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. The company 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.

ENDA EDT2422A DIGITAL THERMOSTAT

Thank you for choosing **ENDA EDT2422A** digital thermostat.

- 35x77mm size.
- On-Off control.
- Relay output selection feature for defrost or lighting.
- Two NTC probe input.
- Cooling offsetpoint can be entered for NTC input.
- AUX Relay output can be operated by according to AUX NTC input.
- Compressor protection parameters can be entered.
- In case of probe failure, compressor operation can be set to ON, OFF or periodic.
- Lower and upper limits of the setpoint can be set.
- Smart defrost feature.
- Defrost time and interval can be adjusted.
- 6 different warning tones.
- Lower and upper alarm limit can be set to dependent on setpoint.
- Temperature can be displayed in ° C or ° F.
- Defrost output can be triggered by external digital input.
- Transfer device parameter settings with ENDA key - no power-up required.
- EN standartlarına göre CE markalı.

CE

R⊕HS Compliant

Order Code: EDT2422A - ☐☐☐ - ☐
                                          1   2

1 - Supply Voltage
   230........230V AC

**2 - Output**
   P.......20A Relay Output

ENDA EDT2423A 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 a 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. 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.
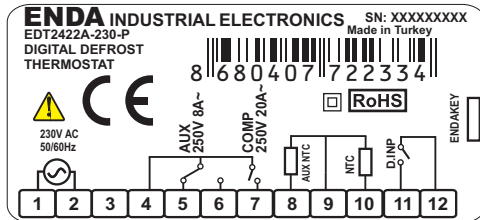
Equipment is protected throughout by **DOUBLE INSULATION**

Holding screw 0.4-0.5Nm.

NOTE:
SUPPLY:

184-253V AC
50/60Hz 4VA
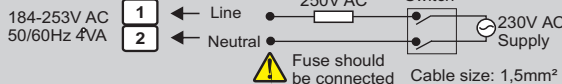
Note:
1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

ENVIRONMENTAL CONDITIONS

Ambient/storage temperature	0 ... +50°C/-25 ... 70°C (without icing)
Relative humidity	Relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Protection class	According to EN60529 ; Front panel : IP65 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 ; 12V AC/DC ± %10 or 24V AC/DC ±%10
Power consumption	Max. 5VA
Connection	2.5mm² screw-terminal connections
Scale	-60.0 ... +150.0°C (-76.0 ... +302.0°F)
Sensitivity	0.1°C (Can be selected as 0.1ºC or 1ºC.)
Accuracy	±1°C
Time accuracy	±1%
Display	4 digits, 12.5mm, 7 segment LED
EMC	EN 61326-1: 2013
Safety requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

OUTPUTS

Compressor relay output	Relay : NO+NC 277V AC, 20A (for resistive load), 1/2hp, 0.37kW 277V AC (for inductive load)
AUX relay output	Relay : NO 250V AC, 8A (for resistive load), 1/2hp, 0.37kW 240V AC (for inductive load)
Life expectancy for Compressor Relay	Without load 10.000.000 switching; 277V AC, 20A (resistive load) 100.000 switching.
Life expectancy for AUX Relay	Without load 30.000.000 switching; 250V AC, 8A (resistive load) 100.000 switching.

CONTROL

Control type	Single set-point control
Control algorithm	On-Off control
Hysteresis	Adjustable between 1 ... 20.0°C.

HOUSING

|	
Housing type	Suitable for flush -panel mounting
Dimensions	W77xH35xD61mm
Weight	Approx. 190g (After packing)
Enclosure material	Self extinguishing plastics.

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

DIMENSIONS

For removing mounting clamps:

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

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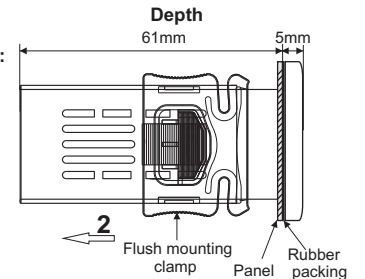
Note:
1) Panel thickness should be maximum 7mm.
2) If there is no 60mm free space at the back side of the device,it would be difficult to remove it from the panel.

