elentek®
One Step Forward

EXPRESS PRO - User Manual

MULTIFUNCTION ELECTRICAL PANEL FOR 1 TO 4 MOTORS

Exclusive Italian Production

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1. INTRODUCTION

This manual must always accompany the relevant equipment and be kept at 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, please contact our service centre 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 centre is available for any requirement or clarification.

On receiving the goods, carry out an inspection immediately to ensure that the equipment has not been damaged during transport. If defects are found, the client should promptly notify, within 5 days of receiving the goods, our retailer or in the event of direct purchases, the manufacturer's service centre.

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 provided for guidance only. Note that failure to observe the instructions provided in this manual may cause physical injury or damage to property.

It is understood that compliance with local provisions and/or statutory regulations in force is compulsory.

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 using water jets and use appropriate extinguishing equipment and means (powder, foam, carbon dioxide).

Install the equipment far from heat sources and in a dry and sheltered location according to the specified protection rating (IP).

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

Before performing any work on the electrical panel or system, disconnect the electrical power supply.

No parts of the panel should be removed without an official authorisation from the manufacturer: any tampering with or changes to the unit will render all terms of the warranty null and void.

All installation and/or maintenance operations must be performed by a specialised technician who is fully aware of the currently applicable safety standards.

Ensure that the installation is connected to an efficient earthing system.

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

The manufacturer 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 model-specific;
- Unauthorised modifications or interventions;
- Partial or total failure to observe instructions.

3. OVERVIEW

- Single-phase board power supply 100-240Vac 50/60Hz;
- Three-phase board power supply 310-450Vac 50/60Hz;
- Electronic board own consumption 3W;
- G/P1 and G/P2 normally open inputs for motor start-up;
- C-MIN-MAX inputs for single-pole level probes;
- T1 and T2 normally closed inputs for motor thermal switch (Klixon);
- G.A. normally open input for alarm activation;
- 4-20mA and 0-10V analog inputs;
- Digital outputs for motor overcurrent alarms, from G.A. input and probe input;
- Cumulative alarm output with voltage-free contacts (NC-C-NO resistive load - 5A / 250V);
- Cumulative alarm output, live (12Vcc / 100mA);
- DIP-SWITCH 1 display - NO/NC (G/P1 - G/P2 - G.A.) input reversal;
- DIP-SWITCH 2 display - Phase sequence control exclusion;
- DIP-SWITCH 3 display - Void;
- DIP-SWITCH 4 display - Fixed/pulse manual;
- Settable parameters:
  - Language;
  - Pump rotation activation;
  - Float start/stop function enable (self-holding)
  - Probe sensitivity,
  - Filling or emptying level probes;
  - Min level alarm activation;
  - Minimum voltage;
  - Maximum voltage;
  - Maximum motor current;
  - Minimum motor current;
  - Dry run control activation on minimum current;
  - Minimum current and timing automatic reset trigger;
  - Minimum current cyclic reset trigger;
  - Analog signal activation;
  - Analog signal type;
  - Analog signal unit of measurement;
  - Analog signal full scale;
  - Setpoint;
  - Motor start/stop threshold;
- SWITCH key (change screen/settings);
- AUTOMATIC key (or UP arrow);
- 0 'standby' key (or DOWN arrow);
- MANUAL key;
- Display: Volts, amps, analog signal, hours of operation, motor status and alarms;
- Missing or incorrect phase sequence check on power supply input;
- Emergency operation on analogue sensor failure;
- Protections of auxiliary circuits and motor with fuses;

- Door lock general disconnect switch (if any);
- Provision for start-up capacitors, single phase version (not included);
- Box in ABS, IP55;
- Ambient temperature: -5/+40 °C;
- Altitude a.s.l. 2000 m;
- Relative humidity 50% at 40 °C (condensate free).

CAUTION!

For further technical data, please refer to the nameplate on the control panel.

General characteristics may vary if accessories are added to the standard product. The addition of accessories may result in changes to the above description.

4. INSTALLATION

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

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

Tighten the electrical cables on the corresponding terminals using a suitable tool correctly sized to avoid the risk of damaging the fixing screws. Be extra careful 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 brackets where available.

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 probes 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 wiring must be suitably sized to withstand the power load.

5. LIGHT INDICATORS AND COMMANDS

Viewing and programming display unit.

Red LED: general alarm.

SETUP key (screen switch).

Pressing and holding it in the main screen for 3 seconds gives access to the settings menu.

Automatic key and UP arrow.

0 key and DOWN arrow.

Press for 5 seconds in the motor screen to reset the hour meter.

Manual key.

Pressing arrow and then MAN resets the current alarm after clearing the cause.

6. MAIN SCREEN PAGE

When the panel is switched on, the display unit shows the following sequence:

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

This screen page displays a general view of the motor and system status:

- 230 V Power supply voltage reading;
- 7.0 A Total absorbed current;
- 10,0B Analog input value (here, 10.0 bar);
- M1 = 1 Motor 1 active;
- M1 = 0 Motor 1 deactivated;
- M2 = 1 Motor 2 active;
- M2 = 0 Motor 2 deactivated;

If no analogue sensors are used, no value for analogue input will be present in the main screen.

Only from this screen is it possible to access the settings menu by pressing and holding the **SETUP** key for 3 seconds.

7. MOTOR SCREEN PAGE

From the main screen, by pressing the **SETUP** key, access is obtained to the motor screen page where one can change the status of the selector (automatic - off - manual), view the absorption of each motor and view hours of operation.

Hours of operation can be reset upon motor replacement by pressing the **OFF** key for 5 seconds.

Press the **SETUP** key again to return to the main screen.

8. MAIN BOARD INPUTS AND OUTPUTS

T1	Normally open input for motor 1 Klixon (thermal switch). Jumper if not using this input.
T2	Normally open input for motor 2 Klixon (thermal switch). Jumper if not using this input.
C - MIN - MAX	Inputs for single-pole level probes Input for minimum level float (connection between C and MAX). Input for general enabling (connection between C and MAX). Jumper C and MAX if not using this input.
G/P1	Input for motor 1 activation. When rotation operation is active, the first alternating motor will start each time the input is opened and closed.
G/P2	Input for motor 2 activation. When rotation operation is active, each time the input is opened and closed it will start both motors regardless of the status of G/P1 input.
G.A.	Input for alarm trigger.
OUT ALARM **(NC - C - NO)**	Cumulative alarm output with voltage-free contacts (resistive load - 5A / 250V) for: - Probe level alarm. - G.A. Input alarm. - Dry run motor alarm. - Motor overcurrent alarm. - Motor overtemperature alarm. - Voltage too low alarm. - Voltage too high alarm. - Sequence or missing phase alarm. - Max level alarm.
BUZZ +/-	Alarm output, live (12Vcc / 100mA);

OUT MOTOR	SINGLE PHASE: • L/S - Motor phase • N/R - Motor idle • AVV - Start with on board capacitor THREE PHASE: • T1 (contactor) - Motor phase U • T2 (contactor) - Motor phase V • T3 (contactor) - Motor phase W
	Earthing.

