



Please read this document carefully before using this product. The guarantee will be invalidated if the device is damaged by not following instructions detailed in the manual. CAL Controls shall not be responsible for any damage or losses however caused, which may be experienced as a result of the installation or use of this product.

## CAL EDT1411 THERMOSTAT

Thank you for choosing the CAL EDT1411 thermostat.

- \* 34 x 77mm sized.
- \* On-Off control.
- \* Single contact output for cooling control.
- \* NTC probe input for cold room temperature.
- \* Offset value can be entered for NTC probe.
- \* Compressor protection parameters can be entered.
- \* In the case of probe failure, output state can be selected on or off or periodical running.
- \* Upper and lower limits of the setpoint can be adjusted.
- \* Defrosting duration and interval can be adjusted.
- \* 16 different warning tones.
- \* Upper and lower limits of the alarm value can be adjusted depending on the setpoint value.
- \* CE marked according to European Norms.



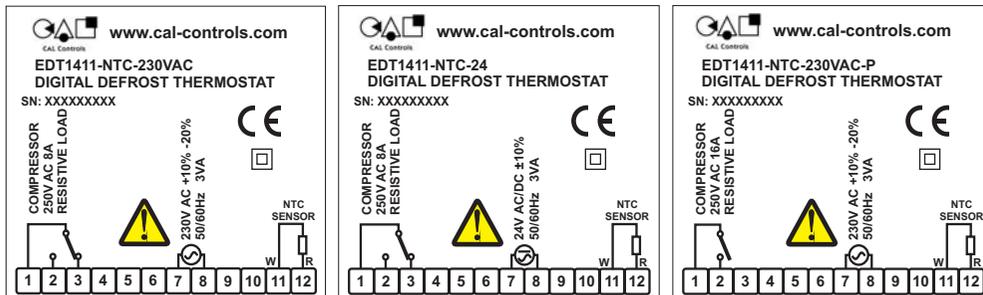
Order Code : EDT1411-NTC-                        

- |                           |                   |
|---------------------------|-------------------|
| <b>1 - Supply Voltage</b> | <b>2 - Output</b> |
| 230VAC...230V AC          | P.....Relay-16A   |
| 24.....24V AC/DC          | None...Relay-8A   |
| 12.....12V AC/DC          |                   |

## Connection Diagram



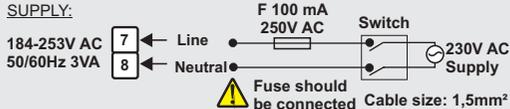
CAL EDT1411 is intended for installation in control panels. Make sure that the device is used only for intended purpose. The electrical connections must be carried out by qualified staff and must be according to the relevant locally applicable regulations. During an installation, all of the cables that are connected to the device must be free of electrical power. The device must be protected against inadmissible humidity, vibrations, severe soiling and make sure that the operation temperature is not exceeded. The cables should not be close to the power cables or components.



Holding screw  
0.4-0.5Nm.

Equipment is protected throughout  
by DOUBLE INSULATION

### NOTE:



### Note:

- 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
- 2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

## Technical Specifications

ENVIRONMENTAL CONDITIONS	
Ambient/storage temperature	0 ... +50°C/-25 ... 70°C (with no icing)
Max. relative humidity	80%, up to 31°C decreasing linearly 50% at 40°C
Rated pollution degree	According to EN 60529      Front panel : IP60 Rear panel : IP20
Height	Max. 2000m
Do not use the device in locations subject to corrosive and flammable gases.	

