

# SET18DP

## SET18DP

Outputs SV AC version



## SUMMARY :

|  | Page |
|--|------|
| - DESCRIPTION  | 2    |
| - CHARACTERISTICS  | 3    |
| - DIMENSIONS AND MOUNTING  | 4    |
| - PROTECTION   | 6    |
| - CONNECTIONS  | 7    |
| - USER INTERFACE   | 10   |
| Main page  | 10   |
| Measure dp page  | 12   |
| Sequencer informations page  | 13   |
| General menu page  | 14   |
| Language page  | 15   |
| Safety levels page   | 16   |
| Parameters page  | 17   |
| Manual running page  | 21   |
| System info page   | 22   |
| - RUNNING  | 22   |
| - FAULTS   | 23   |
| - RELAY OUTPUT   | 23   |
| - WARNING  | 23   |
| - CALIBRATION  | 23   |
| - GENERAL INSTRUCTIONS OF SAFETY, ASSEMBLY, COMMISSIONNING AND MAINTENANCE | 24   |
| - WARRANTY   | 25   |
| - CERTIFICATE  | 25   |

## DESCRIPTION :

SET18DP is an adjustable device for control and full automatization of dedusting equipments, whose declogging is done by pressured air injections.

Permanent control of differential pressure allows an optimal efficiency according to the whole parameters, for any type of exploitation and product.

It is equipped of a sequencer and a differential pressure switch or relative pressure switch (load loss dP).

It has 18 outputs to be linked to solenoid valves with electric default check, 1 loop control input (I1), 1 relay output for default or alarm report, and in option, 1 analogic output 4-20mA for report of loss pressure measure dP information.

The device is adjustable, according to the use of it, with several levels, protected by passwords.

All the running parameters can be seen and adjusted on the front panel of the device, thanks to a graphic colour touch screen Interface is multilingual.

Evolution of the declogging cycle, the running defaults and the pressure loss measure are clearly displayed and detailed.

A graphic representation of pressure loss allows to easily check its level.

The device has a counter of cycles which have been done and records mini and maxi measured pressures.

Remark : this notice is based on a device equipped of pressure loss measure, with 18 outputs and with a 4-20 mA output. In case the device is not equipped of 4-20 mA output, functions linked to it are not taken into consideration. The quantity of outputs defines the terminals and glands configuration.

## CHARACTERISTICS :

- Supply voltage (nominal voltage) : 115/230V ~ 50-60 Hz  
24V/48V ~ 50-60 Hz
- Consumption (nominal current) maxi : 5VA + consumption of solenoid valves voltage
- Protection : With fuse 5x20mm (see table 1)
- Solenoid valves voltage : According to supply voltage (see table 1)  
24V/48V/115V/230V ~ 50-60 Hz – Pmax:25Va
- Characteristics of input (I1): Tension : 24VDC supplied by device  
load current +/- 1mA
- Characteristics of relay contact : Dry contact max: 125VAC/0.3A - 30VDC/1A  
(to be protected by user)
- Ambient operating temperature : -20°to 60°C
- Storage temperature : -20° to 70° C
- Box : ABS - IP65
- Display : Touch screen / size 4.3inches / resolution 480x272  
65536 colours / LED / Buzzer

## SEQUENCER :

- Maxi outputs quantity 18
- Time T1 : activation of an output from 3/100th to 255/100th of a second
- Time T2 / T2A : idle between 2 outputs 1 - 255 seconds
- Time T3 : rest time between 2 cycles 0 - 255 minutes
- Time T4 : automatic dust removal cycle 0 - 255 hours
- Number of cycles if fan stopped 0 - 255 cycles
- Number of cycle in manual operation 0 - 255 cycles

## DP MEASURE :

- Scale 0-500 daPa
- Maxi pressure ( P+ > P- ) 400 mbar
- precision classe 2on the maxi scale of sensor (100 mbar)  
→ from 0 to 60°C this class takes into consideration linearity, hysteresis, temperature and repetitivity effects
- Action time order dP 1 second
- Action time alarm high/low/T2A threshold 5 seconds
- Output 4-20mA Integrated supply, not isolated - Maxi load : <500 Ohms

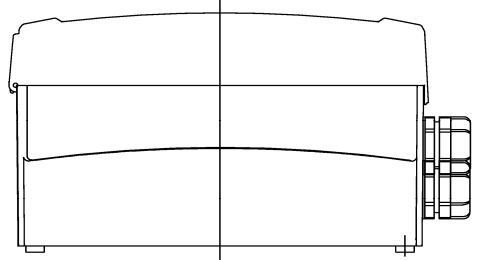
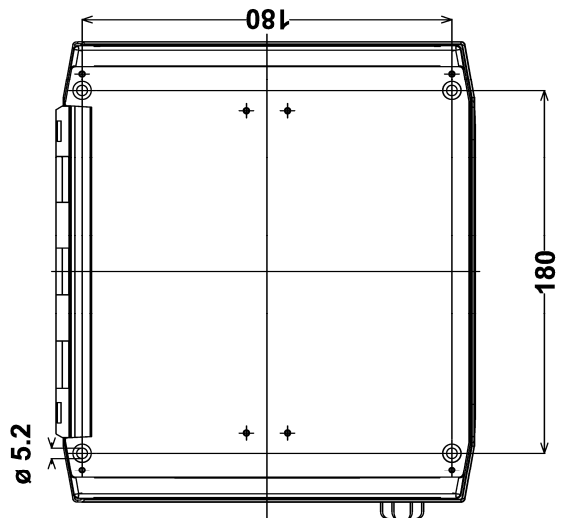
**Table 1 : Supply voltage/Solenoid valves voltage/Fuse**

| Supply voltage          | 230VAC |       |       | 115VAC |       |       |
|-------------------------|--------|-------|-------|--------|-------|-------|
| Solenoid valves voltage | 230VAC | 48VAC | 24VAC | 115VAC | 48VAC | 24VAC |
| Calibre fuse F1         | F1A    |       |       | F1A    |       |       |
| Calibre fuse F2         | F1A    |       |       | F1A    |       |       |
| Calibre fuse F3         | F1A    |       |       | F1A    |       |       |

| Supply voltage          | 48VAC |       | 24VAC |
|-------------------------|-------|-------|-------|
| Solenoid valves voltage | 48VAC | 24VAC | 24VAC |
| Calibre fuse F1         | F1A   |       | F1.6A |
| Calibre fuse F2         | F1A   |       | F1.6A |
| Calibre fuse F3         | F1A   |       | F1A   |

