E	RAV-SM804UTP-E RAV-SM804BT-E RAV-SM807CTP-E RAV-SM806KRT-E
	RAV-SM2804AT8-E	RAV-SM804UTP-E RAV-SM806BT-E RAV-SM807CTP-E RAV-SM806KRT-E
Quad Split Systems	**1 x Outdoor Unit**	**4 x Indoor Units**
	RAV-SM2244AT8-E	RAV-SM564UTP-E RAV-SM564MUT-E RAV-SM567CTP-E RAV-SM566BT-E RAV-SM564SDT-E RAV-SM566KRT-E
	RAV-SM2804AT8-E	RAV-SM804UTP-E RAV-SM807CTP-E RAV-SM806BT-E RAV-SM806KRT-E



Pipe Specifications

Model (RAV-)	Allowable Piping Length (m)			Height Difference (m)			
				Indoor Unit - Outdoor Unit (H)			
	*Total Length (L+a or L+b) Maximum	†Branch Piping a or b to Furthest Indoor Maximum	‡Subtractive Piping Length a-b or b-a Maximum	Outdoor Unit Higher Maximum	Indoor Unit Higher Maximum	Indoor Unit Height Difference (Δh) Maximum	Number of Bent Portions Maximum or Less
SM804ATP-E	30	10	5	30	30	0.5	10
SM1104ATP-E SM1404ATP-E SM1603AT-E SP804ATP-E SP1104AT(8)-E SP1404AT(8)-E SP1604AT8-E	50	15	10	30	30	0.5	10
SM2244AT8-E SM2804AT8-E	70	20	10	30	30	0.5	10

*Total length of pipe between furthest indoor and outdoor unit.

†Maximum distance of Branch pipe from main pipe distributor to furthest indoor unit.

‡Maximum subtractive distance between pipe branches. Example: -

Example 1
Installed length main pipe L to distributor=38m
Installed length branch a=12m
Installed length branch b=10m

Example 2
Installed length main pipe L to distributor=40m
Installed length branch a=14m
Installed length branch b=2m

Example 1 ✓		
Total pipe length L + a	38 + 12= 50m	✓
Subtractive pipe length a – b	12 - 10= 2m	✓
Example 2 ✗		
Total pipe length L + a	40 + 14= 64m	×
Subtractive pipe length a – b	14 - 2= 12m	×

Example 3
Installed length main pipe L to distributor=50m
Installed length branch a=12m
Installed length branch b=10m

Example 4
Installed length main pipe L to distributor=60m
Installed length branch a=14m
Installed length branch b=2m

Example 3 ✓
Total pipe length L + a 50 + 12= 62m ✓
Subtractive pipe length a – b 12 - 10= 2m ✓

Example 4 ✗
Total pipe length L + a 60 + 14= 74m ×
Subtractive pipe length a – b 14 - 2= 12m ×

Additional Charge

Model (RAV-)	Main Pipes			Branch Pipes		
	Sizes (") Gas/Liquid	Pre-charge (m) Factor	Add Amount (kg/m) – [α]	Sizes (") Gas/Liquid	Pre-charge (m) Factor	Add Amount (kg/m) – [ß]
SM804ATP-E	5/8 - 3/8	18	0.040	1/2 - 1/4	2	0.020
SP804ATP-E						
SM1104ATP-E	5/8 - 3/8	18	0.040	1/2 - 1/4	2	0.020
SP1104AT(8)-E						
SM1404ATP-E	5/8 - 3/8	18	0.040	5/8 - 3/8	2	0.040
SP1404AT(8)-E						
SM1603AT-E	5/8 - 3/8	28	0.040	5/8 - 3/8	2	0.040
SP1604AT8-E						
SM2244AT8-E	1 1/8 - 1/2	28	0.080	5/8 - 3/8	4	0.040
SM2804AT8-E						

Gas calculation - [Main pipe] (L-**18**) x α + [Branch Pipe] (a+b - **4**) x ß = additional charge

Gas calculation - [Main pipe] (L-**28**) x α + [Branch Pipe] (a+b - **4**) x ß= additional charge

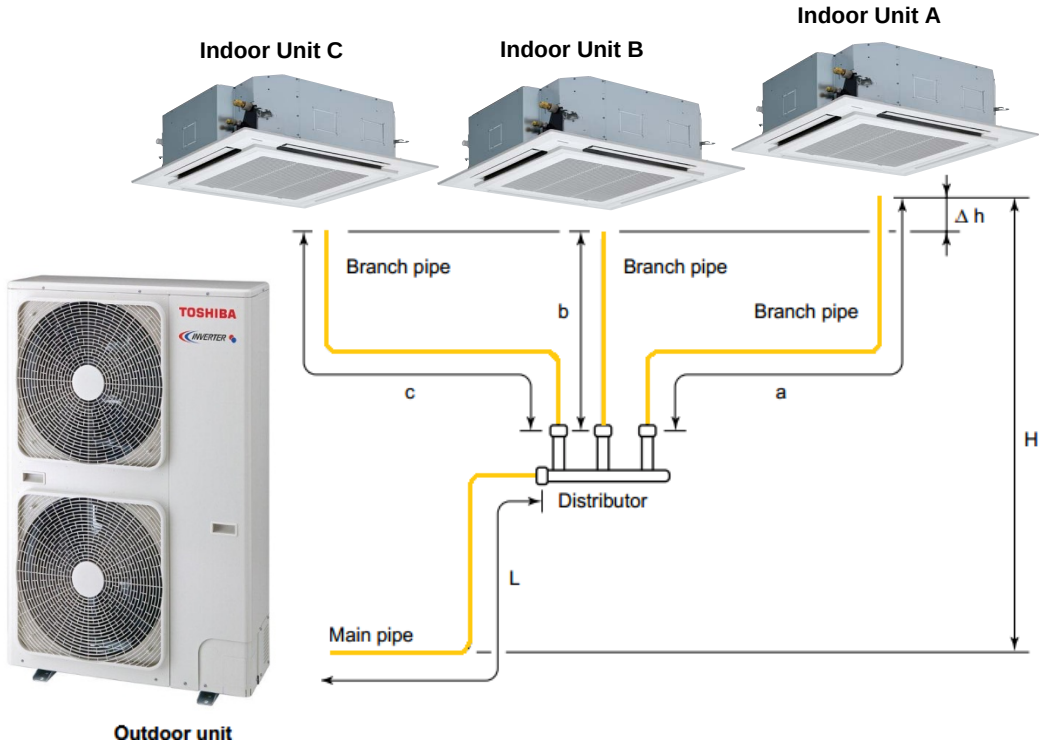
Example 1
Installed length main pipe L to distributor=38m
Installed length branch a=12m
Installed length branch b=10m

Example 1 using SM1104ATP-E

Total pipe length	L - **18** x α	38 - 18	=20 x 0.040=	0.80 +
Branch pipe length	a + b x ß	12 + 10 - **4**	=18 x 0.020=	0.36
			Add Amount	1.16 kg

Example 1 using SM2804AT8-E

Total pipe length	L - **28** x α	38 - 28	=10 x 0.080=	0.80 +
Branch pipe length	a + b x ß	12 + 10 - **4**	=18 x 0.040=	0.72
			Add Amount	1.52 kg



Pipe Specifications

Model (RAV-)	Allowable Piping Lengths (m)			Height Difference (m) Indoor Unit - Outdoor Unit (H)			
	*Total Length La + Lb La + Lc Maximum	†Branch Piping La, Lb or Lc to Furthest Indoor Maximum	‡Subtractive Piping Length Lb - La Lb - Lc Maximum	Outdoor Unit Higher Maximum	Indoor Unit Higher Maximum	Indoor Unit Height Difference (Δh) Maximum	Number of Bent portions Maximum or Less
SM1603AT-E	50	15	10	30	30	0.5	10
SP1604AT8-E							
SM2244AT8-E	70	20	10	30	30	0.5	10
SM2804AT8-E							

*Total length of pipe between furthest indoor and outdoor unit.
†Maximum distance of Branch pipe from main pipe distributor to furthest indoor unit.
‡Maximum subtractive distance between pipe branches. Example: -

Example 1
Installed length main pipe L to distributor=38m
Installed length branch a=12m
Installed length branch b=10m
Installed length branch c=12m

Example 2
Installed length main pipe L to distributor=40m
Installed length branch a=15m
Installed length branch b=4m
Installed length branch c=12m

Example 1 ✓		
Total pipe length L + a	38 + 12= 50m	✓
Subtractive pipe length a – b	12 - 10= 2m	✓
Subtractive pipe length c – b	12 - 10= 2m	✓
Example 2 ✗		
Total pipe length L + a	40 + 15= 55m	×
Subtractive pipe length a – b	15 - 4= 11m	×
Subtractive pipe length c – b	12 - 4= 8m	✓

Example 3
Installed length main pipe L to distributor=40m
Installed length branch a=12m
Installed length branch b=12m
Installed length branch c=10m

Example 4
Installed length main pipe L to distributor=50m
Installed length branch a=20m
Installed length branch b=3m
Installed length branch c=5m

Example 3 ✓			
Total pipe length L + a	40 + 12=	52m	✓
Subtractive pipe length a – b	12 - 12=	0m	✓
Subtractive pipe length c – b	12 - 10=	2m	✓
Example 4 ✖			
Total pipe length L + a	50 + 20=	70m	✓
Subtractive pipe length a – b	20 - 3=	15m	×
Subtractive pipe length c – b	5 - 3=	2m	✓

Additional Charge

Model (RAV-)	Main Pipes Sizes (") Gas/Liquid	Main Pipes Pre-charge (m) Factor	Main Pipes Add Amount (kg/m) – [α]	Branch Pipes Sizes (") Gas/Liquid	Branch Pipes Pre-charge (m) Factor	Branch Pipes Add Amount (g/m) – [ß]
SM1603AT-E	5/8 – 3/8	28	0.040	5/8 – 3/8	6	0.040
SP1604AT8-E						
SM2244AT8-E	1 1/8 – 1/2	28	0.080	5/8 – 3/8	6	0.040
SM2804AT8-E						

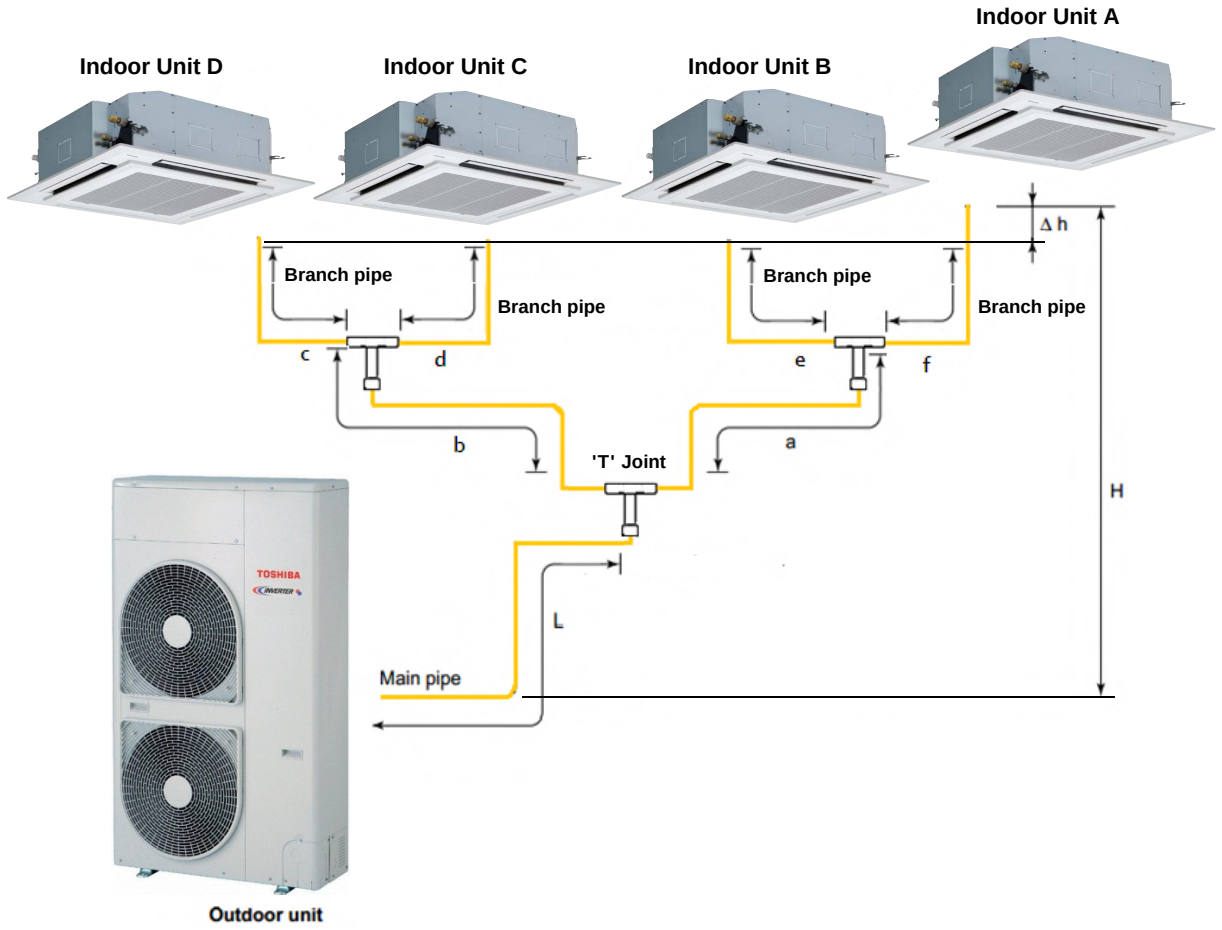
Gas calculation - [Main pipe] (L-**28**) x α + [Branch Pipe] (a+b+c - **6**) x ß = additional charge

Gas calculation - [Main pipe] (L-**28**) x α + [Branch Pipe] (a+b+c - **6**) x ß= additional charge

Example 1
Installed length main pipe L to distributor=38m
Installed length branch a=12m
Installed length branch b=10m
Installed length branch c=12m

Example 1 above using SM1603AT-E			
Total pipe length	L - **28** x α 38 - 28	=10 x 0.040=	0.40 +
Branch pipe length	a + b + c x ß 12+10+ 12- **6**	=28 x 0.040=	1.12
		Add Amount	1.52 kg

Example 1 above using SM2804AT8-E			
Total pipe length	L - **28** x α 38 - 18	=20 x 0.080=	0.80 +
Branch pipe length	a + b + c x ß 12+10+ 12- **6**	=28 x 0.040=	1.12
		Add Amount	1.92 kg



Pipe Specifications

Model (RAV-)	Allowable Piping Lengths (m)			‡Subtractive Branch Piping (c+b) - (d+b) (c+b) - (e+a) (c+b) - (f+a) (d+b) - (e+a) (d+b) - (f+a) (e+a) - (f+a) Maximum	Height Difference (m)			
	*Total Length (L+b+c) or (L+b+d) or (L+a+e) or (L+a+f) Maximum	†Branch Piping c, d, e & f to Furthest Indoor Maximum	¥Branch Piping b+c b+d a+e a+f Maximum		Outdoor Unit-Indoor Unit(H) Outdoor Unit higher Maximum	Outdoor Unit-Indoor Unit(H) Indoor Unit higher Maximum	Indoor unit height difference (Δh) Maximum	Number of Bent portions Maximum or Less
SM2244AT8-E	70	15	20	6	30	30	0.5	10
SM2804AT8-E								

*Total length of pipe between furthest indoor and outdoor unit.
†Maximum distance of Branch pipe from main pipe distributor to furthest indoor unit.
¥ Maximum pipe distance between Branched pairs
‡Maximum subtractive distance between pipe branches. Example: -

Example 1
Installed length main pipe L to distributor=20m
Installed length branch b=10m
Installed length branch c=5m
Installed length branch d=5m
Installed length branch a=10m
Installed length branch e=5m
Installed length branch f=5m

Example 1 ✓		
Total pipe length L + b + c	20 + 10 + 5=	35m✓
Branch length b + d	10 + 5=	15m✓
Branch length a + e	10 + 5=	15m✓
Branch length a + f	10 + 5=	15m✓
Subtractive pipe length c+b - d+b	5+10 - 5+10=	0m✓
Subtractive pipe length c+b - e+a	5+10 - 5+10=	0m✓
Subtractive pipe length c+b - f+a	5+10 - 5+10=	0m✓
Subtractive pipe length d+b - e+a	5+10 - 5+10=	0m✓
Subtractive pipe length d+b - f+a	5+10 - 5+10=	0m✓
Subtractive pipe length e+a - f+a	5+10 - 5+10=	0m✓

Example 2
Installed length main pipe L to distributor=50m
Installed length branch b=15m
Installed length branch c=10m
Installed length branch d=6m
Installed length branch a=15m
Installed length branch e=5m
Installed length branch f=10m

Example 2 ✖					
Total pipe length L + b + c	50+	15+	10		= 75m✖
Branch length b + c	15+	10			= 25m✖
Branch length b + d	15+	6			= 21m✖
Branch length a + e	15+	5			= 20m✓
Branch length a + f	15+	10			= 25m✖
Subtractive pipe length c+b - d+b	10+	15-	6+	15	= 4m✓
Subtractive pipe length c+b - e+a	10+	15-	5+	15	= 5m✓
Subtractive pipe length c+b - f+a	10+	15-	10+	15	= 0m✓
Subtractive pipe length d+b - e+a	6+	15-	5+	15	= 1m✓
Subtractive pipe length d+b - f+a	6+	15-	10+	15	= 1m✓
Subtractive pipe length e+a - f+a	6+	15-	10+	15	= 1m✓

Additional Charge

Model	Main Pipes			Branch pipes				
	Sizes (") Gas/Liquid	Pre-charge (m) Factor	Add amount (kg/m) – [α]	Sizes (") Gas/Liquid	Pre-charge (m) Factor	Add amount (g/m) – [ß]	Sizes (") Gas/Liquid	Add amount (g/m) – [γ]
SM2244AT8-E	1 1/8 – 1/2	28	0.080	5/8 – 3/8	4	0.040	1/2 – 1/4	0.020
SM2804AT8-E	1 1/8 – 1/2	28	0.080	5/8 – 3/8	4	0.040	5/8 – 3/8	0.040

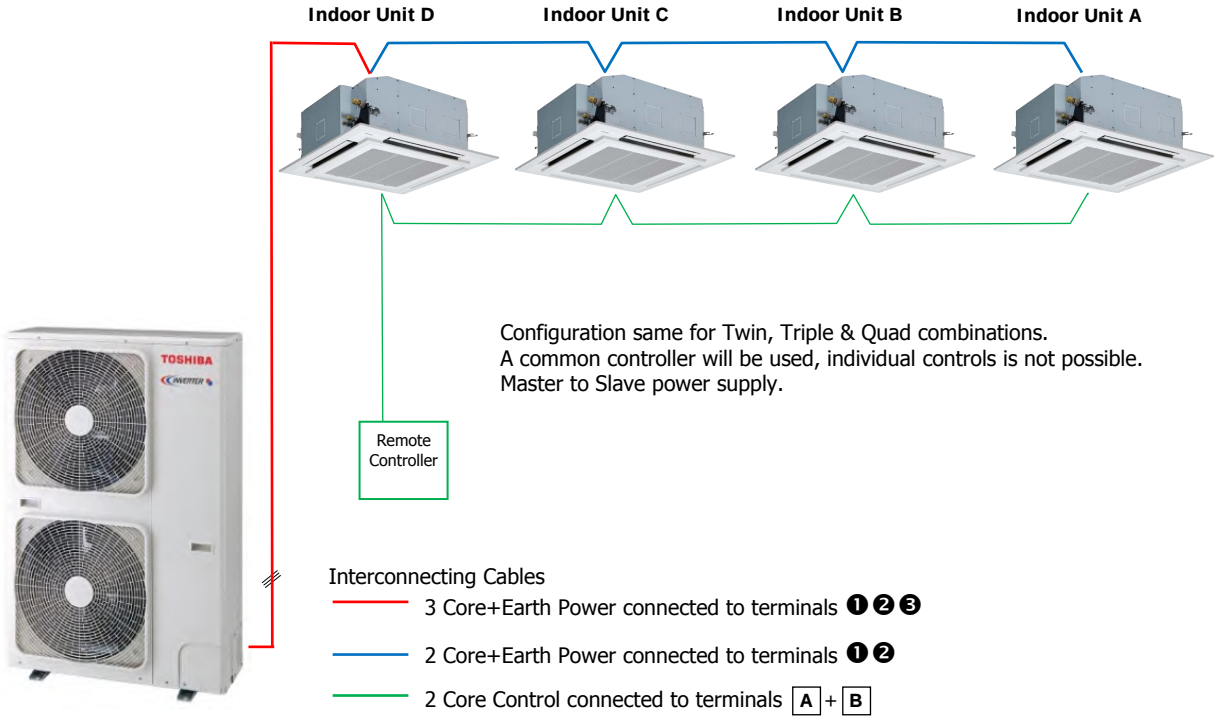
Gas calculation - [Main pipe] (L-**28**) x α + [Branch Pipe] (a + b - **4**) x ß + (c+d+e+f) x γ = additional charge

Gas calculation - [Main pipe] (L-**28**) x α + [Branch Pipe] (a + b - **4**) x ß + (c+d+e+f) x γ = additional charge

Example 1
Installed length main pipe L to distributor=20m
Installed length branch b=10m
Installed length branch c=5m
Installed length branch d=5m
Installed length branch a=10m
Installed length branch e=5m
Installed length branch f=5m

Example 1 using SM2804AT8-E				
Total pipe length	L - **28** x α	20 - 28	=-8 x 0.080=	-0.64 +
Branch pipe length	a + b **-** 4 x ß	10+10- **4**	=16 x 0.040=	0.64 +
Branch pipe length	c + d + e + f x γ	5+5+5+5	=20 x 0.040=	0.80
			Add Amount	0.80 kg

Digital / Super Digital Multi Split System Wiring Schematic



VRF System Make Up Chart

Model Reference MMY	Duty HP	Cooling Capacity kW	Heating Capacity kW	Outdoor Unit Combination								Max. Indoor Units
				0401	0501	0601	0804	1004	1204	1404	1604	
Mini SMMS - MCY												
MAP0401HT	4	12.1	12.5	1								6
MAP0501HT	5	14.0	16.0		1							8
MAP0601HT	6	15.5	18.0			1						9
Note:- MAP0401HT, MAP0501HT & MAP601HT are ***NOT*** Modular												
SMMS*i* Heat Pump - MMY												
MAP0501HT8-E	5	14.0	16.0		1	1						8
MAP0601HT8-E	6	16.0	18.0									10
MAP0804HT8-E	8	22.4	25.0				1					13
MAP1004HT8-E	10	28.0	31.5					1				16
MAP1204HT8-E	12	33.5	37.5						1			20
MAP1404HT8-E	14	40.0	45.0							1		23
MAP1604HT8-E	16	45.0	50.0								1	27
AP1814HT8-E	18	50.4	56.5				1	1				30
AP2014HT8-E	20	56.0	63.0					2				33
AP2214HT8-E	22	61.5	69.0					1	1			37
AP2414HT8-E	24	68.0	76.5						2			40
AP2614HT8-E	26	73.0	81.5					1			1	43
AP2814HT8-E	28	78.5	88.0						1		1	47
AP3014HT8-E	30	85.0	95.0							1	1	48
AP3214HT8-E	32	90.0	100.0								2	48
AP3414HT8-E	34	96.0	108.0					1	2			48
AP3614HT8-E	36	101.0	113.0						3			48
AP3814HT8-E	38	106.5	119.5					1	1		1	48
AP4014HT8-E	40	112.0	127.0						2		1	48
AP4214HT8-E	42	118.0	132.0						1	1	1	48
AP4414HT8-E	44	123.5	138.0						1		2	48
AP4614HT8-E	46	130.0	145.0							1	2	48
AP4814HT8-E	48	135.0	150.0								3	48
SMMS*i* High Efficiency Heat Pump - MMY												
AP1624HT8-E	16	45.0	50.0				2					27
AP2424HT8-E	24	68.0	76.5				3					40
AP2624HT8-E	26	73.0	81.5				2	1				43
AP2824HT8-E	28	78.5	88.0				1	2				47
AP3024HT8-E	30	85.0	95.0					3				48
AP3224HT8-E	32	90.0	100.0				4					48
AP3424HT8-E	34	96.0	108.0				3	1				48
AP3624HT8-E	36	101.0	113.0				2	2				48
AP3824HT8-E	38	106.5	119.5				1	3				48
AP4024HT8-E	40	112.0	126.5					4				48
AP4224HT8-E	42	118.0	132.0					3	1			48
AP4424HT8-E	44	123.5	138.0					2	2			48
AP4624HT8-E	46	130.0	145.0					1	3			48
AP4824HT8-E	48	135.0	150.0						4			48
SHRM*i* Heat Recovery - MMY												

Model Reference MMY	Duty HP	Cooling Capacity Kw	Heating Capacity kW	Outdoor Unit Combination				Max. Indoor Units
				0804	1004	1204	1404	
MAP0804FT8-E	8	22.4	25.0	1				13
MAP1004FT8-E	10	28.0	31.5		1			16
MAP1204FT8-E	12	33.5	37.5			1		20
MAP1404FT8-E	14	40.0	45.0				1	23
AP1614FT8-E	16	45.0	50.0	2				27
AP1814FT8-E	18	50.4	56.5	1	1			30
AP2014FT8-E	20	56.0	63.0		2			33
AP2214FT8-E	22	61.5	69.0		1	1		37
AP2414FT8-E	24	68.0	76.5		1		1	40
AP2614FT8-E	26	73.0	81.5			1	1	43
AP2814FT8-E	28	78.5	88.0				2	47
AP3014FT8-E	30	85.0	95.0		3			48
AP3214FT8-E	32	90.0	100.0		2	1		48
AP3414FT8-E	34	96.0	108.0		2		1	48
AP3614FT8-E	36	101.0	113.0			3		48
AP3814FT8-E	38	106.5	119.5			2	1	48
AP4014FT8-E	40	112.0	127.0			1	2	48
AP4214FT8-E	42	118.0	132.0				3	48

Capacity Data – VRF Indoor Units

Indoor Unit Model	Capacity Code HP	Capacity Code kW
007	0.8	2.2
009	1	2.8
012	1.25	3.6
015	1.7	4.5
018	2	5.6
024	2.5	7.1
027	3	8.0
030	3.2	9.0
036	4	11.2
048	5	14.0
056	6	16.0
072	8	22.4
096	10	28.0

Electrical Data – VRF Outdoor Units

Model (Outdoor)	HP	Phase	Power To	Soft Start	Suggested Fuse Size	Fuse Type	Inter-Connecting Cable
Mini SMMS							
MCY-MAP0401HT	4	1Ph-N	Indoor + Outdoor	Y	20	C	2C Screened
MCY-MAP0501HT	5	1Ph-N	Indoor + Outdoor	Y	25	C	2C Screened
MCY-MAP0601HT	6	1Ph-N	Indoor + Outdoor	Y	32	C	2C Screened
SMMS							
MMY-MAP0501HT8-E	5	3Ph-N	Indoor + Outdoor	Y	16	C	2C Screened
MMY-MAP0601HT8-E	6	3Ph-N	Indoor + Outdoor	Y	16	C	2C Screened
SMMS*i*							
MMY-MAP0804HT8-E	8	3Ph-N	Indoor + Outdoor	Y	16	C	2C Screened
MMY-MAP1004HT8-E	10	3Ph-N	Indoor + Outdoor	Y	16	C	2C Screened
MMY-MAP1204HT8-E	12	3Ph-N	Indoor + Outdoor	Y	25	C	2C Screened
MMY-MAP1404HT8-E	14	3Ph-N	Indoor + Outdoor	Y	25	C	2C Screened
MMY-MAP1604HT8-E	16	3Ph-N	Indoor + Outdoor	Y	32	C	2C Screened
SHRM*i*							
MMY-MAP0804FT8-E	8	3Ph-N	Indoor + Outdoor	Y	16	C	2C Screened
MMY-MAP1004FT8-E	10	3Ph-N	Indoor + Outdoor	Y	20	C	2C Screened
MMY-MAP1204FT8-E	12	3Ph-N	Indoor + Outdoor	Y	20	C	2C Screened
MMY-MAP1404FT8-E	14	3Ph-N	Indoor + Outdoor	Y	25	C	2C Screened

VRF Additional Refrigerant Charge Amount

Additonal Refrigerant Charge Amount			
Liquid Pipe Size inch" - mm	Mini SMMS kg/m	SMMS SMMS*i* kg/m	SHRM SHRM*i* kg/m
1/4 - 6.4	0.025	0.025	0.0325
3/8 - 9.5	0.055	0.055	0.0715
1/2 - 12.7		0.105	0.1365
5/8 - 15.9		0.160	0.2080
3/4 - 19.1		0.250	0.3250
7/8 - 22.2		0.350	0.4550

VRF Additional Refrigerant Charge Calculations

HP	SMMS	Base Charge kg
4	MCY-MAP0401HT	7.2
5	MCY-MAP0501HT	7.2
6	MCY-MAP0601HT	7.2
5	MAP0501HT8-E	8.5
6	MAP0601HT8-E	8.5
8	MAP0801HT8-E	12.5
10	MAP1001HT8-E	12.5
12	MAP1201HT8-E	12.5
14	AP1401HT8-E	21.0
16	AP1601HT8-E	25.0
18	AP1801HT8-E	25.0
20	AP2001HT8-E	25.0
22	AP2201HT8-E	33.5
22	AP2211HT8-E	25.0
24	AP2401HT8-E	37.5
24	AP2411HT8-E	25.0
26	AP2601HT8-E	37.5
28	AP2801HT8-E	37.5
30	AP3001HT8-E	37.5
32	AP3201HT8-E	50.0
32	AP3211HT8-E	37.5
34	AP3401HT8-E	50.0
34	AP3411HT8-E	37.5
36	AP3601HT8-E	50.0
36	AP3611HT8-E	37.5
38	AP3801HT8-E	50.0
40	AP4001HT8-E	50.0
42	AP4201HT8-E	50.0
44	AP4401HT8-E	50.0
46	AP4601HT8-E	50.0
48	AP4801HT8-E	50.0

Trim Charge					
	Mini SMMS			SMMS	
HP	Condenser Combinations 1	2	3	4	Correction Factor kg
4	4				-0.8
5	5				-0.4
6	6				0
5	5				0
6	6				0
8	8				1.5
10	10				2.5
12	12				3.5
14	8	6			0
16	8	8			0
18	10	8			0
20	10	10			3
22	8	8	6		0
22	12	10			5
24	8	8	8		-4
24	12	12			7
26	10	8	8		-4
28	10	10	8		-2
30	10	10	10		0
32	8	8	8	8	-6
32	12	10	10		1
34	10	8	8	8	-6
34	12	12	10		3
36	10	10	8	8	-6
36	12	12	12		4
38	10	10	10	8	-6
40	10	10	10	10	-5
42	12	10	10	10	-4
44	12	12	10	10	-2
46	12	12	12	10	0
48	12	12	12	12	2

