Zelio Control

Temperature controller
Quick start

04/2009

REG 24 ...

REG 48 ...

REG 96 ...

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SOMMAIRE

CHAPTER 1 INTRODUCTION

Fonctioning:

The temperature control relays are equiped with a sensor input that permits to use multiple types of sensors (PT100 probe, thermocouple, current or voltage sensors depending the model), one or two process outputs (relay, solid state relay interface or analog) for heating, cooling or heating and cooling regulation based on PID algorithm.

The measured temperature and the setpoint can be displayed in °Celsius or °Fahrenheit.

Advanced functions are embedded: Ramps (up to 16), hysteresis, fuzzy logic, auto tuning, soft start, alarms.

The temperature controllers can be setup using the front face interface or through a common software by a communication port and the integrated Modbus.

This communication port provides intergartion capability in an itelligente architecture supervised by Magelis terminal or controled by PLCs(Twido, M340 or Premium) to exchange setpoints, process values and alarms.

Application examples:

The temperature controllers Zélio control REG provide a solution for temperature control in the following applications:

- Ovens and furnaces,
- Extrusion lines,
- Plastic and rubber presses,
- thermo-forming,
- Production of synthetic fibres an polymerisation,
- Food and drink processing lines,
- Moulding presses,
- Environmental chambers, overhead furnaces and test benches,
- UV &laser technologies,
- Cabin of painting,
- Cold rooms,
- Horticultural and livestock farms,
- Maintening the temperature of a colour bath…

The product part number allows identification of the embedded functions:

24 controllers :

REG	24	P P	TP UJ	1	A	R L J	HU LU
Regulator	Size	PID	Input type	Output number	Without modbus	Output type	power supply

P = PID

Input type: **TP** = Thermocouples and PT100
UJ = Analog signal

Modbus function: **A** = no modbus available

Output type: **R** = relay
L = solid state relay interface
J = analog (4/20mA)

Power supply: **HU** = 110/220 VAC
LU = 24 V AC/DC

48/96 controllers :

REG	48 96	P	UN	1 2	L	R L J	HU LU
Regulator	Size	PID	Input type	Output number	Without modbus	Output type	Power supply

P = PID
Input type: **UN** = universal input thermocouple / PT100 / analog

Output type: **R** = relay
L = solid state relay interface
J = analog (4/20mA)

Modbus function: **L** = no modbus available

Power supply : **HU** = 110/220 VAC
LU = 24 V AC/DC

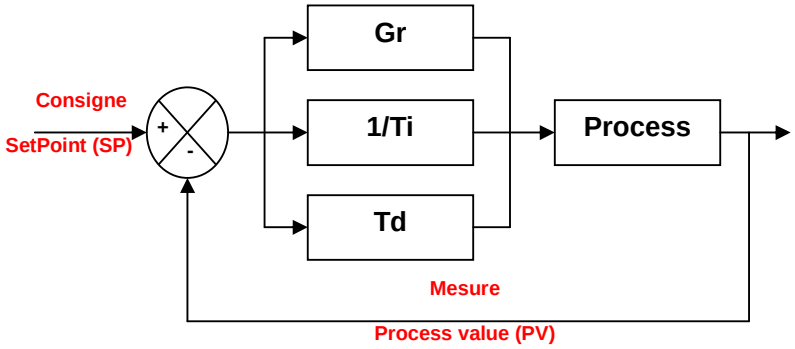
Note : When 2 outputs possible combination between 1 relay and 1 solid state relay interface or 1 solid state relay and one current (for detail see doc 24480-EN page 6)

CHAPTER 2 : TERMINOLOGY

PID : Proportionnel Intégral Dérivé :

The principle of the PID algorithm consists on 3 actions that are dependant to the difference between the setpoint (SV) and the measured process value (PV).

- A proportional action ne action proportionnelle, the error is multiplied by a gain GR
- A complete action, the error is integrated on an interval of time TI
- Derivated action, the error is derivated according to time TD



PID principle schematic

The parameters of the PID influence the answer of the system in the following way:

- When the proportional gain GR increases, the time of rise is shorter but there is a more important overshoot of the setpoint. The time of stabilization varies little and the static error is improved.
- When 1 / TI increase, the time of rise is shorter, but there is a more important overtaking of the setpoint. The time of stabilization stretches out but we assure a static no error.
- When TD increases, the time of rise changes little, but the overshoot decreases. The time of stabilization is better and there is no influence on the static error.

The use of 24/48/96 controllers is going to allow through a parameter setting of variables to appeal to automatic functions or manual regulations.

These variables are going to allow:

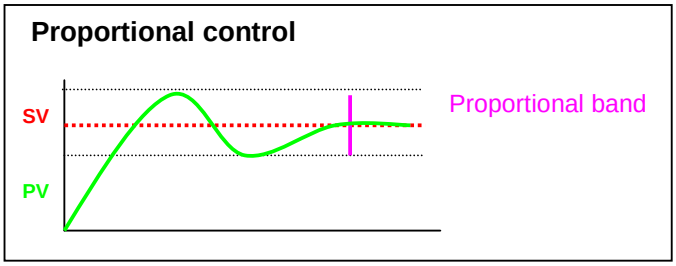
- To choose the type of sensor used (probe thermocouple or PT100, analogical sensor),
- To choose the type of output used according to the actuator(s) (relay, solid state relay, analogical),
- To choose the function of regulation (heating or cooling or heating and cooling),
- To reduce the time of establishment (the value of measure reaches as quickly as possible the setpoint),
- Avoid overshoot (fuzzy logic and PID2),
- To maintain the temperature very close to the setpoint (réduction of the hysteresis and the dead band),
- Avoid influence of perturbation,
- To activate alarms (high, low, delayed…),
- Setup ramps (up to 16 depending the model) to chain cycles of regulations,
- To have information of defects (overflowing measures, defect sensors),
- To lock or authorize the modification of the parameters from the front face of the product.

The outputs:

- **Relay** : Output type mostly used
- **Solid state relay interface**: Used to contrôle actuator with no noise or frequent switching.
- **Courant** : used to drive analog actuator such as speed drives

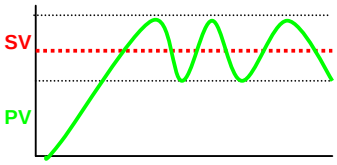
On and OFF control: Most simple algorithm, no anticipation of the setpoint, not precized, we notice a lot of oscillations.

Proportional control: The process output is proportional to the derivation from the. The proportional band allows overshoots anticipation.

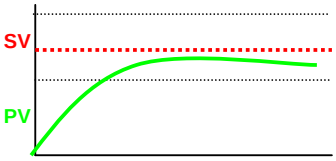


Regulation principle:

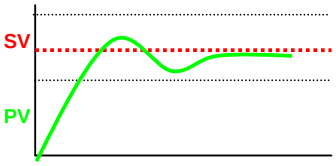
Proportional



P too low = oscillations

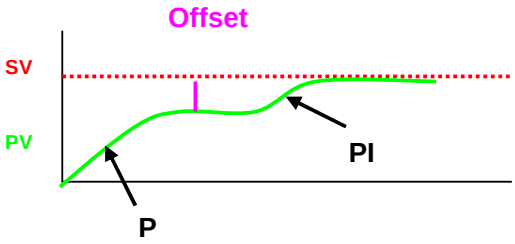


P too high = slow rise and important gap



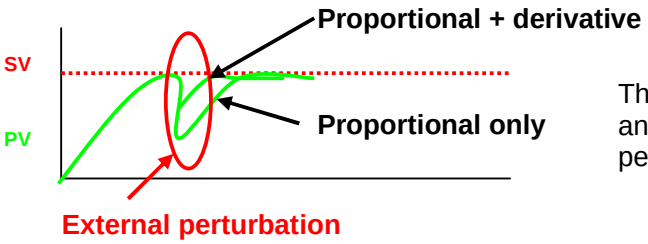
P correct = correct rise and minor gap

Intégrale



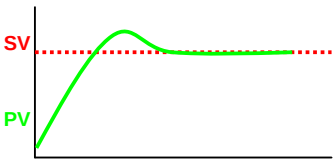
The integral allow catching up the setpoint when there is an offset with the process value.
In combination with the proportional, the integrale function reaches the setpoint.

Derivative



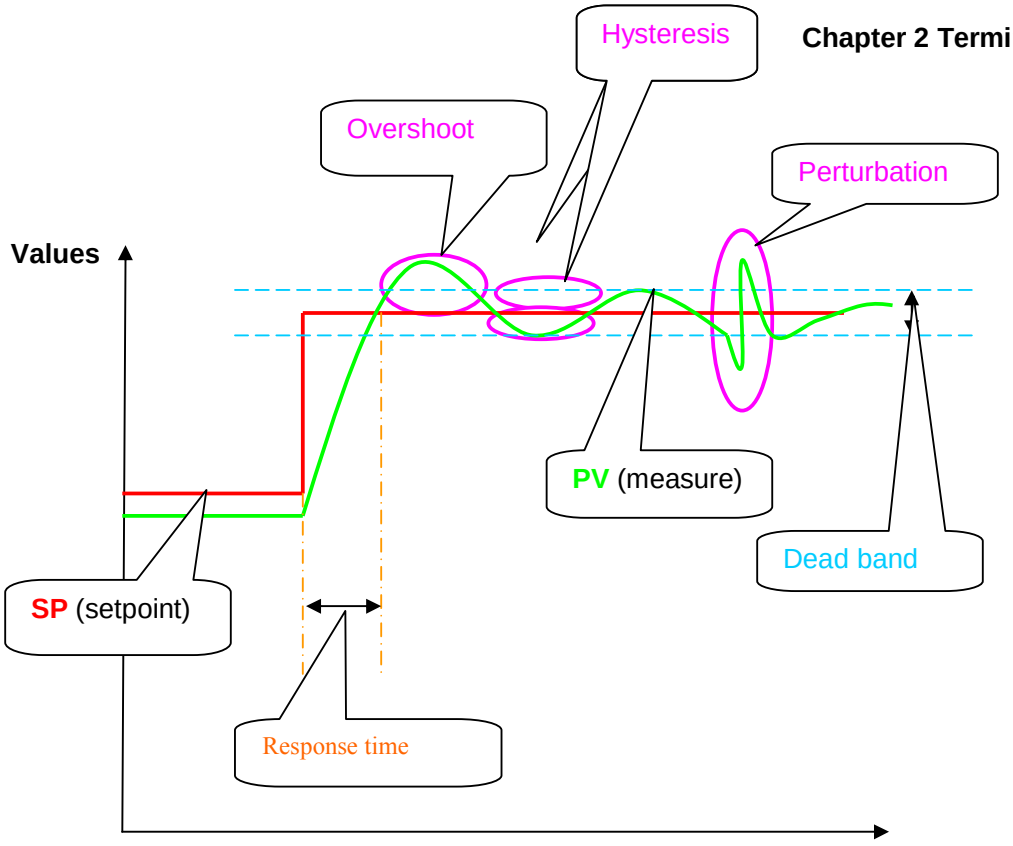
The derived control allows countering any distance created by an external perturbation.