9. EXPANSION INPUTS

9.1 RS485 expansion

A(-) – B(+)	Module for RS485 communication standard with MODBUS protocol

9.2 Voltage-free contact expansion

O1 – O6	Module for 6 digital outputs 300mA 35V max for the signalling of: - O1: Motor 1 run - O2: Motor 2 run - O3: Overcurrent protection for motor 1 - O4: Overcurrent protection for motor 2 - O5: GA active alarm - O6: Probe/G.MIN active alarm

9.3 Probe input expansion for motor start

C – S1 ÷ S4	PRO-SL input module: - C – MIN – MAX (on main board): motor 1 start - C (expansion): common - S1 – S2 (expansion): probe for motor 2 start control - S3 – S4 (expansion): probe for max. level signalling

9.4 Probe input expansion for water seepage into oil chamber

C – S4 ÷ S5	RL-H2O input module: - C: common (to be connected to earthing potential) - S4 (expansion): probe for motor 1 control - S5 (expansion): probe for motor 2 control

9.5 Buffer battery device expansion

	PRODBT module for connection of 6V 1,2Ah buffer battery for maintaining control of alarm float and for signalling mains power supply failure

9.6 Bluetooth-WIFI expansion

	Allows the panel to be connected to any device via Wi-Fi or Bluetooth to use the Elentek APP

10. SETTINGS MENU

To access the settings menu press and hold the **SETUP** key for 3 seconds.

DESCRIPTION OF PARAMETER	VALUE
LANGUAGE 0=ITA / 1=ENG / 2=FRA / 3=ESP / 4=DEU	0 - 4
DISPLAY BRIGHTNESS ON STANDBY This parameter allows to enter the brightness setting applied when the display is set to standby (wait 9 seconds for a preview).	0 - 9
KLIXON SELF-RESET This parameter defines the automatic or manual reset of the motor overtemperature alarm from Klixon.	AUTOMATIC MANUAL
ESPANSIONE POMPE This parameter defines whether the system provides the card for the 3rd and 4th pump.	Y / N
MINIMUM VOLTAGE Set by default to -10%. *(Altering operating limits beyond default parameters will immediately render the warranty null and void)*.	207 (230) 360 (400)
MAXIMUM VOLTAGE Set by default to +10%. *(Altering operating limits beyond default parameters will immediately render the warranty null and void).*	253 (230) 440 (400)
MOTOR M1– M4 MAXIMUM CURRENT This parameter allows the maximum current limit of the motor to be set. Enter the maximum current value, increasing it by 10-15% with respect to the rated motor value. *Altering operating limits beyond the parameters stated on the model data plate will immediately render the warranty null and void.*	1 - … A
MINIMUM CURRENT OR COS-FI CONTROL ACTIVATION This parameter allows the dry run control to be enabled by reading the absorbed motor current value or the cos-fi power factor.	CURRENT COS-FI

MOTOR M1– M4 MINIMUM CURRENT This parameter allows the MINIMUM motor current to be set below which the motor must stop due to dry run. By setting the current to 0, the minimum current dry run control is deactivated. Enable this parameter only if no floats or probes are in use for minimum level control.	0 - … A
MINIMUM COS-FI OF MOTOR M1 – M4 (if cos-fi is enabled) This parameter allows the minimum motor cos-fi to be set below which the motor must stop due to dry run.	0 - 1
PUMP ROTATION ENABLE This parameter allows the pump changeover to be activated every time the floats or pressure switches are triggered. In addition, if the main pump is switched to thermal protection (overcurrent), the second pump is enabled (the START/STOP function is disabled with N).	Y or N
AUTOMATIC RESET FOR DRY RUN In the case of a dry run alarm (minimum cos-fi current) the panel can attempt an automatic reset, programmable in minutes. Four restart times can be set, whereby the system automatically restarts after stopping.	Y / N
AUTOMATIC RESET FOR DRY RUN TIME 1 First attempt to reset the dry run alarm (default: 5 minutes).	1 - 240 Min
AUTOMATIC RESET FOR DRY RUN TIME 2 Second reset attempt counting from the previous reset attempt (default: 10 minutes).	1 - 240 Min
AUTOMATIC RESET FOR DRY RUN TIME 3 Third reset attempt counting from the previous reset attempt (default: 20 minutes).	1 - 240 Min
AUTOMATIC RESET FOR DRY RUN TIME 4 Fourth reset attempt counting from the previous reset attempt (default: 30 minutes).	1 - 240 Min

CYCLIC RESET FOR DRY RUN Setting the *N* value stops automatic restarts after the fourth attempt, while setting the *S* value after the fourth attempt resumes the restart cycle starting from the fourth time that is set to an infinite time. The panel's dry run protection system restarts based on the programming time settings, and resets the restart cycle whenever the system detects the presence of water for more than 10 seconds.	Y / N
ANALOG SIGNAL ACTIVATION This parameter allows the input to be enabled with analog signal. (with analogue signal enabled, if sensor **C** and **MAX** fails, it functions as emergency stop and **G/P1** as emergency start of pumps).	Y / N
TYPE OF ANALOG SIGNAL This parameter allows the type of panel input analog signal to be selected **2-wire active sensor:** 0-10V: Terminal "A/B" = signal; Terminal "-" = negative; 4-20 mA: Terminal "+" = positive; Terminal "A/B"= signal; **3-wire active sensor:** 0-10V: Terminal "+" = positive; Terminal "A/B" = signal; Terminal "-" = negative; 4-20 mA: Terminal "+" = positive; Terminal "A/B"= signal; Terminal "-" = negative;	0 = 0-10 V 1 = 4-20 mA
ANALOG SIGNAL UNIT OF MEASURE This parameter allows the unit of measure of the panel input analog signal to be selected: By selecting "bar", the panel works in PRESSURIZATION mode: the motors will be enabled when the analogue signal decreases compared to set point value (set point higher than start threshold).	“cm” / “m” “bar” NONE

EMPYTING OR FILLING ANALOG SIGNAL Visible if "PRESSURIZATION" is not activated. This parameter allows the operating logic of the analogue signal to be selected if "none", "cm", "m" have been selected as unit of measurement. In FILLING mode, the motors will be enabled when the analogue signal decreases compared to set point value (set point higher than start threshold). In EMPTYING mode, the motors will be enabled when the analogue signal increases compared to set point value (set point lower than start threshold).	FILLING EMPTYING
ANALOG SIGNAL FULL SCALE Visible if "PRESSURIZATION" is not activated. This parameter allows the full scale value of the analog sensor used to be selected.	0.0 - 999.9
SET POINT Visible if "PRESSURIZATION" is not activated. This parameter allows the set point to be maintained on the system to be set. The maximum settable value depends on the "ANALOG SIGNAL FULL SCALE VALUE" set in the previous parameter.	0.0 - 999.9
START THRESHOLD M1 – M4 Visible if "PRESSURIZATION" is not activated. This parameter allows the first motor restart value to be set as the analog signal decreases.	0.0 - 999.9
ALARM LEVEL THRESHOLD Visible if "PRESSURIZATION" is not activated. This parameter allows the alarm value to be set as the analog signal increases.	0.0 - 999.9