Calculation of Additional Refrigerant Charge Mini SMMS

Liquid Line Pipe Diameter Ø	Refrigerant	Length	Additional Amount of
1/4 - 6.4	0.0250 x	=	kg
3/8 - 9.5	0.0550 x	=	kg
	Additional amount of refrigerant =		kg

Calculation of Additional Refrigerant Charge SMMS

Liquid Line Pipe Diameter Ø	Refrigerant	Length	Additional Amount of
1/4 - 6.4	0.025 x	=	kg
3/8 - 9.5	0.055 x	=	kg
1/2 - 12.7	0.105 x	=	kg
5/8 - 15.9	0.160 x	=	kg
3/4 - 19.1	0.250 x	=	kg
7/8 - 22.2	0.350 x	=	kg
	Additional amount of refrigerant =		kg

Additional refrigerant charge amount at site = Additional Refrigerant Charge Amount kg/m **x** Real Length of Liquid Line m **+ HP** Correction Factor kg

Note: if a negative result occurs the additonal refrigerant amount is 0 kg
***** No additional refrigerant charge or change to Factory charge is required *****

Total System Charge = Base Charge + Additional Refrigerant Charge + HP Correction Factor

VRF Additional Refrigerant Charge Calculations

HP	SMMS & SMMS*i*	Base Charge kg
5	MAP0501HT8-E	8.5
6	MAP0601HT8-E	8.5
8	MAP0804HT8-E	11.5
10	MAP1004HT8-E	11.5
12	MAP1204HT8-E	11.5
14	MAP1404HT8-E	11.5
16	MAP1604HT8-E	11.5
18	AP1814HT8-E	23.0
20	AP2014HT8-E	23.0
22	AP2214HT8-E	23.0
24	AP2414HT8-E	23.0
26	AP2614HT8-E	23.0
28	AP2814HT8-E	23.0
30	AP3014HT8-E	23.0
32	AP3214HT8-E	23.0
34	AP3414HT8-E	34.5
36	AP3614HT8-E	34.5
38	AP3814HT8-E	34.5
40	AP4014HT8-E	34.5
42	AP4214HT8-E	34.5
44	AP4414HT8-E	34.5
46	AP4614HT8-E	34.5
48	AP4814HT8-E	34.5
16	AP1624HT8-E	23.0
24	AP2424HT8-E	34.5
26	AP2624HT8-E	34.5
28	AP2824HT8-E	34.5
30	AP3024HT8-E	34.5
32	AP3224HT8-E	46.0
34	AP3424HT8-E	46.0
36	AP3624HT8-E	46.0
38	AP3824HT8-E	46.0
40	AP4024HT8-E	46.0
42	AP4224HT8-E	46.0
44	AP4424HT8-E	46.0
46	AP4624HT8-E	46.0
48	AP4824HT8-E	46.0

Trim Charge					
	SMMS & SMMS*i*				SMMS*i* High Efficiency
	Condenser Combinations				
HP	1	2	3	4	Correction Factor kg
5	5				0
6	6				0
8	8				1.5
10	10				2.5
12	12				3.5
14	14				8.5
16	16				10.5
18	10	8			0
20	10	10			3
22	16	10			5
24	12	12			7.5
26	16	10			8.5
28	16	12			9.5
30	16	14			11.5
32	16	16			12.5
34	12	12	10		3
36	12	12	12		4
38	16	12	10		6
40	16	12	12		7
42	16	14	12		8
44	16	16	12		10
46	16	16	14		12
48	16	16	16		14
16	8	8			0
24	8	8	8		-4
26	10	8	8		-4
28	10	10	8		-2
30	10	10	10		0
32	8	8	8	8	-6
34	10	8	8	8	-6
36	10	10	8	8	-6
38	10	10	10	8	-6
40	10	10	10	10	-5
42	12	10	10	10	-4
44	12	12	10	10	-2
46	12	12	12	10	0
48	12	12	12	12	2

Calculation of Additional Refrigerant Charge SMMS*i* *& High Efficiency*

Liquid Line Pipe Diameter Ø	Refrigerant	Length	Additional Amount of
1/4 - 6.4	0.025 x	=	kg
3/8 - 9.5	0.055 x	=	kg
1/2 - 12.7	0.105 x	=	kg
5/8 - 15.9	0.160 x	=	kg
3/4 - 19.1	0.250 x	=	kg
7/8 - 22.2	0.350 x	=	kg
	Additional amount of refrigerant =		kg

Additional refrigerant charge amount at site = Additional Refrigerant Charge Amount kg/m **x** Real Length of Liquid Line m **+ HP** Correction Factor kg

Note: if a negative result occurs the additonal refrigerant amount is 0 kg
***** No additional refrigerant charge or change to Factory charge is required *****

Total System Charge = Base Charge + Additional Refrigerant Charge + HP Correction Factor

VRF Additional Refrigerant Charge Calculations

HP	SHRM	Base Charge kg
8	MAP0802FT8-E	11.5
10	MAP1002FT8-E	11.5
12	MAP1202FT8-E	11.5
16	MAP1602HT8-E	23.0
18	MAP1802HT8-E	23.0
20	MAP2002HT8-E	23.0
24	MAP2402HT8-E	34.5
26	MAP2602HT8-E	34.5
28	MAP2802HT8-E	34.5
30	MAP3002HT8-E	34.5

Trim Charge				
	SHRM			
	Condenser Combinations			Correction
HP	1	2	3	Factor kg
8	8			2
10	10			2.5
12	12			3
16	8	8		-1.5
18	10	8		0
20	10	10		2
24	8	8	8	-4.5
26	10	8	8	-3
28	10	10	8	-1.5
30	10	10	10	0

HP	SHRM*i*	Base Charge kg
8	MAP0804FT8-E	11.0
10	MAP1004FT8-E	11.0
12	MAP1204FT8-E	11.0
14	MAP1404FT8-E	11.0
16	AP1614FT8-E	22.0
18	AP1814FT8-E	22.0
20	AP2014FT8-E	22.0
22	AP2214FT8-E	22.0
24	AP2414FT8-E	22.0
26	AP2614FT8-E	22.0
28	AP2814FT8-E	22.0
30	AP3014FT8-E	33.0
32	AP3214FT8-E	33.0
34	AP3414FT8-E	33.0
36	AP3614FT8-E	33.0
38	AP3814FT8-E	33.0
40	AP4014FT8-E	33.0
42	AP4214FT8-E	33.0

Trim Charge				
	SHRM*i*			
	Condenser Combinations			Correction
HP	1	2	3	Factor kg
8	8			2
10	10			3
12	12			8
14	14			10
16	8	8		0
18	10	8		1.5
20	10	10		3.5
22	12	10		7.5
24	14	10		8.5
26	14	12		11
28	14	14		12
30	10	10	10	2.5
32	12	10	10	5
34	14	10	10	6
36	12	12	12	8
38	14	12	12	9.5
40	14	14	12	11
42	14	14	14	12.5

Calculation of Additional Refrigerant Charge SHRM*i*

Liquid Line Pipe Diameter Ø	Refrigerant	Length	Additional Amount of
1/4 - 6.4	0.0325 x	=	kg
3/8 - 9.5	0.0715 x	=	kg
1/2 - 12.7	0.1365 x	=	kg
5/8 - 15.9	0.2080 x	=	kg
3/4 - 19.1	0.3250 x	=	kg
7/8 - 22.2	0.4550 x	=	kg
	Additional amount of refrigerant =		kg

Additional refrigerant charge amount at site = Additional Refrigerant Charge Amount kg/m **x** Real Length of Liquid Line m **+ HP** Correction Factor kg

Note: if a negative result occurs the additonal refrigerant amount is 0 kg
***** No additional refrigerant charge or change to Factory charge is required *****

Total System Charge = Base Charge + Additional Refrigerant Charge + HP Correction Factor

Designed with the refurbishment market in mind, the new generation of VRF systems allow the reuse of vertical refrigerant pipe work from old R22 and R407C systems. Allowing a cost effective solution to upgrade from any brand of old equipment to the industry's most energy efficient VRF systems.

R22 & R407C Replacement Technology For SMMSi and SHRMi

Continuing our commitment to more environmentally friendly refrigerants our latest generation SMMSi and SHRMi VRF systems can be used to replace existing R22 and R407C air conditioning plant. R22 (HCFC) was commonly used in air conditioning production up to 2004, on 1st January 2015 R22 equipment will become none serviceable, resulting in systems having to be replaced with more environmentally friendly refrigerants that have a lower or zero Ozone Depleting Potential (ODP).

- Available for Heat Pump and Heat Recovery systems
- Re-use existing refrigerant pipework
- Cost effective upgrade
- Reduced installation time and expense
- ECA compliant dependent on design
- Minimal disruption
- Ideal for refurbishment projects where the main risers are no longer accessible
- Lower energy consumption with up to 60% increase in energy efficiency
- Chance to increase or decrease system capacity
- Smaller footprint compared to previous R22 models
- Can re-use existing power supply
- End of life recycling program for replaced plant

Pipe	Suction Gas					Liquid Side					Discharge Gas				Max. Piping Length to 1st Branch Joint (m) Height Difference Outdoor to Indoor	
SHRM*i*	7/8	1 1/8	1 3/8	1 5/8	1 7/8	1/2	5/8	3/4	7/8	1 1/8	3/4	7/8	1 1/8	1 3/8	Height <3m	Height >3 <50m
8HP	✓	✓				✓	✓				✓				100	85
10HP	✓	✓				✓	✓				✓				100	85
12HP		✓	✓			✓	✓				✓				100	85
14HP		✓	✓				✓	✓				✓			100	85
16HP		✓	✓					✓	✓			✓			100	85
18HP		✓	✓					✓	✓			✓			100	85
20HP		✓	✓					✓	✓			✓			100	85
22HP			✓	✓				✓	✓				✓		100	85
24HP			✓	✓				✓	✓				✓		100	85
26HP			✓	✓					✓	✓			✓		100	85
28HP			✓	✓					✓	✓			✓		100	85
30HP			✓	✓					✓	✓			✓		100	85
32HP			✓	✓					✓	✓			✓		100	85
34HP			✓	✓					✓	✓			✓		100	85
36HP				✓	✓				✓	✓				✓	100	85
38HP				✓	✓				✓	✓				✓	100	85
40HP				✓	✓				✓	✓				✓	100	85
42HP				✓	✓				✓	✓				✓	100	85

Pipe	Suction Gas					Liquid Side					Max. Piping Length to 1st Branch Joint (m) Height Difference Outdoor to Indoor	
SMMS*i*	7/8	1 1/8	1 3/8	1 5/8	1 7/8	1/2	5/8	3/4	7/8	1 1/8	Standard Height <70m	High Efficiency Height <70m
8HP	✓	✓				✓	✓				100	
10HP	✓	✓				✓	✓				100	
12HP		✓	✓			✓	✓				100	
14HP		✓	✓				✓	✓			100	
16HP		✓	✓				✓	✓			100	100
18HP		✓	✓				✓	✓			100	
20HP		✓	✓				✓	✓			100	
22HP			✓	✓				✓	✓		100	
24HP			✓	✓				✓	✓		100	100
26HP			✓	✓				✓	✓		100	100
28HP			✓	✓				✓	✓		100	100
30HP			✓	✓				✓	✓		100	100
32HP			✓	✓				✓	✓		100	100
34HP			✓	✓				✓	✓		100	100
36HP				✓	✓				✓	✓	100	100
38HP				✓	✓				✓	✓	100	100
40HP				✓	✓				✓	✓	100	100
42HP				✓	✓				✓	✓	100	100
44HP				✓	✓				✓	✓	100	100
46HP				✓	✓				✓	✓	50	50
48HP				✓	✓				✓	✓	50	50

Maximum system diversity factor connectable indoor units to outdoor is 105%
The data tables detail the main pipe sizes to the first joint. The pipes can be vertical or horizontal providing they match the data. After the first joint for main pipes all other pipework must follow the same principals/criteria as for new installations as detailed in the installation and data books.

Acoustic Data - MMY Indoor Units

4 Way Compact Cassette	High dB(A)	Med dB(A)	Low dB(A)
MMU-AP0054MH-E	35	32	28
MMU-AP0074MH-E	36	32	28
MMU-AP0094MH-E	37	33	28
MMU-AP0124MH-E	37	33	29
MMU-AP0154MH-E	40	35	30
MMU-AP0184MH-E	44	39	34
4 Way Cassette	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMU-AP0094HP-E	30	29	27
MMU-AP0124HP-E	30	29	27
MMU-AP0154HP-E	31	29	27
MMU-AP0184HP-E	32	29	27
MMU-AP0244HP-E	35	31	28
MMU-AP0274HP-E	35	31	28
MMU-AP0304HP-E	38	33	30
MMU-AP0364HP-E	43	38	32
MMU-AP0484HP-E	46	38	33
MMU-AP0564HP-E	46	40	33
2 Way Cassette	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMU-AP0072WH	34	32	30
MMU-AP0092WH	34	32	30
MMU-AP0122WH	34	32	30
MMU-AP0152WH	35	33	30
MMU-AP0182WH	35	33	30
MMU-AP0242WH	38	35	33
MMU-AP0272WH	38	35	33
MMU-AP0302WH	40	37	34
MMU-AP0362WH	42	39	36
MMU-AP0482WH	43	40	37
MMU-AP0562WH	46	42	39
1 Way Cassette	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMU-AP0074YH-E	42	39	34
MMU-AP0094YH-E	42	39	34
MMU-AP0124YH-E	42	39	34
MMU-AP0154SH-E	37	35	32
MMU-AP0184SH-E	38	36	34
MMU-AP0244SH-E	45	41	37
Slim Ducted	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMD-AP0054SPH-E	35	33	30
MMD-AP0074SPH-E	36	33	30
MMD-AP0094SPH-E	36	33	30
MMD-AP0124SPH-E	38	35	32
MMD-AP0154SPH-E	39	36	33
MMD-AP0184SPH-E	40	38	36
MMD-AP0244SPH-E	49	47	44
MMD-AP0274SPH-E	49	47	44
Standard Ducted	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMD-AP0076BHP-E	29	26	23
MMD-AP0096BHP-E	30	26	23
MMD-AP0126BHP-E	30	26	23
MMD-AP0156BHP-E	33	29	25
MMD-AP0186BHP-E	33	29	25
MMD-AP0246BHP-E	36	31	27
MMD-AP0276BHP-E	36	31	27
MMD-AP0306BHP-E	36	31	27
MMD-AP0366BHP-E	40	36	33
MMD-AP0486BHP-E	40	36	33
MMD-AP0566BHP-E	40	36	33
High Static Ducted	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMD-AP0184H-E	40	37	33
MMD-AP0244H-E	44	40	36
MMD-AP0274H-E	44	40	36
MMD-AP0364H-E	44	40	36
MMD-AP0484H-E	44	40	36
MMD-AP0724H-E	50	49	48
MMD-AP0964H-E	51	50	49

Ceiling Suspended	High dB(A)	Med dB(A)	Low dB(A)
MMC-AP0157H-E	35	32	30
MMC-AP0187H-E	36	33	30
MMC-AP0247H-E	38	36	33
MMC-AP0277H-E	38	36	33
MMC-AP0367H-E	41	38	35
MMC-AP0487H-E	43	40	37
MMC-AP0567H-E	43	40	37
High Wall	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMK-AP0073H	35	31	28
MMK-AP0093H	37	32	28
MMK-AP0123H	37	32	28
MMK-AP0153H	41	36	33
MMK-AP0183H	41	36	33
MMK-AP0243H	46	39	34
MMK-AP0074MH-E	35	32	29
MMK-AP0094MH-E	36	33	29
MMK-AP0124MH-E	37	33	29
Concealed Chassis	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MML-AP0074BH-E	36	34	28
MML-AP0094BH-E	37	35	28
MML-AP0124BH-E	41	36	29
MML-AP0154BH-E	44	38	32
MML-AP0184BH-E	44	41	35
MML-AP0244BH-E	46	42	36
Floor Mounted Console	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MML-AP0074H-E	39	37	35
MML-AP0094H-E	39	37	35
MML-AP0124H-E	45	41	38
MML-AP0154H-E	45	41	38
MML-AP0184H-E	49	44	39
MML-AP0244H-E	49	44	39
Bi-Flow Console	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MML-AP0074NH-E	38	32	26
MML-AP0094NH-E	38	32	26
MML-AP0124NH-E	40	34	29
MML-AP0154NH-E	43	37	31
MML-AP0184NH-E	47	40	34
Floor Mounted Cabinet	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMF-AP0154H-E	46	43	38
MMF-AP0184H-E	46	43	38
MMF-AP0244H-E	49	45	40
MMF-AP0274H-E	49	45	40
MMF-AP0364H-E	51	48	44
MMF-AP0484H-E	54	50	46
MMF-AP0564H-E	54	50	46
Fresh Air Intake	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMD-AP0481HFE	45	43	41
MMD-AP0721HFE	46	45	44
MMD-AP0961HFE	46	45	44
		Extra	
Air to Air Heat Exchanger	**High dB(A)**	**High dB(A)**	**Low dB(A)**
MMD-VN502HEXE	37	36	34
MMD-VN802HEXE	41	40	38
MMD-VN1002HEXE	43	42	40
MMD-VNK502HEXE	36	35	33
MMD-VNK802HEXE	40	39	38
MMD-VNK1002HEXE	42	41	39
Ceiling Suspended	**High dB(A)**	**Med dB(A)**	**Low dB(A)**
MMC-AP0157H-E	35	32	30
MMC-AP0187H-E	36	33	30
MMC-AP0247H-E	38	36	33
MMC-AP0277H-E	38	36	33
MMC-AP0367H-E	41	38	35
MMC-AP0487H-E	43	40	37
MMC-AP0587H-E	43	40	37

Sound Pressure Levels measured in an anechoic chamber in accordance with JSI B8616

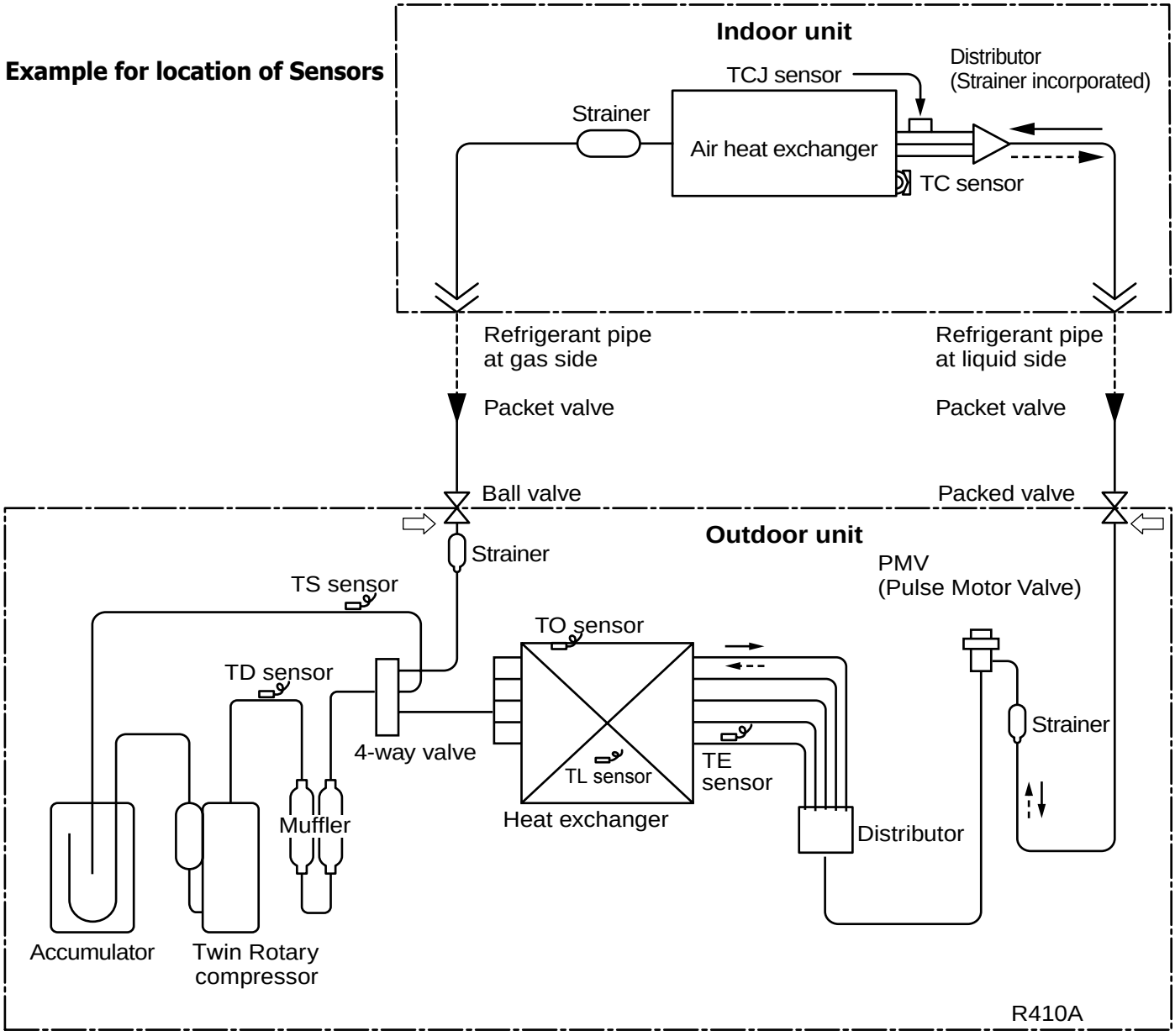
There are eight commonly used sensors in the **RAS** and **RAV** systems.

Ta = Return Air Sensor; indoor unit
TL = Liquid Pipe Sensor (fan speed); outdoor unit
Td = Discharge Pipe Sensor; outdoor unit
Ts = Suction
Tc = Coil Sensor; indoor unit
TE = Heat Exchange Sensor (defrost); outdoor unit
To = Ambient
Tk = Oil sensor

The Ta,Tc,TL and TE sensors all share the same resistance versus temperature characteristic. They differ however in electrical connections and sensing head style, therefore it is important to quote the full model type number when ordering any replacement sensors.
The Td sensor has a different resistance characteristic because its sensing range is that much higher than the others.

Sensor	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	100	ºC
Ta,Tc,TL,TE To, Ts	60.3	45.3	34.5	26.4	20.5	16	12.5	10	8	6.5	5.3	4.3	3.6	2.9	2.4	-	KΩ
Td, Tk	-	-	-	-	103	80.5	63	50	-	-	-	-	17.9	-	-	3.4	kΩ

Example for location of Sensors



Indoor Lamp Indication for Trouble Shooting - RAV 6KRT (High Wall Only)

● : Go off, ○ : Go on, ☼ : Flash (0.5 sec.)

Lamp indication	Check code	Cause of trouble occurrence
Ready ● Timer ● Operation ● No indication at all	—	Power supply OFF or miswiring between receiving unit and indoor unit
Ready ● Timer ● Operation ☼ Flash	E01	Receiving error / Sending error / Communication stop } Receiving unit } Miswiring or wire connection error between receiving unit and indoor unit
	E02	
	E03	
	E08	Duplicated indoor unit No. / Duplicated master units of remote controller } Setup error
	E09	
	E10	Communication error between CPUs on indoor unit P.C. board
	E18	Wire connection error between indoor units, Indoor power OFF (Communication stop between indoor master and follower or between main and sub indoor twin)
Ready ☼ Flash Timer ● Operation ●	E04	Miswiring between indoor unit and outdoor unit or connection erorr (Communication stop between indoor and outdoor units)
Ready ☼ Timer ☼ Operation ● Alternate flash	P01	Indoor AC fan error
	P10	Overflow was detected. Protective device of indoor unit worked.
	P12	Indoor DC fan error
Ready ☼ Timer ● Operation ☼ Alternate flash	P03	Outdoor unit discharge temp. error / Outdoor high pressure system error / Case thermostat worked / Power supply error — Protective device of outdoor unit worked. ∗1
	P04	
	P05	Power supply error / Heat sink overheat error / Gas leak detection error } Outdoor unit error
	P07	
	P15	
	P19	4-way valve system error (Indoor or outdoor unit judged.)
	P20	Outdoor unit high pressure protection
	P22	Outdoor unit: Outdoor unit error / Outdoor unit: Inverter Idc operation / Outdoor unit: Position detection error — Protective device of outdoor unit worked. ∗1
	P26	
	P29	
	P31	Stopped because of error of other indoor unit in a group (Check codes of E03/L03/L07/L08)
Lamp indication	**Check code**	**Cause of trouble occurrence**
Ready ☼ Timer ☼ Operation ☼ Simultaneous flash	—	During test run
Ready ☼ Timer ☼ Operation ○ Alternate flash	—	Disagreement of cool/heat (Automatic cool/heat setting to automatic cool/heat prohibited model, or setting of heating to cooling-only model)

Lamp indication	Check code	Cause of trouble occurrence
Ready ● Timer ☼ Operation ☼ Alternate flash	F01	Heat exchanger sensor (TCJ) error } Indoor unit sensor error
	F02	Heat exchanger sensor (TC) error
	F10	Heat exchanger sensor (TA) error
Ready ○ Timer ☼ Operation ☼ Alternate flash	F04	Discharge temp. sensor (TD) error } Sensor error of outdoor unit ∗1
	F06	Temp. sensor (TL, TS, TE) error
	F07	Temp. sensor (TD) error
	F08	Temp. sensor (TO) error
	F12	Temp. sensor (TS) error
	F13	Heat sink sensor (TH) error
	F15	Temp. sensor miswiring (TE, TS)
Ready ● Timer ☼ Operation ☼ Simultaneous flash	F29	Indoor EEPROM error
Ready ○ Timer ☼ Operation ☼ Simultaneous flash	F31	Outdoor EEPROM error
Ready ● Timer ☼ Operation ● Flash	H01	Compressor break down / Compressor lock } Outdoor compressor system error ∗1
	H02	
	H03	Current detection circuit error } Power supply, outdoor P.C. board error
	H04	Case thermostat worked. } Compressor overheat, outdoor wiring error
Ready ☼ Timer ● Operation ☼ Simultaneous flash	L03	Duplicated master indoor units
	L07	There is indoor unit of group connection in individual indoor unit. → AUTO address ∗ If group construction and address are not normal when power supply turned on, automatically goes to address setup mode.
	L08	Unsetting of group address
	L09	Missed setting (Unset indoor capacity)
Ready ☼ Timer ○ Operation ☼ Simultaneous flash	L10	Unset model type (Service board)
	L20	Duplicated indoor central addresses
	L29	Temp. sensor (TH) error / EEPROM error / Communication between outdoor MCU / Heat sink overheat error / Gas leak detection error / 4-way valve error
	L30	Outside interlock error

The primary judgment to check whether a fault has occurred in the indoor unit or outdoor unit is carried out with the following method; method to judge the erroneous position by flashing indication on the display part of the indoor unit. The indoor unit monitors the operating status of the air conditioner and the blocked contents of self-diagnosis are displayed restricted to the above cases if a protective circuit works.

Indoor Lamp Indication for Trouble Shooting - RAV 6KRT (High Wall Only)

Check Code List (Indoor)

○ : Go on, ◎ : Flash, ● : Go off ALT (Alternate): Alternate flashing when there are two flashing LED SIM (Simultaneous): Simultaneous flashing when there are two flashing LED

(Indoor unit detected)

Check code indication	Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
Wired remote controller	Block indication						Automatic reset	Operation continuation
	Ready	Timer	Operation	Flash				
E03	●	●	◎		Regular communication error between indoor and remote controller	No communication from remote controller and network adapter (Also no communication from central control system)	○	×
E04	◎	●	●		Indoor/Outdoor serial error	There is error on serial communication between indoor and outdoor units	○	×
E08	●	●	◎		Duplicated indoor addresses ✧	Same address as yours was detected.	○	×
E18	●	●	◎		Regular communication error between indoor master and follower units	Regular communication between indoor master and follower units is impossible, Communication between twin master (main) and follower (sub) units is impossible.	○	×
F01	●	◎	◎	ALT	Indoor unit, Heat exchanger (TCJ) error	Open/short was detected on heat exchanger (TCJ).	○	×
F02	●	◎	◎	ALT	Indoor unit, Heat exchanger (TC) error	Open/short was detected on heat exchanger (TC).	○	×
F10	●	◎	◎	ALT	Indoor unit, Room temp. sensor (TA) error	Open/short was detected on room temp. sensor (TA).	○	×
F29	●	◎	◎	SIM	Indoor unit, other indoor P.C. board error	EEPROM error (Other error may be detected. If no error, automatic address is repeated.	×	×
L03	◎	●	◎	SIM	Duplicated setting of indoor group master unit ✧	There are multiple master units in a group.	×	×
L07	◎	●	◎	SIM	There is group cable in individual indoor unit. ✧	When even one group connection indoor unit exists in individual indoor unit.	×	×
L08	◎	●	◎	SIM	Unset indoor group address ✧	Indoor group address is unset.	×	×
L09	◎	●	◎	SIM	Unset indoor capacity	Capacity of indoor unit is unset.	×	×
L20	◎	○	◎	SIM	Duplicated central control system address	Duplicated setting of central control system address	○	×
L30	◎	○	◎	SIM	Outside error input to indoor unit (Interlock)	Abnormal stop by outside error (CN80) input	×	×
P12	◎	◎	●	ALT	Indoor unit, DC fan error	Indoor DC fan error (Over-current/Lock, etc.) was detected.	×	×
P19	◎	●	◎	ALT	4-way valve system error	In heating operation, an error was detected by temp. down of indoor heat exchanger sensor.	○	×
P31	◎	●	◎	ALT	Other indoor unit error	Follower unit in group cannot operate by warning from [E03/L03/L07/L08] of master unit.	○	×

✧ When this warning was detected before group construction/address check finish at power supply was turned on, the mode shifts automatically to AUTO address setup mode.

(Remote controller detected)

Check code indication	Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
Wired remote controller	Block indication						Automatic reset	Operation continuation
	Ready	Timer	Operation	Flash				
E01	●	●	◎		No master remote controller, Remote controller communication (Receive) error	Signal cannot be received from indoor unit. Master remote controller was not set. (including 2 remote controllers)	—	—
E02	●	●	◎		Remote controller communication (Send) error	Signal cannot be sent to indoor unit.	—	—
E09	●	●	◎		Duplicated master remote controller	In 2-remote controller control, both were set as master. (Indoor master unit stops warning and follower unit continues operation.)	×	△

(Central control devices detected)

Check code indication	Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
TCC-LINK central	Block indication						Automatic reset	Operation continuation
	Ready	Timer	Operation	Flash				
C05	Is not displayed. (Common use of remote controller, etc.)				Central control system communication (send) error	Signal sending operation of central control system is impossible. There are multiple same central devices. (AI-NET)	—	—
C06					Central control system communication (receive) error	Signal receiving operation of central control system is impossible.	—	—
C12	—				General-purpose device control interface batched warning	An error on device connected to general-purpose device control interface of exclusive to TCC-LINK/AI-NET	—	—
P30	By warning unit (Above-mentioned)				Group follower unit is defective.	Group follower unit is defective. (For remote controller, above-mentioned [＊＊＊] details are displayed with unit No.	—	—

NOTE: Even for the same contents of error such as communication error, the display of check code may differ according to detection device.
When remote controller or central controller detects an error, it is not necessarily related to operation of the air conditioner. In this list, the check codes that outdoor unit detects are not described.

