TECHNICAL MANUAL

eterm

e-kronos
Code CB1137

CE   EN

Dear user,
thank you for choosing our product. ICI Kronos comes from a non-stop research and state of the art technology.
Genuine quality materials and components make our device a very reliable product. Our range of products follows
all UNI, CEI and EN directives related to safety and electromagnetic compatibility (Directive 72/23/EEC relating to
electrical equipment designed for use within certain voltage limits and Directive 89/336/CEE relating to
electromagnetic compatibility). We recommend to follow the instructions in this manual with great care.

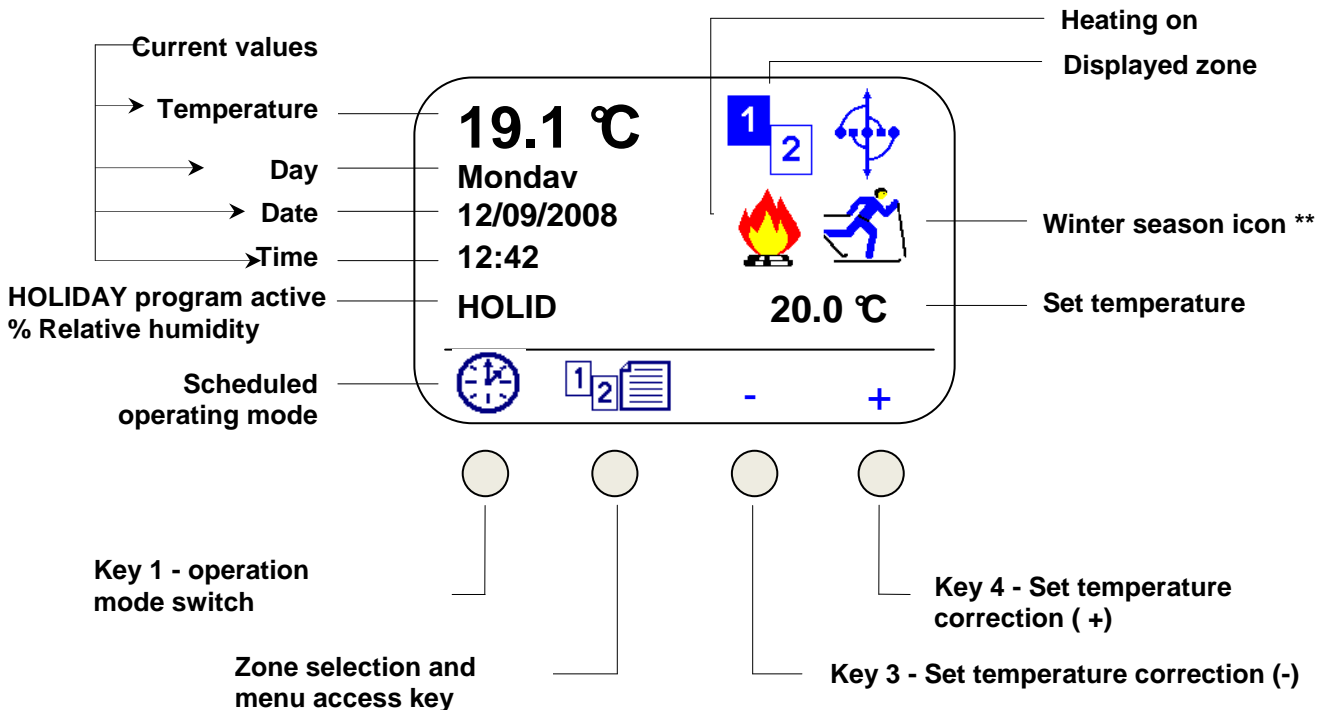**e-kronos controller allows the control and reading of the NEREIX metering stations.**

Depending on the firmware loaded on the device, the user can change the operating modes, the menus, the icons and the language

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CONTENTS

1   MAIN PAGE

The keys have variable functions, depending on the icon placed above them on various pages.

