



Read this document carefully before using this device. The guarantee will be expired by device damages if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

ENDA EDTW136 DIGITAL THERMOSTAT

Thank you for choosing **ENDA EDTW136** Temperature controller.

- ▶ 150x200 mm. sized.
- ▶ Designed for air-blast cooling chambers.
- ▶ On-Off control.
- ▶ Six relay outputs for Cooling, Defrost, Fan, Lighting, Alarm and Auxiliary.
- ▶ Three NTC probe inputs for Cooling, Defrost, Optional Display.
- ▶ Two digital inputs can be set by door state and parameters.
- ▶ Offset values can be set for NTC inputs.
- ▶ Compressor protection parameters can be set.
- ▶ In case of probe failure, output status can be set to ON, OFF or periodic.
- ▶ Selectable smart defrost feature.
- ▶ Manual Fast Cooling.
- ▶ Defrost process can be set to depend on time and evaporator temperature.
- ▶ Lower and Upper set point limits can be set.
- ▶ Defrost duration and interval can be adjusted.
- ▶ Lower and Upper alarm limit can be set to dependent on set point.
- ▶ Temperature unit can be selected as °C or °F.
- ▶ Transfer device parameter settings with "ENDAKEY" - No power-up required
- ▶ RS485 ModBus protocol communication feature (Optional)
- ▶ CE marked according to European Norms

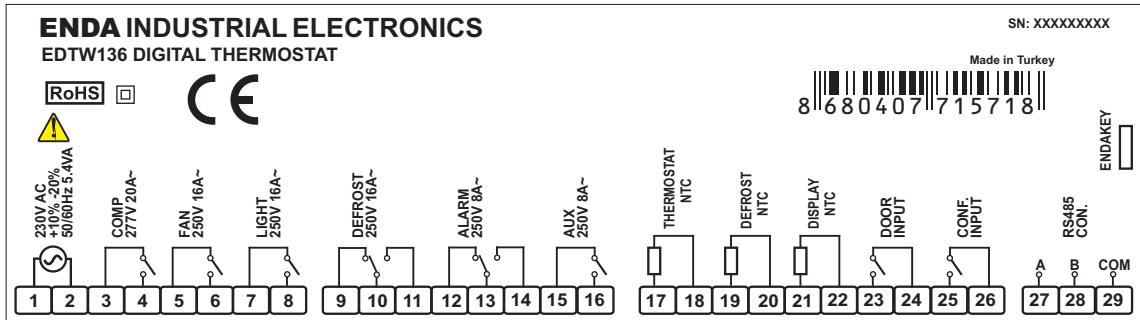


Order Code : **EDTW136**

CONNECTION DIAGRAM

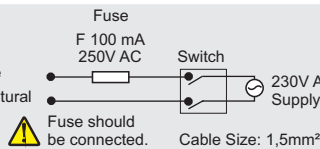


ENDA EDTW136 devices are intended for wall mounted installations. Make sure that the device is used only for intended purpose. The electrical connections must be carried out by a qualified staff and must be according to the relevant locally applicable regulations. During an installation, all of the cables that are connected to the device must be free of electrical power. 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.



SUPPLY:

184-253V AC
50/60Hz±5,4VA



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.

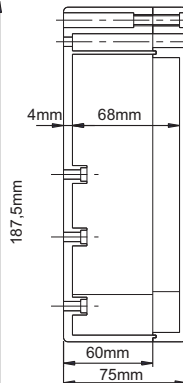
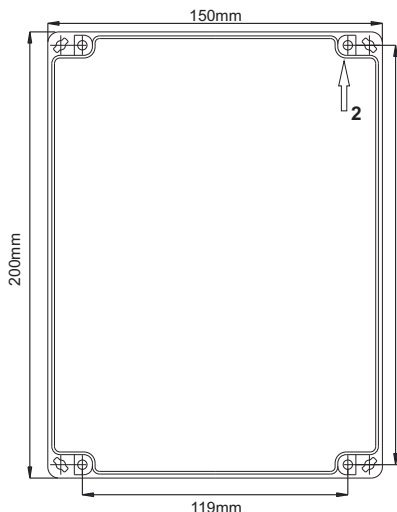


