Operating and Instruction Manual:

TRH-4308

Specifications:

1. Input: Pt-100 & RH module
2. Output: Relay 5A/230VAC Resistive
3. Op. Temperature: 0~50 Deg.
4. Supply: 230V AC +/- 15%
5. Resolution: 1 °C /0.1°C & 0.1/1%
6. Range: Pt-100 -> 0.0~60.0 °C
   RH -> 0~100.0%C
7. Accuracy: 0.25% +/- 1L.C.
8. No. Of Set-Points : 2
9. PV Offset : settable from -99.9~99.9°C
10. For Temperature:
    Control Action: On/Off or Proportional
    Relay Logic: Heat/Cool (on/off only)
    Proportional Band: 1~99°C
    Cycle Time : 1~99 seconds
    Manual Reset : 0.1~99.9°C
    Hysterisis : 0.1~99.9°C
11. For RH :
    Control Action: On/Off or Proportional
    Relay Logic: : For/Rev (on/off only)
    Proportional Band: 1~99 %
    Cycle Time : 1~99 seconds
    Manual Reset : 0.1~99.9%
    Hysterisis : 0.1~99.9°C
12. Dimensions:
. Cutout: 92mm (W) x 92mm (H)
    Overall: 96mm(W) x 96mm(H) x 90mm (D)

Configuration Setting:
Turn Off the Instrument. Now Short the terminals marked configuration and turn ON the Instrument. Now change/read the configuration parameters as below.After setting, turn OFF the Instrument, remove the shorting and turn ON the Instrument toapply the new settings.

Key Press	Display	Description

1. To select the resolution 0.1/1

UpperDisplay `rESn` / `.1`
Press Set +△ `1`

2. Press ▽ to change the process value offset if required.

Upper Display `OF-t` Process offset
`0000` °C
Press Set + ▽ to change the offset value for temperature.
Refer Table-1 for limits for various input types.

3. Press ▽ To set relay logic If Cn-t = "ON"

Upper Display `rL-t`
`HEAt`
`CooL`

4. Press ▽ to select Control action for temperature

Upper Display `Cn-t`
Control Mode `On` On-Off
Press Set +▽ `Pr` Time Proportional

5. Press ▽ To set Hysterisis value If Cn-t = "ON"

Upper Display `HY-t`
Hysterisis `0.1`

This parameter determines the value of the Process value at which the Relay must turn ON in On/off mode and can be changed by pressing Set+△ or Set + ▽ .

Key Press	Display	Description

6. Press ▽ To set Proportional Band in °C If Cn-t = "Pr"

Upper Display `Pb-t`
Proportional Band `01` (1~99° C)
This parameter determines the value of the Process value below the Set Value at which the Proportional Action will start .Change value by pressing Set+△ or Set +▽ .

7. Press ▽ To set Cycle Time in seconds If Cn-t = "Pr"

Upper Display `Cy-t`
Cycle Time `20` (1~99 sec.)
This parameter determines the total cycle time for the Proportional Action .Change value by pressing Set+△ or Set +▽ .

8. Press ▽ To determine the maximum set point limit for temperature

Upper Display `rn-t`
Set point Limit `0450` °C
Press Set + ▽ to change the Set point limi.
Refer Table-1 for limits for various input types.

The parameters from 9 to 15 are similar to the parameters 2 to 8 as listed above for the RH settings. These parameters will show a similar message except that "xx-t" will be changed to "xx-r" for the RH parameters.

16. Press ▽ to select Lock mode

Upper Display `LcK`
Press Set +▽ `0000` (0/1)
This parameter determines whether the manual reset parameter should be accesible from the front panel to the user.
If Lck = 0 : disable all.
If Lck =1 : show manual reset.

Key Press	Display	Description

Changing Set values for temperature & RH:
Turn On the Instrument. The upper display will show the Process temperature and the lower display will show the RH value. To change the set point values for temp & rh. Press set for 3~4 sec. Upper display will show as below.

