Touch Sensitive Temperature Controller

Features:

SZ-7516T

- Rechargeable Battery Backup & Low Battery Indication.
- · Buzzer to activate at Fault.
- · Resolution Selection for °C.
- Unit selection parameter for °C and °F.
- Control action selection for Heating, cooling & cooling with defrost
- . Intelligent time delay added to avoid the Long OFF condition
- of compressor due to Power OFF and P6 Parameter.
- Off cycle defrost.
- · Highest & Lowest Temperature Logging in 10 min of interval.

WIRING: The probe and its corresponding wires should never be installed in a conduit next to control or power supply lines. The electrical wiring should be done as shown in the diagram. The power circuit should be connected to a protection switch. The terminals admit wires of upto 2.5sq mm.

WARNING: Improper wiring may cause irreparable damage and personal injury. Kindly ensure that wiring is done by qualified

Maintenance: Cleaning: Clean the surface of the Controller with a soft moist cloth. Do not use abrasive detergents, petrol, alcohol or

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Installation: Fixing and dimensions of panel models:

To fix the unit, slide the fastener (1) through the guides (2) as per the position shown in the figure. Move the fastener in the direction of the arrow, pressing tab 3 it permits to move the fastener in the opposite direction of the arrow. Once the Controller has been connected, they should be covered with the lid 4 Silicon sealant should be applied along the perimeter of the panel cutout or a rubber 'O' ring supplied before the unit is fitted to increase protection against water seepage.

Controller: Controller should be installed in a place protected by vibration, water and corrosive gasses and where Ambient Temperature does not exceed the values specified in the technical

Probe: To give a correct reading, the probe must be installed in a place protected from thermal influences, which may affect the

Battery:

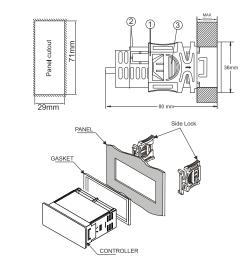
- Incorrect handling of the battery could result in fire or personal injury. The battery may explode if not handled
- Do not short circuit the battery.
- Make sure the plus and minus terminals are correctly aligned when loading the battery or Do not reverse the polarity or Do not disassemble the battery
- · Obey the local laws on disposing the battery
- Misuse of the battery may lead it to overheat or ignite and cause serious injury.
- Do not open the battery
- · Always comply with the voltage range given on the battery label
- The Battery must be removed from the control before it is scrapped.
- The control must me disconnected from the supply mains when removing the Battery.
- The Battery is to be disposed of safely

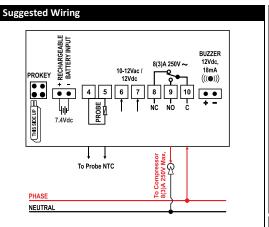
Disposal of The Product:



The product must be disposed of separately in accordance with the local waste disposal legislation in force

Panel Cutout & Dimensions





: Frontal: 78 mm X 36 mm.

echnical Data	
ousing	: Black ABS Plastic, Auto-extinguish
ront Cover	: Polycarbonate Plastic V0 Grade

Te

Dimensions

Depth: 80mm **Panel Cutout** : 29 X 71mm : Flush panel mounting with fasteners Mounting Protection : IP65 Front (with gasket)

Connections : Screw terminal blocks. < 2.5sq mm terminal only. Display : 3 X 17mm 7 segment display

9 LEDs for Indication Data storage : FEPROM Memory **Power input** : 10-12Vac / 12Vdc (External Transformer) External Transformer: Supply Input

Output Voltage: 10Vac@400mA : Compressor Relay 8(3)A, 250V AC Relay output Operating Temp. : -30°C to 70°C (non-condensing) Operating Temperature for Ambient and

Voltage: 230Vac (+/-15%)

Surface T = Ta = Ts = -30°C to 70°C **Operating Humidity** : -5% to 95% (non-condensing) Storage Temp. Storage Humidity **Measuring Range**

Resolution

: -30°C to 70°C (non-condensing) : -5% to 95% (non-condensing) : -30.0°C to 50.0°C (when rS = 0.1) -30° C to 50° C (when rS = 1)

-22°F to 122°F : 1 NTC Probe : +/- 1°F or 1°C / 0. 1°C

(Selectable when CF = C) :+/-0.5°C Accuracy

Alarm (Buzzer) : 12Vdc (+/-1V), 20mA (Max.) :0% to 100% **Battery Input Battery Resolution** :5%

Battery Input for Backup: 7.4V / 2600mAH Max.

