EVCO EV3143 Advanced Controller Instruction Manual

EV3143
Controller with two independent regulators for refrigerated milk storage units and ice cream batch freezers

- 230 VAC or 115 VAC power supply (according to the model)
- 2 analogue inputs (PTC/NTC)
- door switch/multi-purpose input
- main relay 16 A res. @ 250 VAC
- alarm buzzer
- TTL MODBUS slave port for BMS
- hot or cold mode regulation.

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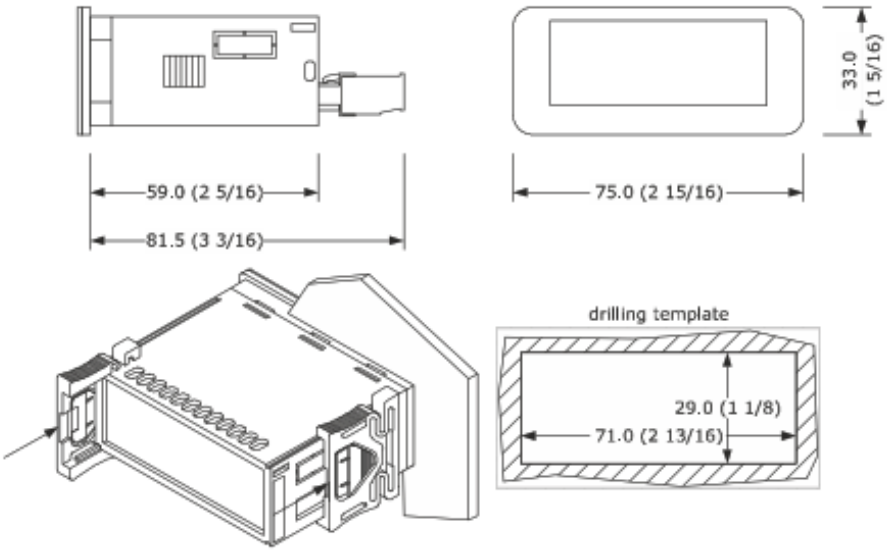
MEASUREMENTS AND INSTALLATION

Measurements in mm (inches). To be fitted to a panel, snap-in brackets provided.

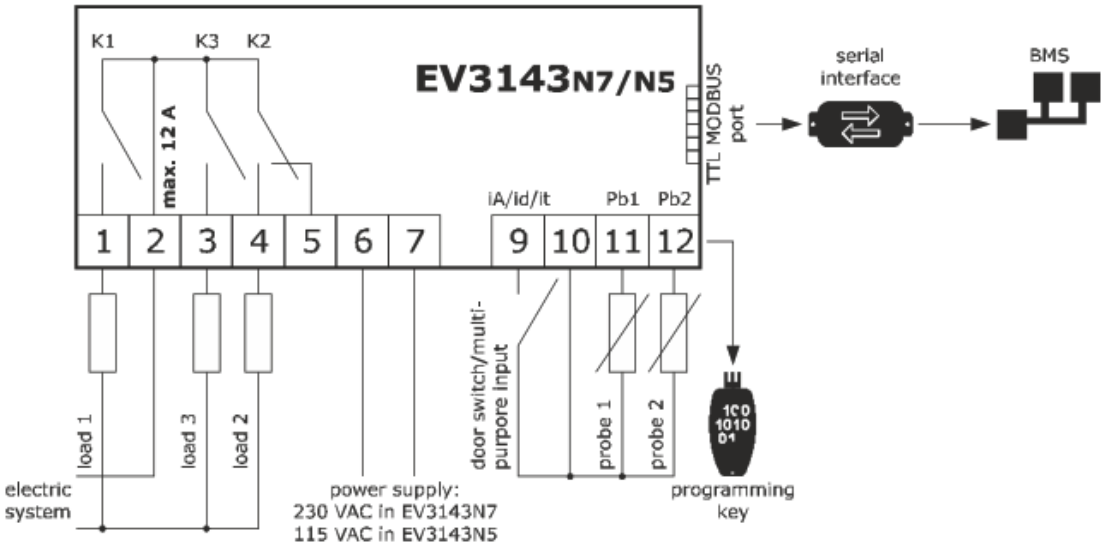


INSTALLATION PRECAUTIONS

- the thickness of the panel must be between 0.8 and 2.0 mm (1/32 and 1/16 in)
- ensure that the working conditions are within the limits stated in the TECHNICAL SPECIFICATIONS section
- do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations, or shocks
- in compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

ELECTRICAL CONNECTION

	**N.B.** • use cables of an adequate section for the current running through them • to reduce any electromagnetic interference, locate the power cables as far away as p ossible from the signal cables.



P10	OPERATION	PROBE 1	PROBE 2	LOAD 1	LOAD 2	LOAD 3
0	controller with two independent regulators	regulator 1	regulator 2	regulator 1	regulator 2	alarm
1	controller for refrigerated mil k storage units	tank	auxiliary	compres- s or	auxiliary	beater
2	controller for ice cream batch freezers	tank	plate	compres- s or	plate heater s	beater

PRECAUTIONS FOR ELECTRICAL CONNECTION

- if using an electrical or pneumatic screwdriver, adjust the tightening torque
- if the device is moved from a cold to a warm place, humidity may cause condensation to form inside. Wait for about an hour before switching on the power
- make sure that the supply voltage, electrical frequency, and power are within the set limits. See the section TECHNICAL SPECIFICATIONS

- disconnect the power supply before carrying out any type of maintenance
- do not use the device as a safety device
- for repairs and for further information, contact the EVCO sales network.

FIRST-TIME USE

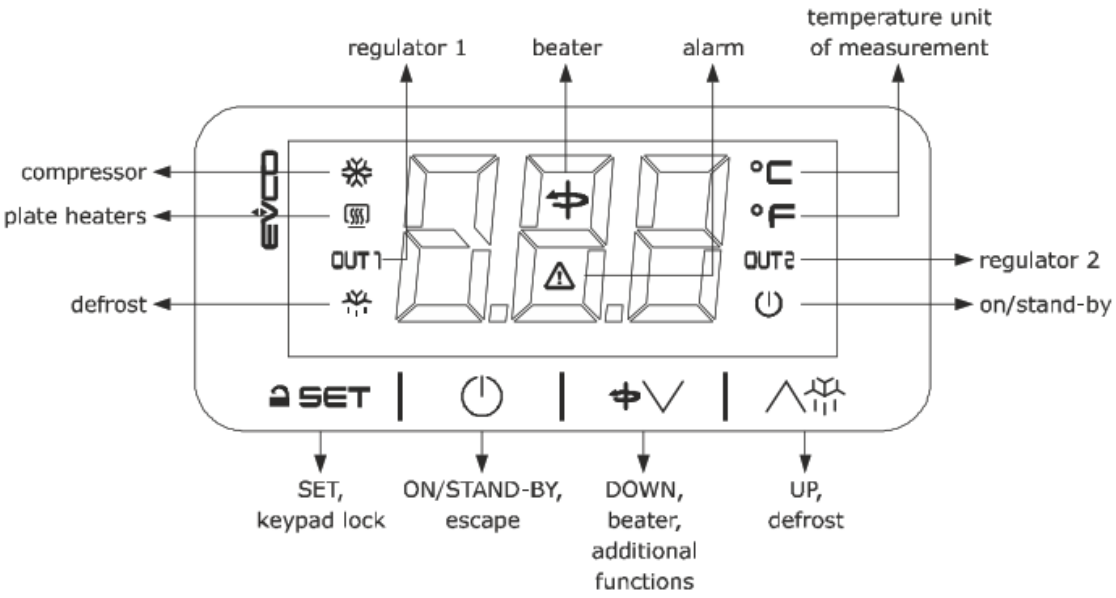
1. Carry out the installation following the instructions given in the section MEASUREMENTS AND INSTALLATION.
2. Power up the device as set out in the section ELECTRICAL CONNECTION: an internal test will startup. The test normally takes a few seconds; when it is finished the display will switch off.
3. Configure the device as shown in the section Setting configuration parameters.

