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.

CAL EDT2411 TEMPERATURE CONTROLLER

Thank you for choosing CAL EDT2411 temperature controller.

* 35x77mm.
* On-Off control.
* Relay output for cooling or heating control.
* Single NTC probe input.
* Offset value can be entered for NTC input.
* Compressor protection parameters.
* On probe failure, output status can be set to ON, OFF or periodic.
* Upper and lower limits of the setpoint adjustment.
* Defrost duration and interval can be adjusted.
* 6 different warning tones.
* Deviation high and low alarm values.
* Temperature unit can be selected °C or °F.
* Digital input (Optional).
   - External alarm
   - Initiate defrost
* Transfer device parameter settings with CAL key - no power-up required.
* RS485 ModBus protocol communication feature (optional).
* Real Time Clock defrost and energy-saving feature.
* CE marked according to European Norms.

R HS Compliant

Order Code: EDT2411- □□□ - □ - □□□ - □□-□
                           1   2   3   4 5

1 - Supply Voltage
110........110V AC
230........230V AC
 24........24V AC/DC
 12........12V AC/DC
SM........9-30V DC/7-24V AC

2-Output
R....... 8A relay output
P....... 20A relay output

3- RTC
Real time clock (optional)
(Only valid for 8A relay output devices)

4- ModBus
RS.......ModBus (optional)

5- Temperature Unit Selection
None.......Celsius
F..............Fahrenheit

CONNECTION DIAGRAM

CAL EDT2411 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. 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.
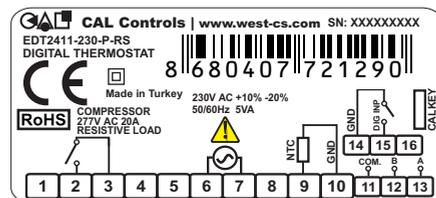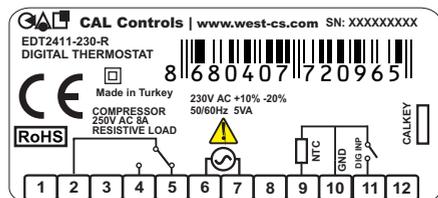
□ Equipment is protected throughout by DOUBLE INSULATION

Holding screw
0.4-0.5Nm.

NOTE:
SUPPLY:

184-253V AC   6 ← Line
50/60Hz 4VA   7 ← Neutral

Fuse
F 100 mA
250V AC

Switch

230V AC Supply

Fuse should be connected

Cable size: 1,5mm²
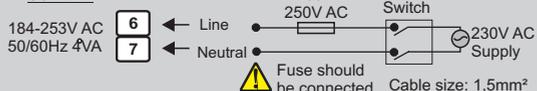
Note:
1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

ENVIRONMENTAL CONDITIONS

Ambient/storage temperature	0 ... +50°C/-40 ... 85°C (without icing)
Relative humidity	Max. 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 or 12/24 V 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 0.1°C or 1°C.)
Accuracy	±1°C
Time accuracy	±1%
Display	4 digits, 12.5mm, 7 segment LED
EMC	EN 61326-1: 2012
Safety requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)

OUTPUTS

Relay output	For EDT2411-X-R ; Relay: NO+NC 250V AC,8A (resistive load), 1/2HP, 0.37KW 240V AC (inductive load) For EDT2411-X-P ; Relay: NO 277V AC,20A (resistive load), 1/2HP, 0.37KW 250V AC (inductive load) For EDT2411-X-R ; Without load 30.000.000 mechanical; 250V AC, 8A resistive load 100.000 electrical operation.
Life expectancy for relay	For EDT2411-X-P ; Without load 10.000.000 switching; 277V AC,20A (for resistive load) 100.000 electrical operation.

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,benzine,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** .

Flush mounting clamp   Panel   Rubber packing

Flush mounting clamp

Panel cut-out
71,5mm

28,5mm

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.

CAL

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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.

☀ **HEATING LED:** Heating is being checked; while the output is active, the LED lights.