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°F FAHRENHEIT LED : In parameter value or the measured temperature value "°F" unit while this LED lights up. In the hidden menu at the same time the user menu parameter is shown the LED lights up.

☀ AUX LED : If AUX output is active, this LED lights.

❄ DEFROST LED : Lights up during DEFROST process.

❄ COMPRESSOR LED : If compressor output is active, this LED lights up. While these compressor delays expected, this LED flashes.

SET In "Running Mode", indicates the set value.
In "Programming Mode", indicates the selected parameter value.

▲ While in "Programming Mode", provides the transition to the next parameter. If parameter is being adjusted, it increases parameter's value. Constantly holding this key, the parameter value rapidly increases.

▼ While in "Programming Mode", provides the transiton to the previous parameter. If parameter is being adjusted, it decreases parameter's value. Constantly holding this key, the parameter value rapidly decreases.
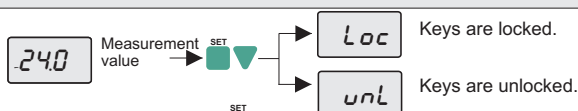
FRONT PANEL COMMANDS

1.Viewing and Changing The Set Value

-24.0 → Measurement value → **SET** → -30.0 → ▼ → -29.9 → ▲ → -30.0

While in the running mode, if **SET** key is pressed set value is displayed for 3 seconds.While in this case,the set value is changed with ▼▲ keys.

2.Locking and Unlocking Keys

-24.0 → Measurement value → **SET** ▼ → Loc Keys are locked.
→ unL Keys are unlocked.

While in the operating mode, if **SET** ▼ keys are pressed together among 2 seconds the Loc message is displayed and the keys are locked. If the keys are locked **SET** keys are pressed for 2 seconds again unL message is displayed and key lock is opened and is returned to the normal way of working. While keys are locked, if **SET** key is pressed, the set value can be displayed but the value can not be changed. While the keys are locked, **SET** key outside if a key is pressed the Loc message is seen.

3.Manuel Defrost Process

While in the operating mode, if ▲ key is pressed for 2 seconds the defrost process is started as manual.If $d.dur = 0$,the manuel defrost will also be disabled.

4.Activating / Inactivating The Control Outputs
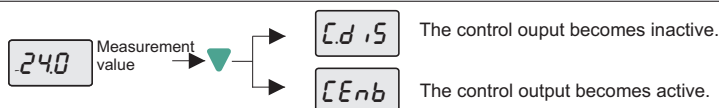
-24.0 → Measurement value → ▼ → $C.dıS$ The control ouput becomes inactive.
→ $CEnb$ The control output becomes active.

* When in the running mode, if the control outputs are inactive, oFF message displays periodically.

When in the running mode, if ▼ key is pressed for 2 seconds, $C.dıS$ message is displayed and control outputs becomes to the inactive position, the device works as the indicator. When the control outputs are disabled; if ▼ key is pressed for 2 seconds $C.Enb$ is disabled and the device continues to do control function.

5. Changing Parameter Values

▲▼ Keys are pressed together for 2 seconds $LP17$ is displayed and the user menu is entered,afterwards first parameter's name is displayed in the user menu.

While a parameter was selected,by pressing to **SET** key parameter's value is displayed, the displayed this parameter can be changed with ▼▲ keys. When the parameter name is shown, no action is done after 3 seconds or to the **SET** key is pressing again to return to the parameter's name. When the parameter name is shown,▼▲ keys are pressed together immediately without waiting to get out of this process.

