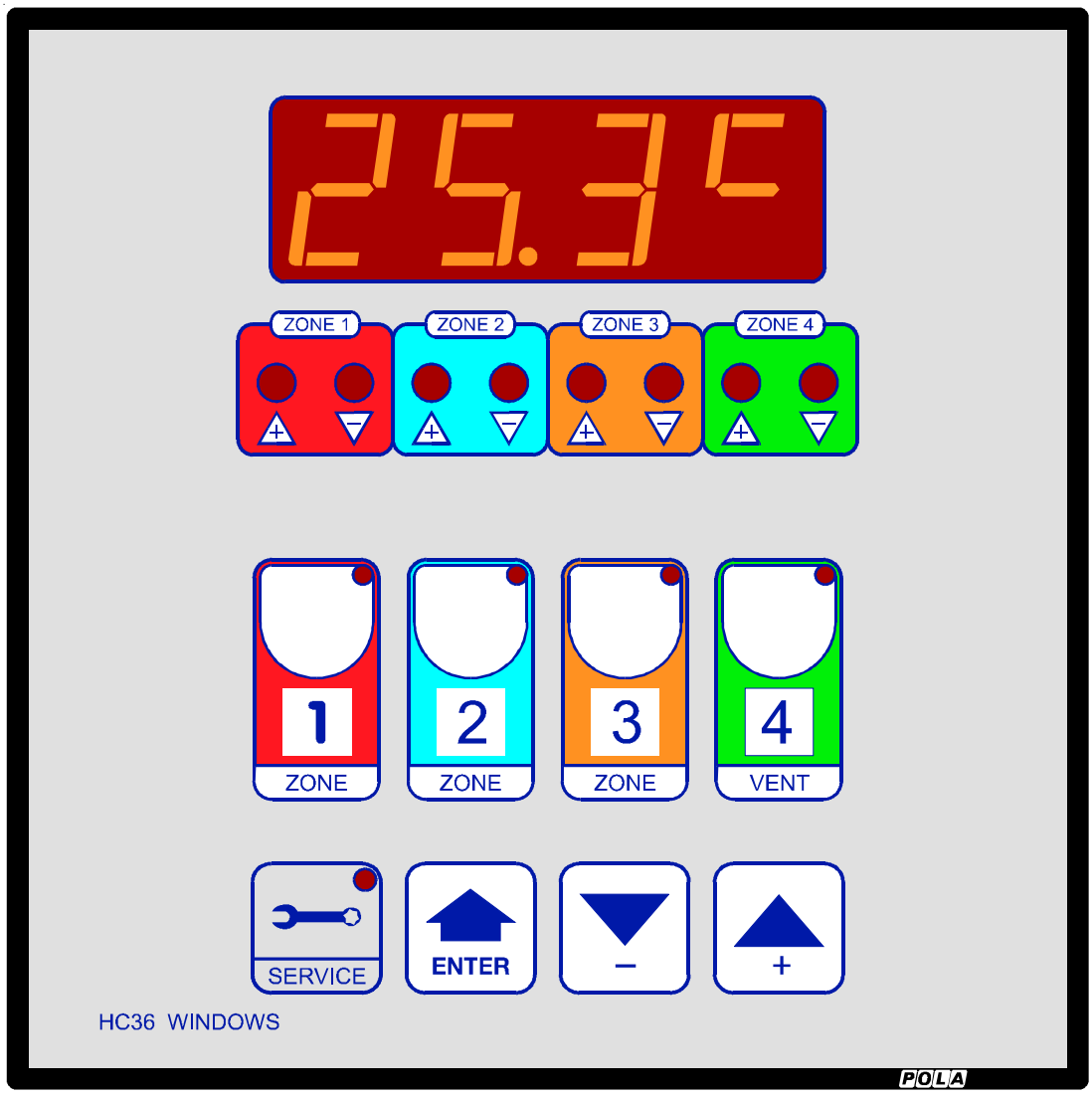
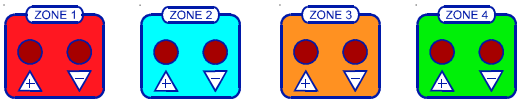
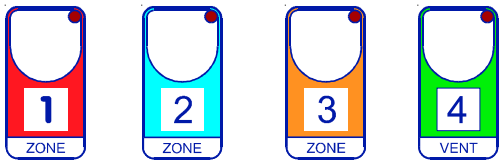

25.3C
ZONE 1
ZONE 2
ZONE 3
ZONE 4
1
ZONE
2
ZONE
3
ZONE
4
VENT
SERVICE
ENTER
–
+
HC36 WINDOWS
POLA

General programming rules

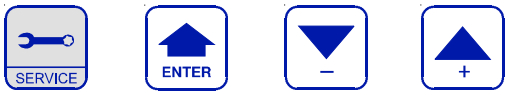
The leds located under the display show the status of the control for the actuators.



