Mitsubishi Electric Technical Seminar 2012

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AGENDA

starMEX Air-Conditioner

- Overview of Starmex Inverter System
- Features of Starmex Inverter System

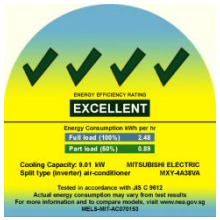
CITY MULTI

- YHA Series
- EP Series
- Advance Controller System
- Q&A

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starMEX Air-Conditioner







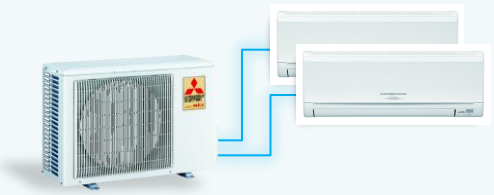




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Overview of starMEX Air-Conditioner Inverter System

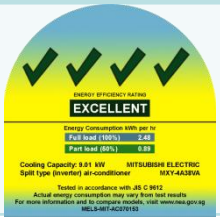
OUTDOOR APPLICATION



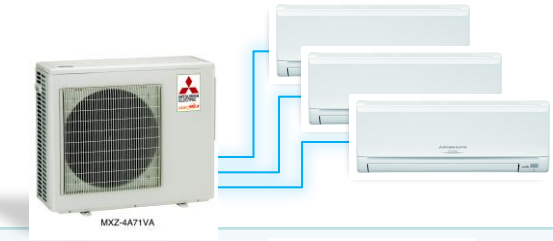
SYSTEM 2

MXY-2E20VA

- Max 2 indoor units
- Cap: Up to 6.55Kw



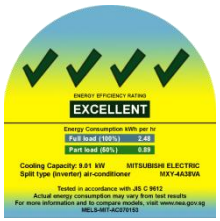




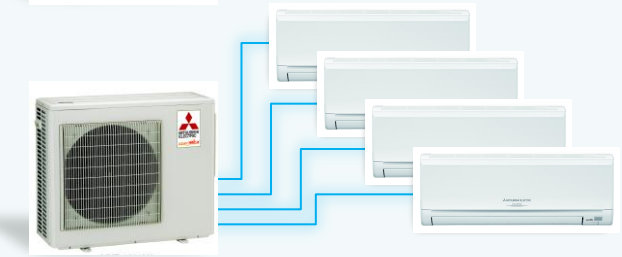
SYSTEM 3

MXY-3A28VA

- Max 3 indoor units
- Cap: Up to 8.9 Kw



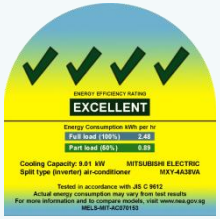




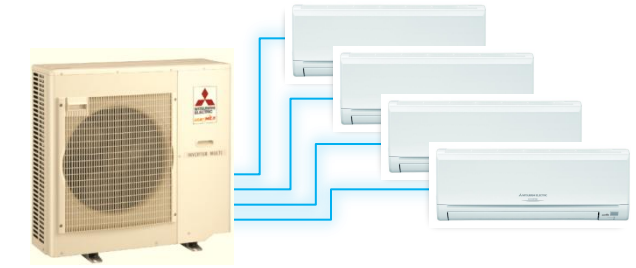
SYSTEM 4

MXY-4A28VA

- Max 4 indoor units
- Cap: Up to 8.9Kw



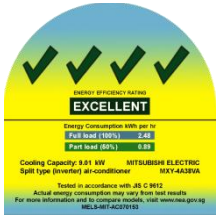




SYSTEM 4

MXY-4A38VA

- Max 4 indoor units
- Cap: Up to 11.2Kw





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Overview of starMEX Air-Conditioner Inverter System

INDOOR APPLICATION	COOLING CAP (Kw)				
	2.5	3.5	5.0	6.0	7.1
 **MSY Series –** Easy Clean, Wide & Long	●	●	●	●	●
 **FD Series** i-see Sensor, Mold Fighter, plasmaDuo Filter Systems	●	●	●		
   New **EF Series** Stylish, Nano Platinum Filter	●	●	●		

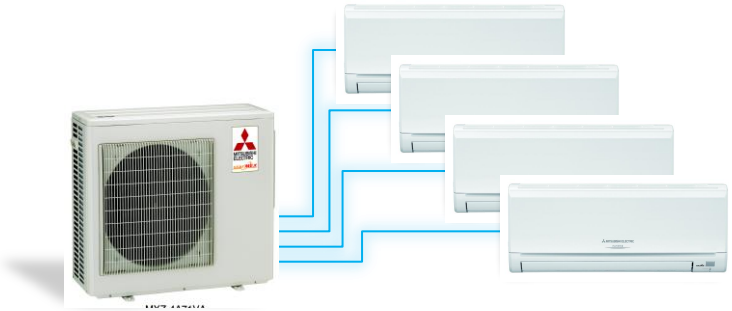
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Overview of starMEX Air-Conditioner Inverter System

INDOOR APPLICATION		COOLING CAP (Kw)				
		2.5	3.5	5.0	6.0	7.1
	PLA Series		●	●	●	●
	MLZ Series		●	●		
	SEZ Series		●	●	●	●
	PEAD Series			●	●	●

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Features of Starmex Inverter System



- Attained Highest No of ticks from NEA

Excellent Energy Savings



- 1st in the Industry to employ Cleaning Free Technology
- Re-use existing pipes

Pipe Reuse Technology



- One of the most Reliable Brand in the Market

High Reliability



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Features of Starmex Inverter System



MSY SERIES

- Silent Mode operation is only 19dB for MSY-GE10VA.
  The Quietest in the Market.

Quietest



- Easy Detachable Panel without special Tools required.
- Eliminates Mould, Odors
- Longer lasting high performance hence reduce electricity consumption

Easiest to clean



- MSY-GE18VA (Cooling cap: 5.0Kw) is the first in the industry to have a minimal width of 798mm.

Slimmest Width

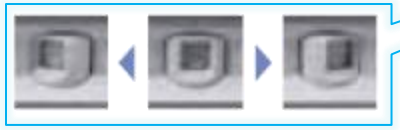


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Features of Starmex Inverter System



FD SERIES



- i-see sensor detects floor temperature and adjust the air outlet temperature to prevent “excessive chilling”

i-see *Sensor*



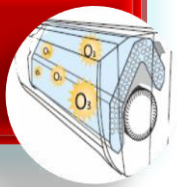
- Plasma Deodorization with Platinum catalyst deodorizing filter
- Plasma Air Purification with Anti Allergen electric enzyme filter

Plasma Duo Filter System



- Suppress growth of mold with the ozone generated by plasma electrode unit. (Under safety level)

Mold Fighter



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Features of Starmex Inverter System



PEAD SERIES

- 1ST In the Industry, PEAD series offers Maximum External Static Pressure of 150Pa.

Highest Static Pressure — *UP TO 150 PA*

- Five Stages external Static Pressure conversion is possible.
- Available in 35/50/70/100/150Pa

Wider selection of Static Pressure — *UP TO 5 STAGES*

- PEAD Series is the 1st in the Industry to offer high static pressure with only a minimal Depth of 250mm

Slimmest Depth — *SUPER SLIM*

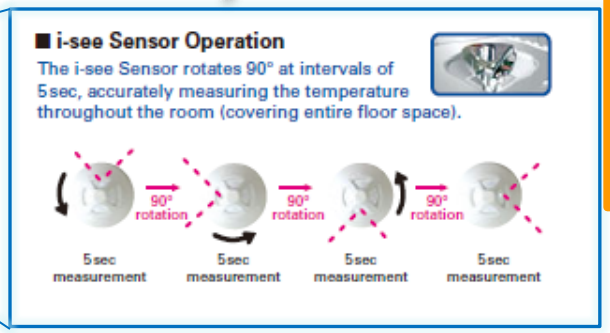
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Features of Starmex Inverter System

Starmex



PLA SERIES



- i-see sensor detects floor temperature and adjust the air outlet temperature to prevent “excessive chilling”

i-see *Sensor*

(Optional)



- Air Direction at each outlet can be set independently by using wired remote controller.

Setting of Air Flow Direction by individual Vane



- New wide shape vane capable of wide angle air supply

Wide Airflow



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Features of Starmex Inverter System





New

EF SERIES

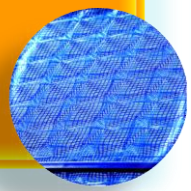
- Stylish Line-Up matches any Room Decor

Stylish



- 3D waved surface which gives better dust collection performance.

Nano Platinum Filter



- Quiet Mode fan speed setting provides super quiet operation as low as 21dB for EF10/13 models.

Quiet Comfort

21dB

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Comparison Table – Inverter Split

	Mitsubishi Electric	D Brand	Mitsubishi Electric	D Brand
Model Name	MXY-3A28VA	3MKS71ESG	MXY-4A38VA	4MKS80ESG
Cooling Capacity (Kw)	7.31★	7.11	9.01★	7.84
Max Cooling Capacity (Kw)	8.9★	8.82	11.2★	10.5
Dimension WxDxH (mm)	840x330x710	826x300x735	900x320x900	900x320x770
Weight (kg)	57★	58	67★	69
Full COP	3.36	3.76	3.63★	3.4
Part COP	5.17★	4.63	5.19★	5.07
Weightage COP	4.45★	4.29	4.57★	4.40

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Sound Level Comparison Table – Inverter Split

INVERTER FCU

	MSY-GE10VA (ME)	D BRAND	MSY-GE13VA (ME)	D BRAND	MSY-GE18VA (ME)	D BRAND	MSY-GE24VA (ME)	D BRAND
Cooling Capacity (kw)	1.40 - 3.50	1.66 - 3.35	1.69 - 4.17	1.45 - 4.00	1.60 - 5.90	1.85 - 5.81	1.60 - 6.70	2.01 - 6.94
Sound Level (dBA)	★ 19-21-29-36	22-25-37	★ 19-22-29-37	23-26-39	★ 28-33-38-44	31-34-43	★ 30-37-41-45	34-37-46

	MXY-3A28VA (ME)	D BRAND	MXY-4A38VA (ME)	D BRAND
Cooling Capacity (kw)	7.5	7.1	9.2	8
Sound Level (dBA)	★ 45/49	45/48	★ 44/46	45/48

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CITY MULTI

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Overview of City Multi VRF System – S Series



Model	Model Name
4 HP	PUMY-P100VHMB (1ø) PUMY-P100YHMB (3ø)
5 HP	PUMY-P125VHMS (1ø) PUMY-P125YHMS (3ø)
6 HP	PUMY-P140VHMS (1ø) PUMY-P140YHMS (3ø)

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Benefit of City Multi VRF System – S Series

CITY MUTLI

S Series (4HP-6HP)

Page97,98

PUMY-P VHMB(-BS)
PUMY-P YHMB(-BS)



Model	4HP	5HP	6HP
Model Name	PUMY-P100VHMB(-BS)	PUMY-P125VHMB(-BS)	PUMY-P140VHMB(-BS)
	PUMY-P100YHMB(-BS)	PUMY-P125YHMB(-BS)	PUMY-P140YHMB(-BS)

New COP: 3.71

New COP: 3.64

Based on NEA tick rating calculations, we have also obtained Highest No of tick!!



Split type (inverter)^2 =
$COP_{100\%} \geq 3.34$ Weighted COP ≥ 3.76

Weighted COP = 0.4 x $COP_{100\%}$ + 0.6 x $COP_{50\%}$

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Overview of City Multi VRF System – S Series

Comparison Table – VRF Mini Series

	Mitsubishi Electric	D	Mitsubishi Electric	D
Model Name	PUMY-P125VHMS	RXMQ5PVE	PUMY-P140VHMS	RXMQ6PVE
Cooling Capacity (Kw)	14	14	15.5	15.5
Dimension WxDxH (mm)	950x330x1350	900x320x1345	950x330x1350	900x320x1345
Noise Level (dBA)	50★	51	51★	53
Weight (kg)	136	125	149	125
Full COP	3.71★	3.52	3.64★	3.4
Part COP	4.55★	4.54	4.49★	4.47
Weightage COP	4.24★	4.14	4.40★	4.05

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CITY MULTI

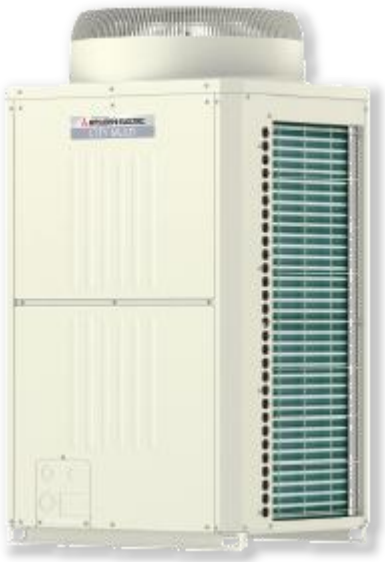


YHA SERIES

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CITY MUTLI

Pdt Line Up - YHA Series



Model	Model Name
8 HP	PUHY-P200YHA(-BS)
10 HP	PUHY-P250YHA(-BS)
12 HP	PUHY-P300YHA(-BS)



Model	Model Name
14 HP	PUHY-P350YHA(-BS)
16 HP	PUHY-P400YHA(-BS)
18 HP	PUHY-P450YHA(-BS)

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Pdt Line Up - YHA Series

CITY MUTLI



Model	Model Name
20 HP	PUHY-P500YSHA(-BS)
22 HP	PUHY-P550YSHA(-BS)
24 HP	PUHY-P600YSHA(-BS)
26 HP	PUHY-P650YSHA(-BS)
28 HP	PUHY-P700YSHA(-BS)
30 HP	PUHY-P750YSHA(-BS)
32 HP	PUHY-P800YSHA(-BS)
34 HP	PUHY-P850YSHA(-BS)
36 HP	PUHY-P900YSHA(-BS)

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Pdt Line Up - YHA Series

CITY MUTLI



Model	Model Name
38 HP	PUHY-P950YSHA(-BS)
40 HP	PUHY-P1000YSHA(-BS)
42 HP	PUHY-P1050YSHA(-BS)
44 HP	PUHY-P1100YSHA(-BS)
46 HP	PUHY-P1150YSHA(-BS)
48 HP	PUHY-P1200YSHA(-BS)
50 HP	PUHY-P1250YSHA(-BS)