Indoor Lamp Indication for Trouble Shooting - RAV Series

● : Go off, ○ : Go on, ✳ : Flash (0.5 sec.)

Lamp indication	Check code	Cause of trouble occurrence
Operation ● Timer ● Ready ● No indication at all	—	Power supply OFF or miswiring between receiving unit and indoor unit
Operation ✳ Flash Timer ● Ready ●	E01	Receiving error / Sending error } Receiving unit } Miswiring or wire connection error between receiving unit and indoor unit
	E02	
	E03	Communication stop
	E08	Duplicated indoor unit No. / Duplicated master units of remote controller } Setup error
	E09	
	E10	Communication error between CPUs on indoor unit P.C. board
	E18	Wire connection error between indoor units, Indoor power OFF (Communication stop between indoor master and follower or between main and sub indoor twin)
Operation ● Timer ● Ready ✳ Flash	E04	Miswiring between indoor unit and outdoor unit or connection erorr (Communication stop between indoor and outdoor units)
Operation ● Timer ✳ Ready ✳ Alternate flash	P10	Overflow was detected. / Indoor DC fan error } Protective device of indoor unit worked.
	P12	
Operation ✳ Timer ● Ready ✳ Alternate flash	P03	Outdoor unit discharge temp. error / Outdoor high pressure system error } Protective device of outdoor unit worked. ∗1
	P04	
	P05	Negative phase detection error / Heat sink overheat error / Gas leak detection error } Outdoor unit error
	P07	
	P15	
	P19	4-way valve system error (Indoor or outdoor unit judged.)
	P20	Outdoor unit high pressure protection
	P22	Outdoor unit: Outdoor unit error / Outdoor unit: Inverter Idc operation / Outdoor unit: Position detection error } Protective device of outdoor unit worked. ∗1
	P26	
	P29	
	P31	Stopped because of error of other indoor unit in a group (Check codes of E03/L03/L07/L08)
Operation ☼ Timer ☼ Ready ☼ Simultaneous flash	—	During test run
Operation ○ Timer ☼ Ready ☼ Alternate flash	—	Disagreement of cool/heat (Automatic cool/heat setting to automatic cool/heat prohibited model, or setting of heating to cooling-only model)

Lamp indication	Check code	Cause of trouble occurrence
Operation ☼ Timer ☼ Ready ● Alternate flash	F01	Heat exchanger sensor (TCJ) error
	F02	Heat exchanger sensor (TC) error — Indoor unit sensor error
	P10	Heat exchanger sensor (TA) error
Operation ☼ Timer ☼ Ready ○ Alternate flash	F04	
	F06	Discharge temp. sensor (TD) error
	F07	Temp. sensor (TE) error
	F08	Temp. sensor (TL) error
	F12	Temp. sensor (TO) error — Sensor error of outdoor unit ∗1
	F13	Temp. sensor (TS) error
	F15	Temp. sensor (TH) error / Temp. Sensor miswiring (TE, TS)
Operation ☼ Timer ☼ Ready ● Simultaneous flash	F29	Indoor EEPROM error
Operation ☼ Timer ☼ Ready ○ Simultaneous flash	F31	Outdoor EEPROM error
Operation ● Timer ☼ Ready ● Flash	H01	Compressor break down
	H02	Compressor lock
	H03	Current detection circuit error — Outdoor compressor system error ∗1
	H04	Case thermostat worked.
	H06	Outdoor unit low pressure system error
Operation ☼ Timer ● Ready ☼ Simultaneous flash	L03	Duplicated master indoor units
	L07	There is indoor unit of group connection in individual indoor unit. / Unsetting of group address / Missed setting (Unset indoor capacity) — → AUTO address
	L08	* If group construction and address are not normal when power supply turned on, automatically goes to address setup mode.
	L09	
Operation ☼ Timer ○ Ready ☼ Simultaneous flash	L10	Unset model type (Service board)
	L20	Duplicated indoor central addresses
	L29	Outdoor unit and other error — Others
	L30	Outside interlock error
	L31	Negative phase error

The primary judgment to check whether a fault has occurred in the indoor unit or outdoor unit is carried out with the following method; method to judge the erroneous position by flashing indication on the display part of the indoor unit. The indoor unit monitors the operating status of the air conditioner and the blocked contents of self-diagnosis are displayed restricted to the above cases if a protective circuit works.

Check Code List (Indoor)

○ : Go on, ◎ : Flash, ● : Go off ALT (Alternate): Alternate flashing when there are two flashing LED SIM (Simultaneous): Simultaneous flashing when there are two flashing LED

(Indoor unit detected)

Check code indication	Indoor Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
TCC-LINK central & Wired remote controller	Block indication						Automatic reset	Operation continuation
	Operation	Timer	Ready	Flash				
E03	◎	●	●		Regular communication error between indoor and remote controller	No communication from remote controller and network adapter (Also no communication from central control system)	○	×
E04	●	●	◎		Indoor/Outdoor serial error	There is error on serial communication between indoor and outdoor units	○	×
E08	◎	●	●		Duplicated indoor addresses ✧	Same address as yours was detected.	○	×
E10	◎	●	●		Communication error between indoor MCU	MCU communication error between main motor and micro computer	○	×
E18	◎	●	●		Regular communication error between indoor master and follower units	Regular communication between indoor master and follower units is impossible, Communication between twin master (main) and follower (sub) units is impossible.	○	×
F01	◎	◎	●	ALT	Indoor unit, Heat exchanger (TCJ) error	Open/short was detected on heat exchanger (TCJ).	○	×
F02	◎	◎	●	ALT	Indoor unit, Heat exchanger (TC) error	Open/short was detected on heat exchanger (TC).	○	×
F10	◎	◎	●	ALT	Indoor unit, Room temp. sensor (TA) error	Open/short was detected on room temp. sensor (TA).	○	×
F29	◎	◎	●	SIM	Indoor unit, other indoor P.C. board error	EEPROM error (Other error may be detected. If no error, automatic address is repeated.	×	×
L03	◎	●	◎	SIM	Duplicated setting of indoor group master unit ✧	There are multiple master units in a group.	×	×
L07	◎	●	◎	SIM	There is group cable in individual indoor unit. ✧	When even one group connection indoor unit exists in individual indoor unit.	×	×
L08	◎	●	◎	SIM	Unset indoor group address ✧	Indoor group address is unset.	×	×
L09	◎	●	◎	SIM	Unset indoor capacity	Capacity of indoor unit is unset.	×	×
L20	◎	○	◎	SIM	Duplicated central control system address	Duplicated setting of central control system address	○	×
L30	◎	○	◎	SIM	Outside error input to indoor unit (Interlock)	Abnormal stop by outside error (CN80) input	×	×
P01	●	◎	◎	ALT	Indoor unit, AC fan error	An error of indoor AC fan was detected. (Fan motor thermal relay worked.)	×	×
P10	●	◎	◎	ALT	Indoor unit, overflow detection	Float switch worked.	×	×
P12	●	◎	◎	ALT	Indoor unit, DC fan error	Indoor DC fan error (Over-current/Lock, etc.) was detected.	×	×
P19	◎	●	◎	ALT	4-way valve system error	In heating operation, an error was detected by temp. down of indoor heat exchanger sensor.	○	×
P31	◎	●	◎	ALT	Other indoor unit error	Follower unit in group cannot operate by warning from [E03/L03/L07/L08] of master unit.	○	×

✧ When this warning was detected before group construction/address check finish at power supply was turned on, the mode shifts automatically to AUTO address setup mode.

(Remote controller detected)

Check code indication	Indoor Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
Wired remote controller	Block indication						Automatic reset	Operation continuation
	Operation	Timer	Ready	Flash				
E01	◎	●	●		No master remote controller, Remote controller communication (Receive) error	Signal cannot be received from indoor unit. Master remote controller was not set. (including 2 remote controllers)	—	—
E02	◎	●	●		Remote controller communication (Send) error	Signal cannot be sent to indoor unit.	—	—
E09	◎	●	●		Duplicated master remote controller	In 2-remote controller control, both were set as master. (Indoor master unit stops warning and follower unit continues operation.)	×	△

(Central control devices detected)

Check code indication	Indoor Sensor lamp indication				Representative defective position	Explanation of error contents	Air conditioner operation	
TCC-LINK central	Block indication						Automatic reset	Operation continuation
	Operation	Timer	Ready	Flash				
C05	Is not displayed. (Common use of remote controller, etc.)				Central control system communication (send) error	Signal sending operation of central control system is impossible. There are multiple same central devices. (AI-NET)	—	—
C06					Central control system communication (receive) error	Signal receiving operation of central control system is impossible.	—	—
C12	—				General-purpose device control interface batched warning	An error on device connected to general-purpose device control interface of exclusive to TCC-LINK/AI-NET	—	—
P30	By warning unit (Above-mentioned)				Group follower unit is defective.	Group follower unit is defective. (For remote controller, above-mentioned [＊＊＊] details are displayed with unit No.	—	—

NOTE: Even for the same contents of error such as communication error, the display of check code may differ according to detection device. When remote controller or central controller detects an error, it is not necessarily related to operation of the air conditioner. In this list, the check codes that outdoor unit detects are not described.

Check Code List (Outdoor)

◯ : Go on, ◎ : Flash, ● : Go off
ALT (Alternate): Alternate flashing when there are two flashing LED SIM (Simultaneous): Simultaneous flashing when there are two flashing LED

Remote controller indication	Indoor Sensor lamp part				Representative defective position	Detection	Explanation of error contents	Automatic reset	Operation continuation
	Block indication								
	Operation	Timer	Ready	Flash					
F04	◎	◎	◯	ALT	Outdoor unit Discharge temp. sensor (TD) error	Outdoor	Open/Short of discharge temp. sensor was detected.	×	×
F06	◎	◎	◯	ALT	Outdoor unit Temp. sensor (TE, TS, TL) error	Outdoor	Open/Short of heat exchanger temp. sensor was detected. Miswiring between TE sensor and TS sensor	×	×
F08	◎	◎	◯	ALT	Outdoor unit Outside temp. sensor (TO) error	Outdoor	Open/Short of outside temp. sensor was detected.	◯	◯
F07	◎	◎	◯	ALT	Outdoor unit Temp. sensor (TL) error	Outdoor	Open/Short of heat exchanger temp. sensor was detected.	×	×
F12	◎	◎	◯	ALT	Outdoor unit Temp. sensor (TS) error	Outdoor	Open/Short of suction temp. sensor was detected.	×	×
F13	◎	◎	◯	ALT	Outdoor unit Temp. sensor (TH) error	Outdoor	Open/Short of heat sink temp. sensor (Board installed) was detected.	×	×
F15	◎	◎	◯	ALT	Outdoor unit Misconnection of temp. sensor (TE, TS)	Outdoor	Misconnection of outdoor heat exchanger temp. sensor and suction temp. sensor was detected.	×	×
F31	◎	◎	◯	SIM	Outdoor unit EEPROM error	Outdoor	Outdoor P.C. board part (EEPROM) error was detected.	×	×
H01	●	◎	●		Outdoor unit Compressor break down	Outdoor	When reached min-Hz by current release control, short-circuited current (Idc) after DC excitation was detected.	×	×
H02	●	◎	●		Outdoor unit Compressor lock	Outdoor	Compressor lock was detected.	×	×
H03	●	◎	●		Outdoor unit Current detection circuit error	Outdoor	Current detection circuit error	×	×
H04	●	◎	●		Outdoor unit Case thermostat operation	Outdoor	Case thermostat operation was detected.	×	×
L10	◎	◯	◎	SIM	Outdoor unit Setting error of service P.C. board type	Outdoor	When outdoor service P.C. board was used, model type select jumper setting was inappropriate.	×	×
L29	◎	◯	◎	SIM	Outdoor unit Other outdoor unit error	Outdoor	1) Defective parts on outdoor P.C. board (MCU communication, EEPROM, TH sensor error) 2) When outdoor service P.C. board was used, model type selection was inappropriate. 3) Other error (Heat sink abnormal overheat, gas leak, 4-way valve inverse error) was detected.	×	×
P03	◎	●	◎	ALT	Outdoor unit Discharge temp. error	Outdoor	Error was detected by discharge temp. release control.	×	×
P04	◎	●	◎	ALT	Outdoor unit High pressure system error, Power supply voltage error	Outdoor	When case thermostat worked, error was detected by high release control from indoor/ outdoor heat exchanger temp. sensor. Power supply voltage error	×	×
P05	◎	●	◎	ALT	Power supply error	Outdoor	Power supply voltage error	×	×
P07	◎	●	◎	ALT	Outdoor unit Heat sink overheat	Outdoor	Abnormal overheat was detected by outdoor heat sink temp. sensor.	×	×
P15	◎	●	◎	ALT	Gas leak detection	Outdoor	Abnormal overheat of discharge temp. or suction temp. was detected.	×	×
P20	◎	●	◎	ALT	Outdoor unit High pressure system error	Outdoor	Error was detected by high release control from indoor/outdoor heat exchanger temp. sensor.	×	×
P22	◎	●	◎	ALT	Outdoor unit Outdoor fan error	Outdoor	Error (Over-current, lock, etc.) was detected on outdoor fan drive circuit.	×	×
P26	◎	●	◎	ALT	Outdoor unit Inverter Idc operation	Outdoor	Short-circuited protective operation of compressor drive circuit element (G-Tr /IGBT) worked.	×	×
P29	◎	●	◎	ALT	Outdoor unit Position detection error	Outdoor	Position detection error of compressor motor was detected.	×	×
E01	◎	●	●		No remote controller master unit Remote controller communication error	Remote controller	Signal was not received from indoor unit. Main remote controller was not set. (including 2 remote controllers)	—	—
E02	◎	●	●		Remote controller send error	Remote controller	Signal cannot be sent to indoor unit.	—	—
E03	◎	●	●		Regular communication error between indoor and remote controller	Indoor	No communication from remote controller and network adapter	◯	×
E04	●	●	◎		Indoor/Outdoor serial error	Indoor	Serial communication error between indoor and outdoor	◯	×
E08	◎	●	●		Duplicated indoor addresses ✧	Indoor	Same address as yours was detected.	◯	
E09	◎	●	●		Duplicated main remote controllers	Remote controller	In 2-remote controller control, both were set as master. (Indoor master unit stops warning and follower unit continues operation.)	×	×
E10	◎	●	●		Communication error between CPU	Indoor	MCU communication error between main motor and micro computer	◯	△
E18	◎	●	●		Regular communication error between master and follower indoor units	Indoor	Regular communication was impossible between master and follower indoor units. Communication between twin master (Main unit) and follower (sub unit) was impossible.	◯	×
L03	◎	●	◎	SIM	Duplicated indoor master units ✧	Indoor	There are multiple master units in a group.	×	×
L07	◎	●	◎	SIM	There is group cable in individual indoor unit. ✧	Indoor	When even one group connection indoor unit exists in individual indoor unit	×	×
L08	◎	●	◎	SIM	Unset indoor group address ✧	Indoor	Indoor address group was unset.	×	×
L09	◎	●	◎	SIM	Unset indoor capacity	Indoor	Capacity of indoor unit was unset.	×	×
L30	◎	◯	◎	SIM	Outside error input to indoor unit (Interlock)	Indoor	Abnormal stop by CN80 outside error input	×	×
P19	◎	●	◎	ALT	4-way valve inverse error	Indoor Outdoor	In heating operation, error was detected by temp. down of indoor heat exchanger or temp. up ofTE, TS.	◯	×

✧ When this warning was detected before group construction/address check finish at power supply was turned on, the mode shifts automatically to AUTO address setup mode.

Indoor Lamp Indication for Trouble Shooting - RAV Series

○ : Go on, ◎ : Flash, ● : Go off
ALT (Alternate): Alternate flashing when there are two flashing LED SIM (Simultaneous): Simultaneous flashing when there are two flashing LED

Remote controller indication	Indoor Sensor lamp part				Representative defective position	Detection	Explanation of error contents	Automatic reset	Operation continuation
	Block indication								
	Operation	Timer	Ready	Flash					
F01	◎	◎	●	ALT	Indoor unit Heat exchanger sensor (TCJ) error	Indoor	Open/Short of heat exchanger (TCJ) was detected.	○	×
F02	◎	◎	●	ALT	Indoor unit Heat exchanger sensor (TC) error	Indoor	Open/Short of heat exchanger (TC) was detected.	○	×
F10	◎	◎	●	ALT	Indoor unit Room temp. sensor (TA) error	Indoor	Open/Short of room temp. (TA) was detected.	○	×
F29	◎	◎	●	SIM	Indoor unit Other indoor P.C. board error	Indoor	EEPROM error (Other error may be detected. If no error, automatic address is repeated.	×	×
P01	●	◎	◎	ALT	Indoor unit Indoor fan error	Indoor	Indoor AC fan error was detected. (Fan thermal relay worked.)	×	×
P10	●	◎	◎	ALT	Indoor unit Overflow detection	Indoor	Float switch worked.	×	×
P12	●	◎	◎	ALT	Indoor unit Indoor fan error	Indoor	Indoor fan error (Over-current / Lock, etc.) was detected.	×	×
P31	◎	●	◎	ALT	Other indoor unit error	Indoor	Other indoor under condition of warning in group. E03/L07/L03/L08 warning	○	×
—	By unit with warning No.			ALT	Error in indoor group	Network adapter	Sub remote controller error in a group (Details of remote controller are displayed with unit No. Only central control side is displayed.)	—	—
—	—				LAN system communication error	Network adapter/ Center	Communication error of central control system signal * Is not displayed on the remote controller	○	○
L20	◎	○	◎	SIM	LAN system communication error	Network adapter/ Center	Duplicated indoor address of central control system communication	○	×
—	—				There are multiple communication adapters.	Network adapter	There are multiple communication adapters on remote controller communication line.	○	○

Download **Toshiba Fault Codes** from your Apps Store
or go to web page Toshiba-calc.co.uk/fault-codes/

Example: 1
Local controller displaying fault code **E04**
Enter **E04** and select **Find Fault**

VRF fault codes can be model specific and may require condenser model reference in Fault Code

Example: 2
Local controller displaying fault code **L29**
Condenser displaying sub-code **07**
Model of condenser MMY-MAP**1604**HT8-E
Enter **L29071604** and select **Find Fault**

Please note; codes can be entered with or without character spaces, spaces ignored in text strings.

Apps Store Fault Codes – All Commercial & VRF Systems

Fault code diagnosis apps now available
Platforms are Apple iPhone & Android

Do Not turn off the power supply before reading the fault codes, doing so will clear the diagnostic memory.
Caution must be taken when removing the access covers, as high voltages are present.
Fault diagnosis is available at three locations within the Air Conditioning system. :-

1 Remote Controller - press the check button
2 Multi Controller - rotate the display switch to position 1
3 Central Controller - press the check button (if installed)
4 Outdoor Unit Switch position (variable dependent upon model): –
2 Pipe Super Multi 2, 3 & 8; 3 Pipe Super Multi 2 & 0;
3 Pipe SMI 2 & 0 2 Pipe Modular Multi MMY 1, 1, 1
3 Pipe Modular Multi MMY 1, 1, 1

Code	Fault Description
04	Split A/C equipment indoor to outdoor communication failure / VRF equipment could also be attributed to communication breakdown between condenser PCB's. Likely cause Indoor PCB / condenser PCB / Interconnecting cable damage / transformer used to power condenser PCB
08	Reverse change in temperature. Detected by indoor evaporator sensor (TC). Likely cause 4 way valve. 4 way reversing valve energised for heating operation only
09	Frost conditions detected / No temperature change. Detected indoors by evaporator sensor (TC). Likely cause poor airflow, lack of refrigerant, overheating compressor
11	Indoor fan trouble. Detected indoors. Likely cause fan motor, PCB
12	EEPROM Failure on PCB. Detected indoors (replace indoor PCB)
14	Inverter compressor PCB short circuit. Detected at outdoor. Likely cause blown fuses supplying inverter pack, faulty IPDU(inverter board) or component within inverter pack, electrical fault on inverter compressor
15	Multi-Control box error. Detected indoors (interrogate Multi-Control box for additional faults by setting display switch @ position 1)
17	Abnormal current detection on inverter compressor. Detected at outdoor. (replace IPDU PCB (inverter board))
18	Condenser coil sensor fault. Detected indoors. Likely cause TE/TE1 sensor condition or outdoor PCB fault sensor value 20°c=12.5k ohms
19	Liquid or compressor discharge sensor fault. Likely cause TL,TD sensor condition or PCB fault TL sensor value 20°c=12.5k ohms TD sensor value 20°c=63k ohms
20	Condenser PCB faulty (replace main PCB)
21	2 pipe VRF & Split A/C equipment High Pressure switch activation 425psi-29bar _ 3 pipe VRF equipment, interrogate condenser PCB for additional fault code. Detected at outdoor. Likely cause split A/C equipment faulty H.P. switch, restriction in refrigerant flow, fan motor failure, poor airflows / VRF equipment set condenser interface PCB switches as follows SW1 @ position 2 & SW2 @ position 0 (see sub codes Er21 or ErAd)
22	Excessive high pressure. Detected at outdoor. Likely cause abnormal characteristics of Pd transducer, refrigerant restriction/blockage
80	Multi-Control box Th(A) sensor fault. Likely cause TH(A) sensor or M/C box PCB sensor value 20°c=12.5k ohms
81	Multi-Control box Th(B) sensor fault. Likely cause TH(B) sensor or M/C box PCB sensor value 20°c=12.5k ohms
82	Multi-Control box Th(C) sensor fault. Likely cause TH(C) sensor or M/C box PCB sensor value 20°c=12.5k ohms
83	Multi-Control box Th(D) sensor fault. Likely cause TH(D) sensor or M/C box PCB sensor value 20°c=12.5k ohms
84	Multi-Control box Th(X) sensor fault. Likely cause TH(X) sensor or M/C box PCB sensor value 20°c=12.5k ohms

Code	Fault Description
87	Phase missing phase. Detected at outdoor. Likely cause abnormal power supply
88	Multi-Control box does not recognise condenser capacity. Likely cause interconnecting cable damage, outdoor PCB fault
89	Indoor capacity to high. Likely cause loss of combination within group of modularised condensers
93	Indoor coil sensor fault. Detected indoors. Likely cause TC1 sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
94	Indoor coil sensor fault. Detected indoors. Likely cause TC2 sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
95	Communication failure on P&Q network (indoor/outdoor communication). Detected indoors & outdoors. Likely cause network cable condition, PCB failure indoor or outdoor
96	Indoor unit count too high. Detected at outdoor. Likely cause indoor capacity vs. outdoor capacity Incorrect, too many indoor units connected
97	Central control communication error. Detected at central controller & indoors. Likely cause indoor power failure, central address error, cable damage
98	Duplicated zone address. Likely cause incorrectly assigned central control addresses
99	No communication from indoor to remote controller. Detected by hard-wired remote controller. Likely cause faulty indoor PCB, remote controller or cable damage
0b	Indoor float switch open circuit as result of high condensation levels within drip tray. Detected indoors. Likely cause faulty float switch, faulty lift pump, debris blocking drain
0c	Return air sensor fault. Detected indoors. Likely cause TA sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
0d	Coil sensor fault. Detected indoors. Likely cause TC sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
1C	Outdoor error. Detected indoors (interrogate condenser for additional faults)
1d	High Inverter dc current. Detected at outdoor. Likely cause imbalance in compressor voltage, excessive amps by inverter compressor
1E	High compressor discharge temperature. Detected at outdoor. Likely cause low refrigerant, poor refrigerant flow, poor airflows, TD sensor condition sensor value 20°c=63k ohms
1F	High Inverter ac current. Detected at outdoor. Likely cause imbalance in compressor voltage, excessive amps by inverter compressor
8d	Outdoor unit quantity fallen (loss of communication between condensers). Detected at outdoor. Likely cause power interruption, BUS communication cable condition
8E	Outdoor units quantity too high. Detected at outdoor. Likely cause too many condensers connected
8F	Outdoor unit address incorrect. Detected at outdoor. Likely cause multiple modularised condenser having SW 9 ON, Interface PCB failure
9A	No temperature change on evaporator. Detected by indoor evaporator sensor TC1. Likely cause miss-wiring, restriction in refrigerant flow, lack of refrigerant
9F	Insufficient temperature change on evaporator. Detected indoors. Likely cause miss-wiring, restriction in refrigerant flow, lack of refrigerant, TC1,TC2 & TA sensor condition sensor value 20°c=12.5k ohms
A0	Compressor discharge sensor fault. Detected at outdoor. Likely cause TD1/ThD1 sensor condition or Interface PCB sensor value 20°c=63k ohms
A1	Compressor discharge sensor fault. Detected at outdoor. Likely cause TD2/ThD2 sensor condition or Interface PCB sensor value 20°c=63k ohms
A2	Compressor suction sensor fault. Detected at outdoor. Likely cause TS1/ThS sensor condition or interface PCB sensor value 20°c=12.5k ohms
A6	High compressor discharge temperature. Detected at outdoor. by TD1. Likely cause low refrigerant, poor refrigerant flow and airflows & TD2 sensor condition sensor value 20°c=63k ohms
A7	High compressor suction temperature > 40°C. Detected at outdoor. Likely cause severe gas shortage, TS sensor condition, interface PCB sensor value 20°c=12.5k ohms

Code	Fault Description
AA	High side pressure sensor fault. Detected at outdoor. (Replace Pd pressure transducer)
Ab	Pressure transducer error. Detected at outdoor. Likely cause abnormal running pressures, abnormal PS / Pd characteristics, interface PCB
AE	High compressor discharge temperature @ low inverter speed. Detected at outdoor. Likely cause TD1 sensor condition, insufficient refrigerant sensor value 20°c=63k ohms
AF	Phase rotation incorrect. Detected at outdoor. Likely cause abnormal phase order, missing phase to outdoor unit
b4	Low pressure transducer error or misreading fault. Detected at outdoor. Likely cause incorrect characteristics of suction pressure transducer (PS, interface PCB faulty
b5	External input activation, refrigerant leak detection system (Call Toshiba's technical helpline for further details 0870 843 0333)
b6	External input activation, refrigerant leak detection system (Call Toshiba's technical helpline for further details 0870 843 0333)
b7	Indoor group follower error. Detected at central controller (interrogate local controller by pressing check for additional fault codes)
b9	Pressure sensor fault. Detected indoors. Likely cause evaporator pressure sensor unplugged, pressure sensor open circuit replace sensor
bb	High compressor discharge temperature. Detected at outdoor. by TD2. Likely cause low refrigerant, poor refrigerant flow and airflows & TD2 sensor condition sensor value 20°c=63k ohms
bE	Low pressure trip. Detected outdoor by PS transducer. Likely cause suction pressure transducer condition (PS), interface PCB fault restriction in refrigerant flow, lack of refrigerant
C05	Command sending error. Detected on Central Controller. Likely cause power loss at indoor unit group, network cable condition)
C06	Command receiving error. Detected on Central Controller. Likely cause power loss at indoor unit group, network cable condition)
d1	Master condenser setup alarm. Detected at outdoor. Likely cause multiple inverter outdoor units connected, faulty interface PCB)
d2	Fault within follower condenser. Detected at outdoor. (retrieve additional fault code from follower condensers)
d3	IPDU PCB overheat (inverter board). Detected at outdoor. Likely cause clogged heat-sink fins, poorly secured or faulty IPDU PCB)
d4	Oil sensor fault. Detected at outdoor. Likely cause TK1 sensor condition or outdoor PCB fault sensor value 20°c=63k ohms)
d5	Oil sensor fault. Detected at outdoor. Likely cause TK2 sensor condition or outdoor PCB fault sensor value 20°c=63k ohms)
d6	Oil sensor fault. Detected at outdoor. Likely cause TK3 sensor condition or outdoor PCB fault sensor value 20°c=63k ohms)
d7	Low oil detection. Detected at outdoor. Likely cause TK1, TK2 & TK3 sensor condition, interface PCB, lack of refrigerant sensor value 20°c=63k ohms)
d8	Oil temperature alarm. Detected at outdoor. Likely cause TK1 sensor location or condition, outdoor PCB fault sensor value 20°c=63k ohms
d9	Oil temperature alarm. Detected at outdoor. Likely cause TK2 sensor location or condition, outdoor PCB fault sensor value 20°c=63k ohms
dA	Abnormal overheat of heat-sink. Detected at outdoor. Likely cause clogged heat-sink fins, poorly secured or faulty IPDU board
db	No oil flow detected. Detected at outdoor. Likely cause TK1, TK2 & TK3 sensor location or condition, interface PCB, blockage within SV3C sensor value 20°c=63k ohms
dC	High temperature oil alarm. Detected at outdoor. Likely cause TK1 sensor condition, interface PCB fault, high ambient running conditions >43°c sensor value 20°c=63k ohms
dd	Temperature change when condensers in off cycle. Detected at outdoor. Likely cause PMV passing within condenser, discharge & suction pressure transducer error (PS & Pd characteristics), interface PCB fault
dE	Indoor unit automatic addressing failure. Detected at outdoor. Likely cause indoor PCB configuration error, indoor PCB faulty
dF	Outdoor unit automatic address failure. Detected at outdoor. Likely cause interface PCB fault

Code	Fault Description
E01	Communication error between indoor unit and remote controller. Detected by remote controller. Likely cause indoor PCB, remote controller, incorrect switch position on rear of remote controller, all switches normally down
E02	Sending error of local remote controller. Detected by remote controller. Likely cause replace remote controller
E03	Communication error between indoor unit and central remote controller. Detected indoors. Likely cause indoor network adapter, central remote controller
E04	Communication failure between indoor and outdoor units. Detected indoors. Likely cause split A/C=indoor PCB, outdoor PCB, interconnecting cable condition, compressor klixon open circuit. VRF system=power loss at condenser, U1/U2 network cable condition
E06	Decrease in quantity of indoor units. Detected indoors. Likely cause power loss at indoor unit, indoor PCB fault, A&B controller cable condition
E07	Communication failure between indoor and outdoor units. Detected at outdoor. Likely cause interconnecting cable condition, outdoor PCB switch position SW30 bit 1 & 2 must be placed in ON position for test
E08	Duplicated indoor address. Detected indoors. Likely cause incorrect setting of BUS addresses when under central control
E09	Duplicated master remote controllers. Detected indoors. Likely cause two local remote controller connected on A&B network
E1	Activation of high pressure switch on D.O.L (Fixed speed) compressor 1. Detected at outdoor. Likely cause fan motor trouble, poor airflows, restricted refrigerant flow
e1 80	Multi-Control box 1 Th(A) sensor fault. Likely cause TH(A) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e1 81	Multi-Control box 1 Th(B) sensor fault. Likely cause TH(B) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e1 82	Multi-Control box 1 Th(C) sensor fault. Likely cause TH(C) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e1 83	Multi-Control box 1 Th(D) sensor fault. Likely cause TH(D) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e1 84	Multi-Control box 1 Th(X) sensor fault. Likely cause TH(X) sensor or M/C box PCB sensor value 20°c=12.5k ohms
E10	Communication Error at indoor PCB. Detected indoors. Likely cause replace indoor PCB
E12	Automatic addressing error. Detected at outdoor. Likely cause incorrect self-addressing sequence, repeat self-addressing procedure. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
E12 01	Automatic addressing error. Detected at outdoor. Indoor / Outdoor communication
E12 02	Automatic addressing error. Detected at outdoor. Outdoor / Outdoor communication
E15	Automatic self-addressing failure. Detected at outdoor. Likely cause SW30 bit 1 & 2 in OFF position, switch both ON before self-addressing commenced, interface pcb failure
E16	Indoor unit count or capacity to high. Detected at outdoor. Likely cause if condenser PCB displays sub code 00=indoor capacity vs. condenser to high. If sub code at condenser reads 01=indoor unit count/quantity to high. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
E16 00	Indoor unit capacity to high. Detected at outdoor. Likely cause indoor unit capacity to high vs. condenser capacity
E16 01	Indoor unit count to high. Detected at outdoor. Likely cause indoor unit count to high vs. outdoor upper limit
E18	Communication failure between indoor units. Detected indoors. Likely cause indoor power loss, A&B controller cable condition. Twin, triple & Quad applications E18 can result from E04 fault code
E19	Outdoor header error. Detected at outdoor. Likely cause if condenser PCB displays sub code 00=power loss to indoor units or U1/U2 network cable condition. If sub code reads 01=incorrect wiring between modularised condensers. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.