PAR.	DEF.	PARAMETER	MIN… MAX.
SP1	0.0	load 1 setpoint	r1… r2
SP2	0.0	load 2 setpoint	r12… r13
SP3	0.0	beater setpoint	r16… r17
PO	1	type of probe	0 = PTC 1 = NTC
P2	0	temperature measurement unit	0 = °C 1 = °F
P10	0	operating logic	0 = controller with two independent regulators 1 = controller for refrigerated milk storage units 2 = controller for ice cream batch freezers 1 …

   Then check that the remaining settings are appropriate; see the section CONFIGURATION PARAMETERS.

4. Disconnect the device from the mains.
5. Make the electrical connection as shown in the section ELECTRICAL CONNECTION, without powering up the device.
6. When connecting to an RS-485 network, connect the EVIF22TSX interface; see the relevant instruction sheets.
7. Power up the device again.

USER INTERFACE AND MAIN FUNCTIONS



Switching the device on/off

1. | ⏻ | If POF = 1 (default), touch the ON/STAND-BY key for 4 s.

   If the device is switched on, the display will show the P5 value (“probe 1 temperature” default); if the display shows an alarm code, see the section ALARMS.

LED	ON	OFF	FLASHING
❄	compressor on	compressor off	– compressor protection in progress – setpoint being set
♨	plate heaters on	plate heaters off	setpoint being set
OUT1	regulator 1 on	regulator 1 off	– load 1 protection in progress – setpoint being set
	defrost active	–	–
	beater on	beater off	setpoint being set
⚠	alarm active and silenced –	–	alarm active and not silenced
°C/°F	temperature displayed	–	–
OUT2	regulator 2 on	regulator 2 off	– load 2 protection in progress – setpoint being set
⏻	device off	device on	device being switched on/off

When 30 s have elapsed without the keys being pressed, the display will show the “Loc” label and the keypad will automatically lock.

Unlocking the keypad

Touch a key for 1 s: the display will show the label “UnL”.

Quick setting:

- of setpoints (if P9 = 1 or 3)
- beater switch on/off times (if P9 = 2 or 3)

Check that the keypad is not locked.

1.	SET	Touch the SET key: the display will show the label **“SP1”.**
2.		Touch the UP or DOWN key within 15 s to set the load 1 setpoint value within the limits r1 and r2 (default “-50… 50”).
3.	SET	Touch the SET key: the display will show the label **“SP2”.**
4.		Touch the UP or DOWN key within 15 s to set the load 2 setpoint value within the limits r12 and r13 (default “-50… 50”).
5.	SET	Touch the SET key: the display will show the label **“SP3”.**
6.		Touch the UP or DOWN key within 15 s to set the beater setpoint value within the limits r16 an d r17 (default “-50… 50”).
7.	SET	Touch the SET key: the display will show the label **“t0”.**
8.		Touch the UP or DOWN key within 15 s to set the time the beater is switched off within the limit s 0… 240 min.
9.	SET	Touch the SET key: the display will show the label **“t1”.**
10.		Touch the UP or DOWN key within 15 s to set the time the beater is switched on within the limit s 0… 240 min.
11.	SET	Touch the SET key (or take no action for 15 s).

Settings are temporary: when the device is switched back on (and after a power failure), it resets the values SP1, SP2, SP3, t0 and t1.

Starting up/interrupting batch freezing (if P10 = 2)

Check that the keypad is not locked.

1.  Touch the ON/STAND-BY key.

Manually switching on the beater (if P10 = 1)

Check that the keypad is not locked.

1. Touch the DOWN key for 4 s.

The beater is switched on for time t1.

Activating manual defrost (if r5 and/or r19 = 0, default)

Check that the keypad is not locked.

1. Touch the UP key for 4 s.

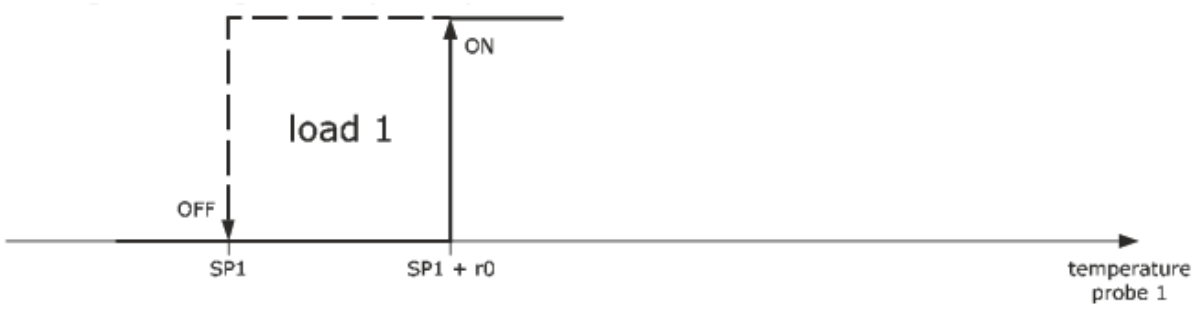
Silencing the buzzer (if Pbu = 2 or 3)

Touch a key.
If u4 = 1, the alarm output is also deactivated.

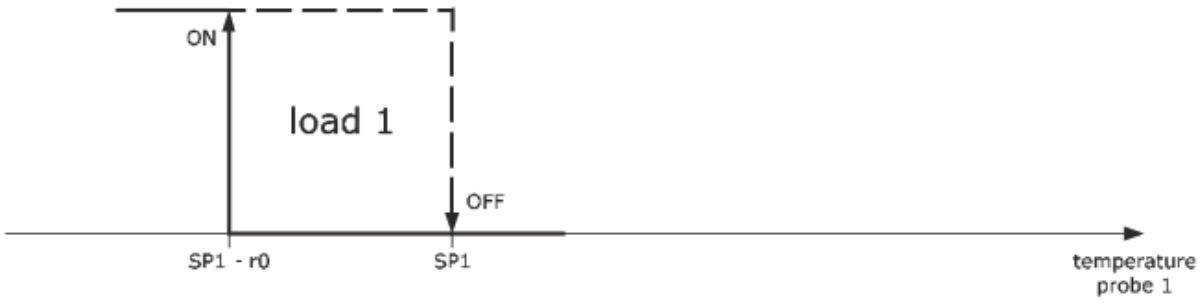
OPERATION

Controller with two independent regulators (P10 = 0, default)

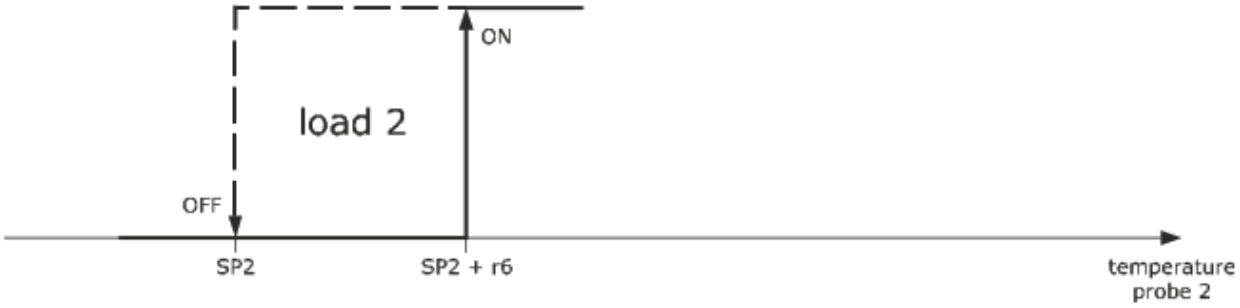
Cold mode regulation regulator 1 (r5 = 0).