Equipment is protected throughout by **DOUBLE INSULATION**



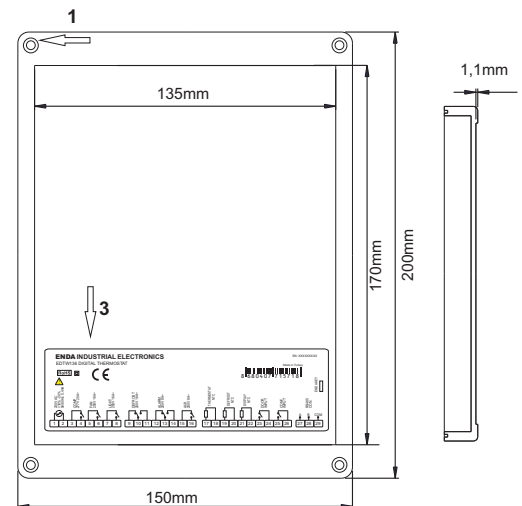
Holding screw 0.4-0.5Nm.

DIMENSIONS



For Mounting:

- 1) Remove the screws from corners and lift cover.
- 2) Perform the installation from indicated points.
- 3) Make electrical connections carefully as shown on connection diagram.
- 4) Close the cover and fit the screws.



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EDTW136-EN-02-170816

TECHNICAL SPECIFICATIONS

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
Power consumption	Max. 5.4VA
Connection	2.5 ve 1.75 mm screw terminal connection
Scale	-60.0 ... +150.0°C (-76.0 ... +302.0°F)
Sensitivity	0.1°C (Can be selected as 0.1°C or 1°C.)
Accuracy	±1°C
Time accuracy	±%1
Display	4 digits, 80x28mm 7 segment led, 5mm 8 warning led
EMC	EN 61326-1: 2013
Safety requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

OUTPUTS

Compressor relay output	For resistive load: NO 277V AC 20A , for inductive load: 2hp 250V AC Life for relay: Without load 10.000.000 switching, 277V AC 20A for resistive load 100.000 switching
Defrosting relay output	For resistive load: NO 250V AC 16A ,NC 250V AC 16A, for inductive load : 1/2hp 240V AC Life expentancy for relay: Without load 30.000.000 switching, 250V AC, 16A for resistive load 100.000 switching
Fan relay output	For resistive load: NO 250V AC 16A , for inductive load : 1/2hp 240V AC Life expentancy for relay: Without load 30.000.000 switching, 250V AC, 16A for resistive load 100.000 switching
Lighting relay output	For resistive load: NO 250V AC 16A , for inductive load : 1/2hp 240V AC Life expentancy for relay: Without load 30.000.000 switching, 250V AC, 16A for resistive load 100.000 switching
Alarm relay output	For resistive load: NO 250V AC 8A , NC 250V AC 8A for inductive load: 1/2hp 240V AC Life expentancy for relay: Without load 30.000.000 switching, 250V AC, 8A for resistive load 100.000 switching
Auxiliary (AUX) relay output	For resistive load: NO 250V AC 8A , for inductive load: 1/2hp 240V AC Life expentancy for relay: without load 30.000.000 switching, 250V AC, 8A for resistive load 100.000 switching






CONTROL









Control Type	With set value and digital inputs compressor, defrosting, fan, lighting, alarm and auxiliary output control
Control Algorithm	On-Off kontrol
Hysteresis	Adjustable between 1 ... 20.0°C

HOUSING

Housing Type	Wall mounted
Dimensions	150x200x75 mm
Weight	Approx 190g (After packing)
Enclosure material	Self extinguishing plastics

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

Indicator Descriptions	
Led	Description
	- If power led is on, control is off.
	- If COMPRESSOR led is on, compressor is in progress. - If COMPRESSOR led is flashing, start delay time is active.
	- If DEFROST led is on, defrost is in progress. - If DEFROST led is flashing, start delay time is active.
	- If FAN led is on, fan is running. - If FAN led is flashing, start delay time is active.
	- If LIGHTING led is on, lighting in progress.
(!)	- If indicated in "Running Mode", alarm is active. - If indicated in "Programming Mode", parameter(s) transferred to user menu.
AUX	- If AUX led is on, auxiliary output is active.
°C	- If °C led is on, CENTIGRADE unit is active. - If °C led is off, FAHRENHEIT unit is active.

