

**MEFE**  
MITCHELL ENGINEERING  
FOOD EQUIPMENT PTY LTD

# Operating Manual



## Access Stand

**By liquid soap or disinfectant providing**

CAT 74-08

Revision 1

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## 1. Important Notes

### 1.1 Explanation of pictograms

It is essential to follow the safety instructions and warnings contained in this manual!



#### **Danger!**

Threat to human life and health



#### **Warning!**

Possible damage to the machine



#### **Tip!**

Draws attention to the use, e.g. during start up and other useful information.



#### **Hands Disinfection**



#### **Hands Wash**



#### **Turnstile Motor**



#### **Place a canister of liquid cleaning agent / disinfectant**



#### **Warning!**

Warning of electric shock

### 1.2 General Remarks

Before beginning operations related to transport, installation, commissioning, cleaning, maintenance and repair of the device, read this instruction manual. All persons involved in the execution of these tasks must observe this manual. To protect the people and things you should follow all safety rules contained in this document.

Compliance with the information and recommendations contained in this document, safety rules and instructions for start-up and any other instruction is necessary in order to avoid hazards and damage. It is required that all work related to transportation, assembly, installation (connection to the electricity grid, connection to water and sewage networks), commissioning, cleaning, maintenance and repairs performed by qualified personnel with the appropriate permissions. Qualified personnel are persons who, because of their education, experience and training as well as knowledge of relevant standards, accident prevention regulations and operating conditions are authorized to perform the tasks required for mobilization of equipment hygiene.

In carrying out the above mentioned operations should be observed first all technical data and information about permissible use, assembly, connections, ambient conditions and operation described in the product documentation.

In order to avoid malfunctions, the recommended maintenance and inspections should be performed by trained personnel.

## 1.3 Packaging, transportation, storage

### Packaging

Please ensure you remove all packaging and check the machine for damage. Appropriately dispose of the packaging as per your local governing rules and regulations regarding packaging waste.



#### Warning!

It is prohibited to install and run devices damaged. If in doubt, contact the service.



If no damage is detected to the device, you can remove all packaging.

### Transportation

During transport device should be prevented from slipping, falling over, strong shocks and other mechanical damage.

Internal transport should be means of transport adapted to the dimensions and weight of the device,. While transporting large devices with large weight, we suggest the use a pallet truck or forklift.

### Storage

Before installing and operating the device should be stored in a closed, dry place, protected from mechanical damage.

## 2. Access stand by liquid soap or disinfectant providing

### 2.1 Intended Use



An access stand, comprising a soap or disinfectant providing station and turnstile is used to control hygiene maintenance by the staff proper to entering production.



In accordance with the *Regulation on the European Parliament and EX Council no. 852/2004 of 29.04-2004 on hygiene of foodstuffs* food market entrepreneur shall ensure proper hygienic conditions in the workplace in order to prevent contamination of food stuffs.

### 2.2 Technical Details

Supply voltage: 230V, 50Hz
Control voltage: 24V AC/DC
Liquid connection diameter: Ø5mm
Outflow of excess fluid: Ø10mm
Type of liquid: - Disinfectant (colourless liquid, quick drying, based on alcohol) - Cleaner (rare consistency of soap)
Safety level: IP65
Weight: ~30kg

## 2.3 Design

The main element of the access stand comprises a body made of stainless steel 1.4301, where 2 soap or disinfectant providing chambers are located. Inside the housing, there are built-in pumps which suck in the disinfectant or soap from the container and sprays it on hands via nozzles. The signal for pump activation is closing of the photocell system circuit. The device operation is signalled by two warning lights (green and red). The control system is built inside the body of the control box (for servicing purposes, remove the right or left inspection cover located on the sides of the body). After proper intake of soap / disinfectant, the green warning light goes on, followed by unlocking of the turnstile. The turnstile makes a 1/3 rotation and is equipped with a mechanism “pushing” the worker out of the stand.