Code	Fault Description
E19 00	Outdoor header error. Detected at outdoor. Likely cause power loss to indoor units, U1/U2 network cable condition, SW30 bit 1 & 2 must be ON to test
E19 01	Outdoor header error. Detected at outdoor. Likely cause incorrect wiring between modularised condensers
e2 80	Multi-Control box 2 Th(A) sensor fault. Likely cause TH(A) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e2 81	Multi-Control box 2 Th(B) sensor fault. Likely cause TH(B) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e2 82	Multi-Control box 2 Th(C) sensor fault. Likely cause TH(C) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e2 83	Multi-Control box 2 Th(D) sensor fault. Likely cause TH(D) sensor or M/C box PCB sensor value 20°c=12.5k ohms
e2 84	Multi-Control box 2 Th(X) sensor fault. Likely cause TH(X) sensor or M/C box PCB sensor value 20°c=12.5k ohms
E20	One or more systems connected on network during self-addressing procedure. Detected at outdoor. Likely cause if condenser PCB displays sub code 01=multiple outdoor systems connected on U3/U4 network, miss-wiring or central control relay connecter in-place. If sub code reads 02=indoor units from other line connected, miss-wiring or central control relay connecter in-place. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
E20 01	Multiple indoor system line numbers connected on network during self-addressing procedure. Detected at outdoor. Likely cause miss-wiring of indoor network cable, central control relay connecter together during self-address
E20 02	Multiple outdoor system numbers connected on network during self-address procedure. Detected at outdoor. Likely cause miss-wiring of outdoor units, central control relay/plug connected during self-address
E23	Communication error between outdoor units. Detect outdoors. Likely cause U5/U6 cable condition, interface PCB fault
E25	Duplicated follower outdoor unit address. Detected at outdoor. Likely cause error in manually assigning addresses, allow system to self-address
E26	Decrease in quantity of outdoor units connected. Detected at outdoor. Likely cause power loss at condensers, U5/U6 cable condition
E28	Outdoor follower fault. Detected at outdoor. Likely cause lead condenser OK, follower condenser has suffered fault, retrieve second fault code from follower condenser
E31	IPDU/PCB board communication error. Detected at outdoor. Likely cause loss in communication between condenser PCB's. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
E31 01	Compressor 1 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU board
E31 02	Compressor 2 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU board
E31 03	Compressor 1 & 2 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 2 IPDU board
E31 04	Communication failure between PCB's within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for E3104 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search E31041, E31042 or E31044
E31 04 1	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
E31 04 2	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
E31 04 4	Compressor 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 3 IPDU board

Code	Fault Description
E31 05	Communication failure between PCB within condenser. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for E3105 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search E31051, E31052 or E31054
E31 05 1	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
E31 05 2	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
E31 05 4	Compressor 1 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 3 IPDU board
E31 06	Communication failure between PCB within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for E3106 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search E3101, E31062 or E31064
E31 06 1	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
E31 06 2	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
E31 06 4	Compressor 2 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 & 3 IPDU board
E31 07	Communication failure between PCB within condenser. Detected at outdoor. (4 Series Condenser Compressor 1, 2 & 3 IPDU board communication error). (1&2 Series condenser communication error between PCB within condenser) likely cause phase missing on power supply, replace interface PCB
E31 07 1	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB
E31 07 2	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB
E31 07 4	Compressor 1, 2 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1, 2 & 3 IPDU board
E31 08	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
E31 09	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
E31 0A	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
E31 0B	Compressor 1 & 2 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 2 IPDU PCB & fan IPDU board
E31 0C	Compressor 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 3 IPDU board & fan IPDU board
E31 0d	Compressor 1 & 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 3 IPDU board & fan IPDU board

Code	Fault Description
E31 0E	Compressor 2 & 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 & 3 IPDU PCB & fan IPDU board
E31 0F	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB
E5	Activation of high pressure switch or internal overheat (klixon on INVERTER compressor only. Detected at outdoor. Likely cause fan motor trouble, poor airflows, poor refrigerant flow, insufficient refrigerant
E6	Activation of compressor klixon or contactor overload on D.O.L (Fixed speed compressor 1. Detected at outdoor. Likely cause poor refrigerant flow, insufficient refrigerant, excessive amps by compressor
Eb	Resulting from b6 fault code generated at indoor unit. Detected at outdoor. (b6=External input activation, refrigerant leak detection system (Call Toshiba's technical helpline for further details 0870 843 0333)
Er 14	Inverter compressor low voltage. Detected at outdoor. Likely cause AC fuse disconnection, faulty component within compressor inverter circuit, electrical failure of compressor
Er 1d	High Inverter dc current. Detected at outdoor. Likely cause imbalance in compressor voltage, excessive amps by inverter compressor
Er 1F	High Inverter ac current. Detected at outdoor. Likely cause imbalance in compressor voltage, excessive amps by inverter compressor
Er 21	Inverter compressor trip. Detected at outdoor. Likely cause activation of high pressure switch 425psi-29bar / internal overheat (klixon) on inverter compressor only
Er A0	Compressor discharge sensor fault. Detected at outdoor. Likely cause TD1/ThD1 sensor condition or Interface PCB sensor value 20°c=63k ohms
Er A1	Compressor discharge sensor fault. Detected at outdoor. Likely cause TD2/ThD2 sensor condition or Interface PCB sensor value 20°c=63k ohms
Er A2	Compressor suction sensor fault. Detected at outdoor. Likely cause TS1/ThS sensor condition or interface PCB sensor value 20°c=12.5k ohms
Er A4	Ambient air sensor fault. Detected at outdoor. Likely cause Th0 sensor condition or interface PCB sensor value 20°c=12.5k ohms
Er A5	Condenser coil sensor fault. Detected at outdoor. Likely cause ThE sensor condition or interface PCB fault sensor value 20°c=12.5k ohms
Er A6	High compressor discharge temperature. Detected at outdoor. by TD1,TD2,ThD1 & ThD2. Likely cause low refrigerant, poor refrigerant flow and airflows & TD sensor condition sensor value 20°c=63k ohms
Er A7	High compressor suction temperature > 40°C. Detected at outdoor. Likely cause severe gas shortage, TS sensor condition, interface PCB sensor value 20°c=12.5k ohms
Er AA	High side pressure sensor fault. Detected at outdoor. (Replace Pd pressure sensor)
Er Ad	Fixed speed compressor trip (D.O.L). Detected at outdoor. Likely cause activation of high pressure switch 425psi-29bar / internal overheat (klixon) / phase rotation PCB / D.O.L contactor overload trip
Er AE	Low Pressure trip < 3 psig. Detected at outdoor. by L.P. switch. Likely cause refrigerant loss, restriction in refrigerant flow
Er AF	Phase rotation incorrect. Detected at outdoor. Likely cause abnormal phase order, missing phase to outdoor unit
F0	Activation of high pressure switch on D.O.L (Fixed speed) compressor 2. Detected at outdoor. Likely cause fan motor trouble, poor airflows, restricted refrigerant flow
F01	TCj Coil sensor fault. Detected indoors. Likely cause TCj sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
F02	TC2 or TC Coil sensor fault. Detected indoors. Likely cause TC2 / TC sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms
F03	TC1 Coil sensor fault. Detected indoors. Likely cause TC1 sensor condition or indoor PCB fault sensor value 20°c=12.5k ohms

Code	Fault Description
F04	Td1 sensor fault. Detected at outdoor. Likely cause compressor discharge sensor condition (Td1) or outdoor PCB fault sensor value 20°c=63k ohms
F05	Td2 sensor fault. Detected at outdoor. Likely cause compressor discharge sensor condition (Td2) or outdoor PCB fault sensor value 20°c=63k ohms
F06	TE or TS Sensor fault. Detected at outdoor. Likely cause Heat exchange sensor condition (TE / TE1 / TE2). Suction line sensor condition (TS) or outdoor PCB fault sensor value 20°c=12.5k ohms. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
F06 01	TE1 Sensor fault. Detected at outdoor. Likely cause Heat exchange sensor condition (TE1) or outdoor PCB fault sensor value 20°c=12.5k ohms
F06 02	TE2 Sensor fault. Detected at outdoor. Likely cause Heat exchange sensor condition (TE2) or outdoor PCB fault sensor value 20°c=12.5k ohms
F07	TL Sensor fault. Detected at outdoor. Likely cause Liquid line sensor condition (TL) or outdoor PCB fault sensor value 20°c=12.5k ohms
F08	TO Sensor fault. Detected at outdoor. Likely cause Ambient air sensor condition (TO) or outdoor PCB fault sensor value 20°c=12.5k ohms
F1	Activation of compressor klixon or contactor overload on D.O.L (Fixed speed compressor 2). Detected at outdoor. Likely cause poor refrigerant flow, insufficient refrigerant, excessive amps by compressor
F10	TA Sensor fault. Detected indoors. Likely cause Return air sensor condition (TA) or indoor PCB fault sensor value 20°c=12.5k ohms
F12	TS Sensor fault. Detected at outdoor. Likely cause Suction line sensor condition (TS / TS1 / TS2) or outdoor PCB fault sensor value 20°c=12.5k ohms
F13	Compressor IPDU board overheat. Detected at outdoor. Likely cause poor contact to heat-sink, IPDU board fault. Fault sub-code required to determine which board has suffered overheat 01=IPDU1 overheated 02=IPDU2 overheated 03=IPDU3 overheated. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
F13 01	Compressor 1 IPDU board overheat. Detected at outdoor. Likely cause poor contact to heat-sink, replace compressor IPDU board 1
F13 02	Compressor 2 IPDU board overheat. Detected at outdoor. Likely cause poor contact to heat-sink, replace compressor IPDU board 2
F13 03	Compressor 3 IPDU board overheat. Detected at outdoor. Likely cause poor contact to heat-sink, replace compressor IPDU board 3
F15	Outdoor temperature sensor error. Detected at outdoor. Likely cause VRF equipment=Heat exchange (TE) sensor condition/location or Liquid line (TL) sensor condition/location, outdoor PCB fault Split equipment=Suction sensor (TS) condition/location Heat exchange sensor (TE) condition/location, outdoor PCB fault sensor value 20°c=12.5k ohms
F16	Pressure sensors miss-reading. Detected at outdoor. Likely cause incorrect characteristics of compressor discharge (Pd) & compressor suction (PS) pressure sensor or total loss of refrigerant
F22	Td3 sensor fault. Detected at outdoor. Likely cause compressor discharge sensor condition (Td3) or outdoor PCB fault sensor value 20°c=63k ohms
F23	Compressor suction pressure sensor fault. Detected at outdoor. Likely cause Suction transducer (PS) fault, outdoor PCB fault
F24	Compressor discharge pressure sensor fault. Detected at outdoor. Likely cause Suction transducer (Pd) fault, outdoor PCB fault
F29	Indoor PCB fault. Detected indoors. Likely cause replace indoor PCB
F31	Outdoor EEPROM Error. Detected at outdoor. Likely cause VRF equipment=power interruption, replace interface PCB Split equipment=replace condenser CDB board
H01	Excessive amps drawn by compressor. Detected at outdoor. Likely cause imbalance in voltage supplied from IPDU board to compressor, compressor lock / seizure. Retrieve sub-code for VRF from condenser to determine which compressor suffered failure 01=compressor1, 02=compressor2 & 03=compressor3. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
H01 01	Excessive amps drawn by compressor 1. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 1 from inverter IPDU board 1, compressor 1 lock / seizure

Code	Fault Description
H01 02	Excessive amps drawn by compressor 2. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 2 from inverter IPDU board 2, compressor 2 lock / seizure
H01 03	Excessive amps drawn by compressor 3. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 3 from IPDU board 3, compressor 3 lock / seizure
H02	High amps drawn by compressor on start-up. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor from IPDU board, compressor locked / seized. For VRF fault sub-code required to determine which compressor suffered failure 01=compressor1 02=compressor2 03=compressor3. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
H02 01	High amps drawn by compressor 1 on start-up. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 1 from IPDU board 1, compressor 1 locked / seized
H02 02	High amps drawn by compressor 2 on start-up. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 2 from IPDU board 2, compressor 2 locked / seized
H02 03	High amps drawn by compressor 3 on start-up. Detected at outdoor. Likely cause imbalance in voltage supplied to compressor 3 from IPDU board 3, compressor 3 locked / seized
H03	Current detected in compressor off cycle. Detected at outdoor. Likely cause replace compressor IPDU board. For VRF fault sub-code required to determine which compressor suffered failure 01=compressor1 02=compressor2 03=compressor3. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
H03 01	Current detected in compressor off cycle. Detected at outdoor. Likely cause replace compressor IPDU board 1
H03 02	Current detected in compressor off cycle. Detected at outdoor. Likely cause replace compressor IPDU board 2
H03 03	Current detected in compressor off cycle. Detected at outdoor. Likely cause replace compressor IPDU board 3
H04	Compressor 1 over-heat. Detected at outdoor. Likely cause compressor klixon activation, loss of refrigerant, poor refrigerant flow reducing cooling effect to compressor
H05	Compressor discharge temperature does not increase while compressor 1 operates. Detected at outdoor. Likely cause compressor discharge sensor (Td1) condition / location, outdoor PCB fault sensor value 20°c=63k ohms
H06	Low pressure protection operation. Detected at outdoor. Likely cause characteristics of suction pressure transducer (PS), system pump-down, interface PCB fault)
H07	Abnormal oil level / temperature alarm. Detected outdoor. Likely cause oil balance service valve, refrigerant loss, oil sensor condition (TK1 / TK2 / TK3 / TK4 / TK5), interface board PCB fault sensor value 20°c=63k ohms)
H08	TK Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition, outdoor PCB fault. Fault sub code required to determine which sensor (TK1 / TK2 / TK3 / TK4 / TK5 sensor value 20°c=63k ohms). Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
H08 01	TK1 Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition (TK1), outdoor PCB fault sensor value 20°c=63k ohms
H08 02	TK2 Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition (TK2), outdoor PCB fault sensor value 20°c=63k ohms
H08 03	TK3 Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition (TK3), outdoor PCB fault sensor value 20°c=63k ohms
H08 04	TK4 Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition (TK4), outdoor PCB fault sensor value 20°c=63k ohms
H08 05	TK5 Oil sensor fault. Detected at outdoor. Likely cause oil sensor condition (TK5), outdoor PCB fault sensor value 20°c=63k ohms
H14	Compressor 2 over-heat. Detected at outdoor. Likely cause compressor klixon activation, loss of refrigerant, poor refrigerant flow reducing cooling effect to compressor

Code	Fault Description
H15	Compressor discharge temperature does not increase while compressor 2 operates. Detected at outdoor. Likely cause compressor discharge sensor (Td2) condition / location, outdoor PCB fault sensor value 20°c=63k ohms
H16	TK oil sensors do not detect temperature change while compressors operate. Detected at outdoor. Likely cause oil line (TK1 / TK2 / TK3 / TK4 / TK5) sensor condition / location, outdoor PCB fault sensor value 20°c=63k ohms. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
H16 01	TK1 oil sensor does not detect temperature change while compressor 1 operates. Detected at outdoor. Likely cause oil line (TK1) sensor condition / location, outdoor PCB fault sensor value 20°c=63k ohms
H16 02	TK2 oil sensor does not detect temperature change while compressor 2 operates. Detected at outdoor. Likely cause oil line (TK2) sensor condition / location, outdoor PCB fault sensor value 20°c=63k ohms
H16 03	TK3 oil sensor does not detect temperature change while compressor 3 operates. Detected at outdoor. Likely cause oil line (TK3) sensor condition / location, outdoor PCB fault sensor value 20°c=63kΩ
H16 04	TK4 oil sensor does not detect temperature change while compressors operate. Detected at outdoor. Likely cause oil line (TK4) sensor condition / location, outdoor PCB fault sensor value 20°c=63kΩ
H16 05	TK5 oil sensor does not detect temperature change while compressors operate. Detected at outdoor. Likely cause oil line (TK5) sensor condition / location, outdoor PCB fault sensor value 20°c=63kΩ
H25	Compressor discharge temperature does not increase while compressor 3 operates. Detected at outdoor. Likely cause compressor discharge sensor (Td3) condition / location, outdoor PCB fault sensor value 20°c=63k ohms
L03	Two or more lead units within group of indoor units. Detected indoors. Likely cause incorrect addressing, alteration in grouped set-up / wiring, requires re-addressing
L04	Duplicated outdoor line address. Detected at outdoor. Likely cause failure to correctly set line address before auto addressing
L05	Duplicated priority indoor unit, displayed on priority indoor unit. Detected indoors. Likely cause two units configured as priority units, correct configuration within engineers menu 04
L06	Duplicated priority indoor unit, displayed on other than priority indoor unit. Detected indoors. Likely cause two units configured as priority units, correct configuration within engineering menu code 04
L07	Indoor unit group address incorrectly set. Detected indoors. Likely cause alteration of indoor group set-up, re-address required
L08	Indoor group / addresses unset. Detected at outdoor. Likely cause automatic addressing in-completed
L09	Indoor PCB capacity unset. Detected indoors. Likely cause failure to follow instruction accompanying new PCB
L10	Outdoor PCB capacity unset. Detected at outdoor. Likely cause failure to follow instructions accompanying new PCB
L17	Inconsistency of outdoor unit models. Detected at outdoor. Likely cause incorrect selection on outdoor model references
L18	Flow Selector unit error. Detected indoors. Likely cause indoor unit unable to heat on demand. Check power & communication to F/S Box from local indoor unit. Incorrectly configured indoor group sharing F/S box
L20	Duplicated central controller address. Detected indoors. Likely cause incorrectly set network address. Engineering code 03
L28	Quantity of outdoor units to high. Detected at outdoor. Likely cause to many outdoor units modularised together
L29	IPDU /PCB communication error. Detected at outdoor. Likely cause Split equipment=faulty or overheating inverter PCB. VRF equipment=loss in communication between condenser PCB's. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis. Search fault code (without spaces) for diagnosis e.g. L2901

Code	Fault Description
L29 01	Compressor 1 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU board
L29 02	Compressor 2 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU board
L29 03	Compressor 1 & 2 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 2 IPDU board
L29 04	Communication failure between PCB within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for L2904 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search L29041, L29042 or L29044
L29 04 1	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
L29 04 2	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
L29 04 4	Compressor 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 3 IPDU board
L29 05	Communication failure between PCB within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for L2905 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search L29051, L29052 or L29054
L29 05 1	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
L29 05 2	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
L29 05 4	Compressor 1 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 3 IPDU board
L29 06	Communication failure between PCB within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for L2906 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search L29061, L29062 or L29064
L29 06 1	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
L29 06 2	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
L29 06 4	Compressor 2 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 & 3 IPDU board
L29 07	Communication failure between PCB within condenser. Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for L2907 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search L29071, L29072 or L29074 for diagnosis
L29 07 1	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB

Code	Fault Description
L29 07 2	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB
L29 07 4	Compressor 1, 2 & 3 IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1, 2 & 3 IPDU board
L29 08	Fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace fan IPDU board
L29 09	Compressor 1 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 IPDU & fan IPDU board
L29 0A	Compressor 2 IPDU & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 IPDU & fan IPDU board
L29 0B	Compressor 1 & 2 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 2 IPDU PCB & fan IPDU board
L29 0C	Compressor 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 3 IPDU board & fan IPDU board
L29 0d	Compressor 1 & 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 1 & 3 IPDU board & fan IPDU board
L29 0E	Compressor 2 & 3 IPDU board & fan IPDU board communication error. Detected at outdoor. Likely cause check communication cable linking all PCB's, replace Compressor 2 & 3 IPDU PCB & fan IPDU board
L29 0F	Communication error between PCB within condenser. Detected at outdoor. Likely cause check communication cable linking all PCB's, phase missing on power supply, replace interface PCB
L30	Auxiliary interlock in indoor unit. Detected indoors. Likely cause external interlock in CN80 socket on indoor unit
P01	Indoor fan motor error. Detected indoors. Likely cause indoor fan motor or wiring to motor
P03	High compressor discharge temperature. Detected at outdoor. by TD1 @ 115°c. Likely cause low refrigerant, poor refrigerant flow and airflows & TD1 sensor condition sensor value 20°c=63k ohms
P04	High pressure switch activation. Detected at outdoor. Likely cause poor airflows over indoor / out dependant on operation, restriction in refrigerant flow, non-condensable mixed with refrigerant. Fault sub code required to determine which H.P Switch activated 01=compressor 1 02=compressor 2 03=compressor 3. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
P04 01	Compressor 1 high pressure switch activation. Detected at outdoor. Likely cause poor airflows over indoor / out dependant on operation, restriction in refrigerant flow, non-condensable mixed with refrigerant
P04 02	Compressor 2 high pressure switch activation. Detected at outdoor. Likely cause poor airflows over indoor / out dependant on operation, restriction in refrigerant flow, non-condensable mixed with refrigerant
P04 03	Compressor 3 high pressure switch activation. Detected at outdoor. Likely cause poor airflows over indoor / out dependant on operation, restriction in refrigerant flow, non-condensable mixed with refrigerant
P05	Phase-missing detection / phase order error, compressor inverter High Voltage. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis. Search fault code (without spaces) for diagnosis e.g. P0501
P05 00	Phase-order incorrect or phase missing. Detected at outdoor. Likely cause issue with power supply to condenser, or phase order wrong, swap L2 & L3

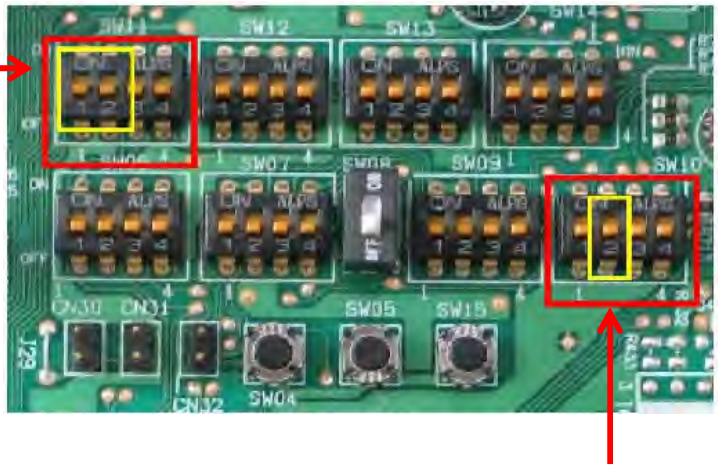
Code	Fault Description
P05 01	Phase-missing detection (series 1 & 2) or High D.C. inverter voltage (series 4). Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for P0501 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search P05011, P05012 or P05014
P05 01 1	Phase-missing detection. Detected at outdoor. Likely cause error on power supply to condenser
P05 01 2	Phase-missing detection. Detected at outdoor. Likely cause error on power supply to condenser
P05 01 4	High D.C. inverter voltage. Detected at outdoor. Likely cause compressor 1 IPDU board overheat or failure
P05 02	Phase-order incorrect (series 1 & 2) or High D.C. inverter voltage (series 4). Detected at outdoor. Fault Code is outdoor model series specific e.g. MMY-MAP###1HT8-E, MMY-AP###2HT8-E or MMY-MAP###4HT8-E therefore example fault code for P0502 will be (MMY-MAP0801HT8-E (series 1), MMY-MAP0802HT8-E (series 2), MMY-MAP0804HT8-E (series 4) search P05011, P05012 or P05014
P05 02 1	Phase-order incorrect. Detected at outdoor. Likely cause issue with power supply to condenser, swap L2 & L3 to correct
P05 02 2	Phase-order incorrect. Detected at outdoor. Likely cause issue with power supply to condenser, swap L2 & L3 to correct
P05 02 4	High D.C. inverter voltage. Detected at outdoor. Likely cause compressor 2 IPDU board overheat or failure
P05 03	High D.C. inverter voltage. Detected at outdoor. Likely cause compressor 3 IPDU board overheat or failure
P07	Overheating compressor IPDU / inverter board. Detected at outdoor. Likely cause poorly secured inverter PCB to heat-sink, faulty IPDU. Fault sub code required to determine which IPDU overheated 01=IPDU1 02=IPDU2 03=IPDU3. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
P07 01	Overheating compressor 1 IPDU / inverter board. Detected at outdoor. Likely cause poorly secured inverter PCB to heat-sink, faulty IPDU board 1
P07 02	Overheating compressor 2 IPDU / inverter board. Detected at outdoor. Likely cause poorly secured inverter PCB to heat-sink, faulty IPDU board 2
P07 03	Overheating compressor 3 IPDU / inverter board. Detected at outdoor. Likely cause poorly secured inverter PCB to heat-sink, faulty IPDU board 3
P10	Indoor float switch open circuit as result of high condensation levels within drip tray, detected indoors. Likely cause faulty float switch, faulty lift pump, debris blocking drain
P12	Indoor fan motor trouble. Detected indoors. Likely cause fan motor locked, incorrectly configured PCB, indoor PCB fault
P13	Outdoor liquid back detection in condenser while in OFF cycle. Detected at outdoor. Likely cause increase in pressure within dormant condenser, possible PMV valves passing
P15	High compressor suction or discharge temperature. Detected at outdoor. Likely cause sensor condition (TS1 or TD1, 2 or 3), interface PCB fault, loss of refrigerant TS1 sensor value 20°c=12.5k ohms TD1,2 & 3 sensor value 20°c=63k ohms. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
P15 01	High compressor suction temperature. Detected at outdoor. Likely cause suction sensor condition (TS1), interface PCB fault, loss of refrigerant sensor value 20°c=12.5k ohms
P15 02	High compressor discharge temperature. Detected at outdoor. Likely cause discharge sensor condition (TD1, TD2 or TD3), interface PCB fault, loss of refrigerant sensor value 20°c=63k ohms
P17	High compressor discharge temperature. Detected at outdoor. by TD2 @ 115°c. Likely cause low refrigerant, poor refrigerant flow and airflows & TD2 sensor condition sensor value 20°c=63k ohms
P18	High compressor discharge temperature. Detected at outdoor. by TD3 @ 115°c. Likely cause low refrigerant, poor refrigerant flow and airflows & TD3 sensor condition sensor value 20°c=63k ohms
P19	Incorrect temperature / pressure reading at condenser. Detected at outdoor. Likely cause check characteristics of pressure transducers (PS & Pd) and temperature sensors (TS1, TE1 & TL), interface PCB fault sensor value 20°c=12.5k ohms

Code	Fault Description
P20	High pressure protection detected by discharge pressure transducer reading @ 36bar. Detected at outdoor. Likely cause characteristics of discharge pressure transducer (Pd), interface PCB, poor airflows across condensers
P22	Outdoor fan motor error. Detected at outdoor. Likely cause Split equipment, locked / faulty fan motor, faulty PCB VRF Equipment. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis. Search fault code (without spaces) for diagnosis. e.g. P2203
P22 03	Outdoor fan motor error. Detected at outdoor. Likely cause locked / faulty fan motor, faulty fan IPDU PCB. Fan motor has 3 ohms resistance on any 2 wires
P22 34	Outdoor fan motor error. Detected at outdoor. Likely cause locked / faulty fan motor, faulty fan IPDU PCB. Fan motor has 3 ohms resistance on any 2 wires
P22 37	Outdoor fan motor error. Detected at outdoor. Likely cause locked / faulty fan motor, faulty fan IPDU PCB. Fan motor has 3 ohms resistance on any 2 wires
P22 E1	Fan IPDU board error. Detected at outdoor. Likely cause error on DC supply voltage to fan IPDU PCB or problem with mains voltage onto condenser
P22 E2	Fan IPDU board error. Detected at outdoor. Likely cause error on DC supply voltage to fan IPDU PCB or problem with mains voltage onto condenser
P22 E3	Fan IPDU board error. Detected at outdoor. Likely cause error on DC supply voltage to fan IPDU PCB or problem with mains voltage onto condenser
P26	Compressor IPDU PCB Short circuit. Detected at outdoor. Likely cause electrical fault on compressor, faulty compressor inverter board. Before replacing PCB prove compressor is good. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
P26 01	Compressor 1 IPDU PCB Short circuit. Detected at outdoor. Likely cause electrical fault on compressor 1, faulty compressor 1 inverter board. Before replacing PCB prove compressor is good
P26 02	Compressor 2 IPDU PCB Short circuit. Detected at outdoor. Likely cause electrical fault on compressor 2, faulty compressor 2 inverter board. Before replacing PCB prove compressor is good
P26 03	Compressor 3 IPDU PCB Short circuit. Detected at outdoor. Likely cause electrical fault on compressor 3, faulty compressor 3 inverter board. Before replacing PCB prove compressor is good
P29	Compressor position detection error. Detected at outdoor. Likely cause fault on compressor, faulty compressor inverter board. Before replacing inverter PCB prove compressor is good. Retrieve fault sub-code from condenser interface PCB by placing rotary dials to position 1 / 1 / 1 for diagnosis.
P29 01	Compressor 1 position detection error. Detected at outdoor. Likely cause fault on compressor 1, faulty compressor 1 inverter board. Before replacing inverter PCB prove compressor is good
P29 02	Compressor 2 position detection error. Detected at outdoor. Likely cause fault on compressor 2, faulty compressor 2 inverter board. Before replacing inverter PCB prove compressor is good
P29 03	Compressor 3 position detection error. Detected at outdoor. Likely cause fault on compressor 3, faulty compressor 3 inverter board. Before replacing inverter PCB prove compressor is good
P30	Indoor unit other than lead indoor suffering fault. Detected on central controller. Likely cause to diagnose retrieve fault code from local remote controller to indoor group
P31	Indoor unit other than lead indoor suffering fault. Detected indoors. Likely cause to diagnose retrieve fault code from local remote controller to indoor group

Check Code				Wireless Remote				Check Code Name	Judging Device
Central Control Device	Outdoor 7 Segment Display		AI Central Controller	Sensor Block Display					
		Auxiliary Code		O	T	R	F		
C05	---	---	---	---				Sending error in TCC-Link central control device	TCC-LINK
C06	---	---	---	---				Receiving error in TCC-Link central control device	TCC-LINK
C12	---	---	---	---				Batch alarm of general purpose equipment control interface	HA control interface I/F
P30	---	Differs according to error contents of unit with occurrence of alarm						Group control follower unit error	TCC-LINK
		---	(L20 is displayed)					Duplicated central control addresses	

- Dials must be in positions ' **1 – 1 – 1** 'with a 7 segment displaying ' **U1 - - -**'
- To start the wiping of addresses move rotary dials to ' **2 – 1 – 2**' 7 segment display will read' **ad bus**'
- Press and hold **SW04** for 4 seconds, ' **ad cl**' will appear on the 7 segment display
- Once ' **ad cl**' appears on display release **SW04** and return rotary dials to ' **1 – 1 – 1**'
- Approximately 3 minutes later ' **U1 L08**' will appear, wiping of **BUS** address is now complete
- To start re-address of indoor units press and hold **SW15** – display will scroll from **AUTO1** to **AUTO9**
- After approx. 10 minutes display will show ' **U1 - - -**'
- To check the quantity of indoors assigned place rotary dials at ' **1 – 4 – 3**'
- e.g. display of ' **10 C 0**' the number **10** in this display relates to the number of indoors addressed. Once complete return dials to ' **1 – 1 – 1**'

Super Modular Multi (SMMSi) Switch Positions



Priority Mode (SMMS(i) Only).

