



USER MANUAL

ENGLISH - REV. 02



USE FOR COLD STORAGE ROOMS AND VISA COOLERS



FRONT PANEL IP65



ELECTRICAL AND HOT GAS DEFROSTING



PROGRAMMABLE BY NFC APP
EVEN UNPLUGGED



85-240 VAC 50-60HZ
AUTOMATIC



ECO AND SUPER
FREEZING MODE



SHORTCUT KEYS,
EASY TO PROGRAM



BUZZER

TEMPERATURE CONTROLLER **STORM ST201**

emicool

INNOVATION AND MANUFACTURING
AT YOUR SERVICE

INDEX

1. Product Description	03
1.1. Applications	03
1.2. Items In The Product Box	03
1.3. Technical Specifications	03
1.4. Operation Key Indications	04
1.5. Wiring Diagrams	04
1.6. Product Assembly	04
2. Parameters Adjustment	05
2.1. Configuration by Emicol Application	05
2.2. Configuration with frontal Keys	06
2.2.1. Adjustment of the Setpoint Temperature Desired	06
(Normal Setpoint and Eco Setpoint)	
2.2.2. Advanced Operations (Access the Complete Menu)	06
3. Easy Menu Features	06
3.1. [SUF] - Activate Super Freezing Mode	07
3.2. [Eco] - Select Eco Mode	07
3.3. [Dfr] - Manual defrost	07
3.4. [Loc] - Lock Functions	08
3.5. [Ctl] - Control Functions Off	08
3.6. [SP] - Edit Normal Setpoint	08
3.7. [SPE] - Edit ECO Setpoint	08
3.8. [Cr9] - Clear Min and Max Registers	08
3.9. [Re9] - View Min and Max Records	09
3.10. Information About the Running Process	09
4. Quick Access Key Map	09
5. Parameters	10
5.1. Parameter Table	10
6. Field Test	11
7. Parameter Description	11
8. Display Messages	19
9. How to Buy	20
10. Warranty	20
11. Customer Service	20

1. PRODUCT DESCRIPTION

The Temperature Controller **ST201** is a microcontrolled digital electronic instrument, developed for applications that require defrosting by resistance or hot gas, being suitable for **cold storages rooms and visa coolers**.

The Controller has sensors to monitor the ambient temperature, as well as the end defrost on the evaporator. An additional sensor can be installed to monitor the maximum temperature of the condenser (sold separately).

Main features

- ▶ Programable by approximation with 100% free Android APP; (requires NFC);
- ▶ FullRange (85 to 240Vac | 50 or 60Hz);
- ▶ Shortcut keys for direct access to functions;
- ▶ Electric or hot gas defrost;
- ▶ ECO, NORMAL and SUPER FREEZING Operation modes
- ▶ Configurable Buzzer for alarms;
- ▶ It can be used in Cold Rooms and Visa Coolers where there is need for a forced defrost with electrical resistance or hot gas;
- ▶ Neutral design that harmonizes with various types and colors of equipment;
- ▶ Front Panel IP65;
- ▶ Ambient temperature sensor for ON-OFF Compressor
- ▶ Defrost sensor for monitoring the evaporator temperature;
- ▶ Temperature sensor to monitor the condenser (sold separately);
- ▶ Parameter for using sensors from other brands.

Note: Requires Android Phone with version higher than 6.0, availability of NFC communication and active data plan for settings sharing (if applicable).

1.1 APPLICATIONS

- ▶ Cold rooms
- ▶ Visa Coolers

1.2. ITEMS IN THE PRODUCT BOX

- ▶ ST201 controller
- ▶ User manual
- ▶ Sensor 1,5m for ambient
- ▶ Sensor 1,5m for evaporator

1.3 TECHNICAL SPECIFICATIONS

FullRange Power supply	85-240Vac 50/60Hz
Control Temperature	-50°C a 105°C
Operation Conditions	(0a40) °C e (10 -85) %UR [without Condensation]
Control Power	1HP (Compressor)
Compressor	16 A
Fan	5 A

Defrost	10 A
Accuracy Range	0,1°C
IP Protection level	IP65 Frontal
Dimensions	76 x 34 x 77 [mm] (Width x Height x Depth)
Cutout dimensions	X = 71±0.5 Y = 29±0.5 [mm] (Width x Height x Depth)
NFC Communication	Android version higher than 6.0 ISO/IEC15693

