G.MILANI S.A.S.
DI TETTONI FABRIZIO & C.
VIA CAVAGLIETTO, 25
28010 - CAVAGLIO D'AGOGNA NO (ITALIA)

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HOT WATER PRESSURE WASHER EQUIPMENT
TLR FULL

Features:

- Power supply range: 90 to 520Vac 50/60Hz
- For three-phase motors up to 7.5kW – 10Hp
- For single-phase motors up to 5.5kW – 7.5Hp
- Managed by microprocessor
- General On-Off in low voltage
- Hot activation On-Off
- Timed smoke fan control
- Timed diesel solenoid valve control
- Independent timed spark control
- Timed anti-limescale output
- Photocell control
- Thermostat input
- Diesel float input
- Detergent float input
- 4 outputs for LED indicator lights
- Low voltage pressure switch input
- Motor thermal protection with intervention warning
- Power connections via 6.3mm Faston
- Control connections via Phoenix terminal blocks
- Connector for PC interface
- Dimensions: 130 x 100 x 50 (W x L x H)
- Weight: 700g

The TLRFULL is the new electronic board designed to fully manage and control hot water pressure washers. Everything is managed by a microprocessor, which allows for easy and customizable configuration through the TesterTLR software, compatible with Windows Pcs.

Main Functions:

- **Customized Configuration:** The manufacturer can adjust timings, enable/disable functions, and view the hour counters (total and partial) directly from the software.
- **Traceability**: Each board is programmed with a unique serial number, visible through the software, to ensure the traceability of each device.
- **Intelligent Spark Management:** The spark ignition occurs only when needed and turns off when the flame is detected. This increases the igniter's lifespan.
- **Universal Power Supply:** The board operates with voltages ranging from 90 to 520 Vac (50/60 Hz), without the need for adjustments. It automatically detects the voltage and adapts accordingly.
- **Advanced Hour Counter:** It records working hours both for hot and cold conditions, and the number of thermal protection interventions due to overheating. It includes a partial counter that indicates when maintenance is needed. The operator can choose whether to allow the machine to continue working normally or to stop it after exceeding a preset time threshold.
- **Hour Counter Reset:** Through a specific button (which can be enabled/disabled via software), the operator can reset the partial hour counter after performing maintenance.

MADE IN ITALY

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Integrated Safety Features:

- **Motor Thermal Protection:** If the thermal fuse (on the pump motor) is triggered, the board shuts down the machine and signals the anomaly. It also detects when the temperature returns to normal parameters, allowing work to resume.

- **Photocell Control:** Ensures the safety of the operator and the machine. Any attempt to tamper with, malfunction, or break the photocell is detected, blocking the hot section. Only the manufacturer can disable this protection via software.

Customization via TesterTLR:

Thanks to the dedicated connector, it is possible to:

- Customize timings and safety thresholds.
- Reverse or disable input control.
- View the serial number for traceability.

Configurable Functions:

- TotalStop activation time on power-up and when releasing the lance.
- Block for maximum continuous pump operating time.
- Block for inactivity (stand-by).
- Micro-leak detection (false starts), setting the number, minimum duration for recognition, and timing within which they must occur to trigger the alarm intervention.
- Detection of water shortage.
- Detection of flame absence.
- Detection of diesel shortage.
- Smoke fan shutdown timing.
- Ordinary maintenance alert.
- Block for missed maintenance.
- Activation of anti-limescale at regular intervals (counted only when the pump is active).

Hardware Features:
- Power via 6.3mm Faston connectors.
- Control and command via Phoenix terminal blocks.
- Outputs:
  - Pump motor: 3 relays of 40A each.
  - Fan motor: 1 relay of 8+8A (interrupts the 2 phases).
  - Spark: 1 relay of 10A.
  - Diesel solenoid valve: 1 relay of 10A.
  - Anti-limescale: 1 relay of 10A.
- 4 independent outputs for 12Vdc LED indicators.
- Protection: The board is coated with epoxy resin for dust and humidity protection.

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ALARM SIGNAL DESCRIPTION
TLR FULL

LED 1 - Power:

OFF: no power to the equipment
ON: power present
Flashing (0.5s ON / 0.5s OFF): thermal protection triggered
Flashing (2s ON / 0.5s OFF): temperature back to normal

LED 2 - Water:

OFF: normal operation
ON: no water
Flashing (0.5s ON / 0.5s OFF): false starts
2 flashes (1s pause): maximum pump time exceeded
3 flashes (1s pause): maximum stand-by time exceeded
5 flashes (1s pause): no detergent

LED 3 - Diesel:

OFF: normal operation
ON: no diesel
Flashing (0.5s ON / 0.5s OFF): no flame
6 flashes (1s pause): flame sensor error

