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TRIO PANEL

THREE PHASE / UP TO 5.6KW / 400V

www.nistcontrol.com

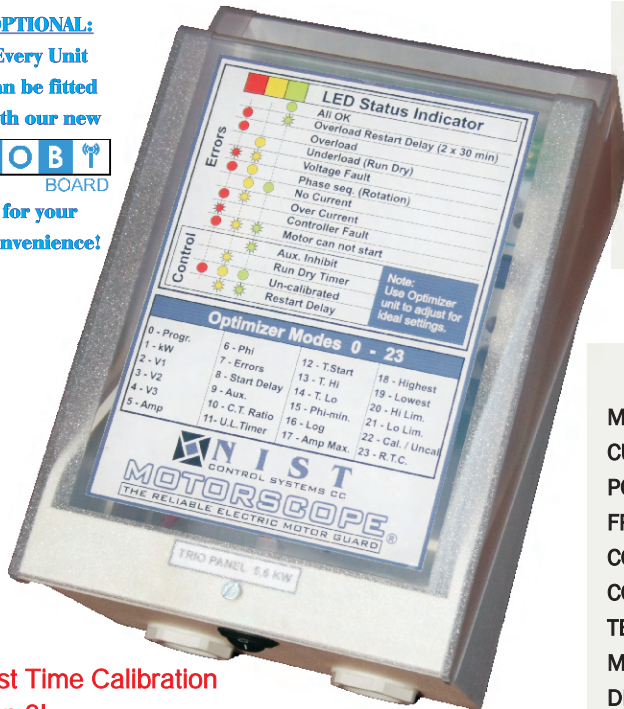
GENERAL INFORMATION

The power used by a working system varies with the application but must stay within safe limits. Power consumption outside of this range indicates a faulty motor or system.

The load or power consumption is measured at the input to the motor. When the calibration button is pressed, with the jumper in place, the MOTORSCOPE defines the safe range for the system. The motor must, at that time, run under normal working conditions. The power supply has to be correct and stable, this is checked continuously. The MOTORSCOPE keeps the motor running as long as the safe limits are not exceeded.

The MOTORSCOPE has a RS232 output for serial communication with our OPTIMIZER or a PC. The OPTIMIZER is used to improve settings, as an installation aid and for more detailed fault indication. The OPTIMIZER can carry the data of the last 43 motor stops to be transferred to a PC. DO NOT MOUNT THE UNIT IN FULL SUN!

OPTIONAL:
Every Unit can be fitted with our new **MOBI BOARD** for your convenience!



AUXILIARY INPUT

LIQUID LEVEL
PRESSURE
TEMPERATURE
EARTH LEAKAGE

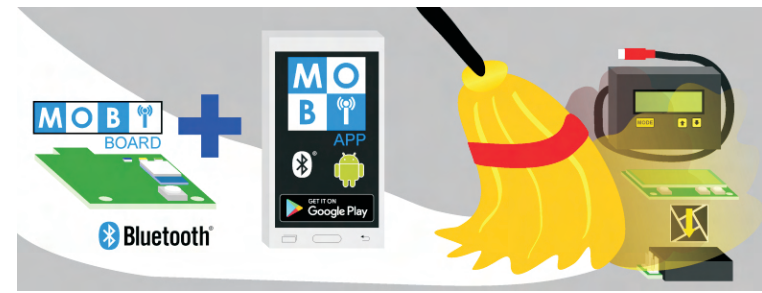
PROTECTION

OVER- and UNDER-LOAD
OVER- and UNDERVOLTAGE
PHASE FAILURE
PHASE SEQUENCE
PHASE IMBALANCE
OVERHEATING (UNCONTROLLED STARTS)
NOT AGAINST LIGHTNING

TECHNICAL SPECS

MOTOR VOLTAGE : L1- L2- L3 = 400V AC
CURRENT RANGE : 1 - 15 Amp Inductive
POWER RANGE : 0.25 - 5.6kW
FREQUENCY RANGE : 40 - 70 Hz
CONSUMPTION : 3VA
COS PHI RANGE : 0 - 1 Inductive
TEMP RANGE : -15 to +70° C
MECHANICAL : Weight ±1.5kg
DIMENSIONS : 158 x 238 x 100mm


Scan This QR Code To Be Directed To Our YouTube Channel To View A Full Demo Video Or Short Tutorial Videos



The combination of the Mobi App and Mobi Board replaces the Optimizer, Downloader and Downloader Windows program.

The Mobi App (for Android™) acts as a Graphical User Interface to the the Mobi Board. The Mobi Board provides a Bluetooth® wireless interface to Motorscope® Products.

HOW TO DOWNLOAD THE APP:

1. Use your Smart Device and go to the App Store / Google Play.
2. Search for "Nist MOBI" .
3. Choose Install --> Accept --> Open
(The Mobi App will open. Choose the Motorscope you wish to view.)
4. All variables will be visible.



