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 EDT1423 TEMPERATURE CONTROLLER

Thank you for choosing CAL EDT1423 temperature controller.

CE RoHS Compliant

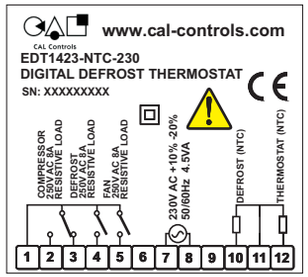
* 34 x 77mm sized.
* On-Off control.
* 3 contact outputs for cooling, defrost and fan controls.
* 2 NTC probe inputs for cooling and defrost control.
* Offset value can be entered for NTC probe.
* Compressor protection parameters can be entered.
* In the case of probe failure, output state can be selected on, off or periodical running.
* Upper and lower limits of the setpoint can be adjusted.
* Defrosting duration and interval can be adjusted.
* Time and evaporator temperature dependent or manual defrosting is possible.
* Fan may be operated depending on defrost and compressor.
* Temperature unit can be selected °C or °F.
* Upper and lower limits of the alarm value can be adjusted depending on the setpoint value.
* CE marked according to European Norms.

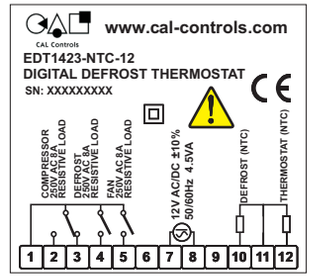
Order Code : EDT1423-NTC-□□□□□□
1

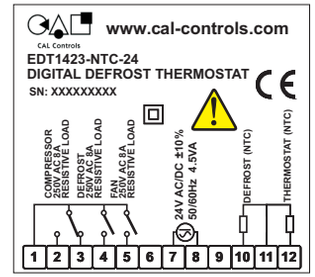
Supply Voltage
230VAC...230V AC
24.....24V AC/DC
12.....12V AC/DC

Connection Diagram

CAL EDT1423 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.



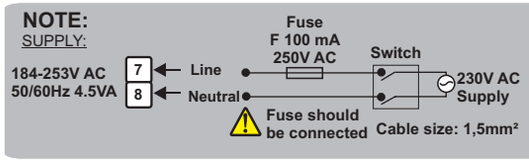




Holding screw 0.4-0.5Nm.

Equipment is protected throughout by DOUBLE INSULATION

NOTE:
SUPPLY:



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 gasses.

ELECTRICAL CHARACTERISTICS	
Supply voltage	230V AC +10% -20%, 50/60Hz or 24V AC/DC ±10%, 50/60Hz or 12V AC/DC ±10%, 50/60Hz
Power consumption	Max. 4.5VA
Wiring	2.5mm² 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)

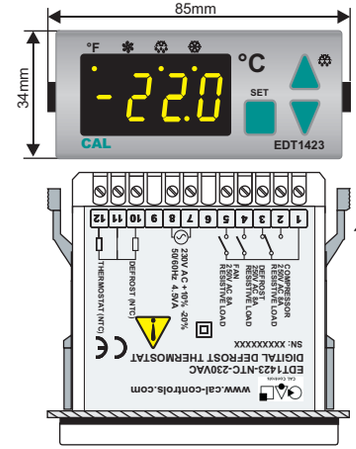
OUTPUTS	
Compressor	Relay: 250VAC, 8A (for resistive load),NO+NC; 1/2 HP 240VAC Cos = 0.4 (for inductive load)
Defrost	Relay: 250VAC, 8A (for resistive load),NO; 1/2 HP 240VAC Cos = 0.4 (for inductive load)
Fan	Relay: 250VAC, 8A (for resistive load),NO; 1/2 HP 240VAC Cos = 0.4 (for inductive load)
Life expectancy for relay	Mechanical 30.000.000; Electrical 100.000 operation.