PID

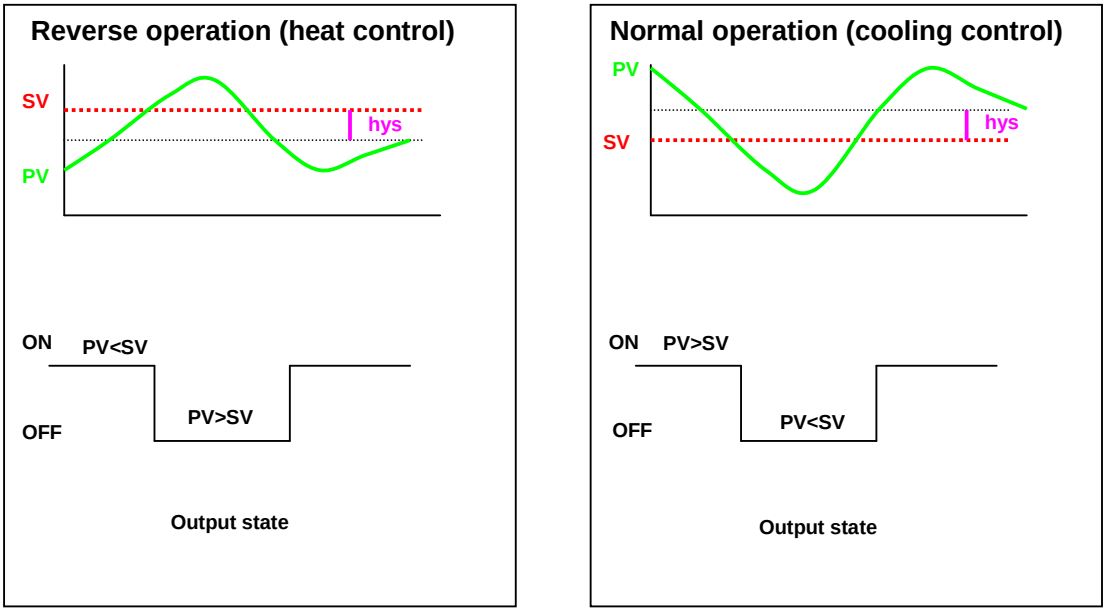


The combination of proportional, derivative and integrale optimized the regulation

Visualization of PID structure:



Visualization of PID structure



Choice of regulation type

CHAPTER 3: EXAMPLES OF INTEGRATED FUNCTIONS INTO THE CONTROLLERS

Auto tunning:

This function calculates automatically the proportional, derivative and integrale factors of the PID function. This calculation is done during 2 regulation cycles.

Fuzzy logic:

The fuzzy logic manages the command of the process in a range of 0 to 100% of the measure scale. This logic applies a command to the process to optimize the switching between heating and cooling outputs depending the setpoint and avoid overshoot.

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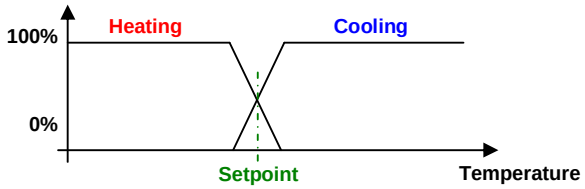


Fuzzy logic principle

Self control :

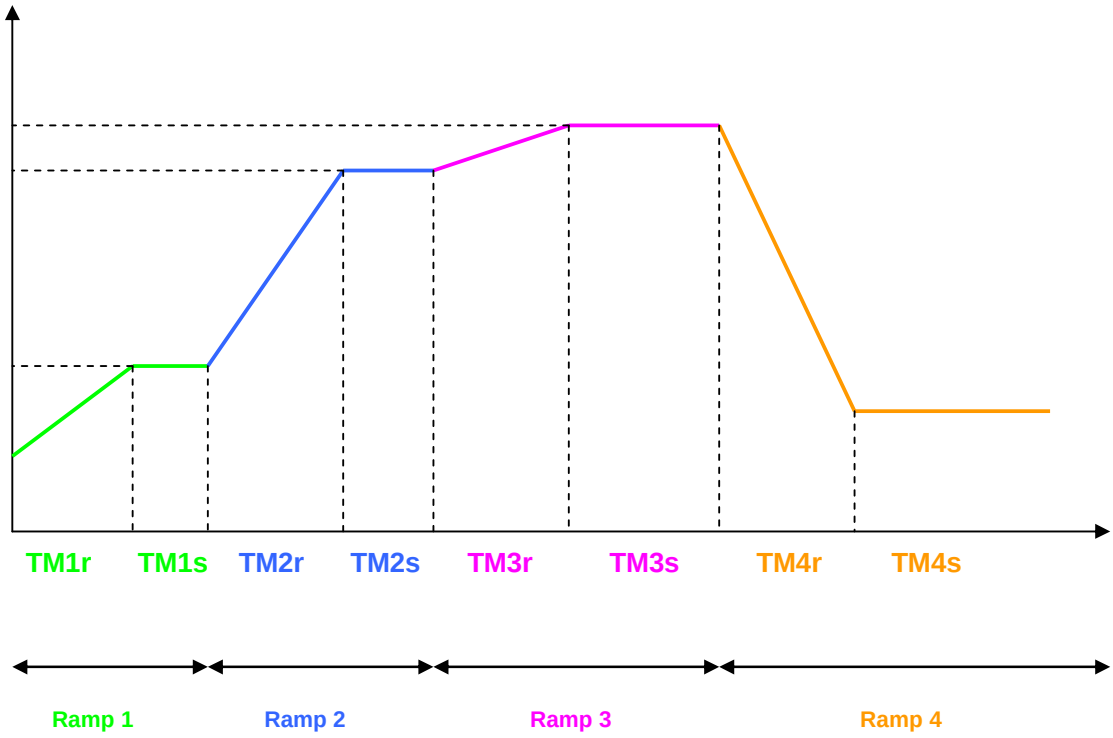
This function restarts the calculation of the PID parameters at each setpoint change or after a power on.

Remark: This command will generate temporarly a perturbation of the regulation close to the setpoint value. Some applications might be sensitive to this function.

Ramps:

This function allows a sequence of setpoints (up to 16 ramps for REG48 and REG96) during a certain period of time. For each setpoint, a response time and the duration of the level can be setup.
These times can be defined in hour and minutes or in minutes and seconds.

Example:



Pid 2 :

Choice of a PID that avoid overshoot during the regulation phase.

Soft start :

Moderate starting up, the time of establishment (the process value reaches the setpoint) is adjustable. This function can be used in the case of machines sensitive to the abrupt variations of temperature.

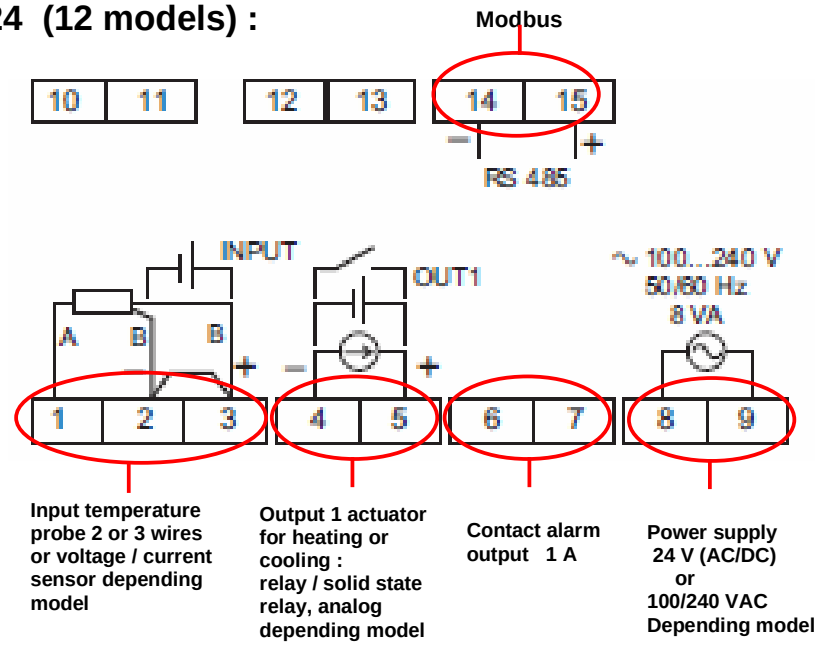
Alarms:

One to 3 alarms are available depending the models. Each alarm is based on an output relay (1 to 3A depending the model). Two more alarms are available through Modbus on REG96 and one on the REG48 models.

The alarms can be configured for a low or high level and can also be delayed.