When pressing the key of the required zone (led is on) the display shows the readout of the related sensor.



The keys in the bottom row provides access to the various programming functions.



If, when pressing one of the above keys, this message is displayed, it indicates that the zone is disabled.

If, whilst trying to change a setting, the following message is displayed this indicates that a password is required to be able to acces the programming section. To input the password, quit the programming mode then press **SERVICE** for longer than 2 secs (***PASS*** message will be displayed) then input the password and confirm it by pressing **ENTER**. Once this has been completed the password will not be required to be re-entered for a period of 5 minutes.

If, when trying to change a setting, the following message is displayed this indicates that the setting is a "relative setting" and cannot be changed.
When the setting is linked to the Set of another Zone (see page **6**, ***ProG*** function), the setting of the specified zone can only be changed, the linked zone(s) will move accordingly. See example page. **9**.

The sensor has a faulty electrical connection (open circuit).

The sensor has a faulty electrical connection (short circuit).

ZONE 1 setting

Press **ZONE 1** then press the **ENTER** key*¹:
this message will be displayed, alternating with the value set for *ZONE 1 Temperature Set*.

Press ▲ or ▼ to change the value, pressing ENTER to confirm.

At this point this message will be displayed*², alternating with the value set for the *Minimum % opening flap.*

Press ▲ or ▼ to change the value, pressing ENTER to confirm.

At this point this message will be displayed*², alternating with the value set for the *Maximum % opening flap.*

Press ▲ or ▼ to change the value, pressing ENTER to confirm.

Then the program leaves the setting mode and the display shows the readout of *ZONE 1 Temperature probe*.

---

*¹ If ***no.op*** message is displayed, it means this zone is disabled.
*² If, when trying to change a setting, the ***rELA*** message is displayed it means that the setting is a "relative setting" and cannot be changed (see pag.**3**).
*³ These settings are displayed only if the zone has been setup to operate in proportional mode.

ZONE 2 setting

Press **ZONE 2** then press the **ENTER** key:
Settings can be made as described in ZONE 1 above.

ZONE 3 setting

Press **ZONE 3** then press the **ENTER** key:
Settings can be made as described in ZONE 1 above.

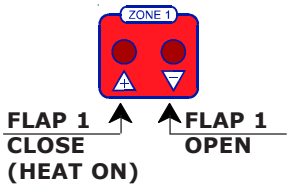
ZONE 4 setting

Press **ZONE 4** then press the **ENTER** key:
Settings can be made as described in ZONE 1 above.

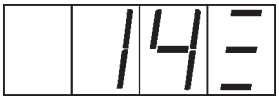
ZONE 1 viewing

ZONE 1 temperature probe readout
To display it press **ZONE 1** (key led is on).

Status of ZONE 1 relays output
When the + led is on
it means that **FLAP 1** is closing (or HEAT On if present).
When the - led is on
it means that **FLAP 1** is opening.

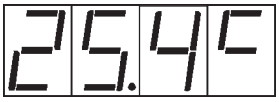


% Position FLAP1
(only if a 0-100% proportional mode is selected).
To display it press **FLAP 1** for longer than 2 seconds.



Minimum temperature recording
To show it press **ZONE 1** then press the **-** key

Maximum temperature recording
To show it press **ZONE 1** then press the **+** key



Min. & max.temperature values are stored in a permanent memory. To clear the memory press the **+** key for more than 3 seconds. The ***CLEA*** message will be displayed.

ZONE 2 viewing

ZONE 2 working temperature probe
To display it press **ZONE 2** (key led is on):
Readouts can be displayed as described in ZONE 1 above.

ZONE 3 viewing

ZONE 3 working temperature probe
To display it press **ZONE 3** (key led is on):
Readouts can be displayed as described in ZONE 1 above.

