



# OPERATING INSTRUCTIONS



**SZ-7529-WV**

## Instructions :

The Sub-Zero Series SZ-7529-WV is aesthetically superior versions of its predecessors. The SZ-7529-WV is a defrost controller with alarm. It is specifically designed for refrigeration applications wherein the compressor cuts off at set point and is restarted at a temperature of set point plus differential.

Additionally the controller 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-7529-WV controller can be used for several applications with a measuring range from -40.0°C to 50.0°C.

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Set point	Function: To set the cut out point of the controller.						
Press and hold the SET key for 2 Seconds. 	Display will change to set range. The set point range can now be changed by using the UP/DOWN key. After setting the desired range, press the set key and you will see "--" which confirms that the set point has been stored in memory.						
<table border="1"> <thead> <tr> <th>Min</th> <th>Max</th> <th>Fac.</th> </tr> </thead> <tbody> <tr> <td>P3+0.5</td> <td>P2-0.5</td> <td>0.0°C</td> </tr> </tbody> </table>	Min	Max	Fac.	P3+0.5	P2-0.5	0.0°C	
Min	Max	Fac.					
P3+0.5	P2-0.5	0.0°C					


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To set other Parameters.	
Press & hold the DOWN(prg) key for 2 seconds. 	Display will show P2 & flash. To go to other parameters, use UP/DOWN keys.

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<b>P2 Parameter</b>			Function: To set maximum allowable high temperature limit.
To change the P2 parameter, press the SET key.			Use UP/DOWN keys to set desired range. Once set at a particular range, this will not allow the set point to go above this range.
Min	Max	Fac.	<b>Example</b> : Setting this parameter at 50.0°C will not allow the set point to go above 50.0°C. Also, if the temperature reaches 50.0°C, the display will show <i>HT</i> (High Temp.) indicating that the temperature has gone above the range in this parameter.
SP+0.5	50.0°C	50.0°C	
SP= Set Point  (Message on display)			

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<b>P3 Parameter</b>			Function: To set minimum allowable low temperature set point.
To change the P3 parameter, press the SET key.			Use UP/DOWN keys to set desired range. Once set at a particular range, this will not allow the set point to go below this range.
Min	Max	Fac.	<b>Example</b> : Setting this parameter at -40.0°C will not allow the set point to go below -40.0°C. Also, if the temperature reaches -40.0°C, the display will show <i>Lt</i> (Low Temp.) indicating that the temperature has gone below the range in this parameter.
-40.0°C	SP-0.5	-40.0°C	
 (Message on display)			


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<b>P4 Parameter</b>			Function: To set the differential.
To change the P4 parameter, press the SET key.			Use UP/DOWN keys to set desired range. Differential between cut out and cut in temperature can be set between 0.5°C to 20.0°C.
Min	Max	Fac.	<b>Example</b> : 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 relay will cut out. Since the differential is 2.0°C, the relay will cut in (restart) at 12.0°C (10.0°C+2.0°C).
0.5°C	20.0°C	2.0°C	


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<b>P5 Parameter</b>			Function: To set probe calibration.
To change the P5 parameter, press the SET key.			Use UP/DOWN keys to set desired range. In time it may be possible that the display may be offset by a degree or so. To compensate for this error, you may need to add or minus the degrees required to achieve the correct temperature. Setting range is from -10.0°C to +10.0°C.
Min	Max	Fac.	<b>Example</b> : The temperature on the display is 28.0°C, whereas the actual temperature is 30.0°C. You will need to set the P5 mode to 2.0°C, which means that once out of the programming mode, the temperature will show 30.0°C (28.0°C + 2.0°C).
-10.0°C	10.0°C	0.0°C	

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<b>P6 Parameter</b>			Function: To set time delay between relay restart time.
To change the P6 parameter, press the SET key.			Use UP/DOWN keys to set desired range. This parameter is used to protect the compressor from restarting in a short period of time and can be set between 0 to 20 minutes.
Min	Max	Fac.	<b>Example</b> : If this parameter is set at 3 minutes, the relay will cut off at the set temperature, but 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 when there are power fluctuations and the compressor is switched off and on within a few seconds.
0 Min	20 Min	3 Min	
 Flashing Time delay in progress			

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<b>P7 Parameter</b>			Function : To set duration of defrost.
To change the P7 parameter press the SET key			Use UP/DOWN keys to set desired range. This parameter is used for auto defrost cycle and specifies how long a defrost will last.
Min	Max	Fac.	<b>Example</b> : If this parameter is set to 15min, and P8 parameter is set to 1 hr. Then '1 hr' after power is applied to the controller, defrosting for 15 mins will take place. This cycle will repeat every 1 hr.
0 Min	99 Min	0 Min	
			

