

USE AND MAINTENANCE MANUAL

Series D2-D5 Valve Island

MULTIPOLAR



Made in Italy

The products are in compliance with the provisions of the following directives:

- 2004/108 / EC

They respond in full or only to the parts applicable to the following standards:

- CEI EN 61131-2

The EC Declarations of Conformity can be downloaded from www.camozzi.com

	Series D4 Valve Island MULTIPOLAR	5000029993
		Versione 4

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1 Product identification

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2 General recommendations

Please respect the recommendations for safe use described in this document.

- Some hazards can be associated with the product only after it has been installed on the machine / equipment. The end user is responsible for identifying these dangers and reducing the risks associated with them.
- The products covered by this manual can be used in circuits that must comply with EN ISO 13849-1.
- For information regarding the reliability of the components, contact Camozzi.
- Before using the product, carefully read the information contained in this document.
- Keep this document in a safe and handy place throughout the life cycle of the product.
- Transfer this document to any subsequent holder or user.
- The instructions contained in this manual and further information can be found using the following references:
 - Website <http://www.camozzi.com>
 - Camozzi general catalog
 - Technical assistance service
- Assembly and commissioning must only be carried out by qualified and authorized personnel, according to these instructions.
- It is the responsibility of the system / machinery designer to correctly choose the most appropriate component according to the required use.
- The use of suitable protections is recommended to minimize the risk of personal injury.
- For all those situations of use not covered in this manual and in situations where damage to property, persons or animals could be caused, contact Camozzi first.
- Do not carry out unauthorized modifications on the product. In this case, any damage caused to people or animals is to be considered the responsibility of the user.
- It is recommended to comply with all the safety regulations affected by the product.
- Do not intervene on the machine / system unless after checking that the working conditions are safe.
- Before installation or maintenance, make sure that the specific safety lockout positions are activated, then cut off the power supply (if necessary) and the pressure supply of the system, discarding all the residual compressed air present in the system and deactivating the residual energy stored in springs, condensers, receptacles and gravity.
- After installation or maintenance, it is necessary to reconnect the pressure and electrical supply (if necessary) of the system and check the regular operation and tightness of the product. In the event of a leak or malfunction, the product must not be put into operation.

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- The product can be put into operation only in compliance with the specifications indicated, if these specifications are not respected the product can be put into operation only after authorization by Camozzi.
- Avoid covering the appliances with paints or other substances that reduce heat dissipation.

2.1 Product storage and transport

- Adopt all measures possible to avoid accidental damage to the product during transport, and when available use the original packaging.
- Observe the specified storage temperature range of $-10 \div 50$ °C.

2.2 Use

- Make sure that the voltage of the distribution network and that all operating conditions are within the admissible values.
- The product can be put into operation only in compliance with the specifications indicated, if these specifications are not respected the product can be put into operation only after authorization by Camozzi.
- Respect the indications on the identification plate.
- In case of prolonged stops longer than 3 months, before operating the system, carry out some empty maneuvers

2.3 Limitation of use

- Do not exceed the technical specifications shown in the "General characteristics" paragraph and in the Camozzi general catalog.
- Do not install the product in environments where the air itself can cause dangers.
- Unless specifically intended for use, do not use the product in environments where direct contact with corrosive gases, chemicals, salt water, water or steam could occur.

2.4 Maintenance

- Incorrectly performed maintenance operations can compromise the correct functioning of the product and cause damage to surrounding people.
- Check the conditions to prevent the sudden release of pieces, then suspend the supply of power and allow the discharge of residual voltages before intervening.
- Check the possibility of having the product serviced at a technical assistance center.
- Never disassemble a live unit.
- Isolate the product electrically and pneumatically before maintenance.
- Always remove accessories before maintenance.

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- Always make sure that you are wearing the correct safety equipment required by local authorities and by current laws.
- In case of maintenance, replacement of wear parts, use only original Camozzi kits and have the operation carried out only by authorized specialist personnel. Otherwise the product homologation loses all its validity.

2.5 Ecological information

- At the end of the product life cycle, the separation of materials is recommended to allow for their recovery.
- Comply with the regulations in force in your country regarding disposal.
- The product and the parts that compose it comply with ROHS, REACH regulations.

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3 General characteristics and conditions of use

PNEUMATIC SECTION		
Valve type		Spool with seals
Valve functions		5/2 monostable e bistable 2x3/2 NC 2x3/2 NO 1x3/2 NC+1x3/2 NO 5/3 CC - CP - CO
Material	Body	Aluminium
	Spool	Aluminium
	Sub-base	Tecnopolymer
	End cover	Tecnopolymer
	Seals	HNBR
Connections		Outlet 2 e 4: thread G3/8 or fitting with max. tube size 14 Inlet 1: thread G1/2 or fitting with max. tube size 16 Exhaust 3 e 5: thread G1/2 or fitting with max. tube size 16 or integrated silencer. Inlet 12/14 and exhaust 82/84: thread G1/8 or fitting with max. tube size 8
Temperature		0 ÷ 50 °C
Air Characteristics		Compressed air filtered and not lubricated in class 7.4.4 according to ISO 8573-1: 2010. If lubrication is required, use only oils with max. viscosity. 32 Cst and the version with external servo drive. The servo drive air quality must be in class 7.4.4 according to ISO 8573-1: 2010 (do not lubricate).
Valve Size		25 mm
Working pressure		-0,9 ÷ 10 bar
Drive pressure		2.5 ÷ 7 bar 4.5 ÷ 7 bar (with working pressure higher than 6 bar for the 2x3/2 version)
Flow rate		2000 NL/min
Mounting position		Any
IP protection		IP65

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ELECTRICAL SECTION	
Power and bus connection type	25 or 44 poles
Supply voltage	24 V DC +/-10%
Valve maximum absorption	1,5 A
Maximum no. valve positions	22 coils on 11 valve positions (with 25-pole Sub-D connector) 38 coils on 19 valve positions (with 44-pole Sub-D connector)
Coil power	1W (reduction to 50% after 100ms)
Switching valve on subbase	Yellow led
Fault detection on master	Red led - anomaly diagnostic
Operation status on master	Green led - power supply and WLAN operation

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4 General description of the system

The D Series is a valve island equipped with COILVISION technology that allows you to monitor and predict the state of wear and efficiency of some parts of the individual Coil valves. Through this monitoring and predictive diagnostics system, it is possible, for example, to know the electricity consumption and the possible overheating of the coil. The detected data, alarms and health status can be transmitted via cable to a PLC or via WLAN to an IIoT Gateway for subsequent sending to the Cloud. The D Series is suitable for use in applications with limited installation space without penalizing the flow rate.

Available with connection integrated in a D-sub connector, it allows to cover the needs of all industrial applications.

