

**Introduction**

The SZ-7531T is aesthetically superior versions of their predecessors. The SZ-7531T is a Dual Set Point Controller with Drain Valve facility. They are specifically designed for Air Dryer applications wherein the Fan cuts off at Fan set point and is restarted at a Temperature of Fan Set Point + Differential and the HGSV cuts off at HGSV set point and is restarted at a Temperature of HGSV Set Point – Differential.

Additionally, these controllers offer several protection features that are easily understood by the examples in the instructions below.

A number of parameters are displayed alphanumerically to set up the instrument for each specific application.

The SZ-7531T Controller can be used for several applications with a measuring range from -45.0°C to 99.0°C.

**Cautions**

**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 supply 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 personnel only.

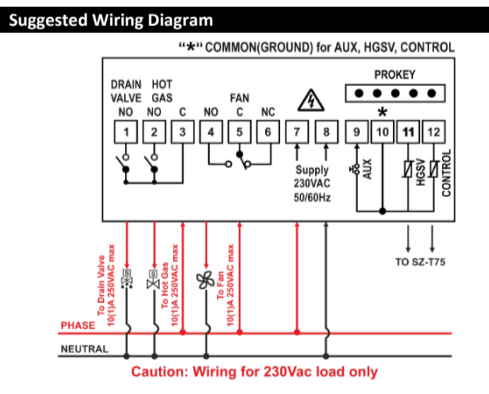
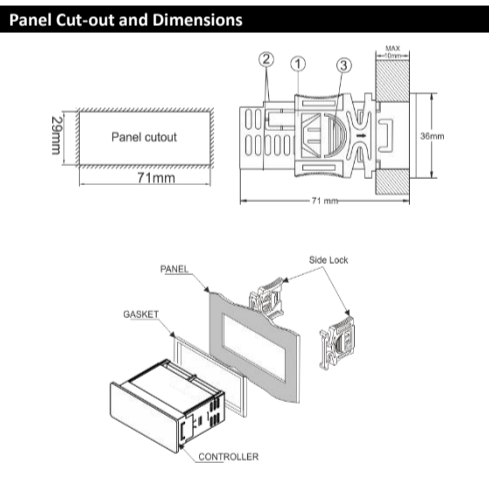
**Maintenance:** Cleaning: Clean the surface of the controller with a soft moist cloth. Do not use abrasive detergents, petrol, alcohol or solvents.

**Notice:** The information in this document is subject to change in order to improve reliability, design or function without prior notice and does not represent a commitment on the part of the company. In no event will the company be liable for direct, indirect, special, incidental or consequential damage arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages. No part of this manual may be reproduced or transmitted in any form or by any means without the prior written permission of the company.

**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.

**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 data.

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



**Technical Data**

**Housing:** Black ABS Plastic, Auto-extinguish  
**Front Cover:** Polycarbonate Plastic V0 Grade  
**Dimensions:** Frontal: 78 X 36mm, Depth: 80mm  
**Panel Cutout:** 29 X 71mm  
**Mounting:** Flush panel mounting with fasteners  
**Protection:** IP65 Front (with gasket)  
**Connections:** Screw terminal blocks. < 2.5sq mm terminal only.  
**Display:** 2 X 17mm 7 segment display  
 1 X 17mm 7 segment display  
 7 LEDs for Indication  
**Data storage:** Flash APROM memory.  
**Power input:** 230 Vac ±10%, 50/60Hz Standard.  
**Relay output:** Fan Relay 10(1)A, 250V AC  
 Hot Gas Relay 10(1)A, 250V AC

**Operating temp.:** Drain Valve Relay 10(1)A, 250V AC  
 : 0°C to 60°C (non-condensing)  
**Operating humidity:** : 20% to 85% (non-condensing)  
**Storage temp.:** : -25.0°C to 60.0°C (non-condensing)  
**Measuring Range:** : -45.0°C to 99.0°C (when rS=0.1/0.5)  
 -45°C to 99.0°C (when rS=1)  
**Input:** : NTC Probe-SZ-T75.  
**Digital Input (Potential Free):** AUX Digital Input for Fan, HGSV & Drain Valve.  
**Resolution:** : 0.1°C / 1°C / 0.5°C (Selectable)  
**Accuracy:** : +/- 1°C  
**Prokey:** : SZ-PK-3000

**User Interface**

**Up Arrow:** In Program mode: Scroll through parameters & Increases parameter value. In Set mode: Increases parameter value. Touch & hold to see HGSV probe temperature if A0 > diS.

