

3-2. Advanced touch level signals controller [AT-50B]



Dual Set Point

■ Functions

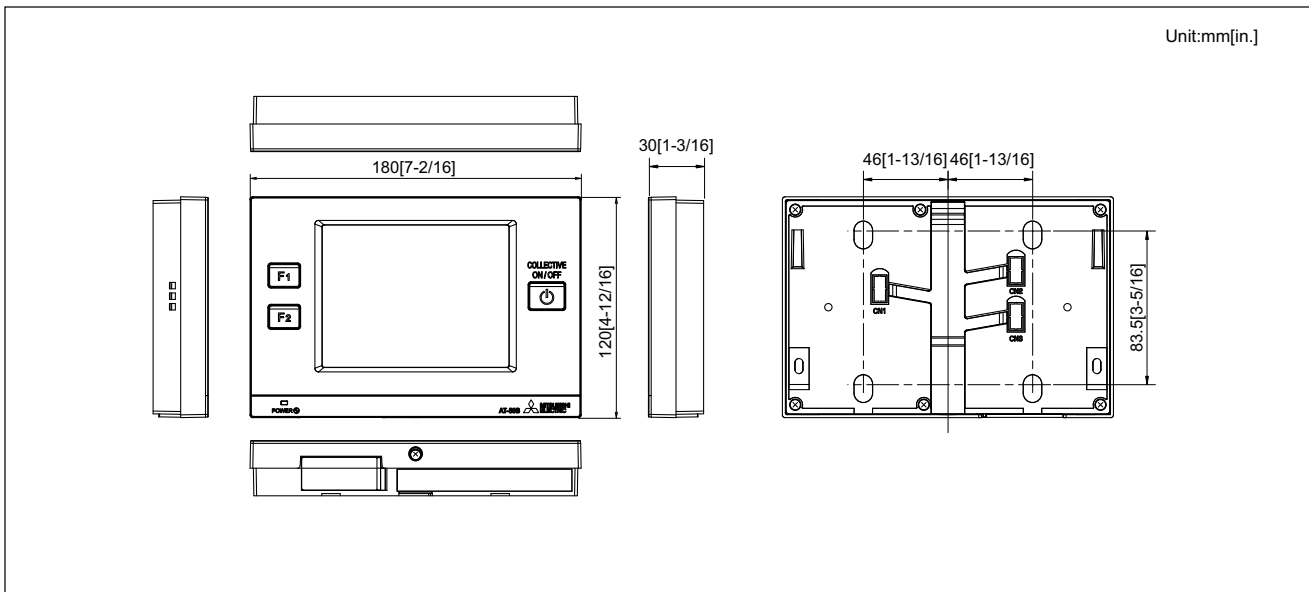
□:Each unit ○:Each group ●:Each block ✓:Available  
 △:Each floor ◎:Group or collective ✕:Not available

