TECHNICAL MANUAL

eterm

SYSTEM MANAGEMENT
CONTROL PANEL
QETERM02

Technical manual   System Management Control Panel QETERM02   REV. 2013-03

CE

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CONTENTS

1 GENERAL FEATURES

Command control panel with pre-configured functions.
All settings can be implemented using the PC keyboard.
QETERM-02 control panels can be connected to Master unit by bus connections:
- Boiler Management Control Panels (example QETERM-01)
- Nereix Master

Power source
230 Vac

PROGRAMABLE OUTPUTS CONTACT No
Maximum load 230 Vac / 1 A
P1   Programmable output– triac
P2   Programmable output– triac
PM   Programmable output – triac – phase interrupt

PROGRAMMABLE COMMON DUAL OUTPUT
Maximum load 230 Vac / 1 A
V1   Programmable output – dual triac
V2   Programmable output – dual triac

DIGITAL PROBE INPUT
PT1   Programmable input PT1000
PT2   Programmable input PT1000
PT3   Programmable input PT1000
NTC   Programmable input NTC

INPUT 0-10 Volt / DIGITAL
INPUT 4-20 mA
OUTPUT 0-10 Volt
INPUT 4-20 mA
COMUNICATION
USB slot
RS485 connection for boiler control panel Q ETERM … or NEREIX master

INTERCONECTION NOTES
The boiler board is able to operate individually in order to control a system, in this case it cannot be controlled remotely.
The system management board can be slave to a management boiler control panel (example ETERM -01) or a Nereix Master. Earlier mentioned boards are able to control remotely the system management board through a specific modem.
If the system management board will be slave to boiler board address allocation will be software implemented.
If the system management board will be slave to a Nereix Master address allocation must be configured by "eterm pc manager" in the same manner as a Nereix Clima slave or Nereix Accounting, for this reason each card management system is distinguished by a unique serial number.

Optional
External NTC probe
Contact NTC probe
Immersion NTC probe
Combustion gas probe
Immersion PT1000 probe
Contact PT1000 probe

**ATTENTION! BOARD FUNCTIONALITY DEPENDS ON LOADED FIRMWARE
WHICH CAN BE UPDATED WITH SPECIFIC APPLICATIONS
THE PURPOSE OF ICI CALDAIE SPA IS PRODUCT IMPROVEMENT. IN ORDER TO DO SO ICI
CALDAIE SPA RESERVES THE RIGHT TO MAKE FIRMWARE AND SOFTWARE CHANGES AND
IMPLEMENTATIONS WHEN FOUND APPROPRIATE**

## 2   SYSTEM MANAGEMENT FRONT CONTROL PANEL.

DISPLAY

USB

KEYBOARD

3   CONTROL PANEL ASSEMBLY

⚠ **ALL OPERATIONS OF MOUNTING AND WIRING MUST BE PERFORMED WHEN THE POWER SOURCE IS DISCONNECTED**

Cut a hole with a rectangular base of 255 mm and height of 200 mm in the panel.
Remove the extractable terminals and insert QETERM02 unit from the outside until the metal frame rests on the control panel.
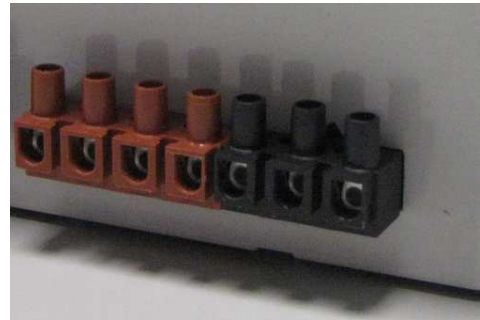

EXTRACTABLE TERMINALS

METAL FRAME

B

A

A

B
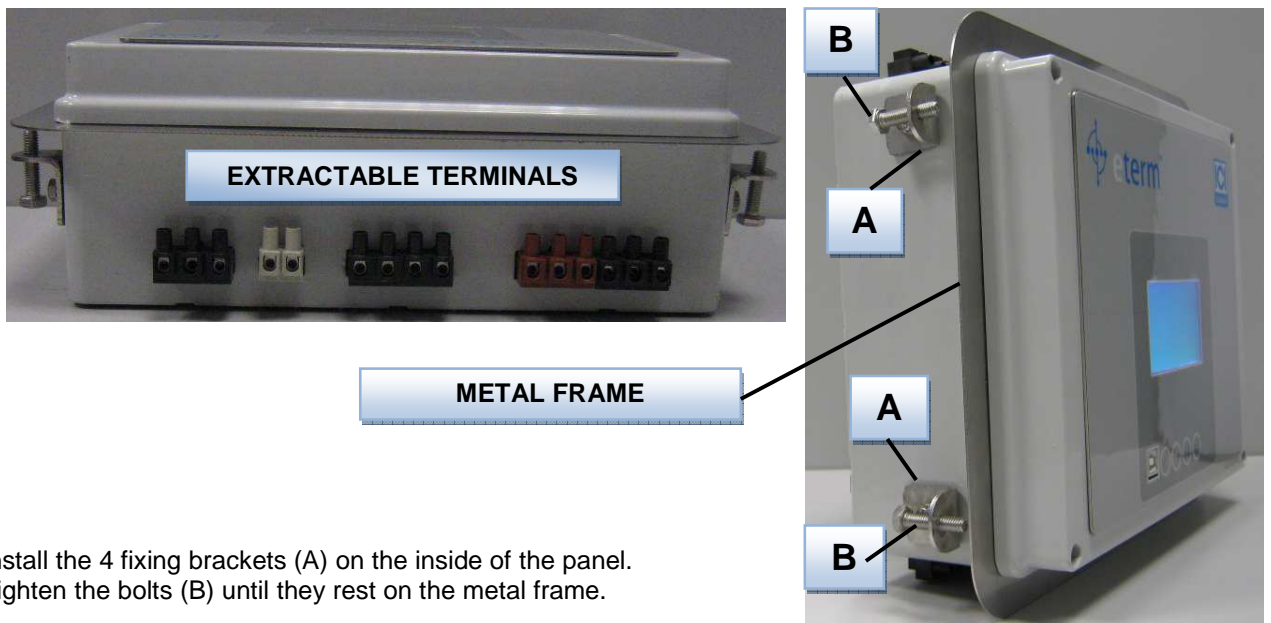
Install the 4 fixing brackets (A) on the inside of the panel.
Tighten the bolts (B) until they rest on the metal frame.

Connect wires to extractable terminals and reinsert them in QETERM-02 unit.

Attention. The terminals are divided into high and low voltage, refer to "TERMINAL" section for electrical connections.
Extractable terminals can be mounted with or without cover.

Extractable terminals with cover

.

Extractable terminals without cover

4   WALL MOUNT

 ALL OPERATIONS OF MOUNTING AND WIRING MUST BE PERFORMED WHEN THE ELECTRICITY IS DISCONNECTED

Remove the extractable terminals, remove front metal frame.

Install mounting brackets in the rear and use them to secure the panel on the wall with appropriate screws.