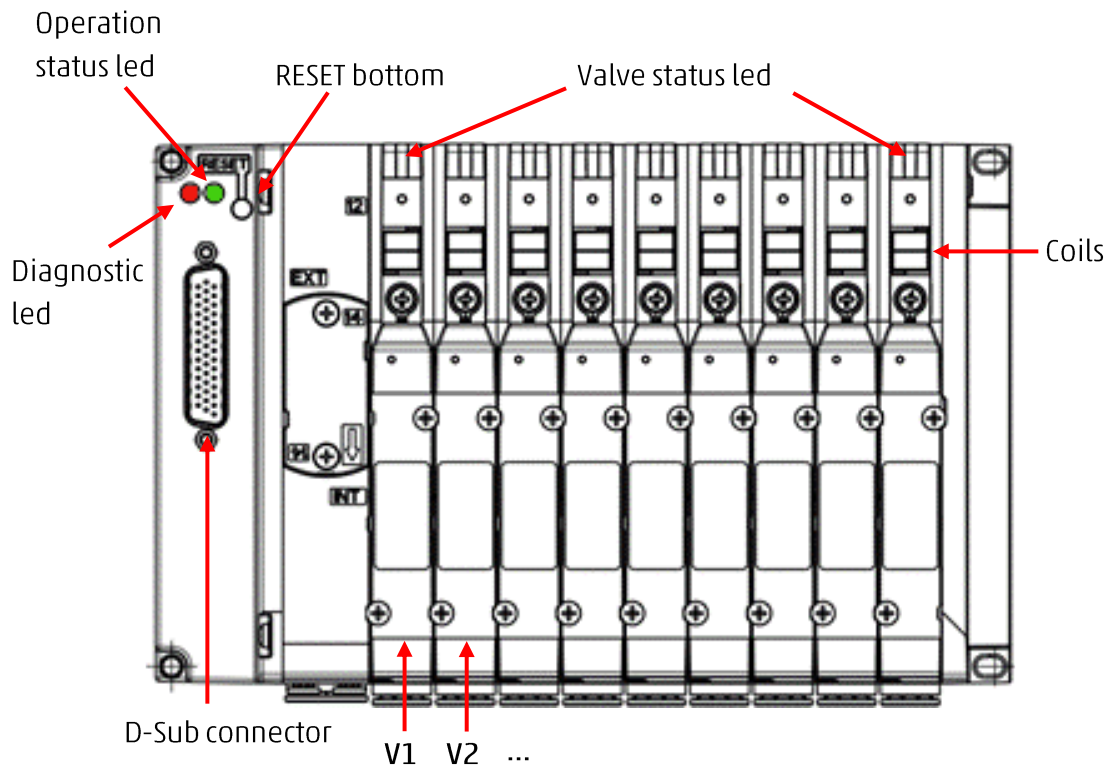
COILVISION technology has been developed to constantly monitor the functional parameters of the electropilot which operates the spool via air. Each actuation of the electropilot, in different cyclic configurations and environmental conditions, is analyzed to acquire information which, processed by software algorithms, allows to diagnose and predict the health of the component.

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5 Installation and Commissioning

- During the unpacking phase, be very careful not to damage the product.
- Check for damage due to transportation or storage of the product.
- Separate the packaging materials in order to allow their recovery or disposal in compliance with the regulations in force in your country.
- Before putting the component into operation, check that the declared characteristics and performances correspond to those required.
- During the installation of the component, provide for specific surge protection devices.
- During the installation of the component, check that there is no danger due to mechanical movements.
- Install the component in an area where the set-up and maintenance phases are easily performed and cannot create dangers for the operator.
- Close any unused connections with the appropriate covers or protective caps, in the case of the 3/5 and 82/84 exhaust channels with appropriate silencers.
- The components must be fixed correctly, using the appropriate anchors, where available, and checking that the fixing remains effective even in the presence of high cycles or strong vibrations.
- Provide for the installation of dehumidifiers in order to avoid the formation of humidity and condensation in the internal components.
- If the device is used to operate an actuator whose accidental movement can generate a hazard, provide for appropriate locking devices for the moving part of the actuator.
- Make sure the connectors are connected and fastened correctly.
- Use only power supplies capable of ensuring safe electrical disconnection of the voltage supply according to IEC 742 / EN 60742 / VDE 0551 with a minimum insulation resistance of 4 kV Protected Extra Low Voltage (PELV).
- It is the user's task to adopt the necessary measures to prevent damage to the system caused by non-periodic overvoltage peaks on the power lines following power cuts on high energy equipment.
- Voltage interruptions are allowed according to the PS2 severity level.

5.1 Connecting and diagnostic elements



5.2 Electrical connection

25 poles	Pin	Cables Color G25X1	Function	44 poles	Pin	Cables Color G44X1	Function
	1	WHITE	Valve 1 - Coil 14		1	WHITE	Valve 1 - Coil 14
	2	BROWN	Valve 1 - Coil 12		2	BROWN	Valve 1 - Coil 12
	3	GREEN	Valve 2 - Coil 14		3	GREEN	Valve 2 - Coil 14
	4	YELLOW	Valve 2 - Coil 12		4	YELLOW	Valve 2 - Coil 12
	5	GREY	Valve 3 - Coil 14		5	GREY	Valve 3 - Coil 14
	6	PINK	Valve 3 - Coil 12		6	PINK	Valve 3 - Coil 12
	7	BLUE	Valve 4 - Coil 14		7	BLUE	Valve 4 - Coil 14
	8	RED	Valve 4 - Coil 12		8	RED	Valve 4 - Coil 12
	9	BLACK	Valve 5 - Coil 14		9	BLACK	Valve 5 - Coil 14
	10	VIOLET	Valve 5 - Coil 12		10	VIOLET	Valve 5 - Coil 12
	11	GREY/PINK	Valve 6 - Coil 14		11	GREY/PINK	Valve 6 - Coil 14
	12	RED/BLUE	Valve 6 - Coil 12		12	RED/BLUE	Valve 6 - Coil 12
	13	WHITE/GREEN	Valve 7 - Coil 14		13	WHITE/GREEN	Valve 7 - Coil 14
	14	BROWN/GREEN	Valve 7 - Coil 12		14	BROWN/GREEN	Valve 7 - Coil 12
	15	WHITE/YELLOW	Valve 8 - Coil 14		15	WHITE/YELLOW	Valve 8 - Coil 14
	16	YELLOW/BROWN	Valve 8 - Coil 12		16	YELLOW/BROWN	Valve 8 - Coil 12
	17	WHITE/GREY	Valve 9 - Coil 14		17	WHITE/GREY	Valve 9 - Coil 14
	18	GREY/BROWN	Valve 9 - Coil 12		18	GREY/BROWN	Valve 9 - Coil 12
	19	WHITE/PINK	Valve 10 - Coil 14		19	WHITE/PINK	Valve 10 - Coil 14
	20	PINK/BROWN	Valve 10 - Coil 12		20	PINK/BROWN	Valve 10 - Coil 12
	21	WHITE/BLUE	Valve 11 - Coil 14		21	WHITE/BLUE	Valve 11 - Coil 14
	22	BROWN/BLUE	Valve 11 - Coil 12		22	BROWN/BLUE	Valve 11 - Coil 12
	23	WHITE/RED	Diagnostic output		23	WHITE/RED	Valve 12 - Coil 14
	24	BROWN/RED	+ 24Vdc		24	BROWN/RED	Valve 12 - Coil 12
	25	WHITE/BLACK	Negative Common		25	WHITE/BLACK	Valve 13 - Coil 14
<p>NOTE. It is suggested to connect all the not used wired to the same negative common of the power supply (Pin 25 for 25 pins D-sub version and 43/44 pins for the 44 pins D-sub version)</p>				26	BROWN/BLACK	Valve 13 - Coil 12	
				27	GREY/GREEN	Valve 14 - Coil 14	
				28	YELLOW/GREY	Valve 14 - Coil 12	
				29	PINK/GREEN	Valve 15 - Coil 14	
				30	YELLOW/PINK	Valve 15 - Coil 12	
				31	GREEN/BLUE	Valve 16 - Coil 14	
				33	YELLOW/BLUE	Valve 16 - Coil 12	
				33	GREEN/RED	Valve 17 - Coil 14	
				34	YELLOW/RED	Valve 17 - Coil 12	
				35	GREEN/BLACK	Valve 18 - Coil 14	
				36	YELLOW/BLACK	Valve 18 - Coil 12	
				37	GREY/BLUE	Valve 19 - Coil 14	
				38	PINK/BLUE	Valve 19 - Coil 12	
				39	GREY/RED	Diagnostic output	
				40	PINK/RED	Not used	
				41	GREY/BLACK	+24 Vdc	
				42	PINK/BLACK	Negative common	
				43	BLUE/BLACK		
44	RED/BLACK						

