

SCOUT - User Manual

ELECTRIC PANEL FOR 1 MOTOR WITH WI-FI PARAMETERIZATION



Exclusive Italian
Production

CONTENTS

1.	INTRODUCTION.....	5
2.	WARNINGS	6
3.	GENERAL DESCRIPTION	7
4.	INSTALLATION.....	8
5.	LUMINOUS INDICATORS AND COMMANDS	9
6.	INPUTS AND OUTPUTS	10
7.	SETTINGS/PARAMETERIZATION	11
7.1	<i>First start of SCOUT</i>	<i>11</i>
7.2	<i>Change the network name and change the access password</i>	<i>12</i>
7.3	<i>Pump control page description.....</i>	<i>12</i>
7.4	<i>Description of alarms history page.....</i>	<i>13</i>
7.5	<i>Description pages configuration.....</i>	<i>13</i>
7.6	<i>Setting pumps parametres</i>	<i>16</i>
8.	ALARMS	17
8.1	<i>Alarm min current.....</i>	<i>17</i>
8.2	<i>Alarm max current.....</i>	<i>17</i>
8.3	<i>Alarm min level.....</i>	<i>17</i>
8.4	<i>Alarm max start.....</i>	<i>17</i>
8.5	<i>Alarm connection.....</i>	<i>17</i>
8.6	<i>Alarm sequence or lack phases.....</i>	<i>17</i>
8.7	<i>Alarm overtemperature.....</i>	<i>17</i>
9.	BOARD SPECIFICATIONS.....	18
9.1	<i>Board SCOUT 1phase (230V)</i>	<i>18</i>
9.2	<i>Board SCOUT 3phase (400V)</i>	<i>19</i>
10.	STANDARD WIRING DIAGRAM.....	20
10.1	<i>Wiring diagram SCOUT 1phase (230V).....</i>	<i>20</i>
10.2	<i>Wiring diagram SCOUT 3phase (400V).....</i>	<i>21</i>

11.	APPLICATIONS	22
12.	DIMENSIONS.....	23
13.	TROUBLESHOOTING.....	24

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 1phase 100-240Vac 50/60Hz (SCOUT-Mono);
- Power supply 3phase 310-450Vac 50/60Hz (SCOUT-Tri/5.5);
- Normally open input for start command;
- Input C-MIN-MAX for:
 - Single-pole probes;
 - Float switches;
 - Flow switch;
- Pushbuttons: AUTOMATIC, 0 with MANUAL function;
- Green LED power ON:
 - Fix light = network presence;
 - Flashing light= board in overtemperature;
- Green LED: AUTO mode ON;
- Green led: motor active;
- Red LED:
 - 1 flash = minimum current alarm;
 - 2 flashes = maximum current alarm;
 - 3 flashes = level alarm from probe input;
 - 4 flashes = max number of startings per hour exceeded;
 - 5 flashes = lack of communication with other SCOUT panels;
 - 6 flashes = failure or incorrect phase sequence (only for three-phase model);
- Settings / parameterization via Wi-Fi connection;
 - selection of probes in filling or emptying function;
 - Italian / English language selection;
 - selection of control from 1 to 3 pumps;
 - enabling level alarm signaling from probes;
 - enabling start / stop floats function for waste water;
 - pump rotation enable (for systems with 2 or 3 pumps);
 - selection of delay time for activation of the board on power mains return;
 - enabling cyclic restart after minimum current alarm with programmable times;
 - selection of delay time for activation of motors from closing of start-up inputs;
 - selection of delay time for auxiliary motor activation;
 - selection of delay time for activation of min/max current alarms at motor start-up;
 - overload maximum current electronic control;
 - dry running minimum current electronic control;
 - motor current visualization;
 - visualization of working hours and number of engine starts (resettable);
- Automatic reset of minimum current alarm;
- Board and motor protection with fuses;
- Cumulative alarm output energised (12Vdc / 100mA);
- Provision for running capacitors (not included);
- Box in ABS, IP55;
- Ambient temperature: -5 / + 40 ° C;
- Relative humidity 50% at 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.