Alternatively, scan the appropriate QR code:



HOW TO USE THE APP:

2. Tap on  at the top left corner and choose "Tutorial".

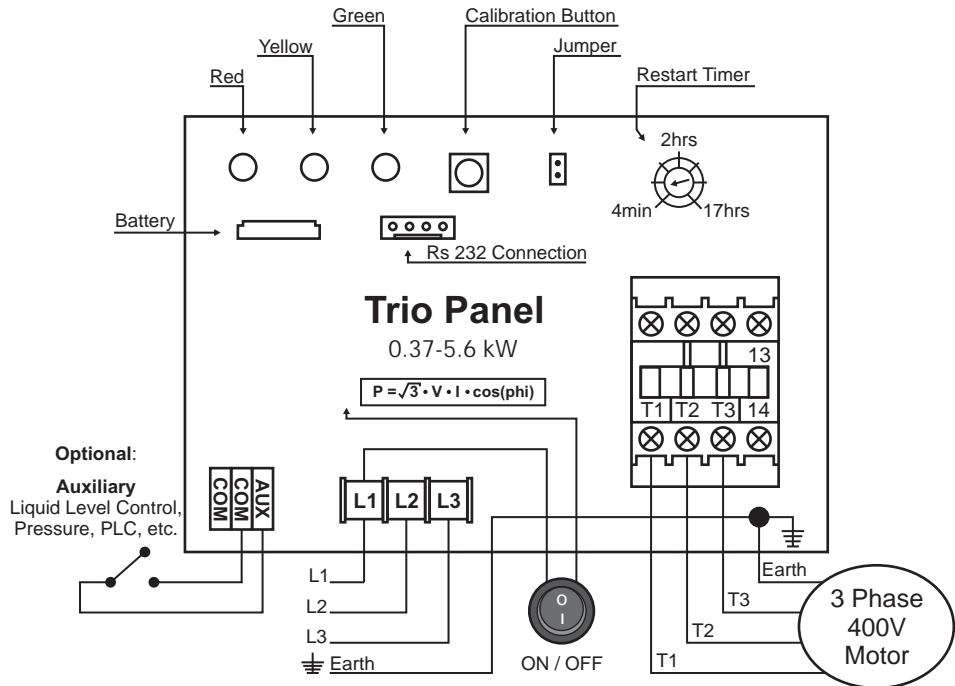
CALIBRATION WITH MOBI BOARD:

ALWAYS START WITH STEPS 1+2, EVEN WHEN ALREADY UNCALIBRATED

1. With the Motorscope switched OFF, make sure the jumper is connected on both pins.
2. Hold in Calibration Button while switching the Motorscope ON. All three LED's must come ON. (Meaning UNCALIBRATED).
3. Connect with the Mobi App to the Motorscope.
4. The Mobi App will show "Uncalibrated".
5. Press "Calibrate" to follow the Calibration Wizzard.

First Time Calibration on p.2!

CONNECTION DIAGRAM



TO START OR STOP, USE THE ON/OFF SWITCH AT THE BOTTOM OF THE ENCLOSURE.

INSTALLATION INSTRUCTIONS

1. Megger the motor and measure the winding resistances.
2. Connect the incoming power (L1, L2, L3 and Earth) to the Trio-panel as indicated on the diagram on the left.
3. Connect the outgoing power to the motor as per diagram (Do not forget to earth the motor as indicated).
4. When all connections are properly fastened, proceed with the First Time Calibration.
5. For 0.37kW motors: L3 should go through the CT twice (in the same direction).

FIRST TIME CALIBRATION WITHOUT MOBI BOARD: *** For MOBI Calibration, please refer to page 1) ***

(Ensure that all wires and the motor's earth are properly connected before **First Time Calibration**)

1. Connect the **jumper** to the two pins as indicated above.
2. Press the **calibration button** while switching the power on at the **ON/OFF** switch on the bottom of the unit.
3. When all the indication lights glow, release the **calibration button** for one second.
4. Press the **calibration button** again until the motor starts (± 3 sec). The calibration will start automatically.
5. First the **RED** and **GREEN** light will glow for 4 seconds, indicating that calibration is in progress.
6. The calibration is completed when only the **GREEN** light glows. Check rotation. Swap 2 wires on T1 & T2 if wrong.
7. After the pump has run for approximately 5 min; press the **calibration button** again until the **RED** and **GREEN** lights glow, to optimize the automatic calibration.
8. Calibration is finished when only the **GREEN** light glows. Place the **jumper** on one pin to keep the set limits and to prevent tampering. Adjust the **Restart Timer** (with a screwdriver) to set the dry-run recovery time.

FINAL STEP: Measure the current in ALL phases to see if it is within the motor specifications. If not, switch the power off & contact our technical department.

POSSIBLE ERRORS AT FIRST TIME CALIBRATION

● LIGHT ON ○ LIGHT OFF ✨ LIGHT FLASHING

NOTE: Start fault finding by checking that all wires and compressed copper connections are properly connected, and that the motor is calibrated at it's normal running condition.

LED Indication:
Red Yellow Green

Reason

Possible cause

Solution

<p>❄️ ❄️ ○ , Red and Yellow lights flashing</p>	<p>Voltage fault (When the supply voltage recovers and stays within the safe limits for 15 min, normal operation resumes.) Under-load / Restart timer</p>	<p>Supply voltage incorrect</p>	<p>Connect Earth(⏚) to COM. Phone your power supply company.</p>
<p>○ ❄️ ○ , Yellow light flashing</p>	<p>Bore-hole dry Broken belt/shaft Over current</p>	<p>Set Restart-timer, for bore-hole to refill. Phone your motor's supplier Current exceeds safe limit.</p>	
<p>● ❄️ ○ , Red constant and Yellow flashing</p>	<p>Current fault</p>		
<p>○ ❄️ ✨ , Yellow and Green lights flashing</p>	<p>Start delay</p>	<p>Too rapid restart</p>	<p>Leave on, unit restarts automatically.</p>
<p>● 🟡 ○ , Red and Yellow constant</p>	<p>Phase rotation error</p>	<p>2 Phase wires interchanged</p>	<p>Interchange 2 phase wires at input power connector.</p>
<p>● ○ ○ , Red constant</p>	<p>Overload</p>	<p>Low voltage at motor Overload</p>	<p>Use a larger diameter cable to motor Check system or contact supplier.</p>