

**FRUIT RIPENING CONTROLLER**

**USER MANUAL**



**SZ-FR-2000**



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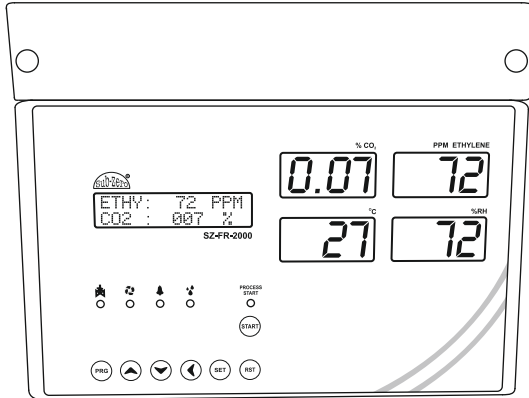
**Introduction**

The SZ-FR-2000 is a panel/wall mounted controller dedicated to control fruit ripening process.

**Features:**

- ▶ 7 Segment LED display & LCD with backlight to display all parameters and control status
- ▶ In the absence of a CO<sub>2</sub> sensor, Unit will work on an ON/OFF logic provided for Damper/Fan operation to vent CO<sub>2</sub>.
- ▶ Automatic control of Ethylene by operation of a Solenoid valve.
- ▶ In the absence of an ethylene sensor, unit will work on an On/Off logic provided for ethylene solenoid valve.
- ▶ Real time clock incase of power failure to keep in memory number of hours operated .
- ▶ One push button activation for complete operation of ripening process.

## Get to Know Your Controller



## Key Introduction

	PROCESS START Key		Back Key
	Program Key		Set Key
	UP Key		Reset Key
	Down Key		

## LED Indications

LED	MODE	DISCRIPTION
	ON OFF	LSV Relay ON. LSV Relay OFF.
	ON OFF	Fan Relay ON. Fan Relay OFF.
	ON OFF	Alarm Relay ON. Alarm Relay OFF.
	ON OFF	Humidifier Relay ON. Humidifier Relay OFF.
PROCESS START	ON.	Process start ON.

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## MAIN SYSTEM PROGRAMMING MODE

1> USER PROGRAM	Press PRG Key for 2 seconds to Enter Programming mode.
2> RIPENING PROCESS START	Press START Key for 2 seconds.
3> TO STOP RIPENING PROCESS	Press START Key again for 2 seconds.

Min: MINIMUM Max : MAXIMUM  
Fact. Set : FACTORY SETTING(DEFAULT)

## Description of parameters and functions.

Sr. No.	Parameter (LCD Message)	Parameter setting method	
To set other parameter			
	Press & hold SET key for 2 seconds 	Display will show SET POINT << CO2 : 0.65 % Press SET key display will show CO <sub>2</sub> set point. To go other parameter, use UP/DOWN keys.	
01	SET POINT << CO2 : 0.65 %	Function : To set Set point of CO <sub>2</sub> control.	
	Press SET key to set parameter.	Use UP/Down key to set desired value.	
<b>Range</b>			
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>
LL CO <sub>2</sub> +0.01	HL CO <sub>2</sub> -0.01	0.65	%
			LL = Low Limit. HL = High Limit.


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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
02	SET POINT << ETH :115PPM		Function : To set Set point of Ethylene control.	
Press SET key to set parameter.			Use UP/Down key to set desired value.	
Range			Set point to control Ethylene dosing to maintain ethylene PPM in the ripening chamber.	
Min	Max	Fact. Set	M. Unit	
LL ETH +1	HL ETH -1	115	PPM	
03	SET POINT << TC :18°C		Function : To set Set point of Temperature.	
Press SET key to set parameter.			Use UP/DOWN keys to set desired value.	
Range			Set point for Temperature used in ripening process start.	
Min	Max	Fact. Set	M. Unit	
LL TC +1	HL TC -1	18	°C	
04	SET POINT << RH :95%		Function : To set Set point of RH control.	
Press SET key to set parameter.			Use UP/DOWN key to set desired value.	
Range			Set point to control RH percentage dosing to maintain RH percentage in the ripening chamber.	
Min	Max	Fact. Set	M. Unit	
LL RH +1	HL RH -1	95	%	
05	SET -EXIT UP/DOWN - SCROLL		Function : To Exit from Set mode.	
To end programming parameter, press the set key.			Once the SET key is pressed, the control goes into the normal mode and displays the temperature.	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
To set other parameter				
Press & hold PRG key for 4 seconds			Display will show SENSOR LOGIC << CO2 : ENABLE Press PRG key display will show CO <sub>2</sub> SENSOR LOGIC . To go other parameter, use UP/DOWN keys.	
				
