

TOSHIBA INSTALLATION INSTRUCTIONS

INFORMATION FOR THE PERSON IN CHARGE OF INSTALLATION (ELECTRICAL) WORK AND SERVICING

Model TCB-EXS21TLE

Safety Precautions

- Read these Safety Precautions before beginning installation or electrical work, and perform the work only in the correct manner.
- Precautions in this manual are given in the form of "Warnings" or "Cautions." Both types of precautions contain important information related to your safety, the safety of users, and the correct operation, installation, or maintenance of the air conditioning system. Be sure to carefully observe all relevant precautions.

WARNING This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

When installation work is completed, perform a test run and check that no trouble occurs. Also be sure to explain the methods for using the product to the customer, based on the contents of the Operation Manual. In addition, request that the customer keep and conveniently store the "Information for the Person in Charge of Installation (Electrical) Work and Servicing" together with the Operation Manual.

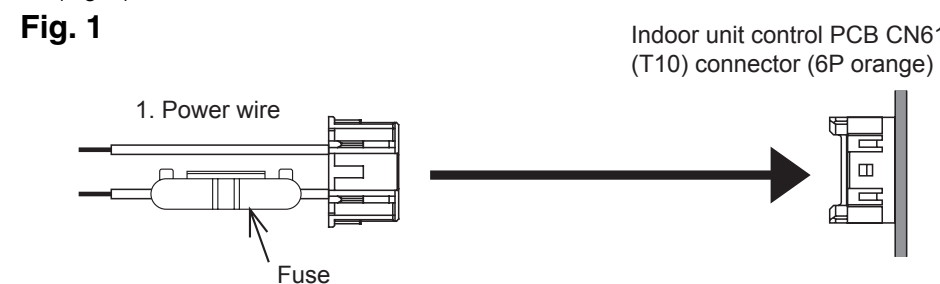
- WARNING**
- Request installation and electrical work only from the dealer or a qualified air conditioning specialist. Attempting to carry out installation work on your own, and doing so incorrectly, may result in electrical shock, fire, or other hazards.
 - Installation procedures must be performed correctly, carefully following the instructions in this document. Failure to do so may result in electrical shock, fire, or other hazards.
 - Electrical work must be performed by a qualified electrician. It must be performed in accordance with technical standards related to electrical equipment, interior wiring regulations, local codes, and the contents of these instructions. Be sure to use a dedicated power supply circuit. Insufficient power circuit capacity or improper electrical work may result in electrical shock or fire.
 - Use only the designated cables for wiring, and connect them securely. Fasten cables so that no external force is applied to the terminal connections. Insufficient connections or cable fastening may result in heat generation, fire, or other hazards.

- CAUTION**
- Depending on the installation location, it may be necessary to install an earth leakage breaker. Failure to do so may result in electrical shock or fire.
 - Do not install in kitchens, workshops, or other locations where there is oil mist in the air.
 - Do not install next to windows or in other locations exposed to direct sunlight or in direct contact with outside air.
 - Do not install near an elevator, automatic door, industrial sewing machine, or other devices that can be expected to produce electrical noise.

Accessories for Schedule Timer

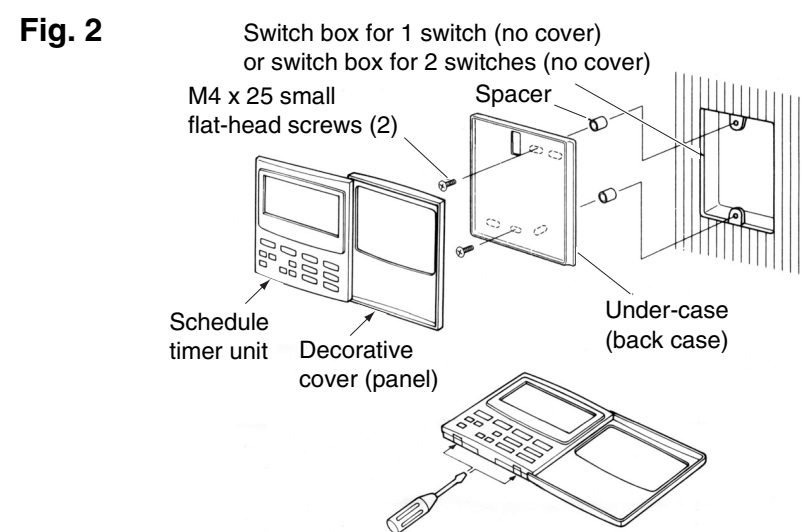
No.	Supplied parts	Q'ty	No.	Supplied parts	Q'ty
1	CN61 (T10) power wire (with current fuse) *1	1	4	Spacers	2
2	1.2m length of connecting wire *2	1	5	Wire joints	6
3	Screws M4 x 25	2	6	Operation manual	2
			7	Installation manual	1

- *1 If the fuse blows as a result of a wiring short-circuit, miswiring, or overcurrent, replace it with a 125 V, 0.1 A fuse (Fig. 1).
- *2 Use this connecting wire when using with weekly timer mode. Connect the provided connecting wire (4 cores) to the power terminal (4P connector) of the schedule timer unit. (Fig. 5)