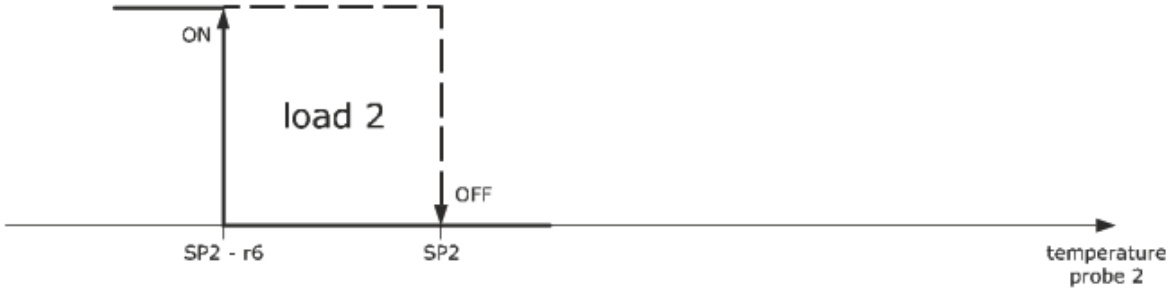
Hot mode regulation regulator 1 (r5 = 1).



Cold mode regulation regulator 2 (r10 = 0).

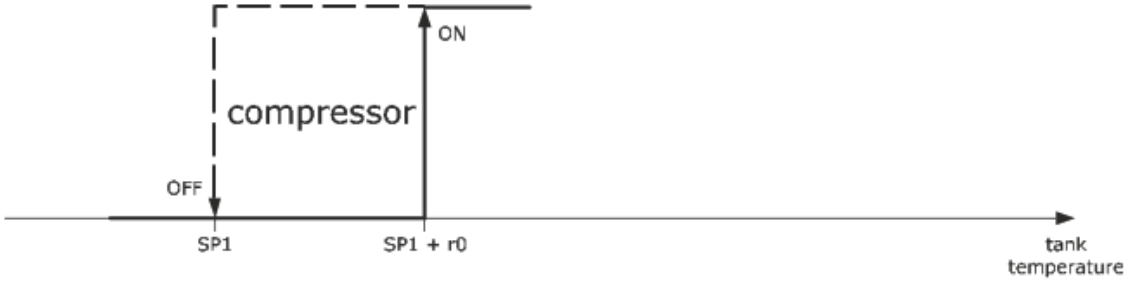


Hot mode regulation regulator 2 (r10 = 1).

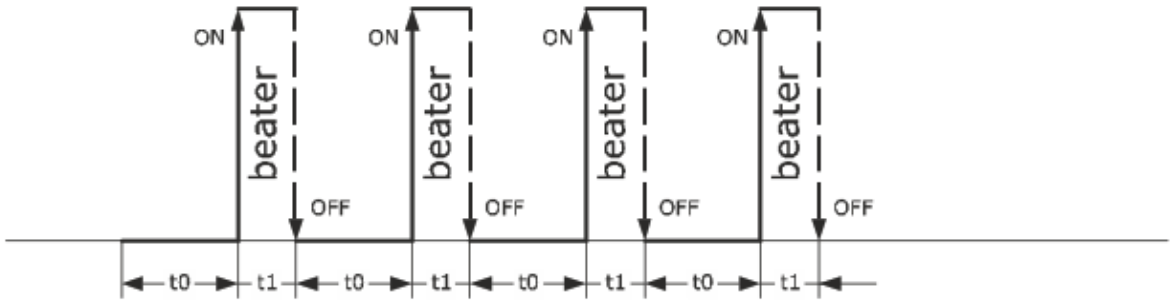


Controller for refrigerated milk storage units (P10 = 1)

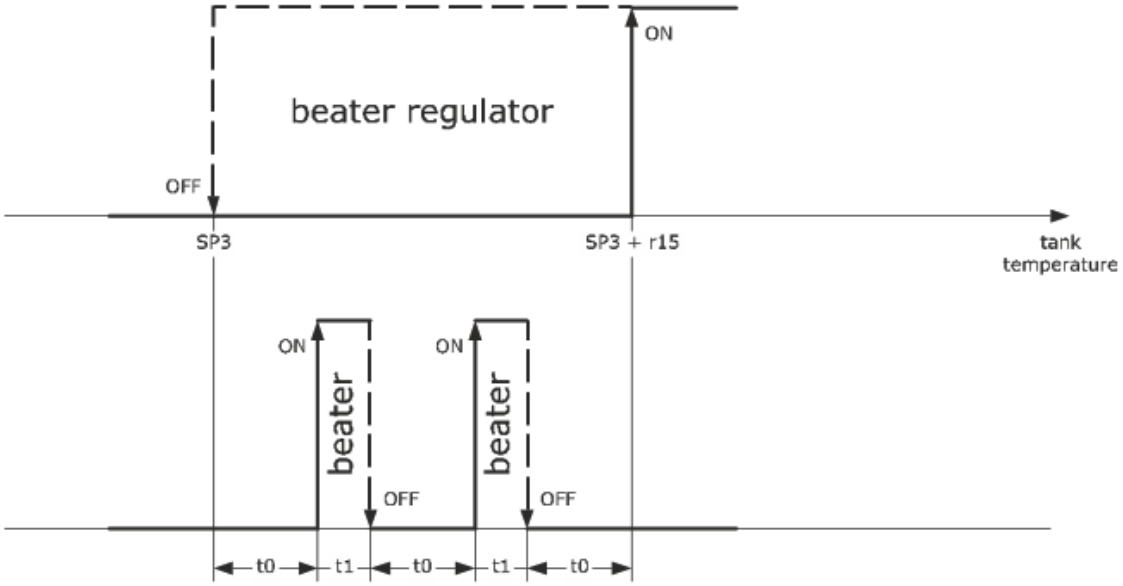
Compressor operation.



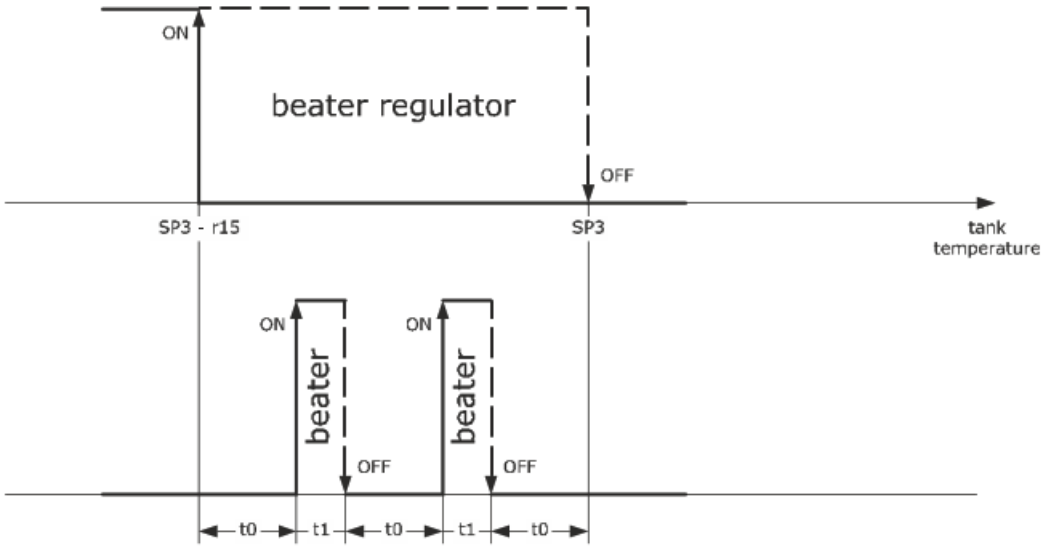
Beater operation set to t0 and t1 (r14 = 0).