CHAPTER 4 : WIRING AND SCHEMATICS :

REG 24 (12 models) :



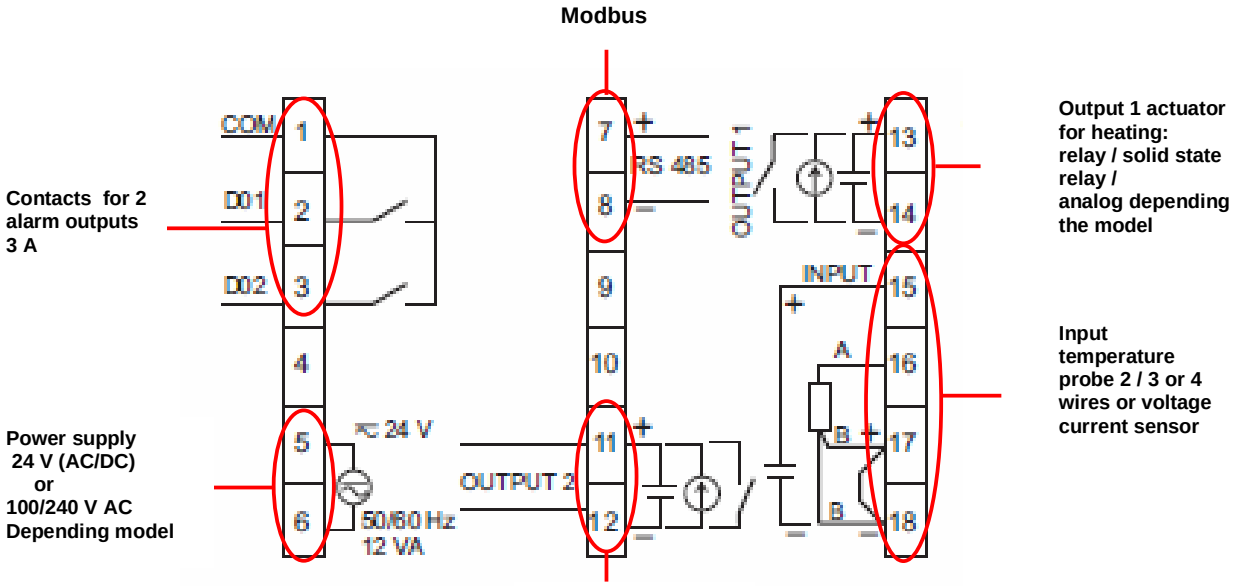
Input temperature probe 2 or 3 wires or voltage / current sensor depending model

Output 1 actuator for heating or cooling : relay / solid state relay, analog depending model

Contact alarm output 1 A

Power supply 24 V (AC/DC) or 100/240 VAC Depending model

REG 48 (14 models) :



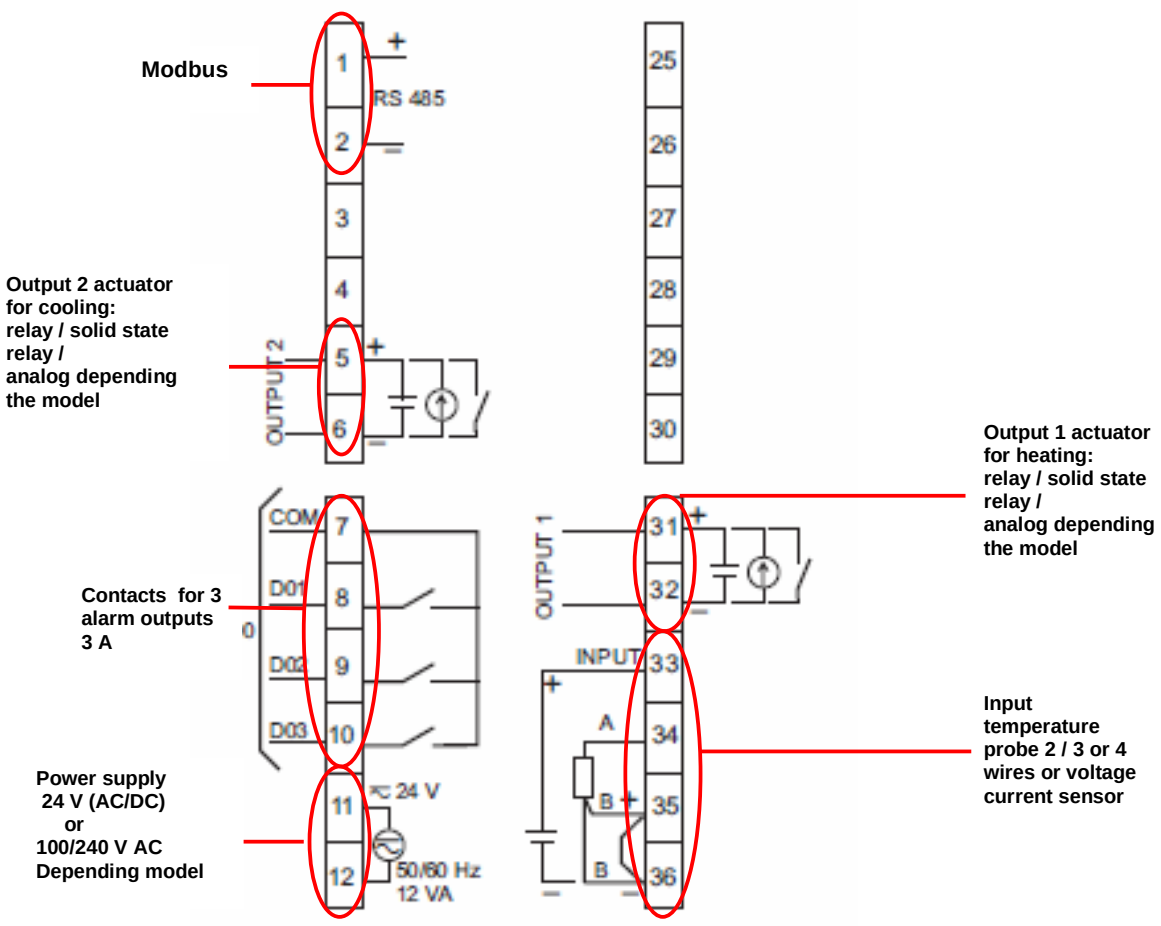
Contacts for 2 alarm outputs 3 A

Power supply 24 V (AC/DC) or 100/240 V AC Depending model

Output 1 actuator for heating: relay / solid state relay / analog depending the model

Input temperature probe 2 / 3 or 4 wires or voltage current sensor

Output 2 actuator for cooling: relay / solid state relay / analog depending the model



Note :

The alarms D4 and D5 are only available through Modbus
The output(s) type depends on the product (see page 6 of the document).

Remark:

The wiring of the solid sate relays or analog actuators and input probe must follow the wiring shematics, especially the polarity..

For the modbus connection avalability check carrefully the part number and the table described page 6.

The modbus connection is connected to the screw termials:
- **14/15** for REG 24
- **7/8** for REG 48
- **1 /2** for REG 96

CHAPTER 5: IMPLEMENTATION

Selection guide:

To choose the most adapted controller the characteristics that must be take into account are (functional analysis):

- The sensor type connected to the input (PT100, thermocouple, analog, current or voltage);
- The number and type of the outputs: need to manage one or 2 actuators for heating, cooling or heating and cooling regulation (relay or solid state relay interface or analog (proportional valve, speed drive) ;
- The number of alarms;
- The number of ramps;
- Operation mode (automatic or automatic and manual);
- **Modbus** communication available (need of multiple controllers, communication with a Magelis, a PLC such as TWIDO, M340 or Premium);

Advanced function easy to use and to setup embedded on controllers:
- hysteresis
- auto tuning
- fuzzy logic (see page 8)
- soft start (on REG48 and REG96)

	REG 24	REG 48	REG 96
Input type	-PT100 -Themocouple J,K,R,B,S,T,E,N,PLII -Voltage 1....5V -Current 4...20mA	-PT100 -Themocouple J,K,R,B,S,T,E,N,PLII -Voltage 0….5V,1....5V,0….10V, 2…10V, -Current 0...20mA, 4….20mA	-PT100 -Themocouple J,K,R,B,S,T,E,N,PLII -Voltage 0….5V,1....5V,0….10V, 2…10V, -Current 0...20mA, 4….20mA
Process output type	-SPDT Relay 220VAC, 30VAC/DC 3A -Solid state interface 24VDC, 20 mA, 850Ω - analog 4....20mA (600Ω maxi)	-SPST Relay 220VAC, 30VAC/DC 3A -Solid state interface 24VDC, 20 mA, 850Ω - analog 4....20mA (600Ω maxi) 0….5V, 1….5V, 0….10V (10KΩ mini)	
Number of process outputs	1relay ou 1 solid sate relay interface ou 1 analog current	1 relay ou 2 relays ou 1 solide state relay interface ou 1 relay + 1 solid state relay interface ou 1 analog current ou 1 solid state relay interface + 1 analog current	
Alarms	1 physical or 1Modbus	2 + 1Modbus	3 + 2 Modbus
Sampling time	500ms	200ms	200ms
Precision	0,5% FS	0,3% FS	
Number of ramps	8	16	
Hysteresis	OUI		
PID	OUI		
PID2	NON	OUI	
Auto tuning	OUI		
Fuzzy logic	Yes		
Soft start	NO	Yes	
Operating mode	AUTOMATIC	AUTOMATIC and MANUAL	
Modbus communication	NO if A letter in the part number	NO if L letter in the part number befor the number of output	

Front face description :

REG 24

1 **C1** : indicator showing output 1 ON
2 **SV** : set-point value indicator; on = SV, off=PV present value indicator, if parameter entry
3 **SEL** : selector button
4 Display of parameter value entered, 4 red digits, 10mm high
5 UP (increment) arrow.
6 DOWN (decrement) arrow
7 **AL1** : relay output alarm on REG24PTP1A•HU only.
8 **AL2** : Modbus alarm.

REG 48

1 **C1** : set-point value indicator.
2 **PV** : process value indicator
3 **C1** : indicator showing output 1 ON.
4 **C2** : indicator showing output 2 ON.
5 **D01** : Alarm 1 output ON
6 **D02** : Alarm 2 output ON
7 Display of process value, 4 red digits, 12 mm high
8 Display of parameter value entered, 4 green digits, 10mm high
9 UP (increment) arrow
10 DOWN (decrement) arrow.
11 **SEL** : selector button.
12 **A/M** : automatic / manual mode or configuration key.

REG 96

1 **SV** : set-point value indicator
2 **PV** : process value indicator
3 **C1** : indicator showing output 1 ON
4 **C2** : indicator showing output 2 ON
5 **D01** : alarm 1 output ON
6 **D02** : alarm 2 output ON
7 **D03** : alarm 3 output ON
8 Display of process value, 4 red digits, 12 mm high
9 Display of parameter value entered, 4 green digits, 10mm high
10 UP (increment) arrow
11 DOWN (decrement) arrow.
12 **SEL** : selector button.
13 **A/M** : automatic / manual mode or configuration key.

CHAPTER 6: EXAMPLE OF IMPLEMENTATION

The function to be done is the piloting of a system of heating. The actuator is managed by a relayand the temeprature probe is a PT100, range from 0 to 400 ℃elsius.
The temperature setpoint is 28℃. It can be adjust ed by the operator from 24 to 30℃.
One alarm must turn on when the temperature reaches 32℃ and a second alarm when the temperature reaches 36℃.
The controller power supply is 220VAC.