TABLE 1

1.4 OPERATION KEY INDICATIONS

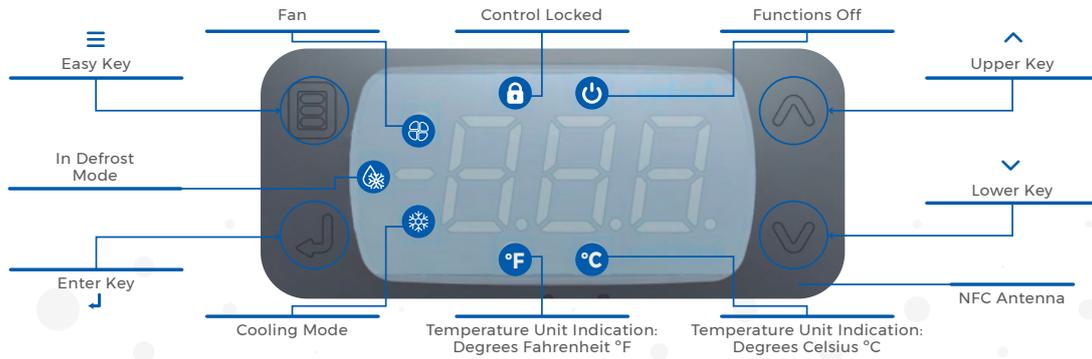


IMAGE 1

1.5. WIRING DIAGRAMS

Connect the sensors and electric cables according to the wiring diagram.

- ▶ Sensor 1: terminals 1-2. Monitor the ambient temperature;
- ▶ Sensor 2: terminals 3-4. Monitor evaporator temperature/end of defrost;
- ▶ Sensor 3/Digital input: terminals 5-6. Configured according to parameter P42.

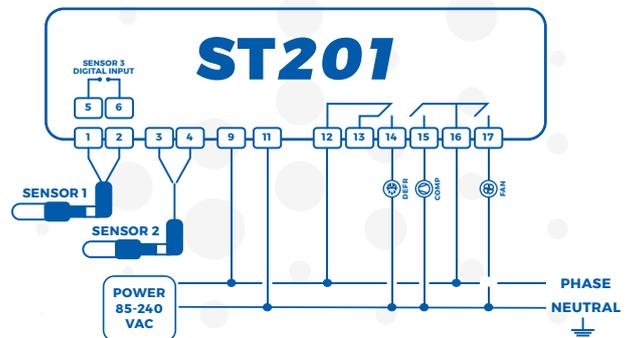


IMAGE 2

1.6. PRODUCT ASSEMBLY

The Controller must be installed in a space according to the table in item 1.3. Avoid installing in locations subject to high humidity and dirt that may cause condensation, introduction of substances or particles.

Make sure that the controller is installed in a place with adequate ventilation and does not exceed the temperature limits indicated in the table of item 1.3. The installation should be as far as possible from sources that may generate electromagnetic interference, such as motors, meters, relays and solenoids.



IMAGE 3



2. PARAMETERS ADJUSTMENT

The **ST201** controller can be configured in two ways, either via the application or directly through the front keys of the controller.

The number of different configurations with the **Emicol Easy App** is unlimited, depending only on the memory capacity of the cell phone.

The controller can store only one configuration.

2.1 CONFIGURATION BY EMICOL APPLICATION

You can send and receive the parameters of the Emicol controller even when disconnected from the power supply. To do this, download the **EMICOL EASY** application from Google Play. The functions present in the application are:

- ▶ Receive a configuration
- ▶ Send a configuration
- ▶ Edit / Create configuration
- ▶ Share a configuration via WhatsApp.



To be able to use the **Easy Emicol** application it is necessary that the cell phone has NFC TECHNOLOGY. One of the symbols below must be present in the cell phone's configuration:



If the application is installed on a cell phone without the NFC function, the communication functions (receive and send) will not work.