Beater operation set to r19, t0 and t1 if beater setpoint is not reached (r14 = 1).
Cold mode regulation beater (r19 = 0)



Beater operation set to r19, t0 and t1 if beater setpoint is not reached (r14 = 1).
Hot mode regulation (r19 = 1).



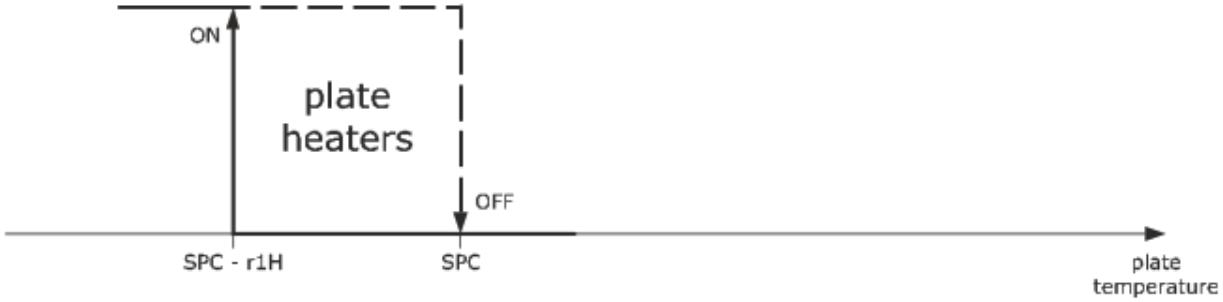
Controller for ice cream batch freezers (P10 = 2)

The batch freezing cycle consists of 4 phases:

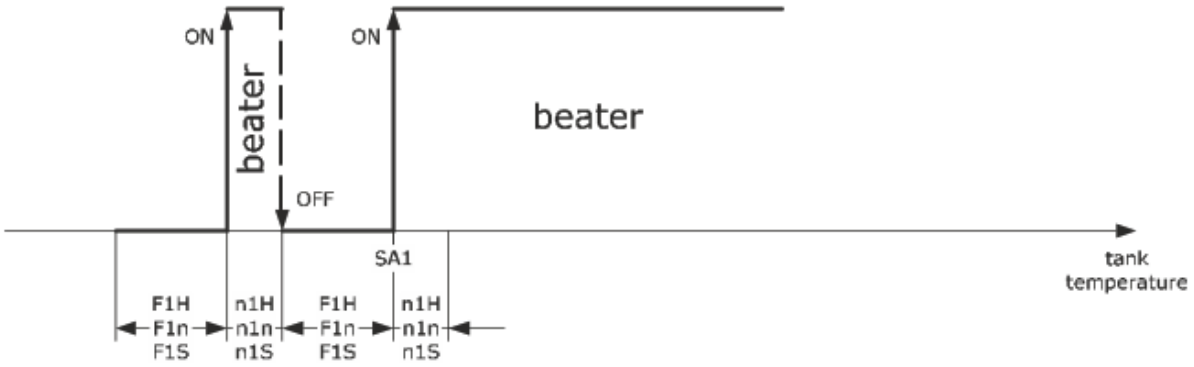
- heating
- cooking
- cooling
- conservation.

Heating

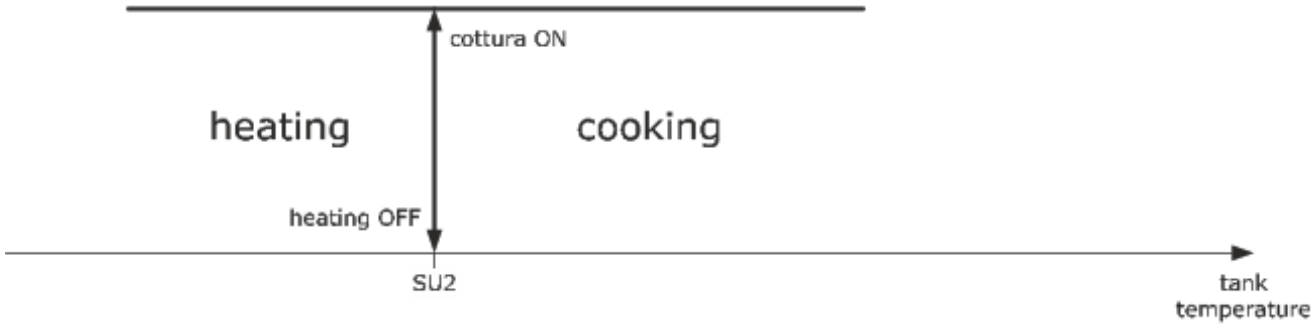
The compressor remains off.
Plate heaters operation.



Beater operation.



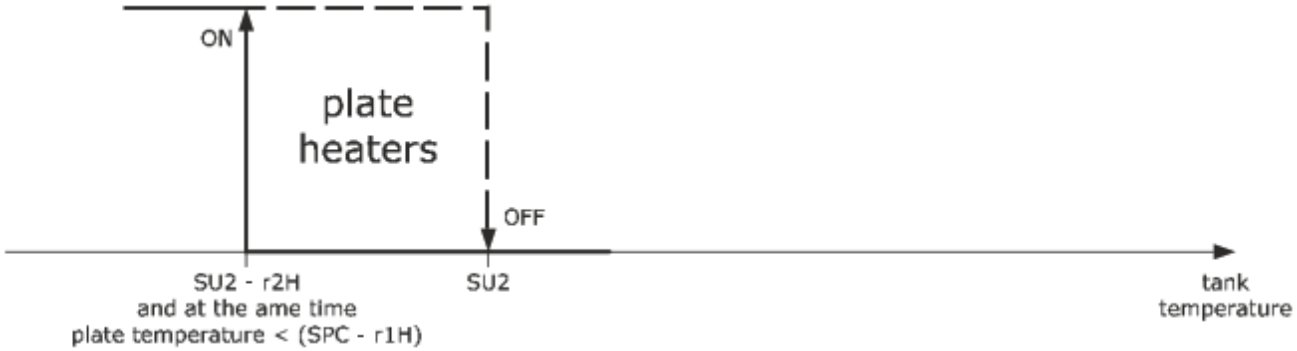
End of phase.



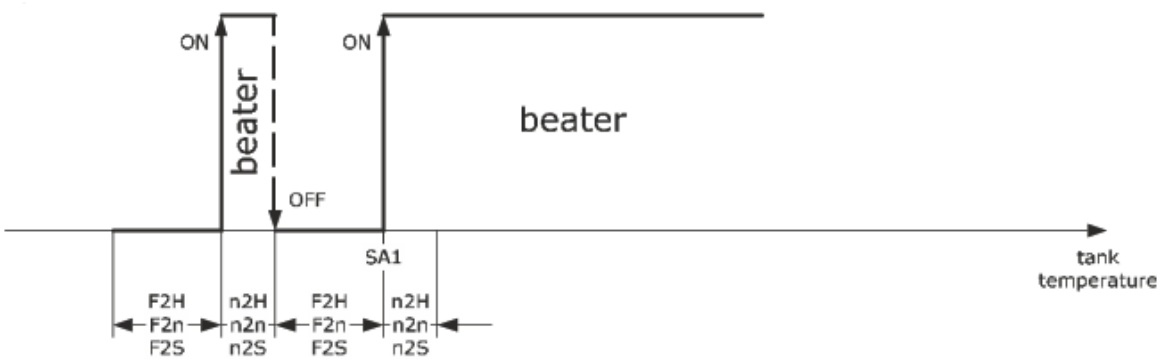
At the end of the phase the buzzer emits 10 beeps 1 s long.
If there is a power failure during the phase, it starts back up again from the beginning.