Item	Description	Operations	Display
ON/OFF	ON and OFF operation for the air conditioner units. The Batch Operation ON/OFF button will light up when one or more air conditioning units are operated.	◎	◎
Operation mode switching	Switches between Cool/Dry/Auto/Fan/Heat. Operation modes vary depending on the air conditioner unit. Auto mode is for CITY MULTI R2 and WR2 series only.	◎	◎
Temperature setting	The temperature can be set within the following range. Cool/Dry: 19°C - 35°C/67°F - 95°F Heat: 4.5°C - 28°C/40°F - 83°F Auto (single set point): 19°C - 28°C/67°F - 83°F Auto (dual set points) [Cool] Same as the set temp. range for Cool mode. [Heat] Same as the set temp. range for Heat mode. * Set temperature range varies depending on the model.	◎	◎
Fan speed setting	Models with 5 air flow speed settings: Hi/Mid-1/Mid-2/Low, Auto Models with 4 air flow speed settings: Hi/Mid-1/Mid-2/Low Models with 3 air flow speed settings: Hi/Mid/Low Models with 2 air flow speed settings: Hi/Low * Fan speed setting (including Auto) varies depending on the model.	◎	○
Air flow direction setting	Air flow direction angles 4-angle or 5-angle, Swing, Auto Louver ON/OFF * Air flow direction settings vary depending on the model.	◎	○
Permit/Prohibit	The ON/OFF, operation mode, setting temperature, fan speed, air direction, filter sign reset operations, and timer using the local remote controllers can be prohibited. Only ON/OFF and filter reset can be prohibited for the LOSSNAY group. * The settable items vary depending on the models.	◎	◎
Operation lock	The operation lock can be set to the input operation of AT-50B. Each button can be set. (Function Button 1, Function Button2, Collective ON/OFF, Touch Panel) Each function can be set. (Operation mode, Setting temperature, Fan speed, Menu button) The password for the lock release can be set.	◎	◎
Error display	When an error is currently occurring on an air conditioner unit, the afflicted unit and the error code are displayed. * When an error occurs, the "ON/OFF" LED flashes. The operation monitor screen show abnormal icon over the unit. The error monitor screen shows the abnormal unit address and error code. The error log monitor screen shows the time and date, the abnormal unit address, error code and source of detection.	✕	□◎
Schedule operation	Weekly schedule setting up to 12 pattern is available. In one pattern, up to 16 setting of "ON/OFF", "Operation mode", "Set Temperature", "Fan speed", "Air flow direction" and "Permit / Prohibit local operation" can be scheduled. Two types of weekly schedule(Summer/Winter) can be set. Today's schedule setting up to 5 pattern in available. * Time setting unit: 5 minute /unit	○	○
Night setback setting	This function helps keep the indoor temperature in the temperature range while the units are stopped and during the time this function is effective.	◎	◎
Ventilation (independent)	Switches the mode "Bypass/Heat recovery/Auto" for LOSSNAY groups.	◎	◎
Ventilation (interlocked)	The LOSSNAY will run in interlock with the operation of indoor unit. The mode cannot be changed. The LED will turn ON during operation after interlocking.	◎	◎
Temperature-set limitation	Batch-setting to temperature range limit at cooling, heating, and auto mode. This function cannot be used with the MA remote controller. (Depends on the indoor unit model.)	◎	◎
Specific mode operation prohibit (Cooling prohibit, heating prohibit, cooling/heating prohibit)	When set as the main controller, operation of the following modes with the local remote controllers can be prohibited. When cooling is prohibited: Cooling, dry, automatic can not be chosen. When heating is prohibited: Heating, automatic can not be chosen. When cooling/heating is prohibited: Cooling, dry, heating, automatic can not be chosen.	◎	◎
System changeover	Operation mode can be switched to an optimal mode depending on indoor temperature setting and target temperature of each group or a representative indoor unit. * When this function is used, the system changeover function of the outdoor unit cannot be used.	●	-

- AT-50B features a 5 inch color LCD touch panel. The settings for air conditioning units can be changed by touching the corresponding icons on the display. On the panel of AT-50B are 3 buttons; ON/OFF, F1 and F2 enabling simple and quick operation.
- One AT-50B can control up to 50 groups/units of air conditioners.