2.2 CONFIGURATION WITH FRONTAL KEYS

2.2.1 ADJUSTMENT OF THE SETPOINT TEMPERATURE DESIRED (NORMAL SETPOINT AND ECO SETPOINT)

- ▶ Press until \downarrow the message [SP] appears
- ▶ Use keys \updownarrow to modify the value
- ▶ Press \downarrow to confirm
- ▶ Then the message [SPE] (ECONOMIC SETPOINT) will be displayed
- ▶ Use the keys \updownarrow to modify the value
- ▶ Press \downarrow to save the parameters

2.2.2. ADVANCED OPERATIONS (ACCESS THE COMPLETE MENU)

- ▶ Press key \equiv until [PAr] appears
- ▶ Press \downarrow . You will see [ACC]
- ▶ Press \downarrow . You will see [0]
- ▶ With the keys \updownarrow choose the code [123] and press \downarrow You will see [PAS]
- ▶ With the keys \updownarrow choose the parameter to be adjusted and press \downarrow
- ▶ Use the keys \updownarrow to edit the desired parameter and press \downarrow
- ▶ Use the keys \updownarrow to choose another parameter if necessary or wait a few seconds to automatically exit the function

Notes:

- ▶ After 15 seconds of inactivity it will be necessary to re-enter the access password
- ▶ This function can also be accessed by pressing together the keys \updownarrow

▶ Four ACC options are available, as below:

- ▶ [99] Reset Controller to factory parameters
- ▶ [55] Field Test
- ▶ [123] Access to the complete parameter menu
- ▶ [231] Change the unit of measure to Celsius or Fahrenheit. The parameters are retained, this change will not reset to the factory settings

Shortcut tip: Press the keys \updownarrow simultaneously to access the [PAr] menu

3. EASY MENU FEATURES

By pressing \equiv and then \vee the following sequence will be shown in the controller display

- ▶ \equiv [PAR] \wedge [SUF] \wedge [ECO] \wedge [DFR] \wedge [PRC] \wedge [Loc] \wedge [CTL] \wedge [SP] \wedge [SPE] \wedge [REG] \wedge [CR9]
- ▶ To access any of the functions, press \downarrow

3.1. [SUF] - ACTIVATE SUPER FREEZING MODE

- ▶ Press  and then  até [SUF] and then  will appear [ON]

Super Freezing mode, also known as turbo mode, activates the compressor output continuously, thereby accelerating the system temperature decrease.

Ways of activating/deactivating:

- ▶ Through the Easy Emicol Menu.
- ▶ P42: Switch connected to the digital input
- ▶ P31: Maximum Super Freezing time
- ▶ P30: Temperature limit for Super Freezing

Information: If defrosting is enabled, the controller will start defrost before entering on Super Freezing mode.

3.2. [ECO] - ACTIVATE ECO MODE

- ▶ Press  and then  to [ECO]
- ▶ Press  and [ON] will appear.

This mode when active, toggles the ECO message together with the other controller messages.

The ECO MODE (Energy saving) mode will operate according to the parameters of:

- ▶ P26: Economic Setpoint
- ▶ P27: Economical Setpoint control differential (hysteresis)

The situations below show the possible ways to enable/disable the ECO mode:

- ▶ P26: Economic Setpoint
- ▶ P27: Economical setpoint control differential (hysteresis)

The situations below show the possible ways to enable/disable the ECO mode:

- ▶ P42: Digital input 1 / S sensor 3 function.
- ▶ P28: Door closed time to enter economic mode. If P42 configured as Digital input.
- ▶ P29: Maximum time in economic mode

3.3. [DFR] - MANUAL DEFROST

- ▶ Press  and then  to [dFr]
- ▶ Press  and [ON] and the symbol will appear. 

Shortcut tip: The defrost can be activated or deactivated by pressing the key  until [On]/[Off] appears.

3.4. [LOC] - LOCKING FUNCTIONS

- ▶ Press  and then  until [Loc] appears.
- ▶ Press  and [OFF] will appear.

This function blocks changes to the controller by displaying the symbol  when activated. This lock can be total or partial, according to parameters **P45** and **P46**.

Shortcut tip: You can deactivate the lock by turning the controller off and then on again by pressing the key  until [LOC] [OFF] is shown in the controller display.

3.5. [CTL] - TURNS OFF CONTROL FUNCTIONS

- ▶ Press  and then  until [CTL]
- ▶ Press  and [OFF] will appear.

Activates the control functions shutdown function and starts acting as a temperature display.