Keyboard Descriptions	
Key	Description
	- In "Running Mode", resets SET value to minimum-maximum measurement values. - In "Programming Mode", indicates the selected parameter value.
	- In "Running Mode" indicates the maximum measured temperature value and the turns off buzzer. - In "Programming Mode" increases the selected parameter value.
	- In "Running Mode" indicates the minimum measured temperature value. - In "Programming Mode", decreases the selected parameter value.
	- Turns off the outputs and stops the measuring.
	- Starts or stops fast cooling manually.
	- Starts or stops defrost manually.
	- Activates or deactivates lighting manually.
	- Activates or deactivates auxiliary output manually.

FRONT PANEL COMMANDS

View / Change SET Values



In "Running Mode", if **SET** key is pressed, set value is displayed for 3 seconds and set value can be changed by using **▲** **▼** keys.

Viewing Minimum Temperature Measurement Value



In "Running Mode", if **▼** key is pressed, minimum temperature value can be displayed for 3 seconds.

Viewing Maximum Temperature Measurement Value



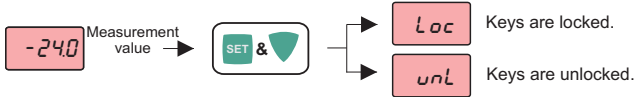
In "Running Mode", if **▲** key is pressed, maximum temperature value can be displayed for 3 seconds.

Resetting the Maximum / Minimum Temperature Measurement Value



In "Running Mode", if **SET** key is pressed for 7 seconds, maximum and minimum temperature values will be equal to the current measurement value and **rE5** message appears.

Locking and Unlocking Keys



In "Running Mode", if **SET** **▼** keys are pressed together among 2 seconds, **Loc** or **unL** message displayed and the keys are locked or unlocked. If any key is pressed while the keys are locked, **Loc** message appears.

Activating / Inactivating The Control Outputs

In "Running Mode", if **⏻** key is pressed for 2 seconds, **Edis** message is displayed and control outputs becomes to the inactive status and device works as indicator. While control outputs are disabled and if **⏻** key is pressed for 2 seconds, **ENb** is disabled and the device continues to do control function. If control is off, lighting and AUX outputs are on.

Manual Fast Cooling Process

In "Running Mode", during the device is not in defrost mode and the control outputs are not off, by pressing **⏻** key for 2 sec. fast cooling process starts or stops. Compressor runs up to the duration of **CFSt**. If the parameter **CFSt** is 0, no manual fast cooling occurs.

Manual Defrost Process

In "Running Mode", if **⏻** key is pressed for 2 seconds, defrost process starts manually. If **ddur** parameter is 0, manual defrost will not performed.

Activating / Inactivating The Lighting Output

In "Running Mode", if **☀** key is pressed for 2 seconds, lighting output becomes active or inactive.

Activating / Inactivating The Auxiliary (AUX)

In "Running Mode", if **AUX** key is pressed for 2 seconds, auxiliary output becomes active or inactive.

Turning OFF Buzzer and Alarm Output

Alarm state, buzzer and alarm relay is on. By pressing to **🔔** key is closed.

Digital Inputs

1. Door Digital Input:

When the door is opened, alarm output is activated at the end of digital input delay time. Other outputs becomes active or inactive to according to **dItP** parameter and **dItP** message appears on display.

2. Adjustable Digital Input:

Digital input is activating at the end of the digital input delay time. Related outputs according to the parameters of **d2tP** becomes active or inactive becomes. Message **dIRL** appears one display.