Current values
Temperature
Day
Date
Time

HOLIDAY program active
% Relative humidity

Scheduled operating mode

Heating on
Displayed zone

19.1 ℃
Monday
12/09/2008
12:42
HOLID
1 2
20.0 ℃

Winter season icon **
Set temperature

Key 1 - operation mode switch

Zone selection and menu access key

Key 3 - Set temperature correction (-)

Key 4 - Set temperature correction (+)

* * When humidity sensor is installed, **UR** is displayed**: xx %** during holidays. In "HOLIDAY" mode, the two messages will be displayed alternately.

** If set season is not "WINTER" icons on the main page will be:

Sumer icon   Cooling enabled

In mid season no icon will be displayed, heating and cooling are not enabled.

Operating mode switch, by pressing this key repeatedly, the user can switch the operating mode:

Manual operating mode, keeps the temperature set on display steady. This value can be changed directly by pressing + and -

Scheduled operating mode, manages the temperatures set in the program

General Shutdown Mode, the only active function is the anti-freeze function

If the module is set to two zones:
A short press of the button will display zone 2 information. By shortly pressing the button again zone 1 information will be displayed.
By pressing the key for more than 3 seconds you can access the menu (see paragraph 2)

If the module is set to only one zone:
above the button only the menu symbol will be displayed and no number regarding the zone will be displayed

By pressing and holding   button, the display will show the current day program. In order to implement changes see point 2.2
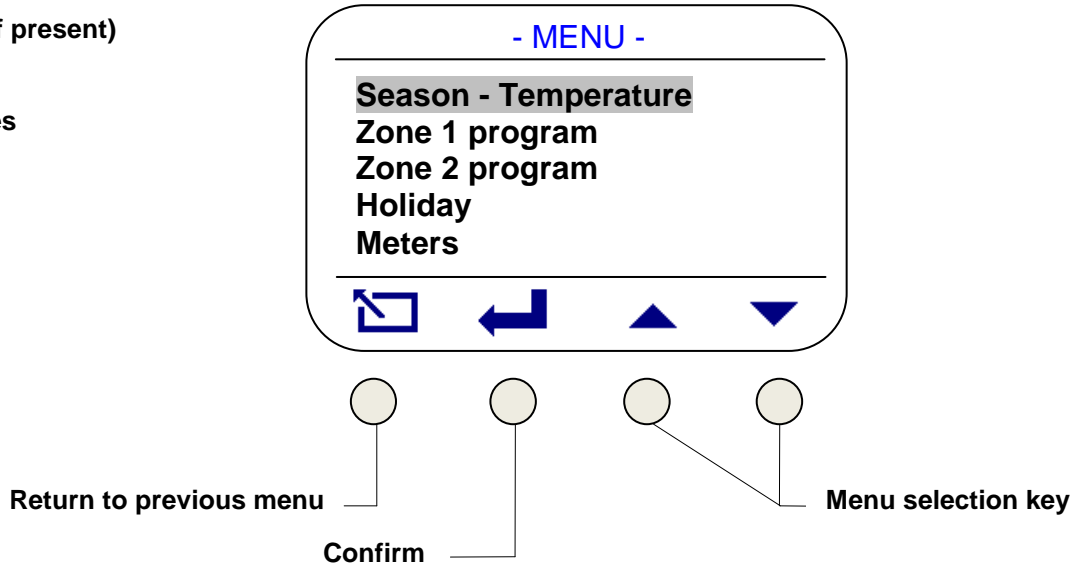
When anti-freeze mode in enabled, the main screen displays only the Heating icon.
In this case the set temperature or the + and - keys will not be displayed.
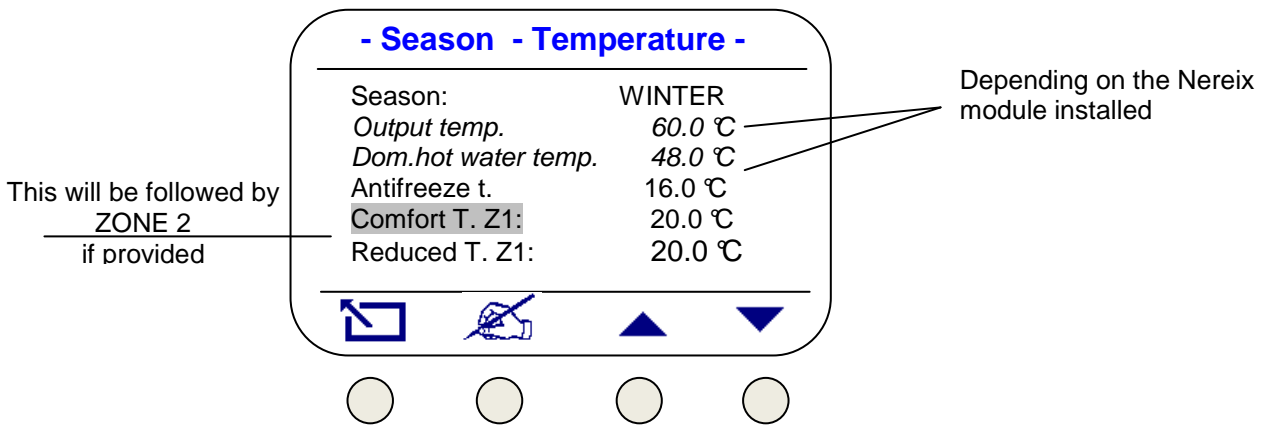
2 MENU

