USE AND MAINTENANCE MANUAL

"2000 SMART" CONTROL UNITS

Summary

COD.: **DTVI_2000SMART_2441**
REV.: **00**
DATE: **09/10/2024**

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1 GENERAL INFORMATION

This manual contains information regarding the installation, use, maintenance and end of life of the component and provides indications for the most suitable behavior for correct operation. This manual has been designed to be simple and as straightforward as possible, with a subdivision into chapters and sub-chapters that allows you to find any information you need quickly. In addition, the manual begins by giving a general description of the contents, then an overview of the component, to arrive at aspects of safety, transport, installation and use and finally to the end of life. If you have any doubts about the interpretation or reading of this document, please contact the manufacturer.

DAV Tech declines any responsibility relating to improper use of the component. Observe the specifications in this manual.

Read this manual before handling the component or performing any action on it.

The manual is an essential safety requirement and must accompany the component throughout its life cycle.

It is the task of the end user to optimize the functionality of the component, always considering the purpose for which it was built.

You are asked to keep this manual, together with the attached documentation, in good condition, legible and complete. In addition, it must be stored in the vicinity of the component or, in any case, in a place accessible and known to all personnel who use the component itself or who must perform maintenance or inspection interventions. If the manual deteriorates or is no longer complete, a copy must be requested from the manufacturer, indicating the code of the manual and the revision.

The manual is intended for personnel who use the component (operators), who perform maintenance on it (maintenance technicians), and for personnel who must perform checks or inspections. The manufacturer is not liable for damage to the component caused by personnel who have not followed the instructions in the manual.

If you have any doubts about the correct interpretation of the information contained in this manual, please contact the manufacturer.

GUARANTEE

During the design phase, a careful choice of materials and components to be used in the project was made and they were subjected to regular testing before delivery. All elements have been designed and manufactured with an adequate degree of safety, such as to be able to withstand stresses greater than those of normal use.

The warranty is valid for a period of 12 months from the date of commissioning and in any case no longer than 15 months from the date of delivery. Work carried out during the warranty period does not extend the warranty period in any way.

The manufacturer is not liable for defects due to normal wear and tear of parts which, by their nature, decay.

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1.1 Symbology

Below are the symbols that are used to give a greater impact to the importance of the concept you want to give.

ATTENTION!
Refers to a warning that could lead to minor damage (minor injuries, damage to the component requiring maintenance work).

DANGER!
It refers to a major event that could cause major damage (death, permanent injury, irreversible breakage of the component).

NOTE. Indicate relevant information or insight.

OBLIGATION. It indicates a task that must be performed, related to both the component and the manual.

REFERENCE. Links to an external document that is important to view

In addition, the list of symbols is integrated with that of the personnel responsible for using the component and its function, together with other symbols used within the manual.

Operator
A (qualified) person capable of operating the component, adjusting, cleaning, starting or resetting the component. The operator is not authorized to perform maintenance.

Mechanical maintenance technician
Qualified technician able to carry out mechanical, adjustment, maintenance and routine repair work described in this manual. He is not authorized to carry out interventions on electrical systems in the presence of voltage.

Electrical maintenance technician
Qualified technician able to carry out electrical, adjustment, maintenance and routine repair work described in this manual. It can work in the presence of voltage on electrical cabinets and junction boxes. He is not authorized to carry out interventions on the mechanical side.

Manufacturer's technician
Qualified technician made available by the manufacturer to carry out operations of a complex nature in particular situations, or in any case as agreed with the customer.

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1.2 Reference standards

The reference standards and directives of this manual are the following:

Directives

- 2006/42/EC – Machinery Directive;

Each component that makes up a system has its own CE declaration as a quasi-machine, but it must be considered that the serial number of the system is given by the serial number of the control unit to which they are connected.

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1.3 Declaration of incorporation (Annex II B DIR. 2006/42/EC)

Manufacturer's name:	**DAV Tech Srl**
Address:	Via G. Ravizza, 30, .36075, Montecchio Maggiore (VI)

DECLARES THAT THE ALMOST MACHINE

Component:	Controller DA/DAS/DAV/CV/DAVR1000 2000 SMART
Model:	Control system for DA/DAS/DAV valves
ID	
Year:	2024
Intended use:	Standalone controller for various dosing systems

COMPLIES WITH THE INCORPORATION PROVISIONS OF DIRECTIVE 2006/42/EC

The technical documentation has been drawn up in accordance with Annex VII B, as required by the following:

- Machinery Directive 2006/42/EC of the European Parliament and Council of 17 May 2006

IT ALSO DECLARES THAT:

- Undertakings are undertaken to provide, in response to a properly substantiated request from the national authorities, relevant information on this partly completed machine;
- The technical file was prepared by Andrea Grazioli, via Ravizza, 30, Montecchio Maggiore (VI), IT.

This quasi-machine cannot be used until the machinery on which it will be used is declared compliant with regulation 2006/42/EC.

Montecchio Maggiore, 09 October 2024

The legal representative

Andrea Grazioli

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1.4 Glossary

The following are the most used terms within this manual with their meanings.

TERM	DEFINITION
Enable	Term that defines the act of preparing (enabling) an action. The action will be triggered as soon as the criteria are met, which consequently leads to the activation of the enabled action.
Active	The action that is performed instantaneously when the control is activated.
Human controls	This defines those commands that, used for manual operations, must be kept activated for the action to be performed. When the command is released, the action stops.
Two-hand controls	Human-controlled controls require two manual controls to be operated simultaneously to perform an action.
P.P.E.	Personal protective equipment. They include all the items necessary to ensure the protection of personnel from possible accidental damage (safety shoes, gloves, helmet, and more).
Display	It is used to display information. It can be in any shape and size, even touch screen.
Manufacturer	Natural or legal person who designed and manufactured the component covered by this manual.
HP	High Pressure. An acronym that indicates high pressure.
Icon	A small image that represents a command, a function or even a document or an operating program, which appears on a computer screen. When selected by the user, it initiates the function or program it symbolizes.
Joystick	Lever manipulator used in control panels.
N.A.	Not Applicable, i.e. it indicates that it is a field that does not apply to this manual and that it cannot be integrated into the component.
Operator panel	A control station where the machine control instruments are located
P.I.	Possible Implementation, i.e. it is currently absent from the component described in this manual, but it is possible to make an addition and implement it.
Screen	Interface system between man and component. Screenshots are the images displayed on the operator panel that allow the user to receive and provide information to the management software.
Push-button panel	Composition of buttons and selectors that allow you to act directly on the behavior of the component.
Keyboard	Keyboard only (stand-alone element) or in addition to a display (keys only, no selectors or other)
Touch screen	Touch screen that allows the user to interact with a graphic interface using their fingers or objects.

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1.5 Service and manufacturer contact details

For any reason relating to the use, maintenance or request of spare parts, the customer must contact the manufacturer (or the service center if present) directly, specifying the identification data of the component.

The customer can make use of the technical and commercial support of local agents or importers, who are in direct contact with the company DAV Tech Srl.

Company name	**DAV Tech Srl**
Postal address	Via Ravizza, 30, 37065, Montecchio Maggiore (VI) – (IT)
Telephone	+39 0444 574510
Fax	+39 0444 574324
email	davtech@davtech.it
Website	www.davtech.it

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2 PRESENTATION AND OPERATION

In this manual we want to talk about the various models of valve controllers DA, DAS, DAV, CV and DAVR1000. The basic operation is the same for all models, some aspects change, since the combined dosing systems are different. In those aspects where there are differences, there are chapters dedicated to specific controllers. If there are equalities, the DA model is taken as a reference, otherwise its particularity is specified for each model.

In this manual we want to deepen the operation of the 2000 SMART control system, which is a grouping of various control systems (DA, DAS, DAV, CV and DAVR1000 2000 SMART) of which the basis is the same for all, only some aspects change that are explained within the present. The function of these controllers is to be able to control a specific valve, based on the type of valve, to perform local dosing, usually using a valve manually.

In other words, the function of this component is:

CONTROL OF VALVE PARAMETERS AND DISPENSING

Intended use is the use described in the chapter below, while improper use is considered any other use that is not described in this manual, with products of different material and format from those for which it was built.

No.	DESCRIPTION
01	Display HMI
02	Pneumatic valve connection 1
03	Pneumatic valve connection 2

Figure 01 – DA 2000 SMART front

No.	DESCRIPTION
01	Display HMI
02	Electrical connection sensors
03	Pneumatic valve connection 1
04	Pneumatic valve connection 2

Figure 02 – DAV 2000 SMART and CV 2000 SMART front

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Figure 03 – DAS 2000 SMART front panel

No.   DESCRIPTION

No.	DESCRIPTION
01	Display HMI
02	Pneumatic air spray connection
03	Sensor electrical connection
04	Pneumatic connection for dosing air
05	Pneumatic air mist adjustment

Figure 04 – Front DAVR1000 2000 SMART

No.   DESCRIPTION

No.	DESCRIPTION
01	Display HMI
02	Electric motor connection
03	Pneumatic valve connection 1
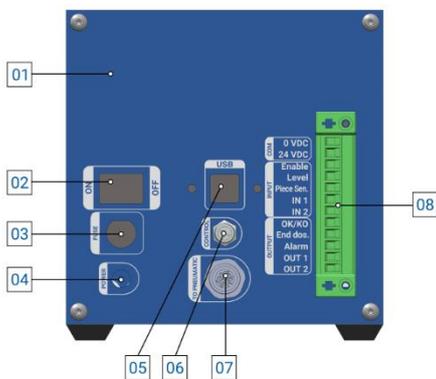
Figure 05 – Rear panel 2000 series smart

No.   DESCRIPTION

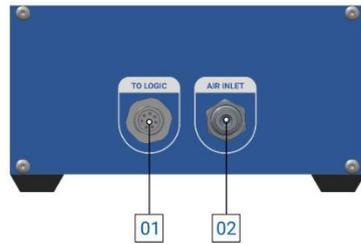| No.	DESCRIPTION
01	CE Plate Position
02	On/off button
03	2° input fuse
04	Control unit power connection
05	USB input
06	"CONTROL" connector that allows you to send the START signal
07	Connector to extension for digital signal exchange
08	Input/Output Terminal Block

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Figure 06 – Rear extension 2000 series smart

No.	DESCRIPTION
01	Expansion of electrical connection
02	Pneumatic expansion connection (Ø6X4 mm)

To choose the correct model for your application, you must check that it matches the valve model to be used. In particular:

- The DA family valves (DA-400, DA-500, and others) must be combined with the DA controller;
- The DAS family valves (DAS-30, DAS-50N and others) must be combined with the DAS controller;
- The DAV family valves (DAV-100, DAV-200 and others) must be combined with the DAV controller;
- The DA family valves must be combined with the CV controller in case you want to perform volumetric dosing;
- The DAVR1000 centrifugal system must be combined with the DAVR1000 2000 SMART controller.