Auxiliary (AUX) Output

Auxiliary output can be performed in three different ways to according to **oLYP** parameter :

1. If **oLYP** parameter is set as **non** : Auxiliary output is off.
2. If **oLYP** parameter is set as **RuS** : Only by using with **AUX** key, becomes active or inactive.
3. If **oLYP** parameter is set as **onof** : If the device is power-off by using **⏻** key, auxiliary output will be disabled. If the device is power-on by using **⏻** key, auxiliary output will be enabled.
4. If **oLYP** parameter is set as **cnE2** : Auxiliary output will be disabled or enabled according to 2nd temperature control. In order to this control works properly, the **P3En**, **oPrb**, **oCnt**, **oSEt**, **oHYS** parameters should be set correctly.

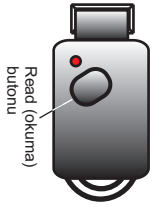
Factory Settings

If **🔑** key is held down while the device is powered up **dPPr** message appears and factory parameters restored.

Displaying Revision Number

In "Running Mode", if **SET** **▲** **▼** keys are pressed together, **r.001** revision number appears.

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 parameters 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 Parameter 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 transferring 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.

Error- Buzzer- Alarm Descriptions

Description	Outputs	Description	Outputs
Pb1 Thermostat Probe failure. Check the sensor connection.	Alarm output is active Compressor output variable are works according to the $C.PPn$ and $C.PPF$ parameter. Other outputs are not affected.	Err Endakey data transfer error. Check the connections and the corresponding parameter set for the device.	Outputs are not affected.
Pb2 Defrost Probe failure. Check the sensor connection.	Alarm output is active Other outputs are not affected.	ER An external alarm has been occurred. Check the system.	Alarm output is active Other outputs are not affected.
Pb3 Display Probe failure. Check the sensor connection.	Alarm output is active Other outputs are not affected.	SR Critical external alarm has been occurred. Check the system.	Alarm output active. All outputs are inactive.
HRL Temperature upper limit alarm. Check the system.	Alarm output is active Other output are not affected.	d iAL Door Open alarm has been occurred. Check the system.	Alarm output active. The other outputs changes according to $d iLP$ parameter .
LRL Temperature lower limit alarm. Check the system.	Alarm output is active Other output are not affected.		

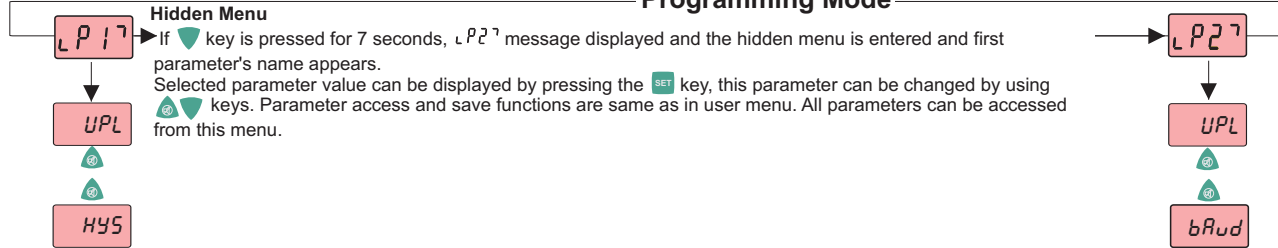
Programming the Device

EDTW136 includes two types of menus as user menu and the hidden menu. The user menu is the frequently used parameter and the hidden menu is the menu where all the parameters are found. Parameter transfer between menus is possible. If the keys are pressed together for 2 seconds in the hidden menu, the parameter is transferred to the user menu. In this way, up to 20 parameters can be transferred. If keys are pressed for 2 seconds in user menu, the parameter is removed from the user menu. On the user menu, if a parameter is in a hidden menu, Alarm Led (!) illuminates.

The User Menu

If these keys are pressed together for 2 seconds, the $LP17$ message is displayed and user menu is entered and first parameter's name appears in the user menu. During parameter name displayed, the parameter value can be displayed by pressing the key, this parameter can be changed with keys. If no operation is performed for 3 seconds while the parameter value displayed, or key is pressed again, parameter's name will be displayed. If no operation is performed for 7 seconds while the parameter name displayed or keys are pressed, "Running Mode" is entered.