Press ▽ to change the Set-1 value

Upper Display `SP-t`
`0200` °C
Press Set + ▽ or Set+ △ to change the Set temperature values.
Refer Table-1 for limits for various input types.

Press ▽ to change the Set-1 value

Upper Display `SP-r`
`0200`
Press Set + ▽ or Set+ △ to change the Set RH values.
Refer Table-1 for limits for various input types.

Changing Manual Reset
To change the manual reset parameters for RH/ Temperature in time proportional mode,Press and hold △ +▽ for 3~4 seconds. The upper display will show as below:

Upper Display `rn-t`
`0000`
Press Set + ▽ or Set+ △ to change the Manual Reset values.

Press ▽ to save manual reset for temperature and the manual reset for RH will be shown as below:

Upper Display `rn-r`
`0000`
Press Set + ▽ or Set+ △ to change the Manual Reset values.

After changing the required values, Press and hold △+ ▽ for 3~4 seconds to come out of the editing mode. Note that the parameters displayed in this mode is dependent upon the Lock ('Lck') parameterin the configuration mode.

Table -1

This table shows the maximum set point limit ranges for different inputs:
1. Pt-100 : 0 ~ 60 °C
2. RH : 0~100 %

Limits for Pt-100 (0.1°C) Input:
a. Hysterisis : 0.0 ~99.9°C
b. Proportional Band : 1~99°C
c. Cycle time : 1~99 seconds
d. Process offset : -99.9~99.9°C
e. Manual Reset : 0.0~99.9°C

Limits for RH :
a. Hysterisis : 0 ~99.9%
b. Proportional Band : 1~99°C
c. Cycle time : 1~99 seconds
d. Process offset : -99.9~99%
e. Manual Reset : 0~99%

Default Factory Set Values:

`rESn`	`.1`
`OF-t`	`000.0`
`rL-t`	`HEAt`
`Cn-t`	`On`
`HY-t`	`000.1`
`Pb-t`	`20`
`rn-t`	`060.0`
`OF-r`	`000.0`
`Cn-r`	`On`
`rL-r`	`For`
`HY-r`	`000.1`
`Pb-r`	`0020`
`Cy-r`	`0020`
`rn-r`	`100.0`
`LcH`	`0000`

