



1. General

- Perform wiring of the power supply in conformance with the regulations of the local electric company.
- For cabling of the power supply of the indoor unit and the inter-unit cabling between indoor and outdoor units, refer to the Installation Manual of indoor unit.
- Never connect the 220-240V power to the terminal block (U1, U2, U3, U4, U5, U6) for control wiring. (Trouble is caused.)
- Arrange the cables so that the electric wires do not come to contact with high-temperature part of the pipe; otherwise coating melts and an accident may be caused.
- After connecting cable to the terminal block, take off the trap and then fix the cable with cable clamp.
- Store wiring system for control and refrigerant piping system in the same line.
- Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe will finish.

2. Summary of wiring design

Design of outdoor unit power supply

- Select the wiring depending on MCA.
- Be sure to set the earth leakage breaker from the viewpoint of safety.

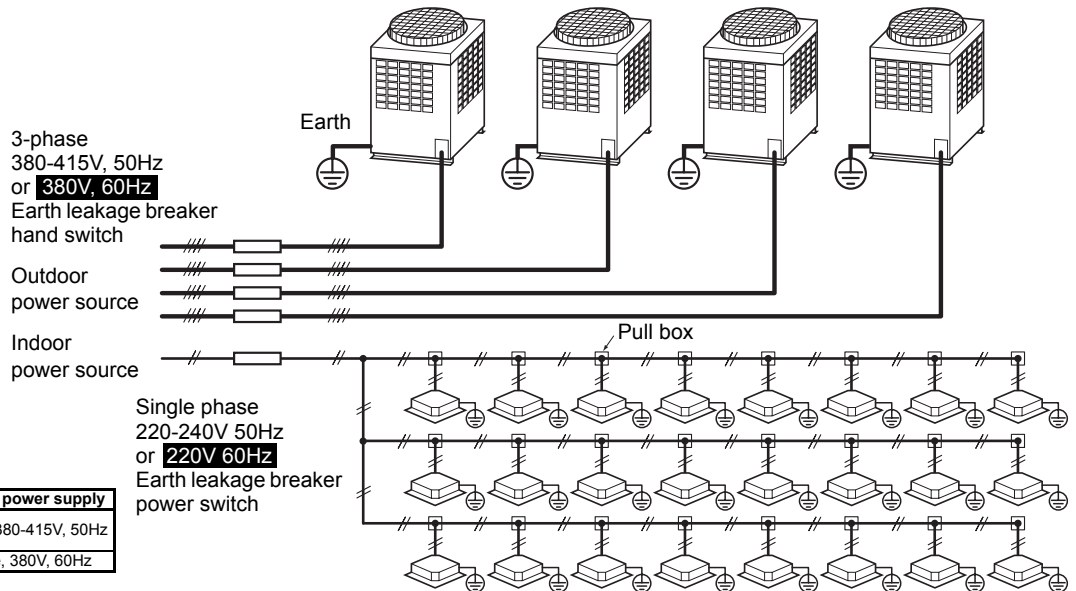
Design of indoor unit power supply

- Select the wiring depending on total current of indoor units.
- Determine the wire size for the length rules.
- Be sure to set the earth leakage breaker from the viewpoint of safety.

Design of control wiring

- Design each control wiring.
 - Between outdoor and indoor units,
 - Between indoor units/outdoor units
 - Between indoor unit and remote controller, central control, BMS
- Select the wire size and type depending on the length rules.
- Be sure to set the earth leakage breaker from the viewpoint of safety.

3. Electrical wiring design

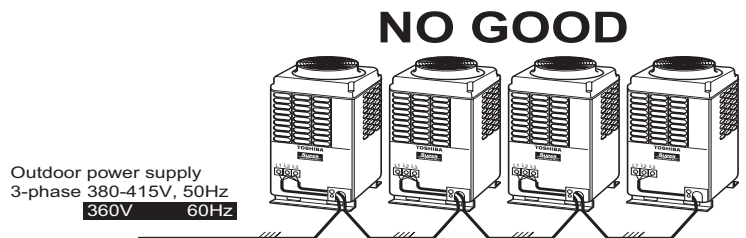


Model	Outdoor power supply
MMY-MAP/AP XXXX HT8, HT8-E, T8, T8-E	3phase, 380-415V, 50Hz
MMY-MAP/AP XXXX HT7	3phase, 380V, 60Hz

- Wiring size must comply with the applicable local and national code.
- Determine the wire size for the indoor unit according to the number of connected indoor units downstream.

