

MCZ02

MICROPROCESSOR CONTROL



USER AND MAINTENANCE MANUAL





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User and maintenance manual
MCZ02_v01

JUNE 2018

Declaration of Conformity



(All. IIA DIR. 2006/42/CE)

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DECLARES

Under its responsibility that the Microprocessor control:

Model	Touch Panel Control	Code	MCZ02
Serial Number		Year of manufacture	

It's in compliance with all regulations and conditions of security required by Directive 2006/42/CE concerning the machines as accepted by the national legislation with Legislative Decree of 27 January 2010 - No.17.

It's in compliance with the conditions of the following other CE Directives:

Directive 2004/108/CE of the European Parliament and the Council of 15 December 2004 concerning the reconciliation of the member States legislations relative to electromagnetic compatibility.

Directive 2006/95/CE of the European Parliament and the Council of 12 December 2006 concerning the reconciliation of the member States legislations relative to electrical equipment designed for use within certain voltage limits.

Cusano Milanino

Legal Representative

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USER AND MAINTENANCE MANUAL

**MICROPROCESSOR CONTROL
MCZ02**



1 GENERAL INFORMATION

1.1 Introduction

This manual is an essential part of the microprocessor control and is destined to trained and well-informed personnel, which is aware of the machine performance at the risk conditions to which it may be exposed.

This document supposes that in the plants where the machine is destined, are complied the present norms of safety and hygiene of the work.

Zator Srl won't be liable for actions or improper connections made by unqualified and unformed personnel.

Instructions, drawings and documentation contained in this manual are of reserved technical disposition, only for Zator Srl property and may be not reproduced in any way, neither in full or partially reproduction; not translated into another language, or trasmitted in any electronic or mechanical means or form, without written permission of Zator Srl.

Zator Srl doesn't assume any responsibility regarding the accuracy of the contents of this manual.

The drawings and technical data in this document is updated to the date of their pubblication and Zator srl reserves the right to change, without notice, the contents of this manual.

It is therefore forbidden for Technician and Operators of the maintenance to use this manual for different purposes from those relatives to the care and maintenance of equipment in question.

This manual includes the installation, use and maintenance norms of the microprocessor control in safety.

Test in production workshop

The manufacturer guarantees the machine, that this document refers, has been inspected and tested by his production workshop.

“At term of law we reserve the property of the data and technical information with the prohibition of play, communicate to third parties or use them anyway for any other executive purpose and what is shown in this document is the property of the Manufacturer”



1.2 Warranty

This warranty is valid for 12 months from the actual delivery.

During the warranty period Zator Srl is undertaken to remove in the necessary time the obvious faults and flaws of material and/or production, on condition that machine or equipment has been used properly, according to the best rules of behavior and maintenance provided in this manual.

The flawed parts under warranty are fixed or replaced free from Zator Srl in the time compatibly necessary, understood that the Zator Srl is exempted from each responsibility for any title, while the buyer give up to ask damages or costs, including those resulting from the temporary not use of the purchased machinery for all the time is necessary to put it back in efficiency; The transport and/or the forwarding costs, the outward and the return trip costs relative to the operation by the Zator's technicians in the Buyer address are always on charge of the buyer.

The labor costs relative to the operation of the Zator's technicians in the Buyer address for the removal of flawed parts under warranty, are on charge of Zator Srl, except these cases when the nature of the flaw can be easily removed on place by the Buyer.

This commitment of Zator Srl excludes each other warranty effects provided by the law.

The warranty for the replaced or repaired spare parts of the microprocessor control finishes the same day of the warranty expiration date of the microprocessor control, the replaced part warranty however doesn't has lifetime less than three months after its installation.

Replaced parts during the warranty period by the seller are free acquired in the same place with new parts.

Are excluded from the warranty all the tools and consumable materials, possibly supplied by Zator Srl with the machine.

It are excluded and renounced by the buyer every pretensions of items/people damages reimbursement on charge to Zator Srl, for any titles, even if the damages were depending from manufacture or material flaws. It's of equal excluded and given up any reimbursement for people and/or items damages depending on the practise of the microprocessor control. Parts replaced free remain of Zator Srl property.

Elapsed the warranty period every operation will be on charge to the buyer.

Application fields

- Packaging machines
- Automation machines
- Paper converting industry
- Case maker industry
- Printing machine
- Tobacco and wood industry
- Assembly
- Food industry



Condemnation of conformity flaw - Goods reception

The original configuration of the microprocessor control never must be changed.
On goods reception, check that:

- The packaging is intact
- The exact correspondence of the commissioned material

In case of damages or wrong delivery contact immediately Zator Srl.

The buyer, on penalty of warranty decadence, must report in writing the flaw conformity or fault of the microprocessor control to the seller, specifying in detail the nature, within eight days from their discovery.

In no case the condemnation of conformity flaw or fault may be validly made after the expiration date of the warranty terms.

Also the buyer decays from the warranty if doesn't allow each reasonable control that the seller requires.

It's excluded from this warranty the most damage caused to the machine by the failure timely condemnation to the seller of a conformity flaw or fault of the the microprocessor control.

1.3 Warranty restrictions

This warranty is only valid for products of new construction.

This warranty is limited to the repair or replacement, by the seller, of each parts of the machine or supplied material that results flawed, after checking the existence of the flaw.

In no case the seller will be liable for every consequential or indirect flaws or otherwise derived from production cycle interruption or machine stoppage.

The seller is not liable for flaws of the microprocessor control derived from the use of devices, equipments, etc. that are enquired and provided by the customer and installed on the machine to change its use compared to the original design.

The seller is not liable for every conformity flaws of the microprocessor control or faults owed for the normal wear of those parts that, by their nature, are subject to rapid and continuous wear.

The seller also is not liable for damages resulting from improper use of the equipment and from the non-observance of the norms expected for the execution of the ordinary periodic maintenance.

The seller is not liable for conformity flaws of the microprocessor control or faults that depends on changes, reparations, alterations or tampering attributed to the buyer and however non-authorized personnel of the buyer.

The costs relative to the wear materials necessary for test and restart the microprocessor control are on charge of the buyer.



1.4 Maintenance service request

Contact:

Technical office of Zator S.R.L.

Via Galvani 11 - 20095 Cusano Milanino (MI) - Italy

e-mail: info@zator.it

www.zator.it

Tel.: +39-0266403235

Fax.: +39-0266403215

Always forward the request in writing (fax or email) and give all the information to identify the machine object of the request:

- **Model**
- **Serial number**

Please refers to the frontspiece of this manual or directly to the nameplate on board to the machine or to the serial number of the microprocessor control.

1.5 Spare parts request

The customer is responsible to purchase original spare parts that guarantee him to keep efficient and safe the microprocessor control.

The disassembly and assembly operations must be performed according to the manufacturer's instructions.

Contact the Technical Office of Zator Srl which will give to you the specifications to do the request of the parts and will provide the information about their replacement.

To order the spare parts is necessary to report completely all identification data of the microprocessor control and those of spare part to be replaced.

The illustrations in this document are for example.



2 SAFETY NORMS

CONFORMITY OF USE

The *MCZ02 control* is designed and manufactured in compliance with the current safety standard. Only trained personnel is authorized to install and use the control. For the MCZ02 control are provided only and exclusively the application fields describe in this manual. All data and parameters indicated in this manual must be respected. Any other use is considered improper.

All operation with the MCZ02 control must be carry out in compliance with the following current safety norm written in part:

1. DPR 547 of 27th April 1955 "Rules for prevention of work accidents" - DPR 303/56 "General rules for work hygiene";
2. Law No.186 of 1st March 1968 (Regulations concerning the manufacturing of materials, equipments, machinery, installations and electrical and electronic plants);
3. Rules of fire prevention;
4. D.L. No.277/91 Risks of chemical, physical, biological agents (in particular noise, lead and asbestos);
5. D.L. No.476 of 4th December 1992 Actualization Directive No.92/31/CEE – 89/336/CEE on electromagnetic compatibility;
6. DLGS 14th August 1996, No. 493 Safety signs actualization Directive No.92/58/CEE;
7. D.P.R. No.459 of 24th July 1996 Rule for introduction and use of machines and safety components on European Union district;
8. Law No.46 of 5th March 1990 Rules for safety of technical plants;
9. DPR No.447 of 6th December 1991 "Rule of law actualization of 5th March 1990, No.46 for the plants safety";
10. Legislative Decree of 19th September 1994 No.626 and 242/96 of 19th March 1996 for the improvement of the safety and health of workers in the workplace;
11. Law No.791 of 18th October 1977 - DLGS No.277 of 31th July 1997 - Actualization of the European Communities council Directives of the 73/23/CEE and 93/68/CEE) about the safety guarantees that the electric material must has, designed for use within specific voltage limits;
12. Directives 89/686/CEE about the PPE.



2.1 Safety and environment general informations

Before the start-up of the microprocessor control the personnel must be adequately informed and trained (D.L. 626/94) on its use, direction and start-up process, as well as the safety norms to be performed and also observe how it is prescribed in this document and in other documents possibly attached to the microprocessor control.

The employer must provide to instruct the personnel on the risks of injury, on safety devices and accident prevention general rules provided by the community directives and the legislation of the country where the microprocessor control is installed.



CAUTION: Always disconnect the power supply before proceed to carry out any maintenance or adjustment operations.

Discharge the fluid pressure before to proceed to carry out any maintenance or adjustment operations.

2.2 P.P.E. Personal protective equipment

For personnel who will work on the microprocessor control, for any functions (installation, assembly, demolition, maintenance and operation) they will be provided with appropriate **P.P.E.** - Personal protective equipment of type approved and certificate by C.E.:

- **anti-solvent gloves**
- **cut resistant gloves**
- **masks**
- **coverall (no floating coverall)**



CAUTION: The clothes of who will operate on the microprocessor control for any functions must be in compliance with the essential safety requirements defined by the community Directives 89/656/CEE and 89/686/CEE and to the actual laws in the country.



2.3 Risks, protections, warnings and cautions

2.3.1 General safety

In accordance with the Machine Directive it means for:

DANGER ZONE = area within or near the microprocessor control where the presence of an exposed person make a risk to the safety and health of himself (Attached I - 1.1.1 Directive 89/392/CEE).

