SVM
Micromécanique SA

Operating instructions and instruction manual

Pulse touch control

SVM Micromécanique SA

Table of contents

1) Safety requirements and precautionary measures

1.1) Explanation of symbols

DANGER !
This symbol warns of an imminent danger that could result in serious injury or death.

ELECTRICAL HAZARD !
This symbol warns of dangerous electrical voltage that can cause serious injury or death.

WARNING
This warning symbol indicates a potentially hazardous situation that could result in personal injury or considerable property damage.

1.2) General safety instructions

In addition to the generally accepted safety and accident prevention regulations, the following general safety instructions must be observed.

- The operator of the machine and its accessories must ensure that SVM products are only handled by trained and authorised personnel!

- Operators must ensure that no unauthorised persons work on SVM machines!

- Operators must immediately report any changes to the machine and its accessories that affect safety conditions!

- Safety devices must not be removed or rendered inoperative.

- Any arbitrary alterations and/or modifications to the machine and its accessories are not permitted for safety reasons.

- Only use original accessories supplied by SVM!

 DANGER !
In addition to the general safety instructions described in this chapter, the information given in the relevant sections must also be observed.

1.3) Poor compliance with safety regulations

- SVM SA is not liable for any damage caused by failure to follow the instructions in this manual.

This applies in particular to :

- Damage that occurs as a result of inappropriate use or incorrect handling.

- Damage that occurs due to failure to follow the safety information in this instruction manual or on the warning signs on the machine.

- Damage that occurs as a result of insufficient or unperformed maintenance.

2) General overview

There are different models of control devices to suit different needs.

742.101 Pulse Simple (standard)

Simple model :
Allows the dosing of one type of product at a time.

742.151 Pulse Double (standard)

Double model :
Allows the simultaneous dosing of 2 different types of products with their own parameters.

742.161.1P Pulse Double 1 pedal (special version)

Double model with one pedal:
Allows the dosing of 2 different types of products with their own parameters, but not simultaneously. The foot pedal is connected directly to the 2 control devices which are powered up according to the needs.

742.125.A Pulse Automation (special version)

Automation model (without pedal) :
Allows to use the control devices on an assembly line and manage the dosing part with the machine interface.

742.115.V Pulse Simple vacuum (special version)

Vacuum model :
Special function that can eliminate the gravity effect of certain liquid products in syringes.

Dimensions : 65x132x192mm
Weight : 1.6kg

Device status LED
Blue: Ready
Green: Cycle in progress
Red : Error

LCD touch screen
Allows you to navigate in the
software and change the
different settings for production

Quick coupling
Connection system for the entire
range of Unidose SVM products.

**Dry air supply!
MAXI : 10 bars !
Check the pressure
of your network
before connecting
the control device.**

**Unidose PULSE foot
switch**
Accessory : with 2 m
cable and 15-pin plug
Art. 742.170

**Unidose PULSE double
foot switch**
Accessory : with 2 m
cable and 15-pin plug
Art. 742.180

Automation plug
Accessory : with 2 m
cable and 15-pin plug
Art. 742.181

Plug-in power supply
Unidose PULSE
Accessory :
Art. 742.190

Socket 24V

Micro SD card

3) Transport and commissioning

3.1) Transport

⚠ Transport the assembly station in a suitable box with impact protection.

3.2) Setting up the machine and connecting it

- Place the Pulse on a flat surface so that it does not become unbalanced.

- Connect the power supply to a 230V/50Hz socket and the other end to the 24V socket on the unit.

- Connect the Start pedal to the external start socket. (see page 6)

