

GRINDE - User Manual

ELECTRICAL PANEL FOR GRINDER

CONTENTS

1.	INTRODUCTION.....	5
2.	WARNINGS	6
3.	GENERAL DESCRIPTION	7
4.	INSTALLATION.....	8
5.	CONTROL PANEL	9
5.1	<i>Main display items.....</i>	<i>10</i>
5.2	<i>Automatic and Manual mode of load activation</i>	<i>11</i>
6.	FUNCTIONS AND SETTINGS	12
6.1	<i>Programming menu.....</i>	<i>12</i>
6.2	<i>User menu.....</i>	<i>14</i>
7.	ALARMS	15
8.	STANDARD CIRCUIT DIAGRAM.....	17
9.	STANDARD WIRING DIAGRAM.....	18

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. GENERAL DESCRIPTION

- Power supply 3 ~ 50/60Hz 400V±10% (GRINDE);
- Input circuits in low voltage;
- Programmable input:
 - N.O. digital input for start command;
 - N.O. digital input for minimum level/pressure/stop command;
 - Digital input for motor clicson;
- Buttons Automatic-0/Reset-Manual (temporary);
- Multifunction Multilanguage display for:
 - Operation parameters set-up;
 - Operation limits set-up;
 - Visualization parameters of operation;
 - Visualization of the operation status;
 - Visualization of alarms;
- Automatic and temporized start of the motor backwards;
- Adjustable motor overload electronic control;
- Contactors in AC3;
- Auxiliaries and motor protection fuses;
- Alarm output (COM-NO-NC resistive load);
- Main switch interlocking door;
- Box in ABS up to 15Kw, metallic box IP55 over 15Kw;
- Ambient temperature: -5/+40 °C;
- Relative humidity 50% a 40 °C (not condensed).

4. 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.

3~310-450Vac 50/60Hz

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.

5. CONTROL PANEL



Display of values and programming



Red led: general alarm



SETUP (or multifunction) button



UP arrow button



DOWN arrow button



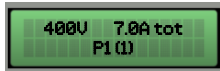
OK button

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

- 230 V = Tensione di alimentazione rilevata;
- 7.0 A tot = Corrente totale assorbita dal quadro;
- P1 () = Motore 1 disattivo; P1 (1) = Motore 1 attivo;



MOTOR SCREEN: By pressing **SETUP** the user can view the screen of each motor (P1, P2 and P3), where the following is displayed:

- 230 V = Power supply voltage reading;
- 0.0 A = Current absorbed by connected load;
- 1.0 φ = Power factor of connected load;
- MAN (*) = Panel set to manual mode;
- AUT (*) = Panel set to automatic mode;
- MAN () AUT () = Panel on standby;
- P1 0 = Motor 1 deactivated;
- P1 1 = Motor 1 active;

5.2 Automatic and Manual mode of load activation

The operation mode can be changed by pushing the UP arrow for manual operation and the DOWN arrow for automatic operation.

5.2.1 Automatic mode

When switched on the panel starts in Automatic mode and it is possible to check it with the asterisk (*) visualized next to the wording *AUT* on the screen or depending on the previous status before the switch off.

The pump starts backwards initially for a time “T” defined on the set-up menu (it can be set-up from 1 to 10 seconds) .

The pump will pause for about 6 seconds after the backwards operation and after 6 seconds the pump will activate forward.



N.B.: the pump will activate as above described for each activation input from the float switch or pressure switch.

In case the pump's rotors are blocked it is possible to deactivate and activate manually the Automatic function to start the pump backwards.

5.2.2 Manual mode

To enable the operation in Manual mode push the **UP** arrow (an asterisk (*) appears on the screen next to the *MAN* writing) and subsequently keep the **OK** button pressed

The pump will start instantaneously forward and when releasing the **OK** button the motor will stop.

6. FUNCTIONS AND SETTINGS

GRINDE control panel is created to control and protect (adjustable protection) 1 grinder electric pump using pressure switches or float switches .

One of its main features is the possibility to reverse the run of the motor for an adjustable time from 1 to 10 seconds in order to avoid the block of the rotor.

6.1 Programming menu

To select the panel operating logic, access the programming menu by pressing the buttons **SETUP**, **UP** and **DOWN** at the same time on the main screen of the panel.