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<b>P8 Parameter</b>			Function : To set the defrost frequency.
To change the P8 parameter press the SET key			Use UP/DOWN keys to set desired range. This Parameter is used for auto defrost cycle and specifies, when each defrost cycle will be repeated.
Min	Max	Fac.	Example : see P7 parameter.
1 hr	31 hrs	1 hr	

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<b>LP Parameter.</b>			Function: To lock keypad.
To change the LP parameter press the SET key.			Use UP/DOWN keys to set desired range. This parameter can lock the keypad so that tampering is not possible by by-standers. 0 = keypad unlocked 1 = keypad locked
Min	Max	Fac.	When locked all parameters can only be viewed, but not modified.
0	1	0	

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<b>E1 Parameter</b>			Function : Relay status on probe failure.
To change the E1 parameter press the SET key.			Use UP/DOWN keys to set desired range. When set to 0 = Relay status is ON. 1 = Relay performs a duty cycle 10 minutes ON and 4minutes OFF. 2 = Relay status is OFF.
Min	Max	Fac.	
0	2	1	

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

<b>FS Parameter</b>			Function : To restore default settings of the controller.
To change the FS parameter press the SET key.			When set to 1 all parameters are programmed to factory values.  Useful to debug setting related problems.
Min	Max	Fac.	
0	1	0	

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<b>EP Parameter.</b>			Function: To end programming.
To end programming press the SET key			Once the SET key is pressed, the control goes into the normal mode and displays the temperature and all settings are recorded.





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#### Operating messages and Icon status

Message	Description	Parameter
Ht	Temperature above the maximum limit of the set point.	P2
Lt	Temperature below the minimum limit of the set point.	P3
PP	Probe short circuit, circuit open or without probe, or temperature > 50.0°C or <-40.0°C	
 ● On/Off	Comp. Relay on/off	SP, P4
  Flashing	Time delay in progress	P6
 ● On	Defrosting in progress	P7, P8
 ● On / Off	Keypad Lock / Unlocked	LP
  Flashing	Keypad Lock / Unlocked	LP

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### Key Introduction

	UP Key	Used in program mode to increment parameter value.
	Down Key / PRG Key	Used in program mode to decrement parameter value. Used to go into the program mode.
	Defrost Key	This key will start a manual defrost cycle if pressed for 2 sec. Press again for 2 seconds it will come out of defrost mode and STOP defrost cycle.
	Set Key	In program mode used to set the changed value of parameter.

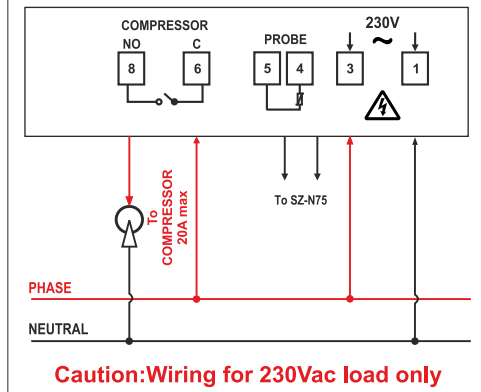
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### Technical data:

<b>Housing</b>	: White, ABS Plastic.
<b>Front Cover</b>	: Polycarbonate plastic.
<b>Dimensions</b>	: Front : 80 X 126 mm, Depth : 15 mm.
<b>Mounting</b>	: Wall Mount.
<b>Connections</b>	: Screw terminal blocks. ≤ 2.5sqmm one wire/ terminal only.
<b>Display</b>	: 3 X14.2 mm (0.56") LED
<b>Data storage</b>	: Non-volatile EEPROM memory
<b>Power input</b>	: 230Vac +/-15%,50-60Hz. Other on request.
<b>Operating temp.</b>	: 5°C to 50°C(non-condensing).
<b>Storage temp</b>	: -20°C to 70°C(non-condensing).
<b>Output</b>	: Comp. relay 20A, 250Vac.
<b>Input</b>	: NTC probe, SZ-N75.
<b>Range</b>	: -40.0°C to 50.0°C.
<b>Resolution</b>	: 0.1°C.
<b>Accuracy</b>	: +/- 1°C.
<b>Probe tolerance at 25°C</b>	: +/- 0.3°C.

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### Suggested Wiring SZ-7529-WV



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### FRONT VIEW



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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 cut out 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 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.

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### CAUTION

**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.

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