Information: This function depends on the parameters configured in **P44**

3.6. [SP] - EDIT NORMAL SETPOINT

- ▶ Press  and then  to [SP]
- ▶ Press 
- ▶ With the keys  , edit the desired temperature value in the Normal SETPOINT
- ▶ Press  to save

3.7. [SPE] - EDIT ECONOMICAL SETPOINT

- ▶ Press  and then  to [SPE]
- ▶ Press 
- ▶ With the keys  , edit the desired temperature value in the Economic SETPOINT
- ▶ Press  to save

3.8. [CR9] - CLEARING MIN AND MAX REGISTERS

- ▶ Press  and then  until [CR9] is displayed
- ▶ Press  to clear the minimum and maximum temperature registers recorded

Information: The message [RST] will be shown in the controller display, confirming that the registers have been cleared.

3.9. [RE9] - VIEW MIN AND MAX REGISTERS

- ▶ Press  and  then until [Re9] is displayed.
- ▶ Press 

The recorded minimum and maximum temperatures will be displayed in the following sequence:

- ▶ T-1: MIN Temperature > MAX Temperature
- ▶ T-2: MIN temperature > MAX temperature
- ▶ T-3: MIN temperature > MAX temperature. If enabled in parameter P42.

Shortcut tip: Press the key  to show the MIN and MAX registers.

3.10. INFORMATION ABOUT THE PROCESS IN PROGRESS:

- ▶ Press key 

The following sequence will be shown in the controller display:

- ▶ Process in Progress
- ▶ Time elapsed
- ▶ Instantaneous temperature at sensor S1
- ▶ Instantaneous temperature at sensor S2. If enabled in parameter P43.
- ▶ Instantaneous temperature at sensor S3. If enabled in parameter P42.

4. SHORTCUT KEYS MAP AND THEIR FUNCTIONS

When the controller is displaying the temperature, the key combinations below are shortcuts to the functions:

	[CRTL] Press until appears CRTL: turns controller functions on/off
 + 	[LOC] pressed together
	[SP] E [SPE] Press to configure normal and economy Setpoint
	[LOC]-OFF Keep key pressed while controller is powered.
 Short Press	[Prc] Displays process in progress
 2 seconds	[SND-OFF] turns off audible alarm (buzzer)
	[Re9] View MIN and MAX registers
 	Accesses the Par menu for parameter editing
	[Dfr] Press until DEFr appears Enters defrost mode
 + 	Clears registers

TABLE 2

5. PARAMETERS

5.1. TABLE OF PARAMETERS

Parameter	Description	Min	Max	Unit	Standard
ACC	Access Password	0	999	n/A	123
P02	Control differential normal setpoint (hysteresis)	0.1	20	°C	2
P03	Ambient temperature S1 indication (offset)	-20	20	°C	0
P04	Minimum setpoint allowed to the user	-50	105	°C	-50
P05	Maximum setpoint allowed to the user	-50	105	°C	105
P06	Instrument powering-on delay	0 (NO)	30	min	0 (NO)
P07	High ambient temperature alarm (S1)	-50	105	°C	105
P08	Refrigeration time (defrost interval)	1	999	min	240
P09	Minimum time for compressor on	0 (NO)	999	seg	0
P10	Minimum time for compressor off	0 (NO)	999	seg	0
P11	Compressor situation with damaged sensor S1	0	2	-	1
P12	Defrost at start of instrument	NO	YES	-	NO
P13	Temperature at the evaporator (S2) to determine end of defrost	-50	105	°C	30
P14	Defrost Time	0 (NO)	90	min	30
P15	Fan on during defrost	0 (OFF)	1 (ON)	-	0 (OFF)
P16	Defrost type (0-Electric / 1-Hot gas)	0	1	-	0
P17	Temperature indication (S1) locked during defrost	-1 (NO)	99	min	-1 (NO)
P18	Draining time (dripping of defrost water)	0 (NO)	99	min	1
P19	Evaporator temperature (S2) for fan return after draining	-50	105	°C	20
P20	Maximum time for fan return after drainage (fan-delay)	0 (NO)	30	min	1
P21	Fan operating mode cooling cycle	0	1	-	1
P22	Fan stop for high temperature in evaporator	-50	105	°C	30
P23	Maximum time before starting defrost	0 (NO)	15	min	0 (NO)
P24	Thermal inertia of sensor S1 (0-deactivated)	0	9	-	0
P25	Normal setpoint	-50	105	°C	-15
P26	Economic setpoint (SPE)	-50	105	°C	-10
P27	Control differential economic (ECO hysteresis)	0.1	20	°C	2
P28	Time for closed door to enter economy mode	0 (NO)	999	min	0 (NO)
P29	Maximum time in economy mode	0 (NO)	100	h	0 (NO)
P30	Temperature limit for Super Freezing	-50	105	°C	-25
P31	Super Freezing max time	0 (NO)	999	min	0 (NO)
P32	Compressor on time in case of S1 failure	0	999	min	0
P33	Compressor off time in case of S1 failure	0	999	min	0
P34	Open door time to shut instant defrost	0 (NO)	999	min	0 (NO)
P35	Open door time to shut down fan	-1 (NO)	999	min	-1 (NO)
P36	Maximum temperature at condenser (S3) to shut down control outputs	0 (NO)	105	°C	0 (NO)
P37	Compressor on time without reaching the setpoint to shut down the control outputs	0 (NO)	999	min	0 (NO)