(Rechargeable Li-Ion Battery with ON/OFF Switch) Purpose of Controller : Temperature sensing control

Construction of Control : Incorporated control Type Action : Type 1 Action Additional Features of Type 1 action: Type 1.c Action **Operating Time** : Continuous

Interface	
^	In Program mode:
	Scroll through parameters & Increases
-	parameter value.
IP Kev	To view Battery capacity when controll

city when controller is ON only with the Battery input. In Set mode: Increases parameter value. Hold for 1sec to check temperature logged value.

Touch and hold for 2sec to enter into program mode. In Program Mode: Scroll through parameters & Decreases Down/PRG parameter value.

In Set Mode: Decreases parameter value

Touch & hold for 2 sec to start a manual defrost ** and to stop Auto / Manual defrost cycle (When RST P1 = CLd & P7 > 0) Defrost/Rest This key is used to Mute the Buzzer and Touch to Key reset the fault manually.

Also used to Exit from program mode

Touch and hold for 2sec to enter into set mode. In program mode and set mode SET set/save the changed value of parameter. SET Key In Log Mode: Touch and hold this key for 1 sec to reset the logged value PRG + SET Touch & Hold for 5sec to power on/off the controller in the Battery mode

In Battery mode touch and hold for 10sec to + SET reset battery cycle when Old battery replaced by RST 1

To check Probe Temperature while defrosting & ddF is set to "dF". RST

CPr

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Sr.	Para	Description	
1	SP	Compressor relay set point.	
2		Set other parameters.	
3	P1	To select control action.	
4	P2	High temperature limit.	
5	P3	Low temperature limit.	
6	HS	Maximum Set Point limit.	
7	LS	Minimum Set Point Limit.	
8	P4	Differential for compressor relay ON condition.	
9	P5	Probe Calibration	
10	P6	Minimum OFF time for compressor relay.	
11	Ot	Minimum ON time for compressor relay.	
12	E1	Compressor relay status in Probe fail.	
13	Cn	Compressor relay OFF time during Probe fail.	
14	Су	Compressor relay ON time during Probe fail.	
15	P7	Duration for Defrost Cycle.	
16	P8	Frequency for Defrost Cycle.	
17	ddF	Display while the Defrost Cycle is in progress.	
18	du	Display update delay on Temperature increase	
		& decrease.	
19	bLo	Low Battery Indication.	
20	AL	Activate Buzzer output.	
21	Htd	High Temperature Alarm delay.	
22	Ltd	Low Temperature Alarm delay.	

Probe Temperature fault Reset.

24	Ad	Time delay at Power ON for fault indication.
25	CF	To select temperature unit.
26	rS	Controller Temperature Resolution.
27	PA	Change Password
28	LP	Lock Keypad.
29	UP	Upload Parameter to Pro-key.
30	FS	Restore default setting of the Controller.
31	EP	End Programming
32		LED Indications
33		Operating Messages (Normal Mode)
34		Operating Messages (Pro-key)
35		Operating Messages (Battery)
36		Password Function
37		Temperature Logging
38		Battery Function
39		Pro-key Function

Parameter List

Function: To set compressor relay Set Point.

Parameter Touch and Hold SET Key for 2 Sec.

Display will show set value. The set point value can now be modified by using the UP/DOWN key. After selecting the desired value, touch the set key and user can see "- -" which confirms that the set point has been stored in memory

CF = C / rS = 1			
Min.	Max.	Fac.	
LS+1	HS-1	2°C	

CF = C / rS = 0.1		
Min	Max	Fac.
LS+1.0	HS-1.0	2.0°C

	CF = F	
Min.	Max.	Fac.
LS+1	HS-1	36°F

To set value press SET key.