EXPOSED PERSON = any person that is placed entirely or partially inside a danger zone (Attached I - 1.1.1 Directive 89/392/CEE).

OPERATOR = person who is appointed to install, operate, adjust, perform ordinary maintenance and clean the machine (Attached I - 1.1.1 Directive 89/392/CEE).

All risk areas of the microprocessor control have been checked and consequently have been taken the necessary precautions to avoid risks to people and damage to the components of the microprocessor control.

Safety glossary

Intended purposes

By this term it refers to the use of the machine as described by the manufacturer.

For “intended purposes” also refers to the use of the unit through its design, its construction and function.

Secondary risks and/or residual risks

A secondary risk is a danger which is not obvious and results from the use of the machine.

Secondary risk are unavoidable despite all the preventive measures that are taken.

Competent personnel

A person is competent when it acquired sufficient knowledge in a specific field both through the professional instruction and with the experience. A competent person must get to know with the specific norms for the safety on work and for the accident prevention and generally with the technical knowledge rules.

Trained personnel

A person is trained when it is informed by a competent person about the activities it must perform and the risks relative to improper behavior and, if necessary, it has received the required training. Also a trained person must be informed about the safety devices and protective measures.



Skilled personnel

A skilled person is a competent person or sufficiently trained.

The operator must be informed of the position and operation of all commands and features of the plant.

The maintenance and start-up operations must be performed by qualified technicians after properly setting up the machine.

The unauthorized tampering or replacement of one or more microprocessor control parts, the adoption of accessories that modify the original use of the microprocessor control and the purpose of different consumer product from those recommended in this manual, can become a cause of injury risks.

The protective devices must not be removed or tampered for the risk to reduce the accident prevention features of our systems.

To highlight particular situations for the safety of the instrument, are used the following graphic symbols:



CAUTION and/or DANGER – Accident prevention rules for the operator



DISCONNECT from the power supply line



R. R. – RESIDUAL RISKS

WARNING - There is the possibility to damage the machine and/or its components

PRECAUTION - Further information about the operation in progress

NOTE - Provides useful information

2.3.2 Dangers and risks unavoidable

On the machine also equipped with protection systems remain the following **R. R. RESIDUAL RISKS**:

A - Danger due to electricity in general

B - Danger due to inhalation of dangerous vapours to health and fire danger

C - Danger due to problems/malfunctions of the control system

This can lead an excessive increase of dispensing of glue as well as a fire danger or dangers due to inhalation of dangerous vapours to health.

D - Risk due to the projection of fluids under pressure

In case of improper maintenance of the hydraulic system parts.

E - Risk of fire

Prohibition to smoke and/or to be present objects at temperature near the microprocessor control.

2.3.3 Safety devices adopted

In order to safeguard the health and security of the exposed people, the machine is equipped with:

- Fixed guards: removable only by tools
- Mobile guards: depending on the model of microprocessor control

The machine can be equipped with area delimiters that prevent operator access to dangerous areas (see **R.R.**).

2.3.4 More general safety precautions



CAUTION: The maintenance operations must be peremptorily carry out by qualified and authorized personnel, only and exclusively with machine turned off: power switch in “OFF” position. Make sure the passages around the machine is not hindered by misplaced cables and dangerous for personnel.

The user must always put available to the operators, in the areas that require it, safety goggles, gloves, and any other necessary protections; it must also make sure that these safeguards are being used.

The areas that require the use of protective clothing must be marked with warning signs and pictograms indicating the residual risk.



CAUTION: is **ABSOLUTELY FORBIDDEN** to tamper or remove the plates and the protections on the microprocessor control.

The manufacturer declines all responsibility for the safety of the microprocessor control in case of omitted observance of the prohibition.

CE norms signage: examples of danger symbols



C
Corrosive



O
Combustible
agent



F
Easily flammable



F+
Extremely
flammable



XI
Irritating



N
Dangerous for the
environment



X
Noxious



P
Toxic



Danger



Noxious material



High voltage





2.4 Environmental condition

Operating environmental conditions

The electromagnetic valve is designed to operate in a closed local, protected from the atmospheric agents, with all the safety requirements resulting from the laws in force.

Waste disposal

The buyer is responsible to follow the correct process and the norms in force in the country for the disposal of waste and residual material.

Waste definition

Waste is any material and object resulting from human activity or natural cycles which is abandoned or destined to be abandoned.

Special waste

They are considered special waste:

- Remains from industrial production, agricultural activities, crafts, commercial and service that for quantity are not declared comparable to urban waste;
- Obsolete and deteriorated machinery and equipments;
- Motor vehicles and their parts out of use.

Toxic-noxious waste

Are to be considered toxic-noxious waste all waste containing or contaminated by materials listed in the attached on the DPR 915/52 of actualization of Directives 75/442/CEE, 76/403/CEE and 768/319/CEE.

Temporary storage

Temporary storage of toxic and noxious waste is allowed depending on the expected disposal of the same by treatment and/or final disposal. In each case, must be observed the laws in force in the country of the user in the environmental safeguard field.

Features of containers

The fixed and mobile containers designed to contain toxic and noxious waste must have suitable strength requirements in relation to the chemical-physical properties and the dangerousness features of the waste contained. The containers where the products and the dangerous or noxious materials are stored, must have markings and symbols in order to show the nature of their contents.

Registration obligations

Pursuant to the DPR of 23 August 1982 relative to the implementation of the Directive 75/439/CEE the records of loading/unloading operations must be kept by all companies that generate - special or toxic - noxious waste from industrial and hand-crafted productions.



Disposal

The pick up of special and/or toxic-noxious waste must be committed with contract to specifically authorized companies and who do the transport materially must be in ownership of the required authorizations and must be turn out to be registered in the haulers register.

It's absolutely forbidden to throw waste in the environment.

For the disposal of the packaging, the user must follow the laws in force in the country of plant installation.

Fire material

There is no fire dangers by the operation of the microprocessor control.



CAUTION: The customer must provide an appropriate fire-fighting system, evaluating its internal situation and respecting the laws in force.

In case of fire, disconnect immediately the power switch to interrupt the power supply.



CAUTION: explosive atmosphere

The electromagnetic valve is not designed to operate in explosive atmosphere. It is forbidden to use the machine in an explosive atmosphere, even if only partially explosive.

Lighting

The customer is responsible for ensuring an appropriate lighting of the local where the machine is installed, according to the laws in force in your country and the EU directives.

Vibrations

The microprocessor control doesn't make vibrations.



2.5 Installation - General norms

Zator's products are manufactured in compliance with the laws in force during its construction. The personnel will be trained and qualified to take advantage of the installed machinery requirements. The personnel must operate in a comfortable space that could be guarantee safety and hygiene for the operator.

In case of a different destination or necessity of use of the microprocessor control, it's appropriate to refer to the technical offices of the Zator Srl.

Goods in packaging

Outside the package are indicated all the information about the content identification and the safety movement:

- CE marking
- address of the sender and the addressee
- dimensions: length – width – height
- gross – net – tare weight
- annotations and pictograms (ex. brittle, handle with care, high)

CAUTION: The customer must check the condition of the goods upon its arrival.

Predispositions: choose the installation space

Without prejudice to specific dispositions, the customer will be provide to:

- Appropriate logistic arrangement for the placement and conduction of the microprocessor control
- Power supply, including the protective conductor usually called "GROUNDED"
- Electrical equipment arrangement and possible pneumatic system
- Wear materials

For the electrical connection it is necessary to have a preferential line of power supply with the features listed in "technical features".

Pneumatic connections



CAUTION: The compressed air must be free of humidity. It is necessary to assemble on the compressor one or more automatic condensation outlet; the air must be filtered and dried out. Make sure that in the pneumatic circuit is not inserted any type of substances (ex. lubricants or other substances).



3 TECHNICAL DESCRIPTION

3.1 Instrument functions

The *MCZ02 microprocessor control* has been designed and realized for the use on various kind of production machines operating at high speed.

Its design and versatility make it ideal whenever a production process requires that manufactured products need **precision applications** of cold glues by means of programmable glue valves.

The control unit can store up to **99 different gluing pattern programs** and may operate up to **two independent glue valves (channels)**, each one having the possibility to produce **four or eight different glue patterns**.

The glue valves may deposit **glue lines or glue dots** up to a programmed speed at which dots will, automatically, convert to lines.

The microprocessor control can be used with two different modes:

- **Encoder mode:** with the use of a machine speed detector (encoder) whenever machines may run at variable speeds;
- **Timer mode:** without encoder, if the production machines are designed to run at constant speed.

The working cycle begin with the “start” (photocell) reading the first blank to glue: at this point, the control unit will activate the glue valves as defined by the programme set for each valve. The same sequence is then repeated for all following single blanks.

Positioning and quantity of glue dots or lines are all exactly obtained thanks to the encoder device which, permanently feeding the control unit with the current machine speed, will permit the constant monitoring of correct gluing at any speed. Being the control unit provided with two single photocells or start sensors input, each glue valve may be employed with a specific own “start”.



The **window function** allow appropriate gluing of blanks carrying parts in absence of carton's continuity (windows, cuts, etc) which, otherwise, would cause misreading of a start signal.

The equipment is also provided with a **0-20 mA output** for the employment of a proportional valve which will permit to compensate the pressure and, consequently, the quantity of the glue output in function of speed variations.

To compensate the displacement of the glue patterns at different speed, can be set **compensation values** in milliseconds, dependent by the type of valve and the distance between the valve and the product to be glued.

It also has an additional output for a signalling lamp, or the activation of a 24Vdc relay, useful to keep glue level under control in pressurized tank with pneumatic pumps provided with a sensor for the signalling of low glue level.

If the glue valves utilize a nozzle protection shutter device, the equipment will automatically activate the shutter device in absence of units to be glued or when the machine is stopped.

The **test function** can run directly from the control a valve cleaning cycle required after long periods of rest or to verify the efficiency of the valves.

The **simple and intuitive design** of graphical interface, combined with a **touch panel display** with different languages (where messages are displayed on the various menus), simplify programming and learning of the basic functions instrument.