CASING MOUNTING

WALL MOUNTING
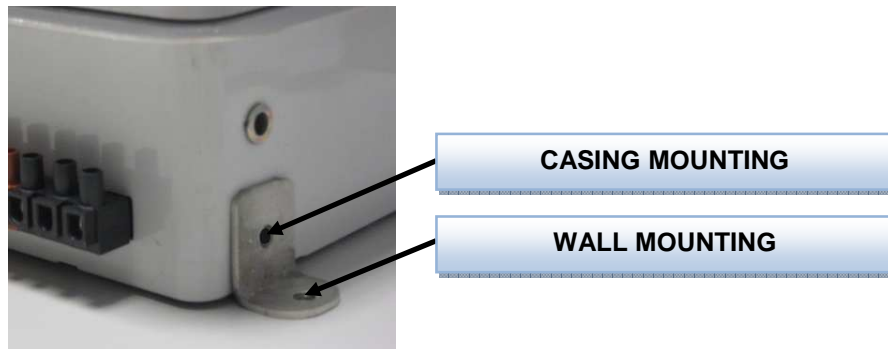
Connect wires to extractable terminals, complete with cover, and reinsert them in QETERM-02 unit.
Attention. The terminals are divided into high and low voltage, refer to "TERMINAL" paragraph for electrical connections.

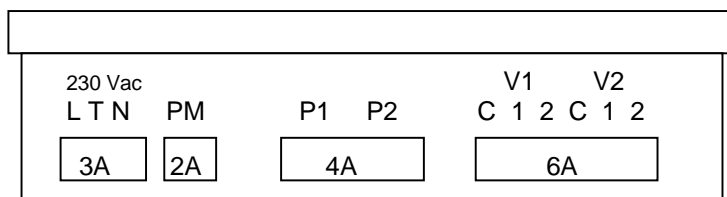## 5 TERMINAL ELECTRIC CONNECTION BOARD

```
                                      V1      V2
  230 Vac
  L T N    PM       P1  P2       C  1  2  C  1  2

  [ 3A ]  [2A]      [  4A  ]     [      6A      ]
```
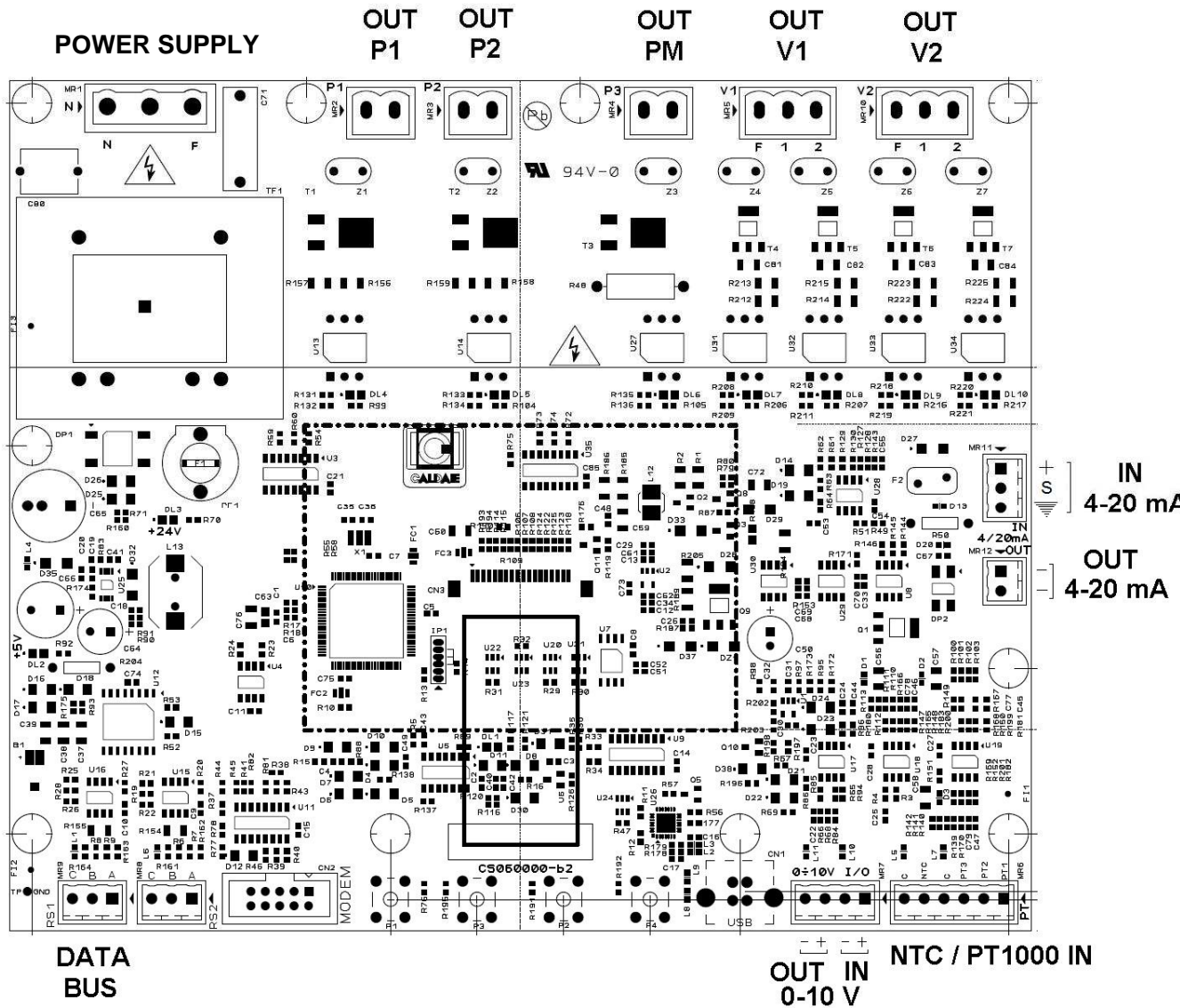
TERMINAL NAME	FUNCTION	TERMINAL
L		
T	CONTROL PANEL GENERAL POWER SUPPLY	3A
N		
PM	PROGRAMMABLE OUTPUT PM	2A
P1	PROGRAMMABLE OUTPUT P1	4A
P2	PROGRAMMABLE OUTPUT P2	
C (COMMON)		
1 (NO) *	PROGRAMMABLE OUTPUT V1	
2 (NC) *		6A
C (COMMON)		
1 (NO) *	PROGRAMMABLE OUTPUT V2	
2 (NC) *		

* In case outputs are used for mix valves, COM-NC contact closing results in valve closing, COM-NO contact closing results in valve opening.