Cooking

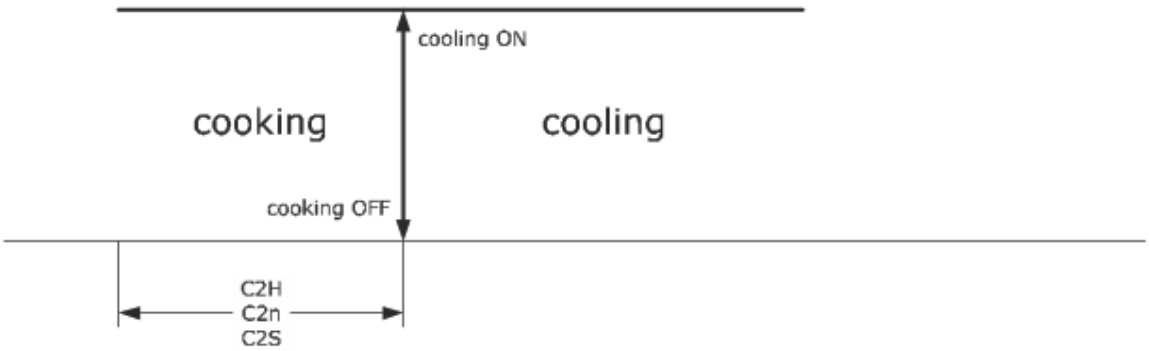
The compressor remains off.
Plate heaters operation.



Beater operation.



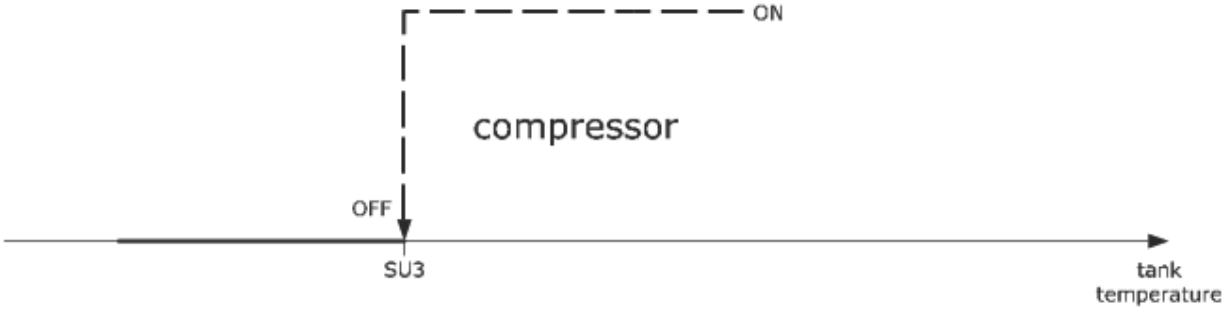
End of phase.



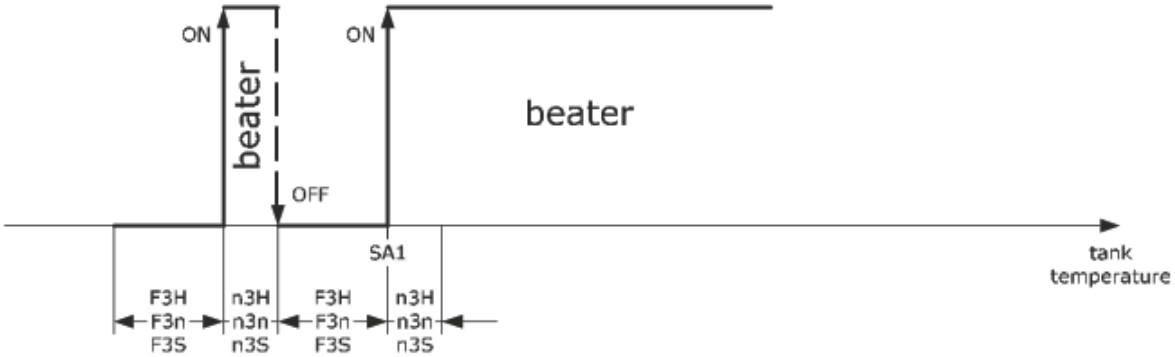
At the end of the phase the buzzer emits 10 beeps 1 s long.
If there is a power failure during the phase, it starts back up again from the beginning.

Cooling

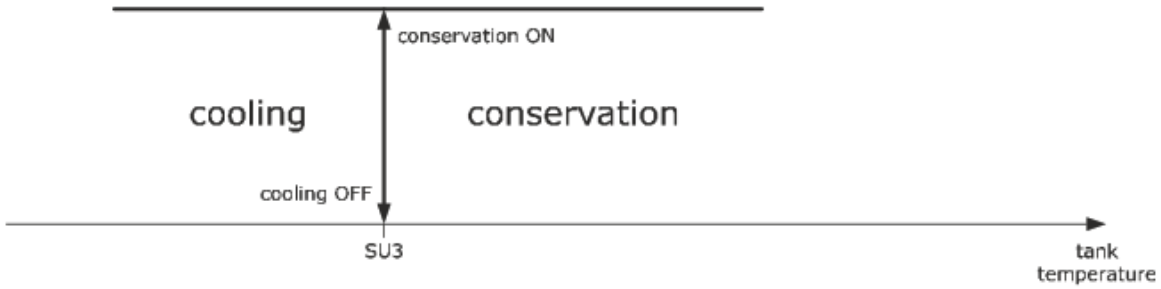
Compressor operation.



The plate heaters remain off.
Beater operation.



End of phase.

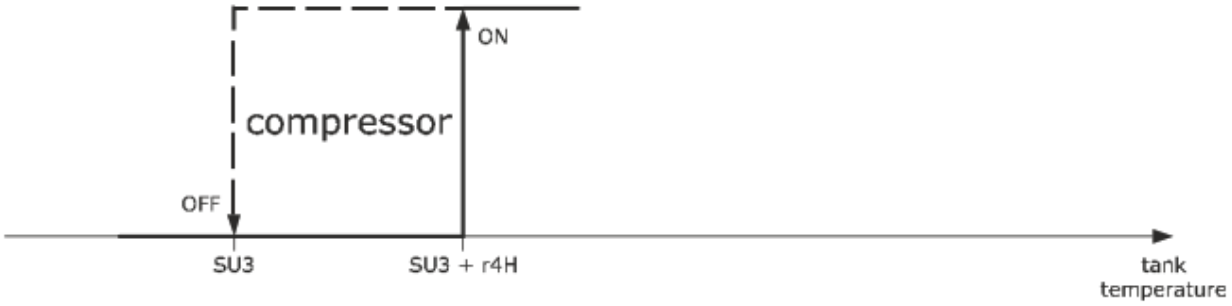


At the end of the phase the buzzer emits 10 beeps 1 s long.
If there is a power failure during the phase:

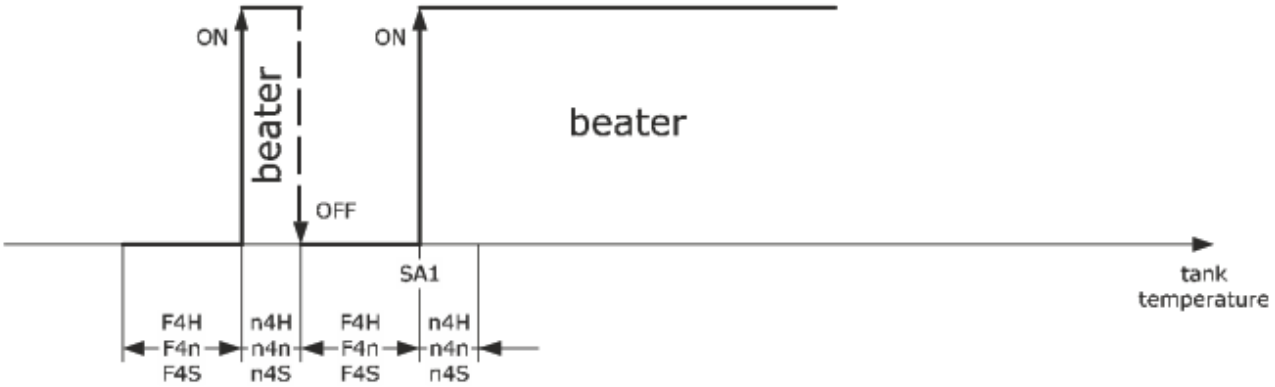
- the phase starts back up again from the beginning if (tank temperature after the powerfailure – tank temperature before the power failure) < PFd
- the cycle starts back up again from the beginning of the heating phase if (tank temperature after the power failure tank temperature before the power failure) > PFd.

