

# Remote controllers

## Smart user-friendly controller with stylish design

### Main remote controller

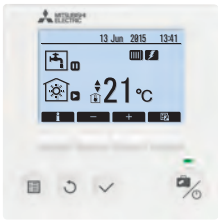
- Large screen and backlight for excellent visibility, even in dark environment
- Multi-language support (supports 15 languages)
- Can be removed from main unit and installed in a remote location (up to 500m)
- Quick reading of operation data (7.5 times faster than previous model)
- Wide range of convenient functions in response to user demand

#### Function settings

- Energy monitoring
- Two-zone control (cooling and heating)
- Two separate schedules
- Summer time setting
- Built-in room temperature sensors
- Hybrid control (boiler interlock)
- Floor drying mode
- Weekly timer
- Holiday mode
- Legionella prevention
- Error codes

### Wireless remote controller (optional)

- Built-in room temperature sensor; easy to place in the best position to detect room temperature
- Wiring work eliminated
- Simple design that is easy to operate
- Remote control from any room without needing to choose an installation location
- Backlight and big buttons that are easy to operate
- Domestic hot water boost and cancellation
- Simplified holiday mode



Main controller



PAR-WR51R-E (Option)  
Receiver



PAR-WT50R-E (Option)  
Wireless remote controller



\*SD logo is a trademark of SD-3C, LLC

# Energy monitoring

## View electricity consumption and heat output on the remote controller

Every end user can now easily check the energy data of the ecodan heat pump.

### Other features

- Daily, monthly and yearly data are stored and can be displayed using the main remote controller.
- External power meter and heat meter can be connected for accurate measurement.
- SD card is also available for storing data.

\*Using pre-set values on the main remote controller, estimated energy consumption/output can be shown without external power and a heat meter.

Depending on operating condition and system configuration, there is some possibility to show different data from the reality.

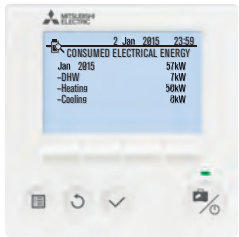
\*This function is available depending on the version of the outdoor unit model.



Heating capacity produced



Electric energy used



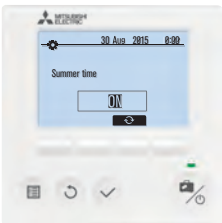
\*SD logo is a trademark of SD-3C, LLC

# Summer time setting

## Easy adjustment for summer time

Just switch the summer time mode 'on' using the main remote controller and the clock in the main remote controller is adjusted to summer time hours.

This function can release the end user from clock setting tasks.

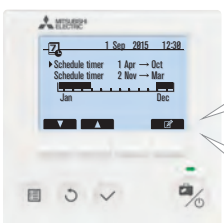


# Two separate schedules

## Pre-setting two different schedules for winter and summer seasons

Two different schedule settings are available for use via the main remote controller.

These schedules can be pre-set and changed depending on the season. For example, from November to March, space heating and domestic hot water are used; however, during warm months such as from April to October, only domestic hot water is used.



<Example>

**Schedule 1** Winter time ⛄  
Space heating **daytime**  
Domestic hot water **early morning**

**Schedule 2** Summer time ☀️  
Domestic hot water **any time**

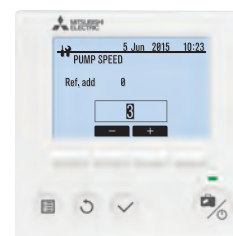
## Easy commissioning

### Pump for primary water circuit\* speed setting possible using ecodan's main remote controller

Even when the system is running, pump output can be set to one of five different settings using the main remote controller.

The person commissioning the system can adjust this speed much more easily.

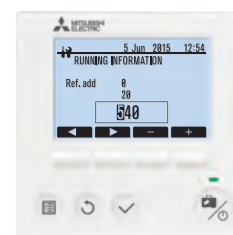
\*Speed setting of pump for domestic hot water is not available through the main remote controller when the system is running.



### Flow sensor newly incorporated

The flow sensor is key for monitoring energy output and can also be used to detect flow error as well.

- Flow rate can be checked on the main remote controller.
- Flow rate can also be shown as graphs using the SD card tool.



### Run indoor unit\* without outdoor unit

During installation or situations such as an outdoor unit malfunction, the indoor unit can be operated using a heater.

While using this mode, flow and tank temperature are selectable.

Fixing and maintenance of the outdoor unit can be done without stopping heating and domestic hot water operation\*.

\* Models with electric heater only.

\* When the indoor unit operation stops, please check all settings after the outdoor unit is connected.

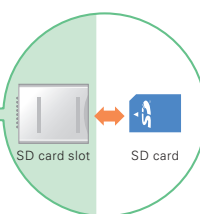
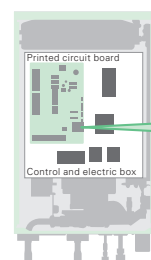
## SD\* card

### For easier settings and data logging

The initial setting for ecodan is now simpler than ever before. The special software enables the required initial settings to be saved to an SD card using a personal computer. The system set-up is as easy as moving the SD card from the computer to the SD card slot in the indoor unit. Compared to the previous procedure of inputting settings using the main controller at the installation site, a remarkable reduction in set-up time has been achieved. Thus, it is ideal for busy installers.

\*SD card function is only used at the time of installation.

Hydro box operation panel



Settings can be performed easily and the logging of operation data saved to an SD card can be confirmed via a personal computer.



\*SD logo is a trademark of SD-3C, LLC



### Items that can be pre-set

Simply copying pre-set data to an SD card, the same settings can input into another unit using the SD card.

- Initial settings (time display, contact number, etc.)
- Heating settings
  - Auto adaptation
  - Heat curve
  - Two different temperature zones (heating and cooling)
- Interlocked boiler operation settings
- Holiday mode settings
- Schedule timer settings (two separate schedules)
- Domestic hot water settings
- Legionella prevention settings

All items that are set by the main controller can be set via a personal computer.

### Data that can be stored

Operation data up to a month long can be stored on a single SD card

- Consumed electrical energy
- Delivered energy
- Flow rate
- Operation time
- Defrost time
- Actual temperature
  - Room temperature
  - Flow temperature
  - Return temperature
  - Domestic hot water temperature
  - Outdoor temperature
- Error record
- Input signal
- Etc.

Split type specifications

Indoor unit

<Cylinder unit>

Cylinder unit>			Small capacity						Medium capacity								UK model						
Model name			EHST20D-VM2C	EHST20D-VM9C	EHST20D-VM2EC	EHST20D-MHC	EHST20D-MEC	EHST20C-VM2C	EHST20C-VM6C	EHST20C-VM9C	EHST20C-TM9C	EHST20C-VM2EC	EHST20C-VM6EC	EHST20C-VM9EC	EHST20C-MEC	EHST20C-MHCW	EHST20D-MHCW						
Type			Heating only																				
			Immersion heater																				
			Expansion vessel																				
			Booster heater																				
Dimensions			HxWxD		mm		1600x595x680																
Weight (empty)			kg		103	105	97	103	96	110	111	112	112	104	105	106	103	110	103				
Power supply (V/Phase/Hz)			230/Single/50																				
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50		400/Three/50		230/Single/50		-		230/Single/50		400/Three/50		230/Three/50		230/Single/50		400/Three/50		-	
		Capacity		kW		2	9 (3/6/9)	2		-		2	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	2	6 (2/4/6)	9 (3/6/9)	-		-		
		Current		A		9	13	9		-		9	26	13	23	9	26	13	-		-		
		Breaker size		A		16	16	16		-		16	32	16	32	16	32	16	-		-		
	Immersion heater	Power supply (V/Phase/Hz)		-		230/Single/50		-		-		-		-		-		-		230/Single/50		-	
		Capacity		kW		-		3		-		-		-		-		-		3		-	
		Current		A		-		13		-		-		-		-		-		13		-	
		Breaker size		A		-		16		-		-		-		-		-		16		-	
	Domestic hot water tank	Volume / Material		L / -		200 / Stainless steel																	
		Ambient		°C																	0~35*1		
Guaranteed operating range*1	Outdoor	Heating		°C																	See outdoor unit spec table		
		Cooling		°C																	-		
Target temperature range	Heating	Room temperature		°C																	10~30		
		Flow temperature		°C																	25~60		
	Cooling	Room temperature		°C																	-		
		Flow temperature		°C																	-		
	DHW		°C																	40~60			
	Legionella prevention		°C																	60~70			
Sound pressure level (SPL)			dB (A)		28																		

\*1 The indoor environment must be frost-free

<Hydro box>

Hydro box>			Small capacity				Medium capacity								Large capacity		
Model name			EHSD-MEC	EHSD-MC	EHSD-VM2C	EHSD-VM9C	EHSC-MEC	EHSC-VM2C	EHSC-VM2EC	EHSC-VM6C	EHSC-VM6EC	EHSC-VM9C	EHSC-VM9EC	EHSC-TM9C	EHSE-MEC	EHSE-VM9EC	
Type			Heating only														
Immersion heater			-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Expansion vessel			-	x	x	x	-	x	-	x	-	x	-	x	-	-	
Booster heater			-	-	x	x	-	x	x	x	x	x	x	x	-	x	
Dimensions		HxWxD	mm	800x530x360												950x600x360	
Weight (empty)		kg	38	43	44	45	42	48	43	49	44	49	44	49	60	62	
Power supply (V/Phase/Hz)			230/Single/50														
Heater	Booster heater	Power supply (V/Phase/Hz)		-	-	230/Single/50	400/Three/50	-	230/Single/50				400/Three/50		230/Three/50	-	400/Three/50
		Capacity	kW	-	-	2	9 (3/6/9)	-	2	2	6 (2/4/6)	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	9 (3/6/9)	-	9 (3/6/9)
		Current	A	-	-	9	13	-	9	9	26	26	13	13	23	-	13
		Breaker size	A	-	-	16	16	-	16	16	32	32	16	16	32	-	16
Guaranteed operating range*1	Ambient	0~35*1															
	Outdoor	Heating	See outdoor unit spec table														
		Cooling	-														
Target temperature range	Heating	Room temperature	10~30														
		Flow temperature	25~60														
	Cooling	Room temperature	-														
		Flow temperature	-														
Sound pressure level (SPL)		dB (A)	28												30		

\*1 The indoor environment must be frost-free

<Reversible cylinder unit>

Reversible cylinder unit>			Small capacity		Medium capacity			
Model name			ERST20D-VM2C	ERST20D-MEC	ERST20C-VM2C	ERST20C-MEC		
	Type		Heating and cooling					
	Immersion heater		-	-	-	-		
	Expansion vessel		x	-	x	-		
	Booster heater		x	-	x	-		
Dimensions		HxWxD	mm				1600x595x680	
Weight (empty)		kg	103	96	110	103		
Power supply (V/Phase/Hz)			230/Single/50					
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50	-	230/Single/50	-	
		Capacity		kW	2	-	2	-
		Current		A	9	-	9	-
		Breaker size		A	16	-	16	-
	Immersion heater	Power supply (V/Phase/Hz)		-	-	-	-	
		Capacity		kW	-	-	-	-
		Current		A	-	-	-	-
		Breaker size		A	-	-	-	-
Domestic hot water tank		Volume / Material		L / -			200 / Stainless steel	
Guaranteed operating range*1	Ambient		°C				0~35*1	
	Outdoor	Heating	°C				See outdoor unit spec table	
		Cooling	°C				See outdoor unit spec table (minimum 10°C*2)	
Target temperature range	Heating	Room temperature		°C			10~30	
		Flow temperature		°C			25~60	
	Cooling	Room temperature		°C			-	
		Flow temperature		°C			5~25	
	DHW		°C			40~60		
	Legionella prevention		°C			60~70		
Sound pressure level (SPL)			dB (A) <td colspan="2">28</td>		28			

\*1 The indoor environment must be frost-free

\*2 If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger breaking by frozen water.

<Reversible hydro box>

Rversible hydro box>			Small capacity	Medium capacity		Large capacity			
Model name			ERSD-VM2C	ERSC-MEC	ERSC-VM2C	ERSE-MEC	ERSE-VM9EC		
	Type		Heating and cooling						
	Immersion heater		—	—	—	—	—		
	Expansion vessel		x	—	x	—	—		
	Booster heater		x	—	x	—	x		
Dimensions		HxWxD	mm	800x530x360		950x600x360			
Weight (empty)			kg	45	43	49	61	63	
Power supply (V/Phase/Hz)			230/Single/50						
Heater	Booster heater	Power supply (V/Phase/Hz)		230/Single/50	—	230/Single/50	—	400/Three/50	
		Capacity		kW	2	—	2	—	9 (3/6/9)
		Current		A	9	—	9	—	13
		Breaker size		A	16	—	16	—	16
Guaranteed operating range*1	Ambient			°C				0~35*1	
	Outdoor	Heating			°C				See outdoor unit spec table
		Cooling			°C				See outdoor unit spec table (minimum 10°C*2)
Target temperature range	Heating	Room temperature		°C				10~30	
		Flow temperature		°C				25~60	
	Cooling	Room temperature		°C				—	
		Flow temperature		°C				5~25	
Sound pressure level (SPL)			dB (A)		28		30		

\*1 The environment must be frost-free

\*2 If you use our system in cooling mode at the low ambient temperature (10°C or below), there are some risks of plate heat exchanger breaking by frozen water.

Outdoor unit










Model name			Eco Inverter	Power Inverter							
			SUHZ-SW45VA (H)*1	PUHZ-SW50VKA (-BS)	PUHZ-SW75V/YAA (-BS)	PUHZ-SW100V/YAA (-BS)	PUHZ-SW75VHA (-BS)	PUHZ-SW100V/YHA (-BS)	PUHZ-SW120V/YHA (-BS)	PUHZ-SW160YKA (-BS)	PUHZ-SW200YKA (-BS)
Dimensions	HxWxD	mm	880×840×330	630×809×300	1020×1050×480	1020×1050×480	943×950×330	1350×950×330	1350×950×330	1338×1050×330	1338×1050×330
Weight		kg	54	43	92/104	114/126	75	118/130	118/130	136	136
Power supply (V / Phase / Hz)			VA(H), VAA, VHA : 230/Single/50 YHA, YKA, YAA : 400/Three/50								
Heating (A7/W35)	Capacity	kW	4.50	5.50	8.00	11.20	8.00	11.20	16.00	22.00	25.00
	COP		5.06	4.42	4.40	4.46	4.40	4.45	4.10	4.20	4.00
	Power input	kW	0.889	1.244	1.818	2.511	1.818	2.517	3.902	5.238	6.250
Heating (A2/W35)	Capacity	kW	3.50	5.00	7.50	10.00	7.50	10.00	12.00	16.00	20.00
	COP		3.40/3.04	2.97	3.40	3.32	3.40	3.32	3.24	3.11	2.80
	Power input	kW	1.029/1.151	1.684	2.206	3.009	2.206	3.009	3.704	5.145	7.143
Cooling (A35/W7)	Capacity	kW	4.00	4.50	7.10	10.00	6.60	9.10	12.50	16.00	20.00
	EER		2.73	2.76	2.70	2.83	2.82	2.75	2.32	2.76	2.25
	Power input	kW	1.465	1.630	2.630	3.534	2.340	3.309	5.388	5.797	8.889
Cooling (A35/W18)	Capacity	kW	3.80	5.00	7.10	10.00	7.10	10.00	14.00	18.00	22.00
	EER		4.28	4.60	4.43	4.47	4.43	4.35	4.08	4.56	4.10
	Power input	kW	0.888	1.087	1.603	2.237	1.603	2.299	3.431	3.947	5.366
Sound pressure level (SPL)	Heating	dB (A)	52	46	43	47	51	54	54	62	62
Sound power level (PWL)	Heating	dB (A)	61	63	58	60	68	70	72	78	78
Operating current (max)		A	12.0	13.0	22.0/11.5	28.0/12.0	17.0	29.5/13.0	29.5/13.0	19.0	21.0
Breaker size		A	20	16	25/16	32/16	25	32/16	32/16	25	32
Piping	Diameter	Liquid/Gas	mm	6.35/12.7	6.35/12.7	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	12.7/25.4
	Max. length	Out-In	m	30	40	40	75	40	75	80	80
	Max. height	Out-In	m	30	30	10	10	30	30	30	30
	Max. height	Out-In	m	30	30	10	10	30	30	30	30
Guaranteed operating range	Heating	°C	-15 to +24	-15 to +21	-20 to +21	-20 to +21	-20 to +21	-20 to +21	-20 to +21	-20 to +21	-20 to +21
	DHW	°C	-15 to +35	-15 to +35	-20 to +35	-20 to +35	-20 to +35	-20 to +35	-20 to +35	-20 to +35	-20 to +35
	Cooling*2	°C	+10 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46

Model name			ZUBADAN					
			PUHZ-SHW80V/YAA (-BS)	PUHZ-SHW112V/YAA (-BS)	PUHZ-SHW80VHA	PUHZ-SHW112V/YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA2
Dimensions	HxWxD	mm	1020×1050×480	1020×1050×480	1350×950×330	1350×950×330	1350×950×330	1338×1050×330
Weight		kg	116/128	116/128	120	120/134	134	143
Power supply (V / Phase / Hz)			VAA, VHA : 230/Single/50 YHA, YKA, YAA : 400/Three/50					
Heating (A7/W35)	Capacity	kW	8.00	11.20	8.00	11.20	14.00	23.00
	COP		4.65	4.40	4.65	4.46	4.22	3.65
	Power input	kW	1.720	2.545	1.720	2.511	3.318	6.301
Heating (A2/W35)	Capacity	kW	8.00	11.20	8.00	11.20	14.00	23.00
	COP		3.55	3.22	3.55	3.34	2.96	2.37
	Power input	kW	2.254	3.478	2.254	3.353	4.730	9.705
Cooling (A35/W7)	Capacity	kW	7.10	10.00	7.10	10.00	12.50	20.00
	EER		3.31	2.83	3.31	2.83	2.17	2.22
	Power input	kW	2.145	3.534	2.145	3.534	5.760	9.009
Cooling (A35/W18)	Capacity	kW	7.10	10.00	7.10	10.00	12.50	20.00
	EER		4.52	4.74	4.52	4.74	4.26	3.55
	Power input	kW	1.571	2.110	1.571	2.110	2.934	5.634
Sound pressure level (SPL)	Heating	dB (A)	45	47	51	52	52	59
Sound power level (PWL)	Heating	dB (A)	59	60	69	70	70	75
Operating current (max)		A	22.0/13.0	28.0/13.0	29.5	35.0/13.0	13.0	20.0
Breaker size		A	25/16	32/16	32	40/16	16	25
Piping	Diameter	Liquid/Gas	mm	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	12.7/25.4
	Max. length	Out-In	m	75	75	75	75	80
	Max. height	Out-In	m	30	30	30	30	30
	Max. height	Out-In	m	30	30	30	30	30
Guaranteed operating range	Heating	°C	-28 to +21	-28 to +21	-28 to +21	-28 to +21	-28 to +21	-25 to +21
	DHW	°C	-28 to +35	-28 to +35	-28 to +35	-28 to +35	-28 to +35	-25 to +35
	Cooling*2	°C	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46	-15 to +46

Note: based on EN 14511 (Input to circulation pump is not included.) It may differ according to the system configuration.

\*1 SUHZ-SW45VAH incorporates base heater.

\*2 Optional air protection guide is required where ambient temperature is lower than -5°C.

Split type	Small capacity (Under 5kW)	Medium capacity (7.5kW–14kW)	Large capacity (≥ 16kW)
		 PUHZ-SHW80/112AA  PUHZ-SHW80/112/140	 PUHZ-SHW230
	 PUHZ-SW50	 PUHZ-SW75  PUHZ-SW75/100AA  PUHZ-SW100/120	 PUHZ-SW160/200
Eco Inverter	 SUHZ-SW45		



Packaged type specifications

Indoor unit

<Cylinder unit>



Model name			EHPT20X-VM2C	EHPT20X-VM6C	EHPT20X-YM9C	EHPT20X-TM9C	EHPT20X-MHCW*2
	Type		Heating only				
	Immersion heater		–	–	–	–	×
	Expansion vessel		×	×	×	×	×
	Booster heater		×	×	×	×	–
Dimensions	HxWxD	mm	1600x595x680				
Weight (empty)		kg	98	99	100	100	98
Power supply (V / Phase / Hz)			230/Single/50				
Heater	Booster heater	Power supply (V / Phase / Hz)	230/Single/50		400/Three/50	230/Three/50	–
		Capacity	2	6 (2/4/6)	9 (3/6/9)	9 (3/6/9)	–
		Current	9	26	13	23	–
		Breaker size	16	32	16	32	–
	Immersion heater	Power supply (V / Phase / Hz)	–	–	–	–	230/Single/50
		Capacity	–	–	–	–	3
		Current	–	–	–	–	13
		Breaker size	–	–	–	–	16
Domestic hot water tank	Volume / Material	L / –	200 / Stainless steel				
Guaranteed operating range*1	Ambient	°C	0~35*1				
	Outdoor	°C	See outdoor spec table				
Target temperature range	Heating	Room temperature	10~30				
		Flow temperature	25~60				
	DHW	°C	40~60				
		Legionella prevention	60~70				
Sound pressure level (SPL)		dB (A)	28				

\*1 The indoor environment must be frost-free    \*2 UK model

<Hydro box>

Model name			EHPX-VM2C	EHPX-VM6C	EHPX-YM9C
	Type		Heating only		
	Immersion heater		–	–	–
	Expansion vessel		×	×	×
	Booster heater		×	×	×
Dimensions	HxWxD	mm	800x530x360		
Weight (empty)		kg	37	38	38
Power supply (V / Phase / Hz)			230/Single/50		
Heater	Booster heater	Power supply (V / Phase / Hz)	230/Single/50	230/Single/50	400/Three/50
		Capacity	2	6 (2/4/6)	9 (3/6/9)
		Current	9	26	13
		Breaker size	16	32	16
Guaranteed operating range*1	Ambient	°C	0~35*1		
	Outdoor	°C	See outdoor spec table		
Target temperature range	Heating	Room temperature	10~30		
		Flow temperature	25~60		
Sound pressure level (SPL)		dB (A)	28		

\*1 The indoor environment must be frost-free

Outdoor unit

			Power Inverter						ZUBADAN	
Model name			PUHZ-W50VHA2(-BS)	PUHZ-W60VAA(-BS)	PUHZ-W85V/YAA(-BS)	PUHZ-W112V/YAA(-BS)	PUHZ-W85VHA2(-BS)	PUHZ-W112VHA(-BS)	PUHZ-HW112YHA2(-BS)	PUHZ-HW140V/YHA2(-BS)
Dimensions	HxWxD	mm	740x950x330	1020x1050x480	1020x1050x480	1020x1050x480	943x950x330	1350x1020x330	1350x1020x330	1350x1020x330
Weight		kg	64	97	97/110	118/131	79	133	148	134/148
Power supply (V / Phase / Hz)			VAA, VHA : 230/Single/50, YAA, YHA : 400/Three/50							
Heating (A7/W35)	Capacity	kW	5.00	6.00	9.00	11.20	9.00	11.20	11.20	14.00
	COP		4.50	4.83	4.51	4.54	4.18	4.47	4.42	4.25
	Power input	kW	1.111	1.242	1.996	2.467	2.153	2.506	2.534	3.294
Heating (A2/W35)	Capacity	kW	5.00	6.00	8.50	11.20	8.50	11.20	11.20	14.00
	COP		3.50	3.64	3.36	3.34	3.17	3.34	3.11	3.11
	Power input	kW	1.429	1.648	2.530	3.353	2.681	3.353	3.601	4.502
Sound pressure level (SPL)	Heating	dB (A)	46	45	45	47	48	53	53	53
Sound power level (PWL)	Heating	dB (A)	61	58	58	60	66	69	67	67
Operating current (max)		A	13.0	13.0	22.0/11.5	28.0/13.0	23.0	29.5	13.0	35.0/13.0
Breaker size		A	16	16	25/16	32/16	25	32	16	40/16
Guaranteed operating range	Heating	°C	–15 to +21	–20 to +21	–20 to +21	–20 to +21	–20 to +21	–20 to +21	–25 to +21	–25 to +21
	DHW	°C	–15 to +35	–20 to +35	–20 to +35	–20 to +35	–20 to +35	–20 to +35	–25 to +35	–25 to +35
	Cooling*1	°C	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46	–15 to +46

Note: based on EN 14511 (Input to circulation pump is included.) It may differ according to the system configuration.

\*1 Optional air protection guide is required where ambient temperature is lower than –5°C.

Packaged type

Medium capacity  
(11.2kW–14kW)

PUHZ-HW112/140

Packaged type

Small capacity  
(Under 5kW)

PUHZ-W50

PUHZ-W60/85/112

PUHZ-W85

PUHZ-W112

Optional Parts

Split type

<Indoor unit>

Parts name	Model name	Specification	Cylinder unit																	Hydro box		
			EHST20C-VM2C	EHST20C-VM6C	EHST20C-VM9C	EHST20C-TM9C	EHST20C-VM2EC	EHST20C-VM6EC	EHST20C-VM9EC	EHST20C-MEC	EHST20C-VM2C	EHST20C-VM9C	EHST20C-VM2EC	EHST20C-MEC	EHST20C-MHC	EHST20C-MHCW	EHST20C-MHCW	ERST models	E#SD or E#SC models	E#SE models		
Wireless remote controller	PAR-WT50R-E		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Wireless receiver	PAR-WR51R-E		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Thermistors	PAC-SE41TS-E	For room temp.	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
	PAC-TH011-E	For buffer and zone (flow and return temp.)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
	PAC-TH011TK-E	For tank temp. (5m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	x		
	PAC-TH011TKL-E	For tank temp. (30m)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	x		
	PAC-TH011HT-E	For boiler (flow and return temp.)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Immersion heater	PAC-IH03V2-E	1Ph 3kW	x	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-	-	-		
EHPT accessories for UK	PAC-WK01UK-E		-	-	-	-	-	-	-	-	-	-	-	-	-	x	x	-	-	-		
Joint pipe	PAC-SG73RJ-E	For PUHZ-SW200YKA/SHW230YKA2 (-BS) ø9.52→ø12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x		
Wi-Fi interface	MAC-567IF-E		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Drain pan stand	PAC-DP01-E	D665mm H270mm W595mm N.W. 14.5kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x*1	-	-		
2 zone kit	PAC-TZ01-E		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	-		

\*1 PAC-DP01-E is necessary when you use ERST units. If you use ERST units without this parts, drain will be flowed from the base of units, in cooling mode.

<Outdoor unit>

Parts name	Model name	Eco Inverter SUHZ-SW45VA(H)	Power Inverter										ZUBADAN					
			PUHZ-SW50YKA(-BS)	PUHZ-SW75YAA(-BS)	PUHZ-SW100YAA(-BS)	PUHZ-SW75YHA(-BS)	PUHZ-SW100YHA(-BS)	PUHZ-SW120YHA(-BS)	PUHZ-SW160YKA(-BS)	PUHZ-SW200YKA(-BS)	SHW80VYAA(-BS)	SHW120YAA(-BS)	PUHZ-SHW80VHA	PUHZ-SHW120YHA	PUHZ-SHW140YHA	PUHZ-SHW230YKA2		
Connector for drain hose heater signal output	PAC-SE60RA-E	—	—	×	×	×	×	×	×	×	×	×	×	×	×	×		
	PAC-SE61RA-E	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—		
	MAC-886SG-E	×	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	PAC-SJ07SG-E	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—		
	PAC-SG59SG-E	—	—	—	—	×	×	×	—	—	—	×	×	×	—	—		
Air discharge guide	PAC-SH96SG-E	—	—	×1	×1	—	—	—	×	×	×	×1	×1	—	—	×		
	PAC-SJ06AG-E	—	×	×	—	—	—	—	—	—	—	—	—	—	—	—		
	PAC-SH63AG-E	—	—	—	—	×	×	×	—	—	—	×	×	×	×	—		
	PAC-SH95AG-E	—	—	×1	×1	—	—	—	×	×	×	×1	×1	—	—	×		
	PAC-SJ82AT-E	—	—	×	×	—	—	—	—	—	—	×	×	—	—	—		
Attachment	PAC-SG61DS-E	—	—	×	×	×	×	×	×	×	×	×	×	—	—	—		
	PAC-SJ08DS-E	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—		
Drain socket	PAC-SG63DP-E	—	×	—	—	—	—	—	—	—	—	—	—	—	—	—		
	PAC-SG64DP-E	—	—	—	—	×	×	×	—	—	—	—	—	—	—	—		
	PAC-SH97DP-E	—	—	—	—	—	—	—	×	×	×	—	—	—	—	—		
	PAC-SJ83DP-E	—	—	×	×	—	—	—	—	—	—	×	×	—	—	—		
Control/Service tool	PAC-SK52ST	—	×	×	×	×	×	×	×	×	×	×	×	×	×	×		

\*1 Attachment (PAC-SJ82AT-E) is necessary for the Air Guide.

Package type

<Indoor unit>

Parts name	Model name	Specification	Cylinder unit					Hydro box		
			EHPT20X-VM2C	EHPT20X-VM6C	EHPT20X-VM9C	EHPT20X-TM9C	EHPT20X-MHCW	EHPX-VM2C	EHPX-VM6C	EHPX-VM9C
Wireless remote controller	PAR-WT50R-E		x	x	x	x	x	x	x	x
Wireless receiver	PAR-WR51R-E		x	x	x	x	x	x	x	x
Thermistors	PAC-SE41TS-E	For room temp.	x	x	x	x	x	x	x	x
	PAC-TH011-E	For buffer and zone (flow and return temp.)	x	x	x	x	x	x	x	x
	PAC-TH011TK-E	For tank temp.	-	-	-	-	-	x	x	x
	PAC-TH011TKL-E	For tank temp. (longer)	-	-	-	-	-	x	x	x
	PAC-TH011HT-E	For boiler (flow and return temp.)	x	x	x	x	x	x	x	x
Immersion heater	PAC-IH03V2-E	1Ph 3kW	x	x	x	x	-	-	-	-
EHPT accessories for UK	PAC-WK01UK-E		-	-	-	-	x	-	-	-
Wi-Fi interface	MAC-567IF-E		x	x	x	x	x	x	x	x
2 zone kit	PAC-TZ01-E		x	x	x	x	x	x	x	x

<Outdoor unit>

Parts name	Model name	Power Inverter						ZUBADAN		
		PUHZ-W50VHA2(-BS)	PUHZ-W60VAA(-BS)	PUHZ-W85VYAA(-BS)	PUHZ-W112VYAA(-BS)	PUHZ-W85VHA2(-BS)	PUHZ-W112VHA (-BS)	PUHZ-HW112VHA2(-BS)	PUHZ-HW140VHA2(-BS)	PUHZ-HW140YHA2(-BS)
Connector for drain hose heater signal output	PAC-SE60RA-E	x	x	x	x	x	x	x	x	x
	PAC-SG59SG-E	x	—	—	—	x	x	x	x	x
Air discharge guide	PAC-SH96SG-E	—	x*	x*	x*	—	—	—	—	—
	PAC-SH63AG-E	x	—	—	—	x	x	x	x	x
Air protection guide	PAC-SH95AG-E	—	x*	x*	x*	—	—	—	—	—
Attachment	PAC-SJ82AT-E	—	x	x	x	—	—	—	—	—
Drain socket	PAC-SG61DS-E	x	x	x	x	x	x	—	—	—
Centralised drain pan	PAC-SG64DP-E	x	—	—	—	x	—	—	—	—
	PAC-SJ83DP-E	—	x	x	x	—	—	—	—	—
Control/Service tool	PAC-SK52ST	—	—	—	—	—	—	—	—	—

\*Attachment(PAC-SJ82AT-E) is necessary for the Air Guide.

Interface/Flow temperature controller

Parts name	Model name	Description
Capacity step control interface	PAC-IF011B-E	1 PC Board w/ Case
Flow temperature controllers	PAC-IF032B-E	1 PC Board w/ Case
System controllers	PAC-IF061B-E	1 PC Board w/ Case
	PAC-IF062B-E	1 PC Board w/ Case
	PAC-IF063B-E	1 PC Board w/ Case
	PAC-SIF051B-E	1 PC Board w/ Case

Note: SUHZ CANNOT be connected to these IFs.

Combination table

Type	Model name	Package type								Split type						
		Power Inverter						ZUBADAN		Eco Inverter	Power Inverter					
		PUHZ-W50VHA2	PUHZ-W85VHA2	PUHZ-W112VHA	PUHZ-W60VAA	PUHZ-W85VAA/YAA	PUHZ-W112VAA/YAA	PUHZ-HW112YHA2	PUHZ-HW140VHA2/YHA2		SUHZ-SW45VA(H)	PUHZ-SW50VKA	PUHZ-SW75VAA	PUHZ-SW75YAA	PUHZ-SW100VAA	PUHZ-SW100YAA
Cylinder unit	EHST20C-VM2C														●	●
	EHST20C-VM6C														●	●
	EHST20C-YM9C														●	●
	EHST20C-TM9C														●	●
	EHST20C-VM2EC														●	●
	EHST20C-VM6EC														●	●
	EHST20C-YM9EC														●	●
	EHST20C-MEC														●	●
	EHST20C-MHCW														●	●
	EHST20D-VM2C									●	●	●	●			
	EHST20D-MEC									●	●	●	●			
	EHST20D-MHC									●	●	●	●			
	EHST20D-MHCW									●	●	●	●			
	EHST20D-VM2EC									●	●	●	●			
	EHST20D-YM9C									●	●	●	●			
	ERST20C-MEC														●	●
	ERST20C-VM2C														●	●
	ERST20D-MEC									●	●	●	●			
	ERST20D-VM2C									●	●	●	●			
	EHPT20X-VM2C	●	●	●	●	●	●	●	●							
Hydro box	EHPT20X-VM6C	●	●	●	●	●	●	●	●							
	EHPT20X-YM9C	●	●	●	●	●	●	●	●							
	EHPT20X-TM9C	●	●	●		●	●	●	●							
	EHPT20X-MHCW	●	●	●		●	●	●	●							
	EHSC-VM2C														●	●
	EHSC-VM2EC														●	●
	EHSC-VM6C														●	●
	EHSC-VM6EC														●	●
	EHSC-YM9C														●	●
	EHSC-YM9EC														●	●
	EHSC-TM9C														●	●
	EHSC-MEC														●	●
	EHSD-VM2C									●	●	●	●			
	EHSD-YM9C									●	●	●	●			
	EHSD-MEC									●	●	●	●			
	EHSD-MC									●	●	●	●			
	ERSC-VM2C														●	●
	ERSC-MEC														●	●
	ERSD-VM2C									●	●	●	●			
	EHPX-VM2C	●	●	●	●	●	●	●	●							
	EHPX-VM6C	●	●	●		●	●	●	●							
	EHPX-YM9C	●	●	●	●	●	●	●	●							
	EHSE-YM9EC															
	EHSE-MEC															
	ERSE-YM9EC															
	ERSE-MEC															



# Mr.SLIM+

A smart air conditioning and hot water supply system conceived from eco-conscious ideas

Mr. SLIM+ has a heat recovery function, which uses waste heat from air conditioners to heat water. Thanks to heat recovery, the Mr. SLIM+ model can achieve a COP of 7.0\*, resulting in intelligent systems with amazing efficiency.

\*Conditions for air-to-air cooling: Indoor 27°C (dry bulb), 19°C (wet bulb); Outdoor 35°C (dry bulb)

## 1 unit, 2 roles – Total comfort year-round

Air conditioning and hot water supply matching the needs of each room

All-in-one outdoor unit (air conditioning, domestic hot water supply and hot water heating)

### Mr. SLIM for Air-to-Air

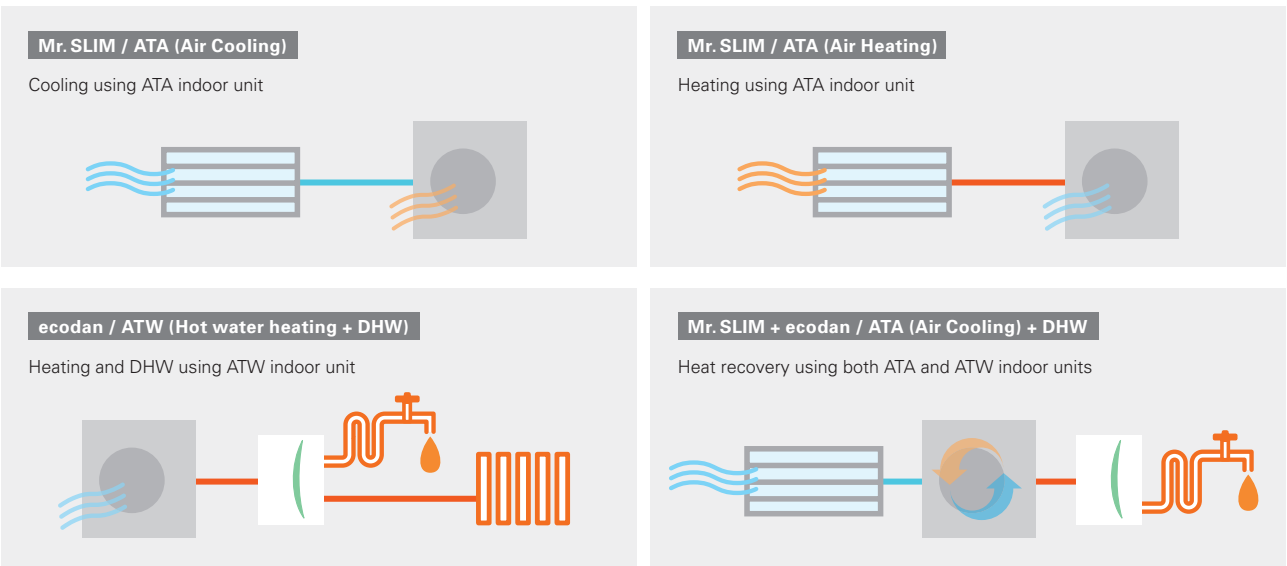
Mr. SLIM+ utilises a duct system that enables the air conditioning or heating of multiple rooms, and other indoor unit type systems that it is possible to fit to various applications.

### ecodan for Air-to-Water

- ✓Domestic hot water (DHW) supply
- ✓Heating for multiple rooms



## Various operations



Specifications

Indoor unit				PLA-ZM71EA		PKA-M71KAL		PCA-M71KA		PSA-RP71KA		PEAD-M71JA		PEAD-M71JAL	
Outdoor unit				PUHZ-FRP71VHA2		PUHZ-FRP71VHA2		PUHZ-FRP71VHA2		PUHZ-FRP71VHA2		PUHZ-FRP71VHA2		PUHZ-FRP71VHA2	
Refrigerant				R410A											
Power supply		Outdoor (V / Phase / Hz)		230 / Single / 50											
Air-to-Air (ATA)	Cooling	Capacity	Rated	kW	7.1	7.1	7.1	7.1	7.1	7.1					
			Min-Max	kW	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1	3.3-8.1					
		Total input	Rated	kW	1.88	1.93	1.93	2.15	2.10	2.04					
			EER			3.77	3.67	3.67	3.30	3.38	3.48				
		Design load			kW	7.1	7.1	7.1	7.1	7.1	7.1				
		Annual electricity consumption *1			kWh/a	376	386	384	409	444	427				
		SEER *3				6.6	6.4	6.4	6.0	5.5	5.8				
			Energy-efficiency class			A++	A++	A++	A+	A	A+				
		Heating (average season)	Capacity	Rated	kW	8.0	8.0	8.0	8.0	8.0	8.0				
	Min-Max			kW	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2	3.5-10.2					
	Total input		Rated	kW	2.11	2.29	2.29	2.42	2.11	2.11					
			COP			3.80	3.50	3.50	3.30	3.79	3.79				
	Design load			kW	4.7	4.7	4.7	4.7	4.9	4.9					
	Declared capacity		at reference design temperature	kW	4.7 (−10°C)	4.7 (−10°C)	4.7 (−10°C)	4.7 (−10°C)	4.9 (−10°C)	4.9 (−10°C)					
			at bivalent temperature	kW	4.7 (−10°C)	4.7 (−10°C)	4.7 (−10°C)	4.7 (−10°C)	4.9 (−10°C)	4.9 (−10°C)					
			at operation limit temperature	kW	3.5 (−20°C)	3.5 (−20°C)	3.5 (−20°C)	3.5 (−20°C)	3.7 (−20°C)	3.7 (−20°C)					
	Back-up heating capacity			kW	0	0	0	0	0	0					
	Annual electricity consumption *1			kWh/a	1,509	1,564	1,556	1,699	1,791	1,791					
	SCOP *3				4.3	4.2	4.2	3.8	3.8	3.8					
Energy-efficiency class			A+	A+	A+	A	A	A							
Air-to-Water (ATW)	Nominal flow rate (for heating)			L/min	22.90										
	Heating *4	A7W35	Capacity	kW	8.00	8.00	8.00	8.00	8.00	8.00					
			Input	kW	1.98	1.98	1.98	1.98	1.98	1.98					
			COP			4.05	4.05	4.05	4.05	4.05	4.05				
		A2W35	Capacity	kW	7.50	7.50	7.50	7.50	7.50	7.50					
			Input	kW	2.67	2.67	2.67	2.67	2.67	2.67					
			COP			2.81	2.81	2.81	2.81	2.81	2.81				
	Heat recovery (ATA cooling & ATW) *5	W45	Capacity (ATA cooling + ATW)	kW	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0	7.1+8.0					
			Input	kW	1.90	1.93	1.95	2.02	2.15	2.13					
			COP			7.95	7.82	7.74	7.48	7.02	7.09				
		W55	Capacity (ATA cooling + ATW)	kW	7.1+9.0	7.1+9.0	7.1+9.0	7.1+9.0	7.1+9.0	7.1+9.0					
			Input	kW	2.97	3.00	3.02	3.09	3.22	3.20					
			COP			5.42	5.37	5.33	5.21	5.00	5.03				
	ATW indoor unit				Cylinder unit or Hydro box (see previous page)										
	Outdoor unit	Dimensions	HxWxD	mm	943-950-330 (+30)										
		Weight			kg	73	73	73	73	73	73				
			Air volume	Cooling	m³/min	50	50	50	50	50	50				
Heating		m³/min		50	50	50	50	50	50						
Sound pressure level (SPL)		Cooling	dB(A)	47	47	47	47	47	47						
		Heat recovery	dB(A)	47	47	47	47	47	47						
		ATA Heating	dB(A)	49	49	49	49	49	49						
		ATW Heating	dB(A)	49	49	49	49	49	49						
Sound power level (PWL)		Cooling	dB(A)	67	67	67	67	67	67						
		Heat recovery	dB(A)	67	67	67	67	67	67						
		ATA Heating	dB(A)	68	68	68	68	68	68						
		ATW Heating	dB(A)	68	68	68	68	68	68						
Operating current (max)			A	19.0	19.0	19.0	19.0	19.0	19.0						
Breaker size			A	25	25	25	25	25	25						
Ext.piping	Diameter	Liquid/Gas	mm	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88	9.52/15.88						
	Max. length	Out-In	m	30 (for ATA) + 30 (for ATW)											
	Max. height	Out-In	m	20	20	20	20	20	20						
Guaranteed operating range (outdoor)				Cooling *2	°C	−15~+46	−15~+46	−15~+46	−15~+46	−15~+46	−15~+46				
				Heating	°C	−20~+21	−20~+21	−20~+21	−20~+21	−20~+21	−20~+21				
				ATW	°C	−20~+35	−20~+35	−20~+35	−20~+35	−20~+35	−20~+35				
				Heat recovery	°C	+7~+46	+7~+46	+7~+46	+7~+46	+7~+46	+7~+46				

\*1 Energy consumption based on standard test results. Actual energy consumption will depend on how the appliance is used and where it is located.

\*2 Optional air protection guide is required where ambient temperature is lower than −5°C.

\*3 SEER/SCOP values are measured based on EN14825.

\*4 Air-to-Water values are measured based on EN14511 (Circulation pump input is not included.).

\*5 Conditions for Air-to-Air cooling: Indoor 27°C (dry bulb) /19°C (wet bulb); Outdoor 35°C (dry bulb).



# PUMY+ecodan

Air-to-Air and Air-to-Water hybrid multi split system

1 unit, 2 roles – Total comfort year-round

Air conditioning and hot water supply matching the needs of each room

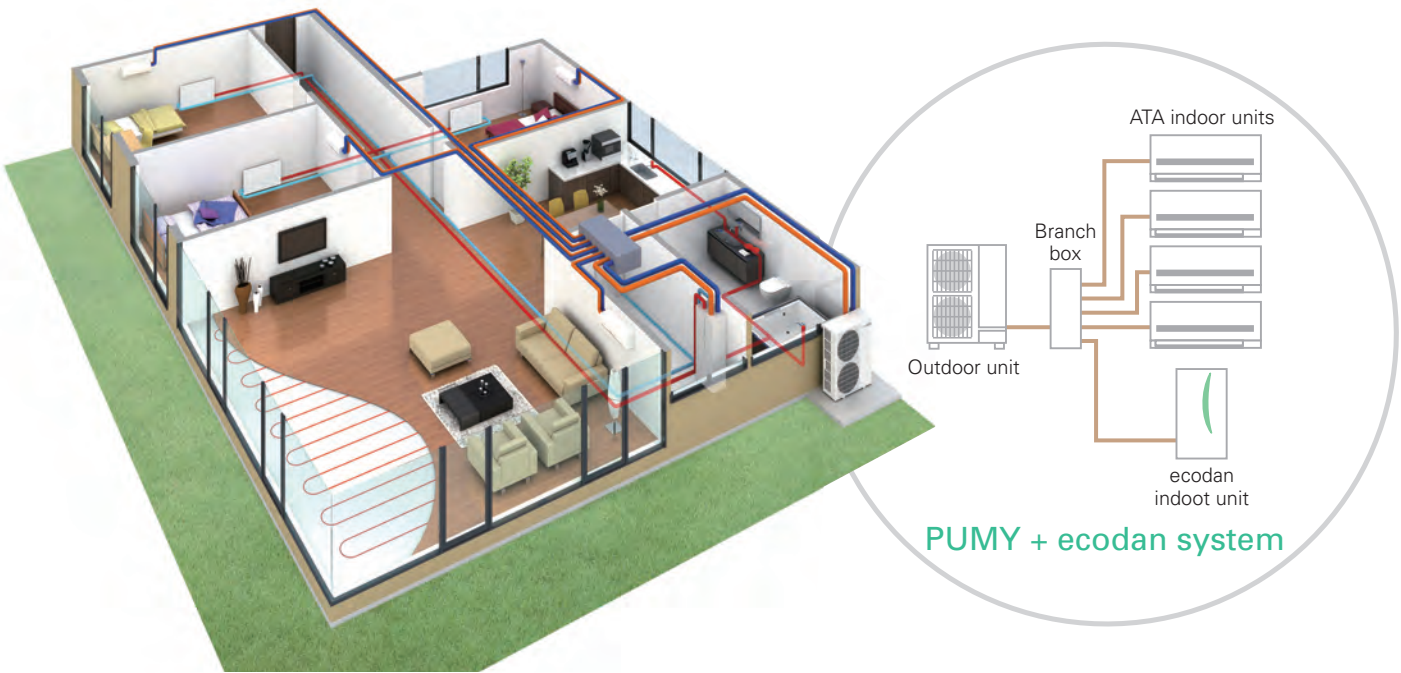
All-in-one outdoor unit (air conditioning, domestic hot water supply and hot water heating)

## PUMY for Air-to-Air

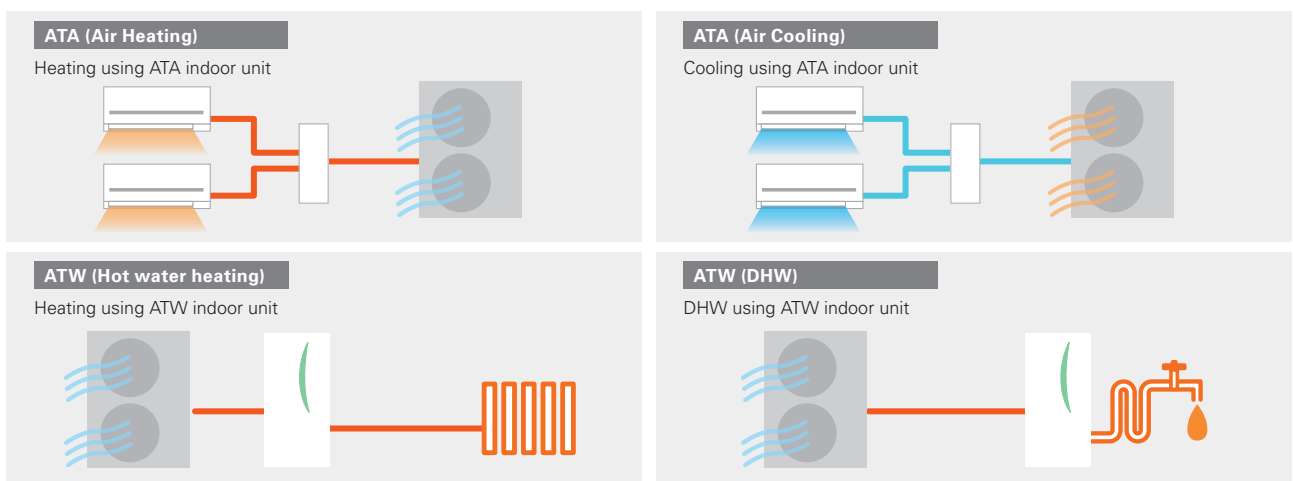
PUMY utilises various indoor units, enabling the air conditioning or heating of multiple rooms, and controls each unit individually.

## ecodan for Air-to-Water

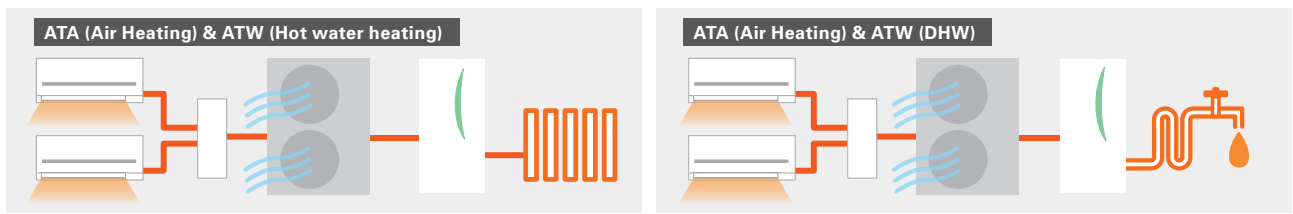
- ✓Domestic hot water (DHW) supply
- ✓Heating for multiple rooms



## Main operation patterns



## Optional operation patterns\* (simultaneous)



\*When using optional simultaneous operation, there are some restrictions, such as connectable indoor units, operation range and DHW flow temp.

Usage pattern All-in-one system solution

Summer 2-in-1 operation

In summer ATA cooling and DHW are utilised. Keep your room comfortable with ATA cooling during high temperature daytime. Heat pump operates to heat up water stored in the DHW tank when ATA is not operated. The hot water can be utilised for shower and washing dishes during daytime.



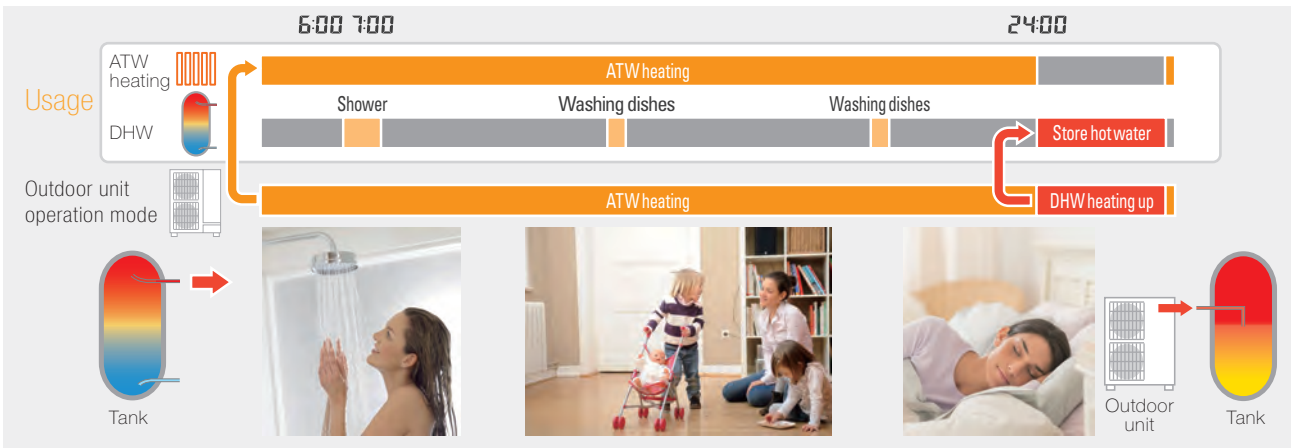
Spring & Autumn 2-in-1 operation

In spring and autumn, ATA heating and DHW are utilised. ATA heating can warm up each room quickly during the low temperature morning and evening. Heat pump operates to heat up water stored in the DHW tank when ATA is not operated. The hot water can be utilised for shower and washing dishes during daytime.