3.2 Technical data

Power supply

<i>Supply voltage</i>	Single phase 230Vac \pm 10%
<i>Frequency</i>	50/60 Hz
<i>Connected output</i>	250 W

Input

<i>Start sensors</i>	2
<i>Encoder</i>	1
<i>Reset</i>	1
<i>Glue level</i>	1
<i>Voltage</i>	+24 Vdc
<i>Type</i>	pnp

Output

<i>Glue valves (channels)</i>	2
<i>Voltage</i>	+ 24/48 Vdc
<i>Max power for each channel</i>	25 W
<i>Proportional valve</i>	1
<i>Type</i>	0÷20 mA
<i>Aux output (Nr.1)</i>	Glue level Shutter Aux1 Aux2
<i>Switching voltage</i>	24 Vdc
<i>Max current</i>	0,5 A

Data connection

<i>Ethernet plug</i>	1
----------------------	---



Machine features

<i>Max machine speed</i>	700 m/min
<i>Application accuracy</i>	± 1 mm
<i>Max glue pattern programs stored</i>	99

Operating conditions

<i>Temperature</i>	0÷50°C
<i>Relative humidity</i>	20÷60%

Weight

6 KG

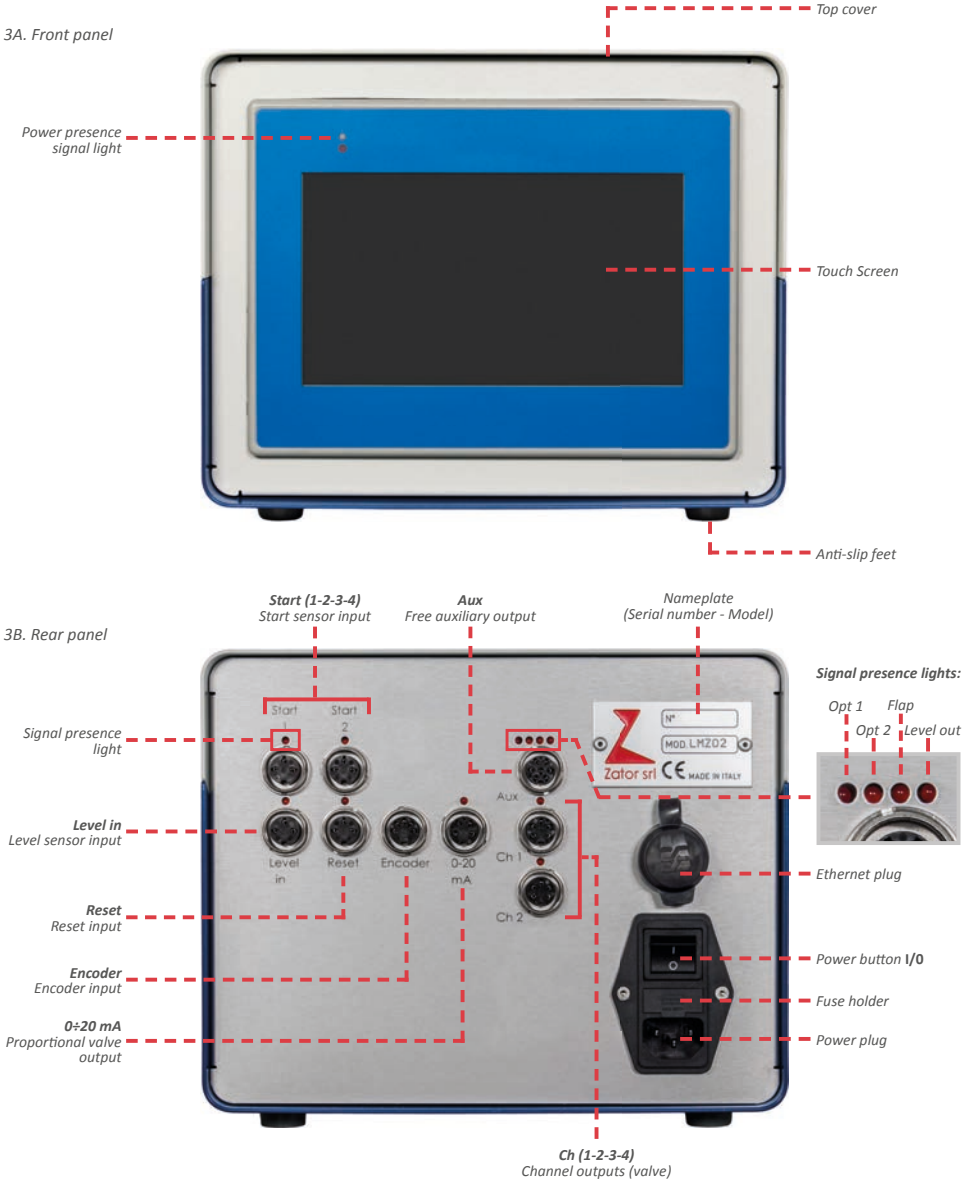
Touch screen

<i>Dimension</i>	7 " TFT
<i>Resolution</i>	800 x 480 pixels
<i>Brightness</i>	350 cd/m ²
<i>Contrast</i>	500:1
<i>Touch type</i>	4 wires resistive
<i>Power consumption</i>	250 mA @ 24V
<i>Frontal protection</i>	IP 65

Zator reserves right to change, without notice, the information provided in this user manual. Information, pictures and descriptions contained in this publication are for guidance only and not binding the Manufacturer.










3.3 Instrument overview

Entering/editing of the parameters and access to all menus and sub-menus of the software take place from the **front panel**^{3A} thanks to touch screen. On the **rear panel**^{3B} there are all inputs/outputs and relative presence signal lights, the power button, the power plug and the instrument nameplate.



3.4 Icon legend

The following list shows all the icons displayed on the screen, divided according to the various menus of the instrument. Each icon has a identification number that it will be used on the following pages of this manual as a reference to this paragraph.

01  HOME SCREEN	HOME SCREEN		
02  HOME SCREEN	03  VALVE OFF	04  VALVE ON	
05  PHOTOCCELL SIGNAL			
06  GLUE DISPENSING IN PROGRESS	07  TEST	08  SETUP	09  VALVES

VALVE PROGRAMMING MENU

10



VALVE ON

11



VALVE OFF

12



No. PHOTOCELL ASSIGNED

13



OPENING TIME

14



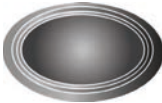
VALVE

15



OPENING DELAY (ms)

16



CAN LID WITH GLUE LINE

17



WORK DIRECTION

18

WRITE PARAMETERS (ms)
(TIMER mode)

19



CAN LIDS

20




COPY VALVES MENU


21



COUNTER RESET



20  COPY VALVES MENU

22  SOURCE VALVE PROGRAM


23  DESTINATION VALVE PROGRAM


24  DIRECTION OF DATA TRANSFER


25  PREVIOUS PAGE


26  CONFIRMATION COPY

27  COPY IN PROGRESS - WAIT

28  COMPLETED COPY

07  TEST MENU

29  VALVE TEST ON

30  VALVE TEST OFF

08



SETUP MENU

31



SECURITY CODE

32



SOFTWARE (INFORMATION)

33



LANGUAGE SELECTION

32

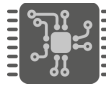


SOFTWARE MENU

34

SOFTWARE VERSION
INSTALLED

35

HARDWARE CODE OF
INTERFACE CARD

25



PREVIOUS PAGE

33



LANGUAGE SELECTION MENU

34



SELECT DESIRED LANGUAGE

25



PREVIOUS PAGE

09



VALVES MENU

37



VALVE No.

38

----- Line

VALVE TYPE ASSIGNED

39

OPEN DROP-DOWN
MENU

40



VALVES SETUP



<p>40</p> 	<p>VALVE SETUP MENU</p>	
<p>41</p>  <p>USER No.</p>	<p>42</p>  <p>ACCESS CODE</p>	<p>25</p>  <p>PREVIOUS PAGE</p>
<p>43</p>  <p>LOGIN DISABLED (insert correct CODE and USER No.)</p>	<p>44</p>  <p>LOGIN ENABLED (correct CODE and USER No.)</p>	<p>45</p>  <p>WRITE PARAMETERS</p>
<p>46</p>  <p>VOLTAGE (%)</p>	<p>47</p>  <p>PEAK TIME (ms)</p>	<p>37</p>  <p>VALVE No.</p>
<p>48</p>  <p>AMPERE LIMIT (A)</p>	<p>49</p>  <p>DOT GLUE SIZE (only for dots valves type)</p>	<p>50</p>  <p>LOGOUT - EXIT</p>



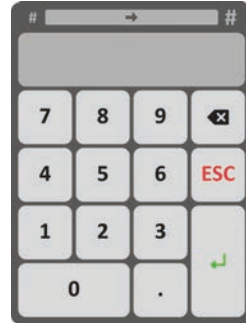
NUMERIC KEYPAD

51



NUMERIC KEYPAD
(for integer value)

52



DECIMAL NUMERIC KEYPAD
(for decimal value)

53



ENTER/
CHANGES CONFIRMATION

54



CLOSE WINDOW/
CANCEL CHANGES

55



BACKSPACE

56



VALUES SETTABLE LIMITS
(LOWER LIMIT and UPPER LIMIT)



4 BASIC KNOWLEDGE

4.1 Turning on/off

1. Check the power cable is plugged in the power supply and in the power plug of the instrument. Turning on the control with **power button I/O^{4A}** on the rear panel.



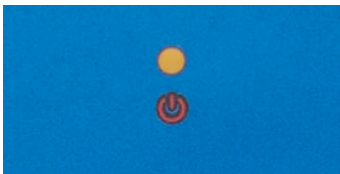
4A. Power button I/O:
Push I for turning on
Push O for turning off

2. After you press the power button, from the front panel the **power presence signal light^{4B}** turns on.

4B. Power presence signal light: the light turns on when you push the power button



Light OFF - Instrument OFF



Light ON - Instrument ON



3. Wait a few seconds the software loading until the **home screen**^{4c} appears on screen: now you can operate on the instrument through the display with your fingers.



4C. Home screen: home screen example, also used during the production.