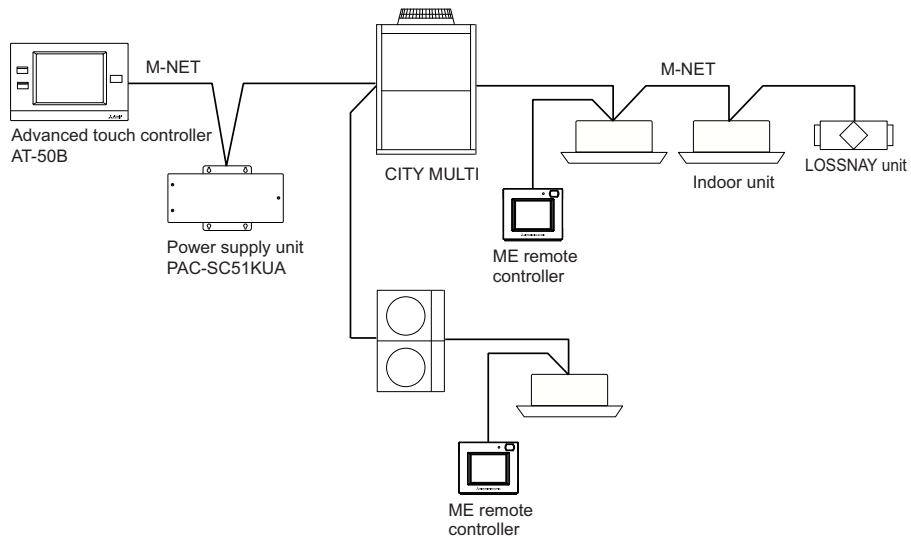
Item	Description	Operations	Display
External input (Emergency stop input, etc.)	The following input with level signals or pulse signals are available. Level signal: "Emergency stop input" or "Collective ON/OFF" Pulse signal: "Collective ON/OFF" or "Local remote controller prohibit/permit" One input can be selected from those above. * An external input/output adapter (PAC-YT51HAA (sold separately)) is required. Relays and DC power supply or other devices must be prepared at the site.	◎	◎
External output (Error output, operation output)	"ON/OFF" and "error/normal" are output with the level signal. * An external input/output adapter (PAC-YT51HAA (sold separately)) is required. Relays and DC power supply or other devices must be prepared at the site.	◎	◎
Checking the Gas Amount	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.	□	□
Main system controller /Sub system controller	AT-50B can be set to Sub System controller. When connecting multiple system controllers, designate the system controller with many functions as the "Main", and set the system controllers with few functions as the "Sub".	✓	-
Function Buttons (F1 Button, F2 Button)	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)	◎	◎

■ External dimension

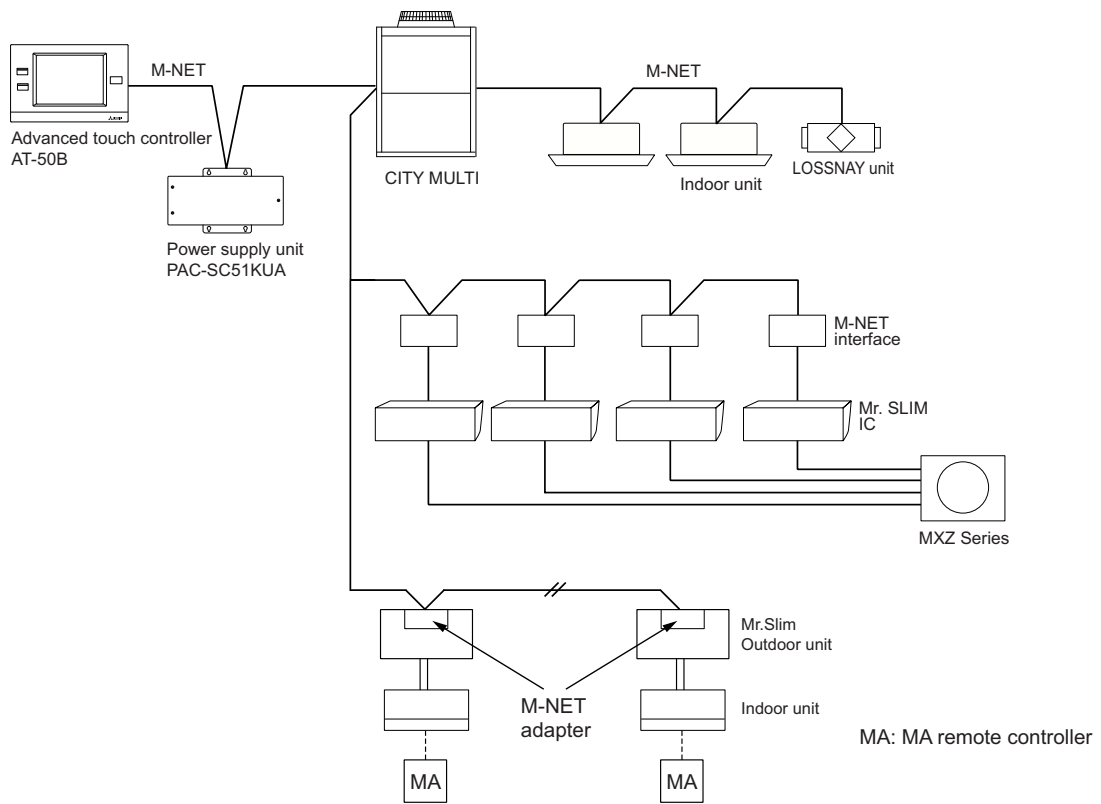


■ System example

(1) Connection with CITY MULTI units



(2) Connection with CITY MULTI and Mr.SLIM units



1. Power supply to AT-50B

AT-50B needs DC power supply of M-NET (24~32VDC) for centralized control transmission use, operation.