Winter ecodan

In winter ATW heating and DHW are utilised. ATW heating warms home all the day in severe cold weather. ATW heating stops temporarily only when the heat pump operates to heat up water stored in the DHW tank.



## PUMY+ecodan

Model name				PUMY- P112VKM4(-BS)	PUMY- P125VKM4(-BS)	PUMY- P140VKM4(-BS)	PUMY- P112YKM(E)4(-BS)	PUMY- P125YKM(E)4(-BS)	PUMY- P140YKM(E)4(-BS)			
Power supply				1-phase 220 - 230 - 240V, 50Hz			3-phase 380 - 400 - 415V, 50Hz					
Air-to-Air (ATA)	Cooling (nominal)*1	Capacity	kW	12.5	14.0	15.5	12.5	14.0	15.5			
		Power input	kW	2.79	3.46	4.52	2.79	3.46	4.52			
		EER		4.48	4.05	3.43	4.48	4.05	3.43			
	Temp. range of cooling	Indoor temp.	W.B.	15 - 24°C								
		Outdoor temp.*2	D.B.	-5 - 52°C								
	Heating (nominal)*1	Capacity	kW	14.0	16.0	18.0	14.0	16.0	18.0			
		Power input	kW	3.04	3.74	4.47	3.04	3.74	4.47			
		COP		4.61	4.28	4.03	4.61	4.28	4.03			
	Temp. range of heating	Indoor temp.	W.B.	15 - 27°C								
		Outdoor temp.	D.B.	-20 - 15°C								
Air-to-Water (ATW)	Nominal flow rate (for heating)			L/min			35.8					
	Heating*3	A7W35	Capacity	kW			12.5					
			Power input	kW			3.06					
			COP				4.08					
		A2W35	Capacity	kW			10.0					
			Power input	kW			3.50					
			COP				2.86					
	Guaranteed operating range	ATW	Heating	D.B.			-20 - +21°C					
			DHW	D.B.			-20 - +35°C					
		ATA + ATW	ATA heating + DHW	D.B.			7 - +21°C					
			ATA heating + ATW heating *4	D.B.			-10 - +21°C					
	Maximum Outlet water temp.			°C			55					
Outdoor unit	Indoor unit connectable	ATA only	Total capacity		50 to 130% of outdoor unit capacity							
			Model/ Quantity	Branch box system	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8		
			Mixed system*12	15-140*5/10	15-140*5/10*6	15-140*5/10*6	15-140*5/10	15-140*5/10*6	15-140*5/10*6			
		ATA + ATW individual operation	Total capacity		ATA : Max 130% of outdoor unit capacity + ATW (EHST20C or EHSC) *7							
			Model/Quantity (including ATW)	Branch box system	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8	15-100/8		
				Mixed system*12	15-140*5/10	15-140*5/10*6	15-140*5/10*6	15-140*5/10	15-140*5/10*6	15-140*5/10*6		
			ATA + ATW simultaneous operation	Total capacity		Max 100% of outdoor unit capacity : ATA + ATW (EHST20C or EHSC) *7						
		Model/Quantity		ATA*12	15/1*8	15-25/2*9	15-42*11/3*10	15/1*8	15-25/2*9	15-42*11/3*10		
				ATW	ATW (EHST20C or EHSC) / 1							
		Sound pressure level (measured in anechoic room)			dB<A>		49 / 51	50 / 52	51 / 53	49 / 51	50 / 52	51 / 53
		Sound power level (measured in anechoic room)			dB<A>		69 / 71	70 / 72	71 / 73	69 / 71	70 / 72	71 / 73
		Refrigerant piping diameter			Liquid pipe	mm		9.52 flare				
				Gas pipe	mm		15.88 flare					
	Fan	Type x Quantity		Propeller fan x 2								
		Airflow rate	m³/min		110							
			L/s		1,883							
			cfm		3,884							
		Motor output		kW		0.074 + 0.074						
	Compressor	Type x Quantity		Scroll hermetic compressor x 1								
		Starting method		Inverter								
Motor output		kW		2.9	3.5	3.9	2.9	3.5	3.9			
External dimensions (H x W x D)				mm		1,338 x 1,050 x 330 (+40)						
Weight				kg		122		YKM: 125 / YKME: 136				

\*1

	Indoor	Outdoor	Piping length	Level difference
Cooling	27°C DB / 19°C WB	35°C DB	7.5m	0m
Heating	20°C DB	7°C DB / 6°C WB	7.5m	0m

\*2 10 to 52°C D.B.: When connecting PKFY-P15/20/25VBM, PFFY-P20/25/32VKM, PFFY-P20/25/32VLE(R)M, PEFY-P\*VMA3 or M, S and P series indoor unit.

\*3 In the case of ATW single connection. Input to circulation pump is not included.

\*4 In the case of simultaneous operation of ATA heating and ATW heating, target flow temperature range is restricted to 45-55°C and when the ambient temp is under 7°C, the flow temp is lowered.

\*5 Up to P100 when connecting via branch box.

\*6 Up to 11 units when connecting via 2 branch boxes.

\*7 Only one ecodan unit can be connected.

\*8 Exceptionally, one MSZ-SF15VA or MSZ-AP15VF can be connected.

\*9 Exceptionally, two MSZ-SF15VA or MSZ-AP15VF can be connected.

\*10 Exceptionally, three MSZ-SF15VA or MSZ-AP15VF can be connected.

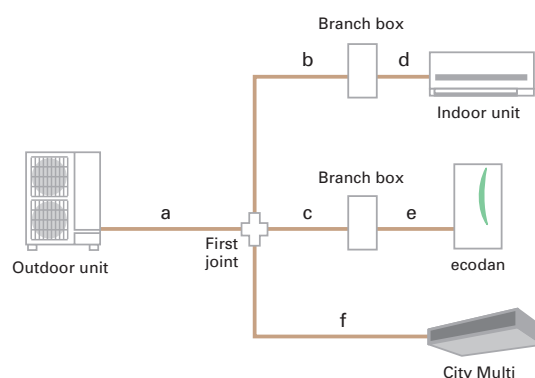
\*11 In the case of City Multi connection, maximum is P32.

\*12 PKFY and PFFY series are not connectable.

### Piping specifications

Total piping length	m	150*	a+b+c+d+e+f
Farthest piping length	m	80	a+b+d or a+c+e
		85	a+f
Total piping length between outdoor unit and branch box	m	55	a+b+c
Total piping length between branch boxes and indoor units	m	95	d+e
Farthest piping length from the first joint	m	30	b or c or f
Farthest piping length after branch box	m	25	d or e
Height difference (Outdoor upside / Outdoor downside)	m	50 / 40	

\*When an ecodan is connected, the maximum piping length is 150m.



PUMY+ ecodan compatibility table

ATW branch box connection compatibility table

Series	Type	Model name	Compatibility	Type	Model name	Compatibility	Type	Model name	Compatibility
ATW	Cylinder unit	EHST20C-VM2/6C	●	Hydro box	EHSC-VM2(E)C	●	Branch box	PAC-MK53BC	●
		EHST20C-YM9C	●		EHSC-VM6(E)C	●		PAC-MK33BC	●
		EHST20C-TM9C	●		EHSC-YM9(E)C	●		PAC-MK53BCB	●
		EHST20C-VM2/6EC	●		EHSC-TM9C	●		PAC-MK33BCB	●
		EHST20C-YM9EC	●	*Please be sure to use brine water.					
		EHST20C-MHCW	●*						

Branch box connection compatibility table

Series	Type	Model name	Compatibility										
			15	18	20	22	25	35	42	50	60	71	100
M series	Wall-mounted	MSZ-LN•VG					●	●					
		MSZ-AP•VF/VG	●		●		●	●	●	●			
		MSZ-FH•VE2					●	●		●			
		MSZ-EF•VE3		●		●	●	●	●	●			
		MSZ-SF•VA	●		●								
		MSZ-SF•VE3					●	●	●	●			
		MSZ-GF•VE2									●	●	
	Floor-standing	MFZ-KJ•VE 2					●	●		●			
S series	1-way cassette	MLZ-KP•VF					●	●		●			
							●	●		●			
P series	Ceiling-concealed	SEZ-M•DA(L)					●	●		●	●	●	
	2x2 cassette	SLZ-M•FA	●				●	●		●			
	Ceiling-suspended	PCA-M•KA						●		●	●	●	●
	4-way cassette	PLA-M•EA						●		●	●	●	●
	Ceiling-concealed	PEAD-M•JA(L)								●	●	●	●

LEV kit connection compatibility table

Series	I/U type	Model name	Compatibility									
			15	18	20	22	25	35	42	50	60	71
M series	Wall-mounted	MSZ-LN•VG					●	●				
		MSZ-AP•VF/VG	●		●		●	●	●	●		
		MSZ-FH•VE2					●	●		●		
		MSZ-EF•VE3		●		●	●	●	●	●		
		MSZ-SF•VA	●		●							
		MSZ-SF•VE3					●	●	●	●		
	Floor-standing	MFZ-KJ•VE 2					●	●		●		

Connectable indoor unit capacity

For individual operation ATA+ATW (no simultaneous operation) ATA: Max 130% of outdoor unit capacity + ATW (EHST20C or EHSC)

Outdoor capacity 12.5kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		Connectable ATA indoor unit total capacity: Max.16.2kW (130%)	
Outdoor capacity 14.0kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		Connectable ATA indoor unit total capacity: Max.18.2kW (130%)	
Outdoor capacity 15.5kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		Connectable ATA indoor unit total capacity: Max.20.2kW (130%)	

For simultaneous operation of ATA+ATW Max 100% of outdoor unit capacity: ATA + ATW (EHST20C or EHSC)

Outdoor capacity 12.5kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		ATA capacity Max. 1.3kW	*Exceptionally, one MSZ-SF15VA or MSZ-AP15VF can be connected.
Outdoor capacity 14.0kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		ATA capacity Max. 2.8kW	*Exceptionally, two units of MSZ-SF15VA or MSZ-AP15VF can be connected.
Outdoor capacity 15.5kW			
ATW indoor unit (Cylinder or Hydro box) 11.2kW		ATA capacity Max. 4.3kW	*Exceptionally, three units of MSZ-SF15VA or MSZ-AP15VF can be connected.

## MELCloud (Wi-Fi interface) for ecodan

### MELCloud for fast, easy remote control and monitoring of your ecodan

MELCloud is a new Cloud-based solution for controlling ecodan either locally or remotely by computer, tablet or smartphone via the Internet. Setting up and remotely operating your ecodan heating system via MELCloud is simple and straight forward. All you need is wireless computer connectivity in your home or the building where the ecodan is installed and an Internet connection on your mobile or fixed terminal. To set up the system, the router and the ecodan WiFi interface must be paired, and this is done simply and quickly using the WPS button found on all mainstream routers.

You can control and check ecodan via MELCloud from virtually anywhere an Internet connection is available. That means, thanks to MELCloud, you can use ecodan much more easily and conveniently.



\* MELCloud uses the MAC-567IF-E interface

### Key control and monitoring features

- 1 Turn system on/off
- 2 See status of each of your heating zones & adjust set points
- 3 See the status of your hot water cylinder & boost remotely
- 4 Live weather feed from ecodan location
  - Holiday mode - Set system parameters while away
  - Schedule timer - Set 7 day weekly schedule
  - Frost protection - Set system to run at minimum temperature
  - Error status
- 5 Check energy usage report\* \*Additional metering hardware is required.





## All A++ line-up!!

\*except for ATA & ATW hybrid system, Mr.SLIM+

Outdoor unit	Indoor unit	For medium-temperature application								For low-temperature application							
		Seasonal space heating energy efficiency class	Water heating energy efficiency class	Rated heat output under average climate conditions		Seasonal space heating energy efficiency under average climate conditions	Water heating energy efficiency under average climate conditions	Sound power level LWA indoor	Sound power level LWA outdoor	Seasonal space heating energy efficiency class	Water heating energy efficiency class	Rated heat output under average climate conditions		Seasonal space heating energy efficiency under average climate conditions	Water heating energy efficiency under average climate conditions	Sound power level LWA indoor	Sound power level LWA outdoor
				kW	%							kW	%				
SUHZ-SW45VA(-H)	EHST20D-****	A++	A	4.6	126	109	40	61		A++	A	5.0	170	109	40	61	
	ERST20D-****	A++	A	4.6	128	109	40	61		A++	A	5.0	174	109	40	61	
	EHSD-****	A++	-	4.6	126	-	40	61		A++	-	5.0	170	-	40	61	
	ERSD-****	A++	-	4.6	128	-	40	61		A++	-	5.0	174	-	40	61	
PUHZ-SW50VKA(-BS)	EHST20D-****	A++	A	4.3	125	98	40	63		A++	A	4.5	163	98	40	63	
	ERST20D-****	A++	A	4.3	128	98	40	63		A++	A	4.5	167	98	40	63	
	EHSD-****	A++	-	4.3	125	-	40	63		A++	-	4.5	163	-	40	63	
	ERSD-****	A++	-	4.3	128	-	40	63		A++	-	4.5	167	-	40	63	
PUHZ-SW75VAA/YAA(-BS)	EHST20D-****	A++	A	7.1	129/128	104	40	58		A++	A	7.2	162/160	104	40	58	
	ERST20D-****	A++	A	7.1	132/132	104	40	58		A++	A	7.2	166/165	104	40	58	
	EHSD-****	A++	-	7.1	129/128	-	40	58		A++	-	7.2	162/160	-	40	58	
	ERSD-****	A++	-	7.1	132/132	-	40	58		A++	-	7.2	166/165	-	40	58	
PUHZ-SW100VAA/YAA(-BS)	EHST20C-****	A++	A	10.0	130/129	103	40	60		A++	A	7.2	167/165	103	40	60	
	ERST20C-****	A++	A	10.0	132/132	103	40	60		A++	A	7.2	170/169	103	40	60	
	EHSC-****	A++	-	10.0	130/129	-	40	60		A++	-	7.2	167/165	-	40	60	
	ERSC-****	A++	-	10.0	132/130	-	40	60		A++	-	7.2	170/169	-	40	60	
PUHZ-SW75VHA(-BS)	EHST20D-****	A++	A	7.1	127	100	40	68		A++	A	7.2	164	100	40	68	
	ERST20D-****	A++	A	7.1	129	100	40	68		A++	A	7.2	166	100	40	68	
	EHSD-****	A++	-	7.1	127	-	40	68		A++	-	7.2	164	-	40	68	
	ERSD-****	A++	-	7.1	129	-	40	68		A++	-	7.2	166	-	40	68	
PUHZ-SW75VHA(-BS)	EHST20C-****	A++	A	7.1	127	103	40	68		A++	A	7.2	165	103	40	68	
	ERST20C-****	A++	A	7.1	129	103	40	68		A++	A	7.2	167	103	40	68	
	EHSC-****	A++	-	7.1	127	-	40	68		A++	-	7.2	165	-	40	68	
	ERSC-****	A++	-	7.1	129	-	40	68		A++	-	7.2	167	-	40	68	
PUHZ-SW100VHA/YHA(-BS)	EHST20C-****	A++	A	10.0	125/125	103	40	70		A++	A	10.4	164/163	103	40	70	
	ERST20C-****	A++	A	10.0	127/127	103	40	70		A++	A	10.4	166/166	103	40	70	
	EHSC-****	A++	-	10.0	125/125	-	40	70		A++	-	10.4	164/163	-	40	70	
	ERSC-****	A++	-	10.0	127/127	-	40	70		A++	-	10.4	166/166	-	40	70	
PUHZ-SW120VHA/YHA(-BS)	EHST20C-****	A++	A	12.0	125/125	99	40	72		A++	A	12.9	162/162	99	40	72	
	ERST20C-****	A++	A	12.0	127/127	99	40	72		A++	A	12.9	164/164	99	40	72	
	EHSC-****	A++	-	12.0	125/125	-	40	72		A++	-	12.9	162/162	-	40	72	
	ERSC-****	A++	-	12.0	127/127	-	40	72		A++	-	12.9	164/164	-	40	72	
PUHZ-SW160YKA(-BS)	EHSE-****	A++	-	13.5	125	-	45	78		A++	-	15.3	161	-	45	78	
	ERSE-****	A++	-	13.5	126	-	45	78		A++	-	15.3	163	-	45	78	
PUHZ-SW200YKA(-BS)	EHSE-****	A++	-	15.5	128	-	45	78		A++	-	17.3	162	-	45	78	
	ERSE-****	A++	-	15.5	129	-	45	78		A++	-	17.3	164	-	45	78	
PUHZ-SHW80VAA/YAA(-BS)	EHST20C-****	A++	A	9.0	133/132	103	40	59		A++	A	9.6	169/167	103	40	59	
	ERST20C-****	A++	A	9.0	135/134	103	40	59		A++	A	9.6	172/172	103	40	59	
	EHSC-****	A++	-	9.0	133/132	-	40	59		A++	-	9.6	169/167	-	40	59	
	ERSC-****	A++	-	9.0	135/134	-	40	59		A++	-	9.6	172/172	-	40	59	
PUHZ-SHW112VAA/YAA(-BS)	EHST20C-****	A++	A	12.7	135/135	103	40	60		A++	A	13.9	171/169	103	40	60	
	ERST20C-****	A++	A	12.7	137/137	103	40	60		A++	A	13.9	173/173	103	40	60	
	EHSC-****	A++	-	12.7	135/135	-	40	60		A++	-	13.9	171/169	-	40	60	
	ERSC-****	A++	-	12.7	137/137	-	40	60		A++	-	13.9	173/173	-	40	60	
PUHZ-SHW80VHA(-BS)	EHST20C-****	A++	A	9.0	131	103	40	69		A++	A	9.6	171	103	40	69	
	ERST20C-****	A++	A	9.0	133	103	40	69		A++	A	9.6	174	103	40	69	
	EHSC-****	A++	-	9.0	131	-	40	69		A++	-	9.6	171	-	40	69	
	ERSC-****	A++	-	9.0	133	-	40	69		A++	-	9.6	174	-	40	69	
PUHZ-SHW112VHA/YHA(-BS)	EHST20C-****	A++	A	12.7	128/128	103	40	70		A++	A	13.9	167/167	103	40	70	
	ERST20C-****	A++	A	12.7	130/130	103	40	70		A++	A	13.9	169/169	103	40	70	
	EHSC-****	A++	-	12.7	128/128	-	40	70		A++	-	13.9	167/167	-	40	70	
	ERSC-****	A++	-	12.7	130/130	-	40	70		A++	-	13.9	169/169	-	40	70	
PUHZ-SHW140YHA(-BS)	EHST20C-****	A++	A	15.8	127	103	40	70		A++	A	17.0	164	103	40	70	
	ERST20C-****	A++	A	15.8	128	103	40	70		A++	A	17.0	165	103	40	70	
	EHSC-****	A++	-	15.8	127	-	40	70		A++	-	17.0	164	-	40	70	
	ERSC-****	A++	-	15.8	128	-	40	70		A++	-	17.0	165	-	40	70	
PUHZ-SHW230YKA2	EHSE-****	A++	-	23.0	127	-	45	75		A++	-	25.0	164	-	45	75	
	ERSE-****	A++	-	23.0	128	-	45	75		A++	-	25.0	165	-	45	75	
PUHZ-W50VHA2(-BS)	EHPT20X-****	A++	A	5.0	127	99	40	61		A++	A	5.0	162	99	40	61	
	EHPX-****	A++	-	5.0	127	-	40	61		A++	-	5.0	162	-	40	61	
PUHZ-W85VHA2(-BS)	EHPT20X-****	A++	A	8.5	128	97	40	66		A++	A	8.5	162	97	40	66	
	EHPX-****	A++	-	8.5	128	-	40	66		A++	-	8.5	162	-	40	66	
PUHZ-W112VHA(-BS)	EHPT20X-****	A++	A	10.0	125	100	40	69		A++	A	10.0	164	100	40	69	
	EHPX-****	A++	-	10.0	125	-	40	69		A++	-	10.0	164	-	40	69	
PUHZ-W60VAA(-BS)	EHPT20X-****	A++	A	6.0	129	104	40	58		A++	A	6.0	182	104	40	58	
	EHPX-****	A++	-	6.0	129	-	40	58		A++	-	6.0	182	-	40	58	
PUHZ-W85VAA/YAA(-BS)	EHPT20X-****	A++	A	8.5	137/136	104	40	58		A++	A	8.5	171/169	104	40	58	
	EHPX-****	A++	-	8.5	137/136	-	40	58		A++	-	8.5	171/169	-	40	58	
PUHZ-W112VAA/YAA(-BS)	EHPT20X-****	A++	A	10.0	133/132	100	40	60		A++	A	10.0	170/169	100	40	60	
	EHPX-****	A++	-	10.0	133/132	-	40	60		A++	-	10.0	170/169	-	40	60	
PUHZ-HW112YHA2(-BS)	EHPT20X-****	A++	A	12.7	127	100	40	67		A++	A	12.7	155	100	40	67	
	EHPX-****	A++	-	12.7	127	-	40	67		A++	-	12.7	155	-	40	67	
PUHZ-HW140VHA2/YHA2(-BS)	EHPT20X-****	A++	A	15.8	126/126	96	40	67		A++	A	15.8	157/157	96	40	67	
	EHPX-****	A++	-	15.8	126/126	-	40	67		A++	-	15.8	157/157	-	40	67	
PUHZ-FRP71VHA2 ATA&ATW hybrid system, Mr.SLIM+	EHST20C-****	A+	A	7.5	123	98	40	68		A++	A	7.5	163	98	40	68	
	EHSC-****	A+	-	7.5	123	-	40	68		A++	-	7.5	163	-	40	68	
PUMY-P112VKM3/YKM(E)4-BS	EHST20C-****	A+	A	11.2	121/121	75	40	69		A++	A	11.2	168/168	75	40	69	
	EHSC-****	A+	-	11.2	121/121	-	40	69		A++	-	11.2	168/168	-	40	69	
PUMY-P125VKM3/YKM(E)4-BS	EHST20C-****	A+	A	11.2	121/121	75	40	69		A++	A	11.2	168/168	75	40	69	
	EHSC-****	A+	-	11.2	121/121	-	40	69		A++	-	11.2	168/168	-	40	69	
PUMY-P140VKM3/YKM(E)4-BS	EHST20C-****	A+	A	11.2	121/121	75	40	69		A++	A	11.2	168/168	75	40	69	
	EHSC-****	A+	-	11.2	121/121	-	40	69		A++	-	11.2	168/168	-	40	69	

\* Based on COMMISSION DELEGATED REGULATION (EU) No 811/2013, average climate conditions



# NEW ECODESIGN DIRECTIVE

## WHAT IS THE ErP DIRECTIVE?

The Ecodesign Directive for Energy-related Products (ErP Directive) establishes a framework to set mandatory standards for ErPs sold in the European Union (EU). The ErP directive introduces new energy-efficiency ratings across various product categories and affects how products such as computers, vacuum cleaners, boilers and even windows are classified in terms of environmental performance. Regulations that apply to air conditioning systems of rated capacity up to 12kW came into effect as of January 1, 2013. Based the use of future-orientated technologies, Mitsubishi Electric is one step ahead of these changes, with our air conditioning systems already achieving compliance with these new regulations.

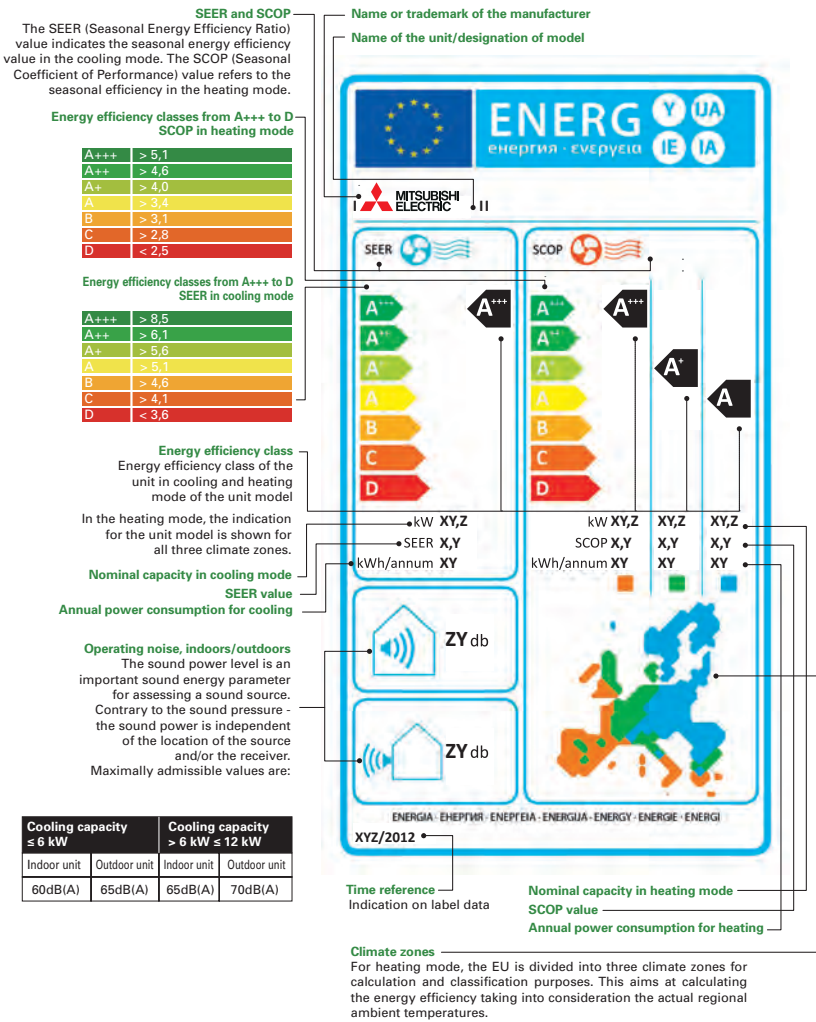
## NEW ENERGY LABEL AND MEASUREMENTS

Under regulation 2011/626/EU, supplementing directive 2010/30/EU, air conditioning systems are newly classified into energy-efficiency classes on the basis of a new energy labelling system, which includes three new classes: A+, A++ and A+++.

Revisions to the measurement points and calculations of the seasonal energy efficiency ratio (SEER) and seasonal coefficient of performance (SCOP) has resulted in changes to how air conditioning systems are classified into energy-efficiency classes.

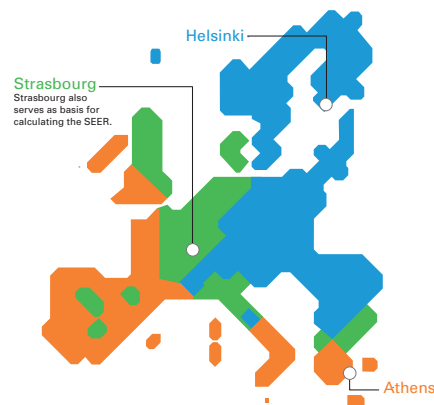
Specifically, for cooling mode, air conditioning systems must achieve at least class B. For heating mode, air conditioning systems must achieve at least a SCOP value of 3.8.

### ■New Energy Efficiency Label



### ■Climate Zones for Heating Mode

**Reference climate zones for calculating the SCOP**  
Since the climate conditions have a great influence on the operating behaviour in the heat pump mode, three climate zones have been stipulated for the EU: *warm*, *moderate*, *cold*. The measurement points are homogenous at 12°C, 7°C, 2°C and -7°C.



Warm (Athens)			
Partial load	Temperature conditions		
	Outdoors	WB	Indoors
-	DB		DB
-	-	-	20°C
100%	2°C	1°C	20°C
64%	7°C	6°C	20°C
29%	12°C	11°C	20°C

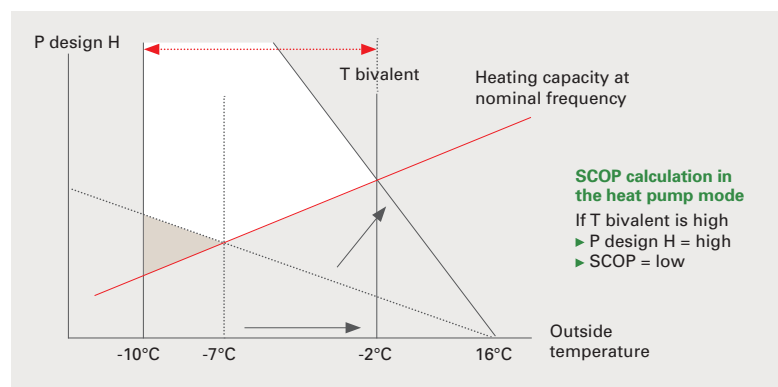
Moderate (Strasbourg)			
Partial load	Temperature conditions		
	Outdoors	WB	Indoors
-	DB		DB
88%	-7°C	-8°C	20°C
54%	2°C	1°C	20°C
35%	7°C	6°C	20°C
15%	12°C	11°C	20°C

Cold (Helsinki)			
Partial load	Temperature conditions		
	Outdoors	WB	Indoors
-	DB		DB
61%	-7°C	-8°C	20°C
37%	2°C	1°C	20°C
24%	7°C	6°C	20°C
11%	12°C	11°C	20°C

## SEER/SCOP

Air conditioning systems were previously assessed using the energy-efficiency rating (EER), which evaluated efficiency in cooling mode, and the coefficient of performance (COP), which defined the efficiency, or the ratio of consumed and output power, in heating mode. Under this system, assessments were not truly reflective of performance as they were based on a single measurement point, which led to manufacturers optimising products accordingly in order to achieve higher efficiency ratings. SEER and SCOP address this problem by including seasonal variation in the ratings via use of realistic measurement points. For cooling mode, measurements at outside temperatures of 20, 25, 30 and 35°C are incorporated and weighted in accordance with climate data for Strasbourg, which is used as a single reference point for the whole EU. For instance, for partial-load operation, which represents more than 90% of operation, there is a correspondingly high weighting for the efficiency classification. For heating mode, a comprehensive temperature profile for the whole EU was not possible, so the EU has been divided into three climate zones, north, central and south, and load profiles created. The same measurement points, at outside temperatures of 12, 7, 2 and -7°C, are used for all three zones.

### ■ SCOP Calculation



### Technical Terms with Respect to the SCOP

**P design H:** Corresponds to a heating load of 100%. The value depends on the selected bivalence point.

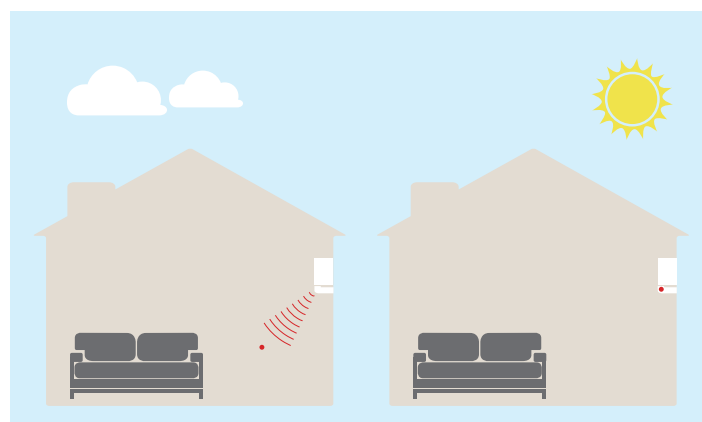
**T design:** Outside temperature which determines the P design H point. The latter is determined from the area conditions.

**T bivalent:** Corresponds to the lowest temperature at which full heating performance can be achieved with the heat pump (without additional heating). This point can be freely selected within the prescribed temperature ranges (T design - T bivalent).

## SOUND PRESSURE LEVEL

Consumers will also receive more information on the noise levels emitted by split-system air conditioners to help them make their purchasing decision. Specifically, the sound power level of indoor and outdoor units is to be indicated in decibels as an objective parameter. Knowing the sound power makes it possible to calculate sound emissions while considering distance and radiation characteristics, which is beneficial because it allows the noise levels of different air conditioning systems to be compared regardless of the usage location and how the sound pressure is measured. This is an improvement on sound pressure values which are usually measured at an approximate distance of 1m where all modern split-system air conditioning systems tend to be very quiet at an average of 21 decibels.

### ■ Sound Pressure vs Sound Power Level



#### Sound pressure level dB(A)

The sound pressure level is a sound field parameter which indicates the perceived operating noise of an indoor unit within a certain distance.

#### Sound power level dB(A)

The sound power is an acoustic parameter which describes the source strength of a sound generator and is thus independent of the distance to the receiver location.



# INVERTER TECHNOLOGIES

Mitsubishi Electric inverters ensure superior performance including the optimum control of operation frequency. As a result, optimum power is applied in all heating/cooling ranges and maximum comfort is achieved while consuming minimal energy. Fast, comfortable operation and amazingly low running cost — That's the Mitsubishi Electric promise.

## INVERTERS — HOW THEY WORK

Inverters electronically control the electrical voltage, current and frequency of electrical devices such as the compressor motor in an air conditioner. They receive information from sensors monitoring operating conditions, and adjust the revolution speed of the compressor, which directly regulates air conditioner output. Optimum control of operation frequency results in eliminating the consumption of excessive electricity and providing the most comfortable room environment.

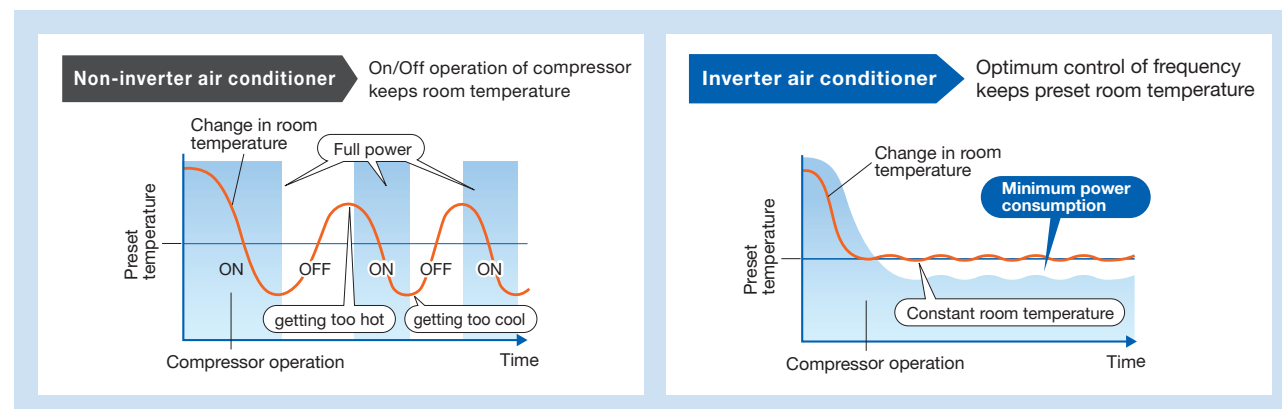
## ECONOMIC OPERATION

Impressively low operating cost is a key advantage of inverter air conditioners. We've combined advanced inverter technologies with cutting-edge electronics and mechanical technologies to achieve a synergistic effect that enables improvements in heating/cooling performance efficiency. Better performance and lower energy consumption are the result.

## TRUE COMFORT

Below is a simple comparison of air conditioner operation control with and without an inverter.

### ■ Inverter operation comparison



The compressors of air conditioners without an inverter start and stop repeatedly in order to maintain the preset room temperature. This repetitive on/off operation uses excessive electricity and compromises room comfort. The compressors of air conditioners equipped with an inverter run continuously; the inverter quickly optimizing the operating frequency according to changes in room temperature. This ensures energy-efficient operation and a more comfortable room.

### Point 1 Quick & Powerful

Increasing the compressor motor speed by controlling the operation frequency ensures powerful output at start-up, brings the room temperature to the comfort zone faster than units not equipped with an inverter. Hot rooms are cooled, and cold rooms are heated faster and more efficiently.

### Point 2 Room Temperature Maintained

The compressor motor operating frequency and the change of room temperature are monitored to calculate the most efficient waveform to maintain the room temperature in the comfort zone. This eliminates the large temperature swings common with non-inverter systems, and guarantees a pleasant, comfortable environment.

## KEY TECHNOLOGIES

### Our Rotary Compressor

Our rotary compressors use our original "Poki-Poki Motor" and "Heat Caulking Fixing Method" to realise downsizing and higher efficiency, and are designed to match various usage scenes in residential to commercial applications. Additionally, development of an innovative production method known as "Divisible Middle Plate" realises further size/weight reductions and increased capacity while also answering energy-efficiency needs.

### Our Scroll Compressor

Our scroll compressors are equipped with an advanced frame compliance mechanism that allows self-adjustment of the position of the orbiting scroll according to pressure load and the accuracy of the fixed scroll position. This minimises gas leakage in the scroll compression chamber, maintains cooling capacity and reduces power loss.

## MORE ADVANTAGES WITH MITSUBISHI ELECTRIC



### Joint Lap DC Motor

Mitsubishi Electric has developed a unique motor, called the "Poki-Poki Motor" in Japan, which is manufactured using a joint lapping technique. This innovative motor operates based on a high-density, high-magnetic force, leading to extremely high efficiency and reliability.



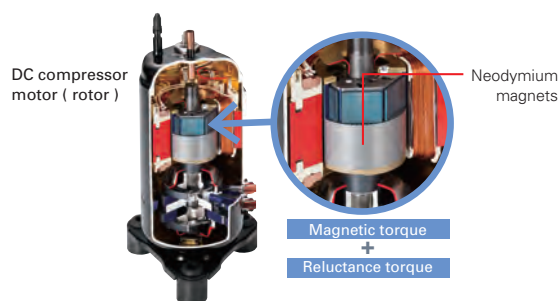
### Magnetic Flux Vector Sine Wave Drive

This drive device is actually a microprocessor that converts the compressor motor's electrical current waveform from a conventional waveform to a sine wave (180°conductance) to achieve higher efficiency by raising the motor winding utilisation ratio and reducing energy loss.



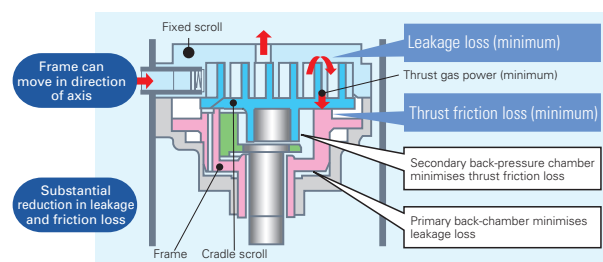
### Reluctance DC Rotary Compressor

Powerful neodymium magnets are used in the rotor of the reluctance DC motor. More efficient operation is realised by strong magnetic and reluctance torques produced by the magnets.



### Highly Efficient DC Scroll Compressor

Higher efficiency has been achieved by adding a frame compliance mechanism to the DC scroll compressor. The mechanism allows movement in the axial direction of the frame supporting the cradle scroll, thereby greatly reducing leakage and friction loss, and ensuring extremely high efficiency at all speeds.



### Heat Caulking Fixing Method

To fix internal parts in place, a "Heat Caulking Fixing Method" is used, replacing the former arc spot welding method. Distortion of internal parts is reduced, realising higher efficiency.



### DC Fan Motor

A highly efficient DC motor drives the fan of the outdoor unit. Efficiency is much higher than an equivalent AC motor.

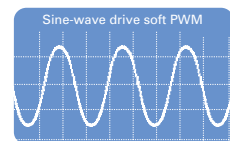


### Vector-Wave Eco Inverter

This inverter monitors the varying compressor motor frequency and creates the most efficient waveform for the motor speed. As the result, operating efficiency in all speed ranges is improved, less power is used and annual electricity cost is reduced.

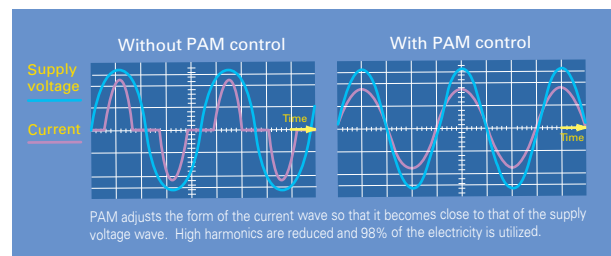
#### Smooth wave pattern

Inverter size has been reduced using insert-molding, where the circuit pattern is molded into the synthetic resin. To ensure quiet operation, soft PWM control is used to prevent the metallic whine associated with conventional inverters.



### PAM (Pulse Amplitude Modulation)

PAM is a technology that controls the current waveform so that it resembles the supply voltage wave, thereby reducing loss and realising more efficient use of electricity. Using PAM control, 98% of the input power supply is used effectively.



#### Merits of PAM Control

**Significant energy savings**  
Remarkable reduction in power loss saves electricity

**Power increased**  
Efficient voltage increase realises increased power

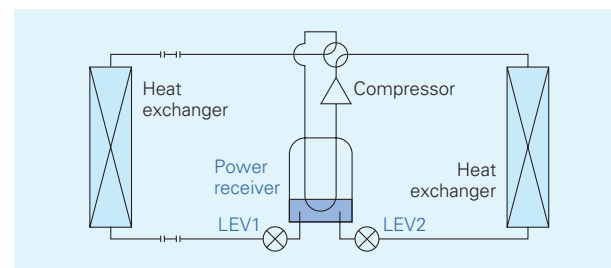
**Limited energy savings**  
Electricity is wasted

**Limited power**  
Insufficient power when needed



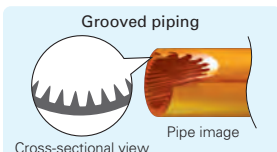
### Power Receiver and Twin LEV Control

Mitsubishi Electric has developed a power receiver and twin linear expansion valves (LEVs) circuit that optimise compressor performance. This technology ensures optimum control in response to operating waveform and outdoor temperature. Operating efficiency has been enhanced by tailoring the system to the characteristics of R410A refrigerant.



### Grooved Piping

High-performance grooved piping is used in heat exchangers to increase the heat exchange area.

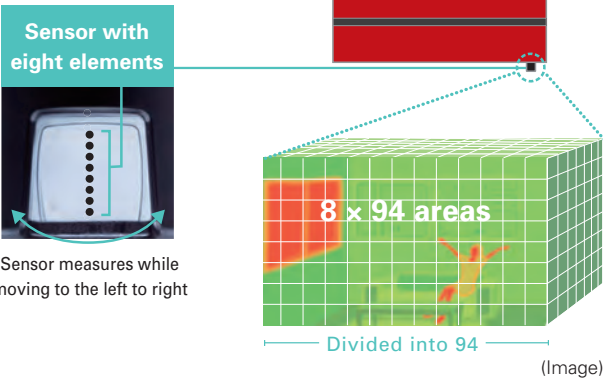


# COMFORT

## 3D i-see Sensor

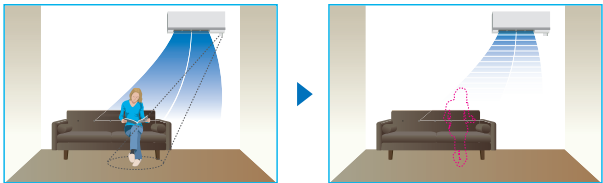
### 3D i-see Sensor for M SERIES

The LN Series and FH Series are equipped with the 3D i-see Sensor, an infrared-ray sensor that measures the temperature at distant positions. While moving to the left and right, eight vertically arranged sensor elements analyze the room temperature in three dimensions. This detailed analysis makes it possible to judge where people are in the room, thus allowing creation of features such as “Indirect airflow,” to avoid airflow hitting people directly, and “direct airflow” to deliver airflow to where people are.



#### No occupancy energy-saving mode

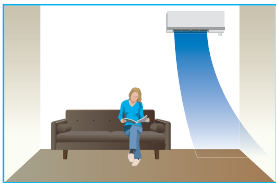
The sensors detect whether there are people in the room. When no-one is in the room, the unit automatically switches to energy-saving mode.



The “3D i-see Sensor” detects people’s absence and the power consumption is automatically reduced approximately 10% after 10 minutes and 20% after 60 minutes.

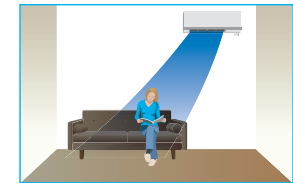
#### Indirect Airflow

The indirect airflow setting can be used when the flow of air feels too strong or direct. For example, it can be used during cooling to avert airflow and prevent body temperature from becoming excessively cooled.



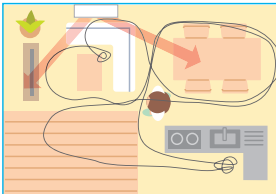
#### Direct Airflow

This setting can be used to directly target airflow at people such as for immediate comfort when coming indoors on a hot (cold) day.



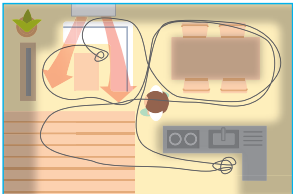
#### Even Airflow \*LN Series only

Normal swing mode



The airflow is distributed equally throughout the room, even to spaces where there is no human movement.

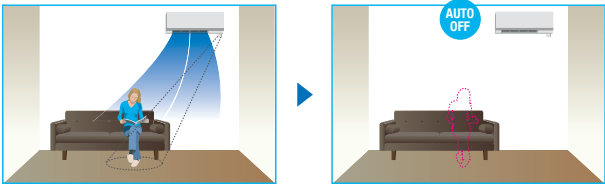
Even airflow mode



The 3D i-see sensor memorizes human movement and furniture positions, and efficiently distributes airflow.

#### No occupancy Auto-OFF mode \*LN Series only

The sensors detect whether or not there are people in the room. When there is no one in the room, the unit turns off automatically.



### 3D i-see Sensor for S & P SERIES

#### Detects number of people

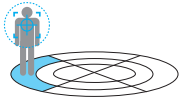
The 3D i-see Sensor detects the number of people in the room and adjusts the power accordingly. This makes automatic power-saving operation possible in places where the number of people changes frequently. Additionally, when the area is continuously unoccupied, the system switches to a more enhanced power-saving mode. Depending on the setting, it can also stop the operation.



Detects number of people



Detects people’s position

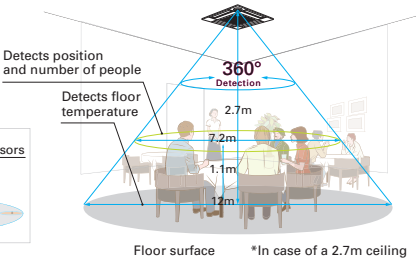
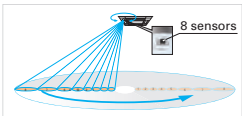


#### Detects people’s position

Once a person is detected, the angle of the vane is automatically adjusted. Each vane can be independently set to “Direct Airflow” or “Indirect Airflow” according to taste.

#### Highly accurate people detection

A total of eight sensors rotate a full 360° in 3-minute intervals. In addition to detecting human body temperature, our original algorithm also detects people’s positions and the number of people.





Detects number of people

Room occupancy energy-saving mode

The 3D i-see Sensor detects the number of people in the room. It then calculates the occupancy rate based on the maximum number of people in the room up to that point in time in order to save air-conditioning power. When the occupancy rate is approximately 30%, air-conditioning power equivalent to 1°C during both cooling and heating operation is saved. The temperature is controlled according to the number of people.

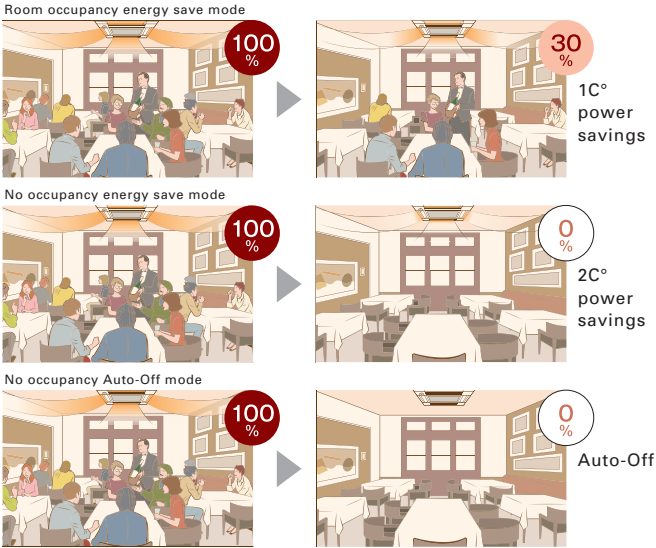
No occupancy energy-saving mode

When 3D i-see Sensor detects that no one is the room, the system is switched to a pre-set power-saving mode. If the room remains unoccupied for more than 60min, air-conditioning power equivalent to 2°C during both cooling and heating operation is saved. This contributes to preventing waste in terms of heating and cooling.

No occupancy Auto-OFF mode\*

When the room remains unoccupied for a pre-set period of time, the air conditioner turns off automatically, thereby providing even greater power savings. The time until operation is stopped can be set in intervals of 10min, ranging from 60 to 180 min.

\* When MA Remote Controller is used to control multiple refrigerant systems, "No occupancy Auto-OFF mode" cannot be used.

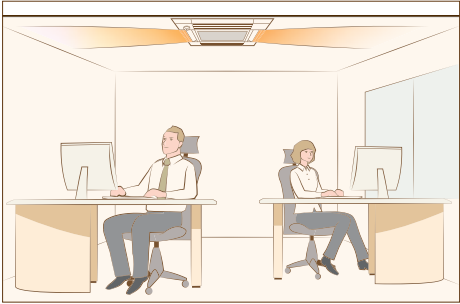


\*PAR-40MAA is required for each setting

Detects people's position

Direct/Indirect settings\*

The horizontal airflow spreads across the ceiling. When set to "Indirect Airflow" uncomfortable drafty-feeling is eliminated completely!



\*PAR-40MAA or PAR-SL100A-E is required for each setting.

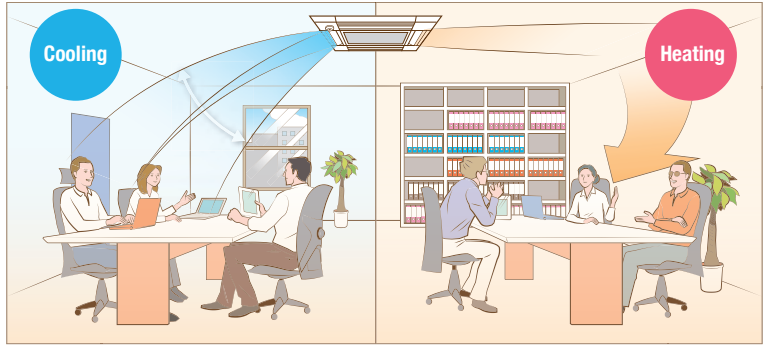
Seasonal airflow\*

When cooling

Saves energy while keeping a comfortable effective temperature by automatically switching between ventilation and cooling. When a pre-set temperature is reached, the air conditioning unit switches to swing fan operation to maintain the effective temperature. This clever function contributes to keeping a comfortable coolness.

When heating

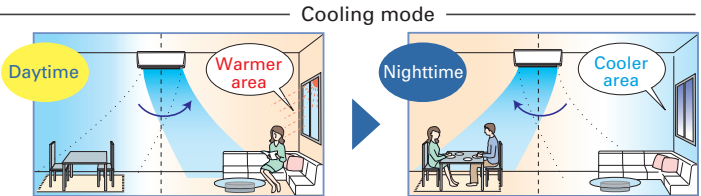
The air conditioning unit automatically switches between circulator and heating. Wasted heat that accumulates near the ceiling is reused via circulation. When a pre-set temperature is reached the air conditioner switches from heating to circulator and blows air in the horizontal direction. It pushes down the warm air that has gathered near the ceiling to people's height, thereby providing smart heating.