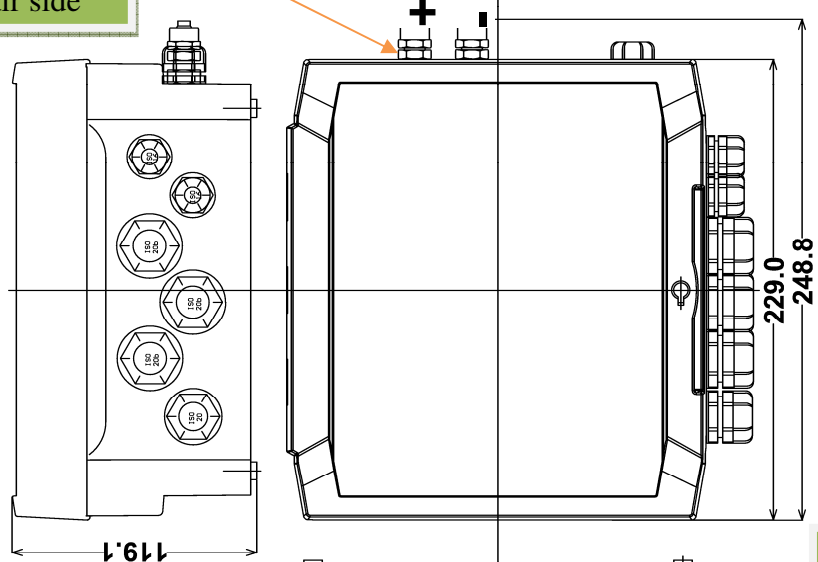
**DIMENSION AND MOUNTING :**

**If version till 18 SV by multiconductor cable**  
**(1 common + ground for 6 SV)**

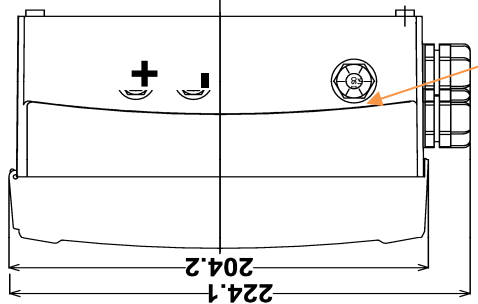


Connection  
for pipe  
6/8mm

+ : dirty air side  
- : clean air side



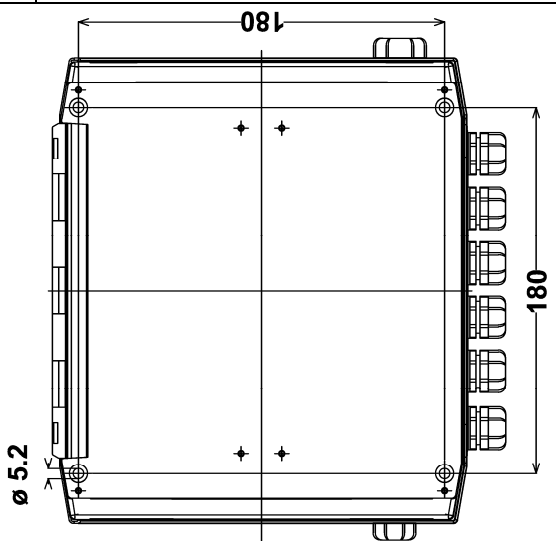
if version  
with output  
4-20mA



Tightening capacity of glands :

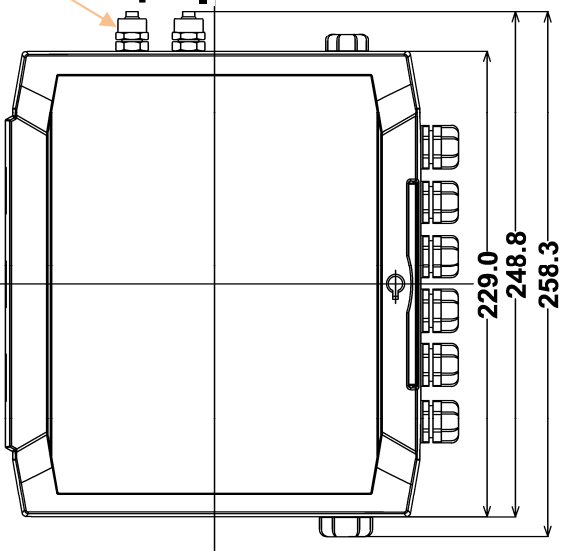
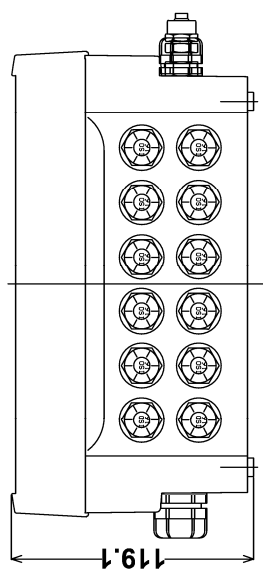
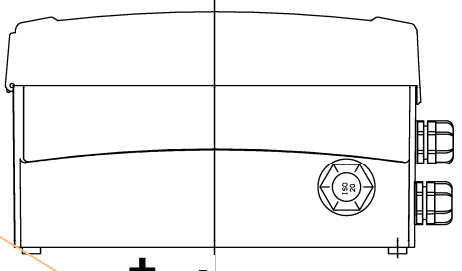
|         |                  |
|---------|------------------|
| ISO 16  | From 4 to 8mm    |
| ISO 20  | From 7.5 to 13mm |
| ISO 20b | From 9.5 to 15mm |

**If version till 10 SV  
by individual cables  
(1 common + ground per SV)**

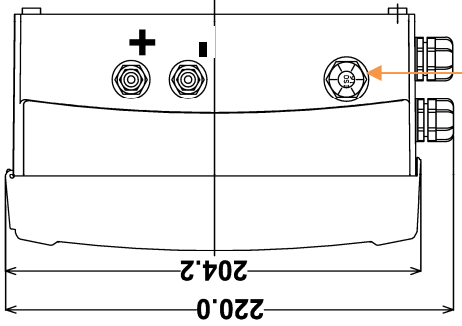


Connection for pipe 6/8mm

+ : dirty air side  
- : clean air side



If version with output 4-20mA

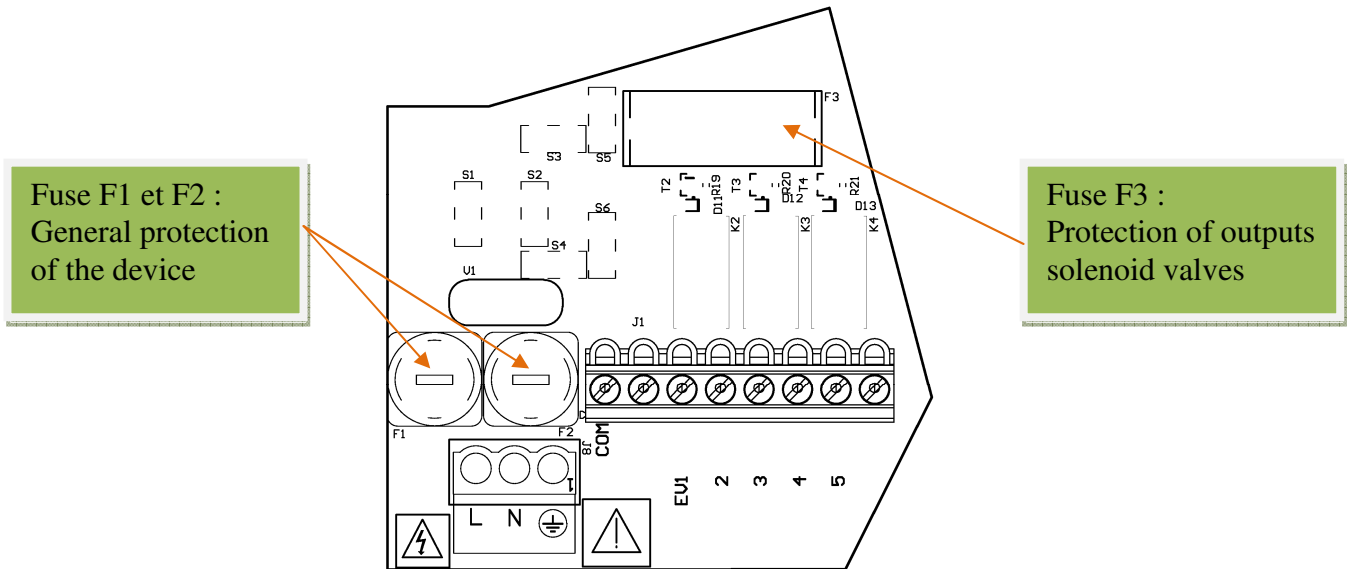


Tightening capacity of glands :

|        |                   |
|--------|-------------------|
| ISO 16 | from 4 to 8mm     |
| ISO 20 | from 7.5 to 13 mm |

**PROTECTION :**

Protection fuse of SV outputs is reachable after dismantling the connections cover.  
(see table 1 for the calibre of the fuse).



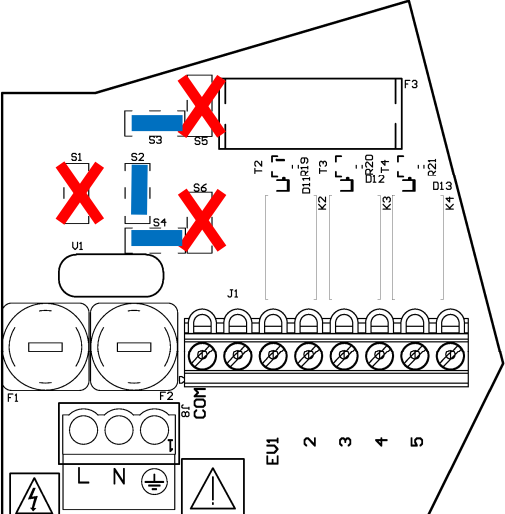
**VOLTAGE CHOICE :**

It is possible according to the version of the sequencer to set differently the supply voltage and the solenoid valves voltage of that made by default in factory answering the ordered version.  
warning: the device must be switched off.