FILLING OR EMPTYING LEVEL PROBES This parameter enables selection of whether the C-MIN-MAX probe input is used in emptying or filling mode. In FILLING mode, the input is used to enable the system when water is not present. The **C-MIN-MAX** input must be open to enable the system. If a float-type on/off control is used, use **C** and **MAX** input. In EMPTYING mode, the input is used to enable the system when water is present. The **C-MIN-MAX** input must be closed to enable the system. If a float-type on/off control is used, use **C** and **MAX** input. *NB: If no minimum level control is used, jumper **C** and **MAX** input.*	FILLING EMPTYING
PROBE SENSITIVITY This parameter allows the probe sensitivity level to be adjusted.	1 - 9
FLOAT START/STOP FUNCTION ENABLE (self-holding) This parameter allows active pumps to be deactivated only on opening of the contact **C** and **MAX** (min./stop float). This function is only available with pump rotation enabled and is only used for emptying systems.	Y / N
MINIMUM LEVEL ALARM ACTIVATION This parameter allows the cumulative alarm output to be removed for minimum level.	Y / N
EXPANSION TYPE This parameter allows any added expansion to be removed. 0 = no expansion applied 1 = **PRO6DO** expansion (6 digital outputs) 2 = **PROSL** expansion (lever probes for motor start) 3 = **PROSL** expansion (water seepage probes into oil chamber) 4 = **PROSL** expansion (water seepage probes into oil chamber and stop motor)	0 - 4
MODBUS ADDRESSES	10

MAXIMUM NUMBER OF IGNITIONS PER HOUR M1 - M4 This parameter allows you to set the maximum number of engine starts in an hour beyond which the alarm is triggered. **<u>If set to 0, control is not active</u>**	0 - 30
ENGINE STOP FOR MAXIMUM IGNITION NUMBER ALARM This parameter allows the engine to be stopped if the alarm for the maximum number of starts per hour is triggered.	Y / N
NUMBER IGNITIONS PER HOUR M1 - M4 Only display of number of starts.	-
NETWORK REENTRY DELAY This parameter allows a fixed time from grid return to be activated before turning on the pumps if controls are active.	Y / N
ALARM HISTORY Displaying the last 10 recorded alarms	

11. DIP-SWITCH SETTINGS DISPLAY

Set DIP-SWITCHES with the panel switched off.

11.1 DIP-SWITCH 1 - NO/NC (G/P1 - G/P2 - G.A.) input reversal

OFF ↓	Normally open inputs.
ON ↑	Normally closed inputs.

DIP-SWITCH 1 allows to invert the enabling of digital inputs G/P1 - G/P2 - G.A.

In the OFF position, normally open inputs enable the system to close the contact.

In the ON position, normally closed inputs enable the system to open the contact.

11.2 DIP-SWITCH 2 - Phase sequence control exclusion

OFF ↓	Missing or incorrect phase sequence check enabled.
ON ↑	Missing or incorrect phase sequence check disabled.

DIP-SWITCH 2 disables the missing or incorrect phase sequence check at the panel input.

In the OFF position, missing or incorrect phase sequence check is enabled.

In the ON position, missing or incorrect phase sequence check is disabled.

11.3 DIP-SWITCH 3 - Self-test

OFF ↓	Motor self-test disabled.
ON ↑	Motor self-test enabled.

DIP-SWITCH 3 enables motor self-test.

In the OFF position, self-test is disabled.

In the ON position, self-test is enabled.

Self-test has a fixed, non-adjustable time and will enable the pump, or pumps depending on the panel model, for 2 seconds every 48 hours.

A pump self-test can only be activated if the Automatic function of the panel is enabled.

11.4 DIP-SWITCH 4 - Manual push or impulse key

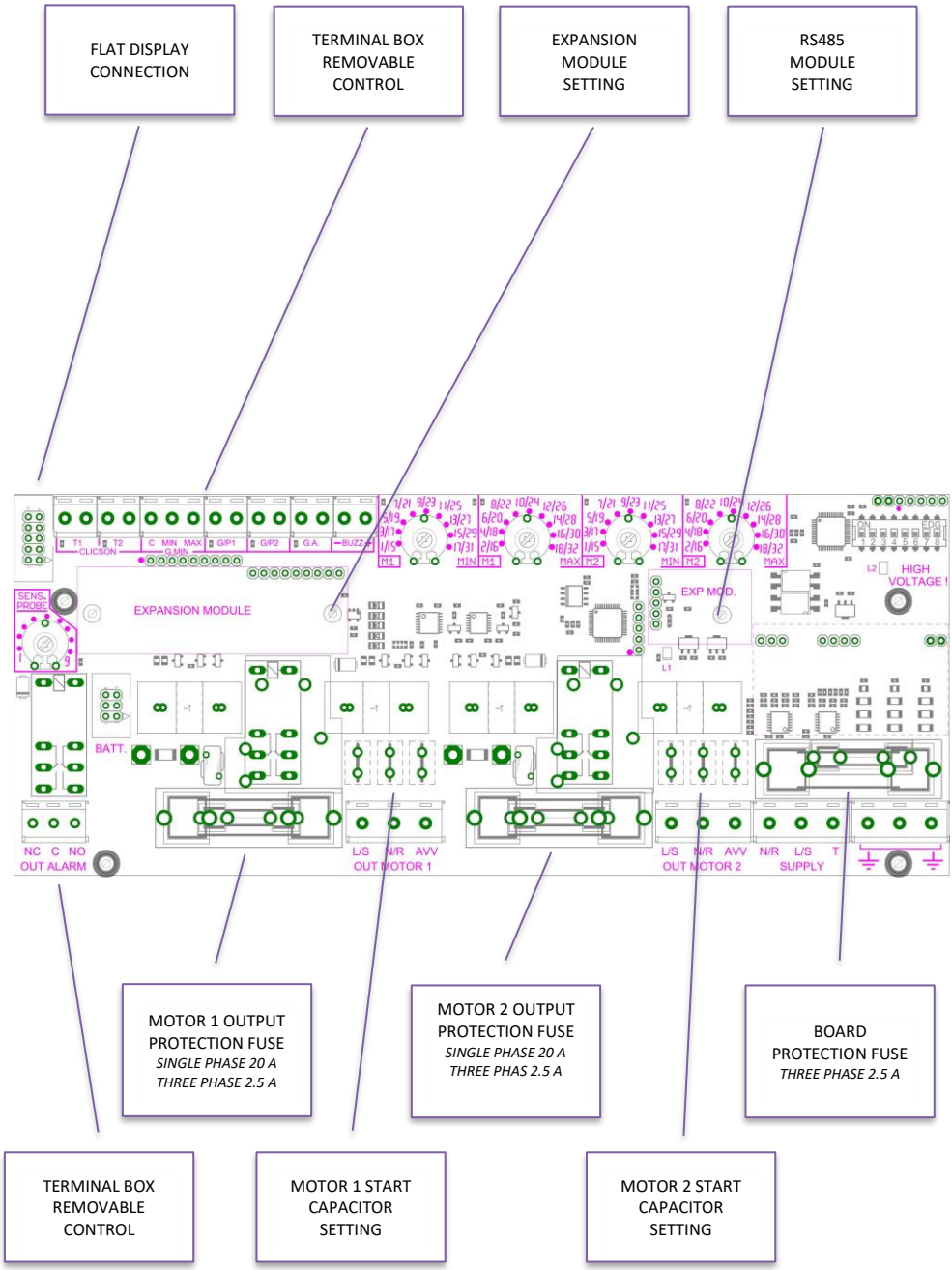
OFF ↓	Manual push key.
ON ↑	Manual impulse key.

DIP-SWITCH 4 sets operation of the manual key.

In the OFF position, the manual key enables the motor by holding the key down; when it is released, the motor stops.