- Connect the device to your compressed air network with a Ø6mm hope. Be careful, the air must be dry and not exceed 10bars! Failure to comply with this last point may cause irreversible damage to the device. → Check the air network before connecting it.
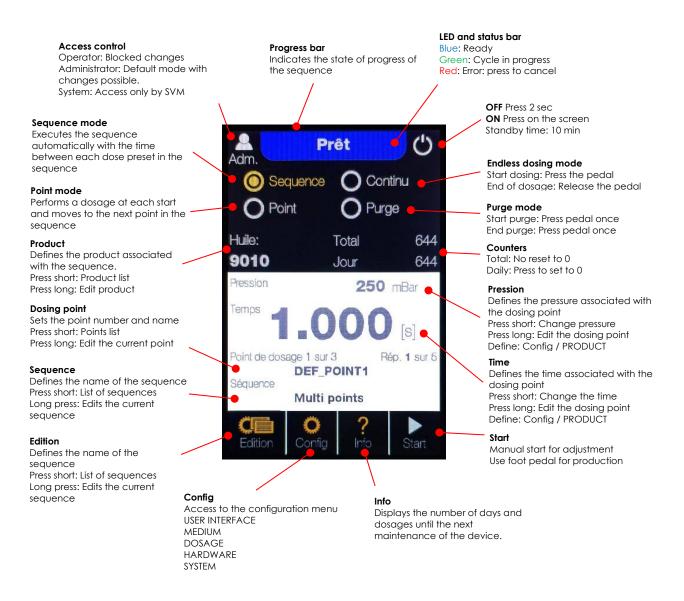
4) General use

4.1) Switching on

If all the previous steps (3.2) have been followed and checked, you can switch on your device.

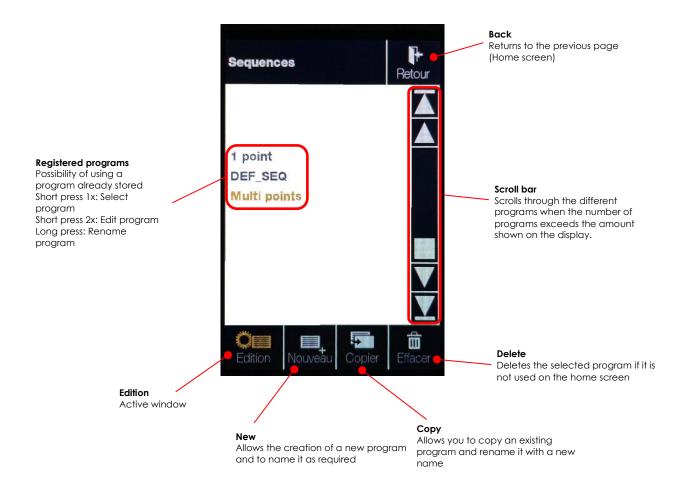To do this, apply a light pressure on the screen. → The display will light up.

4.2) Main screen

Access control
Operator: Blocked changes
Administrator: Default mode with changes possible.
System: Access only by SVM

Progress bar
Indicates the state of progress of the sequence

LED and status bar
Blue: Ready
Green: Cycle in progress
Red: Error: press to cancel

OFF Press 2 sec
ON Press on the screen
Standby time: 10 min

Sequence mode
Executes the sequence automatically with the time between each dose preset in the sequence

Endless dosing mode
Start dosing: Press the pedal
End of dosage: Release the pedal

Point mode
Performs a dosage at each start and moves to the next point in the sequence

Purge mode
Start purge: Press pedal once
End purge: Press pedal once

Product
Defines the product associated with the sequence.
Press short: Product list
Press long: Edit product

Counters
Total: No reset to 0
Daily: Press to set to 0

Dosing point
Sets the point number and name
Press short: Points list
Press long: Edit the current point

Pression
Defines the pressure associated with the dosing point
Press short: Change pressure
Press long: Edit the dosing point
Define: Config / PRODUCT

Sequence
Defines the name of the sequence
Press short: List of sequences
Long press: Edits the current sequence

Time
Defines the time associated with the dosing point
Press short: Change the time
Press long: Edit the dosing point
Define: Config / PRODUCT

Edition
Defines the name of the sequence
Press short: List of sequences
Long press: Edits the current sequence

Start
Manual start for adjustment
Use foot pedal for production

Config
Access to the configuration menu
USER INTERFACE
MEDIUM
DOSAGE
HARDWARE
SYSTEM

Info
Displays the number of days and dosages until the next maintenance of the device.

When the power is turned on, the mode used, the pressure and the time keep in memory the last values entered in the device before it was turned off.

4.3) Edition

The « Edit » mode allows to select an existing program, create a new one, modify or delete an existing one. The program selection mode is available to the « Operator » user. The editing and creation mode is only available to the « Administrator » user.