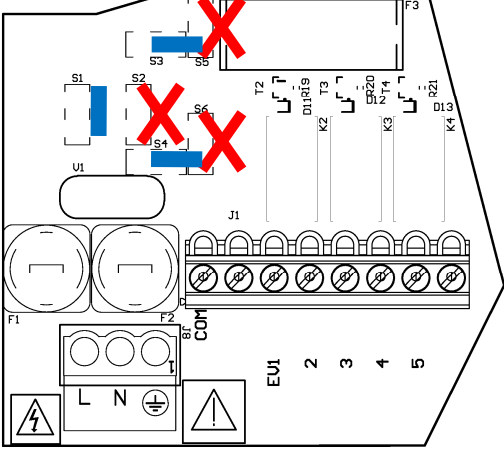
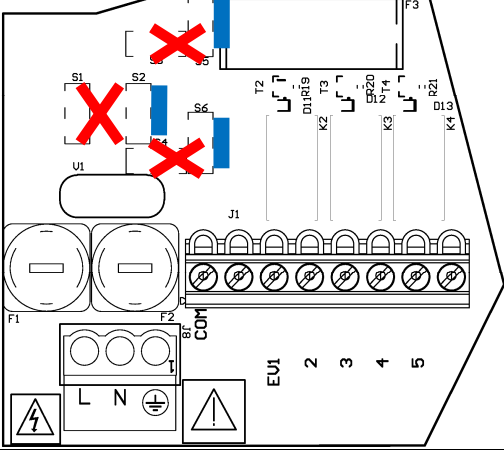
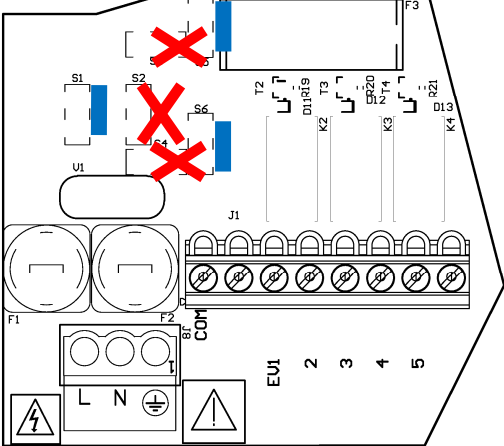
Remarks:

- The supply choices "115V / 230V" or "24 / 48V" can be made only with order
- If supply voltage "115V / 230V", the voltage choice of solenoid valves " 24V or 48V " can be made only with order

See on the following table the possible regulations according to the version of the box.

| ACCORDING TO THE SUPPLY VOLTAGE / SOLENOID VALVES VOLTAGE VERSION | POSITION OF THE JUMPERS :   |
|---|---|
| <p>230VAC / 230VAC<br/>48VAC / 48VAC</p>                          | <div data-bbox="533 1659 770 1928" style="border: 1px solid black; padding: 5px;"> <p>Jumper on :<br/>S2 / S3 / S4</p> <p>Nothing on :<br/>S1 / S5 / S6</p> </div>  |

# SEQUENCER WITH DIFFERENTIAL PRESSURE SWITCH

|  |   |
|--|---|
| <p>115VAC / 115VAC<br/>24VAC / 24VAC</p> | <p>Jumper on :<br/>S1 / S3 / S4</p> <p>Nothing on :<br/>S2 / S5 / S6</p>    |
| <p>230VAC / 24VAC<br/>230VAC / 48VAC</p> | <p>Jumper on :<br/>S2 / S5 / S6</p> <p>Nothing on :<br/>S1 / S3 / S4</p>   |
| <p>115VAC / 24VAC<br/>115VAC / 48VAC</p> | <p>Jumper on :<br/>S2 / S5 / S6</p> <p>Nothing on :<br/>S1 / S3 / S4</p>  |

**WARNING:** a modification of the supply voltage and/or the solenoid valves voltage requires to update the descriptive label placed outside of the box.

## CONNECTIONS :

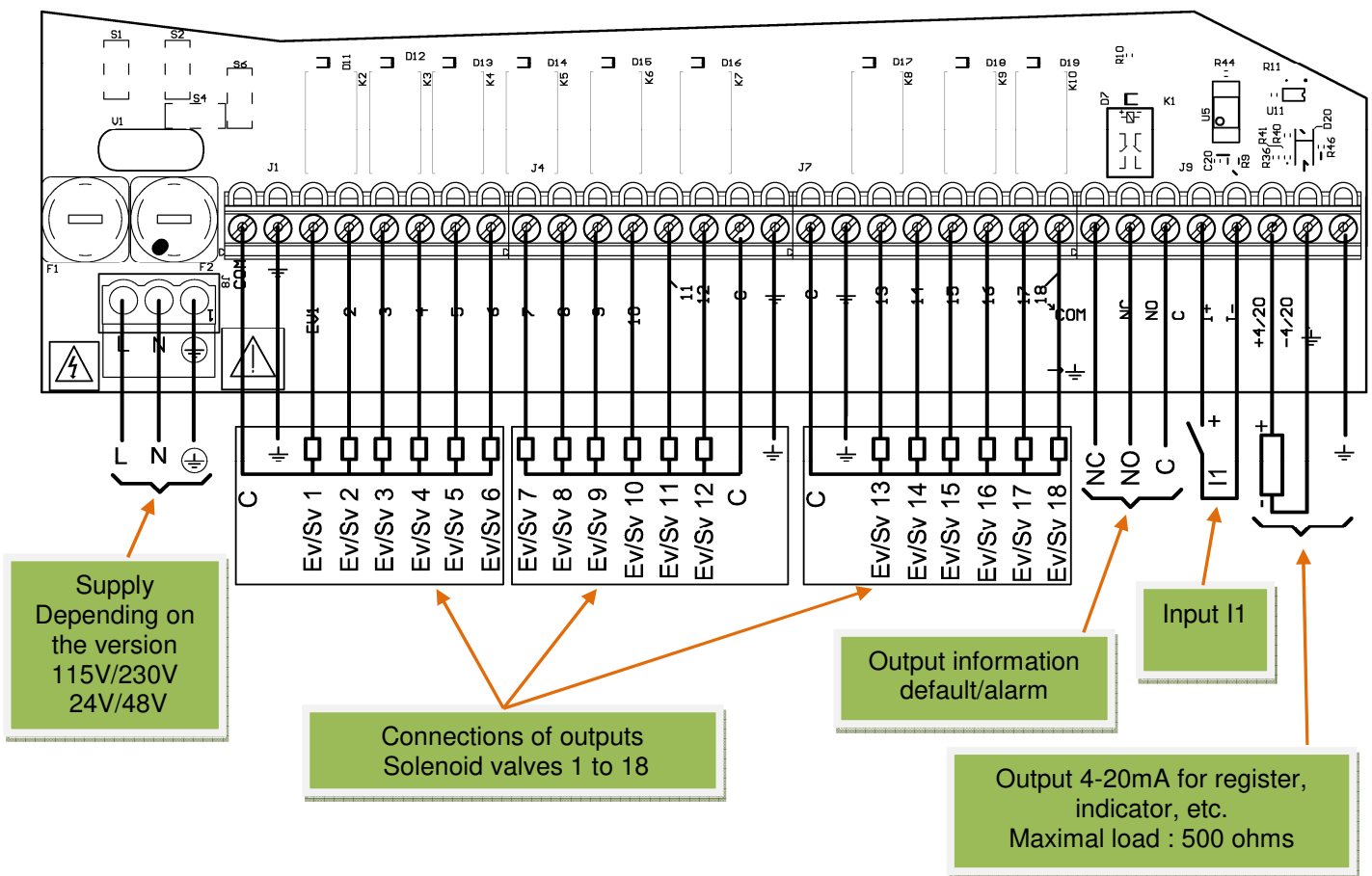
Connections must be done when power off.

Connections terminals are reachable after opening the transparent front panel and dismounting cover (lower part of the box).

According to configuration of the device, some terminals may not be included.