## 2.4 Installation

The device must be installed in place in a position that ensures a stable position when collecting soap or disinfectant, i.e. avoid mounting on the steps or tilted. Depending on the version of the device it can be mounted:



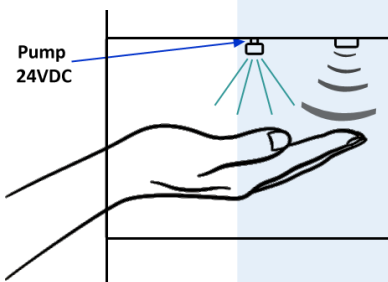
- To the floor,
- on the wall,
- on the washer.

\*Mounting should guarantee the safe operation of the device.

## Commissioning

Commissioning and start-up of the device is performed as follows:

1. Connection to the sewage system, ensuring water tightness of connections (Ø10mm).
2. Connection to the electrical system—**Three wire supply line, socket secured with residual-current device**  
**Note:** During connection of the turnstile to power supply (by putting the plug in the socket), its swing arms perform a test motion: a rotation lasting 1.5s—it is recommended to remain beyond the arms range. During activation of turnstile slowing mechanism, no external force may have impact on the arms. Following the test motion, the device is ready for operation (red light goes on)
3. Placement of 5L disinfectant / soap containers in agent intake spot (in the basket or cabinet with liquid level sensors\*).
4. Placement of section hose in the liquid container.
5. Bleeding of the system (see fig 1.)



6. Testing the device operation:  
Place both open hands in the chambers so that the sensors located at the back of the chamber may locate them.  
After being recognised by the sensors, hands are sprayed with a disinfectant / soap via a nozzle. Simultaneously the warning light changes from red to green and the turnstile is released.



**Note:** In case hands are not sprayed with hands disinfectant / soap, then the action should be repeated. If after several attempts, the disinfectant / soap does not appear, but operation of the pump is audible, it may be the result of:

- air present in the pump cables, then you should bleed the system (see fig 1.)
- no liquid in the container. Then you should replenish the liquid and afterwards also bleed the system (see fig 1.)

\* Liquid Level Sensors optional

## Unblocking the turnstile in case of no power supply, fire, emergency exit etc.

Emergency release of turnstile mechanism is possible by pressing the button releasing the turnstile lock (emergency button—see fig. 1.) - the three-arm turnstile mechanism is unrestricted and enables passing through in any direction.

Also with no power supply, the three arm turnstile mechanism is unrestricted and enables passing through in any direction.

In case of drive unit mechanical damage, it is possible to unscrew the three-arm turnstile from the device.

## 2.5 Device Personalisation

1. Photocell functioning range setting—**In order to introduce changes, contact the service.**

2. Setting the amount of fed disinfectant

The amount of fed liquid is the function of its feeding time.

The liquid feeding time is a variable parameter and its value may be changed by following the SIEMENS programming device manual included with this OEM.



Factory set liquid feeding time in the SIEMENS programming device is:

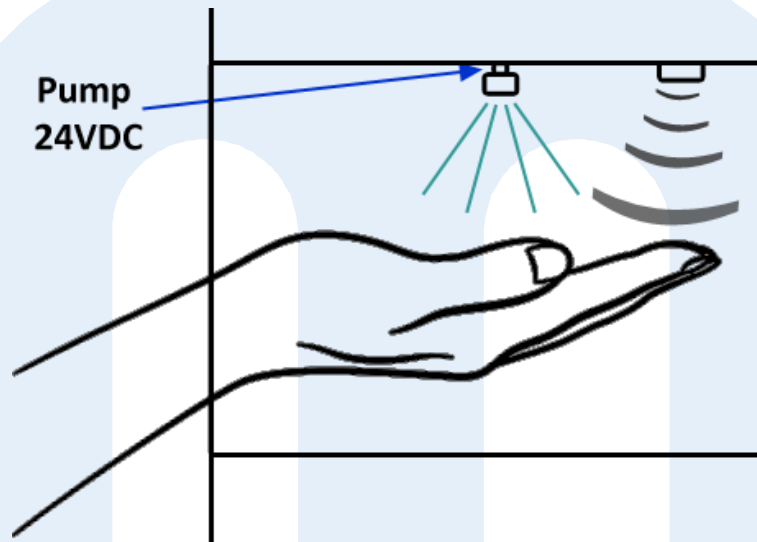
- 0.03s for disinfectant,
- 0.12s for soap.

