

WASTEK - User Manual

MULTIFUNCTION ELECTRICAL PANEL FOR 1 TO 2 MOTORS



**Exclusive Italian
Production**

CONTENTS

| | | |
|-----------|--|-----------|
| 1. | INTRODUCTION..... | 5 |
| 2. | WARNINGS | 6 |
| 3. | INSTALLATION..... | 7 |
| 4. | CONTROL PANEL | 8 |
| 4.1 | <i>Main display items.....</i> | <i>9</i> |
| 4.2 | <i>Activation of load in manual mode.....</i> | <i>10</i> |
| 5. | TECHNICAL WARNINGS BEFORE INSTALLATION | 11 |
| 5.1 | <i>Connection of pressure switch</i> | <i>11</i> |
| 5.2 | <i>Connection of floats or on/off contacts</i> | <i>11</i> |
| 5.3 | <i>Connection of 4-20mA level transducer.....</i> | <i>11</i> |
| 6. | FUNCTIONS AND SETTINGS | 12 |
| 6.1 | <i>PROGRAMMING MENU</i> | <i>12</i> |
| 7. | ALARMS | 16 |

1. INTRODUCTION

This manual must always accompany the relevant equipment and be conserved in an accessible location for consultation by qualified technicians assigned for operation and maintenance of the system.

The installer/user is strongly recommended to carefully read all instructions and information in this manual before using the product, in order to avoid damage or improper use of the unit, which would also render the warranty null and void.

Before operating the equipment, carefully read the manual and follow all instructions provided.

The information and instructions in this manual refer to the standard use of this product; in the event of special circumstances, functions or applications not described in this document, contact our service center for assistance.

If technical assistance or spare parts are required, when contacting the manufacturer always specify the identification code of the model and construction number as stated on the data plate.

Our service center is available for any requirement or clarification.

On receipt of the goods, inspect immediately to ensure that the equipment has not been damaged during transport. If defects are found, the client should promptly notify our retailer within 5 days of receiving the goods, or in the event of direct purchases, the producer service center.



N.B. the information provided in this manual is subject to modifications without notice. The manufacturer shall not be held liable for any damage caused in relation to the use of these instructions, as they are to be considered guideline only. Note that failure to observe the instructions provided in this manual may cause physical injury or damage to objects.

In any event all local and/or current legislation must be observed at all times.

2. WARNINGS



The electrical panel must be used exclusively for the purpose and function as specified in design. Any other application or use is to be considered improper and therefore hazardous.

In the event of a fire in the place of installation or the surrounding area, avoid the use of water jets and use the appropriate extinguishing equipment and means (powder, foam, carbon dioxide).

Install the equipment far from heat sources and in a dry and sheltered location in observance of the stated protection rating (IP).

The installation of a safety device is recommended to protect the panel power line in compliance with current electrical standards.

The electrical panel must be connected by a qualified electrician in observance of the relevant electrical standards.

No parts of the panel must be disassembled without the official authorization of the producer: any tampering with or modifications to the unit will render all terms of the warranty null and void.

All installation and/or maintenance operations must be performed by a specialized technician who is fully aware of the relevant current safety standards.

Ensure the installation is connected to an efficient earthing system.

After making the electrical connection, check that all electrical panel settings are correct to avoid automatic start-up of the electric pump.

The producer declines all liability in the event of the following:

- Incorrect installation;
- Use by personnel not adequately trained in the correct use of the panel;
- Serious failure to perform scheduled maintenance;
- Use of non-original spare parts or parts not specific to the model;
- Unauthorized modifications or interventions;
- Partial or total failure to observe instructions.

3. INSTALLATION

Ensure that the mains power supply specifications correspond to the voltage specified on the data plate of the electrical panel and motor connected, then make the earthing connection before all other connections.

The power line must be protected by a residual current circuit breaker.

Tighten the electrical cables on the relative terminals using a suitable tool correctly sized to avoid the risk of damage to the fixing screws. Take care if using an electric screwdriver.

The electrical panel is designed for wall-mounting using screws and plugs in the pre-drilled holes at the corners of the enclosure, or by means of brackets when present.

Install the equipment in areas compliant with the protection rating and ensure that the box is kept intact when drilling the holes for fitting the cable clamps.

Avoid the use of multicore cables where there are wires connected to inductive loads and power cables and signal cables such as sensors and digital inputs.

Keep connection cables as short as possible, preventing any twisting of cables which may be harmful due to inductive effects on the electronic equipment.

All wires used in the cabling must be suitably sized to withstand the load to be powered.