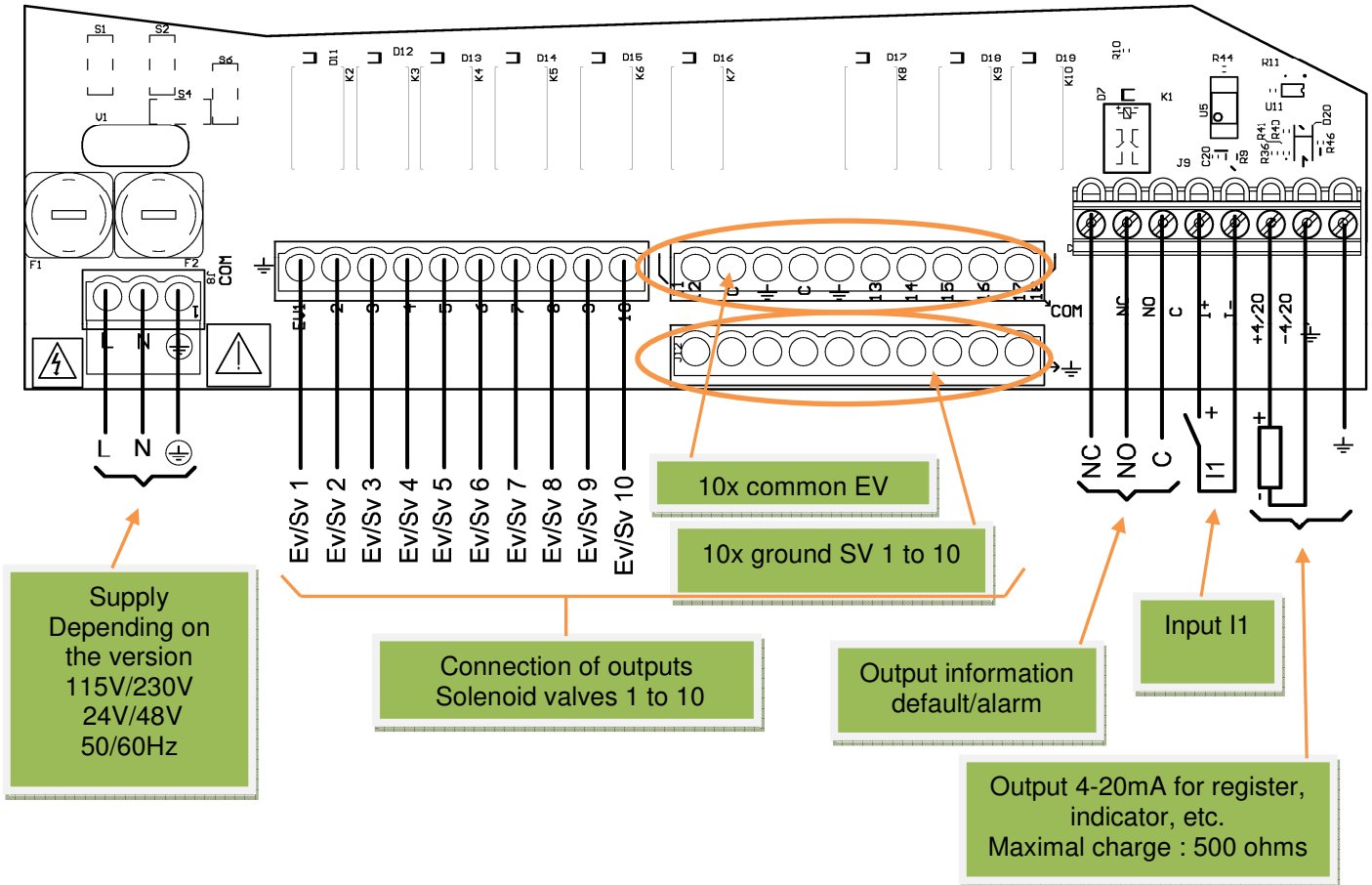
Cable strings will be flexible and will have a section between 0.5 and 1.5 mm<sup>2</sup>.

If version till 18 SV with multiconductor cable (1 common + ground for 6 SV) :





If version till 10 SV with individual cable (1 common + ground for each SV) :



## USER INTERFACE :

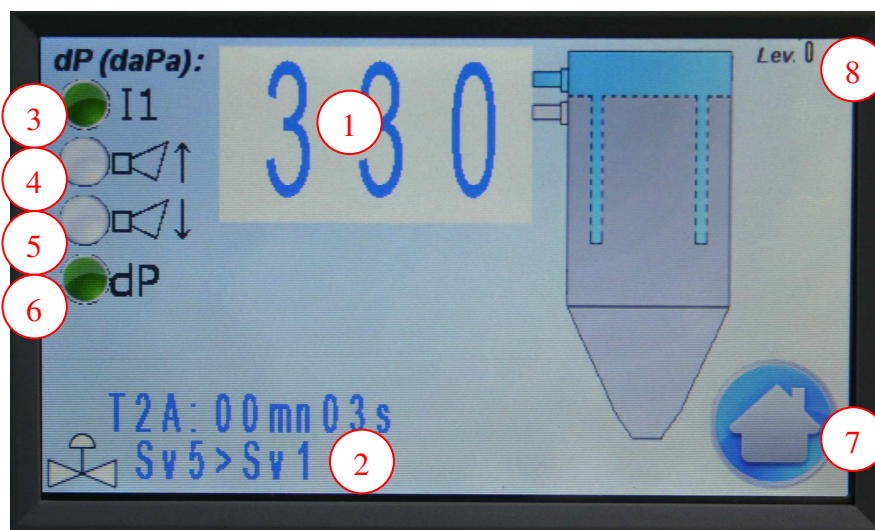
User interface is done through the touch screen on front panel of the box.

When the device is switched on, logo of the company is displayed during 3 seconds, then main menu is displayed.

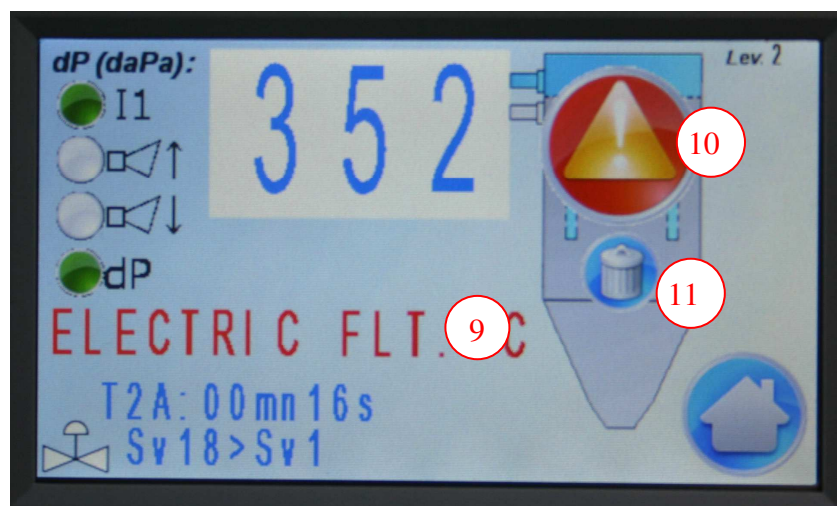
To activate a function or access to adjustment of a parameter: press the corresponding area.

Remark : after 30 seconds without any action, main menu is automatically displayed (unless « dP measure » screen is displayed ).

Main menu, if no fault :



Main menu, if fault :



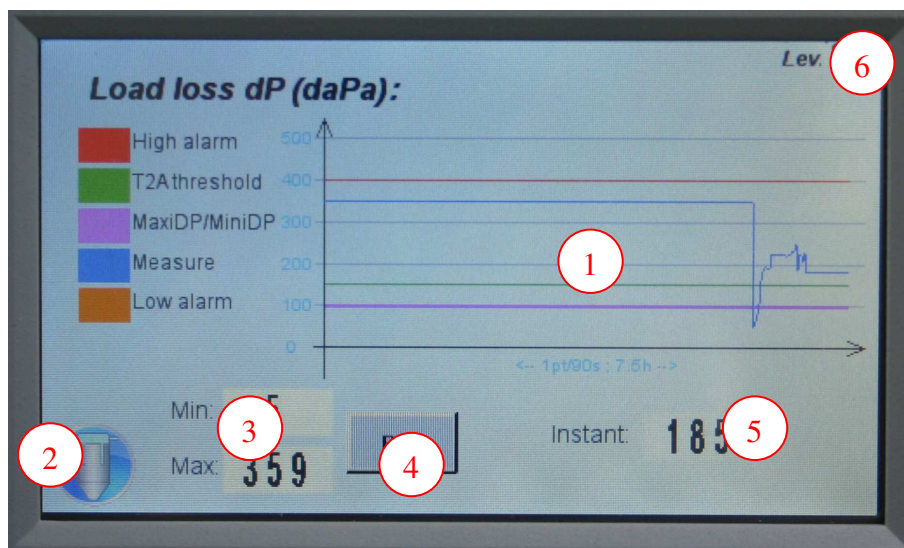
1 : Display of load loss dP ( daPa )..

If high dP alarm or low dP alarm is on, the background of this area flashes in red.

If one touches this area : link towards measure display « load loss dP ».

