MANUAL

UTH−05B

WARNING
FOR AVOIDING ANY EXCESS RISE IN TEMPERATURE DUE TO THE TROUBLE OF THIS PRODUCT, PLEASE USE THE OVERHEATING PREVENTION DEVICE.
FOR AVOIDING AN ELECTRIC SHOCK, MUST CUT OFF THE POWER SUPPLY BEFORE THE INSTALLATION OF THIS PRODUCT OR WIRING WORK.
MUST NOT DISASSEMBLE, PROCESS, REMODEL, OR REPAIR THIS PRODUCT, WHICH MAY CAUSE THE RISK OF MALFUNCTION OR FIRE RISK.
MAKE IT SURE OF WIRING THE POWER SUPPLY AND THE OUTPUT UNIT OF THIS PRODUCT TIGHTLY. A LOOSE WIRING WORK MAY CAUSE THE RISK OF FIRE.

WARNING	A CARELESS HANDLING ON WARNING MAY CAUSE A SERIOUS BODILY INJURY OR DEATH OF THE USER.
CAUTION	A CARELESS HANDLING ON CAUTION MAY CAUSE A SLIGHT BODILY INJURY OF THE USER OR PHYSICAL DAMAGE.

HOW TO INSTALL TRD-20 L THERMOSTAT			
MODEL	SCOPE OF TEMP	SENSOR	FUNCTION / MOTION
TRD-20L	-20℃ ~ 80℃	NTC 5KΩ	SENSOR MODE (CENTIGRADE) / STRENGTH MODE

THANK YOU FOR YOUR PURCHASING OUR URIEL PRODUCT.
THIS MANUAL IS SUPPLIED FOR INFORMING HOW TO INSTALL THE PRODUCT ACCURATELY WHICH WILL PROTECT AGAINST THE DAMAGE OR TROUBLE CAUSED BY CARELESS INSTALLATION. MUST READ THIS MANUAL CAREFULLY BEFORE INSTALLATION.

CAUTIONS	
!	PLEASE USE THE OUTLET PREPARED BY A QUALIFIED SERVICEMAN AND MUST CONFIRM IT BEFORE APPLY[SING AN ELECTRIC CURRENT WHETHER OR NOT THERE IS ANY MISTAKE IN WIRING WORK OR ERROR ON THE VOLTAGE.
!	THIS PRODUCT HAS NO MAIN CIRCUIT BREAKER, PLEASE INSTALL IT ON THE OUTSIDE, IF NECESSARY.
!	THIS PRODUCT SHOULD BE USED AND MAINTAIN WITHIN THE CONDITIONS AND ENVIRONMENT SCOPE OF SPEC (VIBRATION/TEMP/HUMIDITY).
!	FOR PRECISE TEMP CONTROL, THE SENSOR SHOULD BE PLACED ON AN APPROPRIATE LOCATION AND PLACE.
※	THIS PRODUCT SHOULD NOT BE USED AT A PLACE WHERE IS FILLED WITH INFLAMMABLE, CORROSIVE OR EXPLOSIVE GAS OR VAPOR.
※	IF THE PRESENT TEMP IS EXCEEDING OVER THE SET TEMP, PLEASE SHUT OFF THE POWER SUPPLY AND CONTACT TO THE QUALIFIED ELECTRICIAN OR OUR HELP DESK.
!	FOR CLEANING THE SURFACE OF THIS PRODUCT, WISH IT LIGHTLY WITH WET AND SOFT CLOTH. DO NOT USE A DETERGENT OR THINNER.

- FOR PERFECT AND SAFE USE, PLEASE READ ALL INSTRUCTIONS IN THIS MANUAL.
- WHOLE OR PARTIAL REPRODUCTION OR COPY WITHOUT PERMISSION FORBIDDEN.
- THE CONTENTS OF MANUAL IS SUBJECT TO AN UNANNOUNCED CHANGE .
- IN CASE OF FINDING CONTENTS THAT IS AMBIGUOUS OR OMITTED, PLEASE CONTACT TO US BEFORE INSTALLATION.
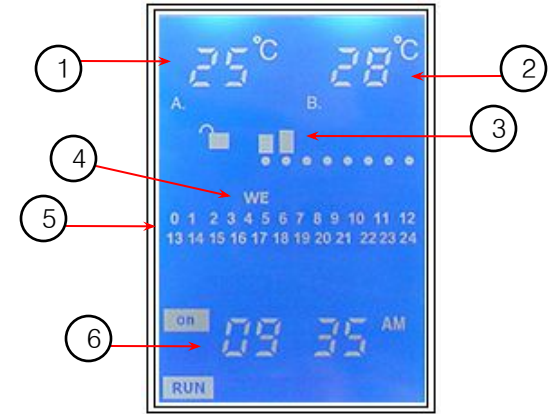- IN CASE OF NOT COMPLYING WITH THIS MANUAL IN INSTALLATION OR WORKING, THE WARRANTY MAY NOT BE VALID.