ZONE 4 viewing

ZONE 4 working temperature probe
To display it press **ZONE 4** (key led is on):
Readouts can be displayed as described in ZONE 1 above.

ZONE 1 Service

Press together **ZONE 1** and **SERVICE**:
this message will be displayed. → 

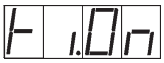
Press ENTER to go forward, press + or − to modify the value.


ZONE 1 operation mode:
=0 : Zone disabled.
=1 : Floating control.
=2 : Proportional feedback actioning *1.
=3 : On-Off heating control


° *Neutral band* (only when ***tYPE= 1***).


° *Closed modulation band* (only when ***tYPE= 1***).


° *Open modulation band* (only when ***tYPE= 1***).


Fixed system On time in seconds (only when ***tYPE= 1***).


Max system Off time in seconds (only when ***tYPE= 1***).


° *Proportional band* (only when ***tYPE= 2***).


Flap potentiometer resistance value in closed condition (only when ***tYPE= 2***) *2.


Flap potentiometer resistance value in open condition (only when ***tYPE= 2***) *2.


Setting mode:
=0 : Absolute setting (zone settings made individually).
=1 : Relative setting, is linked to the Set of another ZONE *3.


Relative temperature setting(only when ***ProG= 1***) *:*
You can set also negative value (see example page **9**).

*1 If you have set this type of flap control, see *Flap potentiometer recording* page **11**.

*2 These values can be manually entered (using the **+** or **-** key) or automatically set by carrying out the *Flap potentiometer recording* page **11**.

*3 For master zone's choice see page **10**, ***rELA*** function .

ZONE 2 Service

Press together **ZONE 2** and **SERVICE**:
this message will be displayed: →
Settings can be made as described in Zone 1 above

ZONE 3 Service

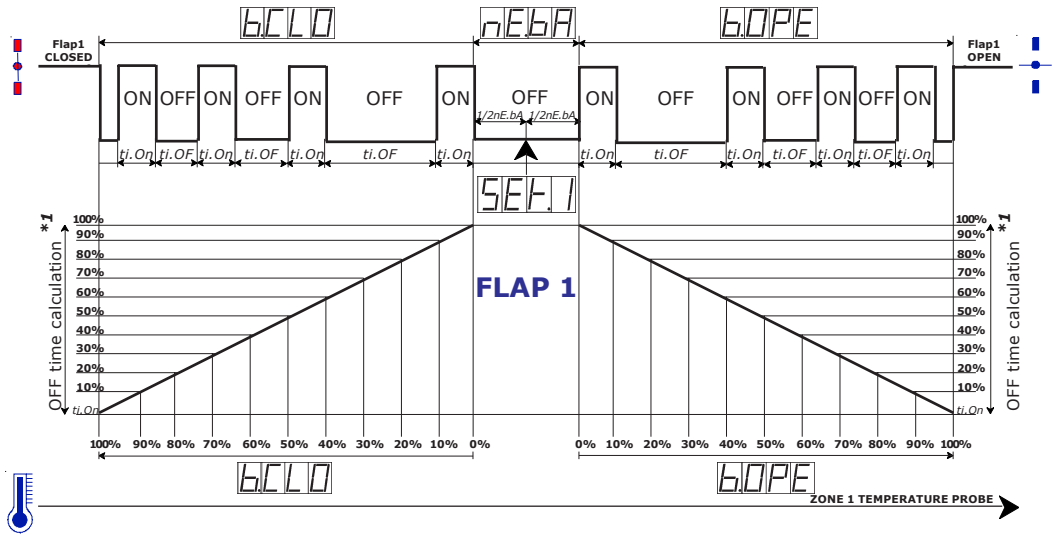
Press together **ZONE 3** and **SERVICE**:
this message will be displayed: →
Settings can be made as described in Zone 1 above

ZONE 4 Service

Press together **ZONE 4** and **SERVICE**:
this message will be displayed: →
Settings can be made as described in Zone 1 above