(1). Power supply of M-NET from power supply unit PAC-SC51KUA.

Power supply unit PAC-SC51KUA is recommended for AT-50B. See the diagram below ; for details, please refer to the installation manual of Power supply unit PAC-SC51KUA

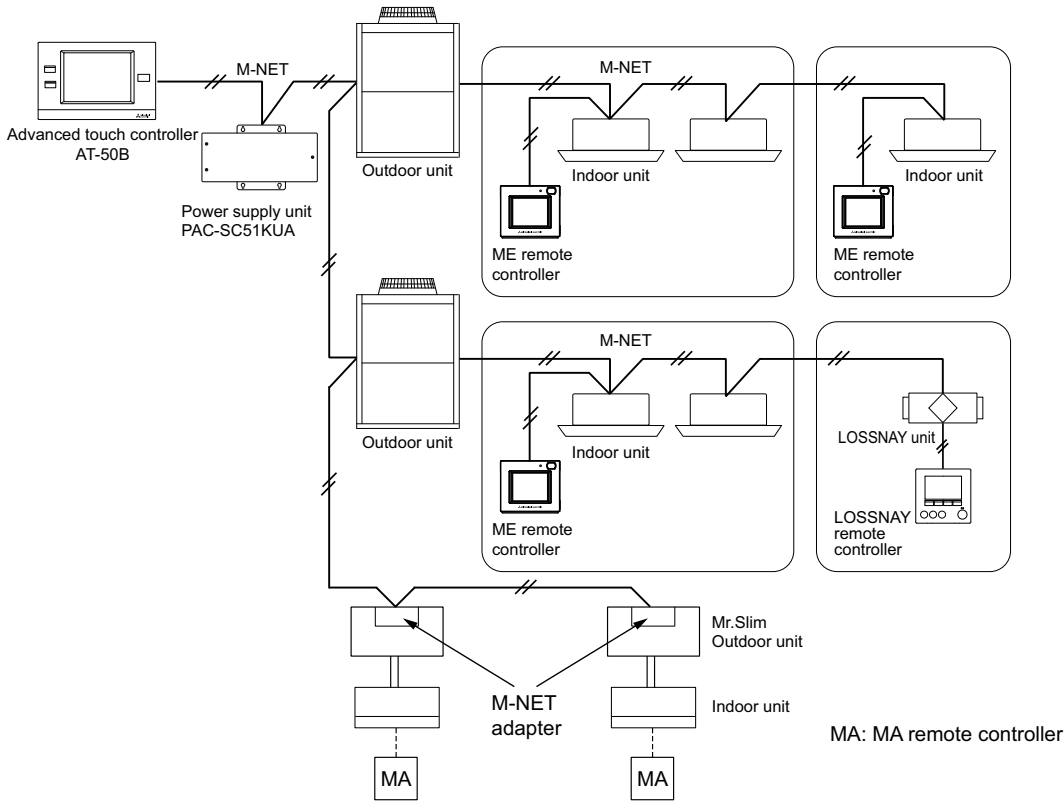


Fig. 1 Basic structure of AT-50B and PAC-SC51KUA

(2). Power supply of M-NET from outdoor unit connector TB7.

As shown on Fig. 2, AT-50B receives power supply of M-NET from R410A outdoor unit connector TB7.

In case one of the outdoor units should change its power supply, switch CN41 to CN40.