Conservation

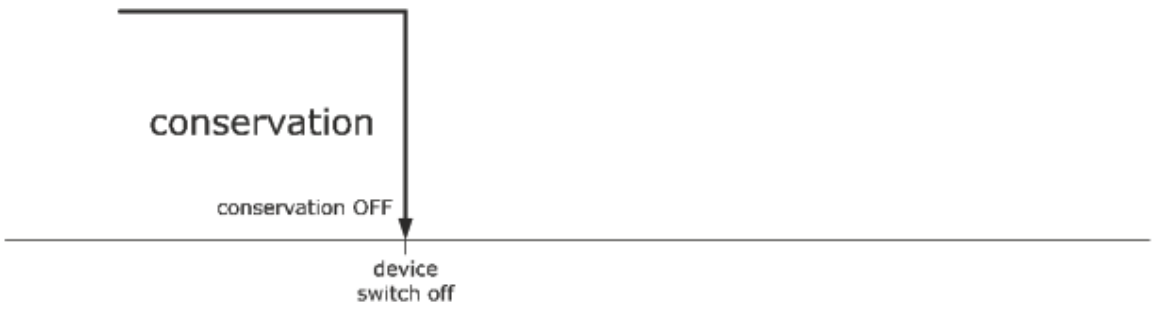
Compressor operation.



The plate heaters remain off.
Beater operation.



End of phase.



If there is a power failure during the phase:

- the phase starts back up again from the beginning if (tank temperature after the power failure – tank temperature before the power failure) < PFd
- the cycle starts back up again from the beginning of the heating phase if (tank temperature after the power failure
- tank temperature before the power failure) > PFd.

ADDITIONAL FUNCTIONS

Viewing the temperatures detected by the probes

Check that the keypad is not locked.

1		Touch the DOWN key for 4 s.
2		Touch the UP or DOWN key within 15 s to select a label.
	LAB.	DESCRIPTION
	Pb1	probe 1 temperature
	Pb2	probe 2 temperature
3		Touch the SET key.
4		Touch the ON/STAND-BY key (or take no action for 60 s) to exit the procedure.

SETTINGS

Setting configuration parameters

1		Touch the SET key for 4 s: the display will show the label “PA”.
2		Touch the SET key.
3		Touch the UP or DOWN key within 15 s to set the PAS value (default “-19”).
4		Touch the SET key (or take no action for 15 s): the display will show the label “SP1”.
5		Touch the UP or DOWN key to select a parameter.
6		Touch the SET key.
7		Touch the UP or DOWN key within 15 s to set the value.
8		Touch the SET key (or take no action for 15 s).
9		Touch the SET key for 4 s (or take no action for 60 s) to exit the procedure.

Restoring factory (default) settings and saving customised settings

N.B.

- check that the factory settings are appropriate; see the section CONFIGURATION PARAMETERS.
- saving customised settings overwrites the factory settings.

1	SET	Touch the SET key for 4 s: the display will show the label “PA”.
2	SET	Touch the SET key.
3		Touch the UP or DOWN key within 15 s to set the value.
	VAL.	**MEANING**
	149	value for restoring the factory information (default)
	161	value for saving customised settings
4	SET	Touch the SET key (or take no action for 15 s): the display will show the label “dEF” (for setting the “149” value) or the label “MAP” (for setting the “161” value).
5	SET	Touch the SET key.
6		Touch the UP or DOWN key within 15 s to set the value.
	VAL. 1	**MEANING**
	1	controller with two independent regulators
	2	controller for refrigerated milk storage units
	3	controller for ice cream batch freezers
7	SET	Touch the SET key (or take no action for 15 s): the display will show “- – -” flashing f or 4 s, after which the device will exit the procedure.
8	Disconnect the device from the power supply.	
9	SET	Touch the SET key for 2 s before action 6 to exit the procedure beforehand.

CONFIGURATION PARAMETERS

	NO.	PAR.	DEF.	SETPOINT	MIN… MAX.
	1	SP1	0.0	load 1 setpoint	rl… r2
	2	SP2	0.0	load 2 setpoint	r7… r8
	3	SP3	0.0	beater setpoint	r16… r17
	NO.	PAR.	DEF.	ANALOGUE INPUTS	MIN… MAX.
	4	CAI	0.0	probe 1 offset	-25… 25 °C/°F
	5	CA2	0.0	probe 2 offset	-25… 25 °C/°F
	6	PO	1	type of probe	0 = PTC 1 = NTC
	7	P1	0	enable decimal point °C	0 = no 1 = yes
	8	P2	0	temperature measurement unit	0 = °C 1 = °F
	9	P3	2	probe 1 function not visible if P10 = 2	0 = disabled 1 = tank probe 2 = regulator 1 3 = condenser probe
	10	P4	2	probe 2 function not visible if PIO = 2	0 = disabled 1 = plate probe 2 = regulator 2 3 = condenser probe
	11	P5	0	value displayed	0 = probe 1 temperature 1 = probe 2 temperature 2 = load 1 setpoint 3 = load 2 setpoint
	12	P8	5	display refresh time	0… 250 s: 10
	13	R	0	enable quick settings block	0 = disabled 1 = setpoint 2 = beater on/off times 3 = beater on/off setpoint + times
	14	P10	0	operating logic	0 = controller with two inde-pendent regulators 1 = controller for refrigerated milk st orage units 2 = controller for ice cream batch fre ezers

	NO.	PAR.	DEF.	REGULATION	MIN… MAX.
	15	r0	2.0	load 1 setpoint differential	1… 15 °C/°F
	16	rl	-50	load 1 minimum setpoint	-99 °C/°F… r2
	17	r2	500	load 1 maximum setpoint	rl… 150 °C/°F
	18	r5	0	hot or cold mode regulation regu- lator 1	0 = cold mode 1 = hot mode
	19	r6	2.0	load 2 setpoint differential	1… 15 °C/°F
	20	r7	-50	load 2 minimum setpoint	-99 °C/°F… r8
	21	r8	500	load 2 maximum setpoint	r7… 150 °C/°F
	22	r9	1	enable regulator 2	0 = no 1 = yes if P10 = 1
	23	r10	0	hot or cold mode regulation regu- lator 2	0 = cold mode 1 = hot mode
	24	r14	0	beater mode in normal operation	0 = parameter set to tO and tl 1 = parameter set to r19, tO, ti if the beater setpoint is not reached
	25	r15	0.5	beater setpoint differential	1… 15 °C/°F
	26	r16	-50	beater minimum setpoint	-99 °C/°F… r17
	27	r17	50	beater maximum setpoint	r16… 150 °C/°F
	28	r19	0	hot or cold mode regulation beater	0 = cold mode 1 = hot mode
	29	r20	0	beater mode in beater probe alarm	0 = off 1 = set to tO and tl
	30	r21	0	constraint between beater and compressor	0 = disabled 1 = on if compressor on and parameter set to r14 2 = on if compressor off and parameter set to r14 3 = on if compressor on