\*PAR-40MAA is required for each setting.

AREA Area Temperature Monitor

The "3D i-see Sensor" monitors the whole room in sections and directs the airflow to areas of the room where the temperature does not match the temperature setting. (When cooling the room, if the middle of the room is detected to be hotter, more airflow is directed towards it.) This eliminates unnecessary heating /cooling and contributes to lower electricity costs.





# COMFORT

## ENERGY-SAVING

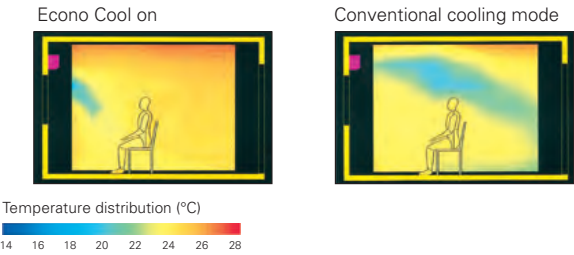
### Econo Cool Energy-Saving Feature

“Econo Cool” is an intelligent temperature control feature that adjusts the amount of air directed towards the body based on the air-outlet temperature. The setting temperature can be raised by as much as 2°C without any loss in comfort, thereby realising a 20% gain in energy efficiency. *(Function only available during manual cooling operation.)*

	Conventional	Econo Cool
Ambient temperature	35°C	35°C
Set temperature	25°C	27°C
Perceived temperature	30°C	29.3°C

#### Econo Cool Mode

A comfortable room environment is maintained even when setting the temperature 2°C higher than the conventional cooling mode.



### Demand Function (Onsite Adjustment)

The demand function can be activated when the unit is equipped with a commercially available timer or an On/Off switch is added to the CNDM connector (option) on the control board of the outdoor unit. Energy consumption can be reduced up to 100% of the normal consumption according to the signal input from outside.

[Example: Power Inverter Series]

Limit energy consumption by changing the settings of SW7-1, SW2 and SW3 on the control board of the outdoor unit. The following settings are possible.

SW7-1	SW2	SW3	Energy consumption
ON	OFF	OFF	100%
	ON	OFF	75%
	ON	ON	50%
	OFF	ON	0% (Stop)

\*PUHZ outdoor only

## AIR QUALITY

### Plasma Quad Plus

Plasma Quad Plus is a plasma-based filter system similar to Plasma Quad, but in addition to bacteria, viruses, allergens, and dust, it can also filter out microparticles such as PM2.5.

### Plasma Quad

Plasma Quad attacks bacteria and viruses from inside the unit using a strong curtain-like electrical field and discharge of electric current across the whole inlet-air opening of the unit.

### Dual Barrier Coating

A two-barrier coating which prevents hydrophobic and hydrophilic dirt from sticking to the inner surface and inner parts of the indoor unit.

### Fresh-air Intake

Indoor air quality is enhanced by the direct intake of fresh exterior air.

### High-efficiency Filter

This high-performance filter has a much finer mesh compared to standard filters, and is capable of capturing minute particulates floating in the air that were not previously caught.

### Air Purifying Filter

The filter has a large capture area and deodourise the circulating air.

### Oil Mist Filter

The oil mist filter prevents oil mist from penetrating into the inner part of the air conditioner.

### Long-life Filter

A special process for the entrapment surface improves the filtering effect, making the maintenance cycle longer than that of units equipped with conventional filters.

### Filter Check Signal

Air conditioner operating time is monitored, and the user is notified when filter maintenance is necessary.

### Silver-ionized Air Purifier Filter

Captures the bacteria, pollen and other allergens in the air and neutralises them.

## AIR DISTRIBUTION



### Double Vane

Double vane separates the airflow in the different directions to deliver airflow not only across a wide area of the room, but also simultaneously to two people in different locations.



### Horizontal Vane

The air outlet vane swings up and down so that the airflow is spread evenly throughout the room.



### Vertical Vane

The air outlet fin swings from side to side so that the airflow reaches every part of the room.



### High Ceiling Mode

In the case of rooms with high ceilings, the outlet-air volume can be increased to ensure that air is circulated all the way to the floor.



### Low Ceiling Mode

If the room has a low ceiling, the airflow volume can be reduced for less draft.



### Auto Fan Speed Mode

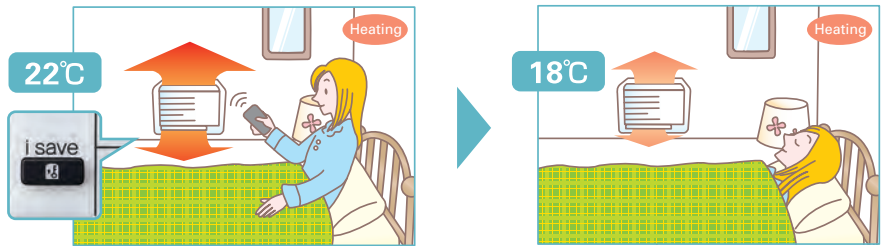
The airflow speed mode adjusts the fan speed of the indoor unit automatically according to the present room conditions.

# CONVENIENCE

## CONVENIENCE

### "i save" Mode

"i save" is a simplified setting function that recalls the preferred (preset) temperature by pressing a single button on the remote controller. Press the same button twice in repetition to immediately return to the previous temperature setting. Using this function contributes to comfortable waste-free operation, realising the most suitable air conditioning settings and saving on power consumption when, for example, leaving the room or going to bed.



\* Temperature can be preset to 10°C when heating in the "i-save" mode.

### Auto Changeover

The air conditioner automatically switches between heating and cooling modes to maintain the desired temperature.

### Auto Restart

Especially useful at the time of power outages, the unit turns back on automatically when power is restored.

### Low-temperature Cooling

Intelligent fan speed control in the outdoor unit ensures optimum performance even when the outside temperature is low.

### 10°C Heating

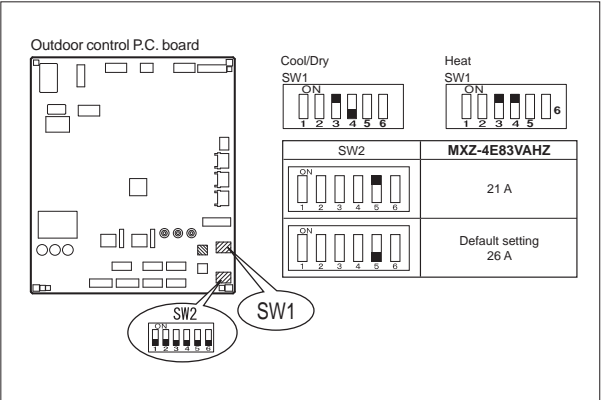
During heating operation, the temperature can be set in 1°C increments down to 10°C.

### Ampere Limit Adjustment

Dip switch settings can be used to adjust the maximum electrical current for operation. This function is highly recommended for managing energy costs.

\*Maximum capacity is lowered with the use of this function.

### ■ Dip Switch Setting (Board for MXZ-5E102)



### Operation Lock (Indoor unit)

To accommodate specific-use applications, cooling or heating operation can be specified using the wireless remote controller. A convenient option when a system needs to be configured for exclusive cooling or heating service.

### Operation Lock (Outdoor unit)

To accommodate specific-use applications, cooling or heating operation can be specified when setting the control board of the outdoor unit. A convenient option when a system needs to be configured for exclusive cooling or heating service.

## Night Mode

When Night Mode is activated using the wireless remote controller, it will switch to the settings described below.

- The brightness of the operation indicator lamp will become dimmer.
- The beeping sound will be disabled.
- The outdoor operating noise will drop to 3dB lower than the rated specification operating noise.

\*The cooling/heating capacity may drop.

## Low-noise Operation (Outdoor Unit)

System operation can be adjusted to prioritise less noise from the outdoor unit over air conditioning performance.

## On/Off Operation Timer

Use the remote controller to set the times of turning the air conditioner On/Off.

## Built-in Weekly Timer Function

Easily set desired temperatures and operation ON/OFF times to match lifestyle patterns. Reduce wasted energy consumption by using the timer to prevent forgetting to turn off the unit and eliminate temperature setting adjustments.

### ■ Example Operation Pattern (Winter/Heating mode)

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
6:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
8:00	Automatically changes to high-power operation at wake-up time						
10:00	OFF	OFF	OFF	OFF	OFF	ON 18°C	ON 18°C
12:00	Automatically turned off during work hours					Midday is warmer, so the temperature is set lower	
14:00							
16:00							
18:00	ON 22°C	ON 22°C	ON 22°C	ON 22°C	ON 22°C	ON 22°C	ON 22°C
20:00	Automatically turns on, synchronized with arrival at home					Automatically raises temperature setting to match time when outside-air temperature is low	
22:00							
(during sleeping hours)	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C
	Automatically lowers temperature at bedtime for energy-saving operation at night						

### Settings

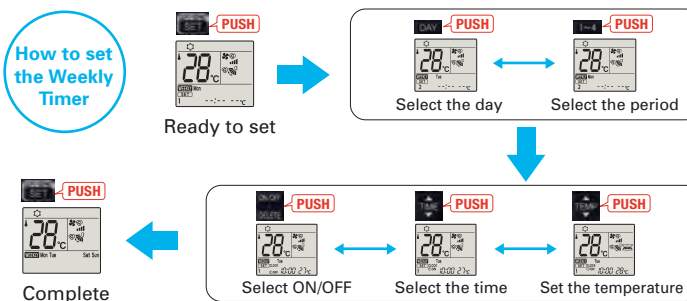
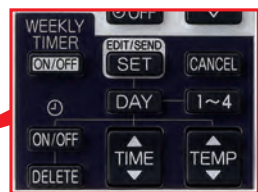
**Pattern Settings:** Input up to four settings for each day

**Settings:** •Start/Stop operation •Temperature setting \*The operation mode cannot be set.

### ■ Easy set-up using dedicated buttons



The remote controller is equipped with buttons that are used exclusively for setting the Weekly Timer. Setting operation patterns is easy and quick.



- Start by pushing the "SET" button and follow the instructions to set the desired patterns. Once all of the desired patterns are input, point the top end of the remote controller at the indoor unit and push the "SET" button one more time. (Push the "SET" button only after inputting all of the desired patterns into the remote controller memory. Pushing the "CANCEL" button will end the set-up process without sending the operation patterns to the indoor unit).
- It takes a few seconds to transmit the Weekly Timer operation patterns to the indoor unit. Please continue to point the remote controller at the indoor unit until all data has been sent.

# INSTALLATION & MAINTENANCE

## INSTALLATION

### Cleaning-free Pipe Reuse

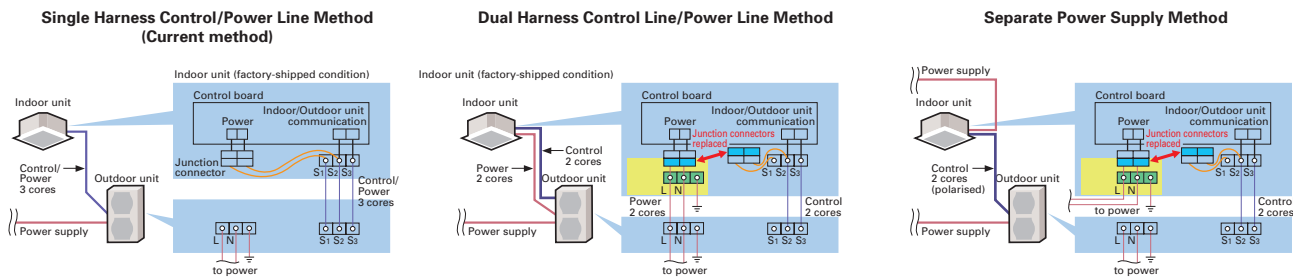
It is possible to reuse the same piping. It allows cleaning-free renewal of air conditioning systems that use R22 or R410 refrigerant.

### Reuse of Existing Wiring

Wiring recycling problem solved! Compatible with other wiring connection methods\*

The wiring method has been improved, making it possible to use methods different from that utilized for control and power supply. Units are compatible with the dual harness control line/power line method and the separate power supply method. Using a power supply terminal kit, wire can be efficiently reused at the time of system renewal regardless of the method the existing system uses.

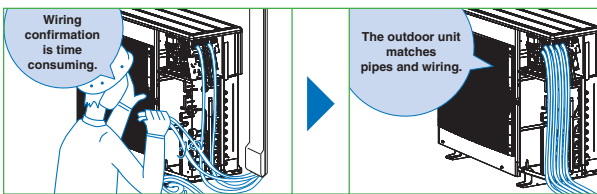
\* Optional. Usage may be limited due to wiring type diameter.



### Wiring/Piping Correction Function\*

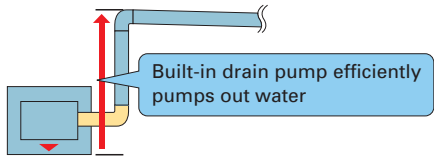
The push of a single button is all that is required to confirm that piping and wiring are properly connected. Corrections are made automatically if a wiring error is detected, eliminating the need for complicated wiring confirmation work when expanding the number of rooms served.

\* This function cannot be used when the outdoor temperature is below 0°C. The correction process requires 10–20 minutes, and only works when the unit is set to the Cooling mode.



### Drain Pump

A built-in drain pump enables drain piping to be raised.



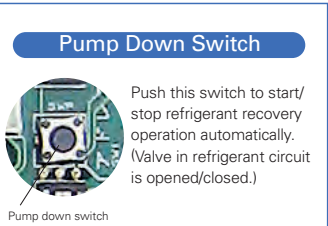
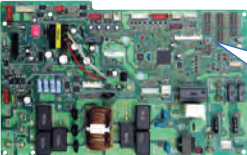
### Flare Connection

Flare connection to cooling pipe work is possible.

### Pump Down Switch

Enables smooth and easy recovery of refrigerant. Simply press the "Pump Down" switch before moving or changing the unit.

Outdoor unit control circuit board



## MAINTENANCE



### Self-Diagnostic Function (Check Code Display)

Check codes are displayed on the remote controller or the operation indicator to inform the user of malfunctions detected.



### Failure Recall Function

Operation failures are recorded, allowing confirmation when needed.



# SYSTEM CONTROL

## SYSTEM CONTROL

### PAR-40MAA/PAC-YT52CRA/PAC-CT01MAA

Units are compatible for use with the PAR-40MAA, PAC-YT52CRA or PAC-CT01MAA remote controller, which has a variety of management functions.

### System Group Control

The same remote controller is capable of controlling the operational status of up to 16 refrigerant systems.

### M-NET Connection

Units can be connected to MELANS system controllers (M-NET controllers) such as the AG-150A.

### MELCloud (Wi-Fi interface)

#### MELCloud for fast, easy remote control and monitoring

MELCloud is a Cloud-based solution for controlling air-conditioner either locally or remotely by computer, tablet or smartphone via the Internet. Setting up and remotely operating via MELCloud is simple and straight forward. All you need is wireless computer connectivity in your home or the building where the air-conditioner is installed and an Internet connection on your mobile or fixed terminal. To set up the system, the router and the Wi-Fi interface must be paired, and this is done simply and quickly using the WPS button found on all mainstream routers. You can control and check air-conditioner via MELCloud from virtually anywhere an Internet connection is available. That means, thanks to MELCloud, you can use much more easily and conveniently.

#### Key control and monitoring features

- 1 Turn system on/off
- 2 See status of operating & adjust set point
- 3 Live weather feed from your location  
Schedule timer - Set 7 day weekly schedule  
Error status
- 4 Energy Consumption Monitoring

\*MSZ-LN, AP Series are available

NEW



MELCloud uses the MAC-567IF-E interface



**MELCloud™**

Connecting the Wi-Fi interface

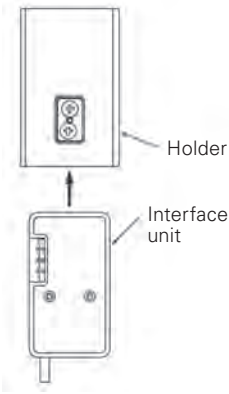
The new Wi-Fi interface MAC-567IF-E can be mounted on the wall or on the outer side of the indoor unit. For LN Series, there is a built-in Wi-Fi interface inside the indoor unit.

When mounting on the wall

The interface can be mounted simply by affixing the holder to the wall on either side of the unit and inserting the interface unit into the holder.

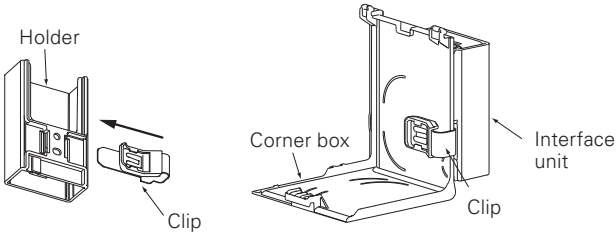


\*When mounting on the right side of the unit



When mounting on the outer side of the unit

The interface can be mounted on the right side, left side, bottom right, or bottom left of the indoor unit. After inserting the clip into the holder, slip the clip over the edge of the corner box.



Right side



Bottom right



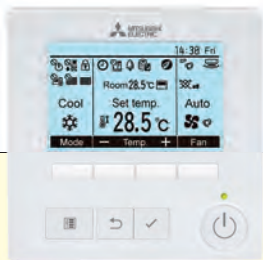
Left side



Bottom left

# CONTROL TECHNOLOGIES

## User-friendly Deluxe Remote Controller with Excellent Operability and Visibility



PAR-40MAA

### Easy To Read & Easy To Use Inverted display screen

The screen background color can be set to black to suit the atmosphere of the installation location.



### Full Dot Liquid-crystal Display Adopted

Easier to read thanks to use of a full dot liquid-crystal display with backlight, and easier to use owing to adopting a menu format that has reduced the number of operating buttons.

#### Display Example [Operation Mode]

Full Dot LCD



### Multi-language Display

#### Multi-language

#### Control panel operation in fourteen different languages

Choose the desired language, among the following languages.

English	Spanish	Italian	Turkish
French	Greek	Portuguese	Swedish
German	Russian	Polish	Czech
Hangarian	Dutch		

### Temperature Control

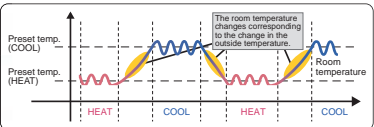
#### Dual Set Point

#### Two preset temperatures

When the operation mode is set to the Auto (Dual Set Point) mode, two preset temperatures (one each for cooling and heating) can be set. Depending on the room temperature, indoor unit will automatically operate in either the COOL or HEAT mode and keep the room temperature within the preset range.



#### Operation pattern during Auto (Dual Set Point) mode



\*Please refer to the function list on pages 188-190 for the combination of the available units.

### Energy-efficient Control Operation Control Functions

#### Energy-saving Schedule

#### Precise control of power consumption

The amount of power consumed in each time period is managed so that the demand value is not exceeded. The demand control function can be set to start and finish in 5-minute units. Additionally, the level can be adjusted to 0, 50, 60, 70, 80 or 90% of maximum capacity, and up to 4 patterns can be set per day. Air-conditioning operation is automatically controlled to ensure that electricity in excess of the contracted volume is not consumed.

#### Setting pattern example

Start time	Finish time	Capacity savings
8:15	→ 12:00	80%
12:00	→ 13:00	50%
13:00	→ 17:00	90%
17:00	→ 21:00	50%

### Auto-return

**Prevents wasteful operation by automatically returning to the preset temperature after specified operating time**

After adjusting the temperature for initial heating in winter or cooling on a hot summer day, it is easy to forget to return the temperature setting to its original value. The Auto-return function automatically resets the temperature back to the original setting after a specified period of time, thereby preventing overheating/overcooling. The Auto-return activation time can be set in 10-minute units, in a range between 30 and 120 minutes.

\*Auto-return cannot be used when Temperature Range Restrictions is in use.

### Auto-off Timer

**Turns heating/cooling off automatically after preset time elapses**

When using Auto-off Timer, even if one forgets to turn off the unit, operation stops automatically after the preset time elapses, thereby preventing wasteful operation. Auto-off Timer can be set in 10-minute units, in a range between 30 minutes and 4 hours. Eliminates all anxiety about forgetting to turn off the unit.

Recommended for **Meeting room** **Changing room**

### Night Setback

**Keep desired room temperatures automatically**

This function monitors the room temperature and automatically activates the heating mode when the temperature drops below the preset minimal temperature setting. It has the same function for cooling, automatically activating the cooling mode when the temperature rises above the preset maximum temperature setting.

### Operation Lock

**Fixed temperature setting promotes energy savings**

In addition to operation start/stop, the operation mode, temperature setting and airflow direction can be locked. Unwanted adjustment of temperature settings is prevented and an appropriate temperature is constantly maintained, leading to energy savings. This feature is also useful in preventing erroneous operation or tampering.

Recommended for **Office** **School** **Public hall**  
**Hospital** **Computer server facility**

### Temperature Range Restriction

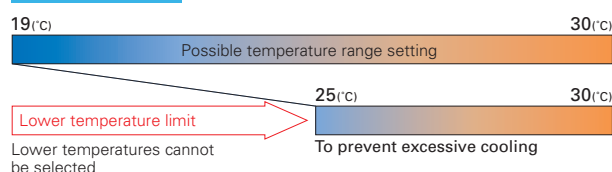
**Temperature Range Restriction prevents overheating/overcooling**

Using a temperature that is 1°C lower/higher for heating/cooling results in a 10% reduction in power consumption.\* Temperature Range Restriction limits the maximum and minimum temperature settings, contributing to the prevention of overheating/overcooling.

\*In-house calculations

### Cooling/Dry

(Setting example of minimum temp. in 25°C)



Recommended for **Office** **Restaurant**

### Weekly Timer

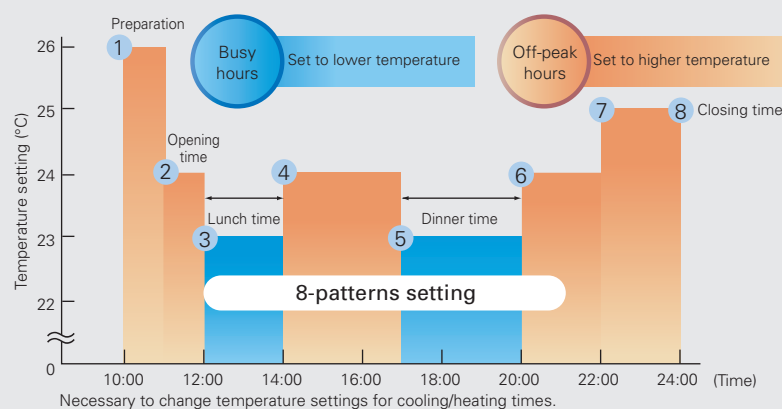
**Weekly Timer with Two Types of Settings**

Weekly schedule timer can save two different settings which can be easily switched according to different seasons.

In addition, it offers eight different pattern setting per day. (on, off and temperature setting)

\*Weekly Timer cannot be used when On/Off Timer is in use.

### Setting Example (restaurant in summer time)



# CONTROL TECHNOLOGIES

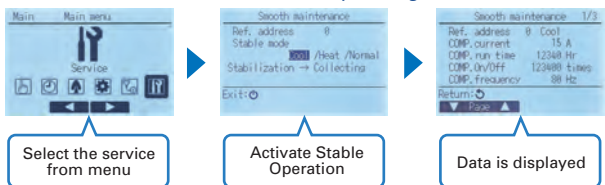
## Installation/Maintenance Support Functions

### Smooth Maintenance

Outdoor unit data accessed immediately, enabling fast maintenance (only PUZ/PUHZ type)

Using the Stable Operation Control (fixed frequency) of the Smooth Maintenance function, the operating status of the inverter can be checked easily via the screen on the remote controller.

#### ■ Smooth Maintenance Function Operating Procedure



#### Display information (11 items)

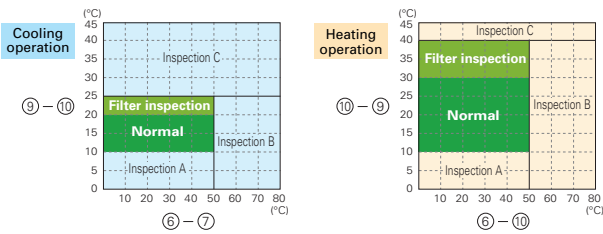
Compressor		⑥	OU TH4 temp. (°C)
①	COMP. current (A)	⑦	OU TH6 temp. (°C)
②	COMP. run time (Hr)	⑧	OU TH7 temp. (°C)
③	COMP. ON/OFF (times)	Indoor Unit	
④	COMP. frequency (Hz)	⑨	IU air temp. (°C)
Outdoor Unit		⑩	IU HEX temp. (°C)
⑤	Sub cool (°C)	⑪	IU filter operating time* (Hr)

\*IU filter operating time is the time elapsed since filter was reset.

#### Inspection Guidelines

The computed temperature difference is plotted as in the graph below and operating status is determined.

		Item
Cooling	Temp. difference	(⑥ OU TH4 temp.) - (⑦ OU TH6 temp.)
		(⑨ IU air temp.) - (⑩ IU HEX temp.)
Heating	Temp. difference	(⑥ OU TH4 temp.) - (⑩ IU HEX temp.)
		(⑩ IU HEX temp.) - (⑨ IU air temp.)



#### Result

Normal	Normal operating status.
Filter inspection	Filter may be blocked.*1
Inspection A	Capacity is reduced. Detailed inspection is necessary.
Inspection B	Refrigerant level is low.
Inspection C	Filter or indoor unit heat exchanger is blocked.

\*1: Due to indoor and outdoor temperatures, "Filter inspection" may be displayed even if the filter is not blocked.

\* The above graphs are based on trial data. Results may vary depending on installation/temperature conditions.

● Stable operation may not be possible under the following temperature conditions:

a) In cooling mode when the outdoor induction temperature is over 40°C or the indoor induction temperature is below 23°C.

b) In heating mode when the outdoor induction temperature is over 20°C or when the indoor induction temperature is over 25°C.

● If the above temperature conditions do not apply and stable operation is not achieved after 30 minutes has passed, please inspect the units.

● The operating status may change due to frost on the outdoor heat exchanger.

### Manual Vane Angle Setting (4-way ceiling cassette)

Direction of vertical airflow for each vane can be set

Setting the vertical airflow direction for each individual vane can be performed simply via illustrated display. Seasonal settings such as switching between cooling and heating are easily changed as well.

### Auto-descending Panel Operation

Easily raise/lower panels using the remote controller

Auto-descending panel operation is available as an option. Panels can be raise/lower using a button on the wired remote controller. Filter cleaning can be performed easily.

### Silent Mode

Three outdoor noise level setting

The outdoor noise level can be reduced on demand according to the surrounding environment. Select from three setting mode: standard mode (rated), silent mode and ultra-silent mode.

### Initial Password Setting

Password for initial settings

A password is required (default setting is "0000") for initial settings such as time and display language.

## Rotation\*, Back-up\* and 2nd Stage Cut-in Functions\* (PAR-40MAA)

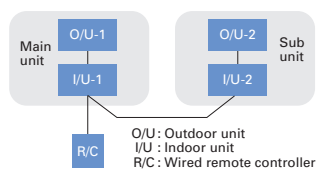
### (1) Rotation and Back-up Functions

#### Function Outline

- Main and sub units take turns operating according to a rotation interval setting.
- If one unit malfunctions, the other unit automatically begins operation (Back-up function)

\*PUZ/PUHZ only

#### System Image



### (2) 2nd Stage Cut-in Function

#### Function Outline

- Number of units operating is based on room temperature and predetermined settings.
- When room temperature rises above the desired setting, the standby unit starts (2-unit operation).
- When the room temperature falls 4°C below the predetermined setting, the standby unit stops (1-unit operation).

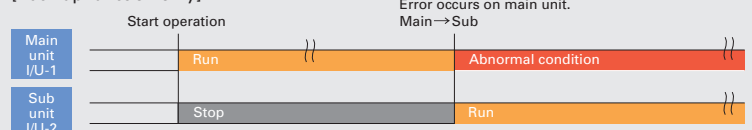
#### System Constraint

- This function is only available for rotation operation and when the back-up function is in cooling mode.

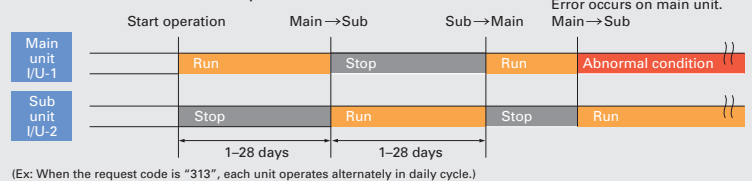
\*PUZ/PUHZ only

#### Operation Pattern

##### [Back-up function only]

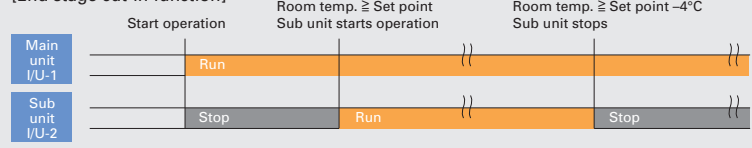


##### [Rotation function] & [Back-up function]



#### Operation Pattern

##### [2nd stage cut-in function]



## Simple MA Remote Controller PAC-YT52CRA

### Backlit LCD


Features a liquid-crystal display (LCD) with backlight for operation in dark conditions.

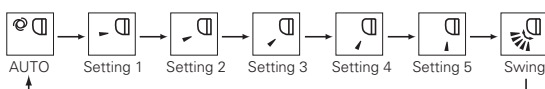
### Flat Back

The slim and flat-back shape makes installation easier without requiring a hole in the wall. Thickness is 14.5mm or less.


### Vane Angle Setting

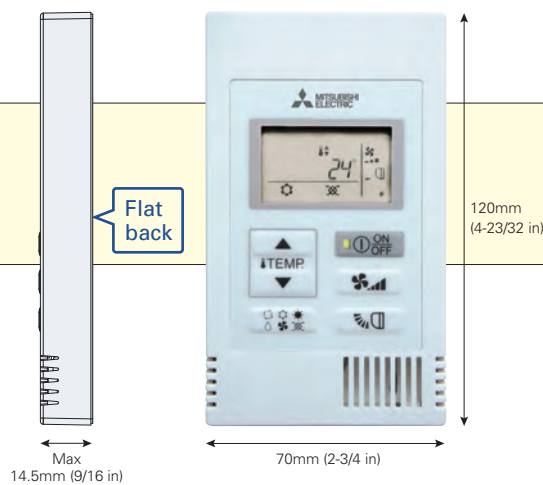
The vane button has been added to allow users to change the airflow direction (ceiling-cassette and wall-mounted units).

Pressing the  button will switch the vane direction.



\* The settable vane directions vary depending on the indoor unit model to be connected.

\* If the unit has no vane function, the vane direction cannot be set. In this case, the vane icon flashes when the  button is pressed.

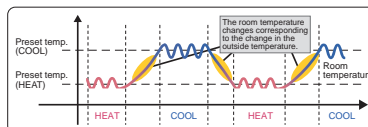


### Dual Set Point

#### Two preset temperatures

When the operation mode is set to the Auto (Dual Set Point) mode, two preset temperatures (one each for cooling and heating) can be set. Depending on the room temperature, indoor unit will automatically operate in either the COOL or HEAT mode and keep the room temperature within the preset range.

##### Operation pattern during Auto (Dual Set Point) mode



\*Please refer to the function list on pages 188-190 for the combination of the available units.



# CONTROL TECHNOLOGIES

**MAT Touch Remote Controller**  
**PAC-CT01MAA-SB**  
**PAR-CT01MAA-PB**



PAC-CT01MAA-SB



PAR-CT01MAA-PB

**User-friendly** Visible big size icons on the full color touch panel display.

**Full color touch panel display**

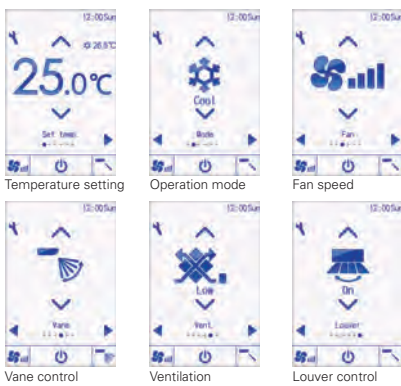


Touch Panel

3.5 inch/HVGA Full Color LCD



**Operation panels**



**Flexibility** Customized display, color on parameter and background, editable parameter, logo image on the initial display.

**Multiple color pattern**

180 color patterns can be selected for control parameters or background on the display.

**Control parameter customize**

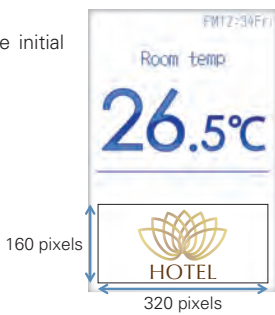
Users can customize the panel to display the selected parameters only.

- **Control parameter customize**  
Simple operation panel is liked by users, especially in hotels. It is available to display only ON/OFF, set temp., fan speed.



**Logo image customization**

Logo image can be displayed on the initial screen.



**Available in a wide variety of colors to suit the decor of any room.**



**Expandability** Smartphone / tablet App is available for setting, customize, and control.

**Bluetooth® low energy technology**

Remote controller can communicate with smartphone or tablet device via Bluetooth Low Energy (BLE). Operation & Setting App are available on the App store.



\*The Bluetooth® word mark is trademark of Bluetooth SIG, Inc., USA.  
\*Contact the sales company for information on "Bluetooth" function.



<App screen image>

User App      Setting App

**Convenient BLE transmission functions for installation contractors**

Initial setup for the remote controller can be easily performed using BLE transmission via a smartphone.

● Previous model

Previously, initial setup (selecting function parameters) was only available via the remote controller installed each room.

● New model

The initial setup (selecting function parameters) can now be performed in advance on a smartphone, with the settings transmitted to the remote controller by enabling BLE transmission upon entry to the room.



**Convenient BLE transmission functions for guests**

The remote controller has been further upgraded with hotels in mind, to allow smartphone connectivity and multilingual support.

**Smartphone connectivity**

For example, hotel guests can operate the air conditioner via their smartphones, without getting out of bed.

**Multilingual support**

The smartphone app can be displayed in the language that the guest's smartphone is set to.

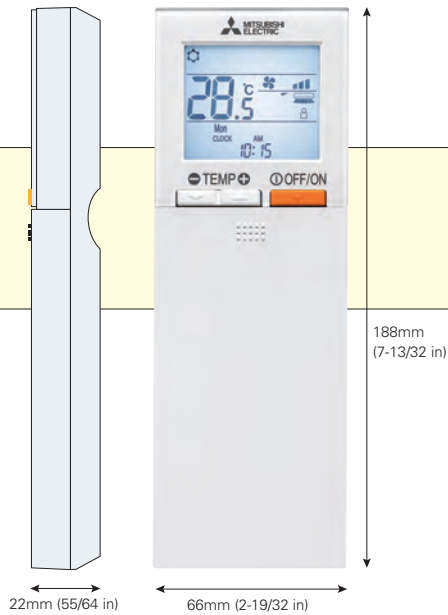


# CONTROL TECHNOLOGIES

## Wireless Remote Controller PAR-SL100A-E

### Weekly Timer

The Weekly Timer enables the setting of operation start and finish times and adjusting the temperature as standard features. Up to 4 patterns per day can be set, providing operation that matches the varying conditions of each period, such as the number of customers in the store.



■ Example Operation Pattern (Winter/Heating mode)

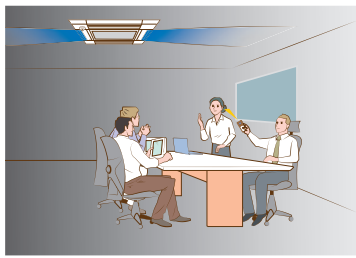
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
6:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
8:00	Automatically changes to high-power operation at wake-up time						
10:00	OFF	OFF	OFF	OFF	OFF	ON 18°C	ON 18°C
12:00	Automatically turned off during work hours						Midday is warmer, so the temperature is set lower
14:00							
16:00							
18:00	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C	ON 20°C
20:00	Automatically turns on, synchronized with arrival at home						Automatically raises temperature setting to match time when outside air temperature is low
22:00	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C	ON 18°C
(during sleeping hours)	Automatically lowers temperature at bedtime for energy-saving operation at night						

\*Weekly Timer cannot be used when On/Off Timer is in use.

\*Only for SLZ-KF25/35/50/60VA2, PLA-ZP/RP35/50/60/71/100/125/140EA

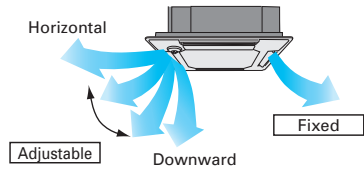
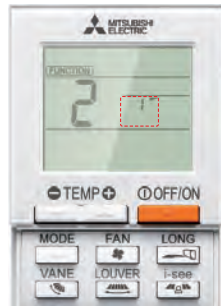
### Backlight

Backlight function incorporated, making screen easy to read in the dark. Even in dimly lit rooms, the screen can be seen clearly for trouble-free remote controller operation.



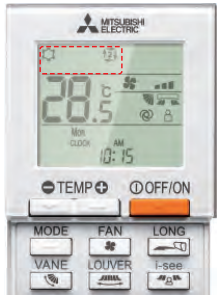
### Individual Vane Settings

The airflow directions of the four vanes can each be adjusted independently. Easily set the optimum airflow according to the room setting.

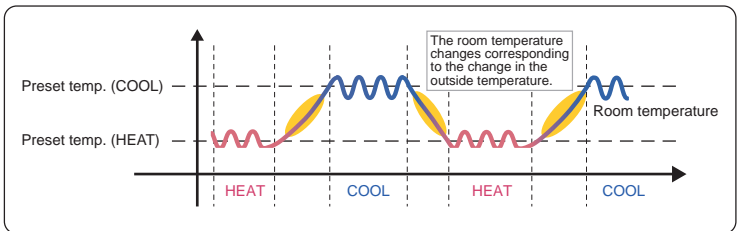


### Dual Set Point

When the operation mode is set to the Auto (Dual Set Point) mode, two preset temperatures (one each for cooling and heating) can be set. Depending on the room temperature, the indoor unit will automatically operate in either the COOL or HEAT mode and keep the room temperature within the preset range.



Operation pattern during Auto (Dual Set Point) mode



\* Only available for compatible models.

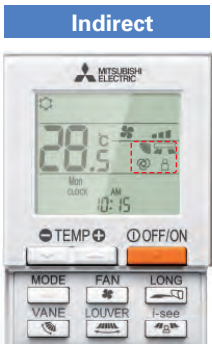
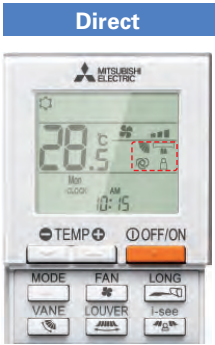
Battery Replacement Sign



Previous wireless remote controllers were not easy to read, understand or use sometimes because the battery was low. Beginning with the PAR-SL100A-E, a battery charge indicator that shows the charge status is included in the LCD so it can be seen when the battery is low and needs to be changed.

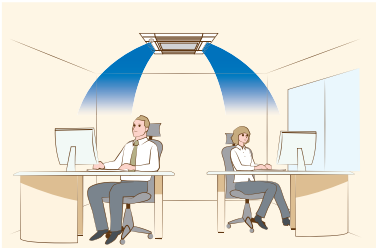
3D i-see Sensor (Direct/Indirect Airflow)

Pressing the i-see button enables direct or indirect setting of all vanes.

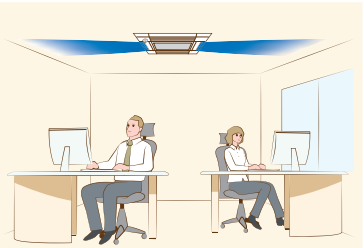


	Vane setting	
	Direct	Indirect
Cooling	horizontal → swing	keep horizontal
Heating	keep downward	downward → horizontal

Direct Airflow



Indirect Airflow



\*Only available for models equipped with 3D i-see Sensor.

Basic Functions


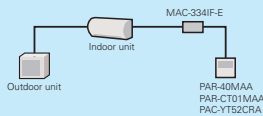
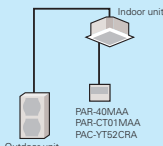

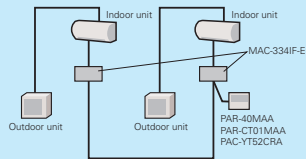
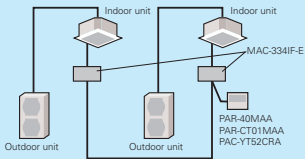
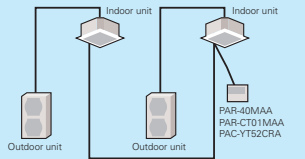

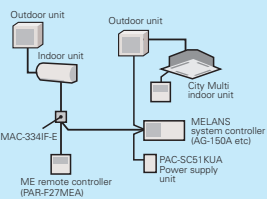
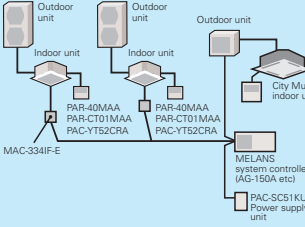
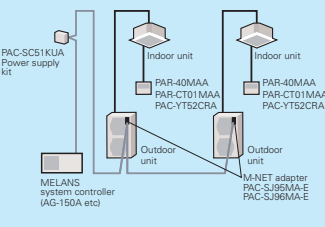
Functions	Button	Liquid crystal
OFF / ON	⏻ OFF/ON	
Preset temperature	⬅ TEMP ➡	88.5℃
Mode	MODE	Cool    Dry    Heat    Fan    Auto    Dual set point   *Dual Set Point function not operational first use.
Fan speed	FAN	4-Speed    Auto
Vane angle	VANE	5-step    Swing    Auto
3D i-see Sensor	i-see	Direct    Indirect
Send sign		
Battery replacement sign		
Function setting		FUNCTION
Test run		TEST
Self check		CHECK
Not available		N/A

\*This remote controller is only compatible with the following models: SLZ-M15/25/35/50/60FA, PLFY-P15/20/25/32/40/50VFM-E1, PLA-ZM/RP35/50/60/71/100/125/140EA, PLFY-P20/25/32/40/50/63/80/100/125VEM-E  
\*Functions available vary according to the model.

# SYSTEM CONTROL

Versatile system controls can be realised using optional parts, relay circuits, control panels, etc.

## MAJOR SYSTEM CONTROL

	System Examples		
Indoor Unit	M Series Indoor Unit	S Series & P Series Indoor Unit	P Series Indoor Unit
Outdoor Unit	M Series and MXZ Series Outdoor	S Series and MXZ Series Outdoor	P Series Outdoor
<div></div> <div>PAR-40MAA Control PAC-YT52CRA Control</div>			
Details	<ul style="list-style-type: none"><li>Wired remote controller can be connected to indoor unit</li></ul>	Standard equipment (for indoor units compatible with wired remote controllers)	
Major Optional Parts Required	<ul style="list-style-type: none"><li>MAC-334IF-E (Interface)</li><li>PAR-40MAA (Wired remote controller)</li><li>PAR-CT01MAA (Wired remote controller)</li><li>PAC-YT52CRA (Wired remote controller)</li></ul>	<ul style="list-style-type: none"><li>PAR-40MAA (Wired remote controller)</li><li>PAR-CT01MAA (Wired remote controller)</li><li>PAC-YT52CRA (Wired remote controller)</li></ul>	
<div></div> <div>System Group Control</div>			
Details	<ul style="list-style-type: none"><li>One remote controller can control plural air conditioners with the same settings simultaneously.</li><li>One remote controller can control up to 16 refrigerant systems. (When connected to a MXZ unit, MAC-334IF-E is counted as one system.)</li><li>Up to two remote controller can be connected.</li><li>PAR-SL100A cannot be used when connected through the MAC-334IF-E or when group control is used.</li></ul>		
Major Optional Parts Required	<ul style="list-style-type: none"><li>MAC-334IF-E (Interface)</li><li>PAR-40MAA (Wired remote controller)</li><li>PAR-CT01MAA (Wired remote controller)</li><li>PAC-YT52CRA (Wired remote controller)</li></ul>		<ul style="list-style-type: none"><li>PAR-40MAA (Wired remote controller)</li><li>PAR-CT01MAA (Wired remote controller)</li><li>PAC-YT52CRA (Wired remote controller)</li></ul>
<div></div> <div>M-NET Connections</div>			
Details	<ul style="list-style-type: none"><li>Group of air conditioners can be controlled by MELANS system controller (M-NET).</li></ul>		
Major Optional Parts Required	<ul style="list-style-type: none"><li>MAC-334IF-E (M-NET Interface)</li><li>MELANS System controller</li><li>PAC-SC51KUA (power supply unit)</li></ul>		<ul style="list-style-type: none"><li>PAC-SJ95MA-E or PAC-SJ96MA-E (M-NET converter)</li><li>MELANS System controller</li><li>PAC-SC51KUA (power supply unit)</li></ul>



## OTHERS

### For M Series Indoor Units (New A-control Models Only)

	System Examples	Connection Details	Control Details	Major Optional Parts Required
<b>1 Remote On/Off Operation</b> <ul style="list-style-type: none"> <li>Air conditioner can be started/stopped remotely. (1 and 2 can be used in combination)</li> </ul>		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	On/Off operation is possible from a remote location.	<ul style="list-style-type: none"> <li>MAC-334IF-E (Interface)</li> <li>Parts for circuit such as relay box, lead wire, etc. (to be purchased locally)</li> </ul>
<b>2 Remote Display of Operation Status</b> <ul style="list-style-type: none"> <li>The On/Off status of air conditioners can be confirmed remotely. (1 and 2 can be used in combination)</li> </ul>		Connect the interface to the air conditioner. Then connect the locally purchased remote controller to the terminal in the interface.	The operation status (On/Off) or error signals can be monitored from a remote location.	<ul style="list-style-type: none"> <li>MAC-334IF-E (Interface)</li> <li>Parts for circuit to be purchased locally (DC power source needed)</li> <li>External power source (12V DC) is required when using MAC-334IF-E.</li> </ul>

### For P Series and S Series Indoor Units

	System Examples		Details	Major Optional Parts Required
	Wired remote controller	Wireless remote controller		
<b>A 2-remote Controller Control</b> <p>With two remote controllers, control can be performed locally and remotely from two locations.</p>	<p>* Set "Main" and "Sub" remote controllers. (Example of 1 : 1 system)</p>	<p>* When using wired and wireless remote controllers (Example of Simultaneous Twin)</p>	<ul style="list-style-type: none"> <li>Up to two remote controllers can be connected to one group.</li> <li>Both wired and wireless remote controllers can be used in combination.</li> </ul>	<ul style="list-style-type: none"> <li>Wired Remote Controller PAR-40MAA PAC-YT52CRA (for PKA, PAC-SH29TC-E is required)</li> <li>Wireless Remote Controller PAR-SL97A-E / PAR-SL100A-E (only for SLZ)</li> <li>Wireless Remote Controller Kit for PCA PAR-SL94B-E</li> </ul>
<b>B Operation Control by Level Signal</b> <p>Air conditioner can be started/stopped remotely. In addition, On/Off operation by local remote controller can be prohibited/permitted.</p>	<p>(Example of 1 : 1 system x 2)</p>	<p>(Example of 1 : 1 system x 2)</p>	<ul style="list-style-type: none"> <li>Operation other than On/Off (e.g., adjustment of temperature, fan speed, and airflow) can be performed even when remote controller operation is prohibited.</li> <li>Timer control is possible with an external timer.</li> </ul>	<ul style="list-style-type: none"> <li>Adapter for remote On/Off PAC-SE55RA-E</li> <li>Relay box (to be purchased locally)</li> <li>Remote control panel (to be purchased locally)</li> </ul>
<b>C Operation Control by Pulse Signal</b>	<p>(Example of 1 : 1 system x 2)</p>	<p>(Example of 1 : 1 system x 2)</p>	<ul style="list-style-type: none"> <li>The pulse signal can be turned On/Off.</li> <li>Operation/emergency signal can be received at a remote location.</li> </ul>	<ul style="list-style-type: none"> <li>Connector cable for remote display PAC-SA88HA-E / PAC-725AD (10 pcs. x PAC-SA88HA-E)</li> <li>Relay box (to be purchased locally)</li> <li>Remote control panel (to be purchased locally)</li> </ul>
<b>D Remote Display of Operating Status</b> <p>Operating status can be displayed at a remote location.</p>	<p>(Example of 1 : 1 system)</p>	<p>(Example of Simultaneous Twin)</p>	<ul style="list-style-type: none"> <li>Operation/emergency signal can be received at a remote location (when channeled through the PAC-SF40RM-E → no-voltage signal, when channeled through the PAC-SA88HA-E → DC 12V signal).</li> </ul>	<ul style="list-style-type: none"> <li>Remote display panel (to be purchased locally)</li> <li>Connector cable for remote display PAC-SA88HA-E / PAC-725AD (10 pcs. x PAC-SA88HA-E)</li> <li>Relay box (to be purchased locally)</li> <li>Remote operation adapter PAC-SF40RM-E</li> <li>*Unable to use with wireless remote controller</li> </ul>
<b>E Timer Operation</b> <p>Allows On/Off operation with timer *For control by an external timer, refer to [B] Operation Control by Level Signal.</p>	<p>(Example of 1 : 1 system)</p>		<ul style="list-style-type: none"> <li><b>Weekly Timer:</b> On/Off and up to 8 pattern temperatures can be set for each calendar day. (Initial setting)</li> <li><b>On/Off Timer:</b> On/Off can be set once each within 72 hr in intervals of 5-minute units.</li> <li><b>Auto-off Timer:</b> Operation will be switched off after a certain time elapse. Set time can be changed from 30 min. to 4 hr. at 10 min. intervals.</li> <li>*Simple Timer and Auto-off Timer cannot be used at the same time.</li> </ul>	<p>Standard functions of PAR-40MAA / PAR-CT01MAA</p>

# FUNCTION LIST (1)

Category	Icon	M SERIES																									
		Combination	Indoor unit	MSZ-LN18/25/35/50/60VG(W)(V)(R)(B)						MSZ-AP15/20VF					MSZ-AP25/35/42/50VG						MSZ-FH25/35/50VE2						
			Outdoor unit	MUZ -LN	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D	MUZ -AP	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D	MUZ -FH	MXZ -2D	MXZ -3E	MXZ -4E	MXZ -5E	MXZ -6D	
Technology	DC Inverter		●	●	●	●		●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●		
	Joint Lap DC Motor		●	●	●	72/83VA	●	●	●	●	72/83VA	●		●	●	●	72/83VA	●	●	●	●	72/83VA	●	●			
	Reluctance DC Rotary Compressor				83	●	●			83	●	●					83	●	●			83	●	●			
	Heating Caulking (Compressor)		●	●	●	72/83VA	●		●	●	72/83VA	●		●	●	●	72/83VA	●	●	●	●	72/83VA	●				
	DC Fan Motor		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	PAM (Pulse Amplitude Modulation)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	Power Receiver and Twin LEV Control				●	72				●	72					●	72					●	72				
	Grooved Piping		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Functions	i-see Sensor		●	●	●	●	●	●												●	●	●	●	●	●		
	Felt Temperature Control (3D i-see Sensor)		●	●	●	●	●	●												●	●	●	●	●	●		
			●	●	●	●	●	●												●	●	●	●	●	●		
	Energy Saving		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
			●											●						●							
	Air Quality		●	●	●	●	●	●													●	●	●	●	●	●	
			Opt	Opt	Opt	Opt	Opt	Opt						Opt	Opt	Opt	Opt	Opt	Opt		●	●	●	●	●	●	
	Air Distribution		●	●	●	●	●	●													●	●	●	●	●	●	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			●	●	●	●	●	●													●	●	●	●	●	●	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Convenience		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			●	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●*1	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
		●	●*4	●*4	●*4	●*4	●*4																				
			2E		83	●	●	2E		83	●	●		2E		83	●	●		2E		83	●	●			
		●	●	●	●	●	●						●	●	●	●	●	●									
			●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●		
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
System Control	PAR-40MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	PAR-CT01MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	PAC-YT52CRA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	Centralised On/Off Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	System Group Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	M-NET Connection *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	Wi-Fi Interface		●	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		
	MXZ Connection			●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2		
Installation	Cleaning-free Pipe Reuse		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	Wiring/Piping Correction Function			●	●	●	●	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●	●		
	Drain Pump																										
	Flare Connection		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Maintenance	Self-Diagnosis Function (Check Code Display)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	Failure Recall Function		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

\*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.  
\*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on pages 111-112 for details.  
\*3 Please refer to "System Control" on pages 173-184 for details.  
\*4 When connected to MXZ outdoor units, the outdoor operating sound will not change.