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

HOUSING	
Housing type	Suitable for flush-panel mounting.
Dimensions	W77xH34xD70mm
Weight	Approx. 223g (after packing)
Enclosure material	Self extinguishing plastics

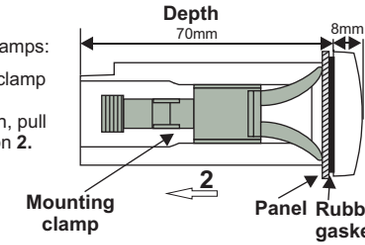
While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.

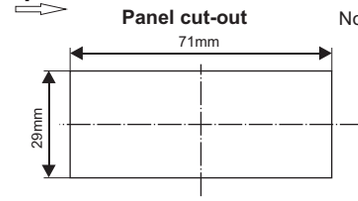
Dimensions



For removing mounting clamps:

Push out the mounting clamp in direction **1** as shown in the figure below. Then, pull out the clamp in direction **2.**





Note :1) Panel thickness should be maximum 7 mm.
2) If there is no 60mm free space at the back side of the device, it would be difficult to remove it from the panel

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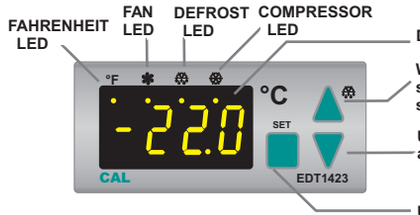

Displayed process value in the run mode, parameter name or value in programming mode.

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.

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 and displaying the value measured by defrost probe 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

-22.0 → Process Value → SET → -30.0 → ▼ → -29.9 → ▲ → -30.0 → SET →

While holding SET key COMPRESSOR setpoint value appears and by using ▲ and ▼ keys the value can be adjusted.

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

P1.Sc	Means, thermostat probe is short circuit.
P1.FA	Means, thermostat probe is broken.
----	Temperature value is higher than the scale.
P2.Sc	Means, defrost probe is short circuit.
P2.FA	Means, defrost probe is broken.
----	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.

Programming Mode

rEG
- r.LoL — The lower limit of the setpoint.
- r.uPL — The upper limit of the setpoint.
- • • •
- drES — Display resolution

CPR
- C.Pon — Delay time for the compressor after power is on.
- C.SSc — Delay time required between successive restarts of the compressor.
- • • •
- C.PPF — Off time for the compressor output in the case of probe failure.

dEF
- d.tYP — Defrosting type.
- d.dur — Defrosting duration
- • • •
- d.tbS — Defrosting time unit.

AL1
- A.LoL — Limit for lower alarm level.
- A.uPL — Limit for upper alarm level.
- • • •
- A.dPo — Delay time to display alarm message after power is on.

Fn1
- F.Con — Fan is controlled depending on temperature.
- F.StP — Fan stoping temperature.
- • • •
- F.Ctr — Fan is controlled depending on cold room temperature.

SEt
- S.Cod — Access code for security menu. This parameter should be 321.
- A.-rE — Security parameter for refrigeration menu
- • • •
- A.rES — Security parameter for refrigeration setpoint value

NOTE:

-30.0 → ▼ → 9.9 If ▼ key is pressed in the run mode, the measurement value of defrost probe appears.