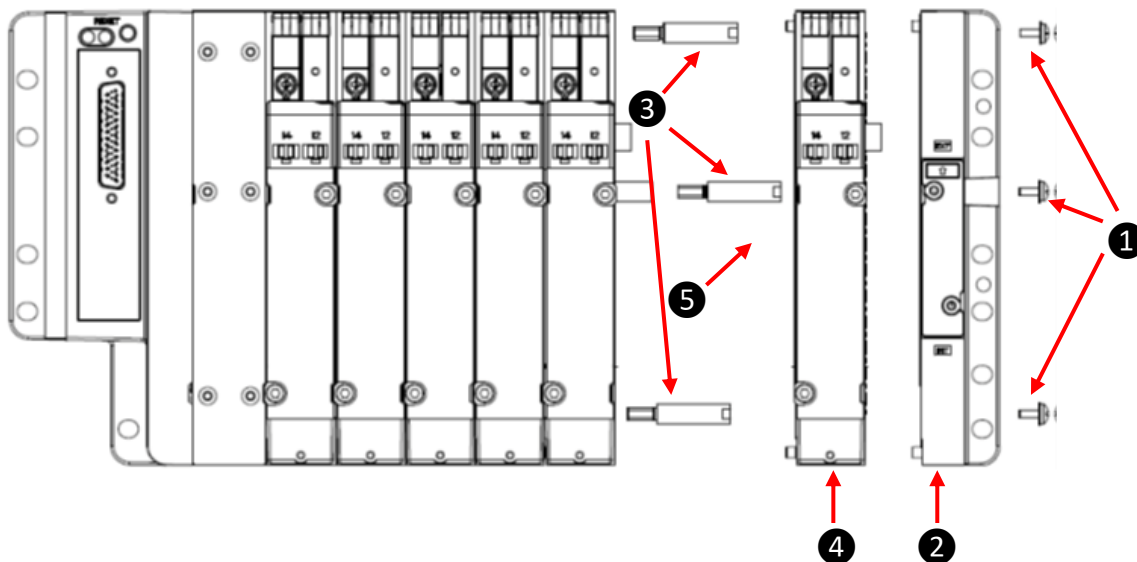
5.3 Electrical characteristics

The multipolar D Series valve island requires a fixed 24Vdc (+/- 10%) power supply that is made through pins 24 (+) and 25 (-) of the 25-pin D-sub connector or pins 41-42 (+) and 43-44 (-) of the 44-pole connector.

The signals for activating the Coil valves are PNP type, it is possible to activate a maximum of 22 Coil pilots on 11 valve positions in the version with 25-pole connector and a maximum of 38 Coil pilots on 19 valve positions in the version with 44-pole connector.

The multipolar D Series has a digital output (Pin 23 of the D-sub 25-pole connector or pin 40 of the D-sub 44-pole *open collector* diagnostic connector, the connection of the diagnostic output is optional

5.3.1 Adding a valve position or changing their position



If it is necessary to add a valve position:

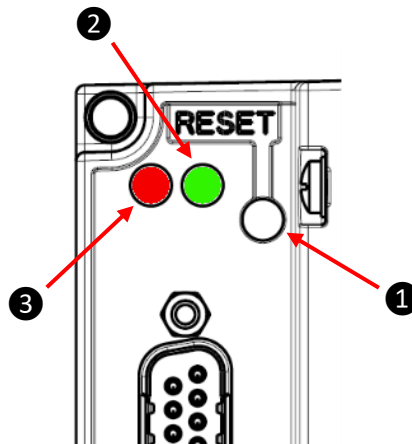
1. Unscrew the screws **1** closing the right terminal **2** and open the valve pack.
2. Screw the tie rods in a single position up to the stop on the tie rods in the sub-bases **3**.
3. Insert the sub-base **4** on the tie rods paying attention to the connection between the card and the *edgocard* connector **5** and the correct positioning of the interface gasket between the sub-bases.
4. Reassemble the right terminal **2** and tighten the screws **1** with tightening torque 0.9 Nm.
5. Screw the Series D valves onto the sub-bases with a tightening torque of 0.25 Nm (The same torque must be applied in case of assembly / disassembly of the internal / external power supply cover **6**).
6. In case of fixing direct **7** (not with the Din Rail) , apply torque less than 1.5 Nm

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NOTE. If it is necessary to assemble many valve positions, assemble the valve on the sub-base and then join components together.

5.3.2 Procedure for numbering the sub-bases/valve position

The numbering procedure must be carried out in all those cases in which the sub-bases are added, removed or moved.



To proceed with the numbering of the valve positions it is necessary to:

1. Disconnect the power supply.
2. Remove the cap that covers the Reset button ❶.
3. Using a thin tip screwdriver, press and hold the Reset button.
4. Switch on the power and keep the Reset button pressed for 3 seconds.
5. Replace the cap that covers the Reset button ❶.

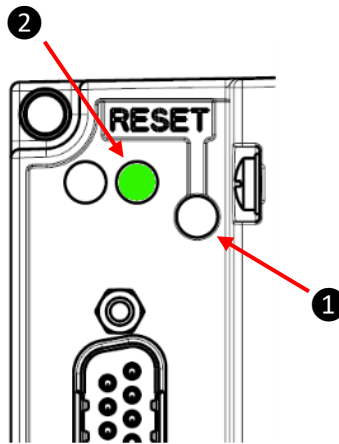
Successful numbering is indicated by the simultaneous flashing of the LEDs on the sub-bases and the LED operating status ❷ (green led).

Otherwise, that is, if the numbering was not correctly done, the red diagnostic led ❸ will light up (red led), and the LED of the last valve position correctly numbered.

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5.3.3 WLAN connection procedure

NOTE. Before connecting a D-Series island to a WLAN, it is necessary to have read the information and followed the instructions in [UVIX Manual](#).



The following steps are necessary to configure the WLAN connection:

1. Check that the letter W is present in the sixth position of the code, e.g. DMC.W.
2. Remove the cap that covers the Reset button **1**.
3. Provide power to the island (operating status led **2** flashing green), press the Reset button for at least 5 seconds.
4. The island is configured as an Access Point and generates the "CamozziWiFi" WLAN network.
5. Using a PC or portable device, connect to the "CamozziWiFi" network, access with the password "!! camozzi".
6. Open a browser and connect to the address 192.168.1.1, where the following page (mini-app) will appear:

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7. Enter the credentials of the network to which you want to connect the island, for example:
 - a. SSID: camozziUVIX
 - b. FEP ADDRESS: 192.168.0.5
 - c. PASSWORD: camozziUVIX
8. The valve island is configured as a Client and connects to the network for data transmission.
9. Replace the cap that covers the Reset button **1**.