By pressing the menu access key, various options will be displayed; those not displayed on the screen can be accessed by pressing the arrow keys ▲▼.

Season - Temperature
Zone 1 program
Zone 2 program (if present)
Holiday
Meters
Show temperatures
Date and time
Configuration
Language setting
Back-light

```
┌────────────────────────────┐
│        - MENU -            │
│   ─────────────────────    │
│  Season - Temperature      │
│  Zone 1 program            │
│  Zone 2 program            │
│  Holiday                   │
│  Meters                    │
│   ⟲     ←     ▲     ▼      │
└────────────────────────────┘
   ◯     ◯     ◯     ◯
```

Return to previous menu ⎯⎯⎯⎯⎯

Confirm ⎯⎯⎯⎯⎯

Menu selection key ⎯⎯⎯⎯⎯

Select the desired menu using the arrow keys and press the key in order to enter individual menus ←.

2.1 SEASON AND TEMPERATURE

```
┌────────────────────────────────┐
│   - Season  - Temperature -    │
│  ────────────────────────────  │
│  Season:              WINTER   │
│  Output temp.         60.0 ℃   │
│  Dom.hot water temp.  48.0 ℃   │
│  Antifreeze t.        16.0 ℃   │
│  Comfort T. Z1:       20.0 ℃   │
│  Reduced T. Z1:       20.0 ℃   │
│  ────────────────────────────  │
│   ⟲      ✍      ▲      ▼      │
└────────────────────────────────┘
   ◯      ◯      ◯      ◯
```