4. Outdoor unit power supply

- Select the power supply cabling and fuse of each outdoor unit from the following specifications: cable 4-core, in conformance with Design 60245 IEC 66
- Do not connect the outdoor units by crossing outside of them, but connect them via the terminal block (L1, L2, L3).





Outdoor unit data
Standard model

* : SMMMS model

Type	HP	Heat Pump Model MMY-	Cooling Only Model MMY-	Power Supply		Voltage Range		Compressor				Fan Motor (kW)	MCA (A)	MOCP (A)
				Phase and frequency	Nominal Voltage	Min. (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)	Unit No.4 (kW)			
Single unit	5*	MAP0501HT8-E*	MAP0501T8-E*	3N~50Hz	380-400-415V	342	456	1.1 x 2				0.6	16.5	20
	6*	MAP0601HT8-E*	MAP0601T8-E*	3N~50Hz	380-400-415V	342	456	1.4 x 2				0.6	16.5	20
	8	MAP0804HT8-E	MAP0804T8-E	3N~50Hz	380-400-415V	342	456	2.3 x 2				1.0	23.5	32
	10	MAP1004HT8-E	MAP1004T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2				1.0	25.5	32
	12	MAP1204HT8-E	MAP1204T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2				1.0	28.5	40
	14	MAP1404HT8-E	MAP1404T8-E	3N~50Hz	380-400-415V	342	456	3.0 x 3				1.0	33.2	40
	16	MAP1604HT8-E	MAP1604T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3				1.0	36.5	50
	18	MAP1814HT8-E	MAP1814T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2			1.0 x 2	49.0	63
	20	MAP2014HT8-E	MAP2014T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2			1.0 x 2	51.0	63
	22	MAP2214HT8-E	MAP2214T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2			1.0 x 2	54.0	63
	24	MAP2414HT8-E	MAP2414T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2			1.0 x 2	57.0	63
	26	MAP2614HT8-E	MAP2614T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.1 x 2			1.0 x 2	62.0	80
	28	MAP2814HT8-E	MAP2814T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2			1.0 x 2	65.0	80
	30	MAP3014HT8-E	MAP3014T8-E	3N~50Hz	380-400-415V	342	456	3.0 x 3	3.0 x 3			1.0 x 2	69.7	80
	32	MAP3214HT8-E	MAP3214T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3			1.0 x 2	73.0	100
	34	MAP3414HT8-E	MAP3414T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	3.1 x 2		1.0 x 3	82.5	100
36	MAP3614HT8-E	MAP3614T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	4.2 x 2		1.0 x 3	85.5	100	
38	MAP3814HT8-E	MAP3814T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2	3.1 x 2		1.0 x 3	90.5	100	
40	MAP4014HT8-E	MAP4014T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	4.2 x 2	4.2 x 2		1.0 x 3	93.5	125	
42	MAP4214HT8-E	MAP4214T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.0 x 3	4.2 x 2		1.0 x 3	98.2	125	
44	MAP4414HT8-E	MAP4414T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	4.2 x 2		1.0 x 3	101.5	125	
46	MAP4614HT8-E	MAP4614T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	3.0 x 3		1.0 x 3	106.2	125	
48	MAP4814HT8-E	MAP4814T8-E	3N~50Hz	380-400-415V	342	456	3.6 x 3	3.6 x 3	3.6 x 3		1.0 x 3	109.5	125	