01	SENSOR LOGIC << CO2 : ENABLE		Function : To activate CO <sub>2</sub> sensor.	
To change SENSOR LOGIC CO <sub>2</sub> parameter, press the SET key.			Use UP/DOWN keys to set desired value.	
Range			Used to set sensor enable or disable , when enable display will show sensing value. When disable display will blank.	
Min	Max	Fact. Set	M. Unit	
DISABLE	ENABLE	ENABLE	-	
02	SENSOR LOGIC << ETH : ENABLE		Function : To activate ethylene sensor.	
To change SENSOR LOGIC ETH parameter, press the SET key.			Use UP/DOWN keys to set desired value.	
Range			Used to set sensor enable or disable , when enable display will show sensing value. When disable display will blank.	
Min	Max	Fact. Set	M. Unit	
DISABLE	ENABLE	ENABLE	-	
03	SENSOR LOGIC << TEMP : ENABLE		Function : To activate temperature sensor.	
To change SENSOR LOGIC TEMP. parameter, press the SET key.			Use UP/DOWN keys to set desired value.	
Range				
Min	Max	Fact. Set	M. Unit	
DISABLE	ENABLE	ENABLE	-	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
04	SENSOR LOGIC << RH : ENABLE	Function : To activate RH sensor.		
To change SENSOR LOGIC RH parameter, press the SET key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		Used to set sensor enable or disable , when enable display will show sensing value. When disable display will blank.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
DISABLE	ENABLE	ENABLE	-	
05	HIGH LIMIT << CO2 : 1.00%	Function : To set High alarm limit for CO <sub>2</sub> .		
To change HIGH LIMIT CO <sub>2</sub> parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of CO <sub>2</sub> to go above this value and below low alarm limit CO <sub>2</sub> setting.		
<b>Range</b>		<b>Example</b> : If High Alarm Limit for CO <sub>2</sub> value set to 0.75% , when % of CO <sub>2</sub> reached above 0.75% HA displayed on 7 segments and alarm relay will ON.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
SP CO <sub>2</sub> +0.01	1.00	1.00	%	
06	LOW LIMIT << CO2 : 0.00%	Function: To set low alarm limit for CO <sub>2</sub> .		
To change the LOW LIMIT CO <sub>2</sub> parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of CO <sub>2</sub> to go below this value and above high alarm limit CO <sub>2</sub> setting.		
<b>Range</b>		<b>Example</b> : If Low Alarm Limit for CO <sub>2</sub> value set to 0.10% , when % of CO <sub>2</sub> reached below 0.10% LA displayed on 7 segments and alarm relay will ON.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0.00	SP CO <sub>2</sub> -0.01	0.00	%	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
07	DIFFERENTIAL << CO2 : 0.10%	Function: To set differential for CO <sub>2</sub>		
To change the DIFFERENTIAL CO <sub>2</sub> parameter, press the set key.		Use UP/DOWN keys to set desired value. Differential between cut out and cut in CO <sub>2</sub> can be set between 0.0% to 0.50%.		
<b>Range</b>		<b>Example</b> : Differential for CO <sub>2</sub> , If Differential of CO <sub>2</sub> set to 0.10% and set point of CO <sub>2</sub> set to 0.65 % . then when CO <sub>2</sub> reached to and above (0.65 % + 0.10 % ) Fan will ON and will turn OFF when CO <sub>2</sub> goes below CO <sub>2</sub> set point i.e. 0.65 %.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0.01	0.20	0.10	%	
08	PROBE CAL << CO2 : 0.00%	Function : To set probe calibration for CO <sub>2</sub> .		
To change PROBE CAL parameter, press the set key.		Use UP/DOWN keys to set desired value. In time it may be possible that the display may be offset by a percentages or so. To compensate for this error, you may need to add or minus the percentages required to achieve the correct CO <sub>2</sub> Setting value is from -0.10% to + 0.10%.		
<b>Range</b>		<b>Example</b> : The CO <sub>2</sub> on the display is 0.50% , whereas the actual CO <sub>2</sub> is 0.52% . You will need to set the CO <sub>2</sub> probe calibration mode to 0.02% , which means that once out of the programming mode, the CO <sub>2</sub> will show 0.52% (0.50%+0.02%) .		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
-0.10	0.10	0.00	%	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
09	HIGH LIMIT << ETH : 999PPM		Function: To set High alarm limit for Ethylene.	
To change HIGH LIMIT ETH PPM parameter, press the set key.			Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of Ethylene to go above this value and below low alarm limit Ethylene setting.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
SP ETH +1	999	999	PPM	
			SP = Set Point. <b>Example</b> : If High Alarm Limit for Ethylene value set to 300PPM, when PPM of Ethylene reached above 300PPM HA displayed on 7 segments and alarm relay will ON.	