\*NOTE: This method applies to R410A CITY MULTI outdoor unit except PUMY (S series)

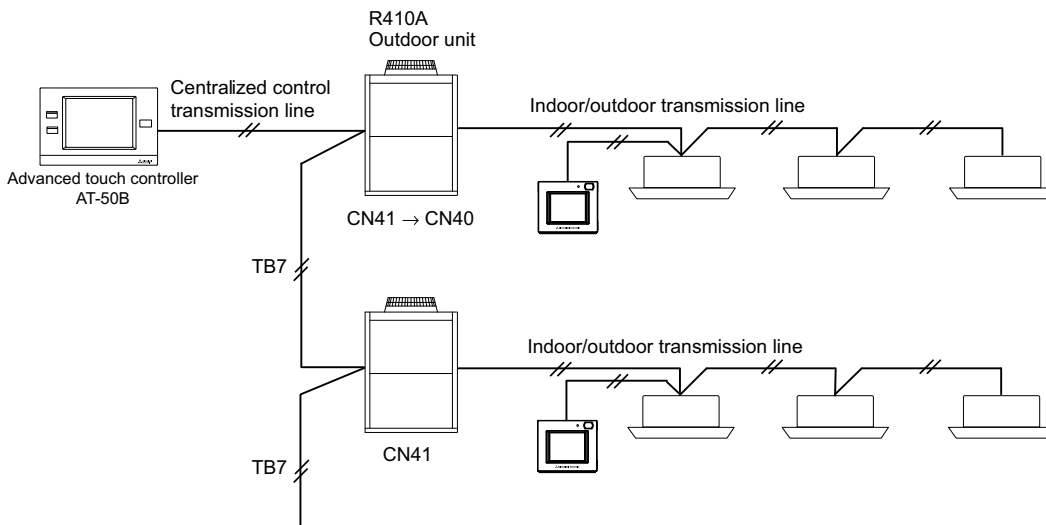


Fig. 2 AT-50B, TB7 scheme

- (3) Power supply of M-NET from outdoor unit connector TB3.  
 AT-50B can also receive power supply from R410A/R407C/R22 outdoor unit connector TB3. However, if the outdoor unit shuts down, AT-50B will also automatically shut down. Therefore, this scheme is not recommended for air conditioning system consisting of multiple outdoor units.

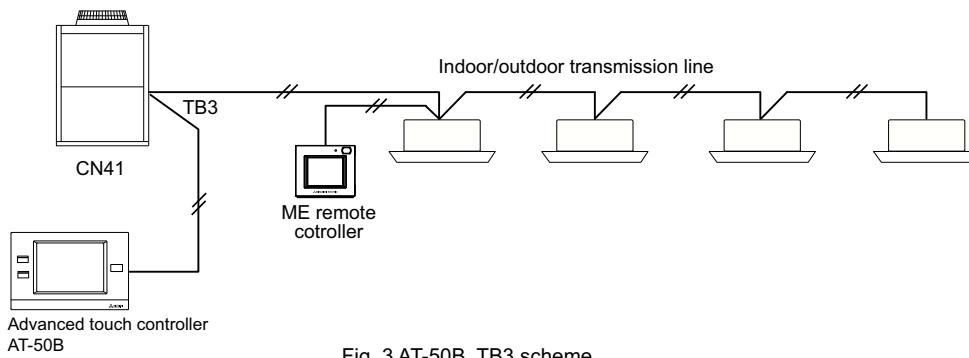
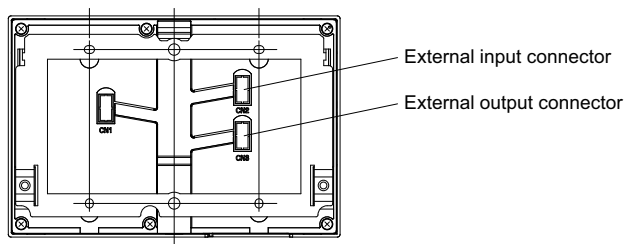


Fig. 3 AT-50B, TB3 scheme.

## 2. External input/output usage



### (1). External signal input function

※ External signal input requires the external I/O adapter (Model: PAC-YT51HAA) sold separately.

#### 1). External input

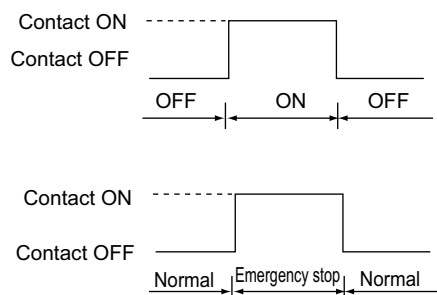
External no-voltage contact signal can be used to send signals indicating the following status of all air conditioning units that are controlled : Emergency stop/Normal, ON/OFF, and local remote controller operation Prohibit/Permit.