Depending on the Nereix module installed
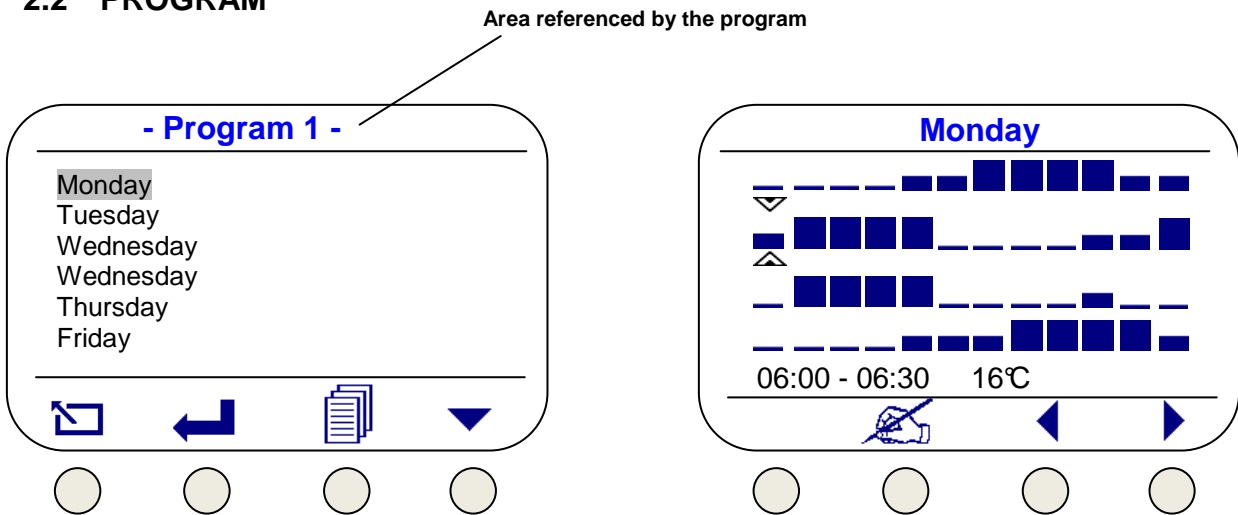
This will be followed by ZONE 2 if provided

In order to edit individual values select them with the highlighted arrow keys and press the button ✍

Once the value is highlighted use the arrow keys in order to correct it and ← key for confirmation.

NOTE
 - Anti-freezing temperature can also be set to Off, in this case the function is disabled.
Delivery and health temperatures can be set within preset limits

2 - After zone 1 temperatures are displayed, zone 2 (if provided) temperatures are displayed, use the arrows keys for access.

3 - By changing the season, specific setpoints are displayed and editable.

4 - Last parameter allows users to change environment probe reading (temperature offset)

2.2 PROGRAM

Area referenced by the program

For parameters select the day with ▼ key and press . ↵ .
A page will appear, in which every box represents the midday

A full square ■ represents operation at domestic hot water temperature

A half-full square ▬ represents operation at reduced temperature

A small line ▬ shows system shutdown (or steady operation at antifreeze temperature)
Select the time slot using the arrow keys in order to change the required temperature (comfort, reduced or

antifreeze) press ✍ instead of the icon the + /- signs will appear and instead of 🔁 icon will appear ↵

Press ↵ to confirm any change. By pressing the arrows, the newly set time range moves to next or previous.

From the main screen of the **PROGRAM** menu, the program attributed to a specific day can be copied to any other day:

After using this key ▼ in order to select desired day to be copied, press 📄 key .On the left side of selected day

a "C" will appear. Above the 📄 icon the name of desired day to be copied will appear

With ▼ key move to the day you want to copy the program to and press 📄📄 .

Repeat this operation and select other days of the week.

2.3 HOLIDAY

```
┌─────────────────────────────────┐
│         - Holiday end -         │
│  ─────────────────────────────  │
│  Time:              09          │
│  Day          12                │
│  Month:             09          │
│  Year:              2013        │
│  Holiday temperat.    10.0 ℃    │
│  Set holiday          On        │
│  ─────────────────────────────  │
│    ⟲       ✍       ▲      ▼     │
└─────────────────────────────────┘
     ○        ○        ○       ○
```

Using the arrow keys select the parameter to be modified, by pressing ✍ key. Modify using **+** and **-** keys.

Press ⬅ to confirm possible modifications.
By entering the ON value to "Set holiday", the selected temperature (for both areas) will be kept until the established moment.
At the holiday end operation will return previous mode of operation.

Use ⟲ key in order to exit the menu.