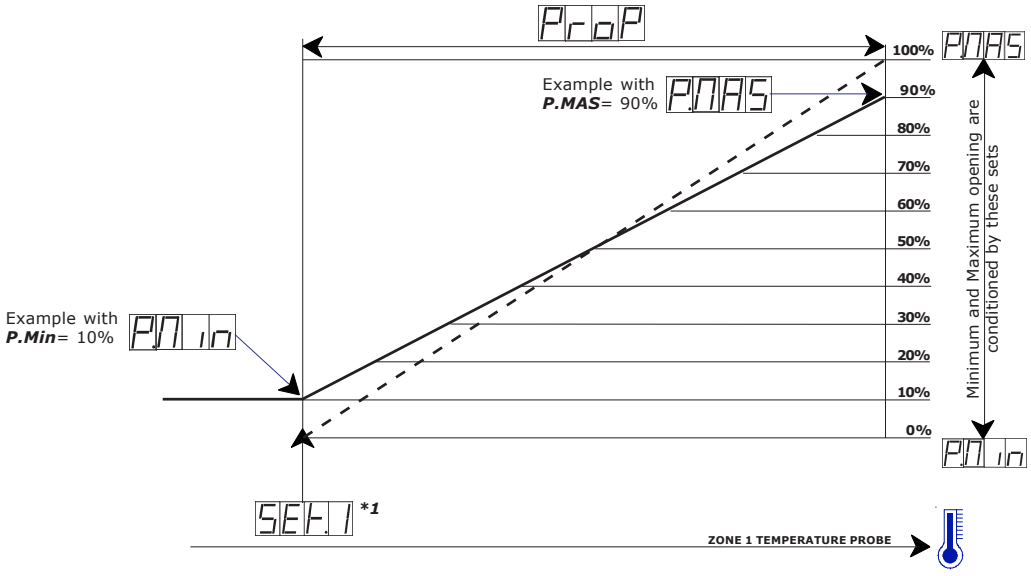
FLAP 1 operative diagram

Floating control (*tYPE=1*)



*1 When the system operates in Floating proportional mode, the ON working time is fixed *(**ti.On**)*, while the OFF time starts from a maximum setting *(**ti.OF**)* and is gradually reduced according to the cold and hot band width (***b.CLO*** and ***b.OPE***).
When the temperature is within the neutral band (***nE.bA***) the system is OFF.
Beyond the Closed band and the Open band (***b.CLO*** and ***b.OPE***) the system is always ON.
For example, in the middle of the Closed Band(***b.CLO***), OFF time is 50%.
The minimum OFF time is never below the ON time *(**ti.On**).*

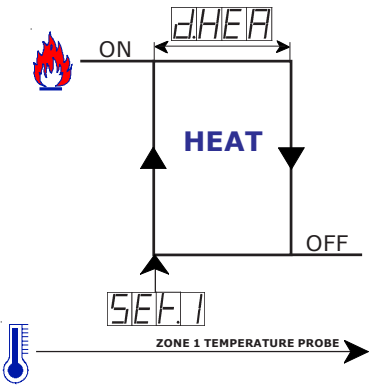
Proportional feedback control (*tYPE=2*)



*1 % flap position at temperature set is programmable (see page **10**, ***PErc*** function).

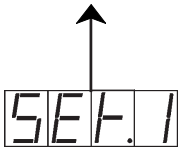
Note: Flap position is conditioned by the ***PC.nA*** value (Flap no-actioning % see page **10**).
If hunting occurs when searching for the position during flap operation (due to mechanical gearmotor hysteresis), raise the ***PC.nA*** setting value until it is eliminated.

Heating (*tYPE=3*)



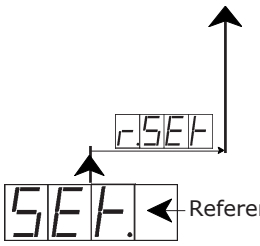
*1 To set differential heating see ***InST*** - ***d.HEA*** function, page **10** .

Absolute setting (*ProG=0*)

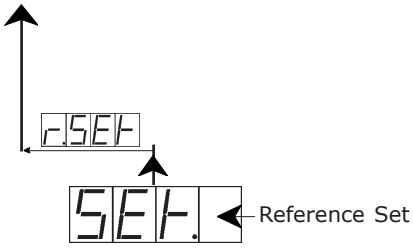


When ***ProG=0*** setting is absolute.
It depends on Set 1 for the selected zone

relative setting (*ProG=1* and *rELA=1* in Inst)



Setting is relative and it is referred to zone's set programmed see page **10**, ***rELA*** function.
r.SEt= positive
(i.e ***r.SEt= 1.0°***) setting is relative.
It adds up 1.0 °C to reference Set.