**PRG Down Arrow:** Touch and hold for 2sec to enter into program mode. In Program mode and Set mode: Decreases parameter value.

**RST:** Touch & hold for 500 msec to manual Reset of Fault and Mute Buzzer. To force a Manual Drain, touch & hold for 2 seconds. The unit will start/stop drain process.

**SET:** Touch and hold for 2sec to enter into set mode. In program mode and set mode: set/save the changed value of parameter.

**Up Arrow + PRG Down Arrow:** Touch & hold to see Control Probe Temperature if default display is other than Control Probe.

Sr.	Para	Description
1	SPF	Set Point for Fan.
2	SPH	Set Point for HGSV.
3	P2	To Set Other Parameter
4	P3	High temperature limit.
5	P4	Low temperature limit.
6	HS	Maximum Set Point limit.
7	LS	Minimum Set Point limit.
8	P5	Differential for Fan relay ON condition.
9	P6	Probe calibration.
10	ot	Time delay (Fan relay restart after cutoff).
11	E1	Minimum ON time for Fan relay.
12	E1	Fan relay status in probe fail.
13	Cn	Fan relay OFF time during probe fault.
14	Cy	Fan relay ON time during probe fault.
15	d1	Drain Valve ON Duration.
16	d2	Drain valve OFF Duration
17	A0	Unit for Drain Valve ON/OFF timing.
18	A4	HGSV Probe Enable / Disable.
19	A5	Differential for HGSV.
20	A6	Probe Calibration for HGSV Probe.
21	H1	HGSV restart delay.
22	HcN	HGSV status on Probe Failure.
23	HcY	HGSV OFF Time for Probe Fault.
24	HcY	HGSV ON Time for Probe Fault.
25	AF0	Activate/deactivate AUX Digital Input fault.
26	AF1	To set fault sensing delay for AUX Digital Input.
27	AF2	To set Output status on AUX Digital Input.
28	AF3	To set reset mode for Fan Output, on AUX Digital Input for Fan Fault.
29	AF4	No. of retrials of Fan when Manual reset is selected.
30	ddr	Display while Drain Process is in progress.
31	nd	Default (Normal) Display.
32	AL	To activate Buzzer.
33	Ad	Ht or Lt power ON delay
34	rS	To set Controller Resolution.
35	PA	Change Password
36	LP	Keypad Lock
37	FS	Restore factory defaults
38	EP	End Programming.
		LED Indications
		Operating Messages
		Temperature Logging

**Parameter List:**

**To Set "Set Points"** Touch & hold SET key for 2 seconds. Display will flash "SPF". To select HGSV Set Point, use UP/DOWN keys.

1. SPF Function: To set Cut OFF Set Point for Fan Relay.

Fan will be 'ON' if the Control (Main) Probe Temperature reaches or goes above "Fan Set Point + Differential" (SPF + P4) and Fan will be 'OFF' if Control (Main) Probe Temperature reaches or goes below Set Point (SPF).

**Example:** When SPF is 0.0°C and Differential is 2.0°C. If the Control (Main) Temperature reaches or goes above 2.0°C (0.0°C + 2.0°C), Fan will be ON. Fan will be OFF when Control (Main) Temperature reaches or goes below 0.0°C.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
SPH+ 1.0	HS- 1.0	3.0°C	SPH+ 1	HS- 1	3°C

2. SPH Function: To set HGSV Relay Set Point.

HGSV will be 'ON' if the Control (Main) Probe Temperature reaches or goes above "HGSV Set Point + Differential" (SPH + P4) and FHGSV will be 'OFF' if Control (Main) Probe Temperature reaches or goes below Set Point (SPH).

**Example:** When SPH is 0.0°C and Differential is 2.0°C. If the Control (Main) Temperature reaches or goes above 2.0°C (0.0°C + 2.0°C), HGSV will be ON. HGSV will be OFF when Control (Main) Temperature reaches or goes below 0.0°C.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
LS+1.0	SPF- 1.0	0.0°C	LS+1	SPF- 1	0°C

2. To Set Other Parameters Touch & hold PRG key for 2 seconds. Display will flash "P2". To select other parameters, use UP/DOWN keys.