SCOUT-Mono	▶	1~100-240Vac 50/60Hz
SCOUT -Tri/5.5	▶	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.

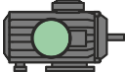
5. LUMINOUS INDICATORS AND COMMANDS



FIX GREEN LED power on;

FLASHING GREEN LED electronic board in over-temperature;

GREEN LED OFF device not powered.



FIXED GREEN LED pump running.

GREEN LED OFF electric pump in stand-by.



RED LED 1 FLASH minimum current alarm;

RED LED 2 FLASHES maximum current alarm;

RED LED 3 FLASHES level alarm from probe input;

RED LED 4 FLASHES max number of startings per hour exceeded;

RED LED 5 FLASHES no communication with other SCOUT(s).



AUT automatic operation button;

FIXED GREEN LED automatic operation active;

GREEN LED OFF automatic operation disabled.



Button for motor stop or stand-by operation;

Button '0' pressed for 5 seconds starts the engine, when the button is released the engine switches off (MANUAL mode).

6. INPUTS AND OUTPUTS


G. MIN	Input for single-pole probes
C-MIN-MAX	Input for float switches (connection between C and MAX). Input for flow switch (connection between C and MAX). Jumper 'C' and 'MAX' if only 'IN1' input ('+' and 'IN') is used.

IN1 (+ e IN)	Normally open input for motor activation from pressure switch or start float switch. Jumper '+' and 'IN' if only 'C-MIN-MAX' or 'C-MAX' input is used.
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OUT1	Energized alarm output 12Vdc - 100mA.
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SUPPLY	1PHASE <ul style="list-style-type: none">• L - Power supply phase.• N - Neutral phase. 3PHASE <ul style="list-style-type: none">• R (support clamps) - R power supply phase• S (support clamps) - S power supply phase• T (support clamps) - T power supply phase
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OUT MOTOR	1PHASE: <ul style="list-style-type: none">• L - Motor phase• N - Motor neutral• AVV - Starting with capacitor in the panel 3PHASE: <ul style="list-style-type: none">• T1 (contactor) - U motor phase• T2 (contactor) - V motor phase• T3 (contactor) - W motor phase
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	Earthing.
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7. SETTINGS/PARAMETERIZATION

7.1 First start of SCOUT

SCOUT can work in groups of max 3 SCOUTs connected together, so it will be necessary to immediately assign to which group (if there are several plants nearby) and which pump each single SCOUT belongs to if more than 1 are used in the same system.

ATTENTION!



ALL SCOUT PANELS ARE ALREADY CONFIGURED FOR SINGLE PUMP OPERATION. PERFORM THE PROCEDURE BELOW ONLY IF THE SYSTEM PROVIDES MORE SCOUT INTERCONNECTED OR IF THERE ARE MORE SYSTEMS WITH SCOUT NEARBY.

When the panel is powered, all the LEDs will flash for 10 seconds, time that can be changed in the "START UP TIME" configuration if the default value is not sufficient to reach the ignition switchboard (see page 14).

While the LEDs are flashing, press the AUT and 0 buttons simultaneously for about 5 seconds.

At the end of the 5 seconds the green LED of the AUT button and the red LED of the flashing alarms will become fixed.

At this point release the buttons. The red LED of the alarms flashing will indicate the assigned number of the pump (one flash = pump number one, two flashes = pump number two, three flashes = pump number three). Press AUT to change the assignment as desired.

Press the 0 button to select the group, the AUT LED will light up steady and the red LED of the flashing alarms will indicate the assigned group number (it is possible to set from 1 up to 4 groups). Press the AUT button to change the assignment as desired.

Once the group and pump number have been assigned, press the 0 button to confirm (the panel will restart automatically saving the settings entered).

It is now possible to access the Wi-Fi network generated by SCOUT by connecting your device with a web browser to the **SCOUT-G1** network if belonging to group 1 (SCOUT-G2 for group 2, SCOUT-G3 for group 3, SCOUT-G4 for group 4) writing on the address bar of the browser the address: **www.scout.org** (type it complete with "www" and make sure that the browser does not automatically add the prefix "http" before the address).