Back
Returns to the previous page (Home screen)

Registered programs
Possibility of using a program already stored
Short press 1x: Select program
Short press 2x: Edit program
Long press: Rename program

Scroll bar
Scrolls through the different programs when the number of programs exceeds the amount shown on the display.

Delete
Deletes the selected program if it is not used on the home screen

Edition
Active window

New
Allows the creation of a new program and to name it as required

Copy
Allows you to copy an existing program and rename it with a new name

4.4) Config

The different parameters of the « Config » mode are only accessible to the « Administrator » user.

User interface → Management of the device's operating parameters
- Default user
- Sound
- Brightness
- Languages (FR/D/EN)
- Units

Medium → Management of products and their default settings

Dosing → Management of default parameters when creating sequences, products, points and number of points.

Hardware → Management of the device's sleep mode after 10 minutes.

System → Date and time management Modification of the "Administrator" access code

4.4.1) User interface

Power-On → Default user management when the device is switched on

Sound → Adjustment of the volume at each press on the display
Adjustment of the volume of the "beep" at each pulse of a cycle

Brightness → Setting the % brightness of the status LED (front)
Setting the % brightness of the bottom LED (inactive)

Languages → Changing the language of the unit (FR/D/EN)

Units → Changing the unit of pressure (mbar/bar)

4.4.2) Medium
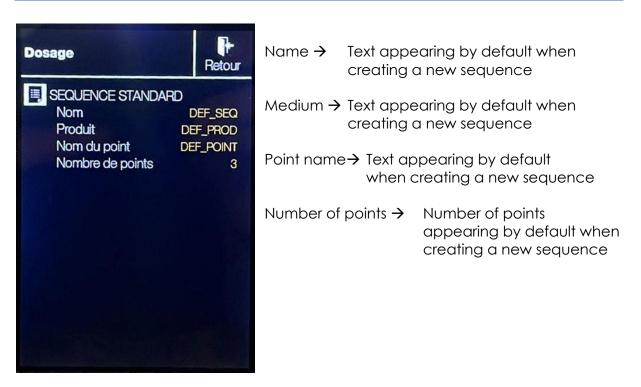
This is a path to modify the products of the device.

See point 6) for more information.

4.4.3) Dosing

Name → Text appearing by default when creating a new sequence

Medium → Text appearing by default when creating a new sequence

Point name → Text appearing by default when creating a new sequence

Number of points → Number of points appearing by default when creating a new sequence

4.4.4) Hardware

Sleep → Management of screen saving. The screen turns off after 10 minutes. A pulse or a pressure on the display turns it on again. An additional pulse performs the dosage.

Pressostat → Only available for SVM

Level detection → Only available for SVM (inactive)

4.4.5) System

Date and time → Changes to the date and time of the device. (summer/wintertime)

Maintenance interval → Only available for SVM Defines the service interval of the device according to the number of days or cycles.

Initialization → Only available for SVM

Access code → Changing the « Administrator » access code

4.5) Info
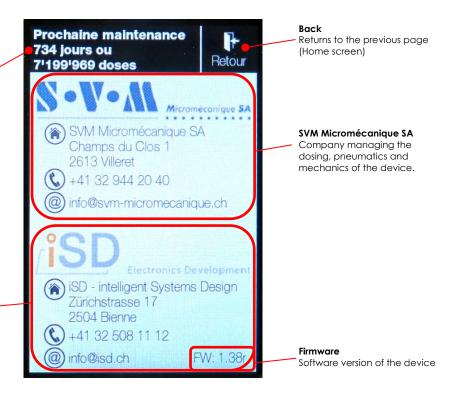
Maintenance
Countdown for the maintenance of the device. A message is displayed when one of the two counters is at zero. The appliance can continue to be used normally by quitting the message. It will reappear each time the device is switched on.
→ Contact SVM Micromécanique SA.

Back
Returns to the previous page (Home screen)

SVM Micromécanique SA
Company managing the dosing, pneumatics and mechanics of the device.

iSD Electronics Development
Partner managing the electronic and software part of the device.
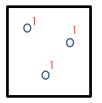
Firmware
Software version of the device

5) Programming parameter settings

5.1) Point mode

Operating mode used for repetitive dosing with the foot pedal.