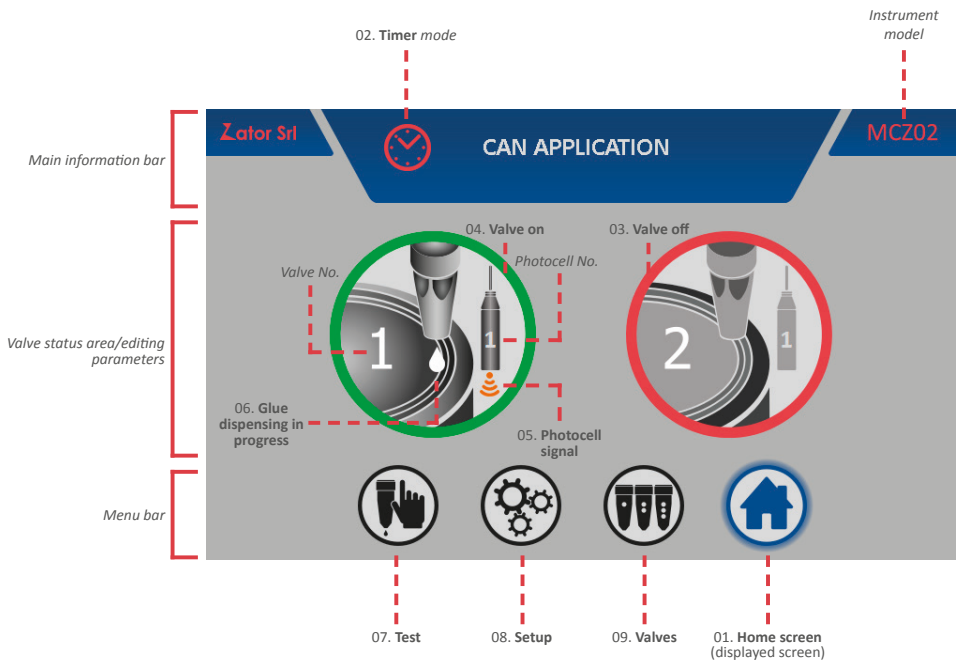


The touch-sensitive area is included in the display dimension.

4.2 Home screen

The home screen shows the main information of the instrument and you can control the valve working. The screen is divided in three different area:

- main information bar (top)
- valve status area/editing parameters (centre)
- menu bar (bottom)



Through the menu bar you can go in the different main menu of the instrument. When you tap on the relative icon, the selected icon lights up blue, so it indicates the present displayed screen.

4.2 Insert/modify parameters

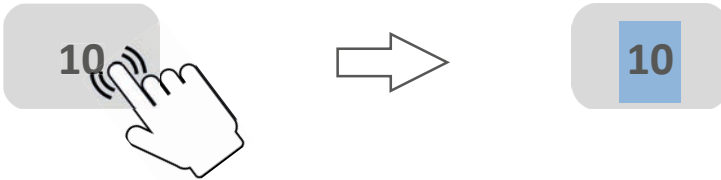
In the different menu are displayed the setting parameters that control the instrument. Likewise, in some screen is requested an access code. These parameters are displayed in a **data box**^{4D}.



4D. Examples of data boxes that you can find in different menu of the instrument.

To modify or insert a parameter in the data box:

1. Tap on the relative data box you want to edit. The value is selected by the system;

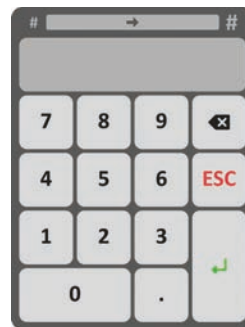


2. Depending on the selected parameters, it appears on screen the **numeric keypad**^{4E} (for integer values) or **decimal numeric keypad**^{4F} (for decimal values);

4E. Numeric keypad for integer values

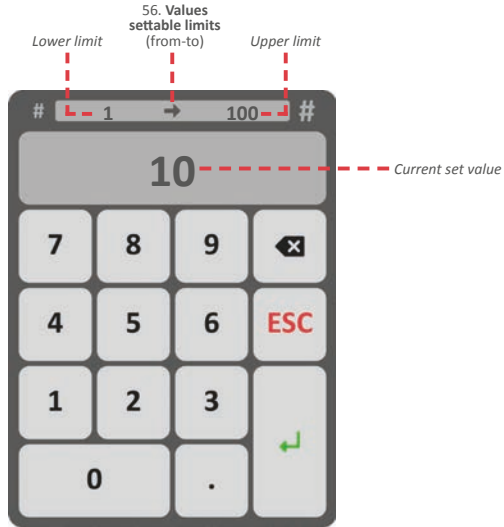


4F. Numeric keypad for decimal values

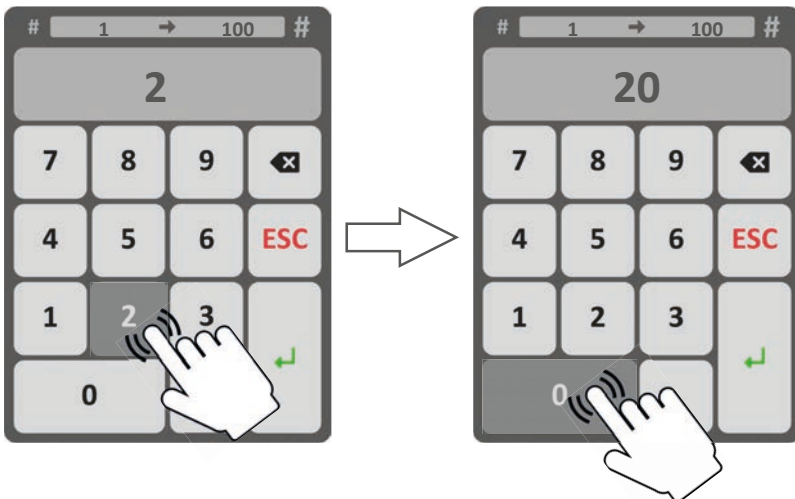




3. To know which values you can enter, there is a bar on the top of the numeric keypad that shows the **values settable limits**: the instrument not allow to write some values outside of these limits;



4. Then insert your desired value using the number (ex. 20). The system overwrite last value with the new value;





5. To cancel a number/some numbers, tap **backspace**;

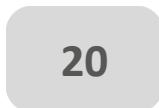


6a. Tap **Enter** to confirm the changes and exit from the window;

6b. Or tap **ESC** to exit from the window and cancel the changes;



7. The new value of parameter is showed into the data box.



5 VALVES PROGRAMMING

From the *home screen* is possible to access to the *programming* menu of desired valve **after entering the security code**.



These changes **must be performed by AUTHORIZED PERSONNEL**.

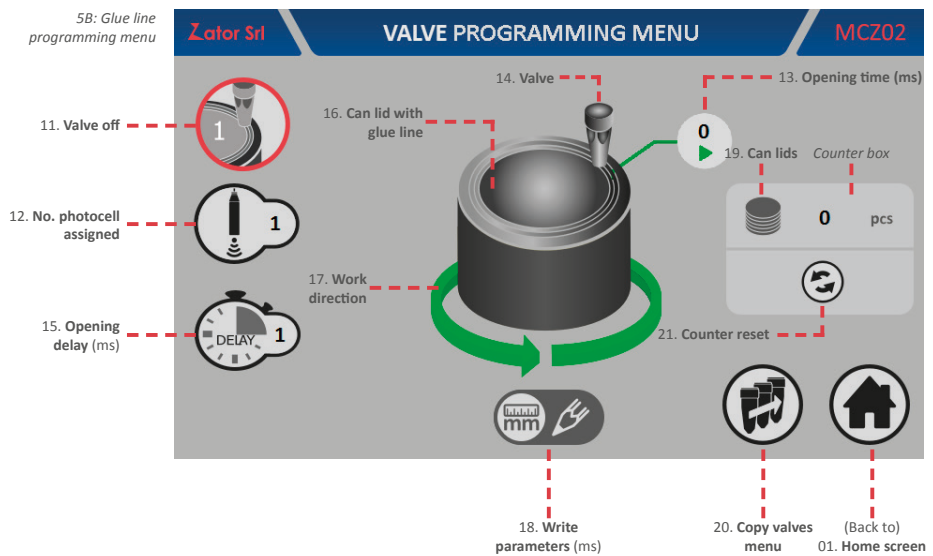
To access to the valve programming menu:

From the home screen tap  or  of desired valve.

In this screen is displayed the **glue line programming menu**^{5B} (see below).

These menu show with a schematic way a three-dimensional view of the machine and the type of application is setted (relative to the current setting of the instrument) that consist of:

- on/off valve button;
- valve and start sensor number assignment (photozell);
- opening delay of the valve;
- can lid to be glued;
- glue line programmable and relative opening time;
- work direction;
- counter and counter reset button;
- copy valve program button.



The **write parameters** icon indicates the measurement unit of the glue line parameters.

These parameters **define the glue line length** as follow:




Opening time: this is the time that the valve will remain open for the application
(Settable values: from 0 to 9999 ms)




Opening delay: this is the time will delay the opening of the valve.
(Settable values: from 1 to 9999 ms)

This parameter is useful to **modify** and/or **correct** the **position** of the glue line.



The number of pieces  (pcs) are displayed in the counter box.

To reset the counter tap .

5.1 Start sensor

The control is provided with two inputs for start sensor (photocell, magnetic sensors, contacts, etc.). According to different applications, it's possible to use one or two sensors, then for each valve is necessary to link a start sensor.





Assign/modify No. photocell assigned



To assign/modify the value, tap on relative data box and with on screen *numeric keypad* insert/modify data, then tap enter to confirm.

Settable values: from 1 to 2

5.2 Turning on/off the valves

From the *glue line programming menu*:

- Tap  to **turning on the valve**;
- Tap  to **turning off the valve**;

From the home screen it's possible to check if the valve is on  or off .


6 COPY VALVES MENU


If the two valves must work with the same glue line, thanks to the *copy valves* function it's possible to speed up and simplify the single glue lines programming.

From the *copy valves menu*^{6A} you can copy all parameters relative to the single glue line from a valve to another one.