3. P2 Function: To set maximum allowable high temperature limit.

To change value use PRG keys. To set value touch SET key.

**Example:** If this parameter is set to 99.0°C and the temperature reaches or goes above 99.0°C, 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°C is considered for clearing the fault.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
P3+1.0	99.0°C	99.0°C	P3+ 1	99° C	99° C

4. P3 Function: To set minimum allowable low temperature limit.

**Example:** If this parameter is set to -1.0°C and the temperature reaches or goes below -1.0°C, 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.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
-1.0°C	P2-1.0	-1.0°C	-1°C	P2-1	-1°C

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

**Example:** Setting this parameter at 25.0°C will not allow the Fan set point to go above 24.0°C (HS-1.0).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
SPF+1.0	99.0°C	99.0°C	SPF+1	99°C	99°C

6. LS Function: To set Minimum set point limit. Once set at a particular value, this will not allow the HGSV set point to go below this value.

**Example:** Setting this parameter at -10.0°C will not allow the HGSV set point to go below -9.0°C (LS+1.0).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
-1.0°C	SPH-1.0	-1.0°C	-1°C	SPH- 1	-1°C

7. P4 Function: To set the differential for Fan relay ON condition. **Example:** If the set point is set at 10.0°C and differential is set at 2.0°C, then when the system reaches 10.0°C, the Fan Relay will go OFF. Since the differential is 2.0°C, the Fan Relay will come ON (restart) at 12.0°C (10.0°C + 2.0°C).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
1.0°C	20.0°C	2.0°C	1°C	20°C	2°C

8. P5 Function: To set probe calibration for Control Probe. In time it may be possible that the display may be offset by a degree or so. To compensate for this error, user may need to add or minus the degrees required to achieve the correct temperature.

**Example:** The 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, which means that once out of the programming mode, the temperature on display will be 30.0°C (28.0°C + 2.0°C).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
-10.0°C	10.0°C	0.0°C	-10°C	10°C	0°C

9. P6 Function: To set time delay between Fan relay restart. This parameter is used to protect the Fan from restarting in a short period of time.

**Example:** If this parameter is set at 3 minutes, the Fan 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 Fan.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
-10.0°C	10.0°C	0.0°C	-10°C	10°C	0°C

10. ot Function: Minimum ON Time for Fan relay. This parameter is used to protect the Fan so that there is enough time for oil to return back to the Fan. This delay starts once the Fan relay is ON.

**Example:** If this parameter is set at 1 minute and if the temperature is achieved before 1 minute, then the Fan relay will remain ON for minimum 1 minute, though set point is achieved.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 Min	99 Min	3 Min	0 Min	99 Min	3 Min

11. E1 Function: Fan relay status in case of Probe Failure. When set to, dFF (0) = Fan Relay status is OFF. dOn (1) = Fan Relay status is ON. dYc (2) = Fan Relay performs a duty cycle for Cn for minutes OFF and Cy for minutes ON.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 Min	99 Min	4 Min	0 Min	99 Min	4 Min

12. Cn Function: Fan relay OFF Time during probe fault. If E1 is not CyC, this parameter will not be applicable. **Example:** If this parameter is set to 4 minutes, then Fan relay will be OFF for 4 minutes while performing the duty cycle.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
1 Min	99 Min	4 Min	1 Min	99 Min	4 Min

13. Cy Function: Fan relay ON Time during probe fault. If E1 is not CyC, this parameter will not be applicable. **Example:** If this parameter is set to 10 minutes, then Fan relay will be ON for 10 minutes while performing the duty cycle.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
1 Min	99 Min	10 Min	1 Min	99 Min	10 Min

14. d1 Function: To Set Drain Valve ON duration. **Example:** If this parameter is set to 4 seconds Drain Valve will remain ON for 4 seconds.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 sec	99 sec	4 sec	0 sec	99 sec	4 sec

**Note: Drain process is independent of Fan and HGSV working, it will take place in probe fail also.**

15. d2 Function: To set Drain Valve OFF duration. **Example:** If this parameter is set to 1 minute Drain Valve will remain OFF for 1 minute.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
1 Min	99 Min	1 Min	1 Min	99 Min	1 Min