	NO.	PAR.	DEF.	BEATER	MIN… MAX.
	31	tO	3	beater off time	0… 240 min
	32	tl	2	beater on time	0… 240 min
	33	t2	0	beater off delay from compressor off	0… 240 min
	34	t3	10	minimum beater on and off time	0… 240 s
	NO.	PAR.	DEF.	LOADS	MIN… MAX.
	35	CO	3	load 1 on delay from power-on	0… 240 min
	36	Cl	5	delay between two load 1 switch- ons	0… 240 min
	37	C2	3	load 1 minimum off time	0… 240 min
	38	C3	0	load 1 minimum on time	0… 240 s
	39	C4	10	load 1 off time in probe 1 alarm	0… 240 min if C6 = 2
	40	C5	15	load 1 on time in probe 1 alarm	0… 240 min if C6 = 2
	41	C6	3	load 2 on delay from power-on and loa d 2 minimum off time	0… 240 min
	42	C7	2	load 2 minimum on time	0… 240 s
	43	C8	5	delay between two load 2 switch- ons	0… 240 min
	44	C10	10	load 2 off time in probe 2 alarm	0… 240 min if C6 = 2
	45	C11	15	load 2 on time in probe 2 alarm	0… 240 min if C6 = 2

	46	C13	80.0	high condensation signal thresh- old not visible if P10 = 2	0… 199 °C/°F differential = 2 °C/4 °F
	47	C14	90.0	high condensation alarm thresh- old	0… 150 °C/°F
	48	C15	60	high condensation alarm delay	0… 240 s
	NO.	**PAR.**	**DEF.**	**DEFROSTING (if r5 = 0)**	**MIN… MAX.**
	49	dO	8	automatic defrost interval regula- for 1 and regulator 2	0… 99 h 0 = manual only
	50	d3	30	defrost duration regulator 1	0… 99 min
	51	d4	0	enable defrost at power-on	0 = no 1 = yes
	52	d5	0	defrost delay from power-on	0… 99 min
	53	d6	2	value displayed when defrosting	0 = value P5 (if P5 = 0 or 1) 1 = value P5 (if P5 = 0 or 1) at defrost activation 2 = label dEF
	54	d10	30	defrost duration regulator 2	0… 99 min
	55	d12	0	constraint between defrost regu- lator 1 and defrost regulator 2	0 = disabled 1 = regulator defrost is acti- vated only if defrost of the other re gulator is not in progress. If it is, it waits for this to end.

	NO.	**PAR.**	**DEF.**	**ALARMS**	**MIN… MAX.**
	56	Al	–10.0	low temperature alarm threshold probe 1	-99… 150 °C/°F
	57	A2	1	type of low temperature alarm probe 1	0 = disabled 1 = relative to load 1 setpoint 2 = absolute
	58	A4	10.0	high temperature alarm threshold prob e 1	-99… 150 °C/°F
	59	AS	1	type of high temperature alarm probe 1	0 = disabled 1 = relative to load 1 setpoint 2 = absolute
	60	A6	12	high temperature alarm delay probe 1 from power-on	0… 99 minx10
	61	A7	15	high/low temperature alarm delay prob e 1	0… 240 min

62	AS	15	high temperature alarm delay probe 1 after defrosting regulator 1	0… 240 min
63	A10	– – –	unused	
64	All	–10.0	low temperature alarm threshold probe 2	-99… 150 °C/°F
65	Al2	1	type of low temperature alarm probe 2	0 = disabled 1 = relative to load 2 setpoint 2 = absolute
66	A14	10.0	high temperature alarm threshold prob e 2	-99… 150 °C/°F
67	A15	1	type of high temperature alarm probe 2	0 = disabled 1 = relative to load 2 setpoint 2 = absolute
68	A16	12	high temperature alarm delay probe 2 from power-on	0… 99 minx10
69	A17	15	high/low temperature alarm delay prob e 2	0… 240 min
70	A18	15	high temperature alarm delay probe 2 after defrosting regulator 2	0… 240 min
71	A19	2.0	high/low temperature alarm reset differ ential	1… 15 °C/°F

	NO.	PAR.	DEF.	DIGITAL INPUTS	MIN… MAX.
	72	i2	0	door switch/multi-purpose input alarm signal delay	0… 120 min
	73	i3	0	maximum compressor and beater off t ime with door switch/multipurpose inp ut active	0… 120 min
	74	i7	0	door switch/multi-purpose input alarm activation delay	0… 120 min
	75	i5	0	door switch/multi-purpose input functi on	0 = disabled 1 = compressor off 2 = beater off 3 = multi-purpose input alarm 4 = switches device on/off 5 = thermal switch alarm 6 = door open alarm
	76	i6	0	activation door switch/multi-pur- pose input	0 = with contact closed 1 = with contact open
	NO.	PAR.	DEF.	DIGITAL OUTPUTS	MIN… MAX.
	77	u1	3	K1 relay configuration	0 = compressor 1 = plate heaters 2 = beater 3 = load 1 4 = load 2 5 = alarm
	78	u2	4	K2 relay configuration	as ul
	79	u3	5	K3 relay configuration	as ul
	80	u4	1	enable silencing alarm output	0 = no 1 = yes

	NO.	PAR.	DEF.	BATCH FREEZER	MIN… MAX.
	81	Snd	-50	threshold for neutral zone regula- tion during cooking	99… 150 °C/°F
	82	d2n	1.0	neutral zone value	0… 99.0 °C/°F

	83	r23	0.0	minimum plate setpoint during batch f reezing heating and cooking	0 °C/°F… r24
	84	r24	130	maximum plate setpoint during batch f reezing heating and cooking	r23… 150 °C/°F
	85	r25	0.0	minimum tank setpoint at end of batch freezing heating and batch free zing cooking setpoint	0 0C/0F… r26
	86	r26	pO O	maximum tank setpoint at end of batc h freezing heating and bat& freezing c ooking setpoint	r25… 150 °C/°F
	87	r27	0.0	minimum tank setpoint at end of batch freezing cooling and tank setpoi nt during conservation	-2 0C/0F… r28
	88	r28	130	maximum tank setpoint at end of batc h freezing cooling and tank setpoint d uring conservation	r27… 60 0C/°F
	89	SAl	50.0	tank setpoint for beater on or on/off during batch freezing	-99… 150 0C/°F differential = 5 0C /10 of
	90	PFd	5.0	difference in tank temperature af- ter power failure during batch freezing co oling or conservation due to reactivati ng heating	1… 25 °C/°F
	NO.	PAR.	DEF.	BATCH FREEZING HEATING	MIN… MAX.
	P 1	OH	2.0	plate differential setpoint during batch freezing heating and plate setpoint du ring batch freezing cooking	1… 25 °C/°F
	92	1Z1fre ezing n 1H	0	hours beater on during batch heating	0… 23 h
	93	nln	2	minutes beater on during batch freezi ng heating	0… 59 min
	94	n1S	0	seconds beater on during batch freezi ng heating	0… 59 s
	95	FIH	0	hours beater off during batch freezing heating	0… 23 h
	96	F1n	2	minutes beater off during batch freezi ng heating	0… 59 min

	97	F1S	0	seconds beater off during batch freezin g heating	0… 59 s
	NO.	PAR.	DEF.	BATCH FREEZING COOKING	MIN… MAX.
	98	SPC	30.0	plate setpoint during batch freez- ing co oking and plate setpoint during batch fr eezing cooking	r23… r24
	99	SU2	30.0	tank setpoint at end of batch freezing h eating and tank setpoint during batch fr eezing cooking	r25… r26
	100	r2H	2.0	tank differential setpoint during batch fr eezing cooking	1… 25 °C/°F
	101	C2H	1	duration in hours of batch freezing cooking	0… 23 h
	102	C2n	0	duration in minutes of batch freezing cooking	0… 59 min
2	103	C2S	0	duration in seconds of batch freezing cooking	0… 59 s
	104	n2H	0	hours beater on during batch freezing cooking	0… 23 h
	105	n2n	2	minutes beater on during batch freezin g cooking	0… 59 min
	106	n2S	0	seconds beater on during batch freezin g cooking	0… 59 s
	107	F2H	0	hours beater off during batch freezing cooking	0… 23 h
	108	F2n	2	minutes beater off during batch freezin g cooking	0… 59 min
	109	F2S	0	seconds beater off during batch freezin g cooking	0… 59 s