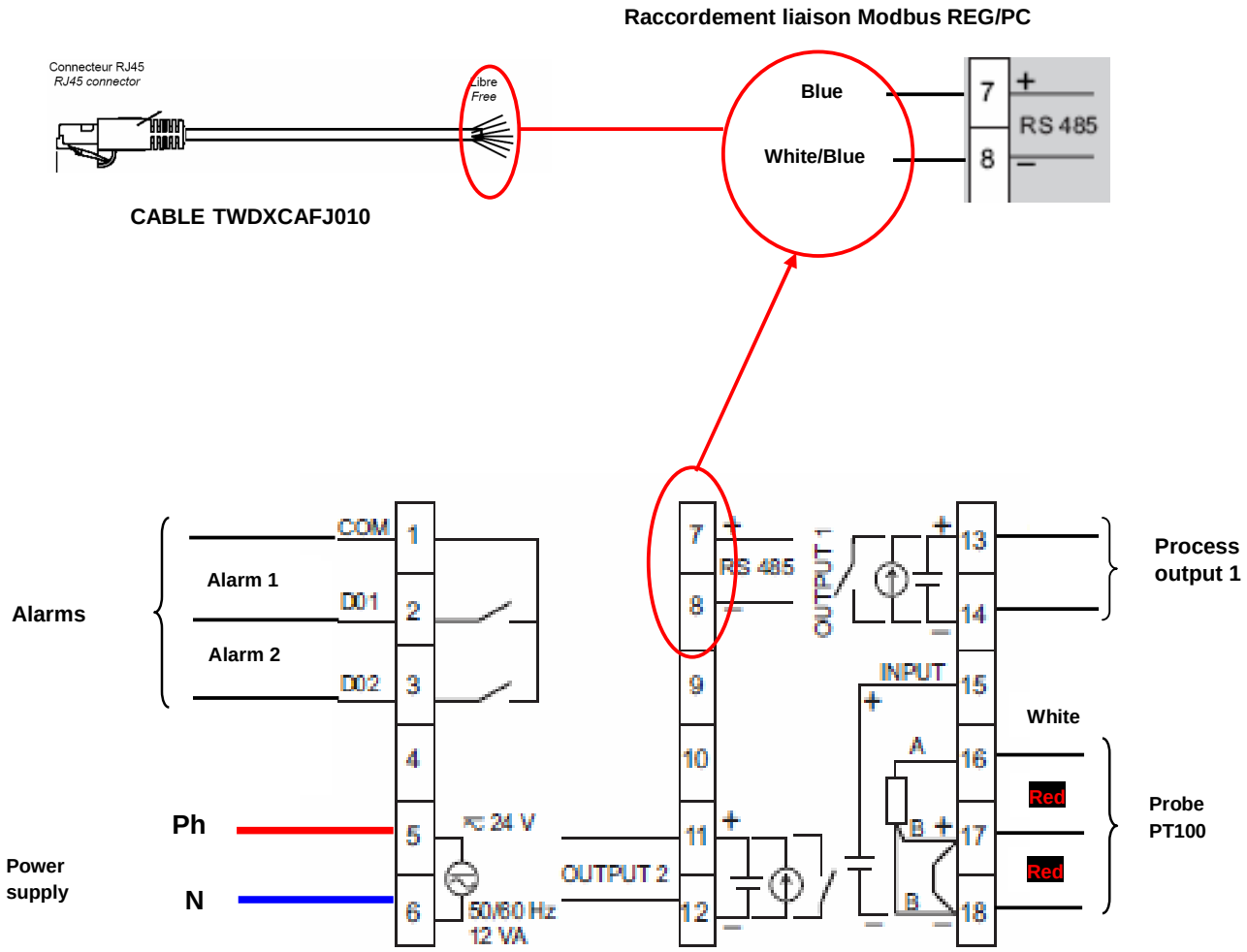
At first no particular function is needed, just a regulation closer of to the setpoint.

1 st step : Controller selection

The demand of two alarms imposes at least a regulator of type 48, Modbus communication to use the software ZelioControl soft.
The selected model is:

REG 48 PUN 1 R HU: 1 universal input, 1 relay output, 220VAC power supply,
Modbus communication to allow parameter setting using the software

2sd step : The cabling



Power on the controller,

Probe type setting (PT100)

From the main screen push on the SEL key until this screen appears

Ch 1 functions, for detail see the user guide

Push on the key until this screen appears

Ch 6 functions, for detail see the user guide

Push on SEL key until this screen appears

PvT choice of the probe type

Push on the SEL key, the green figure is blinking

PvT = 1 (PT100 probe)

Impulsion sur jusqu'à l'apparition du chiffre 1

Choice validation by pushing the SEL key

Setting of the PT100 probe range (0 to 400°C)

Push on ▼ key to get this screen

Setting of the minimum value for the PT100 probe Pvb = 0°C

Push on the SEL key, the green figure is blinking

Push on the ▼ key to get 0

Choice validation by pushing the SEL key

Setting of the maximum value for the PT100 probe PvF = 400°C

Push on ▼ key until this screen appears

Push on SEL key, the green figure is blinking

Push on ▲ key to reach 400

Choice validation by pushing the SEL key

Push on ▼ key to get this screen

Setting of the choosen decimal value (Pvd) (to display the tenth)

Push the SEL key, the green figure is blinking

Push the ▲ key to get the figure 1

Choice validation by pushing the key SEL

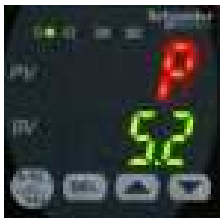
Back to the main screen by pushing A/M

Push the SEL key until this screen appears

Push the ▼ key until this screen appears

Ch 2 functions, for details see the user guide

Push the SEL key until this screen appears



Push the ▼ key until this screen appears

Regulation mode selection = heating on channel 1 (rEv)

see details of the choices page 8

Push the SEL key, the line **no- -** is blinking

One push on ▼ to get **rv --**

Choice validation by the SEL key

Back to the main screen by pushing A/M

Alarms 1 and 2 parameters setting

Push the SEL key key until this screen appears

Push the SEL key until this screen appears

Push the key ▼ key until this screen appears

Alarm 1 parameters setting at 32℃

Push the key SEL the green figure is blinking

Push the key ▲ until 32.0 value di sdisplayed

Choice validation by pushing the key SEL

One push on ▼ to adjust alarm 2

Alarm 2 setting at 38℃

Same operation as for alarm 1, adjust at 38.0℃

Validation of the choice by pushing the key SEL

Back to the main screen by pushing A/M

Parameter setting of the alarms on high overtaking (do1T)

SEL

▼

SEL

▼

Push the key SEL the green figure is blinking

1 push on the key ▲ to display the number 1

Validation using the key SEL

Back to the main screen by pushing A/M

4 Th step: Functional test

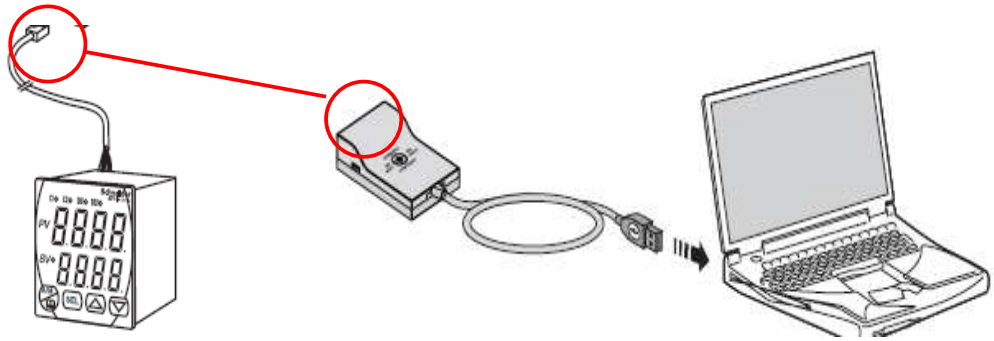
The controller has been configured as for the example. Real tests can be made.
(Status of the alarm 1 and 2 compare to the temperature displayed on the front face….)
Following the same method it's possible to modify through the front face the other parameters (Auto Tunning, PID2, etc…)

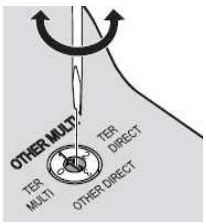
Use of the ZelioControl SOFT software

1 St step: install the software ZelioControl Soft (compatible with Windows XP and Vista)

2 Nd step: installation of the TSXCUSB485 driver

3 Rd step: connect the TSXUSB485 to your PC and the controller

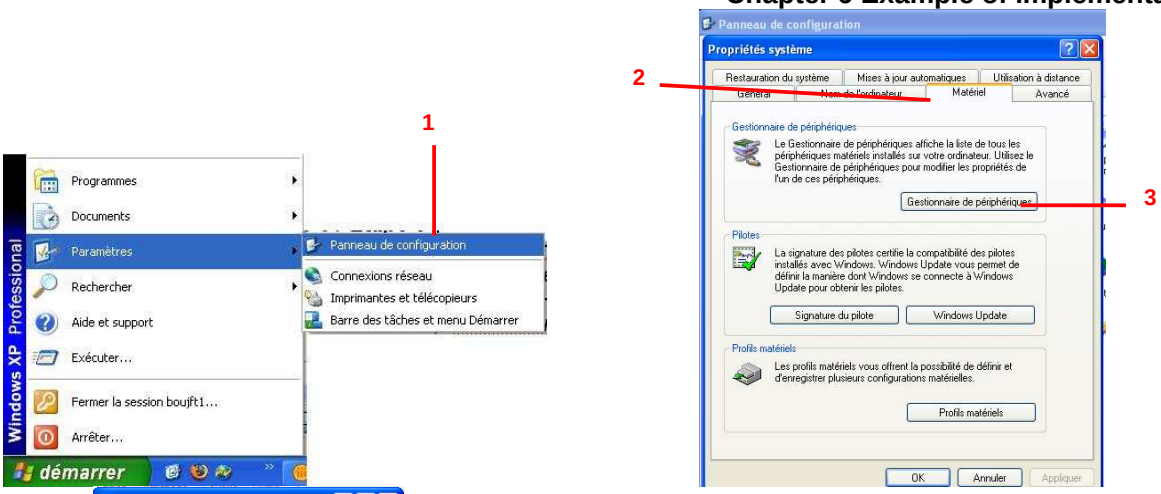


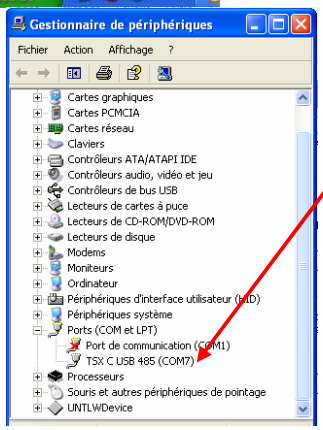


Check the rotary swith is positionned to OTHER MULTI

4 Th step : check the communication port parameters of the TSXCUSB485 driver

Open the Windows configuration panel (1), then “System”, then “Hardware” (2) and “peripheral management” (3):





Communication port assigned to the driver : in this case COM7

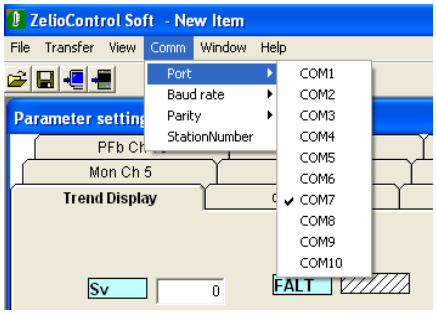
If the communication port number is higher than 10 you must reassign the communication port to a lower number.
Open the port property window, click on the advance button, in the field « Number » of the COM port, you must choose a number less or equal to 10. Validate the change using the “OK” button.