EDT1423 PARAMETER TABLE

	Menu of Refrigeration control parameters	MIN	MAX	UNIT	DEF.SET
rLoL	The lower limit of the setpoint.	-50.0	rUPL	°C	-50.0
rUPL	The upper limit of the setpoint.	rLoL	110.0	°C	110.0
rOFF	The offset value for the refrigeration.	-20.0	20.0	°C	0.0
rHYS	Switch hysteresis for compressor.	0.1	20.0	°C	0.1
Unit	Temperature unit	°C	°F		°C
drES	Display resolution (no= no decimal point, YES= with decimal point.)	no	YES		no
	Menu of Compressor protection parameters				
CPon	Delay time for the compressor after power is on.	0	255	min.	1
CSSc	Delay time required between successive restarts of the compressor.	0	255	min.	1
CFoS	Delay time required for the compressor to restart following a stop.	0	255	min.	1
CdLY	Compressor protection delay (no= no delay, YES= 3sec. delay)	no	YES		no
CPPn	on time for the compressor output in the case of probe failure.	0	255	min.	0
CPPF	oFF time for the compressor output in the case of probe failure.	0	255	min.	1
	Menu of Defrost protection parameters				
dtYP	Defrosting type (ELC= Electrical defrost, GAS= hot gas defrost)	ELC	GAS		ELC
d.dur	Defrosting duration.(If d.dur=0, then defrost is disable.)	0	255	min./sec.	1
d. int	Interval between defrost cycles.	1	120	h./min.	1
dStP	Defrosting temperature. If evaporator temperature is higher than this value, defrosting is disabled.	-50.0	110.0	°C	2.0
ddSP	Display configuration during defrost (rEAL= Real temperature is displayed during defrost. LoC= The temperature which is measured before defrost is displayed during defrost.)	rEAL	LoC		LoC
ddrE	Delay time for display real temperature after defrost is over.	0	255	min./sec.	1
dPon	Defrosting after power is on.(YES=Defrosting begins when power is on, no=Defrosting doesn't begin when power is on.)	no	YES		no
ddPo	Delay time for defrosting after power is on.	0	30	min.	1
ddrt	Drop (Drainage) time	0	15	min./sec.	2
dARc	Time interval required for alarm activation after completing defrosting	0	15	h./min.	2
ddCP	Delay time for the compressor at hot gas defrosting (Delay time is adjusted by using compressor protection parameters)	no	YES		no
dtbS	Defrosting time unit (Hour= Hour, minute SEC=Minute,second)	Hour	SEC		Hour
	Menu of Alarm control parameters				
ALoL	Limit for lower alarm level.	-50.0	AUPL	°C	-50.0
AUPL	Limit for upper alarm level.	ALoL	110.0	°C	110.0
AdFL	Time delay to display alarm message after alarm is on.	0	255	min.	1
AHYS	Switch hysteresis for alarm.	0	15.0	°C	2.0
AtYP	Alarm configuration (AAbS = Absolute alarm. Alarm values are ALoL and AUPL. ArEF = Relative alarm. Alarm values are SEt-ALoL and SEt+AUPL.)	AAbS	ArEF		AAbS
AdPo	Time delay to display alarm message after power is on.	0	24.0	h.	0.1
	Menu of Fan control parameters				
FCon	Fan is controlled depending on temperature.	no	YES		YES
FStP	If evaporator temperature is above this parameter, fan stops	-50.0	110.0	°C	1.0
FHYS	Switch hysteresis for fan	0	15.0	°C	2.0
FCSt	Does fan stop when compressor stops? (no=Fan status doesn't change, YES= Fan stops with compressor.)	no	YES		YES
FdSt	Does fan stop during the defrosting? (no=Fan status doesn't change, YES= Fan stops during the defrosting.)	no	YES		YES
FPon	Delay time for the fan after power is on.	0	255	min.	1
FStd	Delay time for the fan after defrosting is over.	0	255	min./sec.	2
FCtr	Does the fan control depend on the temperature of cold room? If (no) is selected, fan stops while evaporator temperature is above the value of F.StP parameter, If (YES) is selected, fan stops while the difference between cold room and the evaporator temperature is lower than the value of the F.StP parameter. Fan restarts again, if the difference between cold room and the evaporator temperature becomes higher than the total of the values of F.StP and F.HYS parameters.	no	YES		no
	Menu of Parameter security				

A.-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.
A.-CP	Security parameter for menu of compressor control.	
A.-dE	Security parameter for menu of defrost control.	
A.-AL	Security parameter for menu of alarm control.	
A.-Fn	Security parameter for menu of fan control.	
A.rE.S.	Security parameter for refrigeration setpoint value (P.YES= Setpoint value is changeable., P.no= Setpoint value is only visible.)	