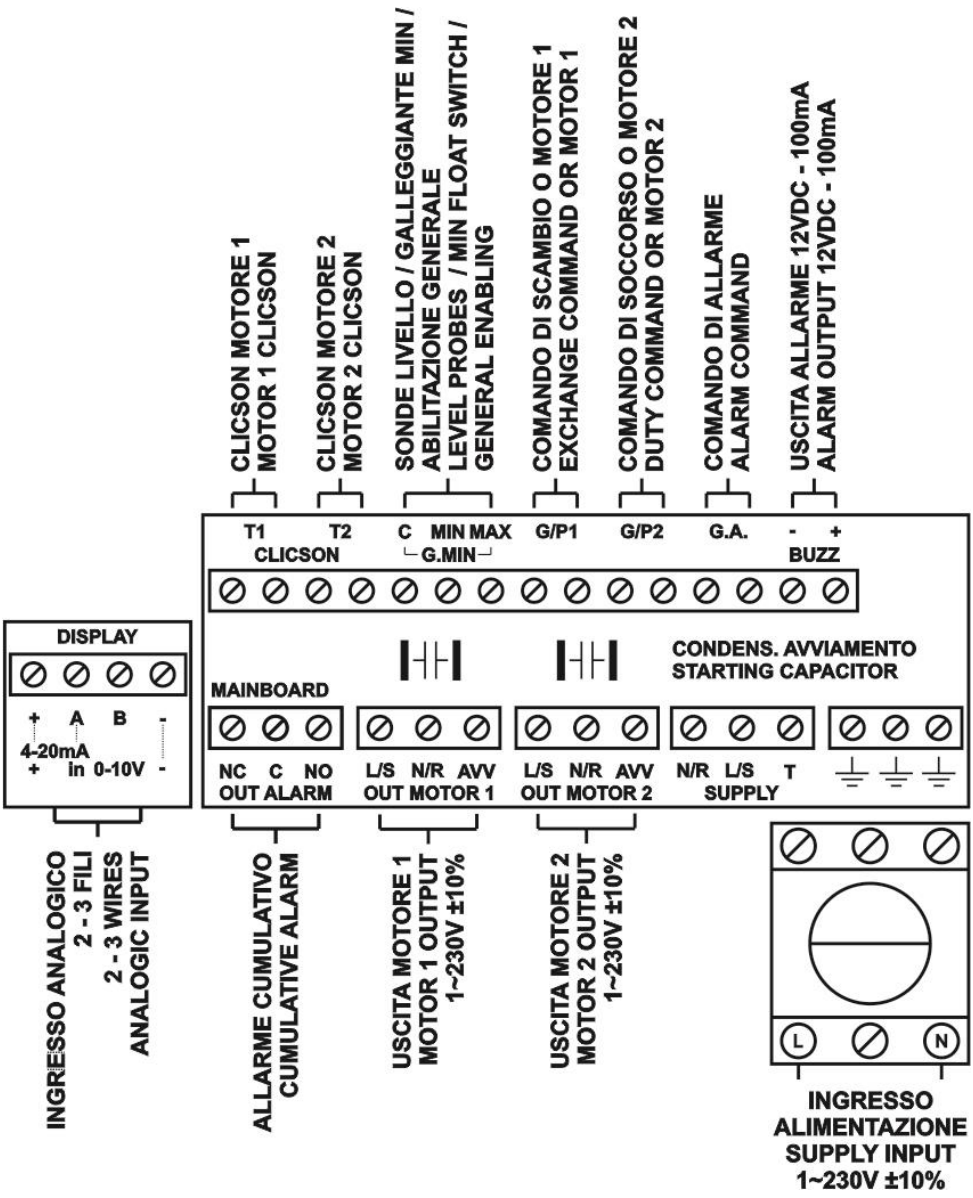
In the ON position, the manual key enables the motor at the first impulse and stops the motor at the next impulse.