Factory setting - Heating priority, this can be modified to Cooling priority via DIP switch "SW11" bit's 1 & 2
In addition to above priority is factory set at "Any one indoor unit" this can be modified to Percentage, i.e. 60% of units requiring a mode, or Set to One SPECIFIC indoor unit.

SW11		Operation
Bit 1	Bit 2	
OFF	OFF	Heating priority (Factory setting)
ON	OFF	Cooling priority
OFF	ON	Percentage (60%)
ON	ON	Specific indoor unit

Outdoor Fan High Static Pressure Setup

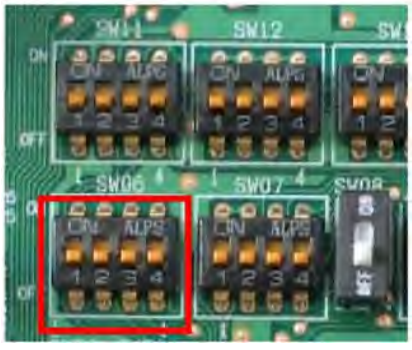
This function is used when connecting a duct to the discharge outlet of an outdoor unit. To setup turn ON the DIP switch [SW10, Bit 2] provided on the interface P.C. board of the outdoor unit. This function must be enabled with every discharge duct connected outdoor unit for both of the header and follower units. It is necessary to increase the speed of the propeller fan units on the outdoor fan to allow the installation of a duct with a maximum external static pressure not greater than specified in the table below. If a discharge duct with a resistance greater than 15 Pa (1.5 mmAq) is to be used, enable this function. The maximum external static pressures of base units are shown below: -

SMMS(i) Model MMY-	MAP0804*	MAP1004*	MAP1204*	MAP1404*	MAP1604*
Maximum external static pressure(Pa)	60	60	50	40	40
(*) Outdoor unit air flow (m^3/h)	9900	10500	11600	12000	13000
SHRM(i) Model MMY-	MAP0804*	MAP1004*	MAP1204*	MAP1404*	
Maximum external static pressure(Pa)	50	40	40	40	
(*) Outdoor unit air flow (m^3/h)	8700	9420	12000	12960	
(*) Calculate duct resistance from outdoor unit airflow. When units are combined maximum external static pressure is the lower value of any single unit in the combination.					

Compressor or Outdoor Fan Motor Backup Isolation Setting

In the event of a compressor or fan motor error it is possible to electronically remove the affected item circuit allowing the unaffected circuit(s) to operate normally. This is achieved via DIP switch "SW06". Turn OFF the power to the system and set up DIP switch "SW06" Bits 1 to 4 as per the chart. This solution is a "Temporary Fix" and it is recommended that the faulty item(s) are replaced within 7 days

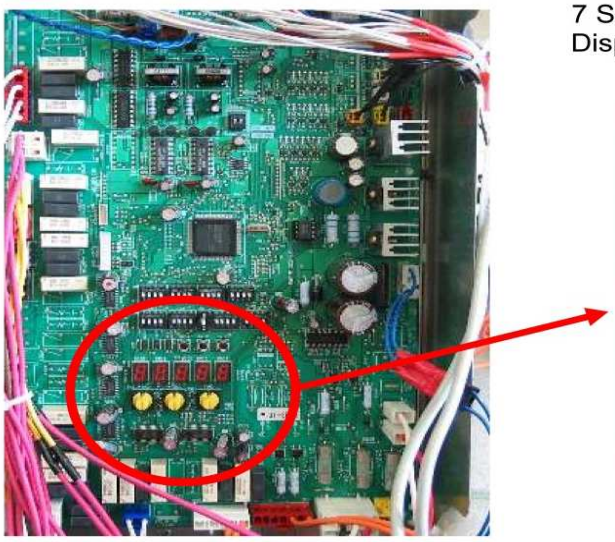
SW06	DIP Switch Positions			
	Bit1	Bit 2	Bit 3	Bit 4
Factory setting	OFF	OFF	OFF	OFF
No 1 Comp. Defective	ON	OFF	OFF	OFF
No 2 Comp. Defective	OFF	ON	OFF	OFF
No 3 Comp. Defective	OFF	OFF	ON	OFF



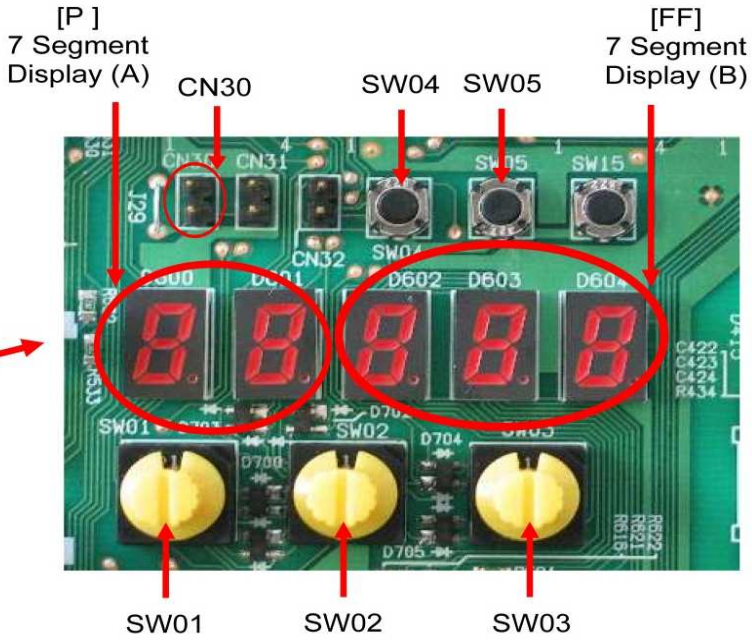
Opening PMV's on Toshiba 3 Pipe VRF (R410a)

Step by step guide on how to open up all PMV's on indoor and outdoor units to enable successful refrigerant recovery, pressure test and evacuation

1. Before starting ensure that you have power applied to all indoor and all outdoor units
2. Ensure that on each condenser you have a normal display of U1--- and U2--- dependent on the quantity of outdoors while the yellow rotary dials are at positions 1-1-1
3. Place yellow rotary dials at position 2-3-1 left to right, on the lead condenser U1---, [P] will appear
4. Press push button SW04 just above the hexadecimal display for several seconds
   [P] [FF] is displayed on the hexadecimal display (meaning that all the PMV's on the indoors are in the open position)
5. You now have a 2 minute window to turn the power off to the indoor units either at the isolator or distribution board to lock the valves in the open position
6. At condenser 1, bridge out the pins of CN30 on the main interface board for 10 seconds with the blade of a screwdriver and turn off power
7. Complete step 6 in any remaining condensers if modularised



Interface PCB



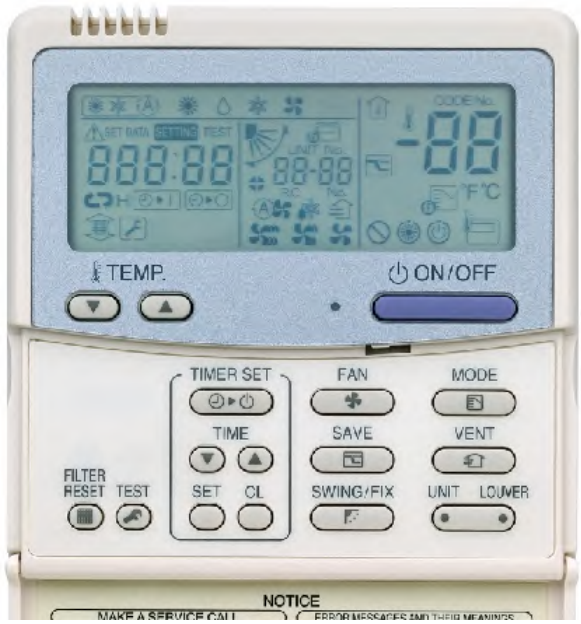
Once your procedures of refrigerant recovery, pressure test or evacuation are complete there are no reverse procedures to follow, the valves will then close automatically once power is applied

VRF Rotary Dial Data Display - SMMS(i), SHRM(i) & Mini SMMS

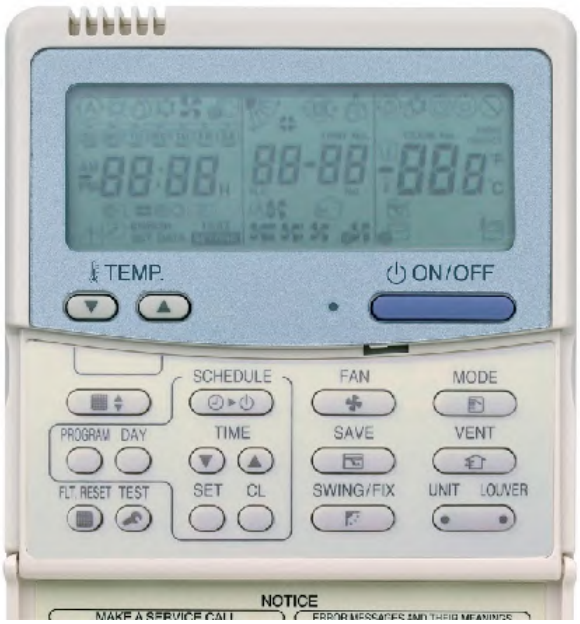
Model	SW01	SW02	SW03	Display Data
Common	1	1	1	Error data
Common	1	1	2	Pd pressure data
Common	1	2	2	Ps pressure data
Common	1	2	3	System capacity
Common	1	2	16	Latest error code of follower unit No.1 (U2)
Common	1	3	2	PL pressure conversion data
Common	1	3	3	No. of outdoor units
Common	1	3	16	Latest error code of follower unit No.2 (U3)
Common	1	4	1	Outdoor unit HP capacity
Common	1	4	2	TD1 sensor data
Common	1	4	3	No. of connected indoor units / No. of units with cooling thermo ON
Common	1	5	2	TD2 sensor data
Common	1	5	3	No. of connected indoor units / No. of units with heating thermo ON
Common	2	3	1	Indoor PMV forced full open function
Common	2	4	1	Indoor remote controller discriminating function
Common	2	5	1	Cooling test operation function
Common	2	6	1	Heating test operation function
Common	2	14	2	Adding additional indoor units
Common	2	16	1	Error clear function
SHRM	1	8	2	TE sensor data
SHRM	1	11	2	TK1 sensor data
SHRM	1	12	2	TK2 sensor data
SHRM	1	13	2	TK3 sensor data
SHRM	1	14	2	TK4 sensor data
SHRM	1	9	2	TL sensor data
SHRM	1	10	2	TO sensor data
SHRM	1	6	2	TS1 sensor data
SHRM	1	7	2	TS2 sensor data
SHRMi	3	8	1 to 2	Compressor 1 operating current
SHRMi	3	9	1 to 2	Compressor 2 operating current
SHRMi	3	10	1 to 2	Compressor 3 operating current
SHRMi	3	11	1 to 2	Fan operating current
SHRMi	1	6	2	TD3 sensor data
SHRMi	1	9	2	TE1 sensor data
SHRMi	1	10	2	TE2 sensor data
SHRMi	1	1	5	TK1 sensor data
SHRMi	1	2	5	TK2 sensor data
SHRMi	1	3	5	TK3 sensor data
SHRMi	1	4	5	TK4 sensor data
SHRMi	1	5	5	TK5 sensor data
SHRMi	1	11	2	TL sensor data
SHRMi	1	12	2	TO sensor data
SHRMi	1	7	2	TS1 sensor data
SHRMi	1	8	2	TS2 sensor data
SMMS	1	4	16	Latest error code of follower unit No.3 (U4)
SMMS	1	7	2	TE sensor data
SMMS	1	11	2	TK1 sensor data
SMMS	1	12	2	TK2 sensor data
SMMS	1	13	2	TK3 sensor data
SMMS	1	14	2	TK4 sensor data
SMMS	1	9	2	TL sensor data
SMMS	1	10	2	TO sensor data
SMMS	1	6	2	TS sensor data
SMMSi	3	8	1 to 3	Compressor 1 operating current
SMMSi	3	9	1 to 3	Compressor 2 operating current
SMMSi	3	10	1 to 3	Compressor 3 operating current
SMMSi	3	11	1 to 3	Fan operating current
SMMSi	1	4	16	Latest error code of follower unit No.3 (U4)
SMMSi	1	6	2	TD3 sensor data
SMMSi	1	8	2	TE1 sensor data
SMMSi	1	9	2	TE2 sensor data
SMMSi	1	12	2	TK1 sensor data
SMMSi	1	13	2	TK2 sensor data
SMMSi	1	14	2	TK3 sensor data
SMMSi	1	15	2	TK4 sensor data
SMMSi	1	16	2	TK5 sensor data
SMMSi	1	10	2	TL sensor data
SMMSi	1	11	2	TO sensor data
SMMSi	1	7	2	TS sensor data
Mini SMMS	1	6	2	TE sensor data
Mini SMMS	1	7	2	TL sensor data
Mini SMMS	1	8	2	TO sensor data
Mini SMMS	1	5	2	TS sensor data

CN30 - Force open all outdoor PMV's short CN30 out and kill power within 2 minutes to ensure valves stay in fully open position

Digital / Super Digital Inverter
SMMSi / SHRMi VRF



RBC-AMT32-E



RBC-AMS41-E

RBC-AMS51-ES

System Configuration Menu

A number of items are configurable by the wired controller – if an indoor unit without a wired controller requires configuration, it may be temporarily connected for the procedure to be undertaken. In order to access the menu

Press TEST + SET + CL for 4 seconds

- The indoor units to be configured will be chosen by pressing the UNIT button.
- The indoor unit being configured runs its fan and swings its louvers (if possible).
- Use SET TEMPERATURE up/down buttons to scroll through the configurable items Use TIMER up/down buttons to choose the configuration value for Use
- SET to confirm configuration value Use CL to undo an incorrect setting (provided that configurable item has not been changed)
- Use CHECK to return to normal operation

Item	Description		Value	Default
01	Filter alarm time	Filter sign displayed after selected time has elapsed – or by external pressure switch (CN70)	0000: Inactive 0001: 150 H 0002: 250 H 0003: 500 H 0004: 1000 H 0005: External switch	0004
02	Dirty environment	Allows filter alarm time to be halved if used in a dirty environment	0000: Standard 0001: Dirty	0000
03	Network address	When under network control.	0099: Unset 0001 to 0064 available	0099
04	Priority Setting for Remote Controller	0 = Normal 1= Priority (This remote has priority of mode setting	0000 = Standard 0001 = Priority	0000
06	Stratification control	Increases effective return air temperature setting in heating mode (0 to 10 K)	0000 to 0010	0002; +2°C Floor type 0000; 0°C
0C	Preheat	Preheat indication on display	0000 = available 0001 = unavailable	0000
0d	Auto mode	Enable or disable Auto mode	0000 = available 0001 = unavailable	0000 except SMMS
0E	SHRMi only	Used when multiple indoor units are served via a single FS box	0000 = normal 0001 = multiple units	0000
0F	Heat Mode	Enable or disable Heat Mode	0000 = available 0001 = unavailable	0000
1b	Compressor on time	Compressor minimum on time 0 = 5 minutes 1 = 4 minutes	0000: 0 – 5 min 0001: 1 - 4 min.	0000
1E	Dead band - auto	Changeover sensitivity in automatic mode. 1 to 10 k adjustable	0000: 0 K, 0010: 10 K	0003
1F	Max. Setting	Cooling mode maximum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	29 ° C
2A	CN70	Selection of optional error input (CN70)	0000: Filter input 0001: Alarm input, 0002: None	0002
2d	Modes available	Binary addition of modes available. Split systems 0000, will fault the system	0015 = all modes 1 = fan; 2 = cool; 4 = dry 8 = heat	0015
2E	External On / Off control	Making or breaking terminals 1 and 2 of CN61 (indoor PCB) External switching option, remove jumper 01 master indoor PCB allows continuous contact switch- link 01 in place; pulse switch required	0000 = group starts when made stops when open 0001 = enable when made, disable when open	0000
5d	**1-Way Cassette**	AP015, 018 / AP024		
	Airflow correction Ceiling height (m)	3.5 / 4.0 / 4.2 — 3.8 / 4.0 / 4.2	0000 0001 0003	0000
	2-Way Cassette	AP007 to AP030 / AP36 to AP056		
	Airflow correction Ceiling height (m)	2.7 / 3.2 / 3.8 — 2.7 / 3.0 / 3.5	0000 0001 0003	0000
	4-Way Cassette	- / RAV56* / RAV80* / RAV110*-160*		
		AP005 to AP012 / AP015 to AP018 / AP024 to AP030 / AP036 to AP056		
	Airflow correction Ceiling height (m)	4-way: 2.7 - / 3-way: 2.8 - / 2-way: 3.0 - 4-way: 2.8 3.2 3.5 / 3-way: 3.2 3.5 3.8 / 2-way: 3.5 3.8 - 4-way: 3.0 3.3 3.6 / 3-way: 3.3 3.5 3.8 / 2-way: 3.6 3.8 - 4-way: 3.9 4.2 4.5 / 3-way: 4.2 4.4 4.6 / 2-way: 4.5 4.6 -	0000 0001 0003	0000
	4-Way Compact	- / RAV40* / RAV56*		
		AP007 to AP012 / AP015 / AP018		
	Airflow correction Ceiling height (m)	2.7 - - / 2.9 3.2 3.5 / 3.2 3.4 3.5	0000 0002 0003	0000
	Slim Ducted	- / RAV40*-56* / -		
		AP0054 / AP0074 to AP0184 / AP0244 to AP0274		
	Airflow correction External static pressure	10 Pa 20 Pa 35 Pa 50 Pa / 10 Pa 20 Pa 35 Pa 50 Pa / 10 Pa 20 Pa 35 Pa 50 Pa	0000 0001 0003 0006	0000
	Standard Ducted	RAV40*-56* / RAV80* / RAV110*-160*		
		AP007 to AP018 / AP024 to AP030 / AP036 to AP058		
	Airflow correction External static pressure	30 Pa 40 Pa 50 Pa 65 Pa 80 Pa 100 Pa 120 Pa / 30 Pa 40 Pa 50 Pa 65 Pa 80 Pa 100 Pa 120 Pa / 30 Pa 40 Pa 50 Pa 65 Pa 80 Pa 100 Pa 120 Pa	0001 0000 0003 0002 0004 0005 0006	RAV40* 0001 RAV-80* 0001 RAV110* 0003 RAV140* 0003 RAV160* 0003 AP007_018 0001 AP024_030 0000 AP036_058 0003
8b	Heating Correction	Heating output reduction split systems only	0000: None, 0001: Correction	0000
8C	Forced Defrost	Run group in HEAT mode after setting defrost is conducted automatically. Value is reset automatically back to 0000	0000 = disabled 0001 = enabled	0000
A0	Fan & Pump	Fan and pump operation during oil retrieval mode (VRF cassettes ONLY)	0000 = fan off, pump on 0003 = fan on, pump on	0003
C2	Energy save	Outdoor unit energy demand 1% increments 50 to 100%	0050 ~ 0100	0075
CE	Replace indoor PCB	4-Way cassette unit capacity code	0000 = disable 0006: RAV40* 0009: RAV56* 0012: RAV80* 0015: RAV110* 0017: RAV140* 0018: RAV160*	0000
D3	Self clean operation	Self clean dry operation	0000 = disable 0001 = enable	0001

Item	Description		Value	Default
F1 **F2** **F3** **F4**	Louvre lock Flap 1 Louvre lock Flap 2 Louvre lock Flap 3 Louvre lock Flap 4	4-Way cassette 5 fixed positions	0000 Full swing 0001 Fixed position 1 0002 Fixed position 2 0003 Fixed position 3 0004 Fixed position 4 0005 Fixed position 5	0000
10	Indoor unit model	Must be set when replacing indoor printed circuit board	0000: 1 way cassette (s models) 0001: 4 way cassette 0002: 2 way cassette 0003: 1 way cassette (y models) 0004: duct (standard) 0005: slim duct 0006: duct (high static) 0007: ceiling 0008: hi wall 0010: console 0011: concealed floor 0014: 4 way cassette (600 x 600) 0013: tall cabinet 0016: fresh air intake 0050: air to air heat exchanger	
11	Indoor unit capacity	0000 will generate a (L09) fault	MM RAV 0001= 007* 0003= 009* 0005= 012* 0006 = 40* 0007 = 015* 0009 = 018* 56* 0011 = 024* MM RAV 0012= 027* 80* 0013= 030* 0015= 036* 110* 0017= 048* 140* 0018= 056* 160* 0021= 072* 224* 0023= 096* 280* Air to air heat exchanger Type 0001= 150m^3/h 0002= 250m^3/h 0003= 350m^3/h 0004= 500m^3/h 0005= 650m^3/h 0006= 800m^3/h 0007= 1000m^3/h	
12	System number	DI/SDI indoor and outdoor units are automatically addressed, this value may be set manually but it must be done via the wired controller – on an individual basis. Settings are 0001 to 0030	0001: outdoor unit 1 0002: outdoor unit 2	0099
13	Indoor unit number	Indoor units connected to a common outdoor unit (e.g. twinned indoor units) will have the same system number - settings are 0001 to 0064. Automatically allocated – but may be manually overridden.	0001: indoor unit 1 0002: indoor unit 2	0099
14	Group master/slave	Allows selection of master indoor unit within group. Automatically allocated but may be manually overridden.	0000: single indoor unit 0001: group master 0002: group slave	0099
15	Temperature Sensor	Compensation for missing temperature sensor (split systems ONLY) other settings produce F03 fault code	0022	0022
16	Indoor Fan	Indoor fan speed selection. Binary addition.	0015 = all speeds available 1 = auto; 2 = low; 4 = medium; 8 = high	0015 except high static 0008
17	Set point shift	Cooling temperature set point shift. (shifted by 1 to 10 k)	0000 = no shift, 0001 = 1 k shift 0010 = 10 k shift	0000
19	Louver functions	None, swing only, swing and auto (where applicable)	0000: disabled, 0001: swing only 0004: all options	
20	Min. Setting	Cooling mode minimum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	18 ° C
21	Max. Setting	Heating mode maximum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	29 ° C
22	Min. Setting	Heating mode minimum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	18 ° C
23	Max. Setting	Dry mode maximum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	29 ° C
24	Min. Setting	Dry mode minimum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	18 ° C
25	Max. Setting	Auto mode maximum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	29 ° C
26	Min. Setting	Auto mode minimum temperature setting (18 – 29)	0018 = 18° C 0020 = 20 ° C 0029 = 29 ° C	18 ° C
28	Auto restart	Enable or disable	0000: disabled, 0001: enabled	0000
29	Humidifier condition	Operating condition of humidifier	0000: Usual 0001: Condition ignored	0000
31	External fan control	Through remote controller and CN32 indoor PCB	0000 = disable, 0001 = enabled	0000
32	Sensor location	Return air/room sensor OR in local controller	0000: return air sensor 0001: remote sensor	0000
33	Unit of temperature	Celsius or Fahrenheit	000 = Celsius, 0001 = Fahrenheit	0000
36	Remote controller	Temperature display	0000: temperature setting 0001: temperature room sensing	0000
40	Drain pump	Drain pump control	0000: None 0001: Pump ON 0002: None 0003: Pump OFF	0003
45	Anti smudge	4 way cassette – anti smudge effect via louver position	0000 = enabled, 0001 = disabled	0000
60	Timer lock	Locks timer in wired local controller – maintaining last setting	0000: unlocked, 0001: locked	0000
62	Anti smudge	4 way cassette – ant smudge via fan speed (Coanda effect)		0001
69	Louver	Louver restriction when cooling	0000 = restricted to horizontal positions 0001 = full range of movement	0000

TCCJ & TCUK Optional Control Accessories

	ITEM	RAV	VRF	VN	ESTIA	RAS	DESCRIPTION	DETAILS
Wired Controller	RBC-AMT32E	■	■				Standard Remote Controller	Full Control Including Service Functions
	RBC-AMS41E	■	■				Remote Controller Built-in Timer	Full Control Including Service Functions and Programmable 24/7 Day Timer
	RBC-AMS51E-ES	■	■				LITE-Vision Plus Remote Controller	Includes Timer and Backlight Display As Well As Power Save Functions, Multilingual
	RBC-AS41E2	■	■				Simplified Controller	Ideal for Hotel and Base use Applications (No Service Functions Available)
	TCB-TC21LE2	■	■				Auto-configurable Remote Sensor	Automatic Control of Room Temperature Sensing Comfort Condition for systems
	NRC-01HE	■	■	■			VN-M150/VN-M2000HE Controller	Controller for Air-Air Heat Exchanger Units
	RBC-SH-A1LE2				■		Remote Controller for Ducted	Wall Mounted Remote Controller
	TCB-EXS21TLE	■	■				Schedule Timer	Use with Central Controllers BMS-CM1280TLE, BMS-SM1280ETLE or Standard Controllers RBC-AMT32E, NRC-01HE
Wireless Controller	RBC-AX32U(W)-E	■	■				4 Way Cassette Corner Receiver	Replacement Corner Pocket with Built-in Receiver and Remote Controller
	RBC-AX23UW(W)-E	■	■				2 Way Cassette Receiver	Replacement Receiver and Remote Controller
	RBC-AX32CE2	■	■				Ceiling Receiver	Replacement Receiver and Remote Controller
	TCB-AX32E2	■	■				Independent External Receiver	Receiver and Remote Controller for all Models
Central Controllers	TCB-CC163TLE2	■	■				On-Off Controller	Enables the Switching On and Off by Volt Free Contact
	TCB-SC642TLE2	■	■				Central Remote Controller	Fully Programmable 64 Way Central Controller
	BMS-CM1280TLE	■	■				Compliant Manager	Enables Full Control of Up to 128 Indoor Units
	BMS-SM1280ETLE	■	■				Smart Manager with Data Analyser	Smart Manager with Remote Access Via Web Browser and Data Analysis Features
Outdoor Boards	TCB-PCDM4E		■				Power Peak-Cut Control	Power Peak-Cut Control
	TCB-PCIN4E		■				Operation Output Display	Operation/Error Output Display, Compressor Operation Control
	TCB-PCMO4E		■				Operation Control	Night Set Back Control, Snowfall Fan Control and External Master On/Off
	TCB-PCOS1E2	■*					Outdoor Control	Peak Power Cut and Noise Reduction. Output for Compressor Operation (*not applicable to all units)
Indoor Boards	TCB-PCNT30TLE2	■					Network Adapter U3/U4 TCC Link	Connects a RAV Unit to the TCC Link Network
	TCB-PCNT20E	■					Network Adapter XY AI Network	Connects a RAV Unit to the Old AI Network
	TCB-PX30MUE	■					Terminal Box	Enclosure for the PCNT30TLE2 when used with all RAV Cassette Units
	RBC-SMF1	■	■				Fan Interface	Interface to Provide An Output to Enable An external Fan From the Unit
	RBC-SMIM2	■	■				Indicator Module Mode	Interface to Indicate the Mode of Unit Operation Output For Cool, Heat and Fan Only
	RBC-SMIM3	■	■				Indicator Module ON/OFF and Stopping Fault	Interface to Indicate Unit Operation and Stopping Fault
	RBC-SMIM4	■	■				Indicator Module ON/OFF, Stopping Fault and Unit Enable	Interface to Indicate Unit Operation and Stopping Fault. It Also Has Connections to Enable the Unit
	RBC-FDP3-PE	■	■				BMS Interface	Interface to Connect to a 0-10v or Resistance Based BMS This Also Has Modbus Functionality
	RBC-IT2-PE	■					Timer Interface	Interface to Accept a 240v Input from a Timer for R22 and R407C Systems
	RBC-IT3-PE					■	Daiseikai/AvAnt 240v Timer Interface	Connects to "HA" Socket for RAS Units
	TCB-PCM03E				■		External Input PCB	Interface to Switch the Estia Unit On or Off
	TCB-PCIN3E				■		Output PCB	Interface Provides an Output for Estia Fault and Run
Other Accessories	RBC-FSEX15		■				Flow Selector Lead	15m Extension Lead Kit for the Flow Selector
	RBC-SMCN61	■	■				On/Off and Locking Lead	Remotely Switches Unit ON/OFF and Locks Function
	RBC-SMCN61L	■	■				On/Off Lock Lead	Locks the ON/OFF Function
	RBC-SMT1	■*	■*				Timer Interface Lead	Provides ON/OFF Control from Wired Remote or Any Central Controller (*excludes RBC-AS41E2)
	RBC-VNL1			■			Unit Interface Lead	Volt Free Interface for VN-M150/VN-M2000HE to Control On/Off, Fan Speed and Damper Positions
	RBC-CK1	■					VRF to DI/SDI Conversion Kit	Kit Required to Convert VRF Floor/Chassis Units to Connect with DI/SDI Outdoors

Features

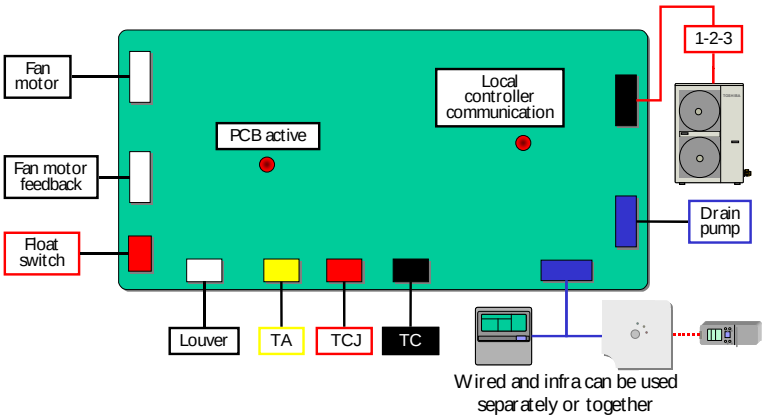
- ⇨ 2 wire, screened, non-polarised controller connection
- ⇨ Infra red control available for cassette models
- ⇨ Remote temperature sensing available
  - Wired controller
  - Infra red controller
  - Separate room sensor
- ⇨ Automatic addressing of groups and twins
- ⇨ Optional control of external fan
- ⇨ High ceiling compensation
- ⇨ Time for filter warning is configurable

Each mode of operation (auto – heat – cool – dry) may have a different temperature set point

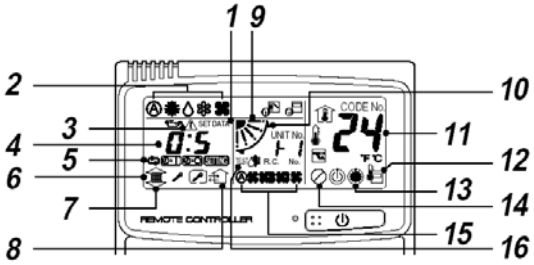
- ⇨ Auto restart is configurable

Cassette PCB

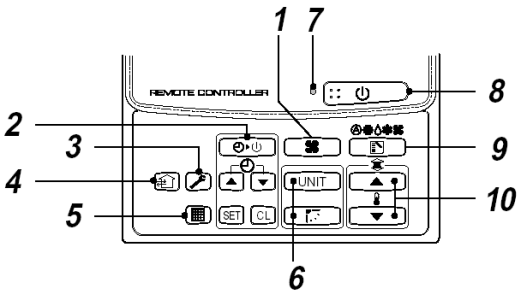
- ⇨ DC fan motor with feedback circuit
- ⇨ Red LEDs indicate communication with local controller and PCB activity when illuminated.
- ⇨ Wired or infra red control (or both)
- ⇨ Drain pump and float switch



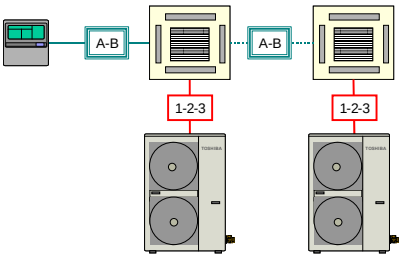
Wired controller



1. Set data – displayed when setting timer
2. Operating mode
3. Alarm alert
4. Timer/check code
5. Choice of timer mode
6. Filter alert
7. Not used
8. External fan active
9. Louver position
10. Louver swinging
11. Set temperature
12. Displayed when using the remote sensor
13. Preheat defrost
14. Not used
15. Fan speed
16. Displayed during test run



1. Fan speed
2. Timer set button
3. Check button
4. Control of external fan
5. Filter reset button
6. Unit button and louver control
7. Operation lamp
8. Operation button
9. Mode select
10. Temperature select button



Group control

- Indoor units may be supplied from any phase
- Up to 8 indoor units per group
- Automatic addressing
- Any indoor unit may be designated as the "master"
- Pre-heat indication
- Filter indication

Automatic addressing

This takes place when power is applied and can last up to 5 minutes – the address will be selected automatically. If a replacement indoor PCB is fitted, the missing address will be re-applied.
The powered controller screen shows the demarcation lines – and does not indicate that the system is either configuring itself – or is ready to use. If the remote temperature sensor is selected (configuration item 32), the associated symbol will appear when the system is ready for use. If a 9 th indoor unit (which can be a protocol converter) is added to a group, the controller will continue to show the demarcation lines.
Adding a system to an existing group (or powering a group up at different times) will require manual configuration (the fault codes will provide guidance).

