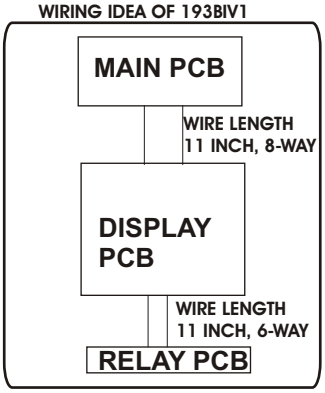
USER GUIDE PAGE: 1

WIRING IDEA OF 193BIV1



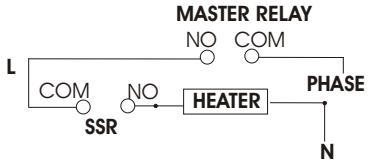
ACCESSARIES SUPPLIED WITH THIS ARE AS FOLLOWS

1 - 27 MM BUZZER, MODEL B27A WITH 2-WAY RMC.
2 - TRANSFORMER PLATE WITH TRANS FORMER FITTED ON IT.
3 - DISPLAY PCB:193BIV1DB 10/02/05
4 - MAIN PCB: 193BT1MB
5 - RELAY & SSR PCB: 193BTRLY
6 - USER GUIDE.
7 - CONNECTION DIAGRAM.
8 -CONNECTION DETAILS IN BRIEF
9 - TEST & CALIBRATION CERTIFICATE.
10 - ELECTRICAL NOISE FILTER CARD FITTED ON TRANSFORMER PLATE.

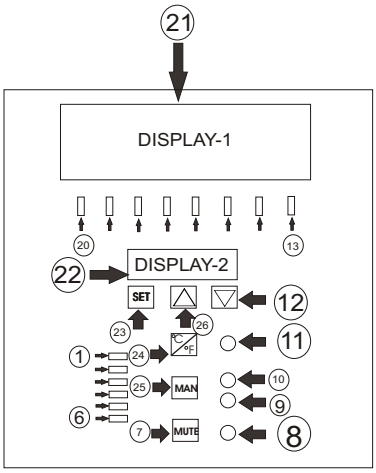
Trouble Shooting :

1) Sensor open indication : Display shows “Err”.
2) Sensor reverse :If the RTD is not connected according to connection diagram. Then it will show erratic temperature
3) Not showing proper temp. : Loose connection on terminal or calibration problem.
4) Problem in relay operation - Check connections as per wiring diagram given **BELOW**,

CONNECTION FOR LOAD



IF MASTER RELAY FAILS THEN , WHOLE SYSTEM WILL SWITCH OFF



1:- SKIN OVER RANGE LED
2:- SKIN UNDER RANGE LED
3:- SKIN HIGH LED
4:- SKIN LOW LED
5:- POWER FAIL LED
6:- HEATER FAIL LED
7:- MUTE KEY
8:- MUTE LED
9:- AUTO MODE LED
10:- MANUAL MODE LED
11:- °F INDICATION LED
12:- DECREMENT KEY
13:- POWER 100% INDICATION LED
14:- POWER 87.5% INDICATION LED
15:- POWER 75% INDICATION LED
16:- POWER 62.5% INDICATION LED
17:- POWER 50% INDICATION LED
18:- POWER 37.5% INDICATION LED
19:- POWER 25% INDICATION LED
20:- POWER 12.5% INDICATION LED
21:- DISPLAY-1 (1 INCH DISPLAY FOR SKIN TEMPERATURE INDICATION)
22:- SET TEMPERATURE DISPLAY-2
23:- SET KEY
24:- °C / °F SELECTION KEY
25:- MANUAL MODE SELECTION KEY
26 - INCREMENT KEY

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MODEL: 193BIV1

BABY INCUBATOR CONTROLLER

Features

1) SET POINT ADJUSTMENT ON FRONT WITH SOFT KEYS.
2) SSR OUTPUT IS GIVEN.
3) MASTER RELAY IS PROVIDED FOR SAFETY WITH NECESSARY LOGIC.
4) MANUAL / SERVO MODE INDICATION ON SEPARATE LEDS
5) AUDIO ALARM MUTE INDICATION ON LED
6) SKIN PROBE OPEN INDICATION ON LED
7) POWER FAIL INDICATION ON LED WITH AUDIO ALARM.
8) PROGRAMMABLE MUTE TIMER.
9) 5 Amp RELAY CONTACT FOR RESISTIVE LOAD.
10) % OF POWER INDICATION ON FLAT LEDS.