Network name: SCOUT-G1

Password: 123456789

7.2 Change the network name and change the access password

This procedure is not necessary for the correct operation of the panel, it should be performed only if you want to change the network name and the access password.

When the panel is powered on, press and hold the AUT and 0 buttons for 5 seconds.

At the end of the 5 seconds the green LEDs of the AUT button and the red LED of the flashing alarms go steady.

Release the buttons and using a smartphone with a browser access to the Wi-Fi net **"SCOUT-Update"** entering the password **123456789** (wi-fi net without internet access).

Open the browser of your device and enter the following address in the address bar: **www.scout.org/password** (written complete with "www").

The new network name and the new password can be entered in the respective items that will be shown on the display.

Use 4 to 25 characters maximum without entering the space for the network name, while for the password use 8 to 30 characters. Once names and passwords have been changed, it is recommended to write them down and keep them in a safe place.

The new data will be saved and the panel will restart by pressing save.

7.3 Pump control page description

Once you have logged in to SCOUT with your smartphone's web browser, you will be able to view the available engines and check their status. Press the Save button after each change of status.

For each pump:

LED Run: green LED indicating if the pump is active and the current absorbed by the motor.

LED Error: red LED indicating pump in alarm, (see page 16 for the types of alarms).

Auto button: sets the pump to automatic mode, therefore the pump gets controlled by the automatisms connected to the SCOUT input (eg floats, pressure switches, probes, etc.).

Stop button: stops the pump and disables the automatic mode.

Manual button: start the pump in manual mode by passing any check.

Reset Alarm button: reset active alarms.

Refresh button: refresh the page displaying updated data.

Cyclic Refresh button: automatically update the page every 5 sec. displaying the updated data.

Write button: save and confirm the changes made to the page.

Config button: proceed with the SCOUT set-up.

Alarm History button: displays the list of the occurred alarms.

7.4 Description of alarms history page

Alarms are recorded on this page from the most recent (top of the list) to the oldest (bottom of the list).

Previous button: returns to the PUMP CONTROL page.

Reset Alarm button: resets the alarm history.

7.5 Description pages configuration

Language: set the language of the system.

Function mode: select the operating mode of the probe input when emptying or filling.

Confirm button: save the changed settings.

Next button: proceed to the CONFIGURATION page 2/2.

CONFIGURATION 1/2	
LANGUAGE	EN = English / IT = Italian / FR = French / DE = German / ES = Spanish
FUNCTION MODE	<ol style="list-style-type: none">1. EMPTYING: the input will be used to enable the system when there is presence of water. The C-MIN-MAX inputs must be closed to enable the system. If unipolar probes are not used but an on / off type command (float switch or flow switch), the C-MAX inputs must be closed to enable the system.2. FILLING: the input will be used to enable the system with lack of water. The C-MIN-MAX inputs must be open to enable the system. If unipolar probes are not used but an on / off type command (float switch), the C-MAX inputs must be closed to stop the system.3. FLOWSWITCH: the input will be used to enable the system in the presence of water flow. The C-MAX input is closed virtually for a set time (FLOWSWITCH TIME), if the input will be closed at the end of the set time the motor will continue to run, if at the end of the set time the input will be open the motor will stop due to lack of water flow (minimum level alarm).