SAFETY TIPS

SAFETY TIPS IS FOR USING THE PRODUCT APPROPRIATELY AND FOR PREVENTING AGAINST ANY BODILY INJURY OR PHYSICAL DAMAGES IN ADVANCE.
IT IS STRONGLY RECOMMENDED TO FOLLOW THE SAFETY TIPS
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TIPS FOR TIME SETTING AND TIMER USE

1) SET TEMP: SHOWS THE PRESENT SET TEMP.

2) PRESENT TEMP : SHOWS THE PRESENT INNER TEMP SENSED BY SENSOR .

3) BAE SIGN: THE PRESENT TEMP DIVIDED INTO 8 STAGES (BASIC 10℃) IS SHOWN BY BAR.
               IN CASE OUTPUT IS ON, BAR SIGN GOES ON AND OFF IN SERIAL ORDER.

4) DAY SIGN: SHOWS THE PRESENT SET DAY OF THE WEEK. .

5) TIME SIGN: SHOWS THE RESERVED TIME (ON TIME), IF SET.

6) PRESENT TIME: SHOWS THE PRESENT TIME
             (IF THE PRESENT TIME IS BETWEEN PM 10:00 ~ AM 08:00, CONTROLLER ECONOMIZES POWER – DISPLAY WINDOW TURNS DARK; OTHER KEY MOTION MAKES
        THE WINDOW TURN LIGHT)

KEY MODE

∨ , ∧   : FOR SETTING A FIXED TEMP, SET THE TEMP WITH UP / DOWN BUTTON.
           (TEMP SET WORKS BY TOUCHING THE KEYS)

 Hour   : USES FOR CHANGING THE PRESENT HOUR, TIMER SET, RESERVATION HOUR SET, ETC.
           (THE PRESENT TIME SET WORKS BY TOUCHING; FOR RESERVING TIME , USE RELEVANT MODE)

 Min   : USES FOR CHANGING THE PRESENT MIN, TIMER SET, RESERVATION HOUR SET, ETC.
           (THE PRESENT TIME SET WORKS BY TOUCHING; FOR RESERVING TIME , USE RELEVANT MODE)

Mode   : USES FOR CHANGING MODE   IT WORKS BY SELECTION; IF NO CHANGE IN KEY, IT TERMINATES AGAIN.
           IT MOVES IN THE ORDER OF CLEAR - SET – CHECK – CLOCK – TIMER ; IF NO CHANGE IN KEY FOR 3 SEC, IT WILL TERMINATE AUTOMATICALLY.

Day   : USES FOR DAY SET. THE PRESENT DAY DISPLAYS BY TOUCHING "DAY" KEY; IN CASE OF PUSHING ONCE AGAIN, THE NEXT DAY DISPLAYS.
            AFTER SELECTING A FIXED DAY, "DAY" KEY IS TERMINATED AUTOMATICALLY WITHOUT AN ADDITIONAL KEY OPERATION.

Slt(select) : USES FOR TIMER SET OR RELEASE   BY PUSHING SELECT KEY AFTER SET A DAY, HOUR AND TEMP, ALL CONTENTS ARE STORED. (CONFIRM KEY)

Power   : USES FOR CONTROLLER POWER ON / OFF. IN SELECT OFF, ALL DISPLAY WINDOW AND KEYS DO NOT WORK.

TIME SET AND BASIC MOTIONS

TIME AND DAY SET

PRESENT TIME SET : BY TOUCHING 'HOUR' OR 'MIN' BUTTON ON THE FRONT PANEL FOR ONE TIME, THE DAY & PRESENT TIME ON THE BOTTOM OF THE DISPLAY
FLICKERS.
FOR CHANGING HOUR, USE 'HOUR' BUTTON; FOR MIN, USE 'MIN' BUTTON.