12. BOARD SPECIFICATIONS

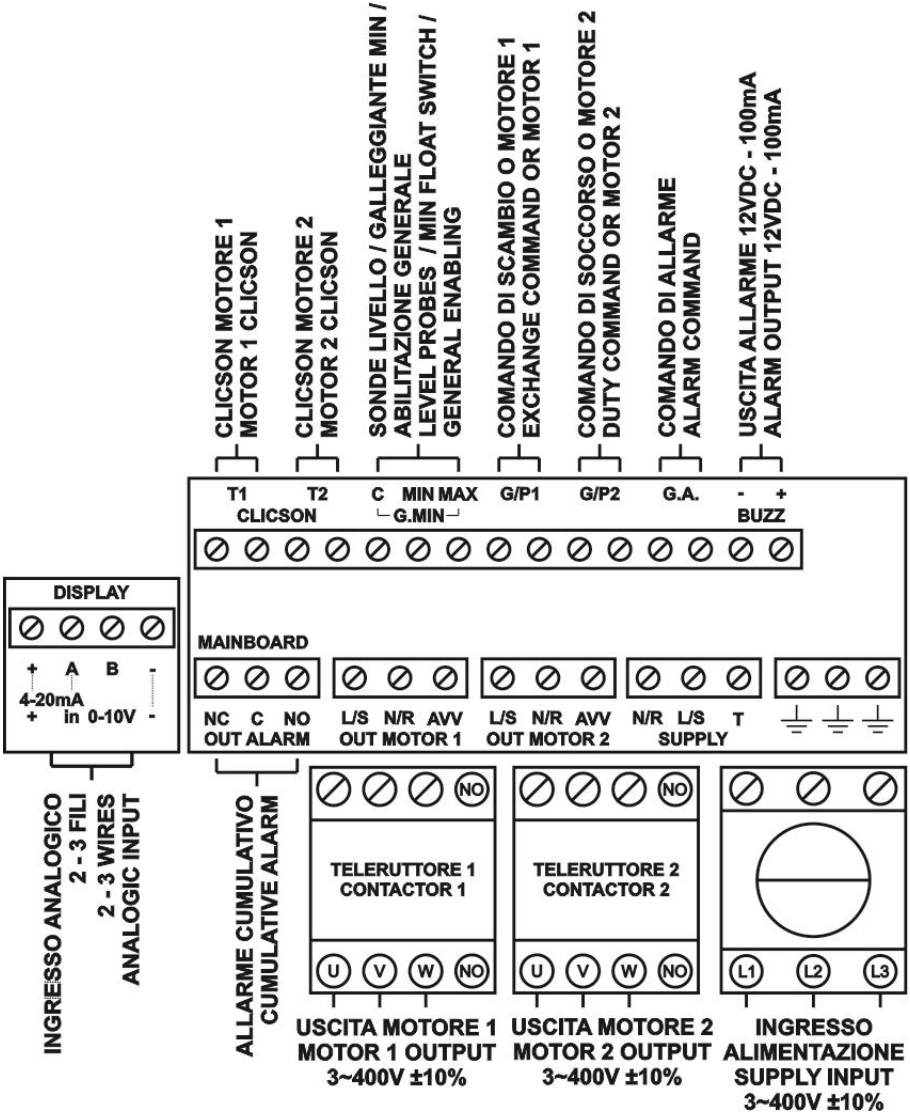


13. MAIN BOARD WIRING DIAGRAMS

13.1 EXPRESS PRO single phase (230V) wiring diagram



13.2 EXPRESS PRO three-phase (400V) wiring diagram

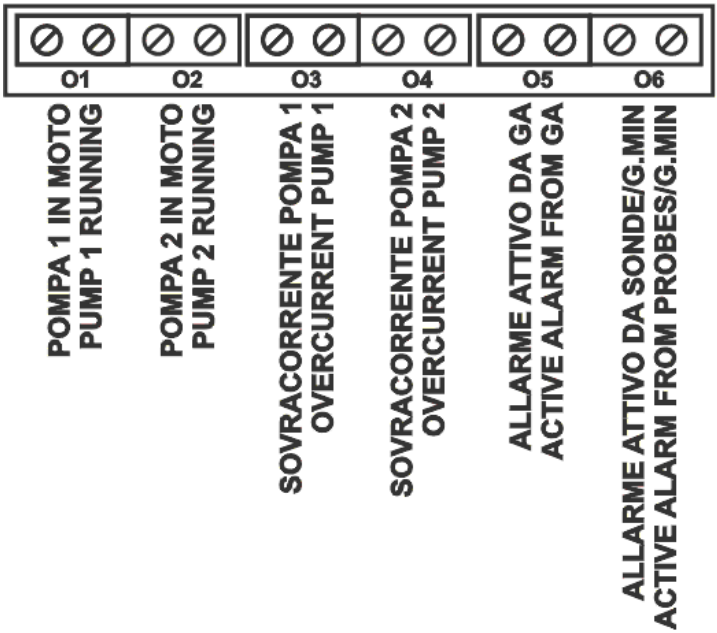


N.B.: On the three phase 230V version, the power supply and motors must be 3~230V.