**Note: When d1 is set to 0, this parameter will not be visible.**

16. d3 Function: To set unit for Drain Valve ON/OFF timing. When set to, SEC (0) = Drain ON duration is in seconds & Drain OFF duration in Minutes. Min (1) = Drain ON duration is in Minutes & Drain OFF duration is in Hours.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
SEC	Min	SEC	SEC	Min	SEC

**Note: When d1 is set to SEC, this parameter will not be visible.**

17. A0 Function: To set HGSV Probe Enable / Disable. When set to, d rS (0) = HGSV Probe is Disabled. E n b (1) = View HGSV Probe Temperature. E n R (2) = HGSV Probe for HGSV Relay is Enabled.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
d rS	E n R	E n R	d rS	E n R	E n R

18. A4 Function: To set the differential for HGSV Relay ON condition. **Example:** If the set point is set at 10.0°C and differential is set at 2.0°C, then when the system reaches 10.0°C, the HGSV Relay will go OFF. Since the differential is 2.0°C, the HGSV Relay will come ON (restart) at 12.0°C (10.0°C + 2.0°C).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
1.0°C	20.0°C	2.0°C	1°C	20°C	2°C

19. A5 Function: To set probe calibration for HGSV Probe. In time it may be possible that the display may be offset by a degree or so. To compensate for this error, user may need to add or minus the degrees required to achieve the correct temperature.

**Example:** The temperature on the display is 28.0°C, whereas the actual temperature is 30.0°C. User will have to set the A5 parameter to 2.0, which means that once out of the programming mode, the temperature on display will be 30.0°C (28.0°C + 2.0°C).

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
-10.0°C	10.0°C	0.0°C	-10°C	10°C	0°C

**Note: When A0 is set to diS, this parameter will not be visible.**

20. A6 Function: To set time delay between HGSV Relay restart. This parameter is used to protect the HGSV from restarting in a short period of time. **Example:** If this parameter is set at 3 minutes, the HGSV 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 HGSV.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 Min	99 Min	3 Min	0 Min	99 Min	3 Min

21. H1 Function: HGSV relay status in case Probe Failure. When set to, dFF (0) = HGSV Relay status is OFF. dOn (1) = HGSV Relay status is ON. dYc (2) = HGSV Relay performs a duty cycle for Cn for minutes OFF and Cy for minutes ON.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 Min	99 Min	3 Min	0 Min	99 Min	3 Min

21. H1 Function: HGSV relay status in case Probe Failure. When set to, dFF (0) = HGSV Relay status is OFF. dOn (1) = HGSV Relay status is ON. dYc (2) = HGSV Relay performs a duty cycle for Cn for minutes OFF and Cy for minutes ON.

rS = 0.1/0.5			rS = 1		
Min	Max	Fac. Set	Min	Max	Fac. Set
0 Min	20 Min	0 Min	0 Min	20 Min	0 Min

