

OPERATING INSTRUCTIONS

SZ-7510/69-E



General Description

The SZ-7510-E/7569-E are aesthetically superior version of their predecessors. The SZ-7510-E/7569-E are single set point controllers.

SZ-7569-E has an inbuilt power relay which can drive compressor loads directly upto 20Amps, thereby eliminates use of conductor in single phase applications. They are specifically designed for refrigeration applications wherein the compressor cuts off at set point and is restarted at a temperature of set point plus differential.

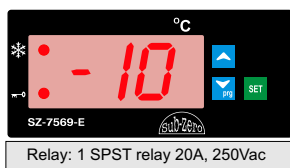
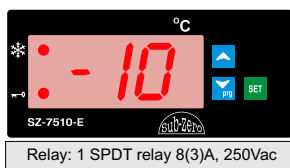
Additionally the SZ-7510-E/7569-E offer several protection features that are easily understood by the examples in the instructions below. A number of parameters are displayed alphanumerically to set up the instruments for each specific application.

The SZ-7510-E / 7569-E can be used for several application with a measuring range from -40°C to 50°C.

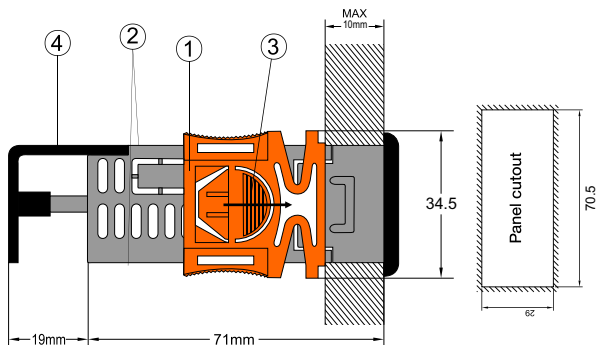
Technical Data

Housing	Black, ABS Plastic.
Front Cover	Red Polycarbonate plastic.
Dimensions	Front : 75 X 34.5 MM Depth : 71 MM (w/o back lid)
Panel Cutout	29 X 70.5 MM
Mounting	Flush panel mounting with fasteners.
Frontal protection	IP 65.
Connections	Screw terminal blocks. ≤ 2.5 sq mm one wire/ terminal only.
Display	2 X14.2 mm (0.56") LED
Data storage	Non-volatile EEPROM memory.
Power input	230Vac +/-10%,50-60Hz. Others on request.
Operating temp.	5°C to 50°C (non-condensing).
Storage temp	-20°C to 70°C (non-condensing).
Input	NTC Probe, SZ-N75.
Range	-40°C to 50°C
Resolution	1°C
Accuracy	+/- 1°C
Probe tolerance	+/- 0.3°C at 25°C

Front Panel View, Relay



Installation and Dimensions



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.

Operating Messages And Icon Status

Message	Mode	Description	Parameter
pp	Flashing	Probe short circuit, circuit open or without probe, or temperature >50°C or <-40°C.	
❄️ ●	ON/OFF	Comp. Relay on/off.	SP, P4
❄️ ☀️	Flashing	Time delay in progress.	P6
🔑 ●	ON/OFF	Keypad locked/unlocked.	LP

Min = Minimum, Max = Maximum
Fac. = Factory Setting (Default)

1. Set Point : To set the cut out point.

Min	Max	Fac.
-40°C	50°C	0°C



1. Press and hold the "SET" key for 2 Seconds.
2. The set value will start flashing.
3. Use ▲ or ▼ to set the desired range.
4. Press SET key & you will see "- -" which confirms that the set point has been stored in memory.

Parameter List

2.To set other Parameters.



1. Press & hold the Prg key for 2 seconds.
2. Display will show "P4" & flash.
3. To go to other parameters, use ▲ or ▼ keys.

3. P4 Parameter : To set the differential.

Min	Max	Fac.
1°C	20°C	2°C

1. To change the P4 parameter, press the "SET" key.
2. To go to desired value, use ▲ or ▼ keys.
3. To set desired value press "SET" key you will see "- -" which confirms that the value has been stored in memory.

Example: Cooling Mode: If the set point is set at 10°C and differential is set at 2°C, then when the system reaches 10°C, the relay will cut out. Since the differential is 2, the relay will cut in (restart) at 12°C (10°C+2°C).

4. P5 Parameter : To set probe calibration.

Min	Max	Fac.
-10°C	10°C	0°C

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°C to +10°C.

1. To change the P5 parameter, press the "SET" key.
2. To go to desired value, use ▲ or ▼ keys.
3. To set desired value press "SET" key you will see "- -" which confirms that the value has been stored in memory.

Example: The temperature on the display is 28°C, whereas the actual temperature is 30°C. You will need to set the P5 mode to 2, which means that once out of the programming mode, the temperature will show 30°C (28°C + 2°C).

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5. P6 Parameter : To set time delay between relay restart time.

Min	Max	Fac.
0Min	20Min	0Min

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.

- To change the P6 parameter, press the "SET" key.
- To go to desired value, use ▲ or ▼ keys.
- To set desired value press "SET" key you will see "--" which confirms that the value has been stored in memory.



Example: 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.

6. LP Parameter : To lock keypad.

Min	Max	Fac.
0	1	0

This parameter can lock the keypad so that tampering is not possible by by-standers.

- To change the LP parameter, press the "SET" key.
- To go to desired value, use ▲ or ▼ keys.



0 : keypad unlocked
1 : keypad locked.

- To set desired value press "SET" key you will see "--" which confirms that the value has been stored in memory:

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

7. E1 Parameter : To set relay status on Probe Failure.

Min	Max	Fac.
0	2	1

- To change the E1 parameter, press the "SET" key.
- To go to desired value, use ▲ or ▼ keys.

0 : Relay status is ON.
1 : Relay performs a duty cycle 10 minutes ON and 4minutes OFF.
2 : Relay status is OFF.

- To set desired value press "SET" key you will see "--" which confirms that the value has been stored in memory.

8. FS Parameter : To restore default settings of the controller.

Min	Max	Fac.
0	1	0

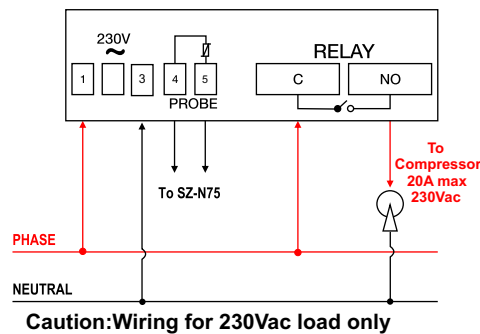
When set to 1 all parameters are programmed to factory values. Useful to debug setting related problems.

- To change the FS parameter, press the "SET" key.
- To go to desired value, use ▲ or ▼ keys.
- To set desired value press "SET" key you will see "--" which confirms that the value has been stored in memory.

9. EP Parameter : To end programming.

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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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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Wiring Diagram

SZ-7510-E