High efficiency model

Type	HP	Heat Pump Model MMY-	Cooling Only Model MMY-	Power Supply		Voltage Range		Compressor				Fan Motor (kW)	MCA (A)	MOCP (A)
				Phase and frequency	Nominal Voltage	Min. (V)	Max (V)	Unit No.1 (kW)	Unit No.2 (kW)	Unit No.3 (kW)	Unit No.4 (kW)			
Combination of outdoor unit	16	MAP1624HT8-E	MAP1624T8-E	3N~50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2			1.0 x 2	46.9	63
	24	MAP2424HT8-E	MAP2424T8-E	3N~50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2			1.0 x 3	70.4	80
	26	MAP2624HT8-E	MAP2624T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2	2.3 x 2		1.0 x 3	72.4	80
	28	MAP2824HT8-E	MAP2824T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	2.3 x 2		1.0 x 3	74.5	100
	30	MAP3024HT8-E	MAP3024T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2		1.0 x 3	76.5	100
	32	MAP3224HT8-E	MAP3224T8-E	3N~50Hz	380-400-415V	342	456	2.3 x 2	2.3 x 2	2.3 x 2		1.0 x 4	93.8	125
	34	MAP3424HT8-E	MAP3424T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	2.3 x 2	2.3 x 2		1.0 x 4	95.9	125
	36	MAP3624HT8-E	MAP3624T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	2.3 x 2		1.0 x 4	97.9	125
	38	MAP3824HT8-E	MAP3824T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2		1.0 x 4	100.0	125
	40	MAP4024HT8-E	MAP4024T8-E	3N~50Hz	380-400-415V	342	456	3.1 x 2	3.1 x 2	3.1 x 2		1.0 x 4	102.0	125
	42	MAP4224HT8-E	MAP4224T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	3.1 x 2	3.1 x 2		1.0 x 4	105.0	125
	44	MAP4424HT8-E	MAP4424T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	3.1 x 2		1.0 x 4	108.0	125
	46	MAP4624HT8-E	MAP4624T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	3.1 x 2		1.0 x 4	111.0	125
	48	MAP4824HT8-E	MAP4824T8-E	3N~50Hz	380-400-415V	342	456	4.2 x 2	4.2 x 2	4.2 x 2		1.0 x 4	114.0	125

Notes MCA : Minimum Circuit Amps
 MOCP : Maximum Overcurrent Protection (Amps)