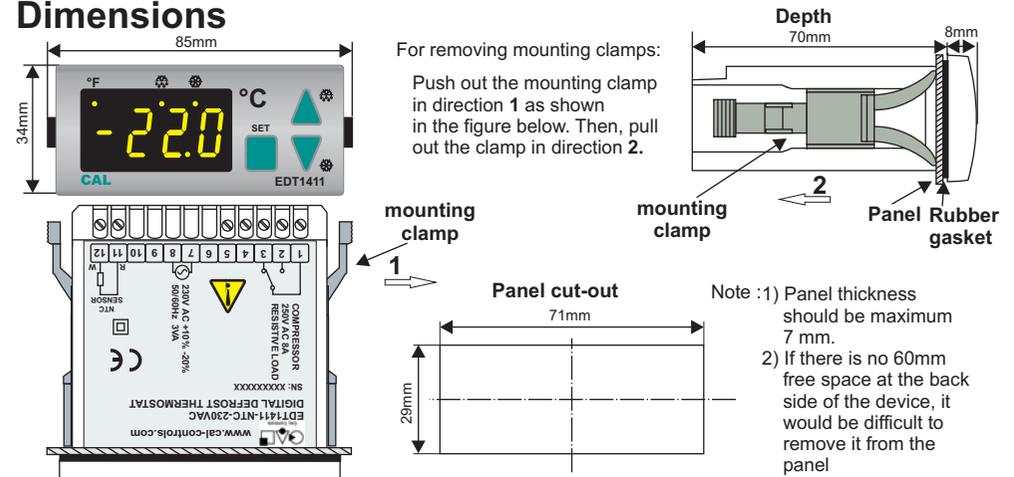
ELECTRICAL CHARACTERISTICS	
Supply voltage	230V AC +10% -10%, 50/60Hz or 24V AC/DC ±10%, 50/60Hz or 12V AC/DC ±10%, 50/60Hz.
Power consumption	Max. 3VA
Wiring	2.5mm <sup>2</sup> screw-terminal connections.
Scale	-50.0 ... +110.0°C (-58.0 ... +230.0°F)
Sensitivity/Accuracy	0.1°C / ±1°C
Time Accuracy	(±%1-15sec) for hour unit, (±%1-1sec) for minute unit
Indicator	4 digits, 12mm, 7 parts yellow LED
EMC	EN 61326-1: 1997, A1: 1998, A2: 2001 (Performance criterion B is satisfied for EMC tests. The device is designed to operate in controlled electromagnetic environment)
Safety requirements	EN 61010-1: 2001 (Pollution degree 2, overvoltage category II)

OUTPUT	
COMPRESSOR	For EDT1411-NTC-XX ; Relay: 250V AC, 8A (for resistive load), NO+NC; 1/2 HP 240V AC CosΦ = 0.4 (for inductive load) For EDT1411-NTC-XXP; Relay: 240V AC, 16A (for resistive load), NO; 1 HP 230V AC CosΦ = 0.5 (for inductive load)
Life expectancy for relay	For EDT1411-NTC-XX ; Mechanical 30.000.000; Electrical 100.000operation. For EDT1411-NTC-XXP; Mechanical 30.000.000; Electrical 30.000operation.

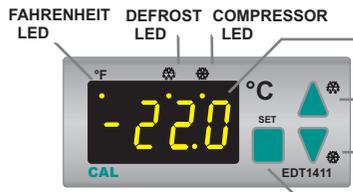
CONTROL	
Control type	Single-setpoint control
Control algorithm	On-Off control
Hysteresis	Adjustable between 0.1 ... 20.0°C.

HOUSING	
Housing type	Suitable for panel mounting.
Dimensions	W77xH34xD70mm
Weight	Approx. 250g (after packing the device and a probe)
Enclosure material	Self extinguishing plastics
While cleaning the device, solvents (thinner, benzene, acid etc.) or corrosive materials must not be used.	

## Dimensions



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Displayed process value in the run mode, parameter name or value in programming mode.

When held down for 3 second in the run mode, manual defrost starts. After the specified time with *d.dur* parameter manual defrost finishes. When held down for 3 second manual defrost finishes before the specified time ends. Used for selecting menu and increasing setpoint value of the parameters in the programming mode and for increasing the setpoint value in the run mode. When held down for a few seconds, the change rate accelerates.