— Program mode —
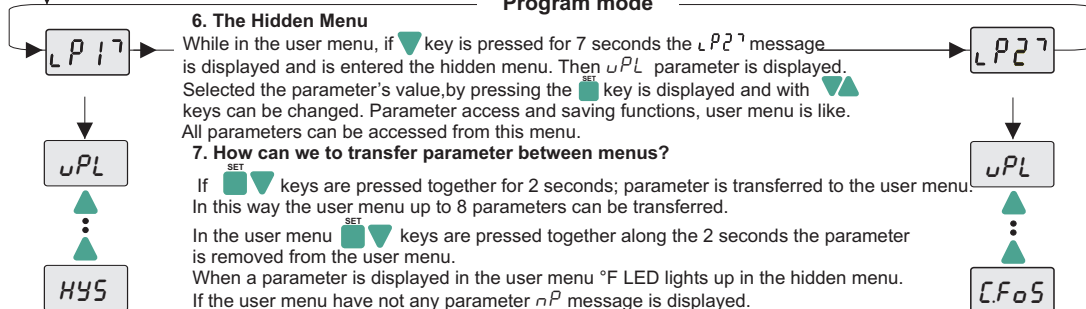
6. The Hidden Menu

While in the user menu, if ▼ key is pressed for 7 seconds the $LP27$ message is displayed and is entered the hidden menu. Then uPL parameter is displayed. Selected the parameter's value,by pressing the **SET** key is displayed and with ▼▲ keys can be changed. Parameter access and saving functions, user menu is like. All parameters can be accessed from this menu.

7. How can we to transfer parameter between menus?

If **SET** ▼ keys are pressed together for 2 seconds; parameter is transferred to the user menu. In this way the user menu up to 8 parameters can be transferred.

In the user menu **SET** ▼ keys are pressed together along the 2 seconds the parameter is removed from the user menu. When a parameter is displayed in the user menu °F LED lights up in the hidden menu. If the user menu have not any parameter nP message is displayed.

$LP17$ → uPL ⋮ → HYS
$LP27$ → uPL ⋮ → $C.FoS$

ERROR MESSAGES

PFA Means, thermostat probe is broken.

PSC Means, thermostat probe is short circuit.

$----$ Temperature value is higher than the scale.

$----$ Temperature value is lower than the scale.

ALARM SITUATION

-24.0 1.When the alarm situation occured, the measured value flashes in the indicator and if "bnd" parameter is not "0" is given audible alarm by the device. While there are a audible warning ; ▲ key is pressed, the audible warning will be disabled.

EA 2.External alarm is activated but output's is not affected by this situation.

SA 3.Except that the alarm has been activated and external alarm output relay is active when the show shut down. (off situation).
4.Buzzer voice warning is given;if any key is pressed the buzzer will be silenced.

HOW CAN WE RETURN THE DEVICE TO THE FACTORY SETTINGS

▼ Key is held down while the device is powered up the $d.PAr$ message will see and restore the factory parameters.

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ENDAKEY PARAMETER TRANSFER
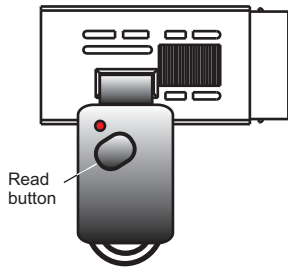
TRANSFERRING THE PARAMETERS FROM ENDAKEY TO DEVICE

While in "Running Mode", if ▼ key on device or "Read" button on "ENDAKEY" is pressed, "*dL*" message appears on display and parameters are read and transferred to the device. If the parameter transfer is successful, the "*rEF*" message appears and the device begins to work with the loaded parameter values. If the parameters are wrong, incorrect or "ENDAKEY" is faulty, "*Err*" message appears. Parameters will not be changed on device.

TRANSFERRING THE PARAMETERS FROM DEVICE TO ENDAKEY

While in "Running Mode", if ▲ key is pressed on device, "*uL*" message appears on display and parameters are read and transferred to the device. If process succes, "*Suc*" message appears. In case of failure, "*Err*" message appears. Parameters will not be changed on device.

NOTE 1 : No power-up required for transfering the parameter by using "ENDAKEY". For long battery life, "ENDAKEY" must be disconnected from device after the transferring process.
NOTE 2 : Please specify at order "ENDAKEY" if required.