Setting is relative and it is referred to zone's set programmed see page **10**, ***rELA*** function.
r.SEt= negative
(i.e ***r.SEt= - 1.0°***) setting is relative.
It decreased up 1.0 °C from reference Set.

FLAP 2 operative diagram

They are the same as ZONE 1, but refer to ZONE 2.

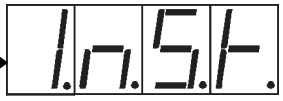
FLAP 3 operative diagram

They are the same as ZONE 1, but refer to ZONE 3.

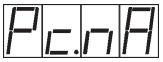
FLAP 4 operative diagram

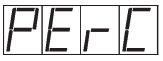
They are the same as ZONE 1, but refer to ZONE 4.

INST parameters

Press these 3 keys together for at least 1 second: this message will be displayed: 

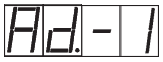
Press ENTER to go forward, press + or − to modify the value.

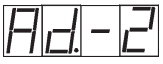
 *Flap no-actioning %* [1].

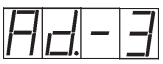
 *Flap positioning % at temperature Set* [1].

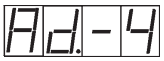
 *Master zone for relatives zones* [2].

 *Heating differential* [3].

 ° *Zone 1 temperature probe correction* [4].

 ° *Zone 2 temperature probe correction* [4].

 ° *Zone 3 temperature probe correction* [4].

 ° *Zone 4 temperature probe correction* [4].

 *Temperature representation*:
=1 : °C (0,1° resolution) → 
=2 : °F (0,1° resolution) → 

 *Password Settings* [5]:
= 0 : Password disabled.
= 1 : Partial password activation (Service-Install).
=-1 : Full Password activation (Setting-Service-Install).

At this point pressing **ENTER** will return to the beginning of the list's programming (message ***S.E.r.v.*** will be displayed).
You can press **SERVICE** at any time to exit and return to the run mode.

[1] Used only when ***tYPE=2*** in **ZONE-SERVICE**.

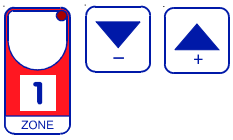
[2] Used only when ***ProG=1*** in **ZONE-SERVICE**.

[3] Used only when ***tYPE=3*** in **ZONE-SERVICE**.

[4] You can correct the readings on the various temperature sensor (**+** or **-**). *Attention: temperature probe has an accuracy of 0.2°C (typically is better than 0.1°C) to make an accurate adjustment of the sensor probes, a certified thermometer with a precision of 0.05°C is required.*

[5] When a password level other than ***0*** is chosen and when trying to access a setting protected by that level, the ***PASS*** message is displayed. The password is the same as the selected password level (***-1*** or ***1***). To enter the password when required see page 3.

Flap 1 potentiometer recording



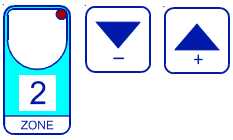
Press these 3 keys together for at least 1 second.

The program CLOSES the Flap 1 (lamp **-** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully closed, press **ENTER** to record the value.

At this point the program OPENS the Flap 1 (lamp **+** flashes) and *the potentiometer resistence value* is displayed.
When the flap has fully opened, press **ENTER** to record the value.

At this point the program returns automatically to the run mode via a re-boot.

Flap 2 potentiometer recording



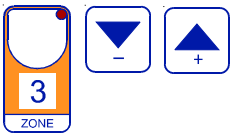
Press these 3 keys together for at least 1 second.

The program CLOSES the Flap 2 (lamp **-** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully closed, press **ENTER** to record the value.

At this point the program OPENS the Flap 2 (lamp **+** flashes) and *the potentiometer resistence value* is displayed.
When the flap has fully opened, press **ENTER** to record the value.

At this point the program returns automatically to the run mode via a re-boot.

Flap 3 potentiometer recording



Press these 3 keys together for at least 1 second.

The program CLOSES the Flap 3 (lamp **-** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully closed, press **ENTER** to record the value.

At this point the program OPENS the Flap 3 (lamp **+** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully opened, press **ENTER** to record the value.