Installing the Schedule Timer

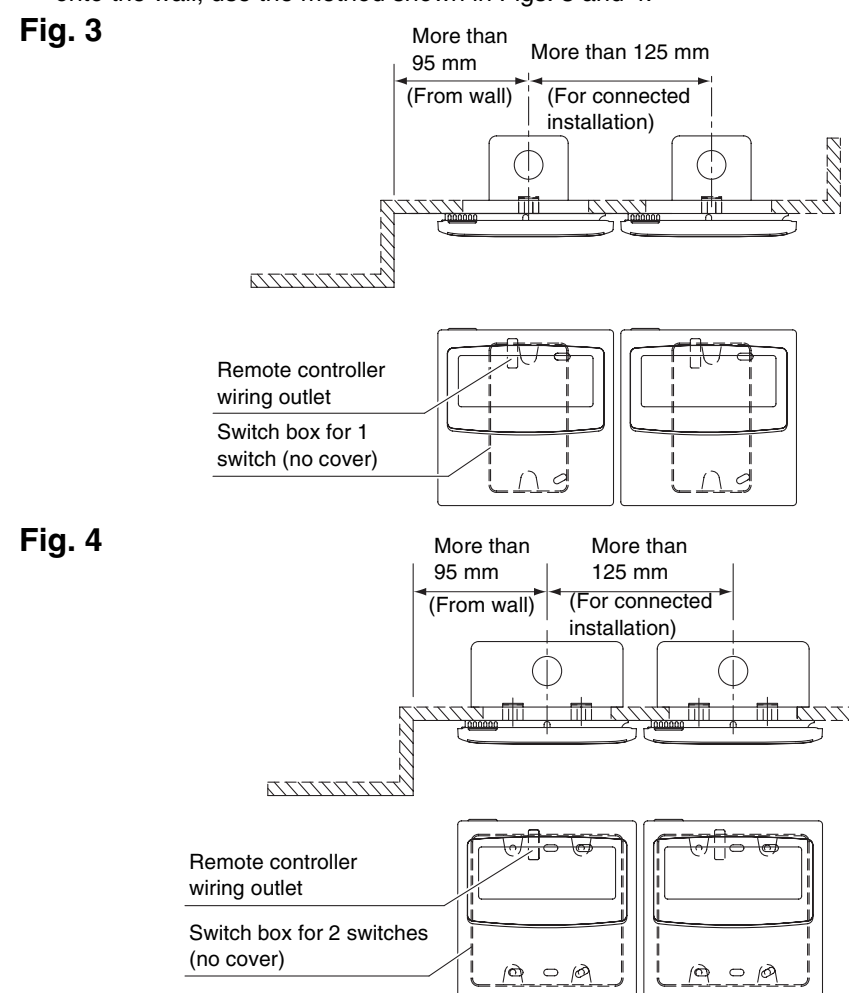
- <Note 1> Avoid twisting the inter-unit control wiring or the input/output wiring together with power or other wiring, and avoid running them in the same metal conduit. Doing so can cause malfunction.
- <Note 2> Install the schedule timer at a location away from any sources of electrical noise.
- <Note 3> Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.



- 1) Open the panel on the schedule timer unit. Insert a standard (flathead) screwdriver or similar tool into the notches on the bottom of the schedule timer unit to open and remove the back case.
- 2) Use the 2 supplied M4 small screws and install the schedule timer back case onto the switch box. Before installing, use a screwdriver or similar tool to press on and open the screw holes that correspond to the JIS box that is used. When fastening the case, use spacers and do not tighten the screws too much. If the schedule timer does not fit tightly against the wall, cut the spacers as required to make adjustments.
- 3) Connect the supplied power wire (2-core) and inter-unit control wire (3-core) to the schedule timer unit. ("Wiring for Weekly Timer mode")
- 4) Align the schedule timer unit with the tabs on the back case and press to install it.

Installation of connected schedule timers

- When installing schedule timers (remote controller switches, system controllers, etc.) onto the wall, use the method shown in Figs. 3 and 4.

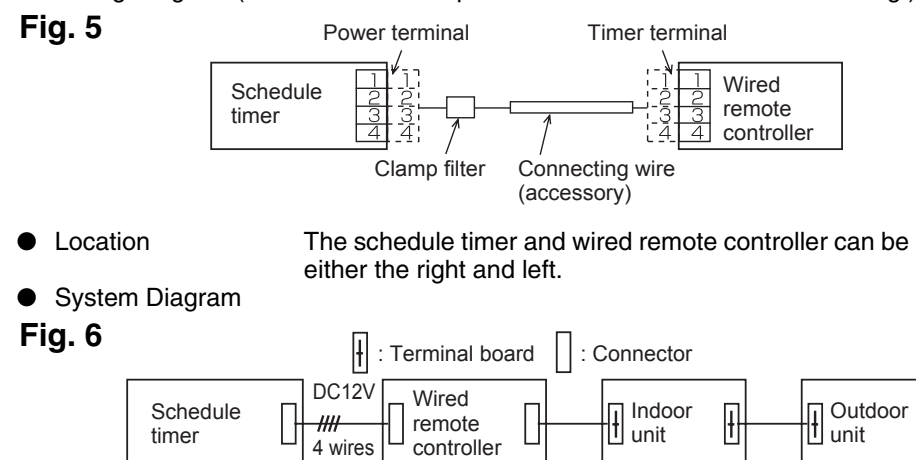


* For maintenance reasons, leave a gap of 25 mm or more between the remote controller switch and schedule timer if they are arranged in parallel above/below each other.