Specifications

1) INPUT SENSOR : Pt-100 (RTD) FOR SKIN PROBE,
2) AUTO / MANUAL MODE OF OPERATION (USER SELECTABLE),
3) SET POINT: 30.0 to 40.0 °C
4) VOICE MESSAGES WITH SPEAKER
5) DUTY CYCLE : 60 SECS FIXED.
6) POWER CONSUMPTION : 10 VA MAX.
7) DISPLAY : 1 INCH,3 DIGIT, 7-SEG, RED LED DISPLAY FOR SKIN & 0.5 INCH3 DIGIT, 7-SEG, GREEN LED DISPLAY FOR SET TEMPERATURE INDICATION.
8) SUPPLY : 220 V AC +/- 15% 50 Hz
9) ALARM : 0.0°C TO 5.0°C ABOVE & BELOW SKIN SET.
10) MUTE TIME: 0 TO 15 MINS (SELECTABLE).
11) ERROR POWER IS PROVIDED IF SENSOR FAILS
12) MUTE LED WILL FLASH ON EVERY SECONDS AS THE MUTE TIME STARTS.
13) POWER SETTING : 10 TO 99% FOR MANUAL MODE.
14) SERVO / MANUAL MODE INDICATION WITH LED.
15) °C/°F SELECTION ON FRONT WITH SOFT KEY, ALSO THE INDICATION FOR °F MODE IS GIVEN ON LED.
16) SET POINT ADJUSTMENT WITH TWO KEYS SO NO ONE CAN DISTURB IT EASILY.
17) MASTER RELAY WITH 5 AMP 1C/O CONTACT FOR RESISTIVE LOAD & SSR OUTPUT WITH 6AMP CONTACT.
18) MASTER RELAY WILL CUT-OFF AS THE SKIN TEMP GOES ABOVE 38°C & SSR WILL BE OFF AS THE SKIN TEMP GOES ABOVE 37°C.
19) SET HIGH, SET LOW, PROBE FAIL, POWER FAIL, HIGH TEMP & LOW TEMP ALARM INDICATION ON FLAT LEDS & ON LCD DISPLAY.
20) SENSOR CONNECTION ON CONNECTORS.
21) “PV” DISPLAY WILL FLASH ON EVERY ERROR CONDITION.

OPERATING MANUAL OF BABY INCUBATOR.

DISPLAY-1 IS TO INDICATE SKIN PROCESS TEMPERATURE IN °C/°F, DISPLAY-2 IS TO INDICATE SKIN SET TEMPERATURE.

DURING "POWER ON" DISPLAY WILL SHOW "rtd" ON DISPLAY-1. DISPLAY-2 WILL SHOW SKIN SET TEMPERATURE IN °C.

HOW TO ADJUST SET POINT ?

PUSH SET KEY FIRST, HOLD IT & PUSH "DECREMENT" KEY. RELEASE BOTH THE KEYS AT A TIME.

"St1" WITH PREVIOUS SET VALUE WILL FLASH ALTERNATELY ON SKIN SET DISPLAY . SET IT BY UP / DOWN ARROW KEYS TO DESIRED VALUE.

PUSH "SET" KEY & "DECREMENT" KEY, HOLD IT & RELEASE BOTH AT A TIME TO GO OUT OF SET MODE (TO NORMAL DISPLAY MODE).

IF NO KEY IS PRESSED IN SET MODE THEN DISPLAY WILL FLASH 3 TIMES & IT WILL GO TO NORMAL MODE BY SAVING THE CHANGED/PREVIOUS VALUE..

GLOBLE SETTING MODE:

TO ADJUST PARAMETERS LIKE ALARM HIGH (HIGH TEMPERATURE),ALARM LOW (LOW TEMPERATURE),POWER IN % FOR MANUAL MODE & MUTE TIMER DO THE PROCEDURE DESCRIBED BELOW,

PUSH "UP" & "DOWN" ARROW KEYS FOR SIX SECONDS, "AI1" WITH SOME NUMBER WILL BE DISPLAYED ON DISPLAY-1. THIS IS ALARM LOW SETTING (LOW TEMPERATURE). SET IT BY "UP" OR "DOWN" KEY TO DESIRED VALUE. (FROM 0.0 TO 5.0°C). IF ONE HAS PUT SET POINT AS 33.0°C & "AI1" AS 2.0°C THEN THE BUZZER WILL START SOUNDING AS THE SKIN TEMPERATURE GOES BELOW 31.0°C.