The above times ensure application of 3-4ml of the liquid on both hands.

## 2.6 Operation

To properly perform the operation collection of soap or liquid disinfectant in the access stand, the worker should simultaneously place both open hands in the device chambers so that the sensors situated at the back of each chamber can locate them.

After being recognized by the sensors disinfectant / soap is applied on hands via spraying nozzles. Proper performance of the activity will cause the green warning light to go on and simultaneous release of the turnstile.



After having unlocked the mechanism, gently push the turnstile arm situated in the horizontal position in the direction of the signalled pass. Pushing of the turnstile arm will automatically activate the push mechanism supporting the passageway and lock its rotation until receiving another control signal.

In order to spray hands with double amount of liquid, please hands outside of sensor range (photocell), and afterwards repeat the above described steps.

The control turnstile may be crossed only once, also after using the disinfectant several times. Turnstile internal bolt is automatically locked after completing 1/3 rotation. Turnstile open status is signalled with a glowing green warning light, while the closed status with a red light.

## 2.7 Cleaning and Maintenance



Due to hygienic reasons, daily cleaning of access stand is necessary.



**Note:**

As the access stand is not a watertight device, it may be cleaned with low pressure equipment (<14 Bar).

**Quick Cleaning Guide:**

1. Disconnect the device from power supply (remove the plug from the socket).
2. Spray the entire device with a suitable cleaning agent.  
**Note: Follow the instructions of the cleaning agent manufacturer.**
3. After the specified time, rinse agent used for cleaning the surface off the device.
4. Remove excess water from the surface of the device.
5. Clean sensors (photocells) with soft, hot water-dampened cloth and mild cleaning agent (isopropyl alcohol or water with soap). Next use a dry cloth to wipe the device dry.

**DO NOT:**

- use washing equipment for cleaning the machine and its high pressure parts.
- use chloric detergents for washing the metal parts.



**Warning!**

Before opening the electrical box, before opening the cabinet with disinfectant and before other maintenance operations, turn off the power.

After each single cleaning of the machine, check all of its parts in terms of their functioning, material wear and also the tightness of the machine. Periodically (according to the provisions in question), and examine the state of the insulation resistance of the electrical installation. Repair and overhauls may be carried out solely by trained and authorized person.

**Detailed Stainless Steel Maintenance and Cleaning have been attached to this OEM (Appendix 1)**

### 3. OHS Rules

General Industrial Safety regulations apply.

### 4. Utilization

The device must be disposed according to its properties and applicable regulations.

### 5. Final Remarks

The manufacturer reserves the right to any constructional changes.

### 6. Guarantee

Statutory guarantee period for this type of device applies. Failing to comply with the rules herein may result in losing the guarantee rights.

**Warning!**



The manufacturer is not liable in the event of improper use of the machine and non-use of the manual.

## Appendix 1

### Stainless Steel Maintenance and Cleaning

#### 1. Introduction

This machine is made of 304 grade Stainless Steel. 304 Grade Stainless Steel is austenitic chrome-nickel low carbon steel. It is used in food and chemical industry equipment, etc. This still is corrosion-resistant in the atmospheric environment, natural water, alkali solutions and some organic and inorganic acids.

Chemical composition of 304 grade Stainless Steel:

C	Si	Mn	P	S	N	Cr	Ni
<0.03%	<1.0%	<2.0%	<0.045%	<0.015%	<0.011%	18.0—20.0%	10.0—12.0%

#### 2. Passive Layer

In Stainless Steels, oxygen reacts with chrome atoms contained in steel. Chrome atoms and oxygen form a layer chromium oxide which provides a natural protection against corrosion factors. The above phenomenon is called a surface passivation reaction, hence the resulting protective layer is referred to as a passive layer.