2.4 METERS

```
┌──────────────────────────────┐     ┌──────────────────────────────┐
│      - Energy meters -       │     │      - Capacity meters       │
│  ──────────────────────────  │     │  ──────────────────────────  │
│  Heating                     │     │  Meter sanit.1:              │
│  Total energy:               │     │          12345678  Lit.      │
│        000112,6 kWh          │     │  Meter sanit. 2:             │
│  ──────────────────────────  │     │          00000012  Lit.      │
│  Cooling                     │     │  Meter sanit.3:              │
│  Total energy:               │     │          00000000  Lit.      │
│        000015,1 kWh          │     │  ──────────────────────────  │
│  ──────────────────────────  │     │    ⟲       ◀◀                │
│    ⟲       ▶▶                │     │                              │
└──────────────────────────────┘     └──────────────────────────────┘
   ○      ○      ○      ○               ○      ○      ○      ○
```

Use the arrow keys to browse the screens and ⟲ to exit the menu

2.5   SHOW TEMPERATURE

```
      - Current

  Temp. Ambient 1:     19.8 ℃
  Temp. Ambient 2:     19.0 ℃
  External temp.       10.2 ℃
  Output temp.      50.2 ℃
  Dom. hot water temp.  30.2 ℃


  ↰
  ○        ○        ○        ○
```

Visible if temperature sensor is present second zone

Visible if an external sensor, connected to Master or single Slave, is present

Visible, depending on Nereix type

Use ↰ key in order to exit the menu.

2.6   DATE AND TIME

```
      - Date and time -

  Day         15
  Month:      09
  Year:       2008
  Time:       17
  Minute:     44


  ↰        ✍        ▲        ▼
  ○        ○        ○        ○
```

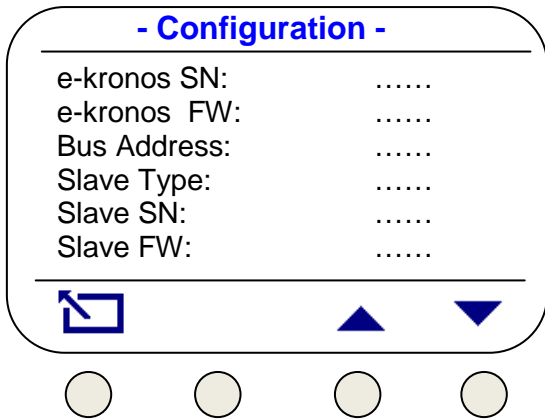Using the arrow keys select the parameter to be modified, by pressing ✍ button. Modify using **+** and **-** keys.

Press ⏎ to confirm possible modifications.

Obs.   In case a Master unit is present, the date and time are not editable.
Date and time are set on central unit.

Use ↰ key in order to exit the menu.

2.7 CONFIGURATION

```
        - Configuration -
  ─────────────────────────────
  e-kronos SN:        ……
  e-kronos  FW:       ……
  Bus Address:        ……
  Slave Type:         ……
  Slave SN:           ……
  Slave FW:           ……
  ─────────────────────────────
   ⮌              ▲      ▼
  ○       ○       ○      ○
```
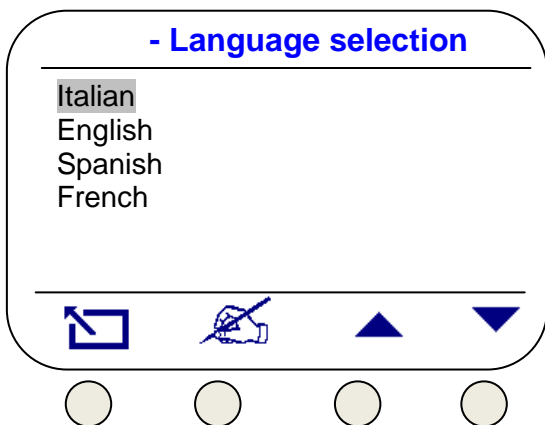
From this menu the following Slave configuration information can be viewed:

- e-kronos SN   = e-kronos equipment serial number
- e-kronos FW   = e-kronos firmware review
- Bus Address   = Bus adress of ekronos connected module (251 = disconnected module)
- Slave Type   = Unit module type (Metering / Climate)
- Slave SN   = Nereix module electronic board serial number
- Slave FW   = Nereix module electronic board review
- Heat Meter 1 SN = Calorimeter 1 serial number
- Heat Meter 2 SN = Calorimeter 2 serial number (if present)
- Counter 1   = Volumetric meter 1 liter count (hot water)
- Counter 2   = Volumetric meter 2 liter count (cold water)
- Counter 3   = Volumetric meter 3 liter count (non treated water)
- Offset   = Temperature probe reading correction *