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2. Output: Relay 5A/230VAC Resistive
3. Op. Temperature: 0~50 Deg.
4. Supply: 230V AC +/- 15%
5. Resolution: 1 °C /0.1°C & 0.1/1%
6. Range: Pt-100 -> 0.0~60.0 °C
RH -> 0~100.0%C
7 .Accuracy: 0.25% +/- 1L.C.
8. No. Of Set-Points : 2
9. PV Offset : settable from -99.9~99.9°C
10. For Temperature:
Control Action: On/Off or Proportional
Relay Logic: Heat/Cool (on/off only)
Proportional Band: 1~99°C
Cycle Time : 1~99 seconds
Manual Reset : 0.1~99.9°C
Hysterisis : 0.1~99.9°C
11. For RH :
Control Action: On/Off or Proportional
Relay Logic: : For/Rev (on/off only)
Proportional Band: 1~99 %
Cycle Time : 1~99 seconds
Manual Reset : 0.1~99.9%
Hysterisis : 0.1~99.9°C
12.Dimensions:
. Cutout: 92mm (W) x 92mm (H)
Overall: 96mm(W) x 96mm(H) x 90mm (D)
Configuration Setting:
Turn Off the Instrument. Now Short the terminals marked configuration and turn ON the Instrument. Now change/read the configuration parameters as below.After setting, turn OFF the Instrument, remove the shorting and turn ON the Instrument toapply the new settings.
Key Press | Display | Description
1. To select the resolution 0.1/1
UpperDisplay rESn / .1
Press Set +△ 1
2. Press ▽ to change the process value offset if required.
Upper Display OF-t Process offset
0000 °C
Press Set + ▽ to change the offset value for temperature.
Refer Table-1 for limits for various input types.
3. Press ▽ To set relay logic If Cn-t = "ON"
Upper Display rL-t
HEAt
CooL
4. Press ▽ to select Control action for temperature
Upper Display Cn-t
Control Mode On On-Off
Press Set +▽ Pr Time Proportional
5. Press ▽ To set Hysterisis value If Cn-t = "ON"
Upper Display HY-t
Hysterisis 0.1
This parameter determines the value of the Process value at which the Relay must turn ON in On/off mode and can be changed by pressing Set+△ or Set + ▽ .
Key Press | Display | Description
6. Press ▽ To set Proportional Band in °C If Cn-t = "Pr"
Upper Display Pb-t
Proportional Band 01 (1~99° C)
This parameter determines the value of the Process value below the Set Value at which the Proportional Action will start .Change value by pressing Set+△ or Set +▽ .
7. Press ▽ To set Cycle Time in seconds If Cn-t = "Pr"
Upper Display Cy-t
Cycle Time 20 (1~99 sec.)
This parameter determines the total cycle time for the Proportional Action .Change value by pressing Set+△ or Set +▽ .
8. Press ▽ To determine the maximum set point limit for temperature
Upper Display rn-t
Set point Limit 0450 °C
Press Set + ▽ to change the Set point limi.
Refer Table-1 for limits for various input types.
The parameters from 9 to 15 are similar to the parameters 2 to 8 as listed above for the RH settings. These parameters will show a similar message except that "xx-t" will be changed to "xx-r" for the RH parameters.
16. Press ▽ to select Lock mode
Upper Display LcK
Press Set +▽ 0000 (0/1)
This parameter determines whether the manual reset parameter should be accesible from the front panel to the user.
If Lck = 0 : disable all.
If Lck =1 : show manual reset.
Key Press | Display | Description
Changing Set values for temperature & RH:
Turn On the Instrument. The upper display will show the Process temperature and the lower display will show the RH value. To change the set point values for temp & rh. Press set for 3~4 sec. Upper display will show as below.
Press ▽ to change the Set-1 value
Upper Display SP-t
0200 °C
Press Set + ▽ or Set+ △ to change the Set temperature values.
Refer Table-1 for limits for various input types.
Press ▽ to change the Set-1 value
Upper Display SP-r
0200
Press Set + ▽ or Set+ △ to change the Set RH values.
Refer Table-1 for limits for various input types.
Changing Manual Reset
To change the manual reset parameters for RH/ Temperature in time proportional mode,Press and hold △ +▽ for 3~4 seconds. The upper display will show as below:
Upper Display rn-t
0000
Press Set + ▽ or Set+ △ to change the Manual Reset values.
Press ▽ to save manual reset for temperature and the manual reset for RH will be shown as below:
Upper Display rn-r
0000
Press Set + ▽ or Set+ △ to change the Manual Reset values.
After changing the required values, Press and hold △+ ▽ for 3~4 seconds to come out of the editing mode. Note that the parameters displayed in this mode is dependent upon the Lock ('Lck') parameterin the configuration mode.
Table -1
This table shows the maximum set point limit ranges for different inputs:
1. Pt-100 : 0 ~ 60 °C
2. RH : 0~100 %
Limits for Pt-100 (0.1°C) Input:
a. Hysterisis : 0.0 ~99.9°C
b. Proportional Band : 1~99°C
c. Cycle time : 1~99 seconds
d. Process offset : -99.9~99.9°C
e. Manual Reset : 0.0~99.9°C
Limits for RH :
a. Hysterisis : 0 ~99.9%
b. Proportional Band : 1~99°C
c. Cycle time : 1~99 seconds
d. Process offset : -99.9~99%
e. Manual Reset : 0~99%
Default Factory Set Values:
rESn .1
OF-t 000.0
rL-t HEAt
Cn-t On
HY-t 000.1
Pb-t 20
rn-t 060.0
OF-r 000.0
Cn-r On
rL-r For
HY-r 000.1
Pb-r 0020
Cy-r 0020
rn-r 100.0
LcH 0000