Parameter	Description	Min	Máx	Unit	Standard
P38	Low ambient temperature alarm (S1)	-50	105	°C	-50
P39	Alarm inhibition time by temperature	0 (NO)	999	min	0 (NO)
P40	Time of open door to given an alarm	0 (NO)	999	min	0 (NO)
P41	Enabling the Buzzer (0-OFF /1-ON)	0 (NO)	1 (ON)	-	0 (OFF)
P42	Function of digital input 1 / Sensor S3	0 (OFF)	13	-	0 (OFF)
P43	Evaporator temperature S2 indication [offset]	-20.1 (OFF)	20	°C	0
P44	Turn off the control functions	0 (NO)	4	-	0 (NO)
P45	Function lock mode	0	2	-	0
P46	Function blocking time	15	60	seg	15

P47	Temperature	Selection	Sensor
	SFG (default)	Heating Cooling	NTC/10K/B (25/85) 3950K 1%
	SCL	Heating Cooling	NTC/10K/B (25/100) 3988K 1%
	SEP	Heating Cooling	NTC/10K/B(25/85) 3435K 1%

P48	NFC blocking	(YES)	(NO)	°C	0 (NO)
P49	Temperature Unit, Operation Mode and Function Lock	-	-	-	

TABLE 3

6. FIELD TEST

It is possible with the field test, to activate/deactivate the loads to carry out functional tests on the controller.

- ▶ Access the [ACC] parameter by pressing the key and then .
- ▶ When [ACC] appears, press . You will see [0].
- ▶ Press to control the outputs [55] or to control the inputs .
- ▶ Press to control the outputs or to control the inputs.

Control Outputs:

- ▶ **Short press on** : Triggers output 1 - Compressor
- ▶ **Short press on** : Activates output 2 - Defrost
- ▶ **Short press on** : Activates output 3 - Fan
- ▶ **Short press on** : Activates buzzer

It is not possible to activate more than one output at the same time

Press for 2s to exit the function

Display Inputs:

- ▶ **Quick touch in** : displays instantaneous value of S1
- ▶ **Quick touch in** : displays instantaneous value of S2
- ▶ **Quick touch in** : displays instantaneous value of S3/Digital

Notes:

- Press for 2 seconds at any time to exit the mode and restart the controller;
- Simultaneously press the + to return to the selection menu between controlling the outputs or display inputs

7. DESCRIPTION OF THE PARAMETERS

ACC: Access Password

- ▶ [123] Complete parameter menu
- ▶ [231] Allows changing the measurement unit from °C to °F
- ▶ [99] Reset factory parameters
- ▶ [55] Field test

P02: Control differential normal setpoint (hysteresis):

It is the temperature difference between ON and OFF of the compressor output in NORMAL and SUPER FREEZING MODES.

P03: Ambient temperature S1 indication (offset):

This parameter makes it possible to correct the temperature displayed by the S1 sensor.

P04 and P05: Minimum/Maximum setpoint allowed to the user:

These are the minimum and maximum temperatures set with password so that the user does not exceed these limits when changing the temperature without an access password

P06: Instrument powering-on delay

It delays the process start to avoid several devices turning on at the same time.