Identifying an indoor unit

- Stop operation
- Press TEST and (external) FAN for 4 seconds
- ALL is displayed
- Indoor fans of the entire group are now energised
- Press UNIT to scroll through group
- Indoor fan of selected indoor unit runs
- Press TEST to exit.

Test operation

- System must be stopped
- Press TEST for 4 seconds
- Controller displays TEST
- Press the ON/OFF button to start operation
- Select MODE of operation
- HEAT or COOL
- Press the ON/OFF button to stop test
- System will automatically revert to normal operation after 1 hour
- Press the TEST button to leave TEST function
-

Controller Configuration - Remote Controller RBC-AMT32E & RBC-AMS41E

Quick Reference Guide
To assist service engineers working on Toshiba air conditioning equipment, there is a large quantity of data available via the standard remote controller, either the RBC-AMT32E or the RBC-AMS41E, this data is **NOT** available via an Infra Red remote or the RBC-AS21E2 simplified remote controller.
Accessing the data is a simple process of pressing a sequence of buttons on the remote controller.

Fault Code Guide
Current fault codes are displayed automatically on the left of the remote controller, (Four figure display in Black) fault code history can be accessed by pressing "**TEST & SET**" together and holding for 4 seconds. Each controller will hold four fault codes per unit controlled, the first displayed fault code is the youngest and the fourth will be the oldest.
To scroll through the faults use the "**TEMP▲▼**" buttons.

- ***Refer to the Technical Handbook for fault code diagnosis and descriptions***

System Data
System data can be obtained by pressing "**TEST & CL**" together and holding for 4 seconds. Codes are displayed on the right of the remote display.
To scroll through the codes use the "**TEMP▲▼**" buttons. Data is displayed on the left of the remote controller. Data is available for "0, 1, 2, 3 & 4 Series" Digital/Super Digital inverter and VRF equipment (Mini SMMS, SHRM, SHRMi, SMMS & SMMSi).

Data Retrieval Guide - Remote Controllers RBC-AMT32E, RBC-AMS41E & RBC-AMS51E-ES

Digital/Super Digital "0-1-2-3" Series Data

Code	Indoor Data	Code	Outdoor Data
00	Room Temp (Control Temp) (°C)	60	TE Sub-cooled Liquid Temp (°C)
01	Room Temp (Remote Controller) (°C)	61	TO Ambient Temp (°C)
02	TA Return Air Temp (°C)	62	TD Discharge Temp (°C)
03	TCJ Coil Liquid Temp (°C)	63	TS Suction Temp (°C)
04	TC Coil Vapour Temp (°C)	65	THS Inverter Heat Sink Temp (°C)

Digital/Super Digital "4" Series

Code	Indoor Data	Code	Outdoor Data
00	Room Temp (Control Temp) (°C)	60	TE Sub-cooled Liquid Temp (°C)
01	Room Temp (Remote Controller) (°C)	61	TO Ambient Temp (°C)
02	TA Return Air Temp (°C)	62	TD Discharge Temp (°C)
03	TCJ Coil Liquid Temp (°C)	63	TS Suction Temp (°C)
04	TC Coil Vapour Temp (°C)	65	THS Inverter Heat Sink Temp (°C)
07	Fan Speed (rpm)	6A	Operation Current (A)
F2	Fan Run Time (x 100h)	70	Compressor Frequency (Hz)
F3	Filter Duration Timer (x 1h)	72	Fan Speed (Lower) (rpm)
F8	Discharge Temp (Indoor If fitted) (°C)	73	Fan Speed (Upper) (rpm)
		F1	Compressor Run Time (x 100h)

VRF Indoor Data For Mini SMMS

Code	Indoor Data	Code	Indoor Data
00	Room Temp (Control Temp) (°C)	06	Indoor Discharge Temp (If Used) (°C)
01	Room Temp (Remote Controller) (°C)	08	PMV Position (0 10)
02	TA Return Air Temp (°C)	0A	Number of Connected Indoor Units (No.)
03	TCJ Coil Liquid Temp (°C)	0b	Indoor Capacity (x 10 = HP)
04	TC2 Coil PMV Pipe Temp (°C)	0C	Number of Outdoor Units (No.)
05	TC1 Coil Vapour Temp (°C)	0d	Outdoor Capacity (x 10 = HP)

VRF Outdoor Data For Mini SMMS / SMMS & SHRM Equipment

Code	Outdoor Data	Code	Outdoor Data
*0	Td1 Compressor 1 Discharge Temp (°C)	*7	TO Outside Ambient Temp (°C)
*1	Td2 Compressor 2 Discharge Temp (°C)	*9	Compressor 1 Current (A)
*2	Pd High Pressure Sensor (MPa)	*A	Compressor 2 Current (A)
*3	Ps Low Pressure Sensor (MPa)	*b	PMV1 + 2 Opening (0-100)
*4	TS Suction Temp (°C)	*d	Compressor 1, 2 ON/OFF
*5	TE Outdoor Heat Exchanger Temp (°C)	*E	Outdoor Fan Mode (0-31)
*6	TL Liquid Temp (°C)	*F	Outdoor Unit Size (HP)
Note * Would be replaced with 1, 2, 3 or 4 to obtain data from respective outdoor unit.			

VRF Outdoor data for SMMSi equipment

Code	Outdoor Data	Code	Outdoor Data
*0	Pd – High Pressure Sensor (MPa)	#0	Compressor 1 Revolutions (rps)
*1	Ps – Low Pressure Sensor (MPa)	#1	Compressor 2 Revolutions (rps)
*2	Td1 – Compressor 1 Discharge Temp (°C)	#2	Compressor 3 Revolutions (rps)
*3	Td2 – Compressor 2 Discharge Temp (°C)	#3	Outdoor Fan Mode
*4	Td3 – Compressor 3 Discharge Temp (°C)	#4	Compressor IPDU 1 Heat Sink Temp (°C)
*5	TS – Suction Temp (°C)	#5	Compressor IPDU 2 Heat Sink Temp (°C)
*6	TE1 – Outdoor Coil Temp (°C)	#6	Compressor IPDU 3 Heat Sink Temp (°C)
*7	TE2 – Outdoor Coil Temp (°C)	#7	Outdoor Fan IPDU Heat Sink Temp (°C)
*8	TL – Liquid Temp (°C)	#8	Heating / Cooling Recovery Controlled
*9	TO – Outdoor Ambient Temp (°C)	#9	Pressure release
*A	PMV 1 + 2 Opening	#A	Discharge Temp. Release
*B	PMV 4 Opening	#B	Follower Unit Release
*C	Compressor 1 Current (A)	#F	Outdoor Unit Size (HP)
*D	Compressor 2 Current (A)	**Note; *** Is replaced with 1, 2, 3 or 4 to obtain data from respective outdoor unit. **#** Is replaced with either 5, 6, 7, 8 to obtain data from outdoor units 1, 2, 3 or 4	
*E	Compressor 3 Current (A)		
*F	Outdoor Fan Current (A)		

Common Configurable Control Options

*Accessed using Toshiba hard wired remote controller RBC-AMT32E and RBC-AMS41E

Relocation of Room Temperature Sensing from Return Air to Remote Controller Sensor
Press and hold the "**TEST, SET & CL**" Buttons simultaneously for 4 seconds
The Engineering Menu is accessed at item code 10
Use the "**TEMP▲▼**" Buttons to navigate to item code 32
Use the "**TIMER▲▼**" Buttons to adjust the value from 0000 to 0001
Press **SET** to acknowledge the change
Press **TEST** to exit the Engineering Menu
The display will go blank and then flash SETTING whilst the system reconfigures
When SETTING stops flashing press **ON/OFF** Button to restart the operation

Automatic Restart After Power Failure
Press and hold the "**TEST, SET & CL**" Buttons simultaneously for 4 seconds
The Engineering Menu is accessed at item code 10
Use the "**TEMP▲▼**" Buttons to navigate to item 28
Use the "**TIMER▲▼**" Buttons to adjust the value from 0000 to 0001
Press **SET** to acknowledge the change
Press **TEST** to exit the Engineering Menu
The display will go blank and then flash SETTING whilst the system reconfigures
When SETTING stops flashing press **ON/OFF** Button to restart the operation

Setting Present Time & Day of Week

Press and hold the **SCHEDULE** for 4 seconds SETTING appears on screen
Press **DAY** until the correct day of the week is indicated
Press **TIME** up and down keys to set current time
Press **SET** to confirm entries. Day and time now set

Setting ON and OFF Times (Scheduled Operations)

1. Press **PROGRAM**, display will flash **PG-01**
2. Press **DAY** until Monday is selected then Press **SET**
3. Press **SET** **PG-01** will stop flashing
4. Press **TIME** up and down keys until required ON TIME is displayed
5. Press **SCHEDULE** until blinks (symbol denotes start operation)
6. Press **SET**
7. Press **UNIT** **PG-02** will appear
8. Press **SET** **PG-02** will stop flashing
9. Press **TIME** up and down keys until required OFF TIME is displayed
10. Press **SCHEDULE** until blinks (denotes stop operation)
11. Press **SET** and then **PROGRAM**

The bar now underlining **MONDAY** indicates that times have now been entered

Copying From Monday to Remaining Days of Week

1. Press **PROGRAM**, display will flash **PG-01**
2. Press **DAY** key and select **Monday**
3. Press **SET**
4. Press **UNIT** key until **PG-CP** appears (program copy)
5. Press **SET**
6. Press **DAY** and select **Tuesday**
7. Press **SET** (**Monday** times now copied into **Tuesday**) to continue copying return to step 4
8. Press **PROGRAM**

The times have now been programmed into the controller

Note; To activate the programmed times press **SCHEDULE** will flash
Press **SET** remains displayed scheduled programming now activated
To deactivate the programmed times press **SCHEDULE** will flash
Press **CL** disappears from screen

Setting Scheduled Operations with Mode & Temperature functionality

1. Press **PROGRAM** display will flash **PG-01**
2. Press **DAY** until Monday is selected then Press **SET**
3. Press **SET** **PG-01** will stop flashing
4. Press **TIME** up and down keys until required ON TIME is displayed
5. Press **MODE** key selecting desired mode of operation
6. Press **TEMPERATURE** up & down arrows to set desired temperature
7. Press **SCHEDULE** until blinks (symbol denotes start operation)
8. Press **SET**
9. Press **UNIT** **PG-02** will appear
10. Press **SET** **PG-02** will stop flashing
11. Press **TIME** up and down keys until required OFF TIME is displayed
12. Press **SCHEDULE** until blinks (symbol denotes stop operation)
13 Press **SET** and then **PROGRAM**

The bar now underlining **MONDAY** indicates that times have now been entered

Copying From Monday to Remaining Days of Week

1. Press **PROGRAM** display will flash **PG-01**
2. Press **DAY** key and select **Monday**
3. Press **SET**
4. Press **UNIT** key until **PG-CP** appears (program copy)
5. Press **SET**
6. Press **DAY** and select **Tuesday**
7. Press **SET** (**Monday** times now copied into **Tuesday**) to continue copying return to step 4
8. Press **PROGRAM**

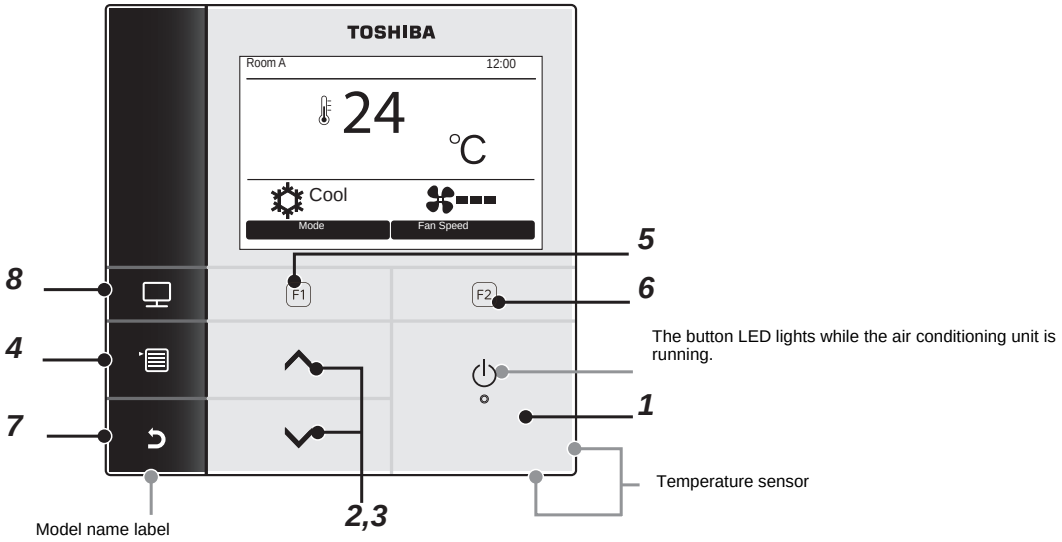
The times have now been programmed into the controller

Note; To activate the programmed times press **SCHEDULE** will flash
Press **SET** remains displayed scheduled programming now activated
To deactivate the programmed times press **SCHEDULE** will flash
Press **CL** disappears from screen

Quick Reference Guide

To assist service engineers working on Toshiba air conditioning equipment, there is a large quantity of data available via the new "Lite Vision – plus" remote controller the RBC-AMS51E-ES, this data is **NOT** available via an Infra-Red remote or the RBC-AS21E2 simplified remote controller. Accessing the data is a simple process of entering into the on board menu of the remote controller.

Controller Layout



1 **[ON/OFF] button**
İlluminates when system is running

2 **[∧] button**
During normal operation: adjusts the temperature used to select function on menu screen

3 **[∨] button**
During normal operation: adjusts the temperature. used to select function on menu screen

4 **[MENU] button**
Displays menu screen

5 **[F1] button**
Varies function according to the setting screen

6 **[F2] button**
Varies function according to the setting screen

7 **[CANCEL] button**
used to cancel function on menu screen

8 **[MONITOR] button**
displays monitor screen

Switching between the normal display and detailed display

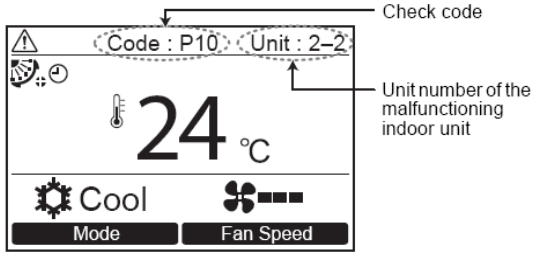
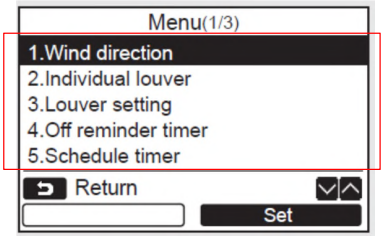
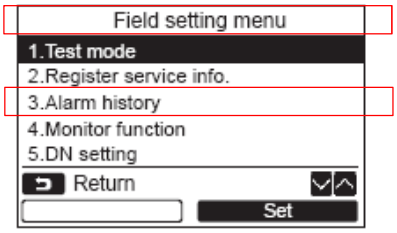
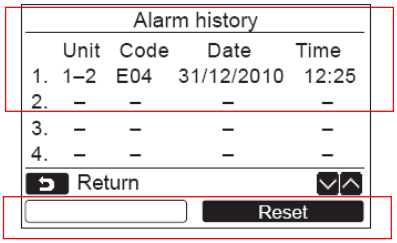
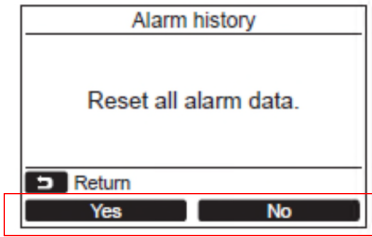
Push and hold the [CANCEL] button and [MONITOR] button at the same time for more than 4 seconds to switch the display mode. The normal display mode is selected as a factory default setting. Normal display mode (factory default)

▼Icon list

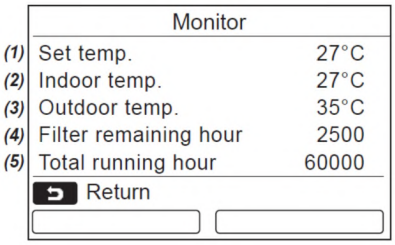
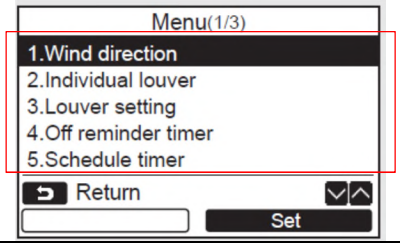
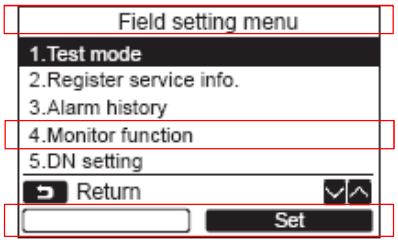
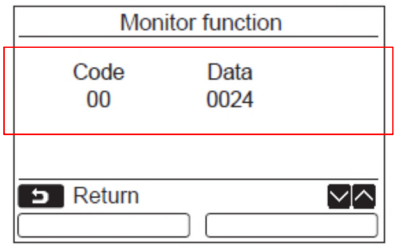
	Shows the Energy saving operation is activated		Shows a timer function is activated.
	Shows the remote controller sensor is activated		Shows the Louver lock is activate
	Shows Night operation is activated		Shows the setting of the louver.
	Shows the use of remote controller is prohibited		Shows the filter needs to be cleaned.

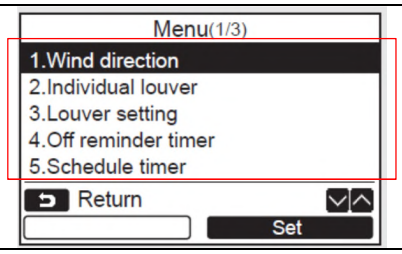
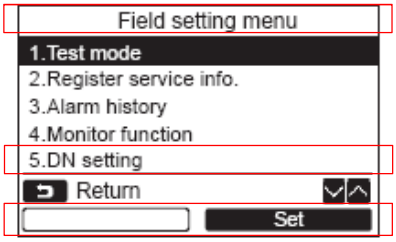
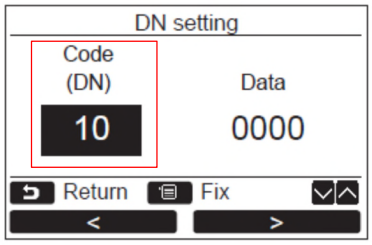
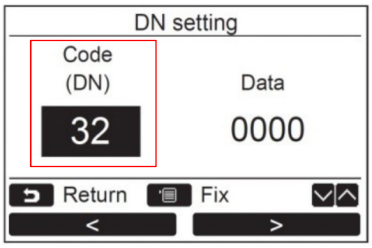
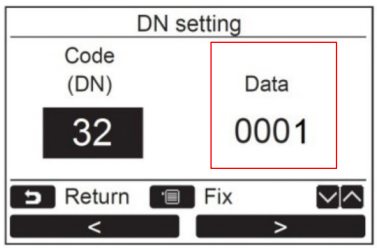
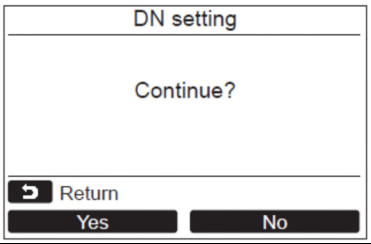
▼Ventilation icon list appear on screen when ventilation unit is connected

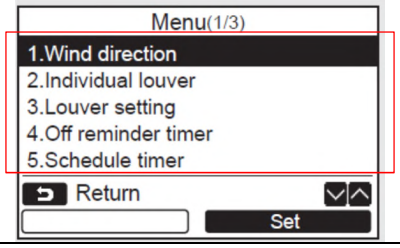
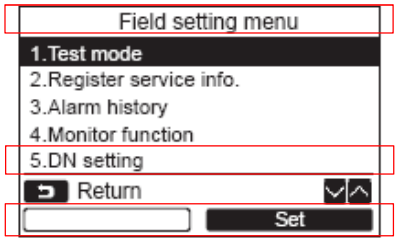
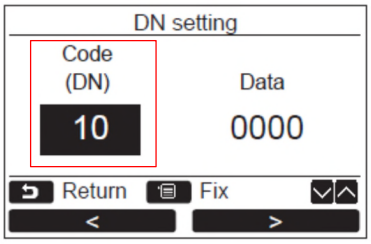
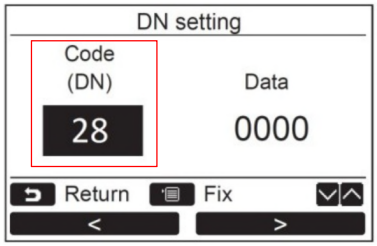
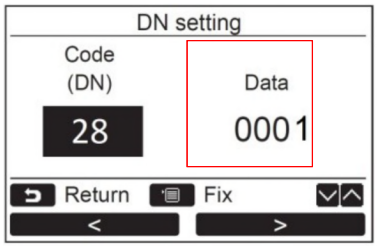
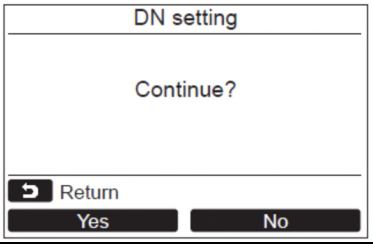
	Automatic mode		24-hour ventilation mode
	Bypass mode		Nighttime heat purge mode
	Total heat exchange mode		

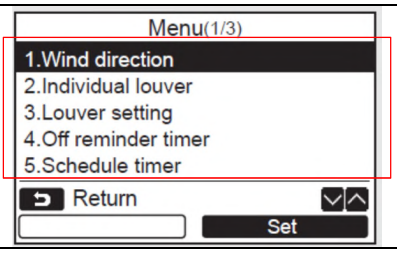
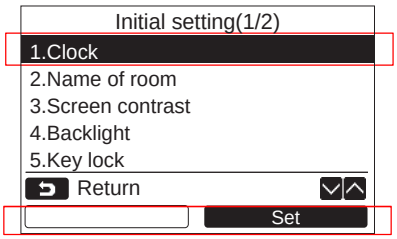
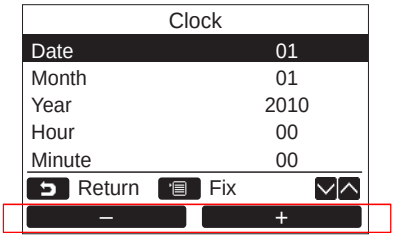
Fault codes are displayed automatically at the top of the LCD display ⚠ Code: *** Unit : #-#) ⏻ Main power switch flashes "**Green**". Fault code history can be accessed by "Field Setting Menu"	
Press the **[MENU]** button to display the "**Menu**" screen	
Press and hold the **[MENU]** button & **[∨]** button the same time for more than 4 seconds to display "**Field setting menu**" scroll down to item "**3**" using [∨] **[** ∧ **]** Buttons Presss F2 Set	
A list of the latest 10 alarm codes along with date, time and unit are displayed. The oldest data is deleted in order to record the newest. The date and time when the error occurred for the first time are displayed for any repeated alarms. Press the F2 button Reset to reset alarm codes	
When display changes Press the F1 button Yes to reset codes	

Refer to Technical Handbook for fault code diagnosis and descriptions or use Smart Phones to download Toshiba Fault Codes from your Apps Store or go to web page Toshiba-calc.co.uk/fault-codes/

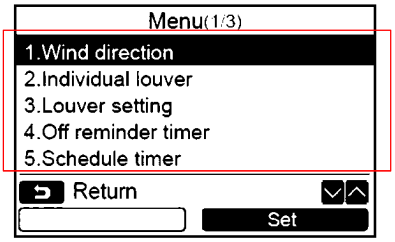
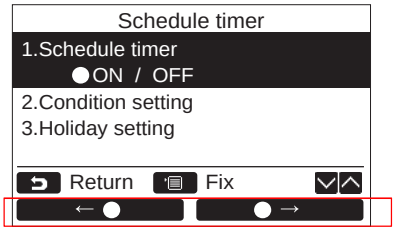
(1) Display's the set temperature (2) Display's the temperature measured by the TA return air sensor within the indoor unit. If the system is programmed to use the room sensor in the remote controller this will be displayed replacing the TA data (3) Display's the temperature measured by the TO ambient air sensor within the outdoor unit (4) Display's the remaining time until the filter sign is displayed (5) Display's the accumulated operating time of the system	
Press the **[MENU]** button to display the "**Menu**" screen	
Press and hold the **[MENU]** button & **[∨]** button at the same time for more than 4 seconds to display "**Field setting menu**" scroll down to item "**4**" using [∨] **[** ∧ **]** Buttons Presss F2 Set	
Presss the [∨] **[** ∧ **]** Buttons to scroll through codes	
Refer to Data Retrieval Guide for code descriptions	

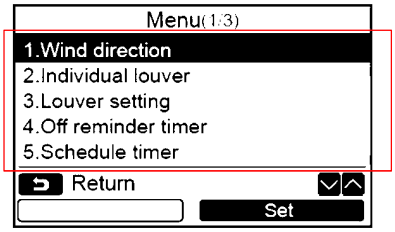
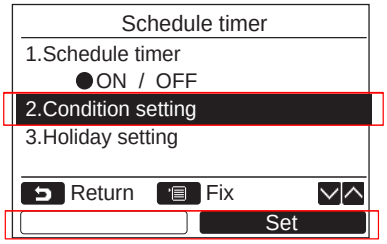
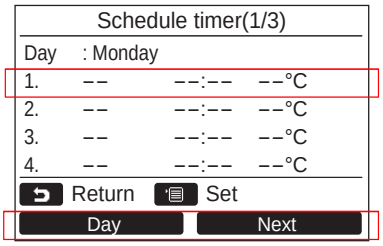
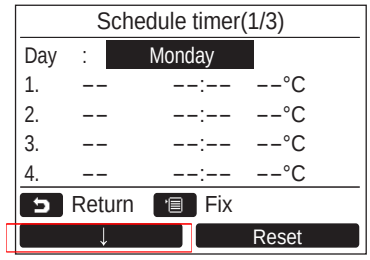
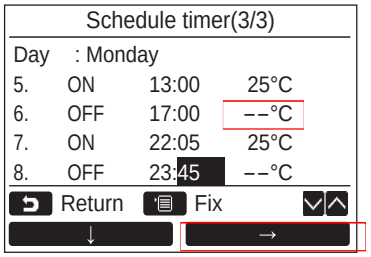
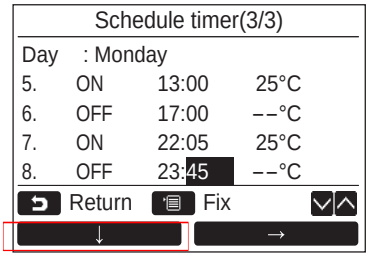
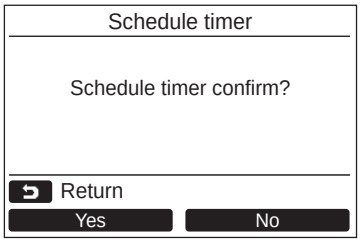
Press the **[MENU]** button to display the "**Menu**" screen	
Press and hold the **[MENU]** button & **[∨]** button at the same time for more than 4 seconds to display "**Field setting menu**" scroll down to item "**5**"	
Using [∨] **[** ∧ **]** buttons presss F2 Set Code **(DN) 10** will be highlighted	
Using [∨] **[** ∧ **]** to scroll through codes to **(DN)32**	
When code **(DN) 32** is highlighted press F2 **>** To highlight "**Data**" change data from "0000" to "0001" by presssing [∨] **[** ∧ **]** buttons to scroll through codes	
Press the **[MENU]** button and follow on screen instructions	