4. CONTROL PANEL



Display of values and programming



Red led: general alarm



SETUP (or multifunction) button



UP button



DOWN button



OK button

4.1 Main display items

On activation of the panel, the display shows the following:



At the end of the start-up sequence, the main menu is displayed, as described below.



MAIN MENU: This screen enables the display of active motors, voltage on input and total absorption of the panel:

- 230 V = Power supply voltage reading;
- 7.0 Atot = Total current adsorbed by the panel;
- P1 (0) = Motor 1 deactivated; P1 (1) = Motor 1 active;
- P2 (0) = Motor 2 deactivated; P2 (1) = Motor 2 active;



If operating modes with analogue signals are used, the main screen also displays the input signal in centimetres, as measured by the related sensors.



MOTOR SCREEN: By pressing **SETUP**, the user can view the screen of each motor (P1 and P2), where the following is displayed:

- 230 V = Power supply voltage reading;
- 0.0 A = Current absorbed by connected load;
- MAN (*) = Panel set to manual mode;
- AUT (*) = Panel set to automatic mode;
- MAN () AUT () = Panel on standby;
- P1 = Motor 1 deactivated;
- P1 = Motor 1 active.

4.2 Activation of load in manual mode

On start-up, the panel starts in automatic mode, as confirmed by the asterisk (*) displayed alongside the text AUT on the display of each motor, or according to the previous status set before shutdown.

The operating mode can be changed by pressing the **UP** button to change to Manual mode, or **the DOWN** button to change to Automatic mode.

To enable operation in manual mode, enter the aimed motor screen and press the **UP** button (the asterisk (*) is displayed alongside the text *MAN*) and then press and hold **OK**.

The values of the current absorbed by the motor will be displayed in real time.

On release of the **OK** button, the motor is shut down.



N.B. in manual mode, the load is activated and bypasses all alarms but, in the event of a fault, the display flashes.

When the ATEX mode is enabled, the manual mode is deactivated if the fluid level is below the stop threshold. If the fluid level is above the stop threshold, the manual mode is only enabled for 2 minutes after activation.

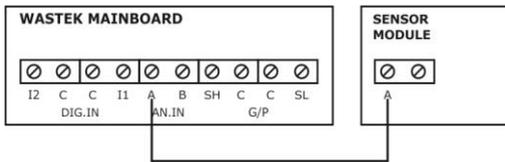
5. TECHNICAL WARNINGS BEFORE INSTALLATION



Before programming WASTEK, all floats, probes and transducers have to be disconnected from the electrical panel, including the wire connecting the terminal A of the Mainboard to the terminal A of the pressure switch module. Some settings and connections are not compatible with probes, floats and transducers. This poses the risk of damaging the electronic board.

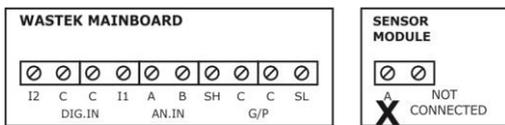
5.1 Connection of pressure switch

If a pressure switch is used, it is first necessary to set the parameter “TYPE?” to 0, then connect the terminals A of the Mainboard and module with the pressure switch.



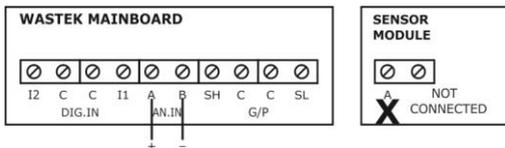
5.2 Connection of floats or on/off contacts

If floats are used, it is first necessary to set the parameter “TYPE?” to 1 and then connect the floats: SL and SH for unipolar level probes or the minimum level float. Terminals A and B of the Mainboard enable the running of the first motor, while terminals C and I1 of the EXP board enable the operation of the second motor. If there is a maximum level float, this is connected to terminals I2 and C of the Mainboard.



5.3 Connection of 4-20mA level transducer

If a 4 - 20 mA level transducer is used, it is first necessary to set the parameter “TYPE?” to 2 and then connect the transducer to terminals A and B of Mainboard. Terminal A is positive (+) and terminal B is negative (-).



6. FUNCTIONS AND SETTINGS

The WASTEK panel features a number of internal functions.

Operating modes are described below.