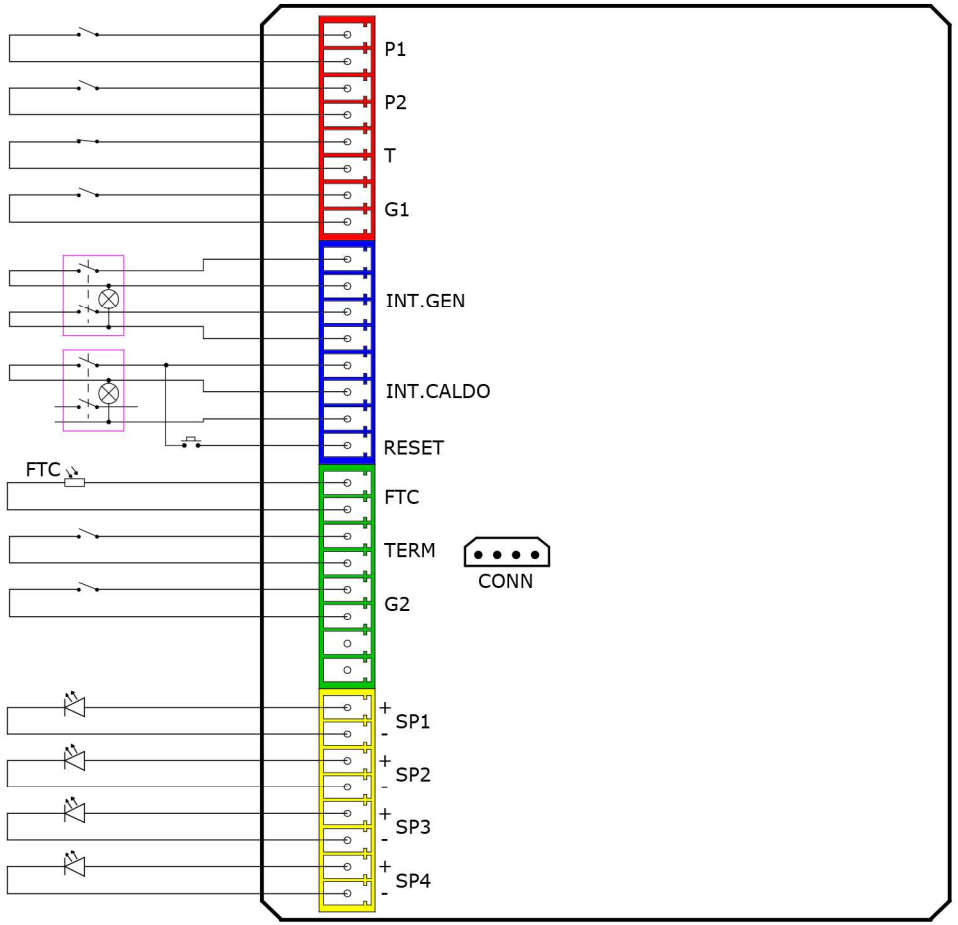
LED 4 - Maintenance:

OFF: normal operation
ON: machine maintenance required

Simultaneous flashing (0.5s ON / 0.5s OFF) of all 4 LEDs:
Machine blocked due to missed maintenance

MADE IN ITALY

P1 - Pressure switch generally mounted on the pump
Pressostato generalmente montato su pompa
P2 - Pressure switch generally mounted on the valve
Pressostato generalmente montato su valvola
T - Thermal control input for the pump motor
Ingresso controllo termica motore pompa
G1 - Diesel float switch input
Ingresso galleggiante gasolio
INT.GEN. - ON/OFF General low voltage switch with indicator
ON/OFF Interruttore in bassa tenesione generale con spia
INT.CALDO - ON/OFF Hot section switch with indicator
ON/OFF Interruttore selezione caldo con spia
RESET - Input for maintenance hour counter reset button
Ingresso per pulsante reset contaore manutenzione
FTC - Photocell sensor input
Ingresso sensore fotocellula
TERM. - Thermostat input
Ingresso termostato
G2 - Detergent float switch input
Ingresso galleggiante detergente
SP1 - 12Vdc output for LED indicator light (Network presence)
Uscita 12Vdc Spia led segnalazione (Presenza rete)
SP2 - 12Vdc output for LED indicator light (Water)
Uscita 12Vdc Spia led segnalazione (Acqua)
SP3 - 12Vdc output for LED indicator light (Diesel)
Uscita 12Vdc Spia led segnalazione (Gasolio)
SP4 - 12Vdc output for LED indicator light (Maintenance)
Uscita 12Vdc Spia led segnalazione (Manutenzione)
CONN - Programming interface connector with PC via TesterTlr software /
Connettore interfaccia programmazione tramite software TesterTlr