#### 3. Corrosion

Although, the passive later is formed on the stainless steel surfaces, **there are cases when it corrodes due to the following conditions:**

- ⇒ Influence of hydrochloric acid and chlorine,
- ⇒ no ongoing maintenance which leads to the formation of strong acid solutions on steel walls (water evaporates and an acid solution remains),
- ⇒ An environment more aggressive than steel provided for it;
- ⇒ Contamination during installation and manufacture (lime, cement, foreign metallic inclusions as a result of using angle grinders nearby or unsuitable assembly tools),
- ⇒ Contact with normal carbon steel (scratching with black steel during transportation or storage),
- ⇒ Insufficient room ventilation or even their absence in aggressive environments (there must always be an air flow in ventilation ducts).

Symptoms of stainless steel corrosion are different. Once can notice that corrosion appears usually on various types of internal (non-metallic inclusions, separations, deformations) and external (edges, scratches, dents, residues of scale, sediments, etc.) surfaces, while smooth and homogenous surfaces are much more resistant to corrosion. Therefore, it is necessary to ensure proper pickling and passivation of a surface.

The mechanism of destruction and the type of corrosion depend on a specific environment and steel affected by it. The following types of corrosion may occur depending on the environment and stainless steel:

Surface (uniform);      Pitting;      Intergranular;      Stress;      Crevice;

Pitting corrosion is the most frequently occurring corrosion caused by inappropriate stainless steel maintenance, more specifically due to the use of chlorinated cleaning agents.

Pitting corrosion is a form of localised environmental attack leading to local losses (pits) in material. It is caused by the influence of galvanic cells formed between a passivated steel surface and clearly localised non-passivation areas laying on it.



Oxygen or oxidising substances in a cathodic cell areas (passivated) are required for pitting corrosion to occur. If they are absent, cathodic areas polarize and the cell stops functioning.

Solutions which cause pitting corrosion of stainless steels most frequently are chlorine solutions. For this type of corrosion, condition of a steel surface is very important. The smoother and cleaner the surface, the smaller the intensity of said corrosion.

A quality assessment of the effects of this type of corrosion is difficult since damage can be very serious at a minor weight loss. It is assumed that an average number of pits per area unit and their greatest depth can serve as some indicators.

#### 4. Maintenance and Cleaning

When using stainless steel furniture and equipment, a layer of chromium oxide present on the steel surface must be taken care of. Compounds used in food industry which disturb the passive layer (chromium oxide) include compounds containing chlorides—salt, disinfectants and acids (water from sauerkraut, cucumbers, acid juices, vinegar, etc.). Water is the most effective neutraliser of chlorides and weak acids.

Of course, each material requires to be kept clean. Stainless steel is not an exception to this rule and each user must be aware that regular cleaning and maintenance of stainless products is required.

Cleaning should remove dirt and sediments, which left for too long on a stainless steel surface may initiate corrosion and tarnishing of the surface. In a highly contaminated or aggressive environment (seaside towns, rooms of increased humidity and temperature, rooms requiring frequent use of disinfectants, in particular containing chloride compounds), cleaning should be done more frequently. The frequency of cleaning should be empirically determined.

In order to prevent a surface of stainless steel equipment from being destroyed due to inappropriate maintenance, the following guidelines should be complied with:

- The following should not be used: agents containing chlorides and bleach or - under no circumstances - silver cleaners
- Steel wool, sand paper, rough cleaners, scouring, grinding and polishing powders, etc. shall not be used as they scratch the surface.
- Steel pads for scouring or wire rushes shall not be used - they can leave sediments of carbon steel on the surface which will eventually lead to material rusting.
- First discolouration and dusts appearing during material use can be removed with a regular piece of cloth, chamois leather, or a nylon sponge in case of higher contaminations.
- If iron particles generated during installation, etc. appear on stainless steel components, they should be immediately removed. Such particles corrode, this they can break the passive layer protecting stainless steel, leading to corrosion as a result. Such sediments should be removed mechanically or with stainless steel cleaning agents.
- If there are pits on a component, they should be pickles with acid or removed mechanically.
- Local discolouration, grease marks - if small, they can be removed with soap water.
- **Products for cleaning stainless steel and alcohol-based preparations can be used for cleaning they do not pose a threat to the corrosion properties of stainless steel.**
- After cleaning it is always recommended to polish the surface with a dry piece of cloth.