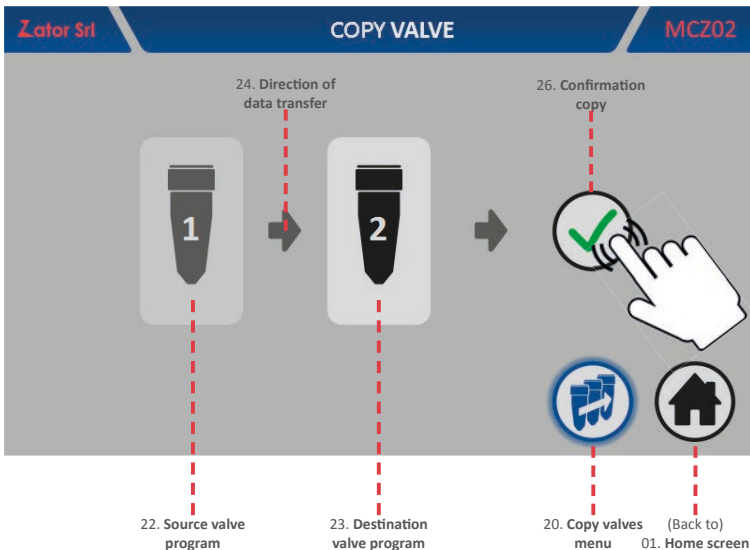
To enter in the *copy valves menu*:

1. After you have programmed the glue line, from the *glue line programming menu* of

desired valve (ex. Valve No. 1), tap  ;

2. From the *copy valves menu*^{6A} tap  to **confirm** and start the copy from the source valve program to the destination valve program*;

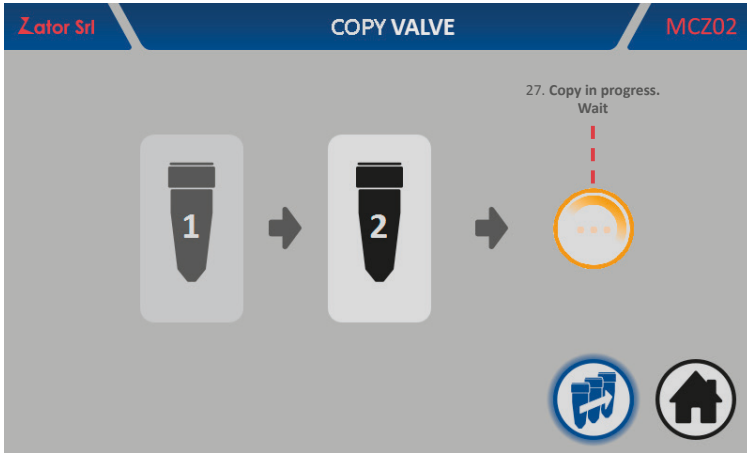
6A: Copy valves menu




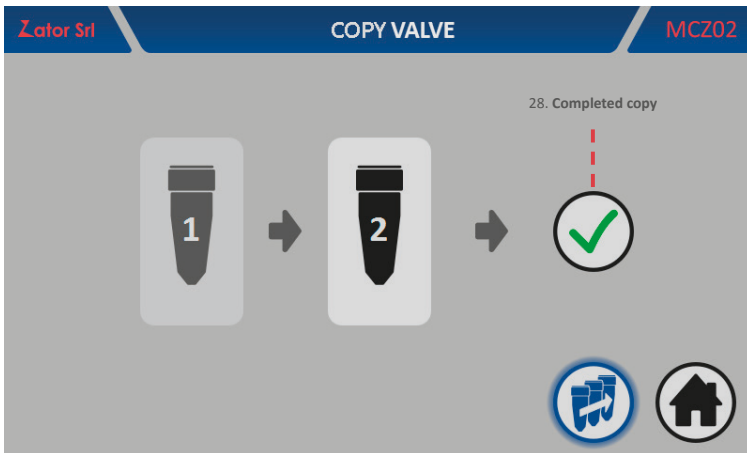
***NOTE:** The *copy valves* function **overwrite** the destination valve data. If there is a glue line programmed in the *destination valves program*, these parameters will overwrite with the *source valve program*.



3. **Wait** the copy process of the data until the icon  disappears;



4. Once the copy is completed tap  to go to *home screen*..

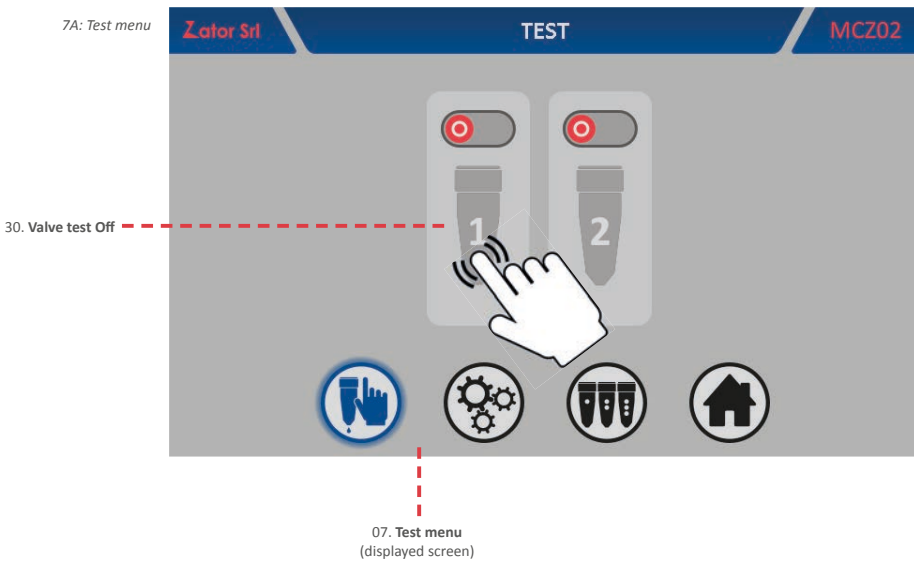



7 TEST MENU

For the correct operation of the valves, it's a good practise to test or to do a valves cleaning cycle after long stop periods or just a verification of the valves efficiency.

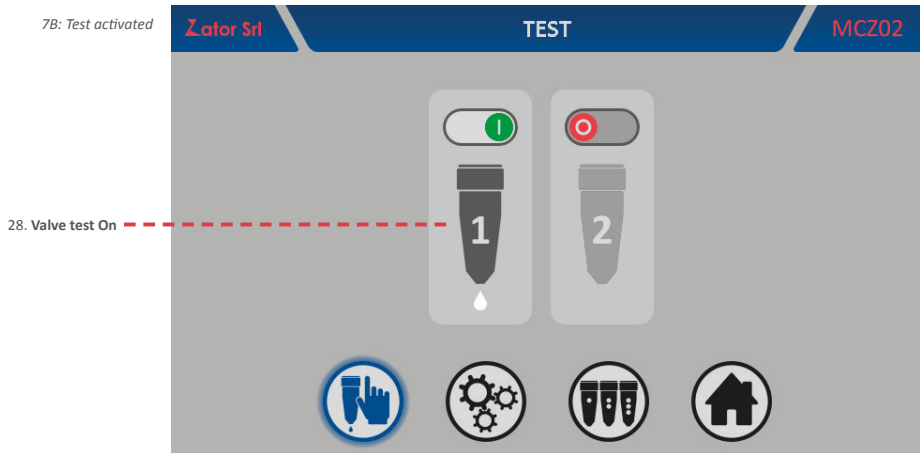
The instrument has a *test* mode in order to perform this operation on one or more valves simultaneously.


To enter in the *test menu*^{7A}, from the *menu bar* tap .



1. To **start** the test tap  of your desired valves to activate them (ex. Valve No.1). To start the test you must activate at **least one valve**;


2. Once the test has been started, the valves which have been activated, change their appearance and start to dispense *glue/fluid*^{7B};

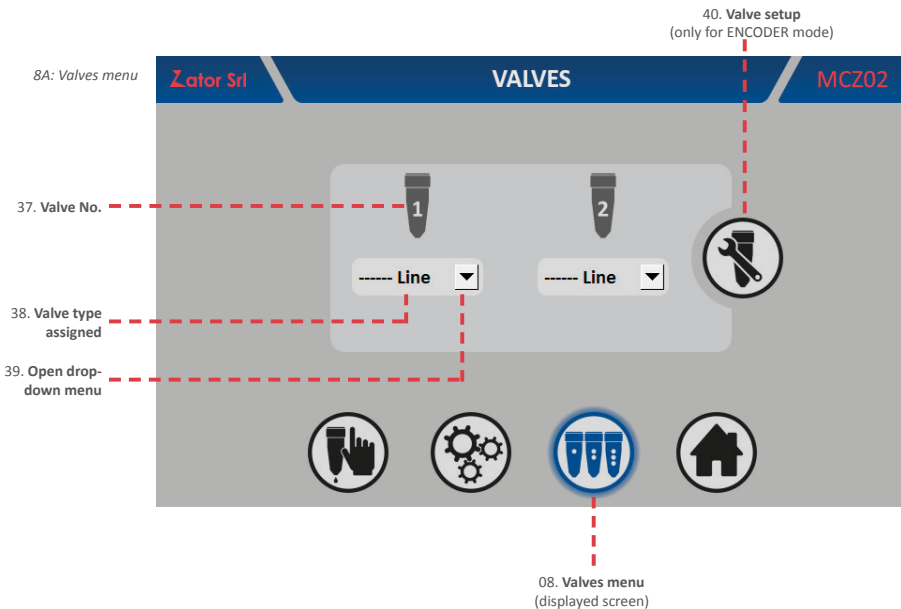


3. To deactivate a valve tap  of desired valve;
4. It's possible to **turn on/turn off the desired valves** also during the test running;
5. To **end** the test just turn off all the valves that are still active, or alternatively you can change the displayed screen from the *menu bar*.

8 VALVES MENU

The instrument can be controls different types of valves: thanks to this menu it's possible to change the valve type assigned to employ for each channel. Also if is necessary you can modify manually the setting parameters of each valve (only for ENCODER mode).


To enter in the **valves menu**^{8A}, from the *menu bar* tap .