2. To Set Display will flash "P1" after entering the correct other password. Parameters To select other parameters, use UP/DOWN keys. Touch & Hold

Key for 2 Sec 3. P1

Function: To select control action mode Parameter

To change values, use PRG keys.

When set to,

CLd = Cooling Mode with Defrost. = Cooling Mode without Defrost CoL HEt = Heating Mode.

Min. Max. Fac. CLd HEt Note: Defrost related parameters i.e. P7, P8, ddF will work only if

this parameter is set to CLd. Function: To set maximum allowable high

temperature limit. Parameter Example: Parameters set to P2 = 30.0°C, Htd = 60 Min If this parameter is set to 30.0°C and the Probe temperature

reaches or goes above 30.0°C for 60 Min or more, then display will show Ht (High Temp.) indicating that the temperature has reached or gone above the value set in this parameter. Differential of 1.0 $^{\circ}\text{C}$ is considered for clearing the fault.

Note: This parameter will work only when Htd parameter is set to <u>></u> 0.

CF = C / rS = 1			
Min.	Max.	Fac.	
P3+1	50°C	50°C	

Min	Max	Fac.
P3+1.0	50.0°C	50.0°C
	CF = F	

CF = C / rS = 0.1

	CF = F		
4	Min.	Max.	Fac.
ON	P3+1	122°F	122°F

Function: To set minimum allowable low Parameter temperature limit.

Example: Parameters set to P3 = -10.0°C, Ltd = 60 Min.

If this parameter is set to -10.0°C and the Probe temperature reaches or goes below -10.0°C for 60 Min or more, then display will show Lt (Low Temp.) indicating that the temperature has reached or gone below the value set in this parameter. Differential of 1.0°C is considered for clearing the fault. Note: This parameter will work only when Ltd parameter is set to >

CF = C / rS = 1			
Min.	Max.	Fac.	
-30°C	P2-1	-30°C	

Min	Max	Fac.
-30.0°C	P2-1.0	-30.0°C

LĿ

	A	Mir
ay)	ON	-22°

Min.	Max.	Fac.
-22°F	P2-1	-22°F

6. HS Function: To set Maximum set point limit. Once set at a particular value, this will not allow the set point to go

Example: Setting this parameter at 12.0°C will not allow the set point to go above 12.0°C.

CF = C / rS = 1 CF = C / rS = 0.1Min Max Fac. Min. Max. Fac. SP+1.0 50.0°C 12.0°C 50°C 12°C

	CF = F		
	Min.	Max.	Fac.
SP = Set Point	SP+1	122°F	54°F

7. LS Function: To set Minimum set point limit. Parameter

Once set at a particular value, this will not allow the set point to go below this value. Example: Setting this parameter at -2.0°C will not allow the set point to go below -2.0°C.

CF = C / rS = 1		_	CF	= C / rS =	= 0.1		
	Min.	Max.	Fac.		Min	Max	Fac.
	-30°C	SP-1	-2°C		-30.0°C	SP-1.0	-2.0°C

	Min
SP = Set Point	-22°

CF = F . Max. Fac. SP-1 28°F

Parameter	relay ON cond	ition.		
				•

Function: To set the differential for compressor

Example: If P1 parameter is set to CLd or CoL (Cooling mode): If the set point is set at 2.0°C and differential is set at 2.5 °C, then when the system reaches 2.0°C, the compressor relay will go OFF. Since the differential is 2.5°C, the compressor relay will come ON

If P1 parameter is set to HEt (Heating mode):

(restart) at 4.5°C (2.0°C +2.5°C).

If the set point is set at 2.0 $^{\circ}\text{C}$ and differential is set at 2.5 $^{\circ}\text{C}$, then when the system reaches 2.0°C, the compressor relay will go OFF. Since the differential is 2.5°C, the compressor relay will come ON (restart) at -0.5°C (2.0°C - 2.5°C).

CF = C / rS = 1				
Min.	Max.	Fac.		
1°C	20°C	2°C		

CF = C / rS = 0.1			
	Min	Max	Fac.
	0.1°C	20.0°C	2.5°C

	CF = F	
Min.	Max.	Fac.
1°F	20°F	2°F

P5	Function: To set Probe calibration.