❄ **DEFROST LED:** With the defrost lights up.

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

SET While in the operating mode set value, while in the programming mode shows selected parameter's 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.

Display: **-24.0** CAL EDT2411 °C ❄ SET ⏻

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.
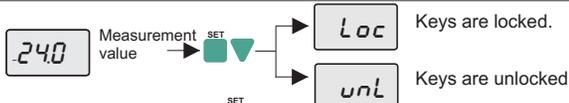
While in the operating mode, if **SET**▼ keys are pressed together among 2 seconds the Loc message is displayed and the keys are locked. If the keys are locked **SET**▼ keys are pressed for 2 seconds again unL message is displayed and key lock is opened and is returned to the normal way of working. While 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.dis** The control ouput becomes inactive. / **CEnb** The control output becomes active.
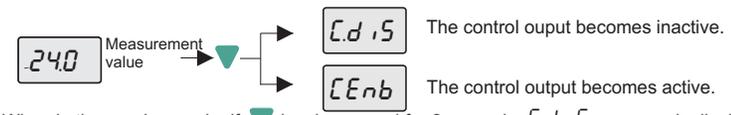
* When in the running mode, if the control outputs are inactive, oFF message displays periodically.

When in the running mode, if ▼ key is pressed for 2 seconds, $C.dis$ 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 $LP1$ 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

LP1 → uPL → ⋮ → HYS
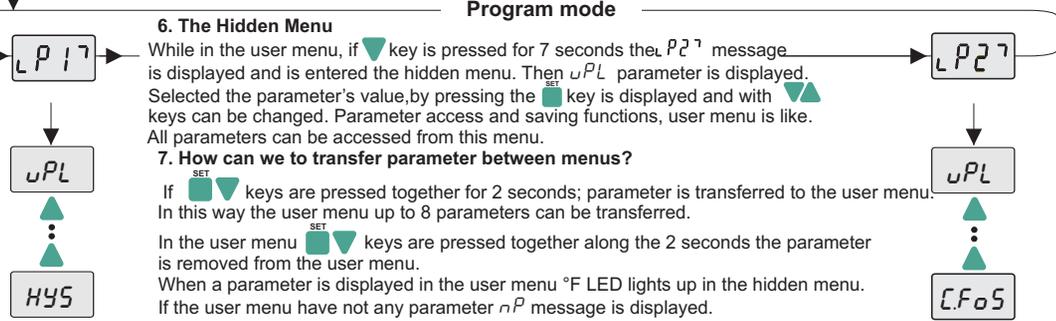
6. The Hidden Menu

While in the user menu, if ▼ key is pressed for 7 seconds the $LP2$ 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.

LP2 → uPL → ⋮ → C.FoS

ERROR MESSAGES

PFA Means, thermostat probe is broken.

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

PSC Means, thermostat probe is short circuit.

_ _ _ _ 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.