PUSH "SET" KEY AGAIN TO GO TO NEXT PARAMETER SET MODE BY SAVING CURRENT / CHANGED VALUE OF "AI1". NOW "Ah1" WITH SOME NUMBER WILL BE DISPLAYED ON DISPLAY-1. THIS IS ALARM HIGH SETTING (HIGH TEMPERATURE). SET IT BY "UP" OR "DOWN" KEY TO DESIRED VALUE. (FROM 0.0 TO 5.0°C). IF ONE HAS PUT SET POINT AS 33.0°C & "Ah1" AS 2.0°C THEN THE BUZZER WILL START SOUNDING AS THE SKIN TEMPERATURE GOES ABOVE 35.0°C.

PUSH "SET" KEY AGAIN TO GO TO NEXT PARAMETER SET MODE BY SAVING CURRENT / CHANGED VALUE OF "Ah1". "tir" WILL FLASH WITH PREVIOUS SET NUMBER. THIS IS MUTE TIMER SETTING. SET IT BY "UP" OR "DOWN" KEY TO DESIRED VALUE. (FROM 0 TO 15 MIN). IF IT IS SET TO "00" THEN THE MUTE TIME IS DISABLED. IF ONE HAS SET ANY VALUE OTHER THAN "00" THEN THE BUZZER WILL SOUND AFTER THE SET TIME BY CHECKING ALARM CONDITION FIRST. IF IT IS SET TO "00" THEN "MUTE" LED WILL BE CONTINUOS "ON" ONLY ON ALARM CONDITION & IF IT IS SET OTHER THAN "00" THEN "MUTE" LED WILL FLASH ON EVERY SECOND WHICH INDICATES THAT THE MUTE TIMER IS RUNNING.

PUSH "SET" KEY AGAIN TO GO TO NEXT PARAMETER BY SAVING CURRENT / CHANGED VALUE OF "t1r".

NOW ErP" WILL FLASH WITH 30 NUMBER ALTERNATELY. THIS IS POWER SETTING IN % FOR MANUAL MODE IF THE SKIN SENSOR FAILS (IN Err CONDITION). SET IT BY "UP" OR "DOWN" KEY TO DESIRED VALUE. (FROM 1 TO 99%) FACTORY SET IS 30%. IN THIS MODE THE POWER WILL BE 30% INITIALLY BUT IF ONE HAS CHANGED IT TO OTHER VALUE SAY 60% THEN THE POWER WILL BECOME 60% AS THE SENSOR FAILS. THIS CHANGED POWER WILL REMAIN TILL NOBODY SETS IT AGAIN.

PUSH "SET" KEY AGAIN TO GO TO NEXT PARAMETER BY SAVING CURRENT / CHANGED VALUE OF "ErP". NOW "POr" WILL FLASH WITH SOME NUMBER ALTERNATELY. THIS IS POWER SETTING IN % FOR MANUAL MODE IF SKIN PROBE IS OK. SET IT BY "UP" OR "DOWN" KEY TO DESIRED VALUE. (FROM 10 TO 99%). IN MANUAL MODE THE POWER WILL BE 40% INITIALLY BUT IF ONE HAS CHANGED IT TO OTHER VALUE SAY 60% THEN THE POWER WILL BECOME 60% AS THE USER COME OUT OF THIS MODE..

ONE CAN DIRECTLY CHANGE THIS BY PUSHING DECREMENT KEY FOR 5 SECONDS IN NORMAL MODE. ONE CAN SET IT BY UP OR DOWN KEY.

PUSH "SET" KEY AGAIN TO GO TO NEXT PARAMETER BY SAVING CURRENT / CHANGED VALUE OF "POr". NOW "SEr" WILL FLASH WITH SOME NUMBER ALTERNATELY. DO NOT CHANGE THIS PARAMETER FROM "000". THIS HAS TO BE "000" OTHERWISE CALIBRATION WILL DISTURB. DO NOT SET THIS PARAMETER EXCEPT "000" ANYWHERE IN THE SOFTWARE.

PUSH SET TO GO OUT OF THIS MODE (NORMAL MODE).

DURING POWER "ON",DISPLAY-1 IS ALWAYS IN °C INDICATION MODE TO TOGGLE BETWEEN °C & °F PUSH °C/°F KEY ONCE. °F LED WILL GLOW TO INDICATE THAT THE DISPLAY IS IN °F MODE. ALSO THERE IS A SPARE DISPLAY ON DISPLAY-1 BANK TO INDICATE °C/°F MODE. TO COME OUT OF °F MODE PUSH °C/°F KEY AGAIN & THE LED WILL BE OFF.