- 2 : Information about state of declogging cycle.  
Display of running time and countdown.  
Display of last SV activated and the following SV.  
If press this area : link to the display « sequencer informations ».
- 3 : Display of AON I1 input .  
Gray : if input I1=0  
Green : if input I1=1
- 4 : Display of High Alarm dP.  
Gray : if measure is below the High Alarm threshold.  
Red : if measure is above the High Alarm threshold.  
Remarks : High Alarm has a delay of 5 seconds.  
High Alarm is not activated if adjusted to 0 value.
- 5 : Display of Low Alarm dP.  
Gray : if measure is above the Low Alarm threshold.  
Red : if measure is below the Low Alarm threshold.  
Remarks : Low Alarm has a delay of 5 seconds.  
Low Alarm is not activated if adjusted to 0 value.
- 6 : Display of dP running order.  
Gray : if dP running order is absent (if measure is below Mini threshold).  
Green : if dP running order is present (if measure is above Maxi threshold).  
Remarks : the dP order has a delay of 1 second.  
The dP order is always present if Mini and Maxi thresholds are adjusted to 0.
- 7 : If press this area : link towards page « main menu ».
- 8 : Display of current protection level.
- 9 : If fault : displays the type of fault
- 10 : If fault : this red sign « warning » is flashing
- 11 : If fault : pressing this area will reset the displayed fault.

Page measure load loss dP :



1 : Graph of the measure of load loss dP.

Display of the 7.5 last hours of running of the device (1pt every 90 seconds). When device is turned off, the graph is reset.

The different running thresholds and alarm thresholds are displayed by horizontal lines with colour corresponding to the legend, on the left part of the screen.

Remark : if one running threshold or one alarm threshold is adjusted to 0, this one will not be displayed.

2 : If press this area : go back to main page.

3 : Display of measure values of load loss dP mini and maxi, which are observed.

Remarks : The mini value is observed two minutes after detection of fan running.

The maxi value is not observed between the start of a declogging shot and 3 seconds after this shot.

4 : Only reachable at level 2.

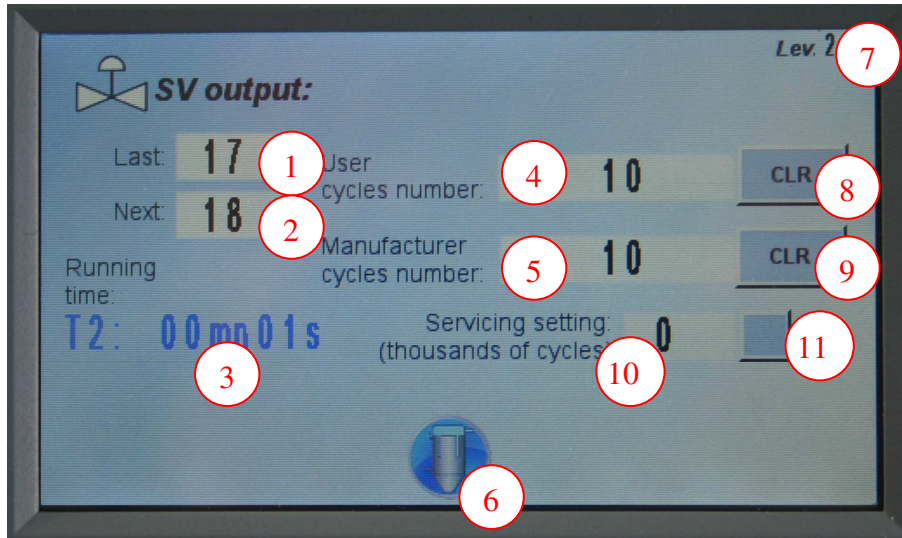
Pressing this area resets the observed mini and maxi load loss values.

Remarks : the maxi is preset at 0. This value is updated when the first maxi value is observed.  
the mini is preset at 999. This value is updated when the first mini value is observed.

5 : Display of immediate load loss measure dP.

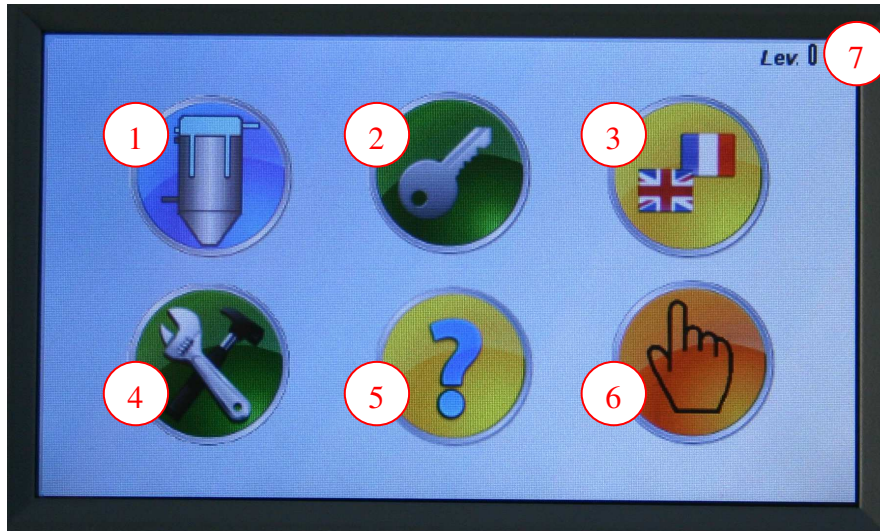
6 : Display of current protection level.

Page sequencer informations :



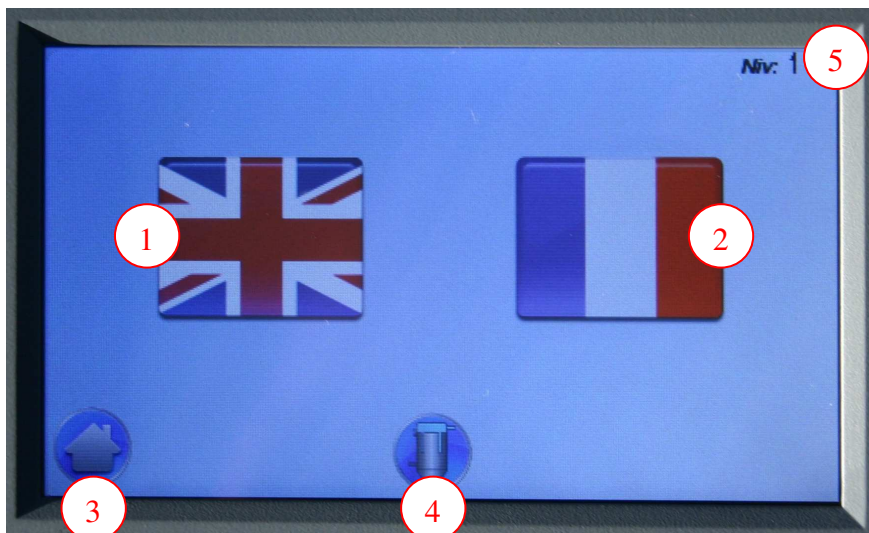
- 1 : Displays the number of the last SV activated.  
Remark : if there is not any declogging cycle since the device has been switched on, it indicates 0
- 2 : Displays the number of the next SV which will be activated.
- 3 : Information about the state of the declogging cycle.  
Displays the running time and its countdown.
- 4 : Counter of cycles done (user).
- 5 : Counter of cycles done (manufacturer).
- 6 : If press this area : return to main page.
- 7 : Displays the current protection level.
- 8 : Reachable only at level 1.  
If press this area, the counter « number of user cycles » is reset
- 9 : Reachable only at level 2.  
If press this area, the counter « number of manufacturer cycles » is reset.
- 10 : Value of the set point for maintenance message (nb of thousands of cycles).  
If number of manufacturer cycles is reaching this set point value, a message appears in the main page : « MAINTENANCE REQUIRED ».  
If set at 0 : the function is not active. No message.
- 11 : Reachable only at level 2.  
Adjustment of set point for maintenance.

Page main menu :



- 1 : If press this area : go back to main page.
- 2 : If press this area : jump to page « safety ».
- 3 : If press this area : jump to page « language ».
- 4 : If press this area : jump to page « adjustments ».
- 5 : If press this area : jump to page « system informations ».
- 6 : If press this area : jump to page « manual running ».
- 7 : Displays the current protection level.

Page language :



1 : If press this area : changes to English language and jumps to main page.

2 : If press this area : changes to French language and jump to main page.

3 : If press this area : go back to page menu.

4 : If press this area : go back to main page.

5 : Displays the current protection level.

## Page safety levels :

The users are classified into 3 levels : level 0, level 1 and level 2.