OUTPUT GRAPHICS
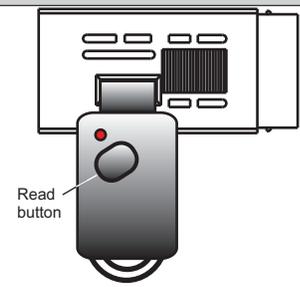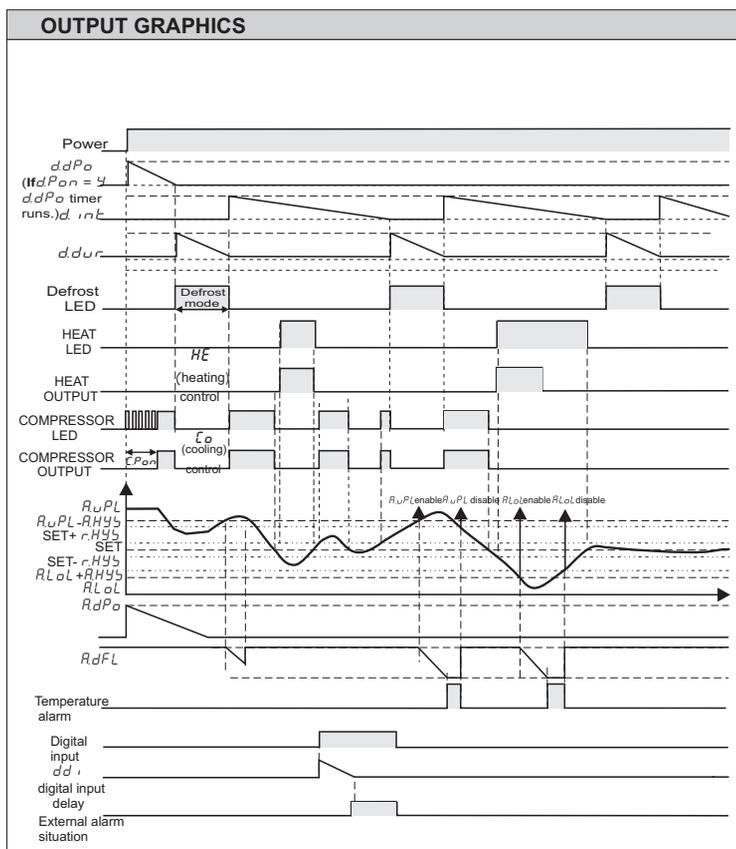
Read button

How Can We Dowload The Parameters From CALKEY To The Device?

While in the running mode; if ▼ key or "Read" button (in CALKEY) are pressed; is displayed "dL" message and parameters are read in CALKEY.

"dL" message appears when the ▼ key is pressed again, reading parameter values from the CALKEY are transferred to the device.

If the parameter transfer is successful, "rEF" message is displayed and the device begins to work with downloaded parameters value.

The parameter in the CALKEY, while belonging to a different device of if there is a malfunction in the CALKEY "Err" message is displayed and the parameters of the device unchanged.

How Can We Upload The Parameters From Device To The CALKEY?

While in the running mode; if ▲ key is pressed "uL" message is displayed and again ▲ key is pressed; if there is no error, the parameters in the device are loaded in to the CALKEY and "Suc" message is displayed.

If there is a malfunction in the device and the installation failed "Err" message is displayed.

NOTE 1: To the device without energy, the parameter transfer is done with CALKEY.

The battery inside the CALKEY for a longer period of time; after the parameter transfer process, the connection between the CALKEY and the device should be disconnected.

NOTE 2: CALKEY device is supplied with orders if requested.

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	Switch hysteresis for compressor (hysteresis)	0.1	20.0	°C	2
oFF	The offset value for the refrigeration	-20.0	20.0	°C	0

CONFIGURATION PARAMETERS

		MIN.	MAX.	UNIT	DEF. SET
$C.tYP$	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	Type of buzzer sound (6 different voice types can be selected. Alarm during 0 is chosen, the voice warning is canceled.) For Relay-8A is valid.	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

		MIN.	MAX.	UNIT	DEF. SET
$C.Pon$	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

		MIN.	MAX.	UNIT	DEF. SET
$d.dur$	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

		MIN.	MAX.	UNIT	DEF. SET
$AuPL$	Limit for upper alarm level. When $AtYP$ is changed, $AuPL$ should be readjusted.	$ALoL$	150.0	°C	150
$ALoL$	Limit for lower alarm level. When $AtYP$ is changed, $ALoL$ should be readjusted.	-60.0	$AuPL$	°C	-60
$AHYS$	Switch hysteresis for alarm.	0.1	20.0	°C	2
$AtYP$	Alarm configuration. (AbS=Absolute alarm.Alarm values are $ALoL$ and $AuPL$.) (rEF= Relative alarm.Alarm values are SET-$ALoL$ and SET+$AuPL$.) NOTE: Upper and Lower alarm level variables are determined according to the "$AtYP$" parameter. If $AtYP$ = AbS , $ALoL$ and $AuPL$. If $AtYP$ =rEF,LoL =SET-$ALoL$ and $AuPL$.	AbS	rEF		AbS
$AdFL$	Time delay to display alarm message after alarm is on.	0:00	99:00	min:sec	0:00
$AdPo$	Time delay to display alarm message after power is on.	0:00	24:00	hr:min	0:10
$Adr.S$	RS485 Network address for the connection of the device.Adjustable between 1-247.				1
$bAud$	Baudrate (0=Off; 1=1200; 2=2400; 3=4800;4=9600; 5=19200)				9600
$c.Sr$	The holding parameter of control outputs state when the supply is powered off.	no	YES		YES
$t.Sr$	The holding parameter of keypad lock state when the supply is powered off.	no	YES		no