The above settings can be made using the external input setting on the Initial Setting screen accessed from the Service Menu screen.

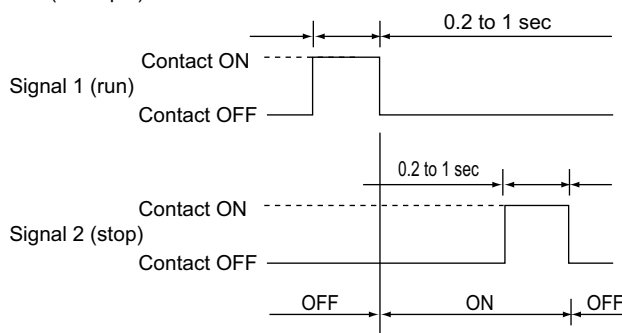
No	External signal input function	Remarks
1	Do not use external input signal (factory setting)	
2	Execute emergency stop/normal with level signal	The local remote controller ON/OFF operations, and the controller ON/OFF operation and prohibit/enable change operations will be prohibited during emergency stop.
3	Perform ON/OFF with level signal	The local remote controller ON/OFF operations, and the controller ON/OFF operations and prohibit/enable change operations will be prohibited.
4	Perform ON/OFF, prohibit/enable with pulse signals.	Set the pulse width while the contact is ON to 0.2 to 1 sec.

#### 2). Level signal and pulse signal

##### (A) Level signal



##### (B) Pulse signal (Example) for ON/OFF



※ The prohibit/enable input is the same.

#### 3). External input specifications

CN2	Lead wire	Emergency stop/normal level signal	ON/OFF, level signal	ON/OFF, prohibit/enable pulse signal
No.1	Green	Built-in power supply for external input (DC5V)		
No.2	Yellow	Emergency stop/normal input	ON/OFF input	ON input
No.3	Orange	Not used	Not used	OFF input
No.4	Red	Not used	Not used	Local remote controller operation prohibit input
No.5	Brown	Not used	Not used	Local remote controller operation enable input

##### (A) For level signal

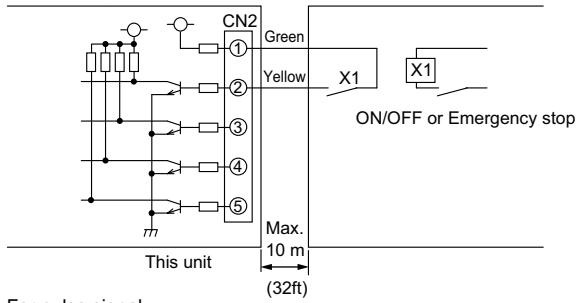
- ① When the emergency stop/normal signal is selected, the status will change from normal to emergency stop when the external input signal contact changes from OFF to ON, and will change from emergency stop to normal when the contact changes from ON to OFF. Emergency stop signal will bring the air conditioners to stop, and canceling the emergency stop will not automatically reset these units. To go back to the previous operation status, they must be manually turned back on.
- ② When the ON/OFF signal is selected, the status will change from OFF to ON when the external input signal contact changes from OFF to ON, and will change from ON to OFF when the contact changes from ON to OFF.

##### (B) For pulse signal

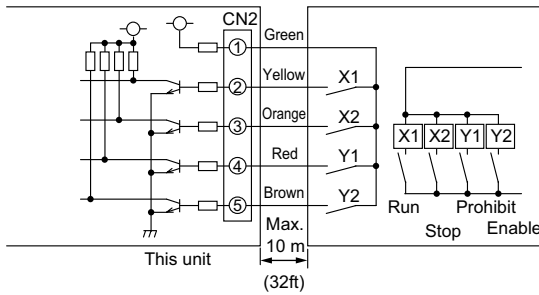
- ① Even if the ON signal is input during ON, the status will remain ON.
- ② If local remote controller operation is prohibited, ON/OFF, operation mode, set temperature, filter sign reset, fan speed, and air direction settings will be prohibited, and also timer (schedule) settings from the local remote controllers will be deactivated. Depending on the models of the connected air conditioning units and remote controllers, operation of some of the items above may not be disabled.
- ③ Set the pulse width (contact ON time) to 0.2 to 1 sec.