IN CASE OF PUSHING KEY CONTINUOUSLY, IT SPEEDS UP 'HOUR' CHANGE; IT CHANGES 'MIN' BY 10 MIN UNIT.
(IF NO KEY CHANGE FOR 3 SEC, THE PRESENT DAY AND TIME IS SET, AND FLICKER IS TERMINATED)

PRESENT DAY SET : BY TOUCHING 'DAY' BUTTON ON THE FRONT PANEL FOR ONE TIME, THE PRESENT DAY & PRESENT TIME
ON THE BOTTOM OF THE DISPLAY FLICKERS.
. BY TOUCHING KEY, THE NEXT DAY IS DISPLAYED ONE BY ONE IF NO KEY CHANGE FOR 3 SEC, FLICKER IS STOPPED
AND THE DAY IS SET.

BASIC MOTIONS

BY PUSHING $\lor$ & $\land$ KEYS FOR 3 SEC SIMULTANEOUSLY, 'stn ' (START OF FUNCTION)'IS DISPLAYED.

BY PUSHING $\land$ KEY IN THE STATE OF 'stn' DISPLAY, IN THE ORDER OF – SEn – tln - , DISPLAY IS ADVANCED. FOR FIXING A MENU, PUSH $\lor$ & $\land$ KEYS
SIMULTANEOUSLY .

SEn MODE = AS SENSOR MODE, SET TEMP FOLLOWING TO THE ORDER ON (TABLE 1).

AFTER SETTING A TEMP, PUSH $\lor$ & $\land$ KEYS SIMULTANEOUSLY. IN THE LAST STAGE, THE SET VALUE IS STORED WITH BUZZER SOUND ; AND THE SET TEMP
WORKS.

AFTER COMPLETING THE SET, FOR SETTING TEMP, SET WITH $\lor$ OR $\land$ KEY. IF NO CHANGE IN KEY, THE PRESENT TEMP IS DISPLAYED AND WORKS AFTER 3
SEC.

INITIAL MENU	SENSOR MODE	MIN TEMP	MAX TEMP	TEMP DEVIATION	DELAY TIME	OVERHEATING TEMP	REVISED TEMP

MODE SET AND CHANGE

SENSOR MODE PRECISE SET

ROLE	DISPLAY	SCOPE OF SET	BASIC SET	MOTION DESCRIPTIONS
MOTION MODE SELECT	SEn – tIn	SENSOR MODE – TIMER MODE	SEN	MOTION ACCORDING TO TEMP SENSED BY SENSOR / REPEATED ON/OFF AT EVERY FIXED TIME
MIN TEMP SET	t - L	-20℃~ UNDER MAX TEMP	0 ℃	MIN TEMP WITHIN THE SCOPE OF TEMP FIXED BY USER
MAX TEMP SET	t – H	OVER MIN TEMP ~ 80 ℃	60 ℃	MAX TEMP WITHIN THE SCOPE OF TEMP FIXED BY USER
TEMP DEFLECTION SET	dIF	00 ℃ ~ 05 ℃	02 ℃	SETS DEFLECTION BETWEEN PRESENT TEMP AND SET TEMP TO SUPPLY POWER FOR HEATING
DELAY TIME SET	dLy	01 SEC ~ 60 SEC	20 SEC	SETS TIME TO SUPPLY POWER FOR HEATING BY SENSING TEMP
OVERHEATING TEMP SET	oHt	OVER MAX TEMP 80 ℃	60 ℃	BY SENSING THE FLOOR TEMP DURING INDOOR TEMP MOTION, OFF THE OUTPUT AT THE TIME OF REACHING THE SET TEMP.
BASIC RESISTANCE SET	rES	-50 ℃ ~ 50℃	00 ℃	SETS TO DISPLAY OR WORK THE CONTROLLER DISPLAY TEMP BY PLACING DEFLECTION ACCORDING TO SITUATION.

TIMER MODE FUNCTION

※ BY PUSHING ∨ & ∧ KEYS FOR 3 SEC SIMULTANEOUSLY, INITIAL 'Stn' IS DISPLAYED. THEN BY PUSHING ∧ KEY FOR ONCE, 'SEN' IS DISPLAYED.

'SEN' WORKS BY SENSOR AND AT THE SAME TO THE PRESENT METHOD, BY TOUCHING ∧ KEY ONCE AGAIN , 'tin' IS DISPLAYED. THEN BY PUSHING ∨ & ∧ KEYS SIMULTANEOUSLY, THE PRESENT CYCLIC VALUE IS DISPLAYED. WITH ∨ AND/OR ∧ KEY, SET THE CYCLE. THEN BY PUSHING ∨ & ∧ KEYS SIMULTANEOUSLY ONCE AGAIN, 'SAU" FLICKERS AND THE CYCLIC VALUE IS STORED AND THE PRESENT SET STRENGTH IS DISPLAYED.