CONFIGURATION 2/2	
TOTAL PUMP NR.	This parameter allows to select the number of pumps of the system (1...3).
LEVEL ALARM	This parameter allows to include or exclude from the cumulative alarm output the alarm for minimum or maximum level given by the C-MIN-MAX probe input. This parameter is not available with the FLOW SWITCH function.
START/STOP FLOAT SWITCH	This allows to activate the self-restraining operation for floating / stopping floats, for the drainage of waste water. With this setting the stop float must be connected to the 'C-MAX' input and the start float switch to 'IN1' ('+' and 'IN').
PUMP ROTATION	This parameter allows to activate the pumps exchange (in systems with two or three pumps) at each activation of the float switches or pressure switches, moreover if the main pump trips for thermal protection (overcurrent) the second pump is enabled.
START TIME (seconds)	This parameter determines the time in seconds that must elapse before the card comes back active at the switch on (10...90 seconds).
CYCLICAL RESTART MODE	This parameter allows to select the cyclic restart mode when there is a minimum current alarm. 1.DISABLED: No attempt to restart. 2.TR1: The restart will be performed based on the time set in parameter TR1 for infinity times 3.TR1 + TR2: The restart will be performed based on the time set in parameter TR1, for a number of attempts defined in parameter NR1. 1.Once the attempts have been completed, the panel will try to restart after the time set in parameter TR2 for infinity times.
RN1: RESTART NUMBER WITH TR1	Number of TR1 attempts of start before moving to TR2 if set to TR1 + TR2 (1 ... 20).
TR1: TIME RESTART 1 (minutes)	Cyclic restart time TR1 (1...20 minutes). See CYCLICAL RESTART.
TR2: TIME RESTART 2 (minutes)	Cyclic restart time TR2 (1...20 minutes). See CYCLICAL RESTART.
START PUMP DELAY (seconds)	Delay time between the activation (closing of inputs) and the run when starting the auxiliaries motors (0.3...5 seconds).

SIMULTANEOUS START DELAY (seconds)	Delay time of motors start if enabled simultaneously (0.3...5 seconds).
INIBITIONS ALARM FROMT START (seconds)	Time of alarms disabled at motor start (0.3...5 seconds).
PROBES INPUT DELAY (seconds)	This parameter allows to set a delay filter (time in seconds) to the reading of the single-pole probes status. It is used to avoid a continuous activation and deactivation of the pump when a probe is lightly touched by the water (1...250 seconds).
I-MIN ALARM DELAY (seconds)	By setting this parameter, you can avoid dry running protection for few seconds while the engine is starting (0.3...8 seconds).
I-MAX ALARM DELAY (seconds)	Setting this parameter allows to avoid tripping of the thermal protection due to overcurrent during the motor start-up, preventing the inrush current from activating the maximum current alarm (0.3...8 seconds).
MAX START/HOURS	Set the maximum number of switch-ons per hour. If they are exceeded, the pump does not stop and the alarm activates. To disable this function set the value to "0" (0...30).
FLOWSWITCH TIME (seconds)	Sets the virtual closing time of the C-MAX input if a flow switch is used (2...30 seconds).

7.6 Setting pumps parametres

The following parameters can be set-up for each pump.

Imin[A]: Minimum current value in Ampere for dry running protection (set it to 0 to disable this function).

Imax[A]: Maximum current value in Ampere for motor overcurrent protection.



ATTENTION!

It is recommended to insert this value respecting the nominal current indicated on the motor's plate + about 15%.

Sens.: Sensitivity value of the probes, where 1 is low sensitivity (for highly conductive liquids) and 9 is high sensitivity (for low conductive liquids).

Tot.Hours: Total operating hours counter of the pump.

Tot.Starts: Total pump switch-on counter.

CLR TOT button: Button to reset the hour and pump switch-on counters.

8. ALARMS

8.1 Alarm min current

This alarm is generated to indicate the dry running of the engine. When this alarm occurs it means that the current absorbed by the motor is lower than that value set in the respective parameter, the motor stops and the red LED flashes 1 time consecutively. At this point the 'cyclic restart' starts to attempt the restart of the motor.

8.2 Alarm max current

This alarm is generated to indicate the motor overload. When this alarm occurs it means that the current absorbed by the motor is greater than that value set in the respective parameter, the motor stops and the red LED flashes twice consecutively.

8.3 Alarm min level

This alarm (if enabled by the relevant parameter in configuration) is generated when the C-MIN-MAX contacts are opened in emptying and flow switch mode or closed in filling mode to indicate respectively the achievement of the minimum or maximum level. The red LED flashes 3 times consecutively.

8.4 Alarm max start

This alarm is generated to indicate that the number of starts per hour set in the respective parameter is exceeded. When this alarm occurs the engine does not stop and the red LED flashes 4 times consecutively.