4). Recommended circuit example

(A) For level signal



(B) For pulse signal



- ① The relays and extension cables, etc. must be prepared separately at the site.
- ② Use a no-voltage contact and minute load relay (minimum application load 5VDC-1mA).
- ③ The length of the connection cable extension should not exceed 10 m (32 ft). (Use a cable of 0.3 mm<sup>2</sup> (22 AWG) or thicker.)
- ④ Cut of the cable not being used close the connector and properly insulate the cut off ends with tape or the like.

(2). External signal output function

※ External signal output requires the external I/o adapter (Model: PAC-YT51HAA) sold separately.

1). External output

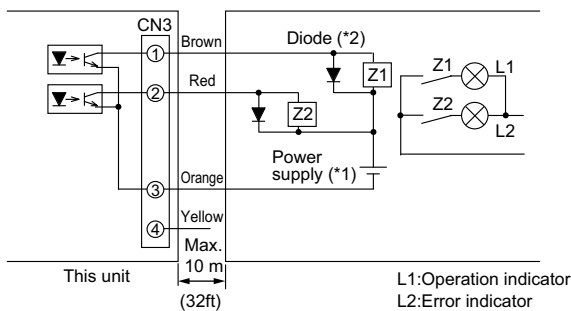
When one or more air conditioners are running, the "ON" signal will be output and if a malfunction occurs in one or more air conditioners, the "Malfunction" signal will be shown.

2). External output specifications

CN 3	Lead wire	Details of each terminal
No.1	Brown	ON/OFF
No.2	Red	Malfunction/normal
No.3	Orange	Common (External ground)
No.4	Yellow	

① "ON" signal and "Malfunction" signal will both be output.

3). Recommended circuit example



Use Z1 and Z2 relays having the following specifications.  
 Operation coil  
 Rated voltage : 12VDC, 24VDC  
 Power Consumption : 0.9W or less  
 (\*1) Prepare a power supply separately according to the relay being used. (12VDC or 24VDC)  
 (\*2) Always insert a diode on both ends of the relay coil.

- ① Each element will turn on while ON operation or a malfunction occurs.
- ② The connection cable can be extended up to 10m (32ft).
- ③ The relays, lamps, diodes and extension cables, etc. must be prepared separately at the site.

3. Screens of AT-50B



GRID (S)



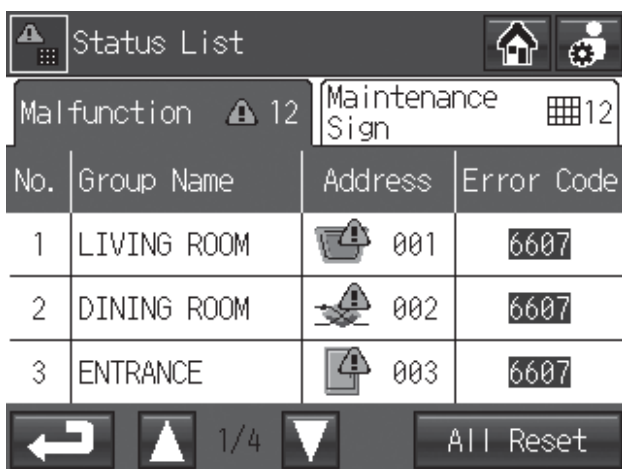
GRID (L)