SERVICEMAN = PUSH ∨ & ∧ KEYS SIMULTANEOUSLY → 'Stn ' IS DISPLAYED → 'tin' SELECTION → PUSH ∨ & ∧ KEYS SIMULTANEOUSLY → CYCLIC VALUE IS DISPLAYED (CYCLE) → CYCLE SELECTION (BASIC 3 MIN) →SET CYCLIC VALUE → PUSH ∨ & ∧ KEYS SIMULTANEOUSLY - 'SAU' FLICKERS – SAVE COMPLETION

(CYCLE SET IS NOT ALLOWED TO USER)

USER = BY TOUCHING ∨ AND/OR ∧ KEY, SELECT THE STRENGTH(BASIC 1 STAGE)

TIMER MODE MOTION TIME

※ **BASIC CYCLE IS SET 3-MIN CYCLE (POSSIBLE TO SELECT CYCLE FROM 1MIN TO 60MIN)**
※ **AFTER SELECTING CYCLE, BY PUSHING ∨ & ∧ KEYS SIMULTANEOUSLY, SET IS COMPLETED WITH BUZZER SOUND(SERVICEMAN)**
※ **THE STRENGTH IS SELECTED BY USER ACCORDING TO THE TEMP FIXED BY USER. .**
※ **THE BASIC STAGE IS SET AS THE 1ST STAGE . (POSSIBLE TO SELECT THE STRENGTH FROM 1ST TO 10TH STAGE)**

1ST STAGE OUTPUT OFF

1ST STAGE OUTPUT ON

TIMER MODE PRECISE SET

STEP	OUTPUT (0N)	OUTPUT (OFF)	REMARKS
1	15SEC * S	45SEC * S	※ S – SELECTED CYCLIC VALUE
2	20SEC * S	40SEC * S	
3	25SEC * S	35SEC * S	IF 1MIN, S=1 IF 3MIN, S=3
4	30SEC * S	30SEC * S	IF 5MIN, S=5 *
5	35SEC * S	25SEC * S	* ※ (IF 20MIN, S = 20, VALUE MULTIPLYING BY 20)
6	40SEC * S	20SEC * S	
7	45SEC * S	15SEC * S	※ (IF 60MIN, S = 60 , VALUE MULTIPLYING BY 60) IT IS THE LENGTH OF ON AND OFF.
8	50SEC * S	10SEC * S	
9	50SEC * S	10SEC * S	
10	55SEC * S	10SEC * S	

TIPS FOR TIME SET AND RESERVATION

RESERVATION SET

SELECT MODE KEY. BY PUSHING MODE KEYS IN THE ORDER OF CLEAR – SET – CHECK – CLOCK – TIMER , MENU IS SELECTED.

FOR RESERVATION, PUSH SELECTION KEY WHEN SET MENU IS DISPLAYED. ON TIME SET IS DISPLAYED AND DAY IS DESIGNATED AS
MONDAY; 88 : 88 FLICKERS ON THE TIME DISPLAY. THEN SET ON TEM AND SET TEMP WITH 'HOUR' AND 'MIN' KEY AND 'TEMP
SET ' KEY. AFTER FINISHING SET, PUSH SELECTION KEY FOR ADVANCING OFF TIME AGAIN. THE METHOD OF OFF TIME SET
FOLLOWS THE SAME METHOD OF ON TIME SET. IT IS POSSIBLE TO SET ON/OF TIME FOR FIVE (5) TIMES A DAY AT MAX. IF
SELECTING OTHER DAY, BY PUSHING 'DAY' KEY, THE DAY IS CHANGED TO "TUES" . AFTER SELECTING A DAY, SET ON/OFF TIME
IN THE SAME METHOD (RESERVATION IS POSSIBLE FOR A WEEK).

WHENEVER PUSHING 'DAY' KEY, THE NEXT DAY IS DISPLAYED. AFTER FINISHING RESERVATION, OFF AND ON THE POWER.