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Benefits- YHA Series

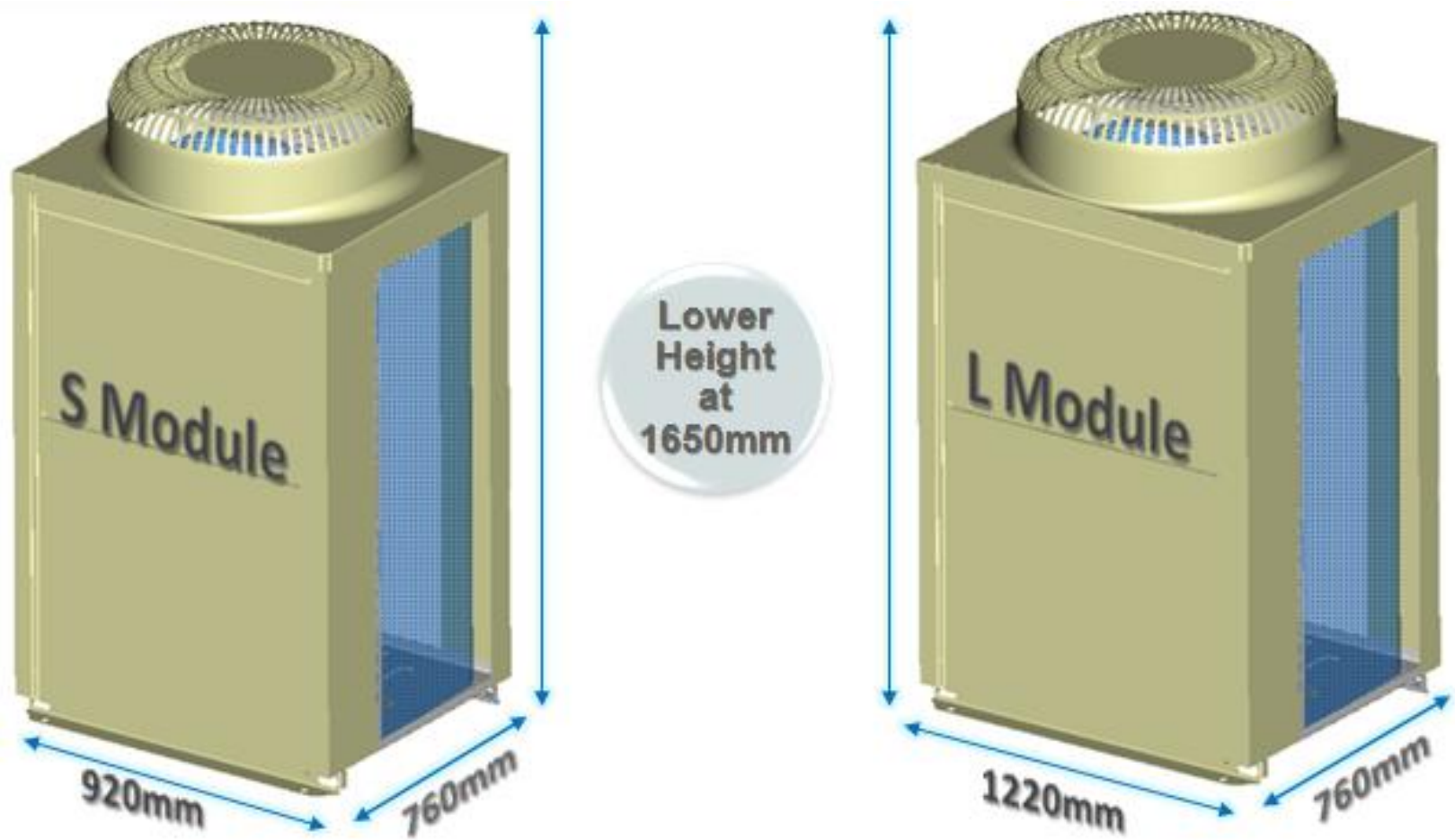


- Smaller Dimension
- Lower Sound Level
- Easy Maintenance
- Full Inverter System

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CITY MUTLI

Smaller Dimension

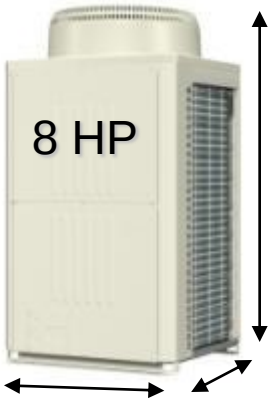


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Smaller Dimension

CITY MULTI

Mitsubishi Electric Base Model



H: 1650mm

(with 60mm base removed)

W: 920mm

D: 760mm



H: 1650mm

(with 60mm base removed)

W: 1220mm

D: 760mm

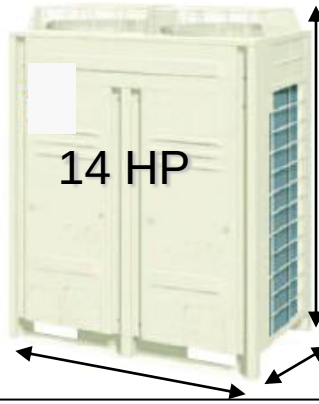
Competitor 'D' Base Model



H: 1680mm

W: 930mm

D: 765mm



H: 1680mm

W: 1240mm

D: 765mm

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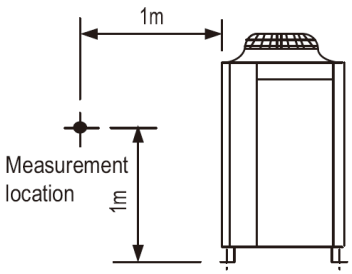
Lower Sound Level

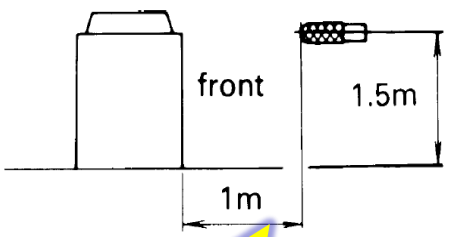




→Effective in Reducing sound level in all 4-directions!

MODELS	MITISUBISHI ELECTRIC NOISE LEVEL (dBA)	COMPETITOR 'D' NOISE LEVEL (dBA)
12HP	59	60
18HP	62	63





Reducing sound level in all *4- DIRECTIONS!*

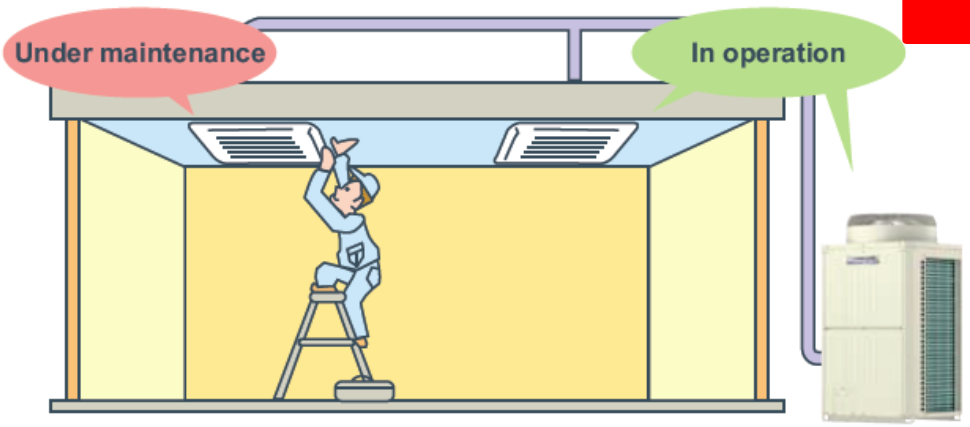
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Easy Maintenance

Easy Maintenance

Even when one of the indoor units in the system is under maintenance, the other indoor unit can still operate.

* Not applicable to all situations.
* Be sure to turn off the power to the indoor unit when repairing or servicing the unit.



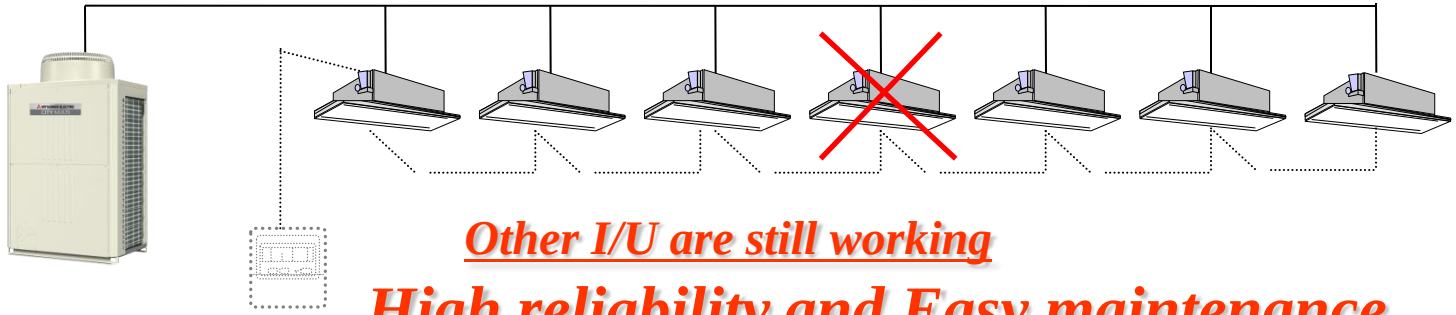
- LEV will be forced to close via programs when FCU is not operating.
- LEV will be normally close when power failure.

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3. High reliability

In case of Failure or Stopping the power supply (as regular maintenance)

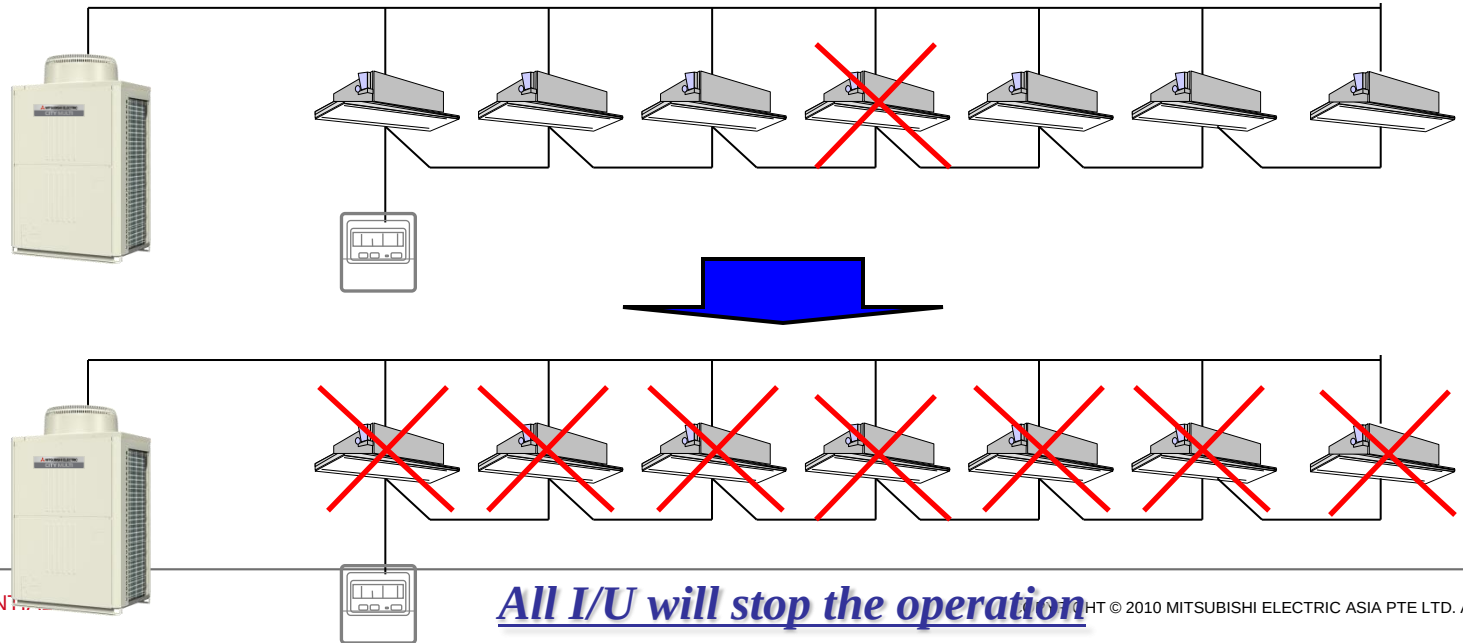
Our control system



Other I/U are still working

High reliability and Easy maintenance

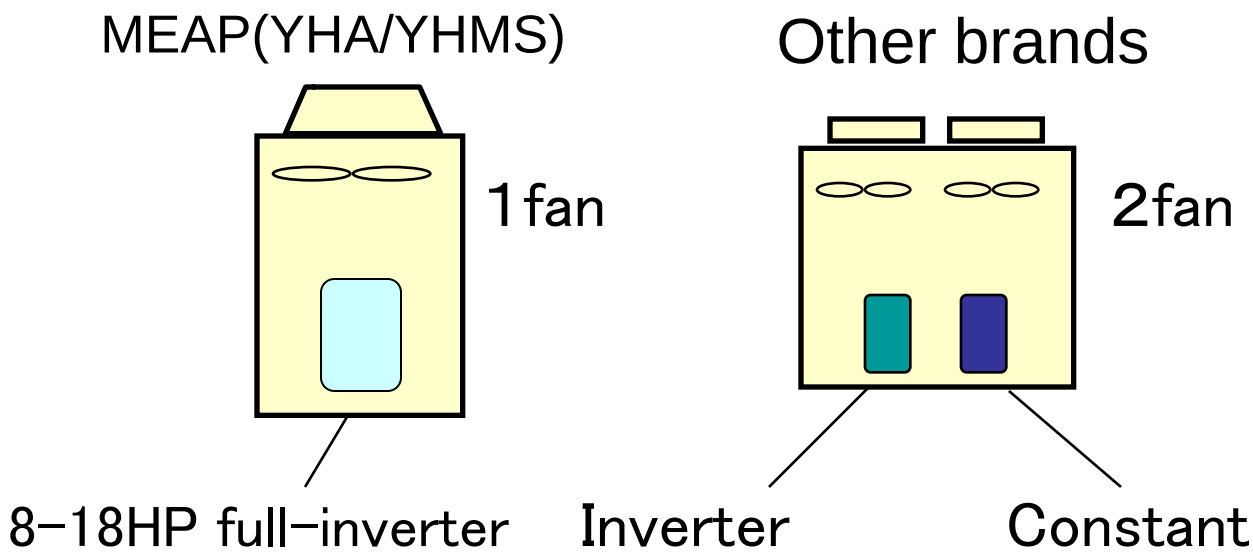
Other brands



All I/U will stop the operation

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Full Inverter System



All O/U used inverter-compressor only!