10	LOW LIMIT << ETH : 0PPM		Function : To set low alarm limit for ethylene.	
To change the LOW LIMIT ETH parameter, press the set key.			Use UP/DOWN keys to set desired value.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	SP ETH -1	0	PPM	
			Once this value set at particular value this will not allow set point of Ethylene to go below this value and above high alarm limit Ethylene setting. <b>Example</b> : If Low Alarm Limit for Ethylene value set to 0.10PPM , when PPM of ethylene reached below 0.10PPM LA displayed on 7 segments and alarm relay will ON.	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
11	DIFFERENTIAL << ETH : 10 PPM		Function : To set differential for ethylene.	
To change DIFFERENTIAL ETH parameter, press the set key.			Use UP/DOWN keys to set desired value. Differential between cut out and cut in PPM can be set between 0PPM to 20PPM.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	20	10	PPM	
			<b>Example</b> : Differential for Ethylene , If Differential of ethylene set to 10 ppm and set point of ethylene set to 115 ppm. then when ethylene goes to and below (115 ppm - 10 ppm) SV will ON and will turn OFF when ethylene reached to and above ethylene set point, i.e. 115 ppm.	
12	PROBE CAL << ETH : 0PPM		Function : To set probe calibration for Ethylene.	
To change Evap Differential parameter, press the set key.			Use UP/DOWN keys to set desired value. In time it may be possible that the display may be offset by a PPM or so. To compensate for this error, you may need to add or minus the PPM required to achieve the correct Ethylene. Setting value is from -10PPM to + 10PPM.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
-10	10	0	PPM	
			<b>Example</b> : The Ethylene on the display is 50PPM, whereas the actual Ethylene is 52PPM. You will need to set the Ethylene probe calibration mode to 2PPM, which means that once out of the programming mode, the Ethylene will show 52PPM (50PPM + 2 PPM).	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
13	HIGH LIMIT << TEMP : 50°C	Function: To set High alarm limit for temperature.		
To change the HIGH LIMIT TEMPERATURE parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of temperature to go above this value and below low alarm limit temperature setting.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
SP TEMP +1	50	50	°C	
		<b>Example :</b> If High Alarm Limit for temperature value set to 50C , when temperature reached above 50C HA displayed on 7 segments and alarm relay will ON.		
14	LOW LIMIT << TEMP : 0°C	Function : To set low alarm limit for temperature.		
To change the LOW LIMIT TEMP. parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of Temperature to go below this value and above high alarm limit Temperature setting.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	SPTC -1	0	°C	
15	PROBE CAL. << TEMP : 0°C	Function : To set probe calibration for Temperature.		
To change PROBE CAL. TEMP. parameter, press the set key.		Use UP/DOWN keys to set desired value. In time it may be possible that the display may be offset by adtemperature or so. To compensate for this error, you may need to add or minus the temperature required to achieve the correct temperature. Setting value is from -10 to + 10°C.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
-10	10	0	°C	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
		<b>Example :</b> The temperature on the display is 50°C, whereas the actual temperature is 52°C. You will need to set the temperature probe calibration mode to 2°C, which means that once out of the programming mode, the temperature will show 52°C (50°C + 2°C).		
16	HIGH LIMIT << RH : 99%	Function: To set High alarm limit for RH.		
To change the Comp Time Delay parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of RH to go above this value and below low alarm limit RH setting.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
SP RH +1	99	99	%	
		<b>Example :</b> If High Alarm Limit for RH value set to 90%, when % of RH reached above 90% HA displayed on 7 segments and alarm relay will ON.		
17	LOW LIMIT << RH : 0%	Function : To set low alarm limit for RH.		
To change the LOW LIMIT RH parameter, press the set key.		Use UP/DOWN keys to set desired value. Once this value set at particular value this will not allow set point of RH percentage to go below this value and above high alarm limit RH percentage setting.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	SP RH -1	0	%	
		<b>Example :</b> If Low Alarm Limit for RH percentage value set to 0.10% , when % of RH reached below 0.10% LA displayed on 7 segments and alarm relay will ON.		