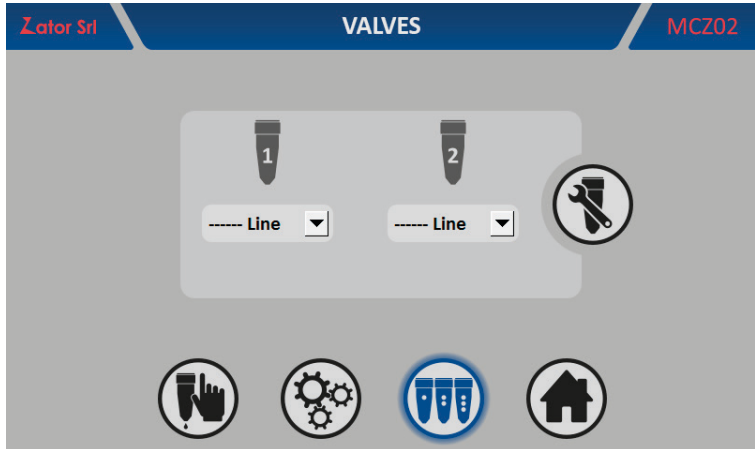
CAUTION: Change the valve type and modify manually the setting parameters of the valves are operations usually carried out during the installation of the instrument. These operations are used to optimize the instrument in relation to the production machine where it's installed. Normally these data don't need to be changed, but if it's necessary these changes **must be performed by AUTHORIZED PERSONNEL**. Every data changes made wrongly may cause **malfunctioning of the equipment**.

8.1 Change the valve type

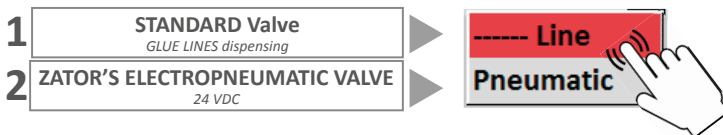
To change the valve type:

1. From the *valves menu* tap  of desired valve (ex. Valve No.1) to open **drop-down menu**^{8B}. The valve type currently assigned is highlighted from red;

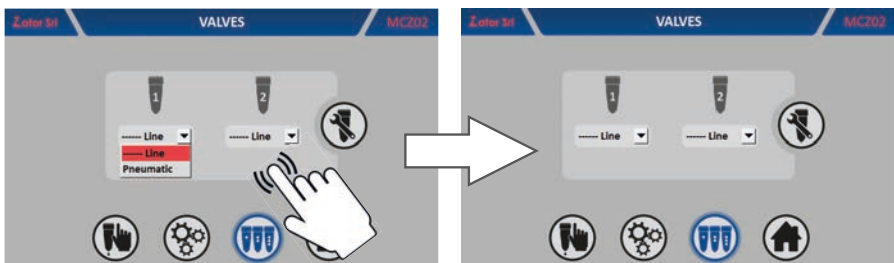
8B: Drop-down menu of valve No.1



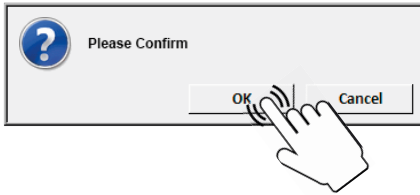
- 2a. By *drop-down menu* it's possible to select one of 2 types of different valves (standard or made by ZATOR production). To assign a new type of valve tap on your desired type (ex. "Pneumatic");



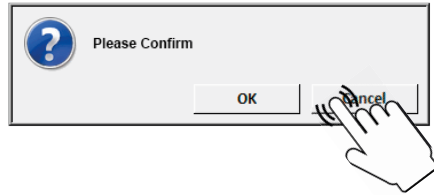
- 2b. Or to **exit** the *drop-down menu* tap anywhere on the screen. Alternatively, the window will close automatically after 10 seconds;



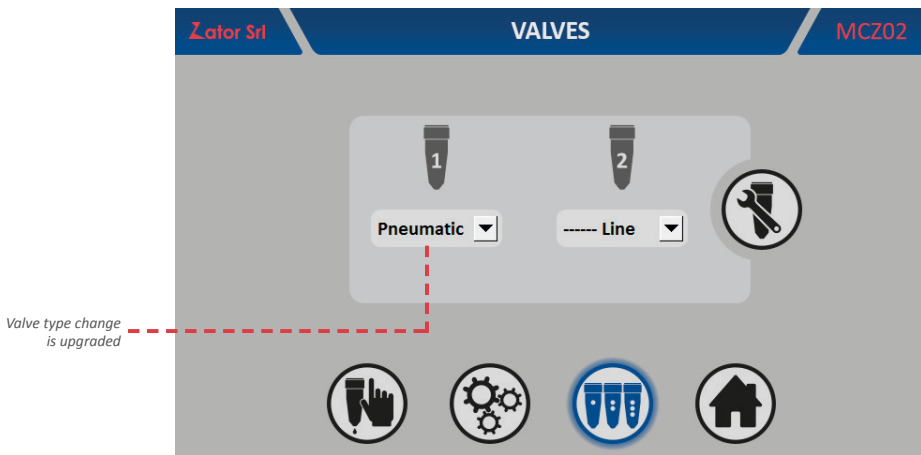
3a. Once the new type of valve is selected, it is necessary to confirm the change with the pop-up window that will appear. Tap *OK* to **confirm**;



3b. Or tap *Cancel* to **cancel** the changes. Alternatively, the window will close and cancel changes automatically after 10 seconds;



4. The new type of valve is upgraded under its relative valve icon.



8.2 Change manually the valves parameters

If on the production machine some *standard* valves were replaced with other different valves from those originally installed on during the placing in service of the instrument, it's possible to modify their setting parameters to optimize their work.



CAUTION: The valves parameters are protected by access code (indicated in this section): these parameters must be entered/edited **ONLY BY QUALIFIED PERSONNEL**, as well as the access code **must be issued only to these persons**. Every data changes made wrongly may cause **damages to the valves**.




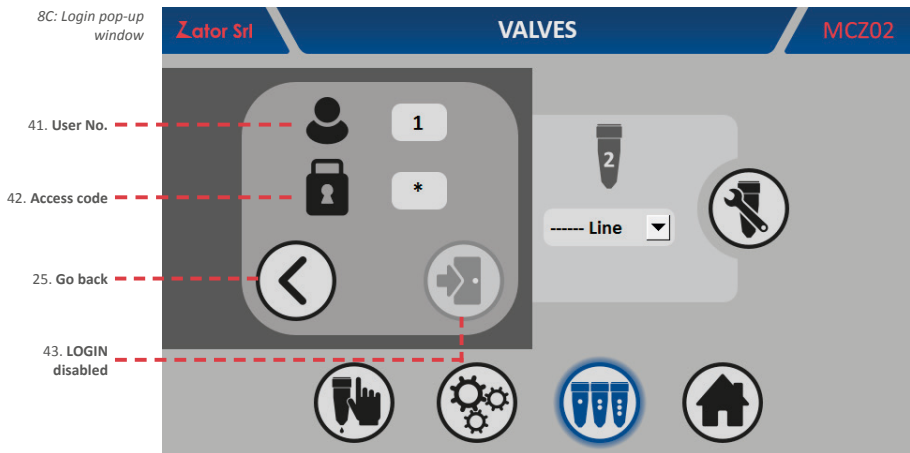
It's advised in all cases to **contact the company before doing any changes**.

To modify manually the parameters of the desired *standard valves* is necessary to *login* into the *valve setup menu*. These changes **can't be made for the Zator production valves**.

8.2.1 Login

To login:

1. From the *valves menu* tap  to open and display the *login pop-up window 8C*;




- 2a. To **close** the login pop-up *window* without log in tap  ;

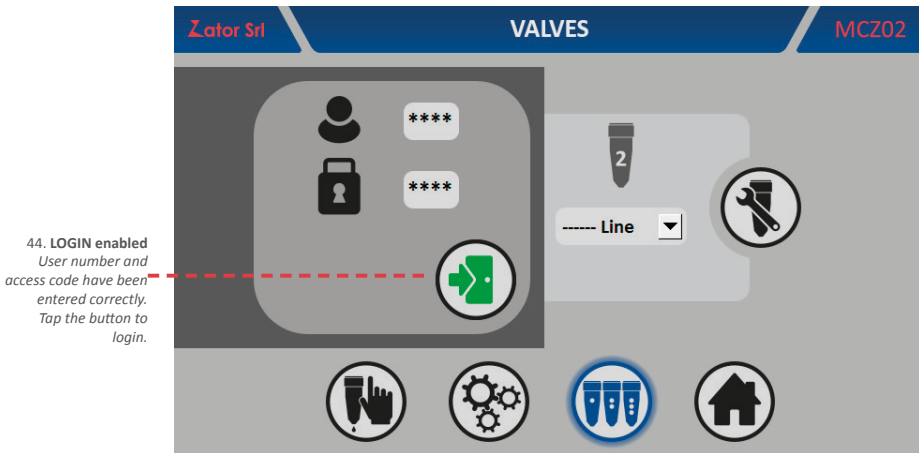
- 2b. In order to enable and then log in, is **necessary insert correctly and in this sequence, before the user number**, then **the access code**, which are indicated below:

User No.	2
Access code	1009

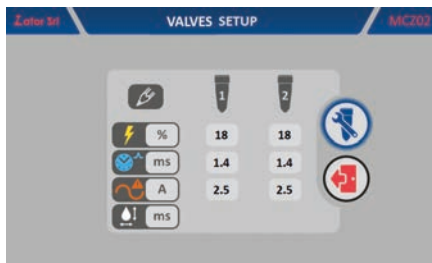
3. Tap on the data box of the user *number/access code*. With the on screen *numeric keypad* insert/modify data, then tap *enter* to confirm;
4. Once you have entered the login credentials, if they have been inserted correctly , they will enable the login icon*. Conversely it will be necessary to insert again the correct login credentials.

Then you can tap  that will appear to log in.

***NOTE:** Once the login is enabled, it is not possible to close the login pop-up window.



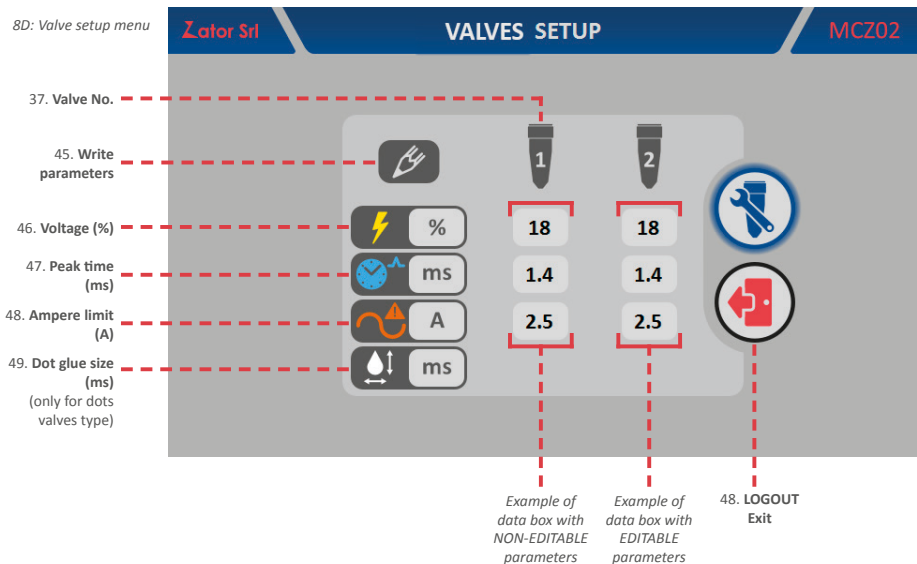
5. After you have logged in, you will enter into the **valve setup menu**^{8D} (see following section).