1. Less space (saving)
2. Smooth control/Less on-off switching
3. High reliability
4. Reduce Rush Current

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COMPARISON TABLE - VRF Y-SERIES OUTDOOR UNITS

	PUHY-P250YHA (Mitsubishi	RXQ10PAY1 (D Brand)	PUHY-P350YHA (Mitsubishi	RXQ14PAY1 (D Brand)	PUHY-P400YHA (Mitsubishi	RXQ16PAY1 (D Brand)	PUHY-P450YHA (Mitsubishi	RXQ18PAY1 (D Brand)	PUHY-P600YSHA (Mitsubishi	RXQ24PAY1 (D Brand)	PUHY-P650YSHA (Mitsubishi	RXQ26PAY1 (D Brand)
Cooling Capacity (kw)	28.0	28.0	40.0	40.0	45.0	45.0	50.0	49.0	69.0	67.4	73.0	71.4
Sound Level (dBA)	57	58	60	60	61	60	62	63	62	62	62.5	64
Weight (kg)	200	249	245	329	245	329	245	341	445	534	460	546
Dimension (WxDxH)(mm)	920 x 760 x 1650	930 x 765 x 1680	1220 x 760 x 1650	1240 x 765 x 1680	1220 x 760 x 1650	1240 x 765 x 1680	1220 x 760 x 1650	1240 x 765 x 1680	2170 x 760 x 1650	2170 x 765 x 1680	2170 x 760 x 1650	2170 x 765 x 1680
Full COP (100%)	3.62	3.54	3.57	3.23	3.40	3.17	3.00	2.99	3.68	3.47	3.51	3.31
Part COP (50%)	5.17	4.56	5.28	4.15	5.26	4.08	4.66	3.85	5.41	4.47	5.16	4.25
Weightage COP	4.55	4.15	4.60	3.78	4.52	3.72	4.00	3.51	4.72	4.07	4.50	3.87

**Data is based on Norminal Conditions

Indoor: 27°Cdb, 19°Cwb and Outdoor: 35°Cdb (Std)

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COMPARISON TABLE - VRF Y-SERIES OUTDOOR UNITS

	PUHY-P700YSHA (Mitsubishi	RXQ28PAY1 (D Brand)	PUHY-P750YSHA (Mitsubishi	RXQ30PAY1 (D Brand)	PUHY-P800YSHA (Mitsubishi	RXQ32PAY1 (D Brand)	PUHY-P850YSHA (Mitsubishi	RXQ34PAY1 (D Brand)	PUHY-P950YSHA (Mitsubishi	RXQ38PAY1 (D Brand)	PUHY-P1000YSHA (Mitsubishi	RXQ40PAY1 (D Brand)
Cooling Capacity (kw)	80.0	77.0	85.0	82.5	90.0	90.0	96.0	94.0	108.0	105.0	113.0	112.0
Sound Level (dBA)	63	64	63.5	65	64	65	64.5	65	64	65	64.5	64
Weight (kg)	490	590	490	626	490	658	490	670	660	831	675	863
Dimension (WxDxH)(mm)	2470 x 760 x 1650	2170 x 765 x 1680	2470 x 760 x 1650	2480 x 765 x 1680	2470 x 760 x 1650	2480 x 765 x 1680	2470 x 760 x 1650	2480 x 765 x 1680	3120 x 760 x 1650	3410 x 765 x 1680	3120 x 760 x 1650	3410 x 765 x 1650
Full COP (100%)	3.56	3.17	3.39	3.26	3.25	3.17	3.10	3.07	3.52	3.43	3.48	3.33
Part COP (50%)	5.24	4.08	5.14	4.21	4.92	4.09	4.85	3.95	5.18	4.41	5.12	4.29
Weightage COP	4.57	3.72	4.44	3.83	4.25	3.72	4.15	3.60	4.52	4.02	4.46	3.91

**Data is based on Norminal Conditions

Indoor: 27°Cdb, 19°Cwb and Outdoor: 35°Cdb (Std)

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COMPARISON TABLE - VRF Y-SERIES OUTDOOR UNITS

	PUHY-P1050YSHA (Mitsubishi	RXQ42PAY1 (D Brand)	PUHY-P1100YSHA (Mitsubishi	RXQ44PAY1 (D Brand)	PUHY-P1150YSHA (Mitsubishi	RXQ46PAY1 (D Brand)	PUHY-P1200YSHA (Mitsubishi	RXQ48PAY1 (D Brand)
Cooling Capacity (kw)	118.0	116.0	124.0	120.0	130.0	126.0	136.0	132.0
Sound Level (dBA)	65	65	65	67	65.5	67	66	67
Weight (kg)	705	875	735	887	735	967	735	967
Dimension (WxDxH)(mm)	3420 x 760 x 1650	3410 x 765 x 1680	3720 x 760 x 1650	3410 x 765 x 1680	3720 x 760 x 1650	3720 x 765 x 1680	3720 x 760 x 1650	3720 x 765 x 1680
Full COP (100%)	3.48	3.24	3.46	3.16	3.30	3.1	3.26	3.17
Part COP (50%)	5.12	4.19	5.25	4.07	5.00	3.99	4.94	4.06
Weightage COP	4.46	3.81	4.53	3.71	4.32	3.63	4.27	3.70

**Data is based on Norminal Conditions
Indoor: 27°Cdb, 19°Cwb and Outdoor: 35°Cdb (Std)

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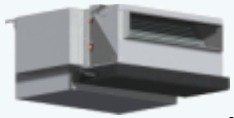
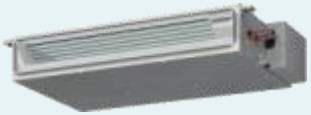
Pdt Line Up - Indoor Units

Model	Cooling Capacity (Kw)								
	2.2	2.8	3.6	4.5	5.6	7.1	9.0	11.2	14.0
 i-see Sensor PLFY-P VBM-E			●	●	●	●	●	●	●
 PLFY-P VCM-E	●	●	●	●					
 PLFY-P VLMD-E	●	●	●	●	●	●	●	●	●
 PMFY-P VBM-E	●	●	●	●					

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CITY MUTLI

Pdt Line Up - Indoor Units

Model	Cooling Capacity (Kw)												
	1.7	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0
 PEFY-P VMR-E-L/R		●	●	●										
 PEFY-P VMS1(L)-E	●	●	●	●	●	●	●							
 PEFY-P VMA(L)-E		●	●	●	●	●	●	●	●	●	●	●		
 PEFY-P VMH-E					●	●	●	●	●	●	●	●	●	●
 PEFY-P VMH-E-F									●			●	●	●

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Pdt Line Up - Indoor Units

Model	Cooling Capacity (Kw)									
	1.7	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	11.2	14.0
 PCFY-P VKM-E					●		●			●	●
 PKFY-P VBM	●	●	●								
 PKFY-P VHM				●	●	●					
 PKFY-P VKM							●			●	

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Pdt Line Up - Indoor Units

Model	Cooling Capacity (Kw)					
	2.2	2.8	3.6	4.5	5.6	7.1
 PFFY-P VKM-E	●	●	●	●		
 PFFY-P VLEM-E	●	●	●	●	●	●
 PFFY-P VLRM(M)-E	●	●	●	●	●	●

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Features of City Multi System



1st in the Industry!

PKFY SERIES

Slimmest Width
(898W x 249D x 295H)

- **With its compact width of 898mm, PKFY-P50VHM-E can be well fitted above the doorway of limited space (less than 1000mm)**

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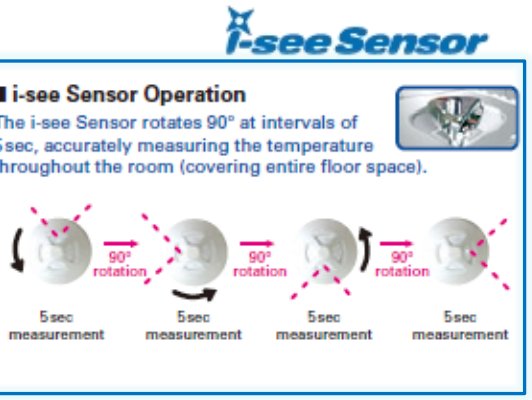
Features of City Multi System

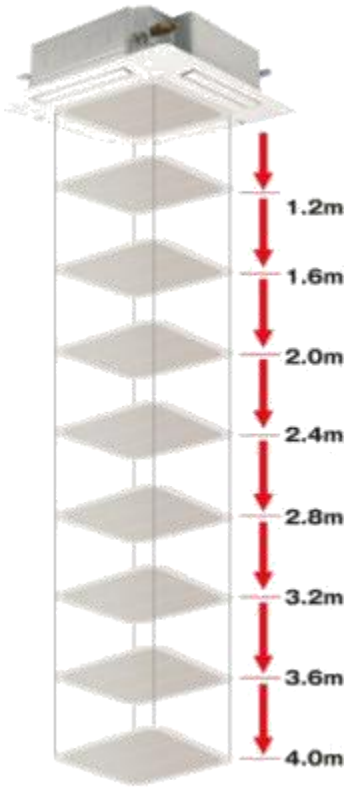
CITY MUTLI

1st in the Industry!



PLFY –PVBM SERIES





Max 4.0m

i-see Sensor (Optional)

- 1ST In the Industry, i-see sensor prevents over-cooling and improves energy efficiency/comfort.

Automatic Lowering Grille (Optional)

- Automatic lowering grille up to 4m for easy filter cleaning

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Features of City Multi System



PEFY –PVMA SERIES

Highest External Static Pressure

- 1ST In the Industry, PEFY-PVMA series offers Maximum External Static Pressure of 150Pa.

Slimmest Depth

- PEFY-PVMA Series is the 1st in the Industry to offer high static pressure with only a minimal Depth of **250**mm.

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Features of City Multi System



PEFY –PVHMS SERIES

COMPARISON TABLE – CITY MULTI VRF (HIGH STATIC DUCTED 1Ø SERIES)

Model	PEFY-P200VMHS-E	FXMQ200MAVE (D BRAND)	PEFY-P250VMHS-E	FXMQ250MAVE (D BRAND)
Power Input (kW)	0.6 ★	1.3	0.8 ★	1.5
Air Flow Rate (CMH)	3000-3660-4320 ★	3000-3480	3480-4260-5040 ★	3720-4320
Sound Level (dBA)	36-39-43 ★	45-48	39-42-46 ★	45-48
Dimensions (WxDxH)(mm)	1250 x 1120 x 470 ★	1380 x 1100 x 470	1250 x 1120 x 470 ★	1380 x 1100 x 470

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CITY MULTI



EP SERIES

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Overview of City Multi VRF System – EP Series

New !
YJMS Series

Higher COP





Model	Model Name	Model	Model Name
8 HP	PUHY-EP200YJMS-A(-BS)	10 HP	PUHY-EP250YJMS-A(-BS)

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Overview of City Multi VRF System – EP Series

New !
YJMS Series

Higher COP



Model	Model Name
12 HP	PUHY-EP300YJMS-A(-BS)
16 HP	PUHY-EP400YSJMS-A(-BS)
18 HP	PUHY-EP450YSJMS-A(-BS)
20 HP	PUHY-EP500YSJMS-A(-BS)
22 HP	PUHY-EP550YSJMS-A(-BS)
24 HP	PUHY-EP600YSJMS-A(-BS)

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Overview of City Multi VRF System – EP Series

New !
YJMS Series

Higher COP



Model	Model Name
26 HP	PUHY-EP650YSJMS-A(-BS)
28 HP	PUHY-EP700YSJMS-A(-BS)
30 HP	PUHY-EP750YSJMS-A(-BS)
32 HP	PUHY-EP800YSJMS-A(-BS)
34 HP	PUHY-EP850YSJMS-A(-BS)
36 HP	PUHY-EP900YSJMS-A(-BS)

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MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow eco Changes

BCA GREEN MARK

CITY MUTLI

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Accordance to Revised BCA Green Mark Criteria Version 4 for New Buildings <500RT effective from 1st Dec 2010

Efficiency (kW/RT) for Green Mark Certified/Gold = 0.90

Model	P200	P250	P400	P450	P500	P550	P600
YJMS (High COP)	4.00	3.94	3.98	3.94	3.95	3.92	3.93
Kw/Ton	0.88	0.89	0.88	0.89	0.89	0.90	0.89
Green Mark Gold	√	√	√	√	√	√	√
Model	**P650**	**P700**	**P750**	**P800**	**P850**	**P900**	
YJMS (High COP)	3.94	3.95	3.93	3.93	3.91	3.92	
Kw/Ton	0.89	0.89	0.89	0.89	0.90	0.90	
Green Mark Gold	√	√	√	√	√	√	

Based on full load

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MITSUBISHI ELECTRIC
Changes for the Better

for a greener tomorrow

CITY MUTLI

Higher COP

BCA GREEN MARK

Accordance to Revised BCA Green Mark Criteria Version 4 for New Buildings <500RT effective from 1st Dec 2010

Efficiency (kW/RT) for Green Mark Platinum= 0.78

Model	P200	P250	P300	P400	P450	P500	P550
YJM S(High COP)	4.88	4.95	4.97	5.28	5.24	4.97	4.93
Kw/Ton	0.74	0.73	0.73	0.70	0.70	0.73	0.74
Green Mark Platinum	√	√	√	√	√	√	√
Model	**P600**	**P650**	**P700**	**P750**	**P800**	**P850**	**P900**
YJMS (High COP)	5.04	5.05	5.06	5.15	5.14	5.23	5.25
Kw/Ton	0.72	0.72	0.72	0.71	0.71	0.71	0.70
Green Mark Platinum	√	√	√	√	√	√	√

Based on Weighted COP= 40% full load + 60% part load

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CITY MULTI





ADVANCED CONTROLLERS

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Advanced Controller System – AT-50A