5 Th step: Discover the software ZelioControl Soft

After the installation of ZelioControl Soft done, start ZelioControl Soft :

Select the controllers 48/96

6 Th step: check the communication parameters of the TSXCUSB485 driver



Select the same communication port than for step 4

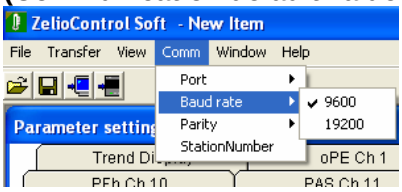
7 Th step: Communication parameters setting:

Baudrate, parity, station number:

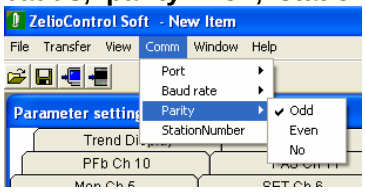
These parameters must be the same than the controller's one. You can check this value using the controller front face interface and the screen CH9:

In this example: baudrate 9600, parity odd, stantion number 5

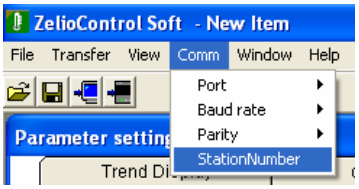
Communication setting using ZelioControl Soft
(Communication default values are : 19200 bauds, parity Even, station n°248)



Baudrate 9600 bds

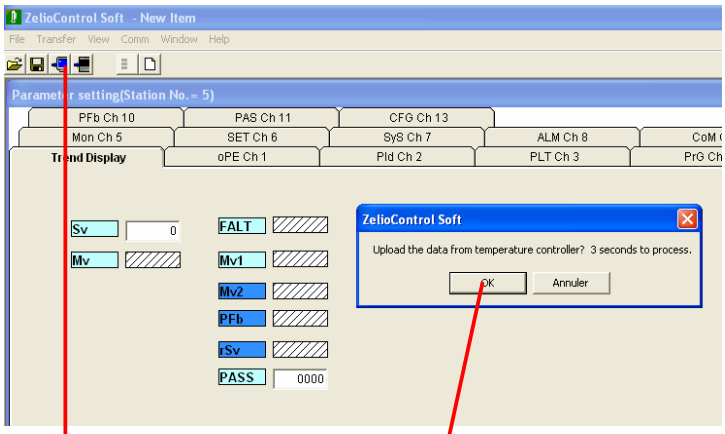


Parity odd



Station n°5

8 Th step: Connection to the régulator and application Upload

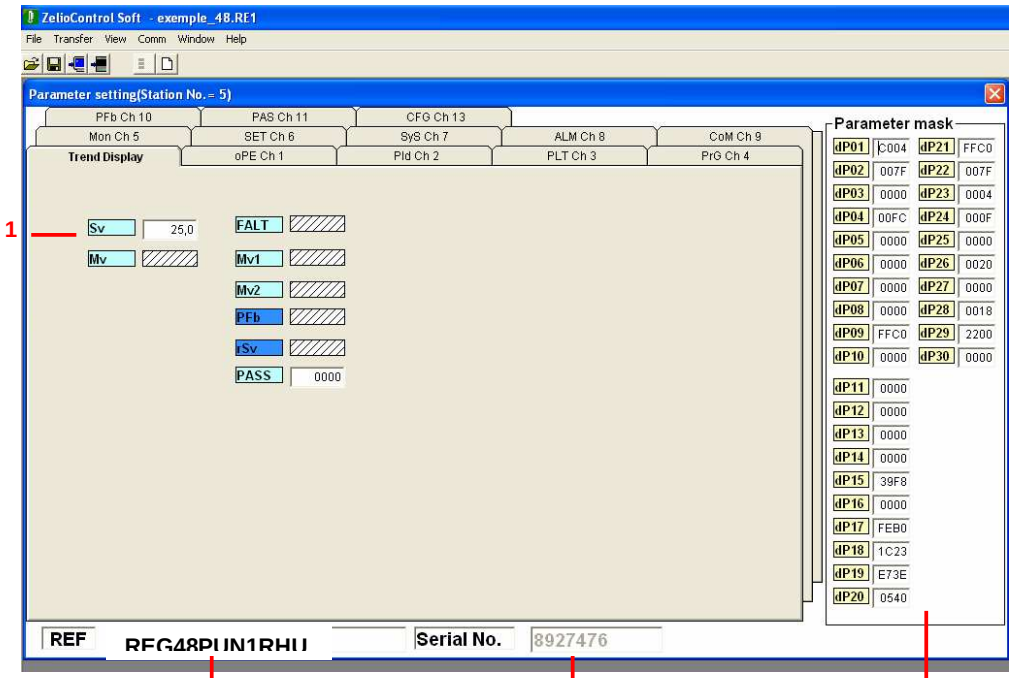


1 **Upload choice** 2 **Confirmation**

Important :
Before exit of ZelioControl Soft, don't forget to save your application.
The software closes without an automatic save of the file. (see page 36)

9 Th step: Application display

ZelioControl Soft principal screen



Controller identification

Serial Number

1 **Sv (setpoint) = 25,0**

2 **Hidden parameters for details see user guide**

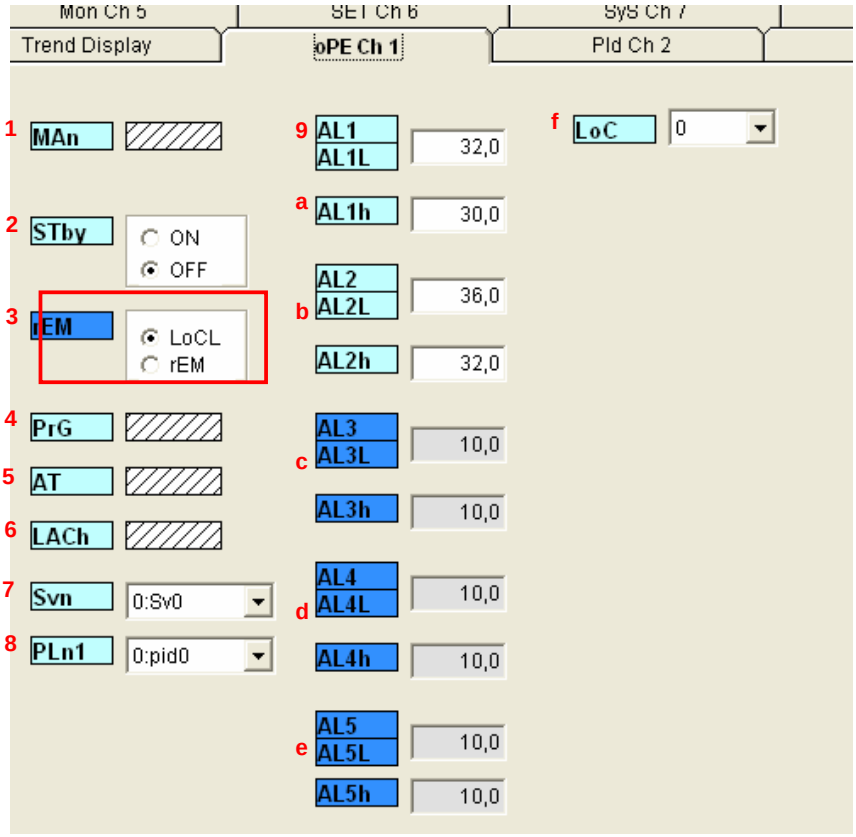
Visible parameter on the product

Hidden parameter on the product (Settable through the software)