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
18	DIFFERENTIAL << RH : 2%		Function : To set differential for RH.	
To change DIFFERENTIAL RH parameter, press the set key.			Use UP/DOWN keys to set desired value. Differential between cut out and cut in percentage can be set between 0% to 20%.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	20	2	%	
			<p><b>Example</b> : Differential for RH , If Differential of RH set to 2% and set point of RH set to 85 % . then when RH goes to and below (85 % - 2 %) Humidifier will ON and will turn OFF when RH reached to and above RH set point, i.e. 85%.</p>	
19	PROBE CAL. << RH : 0%		Function : To set probe calibration for RH.	
To change Coil Probe Cal. parameter, press the set key.			Use UP/DOWN keys to set desired value.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
-10	10	0	%	
			<p>In time it may be possible that the display may be offset by a percentage or so. To compensate for this error, you may need to add or minus the percentage required to achieve the correct RH percentage. Setting value is from -10% to + 10%.</p> <p><b>Example</b> : The percentage RH on the display is 50%, whereas the actual percentage RH is 52%. You will need to set the RH probe calibration parameter to 2%, which means that once out of the programming mode, the RH will show 52% (50% + 2 %).</p>	

Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
20	RESTART DLY << FAN : 60Sec		Function : To set relay restart time for fan.	
To change RESTART DLY FAN parameter, press the set key.			Use UP/DOWN keys to set desired value.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	180	60	Sec	
			<p>This parameter is used to protect the relay from restarting in a short period of time and can be set between 0 to 180 seconds.</p> <p><b>Example</b> : If this parameter is set at 60 seconds, the relay will cut off at the set point, but will not restart for a minimum of 60seconds, even if the differential is achieved earlier. This parameter is good to protect the life of the load on relay or even in applications where the probe is placed at places where there are sudden &amp; short changes in CO<sub>2</sub> like above a cold room door.</p>	
21	RESTART DLY << SV : 60Sec		Function : To set relay restart time for solenoid valve.	
To change RESTART DLY SV parameter, press the set key.			Use UP/DOWN keys to set desired value.	
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	180	60	Sec	
			<p>This parameter is used to protect the relay from restarting in a short period of time and can be set between 0 to 180 seconds.</p> <p><b>Example</b> : If this parameter is set at 60 seconds, the relay will cut off at the set point, but will not restart for a minimum of 60seconds, even if the differential is achieved earlier. This parameter is good to protect the life of the load on relay or even in applications where the probe is placed at places where there are sudden &amp; short changes in ethylene, like above a cold room door.</p>	

Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
22	RESTART DLY << HUMID. : 60Sec	Function : To set relay restart time for humidity.		
To change RESTART DLY HUMID parameter, press the set key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		This parameter is used to protect the relay from restarting in a short period of time and can be set between 0 to 180 seconds.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	180	60	Sec	
		<b>Example</b> : If this parameter is set at 60 seconds, the relay will cut off at the set point, but will not restart for a minimum of 60 seconds, even if the differential is achieved earlier. This parameter is good to protect the life of the load on relay or even in applications where the probe is placed at places where there are sudden & short changes in RH, like above a cold room door.		
23	PROCESS START << SET : 4Hr	Function : To set ethylene process start delay.		
To change PROCESS START SET parameter, press the SET key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		Used to set ethylene process start delay. Ethylene dosing start when temperature achieved (temperature set point), or process start hrs whichever condition acheived first.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	10	4	Hrs	