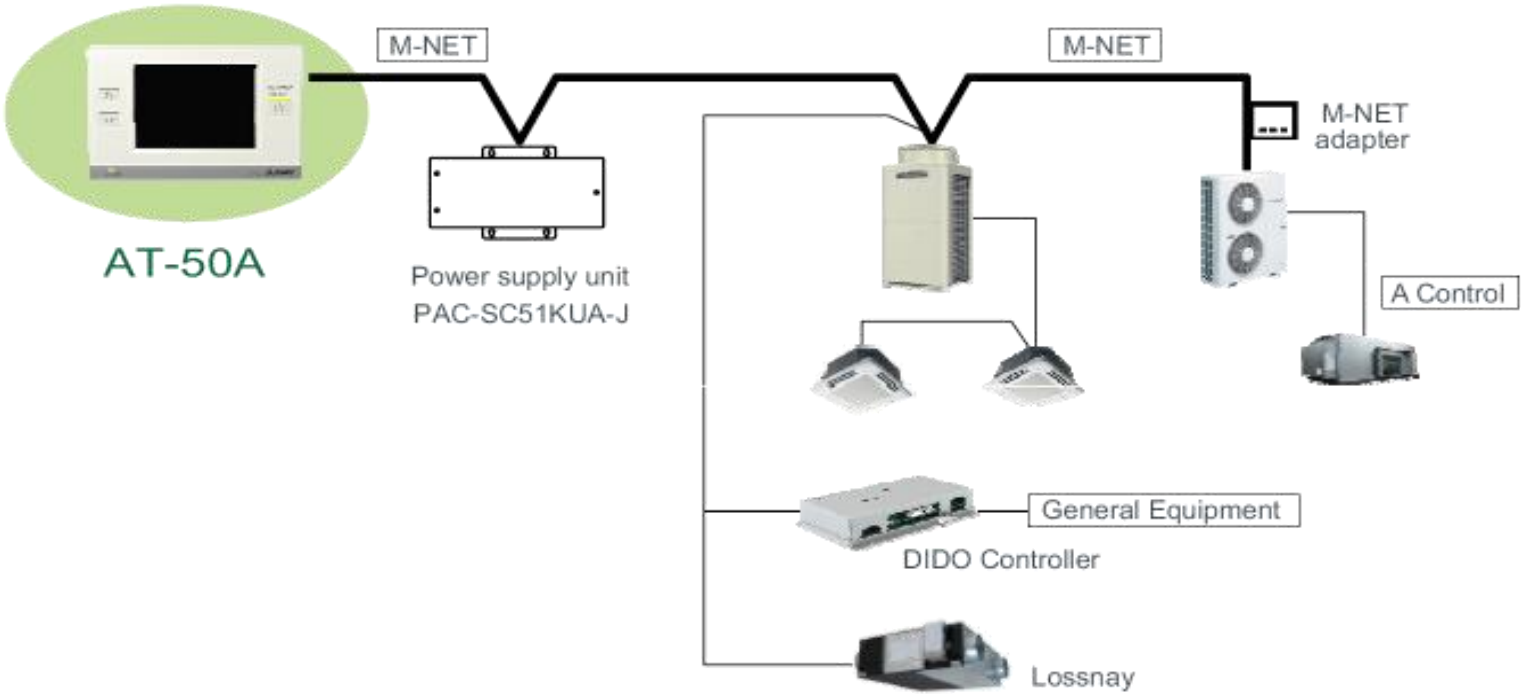
New



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Advanced Controller System – AT-50A

System structure



Power supply unit (PAC-SC51KUA) is required.

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Advanced Controller System – AT-50A

Highlights of AT-50A



1] 7 Languages

2] 5 inch wide color LCD touch panel

3] Easy-to-read LCD with backlight

4] One AT-50A can control up to 50groups/units of air conditioners

5] Two types of weekly schedule (Summer/Winter) can be set

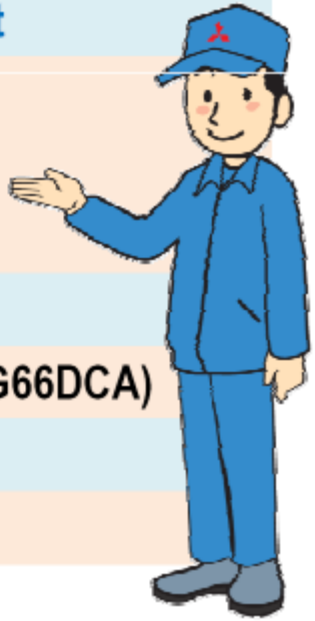
6] Up to 12 patterns of weekly schedule can be set
Maximum of 16 events can be scheduled for each day.
Up to 5 patterns of today's schedule can be set.

7] Independent LOSSNAY operation is possible.

8] Possible to control general equipments via DIDO (PAC-YG66DCA)

9] Setback Control

10] Gas Amount Check function



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Advanced Controller System – AT-50A

1) 7 Languages available



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Advanced Controller System – AT-50A

2) 5 inch wide colour LCD touch panel



External dimensions (W x H x D) : 180 x 120 x 30 mm

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Advanced Controller System – AT-50A

3) Easy-to-read LCD Backlight



The backlight lights up when the panel is touched, and lights off after certain period of time. The backlight will remain lit as long as an error exists.

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Advanced Controller System – AT-50A

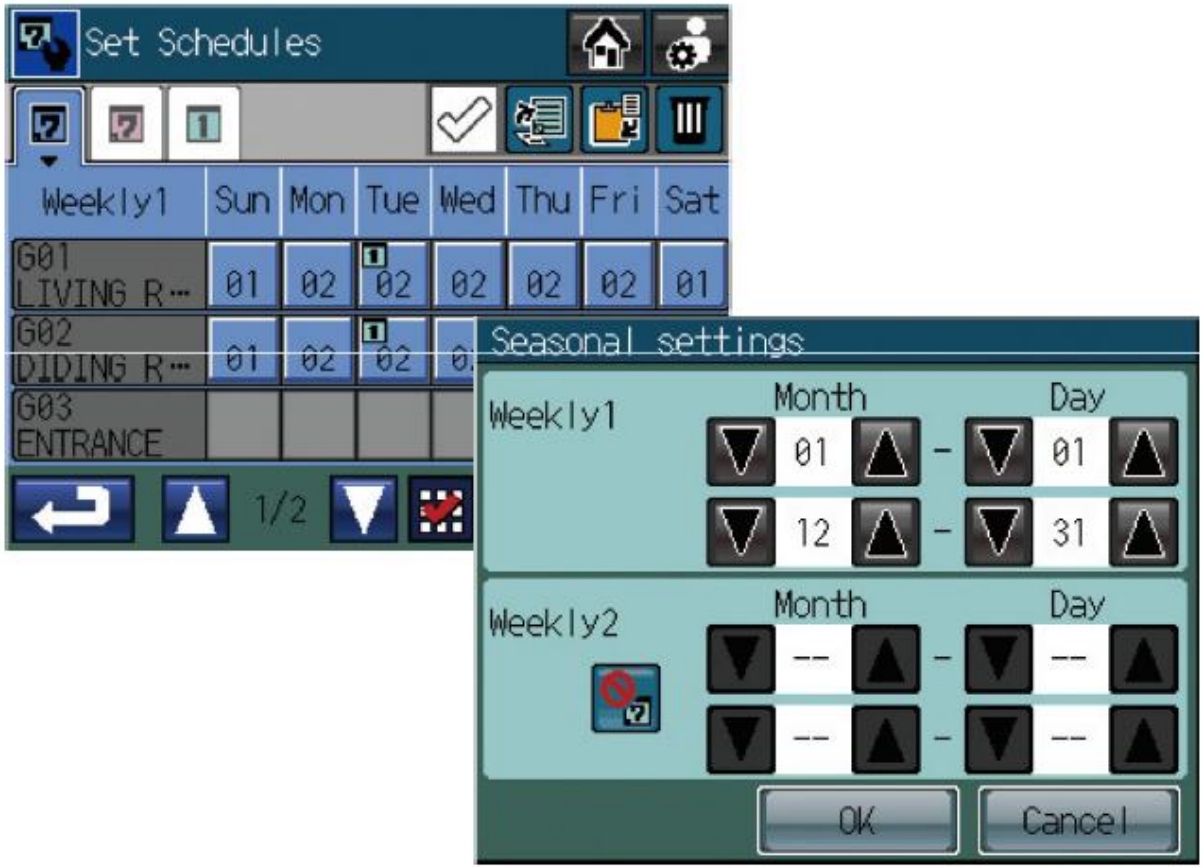
4) One AT-50A can control up to 50 groups/units of air-conditioners.



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Advanced Controller System – AT-50A

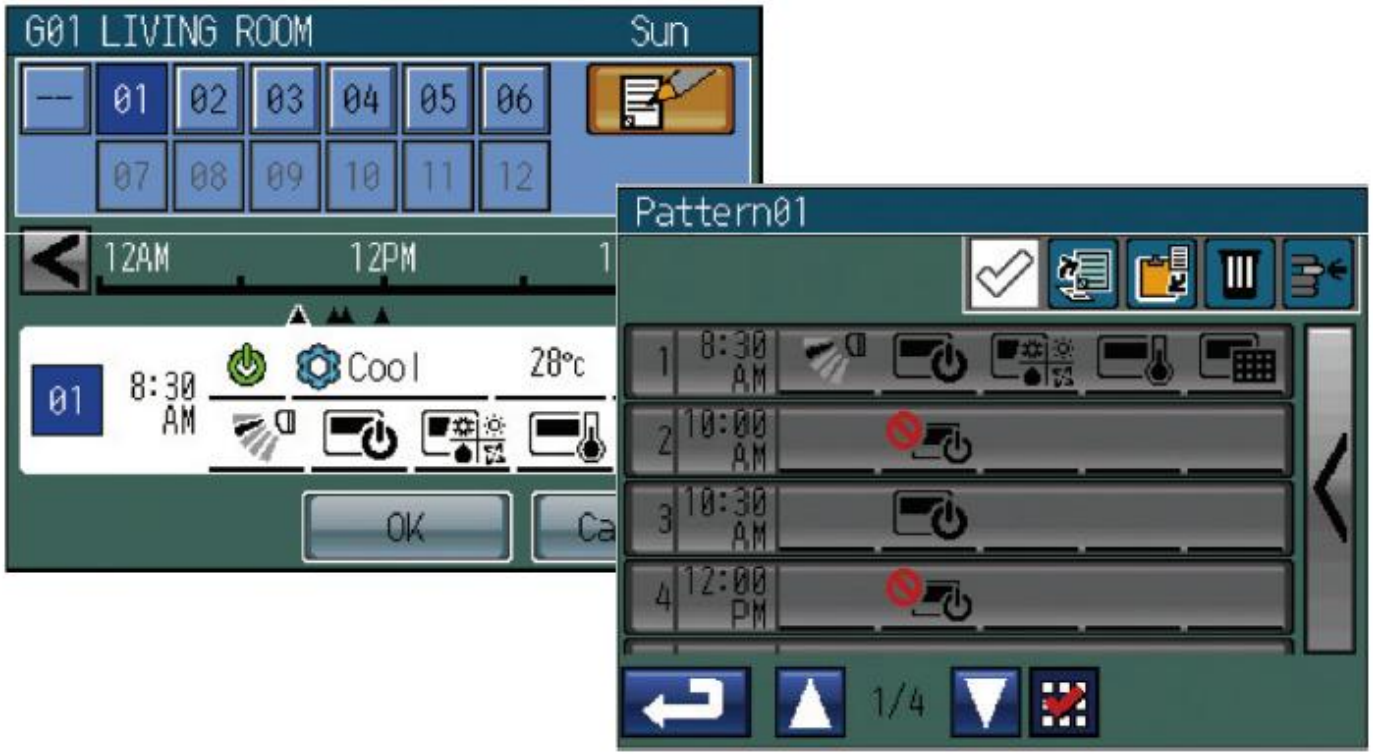
5) Two types of weekly schedule (Summer/Winter) can be set.



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Advanced Controller System – AT-50A

6) Up to 12 patterns of weekly schedule can be set.
Up to 5 patterns of today's schedule can be set.
1 pattern = 16 events (max)



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Advanced Controller System – AT-50A

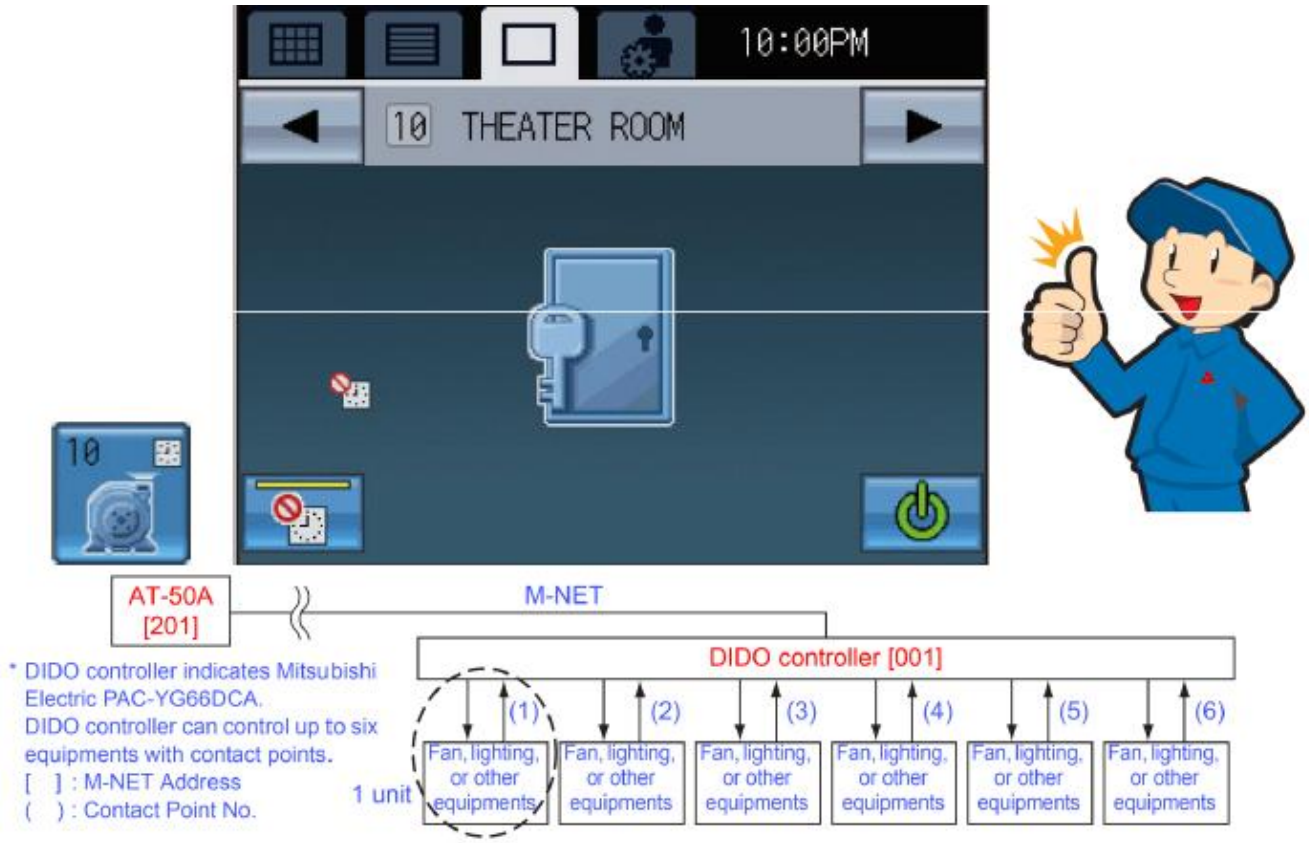
7) Independent LOSSNAY operation is possible