Note: During the delay, only the temperature will be shown in the display while all outputs will be off.

P07: High ambient temperature alarm (S1)

Monitors Sensor 1 and displays the message (AH) when the temperature is above the value configured in this parameter. It emits an audible alarm, if P41 is enabled. This parameter will be disabled in the following situations:

- ▶ From the time the controller was powered up until the SetPoint is reached the first time.
- ▶ During defrost cycles

The differential for shutdown is fixed at 0.1°C in relation to the alarm temperature.

P08: Refrigeration time (defrost interval)

It is the running time of the compressor for refrigeration mode.

P09: Minimum time for compressor on:

It is the minimum time the compressor will stay on, the interval between the last start and the next stop. This parameter avoids successive starts/shutdowns in the refrigeration system.

P10: Minimum time for compressor off:

It is the minimum time that the compressor will remain off, the interval between the last stop and the next start. This parameter can increase the useful life of the compressor and of the electrical system, reducing the starting pressure.

P11: Compressor situation with damaged sensor S1:

If the temperature sensor is short-circuited or disconnected, the compressor output assumes the configured state:

- ▶ Option: [0] Turns off the compressor
- ▶ Option: [1] Keeps the compressor on
- ▶ Option: [2] Cycles according to the times of **P32** and **P33**

P12: Defrost at start of instrument:

This parameter allows you to set an additional defrost when starting the controller (useful in cases of failure of power supply).

- ▶ [NO]: Function disabled
- ▶ [YES]: Defrost on compressor start-up

P13: Temperature at the evaporator (S2) to determine end of defrost:

When the evaporator temperature is greater than or equal to the value set in this function, defrost will be terminated.

P14: Defrost time:

It is the maximum time of defrost duration. If at the end of the period the temperature set in P13 is not reached, the decimal symbol will keep flashing.

If sensor 2 is disconnected, the end of the defrost process will always be determined by time, not generating the alert signal. If set to 0 ([no]) the defrost process will not be executed.

P15: Fan on during defrost:

Defines whether the fan will always stay on or off during defrost.

- ▶ [0]: Fan is not turned on
- ▶ [1]: Fan on

Information: This function is only available for P16=0 electrical defrost.

P16: Defrost type (0-Electric / 1-Hot gas):

- ▶ [0]: Electric defrost (by heating), where only the defrost output is activated
- ▶ [1]: Hot gas defrost, where the output of the compressor and defrost are activated

P17: Temperature indication (S1) locked during defrost:

This parameter allows keeping the temperature locked on the display during defrost, avoiding the visualization of a higher temperature.

- ▶ [No]: Do not lock the temperature indication during defrost.
- ▶ [1 a 99]: Lock the temperature indication during defrost according to the set time.

P18: Draining time (dripping of defrost water):

Time for dripping that allows the remaining water in the evaporator to be drained. In this period all the outputs remain off.

To disable, adjust time = 0 (no).

P19: Evaporator temperature (S2) for fan return after draining:

It is the maximum temperature at Sensor 2 to turn the fan on again after draining.

P20: Maximum time for fan return after drainage (fan-delay):

If the temperature in the evaporator does not reach the value configured in parameter P19 or the sensor (S2) is disconnected, the fan-delay will occur after the time configured in this function.

P21: Fan operating mode cooling cycle:

- ▶ [0] = Fan on together with the compressor. Useful function for saving electricity
- ▶ [1] = Fan on during the entire cooling cycle

P22: Fan stop for high temperature in evaporator:

The fan is turned off in case of high temperature in the evaporator.

P23: Maximum time before starting defrost:

When initiating defrost the controller will keep, during this time, only the fan on, using the residual energy of the gas. In the case of defrost on energization, this time will be disregarded.

P24: Thermal inertia of sensor S1 (0-deactivated):

This parameter simulates an increase in thermal mass in the sensor, delaying the response time (thermal inertia). The higher the value set in this parameter, the greater the response delay of the sensor. To deactivate, set to 0 (zero).

P25: Normal setpoint:

It is the desired temperature in the room, measured through Sensor 1. It is the reference value for the temperature control to turn the compressor on and off.

P26: Economic setpoint (SPE):

It is the desired room temperature in economic mode, measured through Sensor 1. It is the reference value for the temperature control to turn the compressor on and off.