P1-P2-PM-V1-V2 OUTPUTS ARE TRIODES FOR ALTERNATING CURRENT. IN ORDER TO ACTIVATE THE CONTACT, IT IS NECESSARY THAT BETWEEN CONTACT EXTREMITIES THERE IS A VOLTAGE OF AT LEAST 24 Vac - THEREFORE, USE CONTACTS TO CONTROL CONSUMERS AND/OR AUXILIARYS SUPPLIED WITH AT LEAST 24 Vac TO 230 Vac

INFERIOUR TERMINALS (LOW VOLTAGE)

PT1000			In4-20mA	Out4-20mA	In0-10V	OUT0-10V	RS485
1 2 3 C	NTC		+ S T	1 2	+ -	+ -	ABC
6B			5B		7B		
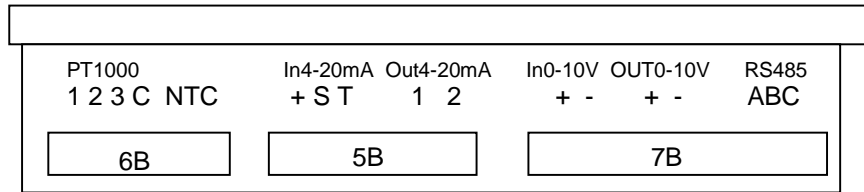
TERMINAL NAME	FUNCTION	TERMINAL
1	INPUT PT1000	6B
2		
3		
C		
NTC	INPUT NTC	
+	IN 4-20 mA**	5B
S		
T		
1	OUT 4-20 mA	
1		
+	IN 0-10 V	7B
-		
+	OUT 0-10 V	
-		
A	RS485 (RS1)	
B		
C		

** For transducers with separate power supply only connect S / +
   For power supply transducers connect:
      power supply T / +
      signal S/ +

6   DISPLAY

Input status view

In order to move from input to output screen , press corresponding key to: **IN**

```
PT1 :  80.0°C      0-10V:
PT2:  38.0°C        100%
PT3:    OPEN    4-20mA:
NTC:CLOSED          100%

      G        ≣      PROG    IN
```
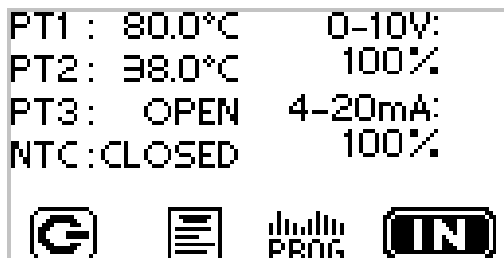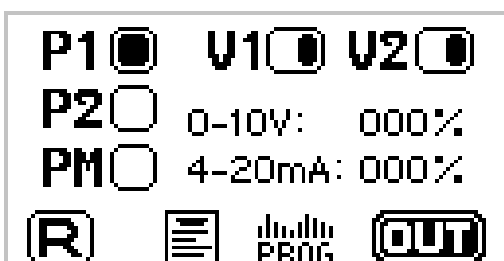
VIZUALIZATION OF LOWER BUTTON
FUNCTIONS

In order to move from output to input screen , press corresponding key to: **OUT**

```
P1●   V1◖  V2◗
P2○  0-10V:    000%
PM○  4-20mA: 000%
  R        ≣      PROG    OUT
```

VIZUALIZATION OF LOWER BUTTON
FUNCTIONS

ICON:

G OFF: All outputs are disabled, if outputs are set for mixing valves then same valves are closed.

R RUN: Outputs are enabled when specific programs are performed.

TO SWITCH FROM OFF TO RUN PRESS AND HOLD THE BUTTON SEVERAL SECONDS
(A BRIEF PRESS OF THE BUTTON DOES NOT CHANGE THE STATUS)

PROG Time schedule menu quick access key

≣ Menu access key

● Output P1 / P2 / P3, enabled (closed contact)

○ Output P1 / P2 / PM, disabled (opened contact)

○ Output V1 / V2, both contacts open (only for mixing valve = valve actuator stops)

◖ Output V1 / V2, C/2 contact closed (for mixing valve = closing valve actuator)

◗ Output V1 / V2, C/1 contact closed (for mixing valve = opening valve actuator)

⚠ Active alarm, in the event of a fault the "menu" icon will blink

7 MENU AND PARAMETERS

Press ▤ key to see available menus
Factory configuration allows access to **Level 2 (SERVICE):**
User parameters
General configuration
Input configuration
Output configuration P1
Output configuration P2
Output configuration PM
Output configuration V1
Output configuration V2
Output configuration 0-10V
Output configuration 4-20mA
Forcing
Device status
Date / Time /Period
Time programs
Instant alarms
Alarm history
Quick setup

To prevent access to configuration parameters set **LEVEL 1 (USER)**
Below are menus accessible at LEVEL 1:
User parameters
Device status
Date / Time /Period
Time programs
Instant alarms
Alarm history
Advanced parameters

Level change:
- enter "Boiler status" menu
- by holding down the right key press simultaneously the two central keys
- when the keys are released you will be prompted to enter the access code
- insert 1 – 2 – 3 – 4 – 2 – 4 for LEVEL 1
- insert 4 – 3 – 2 – 1 – 4 – 3 for LEVEL 2
                              IF THE DEVICE IS BLOCKED BY PC
   THE CHANGE TO LEVEL 2 USING THE CORRESPONDING CODE WILL NOT BE POSSIBLE

Scroll menus using the arrow keys ▲ ▼

Enter menus and display the available parameters by pressing ←

Return to previous screen using ⬑

Once displayed, parameters can be scrolled using the arrow keys ▲ ▼

Select parameter that needs to be modified using ←
This mode allows parameter corresponding value selection and "change" mode will be enabled.

Use ⊖   ⊕ key for value adjustment.

Once desired value is selected press ← to confirm.
At this point, staying in "change" mode will highlight next parameter value.

Press the following key to exit "change" mode ⬑

INTELLIGENT MENU
Unusable parameters, depending on performed configuration, are automatically hidden.

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8 USER PARAMETERS

This menu displays only setting parameters for possible mixing valves (curve and temperatures) depending on level 2 settings.

9 GENERAL CONFIGURATION

Parameter: 01.01 **Language**
Adjustment range: Italian / English / Spanish / etc.
Factory setting: Italian
Description:
Language setting

Parameter: 01.02 **Location (only from PC)**
Adjustment range: Alpha-numeric value
Factory setting: Boiler Management
Description:
It is possible to freely write a boiler / system reference .

Parameter: 01.03 **Primary bus address**
Adjustment range: 0-250
Factory setting: 251
Description:
First level bus address may be assigned by a Nereix Master

Parameter: 01.04 **Secondary bus address**
Adjustment range: 0-15
Factory setting: 0
Description:
Represents board address in possible second-level bus. For only one board the value will be 0

Parameter: 01.05 **External probe**
Adjustment range: None / NTC / System
Factory setting: NO
Description:
Possible input or external temperature reference.

Parameter: 01.06   **Display contrast**
Measurement unit -
Adjustment range: 0 – 16
Factory setting: 6
Description: Allows display adjustment (change if visibility is not optimal)

10 INPUT CONFIGURATION

Parameter: 02.01-03-05-07-09   Input PT1 / PT2 / PT3 / NTC / 0-10 V
Adjustment range: Analogical (PT1000; NTC; 0-10V) / Digital
Factory setting: Digital
Description: This parameter will decide whether the input should be connected to a contact or to a temperature probe PT1000.
When inputs will be predisposed for a contact they will be named **DGT1 / DGT2 / DGT3 / DGT4 / DGT5**

Parameter: 01.02-04-06-08-10-14   Input name PT1 / PT2 / PT3 / NTC / 0-10V / 4-20mA (only from PC)
Adjustment range: Alpha-numeric value (only from PC)
Factory setting: PT1 / PT2 / PT3 / NTC / 0-10V / 4-20mA
Description: Input names can freely be allocated.
When inputs will be predisposed for a contact they will be named **DGT…**

Parameter: 01.11 Measurement unit 0-10V (only from PC)
Adjustment range: Alpha-numeric value
Factory setting: Volt
Description: Input measurement units can be freely allocated.