SPECIAL VERSIONS

N.A.

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OPERATION

The operation of these devices can be grouped into four different types, namely:

- For DA, DAV controllers, a hose of the appropriate size (chapter 2.2) must be connected to the valve opening and valve closing connector, according to the diagram of the selected valve (see valve manual). The only difference is that with DAV type valves you can have a dosing objectification sensor to be connected, i.e. a sensor per valve that allows you to see if the dosing has been carried out. In addition, two valves can be connected to one controller;
- The CV controller is combined with a DA valve (for connections refer to the previous point), while the volumetric meter sensor must be connected to the topmost connector of the sensors. In this case, a single valve can be connected (preferably from the left side).
- For DAS controllers, a single valve can be connected and the dosing air hose must be connected to connection number 04, Figure 03 of the previous chapter, and a spray air hose to connection number 02, Figure 03 of the previous chapter. To adjust the spray air, adjust number 05, Figure 03. For the working pressures of the valves, especially the nebulization pressure, the manual of the valve must be checked. To check the regulation of the atomization air, the dosing phase of the valve itself must be activated; In addition, it is possible to connect the dosage objectification cable via the appropriate sensor input;
- For DAVR1000 controllers, the two pneumatic tubes of the valve must be connected in the appropriate connections with the dimensions specified in chapter 2.2 (a DA is usually used), while the motor must be connected to the appropriate electrical input (that of the sensor). It should be noted that the motor controls the centrifugal part of the DAVR1000 system, while the pneumatic part controls the opening and closing of the valve associated with the centrifugal system.
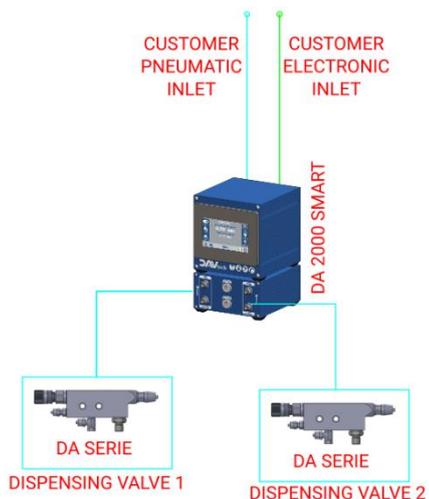
> ⚠️ **ATTENTION!**
> For working pressures, apart from the atomization pressure, it is not possible to adjust the pressure of the control air, which is the same as the inlet pressure of the customer's pneumatic system. Check that it is within the parameters in the manual of the valve in use.

> ⚠️ **ATTENTION!**
> The DAVR1000 2000 SMART controller cannot control the centrifugal system if it is combined with a PCP pump or a 400 EV, 400 EVO or 400 MiniPeek valve. Consult the manufacturer's technicians for alternatives.

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COLOR	MEANING
BLACK	Data
GREEN	System electrical connection
CYAN	Pneumatic connection
RED	Notes

Figure 07 – Example of DA 2000 SMART connection
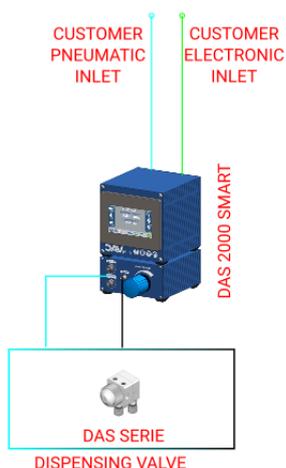
COLOR	MEANING
BLACK	Data
GREEN	System electrical connection
CYAN	Pneumatic connection
RED	Notes

Figure 08 – Example of DAS 2000 SMART connection
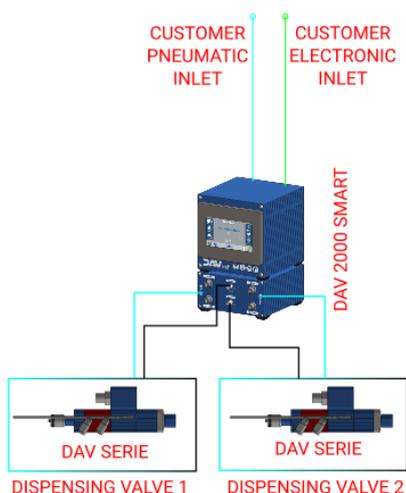
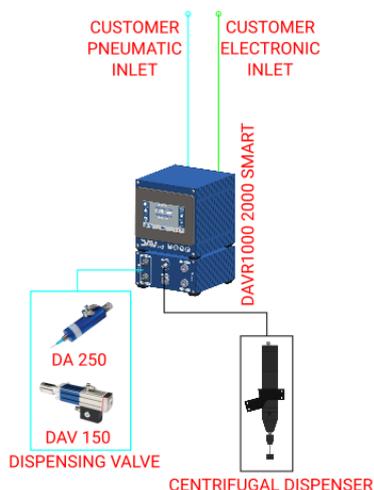| COLOR	MEANING
BLACK	Data
GREEN	System electrical connection
CYAN	Pneumatic connection
RED	Notes

Figure 09 – Example of DAV 2000 SMART connection

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Figure 10 – Example of CV 2000 SMART connection

COLOR	MEANING
BLACK	Data
GREEN	System electrical connection
CYAN	Pneumatic connection
RED	Notes

Figure 11 – Example of connection DAVR1000 2000 SMART

COLOR	MEANING
BLACK	Data
GREEN	System electrical connection
CYAN	Pneumatic connection
RED	Notes

⚠️ **ATTENTION!**
For pneumatic and electronic connections, check the specific valve manual.

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2.1 Exploded

N.A.

2.2 Technical data

All the technical characteristics concerning the component of this manual are indicated below.

SPECIFICATIONS		
Description	**UdM**	**Values**
GENERAL		
Series	\	2000 SMART
Activation	\	Electric
ELECTRIC		
Single-phase power supply	V	110/230
Power supply fuse voltage	V	250
Current usage(DA, DAV, DAS, CV)	A	0.4
Power consumption (DA, DAV, DAS, CV)	W	10
Current usage(DAVR 1000)	A	2.5
Power consumption (DAVR 1000)	W	60
Ionizing radiation	Sv	Not allowed
PNEUMATIC		
Indicative inlet/outlet pressure [1]	bar	6
Pneumatic inlet connection	mm	6x4
Pneumatic outlet connection	mm	4x2.5

[1] To be evaluated with the valve used, refer to the valve manual

ENVIRONMENTAL CHARACTERISTICS		
Description	**UdM**	**Values**
Working Ambient Temperature	°C	5 ÷ 45
Storage Ambient Temperature	°C	-20 ÷ 55
Permissible non-condensing humidity	%	5 ÷ 90

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DIMENSIONAL AND WEIGHT CHARACTERISTICS CONTROLLER

Description	UdM	Value
Component length (min ÷ max)	mm	140
Component height (min ÷ max)	mm	145
Component depth (min ÷ max)	mm	150
Component weight	kg	1.48

DIMENSIONAL AND WEIGHT CHARACTERISTICS EXPANSION FROM/DAV/CV/DAVR1000

Description	UdM	Value
Component length (min ÷ max)	mm	138
Component height (min ÷ max)	mm	73
Component depth (min ÷ max)	mm	143
Component weight	kg	0.95

DIMENSIONAL AND WEIGHT CHARACTERISTICS DAS EXPANSION

Description	UdM	Value
Component length (min ÷ max)	mm	140
Component height (min ÷ max)	mm	73
Component depth (min ÷ max)	mm	143
Component weight	kg	1.06

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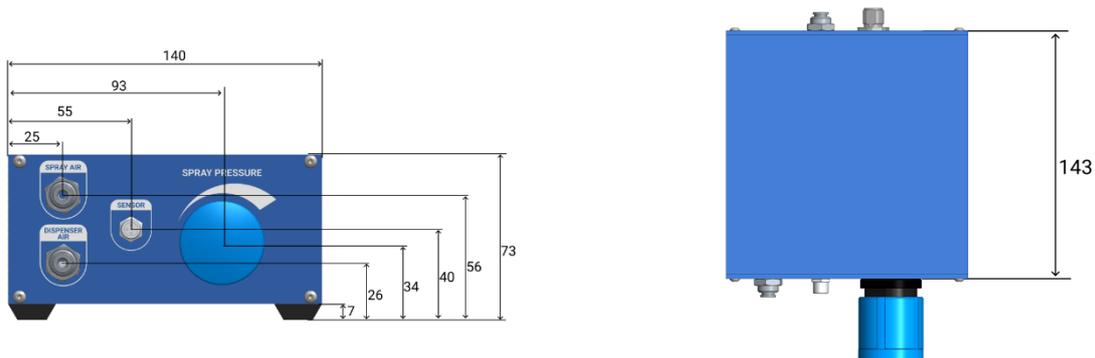
EN