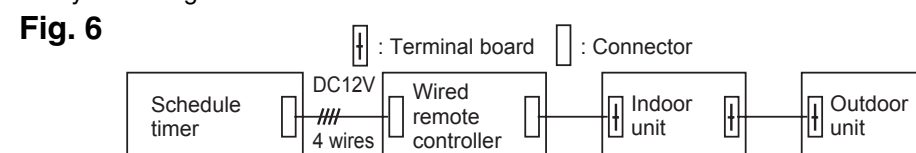
This remote controller has two methods of usage with the weekly timer and the schedule timer. The wiring method and switch setting are different in each case.

Wiring for Weekly Timer mode

- Wiring Diagram (Be sure to use the provided wires for the connection wiring.)

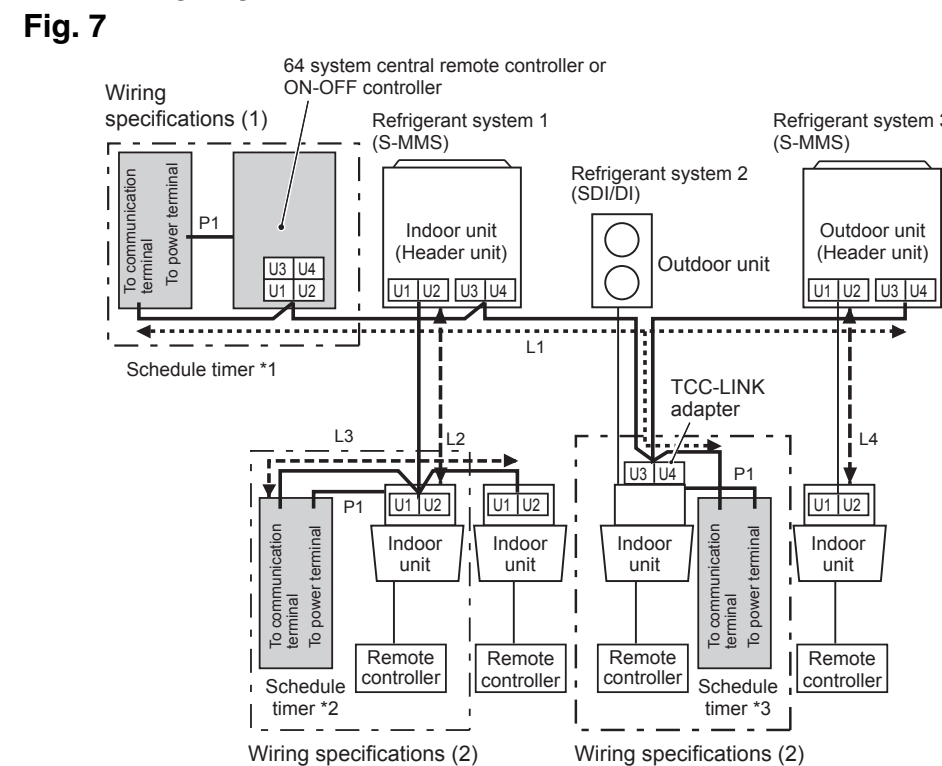


- Location: The schedule timer and wired remote controller can be located on either the right and left.
- System Diagram



Wiring for the Schedule Timer mode

<Basic Wiring Diagram>



- *1 In the case the schedule timer is connected to the 64 system central remote controller or ON-OFF controller
- *2 In the case the schedule timer is connected to the indoor unit for S-MMS
- *3 In the case the schedule timer is connected to the TCC-LINK adapter

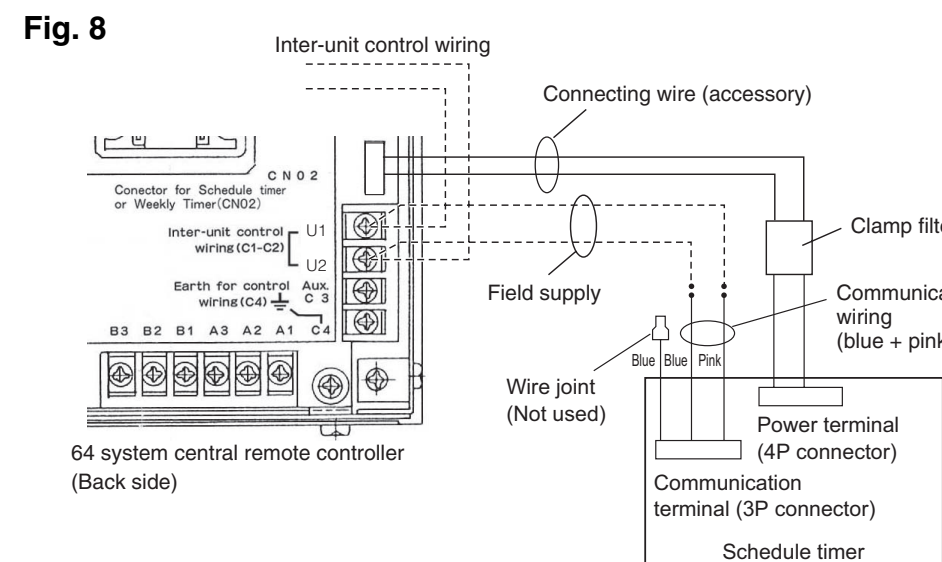
Wiring	Max. Length	Electric cable specifications
P1: Power wire for schedule timer	100m	0.5mm ²
L1: Central control system wiring	Less than 1000m	MVVS 1.25mm ²
L2,L3,L4: Indoor/Outdoor communication line	Less than 2000m	MVVS 2.0 mm ²

P1, L1, L2, L3 and L4 have no polarity.