Levels 1 and 2 are protected by password.

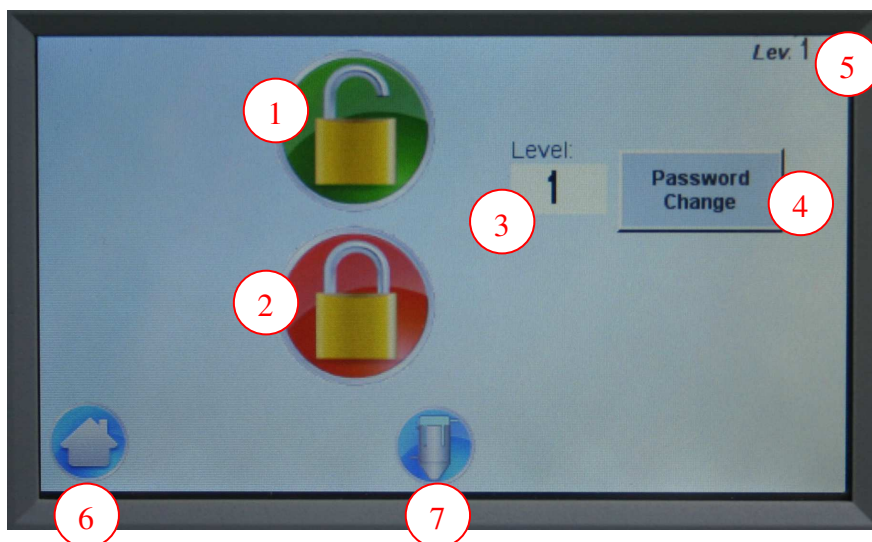
Access to some functionalities or modification of some parameters are possible, according to the protection level we have.

Level 0 : it is not possible to change any parameter, we can only see the parameters.

Reset of faults is possible. Manual running is possible. Change of language is possible.

Level 1 : corresponds to level « user », allowing change of parameters.

Level 2 : corresponds to level « manufacturer ». This level gives access to all possibilities of level 1, with also the possibility to reset some counters, for instance.



1 : If press this area : request password.

According to the password entered, corresponding level is active.

Remark : if password is not correct, we move to level 0.

When a password is entered, it stays active 10 minutes long. After 10 minutes, we automatically move to level 0.

At the 1<sup>st</sup> use of the device, the password for level 1 is "0000".

2 : If press this area : moves to level 0.

Remark : the key is only here when level is different than 0

3 : Display of current protection level.

4 : Allows modification of password of the current level and lower level(s).

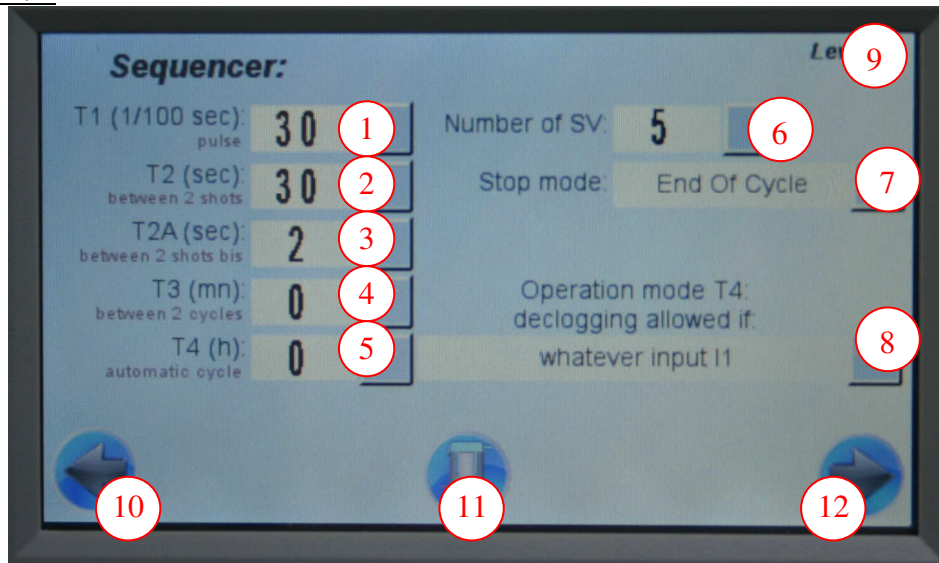
5 : Display of current protection level.

6 : If press this area : go back to page menu.

7 : if press this area : go back to main page.

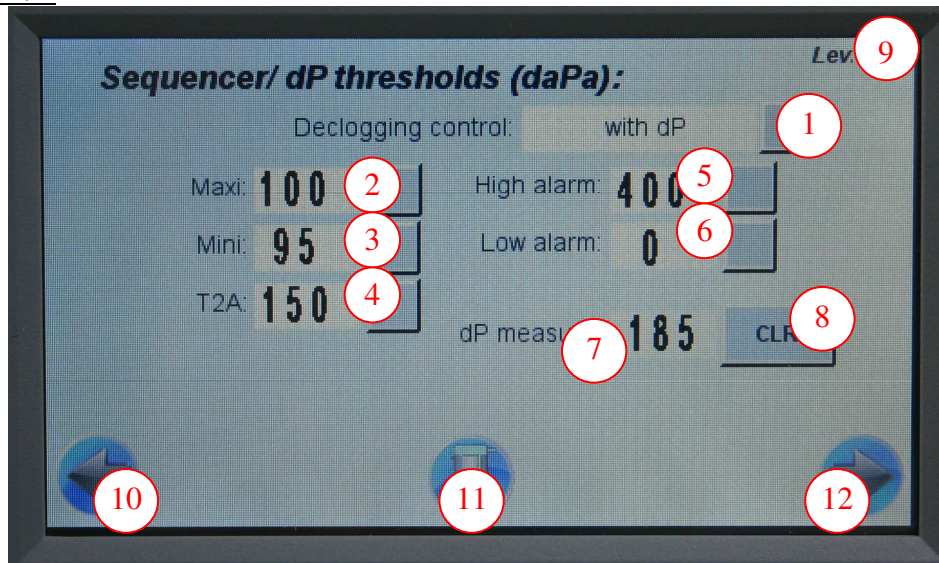


Page parameters 1/4:



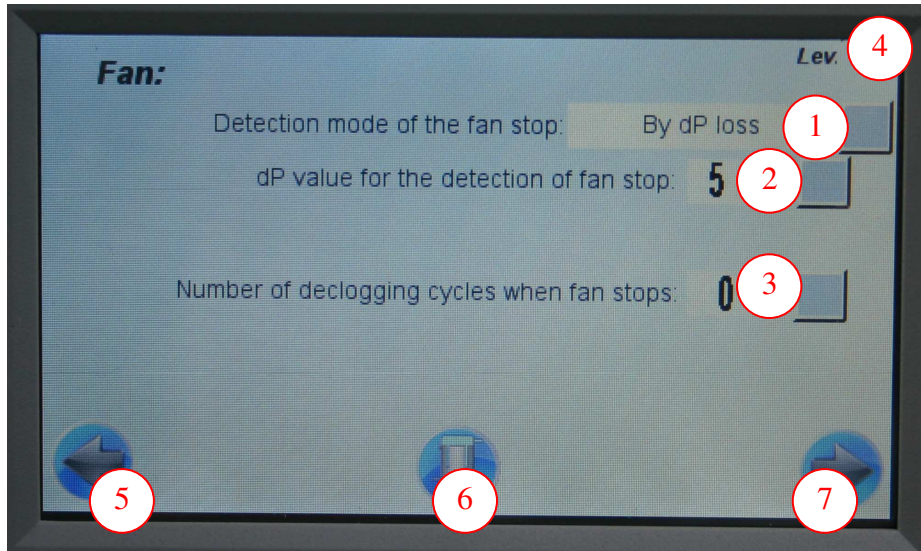
- 1 : T1 : pulse time on one declogging SV.  
Adjustable from 3 to 255 1/100th seconds (reachable at level 1 or above).
- 2 : T2 : rest time between two pulses of declogging SV.  
Adjustable from 1 to 255 seconds (reachable at level 1 and above).
- 3 : T2A : second rest between two pulses of declogging SV.  
T2A time (shorter than T2) replaces T2 time if accelerated running (pressure>threshold T2A).  
Adjustable from 1 to 255 seconds (reachable at level 1 and above).
- 4 : T3 : rest time between two declogging cycles.  
Adjustable from 0 to 255 minutes (reachable at level 1 and above). If adjusted to 0 : not active.
- 5 : T4 : maximum time without declogging cycle.  
If the device did not have any declogging cycle for the quantity of hours which is adjusted, the ongoing cycle is stopped (if stop in cycle) and a declogging cycle is launched.  
Remark: T4 time is reset at each pulse on any SV.  
Adjustable from 0 to 255 hours( reachable at level 1 and above ). If adjusted to 0 : not active.
- 6 : Quantity of declogging SV.  
Adjustable from 1 to 18, according to the quantity of SV which are connected (reachable at level 1 and above).
- 7 : Adjustment of the type of declogging stop, in case we lose the running order :  
« End of cycle » : the ongoing cycle ends up.  
« On cycle » : cycle stops during its running (at the SV where cycle is, at the end of the T2 time). It will start again where it was. (reachable at level 1 and above).
- 8 : Condition to let the declogging cycle, linked to T4 time, runs.  
Two possible choices : « whatever input I1 » or « if I1 Input=1 »
- 9 : Display of ongoing protection level.
- 10 : If press this area : go back to page menu.
- 11 : If press this area : go back to main page.
- 12 : If press this area : goes to the next adjustments page.

