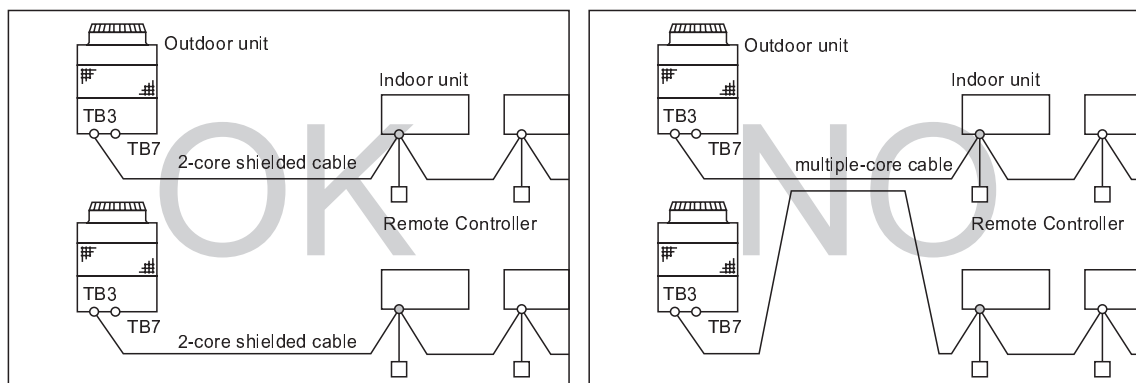


[1] Types and Maximum allowable Length of Cables

1. Wiring work

(1) Notes

- 1) Have all electrical work performed by an authorized electrician according to the local regulations and instructions in this manual.
- 2) Install the control cable at least 5cm[1-31/32"] away from the power supply cable to avoid noise interference. (Do not put the control cable and power supply cable in the same conduit tube.)
- 3) Provide class-D grounding on the outdoor unit.
- 4) Run the cable from the electric box of the indoor or outdoor unit in such way that the box is accessible for servicing.
- 5) Do not connect the terminal block for transmission line to supply voltage of 208V or 230V. Doing so will damage the electronic components on the terminal block.
- 6) Use 2-core shielded cables as control cables. (Marked with OK in the figure below) Use a separate 2-core control cable for each refrigerant system. Do not use a single multiple-core cable to connect indoor units that belong to different refrigerant systems. The use of a multiple-core cable may result in signal transmission errors and malfunctions. (Marked with NO in the figure below)



(2) Control wiring

Different types of control wiring are used for different systems.

Refer to section "[4] An Example of a System to which an MA Remote Controller is connected - [6] An Example of a System to which both MA Remote Controller and M-NET Remote Controller are connected" before performing wiring work.

[Types and maximum allowable length of cables]

Control lines are categorized into 2 types: transmission line and remote controller line. Use the appropriate type of cables and observe the maximum allowable length specified for a given system. If a given system has a long transmission line or if a noise source is located near the unit, place the unit away from the noise source to reduce noise interference.

1) M-NET transmission line

Cable type	Facility type	All facility types
	Type	Shielded cable CVVS, CPEVS, MVVS
	Number of cores	2-core cable
	Cable size	Larger than 1.25mm ² [AWG16]
Maximum transmission line distance between the outdoor unit and the farthest indoor unit		200 m [656ft] max.
Maximum transmission line distance for centralized control and Indoor/outdoor transmission line (Maximum line distance via outdoor unit)		500 m [1640ft] max. *The maximum overall line length from the power supply unit on the transmission lines for centralized control to each outdoor unit or to the system controller is 200m [656ft] max.

2) Remote controller wiring

		MA remote controller ^{*1}	M-NET remote controller ^{*2}	
Cable type	Type	VCTF, VCTFK, CVV, CVS, VVR, VVF, VCT	10m [32ft] or less	When the cable length exceeds 10m [32ft]
			Shielded cable MVVS	1) Follow the same specifications for M-NET transmission lines.
	Number of cores	2-core cable	2-core cable	
	Cable size	0.3 to 1.25mm ² ^{*3} [AWG22 to 16]	0.3 to 1.25mm ² ^{*3} [AWG22 to 16] (0.75 to 1.25mm ²) ^{*4} [AWG18 to 14]	
Maximum overall line length		200 m [656ft] max.	10 m [32ft] max.	The section of the cable that exceeds 10m [32ft] must be included in the maximum indoor-outdoor transmission line distance.

*1 MA remote controller refers to MA remote controller, MA deluxe remote controller, MA simple remote controller, and wireless remote controller.

*2 M-NET remote controller refers to ME remote controller.

*3 The use of cables that are smaller than 0.75mm² (AWG18) is recommended for easy handling.

*4 When connected to the terminal block on the Simple remote controller, use cables that meet the cable size specifications shown in the parenthesis.

[2] Switch Settings and Address Settings

1. Switch setting

The need for switch settings depends on the configuration of the system.

Refer to section "[4] An Example of a System to which an MA Remote Controller is connected - [6] An Example of a System to which both MA Remote Controller and M-NET Remote Controller are connected" before performing wiring work.

Set the switches while the power is turned off.

If the switch settings are changed while the unit is being powered, those changes will not take effect, and the unit will not function properly.

2. Address settings

(1) Address settings table

The need for address settings and the range of address setting depend on the configuration of the system.

Unit or controller		Address setting range	Setting method	Address setting
Indoor unit	Main/sub unit	0, 01 to 50 ^{*1}	Assign the smallest address to the main indoor unit in the group, and assign sequential address numbers to the rest of the indoor units in the same group. ^{*5} In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	00
	LOSSNAY, OA processing unit		Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	00
M-NET remote controller	Main remote controller	101 to 150	Add 100 to the smallest address of all the indoor units in the same group.	101
	Sub remote controller	151 to 200 ^{*2}	Add 150 to the smallest address of all the indoor units in the same group.	
MA remote controller		No address settings required. (The main/sub setting must be made if 2 remote controllers are connected to the system.)		Main
Outdoor unit		0, 51 to 100 ^{*1,*3,*4}	Assign an address that equals the sum of the smallest address of the indoor units in the same refrigerant system and 50.	00
Auxiliary outdoor unit	BC controller (main)	0, 52 to 100 ^{*3,*4}	Assign an address that equals the sum of the address of the outdoor unit in the same refrigerant system and 1.	
	BC controller (sub)		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50. If a sub BC controller is connected, auto-startup function will not be available.	
System controller	System remote controller	201 to 250	Assign an arbitrary but unique address within the range listed on the left to each unit.	201
	ON/OFF remote controller		Assign an address that equals the sum of the smallest group number of the group to be controlled and 200.	
	Schedule timer (compatible with M-NET)		Assign an arbitrary but unique address within the range listed on the left to each unit.	202
	Central controller G-50	0, 201 to 250	Assign an arbitrary but unique address within the range listed on the left to each unit. The address must be set to "0" to control the K-control unit.	000
	LM adapter	201 to 250	Assign an arbitrary but unique address within the range listed on the left to each unit.	247

^{*1} No address settings are required for units in a system with one outdoor unit (with some exceptions). Address setting is required if a sub BC controller is connected.

^{*2} To set the M-NET remote controller address to "200", set it to "00".

^{*3} To set the outdoor unit or auxiliary outdoor unit address to "100", set it to "50".

^{*4} If a given address overlaps any of the addresses that are assigned to other outdoor units, use a different, unused address within the setting range (with some exceptions).

^{*5} Some indoor units have 2 or 3 controller boards that require address settings.

(1) The address to be assigned to the No.1 controller board (by the power supply terminal block) must be 1 smaller than that to the No.2 controller board.

(2) No. 2 controller board address must be equal to the sum of the No. 1 controller board address and 1, and the No.3 controller board address must equal to the No. 1 controller address and 2.

- (2) Power supply switch connector connection on the outdoor unit
(Factory setting: The male power supply switch connector is connected to CN41.)