- <Note>
- This schedule timer is device connected to TCC-LINK.
 - The maximum number of schedule timer units that can be connected is 8. (A maximum of 10 schedule timer units and other central control devices can be connected.)
 - In the case of SDI/DI, an extra TCC-LINK adapter may be required.

- **Wiring**
 - The schedule timer wiring can be connected by the following two methods. Select one of these connection methods according to the actual installation location. When wiring, extend the lengths of the wires using wire joints (accessory) and extension wires (field supply).
- <Note>
- When installing multiple schedule timers, avoid the use of communication line.
 - Connection diagram (Be sure to use the provided wires as the power wiring.)

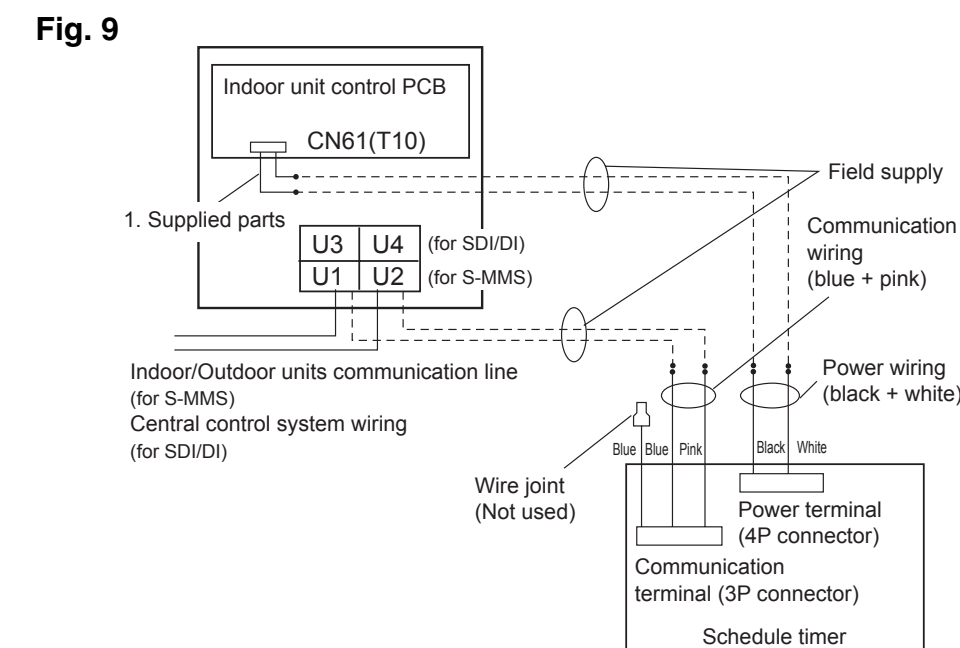
Wiring specifications (1)
If a 64 system central remote controller (or ON-OFF controller) is installed (power is supplied from the 64 system central remote controller):



- Wiring procedures: Connect the provided connecting wire to the power terminal (4P connector) of the schedule timer. The terminal attached to the clamp filter must be connected to the schedule timer.
- The power wiring and communication wiring has no polarity.

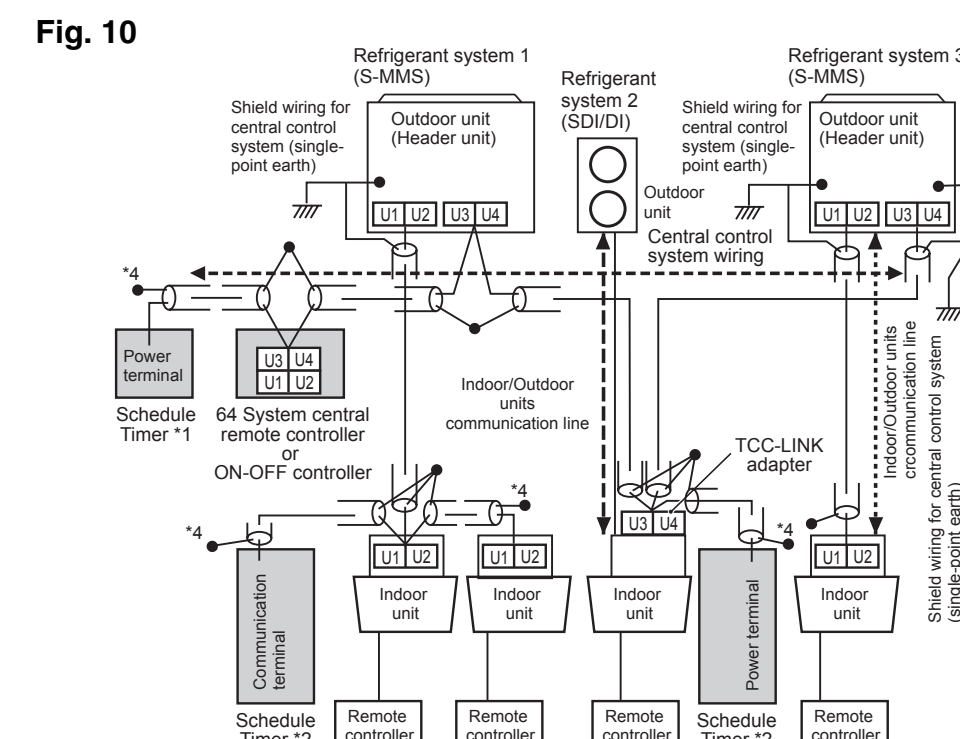
Wiring specifications (2)
If a 64 system central remote controller (or ON-OFF controller) is not installed (power is supplied from the indoor unit):