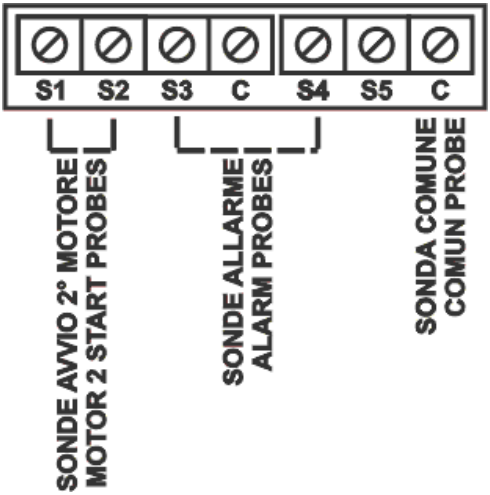
14. EXPANSION WIRING DIAGRAMS

14.1 RS485 expansion

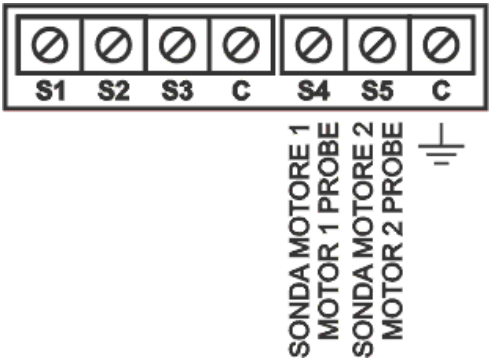
14.2 Voltage-free contact expansion



14.3 PRO-SL probe input expansion

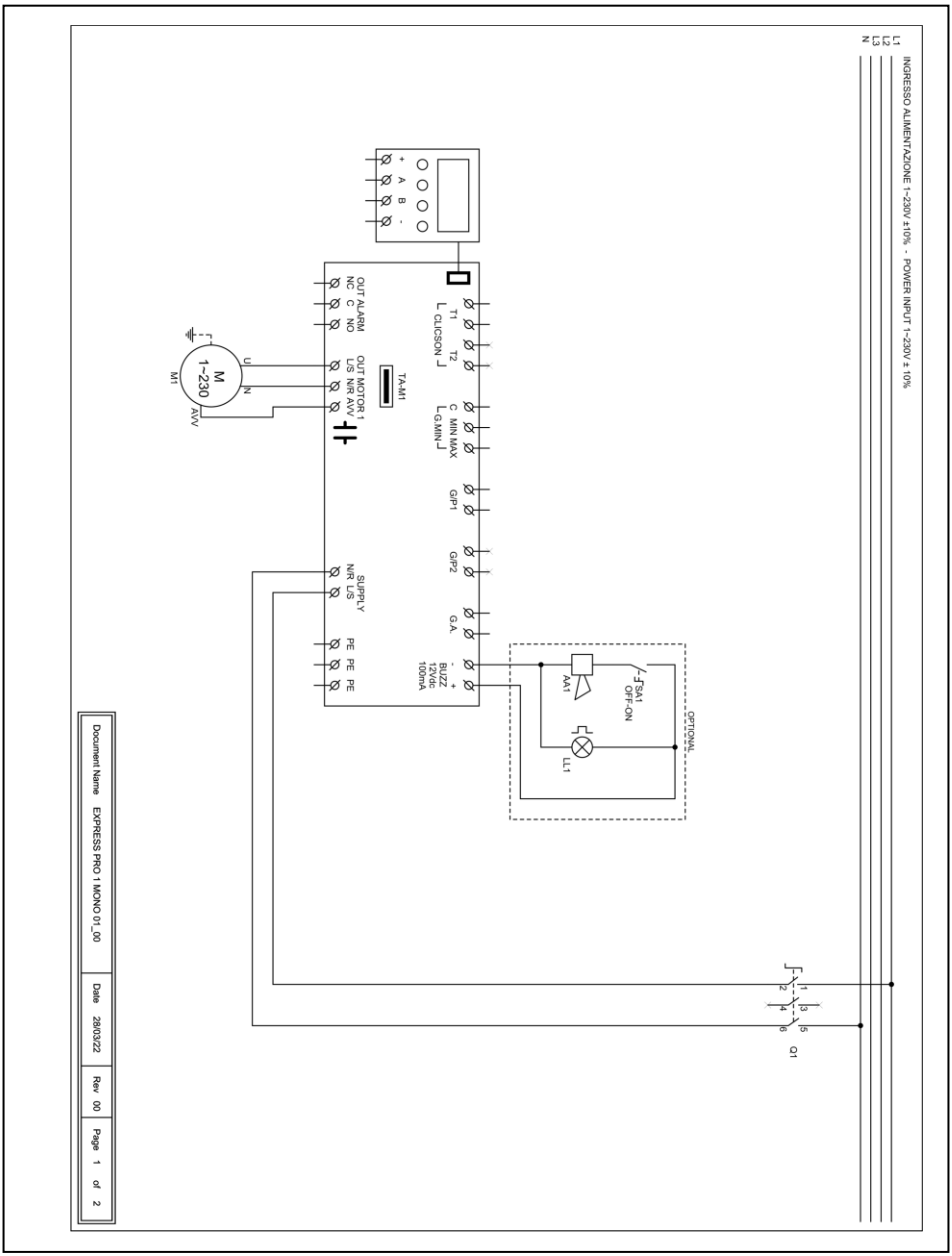


14.4 PRO-SL H20 probe input expansion

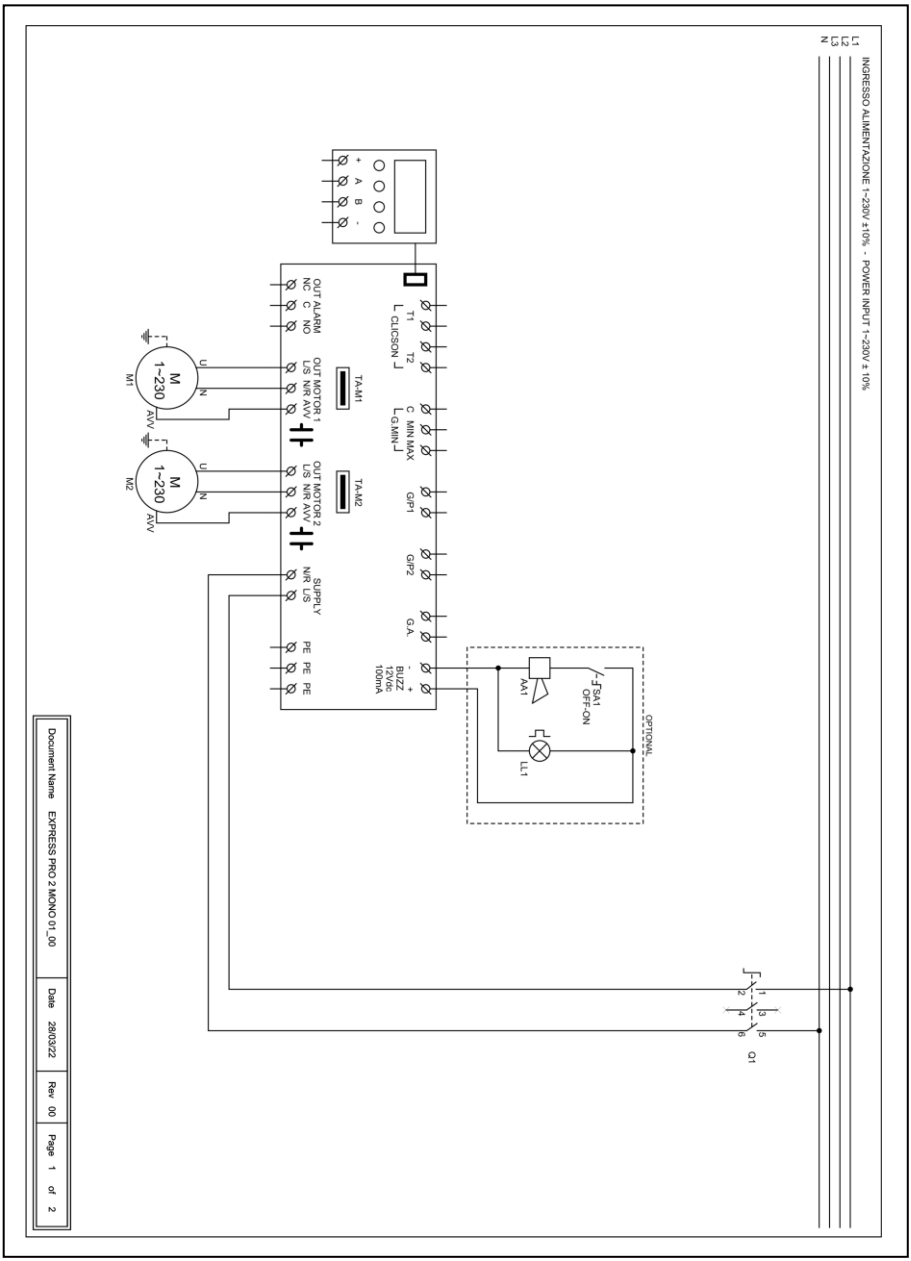


15. WIRING DIAGRAMS

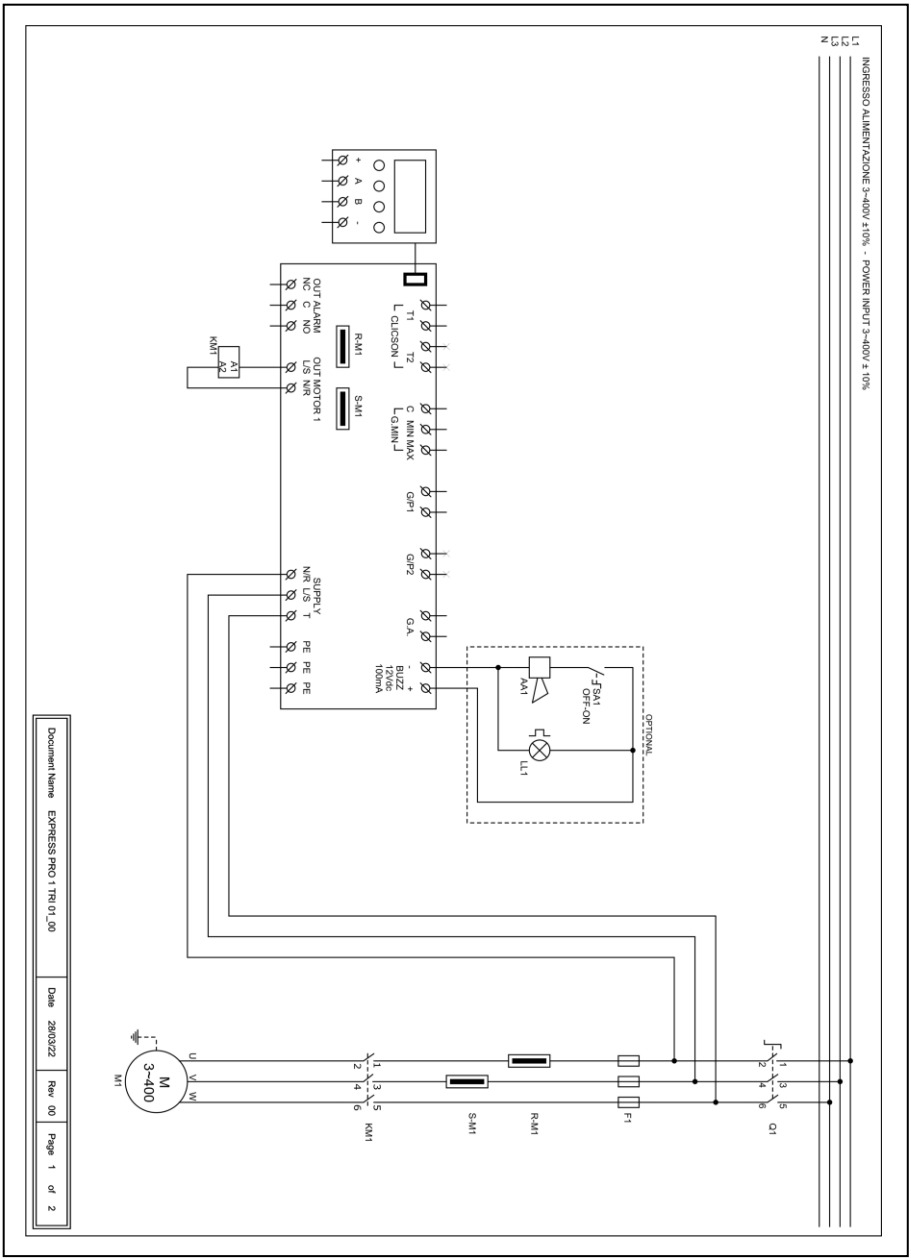
15.1 EXPRESS PRO 1 MONO



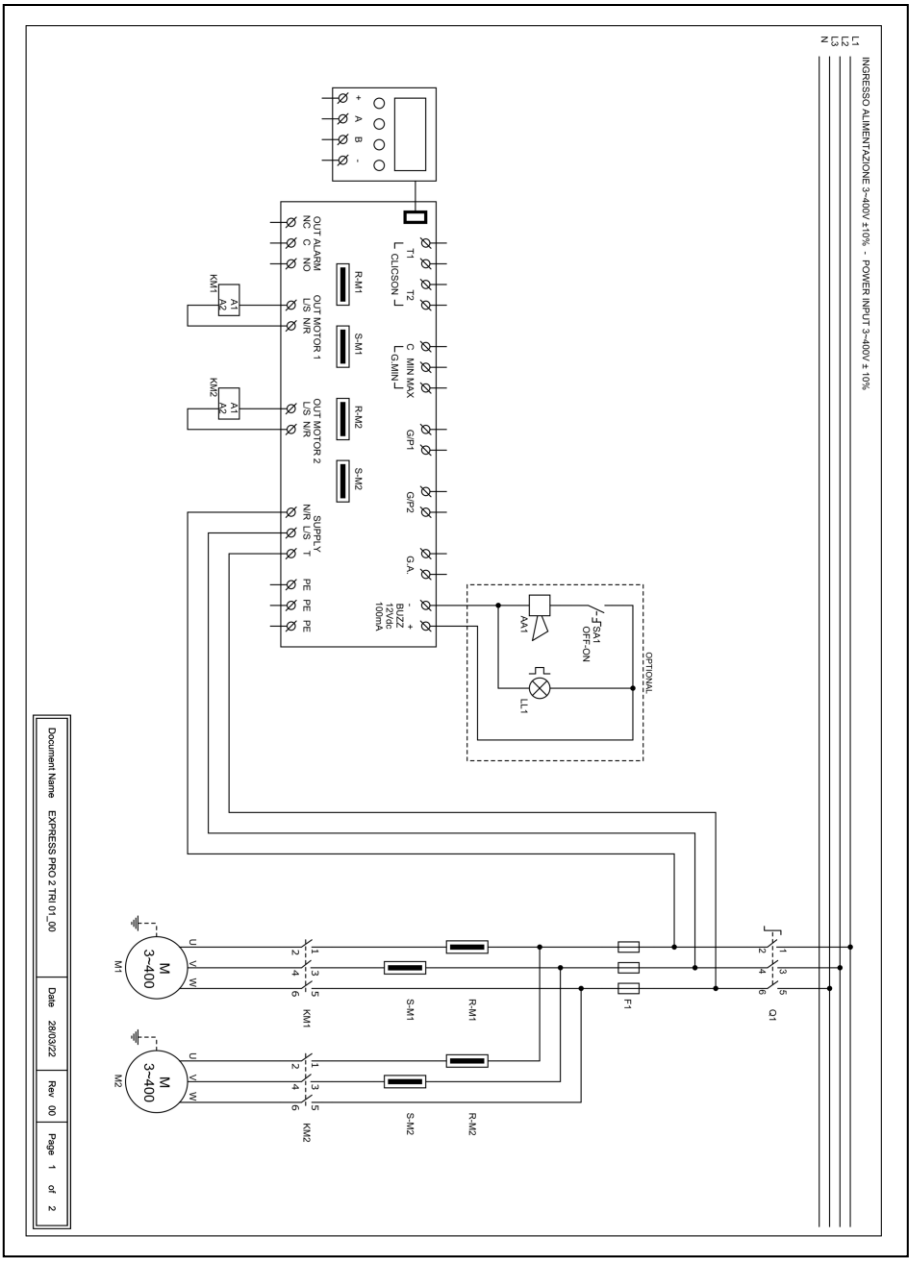
15.2 EXPRESS PRO 2 MONO



15.3 EXPRESS PRO 1 TRI



15.4 EXPRESS PRO 2 TRI



16. RS485 MODBUS ADDRESSES

MODBUS RTU RS485 9600 8N1

INDIRIZZO	REGISTER
0x100	Card serial number
0x101	Firmware version in tenths
0x102	Display type
0x103	Power type
0x104	Number of pumps
0x105	Board 1 voltage value in V
0x106	Board 2 voltage value in V
0x107	Current value in A/10 Pump 1
0x108	Current value in A/10 Pump 2
0x109	Current value in A/10 Pump 3
0x10A	Current value in A/10 Pump 4
0x10B	cosphi value in / 100 Pump 1
0x10C	cosphi value in / 100 Pump 2
0x10D	cosphi value in / 100 Pump 3
0x10E	cosphi value in / 100 Pump 4
0x10F	Dip-Switch status
0x110	Current value set Trimmer M1 MIN
0x111	Current value set Trimmer M2 MIN
0x112	Current value set Trimmer M3 MIN
0x113	Current value set Trimmer M4 MIN
0x114	Value set Trimmer SENS.
0x115	Analog signal value in tenths
0x116	MASTER board input status
0x117	SLAVE board input status
0x118	MASTER board expansion status
0x119	SLAVE board expansion status