The table below presents the most frequent types of contaminations and method of handling:

Contamination	Cleaner
Finger marks	Water with soap and detergent Glass cleaning agents without chlorides
Lime sediment	Vinegar-water solution
Oils and greases	Alcohol-based agents (only with methyl alcohol, isopropyl alcohol) Solvents, e.g. acetone
Paints	Agents for removing paint coating, based on alkaline compounds or solvents
Cement and mortar	Solvent containing a small amount of phosphoric acid, then water
Iron particles - from tools and after contact with structural steel	At an early stage - mechanically If pits appear - with pickling and passivating pastes

The frequency of cleaning components made of stainless steel is individual - it all depends on the degree of wear and contamination. It should be done in such intervals so as to reduce the risk of stainless steel component rusting. The frequency of cleaning stainless steel devices is analogous to the frequency of cleaning household sinks, stainless steel.

## 5. OHS Rules

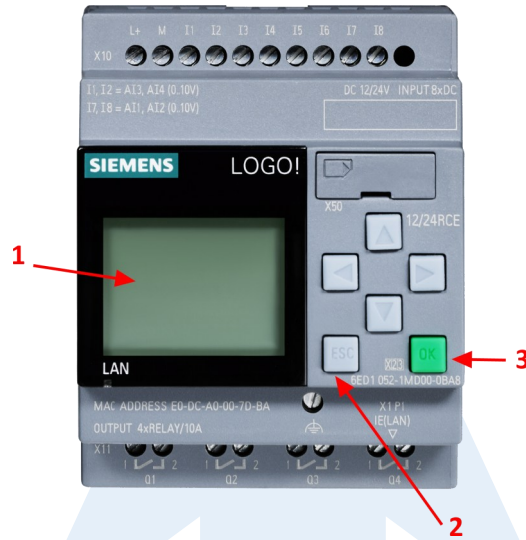
Prior to proceeding with cleaning, it is absolutely required to read data sheets of products applied for cleaning and follow manufacturers' guidelines. It is necessary to use personal protective equipment, ensure adequate ventilation and pay attention to fire hazards.

## Appendix 2

### SIEMENS Programming Advice

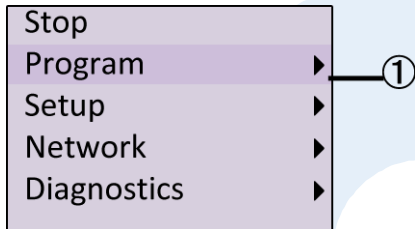
Open the control box cover where the PLC programming device is located.

Change of the cleaner / disinfectant cleaner / disinfectant feeding time will also change the amount of fed liquid.

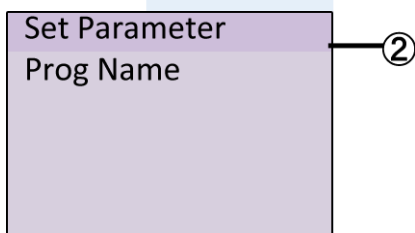


In order to change the time of cleaner / disinfectant / disinfectant cleaner feeding time, press the “ESC” button (2). A window with a parameter modification menu will appear on the display (1).

Next move the cursor in the parameter modification menu to the “①” position: by pressing the ▼ or ▲ buttons. Confirm the selection of “①” position and press “OK” (3).

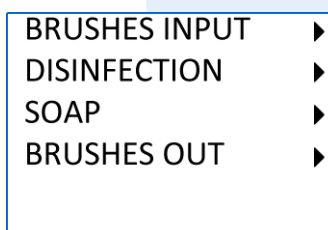


Move the cursor to the “②” position by pressing the ▼ or ▲ buttons.