- <Note>
- (1) The only functions of the schedule timer are indoor unit ON/OFF and remote controller enable/disable operations.
 - (2) It is required that during installation, a 64 system central remote controller or wired remote controller be installed next to the schedule timer so that operation mode and other information can be checked.
 - (3) If the 64 system central remote controller or other central control device is not present, the schedule timer cannot be used in combination with a system that does not utilize remote controllers including high wall (KRT series) systems.



- The power wiring and communication wiring has no polarity.
- The length of the power wiring must be no more than 100 m.

The ground method of a shield wire (when using with the Schedule Timer)



- *1 In the case the schedule timer is connected to the 64 system central remote controller or ON-OFF controller
- *2 In the case the schedule timer is connected to the indoor unit for S-MMS
- *3 In the case the schedule timer is connected to the TCC-LINK adapter

<Grounding of the shield wires>

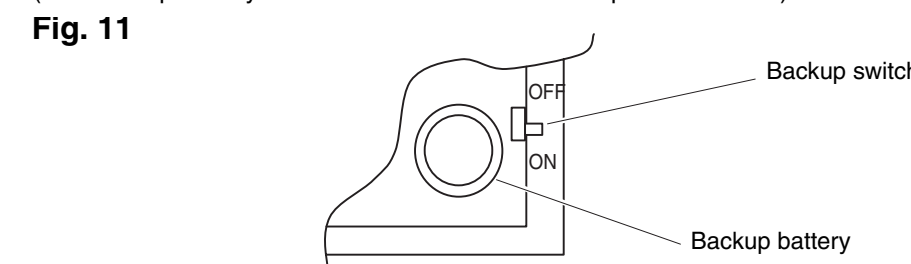
- The shield wires of the central control wiring should be connected at closed end, and these should be single-point ground.
- The terminal end (*4) of the shield wires should be open and insulated.

Explanation to Customers

- After work is completed, present the Operation Manual and Information for the Person in Charge of Installation (Electrical) Work to the customer.
- Explain to the customer the methods for use of the system, as described in the Operation Manual.

Memory Backup Switch

After installation is completed, check that the backup switch on the reverse side of the schedule timer PCB is turned on. (The backup battery will retain the current time for up to 100 hours.)



When using with the Weekly-Timer, all switch settings except S41-1 must be OFF.
About the Setting Switches

- Complete the switch settings before turning ON the schedule timer power.

S41

Function selector switch (1) settings

- In the case of using the Schedule-Timer: (U1-U2 network) set to OFF
- In the case of using the Weekly-Timer: (4-core lead to remote) set to ON *

Timer Group Settings (2, 3)

Function	2	3
1 timer group - fixed	OFF	OFF
4 timer group - fixed	OFF	ON
8 timer group - fixed	ON	OFF
Manual group setting	ON	ON

For details of the timer groups, refer to the Creating Timer Groups when using the Schedule Timer as described in below.

Central Control Main/Sub Switching (4)

Sub: OFF
Main: ON

(Central Control Devices center/ Terminal switching)

(1) Set to "sub" (OFF) when using together with the 64 system central remote controller. (Factory setting: Sub)

(2) Set to "main" (ON) when using together with an ON-OFF controller, wired remote controller or wireless remote controller.

* When using with multiple schedule timer units, set only 1 unit to "main" (ON) and set the remainder to "sub" (OFF).

Schedule Timer Address Settings (5, 6, 7)

A maximum of 8 schedule timer units can be connected to the inter-unit control wiring (central control wiring). If multiple units are connected, use the setting switches and allocate the addresses, taking care to avoid duplication.

Address	5	6	7
Address 1	OFF	OFF	OFF
Address 2	OFF	OFF	ON
Address 3	OFF	ON	OFF
Address 4	OFF	ON	ON
Address 5	ON	OFF	OFF
Address 6	ON	OFF	ON
Address 7	ON	ON	OFF
Address 8	ON	ON	ON

Holiday and Operation Disable Settings for Each Group (8).

When this switch is set to OFF, units are all controlled together. When this switch is ON, the units are controlled by the settings for each timer group.