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Advanced Controller System – AT-50A

8) Possible to control general equipments via DIDO (PAC-YG66DCA)



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Advanced Controller System – AT-50A

9) Setback Control



Night setback function

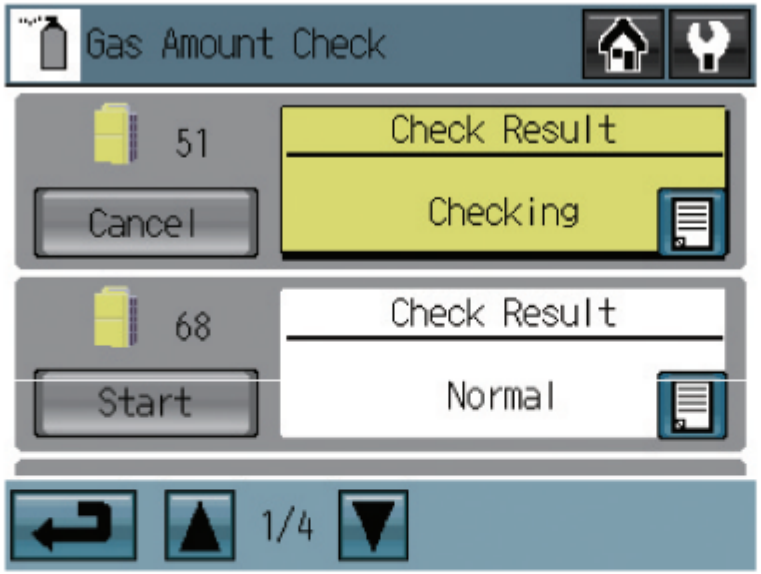
This function allows having a two-temperature setting to keep the desired room temperature when the units are not in operation and during the time this function is effective.

The unit automatically starts heating (cooling) operation when the temperature drops below (rises above) the preset lower (upper) limit temperature. This is not only for comfort environment, but also for saving energy.

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Advanced Controller System – AT-50A

10) Gas Amount Check function



This check will be performed in a specific operation mode and takes from 30 minutes to 1 hour.

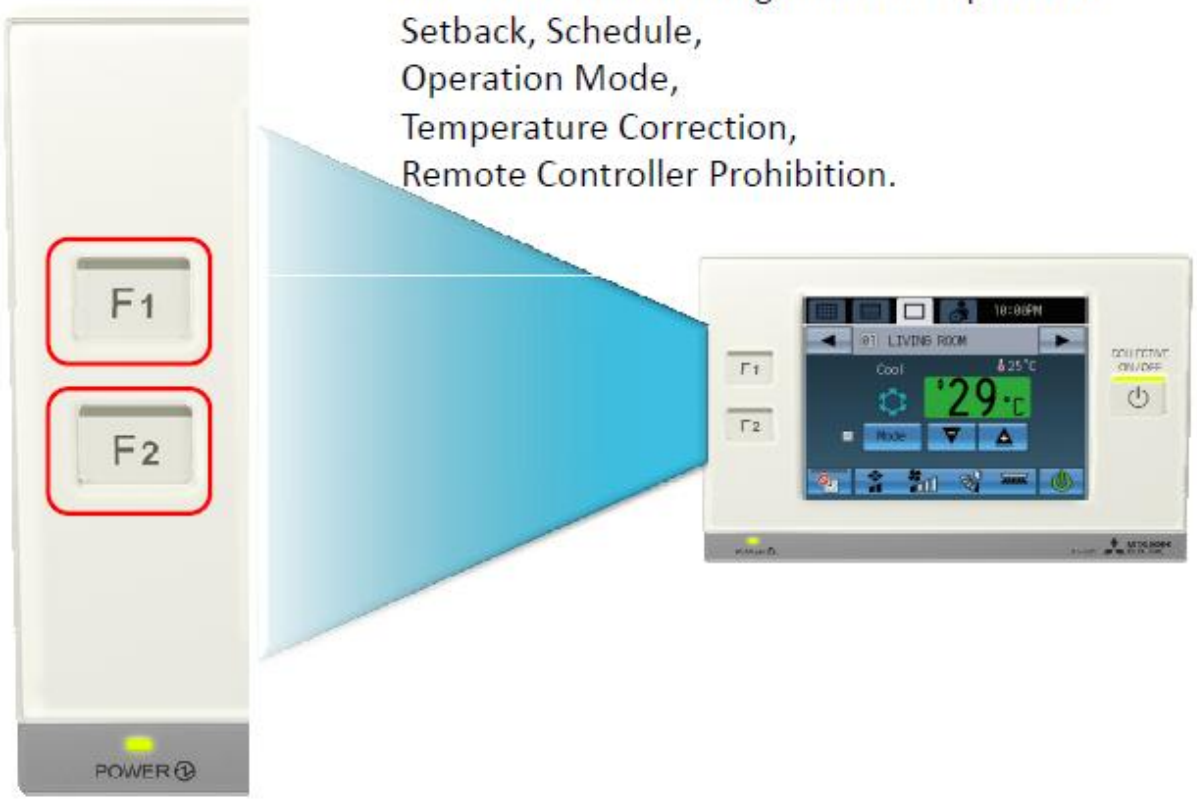
Use this function to check for refrigerant leak from the outdoor unit.
* When this function is used, the gas amount checking function of the outdoor unit cannot be used.
This function is for CITY MULTI R2 and Y (PUMY is excluded.) series only.

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Advanced Controller System – AT-50A

Simple button arrangement

The F1 button and the F2 button can be set as a run button of the following collective operation:
Setback, Schedule,
Operation Mode,
Temperature Correction,
Remote Controller Prohibition.



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Advanced Controller System – AT-50A

Malfunction indications

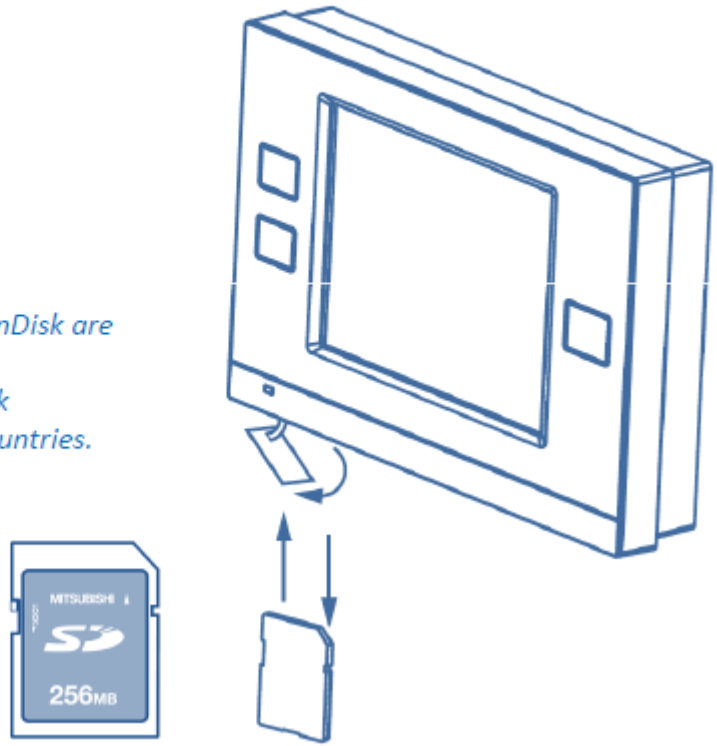


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Advanced Controller System – AT-50A

Using an SD memory card

The AT-50A has a slot for an SD memory card at the bottom that can be used to update software.



** Only 1 GB and 2 GB SD memory cards by SanDisk are supported.*
** SanDisk is a registered trademark of SanDisk Corporation in the United States and other countries.*

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Advanced Controller System – AG-150A-J



First in the Industry !

Web Browser

and

9-Inch Colour Touch Screen

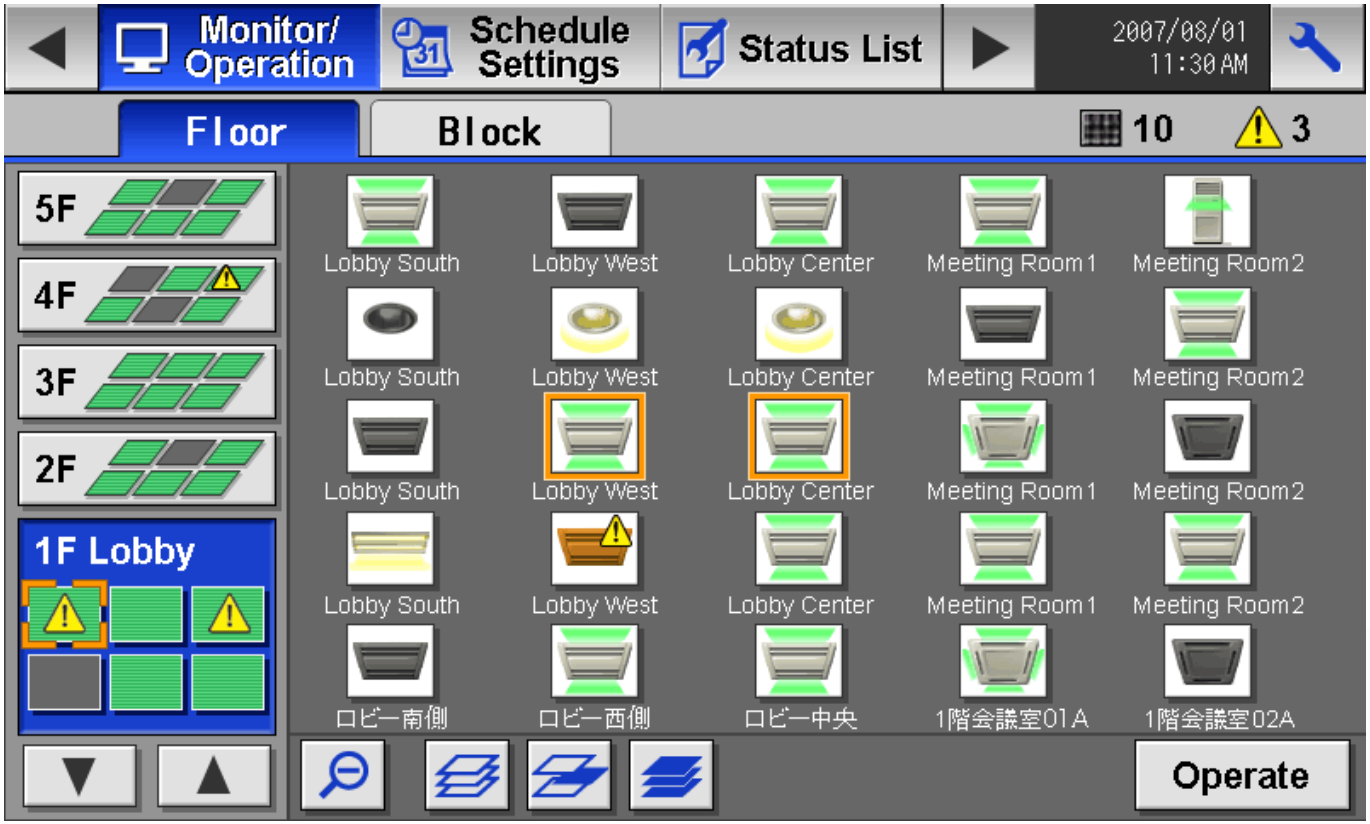
FEATURES OF AG-150A-J

1. 9-inch ***Colour Touch Screen*** with Backlight
2. Connect ***Up to 150*** Fan Coil Units with "Expansion Controller"
3. ***Web Browser Function***
4. ***Password Protection***
5. ***Prohibition Control***
6. ***USB Memory***
7. ***Scheduling***
8. ***Auto Alarm***
9. ***Energy Billing***

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Advanced Controller System – AG-150A-J

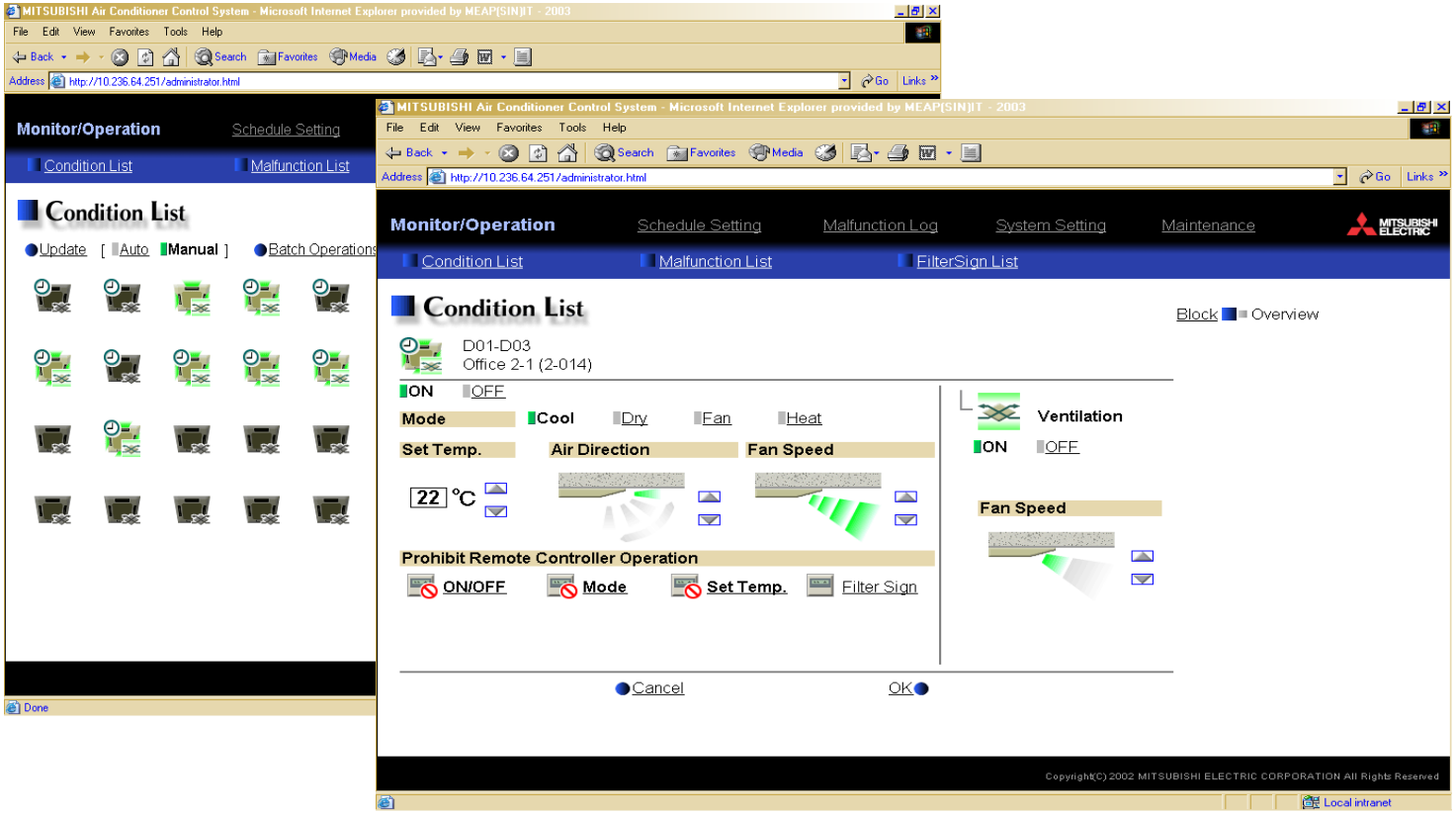
(1) 9-INCH *COLOUR TOUCH SCREEN* WITH BACKLIGHT