0x11A	Output status
0x11B	Alarm status 2
0x11C	Alarm status 1
0x11D	Alarm history 1
0x11E	Alarm history 2
0x11F	Alarm history 3
0x120	Alarm history 4
0x121	Alarm history 5
0x122	Alarm history 6
0x123	Alarm history 7

0x124	Alarm history 8
0x125	Alarm history 9
0x126	Alarm history 10
0x127	Alarm history 11
0x128	Alarm history 12
0x129	Alarm history 13
0x12A	Alarm history 14
0x12B	Alarm history 15
0x12C	Alarm history 16
0x130	Alarm reset 2
0x131	Alarm reset 1
0x132	Alarm history reset
0x133	MANUAL command logic status
0x134	AUTOMATIC command logic status
0x135	Operating hours M1
0x136	Operating hours M2
0x137	Operating hours M3
0x138	Operating hours M4
0x139	Program to run
0x13A	CT type
0x13B	Language
0x13C	Standby display brightness
0x13D	Enabling ELENTEK name on panel
0x13E	Enabling panel name
0x13F	Self-reset klicson
0x140	Maximum current setting in A/10
0x141	Alarm inhibition time at start-up in s/10
0x142	Pump start delay time in s/10
0x143	Tempo ritardo spegnimento pompa in s/10
0x144	Pump shutdown delay time in s/10
0x145	Minimum current alarm delay time in s/10
0x146	Tempo ritardo allarme massima corrente in s/10
0x147	Maximum current alarm delay time in s/10
0x148	Pump current calibration 1
0x149	Pump current calibration 2
0x14A	Pump current calibration 3
0x14B	Pump current calibration 4
0x14C	Voltage board calibration 1
0x14D	Voltage board calibration 2
0x14E	Pump rotation enabling
0x14F	Alarm output enabling
0x150	Self-holding enabling