In time it may be possible that the display may be offset by a degree

To compensate for this error, user may need to add or minus the degrees required to achieve the correct temperature

Example: The Probe temperature on the display is 28.0°C, whereas the actual temperature is 30.0°C. User will have to set the P5 parameter to 2.0 °C, which means that once out of the programming mode, the temperature on display will be 30.0°C (28.0°C+ 2.0°C).

CF = C / rS = 1			
Min.	Max.	F	
-10°C	10°C	٥	

10. P

11. Ot

CF = C / rS = 0.1			
Min	Max	Fac.	
-10.0°C	10.0°C	0.0°C	

	CF = F	
Min.	Max.	Fac.
-10°F	10°F	0°F

6	Function: Minimum OFF time for Compressor
meter	relay.

This parameter is used to protect the compressor from restarting in

Example: If this parameter is set at 3 minutes, the compressor relay goes OFF at the set point, it will not restart for a minimum of 3 minutes, even if the differential is achieved earlier. This parameter is good to protect the life of the compressor.

Note: If controller's power is OFF more than P6 Parameter setting then compressor relay will be ON, after Power ON, else if controller is power OFF for 2 min then once powered ON the controller. compressor will start after 1min.



gress	0 Min	99 min	3 min
•			

Function: Minimum ON Time For Compressor

Min. Max.

Parameter Relay. This parameter is used to protect the compressor so that there is enough time for oil to return back to the compressor. This delay starts once the compressor relay is ON

Example: If this parameter is set at 5 Min and if the temperature is achieved before 5 minutes, then the compressor relay will remain ON for minimum 5 minute, though set point is achieved.

Min.	Max.	Fac.
0 Min	20 Min	5 Min

Max. Fac.

Fac.

12. E1	Function: Compressor Relay status in Probe Fail.
Parameter	
When Cot to	

Wh oFF = Compressor Relay status is OFF. on = Compressor Relay status is ON.

cYc

compressor ricia, periorms a dat, cycle :
for minutes OFF and Cy for minutes ON.

	OFF	cYc	CYC	
Function: Compressor Relay OFF Time during				

Parameter Probe Fail (This will be visible only when E1 parameter is selected cYc). Example: If this parameter is set to 10 minutes, then compressor

relay will be OFF for 4 minutes while performing the duty cycle

Min.	Max	Fac.
1 Min	99 Min	10 Min

14. Cy	Function: Compressor Relay ON Time during	
Parameter	Probe Fail.	
(This will be visible only when E1 personator is selected eVe)		

Example: If this parameter is set to 20 minutes, then compressor relay will be ON for 20 minutes while performing the duty cycle.

Min.	Max	Fac.
1 Min	99 Min	20 Min

15. P7	Function: This Parameter is used to set the
Parameter	Duration for Defrost Cycle.
This parameter	is applicable for both Auto and Manual Defrost. If

set to 0, there will be no defrost cycle Example: If this parameter is set to 60 Minutes and Defrost Frequency means P8 parameter is set to 4 Hour, then 4 Hour after Power is applied to the controller, defrost will take place for 60 Minutes. This cycle will repeat after every 4 Hours & stored the defrost frequency elapsed time in the memory after every 10

Note: This parameter will be visible if CA Parameter is set to CLd.

ON.	Min.	Max	Fac.
Defrost in Progress	0 Min	99 Min	60 Min

16. P8	Function: This Parameter is used to set the
Parameter	frequency for Defrost Cycle.

Example: As explained for P7 parameter.

This parameter is applicable only for Auto Defrost

Note: This parameter will be visible if P1 Parameter is set to CLd &

Min.	Max.	Fac.
1 Hr	31 Hr	4 Hr

17. ddF	Function: This parameter is used to select display	
Parameter	while the Defrost Cycle is in progress.	
When this parameter is set to,		
Pr = V	= While the Defrost is ON, Room temperature	
w	ill be displayed.	
dF = V	Vhile the Defrost is ON, "dF" will be displayed.	