RESERVATION CHECK

SELECT MODE KEY. BY PUSHING MODE KEYS IN THE ORDER OF CLEAR – SET – CHECK – CLOCK – TIMER , MENU IS SELECTED. FOR
RESERVATION CHECK, PUSH THE SELECTION KEY WHEN CHECK MENU IS DISPLAYED. THE DISPLAY OF ON TIME SET FLICKER AND SET
TIME AND TEMP IS DISPLAYED. DAY IS DISPLAYED FROM 'MON'. IF THERE IS NO RESERVATION ON THE DAY, "88:88" FLICKERS.
IT IS POSSIBLE TO CHECK RESERVATION ACCORDING TO THE ORDER FROM 'MON' TO 'SUN.' IF WISHING TO CHECK THE THAT
DAY, IT IS POSSIBLE TO CHECK IT AFTER SETTING A FIXED DAY USING 'DAY' KEY ON RESERVATION CHECK MODE.

FUNCTION SET

EASY TIMER

SELECT MODE KEY. BY PUSHING MODE KEYS IN THE ORDER OF CLEAR – SET – CHECK – CLOCK – TIMER , MENU IS SELECTED. IF SELECTING EASY TIMER, SET TIME USING
   'HOUR' OR 'MIN' KEY WHEN TIMER MENU IS DISPLAYED. IT IS POSSIBLE TO SET THE TIME FROM 1 MIN TO 24 HOURS (MAX).

AFTER SETTING THE WORKING TIME BY USING 'HOUR' OR 'MIN', IF THERE IS NO KEY OPERATION, SET TIME IS APPLIED

AUTOMATICALLY AND WORKS ACCORDING TO COUNT DOWN. ('HOUR' KEY – CONSECUTIVE MOTION BY PUSHING LONGER;

'MIN KEY' –INCREASE EVERY 10 MIN UNIT BY PUSHING LONGER)

BEFORE 10 SEC OF CLOSE, BUZZER SOUNDS FOR 3 TIMES AND AFTER 10 SEC OF CLOSE, THE POWER OF CONTROLLER IS OFF.

(IN CASE THE POWER OF CONTROLLER IS OFF-ON , THE MOTION TIME IS CLEANED AND THE MOTION IS TERMINATED, TOO)

LOCK FUNCTION

BY PUSHING 'SELECTION' KEY + 'TEMP SET DOWN' KEY FOR 3 SEC SIMULTANEOUSLY, ALL MOTIONS OF KEY ARE LOCKED WITH "BEEP " SOUND. FOR RELEASE, THE SAME
   METHOD IS USED.

IN THE STATE OF LOCK, ANY KEYS DO NOT WORK AND THE KEY TOUCH DOES NOT MAKE ANY SOUND, EITHER.
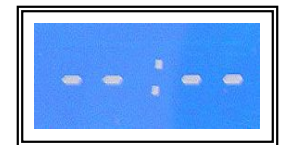
INITIALIZATION FUNCTION

THIS IS THE FUNCTION OF MAKING ALL VALUES BE THE BASIC ONES SET BY THE FACTORY AUTOMATICALLY

BY PUSHING THE POWER BUTTON FOR 10 SEC, ALL SET VALUES ARE INITIALIZED TO THE BASIC ONE S SET BY THE FACTORY.

THIS IS FOR CORRECTING THE CHANGED VALUES CAUSED BY INEXPERIENCED OPERATION OR OUTER NOISE.

WHILE USING TIMER MODE, IT WILL CHANGE TO THE TEMP SENSOR USE MODE BUT RESERVATION SET TIME AND DAY ARE NOT CHANGED.

 " - - - - " DISPLAY FLICKERS FOR 3 TIMES.

TROUBLESHOOTING

SNAPPING TEMP SENSING SENSOR

BASICALLY THE CONTROLLER IS ON/OFF ACCORDING TO THE INDOOR TEMP SENSING SENSOR.

IF THE INDOOR TEMP SENSING SENSOR IS SNAPPED, THE FLOOR SENSOR TEMP VALUE IS APPLIED AUTOMATICALLY. IF THERE IS NO FLOOR SENSOR OR THE FLOOR SENOR IS SNAPPED TOO, THE ERROR OF 'EO' IS DISPLAYED AND THE OUTPUT IS OFF PROMPTLY.
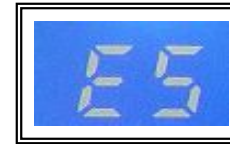
(SUCH ERROR IS HAPPENED DUE TO THE FAILURE OF SENSOR SENSING UNIT; SHORT OF SENSOR EXTENSION CABLE; ELECTRIC LEAKAGE FROM THE SPOT ATTACHING SENSOR . INSPECTION IS NECESSARY AND IN CASE OF TERMINATION, RETURN AUTOMATICALLY.)