5.3.4 Procedure for enabling/disabling the diagnostic of the fault coil

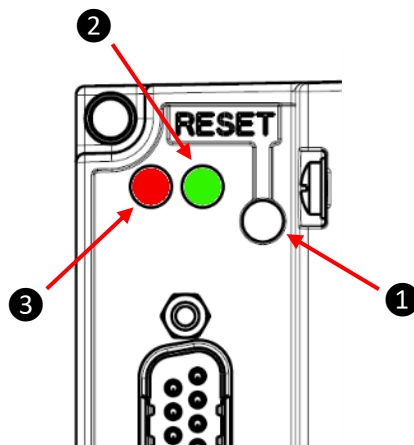
The multipolar master indicates the valves alarms through the red diagnostic LED **3** and the digital output to connect a PLC.

The diagnostic of the fault coil can be enabled (default) or disabled through the manual procedure with the RESET button **1**.

- 3 consecutive presses (in 2 seconds), the diagnostic of the fault coil is disabled.
- 2 consecutive presses (in 2 seconds), the diagnostic of the fault coil is enabled.

At the end of one of the two procedures, the island indicates the correct reception of the procedure and its configuration saving with three-second of flash of the green LED **2**.

The diagnostic of the fault coil via LED will remain active on the individual sub-bases.



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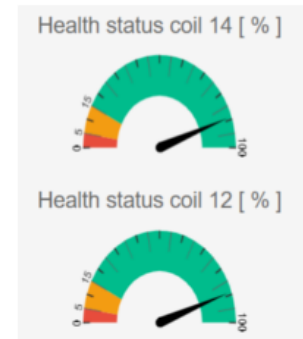
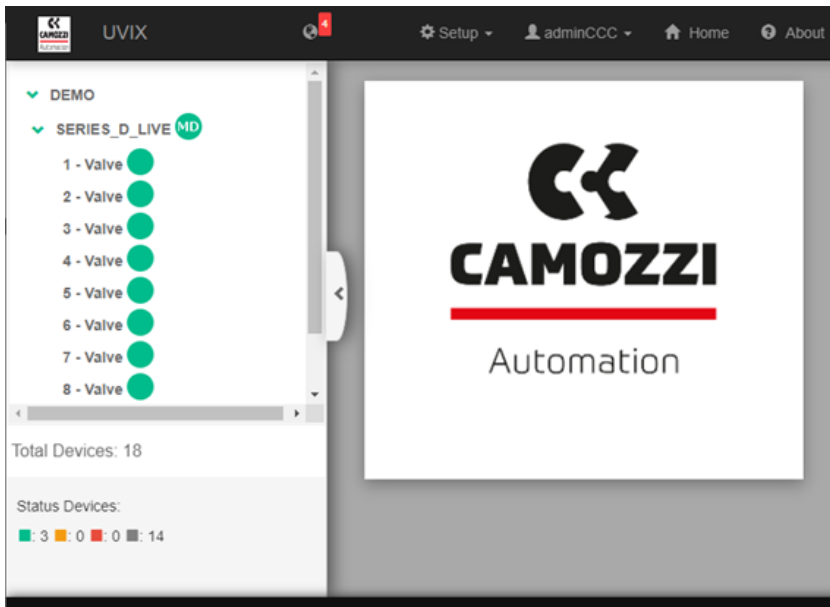
5.4 COILVISION: description of the predictive diagnostic system and data collection

The D Series valve island is able to send data, alarms and the health status of individual Coil pilots via WLAN, allowing them to be monitored and predicted for wear and efficiency.

The data collected through an IoT Gateway are routed to the supervisory system called Camozzi UVIX.

Camozzi UVIX is a software supervisor that can be installed on a PC or on a server inserted in a corporate network and accessible from other PCs. It allows you to view all the information of a network of Camozzi devices and all the data collected: from the general characteristics of the island (number of island valves, valve type) up to the health status of the individual valve (gauge indicator or alarm indicator).

The information on the health status of the individual Coil valves mounted on the island is displayed by means of a gauge indicator with decreasing percentage based on a predictive algorithm.




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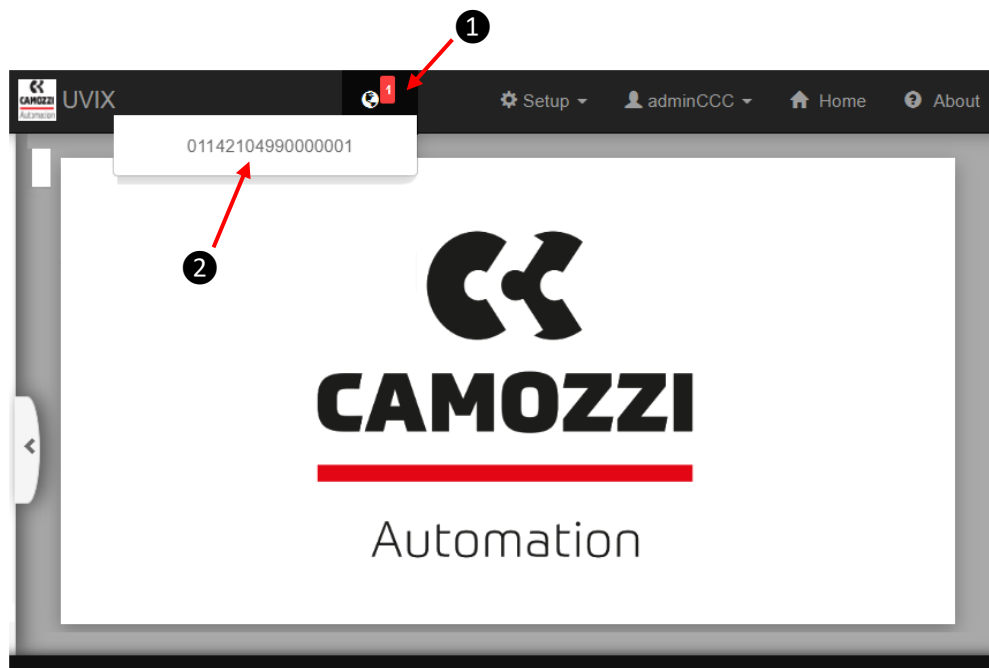
6 CamozziUVIX Series D configuration

6.1 Access to CamozziUVIX

Access to CamozziUVIX can take place in View mode using the *enduser* user and the *enduser* password or in Configuration mode using the *user* user and the *customer* password.



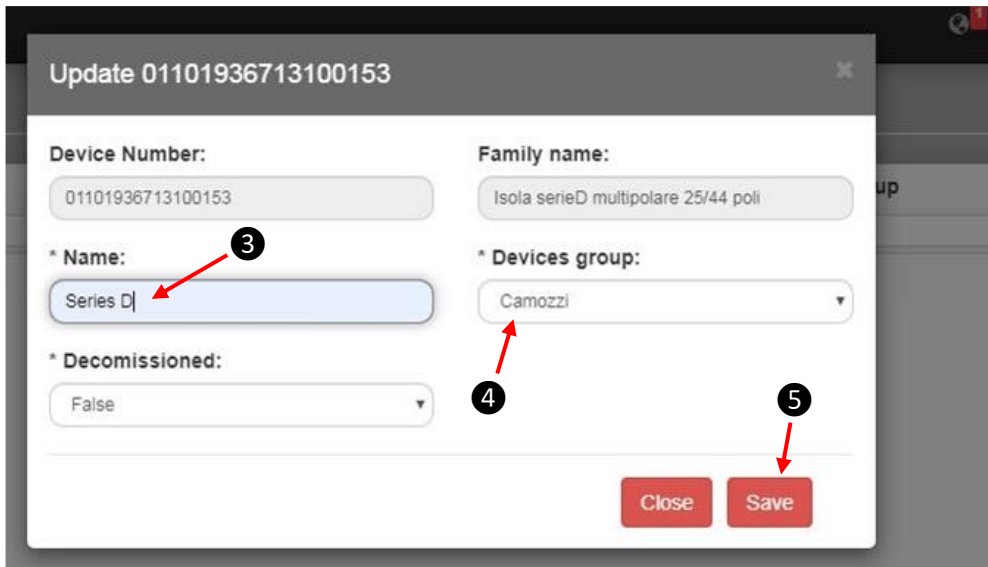
6.2 Assignment of the name and group to the Series D valve island



The system signals the presence of a new Series D island connected to the WLAN network.