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)	Parameter setting method		
24	ETHYL. DOSING << TIME : 24Hr	Function : To set time duration for ethylene control.		
To change ETHYL. DOSING TIME parameter, press the set key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		This is time duration for which ethylene dosing is done for ripening system. SV control action is activated during this period to achieve ethylene set point.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	48	24	Hrs	
		<b>Note</b> : Process hours = Ethylene dosing + Co2 control hours.		
25	CO2 CONTROL << TIME : 72Hr	Function : To set time duration for CO <sub>2</sub> control.		
To change CO <sub>2</sub> CONTROL TIME parameter, press the set key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		This is time duration for which CO <sub>2</sub> will control and monitor in the ripening chamber, Fan control action (Ventilation) activated during this period.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	150	72	Hrs	
26	ETHYL. SV ON << TIME : 60Sec	Function : To set On duration for SV when ethylene probe fail or disable.		
To change ETHYL. SV ON TIME parameter, press the set key.		Use UP/DOWN keys to set desired value.		
<b>Range</b>		This parameter used to set ON time for SV when ethylene sensor disable. Controller works on ON-OFF logic. SV operate on this ON -OFF duration to maintain ethylene ppm in the ripening chamber.		
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	600	60	Sec	
		<b>Example</b> : If this parameter is set to 60 seconds and SV OFF time set to 4 hours then after every 4 hours SV will be ON for 60 seconds.		

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Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
27	SV OFF FREQ. << TIME : 6Hr		Function : To set OFF duration for SV when ethylene probe fail or disable.	
To change SV OFF FREQ. parameter, press the set key.		Use UP/DOWN keys to set desired value.		
This parameter used to set OFF time for SV when ethylene sensor disable and SV works on ON-OFF logic to maintain ethylene ppm in chamber.				
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	15	6	Hrs	
28	FAN ON << TIME : 5Min		Function : To set On duration for fan when Co2 probe fail or disable.	
To change FAN ON TIME parameter, press the set key.		Use UP/DOWN keys to set desired value.		
This parameter used to set ON time for FAN when co2 sensor disable, and fan works on ON-OFF logic to control co2 percentage in chamber.				
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	60	5	Min	
<b>Example</b> : If this parameter is set to 12 minutes and CO2 OFF time set to 4 hours then after every 4 hours Fan will be ON for 12 minutes .				
29	FAN OFF FREQ. << TIME : 6Hr		Function : To set OFF duration for fan when Co2 probe fail or disable.	
To change FAN OFF FREQ. parameter, press the SET key.		Use UP/DOWN keys to set desired value.		
This parameter used to set OFF time for FAN when co2 sensor disable, and fan works on ON-OFF logic to control co2 percentage in chamber.				
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
1	15	6	Hrs	