DESCRIPTION OF PARAMETER	VALUE	DEFAULT
LANGUAGE 0=ITA / 1=ENG / 2=FRA / 3=ESP / 4=TED	0	0
TIME OF BACKWARDS OPERATION This parameter allows to reverse the direction of the motor's run for an adjustable time from 1 to 10 seconds in order to avoid the block of the rotor.	1,0 - 10,0 seconds	10,0
OPERATING LOGIC <i>(do not change)</i>	1	1
NUMBER OF PUMPS <i>(do not change)</i>	1	1
MINIMUM LEVEL ALARM OUTPUT This parameter enables removal of the minimum level alarm from the cumulative alarm output.	Y or N	N

SET-UP OF PUMP SERVICE

This parameter allows to set-up a periodic alarm to remind to carry out the maintenance of the pump

The screen **TOTAL H** shows the total hours of operation of the panel with pump running, which cannot be reset (*see here under an example 10000*).

The value **MAN.H** can be set with the hours of operation of the pump after which it is required to have the alarm "ALLARME MANUTEN. ELETTROPOMPA" (*in the example every 480 hrs*).

The "SERVICE " alarm does not appear when this value is set to 0.



The partial hours of operation of the pump are displayed on the side (in the example every 2500 hrs).

ATTENTION! This parameter has been considered in case of replacement of the pump. The partial hours of operation of the pump can be reset through the arrows UP and DOWN.



0 - 9999
hours

0

6.2 User menu

On completion of panel operation programming, 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	DEFAULT
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>	360	-
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>	440	-
MAXIMUM CURRENT P1 This parameter enables entry of the maximum current 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>	1 - ... A	AS PER ORDER
DISPLAY BRIGHTNESS ON STANDBY This parameter enables entry of the brightness setting applied when the display sets to standby (wait 9 seconds for a preview).	0 - 9	4
TIME FOR ENTRY TO SET-UP This parameter enables entry of the time to keep the SETUP button pressed for access to the set-up menu.	2 - 30 Sec	3 Sec

7. ALARMS



**ALARM MOTOR 1
IN PROTECTION**

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

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

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



**ALARM MOTOR 1
OVERTEMPERATURE**

The thermal cutout of the motor (clacson) has tripped on temperature overload.


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

If not used, close the motor clicson input.

The system is reset automatically when the Motor Clicson closes.

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

In the event of motor overtemperature alarm the pump does not stop.



**ALARM VOLTAGE
TOO LOW**

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

The display and 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 up.

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



**ALARM VOLTAGE
TOO HIGH**

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

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

The system is reset automatically when UP voltage goes back down.

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

**ALARM SEQUENCE
OR LACK PHASES**

The phase sequence is incorrect or one or more phases is missing (the pumps are shut down).

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

The system is reset automatically by turning the panel off and on again.

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

**ALARM MAX
LEVEL**

The alarm float detects maximum level reached (the pumps are not shut down).

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

The system is reset automatically when the alarm float switch contact opens.

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

The alarm is repeated if the level does not fall.

**ALARM MIN
LEVEL**

The minimum level float, or minimum level sensors detect minimum level reached (the pumps are shut down).

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

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

This alarm can be disabled in the ASSISTANCE menu.

**ALARM MAINTANCE
ELECTROPUMP**

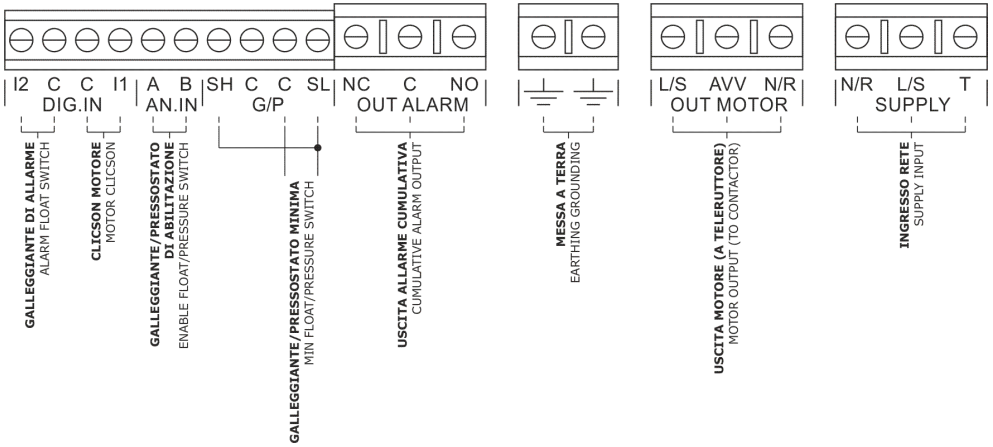
The alarm is activated according to the value set on the parameter ALARM MAINTENANCE ELECTROPUMP (see page 13).

The display and the red led blink and activate the cumulative alarm output (free voltage contacts NC-C-NO).

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

The pump does not stop with the service alarm.

9. STANDARD WIRING DIAGRAM



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 0023 UK

Rev. 02

Em. 06.2019