8.5 Alarm connection

This alarm is generated to indicate the lack of communication with other SCOUTs belonging to the same group. If there is any interference or disturbance to the Wi-Fi signal generated or the devices are simply too far from each other and this compromises their communication it is signaled by this alarm. The red LED flashes 5 times consecutively and the motors managed by the non-connected boards are excluded.

8.6 Alarm sequence or lack phases

This alarm is generated when an incorrect sequence of the power supply input phases is recognized, or in the absence of one of the input power supply phases,

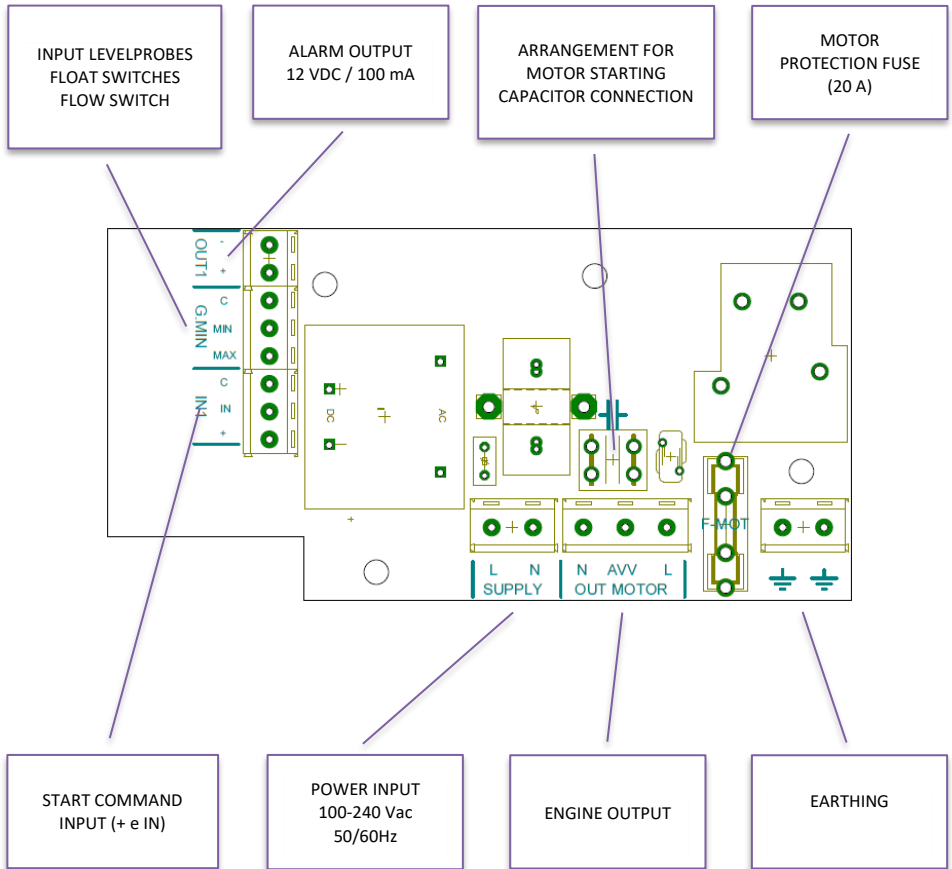
The red LED flashes 6 times consecutively and the SCOUT operation is interrupted until the correct power supply is restored (only three-phase version).