1. Click on the icon **1** to display the Serial number of the Series D island.
2. Click on the *Serial Number* **2** to open the configuration screen.

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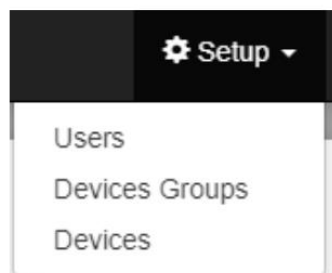


3. Assign an identifier to the device in the *Name* window ③.
4. Assign the device to a *Devices Group* ④ that must have been previously created (see par. 6.3).
5. Save the configuration with the *Save* bottom ⑤.

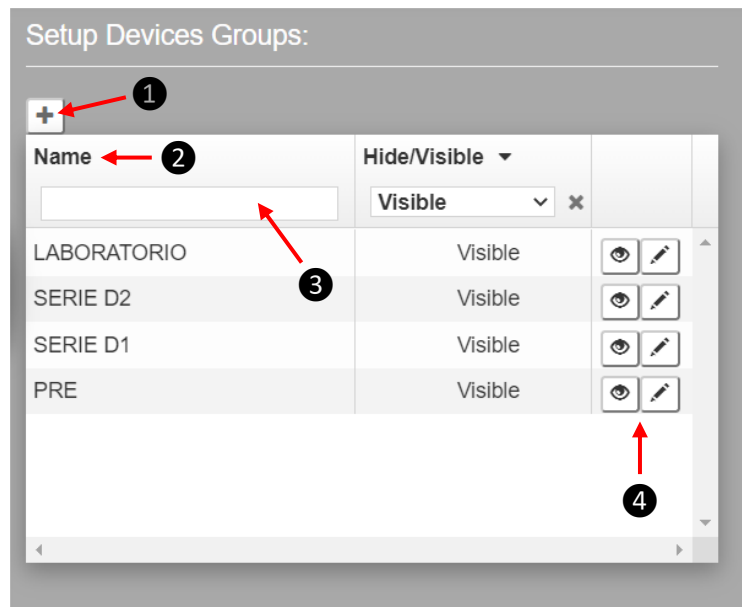
6.3 Generation of a Device Group

It is possible to add new device groups by specifying their name, or view and / or modify the device groups already present in the master data.

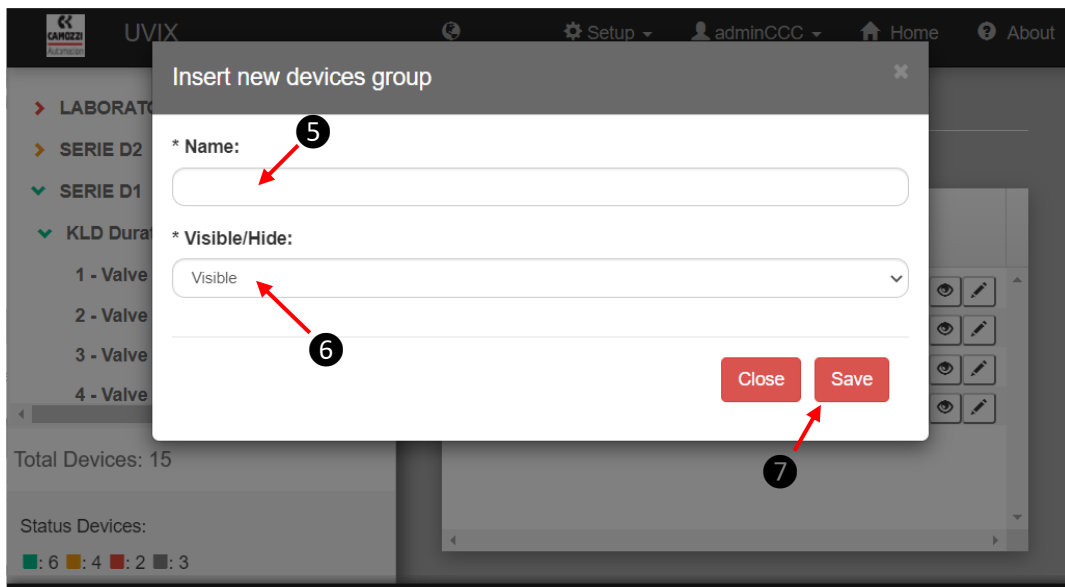
1. Click on the *Setup* icon and select the *Devices Group* item.



2. Create a new devices group clicking on the cross bottom ①:
 - a. Sort the device groups alphabetically in ascending / descending order ②.
 - b. Filter the values contained in the relevant column ③.
 - c. View device group details to edit properties ④.