M SERIES																															
	MSZ-EF18/22/25/35/42/50VG(W)(B)(S)						MSZ-SF15/20VA					MSZ-SF25/35/42/50VE3						MSZ-GF60/71VE2					MSZ-WN25/35VA	MSZ-DM25/35VA			MSZ-HJ25/35/50VA			MSZ-HJ60/71VA	
	MUZ-EF	MXZ-2D/F	MXZ-3E/F	MXZ-4E/F	MXZ-5E	MXZ-6D	MXZ-2D	MXZ-3E	MXZ-4E	MXZ-5E	MXZ-6D	MUZ-SF	MXZ-2D	MXZ-3E	MXZ-4E	MXZ-5E	MXZ-6D	MUZ-GF	MXZ-3E	MXZ-4E	MXZ-5E	MXZ-6D	MUZ-WN	MUZ-DM	MUZ-2DM	MXZ-3DM	MUZ-HJ	MXZ-2DM	MXZ-3DM	MUZ-HJ	
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
	●	●	●	72/83VA	●		●	●	72/83VA	●		●	●	●	72/83VA	●		●	●	72/83VA	●		●	●	●	●	●	●	●	●	●
				83	●	●			83	●	●				83	●	●			83	●	●									
	●	●	●	72/83VA	●		●	●	72/83VA	●		●	●	●	72/83VA	●			●	72/83VA	●		●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			●	72				●	72					●	72				●	72						●			●		
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●											●																			
	●	●	●	●	●	●						Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt									
	●	●	●	●	●	●						●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1	●*1	●	●*1	●*1	●*1	●*1									
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●	●	●	●	●	●		●	●	●	●	●		●	●	●	●			●	●		●	●		
		2E		83	●	●	2E		83	●	●		2E		83	●	●			83	●	●									
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●		●	●		
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt					
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt					
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		Opt							
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt		Opt							
	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt							
	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2	●*2		●*2	●*2	●*2	●*2			●*2	●*2		●*2	●*2		
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	●		●	●	●	●		●	●	●	●	●		●	●	●	●			●	●		●	●		
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

• The figures listed in the table are "only when combined with an outdoor unit with the appropriate capacity range".  
• Opt: Separate parts must be purchased.

# FUNCTION LIST (1)

Category	Icon		M SERIES															
			Combination	Indoor unit	MSZ-HR25/35/42/50VF			MFZ-KJ25/35/50VE2						MLZ-KP25/35/50VF				
	Outdoor unit	MUZ -HR			MXZ -2HA	MXZ -3HA	MUFZ -KJ	MXZ -2D	MXZ -3E	MXZ -4E	MXZ -5E	MXZ -6D	SUZ -M	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D
Technology	DC Inverter																	
	Joint Lap DC Motor									72/83VA						72/83VA		
	Reluctance DC Rotary Compressor									83						83		
	Heating Caulking (Compressor)									72/83VA						72/83VA		
	DC Fan Motor																	
	PAM (Pulse Amplitude Modulation)																	
	Power Receiver and Twin LEV Control									72						72		
	Grooved Piping																	
Functions	i-see Sensor	Felt Temperature Control (3D i-see Sensor)																
		AREA Temperature Monitor																
	Energy Saving	Econo Cool Energy-saving Feature																
		Standby Power Consumption Cut																
	Air Quality	Plasma Quad Plus																
		Plasma Quad																
		Dual Barrier Coating																
		Silver-ionized Air Purifier Filter		Opt									Opt	Opt	Opt	Opt	Opt	Opt
		Air Purifying Filter																
	Air Distribution	Double Vane																
		Horizontal Vane																
		Vertical Vane																
		High Ceiling Mode																
	Convenience	Auto Fan Speed Mode																
		On/off Operation Timer																
		"i save" Mode																
		Auto Changeover																
		Auto Restart																
		Low-temperature Cooling																
		10°C Heating																
		Low-noise Operation (Outdoor Unit)																
		Night Mode																
		Ampere Limit Adjustment																
		Operation Lock (Indoor)																
		Operation Lock (Outdoor)																
	Built-in Weekly Timer Function																	
	System Control	PAR-40MAA Control *3																
		PAR-CT01MAA Control *3																
		PAC-YT52CRA Control *3																
		Centralised On/Off Control *3																
		System Group Control *3																
		M-NET Connection *3																
		Wi-Fi Interface																
	Installation	MXZ Connection																
		Cleaning-free Pipe Reuse																
		Wiring/Piping Correction Function																
		Drain Pump																
	Maintenance	Flare Connection																
		Self-Diagnosis Function (Check Code Display)																
	Failure Recall Function																	

\*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.  
\*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on pages 111-112 for details.  
\*3 Please refer to "System Control" on pages 173-184 for details.

• The figures listed in the table are "only when combined with an outdoor unit with the appropriate capacity range".  
• Opt: Separate parts must be purchased.

FUNCTION LIST (2)

Category	Icon			S SERIES														P SERIES							
		Combination	Indoor unit	SLZ-M15/25/35/50/60FA *7								SEZ-M25/35/50/60/71DA(L)						PLA-ZM35/50/60/71/100/125/140EA							
			Outdoor unit	SUZ -M	SUZ -KA	PUHZ -ZRP	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D	SUZ -M	SUZ -KA	MXZ -2D/F	MXZ -3E/F	MXZ -4E/F	MXZ -5E	MXZ -6D	PUHZ -SHW	PUZ -ZM	PUHZ -ZRP	MXZ -3E/F	MXZ -4E/F	MXZ -5E/F	MXZ -6D
Technology	DC Inverter		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Joint Lap DC Motor		●	●	●	●	●	72/83VA	●	●	●	●	●	●	72/83VA	●	●	●	35-71	35-71	●	72/83VA	●	●	
	Magnetic Flux Vector Sine Wave Drive				●													●	●	●					
	Reluctance DC Rotary Compressor		●	●					83	●	●			83	●	●		●	35-71	35-71		83	●	●	
	Highly Efficient DC Scroll Compressor				●													●	100-140	100-250					
	Heating Caulking (Compressor)		●	●	●	●	●	72/83VA	●	●	●	●	●	●	72/83VA	●	●	●	35-71	35-71	●	72/83VA	●	●	
	DC Fan Motor		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Vector-Wave Eco Inverter				●													●	●	●					
	PAM (Pulse Amplitude Modulation)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	35-140	35-140	●	●	●	●
	Power Receiver and Twin LEV Control				●		●	72						●	72			●	35-140	35-140	●	72			
Grooved Piping		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Functions	i-see Sensor	Felt Temperature Control (3D i-see Sensor)		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt							Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		AREA Temperature Monitor		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt								Opt	Opt	Opt	Opt	Opt	Opt	Opt
	Energy Saving	Demand Function																Opt	Opt	Opt					
	Attractive	Pure White		●	●	●	●	●	●	●	●							●	●	●	●	●	●	●	
		Auto Vane		●	●	●	●	●	●	●	●								●	●	●	●	●	●	●
	Air Quality	Fresh-air Intake		●	●	●	●	●	●	●	●							●	●	●	●	●	●	●	
		High-efficiency Filter																Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		Oil Mist Filter																							
		Long-life Filter		●	●	●	●	●	●	●	●								●	●	●	●	●	●	●
		Filter Check Signal		●	●	●	●	●	●	●	●	●							●	●	●	●	●	●	●
	Air Distribution	Horizontal Vane		●	●	●	●	●	●	●	●							●	●	●	●	●	●	●	●
		Vertical Vane																	●	●	●	●	●	●	●
		High Ceiling Mode		●	●	●	●	●	●	●	●								●	●	●	●	●	●	●
		Low Ceiling Mode																	●	●	●	●	●	●	●
	Convenience	Auto Fan Speed Mode		●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		On/off Operation Timer		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Auto Changeover		●	●	●	●*1	●*1	●*1	●*1	●*1	●	●	●*1	●*1	●*1	●*1	●*1	●	●	●	●*1	●*1	●*1	●*1
		Auto Restart		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-temperature Cooling		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Low-noise Operation (Outdoor Unit)				●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●
		Ampere Limit Adjustment				60-140V	2E		83	●	●			2E		83	●	●	112/140	60-140V	60-140V/200/250		83	●	●
		Operation Lock					●	●	●	●	●			●	●	●	●	●				●	●	●	●
		Rotation, Back-up and 2nd Stage Cut-in Functions				●													●	●	●				
	System Control	Dual Set Point *6				●													●	●	●				
		PAR-40MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		PAR-CT01MAA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		PAC-YT52CRA Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		Centraliesd On/Off Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
		System Group Control *3		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	●	●	●	Opt	Opt	Opt	Opt
		M-NET Connection *3		Opt	Opt		Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt
COMPO *4				71-140													●	71-140	71-250						
Installation	MXZ Connection					●*2	●*2	●*2	●*2	●*2			●*2	●*2	●*2	●*2	●*2				●*2	●*2	●*2	●*2	
	Cleaning-free Pipe Reuse		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Reuse of Existing Wiring																	Opt	Opt	Opt					
	Wiring/Piping Correction Function					●	●	●	●	●			●	●	●	●	●				●	●	●	●	
	Drain Pump		●	●	●	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt	Opt	●		●	●	●	●	●	
Maintenance	Pump Down Switch																	●	●	●					
	Flare Connection		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Self-Diagnosis Function (Check Code Display)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Failure Recall Function		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

\*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.

\*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on pages 111-112 for details.

\*3 Please refer to "System Control" on pages 173-184 for details.

• If a numerical figure is listed, the feature is only available with the outdoor unit of that capacity.

• Opt: Optional parts must be purchased.

\*4 Please refer to page 62 for details.

\*5 PEAD-RP JALQ are not equipped with a drain pump.

\*6 This function is only available with PAR-40MAA, PAC-YT52CRA.

\*7 SLZ-M15 can be connected with R32 MXZ only.

FUNCTION LIST (2)

Category	Icon	P SERIES																								
		Combination	Indoor unit	PLA-M35/50/60/71/100/125/140EA											PEAD-M35/50/60/71/100/125/140JA(L)											
			Outdoor unit	PUHZ -SHW	PUZ -ZM	PUHZ -ZRP	SUZ -M	SUZ -KA	PUZ -M	PUHZ -P	MXZ -3E/F	MXZ -4E/F	MXZ -5E/F	MXZ -6D	PUHZ -SHW	PUZ -ZM	PUHZ -ZRP	PUZ -M	PUHZ -P	SUZ -M	SUZ -KA	MXZ -3E/F	MXZ -4E/F	MXZ -5E/F	MXZ -6D	
Technology	DC Inverter		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Joint Lap DC Motor			35-71	35-71	●	●	100	100	●	72/83VA	●				35-71	35-71	100	100	●	●	●	72/83VA	●		
	Magnetic Flux Vector Sine Wave Drive	●	●	●			●	●					●	●	●	●										
	Reluctance DC Rotary Compressor		35-71	35-71	●	●	●	100-140		83	●	●		35-71	35-71	●	100-140	●	●		83	●	●			
	Highly Efficient DC Scroll Compressor	●	100-140	100-250				200-250					●	100-140	100-250		200/250									
	Heating Caulking (Compressor)		35-71	35-71	●	●	100	100	●	72/83VA	●			35-71	35-71	100	100	●	●	●	72/83VA	●				
	DC Fan Motor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Vector-Wave Eco Inverter	●	●	●				●					●	●	●	●	●									
	PAM (Pulse Amplitude Modulation)	●	●	35-140	●	●	100-140V	100-140V	●	●	●	●	●	●	●	35-140	100-140V	100-140V	●	●	●	●	●	●	●	
	Power Receiver and Twin LEV Control	●	●	35-140			100-140V	100-140	●	72			●	●	35-140		100-140			●	72					
	Grooved Piping	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Functions	i-see Sensor	Felt Temperature Control (3D i-see Sensor)	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt													
		AREA Temperature Monitor	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt													
	Energy Saving	Demand Function	Opt	Opt	Opt			Opt	Opt					Opt	Opt	Opt	Opt	Opt								
	Attractive	Pure White	●	●	●	●	●	●	●	●	●	●	●													
		Auto Vane	●	●	●	●	●	●	●	●	●	●	●													
	Air Quality	Fresh-air Intake	●	●	●	●	●	●	●	●	●	●	●													
		High-efficiency Filter	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt													
		Oil Mist Filter																								
		Long-life Filter	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Filter Check Signal	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Air Distribution	Horizontal Vane	●	●	●	●	●	●	●	●	●	●	●													
		Vertical Vane																								
		High Ceiling Mode	●	●	●	●	●	●	●	●	●	●	●													
		Low Ceiling Mode	●	●	●	●	●	●	●	●	●	●	●													
		Auto Fan Speed Mode	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Convenience	On/off Operation Timer	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Auto Changeover	●	●	●	●	●	●	●	●*1	●*1	●*1	●*1	●	●	●	●	●	●	●	●	●	●	●	●	
		Auto Restart	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Low-temperature Cooling	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Low-noise Operation (Outdoor Unit)	●	●	●			●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	
		Ampere Limit Adjustment	112/140	60-140V	60-140V 200/250						83	●	●	112/140	60-140V	60-140V 200/250						83	●	●	●	
		Operation Lock								●	●	●	●													
		Rotation, Back-up and 2nd Stage Cut-in Functions	●	●	●			●	●					●	●	●	●	●								
		Dual Set Point *6		●	●			●	●						●	●	●	●								
	System Control	PAR-40MAA Control *3	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		PAR-CT01MAA Control *3	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		PAC-YT52CRA Control *3	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		Centralised On/Off Control *3	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		System Group Control *3	●	●	●	Opt	Opt	●	●	Opt	Opt	Opt	Opt	●	●	●	●	●	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		M-NET Connection *3	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	Opt	
		COMPO *4	●	71-140	71-250			●	●					●	71-140	71-250	●	●								
		MXZ Connection								●*2	●*2	●*2	●*2								●*2	●*2	●*2	●*2		
	Installation	Cleaning-free Pipe Reuse	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	
		Reuse of Existing Wiring	Opt	Opt	Opt			Opt	Opt					Opt	Opt	Opt	Opt	Opt								
		Wiring/Piping Correction Function								●	●	●	●								●	●	●	●		
		Drain Pump	●	●	●	●	●	●	●	●	●	●	●	●*5	●*5	●*5	●*5	●*5	●*5	●*5	●*5	●*5	●*5	●*5	●*5	
		Pump Down Switch	●	●	●			●	●					●	●	●	●	●								
		Flare Connection	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Maintenance	Self-Diagnosis Function (Check Code Display)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
		Failure Recall Function	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

\*1 When multiple indoor units connected to an MXZ outdoor unit are running at the same time, simultaneous cooling and heating is not possible.

\*2 For the possible connectivity of MXZ outdoor units and indoor units, please refer to the list on pages 111-112 for details.

\*3 Please refer to "System Control" on pages 173-184 for details.

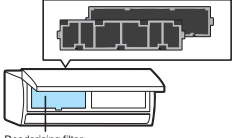
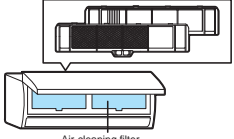
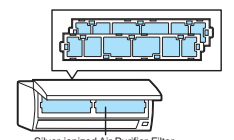
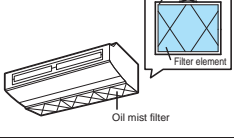
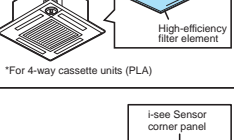
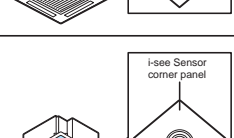
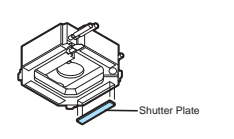
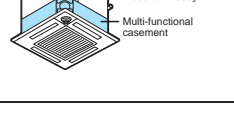
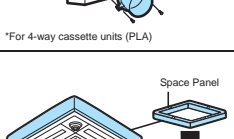


\*4 Please refer to page 62 for details.

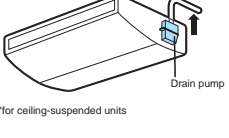
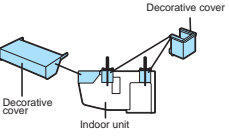
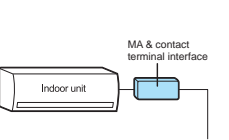
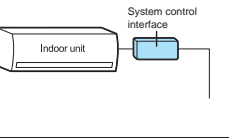

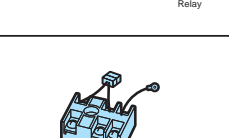
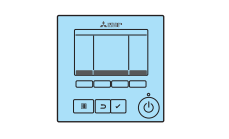
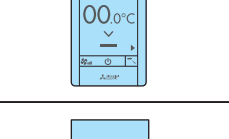
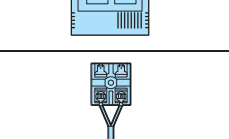


\*5 PEAD-M JAL are not equipped with a drain pump.

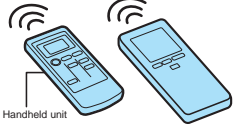
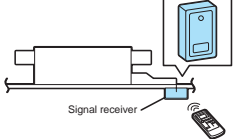
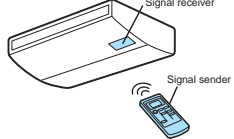
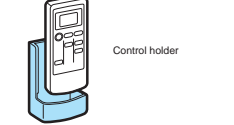
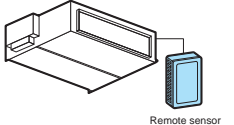
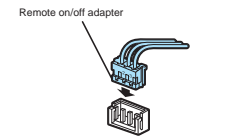
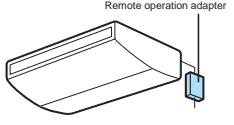
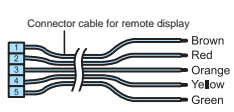
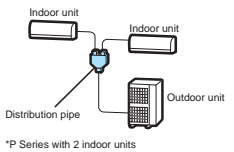
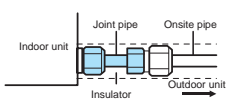
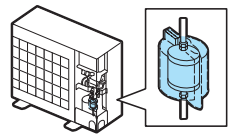
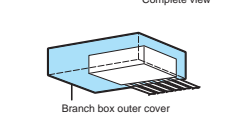
\*6 This function is only available with PAR-40MAA, PAC-YT52CRA.

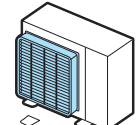
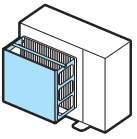
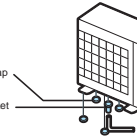
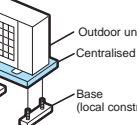
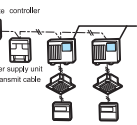
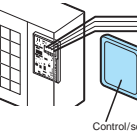
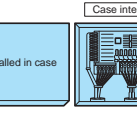
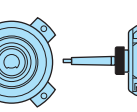
- If a numerical figure is listed, the feature is only available with the outdoor unit of that capacity.
- Opt: Optional parts must be purchased.

## Major Optional Parts

Part Name	Description
<b>Deodorising Filter</b> Captures small foul-smelling substances in the air.	 Deodorising filter
<b>Air-cleaning Filter</b> Removes fine dust particles from the air by means of static electricity.	 Air-cleaning filter
<b>Silver-ionized Air Purifier Filter</b> Captures the bacteria, pollen and other allergens in the air and neutralises them.	 Silver-ionized Air Purifier Filter
<b>Oil Mist Filter Element</b> Filter element (12 pieces) that blocks the oil mist for ceiling-suspended models used in professional kitchens.	 Oil mist filter
<b>High-efficiency Filter Element</b> Element for high-efficiency filter. Removes fine dust particles from the air.	 *For 4-way cassette units (PLA)
<b>3D i-see Sensor Corner Panel for SLZ</b> Corner panel holding the 3D i-see Sensor.	 i-see Sensor corner panel
<b>3D i-see Sensor Corner Panel for PLA</b> Corner panel holding the 3D i-see Sensor.	 i-see Sensor corner panel
<b>Shutter Plate</b> Plate for blocking an air outlet of the 4-way cassette (PLA) indoor unit.	 Shutter Plate
<b>Multi-functional Casement</b> Casement for fresh-air intake and attaching the high-efficiency filter element (optional).	 Indoor unit body Multi-functional casement
<b>Fresh-air Intake Duct Flange</b> Flange attachment for adding a duct to take in fresh air from outside.	 *For 4-way cassette units (PLA)
<b>Space Panel</b> Decorative cover for the installation when the ceiling height is low.	 Space Panel Panel

Part Name	Description
<b>Drain Pump</b> Pumps drain water to a point higher than that where the unit is installed.	 *for ceiling-suspended units
<b>Decorative Cover</b> To be attached to the upper section of ceiling-suspended models for professional kitchen use. Helps prevent dust accumulation.	 Decorative cover Indoor unit
<b>MA &amp; Contact Terminal Interface</b> Interface for connecting with the PAR-40MAA remote controller and PAC-YT52CRA, and to relay operation signals.	 MA & contact terminal interface Indoor unit
<b>System Control Interface</b> Interface to connect with M-NET controllers.	 System control interface Indoor unit
<b>Wi-Fi Interface</b> Interface enabling users to control air conditioners and check operating status via devices such as personal computers, tablets and smartphones.	 WiFi interface Indoor unit Smartphone
<b>Connector Cable</b> This product is an adaptor which inputs the incoming signals from an open/close switch to the air conditioner and outputs the on/off signals from the air conditioner to the back-up heater.	 Indoor unit Switch Relay
<b>Power Supply Terminal Kit</b> Terminal bed to change the power supply from outdoor power supply to separate indoor/outdoor power supplies.	
<b>Wired Remote Controller</b> Advanced deluxe remote controller with full-dot liquid-crystal display and backlight. Equipped with convenient functions like night-setback.	
<b>MA Touch Remote Controller</b> Remote controller with the full color touch display. Smartphone/Tablet App is available for setting, customize and control.	
<b>Simple Wired Remote Controller</b> Remote controller with liquid-crystal display, and backlight function for operation in dark location.	
<b>Remote Controller Terminal Block Kit for PKA</b> The terminal block is used as a relay to wire an indoor unit and to two remote controllers or to wire a remote controller and multiple indoor units in order to perform group control.	

Part Name	Description
<b>Wireless Remote Controller Signal Sender</b> Handheld unit for sending operation signals to the indoor unit.	
<b>Wireless Remote Controller Signal Receiver</b> Receives operation signals from the wireless remote controller handheld unit.	
<b>Wireless Remote Controller Kit (Sender &amp; Receiver)</b> Remote controller handheld unit (signal sender) and receiver (signal receiver) for ceiling-suspended units.	
<b>Control Holder</b> Holder for storing the remote controller.	
<b>Remote Sensor</b> Sensor to detect the room temperature at remote positions.	
<b>Remote On/Off Adapter</b> Connector for receiving signals from the local system to control the on/off function.	
<b>Remote Operation Adapter</b> Adapter to display the operation status and control on/off function from a distance.	
<b>Connector Cable for Remote Display</b> Connector used to display the operation status and control on/off function from a distance.	
<b>Distribution Pipe</b> Branch pipe for P Series simultaneous multi-system use, or to connect two branch boxes for PUMY.	
<b>Joint Pipe</b> Part for connecting refrigerant pipes of different diameters.	
<b>Liquid Refrigerant Dryer</b> Removes water and minute particles from refrigerant pipes.	
<b>Branch Box Outer Cover</b> Casement for branch boxes.	

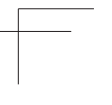
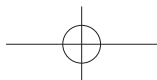
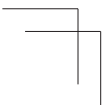
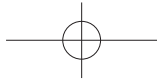
Part Name	Description
<b>Air Discharge Guide</b> Changes the direction of air being exhausted from the outdoor unit.	
<b>Air Protection Guide</b> Protects the outdoor unit from the wind.	
<b>Drain Socket</b> A set of caps to cover unnecessary holes at the bottom of the outdoor unit, and a socket to guide drain water to the local drain pipe.	
<b>Centralised Drain Pan</b> Catches drain water generated by the outdoor unit.	
<b>M-NET Converter</b> Used to connect P Series A-control models to M-NET controllers.	
<b>Control/Service Tool</b> Monitoring tool to display operation and self-diagnosis data.	
<b>Step Interface</b> Interface for adjusting the capacity of inverter-equipped outdoor units.	
<b>High-static Fan Motor</b> Static pressure enhanced up to +30pa.	



Optional Parts List <Indoor>

Option			Filter								Softdry cloth	System Control Interface	MA & Contact Terminal Interface	Wi-Fi Interface	Connector Cable		Wired Remote Controller			
			Silver-ionized Air Purifier Filter					Deodorising Filter		Air Purifying Filter							Controller			Controller Holder
			MAC-2360 FT	MAC-2370 FT	MAC-2380 FT	MAC-2390 FT	MAC-172 FT-E	MAC-3000 FT-E	MAC-3010 FT-E	MAC-3005 CF-E							MAC-1001 CL-E	MAC-334IF-E	MAC-397IF-E	MAC-567IF-E
Indoor Unit																				
M SERIES	Wall - mounted	MSZ-LN18VG(W)(V)(R)(B)																		
		MSZ-LN25VG(W)(V)(R)(B)																		
		MSZ-LN35VG(W)(V)(R)(B)																		
		MSZ-LN50VG(W)(V)(R)(B)																		
		MSZ-LN60VG(W)(V)(R)(B)																		
		MSZ-AP15VF																		
		MSZ-AP20VF																		
		MSZ-AP25VG																		
		MSZ-AP35VG																		
		MSZ-AP42VG																		
		MSZ-AP50VG																		
		MSZ-FH25VE2																		
		MSZ-FH35VE2																		
		MSZ-FH50VE2																		
		MSZ-EF18VG(W)(B)(S)																		
		MSZ-EF22VG(W)(B)(S)																		
		MSZ-EF25VG(W)(B)(S)																		
		MSZ-EF35VG(W)(B)(S)																		
		MSZ-EF42VG(W)(B)(S)																		
		MSZ-EF50VG(W)(B)(S)																		
		MSZ-SF15VA																		
		MSZ-SF20VA																		
		MSZ-SF25VE3																		
		MSZ-SF35VE3																		
		MSZ-SF42VE3																		
		MSZ-SF50VE3																		
		MSZ-GF60VE2																		
		MSZ-GF71VE2																		
		MSZ-WN25VA																		
		MSZ-WN35VA																		
		MSY-TP35VF																		
		MSY-TP50VF																		
		MSZ-DM25VA																		
		MSZ-DM35VA																		
		MSZ-HJ25VA																		
		MSZ-HJ35VA																		
		MSZ-HJ50VA																		
		MSZ-HJ60VA																		
		MSZ-HJ71VA																		
		MSZ-HR25VF																		
		MSZ-HR35VF																		
		MSZ-HR42VF																		
		MSZ-HR50VF																		
	Floor - standing	MFZ-KJ25VE2																		
		MFZ-KJ35VE2																		
		MFZ-KJ50VE2																		
	1-way cassette	MLZ-KP25VF																		
		MLZ-KP35VF																		
MLZ-KP50VF																				

\*1 MAC-334IF-E or MAC-397IF-E is required.



## Optional Parts List <Indoor>

Option			Filter								3D i-see Sensor Corner Panel		Shutter Plate	Multi- functional Casement	Fresh-air Intake Duct Flange		Space Panel	Drain Pump							Decorative Cover		System Control Interface	
			Oil Mist Filter Element	High-efficiency Filter Element				Filter Box																				
			PAC- SG38 KF-E	PAC- SH59 KF-E	PAC- SH88 KF-E	PAC- SH89 KF-E	PAC- SH90 KF-E	PAC- KE92 TB-E	PAC- KE93 TB-E	PAC- KE94 TB-E	PAC- KE95 TB-E	PAC- SF1 ME-E	PAC- SE1 ME-E	PAC- SJ37 SP-E	PAC- SJ41 TM-E	PAC- SH65 OF-E	PAC- SF28 OF-E	PAC- SJ65 AS-E	PAC- SH94 DM-E	PAC- SH75 DM-E	PAC- SJ92 DM-E	PAC- SJ93 DM-E	PAC- SJ94 DM-E	PAC- KE07 DM-E	PAC- SF81 KC-E	PAC- SF82 KC-E	MAC- 334IF-E	
Indoor Unit																												
S SERIES	4-way cassette	SLZ-M15FA																										
		SLZ-M25FA																										
		SLZ-M35FA																										
		SLZ-M50FA																										
		SLZ-M60FA																										
	Ceiling - conceald	SEZ-M25DA(L)																										
		SEZ-M35DA(L)																										
		SEZ-M50DA(L)																										
		SEZ-M60DA(L)																										
	SEZ-M71DA(L)																											
P SERIES	4-way Cassette	PLA-ZM35EA																										
		PLA-ZM50EA																										
		PLA-ZM60EA																										
		PLA-ZM71EA																										
		PLA-ZM100EA																										
		PLA-ZM125EA																										
		PLA-ZM140EA																										
		PLA-M35EA																										
		PLA-M50EA																										
		PLA-M60EA																										
		PLA-M71EA																										
		PLA-M100EA																										
		PLA-M125EA																										
		PLA-M140EA																										
	Ceiling - conceald	PEAD-M35JA(L)																										
		PEAD-M50JA(L)																										
		PEAD-M60JA(L)																										
		PEAD-M71JA(L)																										
		PEAD-M100JA(L)																										
		PEAD-M125JA(L)																										
		PEAD-M140JA(L)																										
		PEA-RP200WKA																										
	Wall - mounted	PKA-M35HA(L)																										
		PKA-M50HA(L)																										
		PKA-M60KA(L)																										
		PKA-M71KA(L)																										
		PKA-M100KA(L)																										
	Ceiling - suspended	PCA-M35KA																										
		PCA-M50KA																										
		PCA-M60KA																										
		PCA-M71KA																										
		PCA-M100KA																										

\*1 P Series indoor units can be used in combination with SUZ or MXZ outdoor units. \*2 Unable to use with wireless remote controller. \*3 Two interface components required for each indoor unit.  
\*4 Refrigerant address must be set to 00. \*5 PAC-SH29TC-E is required. \*6 Group control cannot be used.

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Optional Parts List <Outdoor>

Option			Distribution Pipe				Joint Pipe								Liquid Refrigerant Dryer			Air Outlet Guide												
			For Twin (50:50)		For Triple (33:33:33)	For Quadruple (25:25:25:25)	Unit ø6.35 --> Pipe ø9.52	Unit ø9.52 --> Pipe ø12.7	Unit ø15.88 --> Pipe ø19.05	Unit ø9.52 --> Pipe ø15.88	Unit ø6.35 --> Pipe ø9.52	Unit ø9.52 --> Pipe ø12.7	Unit ø12.7 --> Pipe ø9.52	Unit ø12.7 --> Pipe ø15.88	For pipe ø6.35	For pipe ø9.52	For pipe ø12.7													
			MSDD-50TR-E	MSDD-50WR-E	MSDT-111R-E	MSDF-111R-E	PAC-SG72 R-J-E	PAC-SG73 R-J-E	PAC-SG75 R-J-E	PAC-SG76 R-J-E	PAC-493 PI	Flare				PAC-SG81 DR-E	PAC-SG82 DR-E	PAC-SG85 DR-E												
												MAC-A454 JP-E	MAC-A455 JP-E	MAC-A456 JP-E																
Outdoor Unit																	MAC-889 SG	MAC-881 SG	MAC-882 SG	MAC-856 SG	MAC-886 SG-E	MAC-883 SG	PAC-SJ07 SG-E	PAC-SG59 SG-E	PAC-SH96 SG-E					
M SERIES	L Series	MUZ-LN25VG															●	●												
		MUZ-LN25VGHZ															●	●												
		MUZ-LN35VG															●	●												
		MUZ-LN35VGHZ															●	●												
		MUZ-LN50VG																		●										
		MUZ-LN50VGHZ																			●									
	A Series	MUZ-LN60VG																			●									
		MUZ-AP25VG																												
		MUZ-AP25VGH																												
		MUZ-AP35VG																												
		MUZ-AP35VGH																												
		MUZ-AP42VG																												
	F Series	MUZ-AP42VGH																												
		MUZ-AP50VG																												
		MUZ-AP50VGH																												
		MUZ-FH25VE																●	●											
		MUZ-FH25VEHZ																●	●											
		MUZ-FH35VE																●	●											
	E Series	MUZ-FH35VEHZ																●	●											
		MUZ-FH50VE																			●									
		MUZ-FH50VEHZ																			●									
		MUZ-EF25VE																●	●											
		MUZ-EF25VEH																●	●											
		MUZ-EF35VE																●	●											
	S Series	MUZ-EF35VEH																●	●											
		MUZ-EF42VE																●	●											
		MUZ-EF50VE																●	●	●										
		MUZ-SF25VE																●	●											
		MUZ-SF25VEH																●	●											
		MUZ-SF35VE																●	●											
	G Series	MUZ-SF35VEH																●	●											
		MUZ-SF42VE																●	●											
		MUZ-SF42VEH																●	●											
		MUZ-SF50VE																			●									
		MUZ-SF50VEH																			●									
		MUZ-GF60VE																			●									
	W Series	MUZ-GF71VE																			●									
		MUZ-WN25VA																				●								
	TP Series	MUZ-WN35VA																				●								
		MUY-TP35VF																●	●											
D Series	MUY-TP50VF																●	●												
	MUZ-DM25VA																				●									
H Series	MUZ-DM35VA																				●									
	MUZ-HJ25VA																				●									
	MUZ-HJ35VA																				●									
	MUZ-HJ50VA																●	●												
	MUZ-HJ60VA																			●										
	MUZ-HJ71VA																			●										
HR Series	MUZ-HR25VF																				●									
	MUZ-HR35VF																				●									
	MUZ-HR42VF																●	●												
	MUZ-HR50VF																●	●												
	MUFZ-KJ25VE																●	●												
	MUFZ-KJ25VEHZ																●	●												
Compact floor	MUFZ-KJ35VE																●	●												
	MUFZ-KJ35VEHZ																●	●												
	MUFZ-KJ50VE																			●										
	MUFZ-KJ50VEHZ																			●										
	S SERIES (R32)	SUZ-M25VA															●	●												
	SUZ-M35VA																●	●												
S SERIES (R410A)	SUZ-M50VA																			●										
	SUZ-M60VA																			●										
	SUZ-M71VA																			●										
	SUZ-KA25VA6																●	●												
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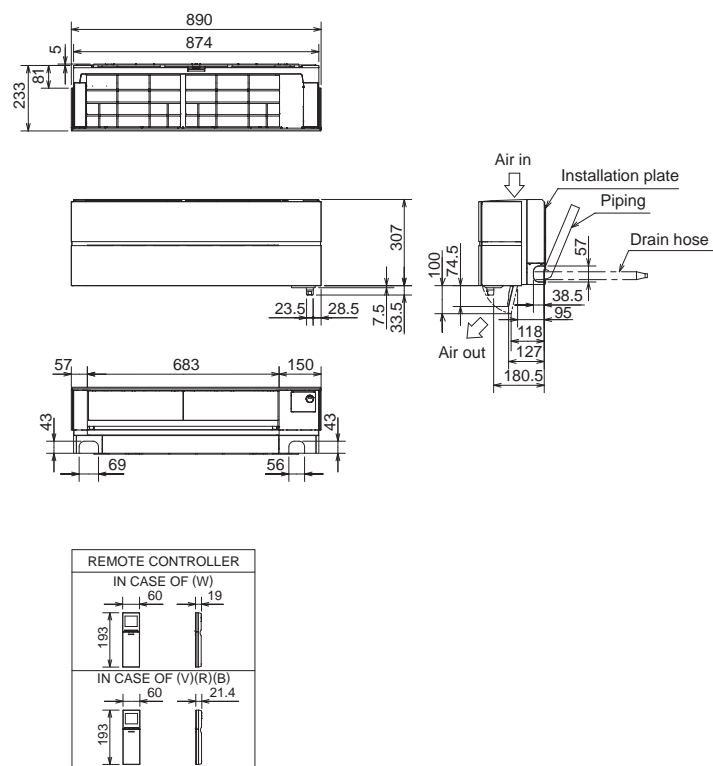
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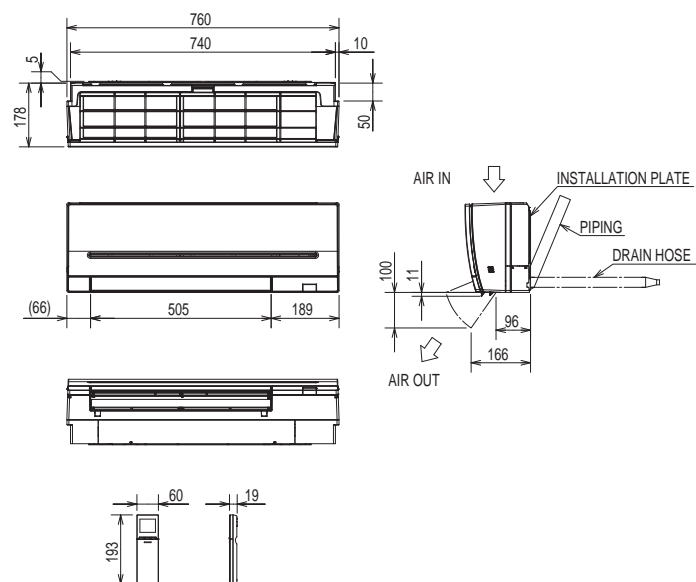
	Air Outlet Guide					Air Protection Guide			Drain Socket			Freeze-prevention Heater (for Drain Pan)						Centralized Drain Pan			M-NET Adapter	M-NET Converter		Control/Service Tool	Step Interface		Insulation for Accumulator		Con-nection Kit	High Static Fan Motor		
	MAC-856 SG	MAC-886 SG-E	MAC-883 SG	PAC-SJ07 SG-E	PAC-SG59 SG-E	PAC-SH96 SG	PAC-SJ06 AG-E	PAC-SH63 AG-E	PAC-SH95 AG-E	PAC-SJ08 DS-E	PAC-SG60 DS-E	PAC-SG61 DS-E	MAC-643 BH-E	MAC-644 BH-E	PAC-645 BH-E	PAC-646 BH-E	PAC-SJ10 BH-E	PAC-SJ20 BH-E	PAC-SG63 DP-E	PAC-SG64 DP-E	PAC-SH97 DP-E	PAC-IF01 MNT-E	PAC-SJ96 MA-E	PAC-SJ95 MA-E	PAC-SK52 ST	PAC-IF012 B-E	PAC-IF013 B-E	MAC-892 INS-E	MAC-893 INS-E	PAC-LV11 M-J	PAC-SJ71 FM-E	
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- Unit: mm

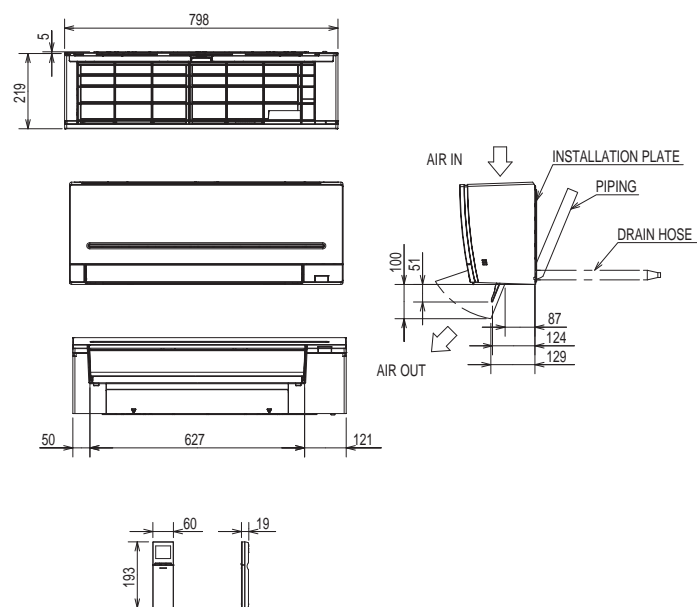
## INDOOR UNIT



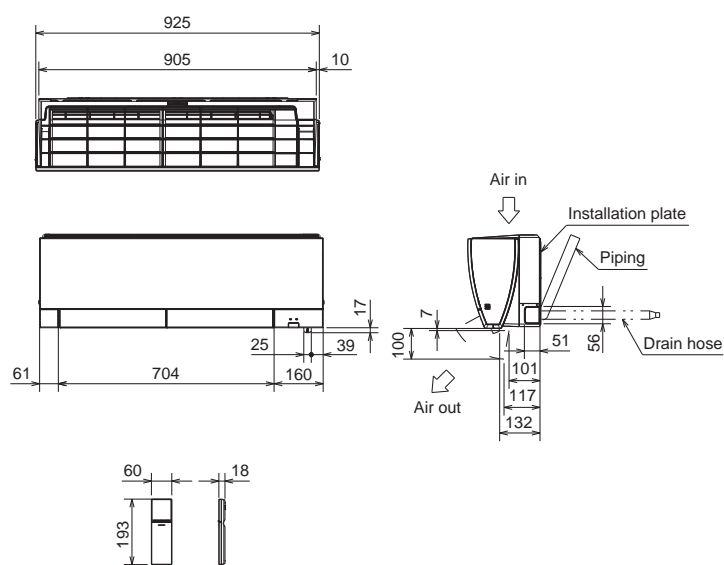
## INDOOR UNIT



## INDOOR UNIT



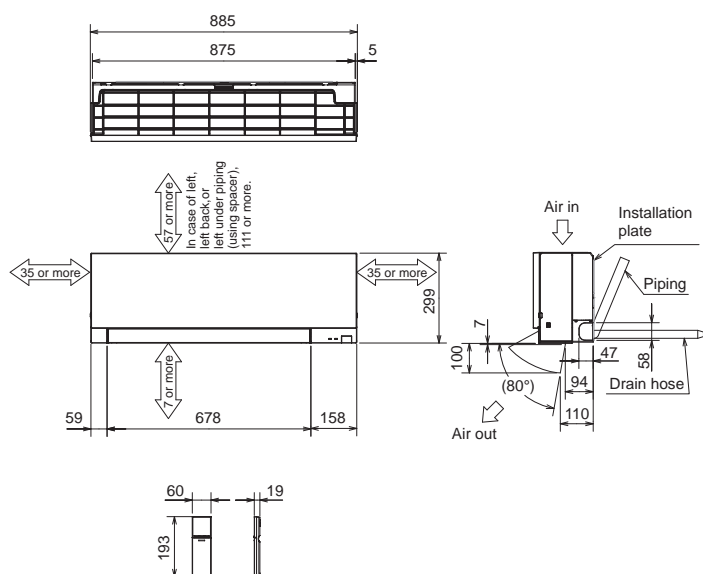
## INDOOR UNIT



Unit : mm

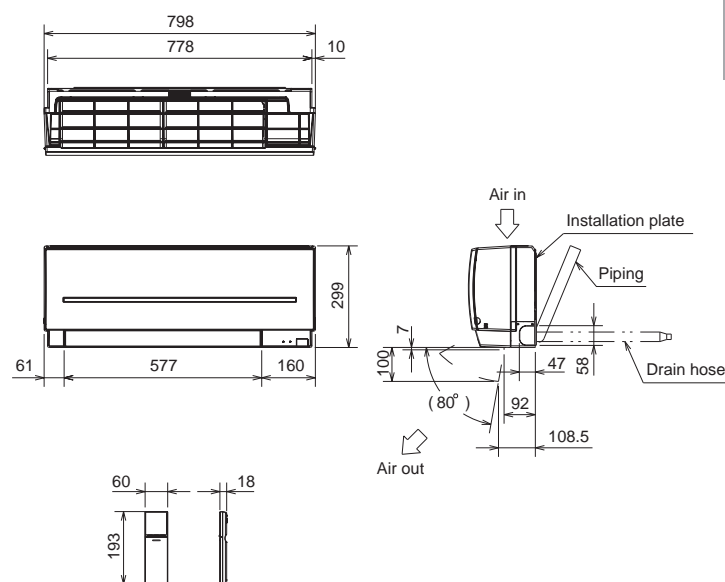
MSZ-EF18VG(W)(B)(S) MSZ-EF22VG(W)(B)(S)  
MSZ-EF25VG(W)(B)(S) MSZ-EF35VG(W)(B)(S)  
MSZ-EF42VG(W)(B)(S) MSZ-EF50VG(W)(B)(S)

INDOOR UNIT



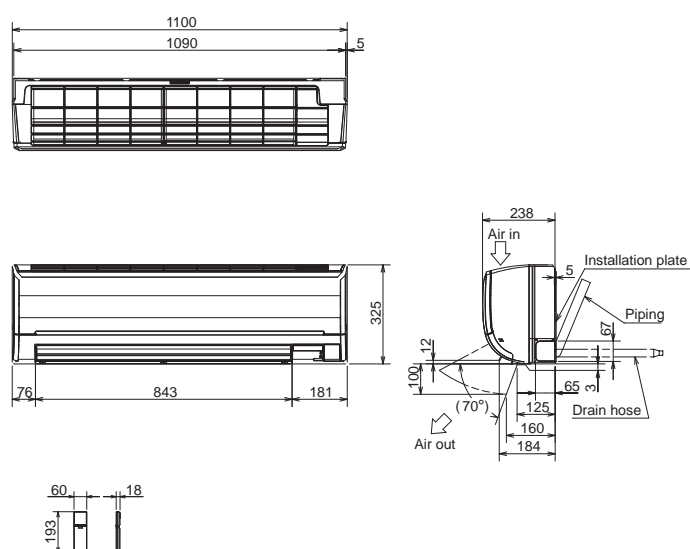
MSZ-SF25VE3 MSZ-SF35VE3 MSZ-SF42VE3  
MSZ-SF50VE3

INDOOR UNIT



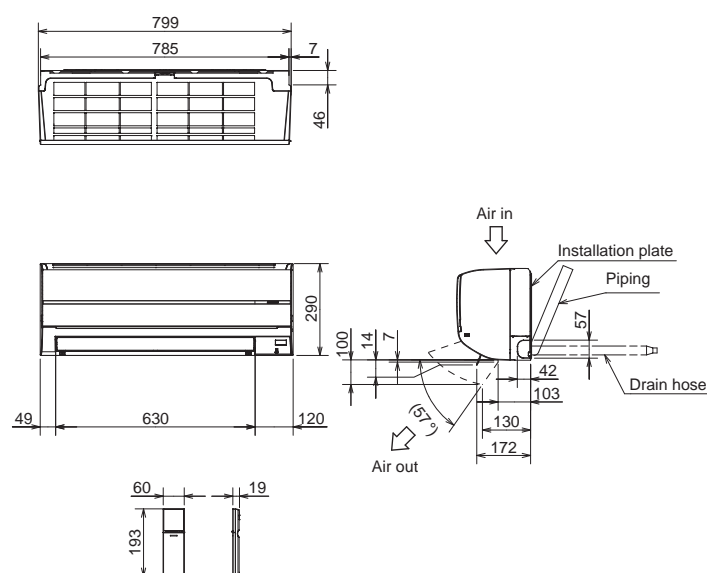
MSZ-GF60VE2 MSZ-GF71VE2

INDOOR UNIT



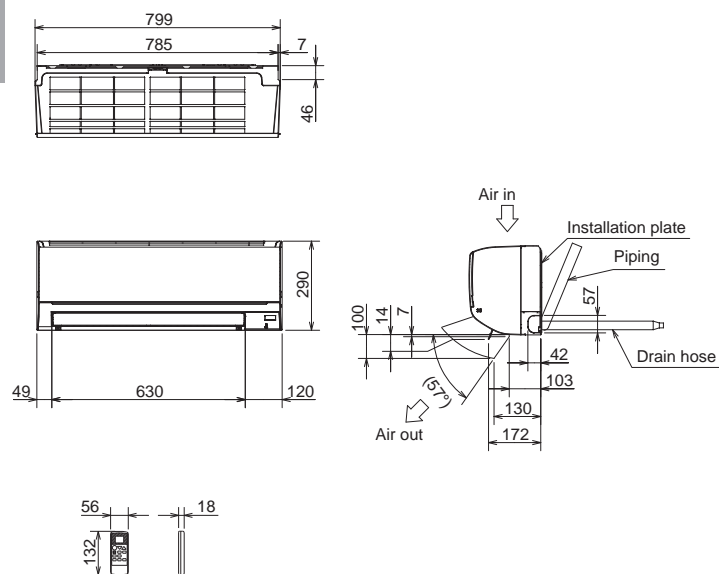
MSZ-WN25VA MSZ-WN35VA

INDOOR UNIT



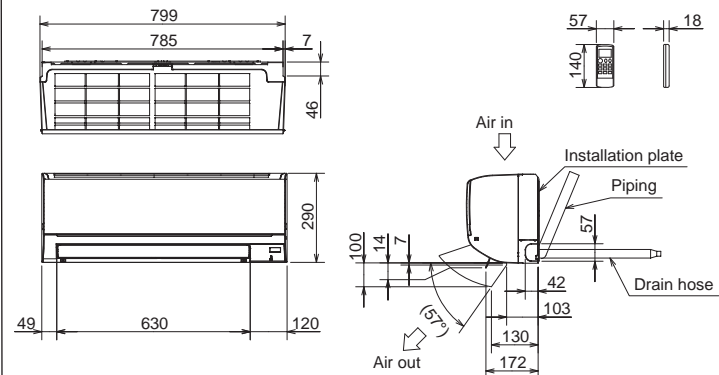
**MSZ-DM25VA MSZ-DM35VA**

**INDOOR UNIT**

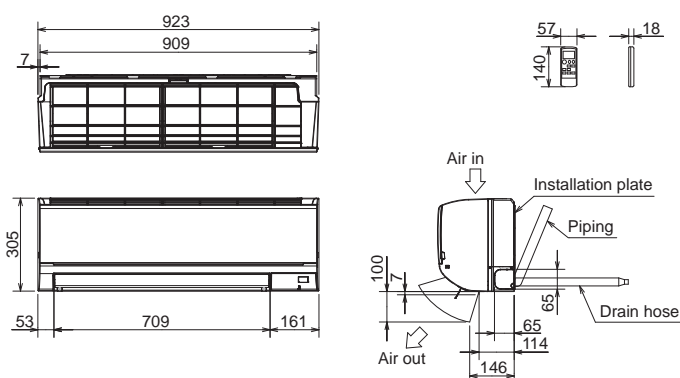


**MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA**

**INDOOR UNIT**

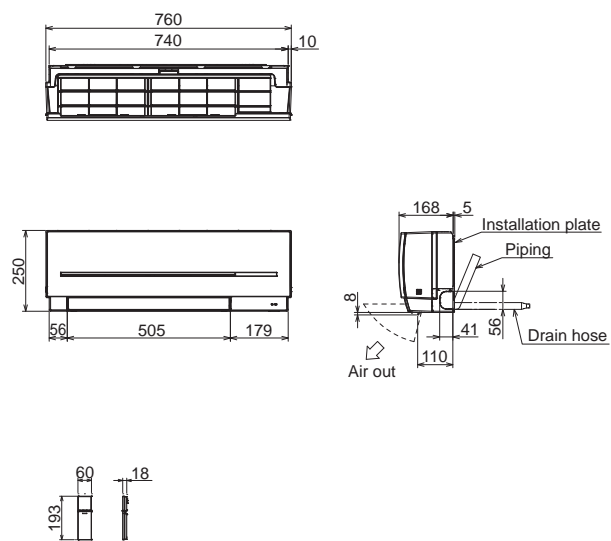


**MSZ-HJ60VA MSZ-HJ71VA  
MSY-TP35VF MSY-TP50VF**



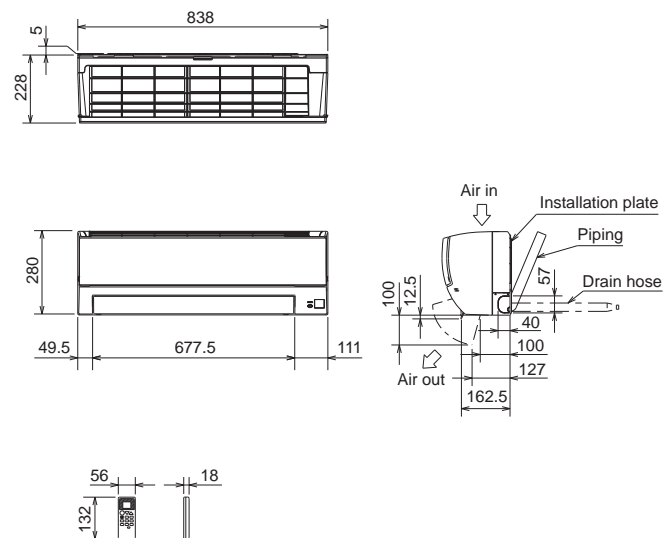
**MSZ-SF15VA MSZ-SF20VA**

**INDOOR UNIT**



**MSZ-HR25VF MSZ-HR35VF MSZ-HR42VF MSZ-HR50VF**

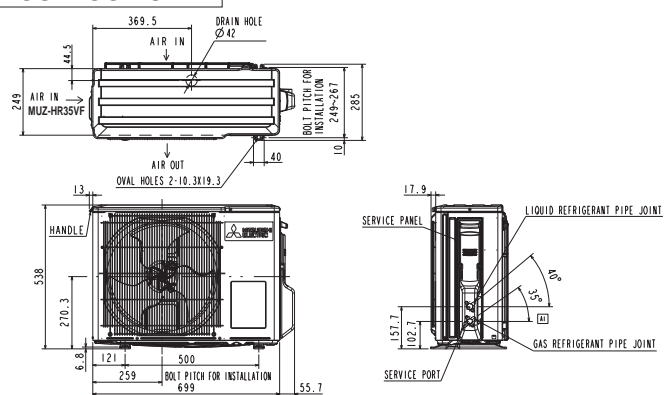
**INDOOR UNIT**



Unit : mm

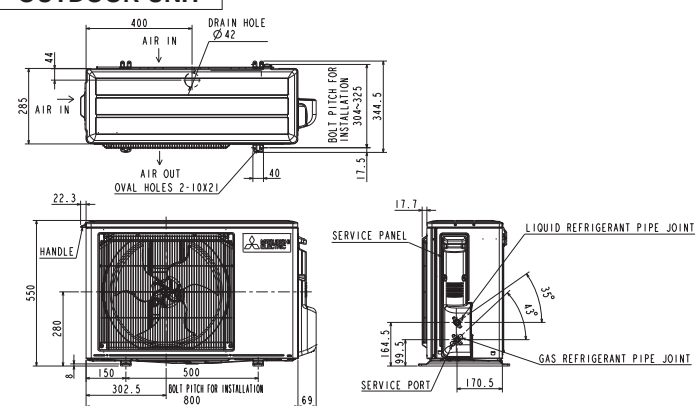
## MUZ-HR25VF MUZ-HR35VF

### OUTDOOR UNIT



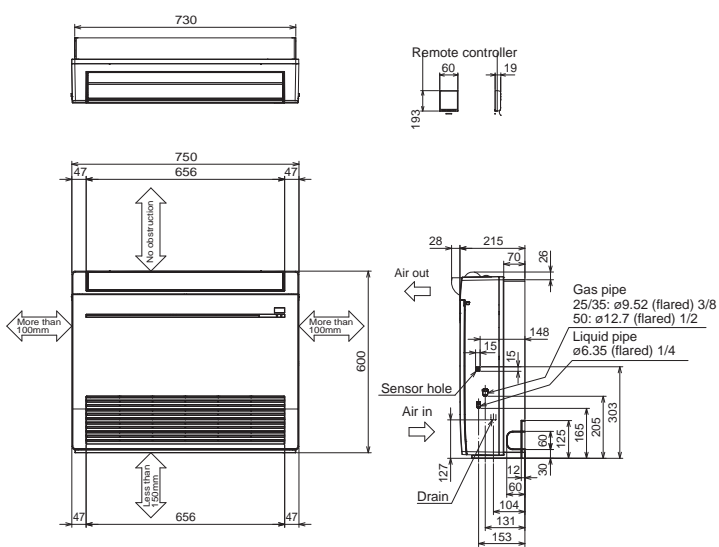
## MUZ-HR42VF MUZ-HR50VF

### OUTDOOR UNIT



## MFZ-KJ25VE2 MFZ-KJ35VE2 MFZ-KJ50VE2

### INDOOR UNIT

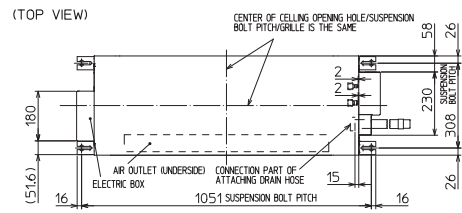


## MLZ-KP25VF MLZ-KP35VF MLZ-KP50VF

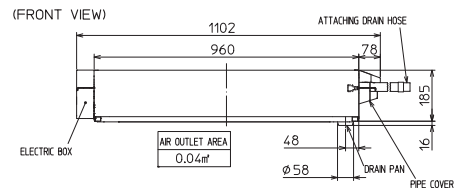
### INDOOR UNIT

#### INDOOR UNIT OUTLINE DRAWING

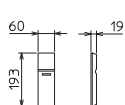
(TOP VIEW)



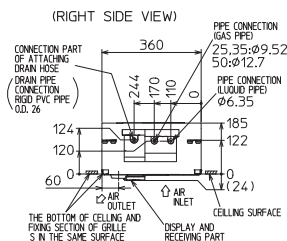
(FRONT VIEW)



#### REMOTE CONTROLLER OUTLINE DRAWING

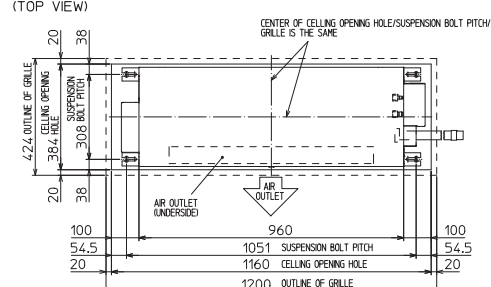


(RIGHT SIDE VIEW)

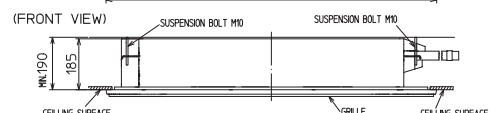


#### INDOOR UNIT DETAIL VIEW

(TOP VIEW)

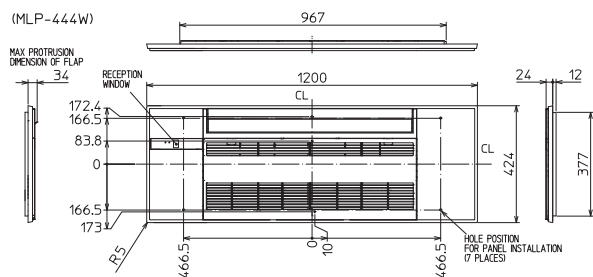


(FRONT VIEW)



#### GRILLE OUTLINE DRAWING

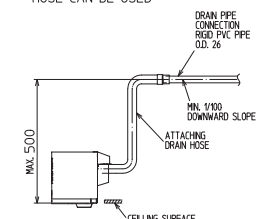
(MLP-444W)



		KP25/35VF	KP50VF
EXTENSION PIPE	LIQUID PIPE O.D.	ø6.35	
	GAS PIPE O.D.	ø9.52	ø12.7
CONNECTING OF PIPE	LIQUID PIPE	FLARED CONNECTION ø6.35	
	GAS PIPE	FLARED CONNECTION ø9.52	FLARED CONNECTION ø12.7
DRAIN HOSE	HEAT INSULATOR O.D.	CONNECTION I.D.	EFFECTIVE LENGTH
	ø32	ø25	480
DRAIN PIPE CONNECTION	RIGID PVC PIPE O.D. 26		

NOTE1: CUTTING ATTACHING DRAIN HOSE CAN BE USED.