		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>OFF</td> <td>4°C</td> <td>4°C</td> </tr> </table>	Min	Max	Fac. Set	OFF	4°C	4°C
Min	Max	Fac. Set						
OFF	4°C	4°C						
22. HCN Parameter	Function: HGSV Relay OFF Time during probe fault.							
If H1 is not CyC, this parameter will not be applicable.								
<b>Example:</b> If this parameter is set to 4 minutes, then HGSV Relay will be OFF for 4 minutes while performing the duty cycle.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>1 Min</td> <td>99 Min</td> <td>4 Min</td> </tr> </table>	Min	Max	Fac. Set	1 Min	99 Min	4 Min
Min	Max	Fac. Set						
1 Min	99 Min	4 Min						
23. HCY Parameter	Function: HGSV Relay ON Time during probe fault.							
If H1 is not CyC, this parameter will not be applicable.								
<b>Example:</b> If this parameter is set to 10 minutes, then HGSV Relay will be ON for 10 minutes while performing the duty cycle.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>1 Min</td> <td>99 Min</td> <td>10 Min</td> </tr> </table>	Min	Max	Fac. Set	1 Min	99 Min	10 Min
Min	Max	Fac. Set						
1 Min	99 Min	10 Min						
24. AF0 Parameter	Function: To activate or deactivate Auxiliary Fault Digital Input.							
When set to,								
$d_{i5}(0)$ = Digital Input is disabled. $oP_n(1)$ = Digital Input is activated when contact is open. $LL_o(2)$ = Digital Input fault is activated when contact is closed.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>d_{i5}</math></td> <td><math>LL_o</math></td> <td><math>d_{i5}</math></td> </tr> </table>	Min	Max	Fac. Set	$d_{i5}$	$LL_o$	$d_{i5}$
Min	Max	Fac. Set						
$d_{i5}$	$LL_o$	$d_{i5}$						
25. AF1 Parameter	Function: To set Auxiliary Fault Digital Input sensing delay.							
<b>Example:</b> If F1 = 5seconds and if Auxiliary Digital Input Fault is present for 5 seconds, then fault is detected.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>0 sec</td> <td>99 sec</td> <td>5 sec</td> </tr> </table>	Min	Max	Fac. Set	0 sec	99 sec	5 sec
Min	Max	Fac. Set						
0 sec	99 sec	5 sec						
<b>Note: When AF0 is set to <math>d_{i5}</math>, this parameter will not be visible.</b>								
26. AF2 Parameter	Function: To set Relay status on Auxiliary Fault Digital Input.							
When set to,								
$Enb(0)$ = No action will be performed, only fault indication message will be displayed. $EnR(1)$ = No action will be performed, only fault indication and message will be displayed and Alarm icon & Buzzer will be ON at fault. $FoF(2)$ = Fan relay will be OFF, fault indication will be displayed and Alarm icon & Buzzer will be ON at fault. $doF(3)$ = Relay for drain valve will be OFF, fault indication will be displayed and Alarm icon & Buzzer will be ON at fault. $HoF(4)$ = Relay for HGSV will be OFF, fault indication will be displayed and Alarm icon & Buzzer will be ON at fault. $HFF(5)$ = Relay for Fan and HGSV will be OFF, fault indication will be displayed and Alarm icon & Buzzer will be ON at fault. $RLF(6)$ = All outputs – Fan, HGSV and Drain valve relays will be OFF, fault indication will be displayed and Alarm icon & Buzzer will be ON at fault.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>Enb</math></td> <td><math>RLF</math></td> <td><math>EnR</math></td> </tr> </table>	Min	Max	Fac. Set	$Enb$	$RLF$	$EnR$
Min	Max	Fac. Set						
$Enb$	$RLF$	$EnR$						
<b>Note: When AF0 is set to <math>d_{i5}</math>, this parameter will not be visible.</b>								
27. AF3 Parameter	Function: To set reset mode for Relay output on Auxiliary Fault Digital Input.							
When set to,								
$Aut(0)$ = Auto Reset $nRn(1)$ = Manual Reset after AF4 retrials in 1 hour.								
<b>Example:</b> If this parameter set to " $nRn$ " & AF4 is set to 5 then, Digital Input Fault for relays will be cleared after 5 retrials only after pressing reset key for 2 seconds.								
If this parameter is set to " $Aut$ " then Digital Input Fault for relays will be cleared automatically when it is healthy.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>Aut</math></td> <td><math>nRn</math></td> <td><math>Aut</math></td> </tr> </table>	Min	Max	Fac. Set	$Aut$	$nRn$	$Aut$
Min	Max	Fac. Set						
$Aut$	$nRn$	$Aut$						
<b>Note: When AF0 is set to <math>d_{i5}</math>, this parameter will not be visible.</b>								
28. AF4 Parameter	Function: No of retrials of Relay output when manual reset is selected.							
<b>Example:</b> As mentioned in AF3								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>1</td> <td>10</td> <td>5</td> </tr> </table>	Min	Max	Fac. Set	1	10	5
Min	Max	Fac. Set						
1	10	5						
<b>Note: When AF0 is set to <math>d_{i5}</math>, this parameter will not be visible.</b>								
29. ddr Parameter	Function: This parameter is used to select display while the Drain Process is in progress.							
When set to,								
$ndd(0)$ = While the Drain Process is ON, display will be as per nd parameter setting. $dr(1)$ = While the Drain Process is ON, "dr" will be displayed.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>ndd</math></td> <td><math>dr</math></td> <td><math>ndd</math></td> </tr> </table>	Min	Max	Fac. Set	$ndd$	$dr$	$ndd$
Min	Max	Fac. Set						
$ndd$	$dr$	$ndd$						