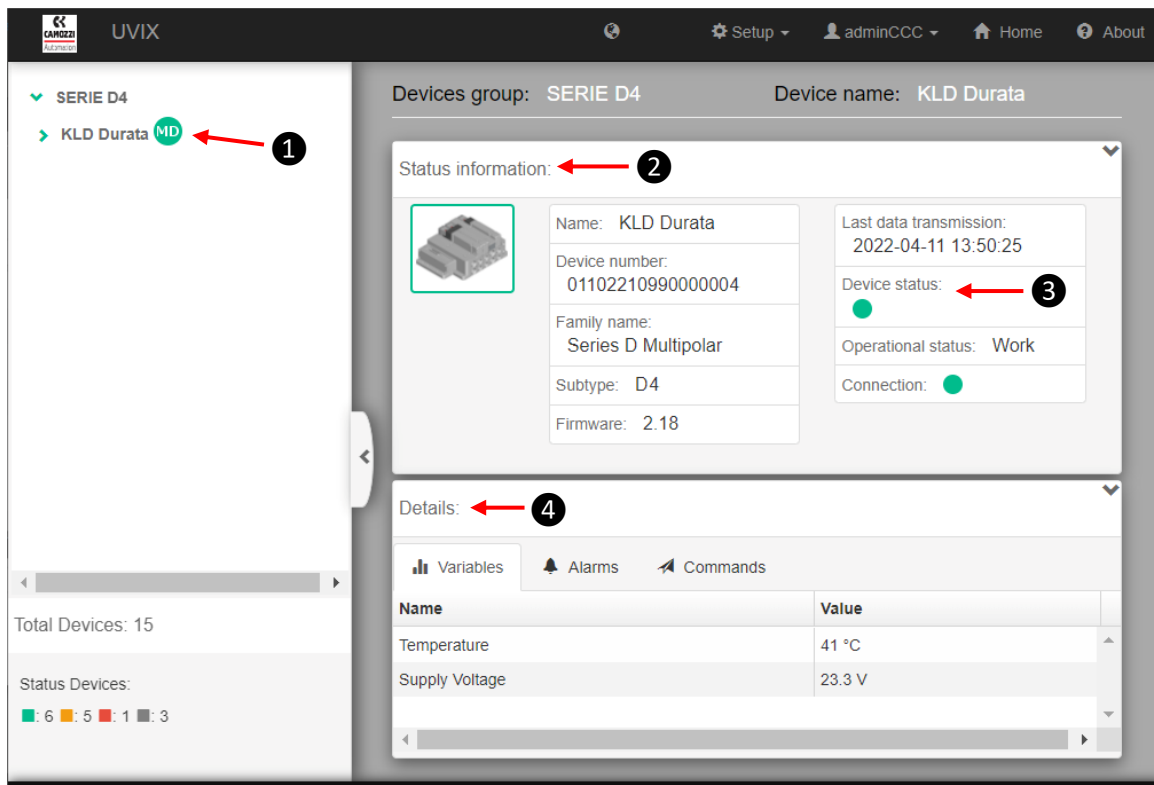


- Once the button 1 is pressed, a new window will open. In this window, it is possible to enter the name 5 of the *Device Group* and make it visible or not in the main tree using the *Visible/Hide* option 6. Press the *Save* bottom 7 to save the new group in the database.



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6.4 General information and valve island status



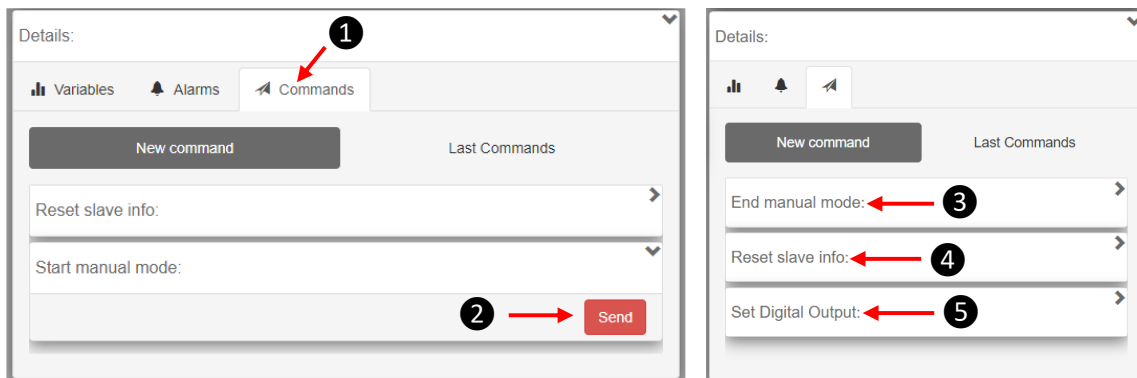
The connected Series D valve island is displayed in the list of devices ❶ on the left side of the screen. Click on the name to view the relative screen with general information ❷, the status of the island ❸ and the tabs ❹ for viewing:

- *Variables*: temperature and supply voltage of the Series D island.
- *Alarms*: the status of the valve island alarms (see par.7.2).
- *Commands*: controls (visible only if the access was made in *user* mode).

6.5 Commands for configuring the valve island (only with *user* access)

After selecting the *Commands* tab ❶, click on the *Send* bottom ❷ to put the Series D valve island to *Manual Mode*.

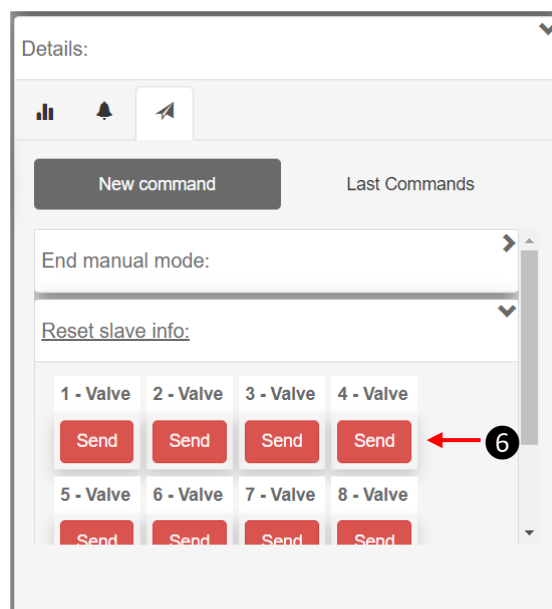
NOTE. In this mode the controls and commands of the PLC or control system are deactivated.



The valve island switches to manual mode appear on the screen:

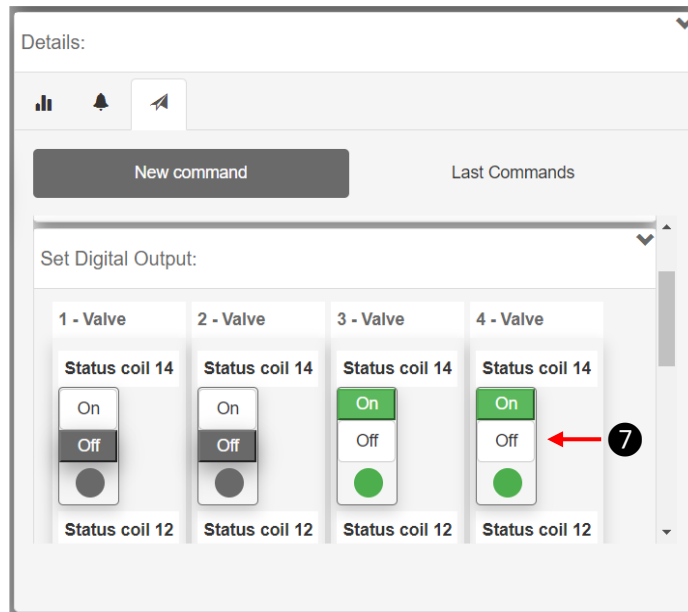
- *End manual mode* ③: returns the valve island to the *automatic* state.
- *Reset slave info* ④: resets the state of health and the number of cycles performed by the valve which is mounted on a subbase. Click on the *Send* bottom ⑥ to reset the information saved in the subbase.

N.B. The information relating to the state of health of the valve and the number of operations performed by the single Coil pilot is recorded by the sub-base on which the valve is mounted, should the replacement of a Coil valve become malfunctioning or for which the system has highlighted a low state of health (preventive maintenance) it is necessary to reset this information. In this way the system will resume recording only the information relating to the new valve fitted.



- *Set Digital Output*: allows remote operation of the single coil of the valve island. Click on the *On* and *Off* bottoms ⑦ to pilot the single Coil pilot and to switch the coils.

NOTE. make sure that the Coil valves are activated in total safety.



6.6 General information and status of the individual valve coils

The screenshot displays the UVIX web interface for a Series D4 Valve Island. The interface is divided into several sections:

- Sidebar (1):** A tree view showing the device hierarchy: DEMO > SERIES_D_LIVE MD > 1 - Valve, 2 - Valve, 3 - Valve, 4 - Valve, 5 - Valve, 6 - Valve, 7 - Valve, 8 - Valve.
- Header (2):** The selected device is '1 - Valve'.
- Status Information (3):** A section providing general information about the valve, including its position, family name, subtype, and firmware. It also shows the last data transmission time and operational status.
- Details (4):** A section containing a table of variables and a 'Health status' section with two gauges for coil 14 and coil 12.
- Alarms (5):** A tab for displaying the status of monitored alarms.