P27: Control differential economic (ECO hysteresis):

It is the temperature difference between ON and OFF the compressor output in ECONOMIC mode. MODE.

P28: Time for closed door to enter economy mode:

This function allows to go into Economic mode after the period of inactivity confirmed in the function. The controller should be operating in Normal mode.

To disable this function, set to [no].

P29: Maximum time in economy mode:

This is the maximum time the controller can run in economy mode. After this time, the setpoint returns to the normal operating mode.

To disable this parameter, set to [tOFF].

P30: Temperature limit for Super Freezing:

It is the minimum temperature that the instrument may reach during the super freezing process.

P31: Super Freezing max time:

It is the maximum time that the Super Freezing process will last (Turbo Mode).

P32: Compressor on time in case of S1 failure:

This is the minimum time that the compressor will be [on], if the sensor is defective.

Information: This parameter operates together with P11.

P33: Compressor off time in case of S1 failure:

This is the minimum time that the compressor will be [off], if the sensor is defective.

Information: This parameter operates together with P11.

P34: Open door time to shut instant defrost:

It performs an instant defrost if the door is open for a longer time than the time defined in the parameter.

To disable this parameter, set to [no].

P35: Open door time to shut down fan:

Turns off the fan if the door is open for longer than the time defined in the parameter. To disable this parameter, set to [no].

P36: Maximum temperature at condenser (S3) to shut down control outputs:

Turns off all outputs if the S3 sensor reaches a higher temperature defined in the parameter. This parameter is voided until the Setpoint is reached the first time.

The warning [Ahc] will be shown on the display and a beep will sound if the buzzer [P41] is enabled.

Information: Set Hysteresis is 5°C.

P37: Compressor on time without reaching the setpoint to shut down the control outputs:

It is the maximum time that the compressor will stay on without reaching the setpoint.

If the time defined in the parameter is exceeded, all outputs will be turned off and the visual [ACo] and sound alarm will be activated.

To disable this parameter, configure as [no].

P38: Low ambient temperature alarm (S1):

It is the ambient temperature (S1) below which the instrument will indicate a visual [alarm] and sound alarm if parameter (P41) is active.

This parameter will be ignored in the following situations:

- ▶ From the time the controller was powered up until the SetPoint is reached the first time
- ▶ During Super Freezing mode

P39: Alarm inhibition time by temperature:

Sets a minimum time of the temperature within a range before an alarm goes off.

P40: Time of open door to given an alarm:

If the door is left open longer than or equal to the time set in this parameter, the visual and audible door open alarm will go off (P41) if it is set.

P41: Enabling the buzzer (0-OFF / 1-ON):

Allows to enable and disable the internal buzzer for alarm signaling.

- ▶ **[0]** Off
- ▶ **[1]** Buzzer Enabled. Beeps in case of alarms

P42: Function of digital input 1 / sensor S3:

- ▶ **[Off]** Off
- ▶ **[1]** Temperature sensor S3
- ▶ **[2]** Digital IN: Setpoint ECO (N.O.)
- ▶ **[3]** Digital IN: Defrost (N.O.)
- ▶ **[4]** Digital IN: Super Freezing (N.O.)
- ▶ **[5]** Digital IN: External alarm (N.O.)
- ▶ **[6]** Digital IN: Door contact (N.O.)
- ▶ **[7]** Digital IN: Setpoint ECO (N.C.)
- ▶ **[8]** Digital IN: defrost (N.C.)
- ▶ **[9]** Digital IN: Do Super freezing (N.C.)
- ▶ **[10]** Digital IN: External alarm (N.C.)
- ▶ **[11]** Digital IN: Door contact (N.C.)

P43: Evaporator temperature S2 indication [offset]:

This parameter makes it possible to correct the temperature displayed by sensor S2.

To disable Sensor 2 , set this parameter to **[off]**. When S2 is disabled, the defrost will be terminated by time and will not generate timeout alarm.

P44: Turn off the control functions:

Allows you to turn off the control functions according to the following possibilities:

- ▶ **[no]** NO TurnOFF.
- ▶ **[1]** Enable / Disable when unblocked.
- ▶ **[2]** Enable / Disable when blocked.
- ▶ **[3]** Same as [1] and power off display. *

- ▶ [4] Same as [2] and power off display. *

Note: * it keeps the display off and goes back for 5s when any key is pressed. Then it goes out again and keeps the symbol 

P45: Function lock mode:

Allows setting the function lock.