8.2.2 Valve setup menu

Once you have logged in, from the **valve setup menu**^{8D} it's possible to change **ONLY the standard valves parameters** assigned to their relatives channels (to change the valve type assigned to a channel see the *section 8.1 - Change the valve type*). Non-editable parameters are displayed in grey colour.



From the *valve setup menu*, to modify a parameter:

- 1- Tap the data box relative to the editable parameter that you want to modify;
- 2- With the on screen *numeric keypad* insert/modify data, then tap *enter* to confirm;

Settable values:

- VOLTAGE: from 1 to 100 %
- PEAK TIME: from 0 to 3 ms
- AMPERE LIMIT: from 0 to 5 ms
- DOT GLUE SIZE (only for dots valves type): from 0 to 50 ms

3. Once you have finished the changes, to **exit and logout** tap  .

To access again into the *valve setup menu* it will be necessary log in another time (see *section 8.2.1 - Login*).

9 SETUP MENU


By the *setup menu* it's possible to access and modify all the setup parameters of the instrument combined to the production machine, after entering the *security code*.



CAUTION: Change the setup parameters are operations usually carried out during the installation of the instrument. These operations are used to optimize the instrument in relation to the production machine where it's installed.

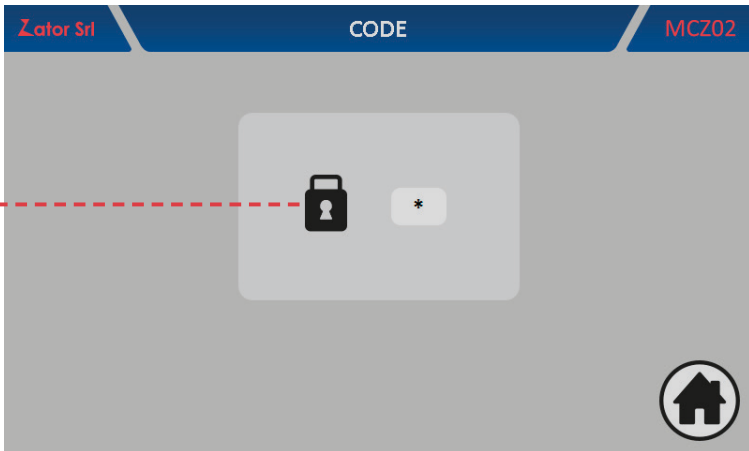
Normally these data don't need to be changed, but if it's necessary these changes **must be performed by AUTHORIZED PERSONNEL**. Every data changes made wrongly may cause **malfunctioning of the equipment**.

To access to the *setup menu*:

1. From the *bar menu* tap  ;
2. Then you must insert the *security code*^{9A};

9A. Security code request

31. Security code



CAUTION: The setup parameters are protected by security code (indicated in this section): these parameters must be entered/edited **ONLY BY QUALIFIED PERSONNEL**, as well as the security code **must be issued only to these persons**. Every data changes made wrongly may cause **damages to the valves**.



It's advised in all cases to **contact the company before doing any changes**.

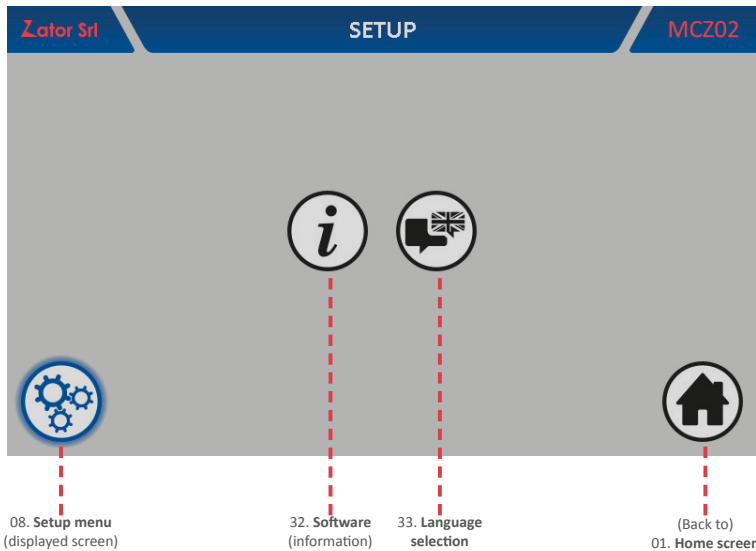


Security code	9822
---------------	------

3. Tap on the data box of the *security code*. With the on screen numeric keypad insert/modify data, then tap *enter* to confirm;
4. If the *security code* has been **entered correctly**, once you tap enter button you will have access to the **setup menu**^{9B}. Conversely, it will be necessary to insert again the correct code.

***NOTE:** Once you have entered into the *setup menu*, no longer you need to enter the *security code* to access again in this menu (if you come back to the *home screen*) up to 10 minutes from the last input code. For safety reasons it is recommended to **turn off then turn on** the instrument once you have finished the changes.

9B. Setup menu

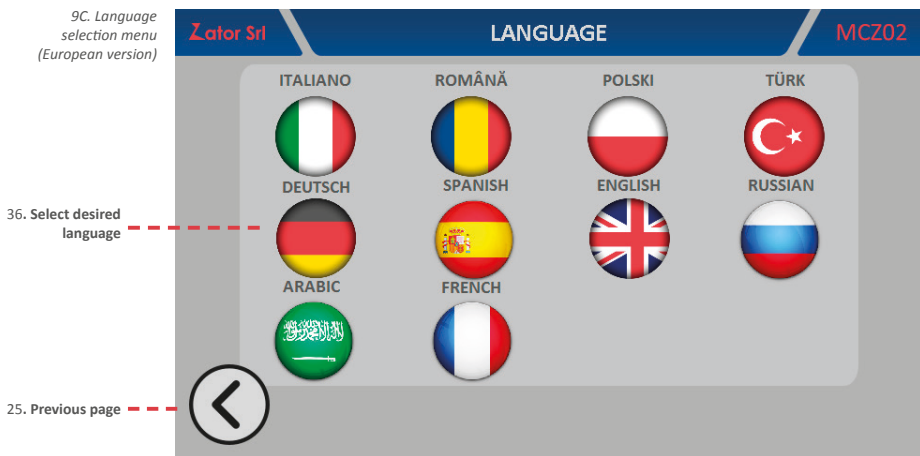



9.1 Language selection

From the language *selection menu*^{9C} it is possible to change the language of the text that are displayed on the different instrument menu.

To enter in this menu:

1. From the *setup menu* tap  ;



4. To go back to the previous page tap  .



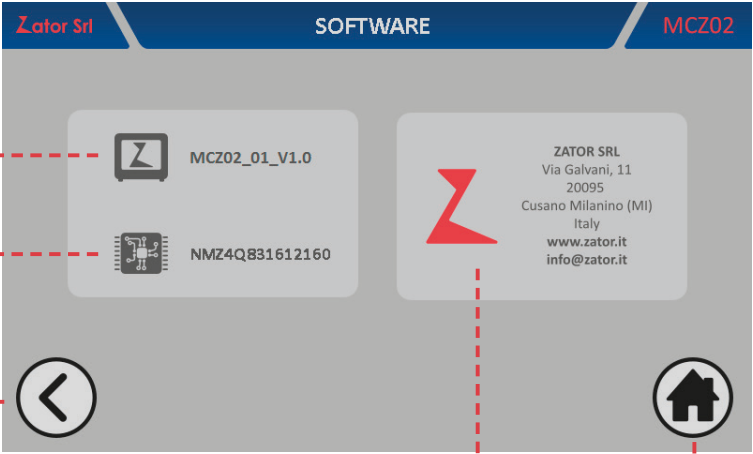
9.2 Software

From the **software menu**^{9D} is possible to display and see the *software version installed* of the instrument and the *hardware code of interface card*. There are also the references of the manufacturing company.

To enter in this menu:

1. From the *setup menu* tap  ;

9D. Software menu




34. Software version installed

35. Hardware code of interface card

25. Previous page

Manufacturing company references

(Back to) 01. Home screen

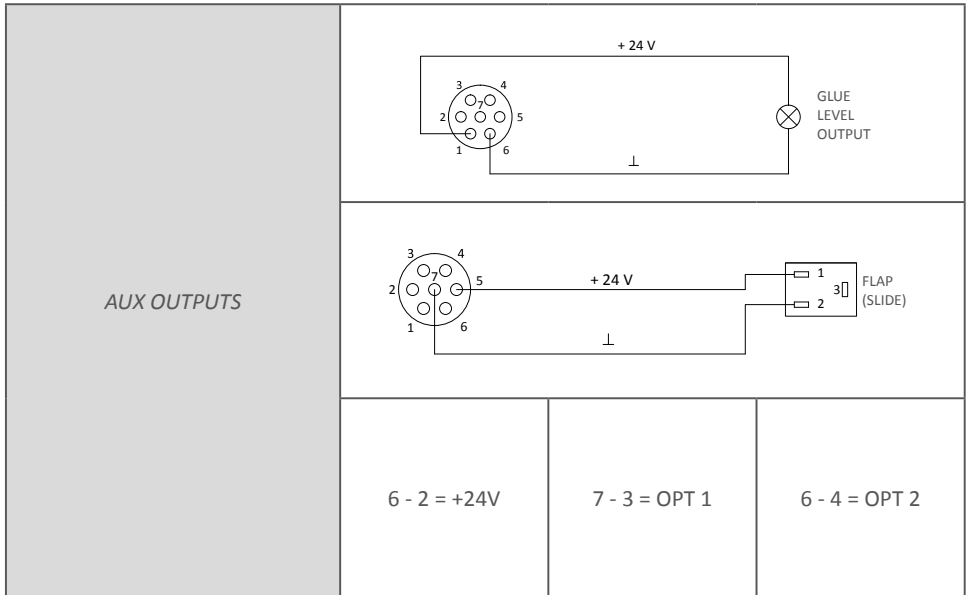
2. To go back to the *previous page* tap  or tap  to go back to the *home screen*.