When held down for 3 second in the run mode continuous mode starts. After the specified time with *CCon* parameter this mode finishes. When held down for 3 second continuous mode finishes before the specified time ends. Used for selecting parameters and decreasing the setpoint value in the programming mode and for decreasing the setpoint value in the run mode. When held down for a few seconds, the change rate accelerates.

Used for adjusting the value of the setpoint in the run mode and for adjusting the selected parameter in the programming mode. While holding **SET** key, setpoint value of the selected parameter appears and by using **▲** and **▼** keys the value can be adjusted.

### Run Mode



If both **▲** keys are pressed and held for 3 seconds, programming mode is entered.

If both **▼** keys are pressed, run mode is entered.

### Error Messages

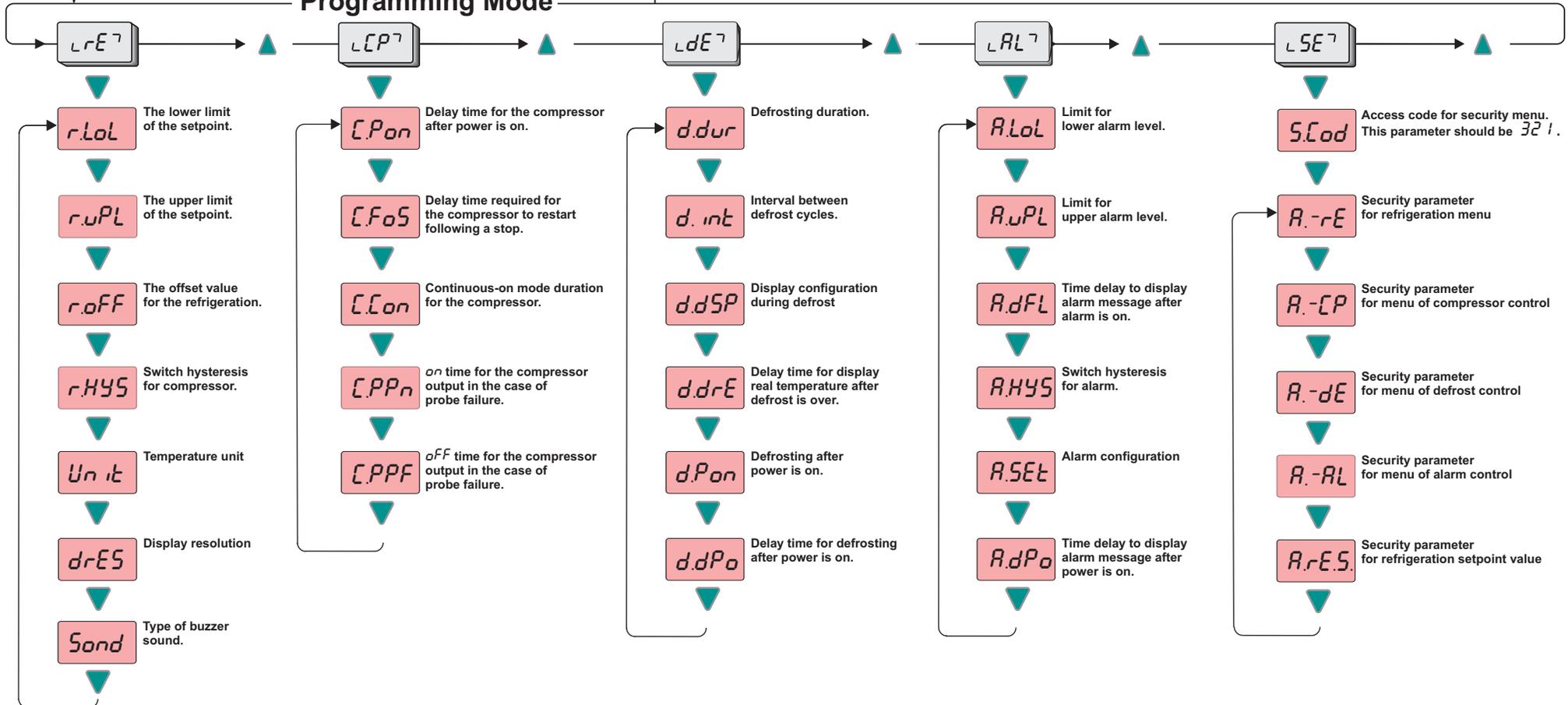
**PSc** Means, thermostat probe is short circuit or temperature value is higher than the scale.