Min.	ſ	Max.	Fac.
Pr	ſ	dF	dF

Note: This parameter will be visible if P1 Parameter is set to CLd & P7 > 0.

18. du	Function: Display update delay on Probe	
Parameter	Temperature increase.	

This parameter is enabled only when the parameter value is kept greater than 0.

P1 = CLd or CoL (Cooling Mode)

If Probe Temperature is increased by 0.1°C / 1°F or more due to any reason, Display will be updated at every 1 minute by +1°C / °F. Not applicable for decrease in temperature.

P1 = HEt (Heating Mode)

If Probe Temperature is decreased by 0.1°C / 1°F or more due to any reason, Display will be updated at every 1 minute by -1°C / °F. Not applicable for increase in temperature.

- 1) When the ddF parameter is set to dF, this parameter will work in the background and the Temperature will be updated on the display once Defrost gets over.
- This is not applicable for Ht/Lt fault & when Control probe

Min.	Max.	Fac.
0 Min	15 Min	1 min

19. bLo	Function: Low Battery Indication.
Parameter	
- 1	

Example: If this parameter is set to 50%. When controller is ON with the Battery supply & Display Battery value goes equal or below this parameter setting then Display will show "bL" for Battery Low. Battery LED Icon in Red colour will be ON.

	Min.	Max.	Fac.
	0%	100%	50%
0.1 0.1 1.10			

Note: If this Parameter is set to 0 then Battery related features will be disabled.

20. AL	Function: To Activate Buzzer output.
Parameter	

The Buzzer will come on incase the temperature reaches or goes above or below the points set in parameter P2 & P3 and if the probe fails as per parameter setting.

= Disable Buzzer for all Faults. = Enable Buzzer at Ht & Lt Fault Only. EHt = Enable Buzzer at Ht Fault Only. = Enable Buzzer at Lt Fault Only. ELt

Note: Buzzer will activate for Probe fail Fault, if this parameter is set to EHL, EHt, ELt.

Buzzer will activate as per AL Parameter whenever fault occurs.

		Min.	Max.	Fac.
		diS	ELt	EHL
21. Htd	Function: To set tim	ie delay fo	or High	

Temperature fault Example: Same as P2 parameter.

Note: If this parameter is set to diS then HT fault sensing will be disabled.

Min.	Max.	Fac.
diS	999 min	60 Min

Example: Same as P3 parameter.		
Parameter	fault.	
22. Ltd	Function: To set time delay for Low Temperature	

Note: If this parameter is set to diS then LT fault sensing will be

		Min.	Max.	Fac.	
		diS	999 min	diS	
23 CPr	Function: This parameter is used to reset Prohe				

Parameter Fault. When set to, Aut = Fault reset Auto.

MAn = Fault reset Manual.

Example: Aut = If HT/LT fault is present then fault will clear automatically

Man = If HT/LT fault is present then fault will not be clear even if temperature becomes healthy. User has to clear that fault manually by RST key.

Min.	Max.	Fac.
Aut	MAn	MAn

Example: If this parameter is set to 20 minutes, once the controller		
Parameter	delay at Power ON for Fault Indication.	
24. Ad	Function: This parameter is used to set the time	

is powered ON, no fault indication will be activated for 20 minutes. Alarm delay is used only for High Temperature and Low Temperature, but not for Sensor fail.

- 4	
_	N .
Fault is	present

Min.	Max.	Fac.
0 Min	99 min	20 Min

Note: This Parameter will be visible only when Htd > 0 or Ltd > 0.

25. CF	Function: To select temperature unit.
Parameter	

If this parameter is changed by the user, then SP, P2, P3, HS & LS parameters will get converted into selected unit. Temperature log will be reset.

When set to,

C = °C Selected.

F = OF Selected.

Min.	Max.	Fac.
С	F	-

Parameter	Resolution.	
This parameter when set to 0.1, it will take temperature related all		
parameters & Temperature in 0.1°C resolution.		

Function: To set Controller Temperature

This parameter when set to 1, it will take temperature related all parameters & Temperature in 1°C resolution.