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CAL EDT2411 DIGITAL THERMOSTAT MODBUS PROTOCOL ADDRESS MAP

1.1 HOLDING REGISTERS

Holding Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission	Status Value
Decimal	Hex					
0000d	0x0000	word	Set value	--	Readable/Writeable	-20
0001d	0x0001	word	Set point upper limit	uPL	Readable/Writeable	150
0002d	0x0002	word	Upper level alarm	A.uPL	Readable/Writeable	150
0003d	0x0003	word	Set point lower limit	LoL	Readable/Writeable	-60
0004d	0x0004	word	Lower level alarm	A.LoL	Readable/Writeable	-60
0005d	0x0005	word	The offset value for the cooling	oFF	Readable/Writeable	0
0006d	0x0006	word	Cooling hysteresis	HYS	Readable/Writeable	2
0007d	0x0007	word	Switch hysteresis for alarm	A.HYS	Readable/Writeable	2
0008d	0x0008	word	Type of buzzer sound	Snd	Readable/Writeable	0
0009d	0x0009	word	Digital input types .0=nd;1=EA;2=SA;3=HC;4=dF	d.inP	Readable/Writeable	nd
0010d	0x000A	word	Digital input delay	ddi	Readable/Writeable	0:00(0 sec)
0011d	0x000B	word	Delay time for the compressor after power is on.	C.Pon	Readable/Writeable	1:00(60 sec)
0012d	0x000C	word	Delay time required for the compressor to restart following a stop.	C.FoS	Readable/Writeable	0:00(0 sec)
0013d	0x000D	word	On time for the compressor output in the case of probe failure	C.PPn	Readable/Writeable	0:00(0 sec)
0014d	0x000E	word	Off time for the compressor output in the case of probe failure	C.PPF	Readable/Writeable	1:00(60 sec)
0015d	0x000F	word	Defrost duration	d.dur	Readable/Writeable	1:00(60 sec)
0016d	0x0010	word	The time between 2 consecutive defrosts.	d.int	Readable/Writeable	1:00(60 min)
0017d	0x0011	word	Delay time for defrosting after power is on.	d.dPo	Readable/Writeable	1:00(60 sec)
0018d	0x0012	word	After the cooling process of cooling start-up delay	d.drE	Readable/Writeable	1:00(60 sec)
0019d	0x0013	word	Time delay to display alarm message after alarm is on.	A.dFL	Readable/Writeable	0:00(0 sec)
0020d	0x0014	word	Time delay to display alarm message after power is on.	A.dPo	Readable/Writeable	0:10(10 min)