(For details of the timer groups, refer to the Creating Timer Groups when using the Schedule Timer as described in below.)

S42

Simultaneous time communications (5)

Disabled: OFF
Enabled: ON

When multiple schedule timers are installed, set this switch to ON to perform time settings for multiple units simultaneously. One minute after the time is set, the time at the other schedule timers will change to match the set time. (Ordinarily this switch is set to OFF.)

Spare (6, 7, 8)

Be sure that these switches are OFF when the system is used.

* These switches are all OFF at the time of delivery.

- The following switch setting is required when selecting remote controller enable/disable button to enable with the schedule timer.
- Remote controller disabled item Switch (2, 3, 4)**

When remote controller enable/disable is used with the schedule timer, set the remote controller item switches 2, 3 and 4 to the specific item according to the following items.

2: Temperature setting
3: Operation mode
4: Start/stop

OFF: No setting
ON: Setting

Remote controller disabled items	64 system central remote controller indication	2	3	4
Mode 0 Remote controller enable/disable not used	No indication	OFF	OFF	OFF
Mode 1 Start/stop	Central 1	OFF	OFF	ON
Mode 2 Operation mode	Central 4	OFF	ON	OFF
Mode 3 Operation mode + Start/stop	Central	OFF	ON	ON
Mode 4 Temperature setting	Central	ON	OFF	OFF
Mode 5 Temperature setting + Start/stop	Central	ON	OFF	ON
Mode 6 Temperature setting + Start/stop	Central 3	ON	ON	OFF
Mode 7 Temperature setting + Operation mode + Start/stop	Central	ON	ON	ON

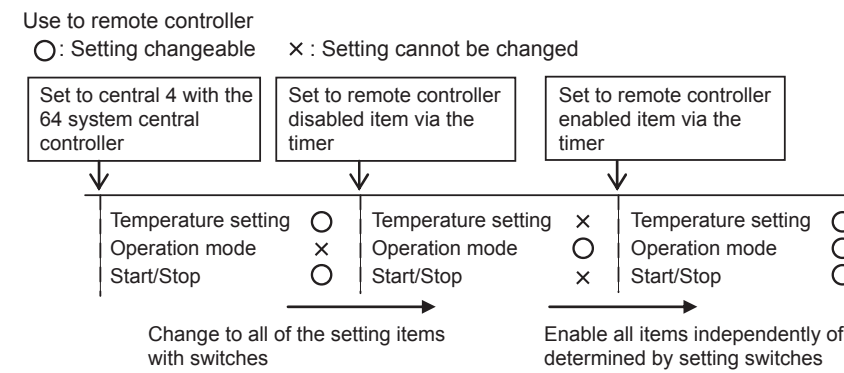
- All switch settings should be set to OFF when enable/disable is not used.
- Central 1 - 4 are the designations for the remote-controller disable modes for the 64 system central remote controller.
- After the above setting is completed, perform the enable/disable setting using the remote controller (H/LOCK) button with schedule timer. For more information, refer to [Setting Up Programmed Operations] in the Operation Manual of the Schedule Timer.

Continue from the previous section :

Remote Controller Enable Items Switch (1) (Substitute/Addition Selector)

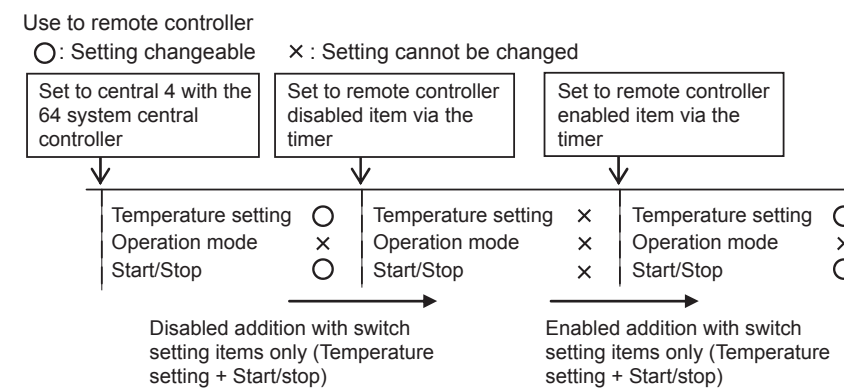
OFF: (Substitute mode)
All setting contents will be substituted to setting contents using the remote controller disabled item switches 2, 3 and 4 as opposed to the remote controller enable/disable items in setting presently.

Example: In the case of setting to [Mode 5] during remote controller disabled item (Temperature setting+ Start/stop mode)



ON: (Addition mode)
Items set to ON using the remote controller disabled item switches 2, 3 and 4 will be added to the remote controller enable/disable items in the current setting.

Example: In the case of setting to [Mode 5] during remote controller disabled item (Temperature setting+ Start/stop mode)



Setting Central Control Addresses when using with the Schedule Timer

- When using the schedule timer, central control addresses setting of the indoor unit is required.

(If central control address of the indoor unit has not been set, the schedule timer cannot be used to start and stop these units normally. Therefore, be sure to set the central control addresses of the indoor unit before turning on the power of the schedule timer.)