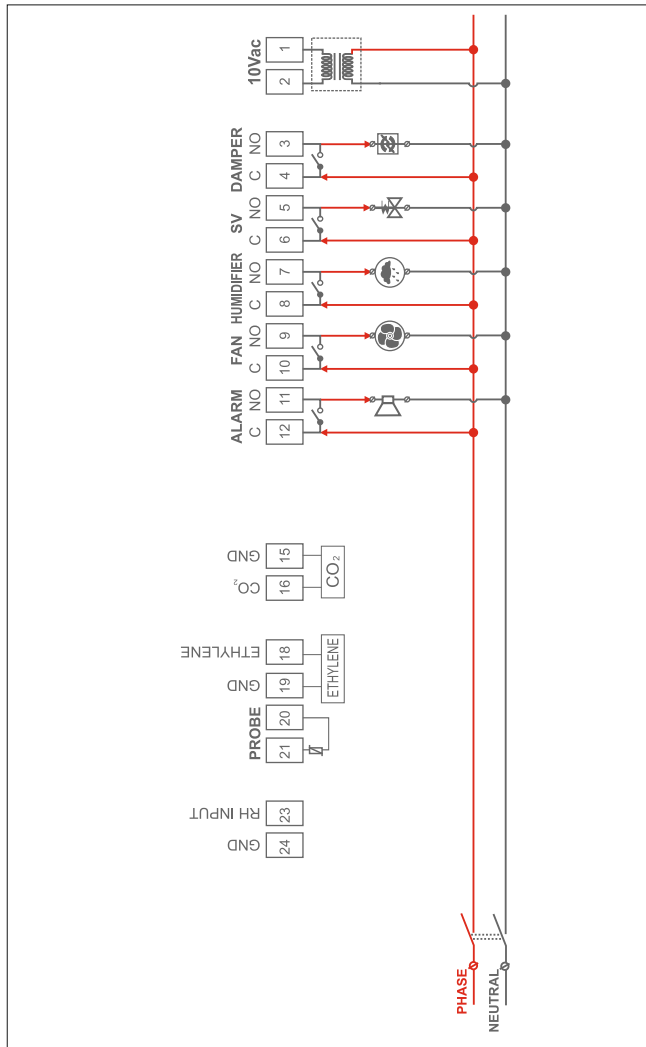
Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
30	DATE(DD/MM/YY)<< SET : DD/MM/YY		Function: To set RTC date/month/year.	
To change DATE (DD/MM/YY) SET parameter, press the SET key.		used to set date month and year RTC setting.		
31	TIME(HH/MM/SS)<< SET : HH/MM/SS		Function: To set RTC time hours/minutes/seconds.	
To change TIME (HH/MM/SS) parameter, press the SET key.		Used to set hours minuts, and seconds. RTC setting.		
32	ALARM << SET : ENABLE		Function : To activate alarm relay.	
To change ALARM parameter, press the SET key.		Use UP/DOWN keys to set desired value. Used to set Alarm relay enable or disable.		
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
DISABLE	ENABLE	ENABLE	-	
33	ALARM DELAY << SET : 1MIN		Function : To set power on alarm delay.	
To change ALARM DELAY parameter, press the SET key.		Use UP/DOWN keys to set desired value.		
Used to set power on alarm delay. After power on system will not generate alarm for this duration.				
<b>Range</b>				
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
0	60	1	Min	

Description of parameters and functions.				
Sr. No.	Parameter (LCD Message)		Parameter setting method	
34	KEYPAD LOCK << SET : ENABLE		Function: To lock keypad.	
To change KEYPAD LOCK parameter, press the set key.			Use UP/DOWN keys to set desired value.	
<b>Range</b>			This parameter can lock the keypad so that tampering is not possible by by-standers.	
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
Disable	Enable	Enable	-	
			Disable = keypad unlocked Enable = keypad locked	
			When locked all parameters can only be viewed, but not modified.	
35	RESTORE FACT. << SET : NO		Function : To restore default settings of the controller.	
To change RESTORE FACT parameter, press the set key.			When set to Yes all parameters are programmed to factory values.	
<b>Range</b>			Useful to debug setting related problems.	
<b>Min</b>	<b>Max</b>	<b>Fact. Set</b>	<b>M. Unit</b>	
No	Yes	No	-	
36	SET-EXIT UP/DOWN - SCROLL		Function: To end programming.	
To end programming parameter, press the set key.			Once the SET key is pressed, the control goes into the normal mode and displays the temperature.	

### Technical Data

<b>Housing</b>	: ABS Plastic
<b>Dimensions</b>	: Length 227mm X Width 200mm X Depth 93mm
<b>Mounting</b>	: Panel / Wall Mounting with screws.
<b>Connection</b>	: Screw terminal blocks. ≤ 2.5sq. mm one wire / terminal only.
<b>Display</b>	: 7 Segment LED display.
<b>Data Storage</b>	: Non-Volatile EEPROM Memory.
<b>Power Input (Options)</b>	: 230VAC +/- 20%, 50Hz, 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>Relay Output</b>	: 5 nos., 10A/250VAC.
<b>Input</b>	: <b>Temperature sensor</b> : NTC (0-50°C) <b>CO<sub>2</sub> Sensor</b> : 4-20mA, 0-100%RH <b>Ethylene Sensor</b> : 4-20mA, 0-999ppm. <b>Humidity Sensor</b> : 0-1V, 0-100%RH.
<b>Resolution</b>	: <b>CO<sub>2</sub></b> : 0.01% <b>Ethylene</b> : 1 ppm <b>RH</b> : 1% <b>Temperature</b> : 1°C
<b>Probe Tolerance at 25°C</b>	: +/- 0.3°C

## Suggested wiring Diagram



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## 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.

## 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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