5 – LIST OF PARAMETERS

Parameter listing. Some of them might be on the menu with password and some without, shortcut or may not be present depending on the model:

Par.		Description	Range	Def.	Note
S. – Parameters Set Point value to regulate					
1	**S.LS**	Minimum Set Point	-99.9 ÷ HS	-50.0	
2	**S.HS**	Maximum Set Point	LS ÷ 999	99.0	
3	**SP**	Set Point	-LS ÷ HS	0.0	
i. - Probe parameters selection and correction					
4	**i.SE**	Type of probe	Pt / nt	nt	
5	**i.uP**	Unit of measure and resolution (decimal point) C0 = ° C without p.dec 1° F0 = ° F without p.dec 1° C1 = ° C with 0.1 ° dec F1 = ° F with 0.1 ° dec	C0 / F0 / C1 / F1	C1	
6	**i.Ft**	Measuring filter	oF ÷ 20.0 sec	2.0	
7	**i.C1**	probe calibration	-30.0 ÷ 30.0 °C/°F	0.0	
r. – Parameters of temperature regulation					
8	**r.d**	Differential (Hysteresis) regulation	0.0 ÷ 30.0 °C/°F	2.0	
9	**r.t1**	Output relay activation time for probe faulty or broken	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
10	**r.t2**	Stop time relay output for faulty sensor or broken	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
11	**r.HC**	Operating mode output: H = Heat (heat) C = Cold (cold)	H - C	C	
d. – Defrost Control Parameters					
12	**d.di**	Interval between defrost	oF/ 0.01 ÷ 9.59 (h.min.) ÷ 99.5 (hrs.min.x10)	6.00	
13	**d.Sd**	Delay to start defrosting (oF = defrost at start)	oF/ 0.01 ÷ 9.59 (h.min.) ÷ 99.5 (hrs.min.x10)	02,0	
14	**d.dE**	Duration defrost	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
15	**d.dL**	Block display during defrost: oF = not active on = Active with last measure Lb = active with abbreviations ("**dEF**" defrosting and "**PdF**" in Post-defrost recovering)	oF - on - Lb	oF	
P. Parameters relating to the protection of the compressor and delay starting.					
16	**P.P1**	Exit delay activation	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
17	**P.P2**	Disabling postarrest output (relay)	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
18	**P.P3**	Minimum time after two starts departure.	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
19	**P.od**	Output activation delay at start (supply)	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
A. – Alarm parameters					
20	**A.Ay**	Temperature alarm type: 1 = Absolute 2 = Relative	1 / 2 (/ 3 / 4 / 5 / 6 / 7 / 8 = No use)	1	
21	**A.HA**	Set alarm for high temperature	oF / -99.9 ÷ 999 °C/°F	oF	
22	**A.LA**	Set alarm for low temperature	oF / -99.9 ÷ 999 °C/°F	oF	
23	**A.Ad**	Differential temperature alarm	0.0 ÷ 30.0 °C/°F	1.0	
24	**A.At**	Temperature alarm delay	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 99.5 (min.sec.x10)	oF	
25	**A.PA**	Delay of temperature alarm at start (power)	oF/ 0.01 ÷ 9.59 (h.min.) ÷ 99.5 (hrs.min.x10)	2.00	
26	**A.dA**	Delay of temperature alarm after defrost defrost lock display	oF/ 0.01 ÷ 9.59 (h.min.) ÷ 99.5 (h.min.x10)	1.00	
o. – Buzzer alarm configuration parameters					
27	**o.bu**	buzzer operation oF = disable 1 = one alarm 2 = only for keyboard use 3 = active alarm and keypad	oF / 1 / 2 / 3	3	
t. – Keyboard Configuration Parameters					
28	**t.UF**	Operation mode key "F" or ⏻. oF = no function 4 = On / stop (Stand-by)	oF / 4 (1 / 2 / 3 = No use)	4	
29	**t.Lo**	Automatic keyguard	oF/ 0.01 ÷ 9.59 (min.sec) ÷ 30.0 (min.sec.x10)	oF	
30	**t.PP**	Password access to operating parameters	oF ÷ 999	oF	

6 – TROUBLESHOOTING, MAINTENANCE AND WARRANTY

6.1 – SIGNALS

Error	Reason	Action
E1 -E1	The relative probe can be broken (**E**) or in short circuit (**-E**), or may have a value that is out of range programmed	Check the connection of the probe to the instrument and verify the correct operation of the probe. (it helps to have the ohms values of the probes)
EPr	Possible anomaly in EEPROM	Press the SET key. Power cycle the instrument
Err	Fatal Error device memory	Replace the device or send it to any repair

In probe error condition the output behaves as scheduled parameters "**t1**" and "**t2**".

Indication on Display	Reason
od	Delay-start after power equipment
Ln	keypad Locked
dEF	Defrost active display if "d.dL" = Lb
PdF	Defrost finish recovering cold if "d.dL" = Lb
Hi	High temperature alarm
Lo	Low temperature alarm

6.2 - CLEANING
We recommend cleaning with a damp cloth only without detergent or detergent.

6.3 – WARRANTY AND REPAIR
This device has a guarantee in form of repair or replacement by manufacturing defects in materials of 12 months from the date of purchase.
OSAKA SOLUTIONS automatically void this guarantee and is not liable for any damages deriving from:

- Use, installation, or use and handling undue, others than those described above and, in particular, differs from the safety requirements established by the regulations.
- Use in applications, machines or electrical panels that do not provide adequate protection against liquids, dust, grease and electric shocks to the installation conditions made.
- The inexperienced handling, and / or alteration of the product.
- The installation / use in applications, machines or electrical panels do not comply with the valid norm.