System configuration	Connection to the system controller	Power supply unit for transmission lines	Group operation of units in a system with multiple outdoor units	Power supply switch connector connection
System with one outdoor unit	—	—	—	Leave CN41 as it is (Factory setting)
System with multiple outdoor units	Not connected	—	Not grouped	Disconnect the male connector from the female power supply switch connector (CN41) and connect it to the female power supply switch connector (CN40) on only one of the outdoor units. ^{*3}
			Grouped	
	With connection to the indoor unit system	Not required	Grouped/not grouped	*Connect the S (shielded) terminal on the terminal block (TB7) on the outdoor unit whose CN41 was replaced with CN40 to the ground terminal (⌚) on the electric box.
	With connection to the centralized control system	Not required ^{*2} (Powered from the outdoor unit)	Grouped/not grouped	
		Required	Grouped/not grouped	Leave CN41 as it is (Factory setting)

*1 The need for a power supply unit for transmission lines depends on the system configuration.

*2 When connecting a system controller to the transmission line for centralized control or performing a group operation of units in different refrigerant systems, the replacement of male power supply switch connector (CN41) must be performed only on one of the outdoor units in the system.

- (3) Settings for the centralized control switch for the outdoor unit (Factory setting: SW2-1 are set to OFF.)

System configuration	Centralized control switch settings (SW2-1)
Connection to the system controller Not connected	Leave it to OFF. (Factory setting)
Connection to the system controller Connected ^{*1}	ON

*1. When only the LM adapter is connected, leave SW2-1 to OFF (as it is).

- (4) Indoor unit port switch setting (R2 series (factory setting: "0"))

Make the setting for the port switch that corresponds to the connected BC (main/sub) controllers.

When more than two ports are used, make the setting on the port with a smaller port number.

The total capacity and the number of connectable indoor units per port is 54 and below, and 3 respectively.

- (5) Selecting the position of temperature detection for the indoor unit (Factory setting: SW1-1 set to "OFF".)

- 1) To use the built-in sensor on the remote controller, set the SW1-1 to ON.

♦Some models of remote controllers are not equipped with a built-in temperature sensor.

Use the built-in temperature sensor on the indoor unit instead.

♦When using the built-in sensor on the remote controller, install the remote controller where room temperature can be detected.

(Note) Factory setting for SW1-1 on the indoor unit of the All-Fresh Models is ON.

- 2) When an optional temperature sensor is used, set SW1-1 to OFF, and set SW3-8 to ON.

♦When using an optional temperature sensor, install it where room temperature can be detected.

(6) Various start-stop controls (Indoor unit settings)

Each indoor unit (or group of indoor units) can be controlled individually by setting SW 1-9 and 1-10.

Function	Operation of the indoor unit when the operation is resumed after the unit was stopped	Setting (SW1)*1	
		9	10
Power ON/OFF by the plug*2*3*4	Indoor unit will go into operation regardless of its operation status before power off (power failure). (In approx. 5 minutes)	OFF	ON
Automatic restoration after power failure	Indoor unit will go into operation if it was in operation when the power was turned off (or cut off due to power failure). (In approx. 5 minutes)	ON	OFF
	Indoor unit will remain stopped regardless of its operation status before power off (power failure).	OFF	OFF

*1. Requires that the dipswitch settings for all the units in the group be made.

*2. Not applicable to units with a built-in drain pump or humidifier.

*3. Models with a built-in drain pump cannot be turned on/off by the plug individually. All the units in the same refrigerant circuits will be turned on or off by the plug.

*4. Do not cut off power to the outdoor unit. Cutting off the power supply to the outdoor unit will cut off the power supply to the crankcase heater and may cause the compressor to malfunction when the unit is put back into operation.

(7) Miscellaneous settings

Cooling-only setting for the indoor unit: Cooling only model (Factory setting: SW3-1 "OFF.")

When using indoor unit as a cooling-only unit, set SW3-1 to ON.

(8) Various types of control using input-output signal connector on the outdoor unit (various connection options)

Type	Usage	Function	Terminal to be used
Input	Prohibiting cooling/heating operation (thermo OFF) by an external input to the outdoor unit. *It can be used as the DEMAND control device for each system.	Compressor ON/OFF (level)	CN3D
	Performs a low level noise operation of the outdoor unit by an external input to the outdoor unit. (The unit can perform a NIGHT MODE operation under the following conditions: Outdoor air temperature below 30°C during cooling operation/Outdoor air temperature above 3°C during heating operation.)	NIGHT MODE or STEP DEMAND (level)*1	
	Forces the outdoor unit to perform a fan operation by receiving signals from the snow sensor.	Snow sensor signal input (level)	CN3S
Output	How to extract signals from the outdoor unit *It can be used as an operation status display device. *It can be used for an interlock operation with external devices.	Operation status of the compressor	CN51
		Error status	

*1. NIGHT MODE is valid when Dip SW4-7 on the outdoor unit are set to OFF. When Dip SW4-7 are set to ON, STEP DEMAND control is possible, using different configurations of NIGHT MODE input and compressor ON/OFF input settings.

SW4-7:OFF (Compressor ON/OFF, NIGHT MODE)

CN3D 1-3P	Compressor ON/OFF	CN3D 1-2P	NIGHT MODE
Open	OFF	Open	OFF
Short-circuit	ON	Short-circuit	ON

SW4-7:ON (STEP DEMAND)

		CN3D 1-2P	
		Open	Short-circuit
CN3D 1-3P	Open	100% (not on the on-DEMAND control)	75%
	Short-circuit	0%	50%

Note the following steps to be taken when using the STEP DEMAND

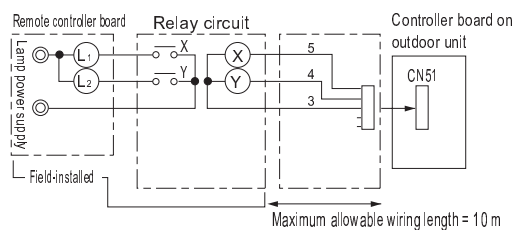
(Example) When switching from 100% to 50%

Demand control steps	(Wrong)	100% → 0% → 50%
	(Correct)	100% → 75% → 50%

If the step listed as the wrong example above is taken, thermo may go off.
The percentage of the demand listed in the table above is an approximate value based on the compressor volume and does not necessarily correspond with the capacity.

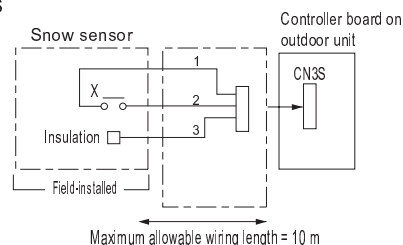
Example of wiring connection

■ CN51



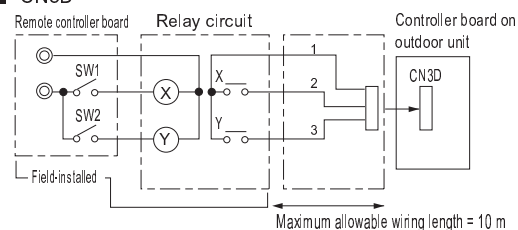
L1 : Error indicator lamp/freeze prevention output
L2 : Compressor operation display lamp
X,Y : Relay (For 12V DC coil rating 0.9 W or below)

■ CN3S



X: Snow sensor (Contact Minimum applied load 12V DC 1 mA)

■ CN3D



SW1 : NIGHT MODE command or Compressor ON/OFF
SW2 : Compressor ON/OFF command
X,Y : Relay (Contact Minimum applied load 12V DC 1 mA)

[3] Sample System Connection

Examples of typical system connection are shown on pages 24 to 52.

