

# *Blueair by* **BLUENIX**






## **SERVICE TRAINING**

**R290 Reach-ins, Undercounter refrigerators  
and general commercial refrigerators.  
Main PCB Parameter Control.**

# Guide to set parameters for R290 UNIT

## Temperature Setting

Steps to set the temperature.

1. Touch the lock button  for 3 seconds to unlock key.
2. After the lock indicator lamp is turned off, touch the  or  button once immediately and the current set value will blink.
3. Adjust the temperature to the value you desire by touching the  or  buttons.
4. When you have finished adjusting the settings, leave it for 3 seconds. Then the change will be applied, and buttons will be locked automatically.

### Default set temperature


- Refrigerator(Cooler) : 35°F(2°C)
- Freezer : 0°F(-18°C)


### Notes

Once the product is connected to power, but **only the LOCK indicator is ON and the product is not running,**

This situation is not a defect of the product. This is because the factory or technician turned off the product by the controller for the safety of the product.

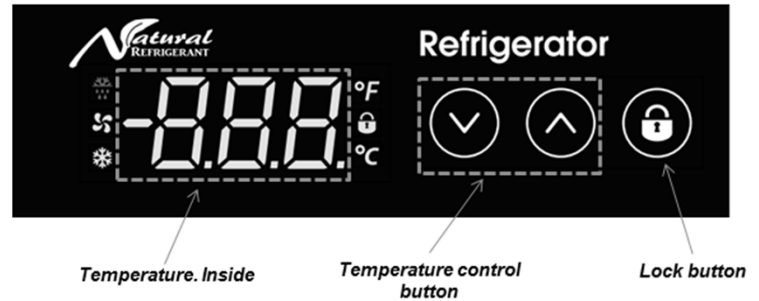
Follow the steps to solve this issue.








1. Touch the lock button for 3 seconds to unlock key.
2. After the lock indicator lamp is turned off, touch the  button twice immediately and wait until the unit starts to run.
3. After that, follow the temperature setting procedure described on above.

 The controller turns off the unit whenever the temperature is set to the maximum set point. Follow the instructions above to restart the unit.



Gently touch the button and **Do Not press hard** because the operation of the button is done by the electrostatic method.



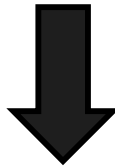
-  Icon will light up and unit will display "DF" when defrost is activated.
-  Icon will light up when evaporator fan(s) are in operation
-  Icon will light up when compressor is in operation
-   Icon will be displayed in Celsius or Fahrenheit depending on the user's selection
-   Touching these Icons will change the value of the setting
-  Icon is used in adjustment confirmation and control panel locking.

### Temperature control ranges

MODEL	Temperature
BSR23/23T/23G-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BSR49/49T/49G-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BSR72/72T-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BSF23/23T-HC	-10°F ~5°F (-23.3°C-15°C)
BSF49/49T-HC	-10°F ~5°F (-23.3°C-15°C)
BSF72/72T-HC	-10°F ~5°F (-23.3°C-15°C)
BLUR28,36,48,60,72-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BLPT28,36,48,60,72-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BLMT28,36,48,60,72-HC	33°F~ 39°F (0.5°C ~ 3.9°C)
BLUF28,36,48,60-HC	-10°F ~5°F (-23.3°C-15°C)

## Error Check Mode

Press  button for 3 seconds.

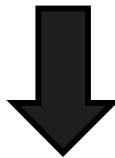


Press  button for 5 seconds

Until display shows “no” or error code(s).

If display shows “no”, that means the unit has no error at all.

**Error codes are only displayed when the unit has errors.**



Press  button to check additional error code(s).



Do not touch controller for 15 seconds to exit.