Press the **[MENU]** button to display the "**Menu**" screen	
Press and hold the **[MENU]** button & **[∨]** button at the same time for more than 4 seconds to display "**Field setting menu**" scroll down to item "**5**"	
Using [∨] **[** ∧ **]** buttons presss F2 Set Code **(DN) 10** will be highlighted	
Using [∨] **[** ∧ **]** to scroll through codes to **(DN).28**	
When code **(DN) 28** is highlighted press F2 **>** To highlight "**Data**" change data from "0000" to "0001" by presssing [∨] **[** ∧ **]** buttons to scroll through codes	
Press the **[MENU]** button and follow on screen instructions	

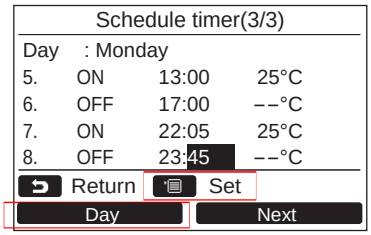
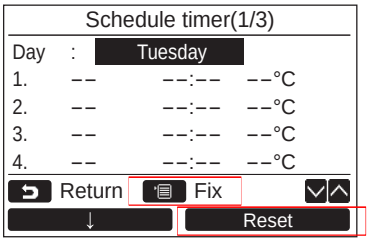
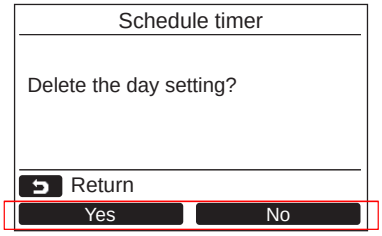
Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**10 Initial settings**" then press F2 Set	
Select "**1 Clock**" then press F2 Set	
Presss the [∨] **[** ∧ **]** buttons to select year, month, date and time. Press the F1 or F2 buttons to set the value Press the **[MENU]** button to return to "**Menu**" screen	

Setting On & Off Times (Scheduled Operations)

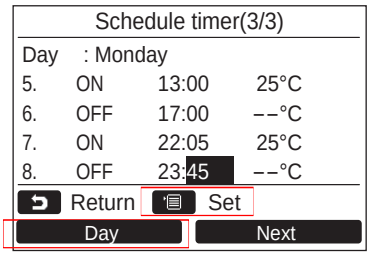
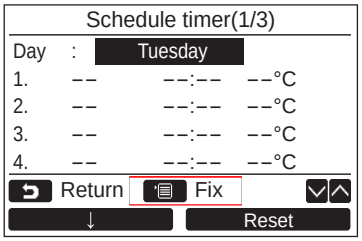
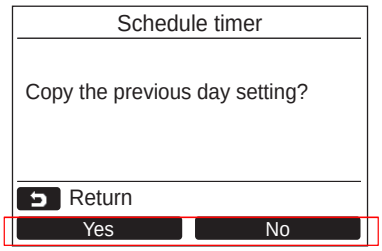
Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**5 Scheduled timer**" then press F2 Set	
Press the F1 ← ● to turn On or press the F2 ● → to turn Off the "**Schedule timer**"	

Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**5 Scheduled timer**" then press F2 Set	
Presss the [∨] **[** ∧ **]** buttons to scroll through settings to select option "**2 Condition setting**" then press F2 Set	
The current settings are displayed Press the F1 Day to confirm the day settings Press the F2 Next to confirm setting, 8 settings appear	
Press the **[MENU]** button Presss the [∨] **[** ∧ **]** buttons to select the day to set Press the F1 ↓	
Presss the [∨] **[** ∧ **]** buttons to select "ON" or "OFF" Select "ON" to set start time and set temperature settings Select "OFF" to set stop time. "- -" indicates that item has not be set Press the F2 → button to select time or temperature If "- -" is displayed (ON/OFF not set) time or temperature cannot be set	
Presss the [∨] **[** ∧ **]** buttons to set time or temperature Press the F1 ↓ to program next sequence. Up to 8 sequence settings per day can be programmed Press the **[MENU]** button to display day selection screen Presss the [∨] **[** ∧ **]** buttons to select the next day to set Repeat procedures above to program day, time & temperature settings	
Press the **[MENU]** button Press the F1 Yes to confirm Press the F2 No to return to setting screen	

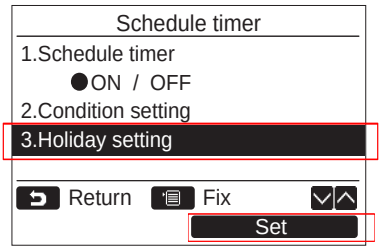
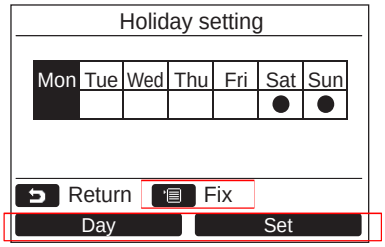
Delete Settings for each Day

Press the F1 Day button to select day Press the [MENU] button	
Press the [MONITOR] button on day selection screen Press the F2 Reset button Schedule for the day selected is deleted	
Press the F1 Yes to delete the day setting Press the F2 No to return to Schedule timer screen	

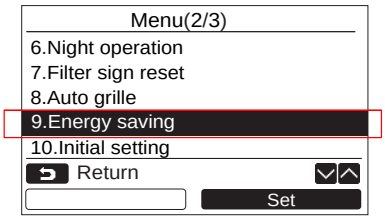
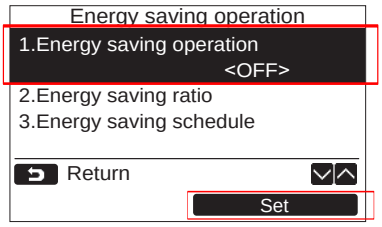
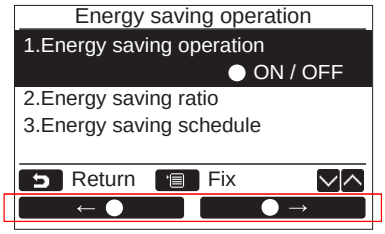
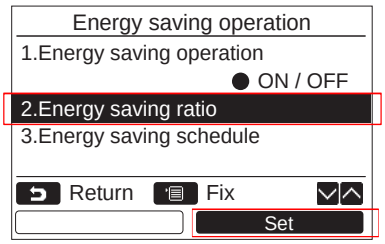
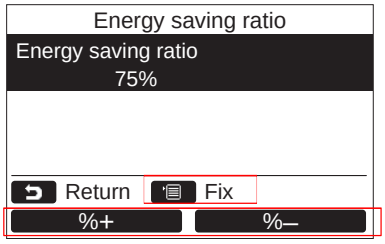
Copy Settings for Previous Day

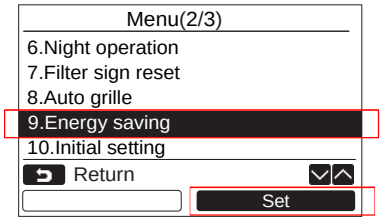
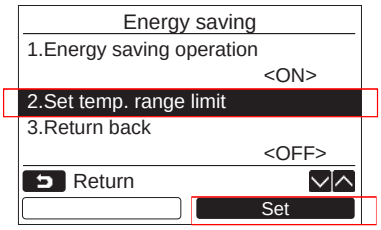
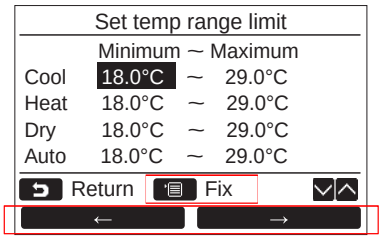
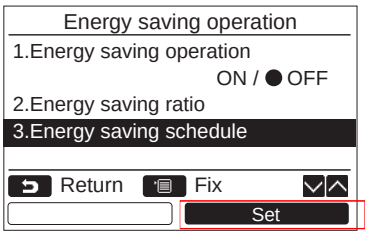
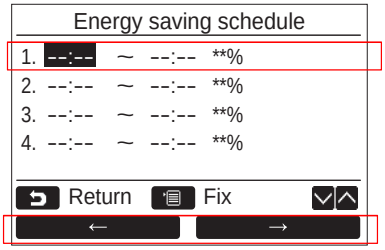
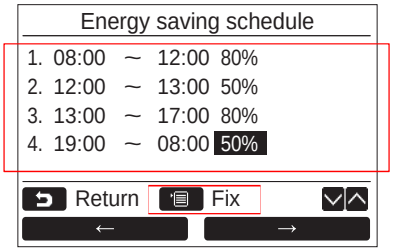
Press the F1 Day button to select day Press the [MENU] button	
Press the [MONITOR] button on day selection screen	
Press the F1 Yes button Schedule for the previous day is copied Press the F2 No to return to Schedule timer screen	

Holiday Day Omit Setting

Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**5 Scheduled timer**" then press F2 Set Presss the [∨] **[** ∧ **]** buttons to scroll through settings to select option "**3 Holiday setting**" then press F2 Set	
Press the F1 Day button to select the day to omit Press the F2 Set button to set day to omit ● Press the **[MENU]** button to "Fix" the setting	

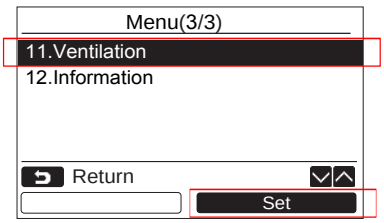
Energy Saving Function

Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**9 Energy saving operation**" Press the F2 button to set Energy saving operation	
Press the F2 Set button to set Energy saving operation	
Press the F2 ● → button to select "OFF" Press the F1 ← ● button to select "ON"	
Presss the [∨] **[** ∧ **]** buttons to scroll through & select option "**2 Energy saving ratio**" then press F2 Set	
Press the F1 %+ button to increase % ratio (max 100%) Press the F2 %– button to decrease % ratio (min 50%) The lower the value is set, the higher the power saving effect becomes Press the **[MENU]** button to "Fix" the setting "⧖Setting" appears on the screen, then the screen returns to the "Energy saving operation" screen	

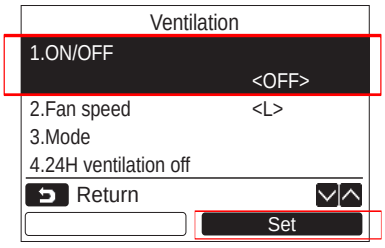
Press the **[MENU]** button to display the "**Menu**" screen Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**9 Energy saving operation**" Press the F2 Set button to set Energy saving operation	
Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "2.Set temp. range limit" Press the F2 Set button to set	
Press the F1 ← button to select temperature settings Press the F2 → button to select temperature settings Presss the [∨] **[** ∧ **]** buttons to set temperature values Press the **[MENU]** button to "Fix" the setting "Setting" appears on the screen, then the screen returns to the "Energy saving operation" screen	
Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "3.Energy saving schedule" Press the F2 Set button to set	
Press the F1 ← button to select time & % ratio settings Press the F2 → button to select time & % ratio settings	
Presss the [∨] **[** ∧ **]** buttons to set time & % ratio values Press the **[MENU]** button to "Fix" the setting "Setting" appears on the screen, then the screen returns to the "Energy saving operation" screen	

The time of the schedule setting for the Save operation can be set within the range from 0:00 to 23:50 at 10 minute intervals.
The save ratio of the schedule setting for the Energy saving operation can be selected only from "Random (random is the value set at Energy saving ratio)" 50% or 0%
Adjust the clock before setting the energy saving schedule.
The lower save ratio is applied when the different save ratios are set at the same hours on the schedule.

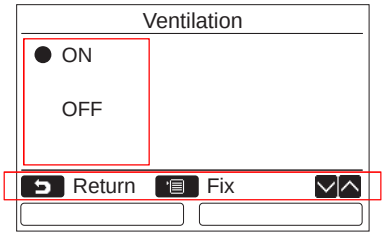
Press the **[MENU]** button to display the "**Menu**" screen
Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "**11.Ventilation**"
Press the F2 Set button to set Energy saving operation
Impossible appears on screen if a ventilation unit is not connected



Presss the [∨] **[** ∧ **]** buttons to scroll through settings & select option "1.ON/OFF"
Press the F2 Set button to set



Press the F1 button to return to previous screen
Presss the [∨] **[** ∧ **]** buttons to scroll ON/OFF
Press the **[MENU]** button to "Fix" the setting



▼Ventilation icon list appear on screen when ventilation unit is connected

	Total heat exchange mode

NOTE

- "Impossible" appears on the display when no ventilation unit is connected or the individual operation for the ventilation unit is not activated.
- "2. Fan speed" or "3. Mode", "4. 24H ventilation off" is available only for the air conditioning system using the Toshiba Air to Air Heat Exchanger VN-M*HE series. Refer to the Owner's Manual supplied with the Air to Air Heat Exchanger for details.
- "" appears on the detailed display during the ventilation operation when the ventilation unit other than the Toshiba Air to Air Heat Exchanger VN-M*HE series is used and the individual operation for the ventilation unit is activated.

Controller

Energy Save operation (RBC-AMS51E-ES/RBC-AMT32E/RBC-AMS41E)

The method to control power consumption by limiting the peak of the compressor's electric current.
= To control peak current by limiting **% of the current release

		FCU only function	Combination function with CDU		
			SDI series 4		
		Linked with A2A HEX by TCC link*1	Energy save operation (Limit the peak of electric current)	Night Operation by only New Controller *2	Frost Protection (8°C set temp. in heating mode)
4-way Cassette type	RAV-SM**4UT-E	x	O	O	O*3
	RAV-SM**4UTP-E	x	O	O	O*3
4-way Compact Cassette type	RAV-SM**4MUT-E	O	O	O	O*3
Ducted type	RAV-SM**6BT-E	O	O	O	O*3
Slim duct type	RAV-SM**4SDT-E	x	O	O	O*3
Ceiling type	RAV-SM**4CT-E	O	O	O	O*3
	RAV-SM**7CTP-E	O	O	O	O*3
High Wall type	RAV-SM**6KRT-E	x	O	O	O*3

1* A2A HEX: VN-M**HE
2* New Controller: RBC-AMS51E-ES, RBC-AMS51E-EN
3* Initial setting OFF. To change set up 8°C, please set according to Installation Manual of indoor units

	RBC-AMS51E-ES	RBC-AMT32E/RBC-AMS41E
O	0%, 50%, Option 50-100% per 1%	Option 50-100% per 1%
X	NA	NA

Codes (DN codes) for changing settings
Codes in the table below are necessary for local advanced control.

Code	Description	SET DATA and description	Factory default	Note
01	Lighting-up hours of the Filter Sign	0000: None 0001: 150H 0002: 2500H 0003: 5000H 0004: 10000H	0002: 2500H	Adjusting this setting is necessary for the header unit.
28	Auto recovery from a power failure	0000: Invalid 0001: Valid *Resumes the status just before the power failure	0000: Invalid	*1
31	Single operation of the fan	0000: Invalid 0001: Valid ON/OFF operation for the Air to Air Heat Exchanger only	0000: Invalid	Adjusting this setting is necessary for the header unit. (System equipped with the Air to Air Heat Exchanger and air conditioners)
48	Imbalanced Fan speed ventilation	0000: Normal 0001: SA (High) > EA (Low) active 0002: SA (Low) < EA (High) active * "High" may be "Extra High".	0000: Normal	Adjusting this setting is necessary for all the Air to Air Heat Exchangers in the group.
49	24-hour ventilation	0001: Invalid 0002: Valid	0001: Invalid	Adjusting this setting is necessary for all the Air to Air Heat Exchangers in the group.
4B	Delayed operation	0000: Invalid 0001-0006: [Setting value] x 10 minutes delay *Delaying the Air to Air Heat Exchanger operation to reduce the air-conditioning load when starting running the air conditioner	0000: Invalid	Adjusting this setting is necessary for all the Air to Air Heat Exchangers in the group. (System equipped with the Air to Air Heat Exchanger and air conditioners)
4C	Nighttime heat purge	0000: Invalid 0001-0048: Start after [Setting value] x 1 hour(s) *Setting for the time before the nighttime heat purge operation starts	0000: Nighttime heat purge OFF	Adjusting this setting is necessary for all the Air to Air Heat Exchangers in the group. (System equipped with the Air to Air Heat Exchanger and air conditioners)
4D	Setting of the exhausting fan operation below -15 °C (OA)	0000: Exhausting fan run 0001: Exhausting fan stop *The supplying fan stops when the temperature is below −15 °C. (OA)	0000: Exhausting fan run	Adjusting this setting is necessary for all the Air to Air Heat Exchangers in the group.
4E	Setting of the linked operation with external devices	0000: ON/OFF linked 0001: ON linked 0002: OFF linked *Specifies whether the ON/OFF operation of the Air to Air Heat Exchanger is linked with the external device operation	0000: ON/OFF linked	Adjusting this setting is necessary for an Air to Air Heat Exchanger to which an adapter for remote ON/OFF control (sold separately) is connected.
EA	Changing the ventilation mode	0001: Bypass mode 0002: Heat Exchange mode 0003: Automatic mode *Compatible with systems without a remote controller and RBC-AMT32E	0003: Automatic mode	*1
EB	Changing the ventilation Fan speed	0002: High 0003: Low 0004: Imbalanced *"High" may be "Extra High". *Compatible with systems without a	0002: High	*1

Fig.1

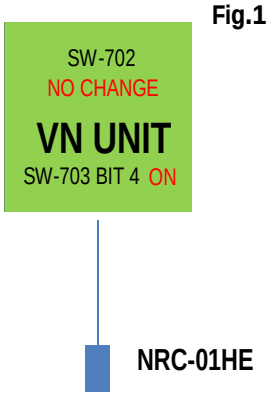
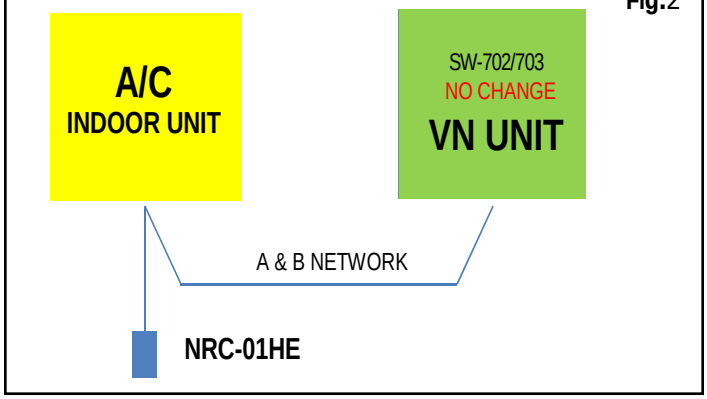


Fig.2



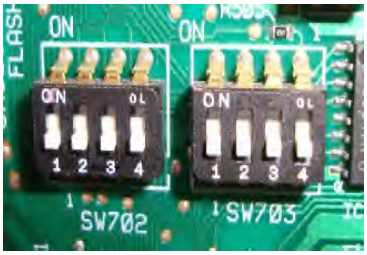
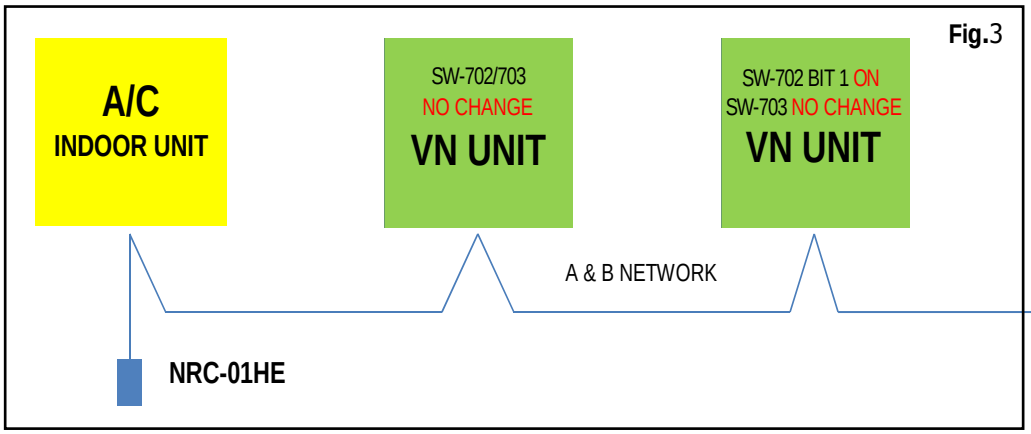
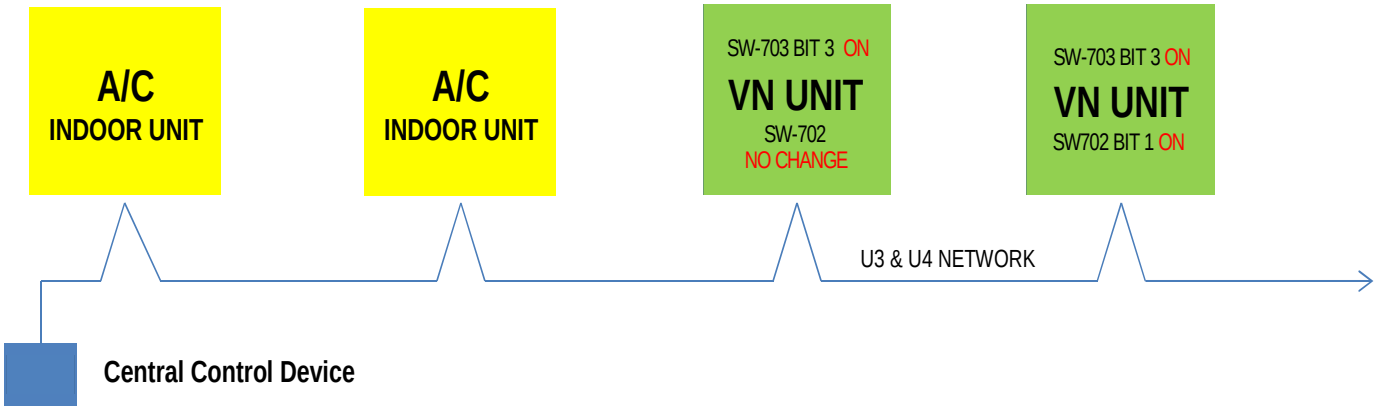


Fig.3



SW702	Number
ALL OFF	1
Bit 1 ON	2
Bit 2 ON	3
Bit 1 & 2 ON	4
Bit 3 ON	5



CONTROLLER MODEL		ON/OFF CONTROL	TIME CLOCK CONTROL	FULL CONTROL
RBC-AMT31-E		NO	NO	NO
RBC-AMT32-E		YES	NO	NO
RBC-AMS41-E		YES	YES	NO
RBC-AMS51E-ES*		YES	YES	NO
NRC-01HE	Fig. 1	YES	NO	YES
	Fig. 2 & Fig. 3	YES	NO	NO

*RBC-AMS51E-ES offers control when paired with a compatible A/C Indoor Unit

Automatic Zone Registration Using the Central Remote Controller (TCB-SC642TLE2)

1) Press the and ZONE buttons at the same time for more than 4 seconds.
SETTING and CODE No.1 will flash.

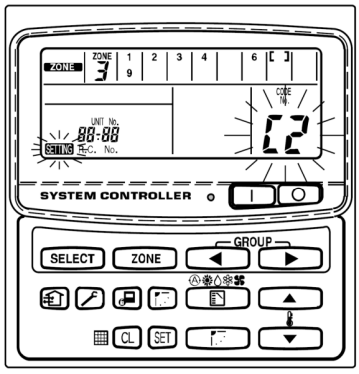
2) Select CODE. No. 2 by pressing and ( ) button and press the SET button.
C2 changes from flashing to ON state and automatic zone Registration will start.

3) Registered GROUP No. will be disappeared all.

4) Central address will be assigned from small indoor unit address to large one in numerical order automatically. Finishing automatic zone registration, SETTING changes from Flashing to OFF.

5) If an error occurs, the "CHECK" starts flashing and zone registration finishes at this time. Press the CL button.

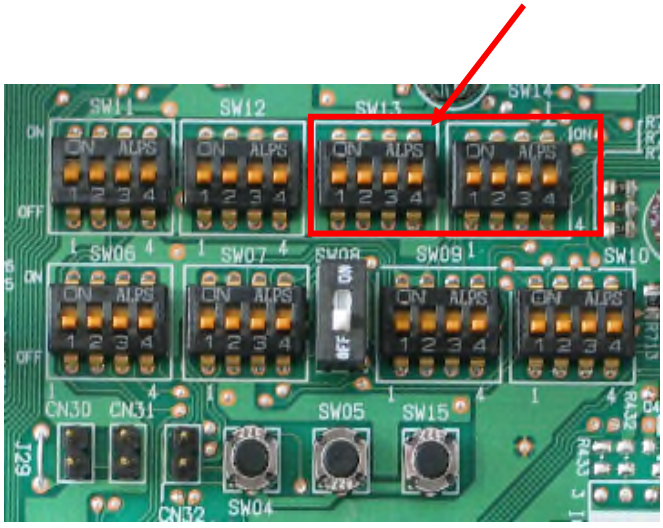
6) Finally, complete automatic zone registration mode by pressing the button.
SETTING Flashes for a few minutes, then OFF.



When setting up a central remote controller, which includes more than one outdoor system, each outdoor system needs to have a system address set, factory setting is 1.

Additional systems may be addressed up to a system number of 28. This is achieved via "Dip switches" SW13 & 14

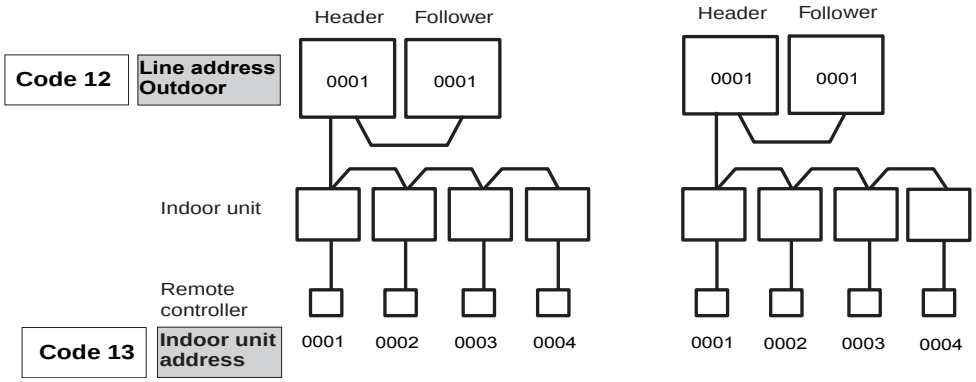
System Address	SW13				SW14			
	1	2	3	4	1	2	3	4
1				X	X	X	X	X
2				X	O	X	X	X
3				X	X	O	X	X
4				X	O	O	X	X
5				X	X	X	O	X
6				X	O	X	O	X
7				X	X	O	O	X
8				X	O	O	O	X
9				X	X	X	X	O
10				X	O	X	X	O
11				X	X	O	X	O
12				X	O	O	X	O
13				X	X	X	O	O
14				X	O	X	O	O
15				X	X	O	O	O
16				X	O	O	O	O
17				O	X	X	X	X
18				O	O	X	X	X
19				O	X	O	X	X
20				O	O	O	X	X
21				O	X	X	O	X
22				O	O	X	O	X
23				O	X	O	O	X
24				O	O	O	O	X
25				O	X	X	X	O
26				O	O	X	X	O
27				O	X	O	X	O
28				O	O	O	X	O
O = ON X = OFF								



Definition of address

Indoor unit address

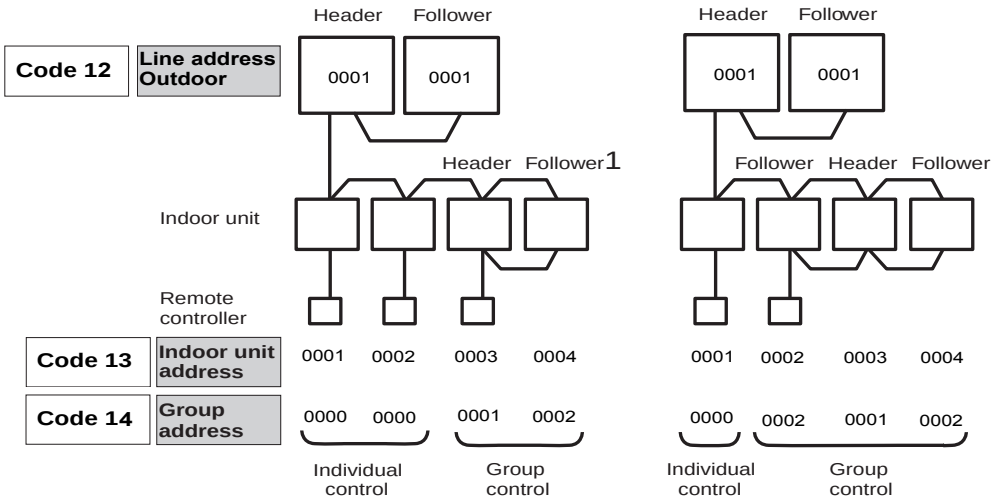
"Indoor unit address" This enables the outdoor unit to recognize each individual indoor unit.
An unique address is allocated to every indoor unit within a refrigeration system.



Group address (VRF) in case of DI/SDI, please refer to Address setup procedure (when using DI/SDI only or using DI/SDI and VRF) page 75

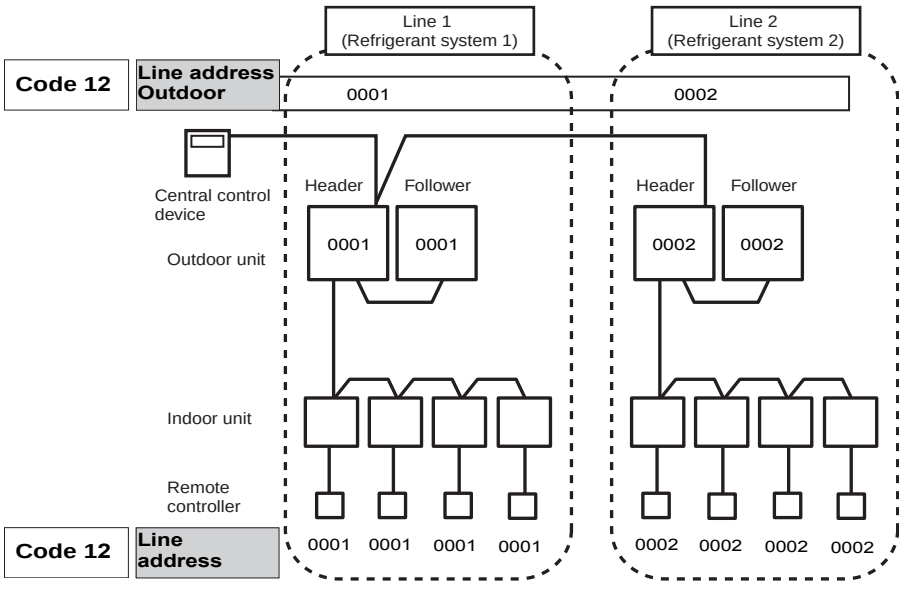
"Group address" This is the address that recognizes the group control and determines the header indoor unit and follower indoor unit.
Group address and the header indoor unit is decided automatically when the automatic address setting is performed.
(Which indoor unit becomes the header unit is indefinite when automatic address setting is performed.)