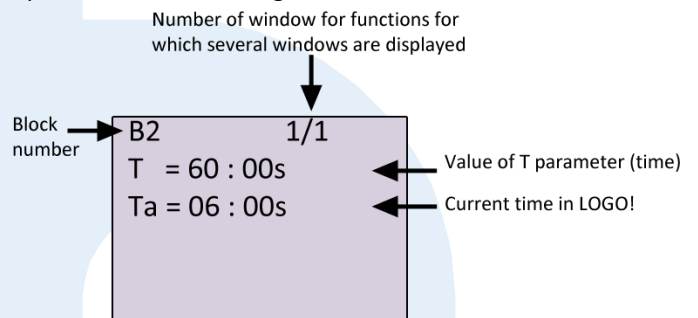


Confirm the selection of “②” position and press “OK”.

Next the list of all available blocks will appear, for example:



By pressing the ▼ or ▲ button move the cursor to the block of parameters to be changed, confirm with the “OK” button.

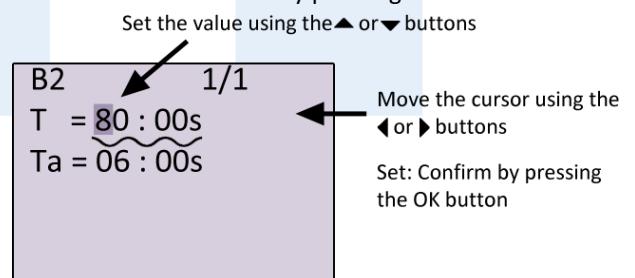


Now select the desired parameters (e.g. liquid dosing time) - by pressing the ▼ or ▲ buttons.

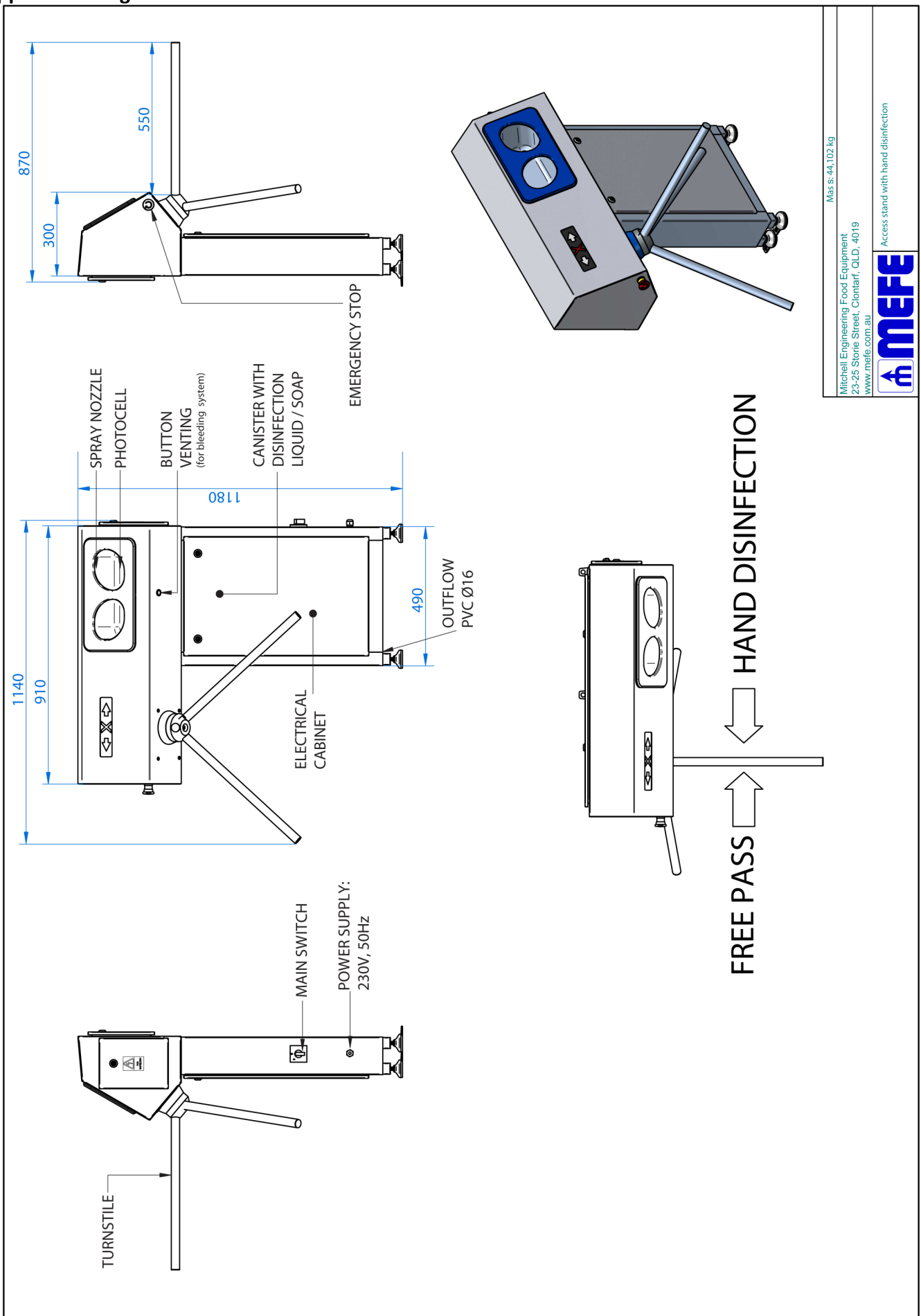
In order to edit the selected parameter press the “OK” button.