- (1) An example of a system to which an MA remote controller is connected

O: Applicable, - : Non-applicable

	System configuration	Connection to the system controller	Address start up for indoor and outdoor units	Unit models		Pages	Notes
				Y Series	R2 Series		
1.	System with one outdoor unit	ON	Automatic address setup	O	O	P24, P25	
2.	System with one outdoor unit	ON	Manual address setup	O	O	P26-P28	Connection of multiple LOSSNAY units
3.	Grouping of units in a system with multiple outdoor units	ON	Manual address setup	O	O	P30-P32	
4.	System with one outdoor unit	With connection to transmission line for centralized control	Manual address setup	O	O	P34-P36	
5.	System with one outdoor unit	With connection to transmission line for centralized control	Manual address setup	-	O	P38-P40	Connection of multiple BC controllers
6.	System with one outdoor unit	With connection to indoor-outdoor transmission line	Manual address setup	O	O	P42-P44	

- (2) An example of a system to which an M-NET remote controller is connected

O: Applicable, - : Non-applicable

	System configuration	Connection to the system controller	Address start up for indoor and outdoor units	Unit models		Pages	Notes
				Y Series	R2 Series		
1.	System with one outdoor unit	With connection to transmission line for centralized control	Manual address setup	O	O	P46-P48	

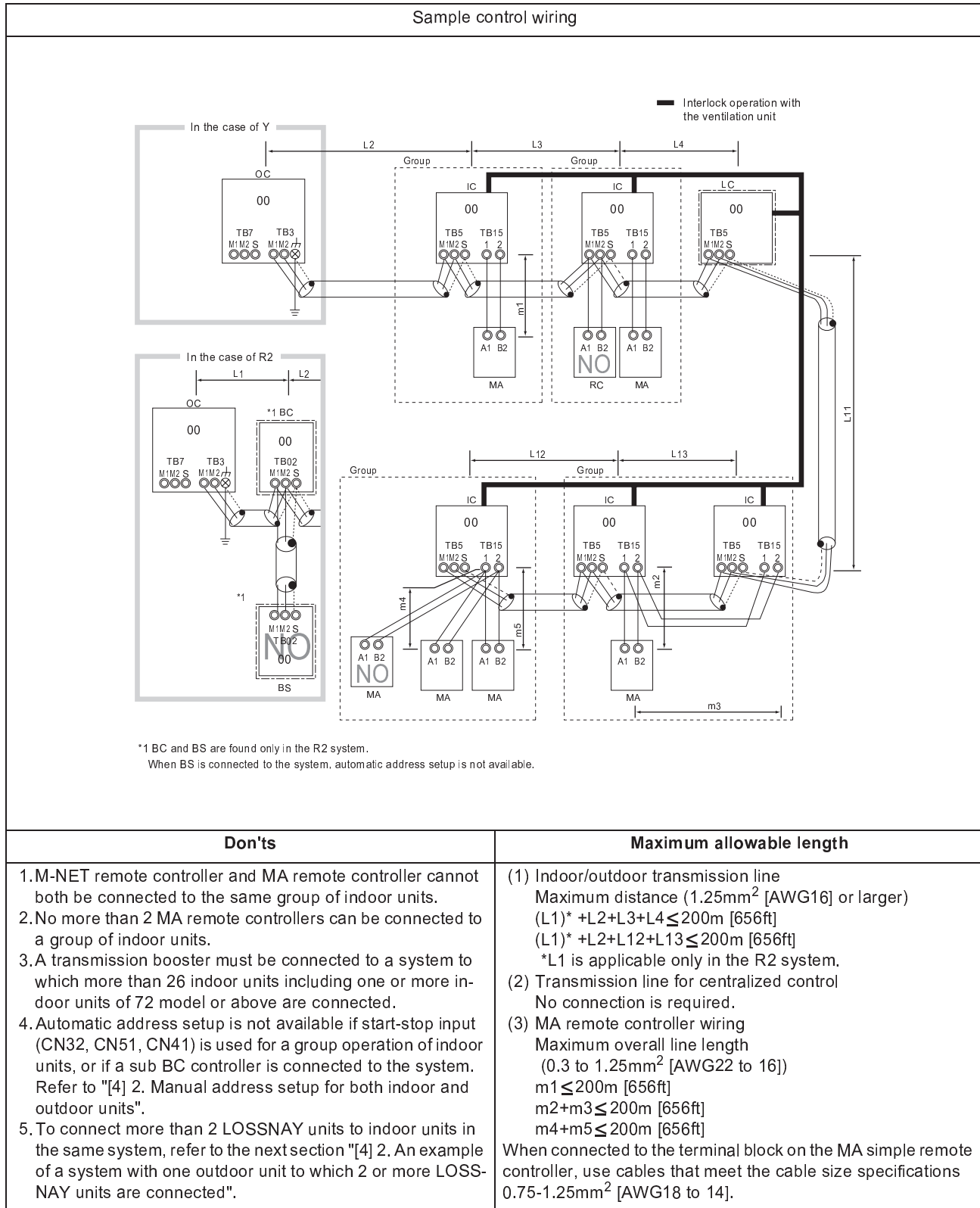
- (3) An example of a system to which both MA remote controller and M-NET remote controller are connected

O: Applicable, - : Non-applicable

	System configuration	Connection to the system controller	Address start up for indoor and outdoor units	Unit models		Pages	Notes
				Y Series	R2 Series		
1.	System with one outdoor unit	With connection to transmission line for centralized control	Manual address setup	O	O	P50-P52	