# Error Codes

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- 1-1. **S1** Defective Temperature (Room) Sensor
  - Sensor is disconnected, open or cabinet temperature is below -58°F.
- 1-2. **S1\_** Defective Temperature (Room) Sensor
  - Sensor is shorted or cabinet temperature is above 149°F

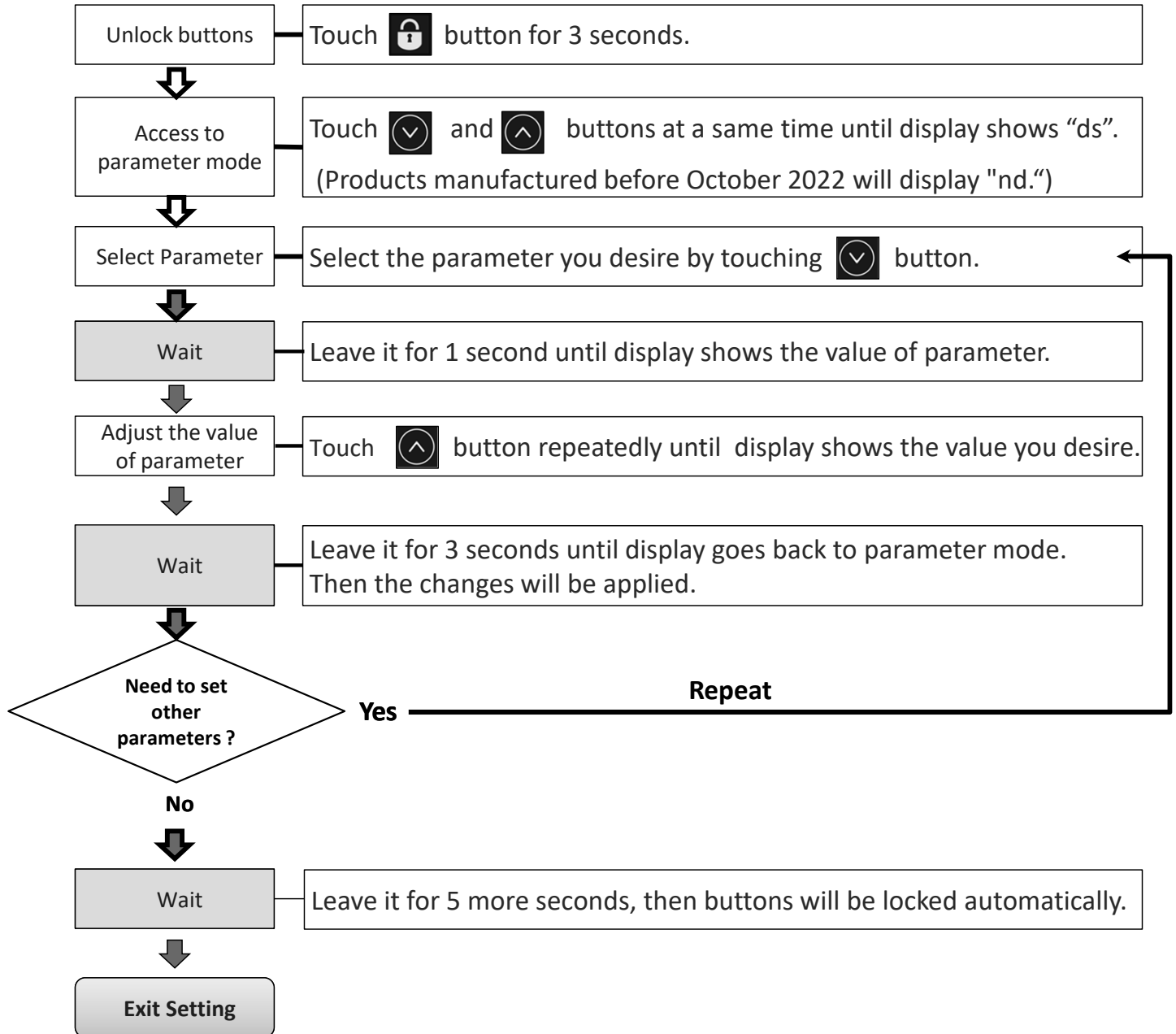
If the above two errors occur, the display window displays "ESL" immediately and the buzzer rings.
  
- 2-1. **d1** Defective Defrost Sensor
  - Sensor is disconnected, open or cabinet temperature is below -58°F.
- 2-2. **d1\_** Defective Defrost Sensor
  - Sensor is shorted or cabinet temperature is above 149°F.
  