At this point the program exits FLAP 3 recording and moves into:

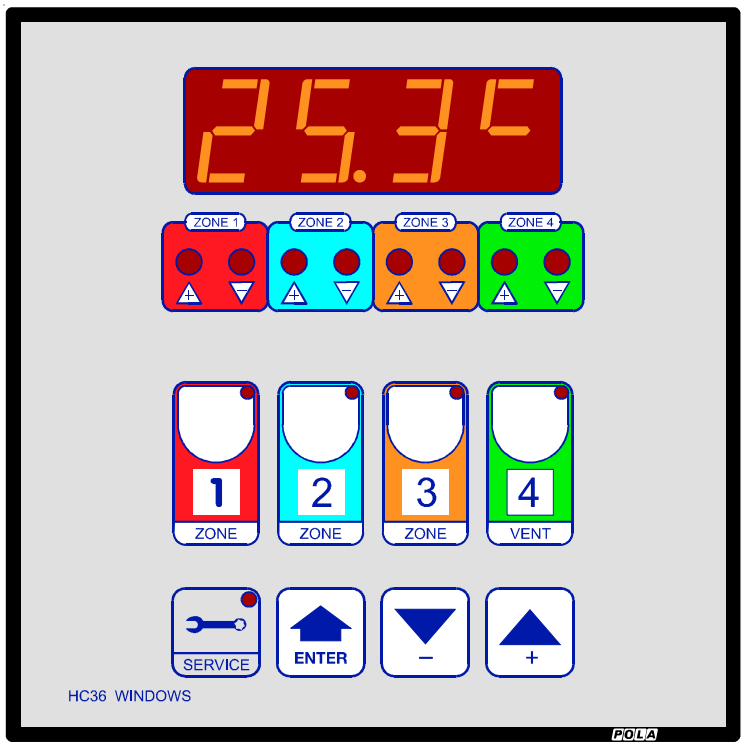
Flap 4 potentiometer recording

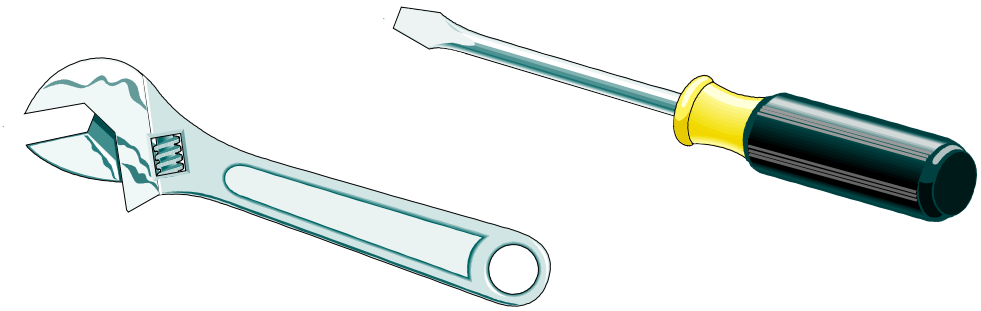
The program CLOSES the Flap 4 (lamp **-** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully closed, press **ENTER** to record the value.

At this point the program OPENS the Flap 4 (lamp **+** flashes) and *the potentiometer resistance value* is displayed.
When the flap has fully opened, press **ENTER** to record the value.

At this point the program returns automatically to the run mode via a re-boot.

INSTALLATION





Installation

The installation and the connection of the **HC36** must be made in strict compliance to the local laws and regulations in use in the country of installation and by fully qualified personnel only.
Read carefully the installation manual before performing the use and installation of the **HC36**.