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CONTROLLER
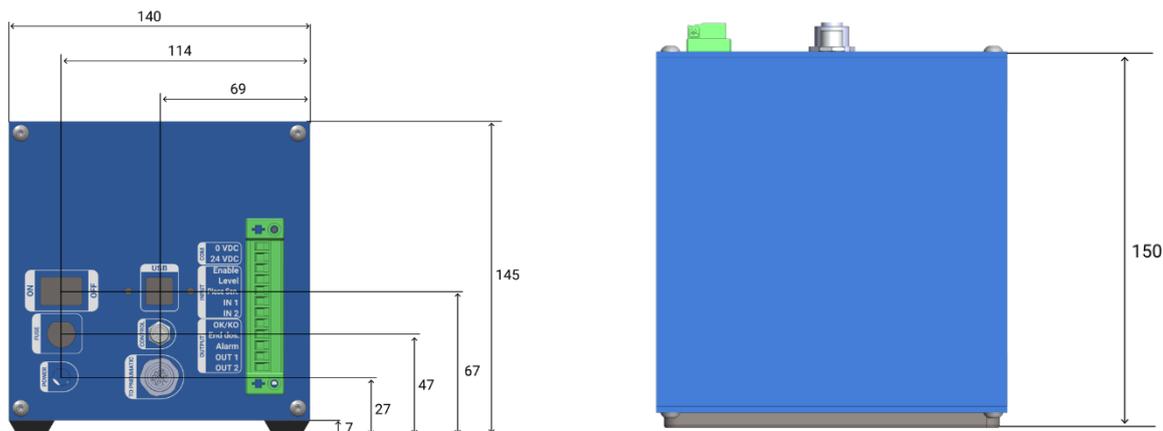
DA/DAV/CV/DAVR EXPANSION
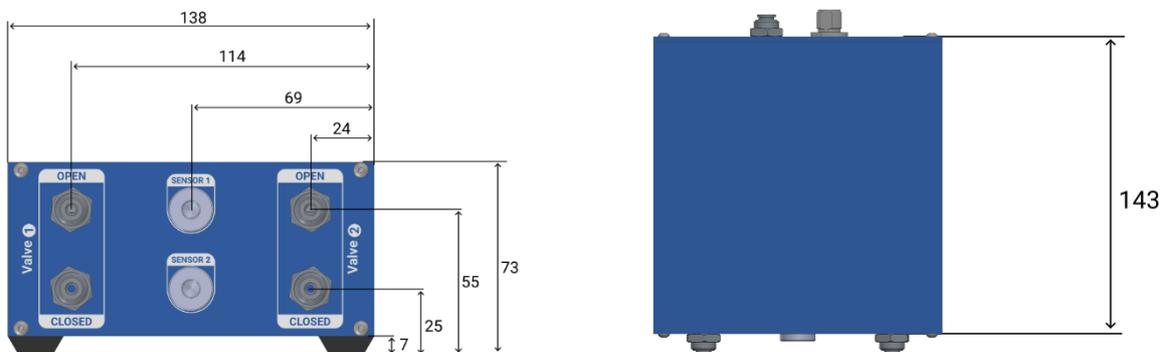
DAS EXPANSION

ℹ️ You can request the 3D of the component in the desired version from the manufacturer without any obligation.

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3 SAFETY

The following is a list of warnings regarding the component covered by this manual. Please read carefully before proceeding to the next chapters.

DANGER!
Before operating the component or performing any action on it, read this manual carefully.

DANGER!
Do not use the component while under the influence of drugs or other substances that may impair attention and reaction ability.

DANGER!
Operators must only perform operations or interventions that are within the competence of the role and qualification assigned.

FIRE/EXPLOSION HAZARD!
This component is not designed to work in an ATEX environment.

ATTENTION!
Modifications to the component must not be made to achieve performance other than that for which it was designed and built, unless authorized by the manufacturer.

The component may only be used by trained and authorized operators and for the sole purpose for which it was designed and manufactured.

The component is manufactured in compliance with the technical safety standards in force at the time of its construction.

3.1 Component safety devices

N.A.

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3.2 Free useful spaces

These are those spaces that must be respected during the installation of the component and serve to allow the passage of personnel safely, as well as allowing maintenance and cleaning operations to be carried out safely.
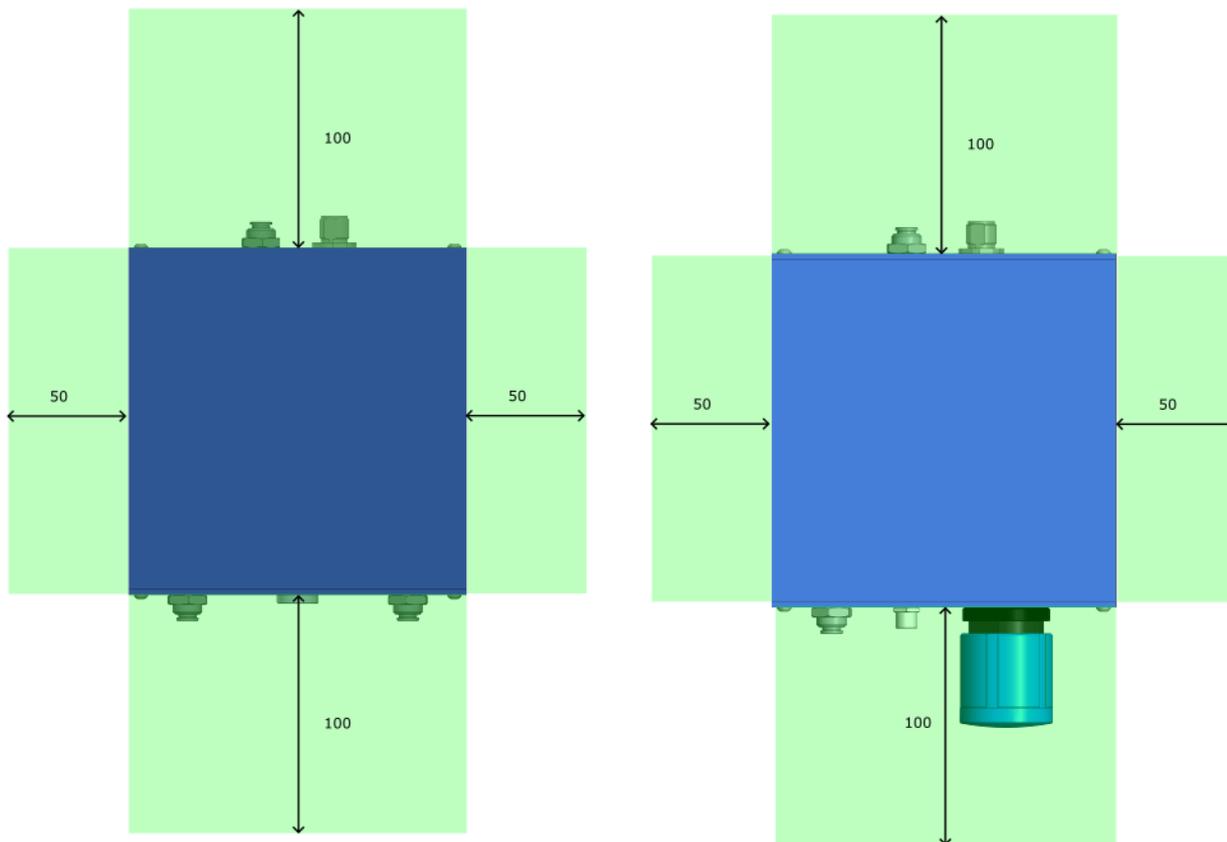
In this image, the areas that are clear of any obstacles have been marked in green.

3.3 Risk areas and residual risk

N.A.

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4 TRANSPORT AND HANDLING

Once you have received the goods, you must check that the packaging is intact and that there is an exact correspondence with the material ordered.

> ⚠️ **ATTENTION!**
> The original configuration of the component must not be changed. The manufacturer is not liable for damage caused by inappropriate use of the component.

> ⚠️ **ATTENTION!**
> If the packaging is not intact, contact the manufacturer immediately, also sending photos of the condition of the packaging. Do not open it until you have notified the manufacturer.

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5 INSTALLATION

The installation of the component is carried out by the customer. If necessary, you can contact the manufacturer to have a specialist technician help you.

To be able to place the controller, just place it on a table, as it is equipped with support feet. In case you have purchased a controller and expansion, you can put the controller on top of the expansion, and the expansion on a plane parallel to the ground. It is not possible, however, to place it in other positions: it must remain resting on a surface parallel to the ground.

A special holder can be purchased separately to tilt the assembly for easy viewing by the operator.

It is recommended that you perform a component check before beginning the installation. If it is evidently damaged, please contact the manufacturer.

ATTENTION!
Please remove the packaging with the utmost care. If damage is caused to the component, the manufacturer is not liable.

Dispose of the packaging correctly, considering the different nature of the components and following the regulations in force in the country.

5.1 Positioning

N.A.

5.2 Connections

In this chapter, we want to explain the connection method that must be used for the component. The following types of connection are provided:

- Electrical connection;
- Pneumatic connection;

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5.2.1 Electric

Authorized personnel		PPE to wear					
Component status	Installed component						
Power Values	See chapter 2.2						
Necessary preparations	N.A.						
Materials needed	N.A.						
Equipment needed	N.A.						

ℹ️ The electricity connection is at the expense of the customer.