- 3-1. **DF1** Fail to Defrost (Only in the freezer)
  - Defrost time exceeds 50 minutes.
- 3-2. **Dr1** Fail to Defrost (Only in the refrigerator)
  - Defrost time exceeds 120 minutes.
  
4. **CF1** Fail to Cool
  - Defrost sensor reads 32°F or above after 30 mins compressor operation.
  
5. **EHF** (Freezer Only): Cabinet Temperature is High.
  - Cabinet temperature is above 45°F for 8 hours after the compressor starts up.
6. **EHR** (Refrigerator Only): Cabinet Temperature is High.
  - Cabinet temperature is above 45°F for 8 hours after the compressor starts up.
  
7. **Edr** Door is open more than an hour. - Alarm (Beeping sound)
  
8. **EF1** When evaporator fan is not running. - Alarm (Beeping sound)
  
9. **UFN** V-FAN is disconnected. - Alarm (Beeping sound) Top Mount Refrigerator Only.

# Parameter Setting

Follow the steps to set the value of parameter.



**Gently touch the button** and **Do Not press hard** because the operation of the button is done by the electrostatic method.



# Details of Parameter

- nd** Select a program by model.  
 • It is not recommended to change. Keep the default.  
**Changes may invalidate the warranty.**

UCr	BLUR28,36,48,60-***_HC
UCS	BLPT/MT28,36,48,60-***-HC
UC7	BLUR/PT/MT72-***-HC
UCF	BLUF28,36,48,60-***-HC
rEF	BSR23,49,72-HC, BSR23G(P),49G(P)-HC
Fre	BSF23,49,72-HC, BSF23T,49T,72T-HC,
Tr2	BSR23T-HC
TrE	BSR49T,72T-HC

**As of October 2022, the "nd" feature has been removed from products manufactured thereafter.**

- ds** Defrost Control  
 • **dS** default – operation in normal.  
 • **dF** Perform defrost 5 sec after it is selected.

- oF** Cabin temperature control : **Factory use Only.**  
 Unit will be controlled with Set Temp + oF value

Code	Value	Code	Value	Code	Value
"00"	0	"-35"	-6.3°F	" 35"	6.3°F
"- 5"	-0.9°F	"-40"	-7.2°F	" 30"	5.4°F
"-10"	-1.8°F	"-45"	-8.1°F	" 25"	4.5°F
"-15"	-2.7°F	"-50"	-9.0°F	" 20"	3.6°F
"-20"	-3.6°F	" 50"	9.0°F	" 15"	2.7°F
"-25"	-4.5°F	" 45"	8.1°F	" 10"	1.8°F
"-30"	-5.4°F	" 40"	7.2°F	" 5"	0.9°F

- Od** Differential, Intervention deferential for set point,  
 Compressor cut in is Set Point + Od value  
 and cut out is Set Point - Od value.

Code	Value	Code	Value
"025"	±0.45°F	" 20"	±3.6°F
"050"	±0.9°F	" 30"	±5.4°F
"075"	±1.35°F	" 40"	±7.2°F
" 10"	±1.8°F	" 50"	±9.0°F
" 15"	±2.7°F		

- CA** Calibration of the temperature difference between the actual temperature of cabinet and the temperature of display. The display will show "Sensing temperature + the value of CA."

Code	Value	Code	Value
" 00"	0	" 50"	9.0°F
"-10"	-0.9°F	" 40"	7.2°F
"-20"	-3.6°F	" 30"	5.4°F
"-30"	-5.4°F	" 20"	3.6°F
"-40"	-7.2°F	" 10"	1.8°F
"-50"	-9.0°F		

- dp** Temperature sensor calibration : **Factory use Only.**  
 • keep the default.

- dt** Interval between defrost cycles.  
 • 0,5,6,7,8,9,10 Hour(s) can be selected.



- nt** Maximum Defrost interval control. : **Factory use Only.**  
 • keep the default.