Start pedal → 1 pulse at the pressure and time set in the home screen or in the « 1 point » program.

5.2) Sequence mode
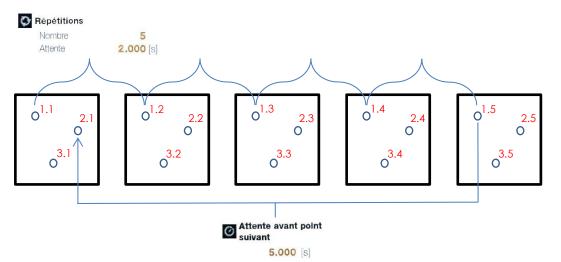
Operating mode allowing the creation of predefined sequential programs.
There are 2 different sequence modes, automatic and pulse.

5.2.1) Automatic sequence

Allows the creation of predefined sequential programs with time between each point.

Example :   Home screen → Edit → New or change program → Define
                             the number of points → Set the values

Start foot pedal → 1.1 → 2 sec → 1.2 → 2 sec → 1.3 → 2 sec → 1.4 → 2 sec → 1.5 →
Waiting for the next point (5 sec) → 2.1 → 2 sec → 2.2 → 2sec → etc…
Waiting for the next point (5 sec) → 3.1 → 2 sec → etc…
Waiting for the next point (5 sec) → 4.1 → 2 sec → etc…
Waiting for the next point (5 sec) → 5.1 → … → 5.5 → End of the program
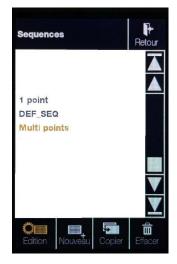
The sequence can be interrupted or modified by pressing the pedal. Press the pedal to resume the sequence with the new parameters.

1. Select « Sequence » from the main screen

It is possible to start the program at a specific dosing point and/or repeat if required. Simply press the 2 red areas and select the desired dosing point and/or repeat.

2. Edit → New → Enter the name of the program
   or
   → Select the program to be changed (press 2x)

3. Create and/or modify the number of points required to produce the part. By selecting the product type, the default values are automatically transferred to the point created. (see point 6) for more information)

4. Enter or change the desired parameters :

Dosing point number → Defined in the previous step
Dosing pressure → Value [mbar/bar] defined for this point
Dosing time → Value [s] defined for this point
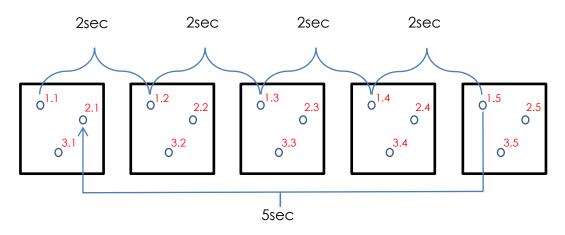Repetitions → Defines the number of points with the same values and the time between each pulse
Waiting for the next point → Time between the end of cycle DEF_POINT1 and the beginning of cycle DEF_POINT2, etc.

DEF_POINT1	Retour	DEF_POINT2	Retour	DEF_POINT3	Retour
# N° du point de dosage	1 sur 3	# N° du point de dosage	2 sur 3	# N° du point de dosage	3 sur 3
Pression de dosage	250 [mBar]	Pression de dosage	500 [mBar]	Pression de dosage	300 [mBar]
Temps de dosage	1.000 [s]	Temps de dosage	2.000 [s]	Temps de dosage	3.000 [s]
Répétitions Nombre Attente	5 1.000 [s]	Répétitions Nombre Attente	5 2.000 [s]	Répétitions Nombre Attente	5 3.000 [s]
Attente avant point suivant	5.000 [s]	Attente avant point suivant	5.000 [s]	Attente avant point suivant	5.000 [s]

5. Return to the home screen → Start / Start pedal

Dosing scheme sequential program :

Possibility to interrupt and modify the sequence between each pulse if needed.

5.2.2) Pulse sequence

Operating mode similar to the automatic sequence 5.2.1), but operating without the predefined times between each point. Pressing the pedal is necessary to move to the next point.

