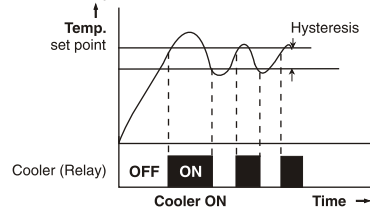


USER GUIDE

1) ON/OFF control action (for cooler) :

The relay is 'OFF' up to the set temperature and 'ON' above the set temperature. As the temperature of the system drops, the relay is switched 'OFF' at a temperature slightly lower than the set point.

Hysteresis : The difference between the temperature at which relay switches 'ON' and at which relay switches 'OFF' is the hysteresis or dead band.



2. Display Offset adjustment :

This function is used to adjust the display value in cases where it is necessary for display value to agree with another recorder or indicator, or when the sensor cannot be mounted in correct location.

3. Defrost mode :

The unit has two modes of defrost - Auto and Manual. The Auto mode can be set by programming required defrost frequency between 0 and 99 (Hr / Min / Sec). The defrost frequency excludes the defrost time. To enable Manual defrost press key ∇ continuously for 4 sec. Defrost is valid only for cool mode. During defrost relay remains OFF for a period = Programmed defrost time. Defrost once enabled can be disabled only at power ON. Defrost is disabled if Defrost frequency = 0 or Defrost time = 0.

4. Restart time delay :

This parameter is used to protect the compressor from restarting in a short period of time and can be set between 0 to 99 minutes.

Example : If this parameter is set at 2 mins, the relay will cut off at the set temperature, but will not restart for a minimum of 2 mins, even if the differential is achieved earlier.

5. Alarm acknowledgment :

To acknowledge the alarm, press \blacktriangle key.

6. Sensor Break :

- When set as 0, main relay is OFF during sensor break.
- When set as 1, main Relay is OFF for 10 min & On for
- 4 min (OFF First) during sensor break.

7. Lock Parameter :

- When set as 0, Configuration parameters & setpoint Are editable
- When set as 1, Configuration parameters & setpoint are read only.

8. Alarm Indicator :

- When FN is set as AL, Alarm function is enabled. HA alarm is generated when $PV \geq HA$, display toggles every 1 sec between PV & HA Value. LA alarm is generated when $PV \leq LA$, display toggles every 1 sec between PV value & LA.

9. Resolution :

- When set as 0.1, PV auto ranges to Resolution 0.1 for $-19.9 > PV > 19.9$ SP range is limited from -19.9 to 19.9
- (If $LA < -19.9$ or $HA > 19.9$)

10. Set Point High Limit :

This function provides highest set point which can be set.

11. Set Point Low Limit:

This function provides lowest set point which can be set.

12. Door Open mode :

- When set as 0, the door open alarm occurs when DI input is open (after door open alarm delay)
- When set as 1, the door open alarm occurs when DI input is closed (after door open alarm delay)

13. Power on Reset :

This Function is used for Retention of timer mode.

- When enabled, timer will start from the set value when power ON.
- When disabled, timer will start from the previous value where it was before power OFF.

CONFIGURATION INSTRUCTIONS

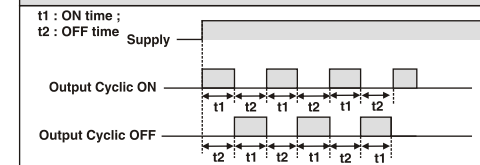
KEY FUNCTIONS	ONLINE	CONFIGURATION MENU	Set point
\leftarrow	<ul style="list-style-type: none"> ➢ Press once to view SP ($^{\circ}C/^{\circ}F$ blinking) ➢ Press for 3 sec to edit SP (Setpoint value blinking) 	<ul style="list-style-type: none"> ➢ Press once to start editing current parameter value. (Parameter value blinking) ➢ After editing, press again to store current parameter value. ($^{\circ}C/^{\circ}F$ blinking) 	<ul style="list-style-type: none"> ➢ Press once to exit Setpoint view / edit mode.
$\blacktriangle + \blacktriangledown$	<ul style="list-style-type: none"> ➢ Press for 3 sec to enter configuration menu. 	_____	_____
\blacktriangle	<ul style="list-style-type: none"> ➢ Press once to acknowledge Alarm. ➢ Press once to see the remaining time. 	➢ To view next parameter OR Increment parameter value.	➢ Increment setpoint.
\blacktriangledown	<ul style="list-style-type: none"> ➢ Press for 3 sec to enable Manual Defrost. 	➢ To view previous parameter OR Decrement parameter value.	➢ Decrements setpoint.
\uparrow	_____	➢ Press for 3 sec to exit configuration menu.	➢ Press 3 Sec to exit Setpoint view / Edit mode

OPERATIONAL MENU

Display (For 1sec)	Description	Default Value	Range	Condition
P1	Control mode	CL	CL / HT	NA
P2	High alarm	100	SP to 100 $^{\circ}$	NA
P3	Low alarm	-50	-50 $^{\circ}$ to SP	NA
SH	Set Point High Limit	90	SP to 90 $^{\circ}$	NA
SL	Set Point Low Limit	-40	-40 $^{\circ}$ to SP	NA
P4	Hysteresis	0.5	0.1 $^{\circ}$ to 9.9 $^{\circ}$	NA
P5	Display offset	0	-19.9 $^{\circ}$ to 9.9 $^{\circ}$	NA
P6	Restart time delay	3.0	0 to 19.9 min	NA
P7	Defrost time	0	0 to 99 min	NA
P8	Defrost Frequency	1	0 to 99 min	Defrost time>0
P9	Defrost Frequency unit	H	H / M / S	Defrost time>0
PU	Display Unit	$^{\circ}C$	$^{\circ}C / ^{\circ}F$	NA
LP	Lock Parameter	0	0 / 1	NA
RS	Resolution	0.1	0.1 / 1	NA
FN	Relay 2 Function	AL	OF / AL / TM	NA
T1	Power On Reset	Y	Y / N	Visible only when FN = TM Applicable only for CH403B-3-NTC
T2	On time unit	M	H / M / S	
T3	OFF time unit	M	H / M / S	
T4	ON time resolution	1	0 or 0.1	
T5	OFF time resolution	1	0 or 0.1	
T6	ON time	10	1 to 199	
T7	OFF time	10	1 to 199	
T8	OFF First / ON First	0	0 or 1	
T9	S. BRK-Cyclic OFF/Cyclic Continue	0	0 or 1	
E1	Sensor break alarm delay	0	0 / 1	NA
E2	Door open alarm delay	5	5 to 99s	NA
E3	Door open mode	0	0 / 1	NA
F5	Reset all(Set to factory default)	0	0 / 1	NA

MODE OF OPERATION - CYCLIC

Cyclic ON first, Cyclic OFF first modes :



- The Cyclic Timer affects the Alarm Relay Output.

(Specifications are subject to change, since development is a continuous process.)

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