Programming Mode



PARAMETER LIST

CONTROL PARAMETERS		MIN.	MAX.	UNIT	DEFAULT
UPL	Set value for Upper Limit	$L oL$	150	$^{\circ}C / ^{\circ}F$	150
$L oL$	Set value for Lower Limit	-60	UPL	$^{\circ}C / ^{\circ}F$	-60
HYS	Cooling hysteresis	1	20	$^{\circ}C / ^{\circ}F$	2
oFF	Cooling offset value	-20	20	$^{\circ}C / ^{\circ}F$	0
CONFIGURATION PARAMETERS					
$Un .t$	Temperature unit	$^{\circ}C$	$^{\circ}F$		$^{\circ}C$
$dPn t$	Decimal point	no	YES		no
$PChS$	The desired sensor to be displayed ($P1$: thermostat probe , $P2$: defrost probe , $P3$: auxiliary probe , $P12$: (P1-P2) temperature difference)	$P1$	$P12$		$P1$
$P3En$	Auxiliary probe use (no : Auxiliary probe off YES :Auxiliary probe on)	no	YES		no
DIGITAL INPUT PARAMETERS					
$d iPo$	Door digital input polarization (cL : While digital input switch is off door digital input polarization active, oP : While digital input switch is on door digital input polarization inactive)	cL	oP		cL
$d iLP$	While door digital input active, outputs status: (non : Compressor ,defrost, outputs unchanged, cP : Compressor is off, FAn : Fan is off, $c-F$: Compressor and fan are off)	non	$c-F$		FAn
$d2Po$	Adjustable digital input polarization (cL : While digital input switch is inactive, digital input is active, oP : While digital input switch is active, digital input is active.)	cL	oP		cL
$d2LP$	Digital input types (nd : Digital input not used, EH : External alarm. SH : Important external alarm. dF : Defrost process is started)	nd	$LGHt$		nd
$dd i$	Delay time of digital inputs. Delay time for digital inputs activating	$00:00$	$99:00$	min:sec	$0:00$