Start pedal → 1.1 → Start pedal → 1.2 → Start pedal → 1.3 → Start pedal → 1.4 → Start pedal → 1.5
Start pedal → 2.1 → Start pedal → 2.2 → Start pedal → etc…
Start pedal → 3.1 → Start pedal → etc…
Start pedal → 4.1 → Start pedal → etc…
Start pedal → 5.1 → … → 5.5 → End of the program
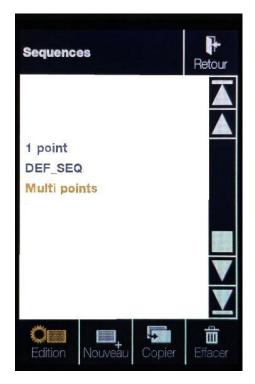
1. Select « Point » on the main screen

It is possible to start the program at a specific dosing point and/or repeat if required. Simply press the 2 red areas and select the desired dosing point and/or repeat.

2. Edit → New → Enter the name of the program
   or
   → Select the program to be changed (press 2x)

3. Create and/or modify the number of points required to produce the part. By selecting the product type, the default values are automatically transferred to the point created. (see point 6) for more information)

4. Enter or change the desired parameters :

   Dosing point number → Defined in the previous step
   Dosing pressure → Value [mbar/bar] defined for this point
   Dosing time → Value [s] defined for this point
   Repetitions → Defines the number of points with the same values and the time
                    between each pulse
   Waiting for the next point → Time between the end of cycle DEF_POINT1 and
                    the beginning of cycle DEF_POINT2, etc.

5. Return to the home screen → Start / Start pedal

5.3) Endless mode

Dosing method used for the application of oil/grease/lacquer/glue strings.

Hold the pedal down → Continuous dosing at the pressure set on the home screen
Release the pedal → Stop dosing

5.4) Purge mode

A dosing mode used when initially filling the device and when changing or cleaning the product. It is also used at the beginning of each day to check the presence of the product at the top of the needle.

Start pedal → Continuous impulse at the set pressure on the home screen
Stop pedal → Interrupting the continuous pulse
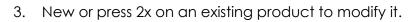
6) Creation and modification of products

It is possible to create new products (oil), with default values, and to modify them.
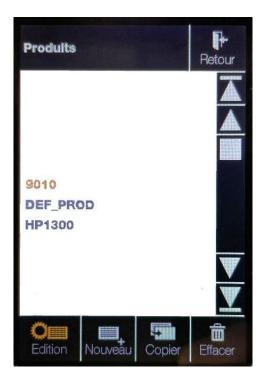
1. Home screen → Config

2. MEDIUM

3. New or press 2x on an existing product to modify it.

3.1 New

3.2 Modifying an existing product

Medium type → Opening of the drop-down menu allowing the choice of the dosed product

Default dosing time → Default dosing pressure [mbar/bar] of the selected product

Default dosing time → Default dosing time [s] of the selected product

Default delay before next dosing point → Default waiting time [s] between each dose of the selected product (sequences)

Default purge pressure → Default product purge pressure [mbar/bar]

Standby pressure → Default value "0"
Use only for models with vacuum

4. It is also possible to select the product and its default settings directly from the main screen.
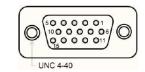
7) Cabling table for automation version

Only valid for automation versions with serial number 742.125.A.

Automation I/O Connector (D-Sub HD15p, female)

Pin Number	Signal Name	Signal Description
1	+V [1]	
2	AirMedia COM [2]	Contact closed when unsufficient air or dosing media supply
3	AutoMode COM [2]	Contact closed when ready to receive a start signal
4	Error COM [2]	Contact closed when in error state
5	Busy COM [2]	Contact closed when executing a dosing cycle or sequence
6	+V [1]	
7	AirMedia NC [2]	Contact closed when unsufficient air or dosing media supply
8	AutoMode NC [2]	Contact closed when ready to receive a start signal
9	Error NC [2]	Contact closed when in error state
10	Busy NC [2]	Contact closed when executing a dosing cycle or sequence
11	GND	
12	Input Level Reservoir [3]	Reservoir level is ok as long as this signal is in high state
13	Input Purge [3]	Purge is executed as long as this signal is in high state
14	Input Start Fill [3]	Positive edge triggers a refill cycle (volume controlled dosing device only)
15	Input Start Dose [3]	Positive edge triggers a dosing cycle or sequence