No display through ZelioControl Soft

CHAPITRE 7: ZelioControl SOFT software

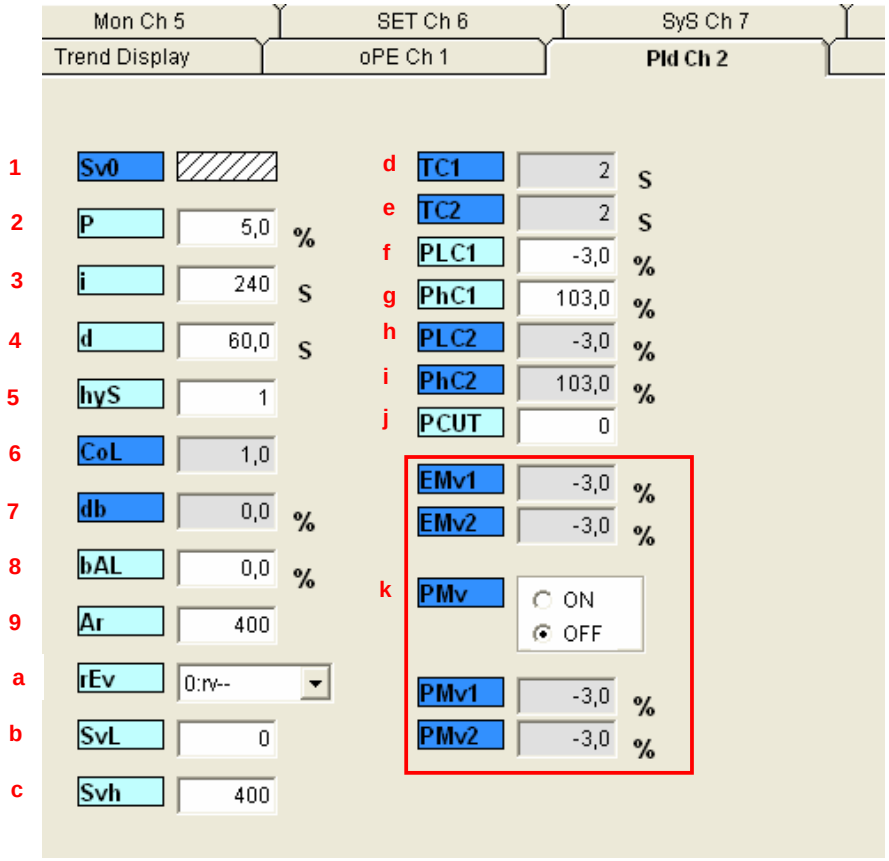
ZelioControl Soft screen - oPE CH1



Operations :
1 Man switches to manual mode
2 Stby Control RUN/STANDBY
3 NOT USED
4 PrG Ramp soak operation command (Off/Run/hold)
5 AT Auto Tuning Command (Off/ON/Low)
6 LACh Output alarm retain
7 Svn Preselection setpoint (0:Sv0 default value)
8 PLn1 Preselection PID (0:pid0 default value)
9 AL1 AL1L Alarm 1 low limit (example : 32℃)
a AL1h Alarm 1 high limit
b AL2 AL2L Alarm 2 low limit (example : 36℃)
AL2h Alarm 2 high limit
c AL3 AL3L Alarm 3 low limit
AL3h Alarm 3 high limit
d AL4 AL4L Alarm 4 low limit
AL4h Alarm 4 high limit
e AL5 AL5L Alarm 5 low limit
AL5h Alarm 5 high limit
f LoC Front face keys locked

Note : the REG48 includes 2 alarms, the REG96 3 alarms. The alarms 4 and 5 are acsessible through Modbus only
Note : if auto tuning then the setting of P/I/D/hys/bal/ar is automatic

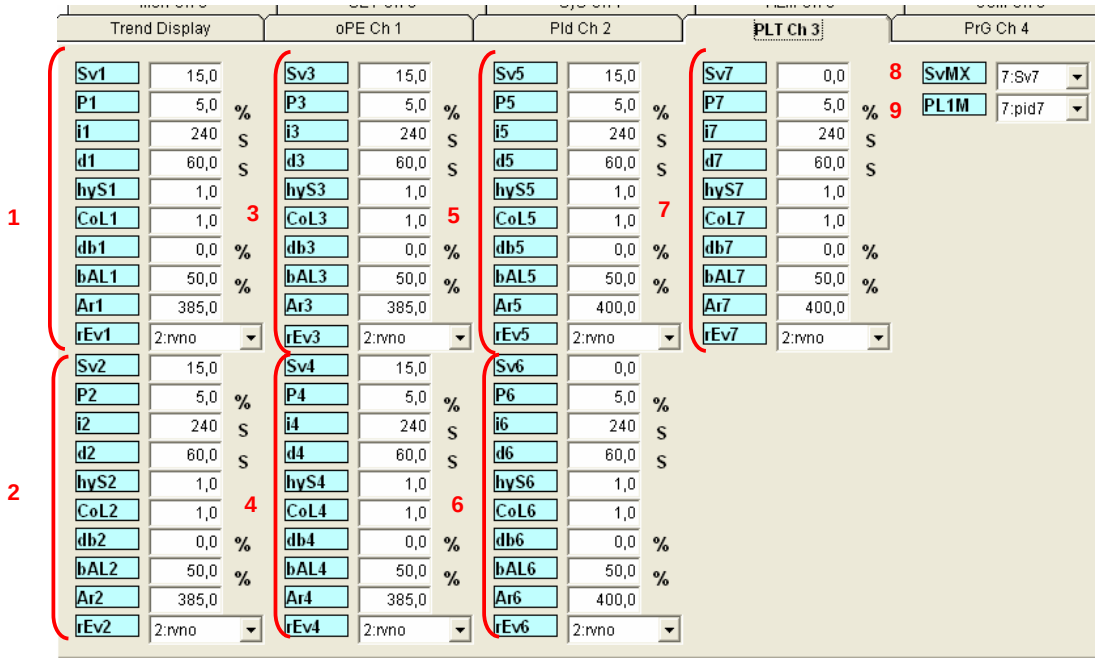
ZelioControl SOFT screen PID CH2



PID parameters:
1 Sv0 Setpoint
2 P proportional factor
3 i integrale factor
4 d derivation factor
5 hyS hysteresis (0 to 50% FS)
6 CoL cooling proportional band
7 db dead band
8 bAL output convergence value
9 Ar anti reset windup – ovoid overshoot if PID inactive
a rEv normal/reverse – selection type (example : rEv - see page 8)
b SvL SV low limit - (example : 0℃)
c Svh SV high limit - (example: 400℃)
d TC1 OUT 1 proportionnal cycle (if solid state interface type : max frequency swithing)
e TC2 OUT 1 proportionnal cycle (if solid state interface type : max frequency switching)
f PLC1 OUT 1 lower limit - (if analog)
g PhC1 OUT 1 upper limit - (if analog)
h PLC2 OUT 2 lower limit - (if analog)
i PhC2 OUT 2 upper limit - (if analog)
i PCUT Select ouput limiter type - (PLC1/2 – PHC1/2)
K NOT USED

Remind: if auto tuning then the setting of P/I/D/hys/bal/ar is automatic

ZelioControl Soft screen - PLT CH3

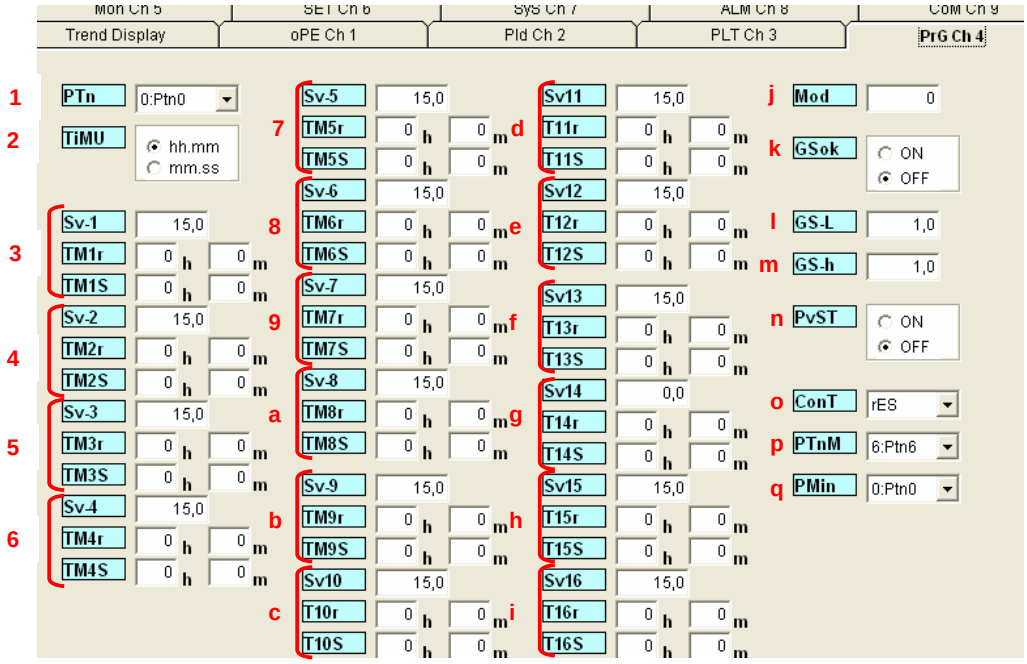


Setpoints and PID settings:

1 Sv1 setpoint 1
- **P1** Proportional 1
- **i1** Integrale 1
- **d1** Derivative 1
- **hyS1** hysteresis 1
- **CoL1** Cooling proportional band 1
- **db1** dead band 1
- **bAL1** output convergence 1
- **Ar1** anti reset windup 1
- **rEv1** Normal/reverse function selection

2 Same for PID 2
3 Same for PID 3
4 Same for PID 4
5 Same for PID 5
6 Same for PID 6
7 Same for PID 7
8 SvMX Selectable Sv numbers
9 PL1M Currently select PID

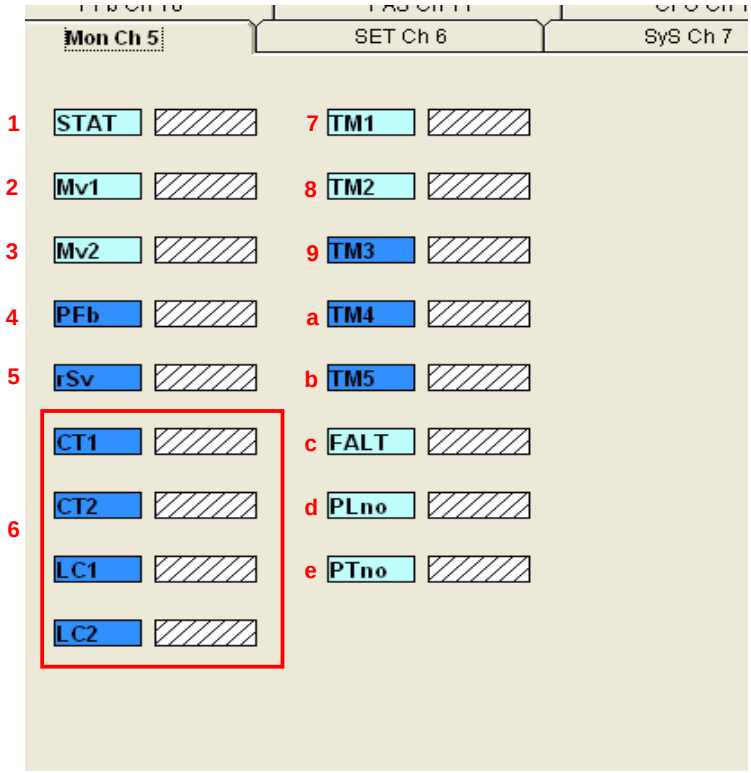
ZelioControl Soft screen - PRG CH4



Ramp parameters:

1 PTn ramp soak patern – ramp number selection
2 TiMU ramp soak time unit (hhmm or mmss)
3 Sv1 setpoint ramp 1
TM1r ramp soak 1 ramp time
TM1s ramp soak 1 seg soak
4 Same for ramp 2
5 Same for ramp 3
6 Same for ramp 4
7 Same for ramp 5
8 Same for ramp 6
9 Same for ramp 7
a Same for ramp 8
b Same for ramp 9
c Same for ramp 10
d Same for ramp 11
e Same for ramp 12
f Same for ramp 13
g Same for ramp 14
h Same for ramp 15
i Same for ramp 16
j MoD ramp soak mod (0 to 15)
k GsoK garanty soak (ON/OFF)
l GS-L garanty soak lower limit
m GS-h garanty soak upper limit
n PvST Consideration of the global nature of the programmed curve (OFF)
Consideration of the real value measured for starting up (ON)
o ConT 3 choices rES/CON/INI
p PTnM sets the max pattern selection
q Pmin sets the min pattern selection

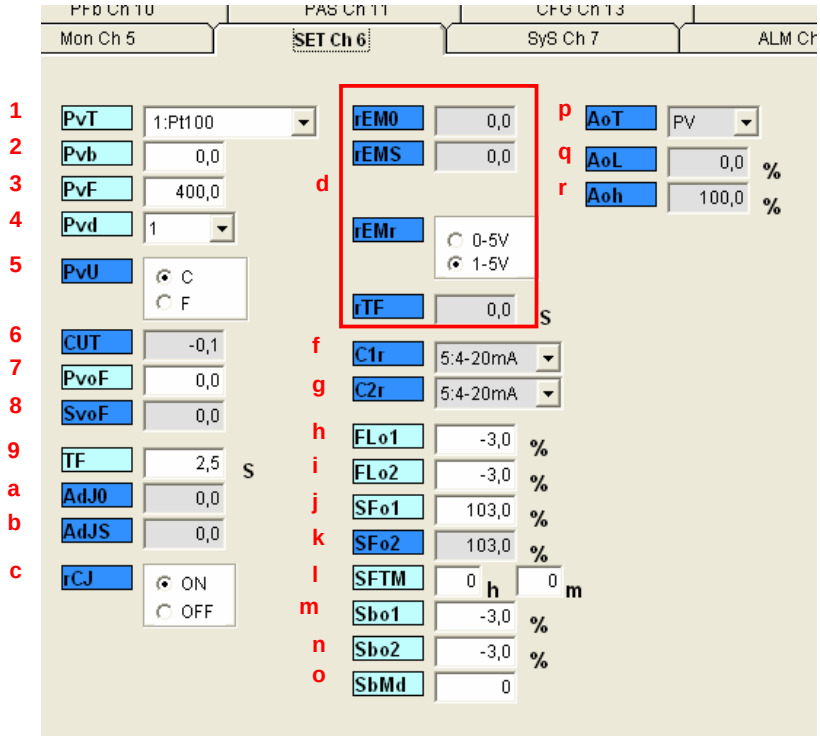
ZelioControl Soft screen - MON Ch5



Monitoring functions:
1 STAT ramp soaks progress
2 Mv1 output 1
3 Mv2 output 2
4 PFb PFB intput value display
5 rSv RSV input value display
6 NOT USED
7 TM1 remaining time on timer 1
8 TM2 remaining time on timer 2
9 TM3 remaining time on timer 3
a TM4 remaining time on timer 4
b TM5 remaining time on timer 5
c FALT Fault status error source display
d Plno PID in progress
e Ptno ramp in progress

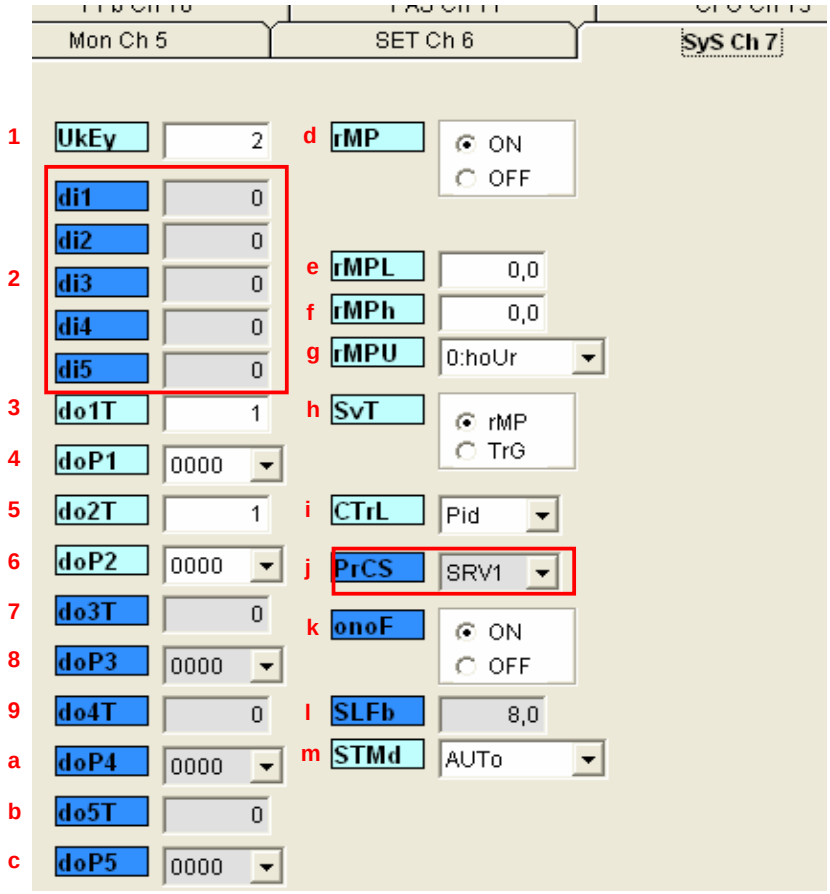
Note: Data used only with the Software. Updated only after the upload.

ZelioControl Soft screen – SET Ch6



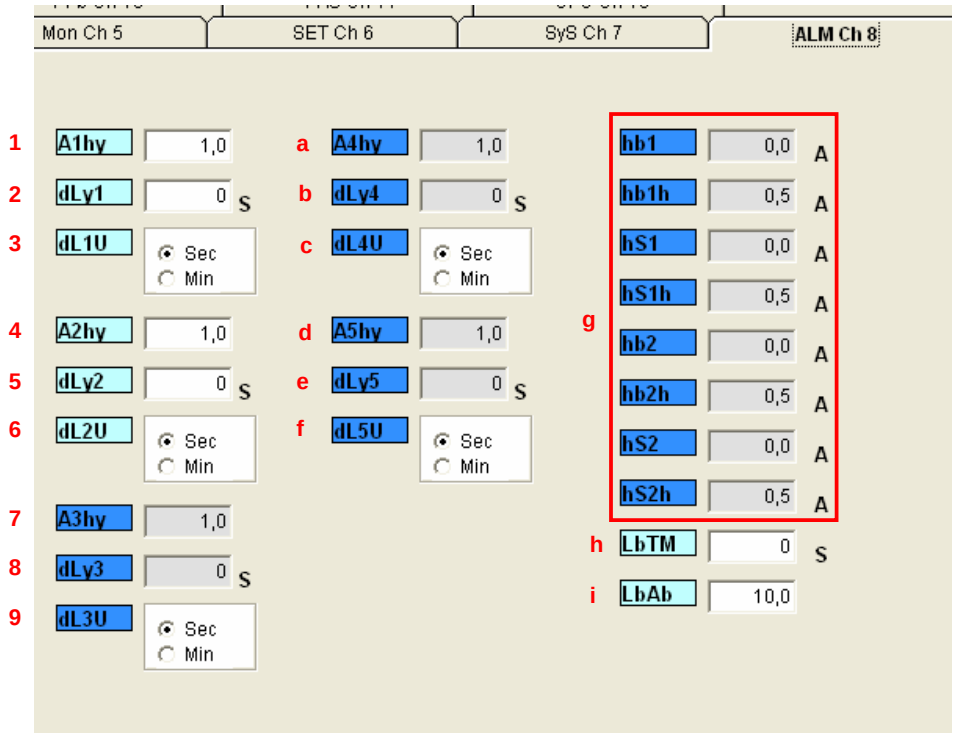
Setup :
1 PvT Sensor type selection (example: 1 PT100)
2 Pvb Pv input lower limit - (example: 0,0℃)
3 PvF Pv input upper limit - (example: 400,0℃)
4 Pvd decimal position - (example: 1)
5 PvU unit selection ℃elsius or ℉ahrenheit (example: ℃)
6 CUT
7 PvoF PV input shift offset
8 SvoF SV shift offset
9 TF PV input filter
a AdJO user zero adjustement
b AdJS user span adjustement
c rCJ Compensation weld for thermocouple probe
d NOT USED
f C1r OUT1 range (if OUT 1 is analog)
g C2r OUT2 range (if OUT 2 is analog)
h Flo1 OUTPUT 1 set value during fault
i Flo2 OUTPUT 2 set value during fault
j SFo1 Soft start OUT 1 set value (if Output 1 digital –3% =0 , 103% =1)
k SFo2 Soft start OUT 2 set value (if Output 2 digital –3% =0 , 103% =1)
l SFTM Soft start set time
m Sbo1 during standby OUT 1 set value
n Sbo2 during standby OUT 2 set value
o SbMd standby mode setting – alarms output state in standby mode
p AoT type off output retransmission (Modbus only)
q AoL AO lower limit scaling (Modbus only)
r Aoh AO upper limit scaling (Modbus only)