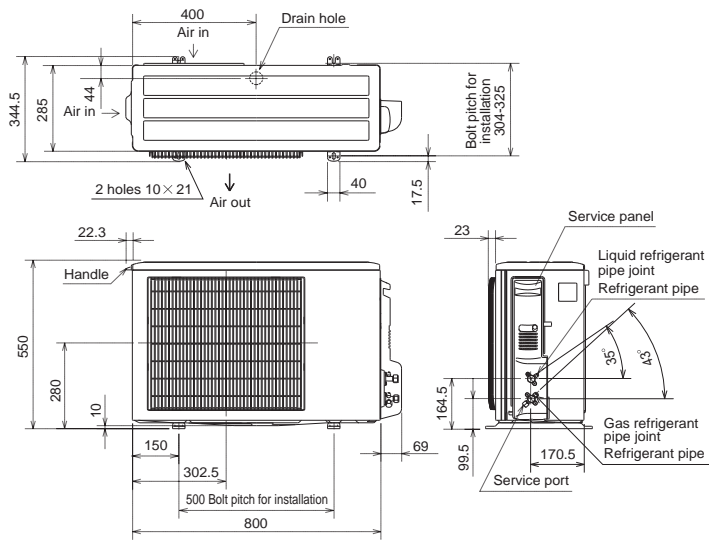
THE METHOD FOR STANDING DRAIN FROM INDOOR UNIT  
\* CUTTING ATTACHING DRAIN HOSE CAN BE USED



Unit : mm

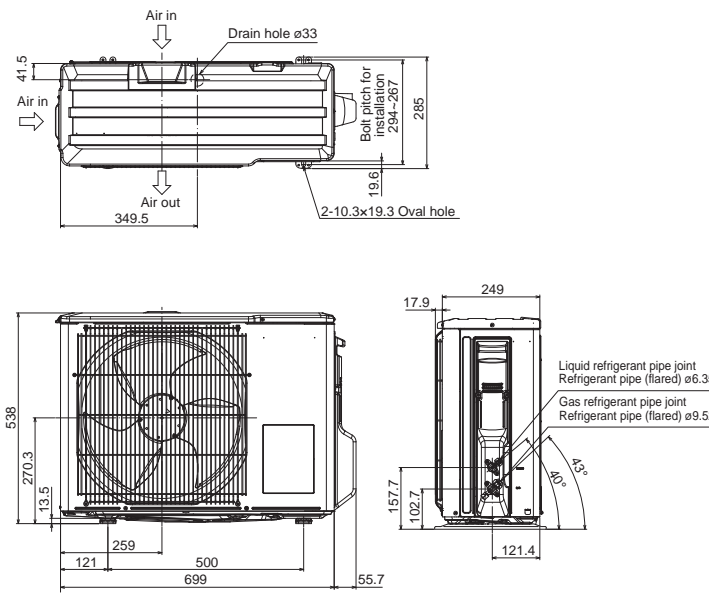
MUZ-LN25VG MUZ-LN25VGHZ  
MUZ-LN35VG MUZ-LN35VGHZ  
MUZ-AP25VG MUZ-AP25VGH  
MUZ-AP35VG MUZ-AP35VGH  
MUZ-AP42VG MUZ-AP42VGH  
MUZ-FH25VE MUZ-FH35VE  
MUZ-FH25VEHZ MUZ-FH35VEHZ  
MUZ-EF25VG MUZ-EF25VGH  
MUZ-EF35VG MUZ-EF35VGH  
MUZ-EF42VG MUZ-TP35VF MUZ-TP50VF  
MUZ-SF25VE MUZ-SF25VEH MUZ-SF35VE  
MUZ-SF35VEH MUZ-SF42VE MUZ-SF42VEH  
MUZ-HJ50VA  
MUFZ-KJ25VE MUFZ-KJ35VE  
MUFZ-KJ25VEHZ MUFZ-KJ35VEHZ

OUTDOOR UNIT



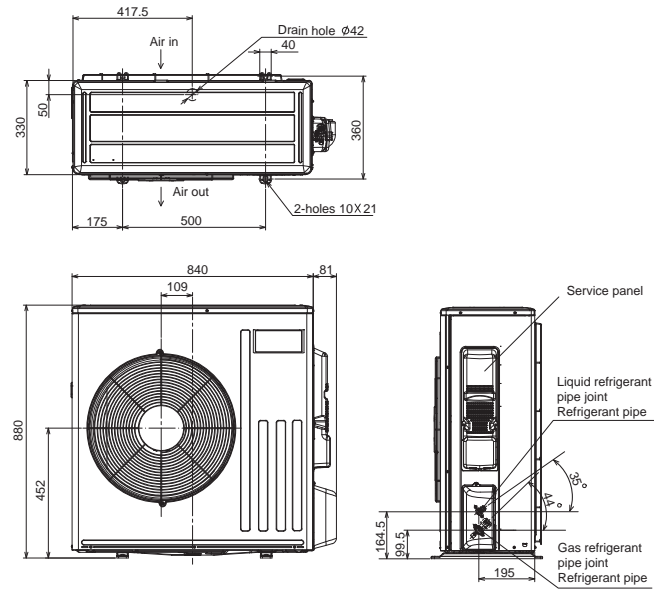
MUZ-WN25VA MUZ-WN35VA  
MUZ-DM25VA MUZ-DM35VA  
MUZ-HJ25VA MUZ-HJ35VA

OUTDOOR UNIT



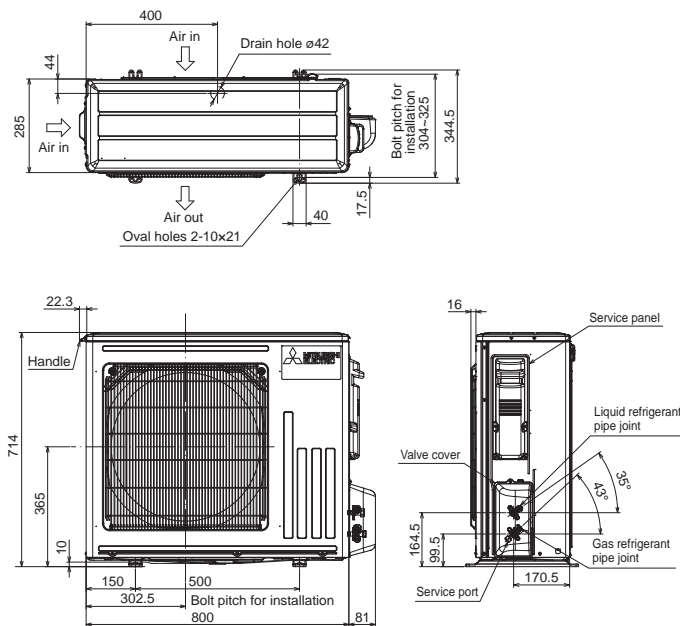
MUZ-LN50VGHZ MUZ-LN60VG  
MUZ-FH50VE MUZ-FH50VEHZ  
MUZ-SF50VE MUZ-SF50VEH  
MUZ-GF60VE MUZ-GF71VE  
MUZ-HJ60VA MUZ-HJ71VA  
MUFZ-KJ50VE MUFZ-KJ50VEHZ

OUTDOOR UNIT



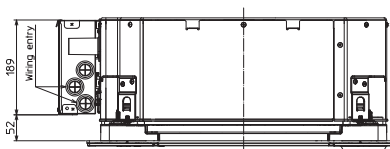
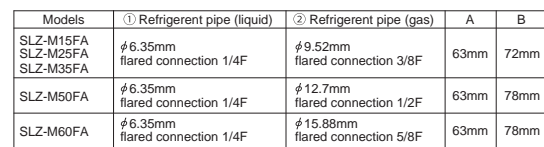
MUZ-LN50VG  
MUZ-AP50VG MUZ-AP50VGH  
MUZ-EF50VG

OUTDOOR UNIT

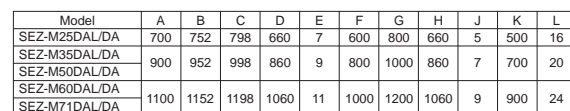


SLZ-M15FA  
SLZ-M25FA SLZ-M35FA  
SLZ-M50FA SLZ-M60FA

## INDOOR UNIT



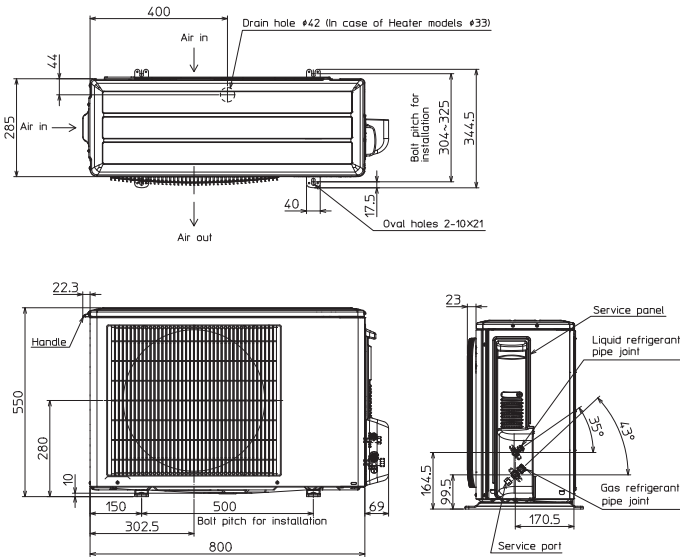
## INDOOR UNIT



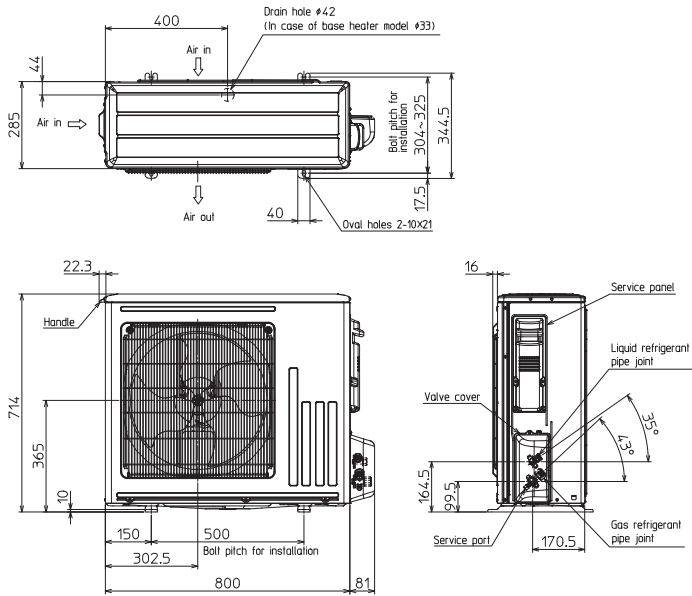
- 206



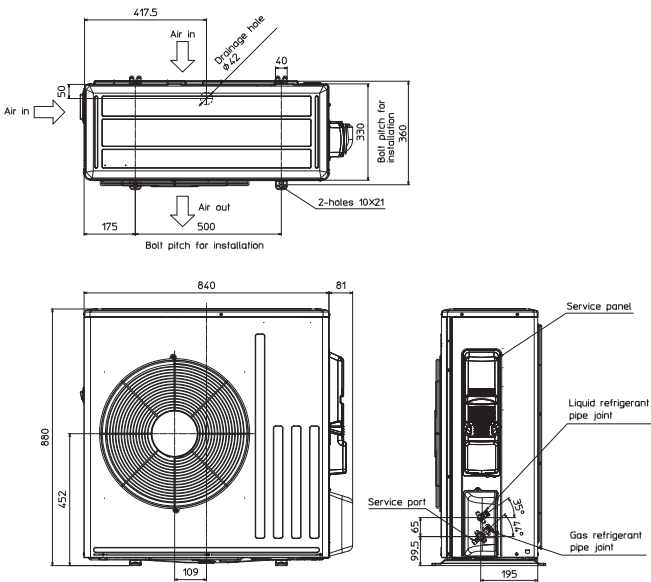
SUZ-M25VA SUZ-M35VA  
OUTDOOR UNIT



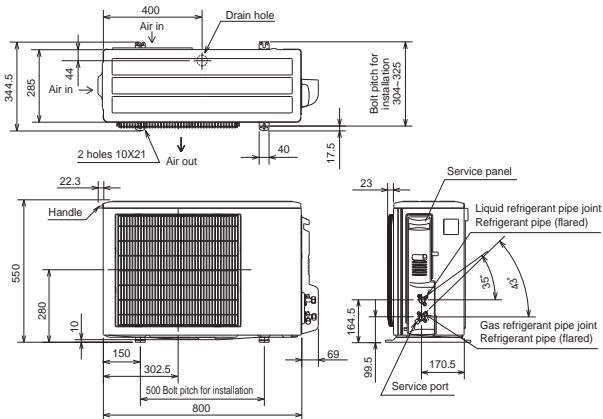
SUZ-M50VA  
OUTDOOR UNIT



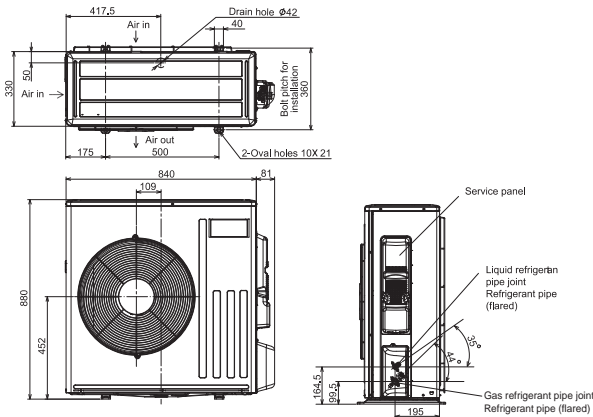
SUZ-M60VA SUZ-M71VA  
INDOOR UNIT



SUZ-KA25VA6 SUZ-KA35VA6  
INDOOR UNIT



SUZ-KA50VA6 SUZ-KA60VA6 SUZ-KA71VA6  
INDOOR UNIT



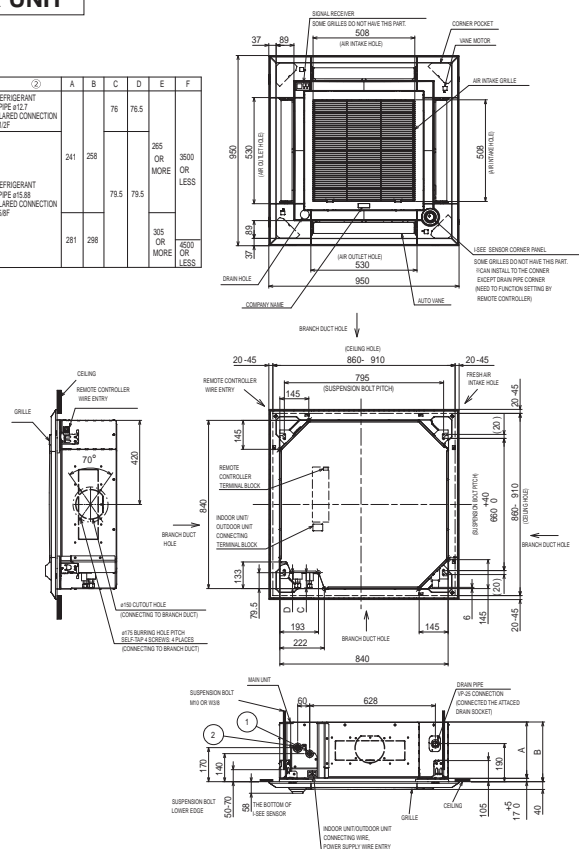
## P SERIES

PLA-ZM35EA PLA-ZM50EA PLA-ZM60EA PLA-ZM71EA  
 PLA-ZM100EA PLA-ZM125EA PLA-ZM140EA  
 PLA-M35EA PLA-M50EA PLA-M60EA PLA-M71EA  
 PLA-M100EA PLA-M125EA PLA-M140EA

### INDOOR UNIT

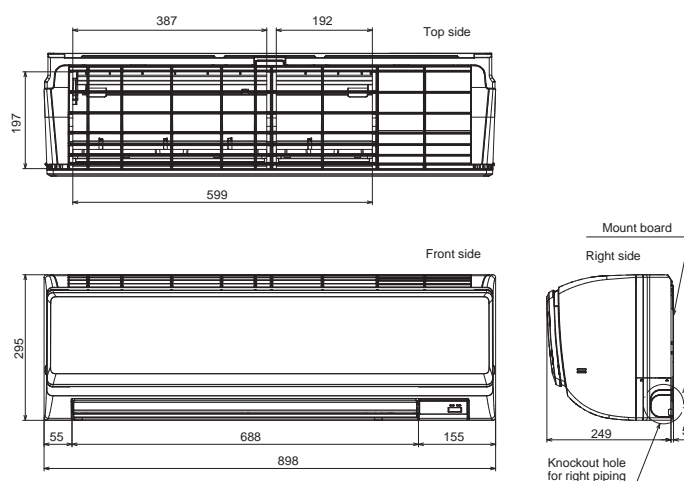
PLA-ZM35EA/60/71/100/125/140EA  
 PLA-M35EA/50EA/60/71/100/125/140EA

ZM	①	②	A	B	C	D	E	F
35/50	REFRIGERANT PIPE #6.35 FLARED CONNECTION 1/2"	REFRIGERANT PIPE #12.7 FLARED CONNECTION 1/2"			76	76.5		
60			241	258			255 OR MORE	3500 OR LESS
71	REFRIGERANT PIPE #6.35 FLARED CONNECTION 3/8"	REFRIGERANT PIPE #12.7 FLARED CONNECTION 3/8"			75.5	75.5		
100-140			281	298			355 OR MORE	3500 OR LESS



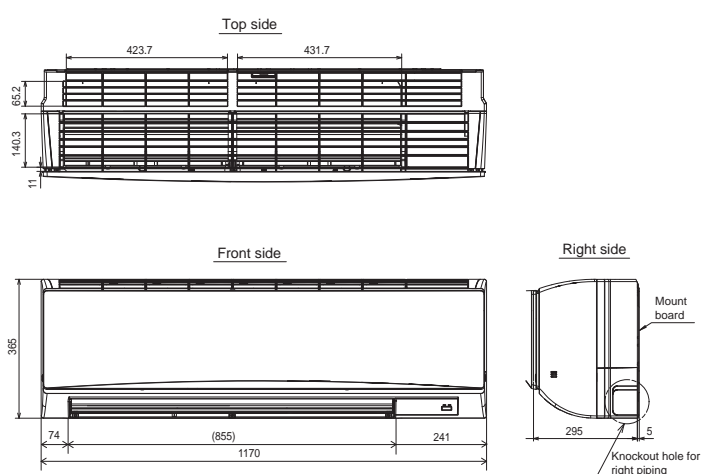
PKA-M35HA(L) PKA-M50HA(L)

### INDOOR UNIT



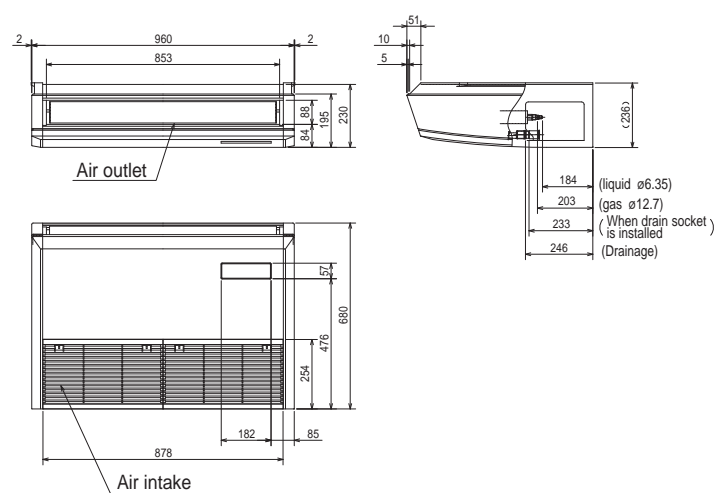
PKA-M60KA(L) PKA-M71KA(L) PKA-M100KA(L)

### INDOOR UNIT



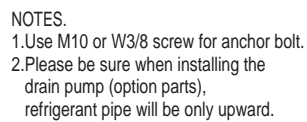
PCA-M35KA PCA-M50KA

### INDOOR UNIT



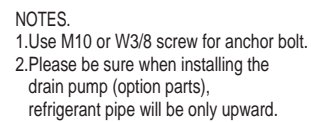
- NOTES.  
 1. Use M10 or W3/8 screw for anchor bolt.  
 2. Please be sure when installing the drain pump (option parts), refrigerant pipe will be only upward.

## INDOOR UNIT

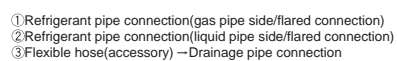


Use the current nuts meeting the pipe size of the outdoor unit.  
Available pipe size

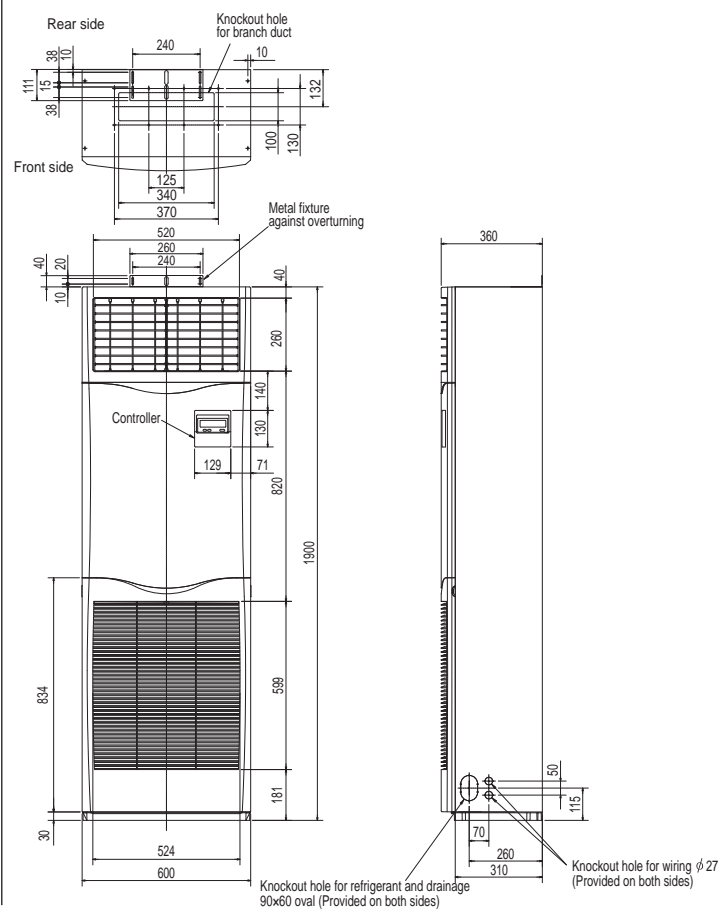
## INDOOR UNIT



## INDOOR UNIT



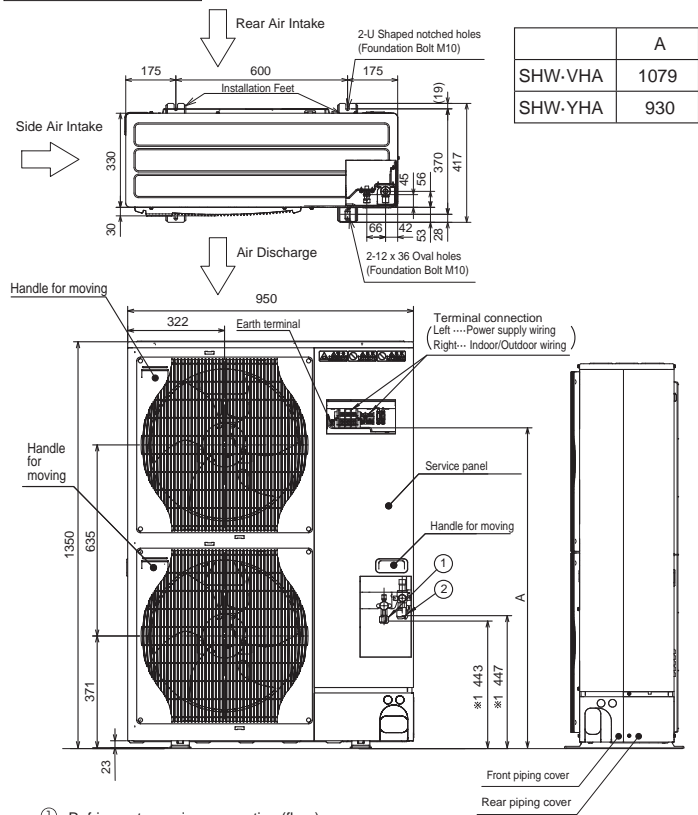
## INDOOR UNIT





PUHZ-SHW112VHA PUHZ-SHW112YHA  
PUHZ-SHW140YHA

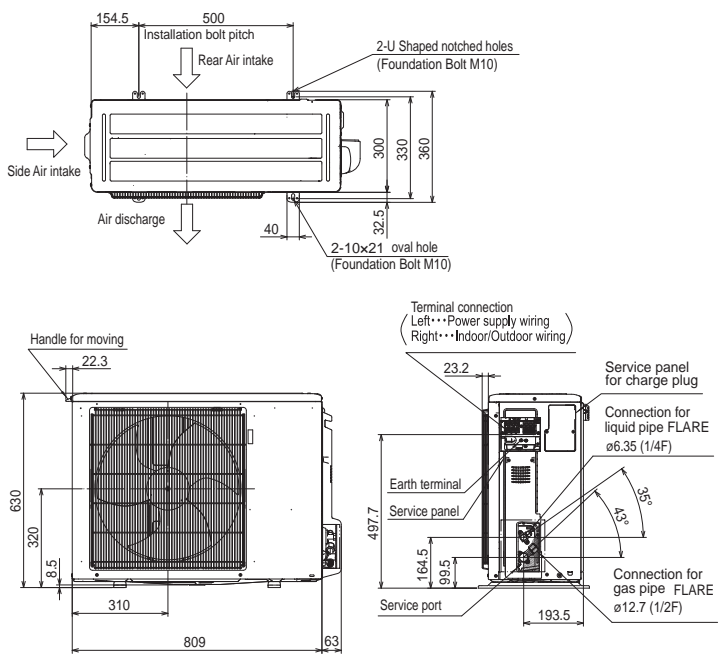
OUTDOOR UNIT



- ①...Refrigerant gas pipe connection (flare)  
②...Refrigerant liquid pipe connection (flare)  
※...Indicates stop valve connection location.

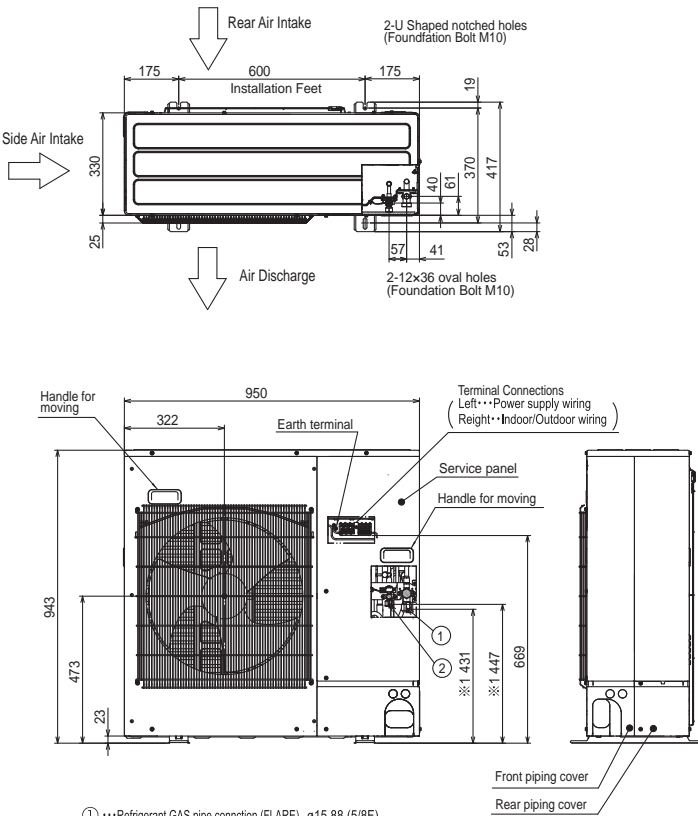
PUZ-ZM35VKA PUZ-ZM50VKA

OUTDOOR UNIT



PUZ-ZM60VHA PUZ-ZM71VHA

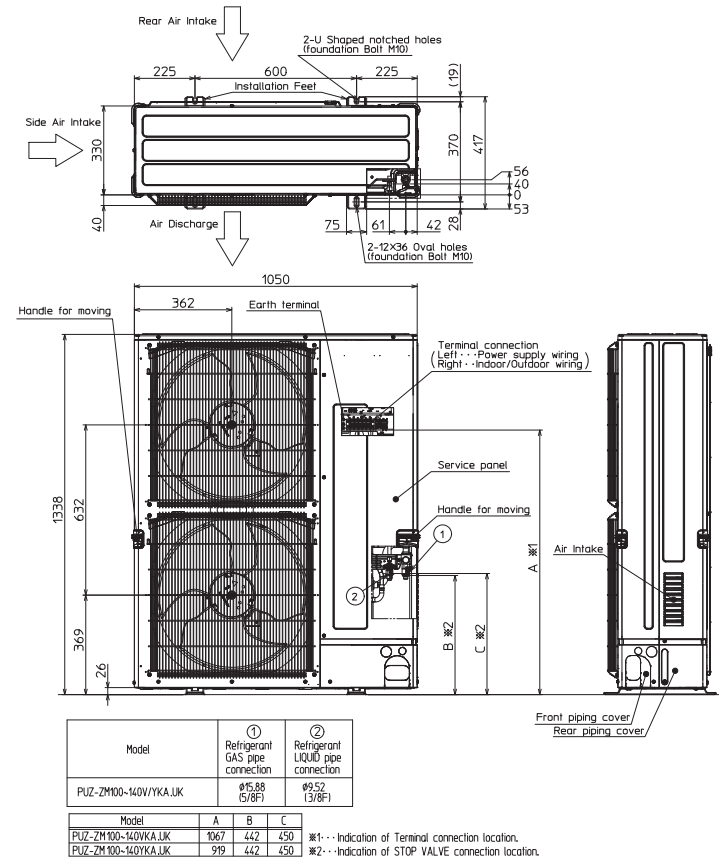
OUTDOOR UNIT



- ①...Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)  
②...Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)  
※1...Indication of STOP VALVE connection location.

PUZ-ZM100VKA PUZ-ZM125VKA PUZ-ZM140VKA  
PUZ-ZM100YKA PUZ-ZM125YKA PUZ-ZM140YKA

OUTDOOR UNIT



Model	① Refrigerant GAS pipe connection	② Refrigerant LIQUID pipe connection
PUZ-ZM100-140V/YKA.UK	ø15.88 (5/8F)	ø9.52 (3/8F)

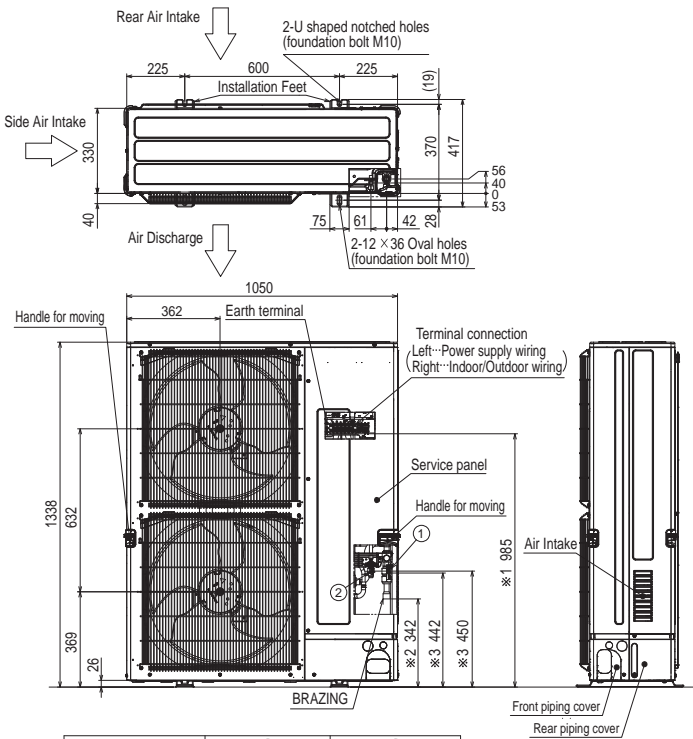
Model	A	B	C
PUZ-ZM100-140VKA.UK	1067	442	450
PUZ-ZM100-140YKA.UK	919	442	450

※1...Indication of Terminal connection location.  
※2...Indication of STOP VALVE connection location.

Unit : mm

PUHZ-ZRP200YKA3 PUHZ-ZRP250YKA3

OUTDOOR UNIT

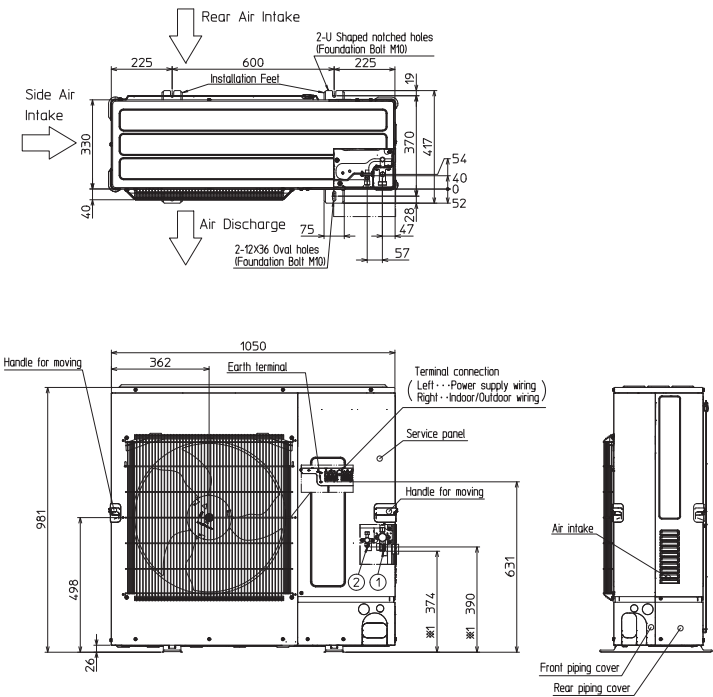


Model	① Refrigerant GAS pipe connection	② Refrigerant LIQUID pipe connection
PUHZ-ZRP200YKA3	ø19.05 (3/4F)	ø9.52 (3/8F)
PUHZ-ZRP250YKA3	ø19.05 (3/4F)	ø12.7 (1/2F)

※1---Indication of Terminal connection location.  
※2---Refrigerant GAS pipe connection (BRAZING) O.D.ø25.4.  
※3---Indication of STOP VALVE connection location.

PUZ-M100VKA PUZ-M100YKA  
PUZ-M125VKA PUZ-M125YKA  
PUZ-M140VKA PUZ-M140YKA

OUTDOOR UNIT

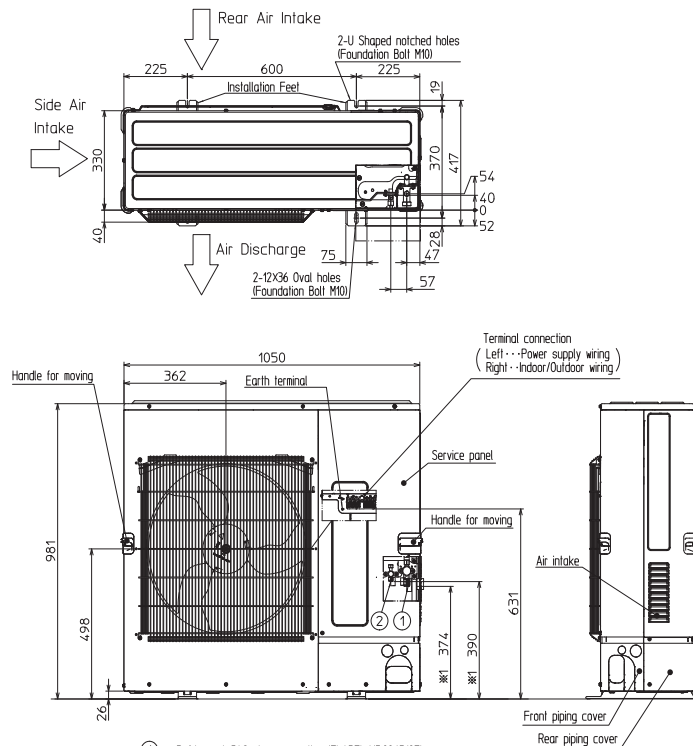


Example Of Notes

- ①---Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)  
②---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)  
※1---Indication of STOP VALVE connection location.

PUHZ-P100VKA PUHZ-P100YKA  
PUHZ-P125VKA PUHZ-P125YKA  
PUHZ-P140VKA PUHZ-P140YKA

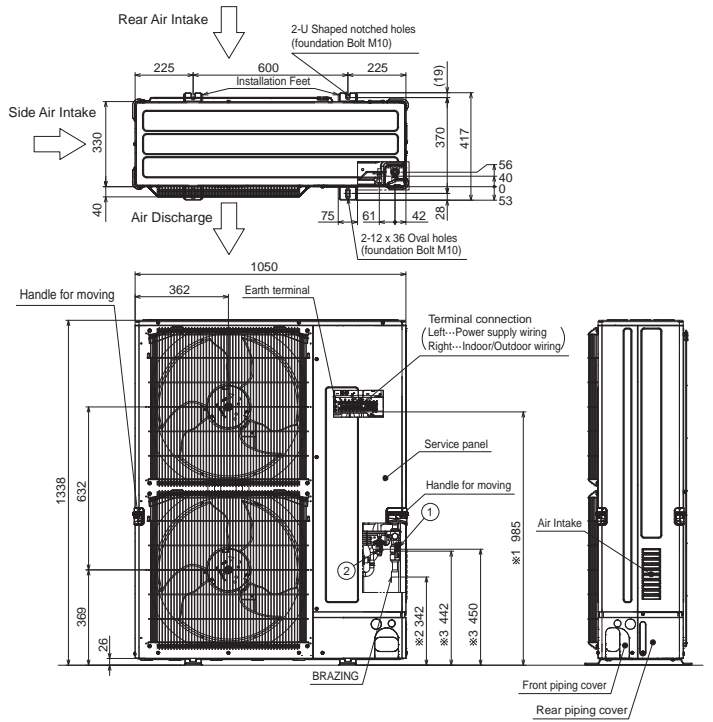
OUTDOOR UNIT



- ①---Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)  
②---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)  
※1---Indication of STOP VALVE connection location.

PUHZ-P200YKA3 PUHZ-P250YKA3

OUTDOOR UNIT



Model	① Refrigerant GAS pipe connection	② Refrigerant LIQUID pipe connection
PUHZ-P200YKA3	ø19.05 (3/4F)	ø9.52 (3/8F)
PUHZ-P250YKA3	ø19.05 (3/4F)	ø12.7 (1/2F)

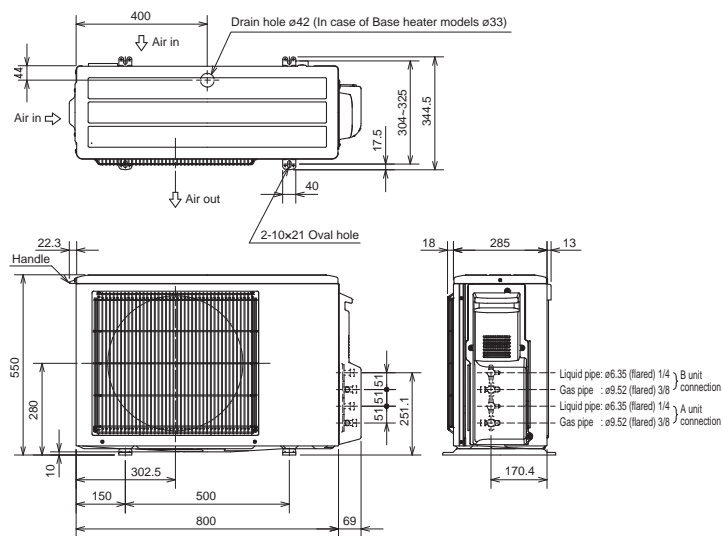
※1---Indication of Terminal connection location.  
※2---Refrigerant GAS pipe connection (BRAZING) O.D.ø25.4.  
※3---Indication of STOP VALVE connection location.