⚠️ **ATTENTION!**
The power supplies on the connectors are used for power transducers and sensors connected to the controller inputs. If you need to interface the controller with an external system that has its own power supply, please only share the negative pole (GND). The positive pole must not be lumped together, otherwise the power supplies of the two systems are in parallel.
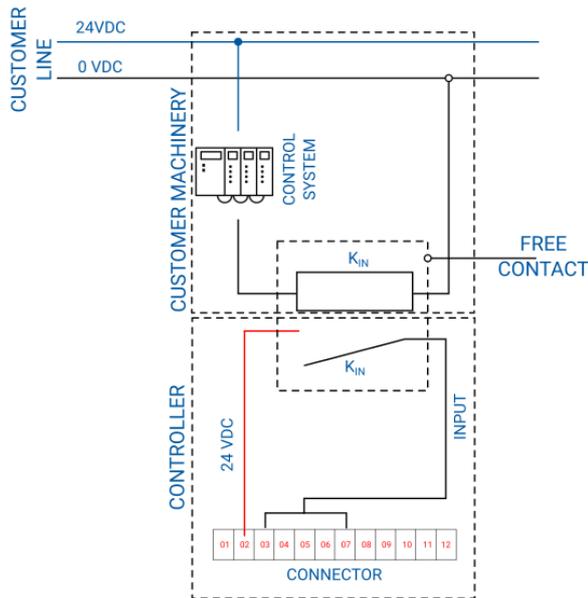
The connection diagrams of the components are shown below. The only component to be connected to the power supply is the controller, which has the connection set up for the 220V power supply with a specially supplied power supply.
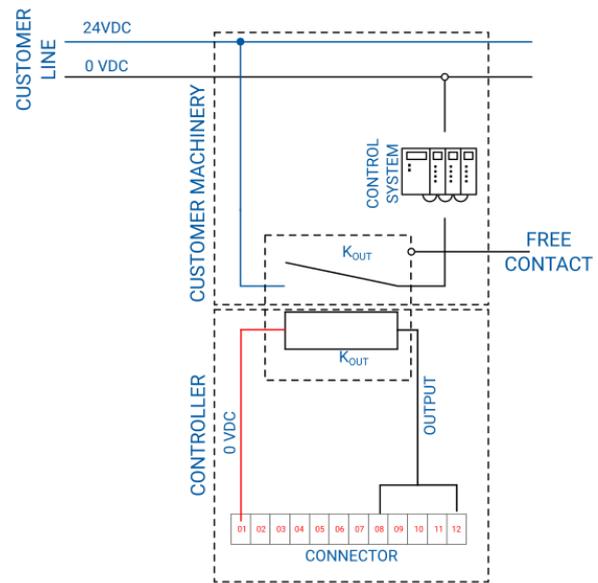
12-PIN CONNECTOR (ON CONTROLLER)
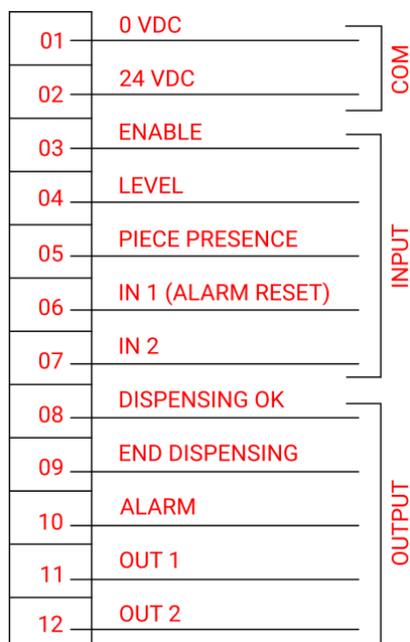
ℹ️ This paragraph is used to explain how the various pins of the connector work. To see how they connect, check the manual for the appropriate external component.

PIN	Signal	Group
01	0 VDC	COM
02	24 VDC	COM
03	ENABLE	INPUT
04	LEVEL	INPUT
05	PIECE PRESENCE	INPUT
06	IN 1 (ALARM RESET)	INPUT
07	IN 2	INPUT
08	DISPENSING OK	OUTPUT
09	END DISPENSING	OUTPUT
10	ALARM	OUTPUT
11	OUT 1	OUTPUT
12	OUT 2	OUTPUT

- PIN 01 and 02: Power supply and common for external components;
- PIN 03: Receive the dosage authorization from an assembly line or a pressure switch;
- PIN 04: Monitor the level of the product to be dispensed;
- PIN 05: Monitor any proximity sensor to check the presence of the component to be dosed (which can be activated from the appropriate page);
- PIN 06: Reset active alarms via a digital input (IN 1) with a minimum pulse of 200ms;
- PIN 08 and 09: Receive working feedback such as part OK and KO, based on the status of the pins "DOSING OK" and "END DOSING" (if both are TRUE the component is OK, otherwise if "DOSING OK" is FALSE, the component is KO);
- PIN 09: Receive an end-of-dosing pulse lasting about 500ms (with the active part-presence check mode, the end-of-dosing signal will remain in a high state until the dispensed piece is removed from the working position);
- PIN 10: Receive a signal if the controller is in alarm.
- PIN 07, 11 and 12: Preparations for any customizations (normally not used).

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Connection of inputs with external system

Connection of outputs with external system

ATTENTION!

The figures above show how to connect an input or output signal to an external control system. Particular attention should be paid to when the 24 VDC (input) and when the 0 VDC (output) should be connected. In addition, free contacts are required for making connections, as shown in the illustrations. The connection diagram is generic for each type of input or output, i.e. it can be connected to the PIN of the desired connector. In addition, a control system is a generic system, which can be a PLC, another controller, a switch, or something else.

ATTENTION!

If you want to connect several inputs (or outputs), you must set up several free contacts; that is, for each input (or output) that you want to connect, you need to have a single free contact.
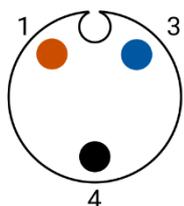
The free contact indicated in the images is that of the customer's electrical panel, it is not the responsibility of the manufacturer.

ATTENTION!

Since purchase, there is a wire that bridges between pin 2 (24 VDC) and pin 3 (Enable). This bridge must remain for the controller to function correctly (in case you do not give the enable command via an external control system). If it is removed to make further connections, remember to reinsert the jumper (only if it is not controlled by an external control system).

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M8 3-PIN CONNECTOR – CONTROL (ON CONTROLLER)

PIN	COLOR	DA	DAS	DAV	CV	DAVR1000
1	BROWN	+24 VDC				
3	BLUE	0 VDC				
4	BLACK	START signal				

Through this connector, the controller receives the START signal which activates the dosage according to the set parameters. Input systems such as buttons, proximity sensors, pedals can be connected or the controller can be controlled via an external PLC.

M12 8-PIN CONNECTOR – TO PNEUMATIC (ON CONTROLLER)
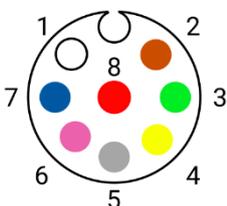
PIN	COLOR	DA	DAS	DAV	CV	DAVR1000
1	WHITE	-	INTERNAL	INTERNAL	-	INTERNAL
2	BROWN	24 VDC				
3	GREEN	EV 1				DAVR1000
4	YELLOW	EV 2			-	EV 1
5	GREY	Ogg. Val. 1	INTERNAL		Con. Vol.	INTERNAL
6	ROSE	Ogg. Val. 2	INTERNAL		-	INTERNAL
7	BLUE	0 VDC				
8	RED	-	INTERNAL		-	INTERNAL

Through this connector there is communication with the specific function for each type of controller, in particular:

- For DAV controllers, it receives the dosage objectification signals and controls the solenoid valves contained in the relative expansion (pin 5 – grey is used for the valve 1 objectification signal; pin 6 – pink is used for the valve 2 objectification signal);
- For the DAS controller, it receives the analog signal from the additional air pressure transducer and controls the solenoid valves contained in the relative expansion;
- For the CV controller, it receives the signals from the volumetric meter, the objectification signals and controls the solenoid valves contained in the relative expansion (pin 5 – gray is used for the signals of the volumetric meter);
- For the DAVR1000 controller, it controls the drive of the motor and the dosing valve (pin 3 – green is used to give power to the motor of the centrifugal system DAVR1000), as well as controlling the solenoid valve inside the relative expansion.

> The M12 8-pin connector (TO LOGIC, (Figure 06, number 01, chapter 2)) present on each expansion has the same mapping as the M12 8-pin connector just described.

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5.2.2 Pneumatic

Authorized personnel		PPE to wear					
Component status	Free from any pneumatic connection						
Power Values	See chapter 2.2						
Necessary preparations	Working pneumatic air system						
Materials needed	Tube Ø6x4mm						
Equipment needed	N.A.						

The pneumatic connection is the responsibility of the customer.

The pneumatic connection is to be made only on the expansions, on the special inlet marked as AIR INLET (Figure 06, number 02, chapter 2), with a pipe of the dimensions shown in chapter 2.2.

5.3 Commissioning

The commissioning of the component is carried out once the positioning and connection of the connectors has been completed. Before commissioning the component, the following checks must be carried out:

- Check that the connections have been connected correctly;
- Check that the component is free of dirt or residues of various kinds;
- Check that the connectors have been connected correctly;
- Make sure that the components are resting on a surface as indicated in the previous chapters.

ATTENTION!
If even one of the above points does not comply, commissioning must not be carried out. Commissioning should only be carried out when all points have been successfully completed.

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6 SOFTWARE

In this chapter we want to deepen the software part of the component, in particular we want to see both the operator terminal and the screens that are displayed and how to change screens.

The operator terminal is a touch screen and is used to display the current screen, change screens, check the status of values within the component. The software starts automatically as soon as the component is powered.