RTC REAL TIME CLOCK PARAMETERS

0021d	0x0015	word	The device time setting	hour	Readable/Writeable	0
0022d	0x0016	word	The device minute setting	m.in	Readable/Writeable	0
0023d	0x0017	word	The device day setting (Sun,mon,tuE,UEd,thu,Fri,SAt)	dAY	Readable/Writeable	0(Sun)
0024d	0x0018	word	The first day of the week holiday (Sun,mon,UEd,thu,Fri,SAt,nu)	ht1	Readable/Writeable	7(nu)
0025d	0x0019	word	The second day of the week holiday (Sun,mon,UEd,thu,Fri,SAt,nu)	ht2	Readable/Writeable	7(nu)
0026d	0x001A	word	Defrost start time of the 1. workday	id1	Readable/Writeable	24:00(hr:min)
0027d	0x001B	word	Defrost start time of the 2 workday	id2	Readable/Writeable	24:00(hr:min)
0028d	0x001C	word	Defrost start time of the 3. workday	id3	Readable/Writeable	24:00(hr:min)
0029d	0x001D	word	Defrost start time of the 4. workday	id4	Readable/Writeable	24:00(hr:min)
0030d	0x001E	word	Defrost start time of the 5. workday	id5	Readable/Writeable	24:00(hr:min)
0031d	0x001F	word	Defrost start time of the 6. workday	id6	Readable/Writeable	24:00(hr:min)
0032d	0x0020	word	Defrost start time of the 1. holiday	td1	Readable/Writeable	24:00(hr:min)
0033d	0x0021	word	Defrost start time of the 2. holiday	td2	Readable/Writeable	24:00(hr:min)
0034d	0x0022	word	Defrost start time of the 3.holiday	td3	Readable/Writeable	24:00(hr:min)
0035d	0x0023	word	Defrost start time of the 4. holiday	td4	Readable/Writeable	24:00(hr:min)
0036d	0x0024	word	Defrost start time of the 5. holiday	td5	Readable/Writeable	24:00(hr:min)
0037d	0x0025	word	Defrost start time of the 6.holiday	td6	Readable/Writeable	24:00(hr:min)
0038d	0x0026	word	Energy-saving value of the difference set	Add	Readable/Writeable	0
0039d	0x0027	word	Energy-saving start time of the workday	iEt	Readable/Writeable	24:00(hr:min)
0040d	0x0028	word	Workday energy-saving time	iES	Readable/Writeable	00:00
0041d	0x0029	word	Energy-saving start time of the holiday	tEt	Readable/Writeable	24:00(hr:min)
0042d	0x002A	word	Holiday energy-saving time	tES	Readable/Writeable	00:00
0043d	0x002B	word	RS485 Network address for the connection of the device. Adjutable between 1-247.	Adr.S	Readable/Writeable	1
0044d	0x002C	word	Baudrate (0=Off; 1=1200; 2=2400; 3=4800; 4=9600; 5=19200)	bAud	Readable/Writeable	9600

* Holding Register parameter of type integer, those "signed integer" is defined as the decimal port of and associated with these parameters. (So,"14.0" is a parameter value of "140" will be read in.)Relevant parameters for a period of "mm:ss" type ones in seconds, "hh:mm" while those species defined in minutes.

* Devices without **RTC**; 0021d and 0022d parameters, the **RTC** in 0043d and 0044d addresses correspond to the devices.

1.2 INPUT REGISTERS

Input Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission
Decimal	Hex				
0000d	0x0000	word	Measured temperature value (°C / °F)	- -	Only readable
0001d	0x0001	word	Defrost time(sn). During the defrost mode to defrost for the normal, for the remaining period of the termination of the defrost process. If the defrost is finished, the remaining time for the start of the next defrost.	- -	Only readable

* Input Register parameter value of the temperature reading, is defined as a signed integer. This value is associated with a portion.(So,"23,5°C"value of temperature "235" will be read in.)

1.3 DISCRETE INPUTS

Discrete Input Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission
Decimal	Hex				
0000d	0x00	Bit	Control output situation (0=OFF; 1=ON)	- -	Only readable