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Advanced Controller System – AG-150A-J

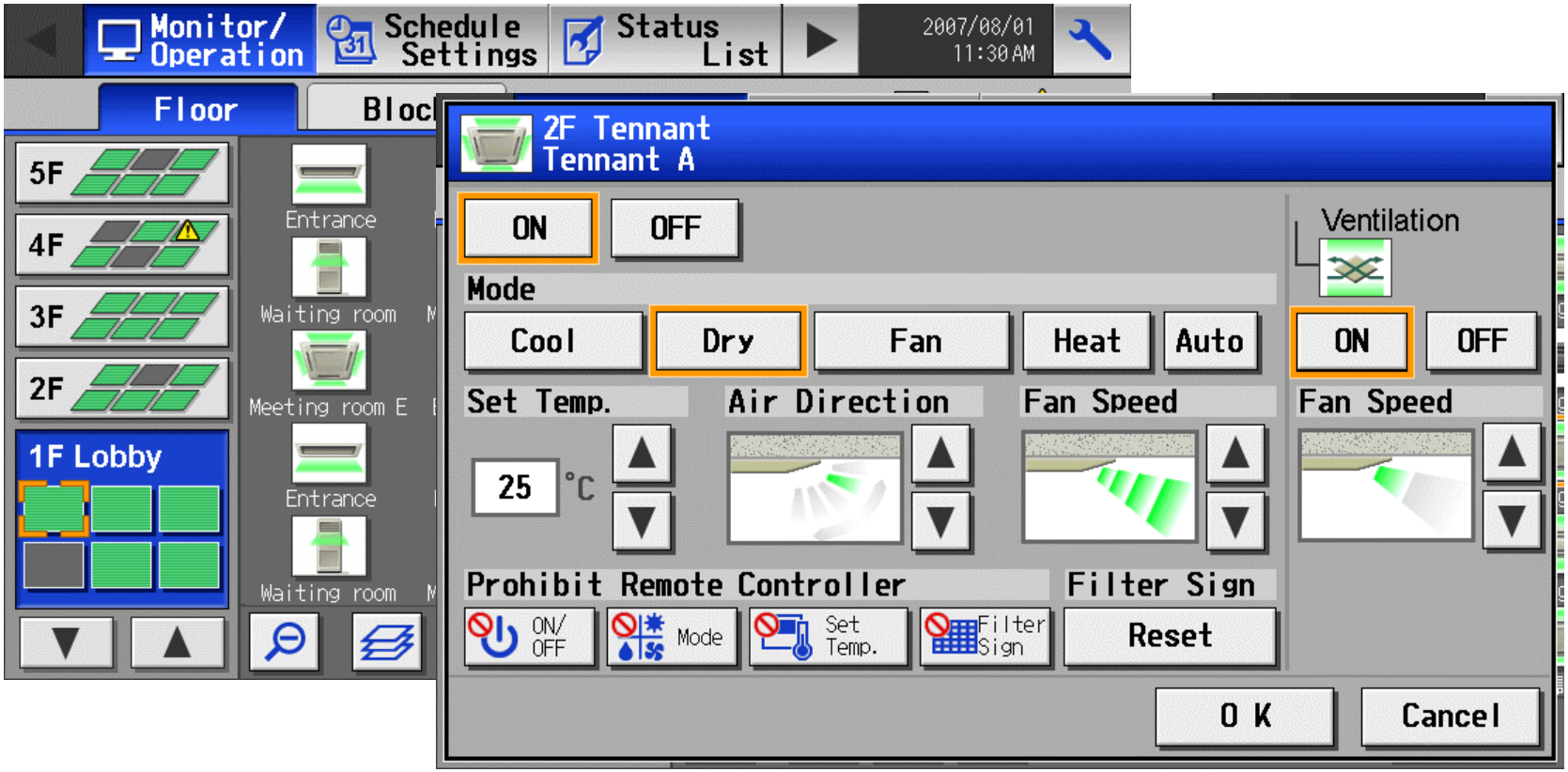
(2) *WEB BROWSER* MONITORING / *REMOTE* OPERATION



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Advanced Controller System – AG-150A-J

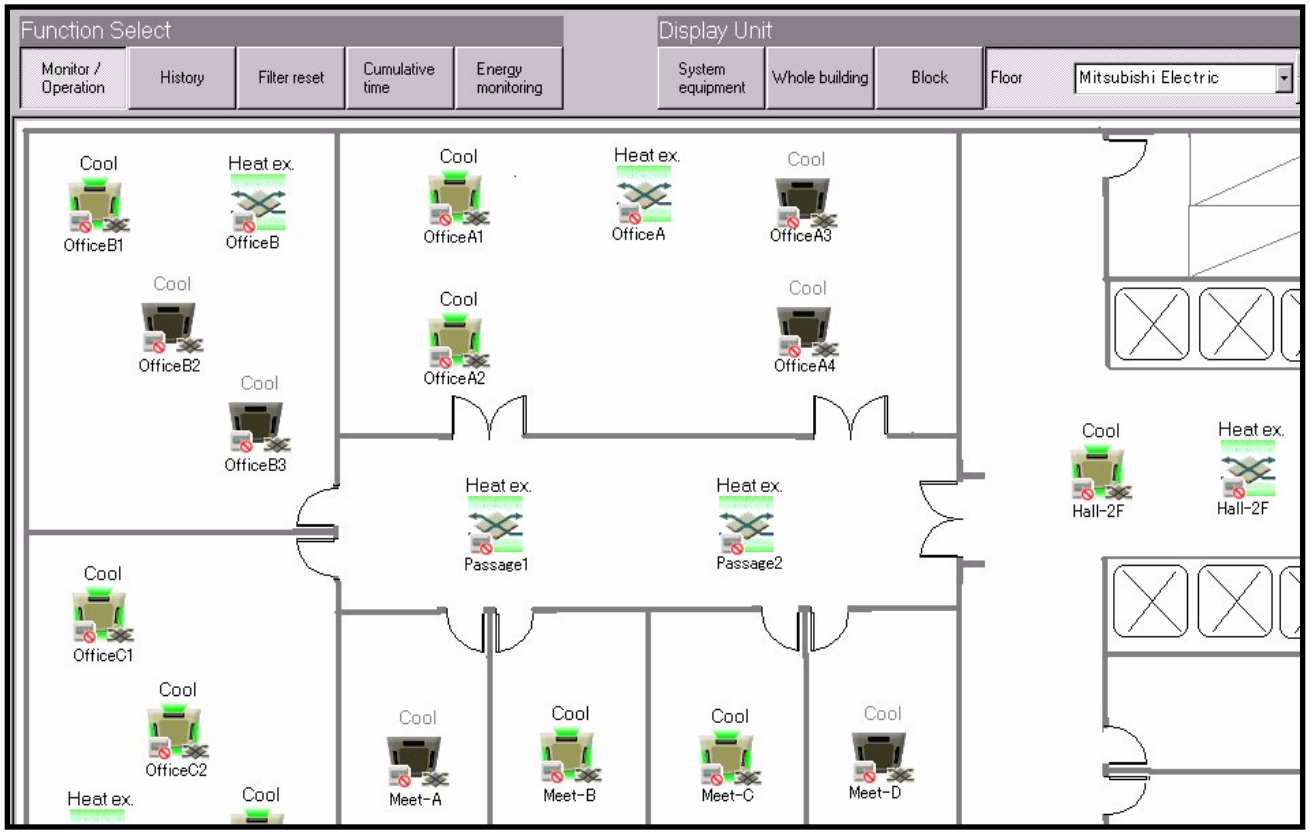
(4) *MONITORING* / *OPERATION*



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Advanced Controller System – AG-150A-J

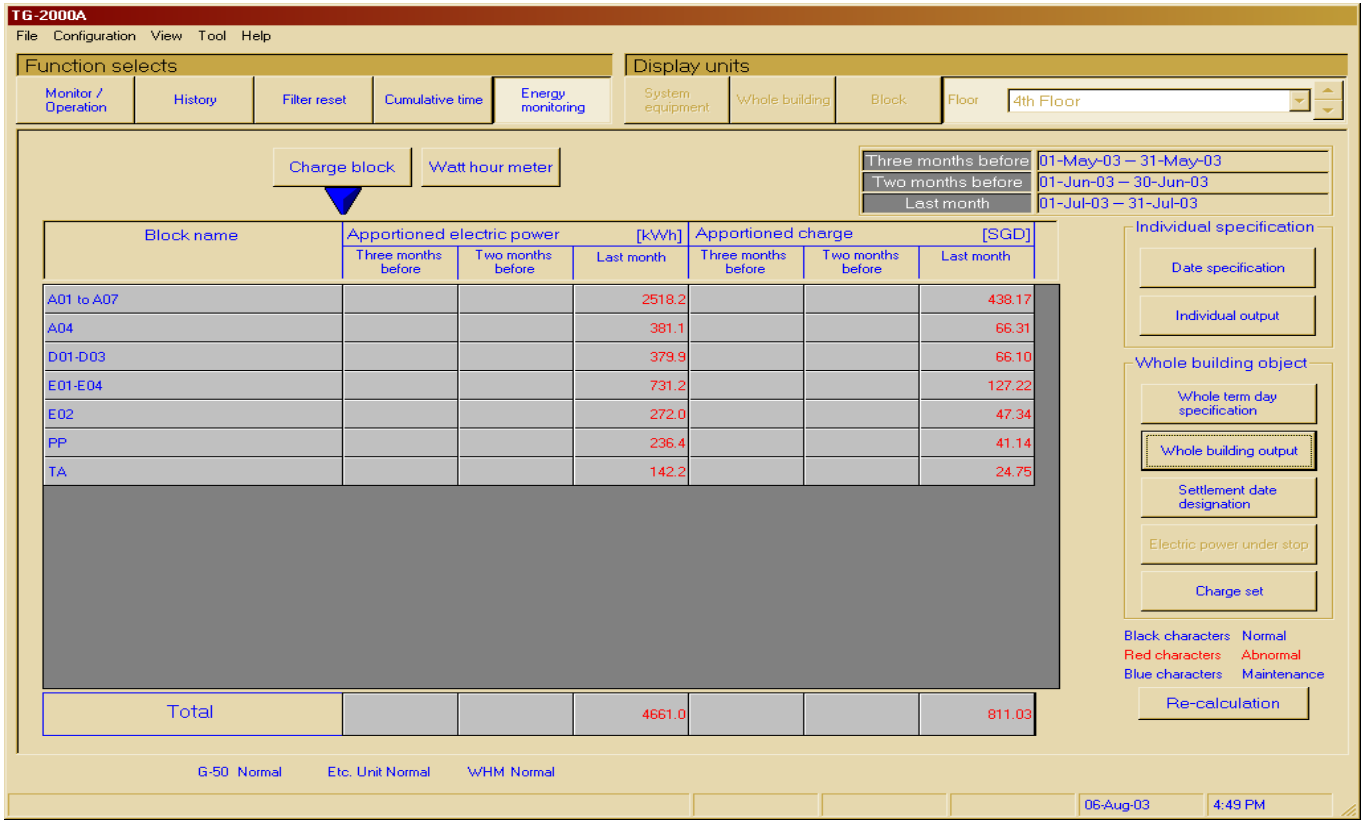
(5) *USB MEMORY* – UPLOAD FLOOR PLAN/MEMORY BACKUP



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Advanced Controller System – AG-150A-J

(7) *ENERGY BILLING* FUNCTION (OPTIONAL)

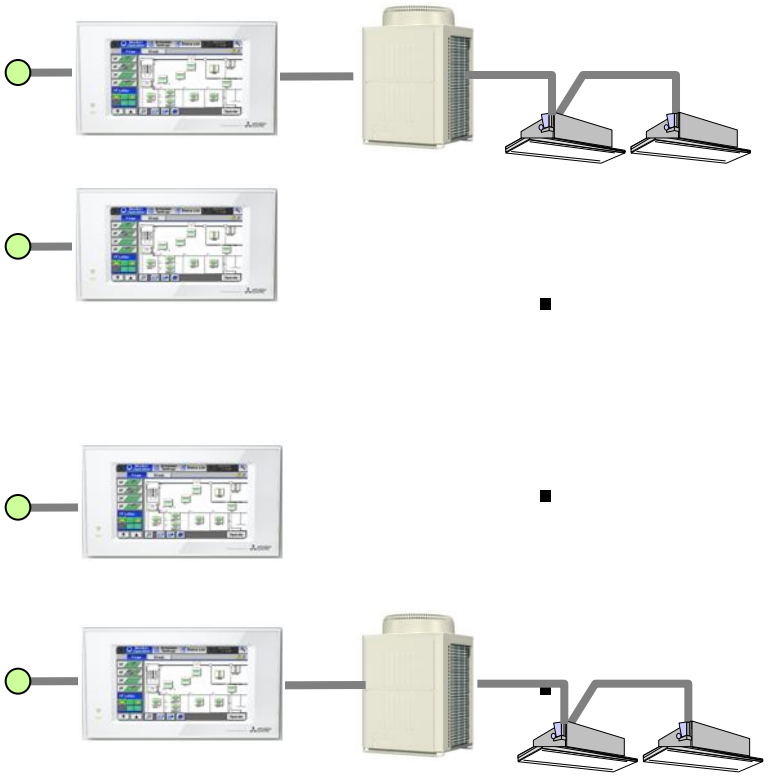


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Advanced Controller System – AG-150A-J