Name	Value
Temperature subbase	27 °C
Cycles coil 14	4432902
Cycles coil 12	0
Health status coil 14	100 %
Health status coil 12	100 %
Status coil 14	Off
Status coil 12	Off
Time MAX coil 14	2833 us
Time MAX coil 12	0 us
Time MIN coil 14	3403 us
Time MIN coil 12	0 us

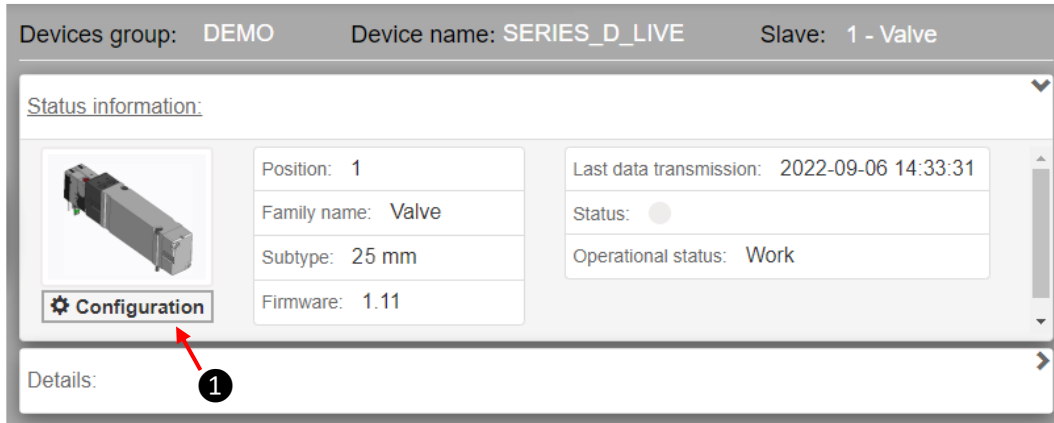
Click on the drop-down menu **1** to open the list of valves mounted on the Series D island and click on the valves **2** to display the content screen: general information **3**, the health status of the individual valve pilot **4**, the tabs for displaying **5**:

- *Variables*: the variables (for example the number of operations) recorded for the valve mounted on the sub-base are displayed.
- *Alarms*: the status of the alarms monitored for the single sub-base / valve is displayed (see par. 7.1).

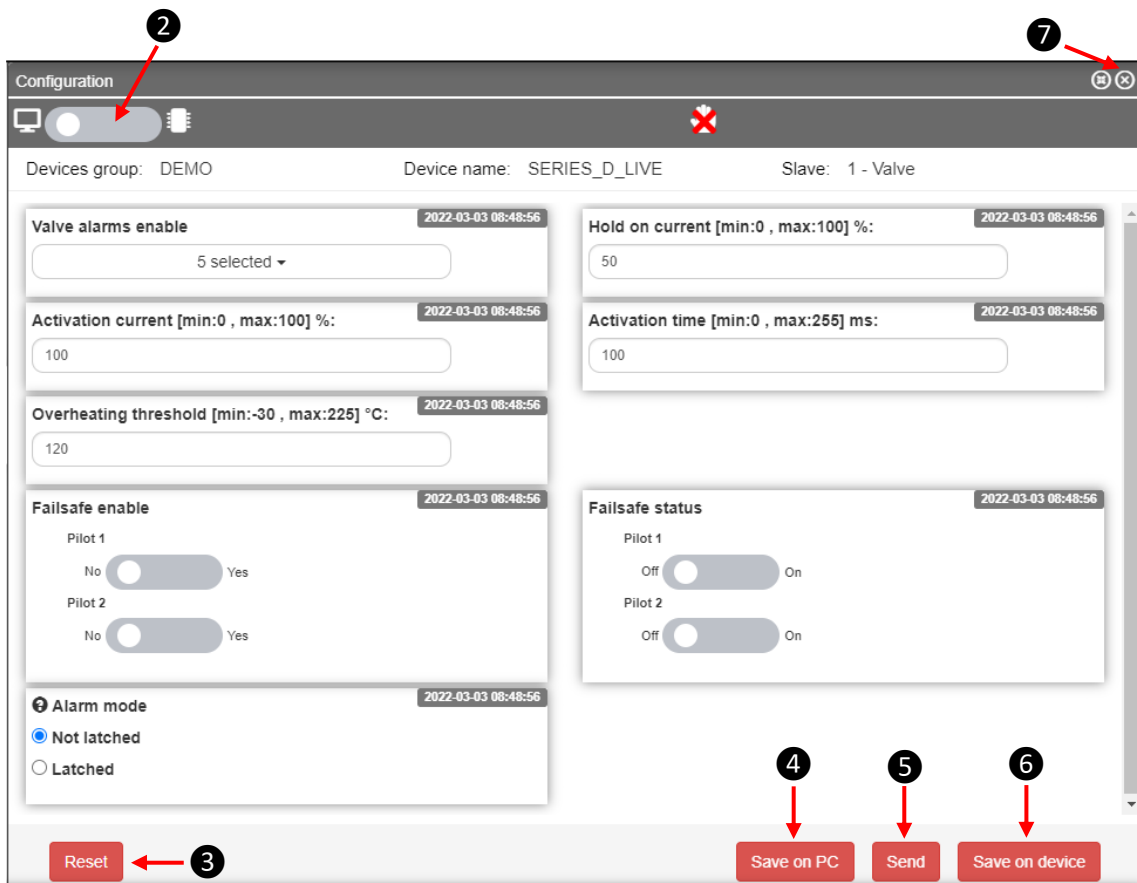
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6.7 Configuration of the subbase parameters (only with user access)

Parameter configuration is only possible with the valve island in manual mode.



Click on the *Configuration* bottom **1** (only with *user* access) to enter in the configuration window of the single subbase/valve.



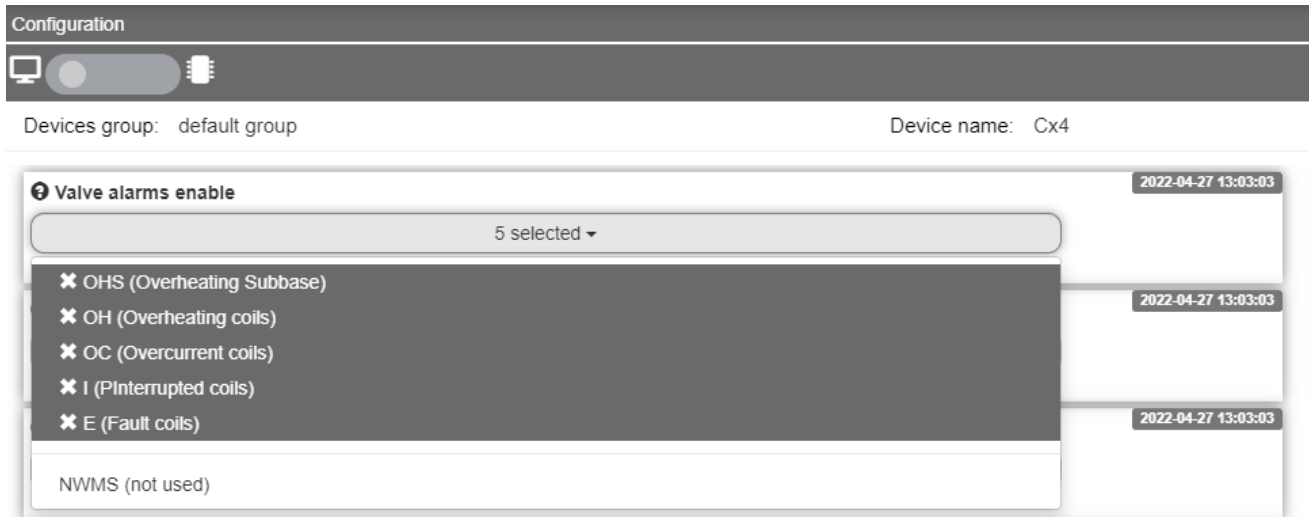
From the configuration screen, it is possible to:

- Display PC parameters or parameters saved in the subbase **2**.
- Reset the status of the configured parameters **3**.
- Save the parameter configuration in CamozziUVIX **4**.