COMPRESSOR PARAMETERS		MIN.	MAX.	UNIT	DEFAULT
<i>C.Pon</i>	Delay time for the compressor after power is on.	0:00	99:00	min:sec	1:00
<i>C.FoS</i>	Delay time required for the compressor to restart following a stop.	0:00	99:00	min:sec	1:00
<i>C.PPn</i>	On time for the compressor output in the case of probe failure.	0:00	99:00	min:sec	0:00
<i>C.PPF</i>	Off time for the compressor output in the case of probe failure.	0:00	99:00	min:sec	1:00
<i>C.FSt</i>	Time for manual rapid refrigeration	0:00	99:00	hr:min	0:00
DEFROST PARAMETERS					
<i>dSnL</i>	Smart Defrost Selection(<i>nO</i> :Defrost counter(2 dbetween 2 defrost duration) decrease irrespective of <i>dInL</i> status of the compressor. (<i>YES</i> :Defrost counter decreases as long as compressor work.)	<i>nO</i>	<i>YES</i>		<i>nO</i>
<i>dLYP</i>	Defrost type selection (<i>ELC</i> = electric defrost (kompresör kapatılır), <i>GRS</i> = Hot gas (compressor is ON).)	<i>ELC</i>	<i>GRS</i>		<i>ELC</i>
<i>dStP</i>	Defrost stop temperature.(If evaporator temperature is greater than this value, defrost will not work.)	-60	150	°C / °F	2
<i>ddur</i>	Defrost duration (<i>ddur</i> = 0 automatic and manual defrost are disabled.)	0:00	99:00	min:sec	1:00
<i>dInL</i>	The time between 2 consecutive defrosts.	0:00	99:00	hr:min	1:00
<i>ddSP</i>	During defrost, display configuration (<i>rE</i> : Real temperature is displayed during defrost. (<i>Lc</i> : The temperature which is measured before defrost is displayed during defrost.	<i>rE</i> .	<i>Lc</i> .		<i>rE</i> .
<i>ddrE</i>	Delay time for display real temperature after defrost is over.	0:00	99:00	min:sec	1:00
<i>dPon</i>	defrosting process begins with energy (<i>nO</i> : Defrost process doesn't start when, the energy comes. <i>YES</i> : Defrost process starts when the energy comes.)	<i>nO</i>	<i>YES</i>		<i>nO</i>
<i>ddPo</i>	Delay time for defrosting after power is on.	0:00	99:00	min:sec	1:00
<i>ddrL</i>	Dripping (discharge) time.	0:00	99:00	min:sec	2:00
FAN PARAMETERS					
<i>FEon</i>	Fan operates with thermostat.(<i>nO</i> =Fan runs independently from thermostat, <i>YES</i> =Fan operated with thermostat.)	<i>nO</i>	<i>YES</i>		<i>YES</i>
<i>FStP</i>	Fan stop temperature.	-60	150	°C / °F	1
<i>FHYs</i>	Fan differential.	1	20	°C / °F	2
<i>FcSt</i>	Fan operations when compressor stop.(<i>nO</i> = Fan holds its status, <i>YES</i> = Fan stops with compressor.)	<i>nO</i>	<i>YES</i>		<i>YES</i>
<i>FdSt</i>	Fan operation during defrost process.(<i>nO</i> = Fan hold its status, <i>YES</i> = Fan stops with compressor.)	<i>nO</i>	<i>YES</i>		<i>YES</i>
<i>F.Pon</i>	Required delay time for fan to be powered up.	00:00	99:00	min:sec	1:00
<i>F.Std</i>	Required delay time for fan to be powered up after defrost.	00:00	99:00	min:sec	3:00
<i>F.cLr</i>	Fan control depending on room temperature? (<i>nO</i> =If evaporator temperature over <i>FStP</i> value,fan does not run. <i>YES</i> =If difference between room temperature and the temperature of the evaporator temperature is below from <i>FStP</i> value, fan stops. If the room temperature and evaporator temperature differences greater than, <i>FStP</i> + <i>FHYs</i> . fan runs again.	<i>nO</i>	<i>YES</i>		<i>nO</i>
ALARM PARAMETERS					
<i>RuPL</i>	Limit for upper alarm level. When <i>RtYP</i> is changed, should be readjusted.	<i>RLoL</i>	150	°C / °F	150
<i>RLoL</i>	Limit for lower alarm level. When <i>RtYP</i> is changed, should be readjusted.	-60	<i>RuPL</i>	°C / °F	-60
<i>RHYs</i>	Hysteresis alarm	1	20	°C / °F	2
<i>RtYP</i>	Alarm configuration (<i>RbS</i> : Independetn alarm, <i>rEF</i> :Relative alarm.) If <i>RtYP</i> : <i>RbS</i> , Alarm values are <i>RLoL</i> and <i>RuPL</i> . If <i>RtYP</i> : <i>rEF</i> , Alarm values are <i>RLoL</i> = <i>SEt</i> - <i>RLoL</i> <i>RuPL</i> = <i>SEt</i> + <i>RuPL</i> .	<i>RbS</i>	<i>rEF</i>		<i>RbS</i>
<i>RdFL</i>	Time delay to display alarm message after temperature alarm satatus is on.	00:00	99:00	min:sec	0:00
<i>RdPo</i>	Time delay to display temperature alarm message after power is on.	00:00	99:00	hr:min	0: 10
<i>RStP</i>	Disable alarm output without alarm condition. (<i>nO</i> = Only audible alarm is silenced, <i>YES</i> = Audible alarm and alarm relay disabled)	<i>nO</i>	<i>YES</i>		<i>nO</i>
AUXILIARY OUTPUT (AUX) PARAMETERS					
<i>aLYP</i>	Auxiliary output (<i>nOn</i> : disable , <i>RuS</i> : Auxiliary output only , <i>onof</i> : On-off only , <i>dI2</i> : Triggering with digital input , <i>cnL2</i> : As second input)	<i>nOn</i>	<i>cnL2</i>		<i>RuS</i>
<i>aPrb</i>	Probe selection, if the auxiliary output is set as <i>cnL2</i> . (<i>P1</i> : Thermostat probe , <i>P2</i> : Defrost probe , <i>P3</i> : Auxiliary probe)	<i>P1</i>	<i>P3</i>		<i>P3</i>
<i>aLnL</i>	Cooling or heating selection if the auxiliary output set as <i>cnL2</i> (<i>LooL</i> : Cooling control , <i>HErL</i> : Heating control)	<i>LooL</i>	<i>HErL</i>		<i>LooL</i>
<i>aSEt</i>	Set value for <i>cnL2</i> auxiliary output	-60	150	°C / °F	0
<i>aHYs</i>	Cooling or heating hysteresis value if the auxiliary output set as <i>cnL2</i>	1	20	°C / °F	2
MODBUS COMMUNICATIONS PARAMETERS					
<i>RdrS</i>	Modbus slave device address for device.	1	247		1
<i>bRuL</i>	Modbus communication speed.	<i>oFF</i>	1920	Bps	9600