- dc** Defrost termination temperature control.  
 • 10 ~ 20°C (Controlled by °C base only)

**For units manufactured after August 2024:**  
**The defrost termination temperature can be adjusted for refrigeration products (salad tables, mega-top tables).**  
 • 5 ~ 10°C (Controlled by °C base only)



- Ht** Cord Heater ON/OFF time control : **Factory use Only.**  
 • keep the default.

- Fn** Evaporator Fan operation control  
 • **Co**; runs continuously except door open.  
 • **--** ; runs with the compressor.  
**The setup for the sandwich and mega-top prep tables is configured as "Co".**

**For units manufactured after August 2024:**  
**\*\*New Shortcut Key Added\*\***  
**To unlock, press the  and  simultaneously for 5 seconds. The display will show "Co" accompanied by two beeps, and the internal fan will operate continuously.**

- Ld** Light control  
 • **OFF** ; Turns ON or OFF by the door switch.  
 • **ON** ; Turns ON continuously.

- UFn** This function is exclusive to top-mount refrigeration products.  
 • **OFF** ; For the model doesn't have Vap Fan.  
 • **ON** ; For the model has Vap Fan.

- Cr** Alarm interval for cleaning condenser coil.  
 • Kicks on by the interval selected.(0,3,6,9 Months)  
 Touch  and  buttons at a same time to turn it off.  
 Make sure the condenser coil clean before it.

- HL** Maximum set point ; **FRZ**; -22 ~ 32°F, **REF**; 23 ~ 59°F  
**LL** Minimum set point ; **FRZ**; -22 ~ 32°F, **REF**; 23 ~ 59°F

- dd** Temperature display steps by the value selected.  
**01 = 0.1°F, 05 = 0.5°F, 10 = 1.0°F**

- CF** Measurement unit °C or °F.

- Er** Error check mode.  
 If there are no errors, "no" is displayed. If the product has problems, display the error code in turn on the display.  
 See the error code table.

- tE** Test mode  
**Each time you select a code, you can check the operation status of the corresponding part. See the test code table.**  
**(For component troubleshooting, please refer to the next chapter for details on a commonly used diagnostic function.)**

- EC** After 1 second after "EC" is displayed, all parameters are reset to initial default state.

# Default Value of Parameter

No	Para-meters	Function	Control or Range of control	Table Units				Reach-Ins				Remarks
				REF			FRZ	BOT	BOT TOP	TOP		
				UR	PT MT	UR72 PT72 MT72	UF	REF	FRZ	REF R23	REF R49 R72	
1	nd	Model Code See the table below	Not recommended to change.	UCr	UCS	UC7	UCF	rEF	Fre	Tr2	TrE	Factory use Only
2	dS	Forced Defrost, When select "dF"	dS ; Normal operation dF ; Forced Defrost	dS	dS	dS	dS	dS	dS	dS	dS	
3	oF	Cabin Temperature Calibration	"-50 ~50"	10	10	0	10	0	0	10	10	Factory or Service technician use Only
4	od	Differential for set point	"025~50"	10	10	10	10	10	10	10	10	
5	CA	Cabin Sensor Calibration	"-50~50"	-10	-10	0	-10	0	0	-10	-10	Factory or Service technician use Only
6	dp	Display temperature calibration	"1~10"	4	4	4	4	4	4	4	4	Factory use Only
7	dt	Interval between defrost cycles	"0,5,6,7,8,9,10" Hr(s)	5	5	5	8	5	8	5	5	
8	nt	Maximum Defrost interval control	"0~99"	N/A	N/A	N/A	8	N/A	8	N/A	N/A	Factory use Only
9	dC	Defrost termination Temperature control	FRE "10~20°C" REF " 5~10°C " Control by °C only	5	5	5	12	5	12	5	5	after August 2024
10	Ht	Cord Heater ON/OFF control	"OF,1,2,3,-1,-2,-3,ON"	-2	-2	-2	-2	-2	-2	-2	-2	Factory use Only
11	Fn	Evaporator fan control	Co ; runs continuously "--" ; runs with the comp	--	Co	Co	--	--	--	--	--	
12	Ld	Light ON/OFF control	OFF; Light ON or OFF by door switch ON; ON continuously	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
13	UFn	Vaporizer fan set	OFF; For the model doesn't have Vap Fan ON ; For the model has Vap Fan	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	Factory or Service technician use Only
14	Cr	Alarm interval for cleaning condenser coil	"0,3,6,9" months	0	0	0	0	0	0	0	0	
15	dd	Display by every (0.1,0.5, or 1 °F/°C)	"01,05,10"	10	10	10	10	10	10	10	10	Factory use Only
16	HL	Maximum set point	FRZ; -22 ~ 32°F REF; 23 ~ 59°F	40	40	40	6	40	6	40	40	
17	LL	Minimum set point	FRZ; -22 ~ 32°F REF; 23 ~ 59°F	33	33	33	-10	33	-10	33	33	
18	CF	Measurement unit "°C" or "°F"	Display will show "°C" or "°F"	F	F	F	F	F	F	F	F	
19	Er	Error test mode	See the following instruction for more details	Factory use Only								
20	tE	Test Mode		Factory use Only								
21	EC	Parameter reset to Default at factory		Factory use Only								