## MXZ SERIES

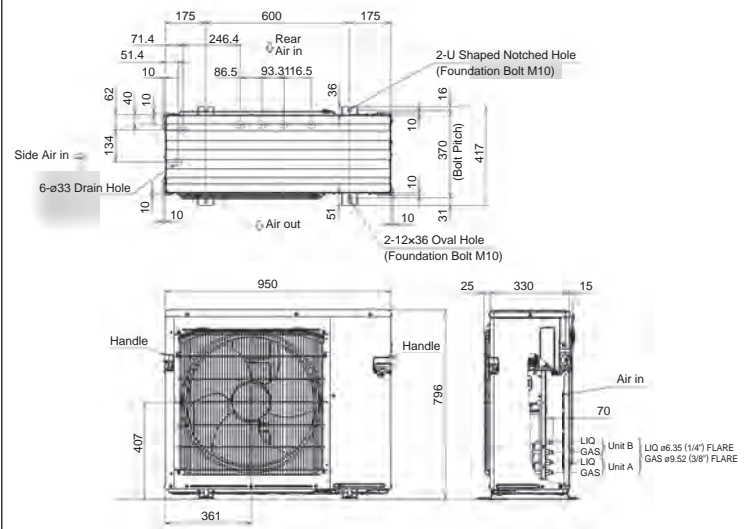
MXZ-2D33VA MXZ-2D42VA2 MXZ-2D53VA2 MXZ-2D53VAH2  
MXZ-2DM40VA MXZ-2HA40VF MXZ-2HA50VF  
MXZ-2F33VF MXZ-2F42VF MXZ-2F53VF MXZ-2F53VFH

### OUTDOOR UNIT



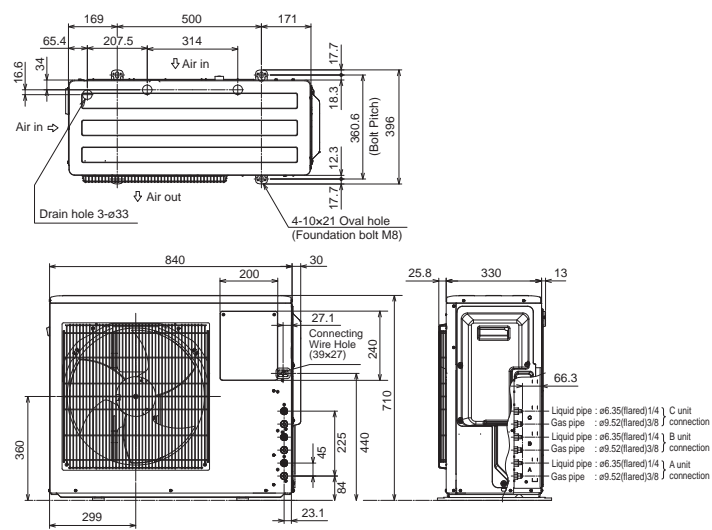
## MXZ-2E53VAHZ

### OUTDOOR UNIT



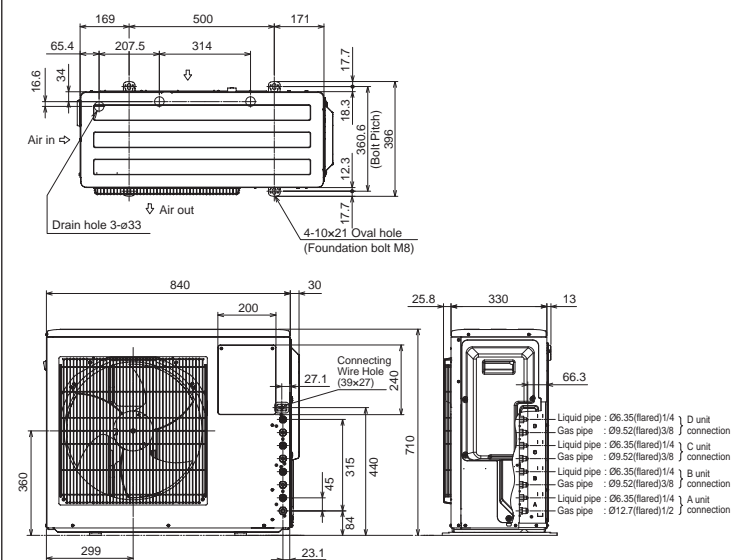
MXZ-3E54VA MXZ-3E68VA  
MXZ-3DM50VA MXZ-3HA50VF  
MXZ-3F54VF MXZ-3F68VF

### OUTDOOR UNIT



MXZ-4E72VA  
MXZ-4F72VF

### OUTDOOR UNIT

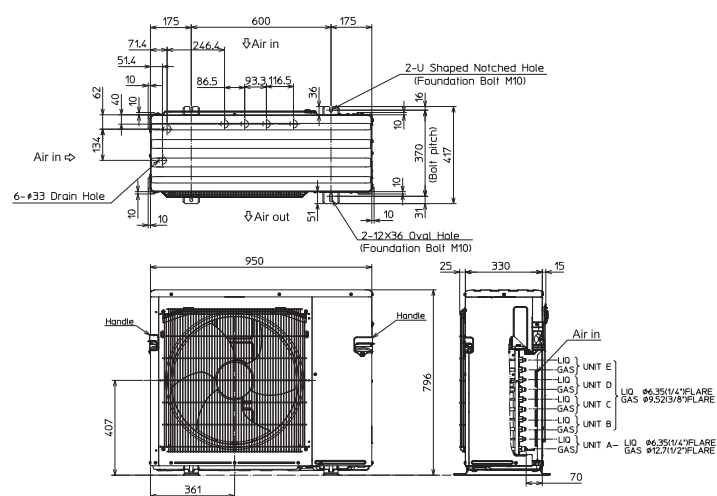




Unit : mm

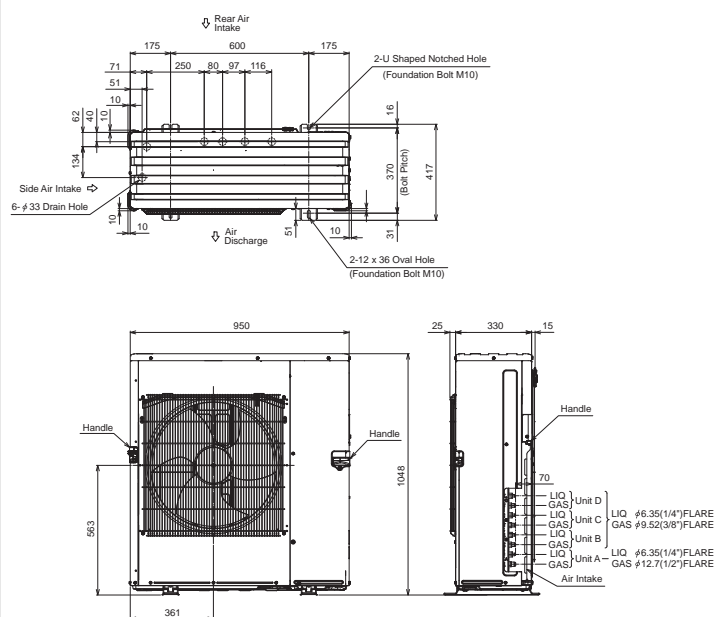
## MXZ-4E83VA MXZ-5E102VA

### OUTDOOR UNIT



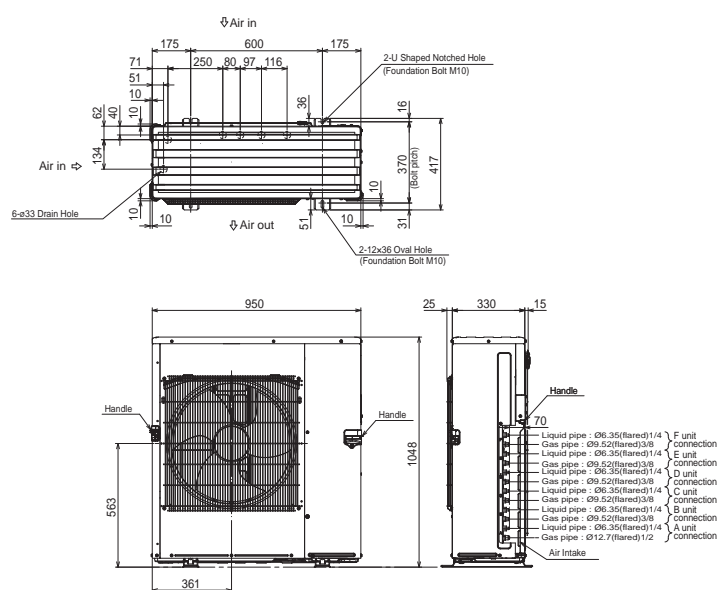
## MXZ-4E83VAHZ

### OUTDOOR UNIT



## MXZ-6D122VA2

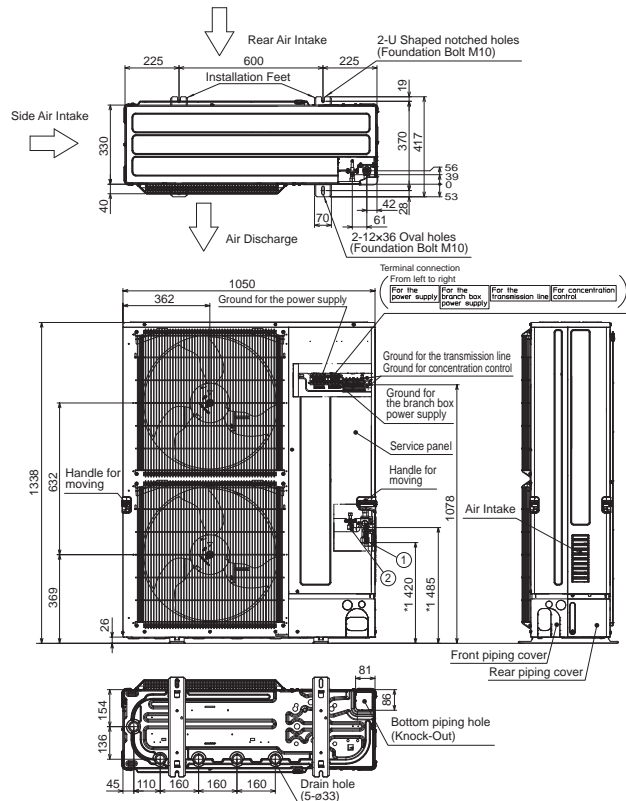
### OUTDOOR UNIT



PUMY SERIES

PUMY-P112/125/140VKM4(-BS)

OUTDOOR UNIT

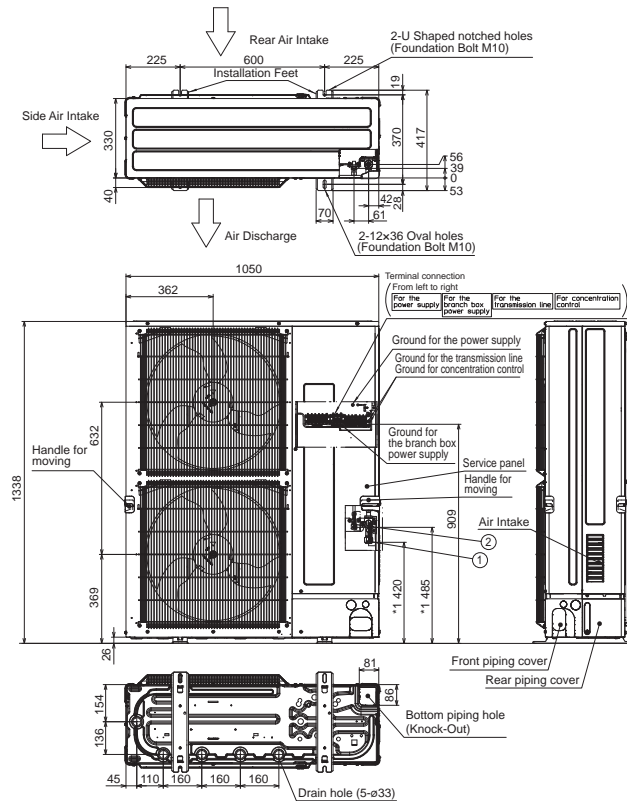


Example of Notes

- ① ---Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)
- ② ---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)
- \*1 ---Indication of STOP VALVE connection location.

PUMY-P112/125/140YKM(E)4(-BS)

OUTDOOR UNIT

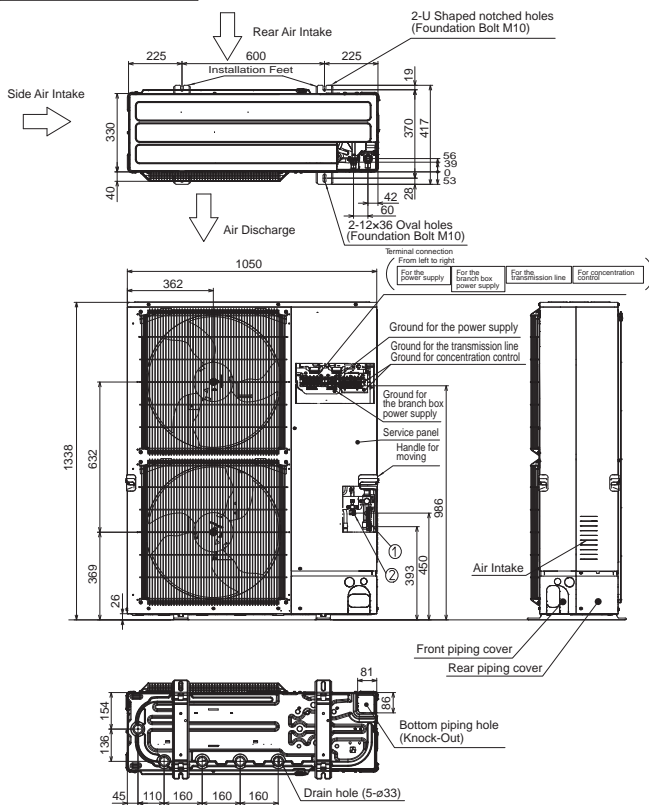


Example of Notes

- ① ---Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)
- ② ---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)
- \*1 ---Indication of STOP VALVE connection location.

PUMY-P200YKM2(-BS)

OUTDOOR UNIT

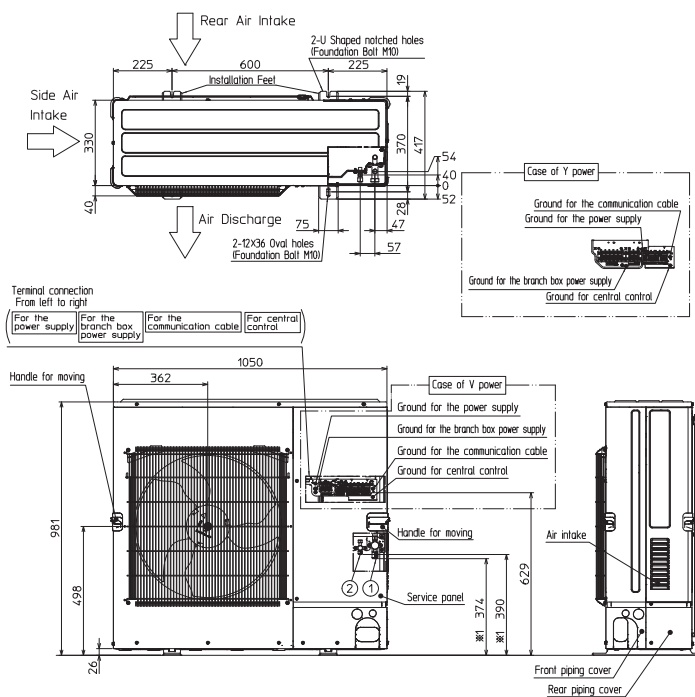


Example of Notes

- ① ---Refrigerant GAS pipe connection (FLARE) ø19.05 (3/4F)
- ② ---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)
- \*1 ---Indication of STOP VALVE connection location.

PUMY-SP112/125/140VKM(-BS)  
PUMY-SP112/125/140YKM(-BS)

OUTDOOR UNIT

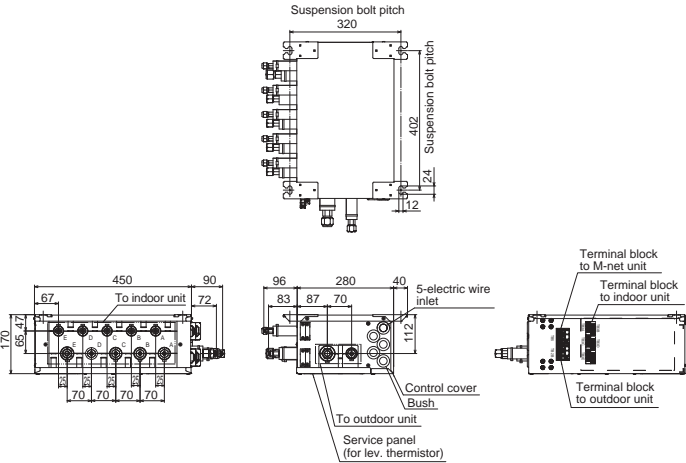


- ① ---Refrigerant GAS pipe connection (FLARE) ø15.88 (5/8F)
- ② ---Refrigerant LIQUID pipe connection (FLARE) ø9.52 (3/8F)
- \*1 ---Indication of STOP VALVE connection location.

PAC-MK53BC

Suspension bolt: W3/W8 (M10)

Branch box



Suspension bolt : W3/8(M10)

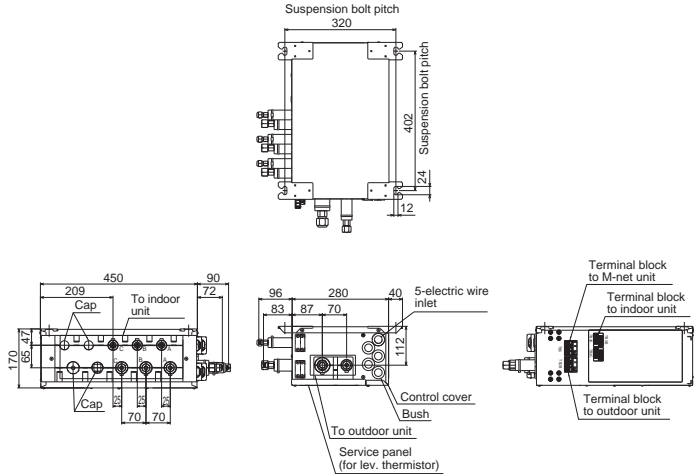
Refrigerant pipe flared connection

	A	B	C	D	E	To outdoor unit
Liquid pipe	1/4F	1/4F	1/4F	1/4F	1/4F	3/8F
Gas pipe	3/8F	3/8F	3/8F	3/8F	1/2F	5/8F

PAC-MK33BC

Suspension bolt: W3/W8 (M10)

Branch box



Suspension bolt : W3/8(M10)

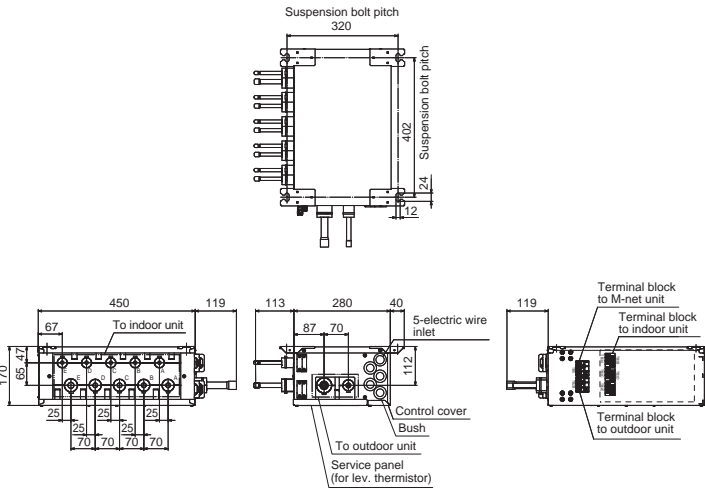
Refrigerant pipe flared connection

	A	B	C		To outdoor unit
Liquid pipe	1/4F	1/4F	1/4F		3/8F
Gas pipe	3/8F	3/8F	3/8F		5/8F

PAC-MK53BCB

Suspension bolt: W3/W8 (M10)

Branch box



Suspension bolt : W3/8(M10)

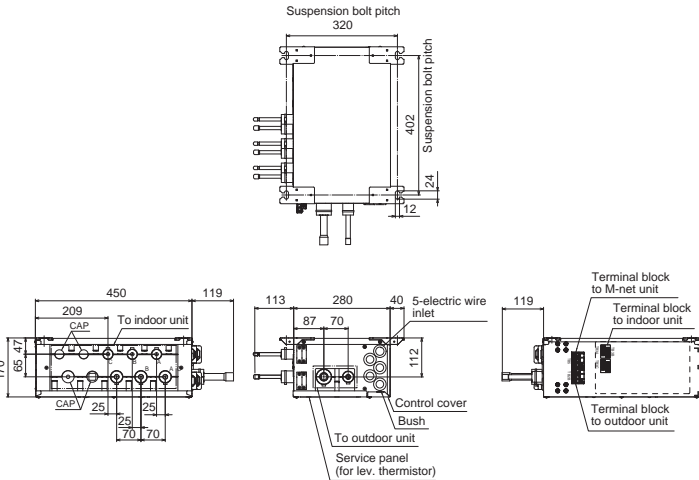
Refrigerant pipe brazed connection

	A	B	C	D	E	To outdoor unit
Liquid pipe	ø6.35	ø6.35	ø6.35	ø6.35	ø6.35	ø9.52
Gas pipe	ø9.52	ø9.52	ø9.52	ø9.52	ø12.7	ø15.88

PAC-MK33BCB

Suspension bolt: W3/W8 (M10)

Branch box



Suspension bolt : W3/8(M10)

Refrigerant pipe brazed connection

	A	B	C		To outdoor unit
Liquid pipe	ø6.35	ø6.35	ø6.35		ø9.52
Gas pipe	ø9.52	ø9.52	ø9.52		ø15.88

Unit : mm

## Piping Installation

### M SERIES

#### Single type

Series	Class <Outdoor unit>	Maximum Piping Length (m)		Maximum Height Difference (m)		Maximum Number of Bends	
		Total length (A)		Outdoor unit - Indoor unit (H)		Total number	
MSZ-L	25 / 35	20		12		10	
	50	20		12		10	
	60	30		15		10	
MSZ-A	25 / 35 / 42	20		12		10	
	50	20					
MSZ-F MFZ	25 / 35	20		12		10	
	50	30		15		10	
MSZ-E	25 / 35 / 42	20		12		10	
	50	30		15		10	
MSZ-S	25 / 35 / 42	20		12		10	
	50	30		15		10	
MSZ-G	60 / 71	30		15		10	
MSZ-W MSZ-D	25 / 35	20		12		10	
MSY-TP	35 / 50	20		12		10	
MSZ-HJ	25 / 35 / 50	20		12		10	
	60 / 71	30		15		10	
MSZ-HR	25 / 35 / 42 / 50	20		12		10	

### S SERIES & P SERIES

#### Single type

Series	Class <Outdoor unit>	Maximum Piping Length (m)	Maximum Height Difference (m)	Maximum Number of Bends
		Total length (A)	Outdoor unit - Indoor unit (H)	Total number
ZUBADAN (PUHZ-SHW)	80 / 112 / 140	75	30	15
Power Inverter (PUZ-ZM)	35 / 50	50	30	15
	60 / 71	55	30	15
	100 / 125 / 140	100	30	15
Power Inverter (PUHZ-ZRP)	35 / 50 / 60 / 71	50	30	15
	100 / 125 / 140	75	30	15
	200 / 250	100	30	15
Standard Inverter (PUZ-M & SUZ-M)	25 / 35	20	12	10
	50 / 60 / 71	30	30	10
	100	55	30	15
	125 / 140	65		
Standard Inverter (PUHZ-P & SUZ-KA)	25 / 35	20	12	10
	50 / 60 / 71	30	30	10
	100 / 125 / 140	50	30	15
	200 / 250	70	30	15

#### Twin type

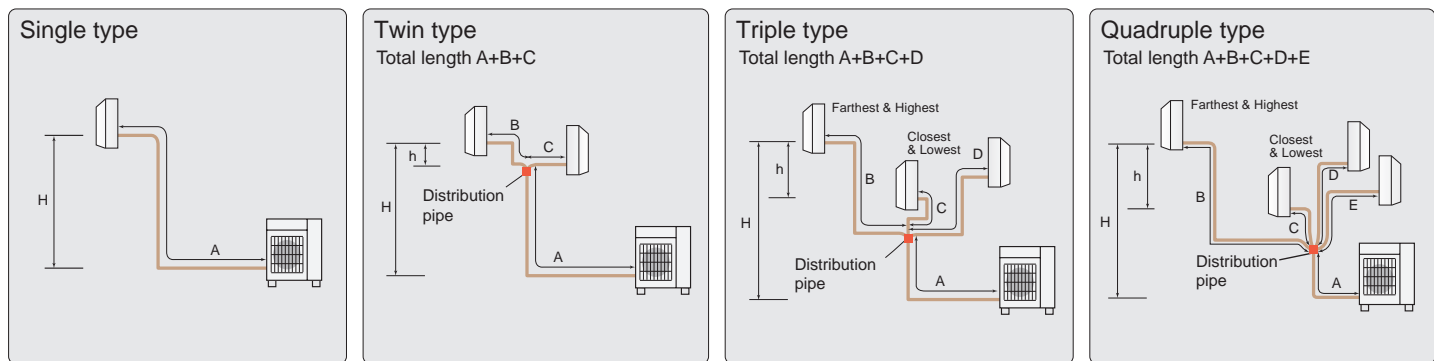
Series	Class <Outdoor unit>	Maximum Piping Length (m)			Maximum Height Difference (m)		Maximum Number of Bends Total number
		Total length A+B+C	Pipe length difference from distribution pipe  B-C	Indoor unit - Distribution pipe B	Outdoor unit - Indoor unit H	Indoor unit - Indoor unit h	
ZUBADAN (PUHZ-SHW)	80 / 112 / 140	75	8	20	30	1	15
Power Inverter (PUZ-ZM)	71	55	8	20	30	1	15
	100 / 125 / 140	100	8	20	30	1	15
Power Inverter (PUHZ-ZRP)	71	50	8	20	30	1	15
	100 / 125 / 140	75	8	20	30	1	15
	200 / 250	100	8	30	30	1	15
Standard Inverter (PUZ-M)	100	55	8	20	30	1	15
	125 / 140	65					
Standard Inverter (PUHZ-P)	100 / 125 / 140	50	8	20	30	1	15
	200 / 250	70	8	30	30	1	15

#### Triple type

Series	Class <Outdoor unit>	Maximum Piping Length (m)			Maximum Height Difference (m)		Maximum Number of Bends Total number
		Total length A+B+C+D	Pipe length difference from distribution pipe  B-C	Indoor unit - Distribution pipe B	Outdoor unit - Indoor unit H	Indoor unit - Indoor unit h	
Power Inverter (PUZ-ZM)	140	100	8	20	30	1	15
Power Inverter (PUHZ-ZRP)	140	75	8	20	30	1	15
	200 / 250	100	8	30	30	1	15
Standard Inverter (PUZ-M)	140	65	8	20	30	1	15
Standard Inverter (PUHZ-P)	140	50	8	20	30	1	15
	200 / 250	70	8	28	30	1	15

#### Quadruple type

Series	Class <Outdoor unit>	Maximum Piping Length (m)			Maximum Height Difference (m)		Maximum Number of Bends Total number
		Total length A+B+C+D+E	Pipe length difference from distribution pipe  B-C	Indoor unit - Distribution pipe B	Outdoor unit - Indoor unit H	Indoor unit - Indoor unit h	
Power Inverter (PUHZ-ZRP)	200 / 250	100	8	30	30	1	15
Standard Inverter (PUHZ-P)	200 / 250	70	8	22	30	1	15



## MXZ SERIES

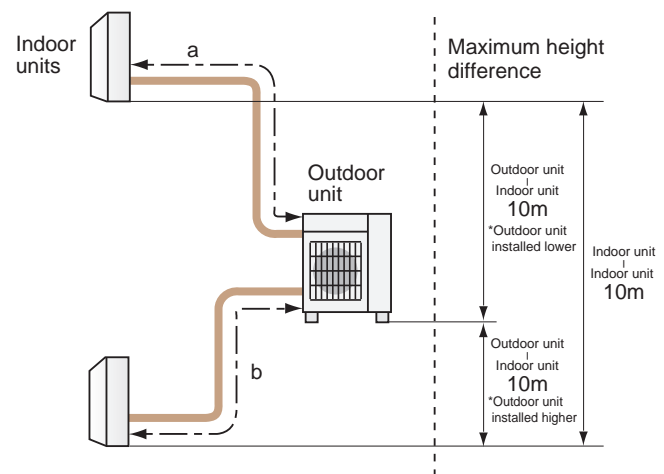
MXZ-2D33VA, MXZ-2F33VF

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b)	15m
Total length (a+b)	20m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b)	15
Total number (a+b)	20

\* When connecting MFZ-KJ Series indoor unit, additional refrigerant is required. For details, please contact Mitsubishi Electric.

Regarding MXZ-2D33, the second unit should be a different type in the case of selecting one MFZ-KJ.



MXZ-2D42VA2, MXZ-2F42VF

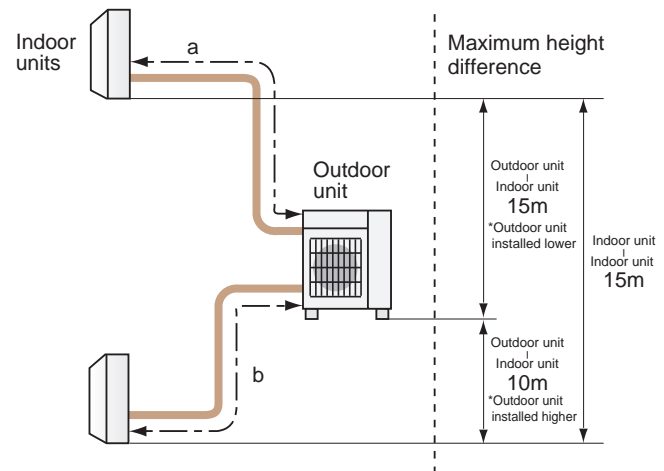
Maximum Piping Length	
Outdoor unit - Indoor unit (a,b)	20m
Total length (a+b)	30m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b)	20
Total number (a+b)	30

MXZ-2D53VA(H)2, MXZ-2E53VAHZ, MXZ-2F53VF(H)

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b)	20m
Total length (a+b)	30m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b)	20
Total number (a+b)	30



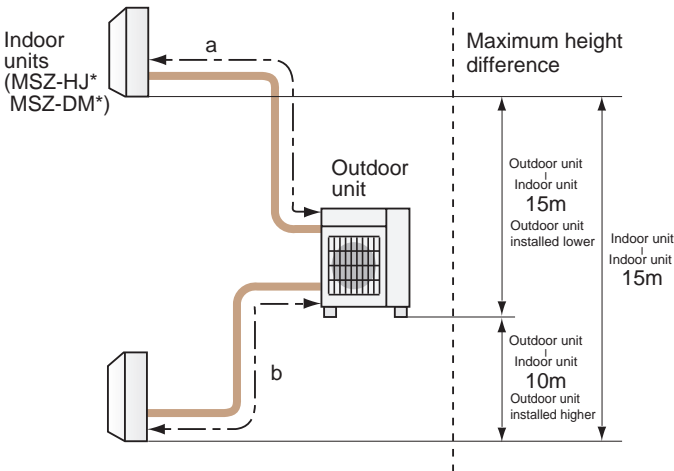
\* When connecting MFZ-KJ Series indoor unit to MXZ-2D42VA2 or MXZ-2D53VA(H)2, additional refrigerant is required. For details, please contact Mitsubishi Electric.

MXZ SERIES

MXZ-2DM40VA

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b)	20m
Total length (a+b)	30m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b)	20
Total number (a+b)	30



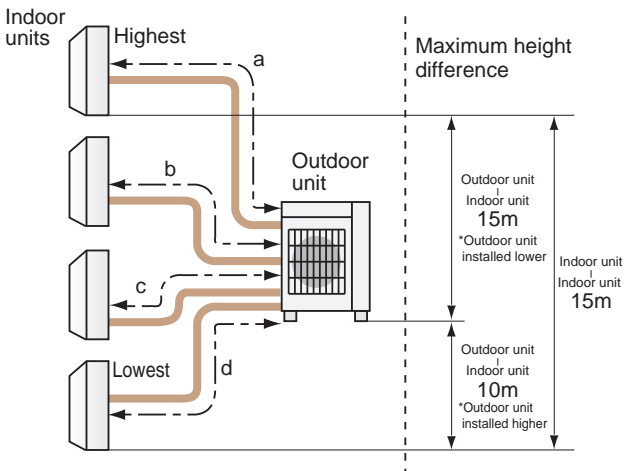
\* Only MSZ-HJ and DM model is connectable.

MXZ-4E72VA, MXZ-4F72VF

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b,c,d)	25m
Total length (a+b+c+d)	60m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b,c,d)	25
Total number (a+b+c+d)	60

\* When connecting MFZ-KJ Series indoor unit, additional refrigerant is required. For details, please contact Mitsubishi Electric.



MXZ-4E83VA, MXZ-4E83VAHZ

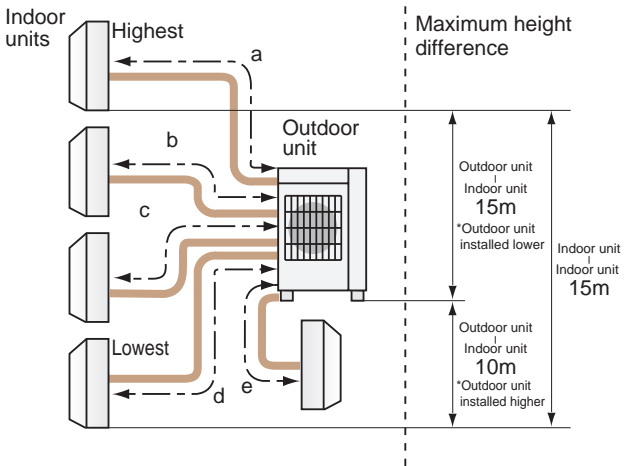
Maximum Piping Length	
Outdoor unit - Indoor unit (a,b,c,d)	25m
Total length (a+b+c+d)	70m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b,c,d)	25
Total number (a+b+c+d)	70

MXZ-5E102VA

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b,c,d,e)	25m
Total length (a+b+c+d+e)	80m

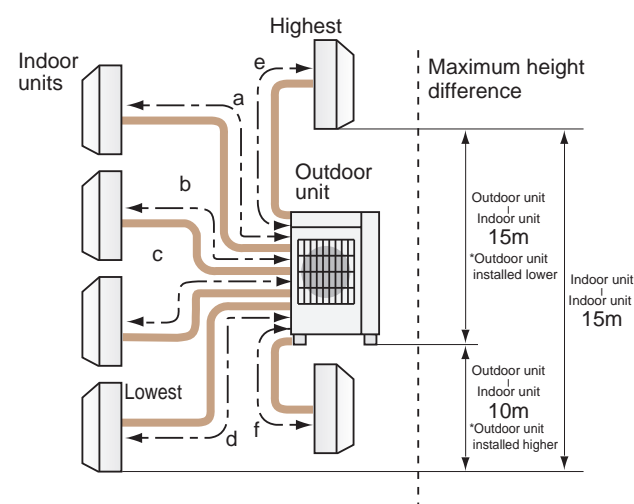
Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b,c,d,e)	25
Total number (a+b+c+d+e)	80



# MXZ-6D122VA2

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b,c,d,e,f)	25m
Total length (a+b+c+d+e+f)	80m

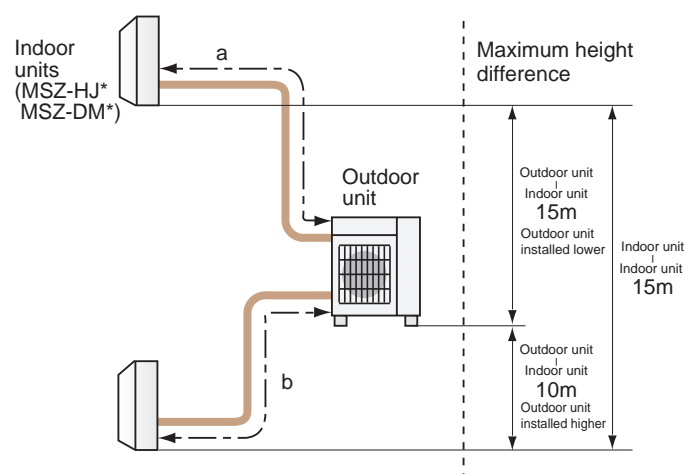
Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b,c,d,e,f)	25
Total number (a+b+c+d+e+f)	80



# MXZ-2DM40VA, MXZ-2HA40VF, MXZ-2HA50VF

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b)	20m
Total length (a+b)	30m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b)	20
Total number (a+b)	30

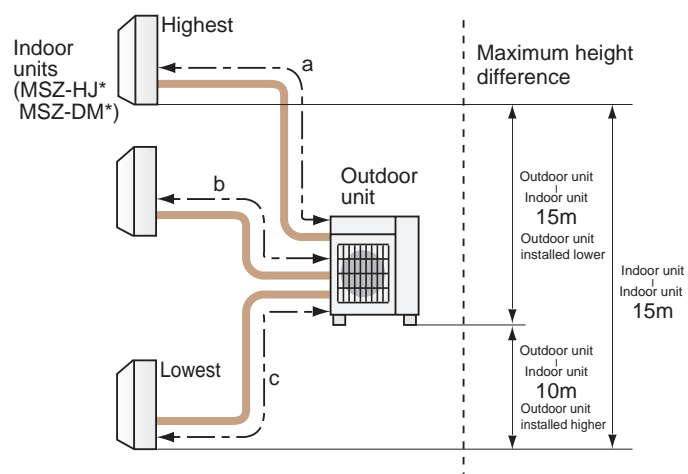


\* Only MSZ-HJ and DM model is connectable.

# MXZ-3DM50VA, MXZ-3HA50VF

Maximum Piping Length	
Outdoor unit - Indoor unit (a,b,c)	25m
Total length (a+b+c)	50m

Maximum Number of Bends	
Outdoor unit - Indoor unit (a,b,c)	25
Total number (a+b+c)	50



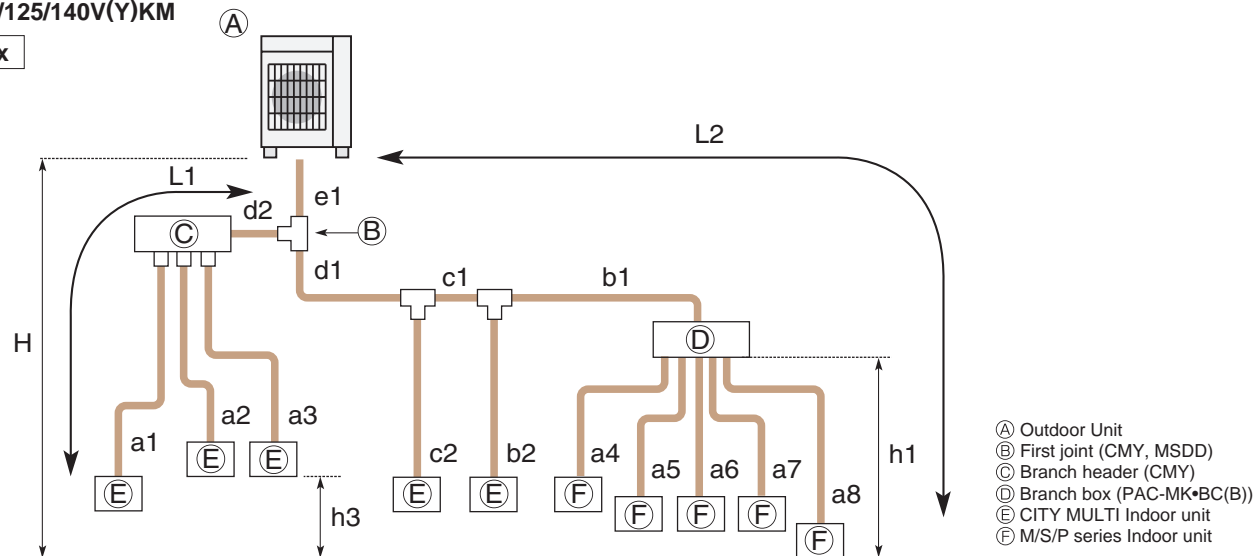
\* Only MSZ-HJ and DM model is connectable.



## PUMY SERIES

PUMY-SP112/125/140V(Y)KM

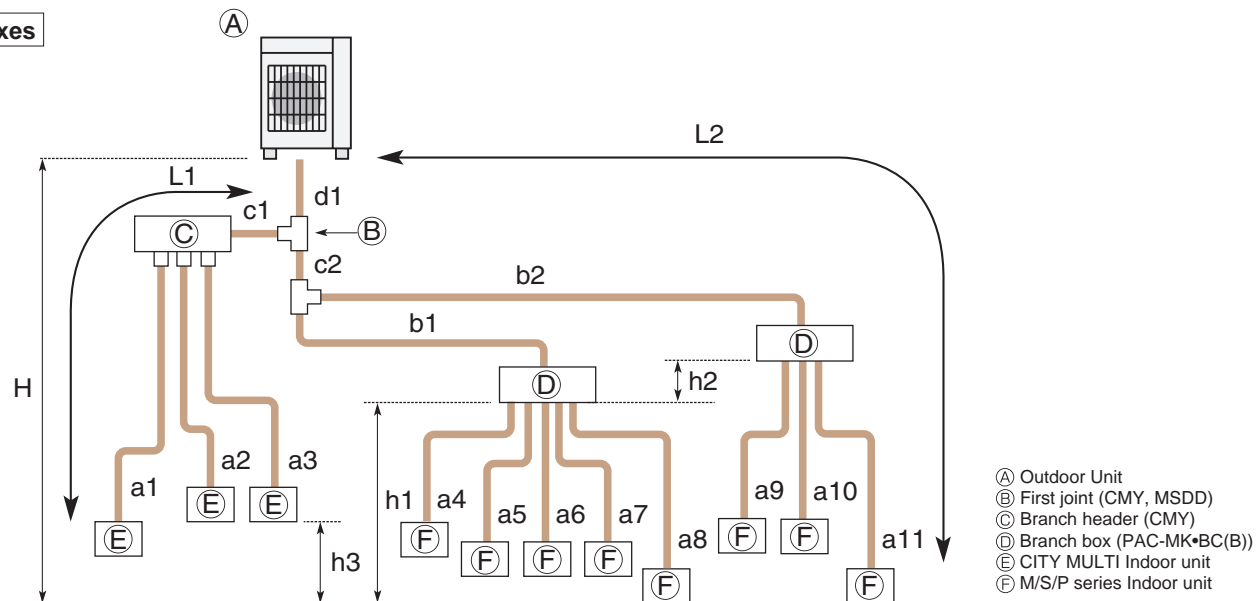
### 1-Branch box



Permissible length (One-way)	Total piping length	$e1 + d1 + d2 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 \leq 120 \text{ m}$
	Farthest piping length (L1)	$e1 + d2 + a1 \text{ or } e1 + d1 + c1 + b2 \leq 70 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$e1 + d1 + c1 + b1 + a8 \leq 50 \text{ m}$
	Piping length between outdoor unit and branch box	$e1 + d1 + c1 + b1 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$d1 + c1 + b1 \text{ or } d1 + c1 + b2 \leq 50 \text{ m}$
	Farthest piping length after branch box	$a8 \leq 25 \text{ m}$
	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 \leq 95 \text{ m}$
Permissible height difference (One-way)	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
		$H \leq 30 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In branch box/indoor unit section (h1)	$h1 \leq 15 \text{ m}$
	In each indoor unit (h3)	$h3 \leq 12 \text{ m}$
Number of bends		$ e1 + d2 + a1 ,  e1 + d2 + a2 ,  e1 + d2 + a3 ,  e1 + d1 + c2 ,  e1 + d1 + c1 + b2 ,  e1 + d1 + c1 + b1 + a4 ,  e1 + d1 + c1 + b1 + a5 ,  e1 + d1 + c1 + b1 + a6 ,  e1 + d1 + c1 + b1 + a7 ,  e1 + d1 + c1 + b1 + a8  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

### 2-Branch boxes

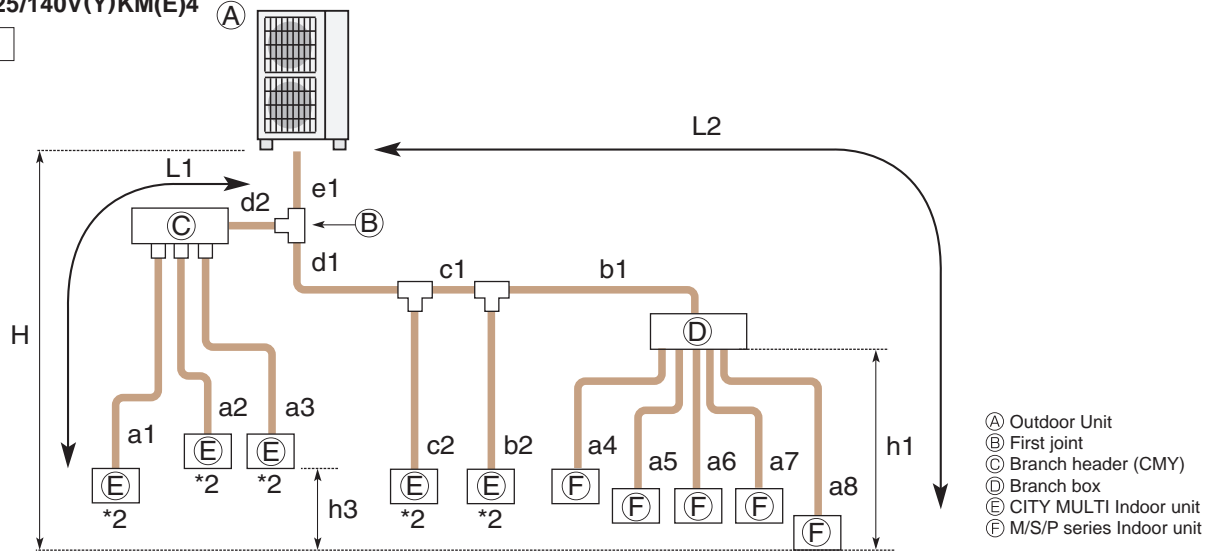


Permissible length (One-way)	Total piping length	$d1 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 120 \text{ m}$
	Farthest piping length (L1)	$d1 + c1 + a1 \leq 70 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$d1 + c2 + b2 + a11 \leq 80 \text{ m}$
	Piping length between outdoor unit and branch boxes	$d1 + c2 + b1 + b2 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$c2 + b2 \text{ or } c1 + a1 \leq 50 \text{ m}$
	Farthest piping length after branch box	$a11 \leq 25 \text{ m}$
	Farthest branch box from outdoor unit	$d1 + c2 + b2 \leq 55 \text{ m}$
Permissible height difference (One-way)	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 95 \text{ m}$
	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
		$H \leq 30 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In branch box/indoor unit section (h1)	$h1 + h2 \leq 15 \text{ m}$
Number of bends	In each branch unit (h2)	$h2 \leq 15 \text{ m}$
	In each indoor unit (h3)	$h3 \leq 12 \text{ m}$
Number of bends		$ d1 + c1 + a1 ,  d1 + c1 + a2 ,  d1 + c1 + a3 ,  d1 + c2 + b1 + a4 ,  d1 + c2 + b1 + a5 ,  d1 + c2 + b1 + a6 ,  d1 + c2 + b1 + a7 ,  d1 + c2 + b1 + a8 ,  d1 + c2 + b2 + a9 ,  d1 + c2 + b2 + a10 ,  d1 + c2 + b2 + a11  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

# PUMY-P112/125/140V(Y)KM(E)4

## 1-Branch box

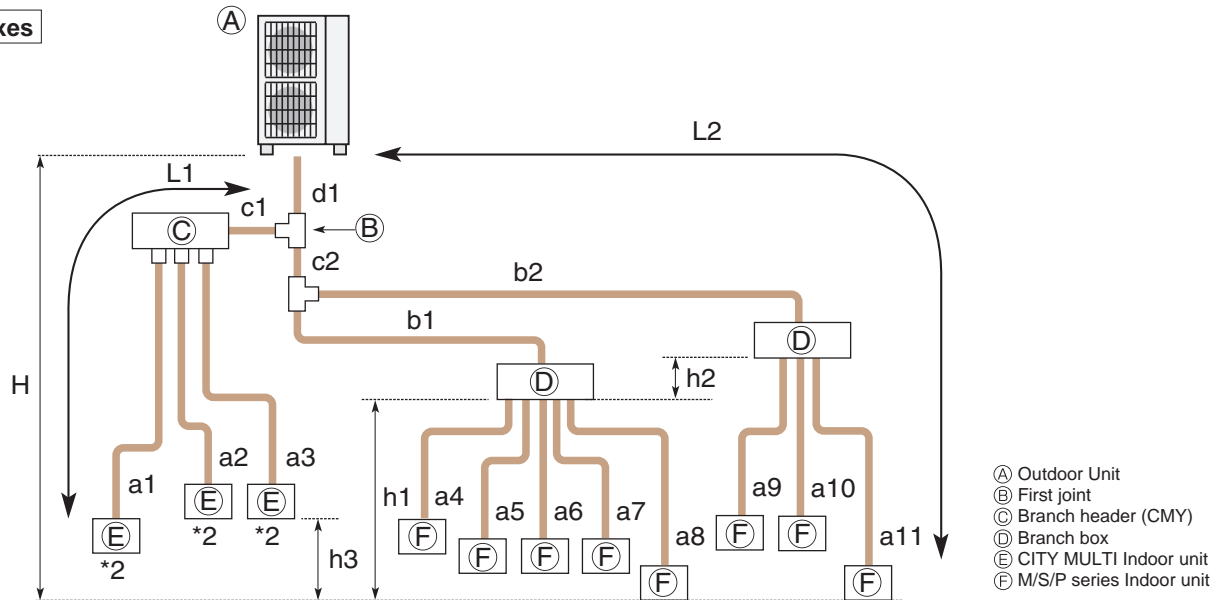


Permissible length (One-way)	Total piping length	$e1 + d1 + d2 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 \leq 300 \text{ m}$
	Farthest piping length (L1)	$e1 + d2 + a1 \text{ or } e1 + d1 + c1 + b2 \leq 85 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$e1 + d1 + c1 + b1 + a8 \leq 80 \text{ m}$
	Piping length between outdoor unit and branch box	$e1 + d1 + c1 + b1 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$d1 + c1 + b1 \text{ or } d1 + c1 + b2 \leq 30 \text{ m}$
	Farthest piping length after branch box	$a8 \leq 25 \text{ m}$
	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 \leq 95 \text{ m}$
Permissible height difference (One-way)	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
	In branch box/indoor unit section (h1)	$H \leq 40 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In each indoor unit (h3)	$h1 \leq 15 \text{ m}$
		$h3 \leq 12 \text{ m}$
Number of bends		$ e1 + d2 + a1 ,  e1 + d2 + a2 ,  e1 + d2 + a3 ,  e1 + d1 + c2 ,  e1 + d1 + c1 + b2 ,  e1 + d1 + c1 + b1 + a4 ,  e1 + d1 + c1 + b1 + a5 ,  e1 + d1 + c1 + b1 + a6 ,  e1 + d1 + c1 + b1 + a7 ,  e1 + d1 + c1 + b1 + a8  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

\*2: PKFY and PFFY Series cannot be connected.

## 2-Branch boxes



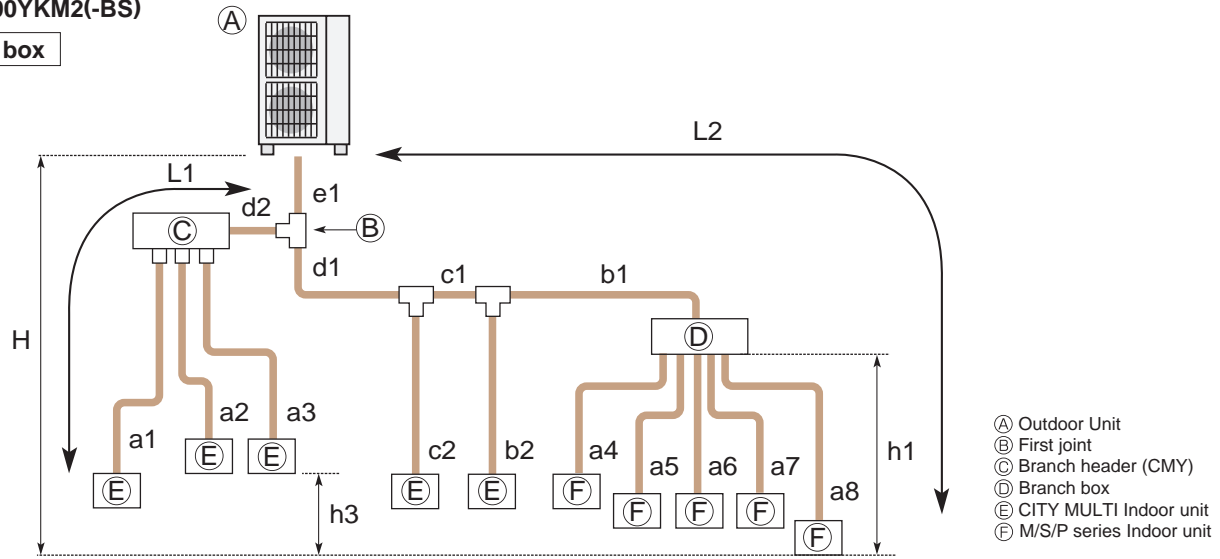
Permissible length (One-way)	Total piping length	$d1 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 240 \text{ m}$
	Farthest piping length (L1)	$d1 + c1 + a1 \leq 85 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$d1 + c2 + b2 + a11 \leq 80 \text{ m}$
	Piping length between outdoor unit and branch boxes	$d1 + c2 + b1 + b2 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$c2 + b2 \text{ or } c1 + a1 \leq 30 \text{ m}$
	Farthest piping length after branch box	$a11 \leq 25 \text{ m}$
	Farthest branch box from outdoor unit	$d1 + c2 + b2 \leq 55 \text{ m}$
	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 95 \text{ m}$
Permissible height difference (One-way)	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
	In branch box/indoor unit section (h1)	$H \leq 40 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In each branch unit (h2)	$h1 + h2 \leq 15 \text{ m}$
	In each indoor unit (h3)	$h2 \leq 15 \text{ m}$
Number of bends		$ d1 + c1 + a1 ,  d1 + c1 + a2 ,  d1 + c1 + a3 ,  d1 + c2 + b1 + a4 ,  d1 + c2 + b1 + a5 ,  d1 + c2 + b1 + a6 ,  d1 + c2 + b1 + a7 ,  d1 + c2 + b1 + a8 ,  d1 + c2 + b2 + a9 ,  d1 + c2 + b2 + a10 ,  d1 + c2 + b2 + a11  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

\*2: PKFY and PFFY Series cannot be connected.