TOTAL CONTROL SYSTEM

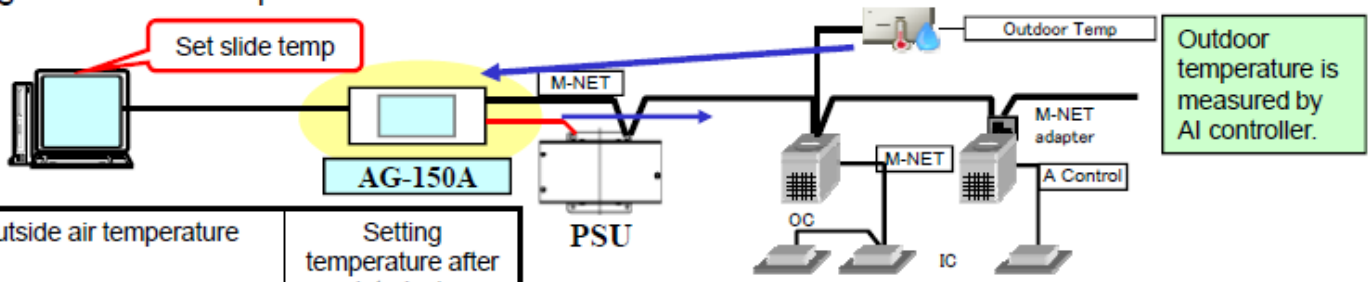
(TG-2000A)



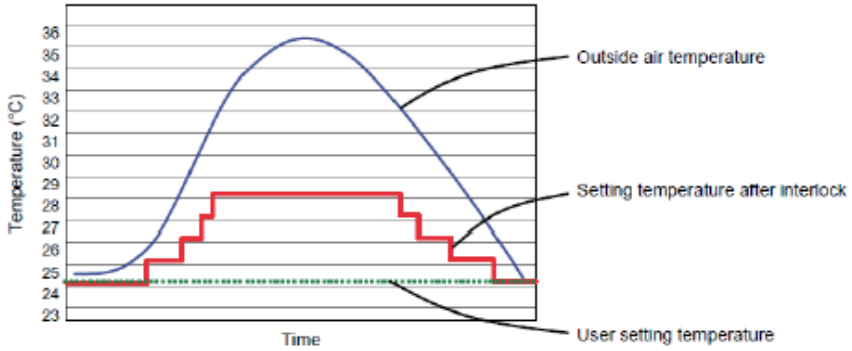
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New Feature – Sliding Temperature

In this interlock function,the outdoor temperature in used to slide the set temperature of a room. This prevents a person from getting a shock(sick) of sudden change in temperature when they enter a building from being outside.Also this process is very effective for energy saving.
This function enables to set different slide temperature range per group in accordance to the change in outdoor temperature.



Outside air temperature	Setting temperature after interlock
[Preset temperature + 1.4° C] or below	Preset temperature
[Preset temperature + 1.5° C] - [Preset temperature + 4.4° C]	Preset temperature + 1° C
[Preset temperature + 4.5° C] - [Preset temperature + 6.4° C]	Preset temperature + 2° C
[Preset temperature + 6.5° C] - [Preset temperature + 7.4° C]	Preset temperature + 3° C
[Preset temperature + 7.5° C] or above	Preset temperature + 4° C



Only Cooling/Dry mode

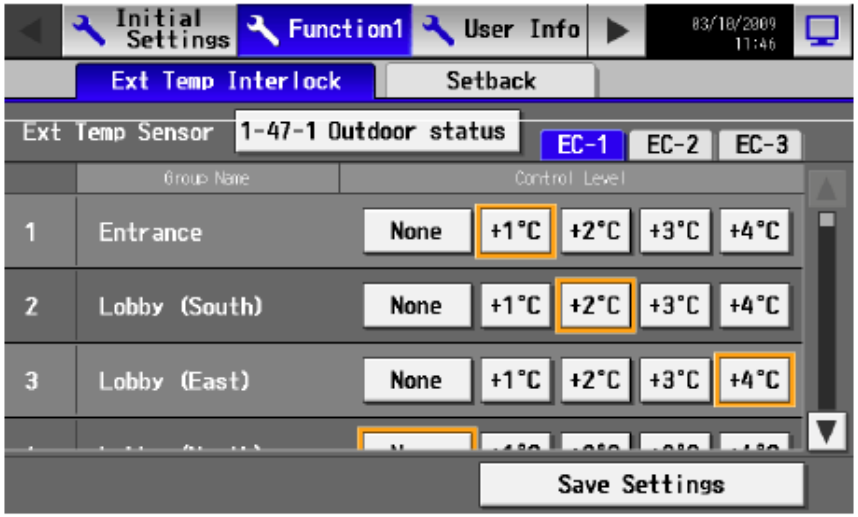
21

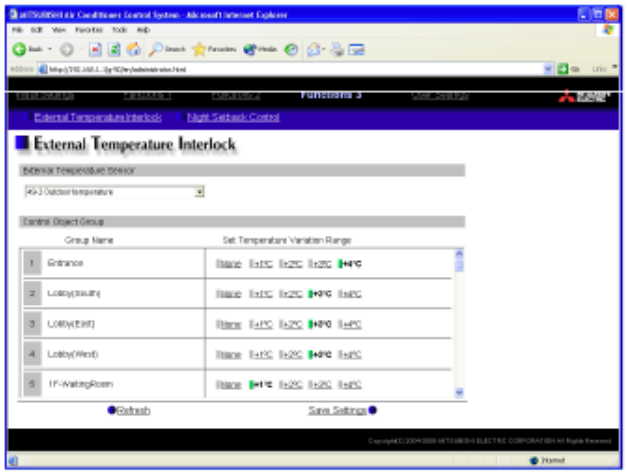
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New Feature – Sliding Temperature

- Sets the control level for each group.
- Sets the external temperature sensor (measurement MC) via a Web

※Only Cooling and Dry modes are controlled.

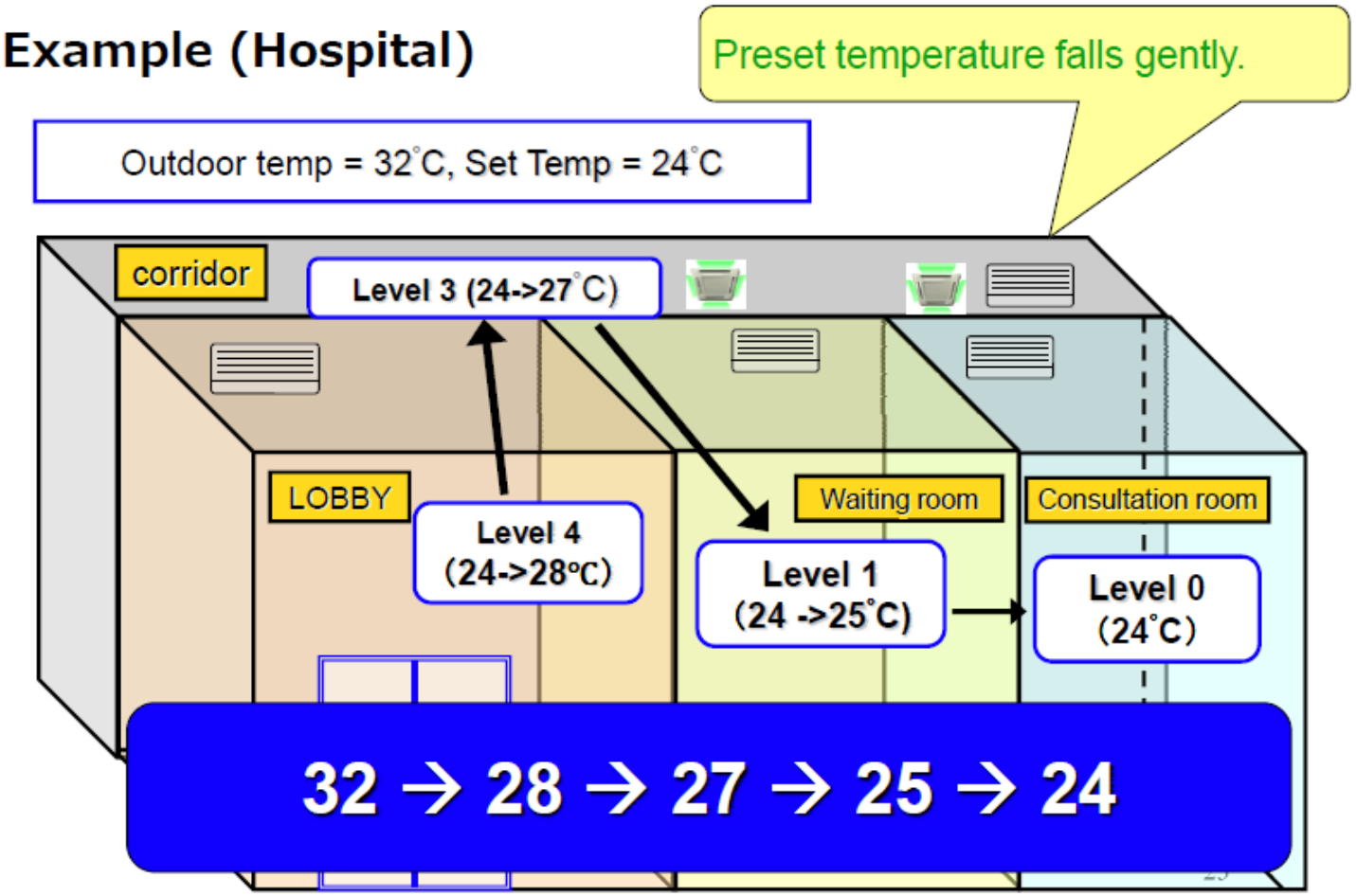




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New Feature – Sliding Temperature

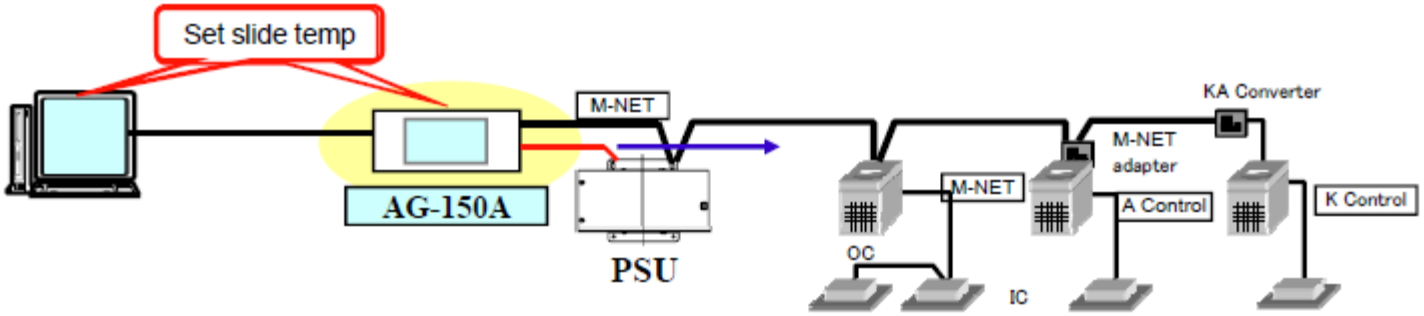
Example (Hospital)

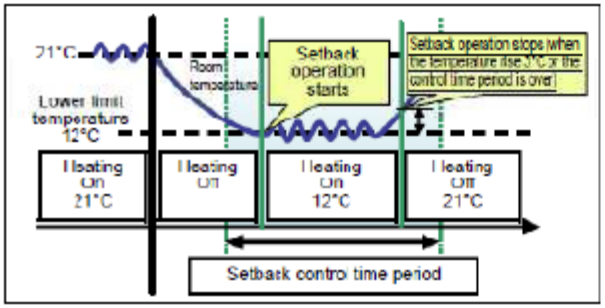


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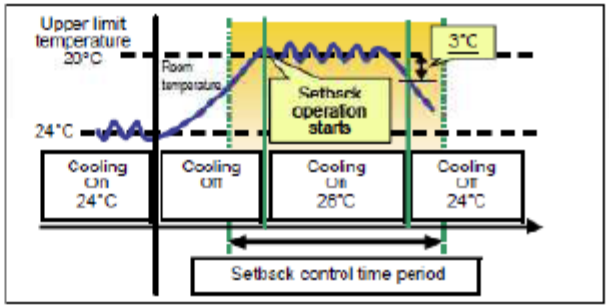
New Feature – Night Setback Function

Another application of indoor temp interlock is to protect frost formation in winter.When the temp goes below a specific value,the unit starts in HEAT mode at low temp.Since the units only start at HEAT mode when it goes below a specific temp,it is very effective for energy saving.(Conventional methods:units only start at a decided time set by schedule)





When the temperature drops below the lower limit temperature (heating control)

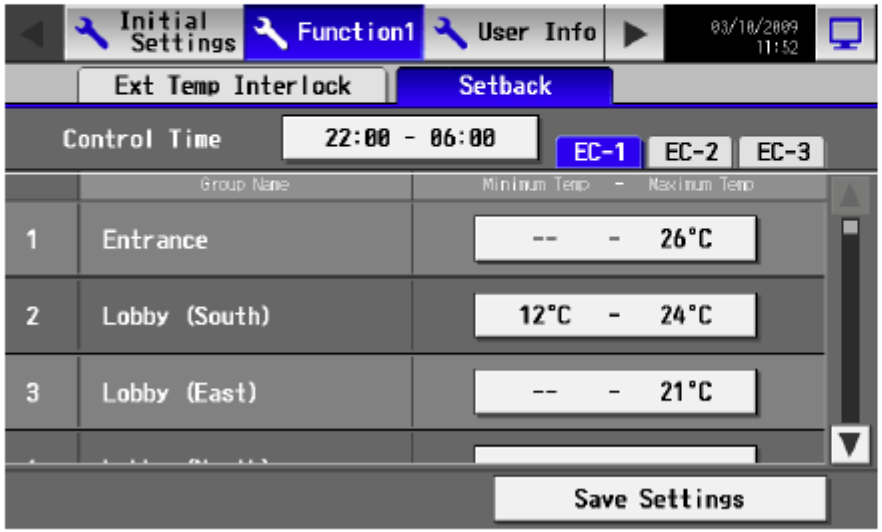


When the temperature rises above the upper limit temperature (cooling control)

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New Feature – Night Setback Function

- Sets the control time.
- Sets the temperature range (upper and lower limits) for each group.