SHORT CIRCUIT OF TEMP SENSING SENSOR

BASICALLY THE CONTROLLER IS ON/OF F ACCORDING TO THE INDOOR TEMP SENSING SENSOR..

IF THE INDOOR TEMP SENSING SENSOR IS SHORT, "ES" ERROR IS DISPLAYED AND POWER IS OFF.

IF THE FLOOR SENSING TEMP SENOR IS SHORT, "ES" ERROR IS DISPLAYED , AND POWER IS OFF.

INDOOR SENSOR SHORT   FLOOR SENSOR SHORT

(SUCH ERROR IS HAPPENED DUE TO THE FAILURE OF SENSOR SENSING UNIT; SHORT OF SENSOR EXTENSION CABLE; ELECTRIC LEAKAGE FROM THE SPOT ATTACHING SENSOR . INSPECTION IS NECESSARY AND IN CASE OF TERMINATION, RETURN AUTOMATICALLY.)

OVERHEATING ERROR

THIS HAPPENS WHEN FLOOR SENSOR SENSING TEMP IS HIGHER THAN OVERHEATING SET TEMP .
"oHt" IS DISPLAYED AND THE OUTPUT IS OFF PROMPTLY.

FOR MANUAL RETURN, OFF-ON THE POWER IN THE STATE THAT OVERHEATING ERROR IS TERMINATED.

(CHECK THE STATE OF OVERHEATING SENSOR; CONTROLLER RELAY MOTION; SNAPPING OF FLOOR TEMP SENSOR; SET TEMP VALUE)

CLASSI	ITEMS		SPECIFICATIONS
POWER UNIT	RATED INPUT VOLTAGE		100V AC ~ 240V AC (UNIVERSAL VOLTAGE)
	OUTPUT VOLTAGE		100V AC ~ 240V AC (UNIVERSAL VOLTAGE)
	DRIVING METHOD		ELECTRONIC TYPE
	MAX OUTPUT		4 KW
	LOAD	NO. OF CIRCUIT	1 CIRCUIT
		MAX CAPACITY	18A (RESISTANCE LOAD)
PRECISION	TEMP PRECISION		± 1℃ : CHANGE CONDITION OF 1℃ PER 30 SEC (DELAY OPTION 20 SEC)
MOTION	POWER INPUT DISPLAY		TIME DISPLAY, DISPLAY
	OUTPUT DISPLAY		BAR MOTION
	SCOPE OF TEMP		POSSIBLE TO SELECT WITHIN THE SCOPE OF -20℃ ~ 80℃
	RESERVATION FUNCTION		MAX 5 TIMES (ON/OFF) PER DAY, ONE WEEK RESERVATION
SENSOR	KIND		NTC : NEGATIVE TEMPERATURE COEFFICIENT EPOXY MOLDING
	PRECISION %		1 %
	25℃ RATED RESISTANCE		5000 OHM
	QUANTITY		SENSOR 1 : FOR SENSING INDOOR TEMP (ATTACH INSIDE CONTROLLER), SENSOR 2 : FOR SENSING FLOOR TEMP (OPTION)
FUNCTION (CAPACITY)	SAFETY DEVICE	SNAPPING, SHORT OF SENSOR LINE	AT THE TIME OF SNAPPING INDOOR FLOOR SENSING TEMP SENSOR: "EO" (Error Open) IS DISPLAYED AND OUTPUT IS OFF SHORT OF INDOOR SENSOR: "ES" (Error Short), SHORT OF FLOOR: "FS" (Field Short) IS DISPLAYED AND OUTPUT IS OFF (AUTO RETURN)
		OVERHEATING PREVENTION SENSOR (OPTION)	OUTPUT IS OFF IF FLOOR SENOR SENSING TEMP IS HIGHER THAN SET OVERHEATING TEMP, OUTPUT IS OFF (AUTO RETURN)
		RESISTANCE FOR FUSE	10 ohm (FOR PROTECTING THE INNER CIRCUIT OF CONTROLLER)
OTHERS	OUTER CASE		ANTI-FLAMMABLE
	WEIGHT		220 G
	DIMENSION (mm)		70(W) × 120(H) × 41(D)
	USE TEMP	AIR TEMP	0℃ ~ 40℃
		AIR HUMIDITY	UNDER 80 %

70

38,4

2

59

40,4

120

52

35

15

OUT

IN

40

83

37

40,5