Parameter: 01.12 Input value 0 Volt
Adjustment range: - 1000,0 / + 1000,0
Factory setting: 0
Description: Represents displayed value when analogical input measures 0 Volt.

Parameter: 01.13 Input value 10 Volt
Measurement unit /
Adjustment range: - 1000,0 / + 1000,0
Factory setting: 10
Description: Represents displayed value when analogical input measures 10 Volt.

Parameter: 01.15 Measurement unit 4-20mA (only from PC)
Adjustment range: Alpha-numeric value
Factory setting: mA
Description: Input measurement units can be freely allocated.

Parameter: 01.16 Input value 4 mA
Adjustment range: - 1000,0 / + 1000,0
Factory setting: 4
Description: Represents displayed value when analogical input measures 0 Volt.

Parameter: 01.17 Input value 20 mA
Adjustment range: - 1000,0 / + 1000,0
Factory setting: 20
Description: Represents displayed value when analogical input measures 10 Volt.

Parameter 01.18   **Offset probe NTC**

Parameter 01.19   **Offset probe PT1**

Parameter 01.20   **Offset probe PT2**

Parameter 01.21   **Offset probe PT3**
Adjustment range: - 10,0 / + 10,0
Factory setting: 0
Description: Represents probe reading accuracy.

11 OUTPUT CONFIGURATION P1

Parameter: 03.01   CONNECTION FUNCTIONS
Adjustment range: Parallel / Series
Factory setting: Parallel
Description:
In "Parallel" Output contact will be closed if one of the programed contacts activates in subsequent parameters.
In "Series" Output contact will be closed if all programed contacts activates in subsequent parameters.

Parameter: 03.02   WINTER SEASON CONSENT
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for contact closing is given for the entire winter period.

Parameter: 03.02   SUMMER SEASON CONSENT
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for contact closing is given for the entire summer period.

Parameter: 03.04   IN BETWEEN SEASON CONSENT
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for contact closing is given for the entire period excluding winter or summer.

Parameter: 03.05-06-07   1-2-3 PROGRAM CONSENT
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for contact closing is given when 1-2-3 program dictates "comfort" operation.

Parameter: 03.08   HYSTERESIS TIME ON
Adjustment range: 0-999
Measurement unit Seconds
Factory setting: 0
Description:
Delay between activation condition occurrence and activation itself.

Parameter: 03.09   HYSTERESIS TIME OFF
Adjustment range: 0-999
Measurement unit Seconds
Factory setting: 0
Description:
Delay between deactivation condition occurrence and deactivation itself.

Parameter: 03.10   DGT INPUT CONSENT
Adjustment range: OFF / ON Parallel / ON Series
Factory setting: OFF
Description:
If "Parallel ON "is enabled, output contact closing consent is given if one of the digital inputs selected in subsequent parameters is closed.
If "Series ON "is enabled, output contact closing consent is given if all digital inputs selected in subsequent parameters are closed.

Parameter: 03.11-12-13-14-15   Input DGT 1-2-3-4-5
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for output contact closing is given when DGT output contact (belonging to the same board that is being programmed) is closed
If selected input is not set up as digital, function consent can never be given.

Parameter: 03.16   DGT external address
Adjustment range: 0-15
Factory setting: 0
Description:
If only one board is present and therefore is not inserted into a bus network, the address address remains 0.
If the board is part of a bus network, present digital consents can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 03.11-12-13-14-15   Input DGT 1-2-3-4-5
Adjustment range: YES/NO
Factory setting: NO
Description: If YES is selected consent for output contact closing is given when DGT output contact (belonging to the board programmed with 0.3.14 parameter) is closed
If selected input is not set up as digital, function consent can never be given.

Parameter: 03.22   TEMP. LIMIT CONSENT
Adjustment range: OFF / ON Parallel / ON Series
Factory setting: OFF
Description:
If "Parallel ON " is enabled, output contact closing consent is given if a temperature limit is reached in one of PT1000/NTC inputs selected within subsequent parameters.
If "Series ON " is enabled, output contact closing consent is given if all temperature limit are reached by PT1000/NTC inputs selected within subsequent parameters.

Parameter: 03.23   Hysteresis temp. limit
Measurement unit °C
Adjustment range: 1 – 20 °C
Factory setting: 2 °C
Description: Possible activated consent ceases when the temperature returns above or below set limit + hysteresis.

Parameter: 03.24-26-28-30-32   Limits PT1 / PT2 / PT3 / NTC / EXT
Adjustment range: OFF / Major / Minor
Factory setting: OFF
Description:
If "Major" is enabled, output contact closing consent is given if temperature rises over posted value within subsequent parameter.
If "Minor" is enabled, output contact closing consent is given if temperature falls under posted value within subsequent parameter.
If selected input is not set up as PT100/NTC, function consent can never be given.

Parameter: 03.25-27-29-31-33   Value limits PT1 / PT2 / PT3 / NTC / EXT
Measurement unit °C
Adjustment range: 0-110 °C
Factory setting: 0 °C
Description: Threshold temperature is taken into consideration based on previous parameter.

Parameter: 03.34   Reference board address
Adjustment range: 0-15
Factory setting: 0
Description:
If only one board is present and therefore is not inserted into a bus network, the address address remains 0.
If the board is part of a bus network, present probe inputs can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 03.35-37-39-41 Limits PT1 / PT2 / PT3 / NTC / EXT
Adjustment range: OFF / Major / Minor
Factory setting: OFF
Description:
If "Major" is enabled, output contact closing consent is given if temperature rises over posted value within subsequent parameter.
If "Minor" is enabled, output contact closing consent is given if temperature falls under posted value within subsequent parameter.
If selected input is not set up as PT100/NTC, function consent can never be given.

Parameter: 03.36-38-40-42 Value limits PT1 / PT2 / PT3 / NTC / EXT
Measurement unit °C
Adjustment range: 0-110 °C
Factory setting: 0 °C
Description: Threshold temperature is taken into consideration based on previous parameter.

Parameter: 03.43   DIFF. CONSENT TEMP.
Adjustment range: OFF / ON
Factory setting: OFF
Description:
If "ON" is enabled, output contact closing consent is given if a temperature differential, between two PT1000/NTC inputs selected within subsequent parameter, is superior or inferior to a certain value.
Within **03.45** parameter it can be chosen if consent is given for superior or inferior values of set differential.

Parameter: 03.44   Temperature differential
Measurement unit °C
Adjustment range: 1 – 110 °C
Factory setting: 10 °C
Description: Reached temperature differential which is given consent for contact closing.
The differential will be calculated as the difference between the probe that will be set as "A" and the probe that will be set as "B".

Parameter: 03.45   Hysteresis temp. diff.
Measurement unit °C
Adjustment range: 1 – 20 °C
Factory setting: 2 °C
Description: Possible activated consent ceases when temperature differential returns below the differential parameter set at **03.40+** hysteresis.

Parameter: 03.46   ref. probes address
Adjustment range: Same board / 0-15
Factory setting: Same board
Description:
If the board is part of a bus network, present probe inputs can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 03.47   Probe A selection
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT
Factory setting: PT1
Description: Probe taken into consideration as A (Differential = A-B)

Parameter: 03.47   Probe B selection
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT / OFF
Factory setting: PT1
Description: Probe taken into consideration as B (Differential = A-B)

NOTE
- if for A and B same probe would have been chosen, calculated differential would always be 0
- if for B, OFF is selected, calculated differential would be A – 0 = A

Parameter: 03.49   Differential logic
Adjustment range: Major / Minor
Factory setting: Major
Description:
If "Major" is enabled, consent is given if differential is superior to set value.
If "Minor" is enabled, consent is given if differential is inferior to set value.