## PUMY-P200YKM2(-BS)

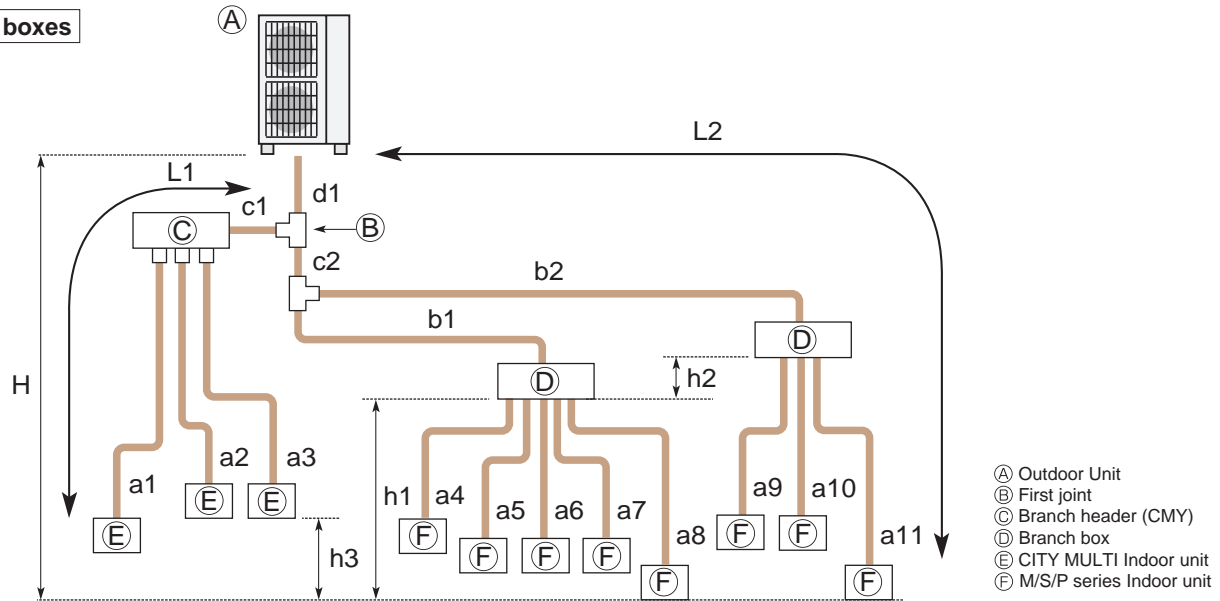
### 1-Branch box



Permissible length (One-way)	Total piping length	$e1 + d1 + d2 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 \leq 150 \text{ m}$
	Farthest piping length (L1)	$e1 + d2 + a1 \text{ or } e1 + d1 + c1 + b2 \leq 80 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$e1 + d1 + c1 + b1 + a8 \leq 80 \text{ m}$
	Piping length between outdoor unit and branch box	$e1 + d1 + c1 + b1 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$d1 + c1 + b1 \text{ or } d1 + c1 + b2 \leq 30 \text{ m}$
	Farthest piping length after branch box	$a8 \leq 25 \text{ m}$
	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 \leq 95 \text{ m}$
Permissible height difference (One-way)	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
	In branch box/indoor unit section (h1)	$H \leq 40 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In each indoor unit (h3)	$h1 \leq 15 \text{ m}$
	In each indoor unit (h3)	$h3 \leq 12 \text{ m}$
Number of bends		$ e1 + d2 + a1 ,  e1 + d2 + a2 ,  e1 + d2 + a3 ,  e1 + d1 + c2 ,  e1 + d1 + c1 + b2 ,  e1 + d1 + c1 + b1 + a4 ,  e1 + d1 + c1 + b1 + a5 ,  e1 + d1 + c1 + b1 + a6 ,  e1 + d1 + c1 + b1 + a7 ,  e1 + d1 + c1 + b1 + a8  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

### 2-Branch boxes



Permissible length (One-way)	Total piping length	$d1 + c1 + c2 + b1 + b2 + a1 + a2 + a3 + a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 150 \text{ m}$
	Farthest piping length (L1)	$d1 + c1 + a1 \leq 80 \text{ m}$
	Farthest piping length. Via Branch box (L2)	$d1 + c2 + b2 + a11 \leq 80 \text{ m}$
	Piping length between outdoor unit and branch boxes	$d1 + c2 + b1 + b2 \leq 55 \text{ m}$
	Farthest piping length from the first joint	$c2 + b2 \text{ or } c1 + a1 \leq 30 \text{ m}$
	Farthest piping length after branch box	$a11 \leq 25 \text{ m}$
	Farthest branch box from outdoor unit	$d1 + c2 + b2 \leq 55 \text{ m}$
	Total piping length between branch boxes and indoor units	$a4 + a5 + a6 + a7 + a8 + a9 + a10 + a11 \leq 95 \text{ m}$
Permissible height difference (One-way)	In indoor/outdoor section (H)*1	$H \leq 50 \text{ m}$ (In case of outdoor unit is set higher than indoor unit)
	In branch box/indoor unit section (h1)	$H \leq 40 \text{ m}$ (In case of outdoor unit is set lower than indoor unit)
	In each branch unit (h2)	$h1 + h2 \leq 15 \text{ m}$
	In each indoor unit (h3)	$h2 \leq 15 \text{ m}$
Number of bends		$ d1 + c1 + a1 ,  d1 + c1 + a2 ,  d1 + c1 + a3 ,  d1 + c2 + b1 + a4 ,  d1 + c2 + b1 + a5 ,  d1 + c2 + b1 + a6 ,  d1 + c2 + b1 + a7 ,  d1 + c2 + b1 + a8 ,  d1 + c2 + b2 + a9 ,  d1 + c2 + b2 + a10 ,  d1 + c2 + b2 + a11  \leq 15$

\*1: Branch box should be placed within the level between the outdoor unit and indoor units.

# Explanation of Terminology

## Maximum piping length:

This is the maximum allowable length of the refrigerant piping. The amount of refrigerant pipe used cannot be longer than the length specified.

### Total length:

The maximum allowable combined length of all the refrigerant piping between the outdoor unit and indoor unit(s).

### Outdoor Unit - Indoor Unit:

The maximum allowable length of the refrigerant piping between the outdoor unit and indoor units installed when multiple units are connected to a single outdoor unit. This distance limitation refers to the maximum length between the outdoor unit and the farthest indoor unit.

### Pipe length difference from distribution pipe:

The maximum allowable difference in refrigerant piping length from the distribution pipe to the farthest indoor unit and from the distribution pipe to the closest indoor unit when multiple indoor units are connected to a single outdoor unit using a distribution pipe.

### Indoor Unit - Distribution Pipe:

The maximum allowable length of the refrigerant piping between indoor units and the distribution pipe when multiple indoor units are connected to a single outdoor unit.

## Maximum height difference:

This is the maximum allowable height difference. It is necessary to install the air conditioning system so that the height distance is no more than the difference specified. (Specified differences may vary if the outdoor unit is installed higher or lower than the indoor units).

### Outdoor unit - Indoor unit:

The maximum allowable difference in height between the outdoor unit and indoor units when installed (when multiple indoor units are connected to a single outdoor unit, this distance limitation refers to the maximum height difference between the outdoor unit and an indoor unit).

### Indoor unit - Indoor unit:

The maximum allowable difference between the heights of indoor units when multiple indoor units are connected to a single outdoor unit.

## Maximum number of bends:

This is the maximum allowable number of bends in the refrigerant piping. The total number of bends in the refrigerant piping used cannot exceed the number specified.

### Total number:

The maximum allowable number of bends for all refrigerant piping between the outdoor unit and indoor units.

### Outdoor unit - Indoor unit:

The maximum allowable number of bends between the outdoor unit and each indoor unit when multiple indoor units are connected to a single outdoor unit.

## Conditions for specifications

Temperature conditions are based on JIS B8616.

Cooling	Indoor	27°C DB, 19°C WB
	Outdoor	35°C DB, 24°C WB
Heating	Indoor	20°C DB
	Outdoor	7°C DB, 6°C WB

Refrigerant piping length ; 5m

The figures for total input are based on the following voltages.

Series	Indoor unit	Outdoor unit
M Series S Series P Series (except for PEA) MXZ Series POWERFUL HEATING Series	—	VG,VE,VA,VHA,VKA:230V/Single phase/50Hz YA,YHA,YKA:400V/Three phase/50Hz
PEA Series	400V/Three phase/50Hz	400V/Three phase/50Hz

Sound pressure level

- The sound pressure measurement is conducted in an anechoic chamber.
- The actual sound level depends on the distance from the unit and the acoustic environment.

## How to read a model name

### 1) M & S Series

M	M : M Series    S : S Series
S	"S"= Wall-mounted , "F"= Compact floor-standing , "E"= Compact ceiling-concealed , "L"= 4- or 1-way cassette , "U"= Outdoor unit
Z	"Z"= Inverter heat pump , "H"= Fixed-speed heat pump , "blank"= Cooling only of Non-inverter , "Y"= Cooling only of inverter
—	
F	Series
H	Generation
25	Rated cooling capacity (kW base)
V	230V / Single phase / 50Hz
E	"A"= R410A with new A control , "B"= R410A with conventional control , "E"= R410A with new A control & ErP correspondance , "G"=R32 with new A control & ErP correspondance , "F"= R32 with new A control
HZ	"HZ"= Hyper Heating model , "H"= Anti-freeze heater equipped model , "S"= Silver indoor unit , "W"= White/Natural White indoor unit , "B"= Black/Onyx Black indoor unit , "V"= Pearl White indoor unit , "R"= Ruby Red indoor unit

### 2) P Series

P	P Series
U	"K"= Wall-mounted , "S"= Floor-standing , "L"= 4-way cassette , "E"= Ceiling-concealed , "C"= Ceiling-suspended , "U"= Outdoor unit
H	"H"= For heating and cooling
Z	"Z"= Inverter
—	

ZM/M/ZRP/RP/P "ZM"= R32 Eco-conscious Power Inverter , "M"= R32 &R410A  
"ZRP"/"RP"= R410A & cleaning-free pipe reuse , "P"=R410A  
SHW "SH"= Powerful heating ZUBADAN , "W"= can be used as air to water application

71	Rated cooling capacity (kW base)
V	"V"= 230V / Single phase / 50Hz , "Y"= 400V / Three phase / 50Hz
H	Generation
A	"A"= A control

### 3) MXZ Series

M	M Series
X	Multi-system outdoor unit (heat pump)
Z	Inverter heat pump
—	
4	Maximum number of connectable indoor units
D/E/F/HJ/DM	Generation / Type
72	Rated cooling capacity (kW base)
V	"V"= 230V / Single phase / 50Hz
A	"A"= R410A with new A control
HZ	"HZ"= Hyper Heating model , "H"= Anti-freeze heater equipped model

Refrigerant Amount

M/S/P/Multi/Zubadan/ATW

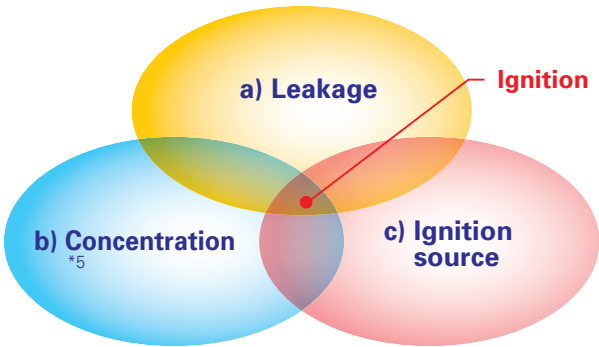
	Model Name	Refrigerant		Pre-charged quantity		Max. added quantity	
			GWP	Weight [kg]	CO <sub>2</sub> equivalent [t]	Weight [kg]	CO <sub>2</sub> equivalent [t]
M-Series	MUZ-LN25VG	R32	675	1.00	0.68	0.26	0.18
	MUZ-LN35VG	R32	675	1.00	0.68	0.26	0.18
	MUZ-LN50VG	R32	675	1.25	0.85	0.26	0.18
	MUZ-LN60VG	R32	675	1.45	0.98	0.46	0.32
	MUZ-LN25VGHZ	R32	675	1.00	0.68	0.26	0.18
	MUZ-LN35VGHZ	R32	675	1.00	0.68	0.26	0.18
	MUZ-LN50VGHZ	R32	675	1.45	0.98	0.46	0.32
	MUZ-AP25VG	R32	675	0.55	0.37	0.26	0.18
	MUZ-AP35VG	R32	675	0.55	0.37	0.26	0.18
	MUZ-AP42VG	R32	675	0.70	0.47	0.26	0.18
	MUZ-AP50VG	R32	675	1.00	0.68	0.26	0.18
	MUZ-AP25VGH	R32	675	0.55	0.37	0.26	0.18
	MUZ-AP35VGH	R32	675	0.55	0.37	0.26	0.18
	MUZ-AP42VGH	R32	675	0.70	0.47	0.26	0.18
	MUZ-AP50VGH	R32	675	1.00	0.68	0.26	0.18
	MUZ-FH25VE	R410A	2088	1.15	2.41	0.39	0.82
	MUZ-FH35VE	R410A	2088	1.15	2.41	0.39	0.82
	MUZ-FH50VE	R410A	2088	1.55	3.24	0.46	0.97
	MUZ-FH25VEHZ	R410A	2088	1.15	2.41	0.39	0.82
	MUZ-FH35VEHZ	R410A	2088	1.15	2.41	0.39	0.82
	MUZ-FH50VEHZ	R410A	2088	1.55	3.24	0.46	0.97
	MUZ-EF25VG(H)	R32	675	0.62	0.42	0.26	0.18
	MUZ-EF35VG(H)	R32	675	0.74	0.50	0.26	0.18
	MUZ-EF42VG	R32	675	0.74	0.50	0.26	0.18
	MUZ-EF50VG	R32	675	1.05	0.71	0.46	0.32
	MUZ-SF25VE(H)	R410A	2088	0.7	1.47	0.39	0.82
	MUZ-SF35VE(H)	R410A	2088	0.8	1.68	0.39	0.82
	MUZ-SF42VE(H)	R410A	2088	1.15	2.41	0.39	0.82
	MUZ-SF50VE(H)	R410A	2088	1.55	3.24	0.46	0.97
	MUZ-GF60VE	R410A	2088	1.55	3.24	0.4	0.84
	MUZ-GF71VE	R410A	2088	1.9	3.97	1.1	2.30
	MUZ-WN25VA	R410A	2088	0.7	1.47	0.26	0.55
	MUZ-WN35VA	R410A	2088	0.7	1.47	0.26	0.55
	MUY-TP35VF	R32	675	0.85	0.57	0.13	0.09
	MUY-TP50VF	R32	675	0.85	0.57	0.13	0.09
	MUZ-DM25VA	R410A	2088	0.7	1.47	0.26	0.55
	MUZ-DM35VA	R410A	2088	0.72	1.51	0.26	0.55
	MUZ-HJ25VA	R410A	2088	0.7	1.47	0.26	0.55
	MUZ-HJ35VA	R410A	2088	0.72	1.51	0.26	0.55
	MUZ-HJ50VA	R410A	2088	1.15	2.41	0.26	0.55
	MUZ-HJ60VA	R410A	2088	1.8	3.76	0.46	0.97
	MUZ-HJ71VA	R410A	2088	1.8	3.76	0.46	0.97
	MUZ-HR25VF	R32	675	0.40	0.27	0.26	0.18
	MUZ-HR35VF	R32	675	0.45	0.30	0.26	0.18
	MUZ-HR42VF	R32	675	0.70	0.47	0.26	0.18
	MUZ-HR50VF	R32	675	0.80	0.54	0.26	0.18
	MUFZ-KJ25VE	R410A	2088	1.1	2.30	0.39	0.82
	MUFZ-KJ35VE	R410A	2088	1.1	2.30	0.39	0.82
	MUFZ-KJ50VE	R410A	2088	1.5	3.14	0.46	0.97
	MUFZ-KJ25VEHZ	R410A	2088	1.1	2.30	0.39	0.82
	MUFZ-KJ35VEHZ	R410A	2088	1.1	2.30	0.39	0.82
	MUFZ-KJ50VEHZ	R410A	2088	1.5	3.14	0.46	0.97
	MXZ-2D33VA	R410A	2088	1.15	2.72	0.0	0.00
	MXZ-2D42VA2	R410A	2088	1.3	2.72	0.2	0.42
	MXZ-2D53VA(H)2	R410A	2088	1.3	2.72	0.2	0.42
	MXZ-3E54VA	R410A	2088	2.7	5.64	0.2	0.42
	MXZ-3E68VA	R410A	2088	2.7	5.64	0.4	0.84
	MXZ-4E72VA	R410A	2088	2.7	5.64	0.4	0.84
	MXZ-4E83VA	R410A	2088	2.99	6.25	0.9	1.88
	MXZ-5E102VA	R410A	2088	2.99	6.25	1.6	3.35
	MXZ-6D122VA	R410A	2088	4.0	8.36	1.0	2.09
	MXZ-2F33VF	R32	675	1.0	0.68	0.00	0.00
	MXZ-2F42VF	R32	675	1.2	0.81	0.00	0.00
	MXZ-2F53VF(H)	R32	675	1.2	0.81	0.00	0.00
	MXZ-3F54VF	R32	675	1.4	0.95	1.0	0.68
	MXZ-3F68VF	R32	675	1.4	0.95	1.0	0.68
	MXZ-4F72VF	R32	675	1.4	0.95	1.0	0.68
	MXZ-2E53VAHZ	R410A	2088	2.0	4.18	0.2	0.42
	MXZ-4E83VAHZ	R410A	2088	3.9	8.15	0.9	1.88
	MXZ-2DM40VA	R410A	2088	0.95	1.99	0.2	0.42
	MXZ-3DM50VA	R410A	2088	2.7	5.64	0.2	0.42
	MXZ-2HA40VF	R32	675	0.9	0.61	0.9	0.61
	MXZ-2HA50VF	R32	675	0.9	0.61	0.9	0.61
	MXZ-3HA50VF	R32	675	1.4	0.95	1.6	1.08
S-Series	SUZ-M25VA	R32	675	0.65	0.44	0.91	0.61
	SUZ-M35VA	R32	675	0.9	0.61	1.16	0.78
	SUZ-M50VA	R32	675	1.2	0.81	1.66	1.12
	SUZ-M60VA	R32	675	1.25	0.84	1.71	1.15
	SUZ-M71VA	R32	675	1.45	0.98	2.37	1.60
	SUZ-KA25VA6	R410A	2088	0.8	1.68	0.39	0.82
	SUZ-KA35VA6	R410A	2088	1.15	2.41	0.39	0.82
	SUZ-KA50VA6	R410A	2088	1.6	3.35	0.46	0.97
	SUZ-KA60VA6	R410A	2088	1.6	3.35	0.46	0.97
	SUZ-KA71VA6	R410A	2088	1.8	3.76	1.265	2.65

	Model Name	Refrigerant		Pre-charged quantity		Max. added quantity	
		GWP	Weight [kg]	CO <sub>2</sub> equivalent [t]	Weight [kg]	CO <sub>2</sub> equivalent [t]	
P-Series	PUZ-ZM35VKA	R32	675	2.0	1.35	0.3	0.20
	PUZ-ZM50VKA	R32	675	2.0	1.35	0.3	0.20
	PUZ-ZM60VHA	R32	675	2.8	1.89	0.8	0.54
	PUZ-ZM71VHA	R32	675	2.8	1.89	0.8	0.54
	PUZ-ZM100VKA	R32	675	4.0	2.70	2.8	1.89
	PUZ-ZM100YKA	R32	675	4.0	2.70	2.8	1.89
	PUZ-ZM125VKA	R32	675	4.0	2.70	2.8	1.89
	PUZ-ZM125YKA	R32	675	4.0	2.70	2.8	1.89
	PUZ-ZM140VKA	R32	675	4.0	2.70	2.8	1.89
	PUZ-ZM140YKA	R32	675	4.0	2.70	2.8	1.89
	PUHZ-ZRP35VKA2	R410A	2088	2.2	4.60	0.4	0.84
	PUHZ-ZRP50VKA2	R410A	2088	2.4	5.02	0.4	0.84
	PUHZ-ZRP60VHA2	R410A	2088	3.5	7.31	1.2	2.51
	PUHZ-ZRP71VHA2	R410A	2088	3.5	7.31	1.2	2.51
	PUHZ-ZRP100VKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP100YKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP125VKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP125YKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP140VKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP140YKA3	R410A	2088	5.0	10.44	2.4	5.02
	PUHZ-ZRP200YKA3	R410A	2088	7.1	14.83	3.6	7.52
	PUHZ-ZRP250YKA3	R410A	2088	7.7	16.08	4.8	10.03
	PUZ-M100VKA	R32	675	3.1	2.09	4.1	2.77
	PUZ-M100YKA	R32	675	3.1	2.09	4.1	2.77
	PUZ-M125VKA	R32	675	3.6	2.43	5.0	3.38
	PUZ-M125YKA	R32	675	3.6	2.43	5.0	3.38
	PUZ-M140VKA	R32	675	3.6	2.43	5.0	3.38
	PUZ-M140YKA	R32	675	3.6	2.43	5.0	3.38
	PUHZ-P100VKA	R410A	2088	3.3	6.89	1.2	2.51
	PUHZ-P100YKA	R410A	2088	3.3	6.89	1.2	2.51
	PUHZ-P125VKA	R410A	2088	3.8	7.93	1.2	2.51
	PUHZ-P125YKA	R410A	2088	3.8	7.93	1.2	2.51
	PUHZ-P140VKA	R410A	2088	3.8	7.93	1.2	2.51
	PUHZ-P140YKA	R410A	2088	3.8	7.93	1.2	2.51
	PUHZ-P200YKA3	R410A	2088	6.5	13.58	3.6	7.52
	PUHZ-P250YKA3	R410A	2088	7.7	16.08	4.8	10.03
	PUHZ-SHW112VHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW112YHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW140VHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW140YHA	R410A	2088	5.5	11.49	2.4	5.02
PUHZ-FRP71VHA	R410A	2088	3.8	7.94	1.8	3.76	
PUMY-SP112VKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-SP112YKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-SP125VKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-SP125YKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-SP140VKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-SP140YKM(-BS)	R410A	2088	3.5	7.31	9.0	18.79	
PUMY-P112VKM4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P125VKM4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P140VKM4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P112YKM(E)4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P125YKM(E)4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P140YKM(E)4(-BS)	R410A	2088	4.8	10.02	13.8	28.81	
PUMY-P200YKM2 (-BS)	R410A	2088	7.3	15.24	13.1	27.35	
ATW Packaged	PUHZ-WV50VHA2(-BS)	R410A	2088	1.7	3.55	–	–
	PUHZ-WV85VHA2(-BS)	R410A	2088	2.4	5.02	–	–
	PUHZ-WV112VHA(-BS)	R410A	2088	4.0	8.36	–	–
	PUHZ-WV60VAA(-BS)	R410A	2088	2.4	5.01	–	–
	PUHZ-WV85VAA(-BS)	R410A	2088	2.4	5.01	–	–
	PUHZ-WV85YAA(-BS)	R410A	2088	2.4	5.01	–	–
	PUHZ-WV112VAA(-BS)	R410A	2088	3.3	6.89	–	–
	PUHZ-WV112YAA(-BS)	R410A	2088	3.3	6.89	–	–
	PUHZ-HW112YHA2(-BS)	R410A	2088	4.0	8.36	–	–
	PUHZ-HW140VHA2(-BS)	R410A	2088	4.3	8.98	–	–
	PUHZ-HW140YHA2(-BS)	R410A	2088	4.3	8.98	–	–
	SUHZ-SW45VA(H)	R410A	2088	1.3	2.72	0.35	0.72
	PUHZ-SW50VKA(-BS)	R410A	2088	1.4	2.93	0.6	1.26
	PUHZ-SW75VAA(-BS)	R410A	2088	3.0	6.27	1.8	3.76
	PUHZ-SW75YAA(-BS)	R410A	2088	3.0	6.27	1.8	3.76
ATW Split	PUHZ-SW100VAA(-BS)	R410A	2088	4.2	8.77	1.8	3.76
	PUHZ-SW100YAA(-BS)	R410A	2088	4.2	8.77	1.8	3.76
	PUHZ-SW75VHA(-BS)	R410A	2088	3.2	6.69	1.4	2.93
	PUHZ-SW100VHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW100YHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW120VHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW120YHA(-BS)	R410A	2088	4.6	9.61	2.9	6.06
	PUHZ-SW160YKA(-BS)	R410A	2088	7.1	14.83	4.0	8.36
	PUHZ-SW200YKA(-BS)	R410A	2088	7.7	16.08	5.2	10.86
	PUHZ-SHW80VAA	R410A	2088	4.6	9.61	1.4	2.93
	PUHZ-SHW80YAA	R410A	2088	4.6	9.61	1.4	2.93
	PUHZ-SHW112VAA	R410A	2088	4.6	9.61	1.4	2.93
	PUHZ-SHW112YAA	R410A	2088	4.6	9.61	1.4	2.93
	PUHZ-SHW80VHA	R410A	2088	5.5	11.49	2.4	5.02
	PUHZ-SHW112VHA	R410A	2088	5.5	11.49	2.4	5.02
PUHZ-SHW112YHA	R410A	2088	5.5	11.49	2.4	5.02	
PUHZ-SHW140YHA	R410A	2088	5.5	11.49	2.4	5.02	
PUHZ-SW230YKA2	R410A	2088	7.1	14.83	8.4	17.54	
Mr. Slim+	PUHZ-FRP71VHA2	R410A	2088	3.8	7.94	1.8	3.76

# R32 REFRIGERANT

## R32 REFRIGERANT PROPERTIES

Under the conditions shown below, there is a possibility that R32 could ignite.



	R32	R410A	R22
Chemical formula	CH <sub>2</sub> F <sub>2</sub>	CH <sub>2</sub> F <sub>2</sub> /CHF <sub>2</sub> CF <sub>3</sub>	CHClF <sub>2</sub>
Composition (blend ratio wt. %)	Single composition	R32/R125 (50/50 wt %)	Single composition
Ozone depletion potential (ODP)	0	0	0.055
Global warming potential (GWP) *1	675	2088	1810
LFL(vol.%) *2	13.3	–	–
UFL(vol.%) *3	29.3	–	–
Flammability *4	Lower flammability (2L)	No flame propagation (1)	No flame propagation (1)

\*1 IPCC 4th assessment report.  
\*2 LFL : Lower flammable limit  
\*3 UFL : Upper flammable limit  
\*4 ISO 817:2014  
\*5 R32 consistency is higher than LFL\*<sup>1</sup> and lower than UFL\*<sup>2</sup>.

Although R32 is classified as low flammability, the possibility of igniting can be eliminated by ensuring the following three points.

### a) Do not leak refrigerant.

- <Installation> ·Vacuum drying should be done. Air purging is prohibited.
- Follow “4. Installation Points of Refrigerant Piping Work”.
- <Repair/Relocation/Removal> ·Pump down or recovering refrigerant should be done.

### b) Prevent concentration.

- Ventilate during installation and servicing, such as open the door or window and use a fan.
- Follow “2. Installation Restrictions”.

### c) Keep ignition source away from the unit.

- Do not braise pipe and unit which contain refrigerant. Before brazing, refrigerant should be recovered.
- Do not install unit while the electricity is turned on. Turn off electricity at the fuse box and check the wiring using a tester.
- Do not smoke when working or during transportation of the product.

**Note** Both R32 / R410A emit a toxic gas when coming into contact with an open flame.



# INSTALLATION RESTRICTIONS

In order to prevent the refrigerant from igniting, use the following instructions during installation.

## 1) Indoor Units

Install in a room with a floor area of Amin\* or more, corresponding to refrigerant quantity M.  
(M = factory-charged refrigerant + locally added refrigerant)

Install the indoor unit so that the height from the floor to the bottom of the indoor unit is hO\*.

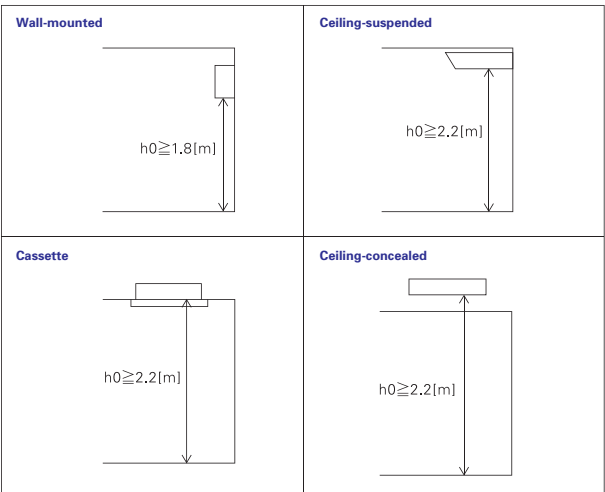
\* Refer to table and drawings below.

<M & P Series>

M[kg]	Amin[m²]
1.0	4
1.5	6
2.0	8
2.5	10
3.0	12
3.5	14
4.0	16
4.5	20
5.0	24
5.5	29
6.0	35
6.5	41
7.0	47
7.5	54

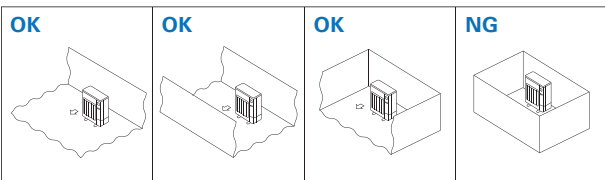
<MXZ Series>

M[kg]	Amin[m²]
1.0	3
1.5	4.5
2.0	6
2.5	7.5
3.0	9
3.5	12
4.0	15.5
4.5	20
5.0	24
5.5	29
6.0	35
6.5	41
7.0	47
7.5	54



## 2) Outdoor Units

Install outdoor units in a place where at least one of the four sides is open or in a sufficiently large space without depressions.



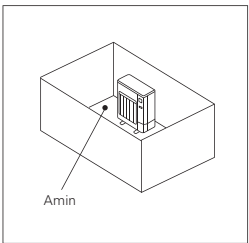
If you unavoidably install a unit in a space where all four sides are blocked or there are depressions, confirm that one of these situations (A, B or C) is satisfied.

### A Secure sufficient installation space (minimum installation area Amin).

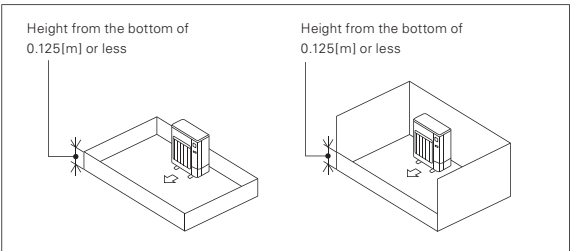
Install in a space with an installation area of Amin\* or more, corresponding to refrigerant quantity M. (M = factory-charged refrigerant + locally added refrigerant)

\* Refer to table and drawings below.

M[kg]	Amin[m²]
1.0	12
1.5	17
2.0	23
2.5	28
3.0	34
3.5	39
4.0	45
4.5	50
5.0	56
5.5	62
6.0	67
6.5	73
7.0	78
7.5	84

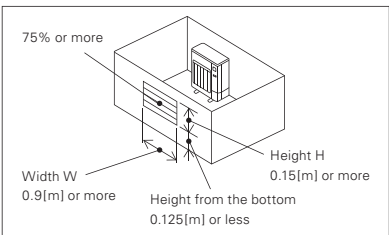


### B Install in a space with a depression height of $\leq 0.125[m]$ .



### C Create an appropriate open ventilation area.

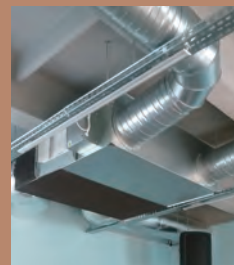
Make sure that the width of the open area is 0.9[m] or more and the height of the open area is 0.15[m] or more. However, the height from the bottom of the installation space to the bottom edge of the open area should be 0.125[m] or less. More than 75% of the ventilation area should be open to allow air circulation.



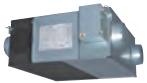
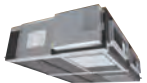





**Note** These countermeasures (A, B or C) are for keeping safety not for specification guarantee.

● Models with R32 Refrigerant: MSZ-L Series (single connection)

# LROSSNAY SYSTEM



## LOSSNAY LINE-UP

Application	Model	Air volume	50 CMH	100 CMH	150 CMH	250 CMH	350 CMH	500 CMH	650 CMH	800 CMH	1000 CMH	1500 CMH	2000 CMH	2500 CMH
Commerical Use	LGH-RVX Series				●	●	●	●	●	●	●	●	●	
	LGH-RVXT Series											●	●	●
	GUF Series							●			●			
Optional Unit	Dx-Coil unit for Lossnay LGH-RVX/RVXT Series GUG Series							●	●	●	●	●	●	●
Residential Use	VL-220CZGV-E					●								
	VL-100(E)U5-E			●										
	VL-50(E)S2-E VL-50SR2-E		●											

### LGH-RVX Series

This commercially oriented system can be utilized virtually anywhere with high performance and functions.

### LGH-RVXT Series

Thin large air volume models in LGH series with high performance and functions.

### Dx-Coil Unit (GUG Series)

Temperature control equipment working with Lossnay unit and Mr. Slim outdoor unit.

### GUF Series

Heat recovery with heating and cooling system using the heat resource of City Multi outdoor unit.

### VL-220CZGV-E

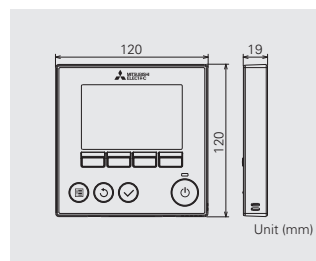
Centralized ventilation for residential use with sensible heat exchange.

### VL-100(E)U5-E, VL-50(E)S2-E

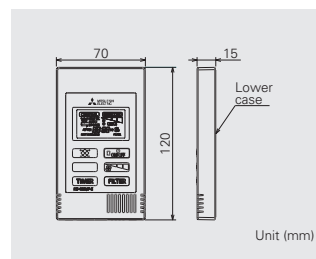
Wall mount models. Particularly suitable for houses and small offices.

## REMOTE CONTROLLER

### PZ-61DR-E



### PZ-43SMF-E



Function (Communicating Mode)	PZ-61DR-E		PZ-43SMF-E	
	LGH-RVX/RVXT	VL-220CZGV-E	LGH-RVX/RVXT	VL-220CZGV-E
Fan speed selection	4 fan speeds	4 fan speeds	2 of 4 fan speeds	2 of 4 fan speeds
Ventilation mode selection	Energy recovery / Bypass / Auto	Heat recovery / Bypass / Auto (available with optional parts P-133DUE-E)	Energy recovery / Bypass / Auto	Heat recovery / Bypass / Auto (available with optional parts P-133DUE-E)
Night-purge (time)	Anytime schedule	No	No	No
Night-purge (fan speed)	Selectable from 4 fan speeds	No	No	No
Function setting from RC	Yes	Yes	No	No
Bypass temp. free setting	Yes	Yes (available with optional parts P-133DUE-E)	No	No
Heater-On temp. free setting	Yes	No	No	No
Fan power change after installation	Yes	Yes	No	No
On/Off timer	Yes	Yes	Yes	Yes
Auto-Off timer	Yes	Yes	No	No
Weekly timer	Yes	Yes	No	No
Operation restrictions (On/Off, ventilation mode, fan speed)	Yes	Yes (ventilation mode is available with optional parts P-133DUE-E)	No	No
Operation restrictions (fan speed skip setting)	Yes	Yes	No	No
Screen contrast adjustment	Yes	Yes	No	No
Language selection	Yes (8 languages)	Yes (8 languages)	No (English Only)	No (English Only)
Initializing remote controller	Yes	Yes	No	No
Filter cleaning sign	Yes	Yes	Yes	Yes
Lossnay core cleaning sign	Yes	No	No	No
Error indication	Yes	Yes	Yes	Yes
Error history	Yes	Yes	No	No

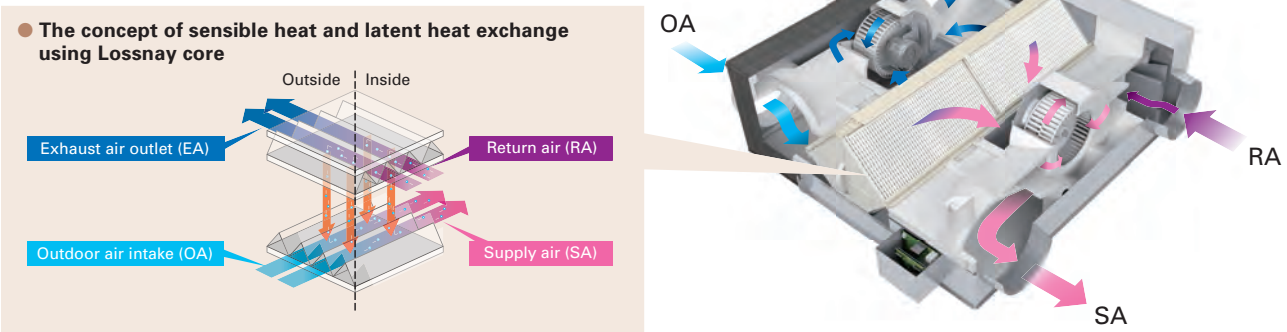
# LOSSNAY SYSTEM

Lossnay ventilation systems are renowned industry-wide for their efficiency. They offer environment-friendly energy recovery and humidity control, and enable air conditioning systems to simultaneously provide optimum room comfort and energy savings.



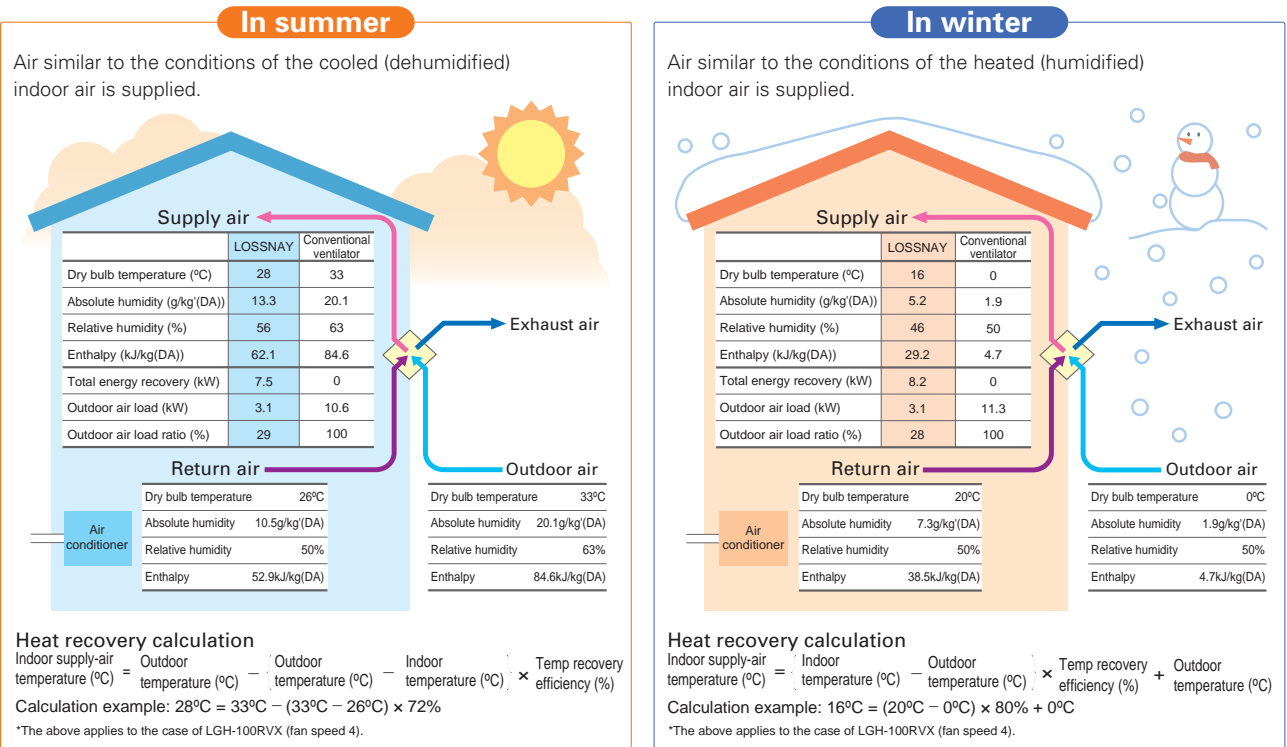
## Indoor Air Quality Inside a Building is Optimised Through Temperature and Humidity Exchange by Lossnay

Lossnay is a total heat exchange ventilation system that uses paper characteristics to perform temperature (sensible heat) and humidity (latent heat) exchange.



## What can be Improved by Introducing Lossnay?

### ● Ventilation with maximised comfort



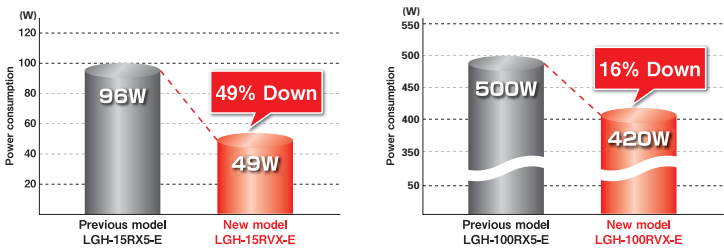
# Commercial Use Lossnay

## LGH-RVX (Standard model)

### Power consumption reduced further with introduction of a DC motor

Realized low power consumption with introduction of a high efficiency brushless DC motor. Compared to models with an AC motor, power consumption is reduced.

Comparison between new and previous power consumption  
(New model: Fan speed 4 at 230V 50Hz, Previous model: Extra-High at 220V 50Hz)



### Improved Air Volume Range

#### Wide range air volume

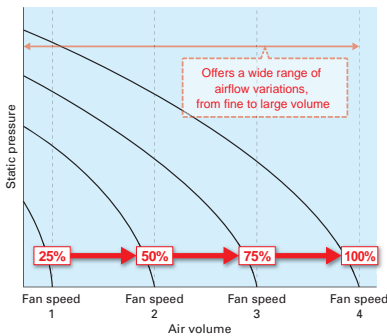
Each fan speed has a range setting of 25, 50, 75 and 100%, allowing much finer air volume control. When used in combination with the CO<sub>2</sub> sensor or timer function, the air volume can be controlled according to conditions that realize better performance and reduce power consumption.

#### Fan speed adjustment function

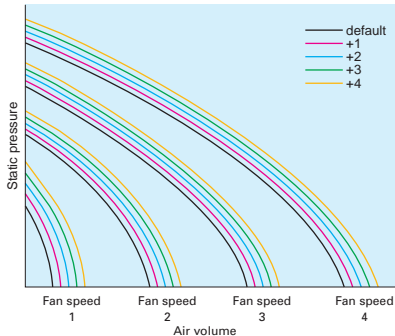
The default fan speed value can be adjusted slightly. Use the PZ-61DR-E remote controller to reset the speed.

- 1) Considering the total hours of Lossnay operation (filter clogging), the fan power can be adjusted automatically after a given period of time.
- 2) After the unit is installed, when if the air volume is slightly lower than the desired airflow, it is possible to make fine adjustments.

■ LGH-RVX/RVXT series model characteristic curves



■ P-Q curve image



## LGH-RVXT (Thinner body type)

The LGH-RVXT series have a large air volume of 1500 - 2500 CMH, but has a thin body @500mm. Installing the unit behind the ceiling is easy.

■ LGH-150/200RVX-E



Height: 808mm

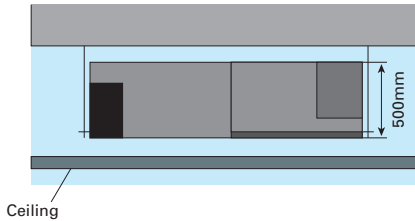
■ LGH-150/200/250RVXT-E



Height: 500mm

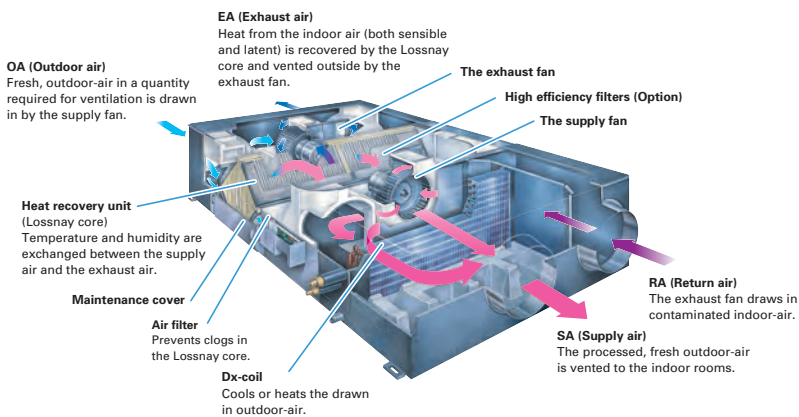
38% Thinner body

■ LGH-RVXT Installation image



## GUF Series (Lossnay with Dx-coil unit)

Along with Lossnay ventilation, the OA Processing Unit is really two units in one, functioning as the main air conditioner when the load is light and adding supplemental air conditioning when the load is heavy.



## LGH-RVX Series

Model		LGH-50RVX-E								LGH-65RVX-E								LGH-80RVX-E							
Electrical power supply		220-240V/50Hz, 220V/60Hz								220-240V/50Hz, 220V/60Hz								220-240V/50Hz, 220V/60Hz							
Ventilation mode		Heat recovery mode				Bypass mode				Heat recovery mode				Bypass mode				Heat recovery mode				Bypass mode			
Fan speed		SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1
Running current (A)		1.15	0.59	0.26	0.13	1.15	0.59	0.27	0.13	1.65	0.90	0.39	0.15	1.72	0.86	0.38	0.16	1.82	0.83	0.36	0.15	1.97	0.86	0.40	0.15
Input power (W)		165	78	32	12	173	81	35	14	252	131	49	15	262	131	47	17	335	151	60	18	340	151	64	20
Air volume	(m³/h)	500	375	250	125	500	375	250	125	650	488	325	163	650	488	325	163	800	600	400	200	800	600	400	200
	(L/s)	139	104	69	35	139	104	69	35	181	135	90	45	181	135	90	45	222	167	111	56	222	167	111	56
External static pressure (Pa)		120	68	30	8	120	68	30	8	120	68	30	8	120	68	30	8	150	85	38	10	150	85	38	10
Temperature exchange efficiency (%)		78	81	83.5	87	—	—	—	—	77	81	84	86	—	—	—	—	79	82.5	84	85	—	—	—	—
Enthalpy exchange efficiency (%)	Heating	69	71	75	82.5	—	—	—	—	68.5	71	76	82	—	—	—	—	71	73.5	78	81	—	—	—	—
	Cooling	66.5	68	72.5	82	—	—	—	—	66	69.5	74	81	—	—	—	—	70	72.5	78	81	—	—	—	—
Noise (dB) <small>(Measured at 1.5m under the center of unit in an anechoic chamber)</small>		34	28	19	18	35	29	20	18	34.5	29	22	18	35.5	29	22	18	34.5	30	23	18	36	30	23	18
Weight (kg)		33								38								48							

## LGH-RVXT Series

## GUF Series

■ For LGH-RVX and LGH-RVXT series

\*The running current, the input power, the efficiency and the noise are based on the rating air volume, and 230V/50Hz.

\*For the specification at the other frequency contact your dealer.

\*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method.

■ For GUF series

\*Cooling/Heating capacity indicates the maximum value at operation under the following condition.