Page parameters 2/4:



- 1 : We choose if dP order is or isn't taken into consideration to launch declogging cycle (reachable at level 1 and above).  
 « with dP » : declogging depends on dP order.  
 « without dP » : declogging does not depend on dP order.
- 2 : Threshold Maxi dP : if measure dP is above this threshold, more than one second, dP running order moves to « ON » status (reachable at level 1 and above).
- 3 : Threshold Mini dP : if measure dP is below this threshold , more than one second, dP running order moves to "OFF" status (reachable at level 1 and above).  
 Remark : if threshold Maxi dP=0 and threshold Mini dP=0, then the dP running order is forced on « ON » status.
- 4 : Threshold T2A : threshold corresponding to accelerated running (reachable at level 1 or above ).  
 If measure dP is above this threshold more than 5 seconds → accelerated running → T2 = T2A  
 If measure dP is below this threshold more than 5 seconds → normal running  
 Note : if threshold T2A is adjusted to 0, the function is not active (always in normal running).
- 5 : Threshold High Alarm dP (reachable at level 1 or above).  
 If measure dP is above this threshold more than 5 seconds → High Alarm dP  
 If measure dP is below this threshold more than 5 seconds → No High Alarm dP  
 Note : If threshold of High Alarm is adjusted to 0, the function is not active (no High Alarm dP generated)
- 6 : Threshold Low Alarm dP (reachable at level 1 or above).  
 If measure dP is below this threshold more than 5 seconds → Low Alarm dP  
 If measure dP is above this threshold more than 5 seconds → No Low Alarm dP  
 Note : If threshold of Low Alarm is adjusted to 0, the function is not active (no Low Alarm dP generated)
- 7 : Display of measure of instantaneous load loss dP.
- 8 : Adjustment to zero pressure (reachable at level 1 and above).  
 Allows to make a calibration at 0 pressure. Put the device out of pressure (disconnect the two pressure connections) and press this area : zero pressure is calibrated.
- 9 : Display of current protection level.
- 10 : If press this area : go back to the former adjustments page.
- 11 : If press this area : go back to main page.
- 12 : If press this area : goes to the next adjustments page.

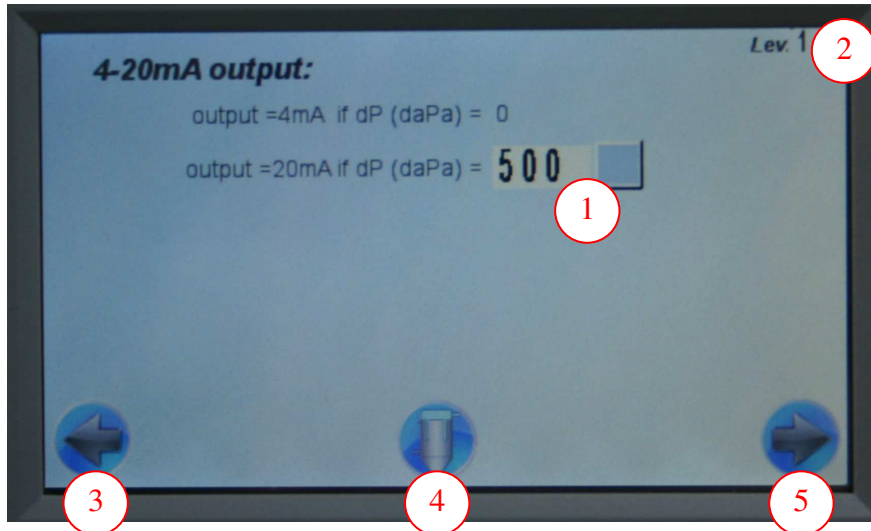
Page parameters 3/4:



The device can detect a fan stop, by two ways : by I1 input or by measure of load loss dP. When it moves from running fan state to stop fan state : the quantity of declogging cycles is done.  
Remark : if during the achievement of the indicated number of declogging cycles, the fan stops and starts again, the running declogging cycle stops and we start again with standard running.

- 1 : Choose the type of detection for fan stop(reachable at level 1 or above) :  
 «by input I1loss » : the stop of the fan is detected if I1=0.  
 Remark : the running of the fan is detected if input I1=1  
 «by dP loss » : the stop of the fan is detected if the load loss measure is lower than the value indicated on the next parameter (see point 2).  
 Remark : the running of the fan is detected if the load loss measure dP is higher than the indicated value, more than 5 seconds.
- 2 : If the type of detection of fan stop is « by dP loss», this value shows the detection threshold (reachable at level 1 and above). Adjustable from 5 to 20 daPa.
- 3 : Number of cycles to run when the fan stops.  
 Adjustable from 0 to 255 cycles (reachable at level 1 or above). If adjusted at 0 : not active.
- 4 : Display of the current protection level.
- 5 : If press this area : go back to previous parameter page.
- 6 : If press this area : go back to main page.
- 7 : If press this area : moves to the next parameters page.

Page parameters 4/4:



If the device is equipped of the 4-20mA output for the report of load loss measure, this page allows to define the scale of this output.

The output is at 4mA if the load loss measure  $dP=0$  daPa.

The output is at 20mA if the load loss measure  $dP$ =indicated value.

Between 4 and 20 mA, the output is linear and proportional to the load loss measure  $dP$ .

1 : Adjust the value of load loss measure corresponding to output 20 mA (reachable at level 1 or above) .

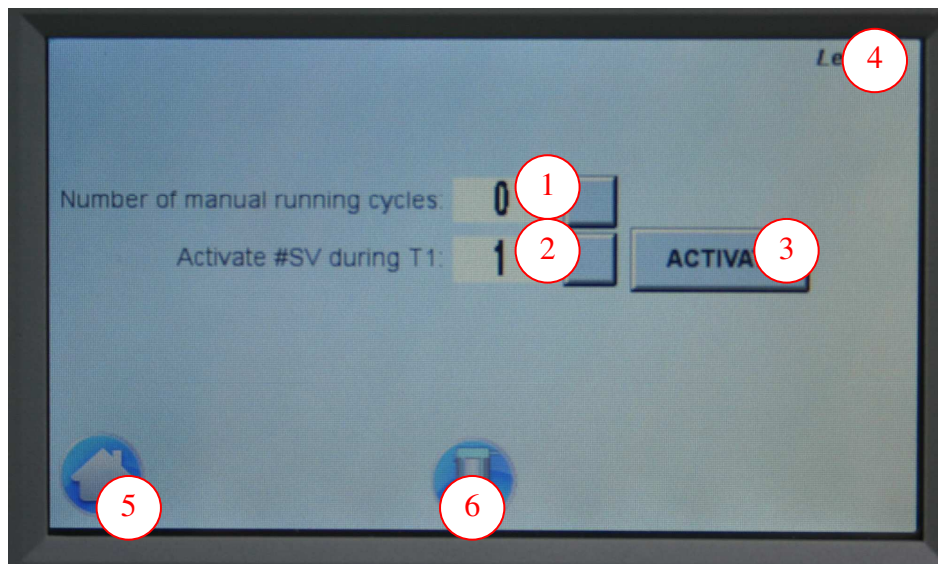
2 : Display the current protection level.

3 : If press this area : go back to previous parameters page.

4 : If press this area : go back to main page.