Parameter: 03.50   ANALOGIC LIMITS CONSENT
Adjustment range: OFF / ON
Factory setting: OFF
Description:
If "ON" is enabled, output contact closing consent is given if an analogical signal is superior or inferior to a certain value.
Within **03.50** parameter it can be chosen if consent is given for superior or inferior values of set differential.

Parameter: 03.51   Ref. board address
Adjustment range: Same board / 0-15
Factory setting: Same board
Description:
If the board is part of a bus network, present analogical inputs can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 03.52   Input selection
Adjustment range: 0-10 Volt / 4-20 mA
Factory setting: 0-10 Volt
Description: Probe taken into consideration for limits.

Parameter: 03.53   Limit value
Measurement unit %
Adjustment range: 0 – 100
Factory setting: 0 %
Description: Limit value (expressed as a percentage) above or below value for which consent is given.

Parameter: 03.54   **Signal hysteresis**

Measurement unit %
Adjustment range: 0-100
Factory setting: 5 %
Description: Possible activated consent ceases when analogical signal value returns below parameter set differential + hysteresis.

NOTE: if the 0-10 volt input is taken into consideration and the same was set as digital input in consent that would never be possible.

Parameter: 03.55   **Analog threshold logic**

Measurement unit /
Adjustment range: major / minor
Factory setting: major / minor
Description: Adjustment range: major / minor

Parameter: 03.56   **NEREIX REQUEST CONSENT**

Measurement unit /
Adjustment range: ON/OFF
Factory setting: OFF
Description: The output is active when at least one address module belonging to referred subsequent parameters, is required.

Parameter: 03.57   **Nereix address for….**

Measurement unit /
Adjustment range: 1-250
Factory setting: 1
Description: First module address activates the contact wen requested.

Parameter: 03.58   **Nereix address for….**

Measurement unit /
Adjustment range: 1-250
Factory setting: 250
Description: Last module address activates the contact wen requested.

12 P2 OUTPUT ACTIVATION

Parameters 04.01-58 See P1 output parameters

13 PM OUTPUT ACTIVATION

Parameters 05.01-58 See P1 output parameters

Parameter: 05.59   OUTPUT MODULATION
Adjustment range: OFF / ON
Factory setting: OFF
Description:
If "ON" is enabled, P3 output will be regulate phase interruption depending on temperature differential between two readings (Differential A-B).

Parameter: 05.60   Ref. board address
Adjustment range: Same board / 0-15
Factory setting: Same board
Description:
If the board is part of a bus network, present probes can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 05.61   Probe A selection
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT
Factory setting: PT1
Description: Probe taken into consideration as A (Differential = A-B)

Parameter: 05.62   Probe B selection
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT / OFF
Factory setting: PT1
Description: Probe taken into consideration as B (Differential = A-B)

NOTE
- if for A and B same probe would have been chosen, calculated differential would always be 0
- if for B, OFF is selected, calculated differential would be A – 0 = A

Parameter: 05.63   Start differential
Measurement unit °C
Adjustment range: 0 – 110
Factory setting: 5 °C
Description: Output is active (at minimum modulation value) when the differential rises above this limit.
Output deactivates when differential falls below this limit - 2 °C

Parameter: 05.64   Start modulation
Measurement unit %
Adjustment range: 0 – 100
Factory setting: 50 %
Description: Modulation percentage value of "start differential" - minimum level of modulation.

Parameter: 05.65   Maximum differential
Measurement unit °C
Adjustment range: 0 – 110
Factory setting: 10 °C
Description: Differential arrives at this value output arrives at 100% modulation.

NB.
If only "MODULATING OUTPUT" is enabled, the contact is always active.
- If other features are active, they will determine activation of at least one output that will be then modulated according to rules set by parameters from 5.60 mt to 5.65

14 V1 OUTPUT ACTIVATION

Parameters 06.01-58 See P1 output parameters

Parameter: 06.59   MIXING VALVE

Adjustment range: OFF / Fixed - Climatic / 0-10V / 4-20mA
Factory setting: OFF
Description:
If a function is activated, the output gives command to a mixing valve.

By selecting "Fixed - Climatic", output setpoint will be calculated based on a climatic curve or a fixed point.

By selecting "0-10V" or "4-20mA", setpoint temperature will vary proportionally to analogical input between "Maximum calculated limit" and "Minimum calculated limit" values, differentiated by heating or cooling modes.
Output activation can be subordinated to:
- digital contact closing, simultaneously activating the "INPUT DGT" feature (see related paragraphs).
- a time schedule (having the following settings OFF / Decreased / Comfort)

First parameter related to output activation may be set to "Series" or "Parallel"
In "Series"
If the digital input dose not give it's consent, the valve will stay totally closed.
If the digital input give it's consent, possible time schedule will be defined as following:
- OFF (total valve closing)
- Comfort operation
- Decreased operation

In "Parallel"
If the digital input gives consent, the valve will modulate regardless of eventual time schedules in order to reach comfort temperature
If the digital input dose not give consent, possible time schedule will be defined as following:
- OFF (total valve closing)
- Comfort operation
- Decreased operation

Other feature activation will not be taken under consideration.

Parameter: 06.60   Mixing valve consent

Adjustment range: series / paralell
Factory setting: Parallel
Description:
When connected in parallel, the mixing valve will tend to reach the setpoint when one appointed condition (digital input and time schedule) will give consent.
When connected in series, the mixing valve will tend to reach the setpoint when both appointed conditions (digital input and time schedule) will give consent.

Parameter: 06.61   Digital consent

Adjustment range: OFF / DGT 1-2-3-4-5
Factory setting: OFF
Description:
If a digital input is activated, the mixing valve will tend to reach appointed setpoint only when the input associated contact will be closed.

Parameter: 06.62   1-2-3 Program consent

Adjustment range: OFF / 1 / 2 / 3
Factory setting: NO
Description:
If a time schedule is activated, the mixing valve will tend to reach appointed setpoint only when selected program provides for comfort operation.

Parameter: 06.63   **Operation type**
Adjustment range: Heat / Cold / Seasonal heating / Heating-Cooling
Factory setting: Heat
Description:
The valve can be used in heating or cooling systems as following:
 "Heat" the mixing valve will be active in heating mode all seasons
 "Cold" the mixing valve will be active in cooling mode all seasons
 "Seasonal heating" the mixing valve will be active in heating mode only in winter
 "Heating - Cooling" the mixing valve will be active in heating mode in winter, in cooling mode in summer and will be disabled in intermediary season.

Parameter: 06.64   **Reference probe**
Adjustment range: PT1 / PT2 / PT3 / NTC
Factory setting: PT1
Description: Probe taken into account for temperature reading downstream of mixing valve.