**PFA** Means, thermostat probe is broken or temperature value is lower than the scale.

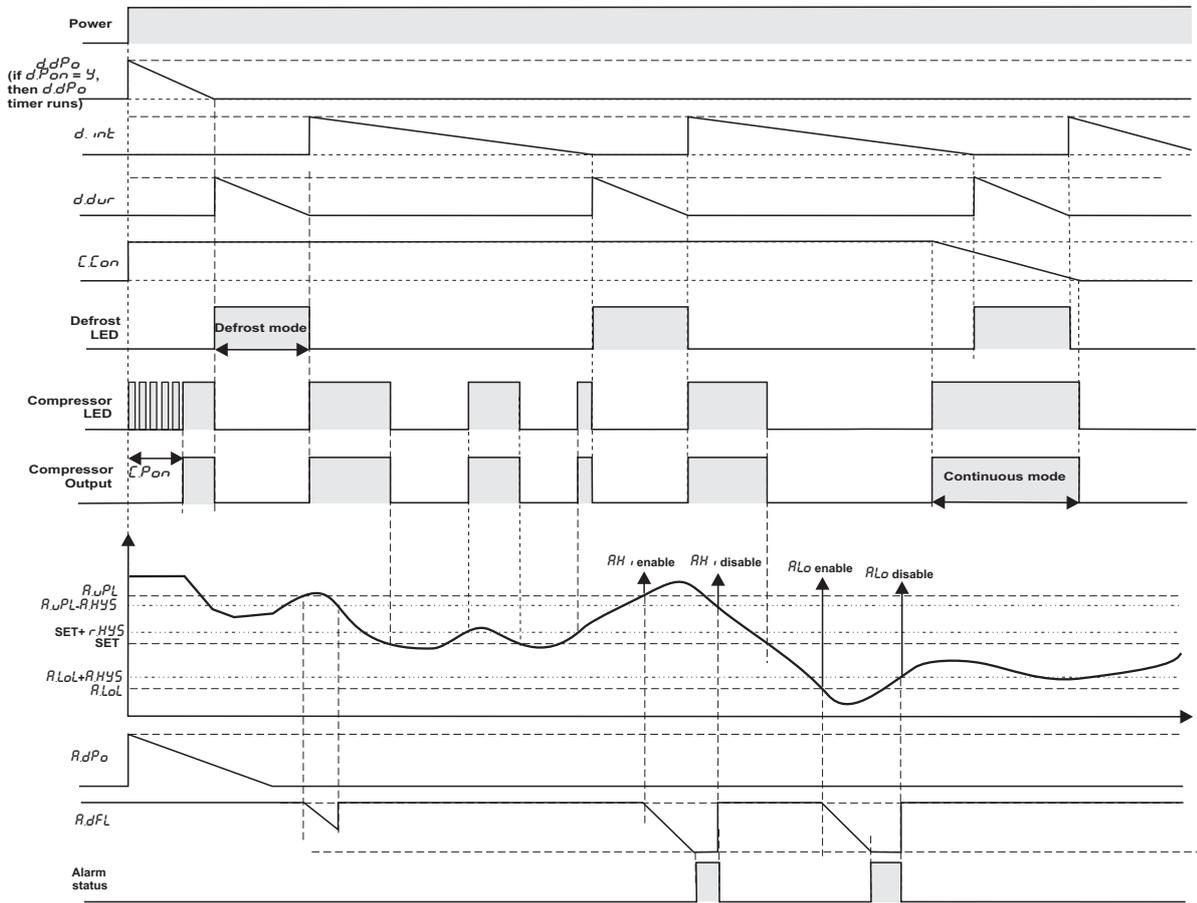
**23.5** If process value flashes and warning tone sounds, means, measured value exceeds the adjusted alarm limit.