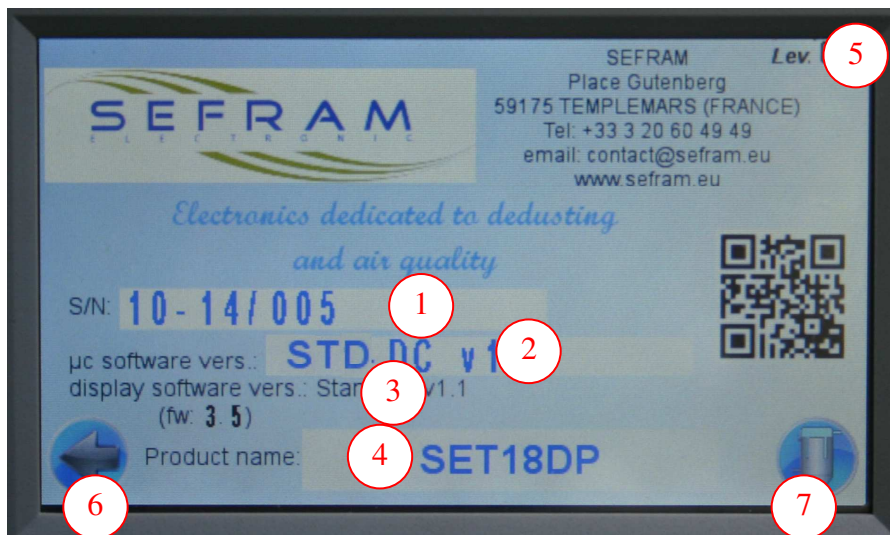
5 : If press this area : moves to page menu.

Page manual running :



- 1 : Adjust the number of cycles to run if manual mode  
Declogging cycles in manual mode, are running, without taking into consideration the input I1 or the load loss measure dP.  
The value countdowns, according to the cycles which are achieved.
- 2 : Choose the SV to activate manually.
- 3 : If press this area, the SV, indicated by its number, is activated during T1 time.
- 4 : Display the current protection level.
- 5 : If press this area : go back to page menu.
- 4 : If press this area : go back to main page.

Page system informations:



- 1 : Indicates the serial number of the device
- 2 : Indicates the software version of the central unit card.
- 3 : Indicates the software version of the user interface card.
- 4 : Indicates the name of the device.
- 5 : Indicates the current protection level.
- 6 : If press this area : go back to page menu.
- 7 : If press this area : go back to main page.

## **RUNNING :**

Conditions to start declogging cycle :

- Input I1=1 (input closed)
- Running order dP ON (if cycle is dependent on load loss measure dP).

If detection of fan stop, by input I1 :

- If we lose the input I1 (I1=0), fan stop is observed : the sequencer executes the defined number of cycles and stops. If the defined number of cycles is at 0 : the sequencer stops immediately or finishes the running cycle, according to the chosen mode.

If detection of fan stop, by load loss measure dP :

- If we lose the input I1 (I1=0), the sequencer stops immediately or finishes the running cycle, according to the chosen mode.
- If detection of fan stop : the sequencer executes the defined number of cycles and stops. If the defined number of cycles is at 0 : the sequencer stops immediately or finishes the running cycle, according to the chosen mode.

Note : when the device is switched on, a temporization of 10 seconds prohibits declogging cycle.

## **FAULTS :**

### Control electrical fault :

When a SV is activated, the device checks the used electric current. If there is no consumption, an electric fault is generated ( for instance : SV not connected or badly connected, SV coil out of order...).

If there is an electric consumption although no SV should be activated, an electrical fault as short circuit is generated ( for instance card failing...).

The electrical faults are automatically reset of the problem disappears.

Faults appear on main page: « ELECTRIC FLT. CC » if short circuit fault, « ELECTRIC FLT. Svx » if electrical fault on SV with x=number of the SV.

If several faults exist, they are stored and displayed, according to the ascending order of SV.

The manual reset of the displayed fault will generate the display of the potential following fault.

## **RELAY OUTPUT :**

The relay is supplied ( electricity )if there is no alarm and no fault ( contact between terminals identified C and NO )

The relay is supplied ( electricity ), if there is a fault, or an alarm or if the device is switched off ( contact between terminals identified C and NF ) :

- Electrical fault on one SV
- Electrical fault short circuit
- High Alarm dP
- Low Alarm dP

## **WARNING :**

- Prevent dusty air at pressure nuts.
- Apply necessary rules to satisfy to device characteristics (pressure max, etc.).
- For the 4-20mA cables, we recommend that you use shielded cable and not follow the routing of the power cables.
- For specific exploitation conditions : consult us
- Interventions must be done by qualified workforce

## **CALIBRATION :**

The device leaves our workshops, adjusted at 0, for zero pressure and at maxi for the maxi pressure value of the range.

Settings carried out when device stabilised and at 20° C.

It is possible to adjust the zero pressure: see page parameters 2/4

**General instructions for safety, assembly, commissioning, usage and maintenance**  
*to be read before working on the device*

**I. GENERAL**

These instructions must be read jointly with:  
+the standard NFC15-100  
+the technical data sheet specific to the device  
The Sefram devices are designed to be assembled, commissioned and used in compliance with the characteristics/data given in the technical data sheet. Always adhere to all of directives, legislation, orders and most recent standards in force for the stated field of application.  
The assembly, commissioning, usage and maintenance operations must always be carried out by qualified and authorized personnel.  
Personnel working on the devices must be familiar with the safety rules and requirements in force regarding the components, devices, machines and electrical installations.

**II. RECEPTION - STORAGE**

After unpacking the device, check that this latter has not been damaged during transport; for certain devices, remove the protective film from the cover. The material must be stored inside in a dry place.  
In the event of a problem, please contact Sefram.

**III. ASSEMBLY**

The assembly operations must be carried out by qualified, skilled and authorized personnel. Personnel working on these devices must be familiar with the safety rules and requirements in force.  
The box must be mounted vertically.  
For material connected permanently to the network, a quickly accessible cut-off device must be incorporated into the cabling installation of the building.  
The device supply must be equipped with a device for protection against risks of over-current and fault isolation. The number of poles protected must be appropriate to the neutral regime of the building and to the regulations in force.  
The equipment must be connected to the PE protection mass by green/yellow wires (NFC15-100).  
The device is compatible with the neutral regimes TT, TN or IT;  
Nevertheless, we recommend that the device is supplied through the intermediary of an insulation transformer for which the primary is supplied between phases and not between phase and neutral, so as to avoid any accidental over-voltage caused when the neutral is cut before the phases.  
In the event of a problem, please contact Sefram.

**IV. COMMISSIONING AND USAGE**

Commissioning is authorized only after duly establishing that the device, the machine or the installation in which the device has been integrated in a compliant manner, satisfies all of the directives, legislation, orders and most recent standards in force.  
Commissioning operations must be carried out by qualified, skilled and authorized personnel. Personnel working on these devices must be familiar with the safety rules and requirements in force.  
Note: correct operational functioning does not in itself constitute an indication of conformity to the recommendations for the use of the material in complete safety.  
Also read the maintenance recommendations which equally apply during commissioning and use.  
In the event of a problem, please contact Sefram.

**V. MAINTENANCE**

The device does not require any special maintenance.  
The following operations are recommended; they constitute a minimum:  
- Before any work intervention, we recommend that the dust is removed before opening the cover,  
- The device must not be opened in an excessively dusty environment,  
- The integrity of the joints must be checked: remove any trace of dust or other deposit,  
- Remove any trace of dust which could have penetrated during the setting operation,  
- Always ensure that the cover is correctly closed.  
- To maintain accuracy of measurement, an annual calibration is recommended especially at "zero"(see calibration).  
- Replacement of fuses must be carried off the power, taking care to respect the caliber of each fuse

Maintenance operations must be carried out by qualified, skilled and authorized personnel. Personnel working on these devices must be familiar with the safety rules and requirements in force.  
In the event of a problem or any questions during these operations please contact SEFRAM.



**WARRANTY:**

The Warranty does not apply in the following cases:

- Breakage through dropping or knocks to non-packaged products
- Damage caused by abnormal use of the device, connecting error, surges/overvoltages, overpressure, etc.
- Any intervention on the device apart from the connections

In case of failure, no action is permitted and the unit must be returned to the following address:

**SEFRAM  
PLACE GUTENBERG  
59175 TEMPLEMARS  
FRANCE**

**CERTIFICATE:**

The SET18DP respects the European directives ( CEM, BT), which concerns it.

However, it must be used correctly in applications for which it is intended, and should be linked or near CE approved products.

Certificate available on request.

*We are free to implement any technical modification on our devices, as long as we consider it as convenient.*