Cooling: Indoor: 27°C DB/19°C WB      Outdoor: 35°C DB/24°C WB

Heating: Indoor: 20°C DB/13.8°C WB      Outdoor: 7°C DB/6°C WB

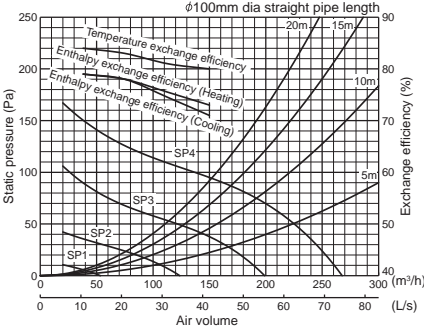
\*The figures in ( ) indicates heat recovering capacity of heat exchange core

\*Figures in the chart are measured according to Japan Industrial Standard (JIS B 8628). Characteristic Curves are measured by chamber method

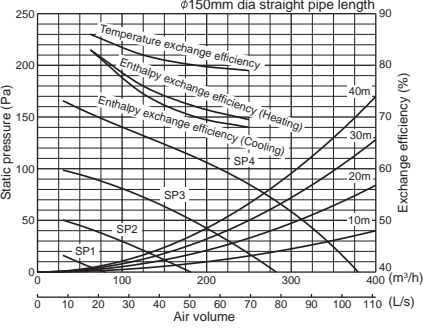


Characteristic Curves

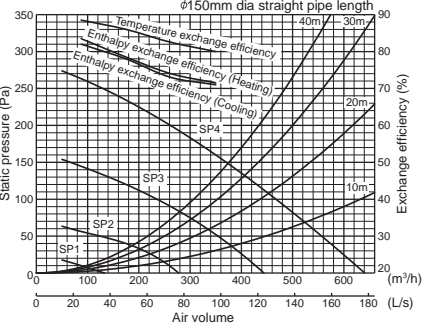
LGH-15RVX-E



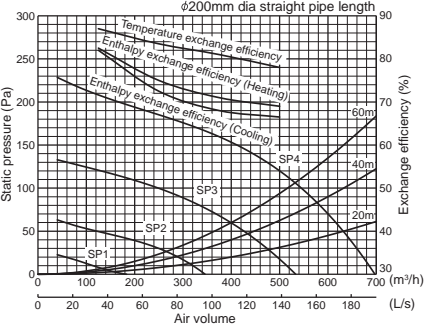
LGH-25RVX-E



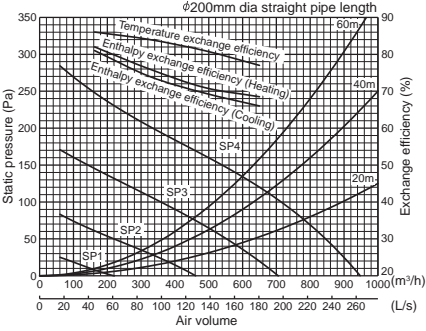
LGH-35RVX-E



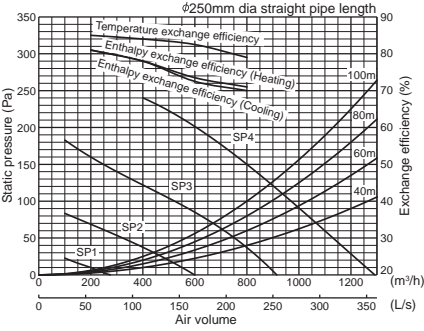
LGH-50RVX-E



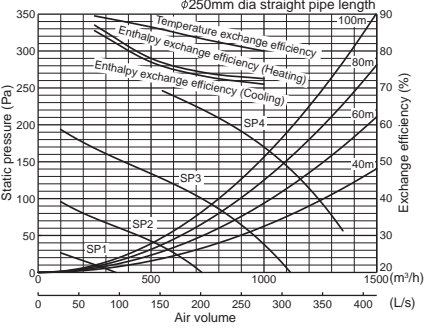
LGH-65RVX-E



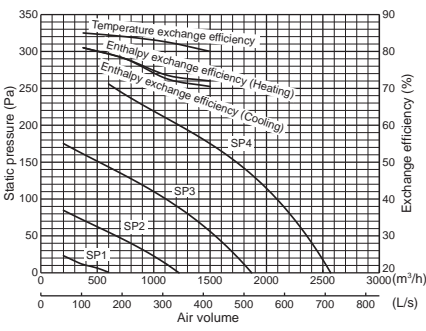
LGH-80RVX-E



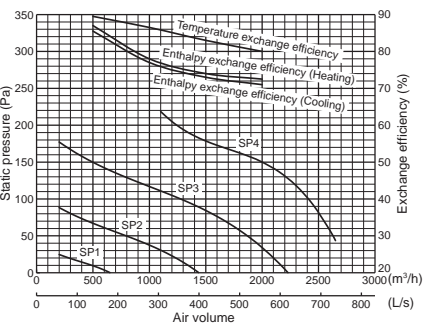
LGH-100RVX-E



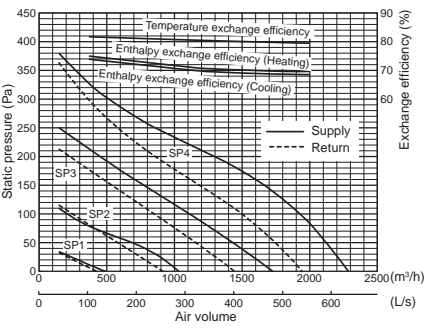
LGH-150RVX-E



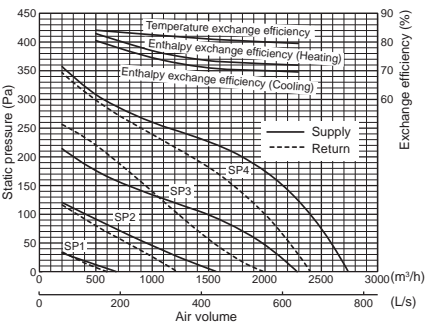
LGH-200RVX-E



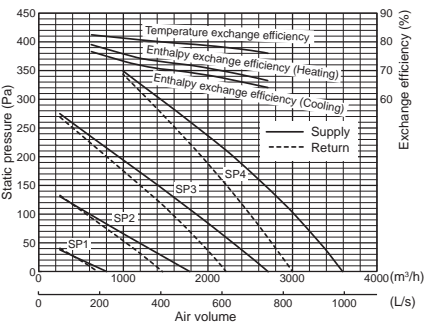
LGH-150RVXT-E



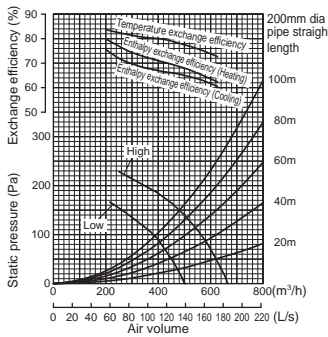
LGH-200RVXT-E



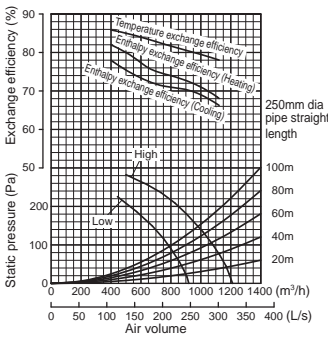
LGH-250RVXT-E



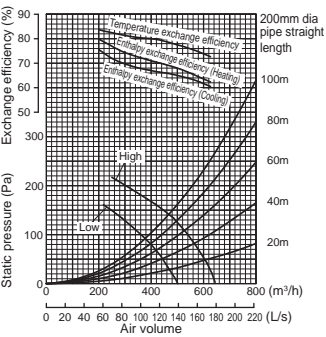
GUF-50RD4



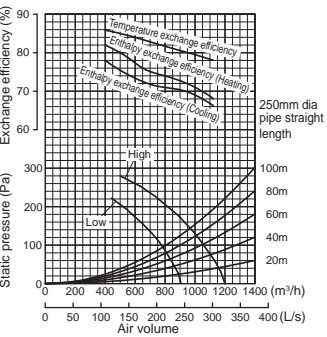
GUF-100RD4



GUF-50RDH4



GUF-100RDH4



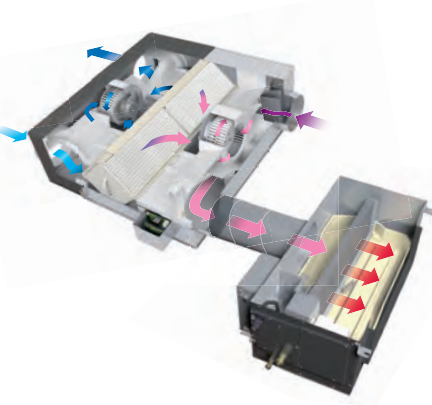


Optional Dx-coil Unit for Lossnay

Supply Comfortable Control

Product Features

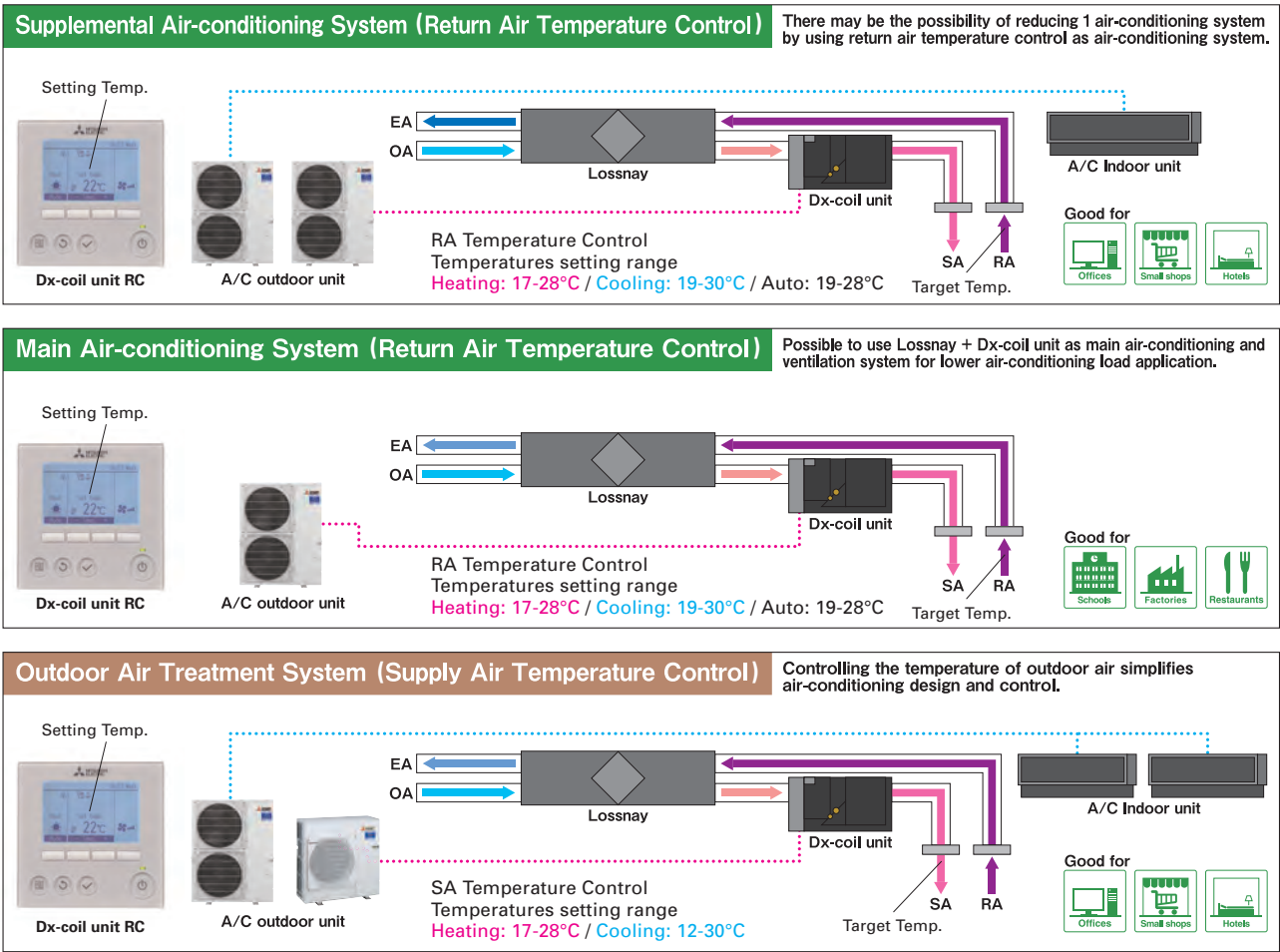
- Lossnay return air and supply air temperature control are possible with Dx-coil unit which is connectable with Mr. Slim (Power inveter series)
  - Expand the product line-up of Lossnay with temperature control (500-2,500CMH) by the connection of Dx-coil unit.
- Suitable for various applications such as offices, shops and schools etc.



Target Application

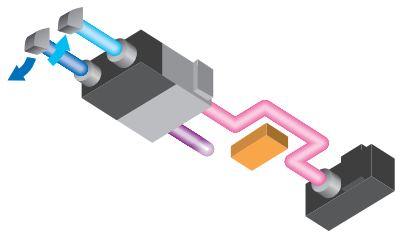


Application Examples



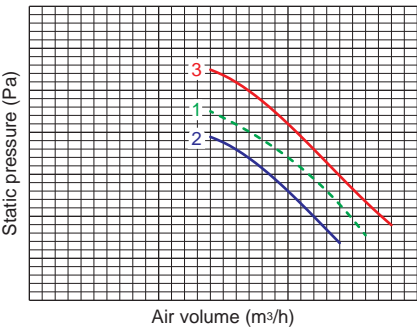
\*Example images of using LGH-RVXT series for reference only.

Flexible Installation



**Flexible Connection to Lossnay**  
The length of the connection cable (accessory) between the Lossnay and Dx-coil unit is about 6m, so flexible installation is possible (two units can be installed close together or far apart with straight or bent ducting).

To Keep High Static Pressure

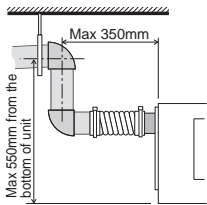


P-Q curve image  
1. Lossnay unit  
2. Lossnay unit + Dx-coil unit  
3. Lossnay unit (fan power up +4) + Dx-coil unit

Dx-coil unit static pressure loss is kept to minimum, making it possible to maintain high static pressure using the fan power up function of the Lossnay. The fan power up function is only available when used with the PZ-61DR-E Lossnay remote controller.

Drain Pump Equipment

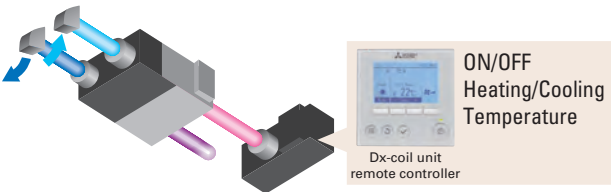
A built-in drain pump makes, attaching the drain hose in the ceiling cavity easy, resulting in simple and fast installation.



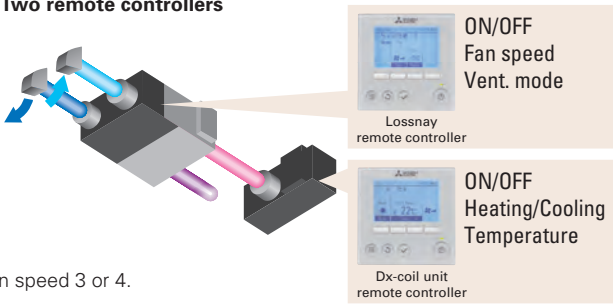
User-friendly System Control

Flexible Remote Controller Selection

(A) One remote controller



(B) Two remote controllers



When using only one remote controller, the Lossnay fan speed is fixed at fan speed 3 or 4.  
When using two remote controllers, all of Lossnay function is available.  
\*1: Both of Lossnay unit and Dx-coil unit will synchronously switch to ON and OFF.  
\*2: When one of the two remote controllers is turned ON, the other remote controller turns ON synchronously.

Priority Mode Selection

Temperature priority mode (factory setting) or Fan speed priority mode are selectable when Lossnay unit fan speed is controlled by a CO<sub>2</sub>-sensor or a BMS (analogue input (0-10VDC) or a volt-free input).  
\*During fan speed 1 or 2, the Dx-coil unit is always thermo-OFF

Operation mode	Fan speed order from external input	Actual fan speed	
		Temp. priority	Fan speed priority
Heating or Cooling	FS4	FS4	FS4
	FS3	FS3	FS3
	FS2	FS3	FS2
	FS1	FS3	FS1
Fan	FS4	FS4	FS4
	FS3	FS3	FS3
	FS2	FS2	FS2
	FS1	FS1	FS1

Specifications

GUG Series



GUG-01SL-E



GUG-02SL-E

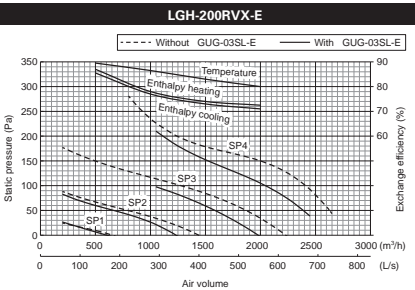
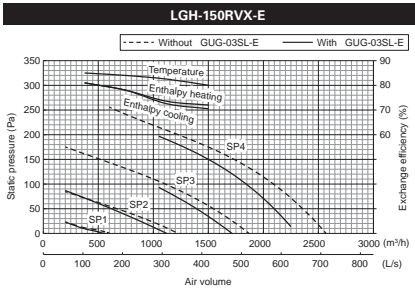
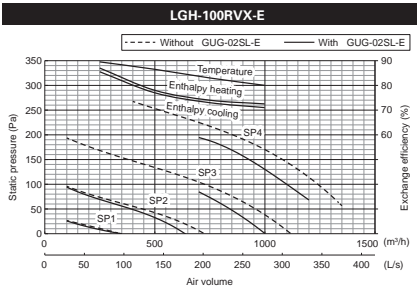
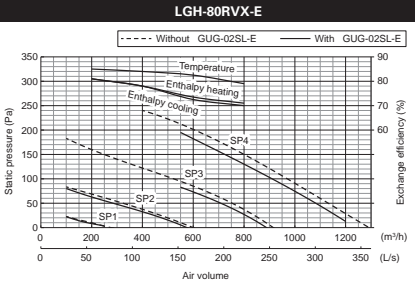
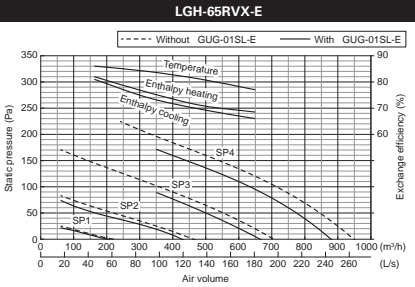
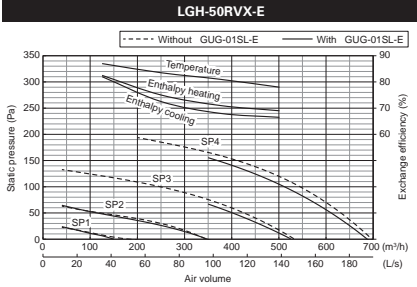


GUG-03SL-E

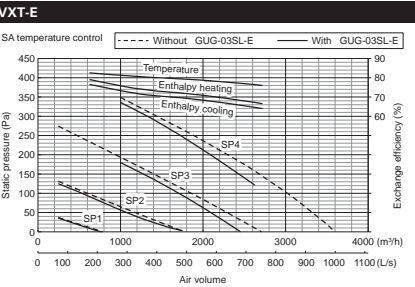
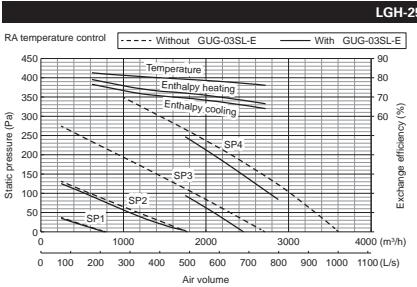
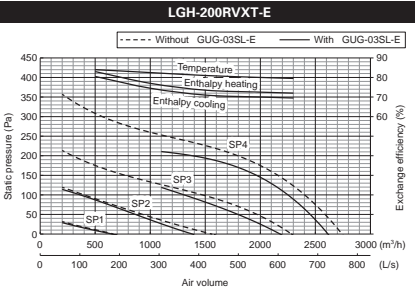
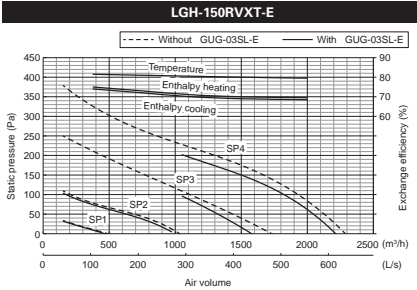
Model		GUG-01SL-E (Connection to LGH-50RVX-E or LGH-65RVX-E)				GUG-02SL-E (Connection to LGH-80RVX-E or LGH-100RVX-E)											
Refrigerant		R410A				R410A											
Electrical power supply		220-240V / 50Hz, 220V / 60Hz (Supplied from outdoor unit)				220-240V / 50Hz, 220V / 60Hz (Supplied from outdoor unit)											
Input power		Heating / Fan: 2.5W, Cooling: 12.4W				Heating / Fan: 2.5W, Cooling: 12.4W											
Running current		Less than 0.1A				Less than 0.1A											
Weight		21kg    *Accessories: Approx. 1kg				26kg    *Accessories: Approx. 1kg											
Function		Heating / Cooling / Auto / Fan    *Auto is only available for RA temperature control				Heating / Cooling / Auto / Fan    *Auto is only available for RA temperature control											
		RA (Return Air) temperature control				RA (Return Air) temperature control / SA (Supply Air) temperature control [Must be set at initial setting and not possible to change from remote controller]											
RA (Return Air) temperature control																	
Connectable Lossnay unit		LGH-50RVX-E		LGH-65RVX-E		LGH-80RVX-E		LGH-100RVX-E									
Capacity [kW]	Heating	6.5 ( 2.4 + 4.1 )		7.7 ( 3.2 + 4.5 )		10.0 ( 4.0 + 6.0 )		13.2 ( 5.1 + 8.1 )									
	Cooling	5.6 ( 2.0 + 3.6 )		6.6 ( 2.6 + 4.0 )		8.3 ( 3.3 + 5.0 )		11.3 ( 4.2 + 7.1 )									
SHF		0.66		0.69		0.69		0.66									
Performance index	Heating	4.09		4.72		4.62		4.42									
	Cooling	4.69		5.03		4.76		4.98									
Air flow range at SP3 and SP4		350 - 695 m³/h		350 - 900 m³/h		560 - 1200 m³/h		700 - 1200 m³/h									
Connectable outdoor unit		PUHZ-ZRP35		PUHZ-ZRP35		PUHZ-ZRP50		PUHZ-ZRP71									
Ext. piping		Diameter    Liquid / Gas: 6.35 / 12.7 Maximum length: 50m, Maximum height: 30m		Diameter    Liquid / Gas: 6.35 / 12.7 Maximum length: 50m, Maximum height: 30m		Diameter    Liquid / Gas: 6.35 / 12.7 Maximum length: 50m, Maximum height: 30m		Diameter    Liquid / Gas: 9.52 / 15.88 Maximum length: 50m, Maximum height: 30m									
Required optional parts		-		-		PAC-SH30RJ-E and PAC-SH50RJ-E		-									
SA (Supply Air) temperature control																	
Connectable Lossnay unit		-		-		LGH-80RVX-E		LGH-100RVX-E									
Capacity [kW]	Heating	-		-		10.0 ( 4.0 + 6.0 )		11.4 ( 5.1 + 6.3 )									
	Cooling	-		-		8.3 ( 3.3 + 5.0 )		9.5 ( 4.2 + 5.3 )									
SHF		-		-		0.69		0.73									
Performance index	Heating	-		-		4.62		5.09									
	Cooling	-		-		4.76		5.43									
Air flow range at SP3 and SP4		-		-		560 - 1200 m³/h		700 - 1200 m³/h									
Connectable outdoor unit		-		-		PUHZ-ZRP50		PUHZ-ZRP50									
Ext. piping		-		-		Diameter    Liquid / Gas: 6.35 / 12.7 Maximum length: 50m, Maximum height: 30m		Diameter    Liquid / Gas: 6.35 / 12.7 Maximum length: 50m, Maximum height: 30m									
Required optional parts		-		-		PAC-SH30RJ-E and PAC-SH50RJ-E		PAC-SH30RJ-E and PAC-SH50RJ-E									
Ventilation specifications																	
Connectable Lossnay unit		LGH-50RVX-E				LGH-65RVX-E				LGH-80RVX-E				LGH-100RVX-E			
Fan speed		SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1
Air Volume	[m³/h]	500	375	250	125	650	488	325	163	800	600	400	200	1,000	750	500	250
	[L/s]	139	104	69	35	181	135	90	45	222	167	111	56	278	208	139	69
External static pressure [Pa]		105	59	26	7	95	53	24	6	130	73	33	8	130	73	33	8

Model		GUG-03SL-E (Connection to LGH-150RVX-E or LGH-200RVX-E)				GUG-03SL-E (Connection to LGH-150RVXT-E, LGH-200RVXT-E or LGH-250RVXT-E)															
Refrigerant		R410A																			
Electrical power supply		220-240V / 50Hz, 220V / 60Hz (Supplied from outdoor unit)																			
Input power		Heating / Fan: 2.5W, Cooling: 12.4W																			
Running current		Less than 0.1A																			
Weight		28kg    *Accessories: Approx. 1kg																			
Function		Heating / Cooling / Auto / Fan    *Auto is only available for RA temperature control																			
		RA (Return Air) temperature control / SA (Supply Air) temperature control [Must be set at initial setting and not possible to change from remote controller]																			
		RA (Return Air) temperature control																			
Connectable Lossnay unit		LGH-150RVX-E		LGH-200RVX-E		LGH-150RVXT-E		LGH-200RVXT-E		LGH-250RVXT-E											
Capacity [kW]	Heating	20.7 ( 7.7 + 13.0 )		23.8 ( 10.3 + 13.5 )		20.4 ( 7.4 + 13.0 )		23.8 ( 10.3 + 13.5 )		26.1 ( 12.1 + 14.0 )											
	Cooling	15.8 ( 6.3 + 9.5 )		18.4 ( 8.4 + 10.0 )		15.7 ( 6.2 + 9.5 )		18.4 ( 8.4 + 10.0 )		22.3 ( 9.8 + 12.5 )											
SHF		0.68		0.76		0.68		0.76		0.87											
Performance index	Heating	4.24		5.02		4.07		4.86		4.75											
	Cooling	5.27		5.86		5.03		5.59		4.59											
Air flow range at SP3 and SP4		1050 - 2250 m³/h		1050 - 2600 m³/h		1050 - 2250 m³/h		1050 - 2600 m³/h		1750 - 2880 m³/h											
Connectable outdoor unit		PUHZ-ZRP100		PUHZ-ZRP100		PUHZ-ZRP100		PUHZ-ZRP100		PUHZ-ZRP125											
Ext. piping	Diameter	Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88											
	Maximum length: 75m, Maximum height: 30m	Maximum length: 75m, Maximum height: 30m		Maximum length: 75m, Maximum height: 30m		Maximum length: 75m, Maximum height: 30m		Maximum length: 75m, Maximum height: 30m		Maximum length: 75m, Maximum height: 30m											
		SA (Supply Air) temperature control																			
Connectable Lossnay unit		LGH-150RVX-E		LGH-200RVX-E		LGH-150RVXT-E		LGH-200RVXT-E		LGH-250RVXT-E											
Capacity [kW]	Heating	16.6 ( 7.7 + 8.9 )		19.5 ( 10.3 + 9.2 )		16.3 ( 7.4 + 8.9 )		19.5 ( 10.3 + 9.2 )		21.6 ( 12.1 + 9.5 )											
	Cooling	13.4 ( 6.3 + 7.1 )		15.9 ( 8.5 + 7.4 )		13.3 ( 6.2 + 7.1 )		15.9 ( 8.5 + 7.4 )		17.6 ( 9.8 + 7.8 )											
SHF		0.85		0.90		0.86		0.90		0.95											
Performance index	Heating	5.46		6.30		5.16		6.01		5.97											
	Cooling	5.32		5.85		5.03		5.54		5.31											
Air flow range at SP3 and SP4		1050 - 2250 m³/h		1050 - 2600 m³/h		1050 - 2250 m³/h		1050 - 2600 m³/h		1000 - 2600 m³/h											
Connectable outdoor unit		PUHZ-ZRP71		PUHZ-ZRP71		PUHZ-ZRP71		PUHZ-ZRP71		PUHZ-ZRP71											
Ext. piping	Diameter	Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88		Liquid / Gas: 9.52 / 15.88											
	Maximum length: 50m, Maximum height: 30m	Maximum length: 50m, Maximum height: 30m		Maximum length: 50m, Maximum height: 30m		Maximum length: 50m, Maximum height: 30m		Maximum length: 50m, Maximum height: 30m		Maximum length: 50m, Maximum height: 30m											
		Ventilation specifications																			
Connectable Lossnay unit		LGH-150RVX-E				LGH-200RVX-E				LGH-150RVXT-E				LGH-200RVXT-E				LGH-250RVXT-E			
Fan speed		SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1	SP4	SP3	SP2	SP1
Air Volume	[m³/h]	1,500	1,125	750	375	2,000	1,500	1,000	500	1,500	1,125	750	375	2,000	1,500	1,000	500	2,500	1,875	1,250	625
	[L/s]	417	313	208	104	556	417	278	139	417	313	208	104	556	417	278	139	694	521	347	174
External static pressure [Pa]		150	84	38	9	105	59	26	7	150	84	38	9	145	82	36	9	140	79	35	9

Characteristic Curves



\*Note The graphs below show the supply air only.



Attention

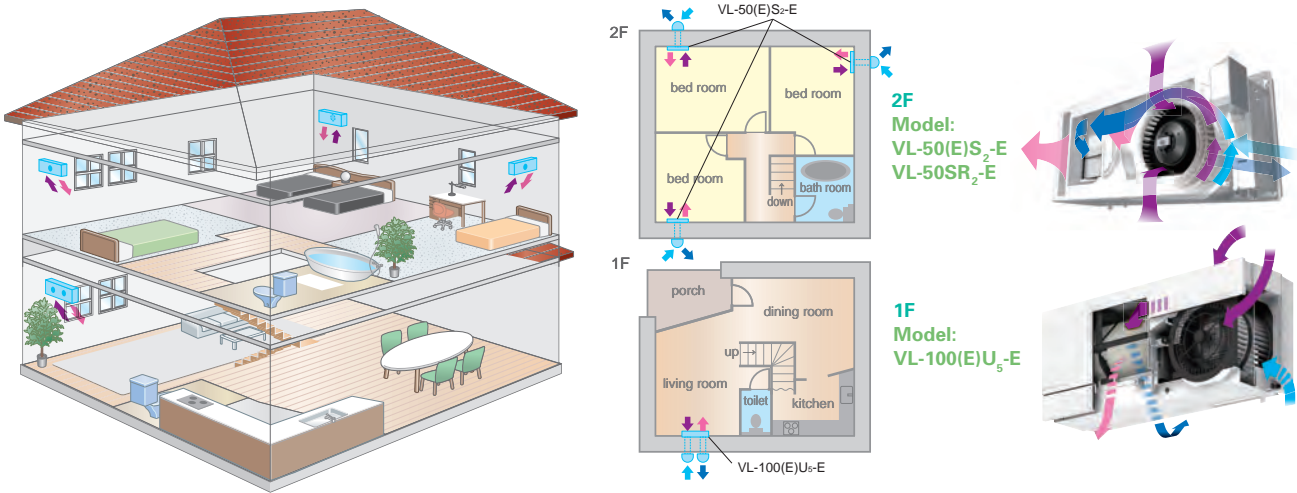
1. The running current and input power are based on 230V/50Hz.
2. The cooling and heating capacities are based on the air conditions listed below and the rated airflow of fan speed 4.  
Cooling Indoor: 27°CDB/19°CWB Outdoor: 35°CDB/24°CWB  
Heating Indoor: 20°CDB/15°CWB Outdoor: 7°CDB/6°CWB
3. The first figure in ( ) of the capacity specification is the heat recovery energy of the Lossnay unit. The second figure is the capacity specification for the Dx-coil connected to the outdoor unit.
4. "Performance index" is the calculated value at the temperature conditions above and is reference purpose only.  
Performance index = Total capacity ÷ total power consumption of outdoor unit and Lossnay unit
5. The external static pressure listed in the tables includes the static pressure loss of the Dx-coil unit when using a 50cm straight duct between the Lossnay and Dx-coil units. When the duct work between the Lossnay and Dx-coil units is longer and/or bent, the pressure loss of the duct work should be included in the pressure loss calculation.
6. The designed airflow of the system (Lossnay, Dx-coil and duct work) at fan speed 3 and 4 should be kept within "Airflow range at SP3 and SP4" listed in the tables. This range is shown as a solid line in graphs of the characteristics curve. If the Lossnay airflow is out of this range, the compressor of the outdoor unit may stop for self-protection purposes.
7. By installing the Dx-coil unit with a Lossnay unit, the air blow noise level is quieter at fan speed 4.  
Please refer to the "Direct Expansion coil unit for Lossnay" catalogue.
8. Refrigerant leakage contributes to climate change. Refrigerant with lower global warming potential (GWP) would contribute less to global warming than a refrigerant with higher GWP, if leaked to the atmosphere.  
This appliance contains a refrigerant fluid with a GWP equal to 1975. This means that if 1kg of this refrigerant fluid would be leaked to the atmosphere, the impact on global warming would be 1975 times higher than 1kg of CO<sub>2</sub>, over a period of 100 years. Never try to interfere with the refrigerant circuit yourself or disassemble the product yourself and always ask a professional.

# Residential Use Lossnay

Mitsubishi Electric offers you decentralized ventilation and centralized ventilation solutions for optimising your indoor air quality by Lossnay.

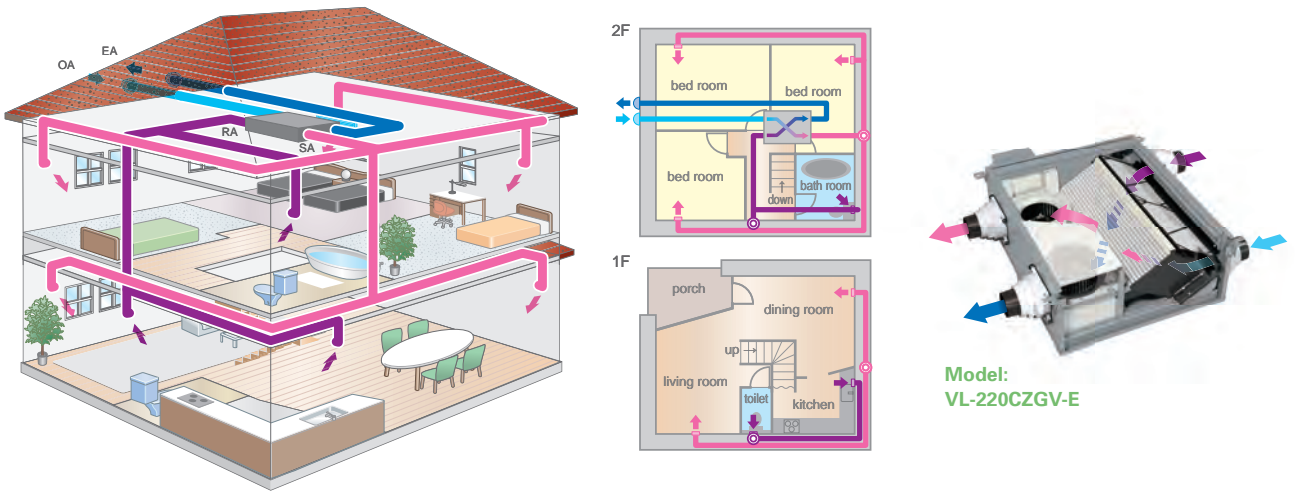
## Decentralized Ventilation Solution

Install the wall mounted Lossnay in each room.  
The heat recovery system provides fresh air at a comfortable air temperature.  
Total heat exchangers effectively reduce heat loss.



## Centralized Ventilation Solution

One Lossnay unit provides 24-hour ventilation for the entire house, from living room and bedrooms to the bathroom. The heat recovery system provides fresh air at a comfortable air temperature. Sensible heat exchanger effectively reduces excess humidity in the winter.



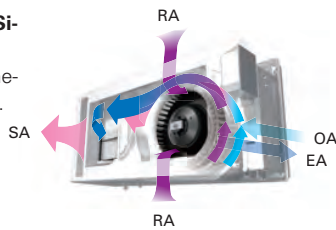


Decentralized ventilation: VL-50(E)S2-E, VL-50SR2-E and VL-100(E)U5-E

Product Merit

Air supplied and Exhausted Simultaneously

Supply and exhaust air simultaneously while transferring the heat.



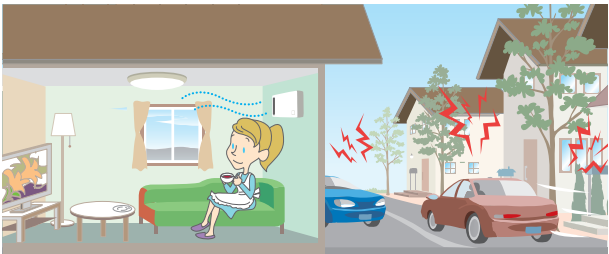
Energy Efficient

- Total heat exchanger minimizes heat loss.
- Achieve over 80% \* temperature efficiency.

\*VL-10D(E)U5-E at low fan speed in 230V 50Hz  
\*VL-50(E)S2-E at low fan speed in 230V 50Hz

Sound Insulation

A sound insulation effect reduces noise generated outside.



Sound Insulation Effect	Sound Source Side Average sound pressure dB	Sound Receiving Side Average sound pressure dB	Difference
	103.4	63.2	40.2

\*Tested based on VL-08S2-AE  
\*Measured by average sound pressure level of more than 30dB in 500Hz according to JIS A1416.  
VL-08S2-AE is Japanese dedicated model with equivalent of VL-50(E)S2-E

Product Features

Stylish Design

Match any interior décor to create a comfortable room.



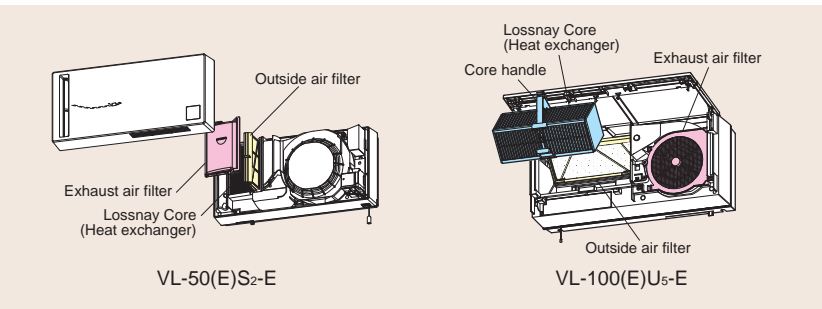
VL-50(E)S2-E  
VL-50SR2-E



VL-100(E)U5-E

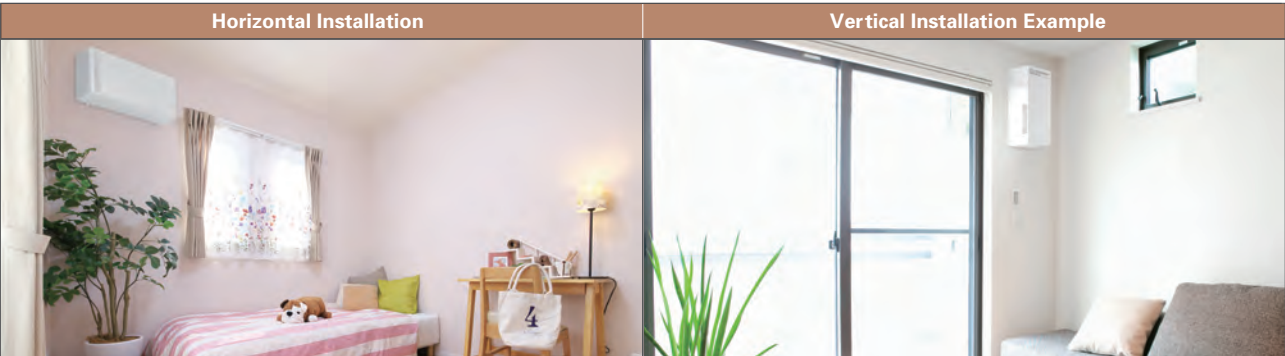
Easy Maintenance

The only maintenance required is cleaning the outside-air filter and exhaust-air filter. Filters are easily accessible, making quick and thorough cleaning possible.



Flexible Installation for Only VL-50(E)S2-E and VL-50SR2-E

Not only horizontal installation but also vertical installation are available. It can fit various types of rooms with flexible installation.



Centralised ventilation: VL-220CZGV-E

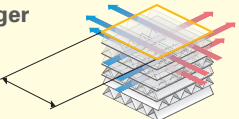
Product Merit

Newly Developed Heat Exchanger

- During ventilation, Lossnay recovers warmth in the winter and keeps air cool in the summer.
- Reducing heating and cooling loads with a maximum exchange efficiency of 86%\*.

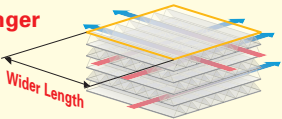
**Normal Square Heat Exchanger**

Simple structure contributes to minimize pressure loss and reduce power consumption.



**New Diamond Heat Exchanger**

Due to the diamond design, air passages are longer and help realize higher exchange efficiency.



Energy Efficient

- The highest energy-saving performance in its class. (8.5W\* minimum input power)
- Saves heating and cooling costs by minimizing energy loss that occurs during ventilation.



Quiet

- At an ultra quiet 14dB\*, it is the quietest product in its class.
- Blocks outside noise for a more comfortable environment.



\*Fan speed 1

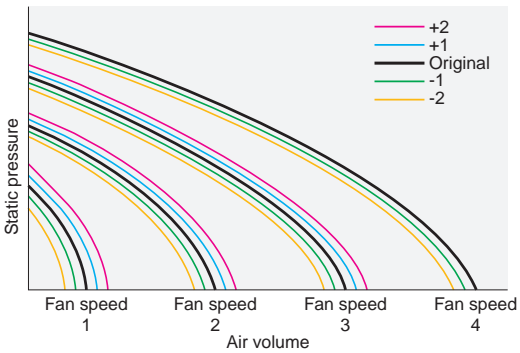
Product Features

Fan Speed Precise Adjustment Function

Each main fan speed value can be further adjusted slightly. Use the PZ-61DR-E remote controller to adjust the speed.

- 1) Considering the total hours of Lossnay operation (filter clogging), the fan power can be adjusted automatically after a given period of time.
- 2) After the unit is installed, when if the air volume is slightly lower or higher than the desired air flow, it is possible to make a fine adjustments. (Fan speed 4 is available only 1 down and 2 down)

P-Q curve image



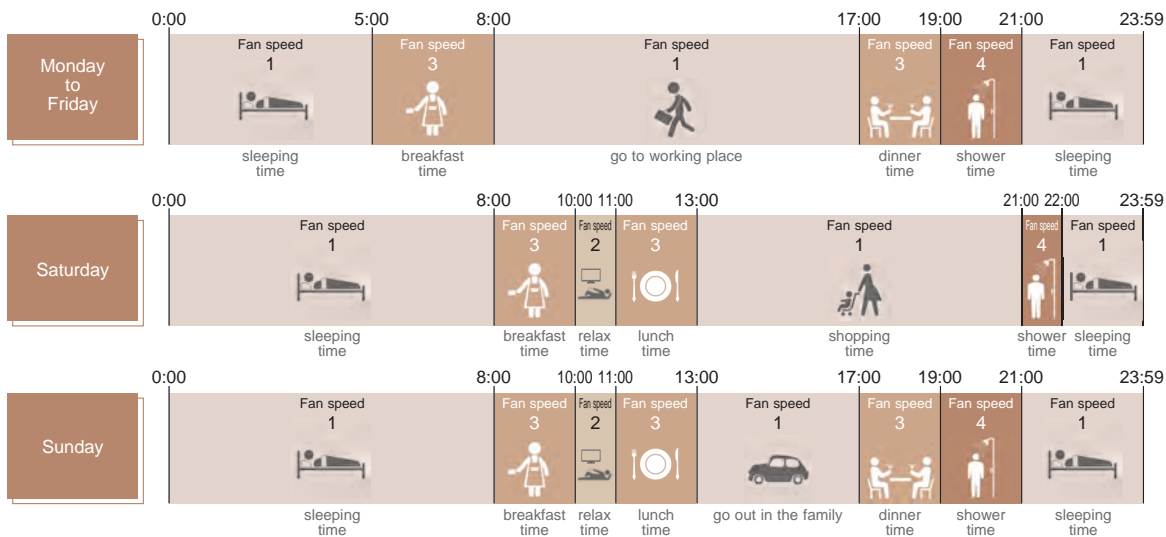
Multi Ventilation (Power Supply and Exhausted) Mode

This mode allows the air supply/ exhaust balance to be varied dynamically. The supply/ exhaust balance can be selected to suit the usage environment.

Normal Mode	Power Supply Mode		Power Exhaust Mode	
Relax time 	Adjust the indoor pressure balance in case a separate exhaust is installed 	Increase indoor pressure to prevent unfiltered drafts from coming in 	Keep steam inside of the shower room 	Prevent odors from spreading 

Weekly Timer

Operation patterns for each day of the week. ON/OFF and airflow can be set using the weekly timer function (up to eight zones per day). This function contributes to enhanced energy-saving operation.



\*Example for reference only.



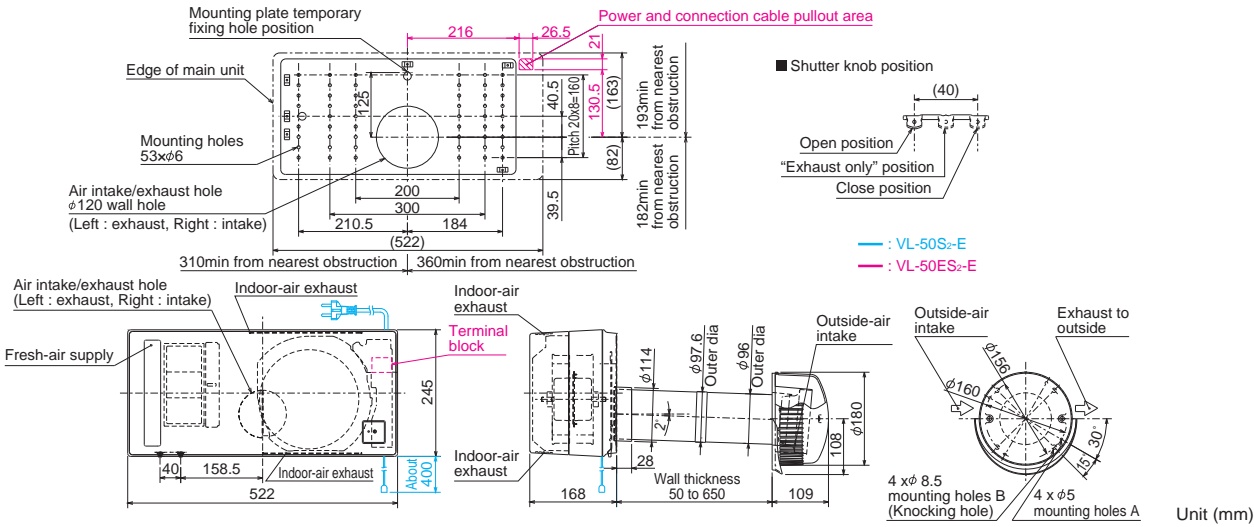
Residential Lossnay Specifications

Model: VL-50S2-E (Pull-Switch Model), VL-50ES2-E (Wall-Switch Model)

Model	VL-50(E)S2-E							
Electrical power supply	220V/50Hz		230V/50Hz		240V/50Hz		220V/60Hz	
Fan speed	High	Low	High	Low	High	Low	High	Low
Air volume (m³/h)	51	15	52.5	16	54	17	54	17
Power consumption (W)	19	4	20	4.5	21	5	21	5.5
Temperature exchange efficiency (%)	70	86	69	85	68	84	68	84
Noise level (dB)	36.5	14	37	15	37.5	15.5	37.5	15.5
Weight (kg)	6.2							
Specific energy consumption class	C							

\*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628) on shutter knob open position.

Dimensions

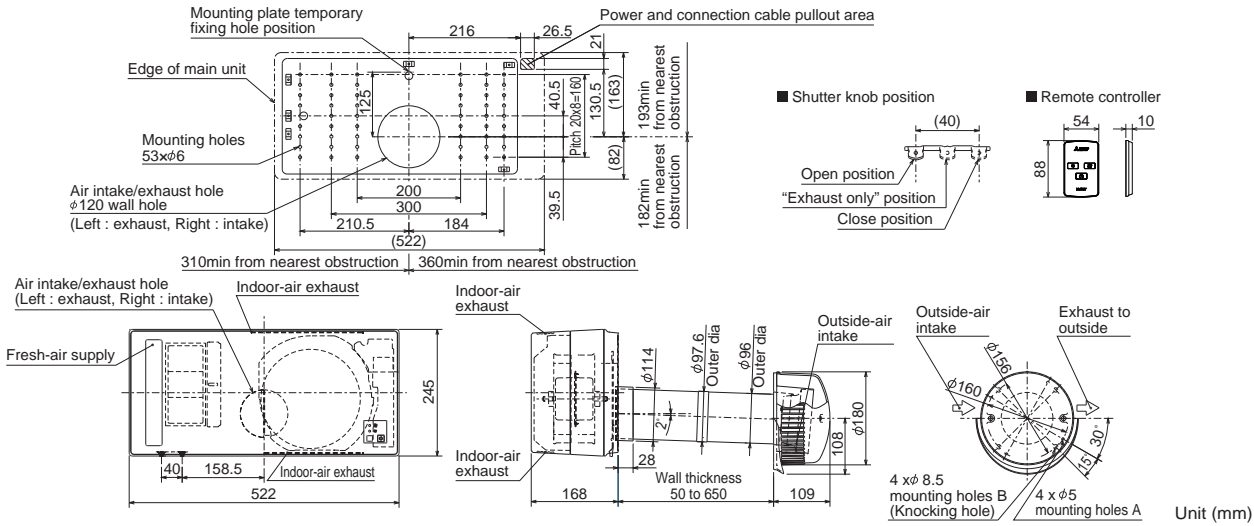


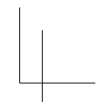
Model: VL-50SR2-E (Remote Controller Model)

Model	VL-50SR2-E							
Electrical power supply	220V/50Hz		230V/50Hz		240V/50Hz		220V/60Hz	
Fan speed	High	Low	High	Low	High	Low	High	Low
Air volume (m³/h)	51	15	52.5	16	54	17	54	17
Power consumption (W)	19	4.5	20	5	21	5.5	21	6
Temperature exchange efficiency (%)	70	86	69	85	68	84	68	84
Noise level (dB)	36.5	14	37	15	37.5	15.5	37.5	15.5
Weight (kg)	6.2							
Specific energy consumption class	C							

\*Figures in the chart is measured according to Japan Industrial Standard (JIS B 8628) on shutter knob open position.

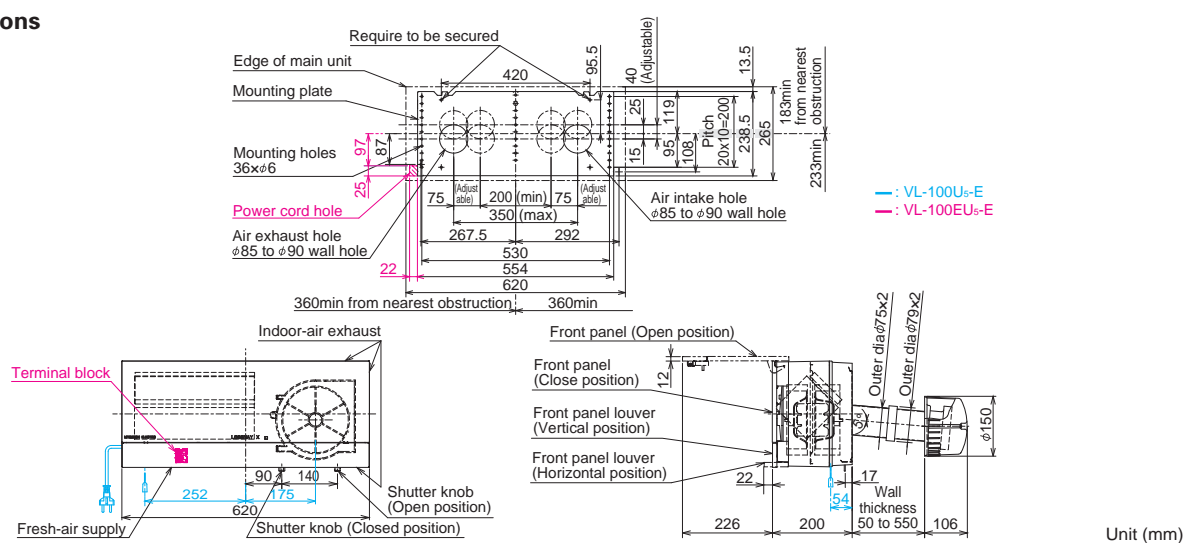
Dimensions





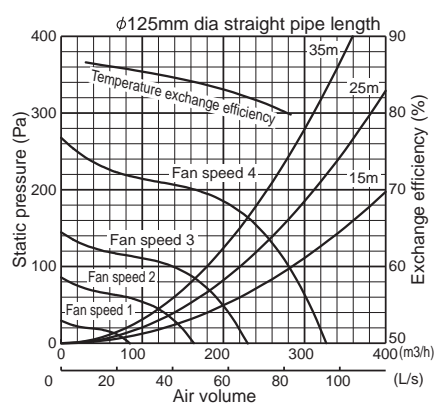
Model	VL-100(E)U <sub>5</sub> -E							
Electrical power supply	220V/50Hz		230V/50Hz		240V/50Hz		220V/60Hz	
Fan speed	High	Low	High	Low	High	Low	High	Low
Air volume (m³/h)	100	55	105	60	106	61	103	57
Power consumption (W)	30	13	31	15	34	17	34	17
Temperature exchange efficiency (%)	73	80	73	80	72	79	73	80
Noise level (dB)	36.5	24	37	25	38	27	38	25
Weight (kg)	7.5							
Specific energy consumption class	B							

## Dimensions

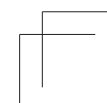
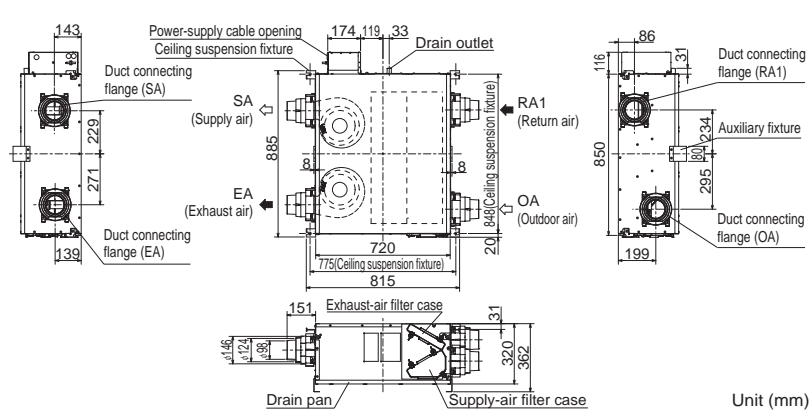


Model		VL-220CZGV-E			
Electrical power supply		220-240V/50Hz 220V/60Hz			
Ventilation mode		Heat recovery mode			
Fan speed		Fan speed 4	Fan speed 3	Fan speed 2	Fan speed 1
Running current		0.60	0.29	0.18	0.11
Input power (W)		80	35	18.5	8.5
Air volume	(m³/h)	230	165	120	65
	(L/s)	64	46	33	18
External static pressure (Pa)		164	84	44	13
Temperature exchange efficiency (%)		82	84	85	86
Noise level (dB)		31	25	19	14
Weight (kg)		31			
Specific energy consumption class		A			

### Characteristic Curve








## Dimensions



Accessories





Optional Parts for VL-50(E)S2-E and VL-50SR2-E

Filter, Extension Pipe and Stainless Hood

Type	High Efficiency Filter	Replacement Filter	Extension Pipe	Joint	Stainless Hood
Design					
Model	P-50HF2-E	P-50F2-E	P-50P-E	P-50PJ-E	P-50VSQ5-E
Feature	Upgraded high-performance filter.	Standard grade replacement filter.	Total length when connected to the joint is 350mm.	Joint for extension pipe	Stylish stainless hood

Optional Parts for VL-100(E)U5-E

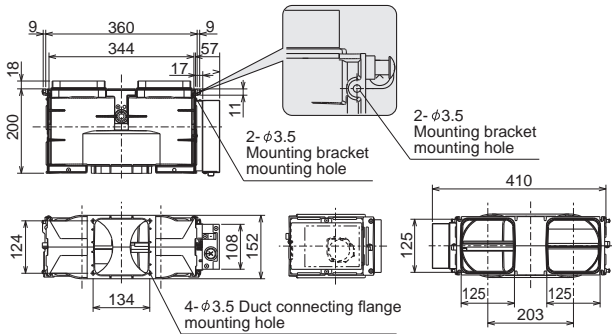
Filter and Extension Pipe

Type	High Efficiency Filter	Replacement Filter	Extension Pipe	Joint
Design				
Model	P-100HF5-E	P-100F5-E	P-100P-E	P-100PJ-E
Feature	Upgraded high-performance filter.	Standard grade replacement filter.	Total length when connected to the joint is 300mm.	<ul style="list-style-type: none"><li>Joint for extension pipe</li><li>Screw-in method</li></ul>

Optional Parts for VL-220CZGV-E




Bypass damper

Model: P-133DUE-E



Unit (mm)

Filter

Type	High Efficiency Supply Air Filter	Medium Efficiency Exhaust Air Filter	Standard Replacement Filter
Design			
Model	P-220SHF-E	P-220EMF-E	P-220F-E
Classification (EN779:2012)	M6	G4	G3