0x151	Probe sensitivity
0x153	Control box operation
0x154	Minimum level alarm enabling
0x155	Min voltage alarm threshold
0x156	Max voltage alarm threshold
0x157	Max alarm threshold current pump 1 in A/10
0x158	Max alarm threshold current pump 2 in A/10
0x159	Max alarm threshold current pump 3 in A/10
0x15A	Max alarm threshold current pump 4 in A/10
0x15B	Cosfi/current alarm selection
0x15C	Min alarm threshold cosfi pump 1 in /100
0x15D	Min alarm threshold cosfi pump 2 in /100
0x15E	Min alarm threshold cosfi pump 3 in /100
0x15F	Min alarm threshold cosfi pump 4 in /100
0x160	Min alarm threshold pump current 1 in A/10
0x161	Min alarm threshold pump current 2 in A/10
0x162	Min alarm threshold pump current 3 in A/10
0x163	Min Alarm threshold pump current 4 in A/10
0x164	Automatic reset for minimum current
0x165	Automatic reset time 1 in minutes
0x166	Automatic reset time 2 in minutes
0x167	Automatic reset time 3 in minutes
0x168	Automatic reset time 4 in minutes
0x169	Enable cyclic reset
0x16A	Enable analog signal
0x16B	Sensor Type Selection
0x16C	Selecting units of measurement
0x16D	Analogue signal operation
0x16E	Analogue sensor backscale in /10
0x16F	Set point in /10
0x170	Threshold 1 start/stop in /10
0x171	Threshold 2 start/stop in /10
0x172	Threshold 3 start/stop in /10
0x173	Threshold 4 start/stop in /10
0x174	Service mode
0x175	Scheduled maintenance due dates
0x176	Days since last maintenance
0x177	Scheduled maintenance alarm postponement days
0x178	Installed expansion type
0x17A	MODBUS address
0x17B	Multi-pump card enabling (EXPRESS only)
0x17C	Counter number of pump start-ups 1

0x17D	Counter number of pump start-ups 2
0x17E	Counter number of pump start-ups 3
0x17F	Counter number of pump start-ups 4
0x180	Maximum number of starts/h pump 1
0x181	Maximum number of starts/h pump 2
0x182	Maximum number of starts/h pump 3
0x183	Maximum number of starts/h pump 4
0x184	Enabling network return delay
0x185	Stop level
0x186	Alarm level
0x187	ATEX mode
0x188	WASTEK pressure sensor calibration in /10
0x189	Engine stop selection in case of max. acc/h alarm

17. ALARMS

	The detected minimum current value is lower than the programmed value and the panel stops the motor. The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system resets automatically according to the times set during programming. The alarm can still be reset manually by pressing the OFF key; the system can then be reset automatically.
	The motor current absorption is higher than the set value and the panel stops the relevant motor. The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. To reset the alarm manually, press the OFF key; the system can then be reset automatically.
	The thermal switch (Klixon) has tripped on overtemperature. The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. If Klixon self-reset is activated, the system automatically resets when the Klixon contact is closed; if the self-reset is disabled, when the Klixon contact is closed, press the "AUT" key and then restart the individual motors in alarm with "MAN". If not used, close the motor Klixon input/s.
	The measured mains voltage is too low (the motor stops). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system is reset automatically when voltage increases.
	The measured mains voltage is too high (the motor stops). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system is reset automatically when voltage decreases.

	The measured phase sequence is incorrect or one phase is missing (the motor stops). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system is reset automatically turning off and on the electrical panel after reconnecting the phase wires correctly.
	The float in the G.A. input detects the alarm for maximum level reached (motor does not stop). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system automatically resets itself when the alarm float is opened.
	The minimum level float, or the minimum level probes, detect the minimum level reached (the motor stops). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system automatically resets itself when the minimum level float or the minimum level probes are closed (this alarm can be disabled from the SERVICE menu).
	The analog sensor used is disconnected, wrongly connected or failed; The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system is activated in emergency mode where C-MIN functions as an emergency stop and GP/1 as a start of all users not simultaneously. The system only resets when the analog sensor returns to normal conditions.
	Through PRO-SL expansion, the presence of water in the engine oil chamber is detected (the engine does not stop). The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system automatically resets itself after the electric motor is serviced.

	The set number of starts/hour has been exceeded. If set, the alarm stops the motor The display and the red LED flash, activating the cumulative alarm output and the 'BUZZ' output.
	With analogue sensor activated, it indicates that the set alarm threshold has been reached; in the event of PRESSURIZATION operation, the alarm stops the motors; in the event of DRAIN operation, the alarm does not stop the motors; in the event of FILL operation, the alarm does not stop the motors; The display and the red LED flash, activating the cumulative alarm output and the "BUZZ" output. The system automatically resets 5" after the set alarm level has returned.

18. SIZE TABLE

CODE	MODEL	MEASURES	TYPE
11630NB	EXPRESS PRO 1-Mono	195X245X120	PLASTIC
12630NB	EXPRESS PRO 2-Mono		
11630	EXPRESS PRO 1-Mono	310X240X185	PLASTIC
12630	EXPRESS PRO 2-Mono		
11633	EXPRESS PRO 1-Tri/7,5	310X240X185	PLASTIC
11634	EXPRESS PRO 1-Tri/11		
11635	EXPRESS PRO 1-Tri/15		
12633	EXPRESS PRO 2-Tri/7,5	310X240X185	PLASTIC
12634	EXPRESS PRO 2-Tri/11	390X310X230	PLASTIC
12635	EXPRESS PRO 2-Tri/15		
13630	EXPRESS PRO 3-Mono	390X310X230	PLASTIC
14630	EXPRESS PRO 4-Mono		
13633	EXPRESS PRO 3-Tri/7,5	500X400X235	METALIC
13634	EXPRESS PRO 3-Tri/11		
13635	EXPRESS PRO 3-Tri/15		
14633	EXPRESS PRO 4-Tri/7,5	700X500X235	METALIC
14634	EXPRESS PRO 4-Tri/11		
14635	EXPRESS PRO 4-Tri/15		

19. TROUBLESHOOTING

PROBLEM	CHECKS/SOLUTIONS
ALARM PHASE FAULT	• Check that all phases are available at the panel input. • Check and modify the phase sequence at the input of the door lock disconnect switch.
THE PANEL IS POWERED UP BUT THE MOTOR DOES NOT START	• Check that automatic operation is enabled on the motor screen. • Check input status and settings.
THE PANEL IS SET TO AUTOMATIC MODE BUT THE MOTOR DOES NOT START.	• Check input status and settings. • On the single phase model, check that the 230V~ voltage is present on the motor output terminals “L/S” and “N/R”; on the three-phase model check that the 400V~ voltage is present on terminals “L/S” and “N/R” and that the contactor winding is powered.
ON PUMP START-UP, THE THERMAL SWITCH TRIPS.	• Check the maximum current setting in the settings. • Check the motor current with a current clamp. • Check the motor status
AMPEROMETRIC INTERVENTION DOES NOT TRIP	• Check the maximum current setting in the settings.
THE PANEL IS IN MOTOR OVERTEMPERATURE ALARM STATUS	• Check that the over-temperature control is disabled if the motor/s is/are not fitted with a thermal switch. • Check the motor status
THE DISPLAY DOES NOT SWITCH ON	• Check that the FLAT connector is inserted correctly. • Ensure that the door lock is set to ON. • On the panel input, check that the voltages 230V~ or 400V~ are present between the SUPPLY mains input terminals. • Check that the fuses are efficient.
THE MAXIMUM START/HOUR ALARM IS TRIGGERED	• Hydraulic system undersized in relation to pump capacity(s). • Check float levels. • Check START/STOP motor(s) threshold settings • Activate START/STOP float function (self-holding)

NOTES