30. nd Parameter	Function: Default (Normal) display.							
When set to,								
$P_{T(0)}$ = Control Probe Temperature. $P_{T(1)}$ = HGSV Probe Temperature. $SPF(2)$ = Fan Set Point $SPH(3)$ = HGSV Set Point								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>P_{T1}</math></td> <td><math>SPH</math></td> <td><math>P_{T1}</math></td> </tr> </table>	Min	Max	Fac. Set	$P_{T1}$	$SPH$	$P_{T1}$
Min	Max	Fac. Set						
$P_{T1}$	$SPH$	$P_{T1}$						
31. AL Parameter	Function: To activate Buzzer.							
When set to,								
$d_{i5}(0)$ = Buzzer is disable for all Faults. $RHL(1)$ = Buzzer will be active for both Ht, Lt and other faults. $RHL(2)$ = Buzzer will be active for Ht and other faults except Lt. $RHL(3)$ = Buzzer will be active for Lt and other faults except Ht.								
<b>Note: Buzzer will activate for PFL/PFH, HFL/HFH &amp; AUX Digital Input Fault, if this parameter is set to AHL, AHT, ALT.</b>								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>d_{i5}</math></td> <td><math>RHL</math></td> <td><math>RHL</math></td> </tr> </table>	Min	Max	Fac. Set	$d_{i5}$	$RHL$	$RHL$
Min	Max	Fac. Set						
$d_{i5}$	$RHL$	$RHL$						
32. Ad Parameter	Function: This parameter is used to set the time delay at Power ON for Ht or Lt Indication.							
If AL is $d_{i5}$ , this parameter will not be applicable.								
<b>Example:</b> If this parameter is set to 20 minutes, once the controller is powered ON, no fault indication will be activated for 20 minutes.								
Ht or Lt delay is used only for High Temperature and Low Temperature, but not for Room Sensor fail.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>0 Min</td> <td>99 Min</td> <td>0 Min</td> </tr> </table>	Min	Max	Fac. Set	0 Min	99 Min	0 Min
Min	Max	Fac. Set						
0 Min	99 Min	0 Min						
33. rS Parameter	Function: To set controller resolution.							
When set to,								
0.1 (0) = It will take all parameter in 0.1°C resolution. 1 (1) = It will take all parameter in 1°C resolution. 0.5 (2) = It will take all parameter in 0.5°C resolution.								
<b>Note: Temperature and parameter will also change accordingly.</b>								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>0.1</td> <td>0.5</td> <td>0.5</td> </tr> </table>	Min	Max	Fac. Set	0.1	0.5	0.5
Min	Max	Fac. Set						
0.1	0.5	0.5						
34. PA Parameter	Function: To change Password.							
User cannot enter into program mode & set mode, if correct password is not entered.								
If the password is kept other then 0, user need to enter correct password to enter into set/program mode.								
If password is 0, user can directly access Set/Program Mode.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td>-999</td> <td>999</td> <td>0</td> </tr> </table>	Min	Max	Fac. Set	-999	999	0
Min	Max	Fac. Set						
-999	999	0						
35. LP Parameter	Function: To lock keypad.							
This parameter is used to lock the keypad so that tampering is not possible by by-standers.								
$Unl(0)$ = keypad unlocked. $Lol(1)$ = keypad locked.								
When locked all parameters can only be viewed, but not modified.								
<b>Note: If LP parameter is set to <math>Lol</math> and if user tries to change any parameter value, "LP" will flash on the display.</b>								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>Unl</math></td> <td><math>Lol</math></td> <td><math>Unl</math></td> </tr> </table>	Min	Max	Fac. Set	$Unl$	$Lol$	$Unl$
Min	Max	Fac. Set						
$Unl$	$Lol$	$Unl$						
36. FS Parameter	Function: To restore default settings of the controller.							
When set to $YES$ all parameters are programmed to factory set values.								
Useful to debug setting related Problems.								
When set to,								
$no(0)$ = FS is disable. $YES(1)$ = FS as per default value.								
		<table border="1"> <tr> <td>Min</td> <td>Max</td> <td>Fac. Set</td> </tr> <tr> <td><math>no</math></td> <td><math>YES</math></td> <td><math>no</math></td> </tr> </table>	Min	Max	Fac. Set	$no$	$YES$	$no$
Min	Max	Fac. Set						
$no$	$YES$	$no$						
37. EP Parameter	Function: To end programming.							
To end programming press "SET" key								
Once the key is pressed, the controller goes into the normal mode and displays the temperature and all settings are recorded.								