1.1 HOLDING REGISTERS

Holding Register Addresses		Data Type	Data Content	Parameter Name	Read / Write Permission
Decimal	Hex				
0000d	0x0000	word	Set point	SEt	Read / Write
0001d	0x0001	word	Set point upper limit	uPL	Read / Write
0002d	0x0002	word	Set point lower limit	LoL	Read / Write
0003d	0x0003	word	Upper level alarm	RuPL	Read / Write
0004d	0x0004	word	Lower level alarm	RLoL	Read / Write
0005d	0x0005	word	Defrost stop temperature	dStP	Read / Write
0006d	0x0006	word	Fan stop temperature	FStP	Read / Write
0007d	0x0007	word	Set point auxiliary output	aSEt	Read / Write
0008d	0x0008	word	Cooling differential	HYS	Read / Write
0009d	0x0009	word	Offset cooling value	oFF	Read / Write
0010d	0x000A	word	Fan hysteresis	FHYS	Read / Write
0011d	0x000B	word	Alarm hysteresis	RHYS	Read / Write
0012d	0x000C	word	Auxiliary output hysteresis	aHYS	Read / Write
0013d	0x000D	word	Desired sensor in the display (0=p1,1=p2,2=p3,3=(p1-p2)	PCHS	Read / Write
0014d	0x000E	word	Port digital input types (0=non,1=cP,2=Fan,3=C-F)	dItP	Read / Write
0015d	0x000F	word	Adjustable digital input types (0=nd,1=EA,2=SA,3=df,4=AU5,5=LGHt)	d2tP	Read / Write
0016d	0x0010	word	Auxiliary output type selection (0=non,1=AU5,2=on.of,3=di2,4=cnt2)	aLYP	Read / Write
0017d	0x0011	word	Auxiliary output probe type selection (0=p1,1=p2,2=p3)	aPrb	Read / Write
0018d	0x0012	word	Delay time digital input	ddi	Read / Write
0019d	0x0013	word	Delay time for the compressor output in the case of probe failure	C.Pon	Read / Write
0020d	0x0014	word	Delay time required for the compressor to restart following a stop	C.FoS	Read / Write
0021d	0x0015	word	On time for the compressor output in the case of probe failure	C.PPn	Read / Write
0022d	0x0016	word	Off time for the compressor output in the case of probe failure	C.PPF	Read / Write
0023d	0x0017	word	Fast cooling time	C.FSt	Read / Write
0024d	0x0018	word	Defrost time	ddur	Read / Write
0025d	0x0019	word	The time between 2 consecutive defrosts	dint	Read / Write
0026d	0x001A	word	After the cooling process off cooling start-up delay	ddrE	Read / Write
0027d	0x001B	word	Delay time for defrosting after power is on	ddPo	Read / Write
0028d	0x001C	word	Dripping (discharge) time	ddrt	Read / Write
0029d	0x001D	word	Required delay time for fan to be powered up	F.Pon	Read / Write
0030d	0x001E	word	Required delay time for defrost to be powered up	F.Std	Read / Write
0031d	0x001F	word	Time delay to display alarm message after power is on	R.dFL	Read / Write
0032d	0x0020	word	Time delay to display alarm message after alarm is on	R.dPo	Read / Write