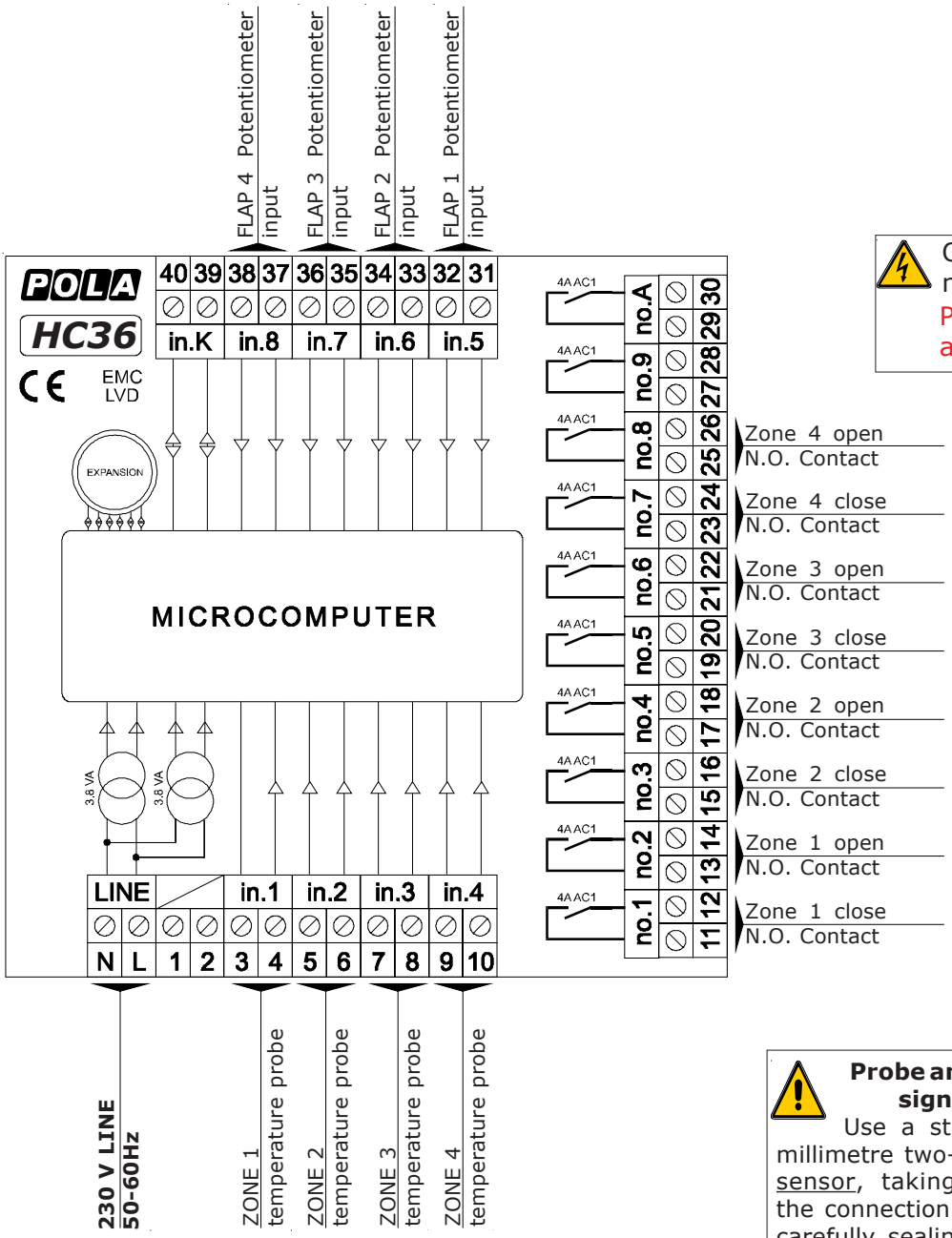
Check periodically the proper functioning of the HC36, otherwise breakdown might suddenly occur!

To prevent damage to the animals, always install an independent temperature alarm module and check it frequently.

POLA® srl supplies the ventilation system control, not the ventilation system itself.
We advise to include power failure automatic devices which can prevent damages to the animals in case of malfunctioning of the HC36, sensing probes and peripherals (emergency windows, emergency power generators, etc.).

Keep voltage off before making any operation on the system.
Always install a system main switch.

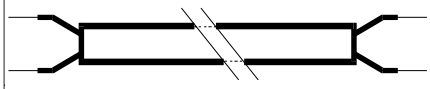
Wiring diagrams



Output contacts: max 2AMP.AC1. Protect with adequate fuse

Probe and Potentiometer signal connection

Use a standard 0.5-square millimetre two-pole wire for each sensor, taking great care over the connection, by insulating and carefully sealing the joints.



Don't use single core wire or multi-core cables for the connection of multiple sensors!

Testing connection

Manual procedure to test the Outputs.
This procedure allows the output relays to work in manual mode in order to test the electric board.
This procedure is recommended for testing purposes only.
Do not use it to operate the system manually !

Press **ZONE 4 - +** keys together for at least one second: ***HAnd*** message will be displayed (release now keys).

Press + or − until the display shows the number of the control to operate (from table below).

Press ENTER to activate the output: pressing + again to increase the relay number, the previous relay is switched off.

Press **ZONE 4** key to exit and return to the run mode.