Read button

CONTROL PARAMETERS		MIN.	MAX.	UNIT	DEF. SET
uPL	The upper limit of the setpoint	-60.0	*uPL*	°C	150
LoL	The lower limit of the setpoint	*LoL*	150.0	°C	-60
HYS	Cooling hysteresis	0.1	20.0	°C	2
oFF	Cooling offset value	-20.0	20.0	°C	0

CONFIGURATION PARAMETERS					
C.tYP	Control type selection (*HE* = (*) heating control is selected, *Co* = Cooling control is selected.) *C.tYP* parameter as *HE* is selected, the defrost function of the device is disabled.	*Co*	*HE*		*Co*
Unit	Temperature unit (Devices with part code suffix 'F' have deg F as the default 'Unit').	°C	°F		°C
dPnt	Decimal point (*no*= decimal point isn't shown 22°C, *YES*=decimal point is shown 22.3°C.)	*no*	*YES*		*no*
Snd	Buzzer sound type selection (6 different sound types can be selected, if 0 is selected, sound warning is canceled during alarm).	0	6		0
d.inP	Digital input types. *nd*:Digital input unused. *EA*: External alarm. *EA* message flashes in the display. Output unchanged. *SA*: Important external alarm. *SA* message flashes in the display. Relay output is turned off. *HC*: Control type. *C.tYP* parameter is changed.(If *HE* = *Co*, If *Co* = *HE*) *dF*: Defrost operation is started .	*nd*	*dF*		*nd*
ddi	Digital input delay. The period of the digital inputs to be active.	0:00	99:00		0:00
dPo	Digital input polarity. *cL* = While a digital input contact is closed,it is activated. *oP*= While a digital input is opened, it is activated.	*CL*	*oP*		*CL*

COMPRESSOR PROTECTION PARAMETERS					
C.Pon	Delay time for the compressor after power is on.	0:00	99:00	min:sec	1:00
C.FoS	Delay time required for the compressor to restart following a stop.	0:00	99:00	min:sec	1:00
C.PPn	On time for the compressor output in the case of probe failure.	0:00	99:00	min:sec	0:00
C.PPF	Off time for the compressor output in the case of probe failure	0:00	99:00	min:sec	1:00

DEFROST CONTROL PARAMETERS					
d.Snt	Smart Defrost selection (*no* : Defrost counter (between 2 defrost duration) decrease irrespective of *d.int* status of the compressor. *YES* : Defrost counter decreases as long as compressor work).	*no*	*YES*		*no*
d.dur	Defrost duration (If *d.dur*=0 , automatic and manual defrost are disabled.)	0:00	99:00	min:sec	1:00
d.int	The time between 2 consecutive defrosts.	1:00	99:00	hr:min	1:00
d.dSP	During defrost,display configuration (*rE* = Real temperature is displayed during defrost. (*Lc* = The temperature which is measured before defrost is displayed during defrost.	*Lc.*	*rE*		*Lc.*
d.drE	Delay time for display real temperature after defrost is over.	0:00	99:00	min:sec	1:00
dPon	Defrosting process begins with energy (*no*=Defrost process doesn't start when,the energy comes. *YES*=Defrost process starts when the energy comes.)	*no*	*YES*		*no*
d.dPo	Delay time for defrosting after power is on.	0:00	99:00	min:sec	1:00

ALARM CONTROL PARAMETERS					
A.uPL	Limit for upper alarm level. When *A.tYP* is changed, *A.uPL* should be readjusted.	*A.LoL*	150.0	°C	150
A.LoL	Limit for lower alarm level. When *A.tYP* is changed, *A.LoL* should be readjusted.	-60.0	*A.uPL*	°C	-60
A.HYS	Hysteresis alarm	0.1	20.0	°C	2
A.tYP	Alarm configuration. (*AbS* = Independent alarm. Alarm values are *A.LoL* and *A.uPL* .) (*rEF* = Relative alarm. Alarm values are *SEt* - *A.LoL* and *SEt* + *A.uPL* .) NOTE: Upper and Lower alarm level variables are determined according to the " *A.tYP* " parameter. If *A.tYP* = *AbS* , *A.LoL* and *A.uPL* . If *A.tYP* = *rEF* , *LoL* = *SEt* - *A.LoL* and *A.uPL* .	*AbS*	*rEF*		*AbS*
A.dFL	Time delay to display alarm message after alarm is on.	0:00	99:00	min:sec	0:00
A.dPo	Time delay to display alarm message after power is on.	0:00	99:00	hr:min	0:10

AUX CONTROL PARAMETERS					
o.SEt	AUX Output setpoint.	-60.0	150.0	°C	-20.0
o.HYS	AUX Output hysteresis.	0.1	20.0	°C	2.0

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