1.2 INPUT REGISTERS

Input Register Addresses		Data Type	Data Content	Parameter Name	Read / Write Permission
Decimal	Hex				
0000d	0x0000	word	Measured thermostat probe temperature value (°C / °F)	-	Read
0001d	0x0001	word	Measured defrost probe temperature value (°C / °F)	-	Read
0002d	0x0002	word	Measured auxiliary probe temperature value (°C / °F)	-	Read
0003d	0x0003	word	Measured lower temperature value (°C / °F) (showing screen)	-	Read
0004d	0x0004	word	Measured upper temperature value (°C / °F) (showing screen)	-	Read

1.3 DISCRATE INPUTS

Discrete Inputs Adresses		Data Type	Data Content	Parameter Name	Read / Write Permission
Decimal	Hex				
0000d	0x0000	bit	Compressor relay output status (0=OFF; 1=ON)	--	Read
0001d	0x0001	bit	Defrost relay output status (0=OFF; 1=ON)	--	Read
0002d	0x0002	bit	Fan relay output status (0=OFF; 1=ON)	--	Read
0003d	0x0003	bit	Lighting relay output status (0=OFF; 1=ON)	--	Read
0004d	0x0004	bit	Alarm relay output status (0=OFF; 1=ON)	--	Read
0005d	0x0005	bit	AUX relay output status (0=OFF; 1=ON)	--	Read

1.4 COILS

Coil Adresses		Data Type	Data Content	Parameter Name	Read / Write Permission
Decimal	Hex				
00d	0x00	Bit	Temperature unit OFF = °C , ON = °F	Unit	Read / Write
01d	0x01	Bit	Decimal point OFF = no , ON = YES	d.Pnt	Read / Write
02d	0x02	Bit	Auxiliary probe usage OFF = no , ON = YES	P3En	Read / Write
03d	0x03	Bit	Gate digital input polarity OFF = cL , ON = oP	d1Po	Read / Write
04d	0x04	Bit	Adjustable digital input polarity OFF = cL , ON = oP	d2Po	Read / Write
05d	0x05	Bit	Smart defrost selection OFF = no , ON = YES	d5nt	Read / Write
06d	0x06	Bit	Defrost type selection OFF= ELÇ , ON = ÇRS	d.tYP	Read / Write
07d	0x07	Bit	During defrost, display configuration OFF = Lc , ON = rE	d.d5P	Read / Write
08d	0x08	Bit	Defrosting process begins with energy OFF = no , ON = YES	d.Pon	Read / Write
09d	0x09	Bit	Fan operates with thermostat OFF = no , ON = YES	F.Çon	Read / Write
10d	0x0A	Bit	Fan operations when compressor stop OFF = no , ON = YES	F.ÇSt	Read / Write
11d	0x0B	Bit	Fan operation during defrost process OFF= no , ON = YES	F.dSt	Read / Write
12d	0x0C	Bit	Fan control depending on room temperature OFF = no , ON = YES	F.çtr	Read / Write
13d	0x0D	Bit	Alarm configuration OFF = RB5 , ON = Relative alarm rEF	R.tYP	Read / Write
14d	0x0E	Bit	Disable the alarm output OFF = no , ON = YES	R.StP	Read / Write
15d	0x0F	Bit	AUX output control type (heating-cooling) OFF = ÇoçL , ON = HEAL	o.cnt	Read / Write
16d	0x10	Bit	Activating / inactivating the control output	--	Read / Write
17d	0x11	Bit	Activating / inactivating the fast cooling	--	Read / Write
18d	0x12	Bit	Activating / inactivating the manual defrost	--	Read / Write
19d	0x13	Bit	Activating / inactivating the lighting output	--	Read / Write
20d	0x14	Bit	Activating / inactivating the aux output	--	Read / Write
21d	0x15	Bit	Activating / inactivating the key	--	Read / Write