ZelioControl Soft screen – SyS Ch7



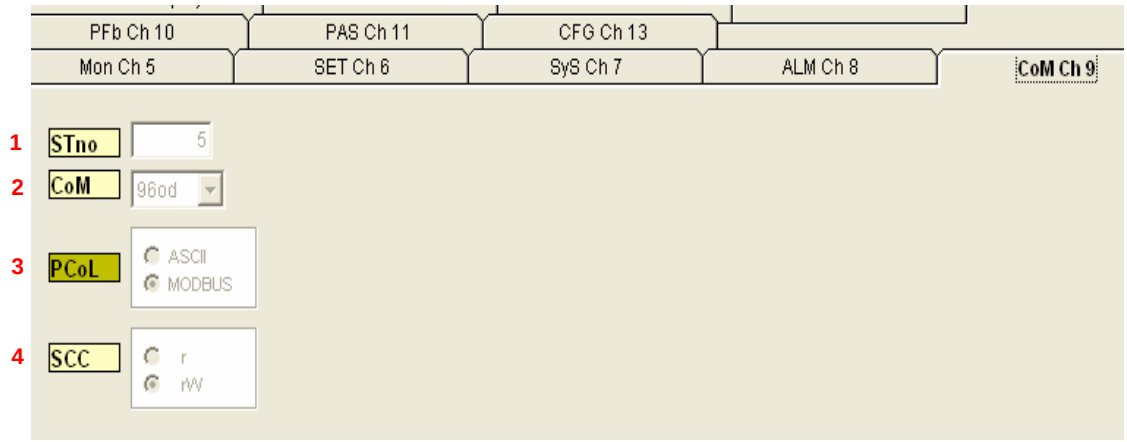
System parameters:
1 UkEy User key assignement setting
2 NOT USED
3 do1T DO1 output event setting - alarm 1 type configuration
4 doP1 DO1 option function setting - hold alarm 1
5 do2T DO2 output event setting - alarm 1 type configuration
6 doP2 DO2 option function setting - hold alarm 2
7 do3T DO3 output event setting - alarm 1 type configuration
8 doP3 DO3 option function setting - hold alarm 3
9 do4T DO4 output event setting - alarm 1 type configuration
a doP4 DO4 option function setting - hold alarm 4
b do5T DO5 output event setting - alarm 1 type configuration
c doP5 DO5 option function setting - hold alarm 5
d rMP ramp use on setpoint change
e rMPL ramp SV decline
f rMPh ramp SV incline
g rMPU ramp SV slipe time unit
h SvT ramp SV-SV display mode selection
i CTrL select PID/FUZZY/SELF function
j NOT USED
k onoF hysteresis mode setting
l SLFb pv stable range
m STMd start mode selection

ZelioControl Soft screen – ALM Ch8



Alarms setting:
1 A1hy alarm 1 hysteresis (0 to 50% FS)
2 dLy1 alarm 1 delay – alarm 1 depending the selected unit
3 dL1U alarm 1 time unit – alarm time unit (0=second – 1=minute)
4 A2hy alarm 2 hysteresis
5 dLy2 alarm 2 delay délai - alarm 2 depending the selected unit
6 dL2U alarm 2 time unit - alarm time unit (0=second – 1=minute)
7 A3hy alarm 3 hysteresis
8 dLy3 alarm 3 delay - alarm 3 depending the selected unit
9 dL3U alarm 3 time unit - alarm time unit (0=second – 1=minute)
a A4hy alarm 4 hysteresis
b dLy4 alarm 4 delay - alarm 4 depending the selected unit
c dL4U alarm 4 time unit - alarm time unit (0=second – 1=minute)
d A5hy alarm 5 hysteresis
e dLy5 alarm 5 delay - alarm 5 depending the selected unit
f dL5U alarm 5 time unit - alarm time unit (0=second – 1=minute)
g NOT USED
h NOT USED
i NOT USED

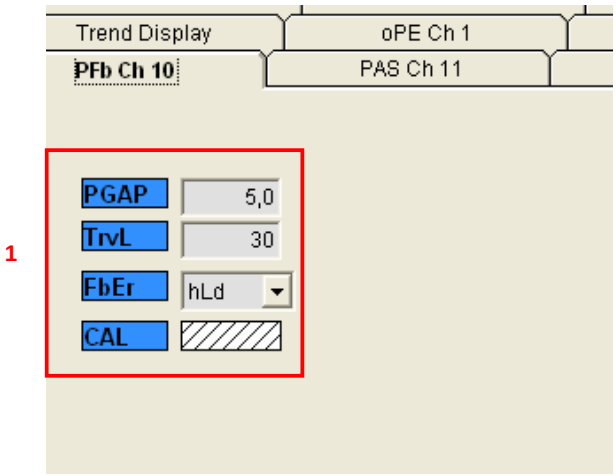
ZelioControl Soft screen - CoM CH9



Modbus communication parameters display :
1 Stno station number (5 in the example)
2 CoM baudrate and parity (96 = 9600 bauds, odd parity (as for the example)
3 PcoL Communication type (Modbus fixed value)
4 SCC read/write possible (up load/down load (fixed value)

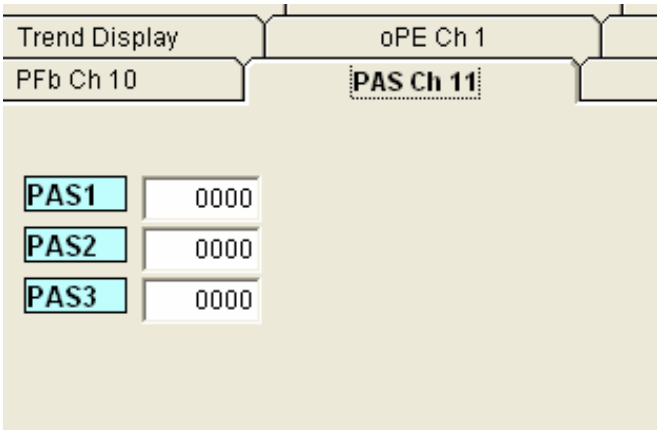
Note: For communication parameters setting see page 23

ZelioControl Soft screen - PFb CH10



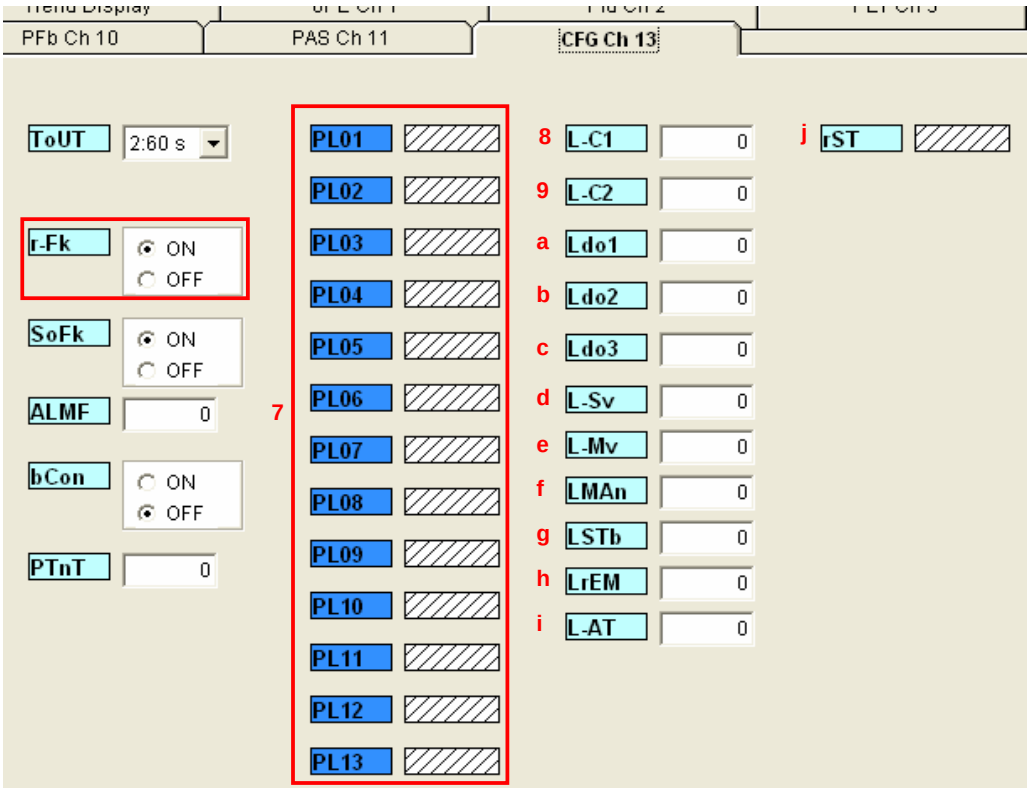
Feedback position:
1 NOT USED

ZelioControl Soft screen - PAS CH11



Passwords setting:
1 PAS1 Password 1 (default value = 0000)
2 PAS2 Password 2 (default value = 0000)
3 PAS3 Password 3 (default value = 0000)

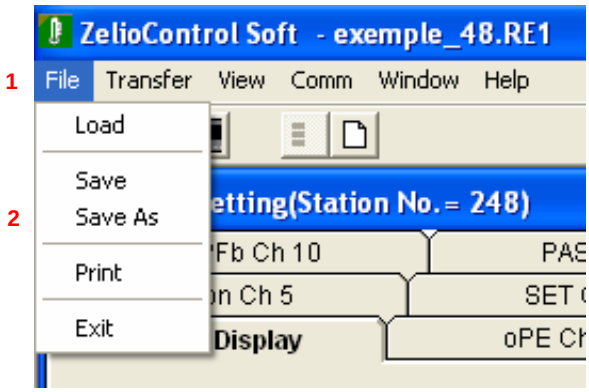
ZelioControl Soft screen - CFG CH13



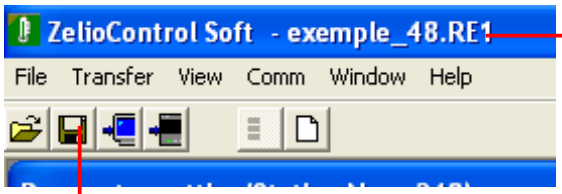
Environment parameters configuration:
1 ToUT Time delay to principal screen return after key action
2 NOT USED
3 SoFK
4 ALMF Blinking or fix state of front face alarm leds
5 bCon
6 PTnT Ramps execution order modification
7 NOT USED
8 L-C1 Led function selection
9 L-C2
a Ldo1
b Ldo2
c Ldo3
d L-Sv
e L-Mv
f LMAn
g LSTB
h LrEM
i L-AT
j rST controller reset

Application file saving under ZelioControl SOFT

Application file saving :



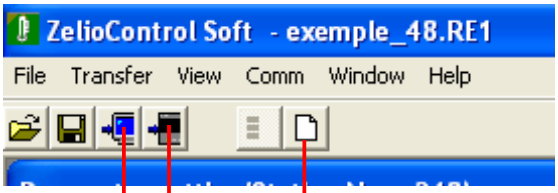
1 File selection
2 Save As and then indicates the path for the file



File name

Current file saving

Other functions :



Report function: all parameters display (printing possibility)

Download (Application transfert from PC to controller using Modbus)

Upload (Application tranfert from controller to PC using Modbus)