Parameter: 06.65   **Boiler request**
Adjustment range: OFF – 0/16
Factory setting: OFF
Description: If the bus network contains a boiler management board, it will be activated (only in heating mode) with a setpoint temperature equal to that of the mixing valve + subsequent parameter programmable differential. Chose boiler secondary bus address that needs to be commanded

Parameter: 06.66   **Diff. Boiler - Vmix**
Measurement unit ℃
Adjustment range: 0 - 30
Factory setting: 10 ℃
Description: Differential between mixing valve setpoint and possible boiler setpoint.

Parameter: 06.67   **Heating: Reduced fixed point**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Heating setpoint is taken into consideration if a time schedule is activated and if the it requires "Reduced" operation.
This value is not taken into consideration if heating climactic curve is active.

Parameter: 06.68   **Heating: Comfort fixed point**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Heating setpoint is taken into consideration if a time schedule is not provided or if it requires "Comfort" operation.
This value is not taken into consideration if heating climactic curve is active.

Parameter: 06.69   **Cooling: Reduced fixed point**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Cooling setpoint is taken into consideration if a time schedule is activated and if the it requires "Reduced" operation.
This value is not taken into consideration if cooling climactic curve is active.

Parameter: 06.70   **Cooling: Comfort fixed point**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Cooling setpoint is taken into consideration if a time schedule is not provided or if it requires "Comfort" operation.
This value is not taken into consideration if cooling climactic curve is active.

Parameter: 06.71   **Heating: Climactic curve**
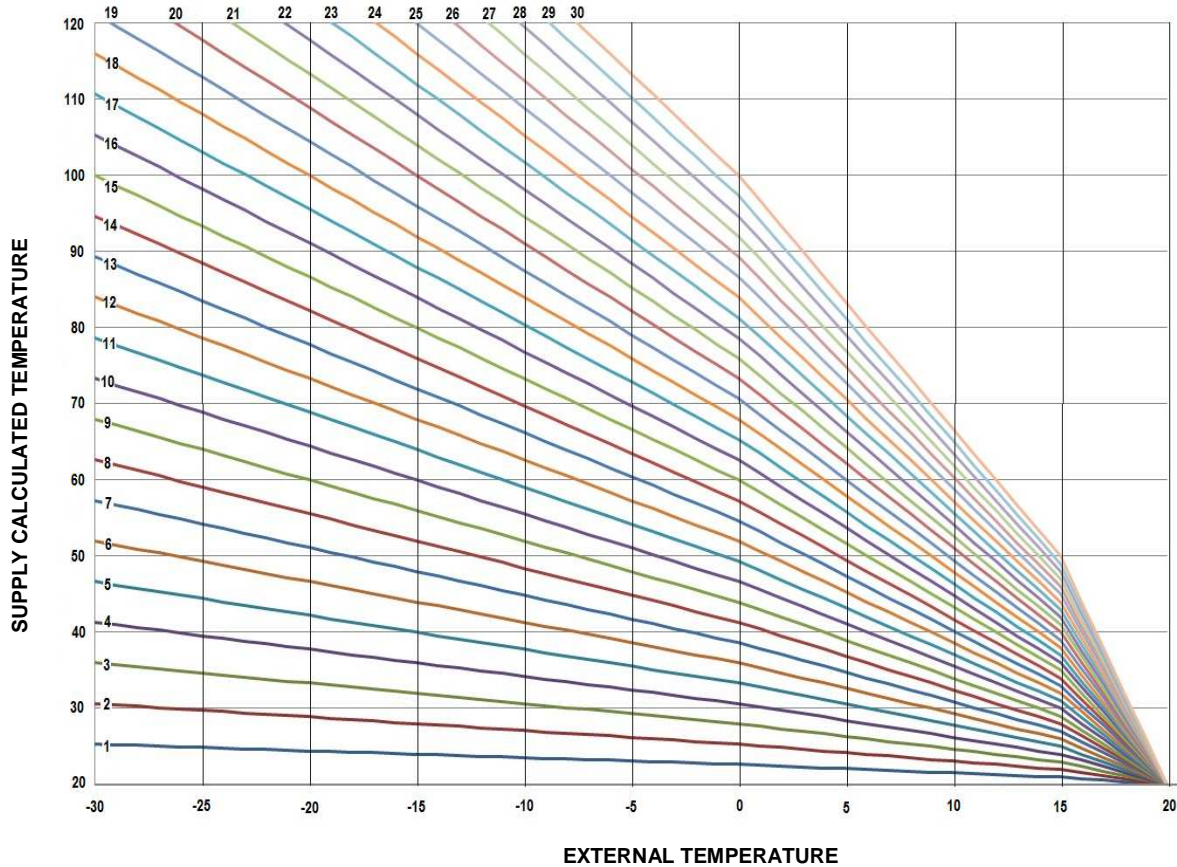
Adjustment range: OFF / 0 - 30
Factory setting: OFF
Description: Heating curve.
If the curve is set to "OFF", the fixed point value is taken into consideration.
Use the chart considering it refers to a theoretical ambient temperature of 20 ℃.

Heating curve

Parameter: 06.72   **Heating:Reduced ambient temperature**

Measurement unit ℃
Adjustment range: 0 – 30 ℃
Factory setting: 16 ℃
Description:
Ambient theoretical temperature during "reduced" phases
Theoretical temperature serves as discharge temperature estimation depending on climactic curve.

Parameter: 06.73   **Heating:Comfort ambient temperature**

Measurement unit ℃
Adjustment range: 0 – 30 ℃
Factory setting: 20 ℃
Description:
Comfort theoretical temperature during "reduced" phases
Theoretical temperature serves as discharge temperature estimation depending on climactic curve.

Parameter: 06.74   **Heating: Calculated maximum limit**

Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Maximum attainable temperature regardless of curve or analogical input

Parameter: 06.75   **Heating: Calculated minimum limit**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Minimum attainable temperature regardless of curve or analogical input

Parameter: 06.76   **Trial period**
Measurement unit Seconds
Adjustment range: 1.-300 seconds
Factory setting: 5 seconds
Description:
Time interval taken by mixing valve as a PID system reference.

Parameter: 06.77   **Proportional factor PID (FPV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 10
Description:
Proportional factor importance taken by mixing valve as a PID system reference.

Parameter: 06.78   **Integral factor PID (FIV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 2.5
Description:
Integral factor importance taken by mixing valve as a PID system reference.

Parameter: 06.79   **Derivative factor PID (FDV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 5
Description:
Derivative factor importance taken by mixing valve as a PID system reference.

Parameter: 06.80   **Min to Max opening time (CMV)**
Measurement unit Seconds
Adjustment range: 0-300 seconds
Factory setting: 60 seconds
Description:
Time required by valve to go from minimum opening position to maximum opening position will be inserted.

Parameter: 0681   **3 pt minimum impulse (ImV)**
Measurement unit Seconds
Adjustment range: 0.1 – 3.0 seconds
Factory setting: 0.2 seconds
Description:
Minimum impulse duration attributed to mixing valve adjustment
Parameter only intended for 3 points mixing valve

15   V2 OUTPUT ACTIVATION

Parameters 07.01-58 See P1 output parameters

Parameters 07.59-81 See V1 output parameters

16 0-10 VOLT OUTPUT ACTIVATION

Parameter: 08.01   MIXING VALVE
Adjustment range: OFF / Fixed - Climatic / 4-20mA / 0-10V
Factory setting: OFF
Description:
If a function is activated, the output gives command to a mixing valve.