01 = ZONE 1 closing relay (Heat)
02 = ZONE 1 opening relay (Cool)
03 = ZONE 2 closing relay (Heat)
04 = ZONE 2 opening relay (Cool)
05 = ZONE 3 closing relay (Heat)
06 = ZONE 3 opening relay (Cool)
07 = ZONE 4 closing relay (Heat)
08 = ZONE 4 opening relay (Cool)

Preset settings

Procedure of bootstrap.
The procedure of Bootstrap resets all the settings in the HC36 to the original settings as delivered from the factory.

Attention: the bootstrap deletes all the settings made by the user when installing the HC36.

Press these 3 keys together for at least 1 second ***boot*** message is displayed.

Technical specifics

Power supply	
Line voltage	220-240Vac
Frequency	50/60Hz
Cabinet	
Material	PVC
Dimensions	144x144x77mm
Weight	KG 1
Protection degree	IP20
Outputs	
Maximum relay contacts load	4A AC1
Serial output	TTL 2400 baud
Inputs	
Probe measuring range	-50.0...+115.0°C
Instrument precision	0.2°C
Temperature probe reading precision	0.2°C
Temperature setting range	-50.0...+115.0°C
Probe connection	2 core without screen
Temperature range	
Operatibility	-10...+40°C
Storage	-40...+85°C

CE DECLARATION OF CONFORMITY

POLA® declares that your **HC36** model complies with the following European rules:

EN 50081-1 (1992) (Emission)
EN 50082-2 (1995) (Immunity)

referred to directive **EE 89/336** and subsequent **92/31** about electro-magnetic compatibility (**EMC**)

and it complies with directive **EEC 73/23** and subsequent **EEC 93/68** about low voltage safety (**LVD**).

Measurements were performed
by Official Institution

Settings Record

Use the tables below to record the user, service and install setting values that you have programmed the HC36 for use in your situation. The tables also show the values of these settings, as programmed, at delivery from the factory (these are the setting that the HC36 will reset to when carrying out the bootstrap procedure).

If you would like to check and/or change the settings in the tables below please refer to pages 4 and 6 of this manual:

ZONE 1

Parameter	Value on delivery	Your Setting
SEt.1	20.0°c	
P.Min	0%	
P.MAS	100%	
SERVICE		
tYPE	=1	
nE.bA	0.2°c	
b.CLO	5.0°c	
b.OPE	5.0°c	
ti.On	1.0"	
ti.OF	60.0"	
ProP	3.0°c	
CL.FL	0	
OP.FL	1000	
ProG	=0	
r.SEt	0.0°	

ZONE 2

Parameter	Value on delivery	Your Setting
SEt.2	20.0°c	
P.Min	0%	
P.MAS	100%	
SERVICE		
tYPE	=1	
nE.bA	0.2°c	
b.CLO	5.0°c	
b.OPE	5.0°c	
ti.On	1.0"	
ti.OF	60.0"	
ProP	3.0°c	
CL.FL	0	
OP.FL	1000	
ProG	=0	
r.SEt	0.0°	

ZONE 3

Parameter	Value on delivery	Your Setting
SEt.3	20.0°c	
P.Min	0%	
P.MAS	100%	
SERVICE		
tYPE	=1	
nE.bA	0.2°c	
b.CLO	5.0°c	
b.OPE	5.0°c	
ti.On	1.0"	
ti.OF	60.0"	
ProP	3.0°c	
CL.FL	0	
OP.FL	1000	
ProG	=0	
r.SEt	0.0°	

ZONE 4

Parameter	Value on delivery	Your Setting
SEt.4	20.0°c	
P.Min	0%	
P.MAS	100%	
SERVICE		
tYPE	=1	
nE.bA	0.2°c	
b.CLO	5.0°c	
b.OPE	5.0°c	
ti.On	1.0"	
ti.OF	60.0"	
ProP	3.0°c	
CL.FL	0	
OP.FL	1000	
ProG	=0	
r.SEt	0.0°	

If you would like to check and/or change the settings in the table below please refer to page 10 of this manual:

INSt parameters

Parameter	Value on delivery	Your Setting
Pc.nA	3%	
PErC	0%	
rELA	=1	
d.HEA	0.2°c	
Ad.-1	0.0°c	
Ad.-2	0.0°c	
Ad.-3	0.0°c	
Ad.-4	0.0°c	
tEnP	=1	
PASS	=0	

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