	OFF	Fan is not in time delay.	-
	ON	Fan is ON and in time delay for switching OFF. (Ot parameter) .	ot
	FLASHING	Fan is in time delay and about to start.	P6
	OFF	Alarm indication OFF.	AL
	ON	Alarm indication ON.	
	FLASHING	Alarm mute on fault.	-
	ON	Control probe temperature and temperature related parameters in °C	-

Fault Messages		
Fault Messages	Fault Description	Parameter
PFL	<b>Control Probe Temperature Fail Low</b> Control Probe Temperature circuit open or without probe, or temperature is < -45.0°C.	-
PFH	<b>Control Probe Temperature Fail High</b> Control Probe Temperature short circuit or temperature is > 100°C.	-
HFL	<b>HGSV Probe Temperature Fail Low</b> HGSV Probe Temperature circuit open or without probe, or temperature is < -45.0°C.	-
HFH	<b>HGSV Probe Temperature Fail High</b> HGSV Probe Temperature short circuit or temperature is > 100°C.	-
Lt	Low temperature fault	P3
Ht	High temperature fault	P2
AF	Digital Input Aux fault is present	AF0, AF1, AF2, AF3, AF4

Operating Messages		
Messages	Description	Parameter
LP	Keypad Lock.	LP
LL	Last Low Temperature	-
LH	Last High Temperature	-
LrS	In temperature log function: When LL and LH values are cleared.	-
PA	Password to Enter to get entry into Set Mode, Program Mode.	PA
dr	Drain Process is ON.	d1
brS	Buzzer mute by drain key.	-
FrS	Manual Fault reset by drain key.	-
rSt	Buzzer mute and Manual Fault reset by drain key.	-

High and Low temperature logging function	
<b>How to see the logged values:</b>	<ul style="list-style-type: none"> <li>LL: Last Low temperature</li> <li>LH: Last High temperature</li> </ul>
	Touch and hold " $\wedge$ " 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 Control probe temperature.
<b>How to reset the Logged values:</b>	<ul style="list-style-type: none"> <li>While the display is showing the logged values, if user touches &amp; holds the "SET" key for 1sec, the logged values will be cleared and "LrS" will be displayed.</li> <li>Log Values will get reset after Power ON/OFF.</li> </ul>

Pro-key Mode	
	While Power UP flashing, press " $\uparrow$ RST" for 1 Sec, display will show "Pr", then press " $\downarrow$ / PRG" keys to select UPLOAD or DOWNLOAD settings from Pro-key.
<b>Customer lock</b>	In Pro-key mode press "SET" key for 1sec to select Customer Lock (CL) or Customer Unlock (UL) .
	If CL is set and if user tries to change any parameter value, "LP" will flash on the display.


  

LED Indications			
LED	Status	Description	Parameter
	ON	Fan is ON.	SPF, P4
	OFF	Fan is OFF.	
	ON	Drain valve output is ON.	d1
	OFF	Drain valve output is OFF.	d2
	ON	HGSV valve output is ON.	SPH, A4
	OFF	HGSV valve output is OFF.	
DI	OFF	AUX fault is absent.	AF0, AF1, AF2, AF3, AF4
	ON	AUX fault is present.	
	FLASHING	AUX fault is in manual reset.	

**Disclaimer:** These manual & its contents remain the sole property of PVR CONTROLS, India and shall not be reproduced or distributed without authorization. Although great care has been taken in the preparation of this document, the company or its vendors in no event will be liable for direct, indirect, special, incidental or consequential damage arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages. No part of this manual may be reproduced or transmitted in any form or by any means without the prior written permission of the company. PVR CONTROLS, reserves the right to make and changes or improvements without prior notice.


**Warranty:** This product is warranted against defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period, product determined by us to be defective in form or function will be repaired or, at our option, replaced at no charge. This warranty does not apply if the product has been damaged by accident, abuse, and misuse or as a result of service or modification other than by the company. This warranty is in lieu of any other warranty expressed or implied. In no event shall the company be held liable for incidental or consequential damages, including lost revenue or lost business opportunity arising from the purchase of this product.

**OTHER PRODUCTS**



Controlled cooling, always

Cold Room Controller  
Chiller Controller  
Two Compressor Controller  
Heating Controller  
Humidity Controller  
Pressure Controller



Ball Valves  
Globe Valves  
Hand Valves  
Flow Switches  
Solenoid Valves

REV1 – 25.07.2024