8.7 Alarm overtemperature

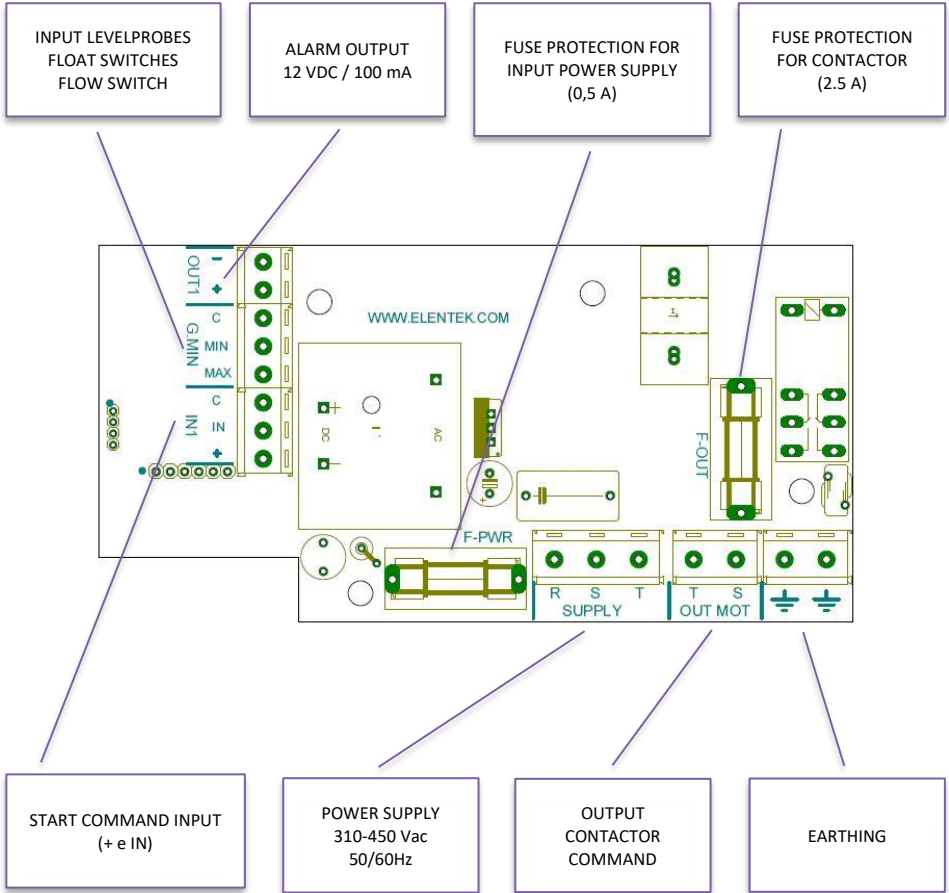
This alarm is generated when the temperature of the electronic card inside the plastic enclosure reaches 80 °C, the green 'Power ON' LED flashes. In this case it is advisable to switch off the system and check that there is no direct heat source to the SCOUT panel. It is also advisable to install SCOUT in a cool and ventilated area away from sources of heat or flames.