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- Send the parameters to the subbase ⑤: the parameters become operational but are not saved and reset if the valve island is turned off.
- Save the parameters in the subbase ⑥: saving the parameters in the sub-base, the parameters will be stored and maintained in case of shutdown of the valve island.
- Close the window ⑦.

6.7.1 Set Alarms Enable



By clicking on the drop-down menu (25) it is possible to enable or disable the single alarm for the sub-base in configuration. If one of the events for which the alarm has been enabled occurs, an error message is sent. The selectable alarms are:

- OHS - Overheating subbase.
- OH - Overheating coils.
- OC - Overcurrent coils.
- I - Interrupted coils.
- E - Fault coils.

NOTE. Alarms are enabled by default.

6.7.2 Hold on current

Percentage of the current PWM signal supplied at the end of the initial activation phase of a single pilot of a Coil valve. The default value is 50%. The reduction of the PWM percentage after the activation phase allows to save energy in the active maintenance of the valve.

6.7.3 Activation current

Percentage of the current PWM signal supplied upon receipt of the activation command of a single pilot of a Coil valve. The default value is 100%, corresponding to constant 24V.

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6.7.4 Activation time

Activation time of a single Coil valve pilot after receiving an activation command. During this time, the PWM percentage of the current signal supplied to the driver is equal to the value set by the *Activation current* parameter. The default value is 100 ms.

6.7.5 Overheating threshold

Maximum threshold for which the coil overheating alarm is provided. The default value is 120 °C.

6.7.6 Failsafe enable

The *Failsafe* parameter allows the subbase to set the status of the valve pilots to a defined state (active or inactive) when there is no communication with the multipolar island head. This parameter allows you to enable or disable the *Failsafe* (default disabled).

6.7.7 Failsafe status

This parameter is combined with that of *Failsafe enable*. If this parameter is enabled, the status indicates in which state the pilots are to be set if there is no communication with the master:

- ON: the pilots are in the active state.
- OFF: the pilots are turned off.

6.7.8 Alarm mode

For the single valve position, it is possible to set the *Fault coils* in two ways:



- *Latched*: the fault is blocked (default), the pilot in error is turned off and can no longer be piloted until the fault has been removed.
- *Not latched*: it is possible to set the single valve position so that the error generated by the Coil pilot is indicated but the alarm is not blocking for the valve that will continue to operate.

NOTE. The system indicates with the  that the setting of the parameter in CamozziUVIX does not correspond to the state physically set in the sub-base.

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7 Diagnostic

The Series D valve island has an *open collector* diagnostic output with which it signals the faults that may occur to the single valve / sub-base (Pin 23 of the 25-pin D-sub connector and Pin 39 of the 44-pin D-sub connector).

The maximum controllable current is 50mA and is equipped with short circuit protection.

The types of the alarms are:




- Subbase overheating.
- Coil overheating.
- Coil overcurrent.
- Coil interrupted.
- Coil fault.

The status of this output depends on the type of alarm set:





- Blocking: the status of the diagnostic output is restored by removing the fault by turning the island off and on again (default).
- Not blocking: the status of the diagnostic output is restored by removing the fault or by driving OFF the Coil that caused the problem.

The subbases indicate the type of alarm by means of a coded flashing of the LED associated with the single electropilot (see par. 7.1). The multipolar head of the valve island signals, with the operating and diagnostic status LEDs, the general behaviour of the island itself (see par. 7.2).







7.1 Subbases (diagnostic Led)

Module status and alarms	LED status	Description of the status and solutions of the alarms
Normal operation without alarms	 YELLOW OFF	The valve is not controlled.
	 YELLOW ON	The valve has been operated correctly.
Fault coil (Position 14/12)	 1 flash YELLOW @100 ms every 1 s	The coil did not energise properly. Solution: the alarm is not blocking, so try operating the coil valve again. If the problem persists, replace the coil valve.









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Module status and alarms	LED status	Description of the status and solutions of the alarms
Interrupted coil (Position 14/12)	 2 flashes YELLOW @100 ms every 1 s	The coil is interrupted or missing. This alarm may be blocking (if configured as such) and therefore the island must be restarted. Solution: replace the coil valve.
Overcurrent coil (Position 14/12)	 3 flashes YELLOW @100 ms every 1 s	The current consumption of the coil is excessive and therefore the coil valve is automatically switched off. Solution: replace the coil valve.
Overheating coil (Position 14/12)	 3 flashes YELLOW @100 ms every 1 s	The coil temperature is too high. This alarm may be blocking (if configured as such) and therefore the island must be restarted. Solution: remove the ON control on the coil valve and allow the coil to cool down. If the problem persists, replace the coil valve.
Overheating subbase	 5 flashes YELLOW @100 ms every 1 s	The sub-base electronics temperature is too high. Solution: switch off the island and let the device cool down. If the problem persists, contact support and replace the sub-base.

7.2 Multipolar (diagnostic Led)

Module status and alarms	Operative LED	Diagnostic LED	Description of the status and solutions of the alarms
Normal operation (WLAN OFF)	 1 flash GREEN @100 ms every 1 s	 RED OFF	The valves island is in work status. The WLAN module (optional) is connection is NOT present or NOT connected.
Normal operation (WLAN ON)	 1 flash GREEN @300 ms every 3 s	 RED OFF	The valves island is in work status. The WLAN module (optional) is present and connected.
Normal operation (WLAN ON)	 2 flashes GREEN @300 ms every 3 s	 RED OFF	The valves island is in work status. The WLAN module (optional) is present and connected. The valve island is in manual mode setted by UVIX

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Module status and alarms	Operative LED	Diagnostic LED	Description of the status and solutions of the alarms
Numbering alarm	 GREEN OFF	 1 flash red @100 ms every 1 s	The island is in error of numbering, it has never been put in communication with any sub-base. Carry out the numbering procedure (see par. 5.3.2).
Mapping alarm	 GREEN OFF	 2 flashes RED @100 ms every 1 s	The island is in a mapping error. The layout of the sub-bases has been changed, check it and if necessary, repeat the numbering procedure (see par. 5.3.2).
Valve alarm	Falshing (see the previous states)	 1 flash RED @100 ms every 1 s	At least a valve has an alarm: <ul style="list-style-type: none"> ▪ Subbase overheating ▪ Coil overcurrent ▪ Coil overheating ▪ Coil fault ▪ Coil Interrupted
Communication alarm	Falshing (see the previous states)	 2 flashes RED @100 ms every 1 s	The multipolar master of the island has lost communication with the sub-bases.
Under Voltage alarm	Falshing (see the previous states)	 3 flashes RED @100 ms every 1 s	The power supply is under the voltage threshold of 21,6V (-10% of 24,0V).
Overheating multipolar master	Falshing (see the previous states)	 5 flashes RED @100 ms every 1 s	Overheating of the multipolar master.

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