[4] An Example of a System to which an MA Remote Controller is connected

1. System with one outdoor unit (automatic address setup for both indoor and outdoor units)

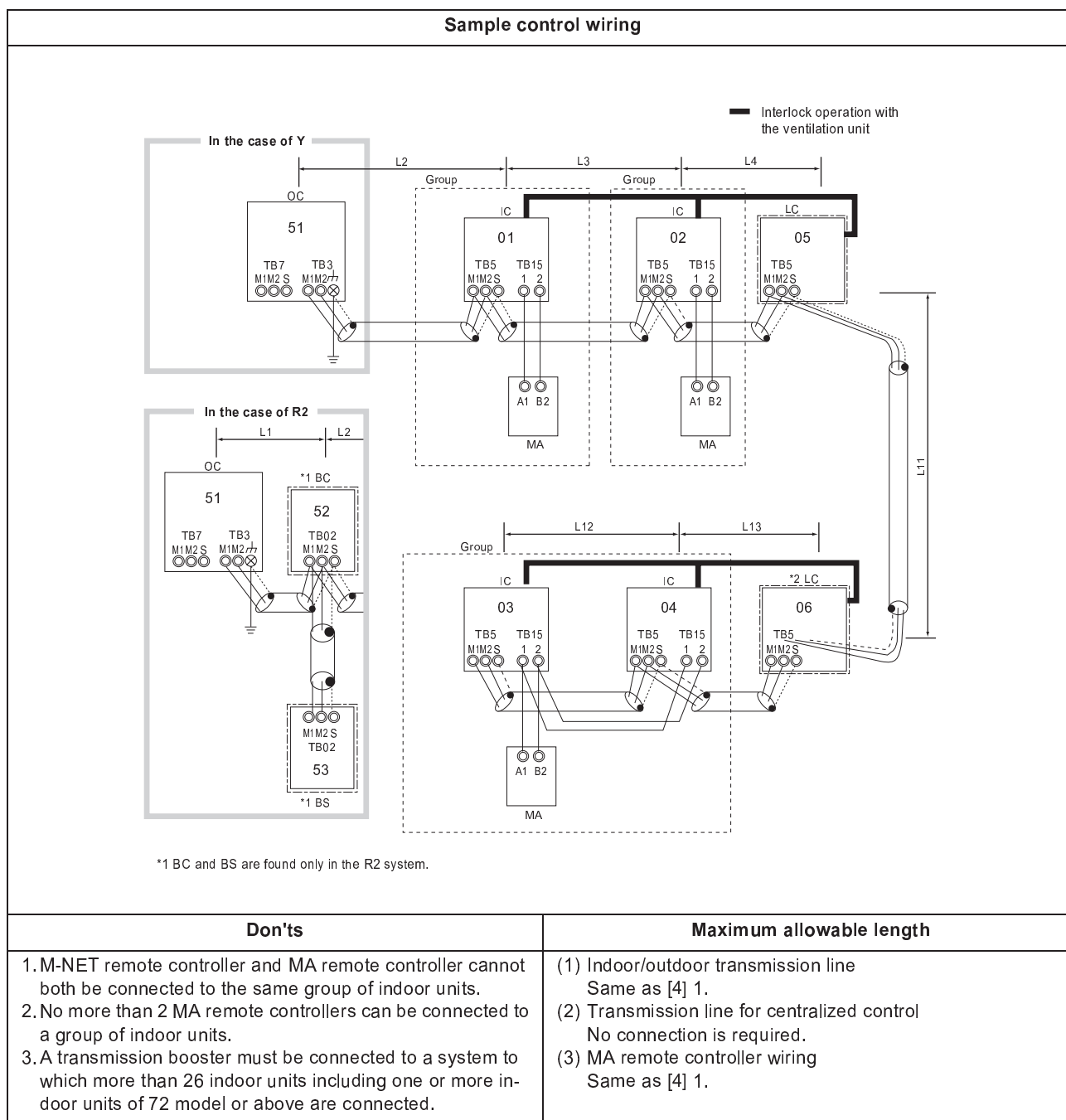


Wiring method/address setting method

- 1) Indoor/outdoor transmission line
 Daisy-chain terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB3) on the outdoor unit (OC), terminals M1 and M2 of the terminal block for indoor-outdoor transmission line (TB02) on the BC controller (BC), and terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB5) on each indoor unit (IC). (Non-polarized 2-core cable)
 •Only use shielded cables.
[Shielded cable connection]
 To ground the shielded cable, daisy-chain the ground terminal on the outdoor unit (OC), S terminals on the terminal block (TB3) on the terminal block (TB1) on the BC controller (BC), and the S terminal on the terminal block (TB5) on the indoor unit (IC).
- 2) Transmission line for centralized control
 No connection is required.
- 3) MA remote controller wiring
 Connect terminals 1 and 2 on the terminal block for MA remote controller line (TB15) on the indoor unit (IC) to the terminal block on the MA remote controller (MA). (Non-polarized 2-core cable)
 •MA remote controllers can be connected to the indoor units of type C or later.
[When 2 remote controllers are connected to the system]
 When 2 remote controllers are connected to the system, connect terminals 1 and 2 of the terminal block (TB15) on the indoor unit (IC) to the terminal block on the two MA remote controllers.
 •Set one of the MA remote controllers to sub. (Refer to MA remote controller function selection (4 [3]2.) or the installation manual for the MA remote controller for the setting method.)
[Group operation of indoor units]
 To perform a group operation of indoor units (IC), daisy-chain terminals 1 and 2 on the terminal block (TB15) on all indoor units (IC) in the same group, and then connect terminals 1 and 2 on the terminal block (TB15) on the indoor unit on one end to the terminal block on the MA remote controller. (Non-polarized 2-core cable)
 •To perform a group operation of indoor units that have different functions, refer to [4] 2.
- 4) LOSSNAY connection
 Connect terminals M1 and M2 on the terminal block (TB5) on the indoor unit (IC) to the appropriate terminals on the terminal block (TB5) on LOSSNAY (LC). (Non-polarized 2-core cable)
 •Interlock operation setting with all the indoor units in the same system will automatically be made.
 •Refer to "[4] 2. Manual address setup for both indoor and outdoor units" in the following cases: performing an interlock operation of part of the indoor units in the system with a LOSSNAY unit, using LOSSNAY alone without interlocking it with any units, performing an interlock operation of more than 16 indoor units with a LOSSNAY unit, or connecting two or more LOSSNAY units to indoor units in the same system.
- 5) Switch setting
 No address settings required.

Procedures	Unit or controller			Address setting range	Setting method	Notes	Factory setting
1	Indoor unit	Main unit	IC	No settings required.	-	•Port number setting is required by an R2 system. •To perform a group operation of indoor units that have different functions, refer to [4] 2.	00
		Sub unit	IC				
2	LOSSNAY		LC	No settings required.	-		00
3	MA remote controller	Main remote controller	MA	No settings required.	-		Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	No settings required.	-		00
5	Auxiliary unit	BC controller	BC				

2. An example of a system with one outdoor unit to which 2 or more LOSSNAY units are connected
(manual address setup for both indoor and outdoor units)



Wiring method
1) Indoor/outdoor transmission line Same as [4] 1. [Shielded cable connection] Same as [4] 1. 2) Transmission line for centralized control No connection is required. 3) MA remote controller wiring Same as [4] 1. [When 2 remote controllers are connected to the system] Same as [4] 1. [Group operation of indoor units] Same as [4] 1. 4) LOSSNAY connection Connect terminals M1 and M2 on the terminal block (TB5) on the indoor unit (IC) to the appropriate terminals on the terminal block (TB5) on LOSSNAY (LC). (Non-polarized 2-core cable) •Interlock setting between the indoor units and LOSSNAY units must be entered on the remote controller. (Refer to "Entering the Interlock Settings into the MA Remote Controller" or the installation manual for the MA remote controller for the setting method.) 5) Switch setting Address setting is required as follows.

Wiring method/address setting method							
Pro- ce- du- res	Unit or controller			Address setting range	Setting method	Notes	Facto- ry set- ting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	- Port number setting is required by an R2 system. - To perform a group operation of indoor units that have different functions, set the indoor unit in the group with the greatest number of functions as the main unit.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	MA remote controller	Main remote controller	MA	No settings required.	-		Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	- To set the address to 100, set it to 50. - If a given address overlaps any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1		
		BC controller (sub)	BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

3. Group operation of units in a system with multiple outdoor units

Sample control wiring	
Legend: — Interlock operation with the ventilation unit Note: *1 BC and BS are found only in the R2 system.	
Don'ts	Maximum allowable length
1. M-NET remote controller and MA remote controller cannot both be connected to the same group of indoor units. 2. No more than 2 MA remote controllers can be connected to a group of indoor units. 3. Do not connect the terminal blocks (TB5) on the indoor units that are connected to different outdoor units with each other. 4. Replacement of male power supply switch connector (CN41) must be performed only on one of the outdoor units. 5. Provide grounding to S terminal on the terminal block for transmission line for centralized control (TB7) on only one of the outdoor units. 6. A transmission booster must be connected to a system to which more than 26 indoor units including one or more indoor units of 72 model or above are connected.	(1) Indoor/outdoor transmission line Maximum distance (1.25mm² [AWG16] or larger) (L1)* + L2 + L3 + L4 ≤ 200m [656ft] (L21)* + L22 + L23 + L24 ≤ 200m [656ft] *L1 and L21 are applicable only in the R2 system. (2) Transmission line for centralized control Maximum line distance via outdoor unit (1.25mm² [AWG16] or larger) (L1)* + L2 + L3 + L4 + L31 + (L21)* + L22 + L23 + L24 ≤ 500m [1640ft] *L1 and L21 are applicable only in the R2 system. (3) MA remote controller wiring Same as [4] 1.

Wiring method

1) Indoor/outdoor transmission line

Daisy-chain terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB3) on the outdoor unit (OC), terminals M1 and M2 of the terminal block for indoor-outdoor transmission line (TB02) on the BC controller (BC and BS), and terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB5) on each indoor unit (IC). (Non-polarized 2-core cable)

•Only use shielded cables.

[Shielded cable connection]

Same as [4] 1.

2) Transmission line for centralized control

Daisy-chain terminals M1 and M2 on the terminal block for centralized control transmission line (TB7). Disconnect the male connector on the controller board from the female power supply switch connector (CN41), and connect it to the female power supply switch connector (CN40).

•Only use shielded cables.

[Shielded cable connection]

To ground the shielded cable, daisy-chain the S-terminals on the terminal block (TB7) on each of the outdoor units. Connect the S (shielded) terminal on the terminal block (TB7) on the outdoor unit whose CN41 was replaced with CN40 to the ground terminal (⏏) on the electric box.

3) MA remote controller wiring

Same as [4] 1.

[When 2 remote controllers are connected to the system]

Same as [4] 1.

[Group operation of indoor units]

Same as [4] 1.