Note: This Parameter will be visible only when CF parameter is set

Min.	Max.	Fac.
0.1	1	-

27. PA	Function: To change Password.
Parameter	

26. rS

User cannot enter into Program Mode, if correct password is kept other than 0, user need to enter correct password to enter into Program Mode.

If password is 0, user can directly access Program Mode

Min.	Max.	Fac.
-999	999	0

28. LP	Function: To lock Keypad
Parameter	

This parameter is used to lock the keypad so that tampering is not possible by by-standers. When set to.

UnL = Keypad Unlocked. LoC = Keypad Locked.

When locked all parameters can only be viewed, but not modified.

Note: If LP Parameter is set to LoC and if user tries to change any parameter value, "LP" will flash on the display.

Min.
UnL

29. UP	Function: To upload the parameters to	
Parameter	Pro-key.	
When set to "LIPL" all parameters will upload to Pro-key		

When set to,

no = No action performed.

UPL = Upload parameters to Pro-key.

Switch off the controller and connect validated Pro-key to the controller as per connection sticker & Power Up the controller. User must set all parameters after Pro-key is connected to controller. Set this parameter to UPL. Display will show "UL" if parameters are uploaded to Pro-key.

Display will show "Er" if uploading is failed or if Pro-key is not

Min.	Max.	Fac.
no	UPL	no

Min. Max. Fac.

30. FS	Function: To restore default settings of the	
Parameter	Controller.	
1441 //14	=0" "	

When set to "YES" all parameters are programmed to factory set Useful to debug setting related Problems.

When Set to,

no

YES

= FS is Inactive.

= FS as per Default Value.

		no	YES	no
31. EP	Function: To Exit fo	orm Progr	am Mode.	
Parameter				
Γo end	Once the key is pre	ssed, the	Controller	goes

To end program Press "S key.		Once the key is pressed, the Controller goes into the Normal Mode and displays the Temperature and all settings are recorded.		
32. LED Indications				
9 11 13	-	0.10		
	i Comp	ressor		Detrost

4.2.	Compressor	**	Defrost
**	ON: Compressor		ON: Defrost is in
	is ON.		Progress.
	OFF: Compressor is OFF.		
_	Time Delay	_	Power
$\langle \nabla \rangle$	ON: Compressor is	()	ON: Controller is in
	ON and in	•	stand-by mode.
	time delay for		Stand by mode.
	switching		
	OFF. (Ot		
	parameter) FLASHING:		OFF: Controller is in
			active mode.
	Compressor is in time delay		active mode.
	and about to		
	start.		
	Buzzer Output		Battery
4	Buzzer Output		Battery Battery indications
•	Buzzer Output		-
•	Buzzer Output		Battery indications
•	ON: Buzzer Output	•	Battery indications when controller is ON with Battery only. RED ON:
•		•	Battery indications when controller is ON with Battery only.
•	ON: Buzzer Output	•	Battery indications when controller is ON with Battery only. RED ON:
•	ON: Buzzer Output is ON.	•	Battery indications when controller is ON with Battery only. RED ON: Battery Low.
•	ON: Buzzer Output is ON. OFF: Buzzer Output	•	Battery indications when controller is ON with Battery only. RED ON: Battery Low.
•	ON: Buzzer Output is ON. OFF: Buzzer Output	•	Battery indications when controller is ON with Battery only. RED ON: Battery Low. RED FLASHING: Battery Fail /
•	ON: Buzzer Output is ON. OFF: Buzzer Output is OFF.	•	Battery indications when controller is ON with Battery only. RED ON: Battery Low. RED FLASHING: Battery Fail / Replace Battery. GREEN ON: Battery is Healthy.
•	ON: Buzzer Output is ON. OFF: Buzzer Output is OFF.	°F	Battery indications when controller is ON with Battery only. RED ON: Battery Low. RED FLASHING: Battery Fail / Replace Battery. GREEN ON: Battery is Healthy. When temperature is
♣	ON: Buzzer Output is ON. OFF: Buzzer Output is OFF. When temperature is displayed in	°F	Battery indications when controller is ON with Battery only. RED ON: Battery Low. RED FLASHING: Battery Fail / Replace Battery. GREEN ON: Battery is Healthy. When temperature is displayed in degree
°C	ON: Buzzer Output is ON. OFF: Buzzer Output is OFF.	°F	Battery indications when controller is ON with Battery only. RED ON: Battery Low. RED FLASHING: Battery Fail / Replace Battery. GREEN ON: Battery is Healthy. When temperature is