[1] internal voltage +V (usually +24 VDC, max. 1000 mA)
[2] COM and NC pairs form potential free solid state relay contacts
     (max. 30 VDC, max. 500 mA)

³ +20 VDC < input level < +30 VDC
(input current < 5 mA, according IEC61131-2 Type 1/2/3)

Recommended **external** connector type D-Sub HD15p, male:
- Connector shell: Compona Part Nr. 330 861-0
- Crimp contact male: Compona Part Nr. 329 605-1
- Plastic hood: Compona Part Nr. 329 466-1
- Crimping tool: Compona Part Nr. 329 001-0

Power Supply Connector (circular M8 3p plug)

Pin Number	Signal Name
1	+V [1]
3	GND
4	not connected

[1] 20VDC < +V < 30 VDC, supply current < 250 mA

Recommended **external** connector type:
- Circular M8 3p socket: Compona Part Nr. 188 400-1

8) Compatible products

8.1) Unidose 111

- Microdispenser for liquid glues or adhesives such as cyanoacrylates, anaerobics, UV adhesives, lacquers, strippers, etc. for the microtechnology and watchmaking industry
- Teflon tank 30-60-120-240 cc
- Application with a dosing pen
- Minimum dosed volume 0.025 mm or 1/40 mm depending on the viscosity of the product
- Automated or robotic applications possible
- Increased longevity of the dosed product
- Easy to use and maintain
- Excellent repeatability of dosages
- 111A: with LL tip for disposable syringe needles

8.2) Unidose 444

- Dosing system with disposable syringes and needles particularly suitable for dosing fast curing products such as two-component epoxy, also suitable for single-component products, pasty products, grease, etc.
- Syringe capacity: 3 to 60cc
- Inner diameter of dosing needles: 0.10 to 1.35mm
- Plastic or metal (stainless steel/brass) needles support

8.3) Unidose 600

- Microdosing machine for lacquers, UV adhesives, strippers, etc... for the microtechnology and watchmaking industry
- Disposable tanks
- Application with a dosing pen
- Minimum dosed volume 0.025 mm or 1/40 mm depending on the viscosity of the product
- Automated or robotic applications possible
- Increased longevity of the dosed product
- Easy to use and maintain
- Excellent repeatability of dosages

8.4) Unidose 222

- Highly accurate grease microdoser for watchmaking and microtechnology applications
- Minimum volume delivered : 5 nanolitres
- Ventilation system to maintain the viscosity of the grease in the tank
- Wide range of needle diameters and lengths
- 2cc tank is suitable for dosing volumes in the watch industry
- Automated or robotic applications possible

8.5) Unidose GRP

- Highly accurate grease microdoser for watchmaking and microtechnology applications
- Microdoser for thick grease (P125, GR97, etc...)
- Wide range of needle diameters and lengths
- 3cc tank is suitable for dosing volumes in the watch industry
- Automated or robotic applications possible

8.6) Unidose 666

- Ultra-precise oil microdoser for watchmaking and microtechnology applications
- 5cc glass tank
- Minimum volume delivered : 5 nanolitres
- Total protection against light and UV radiation
- Application with a dosing pen
- Automated or robotic applications possible
- Needles diameter 0,13-0,18-0,20-0,25-0,30-0,35 etc...
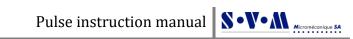
8.7) Unidose 666 Double

- Two types of oil can be dosed with the same device
- Ultra-precise oil microdoser for watchmaking and microtechnology applications
- 5cc glass tank
- Minimum volume delivered : 5 nanolitres
- Total protection against light and UV radiation
- Application with a dosing pen
- Automated or robotic applications possible
- Needles diameter 0,13-0,18-0,20-0,25-0,30-0,35 etc...
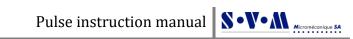
8.8) Unidose 666 EP

- Microdispenser for the application of very fluid liquids (epilame, oil, etc)
- 5cc glass tank
- Minimum volume delivered : 5 nanolitres
- Total protection against light and UV radiation
- Application with a dosing pen
- Automated or robotic applications possible

Personal notes

Personal notes

Personal notes