4) LOSSNAY connection

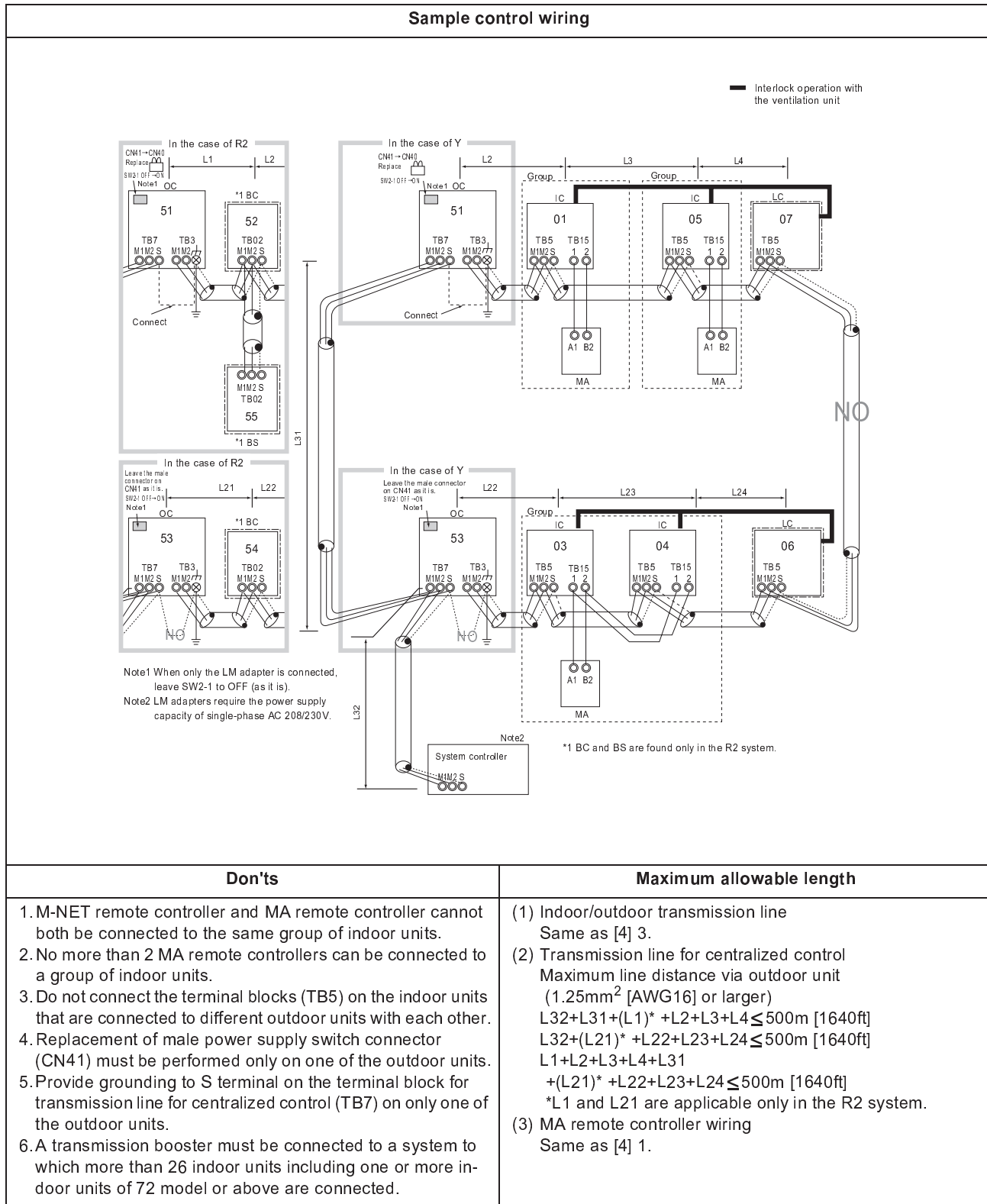
Same as [4] 2.

5) Switch setting

Address setting is required as shown on the next page.

Address setting method							
Proce-du-res	Unit or controller			Address setting range	Setting method	Notes	Factory setting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	Port number setting is required by an R2 system.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	MA remote controller	Main remote controller	MA	No settings required.	-		Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1	- To set the address to 100, set it to 50. - If a given address overlaps any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)	BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

4. An example of a system in which a system controller is connected to the transmission line for centralized control

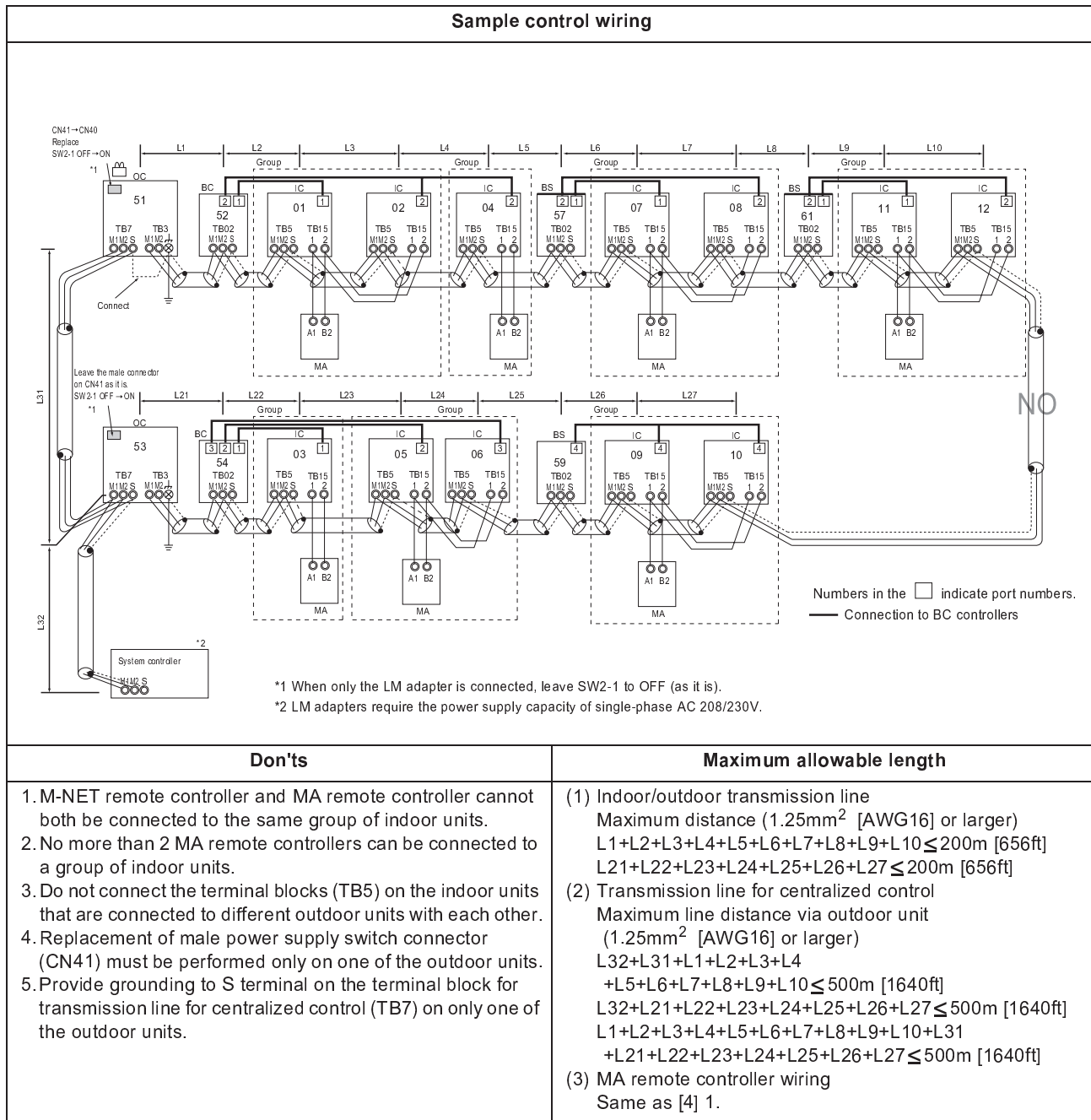


Wiring method
1) Indoor/outdoor transmission line Same as [4] 3. [Shielded cable connection] Same as [4] 1. 2) Transmission line for centralized control Daisy-chain terminals M1 and M2 on the terminal block for transmission line for centralized control (TB7) on each outdoor unit (OC). Disconnect the male connector on the controller board from the female power supply switch connector (CN41), and connect it to the female power supply switch connector (CN40) on only one of the outdoor units (OC). Set the central control switch (SW2-1) on the controller board on all OC to ON. •Only use shielded cables. [Shielded cable connection] Same as [4] 3. 3) MA remote controller wiring Same as [4] 1. [When 2 remote controllers are connected to the system] Same as [4] 1. [Group operation of indoor units] Same as [4] 1. 4) LOSSNAY connection Connect terminals M1 and M2 on the terminal block (TB5) on the indoor unit (IC) to the appropriate terminals on the terminal block for indoor-outdoor transmission line (TB5) on LOSSNAY (LC). (Non-polarized 2-core cable) •Indoor units must be interlocked with the LOSSNAY unit using the system controller. (Refer to the operation manual for the system controller for the setting method.) Interlock setting from the remote controller is required if the ON/OFF remote controller alone or the LM adapter alone is connected. 5) Switch setting Address setting is required as shown on the next page.