5. Indoor unit power supply

• Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
4-Way Air Discharge Cassette Type	MMU-AP0092H	230-1-50	198	264	0.014	0.63	0.79	15
	MMU-AP0122H	230-1-50	198	264	0.014	0.63	0.79	15
	MMU-AP0152H	230-1-50	198	264	0.014	0.80	1.00	15
	MMU-AP0182H	230-1-50	198	264	0.014	0.80	1.00	15
	MMU-AP0242H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0272H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0302H	230-1-50	198	264	0.020	0.87	1.09	15
	MMU-AP0362H	230-1-50	198	264	0.068	1.15	1.44	15
	MMU-AP0482H	230-1-50	198	264	0.072	1.15	1.44	15
Compact 4-way Cassette (600 x 600) Type	MMU-AP0071MH	230-1-50	198	264	0.060	0.32	0.40	15
	MMU-AP0091MH	230-1-50	198	264	0.060	0.35	0.44	15
	MMU-AP0121MH	230-1-50	198	264	0.060	0.36	0.45	15
	MMU-AP0151MH	230-1-50	198	264	0.060	0.48	0.60	15
2-Way Air Discharge Cassette Type	MMU-AP0181MH	230-1-50	198	264	0.060	0.48	0.60	15
	MMU-AP 0071 WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP 0091 WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP 0121 WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP 0151 WH	230-1-50	198	264	0.039	0.37	0.46	15
	MMU-AP 0181 WH	230-1-50	198	264	0.039	0.37	0.46	15
	MMU-AP 0241 WH	230-1-50	198	264	0.053	0.53	0.66	15
	MMU-AP 0271 WH	230-1-50	198	264	0.053	0.53	0.66	15
	MMU-AP 0301 WH	230-1-50	198	264	0.053	0.54	0.68	15
1-Way Air Discharge Cassette Type	MMU-AP 0481 WH	230-1-50	198	264	0.092	1.33	1.67	15
	MMU-AP 0071 YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0091 YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0121 YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP 0151 SH	230-1-50	198	264	0.034	0.55	0.69	15
	MMU-AP 0181 SH	230-1-50	198	264	0.034	0.55	0.69	15
Concealed Duct Type	MMU-AP 0241 SH	230-1-50	198	264	0.034	0.63	0.79	15
	MMD-AP 0071 BH	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP 0091 BH	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP 0121 BH	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP 0151 BH	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP 0181 BH	230-1-50	198	264	0.120	0.50	0.62	15
	MMD-AP 0241 BH	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP 0271 BH	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP 0301 BH	230-1-50	198	264	0.120	0.70	0.88	15
	MMD-AP 0361 BH	230-1-50	198	264	0.120	0.96	1.20	15
	MMD-AP 0481 BH	230-1-50	198	264	0.120	1.13	1.41	15
Concealed Duct High Static Pressure Type	MMD-AP 0561 BH	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP 0181 H	230-1-50	198	264	0.160	0.93	1.16	15
	MMD-AP 0241 H	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP 0271 H	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP 0361 H	230-1-50	198	264	0.260	1.87	2.34	15
Slim Duct Type	MMD-AP 0481 H	230-1-50	198	264	0.260	2.12	2.65	15
	MMD-AP 0721 H	230-1-50	198	264	0.370 x 3	6.04	7.55	15
	MMD-AP 0961 H	230-1-50	198	264	0.370 x 3	6.35	7.94	15
	MMD-AP0071SPH	230-1-50	198	264	0.060	0.35	0.44	15
	MMD-AP0091SPH	230-1-50	198	264	0.060	0.35	0.44	15
	MMD-AP0121SPH	230-1-50	198	264	0.060	0.37	0.47	15
Under Ceiling Type	MMD-AP0151SPH	230-1-50	198	264	0.060	0.38	0.48	15
	MMD-AP0181SPH	230-1-50	198	264	0.060	0.47	0.59	15
	MMC-AP 0151 H	230-1-50	198	264	0.030	0.33	0.41	15
	MMC-AP 0181 H	230-1-50	198	264	0.030	0.37	0.46	15
	MMC-AP 0241 H	230-1-50	198	264	0.040	0.48	0.60	15
High Wall Type (1 series)	MMC-AP 0271 H	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP 0361 H	230-1-50	198	264	0.080	0.90	1.13	15
	MMC-AP 0481 H	230-1-50	198	264	0.080	0.96	1.20	15
	MMK-AP 0071 H	230-1-50	198	264	0.030	0.35	0.44	15
	MMK-AP 0091 H	230-1-50	198	264	0.030	0.35	0.44	15
	MMK-AP 0121 H	230-1-50	198	264	0.030	0.35	0.44	15
High Wall Type (2 series)	MMK-AP 0151 H	230-1-50	198	264	0.030	0.37	0.46	15
	MMK-AP 0181 H	230-1-50	198	264	0.030	0.37	0.46	15
	MMK-AP 0241 H	230-1-50	198	264	0.030	0.40	0.50	15
High Wall Type (3 series)	MMK-AP0072H	230-1-50	198	264	0.030	0.20	0.24	15
	MMK-AP0092H	230-1-50	198	264	0.030	0.21	0.26	15
	MMK-AP0122H	230-1-50	198	264	0.030	0.22	0.27	15
	MMD-AP0073H	230-1-50	198	264	0.030	0.20	0.22	15
	MMD-AP0093H	230-1-50	198	264	0.030	0.22	0.24	15
Floor Standing Cabinet Type	MMD-AP0123H	230-1-50	198	264	0.030	0.22	0.24	15
	MMD-AP0153H	230-1-50	198	264	0.030	0.37	0.40	15
	MMD-AP0183H	230-1-50	198	264	0.030	0.37	0.40	15
	MMD-AP0243H	230-1-50	198	264	0.030	0.43	0.47	15
	MML-AP 0071 H	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP 0091 H	230-1-50	198	264	0.045	0.30	0.37	15
Floor Standing Concealed Type	MML-AP 0121 H	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP 0151 H	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP 0181 H	230-1-50	198	264	0.070	0.54	0.68	15
	MML-AP 0241 H	230-1-50	198	264	0.070	0.54	0.68	15
	MML-AP 0071 BH	230-1-50	198	264	0.019	0.29	0.36	15
Floor Standing Type	MML-AP 0091 BH	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP 0121 BH	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP 0151 BH	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP 0181 BH	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP 0241 BH	230-1-50	198	264	0.070	0.53	0.66	15
	MMF-AP 0151 H	230-1-50	198	264	0.037	0.77	0.96	15
Fresh Air Intake Indoor Unit Type	MMF-AP 0181 H	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP 0241 H	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP 0271 H	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP 0361 H	230-1-50	198	264	0.110	1.48	1.85	15
	MMF-AP 0481 H	230-1-50	198	264	0.160	1.84	2.30	15
	MMF-AP 0561 H	230-1-50	198	264	0.160	1.84	2.30	15
Fresh Air Intake Indoor Unit Type	MMD-AP0481HFE	230-1-50	198	264	0.160	0.28	0.35	15
	MMD-AP0721HFE	230-1-50	198	264	0.16 x 2	0.45	0.56	15
	MMD-AP0961HFE	230-1-50	198	264	0.16 x 2	0.52	0.65	15