⚠️ This symbol appears on any screen when an alarm arises. By pressing on this symbol, you can access the ALARMS and SIGNALS screen, and you can view the alarm and, if necessary, reset it.

By pressing on any interactive field on a screen, the numeric keypad appears to help the operator fill in the field itself. Keypads can be of two types:

Alphanumeric keypad: appears in case you need to enter texts as well as numbers. It is typically used to enter username, password, recipe name, or similar fields. Some keys are:

- CAPS LOCK: Select lowercase/uppercase character;
- BACK: delete the last character inserted;
- CLEAR: Clear all values in the field;
- OK (ENTER): confirm the characters entered and close the keypad;
- CANCEL: Close the keypad without making any changes.

Numeric keypad: appears if you only need to enter numbers. It is typically used to enter passwords or similar fields. Some keys are:

- +/-: converts values from positive to negative;
- CLEAR: Clears all typed values;
- OK: Confirms the entered heats and closes the keypad;
- CANCEL: Closes the keypad without making any changes.

ℹ️ The list of messages (if any) and alarms that may appear for this system are given in chapter 9

ℹ️ In the event of alarms in progress, the ALARMS AND SIGNALS screen appears immediately when the program is switched on, accompanied by an intermittent sound.

TO ACCESS THE SETTINGS MENU, YOU MUST USE THE FOLLOWING CREDENTIALS:

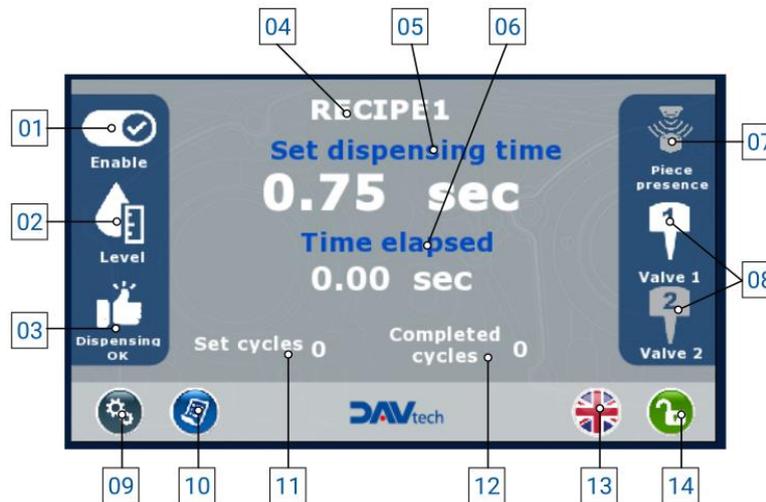**USERNAME:** adm   **PASSWORD:** 574510

Access and modification of the parameters in the menu is allowed only with the prior authorization of the manufacturer's technicians

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6.1 DA 2000 SMART

The following are the screens inside the DA 2000 SMART controller.

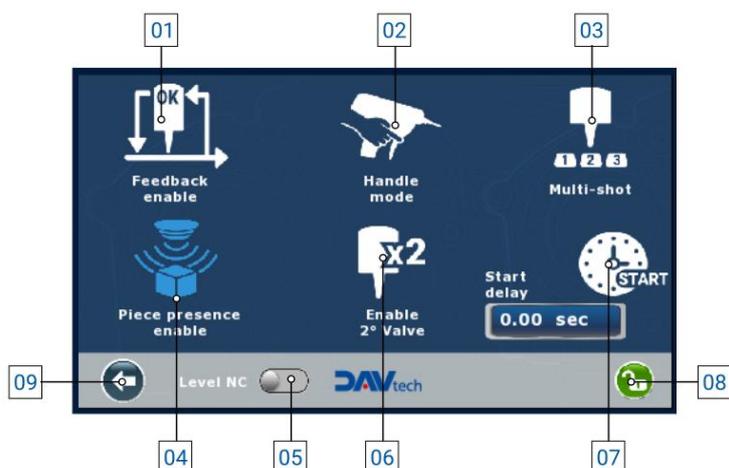## 6.1.1 Main screen

1) **Enable:** Input status signaling "Enable" (Connector 12 PIN, PIN 3, chapter 5.2.1);
2) **Level:** Input status signaling "Level" (Connector 12 PIN, PIN 4, chapter 5.2.1);
3) **Dosing OK:** Status indication of the "Dosing OK" and "End of Dosing" outputs (Connector 12 PIN, PIN 8 and PIN 9, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system has finished dosing and the component has been OK;
   b) **Red:** Indicates that the system has finished dosing and the component has been KO
   c) **White:** Indicates that the system is waiting for the result of the machining;
4) Field that identifies the **active recipe**;
5) Time value **set** within the selected recipe;
6) Value of time that has passed for the work in progress;
7) **Workpiece presence:** Input status signal "Workpiece presence" (Connector 12 PIN, PIN 5, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system detects the presence of the component to be machined;
   b) **White:** Indicates that the system does not detect the presence of the component to be machined;
   c) **Gray:** The part presence recognition mode is disabled;
8) **Valve 1/2:** Indicates the status of the relative valve, of which:
   a) **Green:** Indicates that the indicated valve is controlled;
   b) **White:** Indicates that the indicated valve is not controlled;
   c) **Gray:** Indicates that the indicated valve is not enabled;
9) Button used to enter the **settings menu** (chapter 6.1.2);
10) Button used to enter the **recipe settings** (chapter 6.1.3);
11) Indication of the value imposed on the recipe of the **total cycles (components)** to be performed;
12) Indication of the **components performed** within the same cycle;
13) Button to perform display **language change**;
14) Button that is used to unlock the system to access the various buttons.

For step 12, the work cycle (if the "MULTI-SHOT" mode is enabled from the settings) is based on a certain number of components to be processed, set on the work recipe. To restart it, you must press on the count value for about 1 second, to return the counter to zero.

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6.1.2 Settings screen

1) **Sensor feedback enablement:** Used to enable or disable the objectification of the dosage;
2) **Handle Mode:** If **enabled**, the controller works from the moment it receives a START signal via the CONTROL connector (Figure 05 Number 06 chapter 2) until the time expires, sending the confirmation of "PIECE OK". If the START signal falls before the end of the time, the piece is defined as a "KO PIECE". In case it is **disabled**, just send a START signal of about 200ms via the CONTROL connector, where the controller continues to command the valve even without a start signal. The valve remains active until the working time expires, cataloguing the part as "PIECE OK". If the system receives another START signal after the time has not yet expired, then the controller stops controlling the valve with a consequent "KO PIECE" signal.
3) **Multi-shot:** Used to enable or disable the piece-counting mode, i.e. in this case the system takes the total number of dispenses to be performed from the recipe and increases the count with each dosing, until it reaches the target set per recipe, with the logic described below:
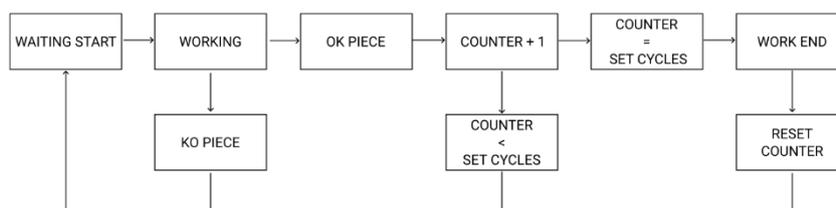
4) **Enabling workpiece presence:** This mode checks the status of the input dedicated to workpiece presence (Connector 12 PIN, PIN 5, chapter 5.2.1) before operating the valve. If this is not detected at the time of START, there is a missing part alarm. When the dosing is completed, the end-of-work signal remains high until the dosed component is removed, to block any repetition of the dispensing in the same component before it is removed;
5) **NC Level:** If enabled, the level alarm with signal from the low level connector (12 PIN Connector, PIN 4, chapter 5.2.1) is reported, otherwise the level alarm with high signal is reported;
6) **Second valve enablement:** Allows you to work with a second dosing channel (area on the right);
7) **Start Hold:** Sets the wait time from the time the start command is received to the actual actuation of the metering valve. It is used in the case of delayed departures;
8) Button that is used to unlock the system to access the various buttons.
9) **Back:** Button to return to the main menu (chapter 6.1.1)

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6.1.3 Recipes screen

No. ▲	Program name	Dispensing time	Set cycles
0	RECIPE1	0.75	0
1	RECIPE2	1.25	15
2		0.00	0
3		0.00	0
4		0.00	0
5		0.00	0

On this screen, you can select or add new recipes. To be able to add a new recipe, you must press on an empty field twice quickly (double-click) under the "Program name" column, give the recipe a name, set a working time by pressing twice quickly on the appropriate value and, if necessary, set a number of cycles to be able to work in "multi-shot" mode.

To be able to select a recipe, just press on a filled line, which turns green as an indication that it is the recipe in use.

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6.2 DAS 2000 SMART

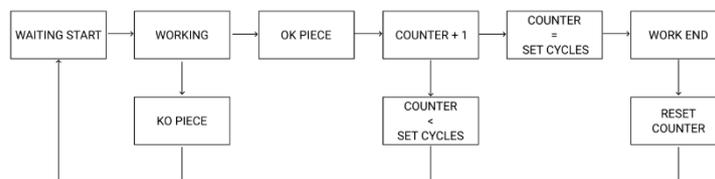The following are the screens inside the DAS 2000 SMART controller.