By selecting "Fixed - Climatic", output setpoint will be calculated based on a climatic curve or a fixed point.

By selecting "0-10V" or "4-20mA", setpoint temperature will vary proportionally to analogical input between "Maximum calculated limit" and "Minimum calculated limit" values, differentiated by heating or cooling modes.

Output activation can be subordinated to:
-   digital contact closing, simultaneously activating the "INPUT DGT" feature (see related paragraphs).
-   a time schedule (having the following settings OFF / Decreased / Comfort)

First parameter related to output activation may be set to "Series" or "Parallel"
In "Series"
If the digital input dose not give it's consent, the valve will stay totally closed.
If the digital input give it's consent, possible time schedule will be defined as following:
-   OFF (total valve closing)
-   Comfort operation
-   Decreased operation
In "Parallel"
If the digital input gives consent, the valve will modulate regardless of eventual time schedules in order to reach comfort temperature
If the digital input dose not give consent, possible time schedule will be defined as following:
-   OFF (total valve closing)
-   Comfort operation
-   Decreased operation
Other feature activation will not be taken under consideration.

Parameter: 08.02   Mixing valve consent
Adjustment range: series / parallel
Factory setting: Parallel
Description:
When connected in parallel, the mixing valve will tend to reach the setpoint when one appointed condition (digital input and time schedule) will give consent.
When connected in series, the mixing valve will tend to reach the setpoint when both appointed conditions (digital input and time schedule) will give consent.

Parameter: 08.03   Digital consent
Adjustment range: OFF / DGT 1-2-3-4-5
Factory setting: OFF
Description:
If a digital input is activated, the mixing valve will tend to reach appointed setpoint only when the input associated contact will be closed.

Parameter: 08.04   1-2-3 Program consent
Adjustment range: OFF / 1 / 2 / 3
Factory setting: NO
Description:
If a time schedule is activated, the mixing valve will tend to reach appointed setpoint only when selected program provides for comfort operation.

Parameter: 08.05   **Operation type**
Adjustment range: Heat / Cold / Seasonal heating / Heating-Cooling
Factory setting: Heat
Description:
The valve can be used in heating or cooling systems as following:
 "Heat" the mixing valve will be active in heating mode all seasons
 "Cold" the mixing valve will be active in cooling mode all seasons
 "Seasonal heating" the mixing valve will be active in heating mode only in winter
 "Heating - Cooling" the mixing valve will be active in heating mode in winter, in cooling mode in summer and will be disabled in intermediary season.

Parameter: 08.06   **Reference probe**
Adjustment range: PT1 / PT2 / PT3 / NTC
Factory setting: PT1
Description: Probe taken into account for temperature reading downstream of mixing valve.

Parameter: 08.07   **Boiler request**
Adjustment range: OFF – 0/16
Factory setting: OFF
Description: If the bus network contains a boiler management board, it will be activated (only in heating mode) with a setpoint temperature equal to that of the mixing valve + subsequent parameter programmable differential. Chose boiler secondary bus address that needs to be commanded

Parameter: 08.08   **Diff. Boiler - Vmix**
Measurement unit °C
Adjustment range: 0 - 30
Factory setting: 10 °C
Description: Differential between mixing valve setpoint and possible boiler setpoint.

Parameter: 08.09   **Heating: Reduced fixed point**
Measurement unit °C
Adjustment range: 0 - 110
Factory setting: 0 °C
Description: Heating setpoint is taken into consideration if a time schedule is activated and if the it requires "Reduced" operation.
This value is not taken into consideration if heating climactic curve is active.

Parameter: 08.10   **Heating: Comfort fixed point**
Measurement unit °C
Adjustment range: 0 - 110
Factory setting: 0 °C
Description: Heating setpoint is taken into consideration if a time schedule is not provided or if it requires "Comfort" operation.
This value is not taken into consideration if heating climactic curve is active.

Parameter: 08.11   **Cooling: Reduced fixed point**
Measurement unit °C
Adjustment range: 0 - 110
Factory setting: 0 °C
Description: Cooling setpoint is taken into consideration if a time schedule is activated and if the it requires "Reduced" operation.
This value is not taken into consideration if cooling climactic curve is active.

Parameter: 08.12   **Cooling: Comfort fixed point**
Measurement unit °C
Adjustment range: 0 - 110
Factory setting: 0 °C
Description: Cooling setpoint is taken into consideration if a time schedule is not provided or if it requires "Comfort" operation.
This value is not taken into consideration if cooling climactic curve is active.

Parameter: 08.13   **Heating: Climactic curve**
Adjustment range: OFF / 0 - 30
Factory setting: OFF
Description: Heating curve.
If the curve is set to "OFF", the fixed point value is taken into consideration.
Use the chart (see V1 output) considering it refers to a theoretical ambient temperature of 20 ℃.

Parameter: 08.14   **Heating:Reduced ambient temperature**
Measurement unit ℃
Adjustment range: 0 – 30 ℃
Factory setting: 16 ℃
Description:
Ambient theoretical temperature during "reduced" phases
Theoretical temperature serves as discharge temperature estimation depending on climactic curve.

Parameter: 08.15   **Heating:Comfort ambient temperature**
Measurement unit ℃
Adjustment range: 0 – 30 ℃
Factory setting: 20 ℃
Description:
Comfort theoretical temperature during "reduced" phases
Theoretical temperature serves as discharge temperature estimation depending on climactic curve.

Parameter: 08.16   **Heating: Calculated maximum limit**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Maximum attainable temperature regardless of curve or analogical input

Parameter: 08.17   **Heating: Calculated minimum limit**
Measurement unit ℃
Adjustment range: 0 - 110
Factory setting: 0 ℃
Description: Minimum attainable temperature regardless of curve or analogical input

Parameter: 08.18 **Trial period**
Measurement unit Seconds
Adjustment range: 1.-300 seconds
Factory setting: 5 seconds
Description:
Time interval taken by mixing valve as a PID system reference.

Parameter: 08.19 **Proportional factor PID (FPV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 10
Description:
Proportional factor importance taken by mixing valve as a PID system reference.

Parameter: 06.78   **Integral factor PID (FIV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 2.5
Description:
Integral factor importance taken by mixing valve as a PID system reference.

Parameter: 08.21   **Derivative factor PID (FDV)**
Measurement unit /
Adjustment range: 0-20
Factory setting: 5
Description:
Derivative factor importance taken by mixing valve as a PID system reference.

Parameter: 08.22   **Min to Max opening time (CMV)**
Measurement unit Seconds
Adjustment range: 0-300 seconds
Factory setting: 60 seconds
Description:
Time required by valve to go from minimum opening position to maximum opening position will be inserted.

Parameter: 08.23   **ON TEMPERATURE DIFFERENTIAL**
Adjustment range: OFF / ON
Factory setting: OFF
Description: This function is an alternative to "mixing" function which is excluded if ON is enabled to this parameter.
If "ON" is enabled, the analogical output will proportional to temperature differential between two readings (Differential A-B).

Parameter: 08.24   **Ref. board address**
Adjustment range: 0-15
Factory setting: 0
Description:
If set to 0 (mandatory when only one board is present) reference probes are those belonging to board being programmed.
If the board is part of a bus network, present probes can be used on other boards.
This parameter makes possible the board buss address selection of inputs taken into consideration.