• **Wiring size**

Must be independent from the outdoor unit power supply

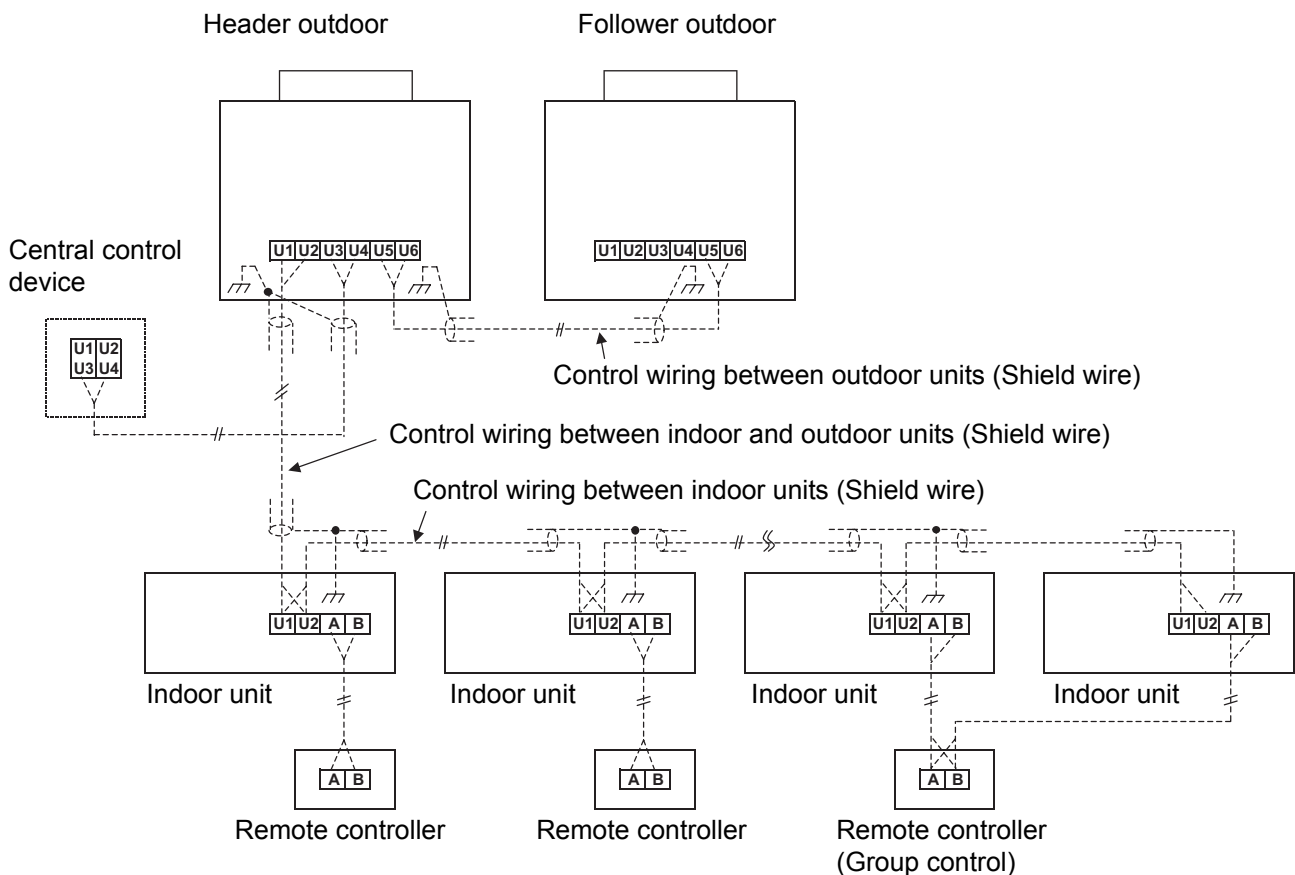
Model \ Item	Power supply wiring			
	Wire size			
All models of indoor units	2.0m ² (AWG#14)	Max. 20m	3.5m ² (AWG#12)	Max. 50m

NOTE:

The above connecting lengths stated in the table, indicate the length from the isolator to the outdoor unit. When the power supply of the indoor units are connected in parallel, it is assumed that no more than a 2% voltage drop will occur. If the connecting length is to exceed the stated lengths, select a suitable wire in accordance with the local wiring standards.