6.2.1 Main screen

1) **Enable:** Input status signaling "Enable" (Connector 12 PIN, PIN 3, chapter 5.2.1);
2) **Level:** Input status signaling "Level" (Connector 12 PIN, PIN 4, chapter 5.2.1);
3) **Dosing OK:** Status indication of the "Dosing OK" and "End of Dosing" outputs (Connector 12 PIN, PIN 8 and PIN 9, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system has finished dosing and the component has been OK;
   b) **Red:** Indicates that the system has finished dosing and the component has been KO;
   c) **White:** Indicates that the system is waiting for the result of the machining;
4) Field that identifies the **active recipe**;
5) Time value **set** within the selected recipe;
6) Value of time that has passed for the work in progress;
7) **Workpiece presence:** Input status signal "Workpiece presence" (Connector 12 PIN, PIN 5, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system detects the presence of the component to be machined;
   b) **White:** Indicates that the system does not detect the presence of the component to be machined;
   c) **Gray:** The part presence recognition mode is disabled;
8) **Valve Product 1/Spray 2:** Indicates the status of the relative valve, of which:
   a) **Green:** Indicates that the indicated valve is controlled;
   b) **White:** Indicates that the indicated valve is not controlled;
9) Button used to enter the **settings menu** (chapter 6.2.2);
10) Button used to enter the **recipe settings** (chapter 6.2.3);
11) Button to perform display **language change**;
12) Indication of the value imposed on the recipe of the **total cycles (components)** to be performed;
13) Indication of the **components performed** within the same cycle;
14) The blue value describes the **real-time reading** of the pressure transducer that monitors the additional air for the spray, while the green value shows the reading of the transducer during operation;
15) Button that is used to unlock the system to access the various buttons.

For point 13, the work cycle (if the "MULTI-SHOT" mode is enabled from the settings) is based on a certain number of components to be processed, set on the work recipe. To restart it, you must press on the count value for about 1 second, to return the counter to zero.

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6.2.2 Settings screen

1) **Handle Mode:** If **enabled**, the controller works from the moment it receives a START signal via the CONTROL connector (Figure 05 Number 06 chapter 2) until the time expires, sending the confirmation of "PIECE OK". If the START signal falls before the end of the time, the piece is defined as a "KO PIECE". In case it is **disabled**, just send a START signal of about 200ms via the CONTROL connector, where the controller continues to command the valve even without a start signal. The valve remains active until the working time expires, cataloguing the part as "PIECE OK". If the system receives another START signal after the time has not yet expired, then the controller stops controlling the valve with a consequent "KO PIECE" signal.

2) **Multi-shot:** Used to enable or disable the piece-counting mode, i.e. in this case the system takes the total number of dispenses to be performed from the recipe and increases the count with each dosing, until it reaches the target set per recipe, with the logic described below:

3) **Enabling workpiece presence:** This mode checks the status of the input dedicated to workpiece presence (Connector 12 PIN, PIN 5, chapter 5.2.1) before operating the valve. If this is not detected at the time of START, there is a missing part alarm. When the dosing is completed, the end-of-work signal remains high until the dosed component is removed, to block any repetition of the dispensing in the same component before it is removed;

4) **Sensor feedback enablement:** Used to enable or disable the objectification of the dosage;

5) **Early mist:** Used to set an advance time for which misting is activated. For the same time, misting is disabled late. Typically, you set a minimum of 200ms. At the beginning of the cycle, it is used to prevent fluid from coming out unmisted, while at the end of the cycle it is used to clean the valve from any residues left.

6) **Start Hold:** Sets the wait time from the time the start command is received to the actual actuation of the metering valve. It is used in the case of delayed departures;

7) Button that is used to unlock the system to access the various buttons.

8) **NC Level:** If enabled, the level alarm with signal from the low level connector (12 PIN Connector, PIN 4, chapter 5.2.1) is reported, otherwise the level alarm with high signal is reported;

9) **Previous:** Button to return to the main menu (chapter 6.2.1)

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6.2.3 Recipes screen

On this screen, you can select or add new recipes. To be able to add a new recipe, you must press on an empty field twice quickly (double-click) under the "Program name" column, give the recipe a name, set a working time by pressing twice quickly on the appropriate value and, if necessary, set a number of cycles to be able to work in "multi-shot" mode.

To be able to select a recipe, just press on a filled line, which turns green as an indication that it is the recipe in use.

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6.3 DAV 2000 SMART

The following are the screens inside the DAV 2000 SMART controller.

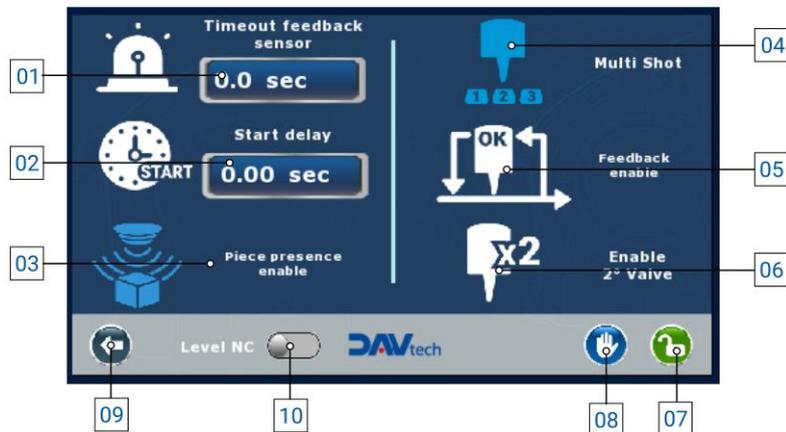### 6.3.1 Main screen

1) **Enable:** Input status signaling "Enable" (Connector 12 PIN, PIN 3, chapter 5.2.1);
2) **Level:** Input status signaling "Level" (Connector 12 PIN, PIN 4, chapter 5.2.1);
3) **Dosing OK:** Status indication of the "Dosing OK" and "End of Dosing" outputs (Connector 12 PIN, PIN 8 and PIN 9, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system has finished dosing, and the component has been OK;
   b) **Red:** Indicates that the system has finished dosing, and the component has been KO;
   c) **White:** Indicates that the system is waiting for the result of the machining;
4) Field that identifies the **active recipe**;
5) Indication of the **components performed** within the same cycle;
6) **Workpiece presence:** Input status signal "Workpiece presence" (Connector 12 PIN, PIN 5, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system detects the presence of the component to be machined;
   b) **White:** Indicates that the system does not detect the presence of the component to be machined;
   c) **Gray:** The part presence recognition mode is disabled;
7) **Valve 1/2:** Indicates the status of the relative valve, of which:
   a) **Green:** Indicates that the indicated valve is controlled;
   b) **White:** Indicates that the indicated valve is not controlled;
   c) **Gray:** The valve is not enabled;
8) Button used to enter the **settings menu** (chapter 6.3.2);
9) Button used to enter the **recipe settings** (chapter 6.3.3);
10) Indication of the value imposed on the recipe of the **total cycles (components)** to be performed;
11) Button to perform display **language change**;
12) Button that is used to unlock the system to access the various buttons.

For step 10, the work cycle (if the "MULTI-SHOT" mode is enabled from the settings) is based on a certain number of components to be processed, set on the work recipe. In this case, you cannot restart the counter.

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6.3.2 Settings screen

1) **Feedback sensor timeout:** From here you set the maximum time for which the system waits for the dosage signal (dosage objectification). If this time exceeds, the system goes into alarm;

2) **Start Hold:** Sets the wait time from the time the start command is received to the actual actuation of the metering valve. It is used in the case of delayed departures;

3) **Enabling workpiece presence:** This mode checks the status of the input dedicated to workpiece presence (Connector 12 PIN, PIN 5, chapter 5.2.1) before operating the valve. If this is not detected at the time of START, there is a missing part alarm. When the dosing is completed, the end-of-work signal remains high until the dosed component is removed, to block any repetition of the dispensing in the same component before it is removed;

4) **Multi-shot:** Used to enable or disable the piece-counting mode, i.e. in this case the system takes the total number of dispenses to be performed from the recipe and increases the count with each dosing, until it reaches the target set per recipe, with the logic described below:
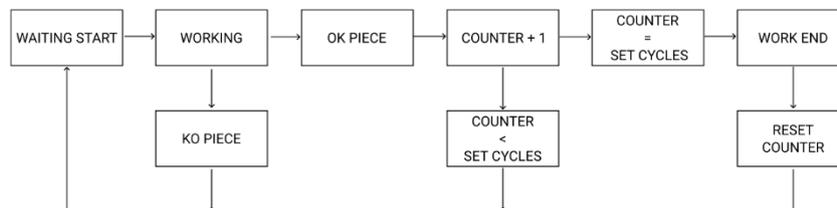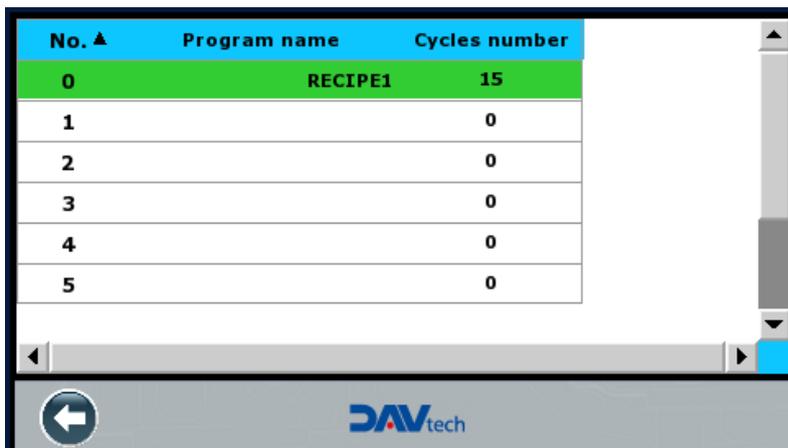

5) **Feedback Enabled:** This is used to enable or disable the objectification of the dosage. If disabled, the valve is controlled for 1 second;

6) **Second valve enablement:** Allows you to work with a second dosing channel;

7) Button that is used to unlock the system to access the various buttons.