* Ambient temperature value read by the internal sensor can be modified with a value between + or - 10 °C.
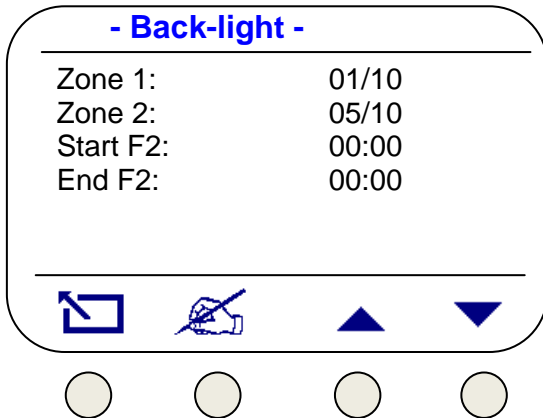
In order to make a correction press ✎, use the **+** and **–** keys, confirm with **OK**.

2.8 LANGUAGE SELECTION

```
       - Language selection
  ─────────────────────────────
  Italian
  English
  Spanish
  French


  ─────────────────────────────
   ⮌        ✎       ▲      ▼
  ○       ○       ○      ○
```

From this menu language selection is possible. Available languages depend on firmware version

2.9 BACK-LIGHT

```
┌─────────────────────────────┐
│      - Back-light -          │
│  ─────────────────────────   │
│  Zone 1:          01/10      │
│  Zone 2:          05/10      │
│  Start F2:        00:00      │
│  End F2:          00:00      │
│                              │
│  ─────────────────────────   │
│   ⌐┐      ✎       ▲     ▼    │
└─────────────────────────────┘
     ◯      ◯       ◯     ◯
```

From this menu you can turn off the back-light or set it so it will turn off after a few seconds since the last press of a button.
The back-light can be set on 2 levels depending on the time
Each level can be set to off (disabled) or between 01/10 and 10/10

3 CELLPHONE COMMANDS VIA SMS

Using received "SMS Code" the user can send a few SMS commands to the slave unit. In order to use this feature, the Slave must necessarily be connected to an ICI Kronos and to a Master unit equipped with a modem.
Commands syntax that can be sent via SMS:

 # SMS code "space" MAN "space" desired temperature:
ICI Kronos transfers to manual operation and supplies desired temperature.

 # SMS code "space" AUTO
ICI Kronos transfers to automatic operation according to installed program

 # SMS code "space" OFF
ICI Kronos shuts down.

Example: if the SMS code was " 5555555 ", forwarded command will be: "#5555555 MAN 20" . The system will transfer to manual operation with desired temperature of 20°C.

IN CASE MORE THAN ONE ZONE EXIST, THE SMS COMMANDS WILL HAVE AN EFFECT ON ALL ZONES

4 VISUAL MODE

In "VISUAL" mode the e-kronos unit does not work with a programmable thermostat so it does not control heating / ambient cooling. In this mode only the following menus are available:

Meters
Show temperature
Date and time
Configuration

For mode switching go to "Configuration" menu.

By pressing simultaneously the 2 buttons on the right (arrow up/down) for 5 seconds the display will shows the message:
"Confirm VISUAL mode"
By pressing the "Enter" key, the device switches to View mode, by pressing the "Esc" key, mode change will be canceled.

When in View mode, users can return to Normal mode with the same procedure.
By pressing simultaneously the 2 buttons on the right (arrow up/down) for 5 seconds the display will shows the message:
"Confirm VISUAL mode"

5 ASSEMBLY AND ELECTRICAL CONNECTION

Assembly procedure:
Connect the cable coming from the Nereix unit to the appropriate three pole removable terminal.
Insert the terminal in the equipment.
Remove the front panel.
Attach the device with two plugs using the diametrically opposed holes.
In case of broadside box, remove the display and electronics from plastic container and secure it.