10 CONNECTION

10.1 Electrical connections

<p><i>START (PHOTOCELL SENSOR)</i></p>	
<p><i>CHANNEL (Valve)</i></p>	
<p><i>ENCODER</i></p>	
<p><i>0-20 mA</i></p>	
<p><i>RESET</i></p>	
<p><i>GLUE LEVEL INPUT</i></p>	



10.2 Fuses replacement



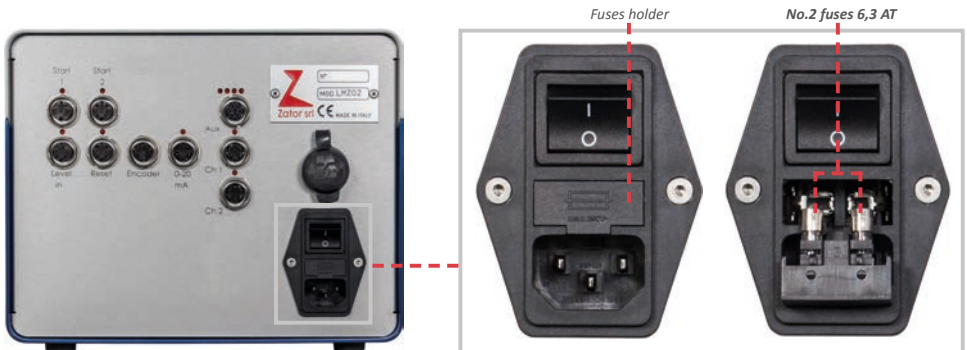
CAUTION: the fuses replacement **must be performed only by AUTHORIZED PERSONNEL.**



Always disconnect the power supply before carrying out this operation.
Use only fuses with the same amperage as those installed on the instrument.

10.2.1 Power plug fuses

To access to *power plug fuses*, from the *rear panel* remove the *fuses holder* from its slot placed above the power plug. Then replace the damaged fuses and insert the *fuses holder* in its slot.



10.2.2 Display fuse

To access to *display fuse*:

1. Remove the *top cover* of the instrument, **being careful to don't tear off** the ground cable connected to it. For its removal, remove the screws of the top cover;



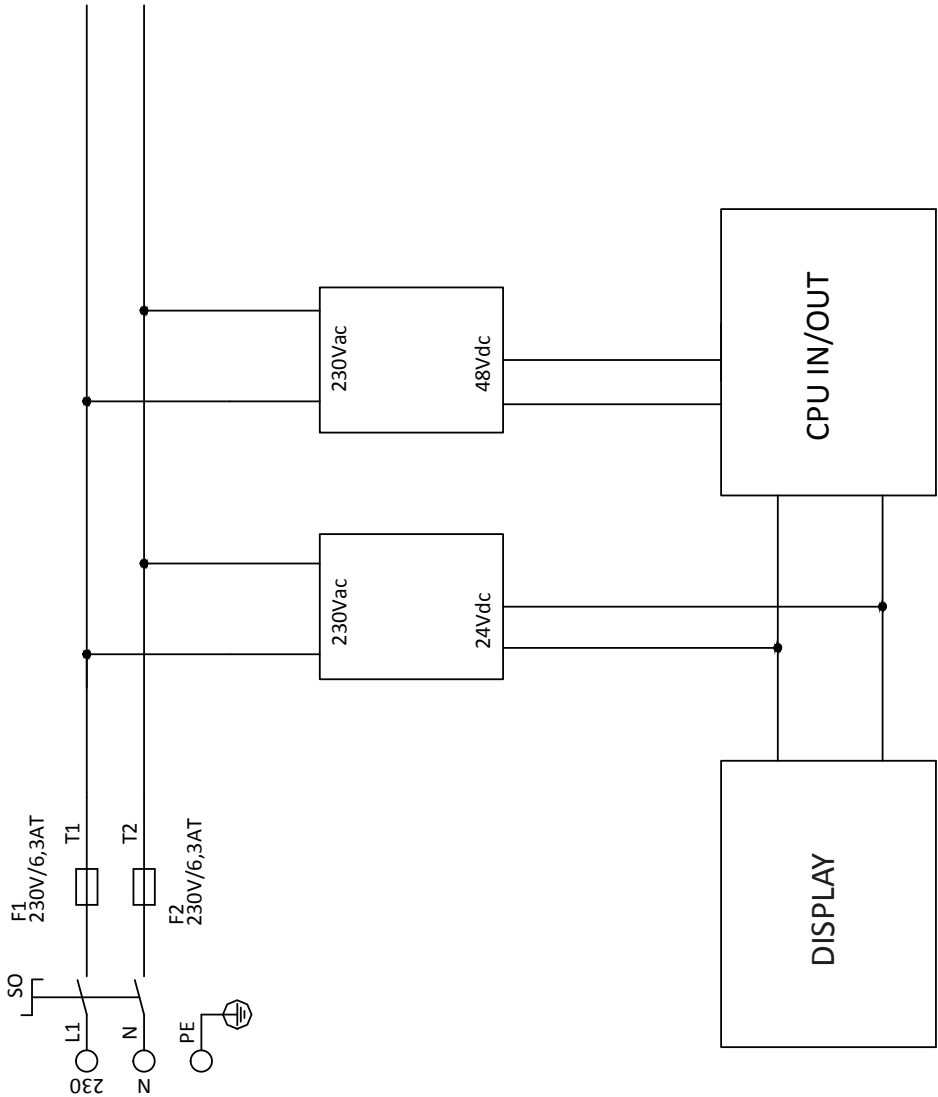
2. The *fuse holder* is placed on the backside of the touch screen display;



3. Remove the *fuse holder* from its slot and replace the damaged fuse ;
4. Insert the *fuse holder* in its slot and reassemble the *top cover* with the screws.



11 CIRCUIT DIAGRAM





12 TROUBLE SHOOTING

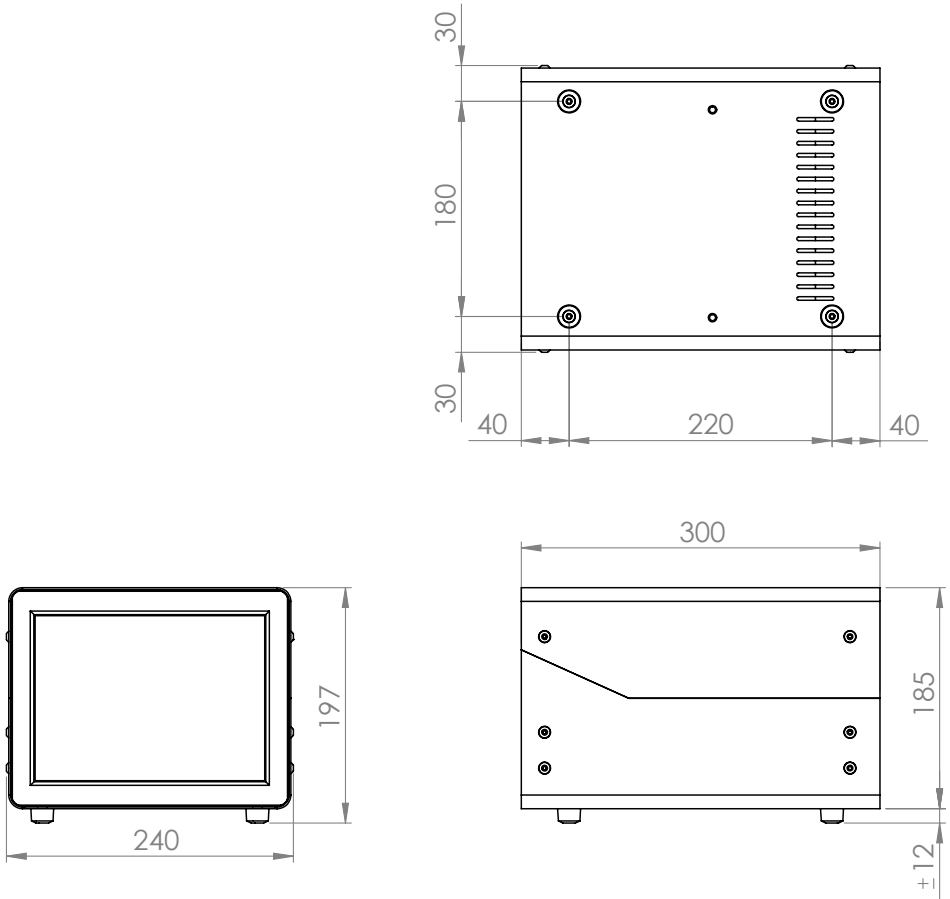


CAUTION: the trouble shooting **must be performed only by qualified personnel** observing the safety norms. For the **unqualified personnel**, the trouble shooting must be limited **only to the fuses inspection**, only after disconnecting the power supply of the instrument.

TROUBLE	POSSIBLE CAUSE	WHAT TO DO	
The instrument doesn't turn on	Burned fuses	Check the fuses condition in the power plug or on the backside of the display and replace them if is necessary (See section 8.2 - Fuses replacement)	
The valves don't perform the setted glue patterns program	Valve is not activated	Check the valve is turned on	
	Program error	Check if the program has been loaded	
	Photocell don't detect the box		Check the correct positioning of the photocell and the detecting point
			Check the correct association of each start sensor with its relative valve
	Encoder doesn't detect the production machine speed		Check if the instrument shows the machine speed
			Check if the installation and the position of the encoder is ok
	Missing valve drive	Check if the LED of considered channel lights up from the rear panel of the instrument	
Damaged cables	Check the conditions of the valves/encoder/start sensor cables		



13 DIMENSIONS





NOTES

A series of horizontal dotted lines providing space for notes.

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