- Indoor unit of individual control : Group address = 0
- Header indoor unit of group control : Group address = 1
- Follower indoor unit of group control : Group address = 2



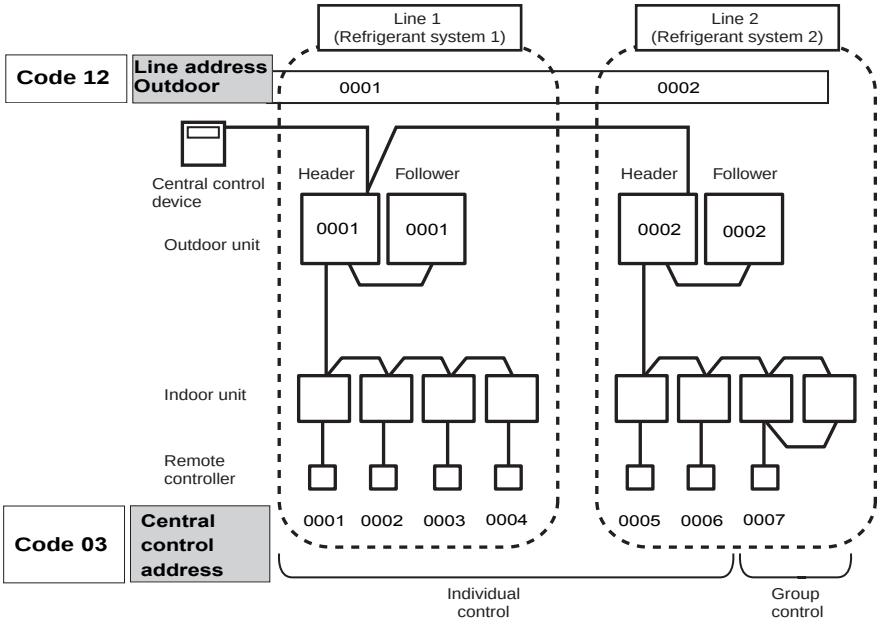
Line address (System address)

"Line address" is the address in which the line (refrigerant system) indoor units are connected.
This line address is set by a switch setting on the interface P.C. board on the header outdoor unit Factory setting : Line address is '1'.



Central control address

"Central control address" is used to make the central control devices recognize each indoor unit.
Address can be set from the central control devices either automatically or manually, or from wired remote controller devices manually.
In the case of group control in the VRF systems, one central control address is allocated to each indoor unit in a group control.

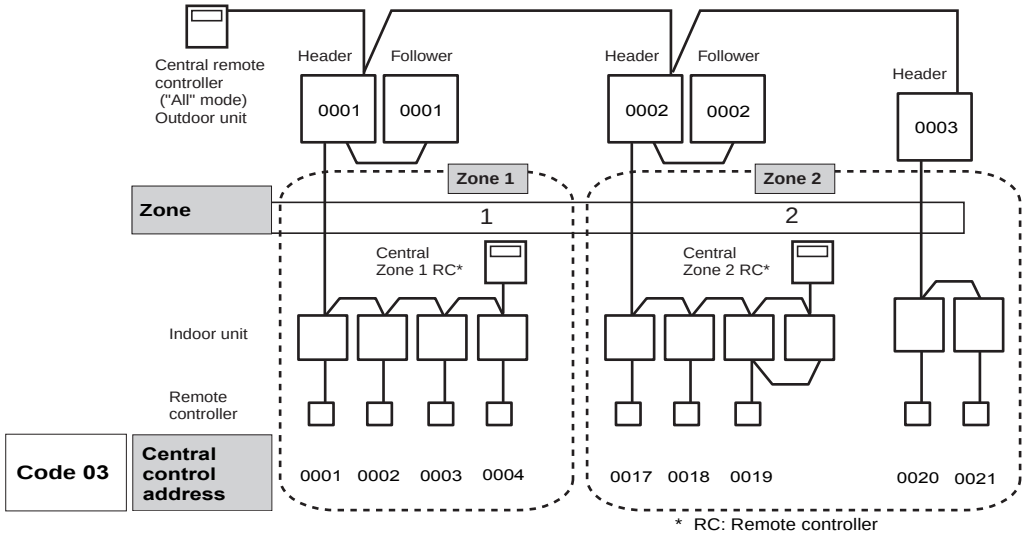


Zone address (Zone No.)

"Zone address" is to be set when the central remote controller is used for each zone.
Zone address is set by a switch setting on the central remote controller.
Central remote controller can divide all indoor units into a max. 4 zones.
The zone to which the indoor unit belongs is decided by its central control address.

<Central control address/zone/group correspondence table>

Central control Address	Zone	Group	Central control Address	Zone	Group	Central control Address	Zone	Group	Central control Address	Zone	Group
1	1	1	17	2	1	33	3	1	49	4	1
2		2	18		2	34		2	50		2
3		3	19		3	35		3	51		3
4		4	20		4	36		4	52		4
5		5	21		5	37		5	53		5
6		6	22		6	38		6	54		6
7		7	23		7	39		7	55		7
8		8	24		8	40		8	56		8
9		9	25		9	41		9	57		9
10		10	26		10	42		10	58		10
11		11	27		11	43		11	59		11
12		12	28		12	44		12	60		12
13		13	29		13	45		13	61		13
14		14	30		14	46		14	62		14
15		15	31		15	47		15	63		15
16		16	32		16	48		16	64		16
									99	Not set up	



* RC: Remote controller

When using BMS-CM1280TLE or BMS-CM1280FTL, you can allocate a zone to each of the 64 central control addresses.

Terminology

Terms for explaining DI/SDI used in section are redefined to:-

Indoor Unit No. N-n =outdoor unit line address N (Max30) –indoor unit address n (max64)
Group address 0=single (not group control)
1=Master unit in group control
2=sub unit in group control

Master unit:

The representative of multiple indoor units in group operation sends/receives signal to/from the remote controllers and sub indoor units. It has no relation with an indoor unit which communicates serially with the outdoor units. Also this unit communicates with the central controller. The operation mode and setup temperature range are reflected on the remote controller LCD. (Except air direction adjustment of louver)

Sub unit:

Indoor units other than master unit in group operation. Basically, sub units do not send/receive signals to/from the remote controller.

Header unit (Representative unit) (Master twin):

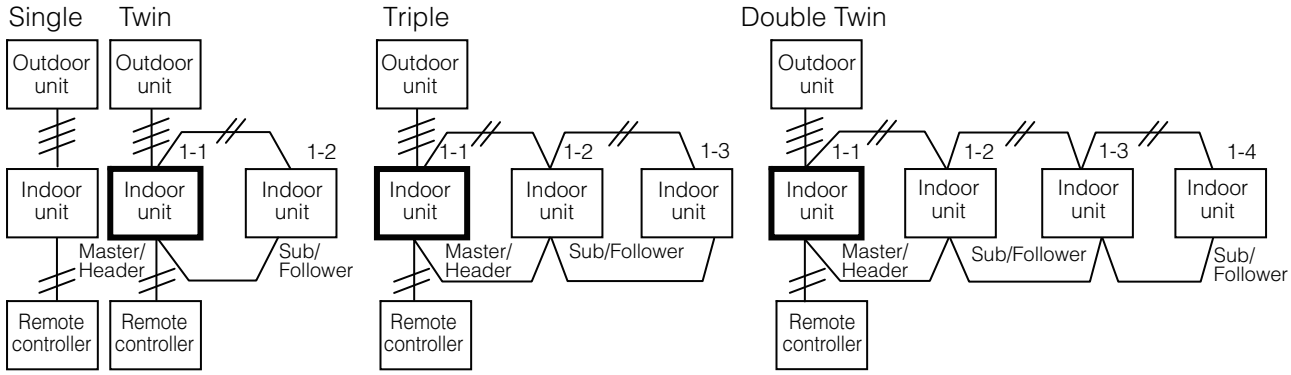
This unit communicates with the indoor unit (follower) which serial-communicates with the outdoor units and sends/receives signal (command from compressor) to/from the outdoor units as the representative of the cycle control in the outdoor units of the identical line address within the minimum unit which confugures one of the refrigerating cycles of twin.

Follower unit (Subordinate unit) (Sub twin):

Indoor units excluding the header unit in Twin. This unit communicates with Header indoor unit in the identical line address and performs control synchronized with Header unit. This unit does not perform the signal send /receive operation with the outdoor units. No judgement for serial signal error.

Basic configuration

The basic DI/SDI connection configuration of each type of model is shown below.

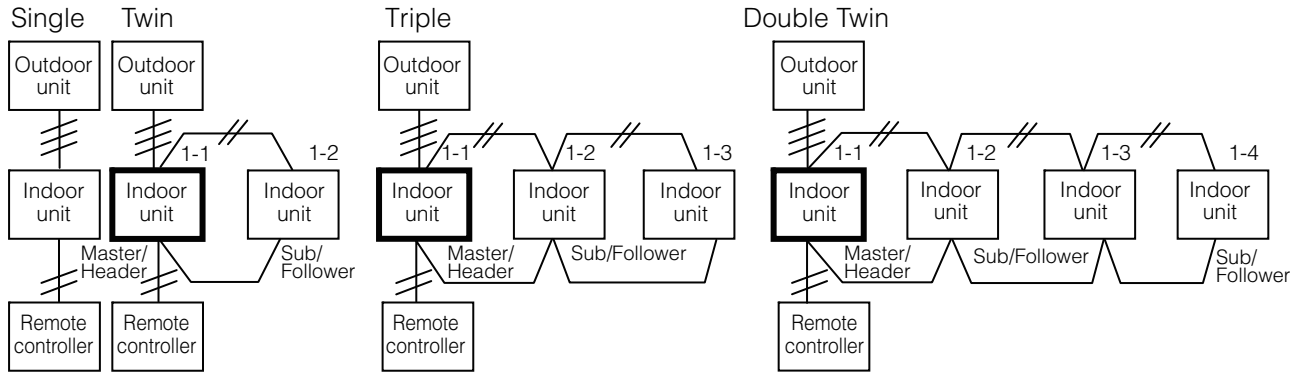


Address re-setup for group control

After turning on the power and finishing automatic address setting, check the Indoor Unit No using the wired remote controller. If the line address is not unified in the devices in a refrigerant line, unify the line address using the wired remote controller. If group control is used, assign the group address “1” to any one of the indoor units and “2” to the rest of the units. Confirm that each indoor unit in a group has a unique Indoor Unit No (E08 error is not indicated on the wired remote controller).

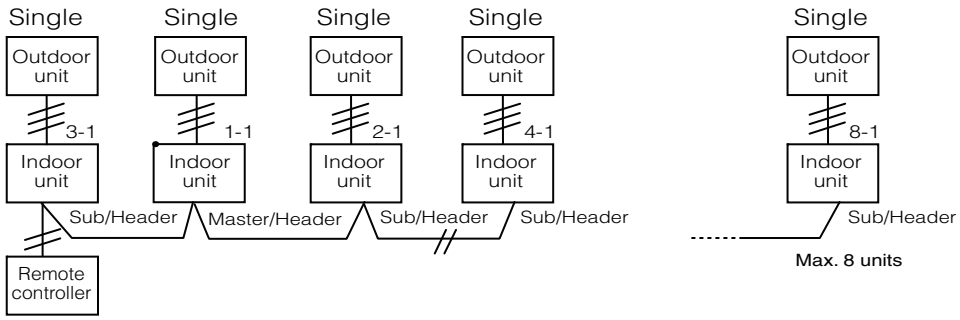
Standard configuration (One outdoor unit)

In this case, address setting can be made by using auto addressing.



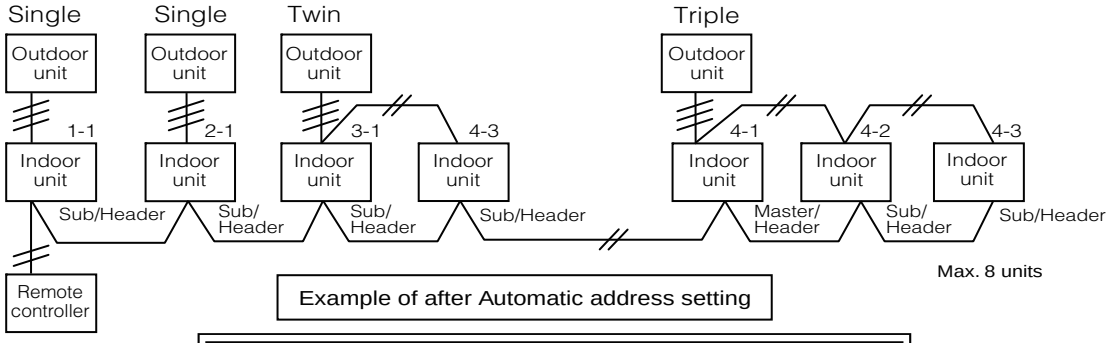
Group configuration (single only)

In this case, address setting can be made by using auto addressing.



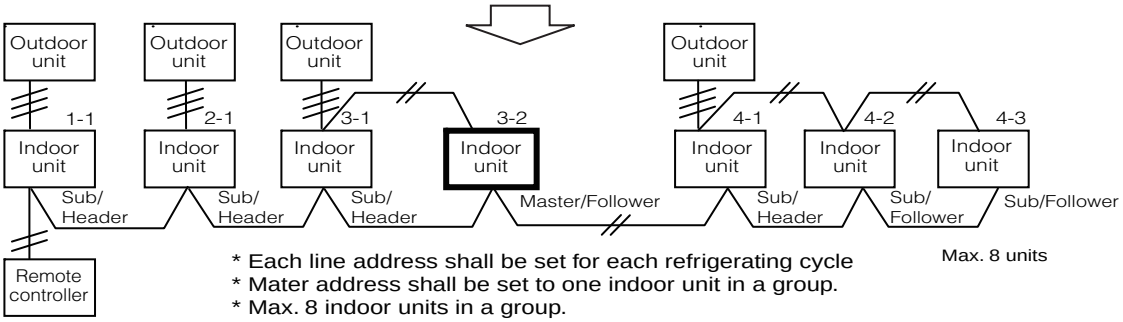
Multiple Group configuration (combination of single/twin/triple)

In this case, manual re-addressing is required.



Example of after Automatic address setting

Change the setting manually for correct operation



* Each line address shall be set for each refrigerating cycle
* Mater address shall be set to one indoor unit in a group.
* Max. 8 indoor units in a group.

Connection and Address re-setup example for central control

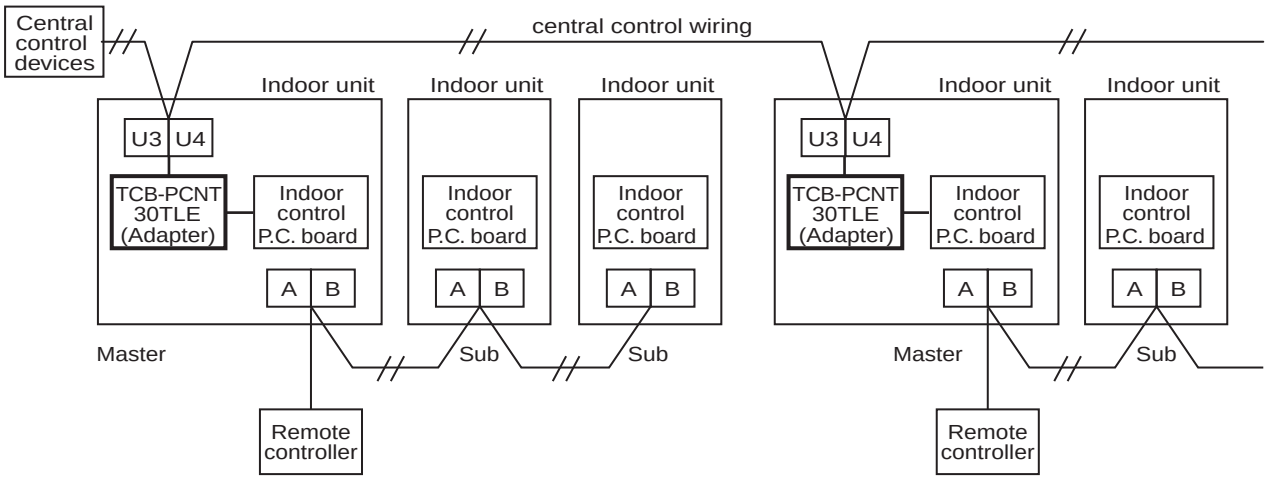
“1:1Model” Connection Interface TCB-PCNT30TLE2

When controlling the super-digital inverter and the digital inverter, the adaptor named “1:1 model” connection interface (TCB-PCNT30TLE2) is necessary.

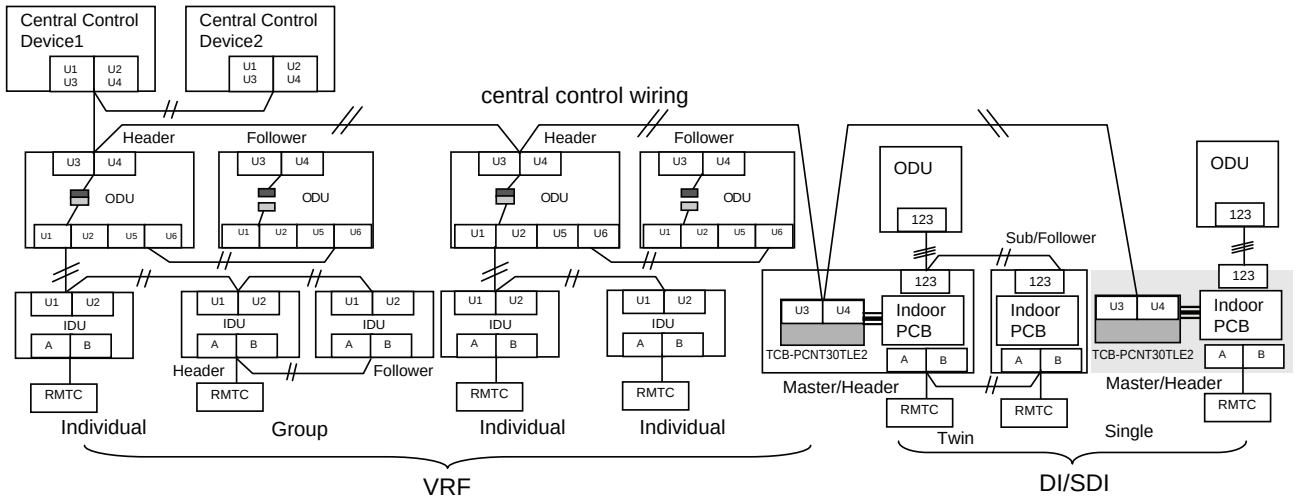
SDI series 4 4-way discharge cassette type, etc. need metal case TCB-PX30MUE additionally for fixing. Some of Hi-wall Type does not need “1:1Model” Connection Interface. Please refer to installation manual of each model.

Cabling connection of control wiring

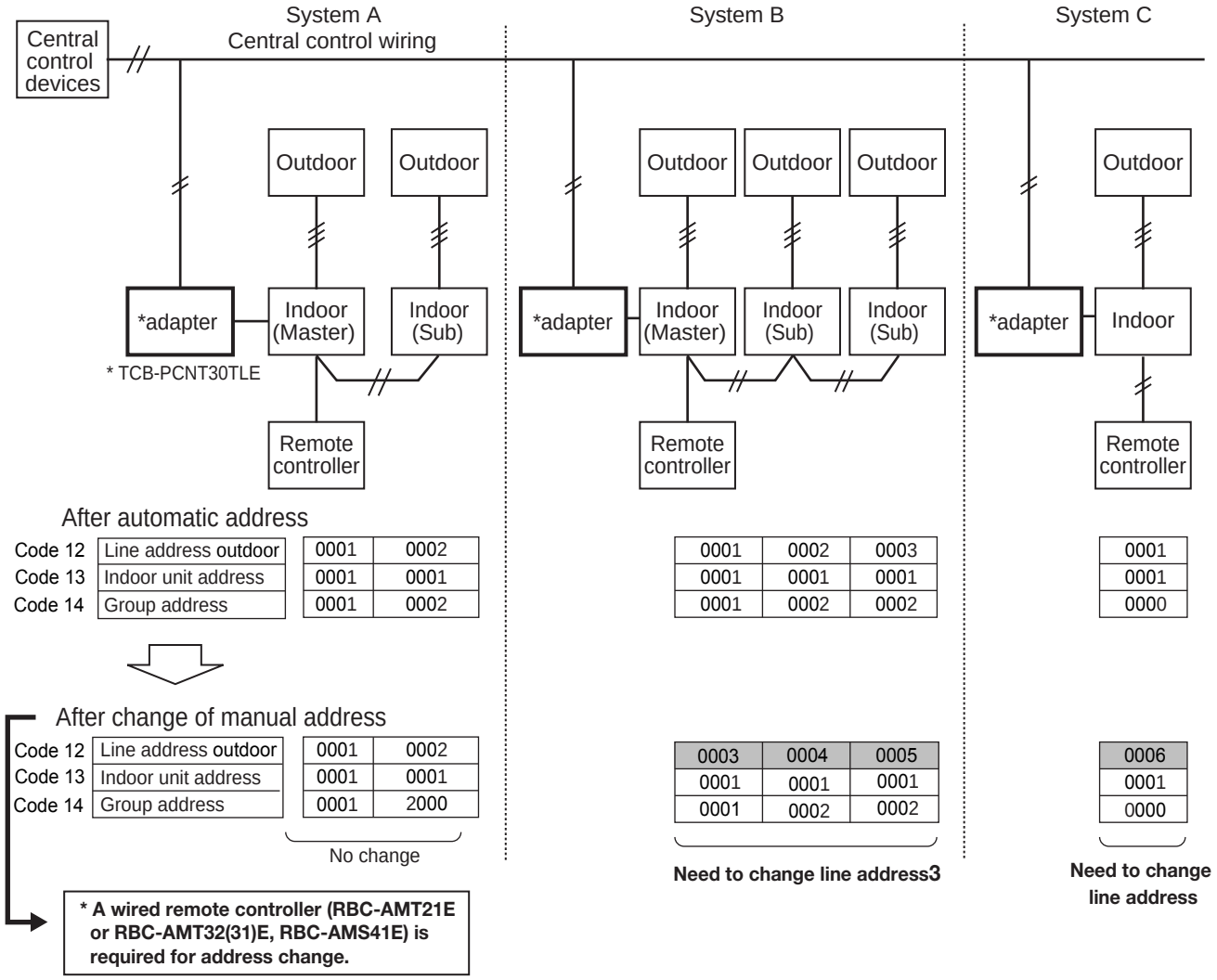
Attach an adaptor per 1 group in the group control operation (including individual control).
Connect the adaptor to the Master indoor unit in the group control.



A central control connection example of a system where both VRF and DI/SDI are used is shown below. The VRF and DI/SDI subsystems are connected through the central control wiring and to the central control devices.



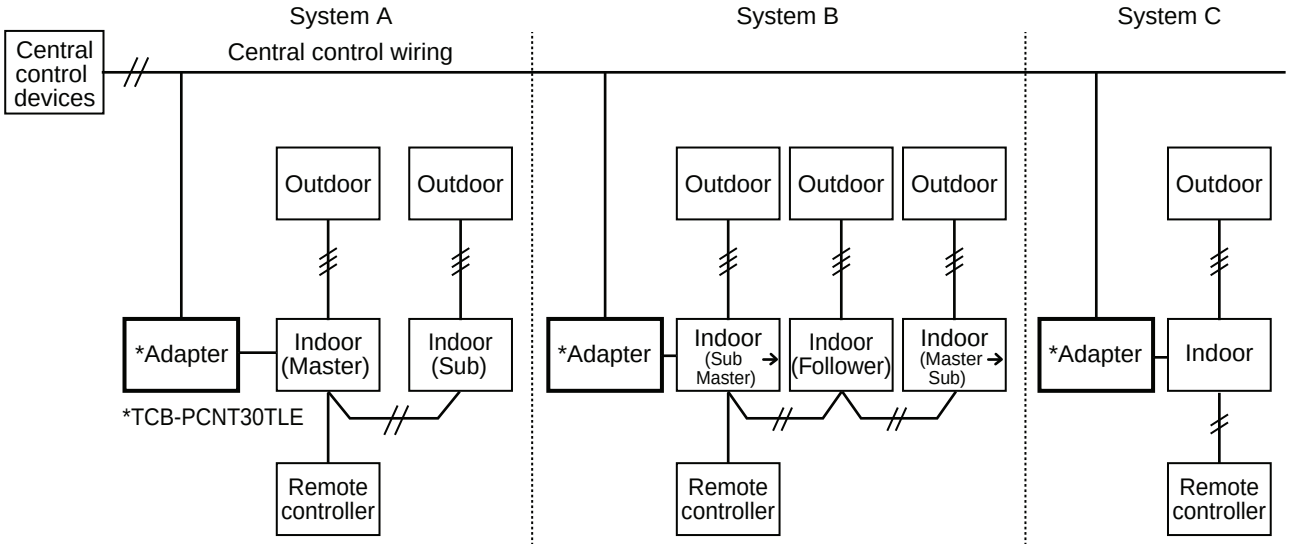
After automatic address setup, it is necessary to change the line address from the wired remote controller for each system.
Reason : After automatic address setup, all of the line addresses will become “1” except in a group control and then a duplicated address error “E08” will be outputted.



- Set up a line address for each refrigerant system.
- Set up a line address so that it is not duplicated with other systems.
  (If the central control is conducted with VRF systems, set up a line address so that it is not also duplicated with line address of the VRF systems.)
- When performing a central control of over 30 systems, the address setup method needs to be changed.
  (including a VRF system)

When the central control is performed for indoor units using twin control in a group operation, it may be required to change the group address. (Adapter is attached to the Master indoor unit.)

Reason : The central control device communicates with each individual indoor unit, the Master indoor unit of the group control and the Master indoor unit of the twin control. However, as the address is automatically set up, which unit will become the Master unit is indefinite. Therefore if the unit attached with adapter does not become the Master indoor unit, the central control function will become unavailable.



Code 12 Line address outdoor ⇨	0001	0002	0003	0004	0005	0006
Code 13 Indoor unit address ⇨	0001	0001	0001	0001	0001	0001
Code 14 Group address ⇨	0001	0002	0002 ⇨ 0002	0002	0002 ⇨ 0002	0000

*** A wired remote controller (RBC-AMT21E, RBC-AMT32(31)E, RBC-AMS41E) is required for address change.**

Address setup procedure (when using DI/SDI only, or using DI/SDI and VRF)

When an outdoor unit and an indoor unit are connected, or when an outdoor unit is connected to each indoor unit respectively in the group operation even if multiple refrigerant lines are provided, the automatic address setup completes with power -ON of the outdoor unit after group construction check (refer to the note below). The operation of the remote controller is not accepted while automatic address works. (Approx.4 to 5 minutes)

CAUTIONS

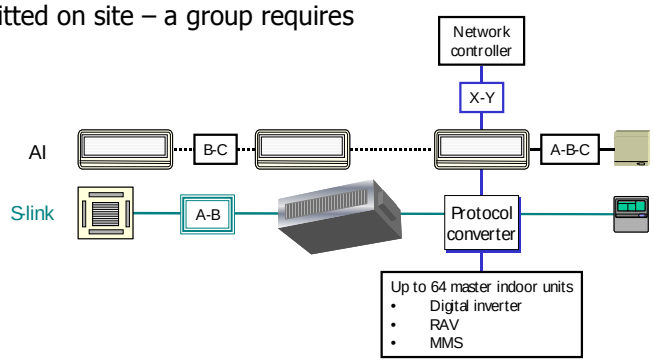
1. Set up address after the wiring has been completed.
2. "1:1Model" Connection Interface TCB-PCNT30TLE2 is necessary for DI/SDI for central control. Some Hi-wall Type do not need "1:1Model" Connection Interface. Please refer to the installation manual of each model. Connect the central control devices to U3/U4 wires of the central control system.
3. When "1:1Model" Connection Interface is used for the group control or twin, triple or quad system, the interface must be connected to the Master unit of the indoor unit. (Connection to Sub unit is unavailable). One "1:1Model" Connection Interface per one group.
4. In group operation, be sure to turn on power supplies to all indoor units in group control within 3 minutes. When power supply of the Master unit is not turned on, there is a possibility that the Master unit exchanges with Sub unit. (If Master unit is exchanged, the central control is unavailable.)

Note)
If group construction is abnormal, the automatic address sequence starts automatically. Normal condition is below.

1. There is no duplicated indoor unit address.
2. There is no invalid indoor unit address.
3. Individual unit and master/sub units are not intermingled.
4. Only a unit for Individual.
5. A master indoor unit and 1 or more sub indoor units for group.

Integration with AI Network Control

TCC-net models use a different language to AI – however a TCC-net group can be linked to an AI network, by the use of a protocol converter. This device is not standard and should be fitted on site – a group requires only one protocol converter to communicate with a network.
An LED flashes to indicate communication with the network.
The Protocol converter provides terminals X-Y for the network connection – it also has the 7-way DIP switch used to give a network address – the method is identical to that used for AI indoor units.
The network address may also be set by a wired controller from the configuration menu.
The protocol converter is counted as an indoor unit – only 7 indoor units may therefore be group controlled in this way.



Second Controller

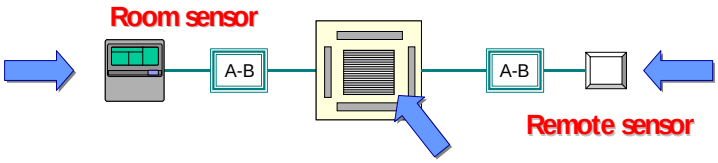
- ⇨ Options available
- 2 x wired controllers
- 1 wired + 1 infra red controller
- ⇨ Full group control from either
- ⇨ Connection may be anywhere within group
- ⇨ Changes updated

The sub-controller must be set – this can be done from either controller. The choice of sub-controller makes little difference unless it is required to act as the temperature sensor

Temperature Sensing

Both infrared and wired controllers are able to supply a temperature value to the indoor unit. This may be more representative than the standard, return air sensor but is not available from sub controllers of either type. To set the room sensor:

- ⇨ Infrared controller – press MAIN SENSOR
- ⇨ Wired controller – selected from configuration menu



Should the infrared controller lose contact with the indoor unit, return air temperature control will automatically resume.
A further option for remote sensing is available – the remote sensor. This is connected to terminals A-B whether or not a wired controller is used. The indoor unit must, in this case, be set to use the standard, return air sensor – this sensor automatically takes over in this case. This value will be used to provide control to all indoor units within the group.

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The information shown in this Technical Book is based on the following data:

- **Nominal capacities are based on Eurovent** - Cooling: indoor air temperature 27°C db/19°C wb, outdoor air temperature 35°C db/24°C wb. Heating: indoor air temperature 20°C db, outdoor air temperature 7°C db
- **The sound pressure levels are based on** - Outdoor units at 1 m distance, indoor units at 1.5 m distance
- **The maximum running current is based on 230 V, 1 phase and 380 V, 3 phase in the cooling mode.**

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