33. Operating Messages (Normal Mode)						
Ht	High temperature alarm Probe Temperature is equal or above the maximum High Temperature limit.	Lt	Low temperature alarm Probe Temperature is equal or below the minimum Low Temperature limit.			
PFL	Probe fail Probe short circuit, circuit open or without probe, or temperature is < -30.0°C or -22°F	PFH	Probe fail Probe temperature is > 50°C or 122°F			
LL	Last low temperature Last low temperature logged.	LH	Last high temperature Last high temperature logged.			
LP	Keypad Lock Keypad is locked.	bL	Low Battery Battery supply is equal or below the Low Battery Limit setting.			
LrS	In log function: When LL and LH values are reset.	dF	Defrost in Progress.			
rSt	Fault Reset Manually.					

34. Operating Messages (For Pro-key)					
UL Parameters are		dn	Parameters are		
	uploaded to Pro-		downloaded from Pro-		
key.			key.		
Err	Pro-key error due				
to wrong					
connection or					
	failed to upload or				
	download.				
		-			

35. Operating Messages (For Battery)					
bF	Battery fail or Battery input supply below 5.6V.	brP	Battery replace. Battery's life expired.		
brS	Battery cycle count reset				

36. Password Function

• In Programme Mode:

Touch & hold "PRG" key for 2sec. Display will flash "P2" parameter if "PA" value is kept "0". If other than "0", then "PA' and "0" will flash. Use " and "PRG " keys to enter the password. On entering correct value, display will flash the first parameter "P2". User can scroll through parameters using " or " PRG " keys.

37. High and Low temperature logging function

• How to see the logged values:

LL: Last Low temperature LH: Last High temperature

Touch and hold " key for 1 second display will flash "LL" and the corresponding temperature for 4 seconds. After this, display will flash "LH" and the corresponding temperature for 4 seconds and come out of Log mode and will display Probe temperature.

. How to reset the Logged values:

While the display is showing the logged values, if user touches & holds the "SET" key for 1sec, the logged values will be cleared and "rS" will be displayed.

Temperature Log values will be stored in memory after every 10min from Power ON.

 $\textbf{Note:} \ \mathsf{Temperature} \ \mathsf{logged} \ \mathsf{value} \ \mathsf{will} \ \mathsf{reset} \ \mathsf{when} \ \mathsf{CF} \ \mathsf{parameter}$ setting is changed

38. Battery Function

Controller functions as per mentioned in below:

- · Temperature and Temperature related faults will be
- Temperature will be logged.
- Only Compressor, Buzzer & Defrost function will be OFF.

39. Pro-key Function

To use Pro-key user must insert it prior to power ON.

Uploading mode

Parameters will upload to Pro-key from Program Mode. "UP" Parameter is provided in the Program Mode for

- Uploading parameters to Pro-key. By setting "UP" parameter to UPL, controller will
- validate the Pro-key then all parameters will be uploaded to Pro-key & Display will show "UL" for 1 Display will show "Er" for 10 sec if Pro-key is not
- connected or Pro-key validation or uploading is

Downloading mode

Whenever controller is powered up after flashing, controller will check Pro-key for downloading.

- If Pro-key is connected properly then Pro-key will validate & all parameters will download to the controller. Display will show "dn" for 1 sec.
- Pro-key is not connected properly & if downloading is failed then display will show "Er" for 10 sec.
- To download the parameter again, ensure Pro-key is connected properly and user need to restart the controller

User has to first Upload the parameters in the Subzero Validated Blank Pro-key and then subsequently use if for downloading. Note: Connect Pro-key and Power Up the controller. User must set all parameters after Pro-key is connected to controller.

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