- Turn on the power of all the indoor units.
- Confirm the setting for the system addresses, indoor addresses and group addresses of all indoor units. If a wrong setting is found, reset the system addresses, indoor addresses and group addresses correctly.
- Perform the address settings that turn off the power of the indoor units.
 - Central control address setting using the wired remote controller

<Perform the following procedures, 1 to 5, to all the indoor units>

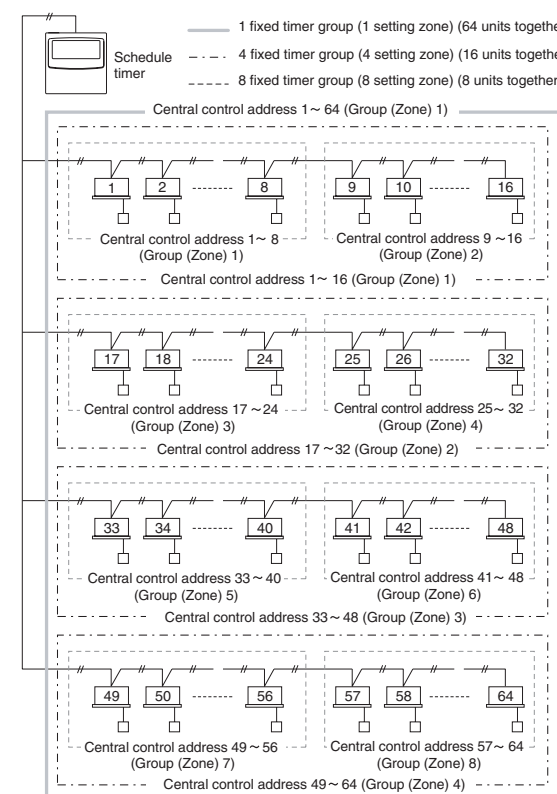
- Press and hold the wired remote controller TEST button and VENT button for at least 4 seconds.
- Assign the item code (DN) to 03 using the temperature setting button (A/▽).
- Set the desired control address (1 to 64) using the timer button (A/▽).
- Press the TEST button.
(Confirm the remote controller indication changes from flashing to fully lit.)
- After setting is completed, press the TEST button and then return the unit to general off status.
(In this case, it will take about 1 minute for normal remote controller operation to resume.)

<Central control address setting using the 64 system central remote controller>
Refer to the [Address switch setting] in the [Installation manual of 64 system central remote controller] that is supplied to the 64 system central remote controller.

Creating Timer Groups when using the Schedule Timer

- The schedule timer can be used to create up to 8 timer groups (8 zones).
- <Setting fixed timer groups (zones)>**

Fig. 12



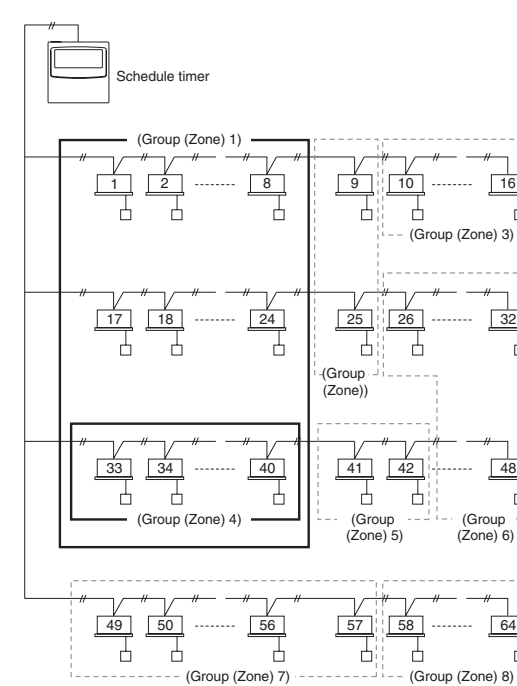
Procedure for making fixed timer group settings (zone)

- First, use a 64 system central remote controller or the wired remote controllers to set the central control addresses, as assigned in the figure above, to the indoor units that will be subject to group timer control.
- Next, use S41 switches 2 and 3 to set the number of timer groups (zones) you wish to create.
(For setting of switches 2 and 3, refer to the [About the Setting Switches] item above.)
- Finally, turn on the schedule timer power. Initial communications are performed. (5L Rn flashes in the display.) The normal display appears after several minutes, and the timer group settings are confirmed.

<Procedure for making manual timer group settings (zone)>

Manual timer group settings allow central control addresses to be assigned freely within the timer groups such as the setting example below.