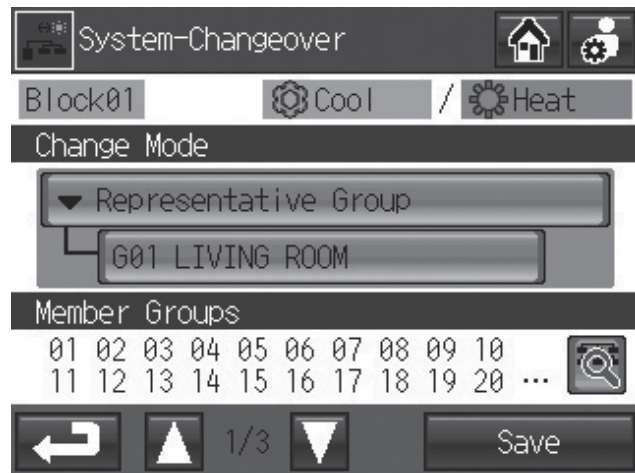
LIST



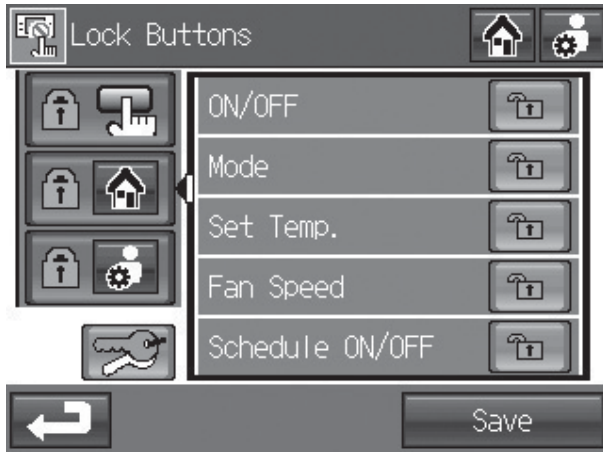
GROUP



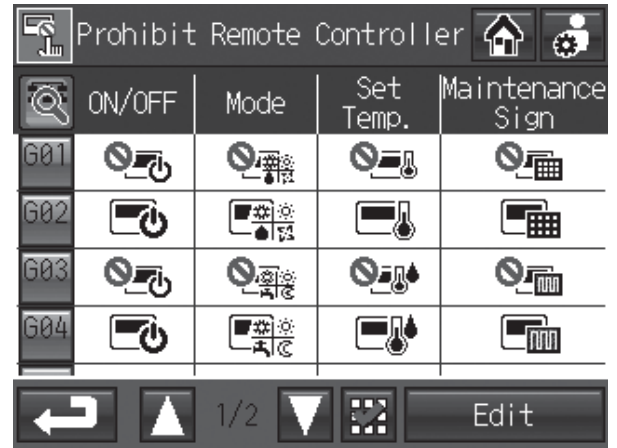
Status List



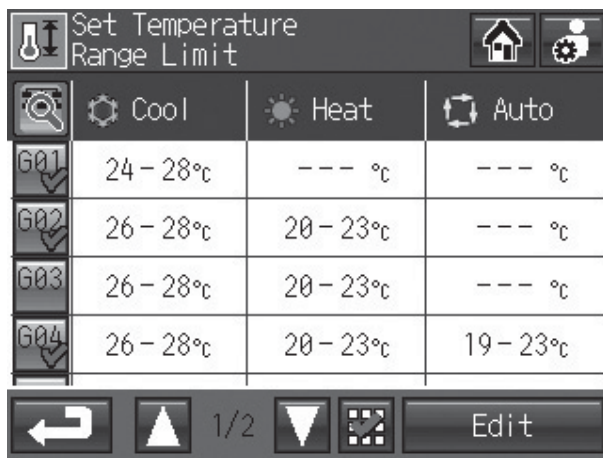
System-Changeover



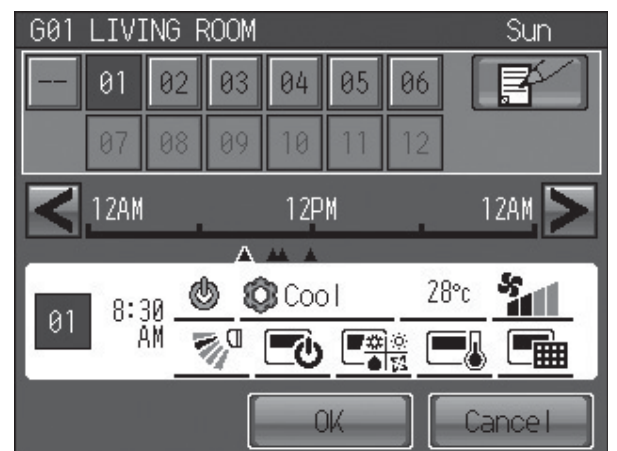
Operation Lock



Prohibit Remote Controller



Set Temperature Range Limit



Set Schedule



Display Format