\*Note: To stop warning tone, press any key.

### Programming Mode



EDT1411 OUTPUT AND PARAMETER TABLE



NOTE : Variables for lower and upper alarm level are determined according to R.SET parameter. If R.SET = R.Ab5 ,then R.LoL = R.LoL & R.uPL = R.uPL.  
 If R.SET = A.rEF , then R.LoL = SET-R.LoL & R.uPL = SET+R.uPL.

Menu of Refrigeration control parameters		MIN	MAX	UNIT	DEF.SET
r.LoL	The lower limit of the setpoint.	-50.0	r.uPL	°C	-50.0
r.uPL	The upper limit of the setpoint.	r.LoL	110.0	°C	110.0
r.oFF	The offset value for the refrigeration.	-20.0	20.0	°C	0.0
r.HYS	Switch hysteresis for compressor.	0.1	20.0	°C	0.1
Unit	Temperature unit	°C	°F		°C
drES	Display resolution (n= no decimal point, y= with decimal point.)	n	y		n
Sond	Type of buzzer sound ( 16 different warning tones can be selectable. If Sond=0, then warning tone is disable.)	0	16		0
Menu of Compressor control parameters					
C.Pon	Delay time for the compressor after power is on.	0	255	min.	1
C.FoS	Delay time required for the compressor to restart following a stop.	0	255	min.	1
C.on	Continuous-on mode duration for the compressor.	0.0	24.0	h.	0.1
C.PPn	on time for the compressor output in the case of probe failure.	0	255	min.	0
C.PPF	oFF time for the compressor output in the case of probe failure.	0	255	min.	1
Menu of Defrost control parameters					
d.dur	Defrosting duration.(If d.dur=0, then defrost is disable.)	0	255	min.	1
d.int	Interval between defrost cycles.	1	120	h.	1
d.dSP	Display configuration during defrost (r.EAL= Real temperature is displayed during defrost. dEF= dEF message is displayed during defrost.)	r.EAL	dEF		dEF
d.drE	Delay time for display real temperature after defrost is over.	0	255	min.	1
d.Pon	Defrosting after power is on.(y=Defrosting begins when power is on, n=Defrosting doesn't begin when power is on.)	n	y		n
d.dPo	Delay time for defrosting after power is on.	0	30	min.	1
Menu of Alarm control parameters					
R.LoL	Limit for lower alarm level.	-50.0	R.uPL	°C	-50.0
R.uPL	Limit for upper alarm level.	R.LoL	110.0	°C	110.0
R.dFL	Time delay to display alarm message after alarm is on.	0	255	min.	0
R.HYS	Switch hysteresis for alarm.	0	15	°C	2
R.SET	Alarm configuration (R.Ab5 = Absolute alarm. Alarm values are R.LoL and R.uPL. R.rEF = Relative alarm. Alarm values are SET-R.LoL and SET+R.uPL.)	R.Ab5	R.rEF		R.Ab5
R.dPo	Time delay to display alarm message after power is on.	0	23.5	hr.	0.3
Menu of Parameter security					
R.-rE	Security parameter for refrigeration menu (nonE= menu is invisible, P.YES= Parameters of menu are changeable, P.no= Parameters of menu are only visible.)				
R.-CP	Security parameter for menu of compressor control (nonE= menu is invisible, P.YES= Parameters of menu are changeable, P.no= Parameters of menu are only visible.)				
R.-dE	Security parameter for menu of defrost control (nonE= menu is invisible, P.YES= Parameters of menu are changeable, P.no= Parameters of menu are only visible.)				
R.-AL	Security parameter for menu of alarm control (nonE= menu is invisible, P.YES= Parameters of menu are changeable, P.no= Parameters of menu are only visible.)				
R.rES	Security parameter for refrigeration setpoint value ( P.YES= Setpoint value is invisible, P.no= Setpoint value is only visible.)				