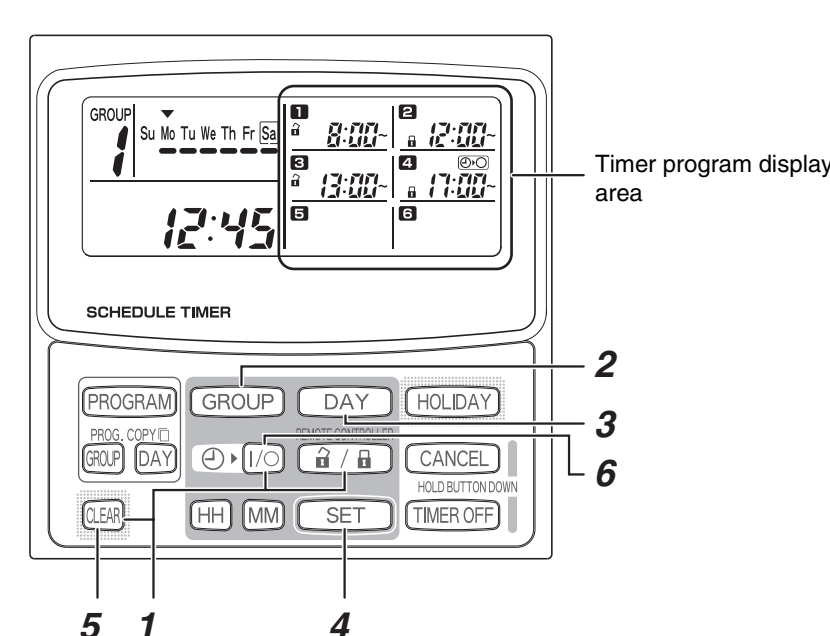
Fig. 13
Setting example



Procedure for making manual timer group settings (zone)

- Turn on (manual settings) S41 setting switches 2 and 3, then turn on the power. Restart and initial communications are performed. (5L Rn flashes in the display.) The normal display appears after several minutes.
- When the normal display appears, press and hold the schedule timer CLEAR button, the I/O button, and the H/LOCK button 1 for 4 seconds or longer. "Rd-0!" appears, flashing, in the present time display. (Rd indicates "address" and 0 is the central address number.)
- Use the GROUP button 2 in the Setting buttons area to select the timer group for programmed operation. Then use the DAY button 3 in the Setting buttons area to select the central control address to assign and register for that timer group. Press the SET button 4 to register the selected central control address. (Registered central control address appears on the [Timer program] display area of the schedule timer.)
- To continue registering addresses, repeat step (3). Central control address numbers will be added to the right side on the [Timer program] display area of the schedule timer. To cancel a registered central control address, use the GROUP button 2 in the Setting buttons area to select the timer group, then use the DAY button 3 in the Setting buttons area to select the central control address and press the CLEAR button 5.
- When registration is completed, press the I/O button 6. The schedule timer restarts automatically and performs initial communications. (5L Rn flashes in the display.) The normal display appears after several minutes, and the manually assigned timer group settings are confirmed.

Fig. 14



- During manual timer group settings, the schedule timer can be used to create up to 8 groups (8 zones), and the central control addresses can be registered up to 64 units in 1 group (1 zone). In addition, one of the central control addresses can be set in multiple timer groups. (Indoor units of the central control address 33-40 are performed to start/stop and enable/disable operation according to the programmed operation for both timer group (zone) 1 and 4 to illustrate with reference to the thick frame marking as shown in above setting example of Fig. 13)

Checking the Central Control Addresses and Operating the Units that are Controlled by the Schedule Timer

- The schedule timer communicates with the indoor units to check which central control addresses can be controlled with the current timer control. The schedule timer can then be used to start and stop these units.
 - Press and hold the schedule timer (H/LOCK) button, TIMER OFF button, and CLEAR button for 4 seconds or longer. "Rd-" (central control address) appears in sequence, blinking.
 - Use the GROUP button in the area to display the blinking central control addresses in sequential order. In this way, it is possible to check which central control addresses in the displayed timer group can be operated by the timer.
 - With the selected timer group displayed, press the timer (I/O) button. Each time the button is pressed the indoor units in the displayed timer group start or stop. Pressing the (H/LOCK) button in this mode permits all items (operation start/stop, operation mode, temperature setting items) at the indoor units in the displayed timer group where remote controller prohibit is in effect.
 - After checking the addresses and operating the units, press and hold the CANCEL button for 2 seconds or longer. The schedule timer display returns to the normal display and all controllable indoor units stop.

Installation Work Plan

- Use the wired remote controller to check the unit No. of the indoor units. (Start the A/C unit with the wired remote controller, then press the remote controller UNIT SELECT button once to display the unit No. of the master unit.)

Schedule timer	Fixed timer group	Central control addresses	Indoor unit Unit No. System - Indoor	Room name			
1 At the time of shipment	1	4	8	1	-		
				2	-		
				3	-		
				4	-		
				5	-		
				6	-		
				7	-		
				8	-		
	2	1	1	1	9	-	
					10	-	
					11	-	
					12	-	
					13	-	
					14	-	
					15	-	
					16	-	
		2	2	1	1	17	-
						18	-
						19	-
						20	-
						21	-
						22	-
						23	-
						24	-
	3	2	2	1	25	-	
					26	-	
					27	-	
					28	-	
					29	-	
					30	-	
					31	-	
					32	-	
		3	3	2	1	33	-
						34	-
						35	-
						36	-
						37	-
						38	-
						39	-
						40	-
	4	3	3	1	41	-	
					42	-	
					43	-	
					44	-	
					45	-	
					46	-	
					47	-	
					48	-	
		4	4	3	1	49	-
						50	-
						51	-
						52	-
						53	-
						54	-
						55	-
						56	-
	4	4	3	1	57	-	
					58	-	
					59	-	
					60	-	
					61	-	
					62	-	
					63	-	
					64	-	