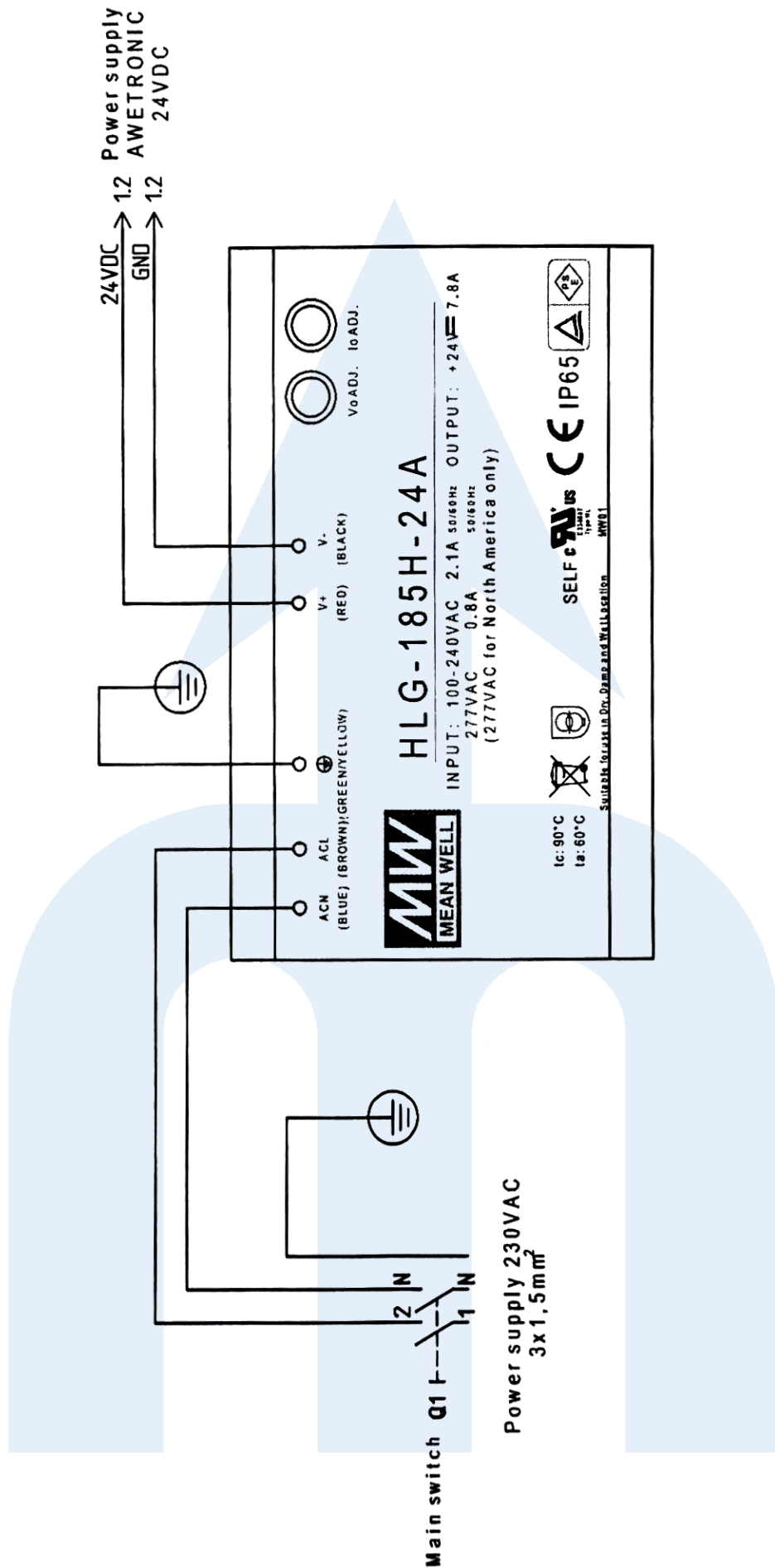
Values of the selected parameter are changed as below:

1. Place the cursor where the change is to be made: by pressing the ◀ or ▶ buttons.
2. Change the value: by pressing the ▼ or ▲ buttons.
3. Confirm the selection by pressing the “OK” button.



Appendix 3 - Figure 1





# Description input and output for logic module Siemens LOGO8

## Input:

- I1 - photoelectric sensor OMRON - disinfection
- I2 - stop disinfection
- I3 - vent disinfection
- I4 - emergency stop
- I5 - NC
- I6 - NC
- I7 - NC
- I8 - NC

## Output:

- Q1 - pump disinfection 24VDC
- Q2 - valve disinfection 24VDC
- Q3 - AWETRONIC (X01; IN\_A or IN\_B) - passage left or right
- Q4 - AWETRONIC - (X01; IN\_C or IN\_D) - stop or exit

Program version: "PL2017D1A" / "EU2017D1A"  
Password access to ADMIN: "AWE"

## Change rotation direction:

AWETRONIC:  
Switch IN\_A > IN\_B (left > right)  
Switch IN\_B > IN\_A (right > left)

## Zestawienie aparatury

Funkcja (=)	Lokalizacja (+)	Oznaczenie (-)	Kod	Opis	Producent	Typ dokumentu	Schemat	Kol.
		M_DC1		Motor DC 24VDC, 40W		Schematy zasadnicze	1	2
		Buz1		Buzzer 24VDC		Schematy zasadnicze	1	2
		H2		LED stop red 24VDC		Schematy zasadnicze	1	2
		H3		LED right green 24VDC		Schematy zasadnicze	1	2
		H1		LED left green 24VDC		Schematy zasadnicze	1	2
		AWETRONIC1		AWETRONIC 55140102 - 24VDC		Schematy zasadnicze	1	3
		Foto1		Photoelectric sensor OMRON E3FB-DP12 24VDC		Schematy zasadnicze	1	4
		Foto2		Photoelectric sensor OMRON E3FB-DP12 24VDC		Schematy zasadnicze	1	5
		Pump1		Disinfection pump 24VDC (KNF PML15446-NF 60)		Schematy zasadnicze	1	6
		S1		Vent disinfection IP65 (ONPOW GQ19)		Schematy zasadnicze	1	6
		PLC1		Logic module Siemens LOGO!8		Schematy zasadnicze	1	6
		F1		Fuse T315mA L250V		Schematy zasadnicze	1	6
		Vw1		Valve disinfection 24VDC/6.5W		Schematy zasadnicze	1	7
		Vw2		Valve disinfection 24VDC/6.5W		Schematy zasadnicze	1	7
		S2		Emergency stop (Schneider XB7N...45)		Schematy zasadnicze	1	7
		F2		Fuse T1A L250V		Schematy zasadnicze	1	9
		Q1		Main switch (Spanel tK16RG "S")		Schematy zasadnicze	2	3
		PS1		Power supply 24VDC/7.8A (MW HLG-185-24A)		Schematy zasadnicze	2	4