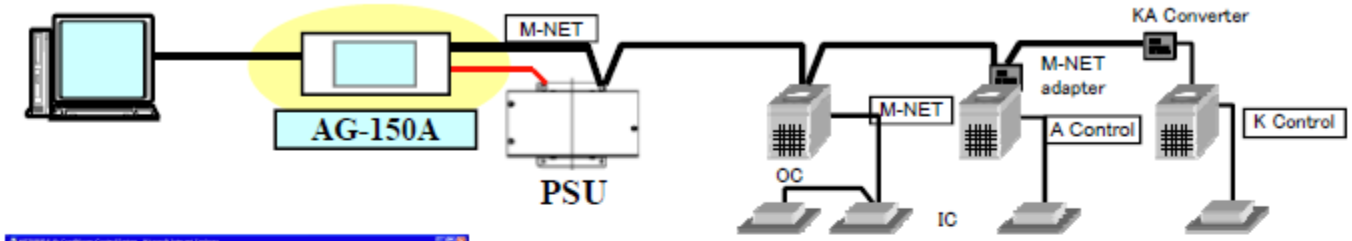


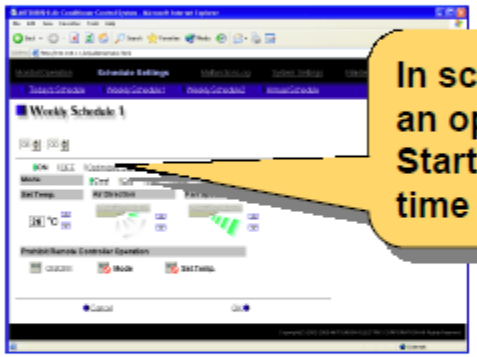


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New Feature – Optimized Start up

Optimized start-up schedule function is a function that starts an air conditioning unit 5 - 60 minutes prior in order to reach the scheduled temperature at the scheduled time.





In schedule setting, there is an option of "Optimized Start" with setting temp and time



Function
When it is set as "25C at 8:00, with option of pre cooling",

It turns on for example 15 min before 8:00 to achieve 25C at 8:00.

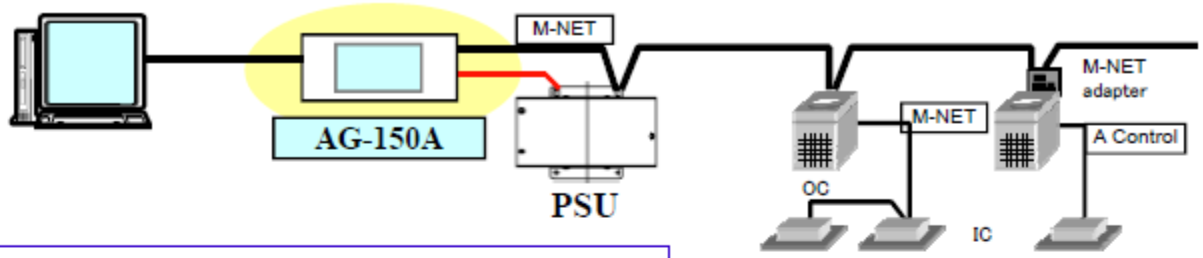
AG-150A decides as to when pre-cooling should start

➔ detail in next slide

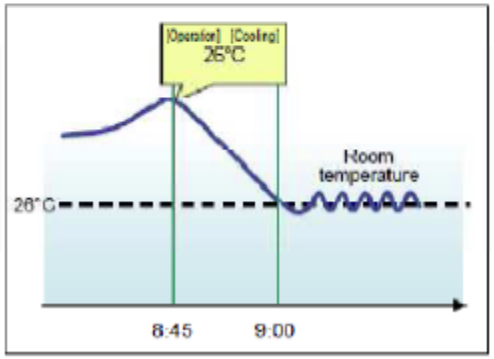
26

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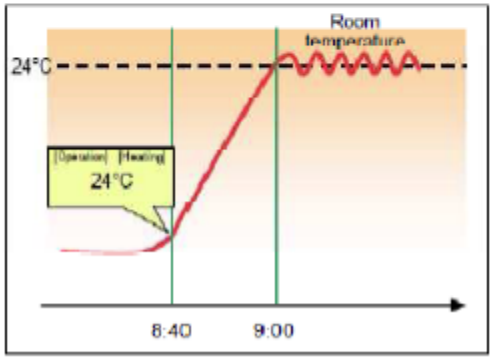
New Feature – Optimized Start up



<Logic>
AG-150 studies the set temp, room temp and data of the past days(when units were turned ON for optimized start-up) and decides when to start the units.
* The unit starts 30 minutes prior at the first boot.



Pre-cooling (9:00 26°C)



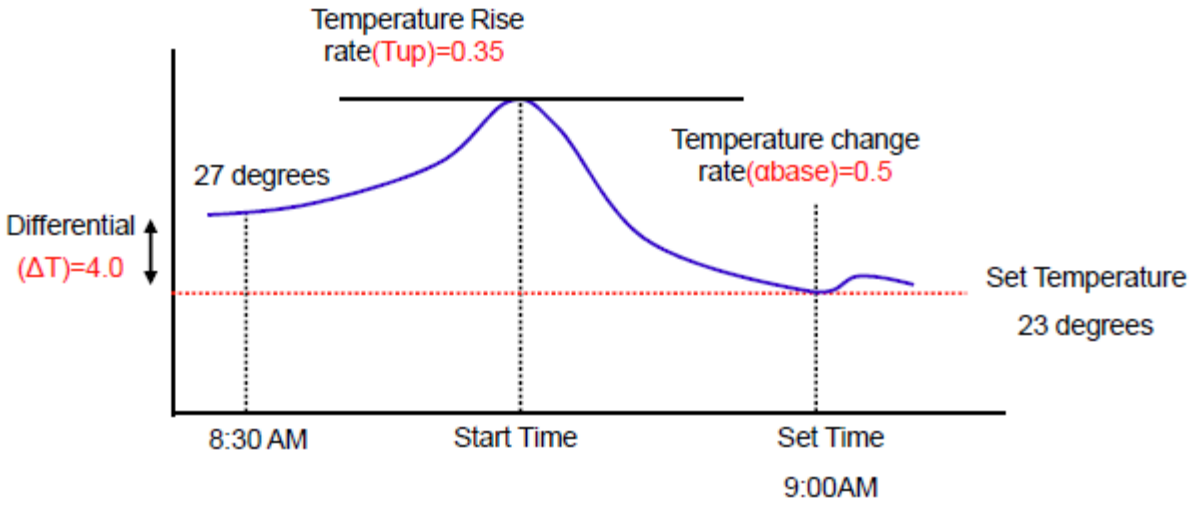
Pre-heating (9:00 24°C)

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New Feature – Optimized Start up

For Example



$$\Delta Time=(\Delta T+30\times Tup)/(\alpha base/Tup)$$

$$=(4.0+30\times 0.35)/(0.5/0.35)=10.15 \text{ minute}$$

Start Time=8:50AM

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PROJECT REFERENCES

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H2O Residences

Platinum Award Year 2011

BCA AWARDS 2011
Recognising Excellence in the Built Environment

Installed System

Outdoor Unit



MXY Series
X 777 units



MUY Series
X 704 units



PUMY Series
X 7 units

Indoor Unit



MSY Series
X 2240 units



PLFY Series
X 7 units





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Canberra Residences

Platinum Award Year 2011

BCA AWARDS 2011
Recognising Excellence in the Built Environment

Installed System

Outdoor Unit



MXY Series
X 681 units



PUHY Series
X 1 units



PUMY Series
X 4 units



MUY Series
X 2 units

Indoor Unit



MSY Series
X 1587 units



PLFY Series
X 14 units





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BCA AWARDS 2011
Recognising Excellence in the Built Environment

Installed System

Outdoor Unit



PUMY Series
X 5 units



PUHY Series
X 4 units

Indoor Unit



PEFY-PVMA Series
X 19 units



PLFY Series
X 2 units



PKFY-PVBM Series
X 2 units

68 Binjai Park

Platinum Award Year 2011



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Tiong Seng PreFab Hub

Platinum Award Year 2010

Installed System

Outdoor Unit



MUY Series
X 1 unit



PUHY-EP Series
X 32 units

Indoor Unit



MSY Series
X 1 unit



PLFY Series
X 58 units



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ITE College West

Platinum Award Year 2009

BCA GREEN MARK

Installed System

Outdoor Unit



PUHY Series
X 75 units

Other installed units include : PUHN Series x 1 unit

Indoor Unit



PEFY- PVMAL Series
X 15 units



PKFY Series
X 19 units







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BCA AWARDS 2011
Recognising Excellence in the Built Environment

Pasir Ris Sports and Recreational Centre

Singapore 1000th Green Mark Building
2nd Highest Rating – BCA Green Mark Gold Plus Award

Installed System

Outdoor Unit



PUHY Series
X 33 units



PUMY Series
X 8 units

Indoor Unit



PEFY- PVMAL Series
X 4 units



PLFY Series
X 9 units



PKFY Series
X 7 units



PEFY- PVMH Series
X 38 unit



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City Square Mall

Platinum Award Year 2007

BCA GREEN MARK

Installed System

Outdoor Unit



PUHY Series
X 12 units



PUMY Series
X 10 units

Indoor Unit



PDFY Series
X 4 units



PEFY- PVMH Series
X 26 units







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Straits Trading Building

Gold Award Year 2009

Installed System

Outdoor Unit



PUHY-EP Series
X 119 units



PUHY Series
X 3 units



PUMY Series
X 22 units

Indoor Unit



PKFY Series
X 2 units



PLFY Series
X 5 units



PEFY- PVMH Series
X 279 units



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Bartley Christian Church

Installed System

Outdoor Unit



PUHY Series
X 20 units

Other installed units include : PRC-32MYA x 4 units

Indoor Unit



PLFY Series
X 68 units



PEFY- PVMH Series
X 6 units









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Installed System

Outdoor Unit



PU Series
X 6 units



MUY Series
X 2 units



PUMY Series
X 2 units



PUHY Series
X 37 units

Indoor Unit





PEFY- PVMH -E- F Series
X 18 units

PEFY- PVMAL Series
X 336 units



PKFY Series
X 4 units



MSY Series
X 2 units



PLFY Series
X 12 units



PS Series
X 6 units

Bay Hotel @ Telok Blangah Rd

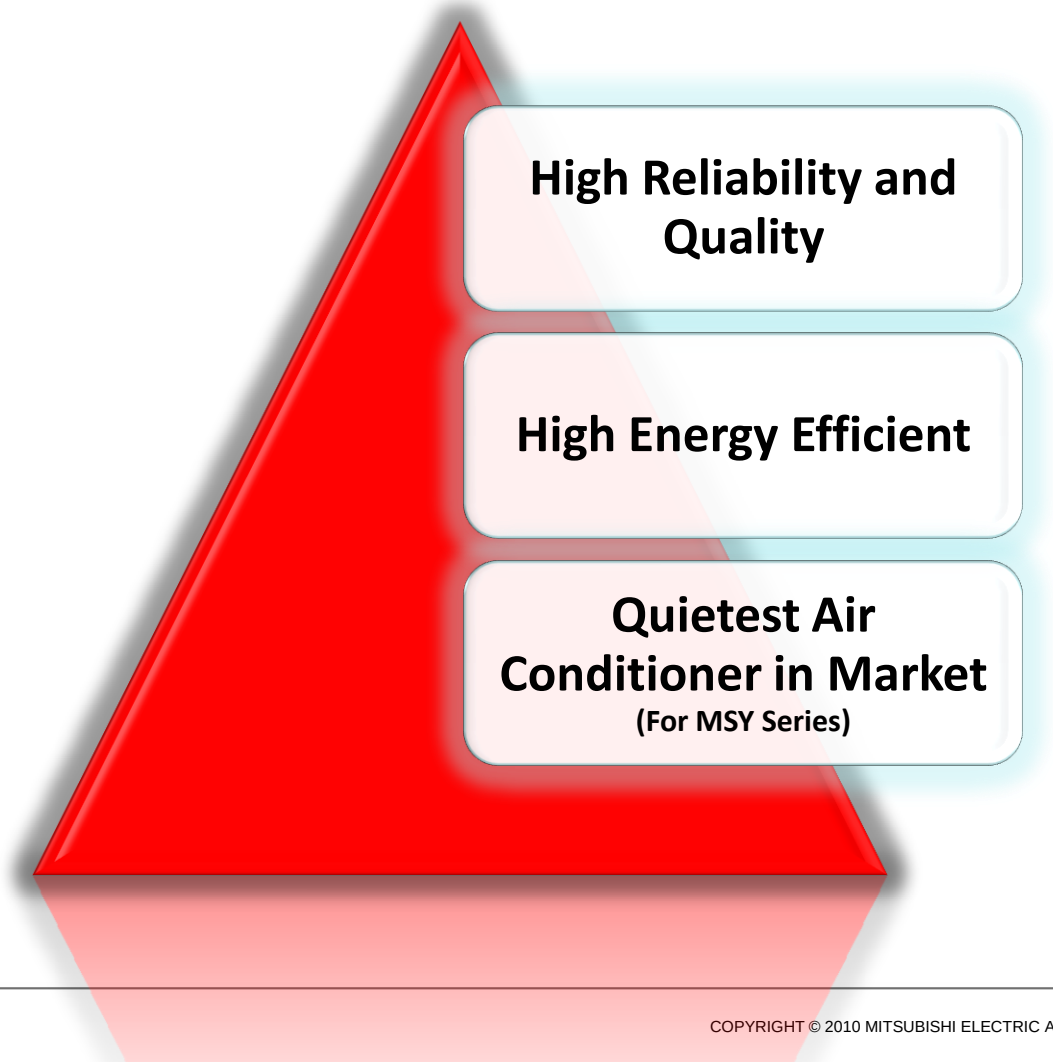


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Q&A

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CONCLUSION



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