8) **Manual mode:** Allows you to enter the manual control menu, useful for adjusting the sensors for detecting that the dosage has been completed (objectification). Pressing on the valve controls the dosage.

9) **Previous:** Button used to return to the main menu (chapter 6.3.1)

10) **NC Level:** If enabled, the level alarm with signal from the low level connector (12 PIN Connector, PIN 4, chapter 5.2.1) is reported, otherwise the level alarm with high signal is reported;

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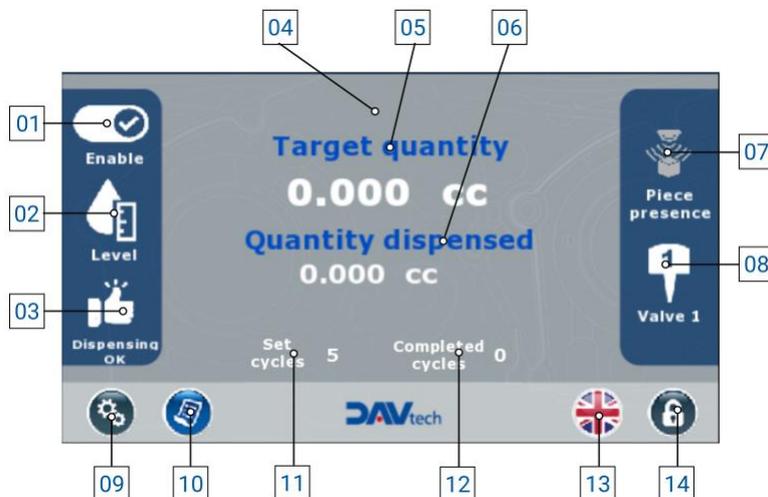
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6.3.3 Recipes screen

On this screen, you can select or add new recipes. To be able to add a new recipe, you must press on an empty field twice quickly (double-click) under the "Program name" column, give the recipe a name and set a number of cycles to be able to work in "multi-shot" mode.

To be able to select a recipe, just press on a filled line, which turns green as an indication that it is the recipe in use.

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6.4 CV 2000 SMART

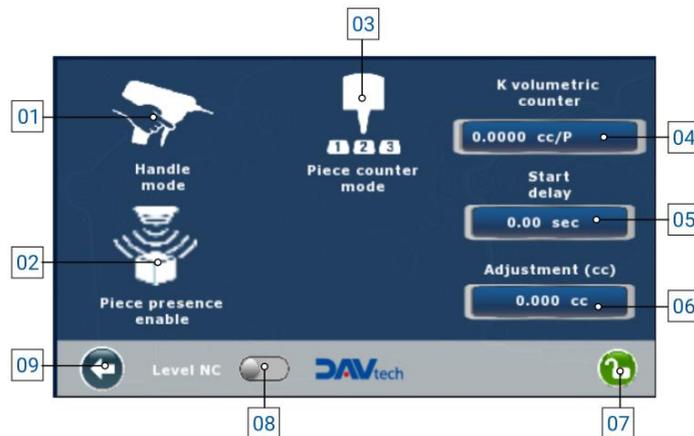The following are the screens inside the CV 2000 SMART controller.

6.4.1 Main screen


1) **Enable:** Input status signaling "Enable" (Connector 12 PIN, PIN 3, chapter 5.2.1);
2) **Level:** Input status signaling "Level" (Connector 12 PIN, PIN 4, chapter 5.2.1);
3) **Dosing OK:** Status indication of the "Dosing OK" and "End of Dosing" outputs (Connector 12 PIN, PIN 8 and PIN 9, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system has finished dosing and the component has been OK;
   b) **Red:** Indicates that the system has finished dosing and the component has been KO;
   c) **White:** Indicates that the system is waiting for the result of the machining;
4) Field that identifies the **active recipe**;
5) Indication of the **total quantity** you want to reach;
6) Indication of the **quantity dispensed** with the current cycle;
7) **Workpiece presence:** Input status signal "Workpiece presence" (Connector 12 PIN, PIN 5, chapter 5.2.1), of which:
   a) **Green:** Indicates that the system detects the presence of the component to be machined;
   b) **White:** Indicates that the system does not detect the presence of the component to be machined;
   c) **Gray:** The part presence recognition mode is disabled;
8) **Valve 1:** Indicates the status of the relative valve, of which:
   a) **Green:** Indicates that the indicated valve is controlled;
   b) **White:** Indicates that the indicated valve is not controlled;
9) Button used to enter the **settings menu** (chapter 6.4.2);
10) Button used to enter the **recipe settings** (chapter 6.4.3);
11) Indication of the value imposed on the recipe of the **total cycles (components)** to be performed;
12) Indication of the **components performed** within the same cycle;
13) Button to perform display **language change**;
14) Button that is used to unlock the system to access the various buttons.

For step 12, the work cycle (if the "MULTI-SHOT" mode is enabled from the settings) is based on a certain number of components to be processed, set on the work recipe. To restart it, you must press on the count value for about 1 second, to return the counter to zero.

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6.4.2 Settings screen

1) **Handle Mode:** If **enabled**, the controller works from the moment it receives a START signal via the CONTROL connector (Figure 05 Number 06 chapter 2) until the time expires, sending the confirmation of "PIECE OK". If the START signal falls before the end of the time, the piece is defined as a "KO PIECE". In case it is **disabled**, just send a START signal of about 200ms via the CONTROL connector, where the controller continues to command the valve even without a start signal. The valve remains active until the working time expires, cataloguing the part as "PIECE OK". If the system receives another START signal after the time has not yet expired, then the controller stops controlling the valve with a consequent "KO PIECE" signal.

2) **Enabling workpiece presence:** This mode checks the status of the input dedicated to workpiece presence (Connector 12 PIN, PIN 5, chapter 5.2.1) before operating the valve. If this is not detected at the time of START, there is a missing part alarm. When the dosing is completed, the end-of-work signal remains high until the dosed component is removed, to block any repetition of the dispensing in the same component before it is removed;

3) **Multi-shot:** Used to enable or disable the piece-counting mode, i.e. in this case the system takes the total number of dispenses to be performed from the recipe and increases the count with each dosing, until it reaches the target set per recipe, with the logic described below:
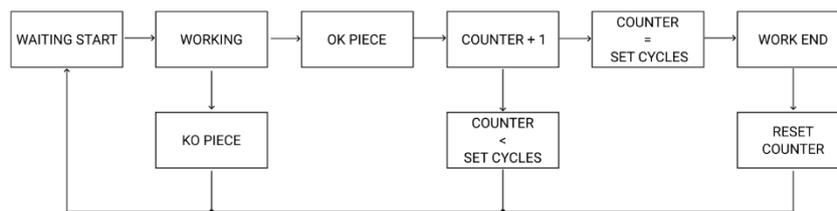
4) **K Volumetric counter:** Multiplication coefficient of the volumetric counter in cc/pulse;

5) **Start Hold:** Sets the wait time from the time the start command is received to the actual actuation of the metering valve. It is used in the case of delayed departures;

6) **Correction (cc):** It is used to calibrate the inertia of the product and the responsiveness of the system by anticipating or delaying the closure of the valve; that is, if a negative value is set, it means that an advance in the closure of the valve is needed, while with a positive value a delay is needed;

7) Button that is used to unlock the system to access the various buttons;

8) **NC Level:** If enabled, the level alarm with signal from the low level connector (12 PIN Connector, PIN 4, chapter 5.2.1) is reported, otherwise the level alarm with high signal is reported;

9) **Previous:** Button to return to the main menu (chapter 6.4.1)

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6.4.3 Recipes screen

On this screen, you can select or add new recipes. To be able to add a new recipe, you have to press on an empty field twice quickly (double-click) under the "Program name" column, give the recipe a name, set a working time by pressing twice quickly on the appropriate value and, if necessary, set a number of cycles to be able to work in "multi-shot" mode; in addition, a delay in the opening of the valve can also be set using the "DELAY" parameter.

To be able to select a recipe, just press on a filled line, which turns green as an indication that it is the recipe in use.

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6.5 DAVR1000 2000 SMART

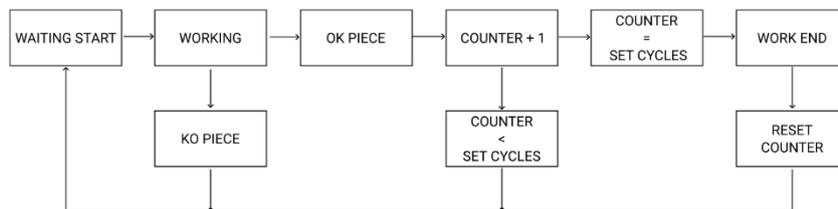The following are the screens inside the DAVR1000 2000 SMART controller.

6.5.1 Main screen

1) **Enable:** Input status signaling "Enable" (Connector 12 PIN, PIN 3, chapter 5.2.1);
2) **Level:** Input status signaling "Level" (Connector 12 PIN, PIN 4, chapter 5.2.1);
3) **Dosing OK:** Status indication of the "Dosing OK" and "End of Dosing" outputs (Connector 12 PIN, PIN 8 and PIN 9, chapter 5.2.1), of which:
    a) **Green:** Indicates that the system has finished dosing and the component has been OK;
    b) **Red:** Indicates that the system has finished dosing and the component has been KO;
    c) **White:** Indicates that the system is waiting for the result of the machining;
4) Field that identifies the **active recipe**;
5) Indication of the **total working time** set by the recipe;
6) Indication of the **elapsed** working **time** during the current processing;
7) **Workpiece presence:** Input status signal "Workpiece presence" (Connector 12 PIN, PIN 5, chapter 5.2.1), of which:
    a) **Green:** Indicates that the system detects the presence of the component to be machined;
    b) **White:** Indicates that the system does not detect the presence of the component to be machined;
    c) **Gray:** The part presence recognition mode is disabled;
8) **Product:** Indicates the status of the pneumatically operated valve, of which:
    a) **Green:** Indicates that the indicated valve is controlled;
    b) **White:** Indicates that the indicated valve is not controlled;
9) **DAVR1000:** Indicates the status of the centrifugal system, of which:
    a) **Green:** Indicates that the system is controlled;
    b) **White:** Indicates that the system is not controlled;
10) Button used to enter the **settings menu** (chapter 6.5.2);
11) Button used to enter the **recipe settings** (chapter 6.5.3);
12) Indication of the value imposed on the recipe of the **total cycles (components)** to be performed;
13) Indication of the **components performed** within the same cycle;
14) Button to perform display **language change**;
15) Button that is used to unlock the system to access the various buttons.