Address setting method

Pro- ce- du- res	Unit or controller			Address setting range	Setting method	Notes	Facto- ry set- ting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	Port number setting is required by an R2 system.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	MA remote controller	Main remote controller	MA	No settings required.	-	Enter the same indoor unit group settings on the system controller as the ones that were entered on the MA remote controller.	Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1	- To set the address to 100, set it to 50. - If a given address overlaps any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)	BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

**5. An example of an R2 system to which multiple BC controllers are connected
(a system in which a system controller is connected to the transmission line for centralized control).**

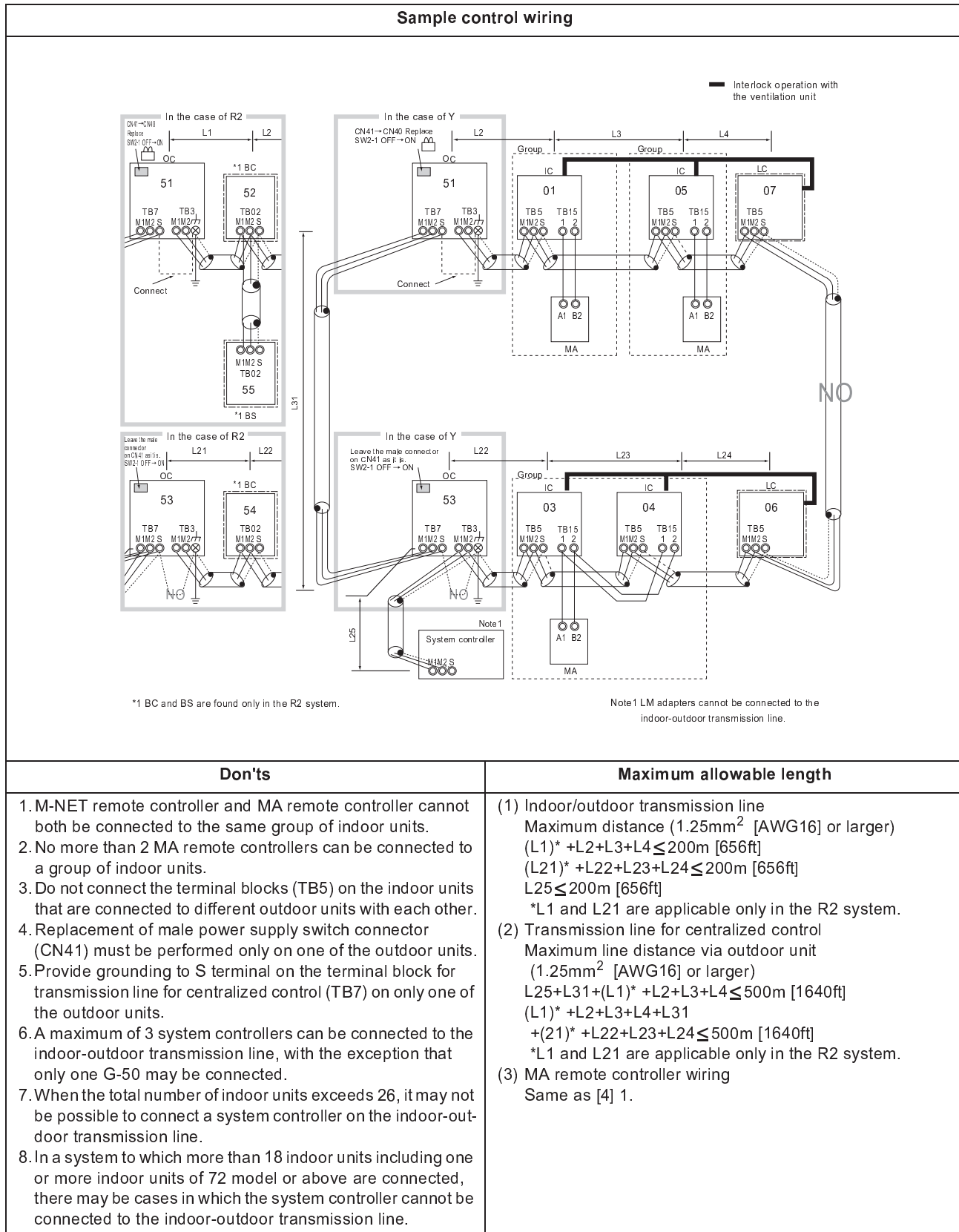


Wiring method	
1) Indoor/outdoor transmission line	Daisy-chain terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB3) on the outdoor unit (OC), terminals M1 and M2 of the terminal block for indoor-outdoor transmission line (TB02) on the main BC controller (BC) and the sub BC controller (BS), and terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB5) on each indoor unit (IC). (Non-polarized 2-core cable) •Only use shielded cables. [Shielded cable connection] Same as [4] 1.
2) Transmission line for centralized control	Same as [4] 4. [Shielded cable connection] Same as [4] 3.
3) MA remote controller wiring	Same as [4] 1. [When 2 remote controllers are connected to the system] Same as [4] 1. [Group operation of indoor units] Same as [4] 1.
4) LOSSNAY connection	Same as [4] 4.
5) Switch setting	Address setting is required as shown on the next page.

Address setting method

Pro- ce- du- res	Unit or controller			Address setting range	Setting method	Notes	Facto- ry set- ting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	Port number setting is required by an R2 system.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	MA remote controller	Main remote controller	MA	No settings required.	-	Enter the same indoor unit group settings on the system controller as the ones that were entered on the MA remote controller.	Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1	- To set the address to 100, set it to 50. - If addresses that are assigned to the main BC controller overlap any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)	BS	51 to 100	Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

6. An example of a system in which a system controller is connected to the indoor-outdoor transmission line (except LM adapter)