1.4 COILS

Coil Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission	Status Value
Decimal	Hex					
00d	0x00	Bit	Control type selection. OFF=Cooling control (Co) ON=Heating control(HE)	C.tYP	Readable/Writeable	Co
01d	0x01	Bit	Temperature unit. OFF=°C ON=°F	Unit	Readable/Writeable	°C
02d	0x02	Bit	Decimal point . OFF=no ON=YES	d.Pnt	Readable/Writeable	no
03d	0x03	Bit	Digital input polarity. OFF=While a digital input contact is closed, it is activated. (cL) ON=While a digital input is opened, it is activated(oP)	dPo	Readable/Writeable	cL
04d	0x04	Bit	During defrost,display configuration. OFF=The temperature which is measured before defrost is displayed. (Lc) ON=Real temperature is displayed during defrost process. (rE)	d.dSP	Readable/Writeable	Lc
05d	0x05	Bit	Defrosting process begins with energy. OFF=Defrost process doesn't start when the energy comes. (no) ON=Defrost process starts when the energy comes. (YES)	d.Pon	Readable/Writeable	no
06d	0x06	Bit	Alarm configuration .OFF=Absolute alarm (AbS) ON=Relative alarm (rEF)	A.tYP	Readable/Writeable	AbS
07d	0x07	Bit	Defrost type (OFF=The normal operation of the defrost. (nor) ON=Defrost operation with RTC (rtc)	d.tYP	Readable/Writeable	nor
08d	0x08	Bit	Control situaiton. OFF=Control passive. (C.diS) ON=Control active (C.Enb)	- -	Readable/Writeable	CEnb

*"07d" address parameter, only the RTC and the RTC are not located in the devices and the device have a total of 7 parameter ""08d" with address parameter 7. the order.

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CAL EDT2411 DIGITAL THERMOSTAT RTC PARAMETERS

RTC SET PARAMETERS

		Min.	Max.	Unit	Status
hour	The device time setting	0	23	hour	0
n̄ in	The device minute setting	0	59	minute	0
dAY	The device day setting *Sun,n̄on,tuE,UEd,thu,Fr i,SAt*	*Sun*	*SAt*	day	*Sun*
ht1	The first day of the week holiday. *Sun,n̄on,tuE,UEd,thu,Fr i, SAt,nu.* (If *nu* is chosen, holidays are not selected and it is perceived as working days.)	*Sun*	*nu*	day	*nu*
ht2	The second day of the week holiday.(*Sun,n̄on,tuE,UEd,thu,Fr i, SAt,nu.* (If *nu* is chosen, holidays are not selected and it is perceived as working days.)	*Sun*	*nu*	day	*nu*

DEFROST CONTROL PARAMETERS

		Min.	Max.	Unit	Status
d.tYP	The device defrost type. (*nor*:with interval times defrost, *rtc*:with real time clock defrost)	*nor*	*rtc*	-	*nor*
id1 / id6	*id1, id2, id3, id4, id5, id6* Defrost status time in the range of *id1- id6* workdays. (If this status time=*24:00*,defrost process is not performed.	00:00	24:00	hr:min	24:00
td1 / td6	*td1,td2,td3,td4,td5,td6.* Defrost status time in the range of *td1-td6* holidays. (If this status time= 24:00 defrost process is not performed.)	00:00	24:00	hr:min	24:00

ENERGY-SAVING PARAMETERS

		Min.	Max.	Unit	Status
Add	Energy-saving value of the difference set (During the energy-saving SET=SET+*Add.* Energy-saving during, the set value does not change.	-20	20	°C/°F	0
iEt	Energy-saving start time of the workday. (If this status time=*24:00* energy-saving will not be made.)	00:00	24:00	hr:min	24:00
iES	Workday energy-saving time(If this status time= *00:00* energy-saving will not be made.)	00:00	24:00	hr:min	24:00
tEt	Energy-saving start time of the holiday. (If this status time *24:00* energy-saving will not be made.)	00:00	24:00	hr:min	24:00
tES	Holiday energy-saving time (If this status time: *00:00* energy-saving will not be made.)	00:00	24:00	hr:min	24:00

REAL TIME CLOCK FEATURE

At first power up of the device; hour, minute, day must be adjusted. In addition, an optional holiday in each week can be assigned to the desired days. All the days of the week "workday" is entered as requested,*ht1* and *ht2* parameters should be chosen as "*nu*". This sets the device is powered down, even after the 2500 real time clock continuous to run throughout the day. With this feature, defrost control and energy-saving can be requested.

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