Reinstall electronic parts and display (if removed) and front panel.

IMPROTANT:
e-kronos is powered directly from NEREIX satellite user board.
All operations should be carried out with NEREIX unit unplugged.
In the event of voltage absence, settings are stored in equipment microprocessor.

Electric wiring:
Communication between e-Kronos and NEREIX modules is done through a bus connection. The connection must be insured by a 3-poler shielded cable (section 3x0.35mm^2) of maximum 90 meters.
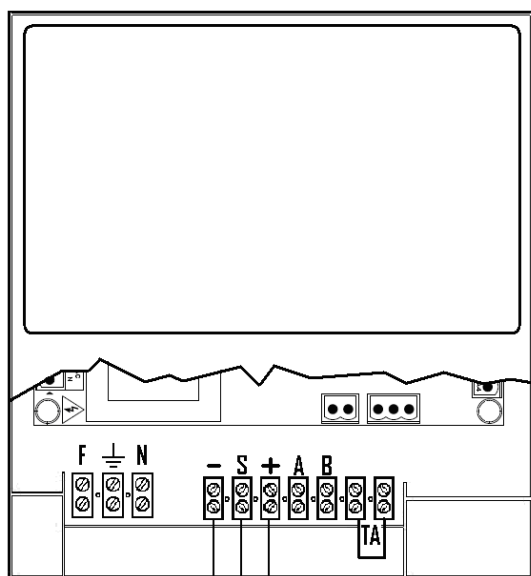Never place in the same slot data and power cables.
In the same slot can be placed master BUS cables and e-kronos cables.
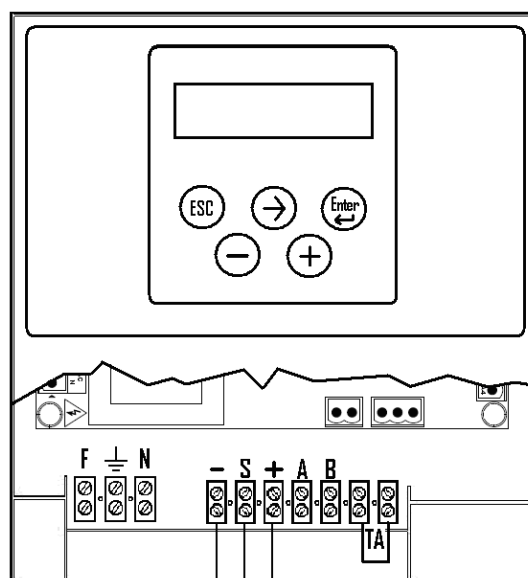The e-kronos unit is supplied with 24 Vcc from the Nereix module

Obs. Do not switch power supply polarity
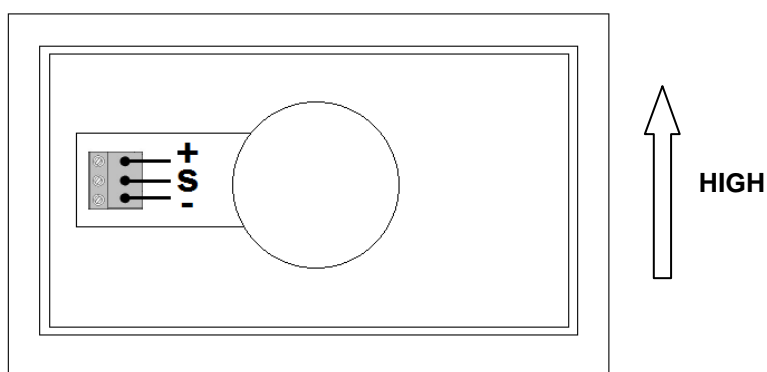   **Respect + S - connections**

"MANAGEMENT" BOARD

e-kronos / ICI Kronos

"CLIMATE" BOARD

e-kronos / ICI Kronos

HIGH

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