Wiring method

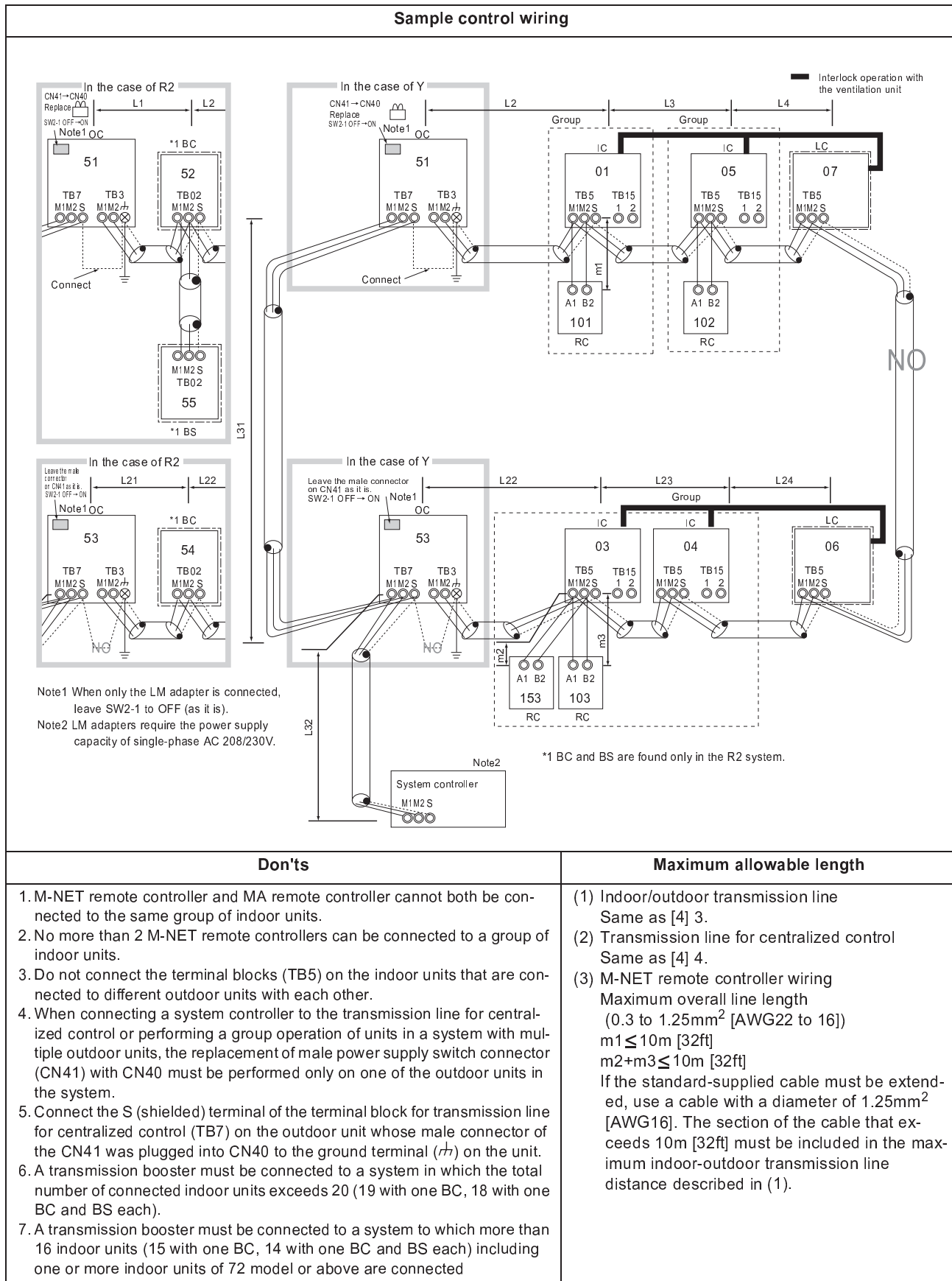
- 1) Indoor/outdoor transmission line
 Daisy-chain terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB3) on the outdoor unit (OC), terminals M1 and M2 of the terminal block for indoor-outdoor transmission line (TB02) on the BC controller (BC and BS), terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB5) on each indoor unit (IC), and terminals M1 and M2 on the system controller. (Non-polarized 2-core cable)
 •Only use shielded cables.
[Shielded cable connection]
 To ground the shielded cable, daisy-chain the ground terminal on the outdoor unit and on the terminal block (TB1) on the BC and BC, the S terminal on the terminal block (TB5) on the indoor unit, and the S terminal on the system controller.
- 2) Transmission line for centralized control
 Same as [4] 4.
[Shielded cable connection]
 Same as [4] 3.
- 3) MA remote controller wiring
 Same as [4] 1.
[When 2 remote controllers are connected to the system]
 Same as [4] 1.
[Group operation of indoor units]
 Same as [4] 1.
- 4) LOSSNAY connection
 Connect terminals M1 and M2 on the terminal block (TB5) on the indoor units (IC) to the appropriate terminals on the terminal block for indoor-outdoor transmission line (TB5) on LOSSNAY (LC). (Non-polarized 2-core cable)
 •Indoor units must be interlocked with the LOSSNAY unit using the system controller. (Refer to the operation manual for the system controller for the setting method.) Interlock setting from the remote controller is required if the ON/OFF remote controller alone is connected.
- 5) Switch setting
 Address setting is required as shown on the next page.

Address setting method

Pro- ce- du- res	Unit or controller			Address setting range	Setting method	Notes	Facto- ry set- ting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	Port number setting is required by an R2 system.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	MA remote controller	Main remote controller	MA	No settings required.	-	Enter the same indoor unit group settings on the system controller as the ones that were entered on the MA remote controller.	Main
		Sub remote controller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1	- To set the address to 100, set it to 50. - If a given address overlaps any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)	BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