	NO.	**PAR.**	**DEF.**	**BATCH FREEZING COOLING**	**MIN… MAX.**
	110	SU3	30.0	tank setpoint at end of batch freezing cooling and tank setpoint duri ng batch freezing conservation	r27… r28
	111	SA3	10.0	tank setpoint for beater on at end of b atch freezing cooking	0… 25 °C/°F

3	112	ZIfreezing n3H	0	hours beater on during batch cooling	0… 23 h
	113	n3n	2	minutes beater on during batch freezing cooling	0… 59 min
	114	n3S	0	seconds beater on during batch freezing cooling	0… 59 s
	115	F3H	0	hours beater off during batch freezing cooling	0… 23 h
	116	F3n	2	minutes beater off during batch freezing cooling	0… 59 min
	117	F3S	0	seconds beater off during batch freezing cooling	0… 59 s
4	NO.	PAR.	DEF.	BATCH FREEZING CONSERVATION	MIN… MAX.
	118	r4H	2.0	tank differential setpoint during batch freezing conservation	1… 25 °C/°F
	119	n4H	0	hours beater on during batch freezing conservation	0… 23 h
	120	n4n	2	minutes beater on during batch freezing conservation	0… 59 min
	121	n4S	0	seconds beater on during batch freezing conservation	0… 59 s
	122	F4H	0	hours beater off during batch freezing conservation	0… 23 h
	123	F4n	2	minutes beater off during batch freezing conservation	0… 59 min
	124	F4S	0	seconds beater off during batch freezing conservation	0… 59 s

	125	F4C	0	beater mode during batch freezing conservation	0 = independent on the compresso r 1 = on if compressor on, according to n4… and F4… if compressor off

	NO.	PAR.	DEF.	SECURITY	MIN… MAX.
	126	H4E	0	timeout for locking the keypad	0… 240 s
	127	POF	1	enable ON/STAND-BY key	0 = no 1 = yes
	128	PAS	-19	password	-99… 999
	129	PA1	– – –	unused	–
	130	PA2	– – –	unused	–
	NO.	PAR.	DEF.	UNUSED	MIN… MAX.
	131	Hr0	– – –	unused	–
	NO.	PAR.	DEF.	UNUSED	MIN… MAX.
	132	rE0	– – –	unused	–
	133	rEl	– – –	unused	–
	NO.	PAR.	DEF.	MODBUS	MIN… MAX.
	134	LA	247	MODBUS address	1… 247
	135	Lb	2	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
	136	bLE	– – –	unused	–
	NO.	PAR.	DEF.	SECURITY	MIN… MAX.
	137	bul	0	duration of buzzer activation when setpoint reached	0… 240 s
	138	Pbu	2	enable buzzer	0 = disabled 1 = keys only 2 = alarms only 3 = keys and alarms

ALARMS

CODE	DESCRIPTION	RESET	TO CORRECT
Pr1	probe 1 alarm	automatic	– check PO – check integrity of the probe – check electrical connection
Pr2	probe 2 alarm	automatic	
rtc	unused	unused	unused
All	low-temperature alarm probe 1	automatic	check Al and A2
AH1	high-temperature alarm probe 1	automatic	check A4 and AS
AL2	low-temperature alarm probe 2	automatic	check All and Al2
AH2	high-temperature alarm probe 2	automatic	check A14 and A15
id	door open alarm	automatic	check i5 and i6
PF	power failure alarm	manual	– touch a key – check electrical connection
COH	high condensation signal	automatic	check C13
CSd	high condensation alarm	manual	– switch the device off and on – check C14
iA	multi-purpose input alarm	automatic	check i5 and i6
it	thermal switch alarm	automatic	– switch the device off and on – check i5 a nd i6

TECHNICAL SPECIFICATIONS

Purpose of the control device:	function controller.
Construction of the control device:	built-in electronic device.
Housing:	black, self-extinguishing.
Category of heat and fire resistance:	D.
Measurements:	
75.0 x 33.0 x 59.0 mm (2 15/16 x 1 5/16 x 2 5/16 in) with fixed screw terminal blocks	75.0 x 33.0 x 81.5 mm (2 15/16 x 1 5/16 x 3 3/16 in) wit h plug-in screw terminal blocks
Mounting methods for the control device:	to be fitted to a panel, snap-in brackets provided
Degree of protection provided by the casing:	IP65 (front).

Connection method:		
fixed screw terminal blocks for wires up to 2.5 mm²	plug-in screw terminal blocks for wires up to 2.5 mm² (on request)	Micro-MaTch connector

Maximum permitted length for connection cables:	
power supply: 10 m (32.8 ft)	analogue inputs: 10 m (32.8 ft)
digital inputs: 10 m (32.8 ft)	digital outputs: 10 m (32.8 ft).
Operating temperature:	from 0 to 55 °C (from 32 to 131 °F).
Storage temperature:	from -25 to 70 °C (from -13 to 158 °F).
Operating humidity:	relative humidity without condensate from 10 to 90%.
Pollution status of the control device:	2

Compliance:		
RoHS 2011/65/EC	WEEE 2012/19/EU	REACH (EC) Regulation no. 1907/2006

EMC 2014/30/EU	LVD 2014/35/EU.

Power supply:
230 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 2 VA insulated in EV3143N7
115 VAC (+10% -15%), 50/60 Hz (±3 Hz), max. 2 VA insulated in EV3143N5.

Earthing methods for the control device:	none.
Rated impulse-withstand voltage:	4 KV.
Over-voltage category:	III.
Software class and structure:	A.
Analogue inputs:	2 for PTC or NTC probes (probe 1 and probe 2).

PTC probes:	Type of sensor:	KTY 81-121 (990 W @ 25 °C, 77 °F)
	Measurement field:	from -50 to 150 °C (from -58 to 302 °F)
	Resolution:	0.1 °C (1 °F).
NTC probes:	Type of sensor:	ß3435 (10 KW @ 25 °C, 77 °F)
	Measurement field:	from -40 to 105 °C (from -40 to 221 °F)
	Resolution:	0.1 °C (1 °F).

Digital inputs:	1 dry contact (door switch/multi-pu

Dry contact:	Type of contact:	5 VDC, 1.5 mA
	Power supply:	none
	Protection:	none.

Digital outputs:	3 electromechanical relays.

K1 relay:	SPST, 16 A res. @ 250 VAC
K2 relay:	SPDT, 8 A res. @ 250 VAC.
K3 relay:	SPST, 5 A res. @ 250 VAC.
Type 1 or Type 2 actions:	type 1.
Additional features of Type 1 or Type 2 actions:	C.
Displays:	custom display, 3 digits, with function icons.
Alarm buzzer:	built-in.
Communications ports:	1 TTL MODBUS slave port for BMS.

N.B.

The device must be disposed of according to local regulations governing the collection of electrical and electronic equipment.

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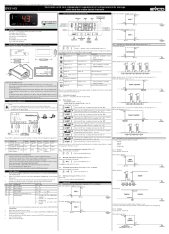
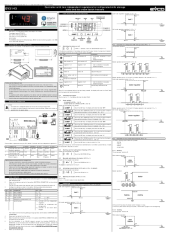
Documents / Resources

	EVCO EV3143 Advanced Controller [pdf] Instruction Manual EV3143 Advanced Controller, EV3143, Advanced Controller
	EVCO EV3143 Advanced Controller [pdf] User Manual EV3143 Advanced Controller, EV3143, Advanced Controller, Controller

References

- info@evco.it
- EVCO - Advanced Controllers