6.1 PROGRAMMING MENU

To access the programming menu, press the buttons **SETUP**, **UP** and **DOWN** at the same time on the main screen of the panel.

| DESCRIPTION OF PARAMETER | VALUE |
|---|-----------|
| LANGUAGE 0=ITA / 1=ENG / 2=TED | 0 - 1 - 2 |
| SERVICE MODE? During maintenance, this parameter allows to block or release changes to WASTEK parameters. If set to Y, all parameters are released and can be changed. If set to N, all parameters are blocked and cannot be changed. | Y or N |
| NUMBER OF PUMPS This parameter allow to select the number of pumps in the system (if set to 1, the parameters PUMP ROTATION ENABLED and FLOAT START/STOP FUNCTION are disabled). For the START / STOP with 1 single pump, connect the float start between C-SH and the float stop between C-SL). | 1 - 2 |
| PUMP ROTATION ENABLED? This parameter allows to activate the pump exchange at each demand from floats and the pressure switch and the 4 – 20 mA signal level transducer. Also, if the main pump thermal cut-out trips, the second pump is enabled. If set to “N”, the function START/STOP (self-holding) is deactivated only in the float mode. This parameter is only available in WASTEK 2-pump model. | Y or N |
| FLOAT START/STOP FUNCTION (self-holding) This parameter allows to deactivate active pumps only on opening of the contact SL (min./stop float). This parameter is only available in WATEEK 2-pump model. Only operating in float mode. | Y or N |
| ACOUSTIC-VISUAL ALARM OUTPUT? This parameter allows to activate and deactivate the alarm buzzer. | Y or N |

| DESCRIPTION OF PARAMETER | VALUE |
|---|-----------|
| <p>TYPE?</p> <p>This parameter enables the selection of the type of fluid level acquisition.</p> <p>0. Pressure switch: terminal A of the Mainboard must be connected to terminal A of the pressure switch module.</p> <p>1. Floats or on/off contacts (no voltage): terminal A of the pressure switch module must be disconnected (failure to do so will cause damage to the Mainboard).</p> <p>2. 4-20 mA (passive) signal level transducer: terminal A of the Mainboard must be connected to the positive pole of the transducer and terminal B of the Mainboard must be connected to the negative pole of the transducer.</p> <p>If this parameter is enabled, also the "SENSOR FULL SCALE" is activated. Terminal A of the pressure switch module must be disconnected (failure to do so will cause damage to the Mainboard).</p> | 0 - 1 - 2 |
| <p>SENSOR FULL SCALE</p> <p>This parameter allow to set the full scale of the 4 - 20 mA transducer. The value in centimetres must match the one of the transducer in use, otherwise it will give a mistaken reading.</p> <p>This item is only enabled selecting 4 - 20 mA in the parameter "TYPE?"</p> | 0 - 999 |
| <p>START LEVEL P1</p> <p>This parameter defines the level triggering the first pump.</p> <p>It is expressed in centimetres.</p> <p>This parameter is only enabled if the pressure switch or 4 - 20 mA transducer are used.</p> | 0 - 100 |
| <p>START LEVEL P2</p> <p>This parameter defines the level triggering the second pump.</p> <p>It is expressed in centimetres.</p> <p>This parameter is only enabled if the pressure switch or 4 - 20 mA transducer are used.</p> | 0 - 100 |
| <p>STOP LEVEL</p> <p>This parameter defines the stop level for pumps, equal to the min. level float.</p> <p>It is expressed in centimetres.</p> <p>This parameter is only enabled if the pressure switch or 4 - 20 mA transducer are used.</p> | 0 - 100 |
| <p>ALARM LEVEL</p> <p>This parameter defines the max. level for alarm.</p> <p>It is expressed in centimetres.</p> <p>This parameter is only enabled if the pressure switch or 4 - 20 mA transducer are used.</p> | 0 - 100 |
| <p>MAN. DAY</p> <p>This parameter allows to set the days to the next scheduled maintenance.</p> <p>The second line of the display shows the days elapsed since the last maintenance. If power is off, the WASTEK panel records the days counted up to the preceding day.</p> | 0 - 9999 |

| DESCRIPTION OF PARAMETER | VALUE |
|---|---------|
| <p>CNT. DAY</p> <p>This screen displays the working days of the panel. By pressing UP and DOWN at the same time, the count is reset.</p> | - |
| <p>MAINTENANCE ALARM POSTPONEMENT</p> <p>This parameter allows to set a scheduled maintenance alarm postponement. If the maintenance alarm is silenced by the customer, it reappears after the days set in this parameter.</p> | 0 - 250 |

6.1.1 User menu

When the panel operation programming is completed, enter the setup menu to configure the various data for motor start-up.