TO SHIFT TO MANUAL MODE PUSH "AUTO/MAN" KEY ONCE. INCUBATOR WILL START WORKING IN MANUAL MODE & MAN LED WILL GLOW. IN THIS MODE THE POWER CONTROL WILL BE ALWAYS SET "POr"& THE MAXIMUM TEMPERATURE LIMIT IS 37 °C. HERE THE CONTROL ACTION WILL START AS SOON AS USER ENTERS THIS MODE & THE CYCLE TIME (FOR ON/OFF) IS 30 SEC EACH. IF THE POWER IS 40% THEN THE HEATER WILL BE ON FOR 40% OF 60 SEC (CYCLE TIME)= 24 SEC. HERE THE % OF POWER CAN BE CHANGED BY DOING THE PROCEDURE DESCRIBED ABOVE.

TO SHIFT TO AUTO MODE PUSH "AUTO/MAN" KEY ONCE. INCUBATOR WILL START WORKING IN AUTO MODE & AUTO LED WILL GLOW. IN THIS MODE THE POWER CONTROL WILL BE AUTOMATIC WITH RESPECT TO THE SET TEMPERATURE. HERE THE CONTROL ACTION WILL START 1.0°C BELOW SET POINT & WITH THE CYCLE TIME (FOR ON/OFF) OF 60 SEC. IF THE POWER IS 50% THEN THE HEATER WILL BE ON FOR 50% OF 60 SEC (CYCLE TIME)= 30 SEC.

"MUTE KEY" IS PROVIDED TO MUTE AUDIO ALARM (BUZZER). IN FAULT CONDITION THE MUTE LED WILL FLASH FOR MUTE TIME. AFTER COMPLETION OF MUTE TIME IT WILL SOUND THE AUDIO ALARM IF ALARM CONDITION IS THERE.

FAULT MESSAGES & INDICATIONS :-

"SKIN HIGH" & "SKIN LOW" MESSAGES WILL BE DISPLAYED LED AS WELL AS VOICE MESSAGE WILL BE ANNOUNCED.

SKIN PROBE FAIL INDICATION IS ALSO GIVEN ON VOICE. PROBE FAIL LED WILL GLOW & "Err" WILL BE DISPLAYED ON DISPLAY-1. "Err" WILL BE DISPLAYED IF THE PROBE IS OPEN OR IF THE TEMPERATURE GOES ABOVE 100°C OR BELOW 0°C.

HEATER FAIL INDICATION IS GIVEN ON LED AS WELL WITH VOICE.

SKIN TEMPERATURE UNDER RANGE & OVER RANGE IS GIVEN ON LED AS WELL AS VOICE.

SET TEMPERATURE WILL BE ANNOUNCED IF USER CHANGES THE SET TEMPERATURE VALUE.

ALARM CONDITIONS:

AUDIO ALARM WILL SOUND AFTER THE COMPLETION OF MUTE TIME BUT IT WILL CHECK FOR THE ALARM CONDITION FIRST. IF NO ERROR MESSAGE ON DISPLAY & IF THERE IS NO FAULT IN THE UNIT THEN THE ALARM WILL BE OFF OR IT WILL COME OUT OF MUTE MODE IF IT IS MUTED FOR THE PREVIOUS ERROR / FAULT CONDITION.

DISPLAY-1 WILL FLASH ON ANY ALARM CONDITION.

POWER FAIL ALARM & INDICATION IS ALSO GIVEN. THERE IS NO MUTE GIVEN FOR POWER FAIL MODE BUT IT WILL BE OFF AFTER 60 SECONDS. BATTERY BACK-UP IS GIVEN WITH TRICKLE CHARGING. USE "9V" RECHARGABLE BATTERY.

TEMPERATURE UNDER RANGE LED WILL GLOW IF THE SKIN TEMPERATURE GOES BELOW 34 DEG

TEMPERATURE OVER RANGE LED WILL GLOW IF THE SKIN TEMPERATURE GOES ABOVE 38 DEG.

MASTER RELAY WILL CUT-OFF WHEN SKIN TEMPERATURE GOES ABOVE 38 DEG. CELSIUS, IN AUTO MODE & POWER WILL BE ZERO AT 37°C IN MANUAL MODE. ALSO IT WILL BE ZERO IF THE SKIN TEMPERATURE REACHES TO SET TEMPERATURE IN AUTO MODE.

IT GOES TO MAN MODE FROM AUTO MODE AUTOMATICALLY IF THE SENSOR FAILS IN NORMAL MODE.