[5] An Example of a System to which an M-NET Remote Controller is connected

1. An example of a system in which a system controller is connected to the transmission line for central control

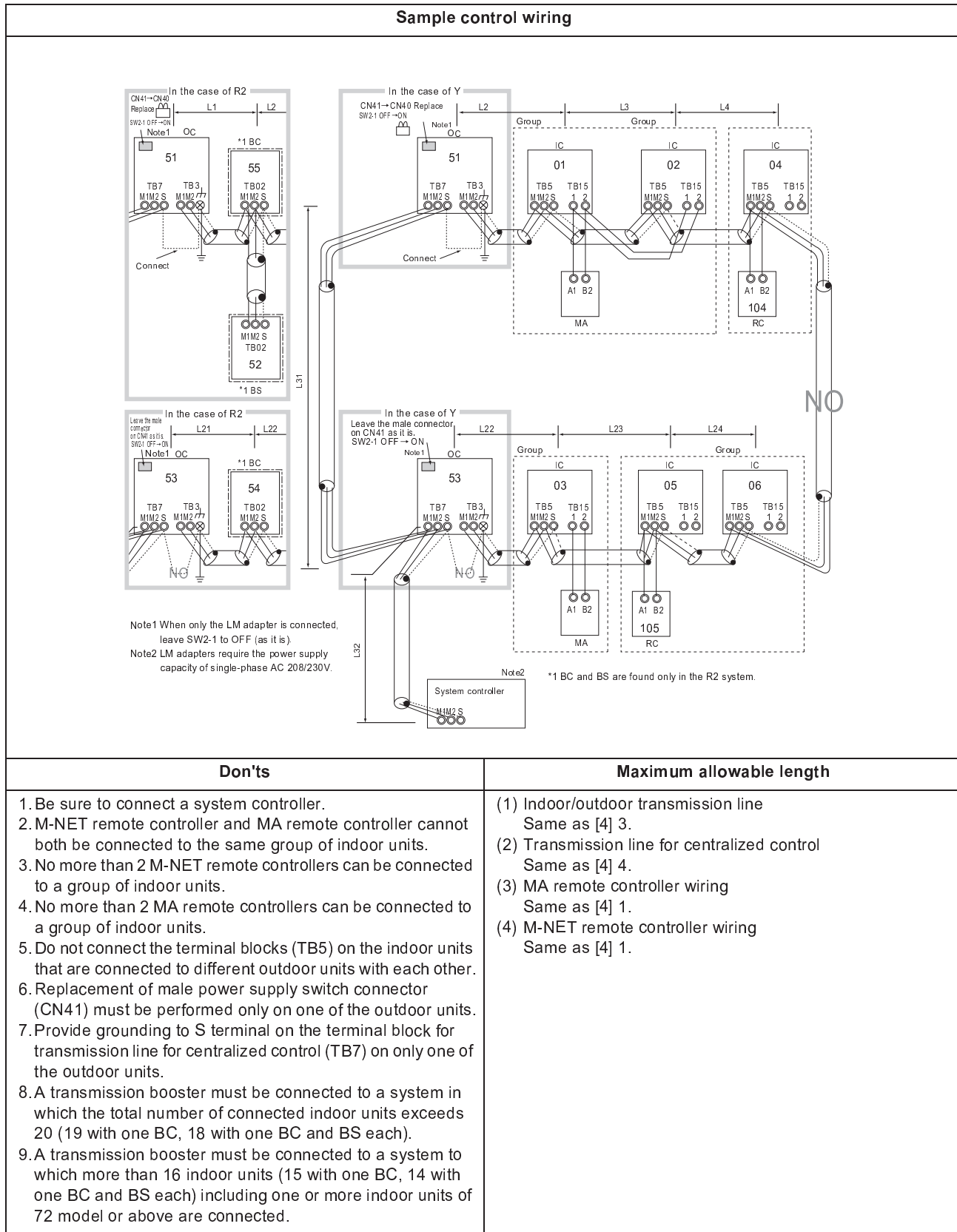


Wiring method
1) Indoor/outdoor transmission line Same as [4] 3. [Shielded cable connection] Same as [4] 1. 2) Transmission line for centralized control Same as [4] 4. [Shielded cable connection] Same as [4] 3. 3) M-NET remote controller wiring Connect terminals M1 and M2 on the terminal block for indoor-outdoor transmission line (TB5) on the indoor units (IC) to appropriate terminals on the terminal block on M-NET remote controller (RC). (Non-polarized 2-core cable) [When 2 remote controllers are connected to the system] When 2 remote controllers are connected to the system, connect terminals M1 and M2 of the terminal block on the IC (TB5) to the terminal block on the two RC remote controllers. [Group operation of indoor units] To perform a group operation of indoor units, connect terminals M1 and M2 on the terminal block (TB5) on the main indoor unit in the group, to the terminal block on the M-NET remote controller. (Non-polarized 2-core cable) ♦M-NET remote controller is connectable anywhere on the indoor-outdoor transmission line. ♦To perform a group operation of indoor units that have different functions, set the indoor unit in the group with the greatest number of functions as the main unit. 4) LOSSNAY connection Same as [4] 4. 5) Switch setting Address setting is required as shown on the next page.

Address setting method

Pro- ce- du- res	Unit or controller			Address setting range	Setting method	Notes	Facto- ry set- ting
1	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	- Enter the indoor unit group settings on the system controller (MELANS). - Port number setting is required by an R2 system.	00
		Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
2	LOSSNAY		LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
3	M-NET remote controller	Main remote controller	RC	101 to 150	Add 100 to the main unit address in the group	- It is not necessary to set the 100s digit. - To set the address to 200, set it to 00.	101
		Sub remote controller	RC	151 to 200	Add 150 to the main unit address in the group		
4	Outdoor unit		OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxiliary unit	BC controller (main)	BC	52 to 100	Outdoor unit address + 1	- To set the address to 100, set it to 50. - If addresses that are assigned to the main BC controller overlap any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. - The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)	BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

[6] An Example of a System to which both MA Remote Controller and M-NET Remote Controller are connected



Wiring method/address setting method

- 1) Indoor/outdoor transmission line
Same as [4] 3.
[Shielded cable connection]
Same as [4] 1.
- 2) Transmission line for centralized control
Same as [4] 4.
[Shielded cable connection]
Same as [4] 3.
- 3) MA remote controller wiring
Same as [4] 1.
[When 2 remote controllers are connected to the system]
Same as [4] 1.
[Group operation of indoor units]
Same as [4] 1.
- 4) M-NET remote controller wiring
Same as [4] 1.
[When 2 remote controllers are connected to the system]
Same as [4] 1.
[Group operation of indoor units]
Same as [4] 1.
- 5) LOSSNAY connection
Same as [4] 4.
- 6) Switch setting
Address setting is required as shown on the next page.

Pro- ce- du- res	Unit or controller				Address setting range	Setting method	Notes	Facto- ry set- ting
1	Opera- tion with the MA remote con- troller	Indoor unit	Main unit	IC	01 to 50	- Assign the smallest address to the main unit in the group. - In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	- Assign an address smaller than that of the indoor unit that is connected to the M-NET remote controller - Enter the same indoor unit group settings on the system controller as the ones that were entered on the MA remote controller. - Port number setting is required by an R2 system.	00
			Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
		MA re- mote con- troller	Main re- mote con- troller	MA	No settings required.	-		Main
			Sub re- mote con- troller	MA	Sub remote controller	Settings to be made according to the remote controller function selection		

Wiring method/address setting method								
Pro- ce- du- res	Unit or controller				Address setting range	Setting method	Notes	Facto- ry set- ting
2	Opera- tion with the M-NET remote control- ler	Indoor unit	Main unit	IC	01 to 50	•After assigning an address to all indoor units to be controlled from the MA remote controller, assign the smallest address to the main indoor unit in the group. •In an R2 system with a sub BC controller, make the settings for the indoor units in the following order. (i) Indoor unit to be connected to the main BC controller (ii) Indoor unit to be connected to sub BC controller 1 (iii) Indoor unit to be connected to sub BC controller 2 Make the settings for the indoor units in the way that the formula "(i) < (ii) < (iii)" is true.	•Enter the indoor unit group settings on the system controller (MELANS). •Port number setting is required by an R2 system.	00
			Sub unit			Assign sequential numbers starting with the address of the main unit in the same group +1. (Main unit address +1, main unit address +2, main unit address +3, etc.)		
		M-NET re- mote con- troller	Main re- mote con- troller	RC	101 to 150	Add 100 to the main unit address in the group.	•It is not necessary to set the 100s digit. •To set the address to 200, set it to 00.	
			Sub re- mote con- troller	RC	151 to 200	Add 150 to the main unit address in the group.		
3	LOSSNAY			LC	01 to 50	Assign an arbitrary but unique address to each of these units after assigning an address to all indoor units.	None of these addresses may overlap any of the indoor unit addresses.	00
4	Outdoor unit			OC	51 to 100	The sum of the smallest address of the indoor units in the same system and 50	To set the address to 100, set it to 50.	00
5	Auxilia- ry unit	BC controller (main)		BC	52 to 100	Outdoor unit address + 1	•To set the address to 100, set it to 50. •If a given address overlaps any of the addresses that are assigned to the outdoor units or to the sub BC controller, use a different, unused address within the setting range. •The use of a sub BC controller requires the connection of a main BC controller.	00
		BC controller (sub)		BS		Assign an address that equals the sum of the smallest address of the indoor units that are connected to the sub BC controller and 50.		

[7] Restrictions on Pipe Length

The refrigerant pipe from the outdoor unit is branched at the pipe end, and each branch is then connected to an indoor unit. Flare connections are used for the pipes on the indoor units and for the liquid pipes on the outdoor units. Flange connections are used for gas pipes on the outdoor units. Branched sections are brazed together.

WARNING

Do not let refrigerant (R410A) leak in the presence of an open flame or other heat source. When exposed to an open flame or other heat source, refrigerant will break down, generate poisonous gas, and pose a risk of gas poisoning. Do not weld in a confined space. Perform an air tightness test at the completion of pipe work.

Only use the type of refrigerant (R410A) that is indicated on the unit when installing or reinstalling the unit.

Infiltration of any other type of refrigerant or air into the unit may adversely affect the refrigerant cycle and may cause the pipes to burst or explode.

CAUTION

Do not use the existing refrigerant piping.

A large amount of chlorine that may be contained in the residual refrigerant and refrigerating machine oil in the existing piping may cause the refrigerating machine oil in the new unit to deteriorate.

Use refrigerant pipes made of phosphorus deoxidized copper. Keep the inner and outer surfaces of the pipes clean and free of such contaminants as sulfur, oxides, dust, dirt, shaving particles, oil, and water.

These types of contaminants inside the refrigerant pipes may cause the refrigerant oil to deteriorate.

Store the pipes to be installed indoors, and keep both ends of the pipes sealed until immediately before brazing. (Keep elbows and other joints wrapped in plastic.)

Infiltration of dust, dirt, or water into the refrigerant system may cause the refrigerating machine oil to deteriorate or cause the unit to malfunction.

Charge liquid refrigerant (as opposed to gaseous refrigerant) into the system.

If gaseous refrigerant is charged into the system, the composition of the refrigerant in the cylinder will change and may result in performance loss.

Do not use a charging cylinder.

If a charging cylinder is used, the composition of the refrigerant will change, and the unit may experience power loss.