To access the user menu, press the button **SETUP** for 4 seconds in the main screen of the panel.

| DESCRIPTION OF PARAMETER | VALUE |
|--|--------------------------------|
| <p>MINIMUM VOLTAGE Set by default at -10% . <i>Modifications to operating limits beyond the default parameters will immediately render the warranty null and void.</i></p> | <p>207 (230) 360 (400)</p> |
| <p>MAXIMUM VOLTAGE Set by default at +10% . <i>Modifications to operating limits beyond the default parameters will immediately render the warranty null and void.</i></p> | <p>253 (230) 440 (400)</p> |
| <p>MAXIMUM CURRENT P1/P2 This parameter allows to set the maximum current for each motor. Enter the maximum current value, increasing it by 10-15% with respect to the rated motor value. <i>Modifications to operating limits beyond the parameters stated on the model data plate will immediately render the warranty null and void.</i></p> | <p>1 - ... A</p> |
| <p>P1 / P2 START-UP TIME DELAY This parameter allows to set a delay in the pump start-up time.</p> | <p>0 - 120 sec</p> |
| <p>P1 / P2 SWITCH-OFF TIME DELAY This parameter allows to set a delay in the pump switch-off time.</p> | <p>0 - 120 sec</p> |
| <p>ATEX MODE? This parameter allows to activate or deactivate the ATEX mode when the device is used in an explosive environment. This function is designed to avoid that atmospheric gases may enter the electric-pump impeller and cause possible sparks and explosions. When the ATEX mode is active, if the fluid level achieved is lower than the stop level, the ATEX alarm triggers and the manual mode is deactivated. This parameter cannot be deactivated as long as the fluid level is lower than the stop level.</p> | <p>Y or N</p> |
| <p>DISPLAY BRIGHTNESS ON STANDBY This parameter allows to enter of the brightness setting applied when the display is set to standby (wait 9 seconds for a preview).</p> | <p>0 - 9</p> |
| <p>TIME FOR ENTRY TO SETUP This parameter allows to set the time during which the SETUP button is kept pressed to access the set-up menu.</p> | <p>2 - 30 sec</p> |

7. ALARMS



With the ATEX mode on, the fluid level is lower than the pump stop level.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

The system is reset automatically when the fluid level goes above the stop level.



The load current absorption is higher than the set value and the panel shuts the related pump down.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button.



The thermal motor cutout (clicson) has tripped on temperature overload.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

If not used, close the motor clicson input.

The system is reset automatically on closing the motor clicson.

In the event of motor over-temperature alarm, the pumps do not stop.



The measured mains voltage is too low (the pumps are shut down).

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

The system is reset automatically when voltage goes back up.

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button.



The measured mains voltage is too high (the pumps are shut down).

The display and the red LED flash and the cumulative alarm output is activated (voltage-free contacts NC-C-NO).

The system is reset automatically when voltage goes back down.

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button.

**ALARM PHASE
FAILURE/SEQUENCE**

The phase sequence is incorrect or one or more phases are missing (the pumps are shut down). If steps L1 and L2 are missing, the panel switches off.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

The system is reset manually turning off and on the electrical panel after reconnecting the phases correctly.

**ALARM MAX
LEVEL**

The alarm float, the pressure switch or the 4 – 20 mA transducer detect the maximum level reached (the pumps are not shut down).

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button. The alarm is repeated if the level does not fall.

**ALARM MOTOR...
COMMUNICATION**

Connection problems between the Mainboard and expansion modules.

The display and red led blink and the cumulative alarm output is activated (voltage-free contacts NC-C-NO). The pump controlled by the related missing expansion stops.

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button.

Check the connection of the flat cable between the boards *Mainbord* and *EXP*.

**ALARM PUMP
SERVICE**

This alarm signals that the time to scheduled maintenance has elapsed. The day count set in the parameter MAN. DAY has come to an end. The pumps are not shut down.

However, this alarm can be postponed through the parameter MAINTENANCE ALARM POSTPONEMENT. When the alarm is reset, the days set in this parameter before the alarm reappears are counted.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button. Then reach the parameter CNT. DAY and press **UP** and **DOWN** at the same time, to reset the counter.

**ALARM
NO LOAD**

This alarm signals that no load has been connected to motor output, or that an irrelevant load has been applied.

The display and the red LED flash and the cumulative alarm output are activated (voltage-free contacts NC-C-NO).

To reset the alarm manually, press **UP** or **DOWN** and then the **OK** button.

ELENTEK SRL SOCIETÀ UNIPERSONALE

Via A. Meucci 5/11 - 35028 Piove di Sacco (PD) - ITALIA

Tel. +39 049 9730367 - Fax +39 049 9731063

www.elentek.com - info@elentek.com

P.IVA 04534630282

Cod. MQ 0029 UK

01

Em. 06.2019