Parameter: 08.25   **Probe A selection**
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT
Factory setting: PT1
Description: Probe taken into consideration as A (Differential = A-B)

Parameter: 08.26   **Probe B selection**
Adjustment range: PT1 / PT2 / PT3 / NTC / EXT / OFF
Factory setting: PT1
Description: Probe taken into consideration as B (Differential = A-B)

NOTE
- if for A and B same probe would have been chosen, calculated differential would always be 0
- if for B, OFF is selected, calculated differential would be A – 0 = A

Parameter: 08.27   **Maximum differential**
Measurement unit °C
Adjustment range: -100 / + 100
Factory setting: 10 °C
Description: Differential Value having the analog output equal to 100%

Parameter: 08.28   **Minimum differential**
Measurement unit °C
Adjustment range: -100 / + 100
Factory setting: 0 °C
Description: Differential Value having the analog output equal to 0 %

Parameter: 08.29   **NEREIX REQUEST CONSENT**

Adjustment range: ON/OFF
Factory setting: OFF
Description: If this feature is enabled, the output is proportional to requested module number.
Considered as the modules included between addresses referred to the subsequent parameters.
Also editable:
- Minimum output value: Nereix module not required
- Maximum output value: All Nereix module required

Parameter: 03.57   **Minimum Nereix address for….**

Adjustment range: 1-250
Factory setting: 1
Description: Group's first module address considered in proportional output computation.

Parameter: 08.31   **Maximum Nereix address for….**

Adjustment range: 1-250
Factory setting: 250
Description: Group's last module address considered in proportional output computation.

Parameter: 08.32   **Output without Nereix requirement**

Measurement unit %
Adjustment range: 0 – 100 %
Factory setting: 0 %
Description: Output value when no Nereix module is required

Parameter: 08.33   **Output with all Nereix requirements**

Measurement unit %
Adjustment range: 0 – 100 %
Factory setting: 100 %
Description: Output value when all Nereix modules are required

NOTE: If 08.31 is bigger than 08.32 the output value will be inversely proportional to required number of Nereix modules.

17 4-20 MA OUTPUT ACTIVATION

Parameters: 09.01-33 See 0-10 Volt output parameters

18 FORCING

Entering forcing parameter all available outputs are displayed, desired state of each output can be implemented and start selected parameter general forcing (enable forcing).
Forcing will be disabled at menu exit.

Forcing screen:

Output	Force	Active
P1	None/ ON / OFF	YES/NO
P2	None/ ON / OFF	YES/NO
PM	None/ ON / OFF	YES/NO
V1	None/ A ON / B ON / AB ON / AB OFF	YES/NO
V2	None/ A ON / B ON / AB ON / AB OFF	YES/NO
0-10 V	None/ 00,0-10,0 V	YES/NO
4-20 mA	None/ 4,0-20,0 mA	YES/NO

In order to maintain forcing active even after forcing menu exit, set "Duration proprieties":
Forcing will remain active for set period aftermenu exit.

19 DEVICE STATUS

Input PT1-PT2-PT3-NTC
- Name:
- Function = digital or analogical
- Offset … °C (if analogical)
- Status = open / closed if digital ; temperature …. °C if analogical

Input 0-10V / 4-20mA
- Name:
- Function = Digital or analogical (digital only available for 0-10V)
- Min = minimum input value (0 Volt / 4 mA)
- Max= maximum input value (10 Volt / 20 mA)
- Status = open / closed if digital (only 0-10V); input value …. V / mA if analogical

Out P1-P2-PM
- Name:
- Time ON = Time meter activation
- Status = Open / closed; phase interruption percentage (only for PM)

Out V1-V2 if the output is set as changeable contact
- Name:
- Time ON = Time meter activation
- Status = Open / closed; phase interruption percentage (only for PM)

Out V1-V2 if the output is set as mixing valve
- Name:
- Request = ON/OFF
- Set Point = temperature value
- Actual temperature = temperature value
- Opening mix = mixing valve percentage opening

Out 0-10V / 4-20mA if the output is set as mixing valve
- Name:
- Request = ON/OFF
- Set Point = temperature value
- Actual temperature = temperature value
- Opening mix = mixing valve percentage opening

Out 0-10V / 4-20mA if the output is set as Nereix module control
- Name:
- Modules ind. of a= first module address / last module address
- Number of active modules
- Output value

Out 0-10V / 4-20mA if the output is set as temperature differential
- Name:
Min / Max differential = differential extremities
- Differential output value Min / Max
- Actual differential
- Output value

20 DATE / TIME / PERIOD

General setup

      System parameters / Local parameters

      The board is a slave unit and the system interprets the parameters as default.

Local settings (adjustable if not belonging to the system)

      Year, Month, Day, Dau of the week (automatic)

      Hour, Minutes, Seconds

      Automatic period / Manual period

      Summer / Winter / OFF (if manual switching is equipped)

      Winter start setup: Date, month, year

      Winter end setup: Date, month, year

      Summer start setup: Date, month, year

      Summer end setup: Date, month, year

      Summer to winter switch temperature setup. OFF / 10 - 30 ℃

21 TIME PROGRAMS

When the menu is accessed, three available programs will be displayed and functions associated with every single program are indicated.

Choose the program intended for view or edit using the arrow keys (central) and press .

By entering programs, days of the week are displayed and ESC.

The arrow selects the day or ESC and by pressing the selected day is enter or return to previous screen (if ESC is selected)

Once the program day is entered, the displays shows 48 time slots (one for every 30 minutes).
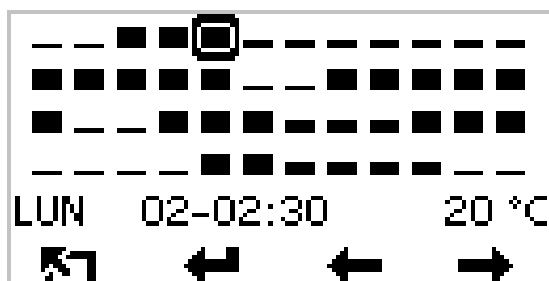
The line $[-]$ icon means OFF;

The half square $[\blacksquare]$ icon represents "Reduced";

The full square $[\blacksquare]$ icon represents "Comfort".

Time slot operation can be modified by selecting it using the arrow keys.

Then press the key that will become .

Pressing repeatedly will cyclically switch between OFF, Reduced, and Comfort settings .

By pressing an arrow key when key is active will copy selected settings to next or previous time slots

To exit present menu press , press again to exit to day selection menu
A day program can be copied and attributed to other days:

- Select day chosen for setting copy and press a bullet will highlight the day chosen for setting duplication.
- Select the day settings will be copied to and press
- Instead of ,for a few seconds, will appear for copy confirmation.

- Select another day settings will be copied to

Select ESC and press multiple times in order to exit to main screen.

22 ALARMS

Possible alarms:
Phase lack of security input.
Temperature thresholds.
Value thresholds of 0-10 volts / 4-20 mA analog input
The board recalls 50 events ??!!
Alarm threshold configuration
Configuration of alarms sent by SMS
Configuration of telephne numbers sent by SMS

23 QUICK SETUP

Allows parameter reset to factory standard settings.
The generic default corresponds to values presented by this manual.
Choose the setup and hold the enter key until the electronic board reboots in order to enter the menu.