For point 13, the work cycle (if the "MULTI-SHOT" mode is enabled from the settings) is based on a certain number of components to be processed, set on the work recipe. To restart it, you must press on the count value for about 1 second, to return the counter to zero.

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6.5.2 Settings screen

1) **Handle Mode:** If **enabled**, the controller works from the moment it receives a START signal via the CONTROL connector (Figure 05 Number 06 chapter 2) until the time expires, sending the confirmation of "PIECE OK". If the START signal falls before the end of the time, the piece is defined as a "KO PIECE". In case it is **disabled**, just send a START signal of about 200ms via the CONTROL connector, where the controller continues to command the valve even without a start signal. The valve remains active until the working time expires, cataloguing the part as "PIECE OK". If the system receives another START signal after the time has not yet expired, then the controller stops controlling the valve with a consequent "KO PIECE" signal.

2) **Multi-shot:** Used to enable or disable the piece-counting mode, i.e. in this case the system takes the total number of dispenses to be performed from the recipe and increases the count with each dosing, until it reaches the target set per recipe, with the logic described below:

3) **Enabling workpiece presence:** This mode checks the status of the input dedicated to workpiece presence (Connector 12 PIN, PIN 5, chapter 5.2.1) before operating the valve. If this is not detected at the time of START, there is a missing part alarm. When the dosing is completed, the end-of-work signal remains high until the dosed component is removed, to block any repetition of the dispensing in the same component before it is removed;

4) **DAVR1000 Advance:** Used to set an advance time for which the rotation of the dosing nozzle is activated before the fluid dispensing begins. For the same time, rotation is disabled late. Typically, you set a minimum of 200ms. At the beginning of the cycle, it is used to prevent the nozzle from filling too much, affecting the dosage, while at the end of the cycle it is used to clean the nozzle from any remaining residues.

5) **Start Hold:** Sets the wait time from the time the start command is received to the actual operation of the metering system. It is used in the case of delayed departures;

6) Button that is used to unlock the system to access the various buttons.

7) **NC Level:** If enabled, the level alarm with signal from the low level connector (12 PIN Connector, PIN 4, chapter 5.2.1) is reported, otherwise the level alarm with high signal is reported;

8) **Previous:** Button to return to the main menu (chapter 6.5.1)

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6.5.3 Recipes screen

ID ▲	Program name	Dispensing time	Cycles number
0	DAVR1000	13.00	0
1		0.00	0
2		0.00	0
3		0.00	0
4		0.00	0
5		0.00	0
6		0.00	0

On this screen, you can select or add new recipes. To be able to add a new recipe, you must press on an empty field twice quickly (double-click) under the "Program name" column, give the recipe a name, set a working time by pressing twice quickly on the appropriate value and, if necessary, set a number of cycles to be able to work in "multi-shot" mode.

To be able to select a recipe, just press on a filled line, which turns green as an indication that it is the recipe in use.

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7 PROCEDURE

In this chapter we want to explain the main configurations that can be used on the component covered by this manual. In particular, we want to explain in detail:

- Priming of the DA/DAS/CV/DAVR1000 2000 SMART controller;
- Priming the DAV 2000 SMART controller

7.1 DA/DAS/CV/DAVR1000 Controller Priming

To perform priming, i.e. the first commissioning and every time the valve connected to the system is serviced, so the system has no fluid inside it, the following steps must be followed:

- Set the working time to 0 seconds, so that you can work continuously;
- Set the controller to handle mode;
- Set low fluidic pressure at the outlet of the fuel system;
- Place the valve inside a container to collect the outgoing fluid
- Command the start of processing;
- Wait for fluid to exit the valve nozzle;
- Stop dispensing once all air has been removed from the system.

⚠️ **ATTENTION!**
For DAVR1000, priming can also be carried out without controlling the rotation of the centrifugal system.

7.2 DAV Controller Priming

To perform priming, i.e. the first commissioning and every time the valve connected to the system is serviced, i.e. when the system has no fluid inside it, the following steps must be followed:

- Keep the fluidic hose inlet to the valve disconnected and place it in a container, to collect the outgoing fluid;
- Set low fluidic pressure at the outlet of the fuel system;
- Wait until the hose is full and the fluid comes out of the hose;
- Reset the pressure leaving the fuel system, to stop the fluid from escaping;
- Bring the micrometric adjustment of the valve to 100%, i.e. set the movement of the piston inside the valve at full speed;
- Connect the fluidic hose to the valve and make sure it is well secured;
- Set the working pressure at the outlet of the fuel system;
- Go to the manual page (chapter 6.3.2) and control the valve repeatedly until the fluid begins to flow out of the nozzle;
- Correctly adjust the micrometric adjustment for the processing to be performed;
- Adjust the objectification sensor to verify that the dosage has been completed.

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8 MAINTENANCE

Maintenance interventions are all those activities that must be performed on the component which, if carried out correctly, allows it to have a longer life. In general, maintenance is divided into two groups:

- **Ordinary maintenance**, which are interventions on a regular basis or that can be carried out by the customer's staff, are the most important activities as they allow the component to be kept in good working condition;

⚠️ **ATTENTION!**
Ordinary maintenance must be carried out in the manner and timing indicated in the following chapters.

- **Extraordinary maintenance**, i.e. all those interventions that are not regularly carried out or that have not been planned, or interventions that cannot be carried out by the Customer. They can also arise from the lack of routine maintenance.

⚠️ **ATTENTION!**
Extraordinary maintenance work must be carried out together with the manufacturer's specialized technicians.

Regarding attendance, it must be considered that:

- **When necessary:** Operation to be carried out when the need to be carried out is seen;
- **Each component start or job end:** Indicates a daily period, in general. This can imply every 24 hours (i.e. at the beginning of the shift of every day, or the end of the shift of every day), or even more frequently, depending on the application;
- **Long pause:** Indicates a period approximately greater than an hour;
- **Weekly:** Indicates a period equal to seven calendar days;
- **Monthly:** Indicates a period equal to one calendar month;
- **Semi-annual:** Indicates a period equal to six calendar months;
- **Yearly:** Indicates a period equal to one calendar year.

⚠️ **ATTENTION!**
The times given below are indicative as they depend on how the component is used. Follow the variations suggested by the technicians.

Assigned	Description	Frequency	Chapter
	Perform a test operation of the controller (see if navigation works)	Every machine start-up or end of work	\
	Perform a surface cleaning of the controller	Every machine start-up or end of work	\
	Check pneumatic circuit (connections)	Every machine start-up or end of work	\

⚠️ **ATTENTION!**
Only use soft brushes or cotton cloths to clean the controller.

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9 SYSTEM MESSAGES

In this chapter, the types of messaging that are present within the component are explored and listed. In particular:

- **Alarm:** A warning from the component to the operator indicating a problem, which can be electrical, pneumatic or generic in nature;

This chapter lists all the messages that the system produces, with their explanation, and all the alarms that the system emits, with their explanation and method of resolution of the specific alarm.

In general, to remove an alarm, you must:

- Identify the alarm (if there is more than one alarm, identify only one);
- Resolve the cause of the alarm, as indicated in the next chapter;
- From the operator terminal, access the alarm screen by pressing on the yellow triangle symbol. A screen like the figure below opens;
- Reset the specific alarm;

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9.1 Alarms

ALARM	CAUSE	SOLUTION
ECU not enabled	No Enable signal (12-PIN connector, PIN 3, chapter 5.2.1);	Make sure the Enable input is powered or the jumper is present
Insufficient product level	The Level signal is missing (12-PIN connector, PIN 4, chapter 5.2.1);	Make sure the input is properly connected.
	Level not present	Set the controller in "NC Level" mode to "OFF"
Timeout monitor 1/2	Objectification not achieved	Check Objectification Sensor
		Adjust the position of the sensor on the valve body
		Increase the "Feedback sensor timeout" time on the settings page
		Disable sensor feedback on the settings page
		Check the correct fluidic supply
Workpiece presence alarm	Missing Sensor Part. signal (12-PIN connector, PIN 5, chapter 5.2.1);	Check workpiece presence sensor
		Adjusting the Sensor Position on the Workpiece Presence
		Disable Part Presence Mode in Settings
		Remove the component you worked on before proceeding with the next

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10 END OF LIFE

End-of-life refers to all those activities that put the component out of service. End-of-life activities can be:

- **Storage,** i.e. when the component is placed inside the warehouse for an unspecified period waiting for a third party to buy the component;
- **Dismantling,** i.e. when the component has reached the end of work period, whether it is due to age, obsolescence or faults that cannot be repaired, or that it is possible to repair but it is worth buying a new component.

If installation is not planned soon, the component can remain packaged and must be stored in a sheltered and preferably closed place. The ambient temperatures to be observed are given in chapter 2.2.

On the other hand, for the dismantling and consequent scraping of the component or its parts, the different nature of the various components must be considered, and a differentiated scrapping must be carried out. We recommend that you commission specialist companies for this purpose and must always observe the applicable laws on waste disposal.

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