6. Design of control wiring

• **Summary of control wiring**



- (1) Control wiring and central control wiring use 2-core non-polarity transmission wires. Use 2-core shield wires to prevent noise trouble. In this case, for the system grounding, close (connect) the end of shield wires, and isolate the end of terminal. Perform the ground of wires at one side only for the header outdoor unit.
- (2) Use 2-core non-polarity wire for remote controller. (A, B terminals)
Use 2-core non-polarity wire for wiring of group control. (A, B terminals)



• Restriction of control wiring

Be sure to keep the rule of below tables about size and length of control wiring.

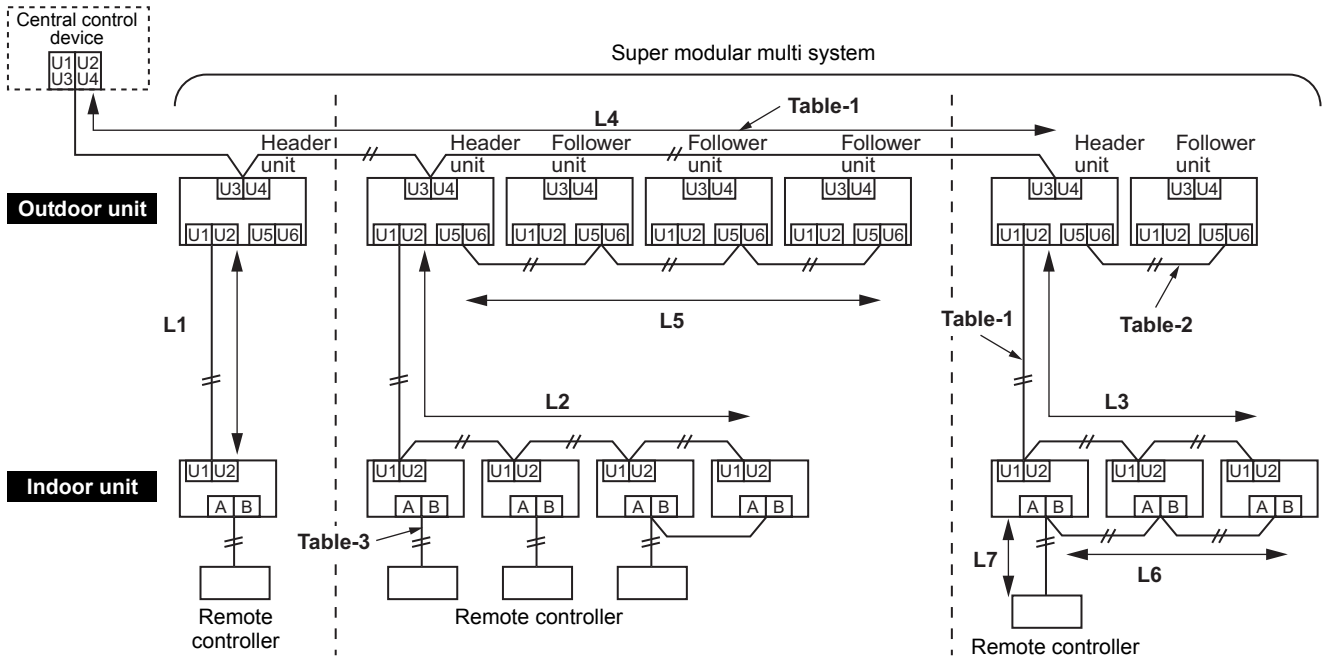


Table-1 Control wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm ² : Up to 1000 m/2.0 mm ² : Up to 2000 m (*1)

Note (*1): Total length of control wiring length for all refrigerant circuits (L1 + L2 + L3 + L4)

Table-2 Control wiring between outdoor units (L5)

Wiring	2-core, non-polarity
Type	Shield wire
Size/Length	1.25 mm ² to 2.0 mm ² /Up to 100 m (L5)

Table-3 Remote controller wiring (L6, L7)

Wire	2-core
Size	0.5 mm ² to 2.0 mm ²
Length	<ul style="list-style-type: none"> • Up to 500 m (L6 + L7) • Up to 400 m in case of wireless remote controller in group control. • Up to 200 m total length of control wiring between indoor units (L6)

• Group Operation through a Remote Controller

Group operation of multiple indoor units (8 units) through a single remote controller switch