9. BOARD SPECIFICATIONS

9.1 Board SCOUT 1phase (230V)

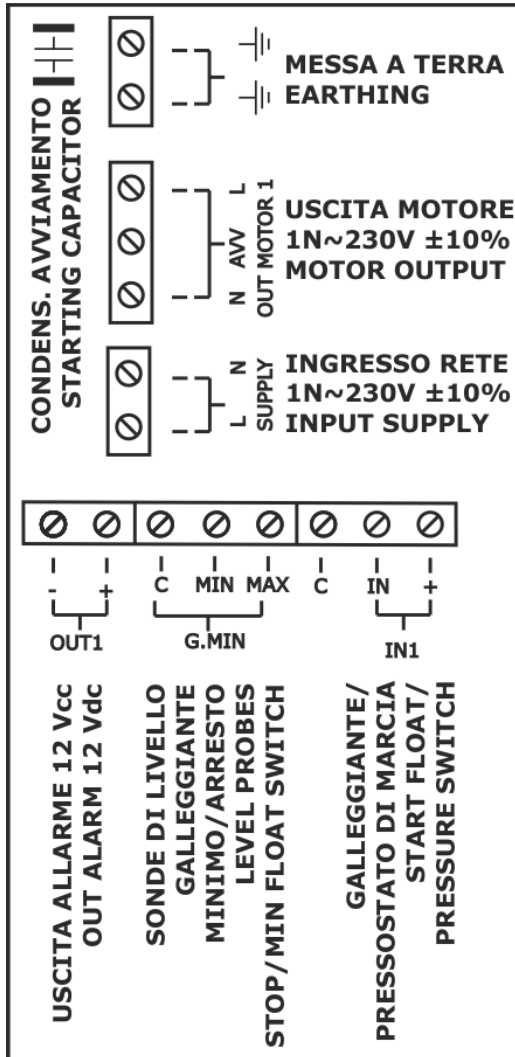


9.2 Board SCOUT 3phase (400V)

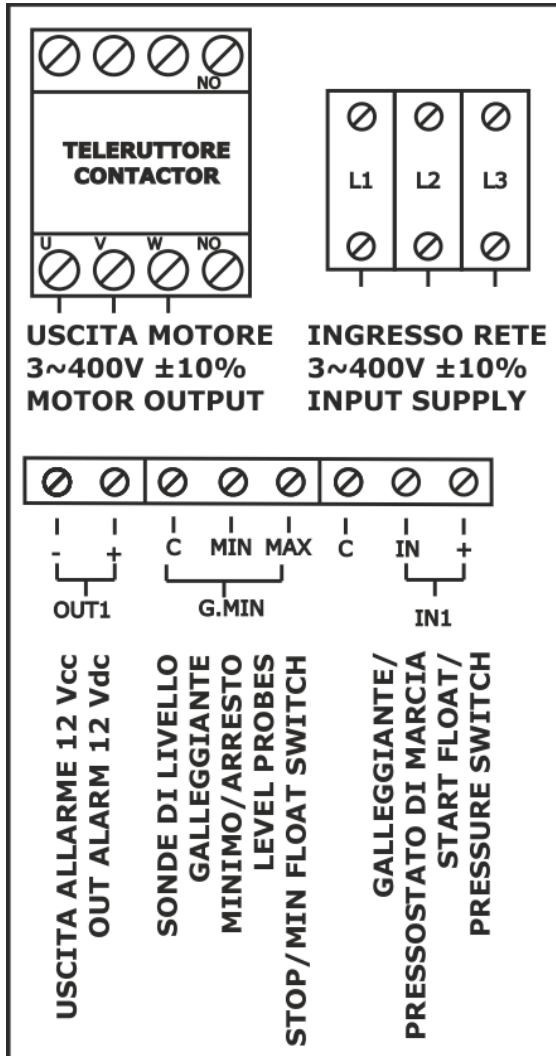


10. STANDARD WIRING DIAGRAM

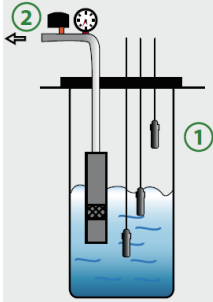
10.1 Wiring diagram SCOUT 1phase (230V)



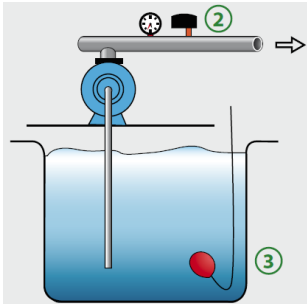
10.2 Wiring diagram SCOUT 3phase (400V)



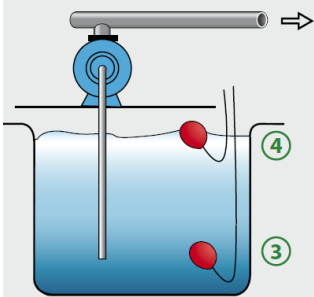
11. APPLICATIONS



- ① LEVEL PROBES
Connect to input C-MIN-MAX
- ② PRESSURE SWITCH
Connect to input IN1 (+ e IN)