## Terms :

- REF ; Refrigerator
- FRZ ; Freezer
- BOT ; Bottom mounted compressor model
- TOP ; Top mounted compressor model
- Vap Fan ; Vaporizer Fan [for condensate water]

◆See the following instruction for more details.

# Check the temperature of each sensor.

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Press  button for 3 seconds.



Press  button for 5 seconds  
Until display shows "dS" (defrost sensor).


**If the sensor is functioning properly, it will display the temperature.  
If the sensor is shorted, it will display "tS" and  
if the sensor is open it will display "tO".**



Press  button again to display the room temperature  
sensor. Until display shows "rS" (room sensor).

**If the sensor is functioning properly, it will display the temperature.  
If the sensor is shorted, it will display "tS" and  
if the sensor is open it will display "tO".**



Pressing  button once more will lock the controls and  
display the room temperature.

Do not touch controller auto-recovery in 20 minutes.

# Test Mode

Press  button for 3 seconds.

Press  and  buttons together until "nd" is displayed.

Press  button 18 times until "tE" is displayed.

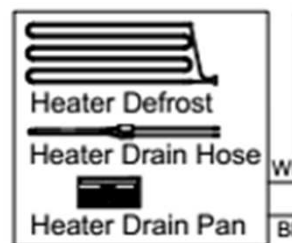
"St" is displayed after "Beep" sound.

Press  button to check each part's operation.

Go back to "St", and do not touch controller for 15 seconds to exit.

# Test Codes

1. "CP1"
  - Turn on the compressor and fans. (Evaporator FAN, Condenser FAN)
2. "dHt" (Freezer Only)
  - Turn on the defrost heaters.
  - All three heaters related to defrost are turned on. (defrost heater, drain hose heater, drain pan heater)
3. "CHt" (Not in use for "-HC" units.)
  - Turn on the cord heater. Blue Air products do not have a cord heater.
4. "LP"
  - Turn on the LED light.
5. "FS"
  - Check temperature (room) sensor.
  - Cabinet temperature is displayed if the sensor is okay.
  - "t0" or "ts" is displayed if the sensor is defective.
6. "rt"
  - Check ambient temperature sensor on control board.
  - Cabinet temperature is displayed if the sensor is okay.
  - "t0" or "ts" is displayed if the sensor is defective.
7. "ds"
  - Check defrost sensor.
  - Cabinet temperature is displayed if the sensor is okay.
  - "t0" or "ts" is displayed if the sensor is defective.



## Test mode

REF: Refrigeration Model  
FRE: Freezer Model

Code	Test Time or Display	Test what	Remarks
"St"	10 Sec	Stand by	REF/FRZ
"CP1"	Continuous	Comp/Fan ON	REF/FRZ
"dHt"	Continuous	Defrost Heater ON	FRZ Only
"CHt"	Continuous	Code Heater ON	REF/FRZ
"LP"	Continuous	Light ON	REF/FRZ
"rS"	Display "rS"	Cabin sensor	REF/FRZ
"rt"	Display "rt"	Ambien Sensor	REF/FRZ
"ds"	Display "ds"	Defrost sensor	REF/FRZ



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