- ▶ [0] Do not allow the function lock
- ▶ [1] It allows a partial lock
- ▶ [2] It allows the full lock

P46: Function blocking time:

Enables locking the control functions.

- ▶ [15] - [60] - Time for function blocking in seconds

P47: Temperature sensor selection

The ST201 2HP controller will be able to work with different types of temperature sensors, avoiding the need for exchanging in cases of difficulty when cabling. Example cold rooms.

- ▶ [SF9] Standard
- ▶ [SCL] Optional
- ▶ [SEP] Optional

P48: NFC Blocking: This function blocks NFC communication from the controller:

- ▶ [0]: NFC enabled
- ▶ [1]: NFC blocked

Note: This lockout works only when the instrument is powered

P49: Temperature Unit, Operation Mode and Function Lock:

This parameter is exclusive to the Easy Emicol App. Parameter P49 will not be shown in the controller's display.

This parameter may change the settings of Temperature Unit (Degrees Celsius and Degrees Fahrenheit), Keypad Lock, and turn off functions.

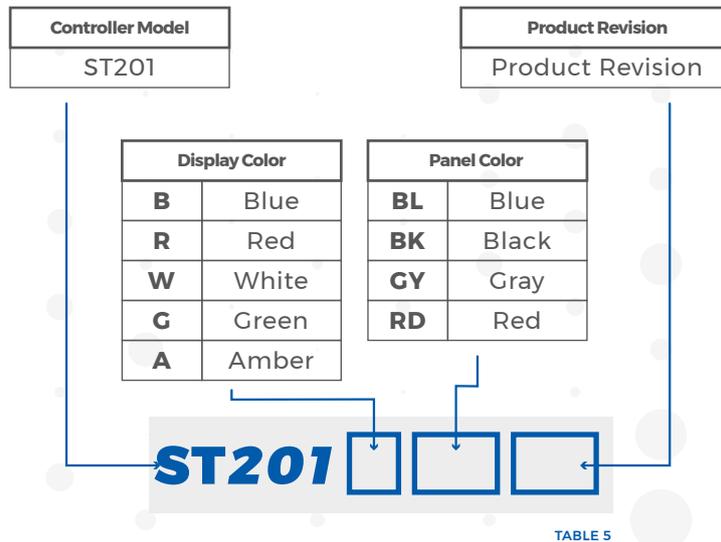
8. DISPLAY MESSAGES

Message	Description
Aco	Maximum Compressor ON time alarm
Ado	Open door alarm
Ahi	High ambient temperature alarm (sensor1).
Alo	Low ambient temperature alarm (sensor1).
dEL	Delay when starting the controller
dFr	Defrost process
dFr OFF	Manual activation of the cooling process.
dFr On	Manual activation of the defrost process.
drA	Draining process
OFF	Control functions off.
rEF	In Refrigeration mode
ECO	In Economic mode
FAn	Fan delay process
LOC	Locked Functions
LOC On	Activates function lock
Er1	Sensor1 error: Disconnected, damaged or short-circuited
Er2	Sensor2 error: disconnected, damaged or short-circuited
Er3	Sensor3 error: Disconnected or damaged.
nFC Er4	NFC not initialized. Out of operation.
nFC LOC	NFC blocked, parameters transmitted by the APP were not saved.
nFC REJ	Parameters transmitted by the APP are corrupted, not saved.
nFC STO	Parameters saved successfully

TABLE 4

9. HOW TO BUY

ST201 has a smart code, where you can set the controller features according to your needs.



10. WARRANTY AND REPAIRS

This product is guaranteed by Emicol for manufacturing defects for a period of 12 months from the date of sale. The warranty does not apply to defects resulting from misuse or damage caused by technical malpractice, improper or inadequate installation/maintenance by unqualified personnel.

This product cannot be applied in situations under controls that can generate dangerous or harmful situations for people.

Emicol guarantees the product and is exempted from any and all extra expenses such as inputs, services or transportation.



11. SERVICE TO THE TECHNICIAN/CUSTOMER

Do you still have any questions? Contact us:

- ▶ e-mail: pecas@emicol.com.br