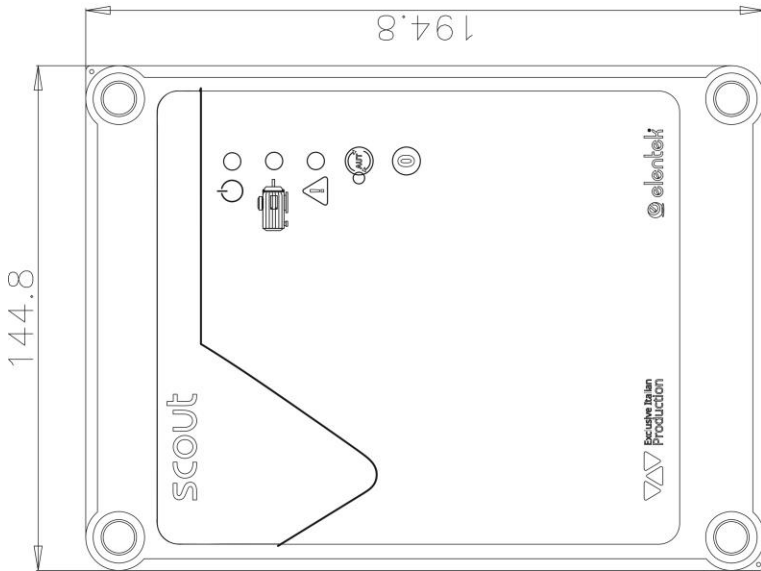


- ② PRESSURE SWITCH
Connect to input IN1 (+ e IN)
- ③ MINIMUM LEVEL FLOAT
Connect to input C-MAX



- ③ MINIMUM LEVEL FLOAT
Connect to input C-MAX
 - ④ GEAR FLOAT
Connect to input IN1 (+ e IN)
-

12. DIMENSIONS



13. TROUBLESHOOTING

PROBLEM	CHECKS/SOLUTIONS
YOU CAN NOT REACH WWW.SCOUT.ORG	<ul style="list-style-type: none">• Check the connection to the Wi-Fi network generated by SCOUT.• Check that the address has been written in the browser's address bar and not in a smartphone search bar.• Check that there is no "http" prefix before the address.
THE PANEL IS POWERED BUT DOES NOT START AUTOMATICALLY.	<ul style="list-style-type: none">• Check that the green light on the automatic button is on, otherwise press the button.• If the red LED flashes 6 times consecutively, it means that the alarm is activated by sequence or phase failure (three-phase version)
THE PANEL IS IN AUTOMATIC MODE BUT THE PUMP IS NOT ACTIVATED.	<ul style="list-style-type: none">• Check that the "+ IN" and "COM-MIN-MAX" inputs are closed.• Check the correct operation of the floats.• Check that the normally open inputs are closed.• Check, in the single-phase model, that there are 230V ~ in the "L" and "N" terminals in the motor output. Check, in the three-phase model, that there are 400V~ in the S and T terminals in the motor output and that the coil of the contactor is powered.• Check the configuration settings.
THE THERMAL PROTECTION OCCURS WHEN STARTING THE PUMP.	<ul style="list-style-type: none">• Check the calibration of the set maximum current to be about 15% higher than the rated motor current.• Check that the activation delay time of the thermal intervention is sufficient in the configuration settings.
THERMAL PROTECTION DOES NOT ACTIVATE.	<ul style="list-style-type: none">• Check the calibration of the set maximum current to be about 15% higher than the rated motor current.
THE ENERGISED OUTPUT DOES NOT SUPPLY THE 12VCC (OUT1).	<ul style="list-style-type: none">• Verify that the level alarm is enabled in the configuration settings.• Verify if there is any alarm active.
THE PANEL IS IN BOARD OVERHEATING ALARM	<ul style="list-style-type: none">• Check the place of installation of the electrical panel.• The panel must be installed in a ventilated area away from sources of heat or flame.

NO LIGHT ON THE
CONTROL PANEL
LIGHTS

- Check the 230V ~ to be supplied to the "SUPPLY" terminals of the panel.

WITH A MULTIPUMP
SYSTEM THE SYSTEM
DOES NOT WORK
CORRECTLY

- Check that all the pump and group numbers have been correctly assigned to all the SCOUT panels (see page 11).
 - Check that all the SCOUT panels used in the system are interconnected with each other through the Wi-Fi network generated by the panel named n. 1 of group 1.
 - The Wi-Fi signal has a range of 100 meters, make sure to be in the field covered by the signal.
-

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