In case of defective product under warranty or out of that period, it should contact the post sales service to perform the necessary steps. Request document repair "RMA" (by mail or fax) and complete it, is necessary send the RMA and the device to SAT OSAKA by method prepaid.

7 – TECHNICAL DATA

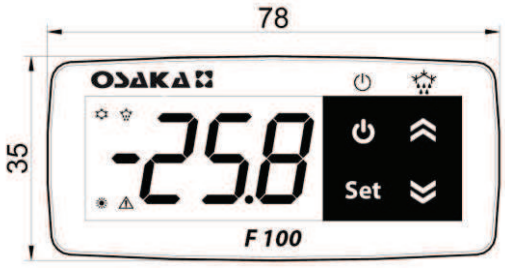
7.1 – ELECTRICAL FEATURES
Supply: 12…24 VAC/DC (**F 100**) - 100...240 VAC +/- 10%
Frequency AC: 50/60 Hz
Consumption: 4 VA
Input /i: 1 input for temperature sensor NTC (103AT-2, 10 K Ω @ 25 °C) o PTC (KTY 81-121, 990 Ω @ 25° C)
Output: 1 Relay SPDT
M1: 8A-AC1 (3A-AC3) / 250 VAC
F 100 / TSF 100: 16A-AC1 (9A-AC3) / 250 VAC
Electrical life relay output: 100000 op.
Power supply: EN 60730-1 type 1.B
Overvoltage category: II
Device Class: Class II
Isolation: Isolated by piece low voltage (power 115/230 V and relay outputs); and part low voltage inputs; Electrically isolated between output and supply.

7.2 - MECHANICAL FEATURES
Carcase: Plastic self-extinguishing UL 94 V0
Category of resistance to heat and fire: D
Dimensions: 78 X 35 mm, prof. 64 mm
Weight: 120 g approx.
Installation: on panel, recessed 71x29mm
Connection: Terminal block 2,5 mm2
Sealing degree: IP65
Ambient operating temperature: 0 T 50 ° C
Operating humidity: <95% RH non-condensing
Storage and transport temperature: -25 ° C T 60

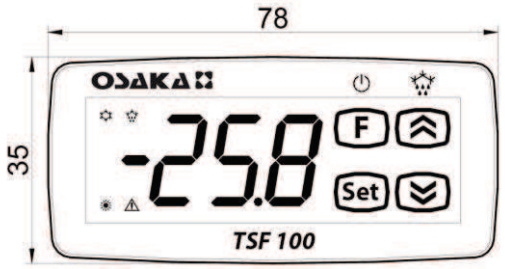
7.3 - FUNCTIONAL FEATURES
Temperature regulation: ON / OFF
Defrost control: interval for compressor failure.
Measuring range: NTC: -50 ... 109 ° C / -58 ... 228 ° F; PTC: -50 ... 150 ° C / -58 ... 302 ° F
Display resolution: 1 ° or 0.1 ° (pitch -99.9 .. 99.9 ° C)
Total accuracy: + / - (0.5% FS + 1 digit)
Time measured speed (no filter): 130 ms
Display: 3 Digit 15.5 mm h
Software class structure: Class A
Compliance: Directive 2004/108/EC (EN55022 class B, EN61000-4-2: 8KV air, 4KV cont; EN61000-4-3. 10V / m, EN61000-4-4: 2KV power, inputs, outputs; EN61000-4-5: com 2KV power mode, 1 kV \ diff mode, EN61000-4-6:.. 3V), 2006/95/EC (EN 60730-1, EN 60730-2-7, EN 60730-2 -9)

7.4 – MECHANICAL DIMENSIONS AND MOUNTING

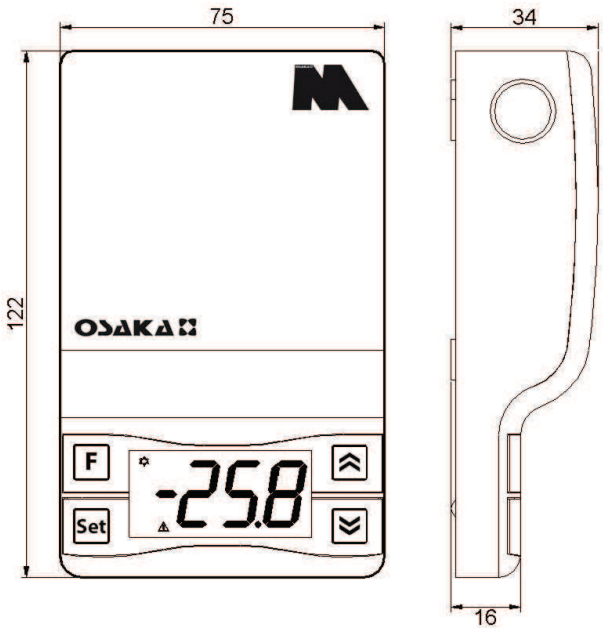
F 100



TSF 100



M 1



HOLES PANEL
- F 100/100 TSF: 29 x 71 mm

FIXING
- F 100/100 TSF: lateral Staples
- M1: Area through screw