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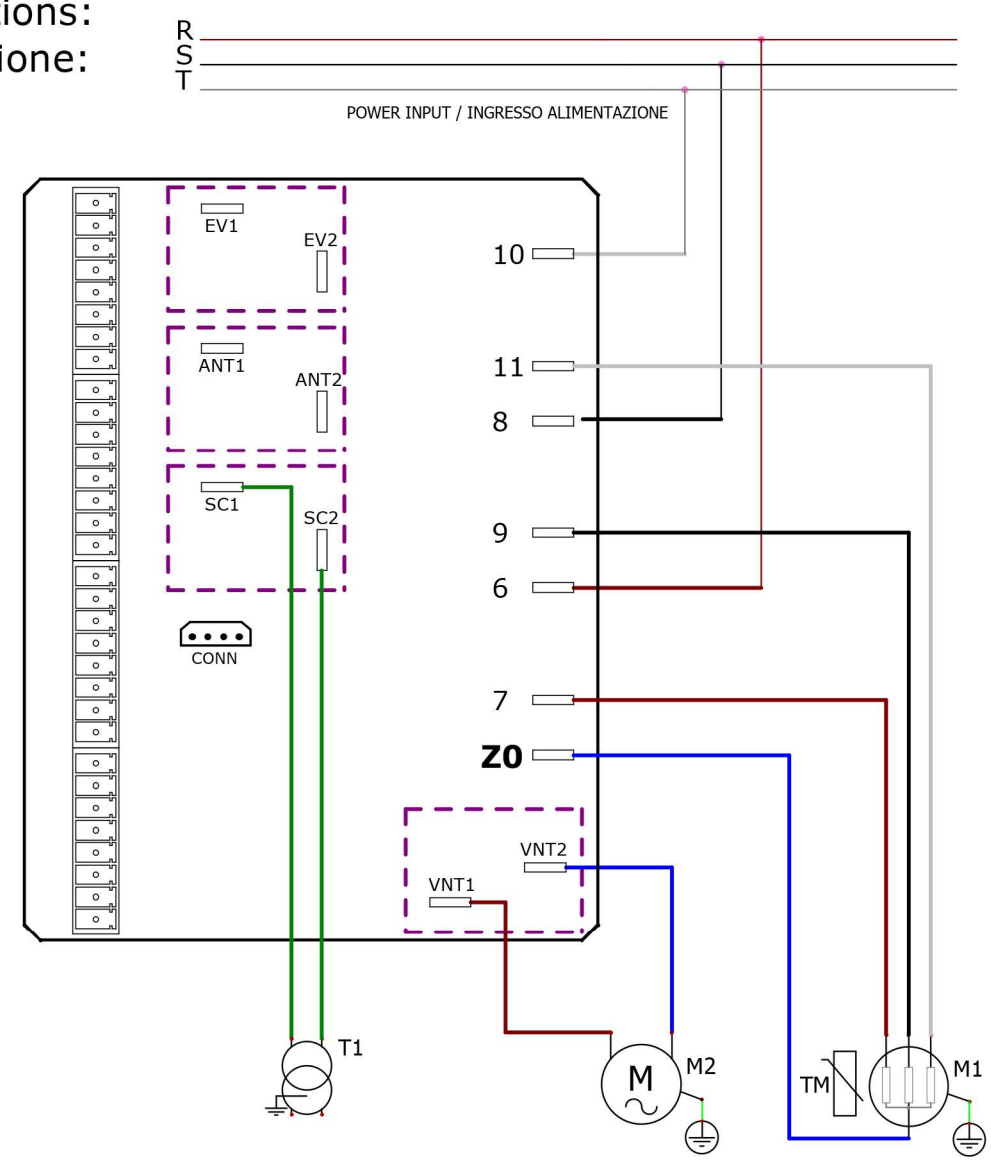
CONTRACT:		DESIGNED G.Milani			

Example of Connections:
Esempio di connessione:



6,8,10 - Power Input
Ingresso alimentazione
7,9,11 - Water pump motor Output
Uscita motore pompa
Do not use 10,11 in single-phase
In monofase non usare 10,11
Z0 - Neutral input for 230Vac, or pump motor star center, connect to 8 in single-phase
Ingresso Neutro per 230Vac, oppure centro stella motore Pompa, unire con 8 in monofase
VNT1,VNT2 - 230Vac output for smoke fan motor
Uscita 230Vac motore ventola fumi
EV1,EV2 - Clean N/O contacts for diesel solenoid valve
Contatti N/O puliti Elettrovalvola gasolio
ANT1,ANT2 - Clean N/O contacts for descaling system
Contatti N/O puliti per anticalcare
SC1,SC2 - 230Vac Output Spark Igniter
Uscita 230Vac accenditore scintilla
CONN - Programming interface connector with PC via TesterTlr software /
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M1 - Water pump outlet / Uscita pompa acqua
To reduce overvoltages and improve contact lifespan, it is recommended to install an RC snubber as close as possible to the motor/pump contacts, following the manufacturer's guidelines /
Per ridurre le sovratensioni e migliorare la durata dei contatti, si consiglia l'installazione di un gruppo RC il più vicino possibile ai contatti del motore/pompa, seguendo le indicazioni del produttore del motore.
TM - motor safety thermal switch / Interruttore termica sicurezza motore
M2 - Smoke fan motor / Motore ventola fumi
T1 - Spark high voltage transformer / Trasformatore alta tensione scintilla

130 x 100 x 50 - Dimensions and clearance measurements for TLRFULL
Dimensioni ingombro TLRFULL

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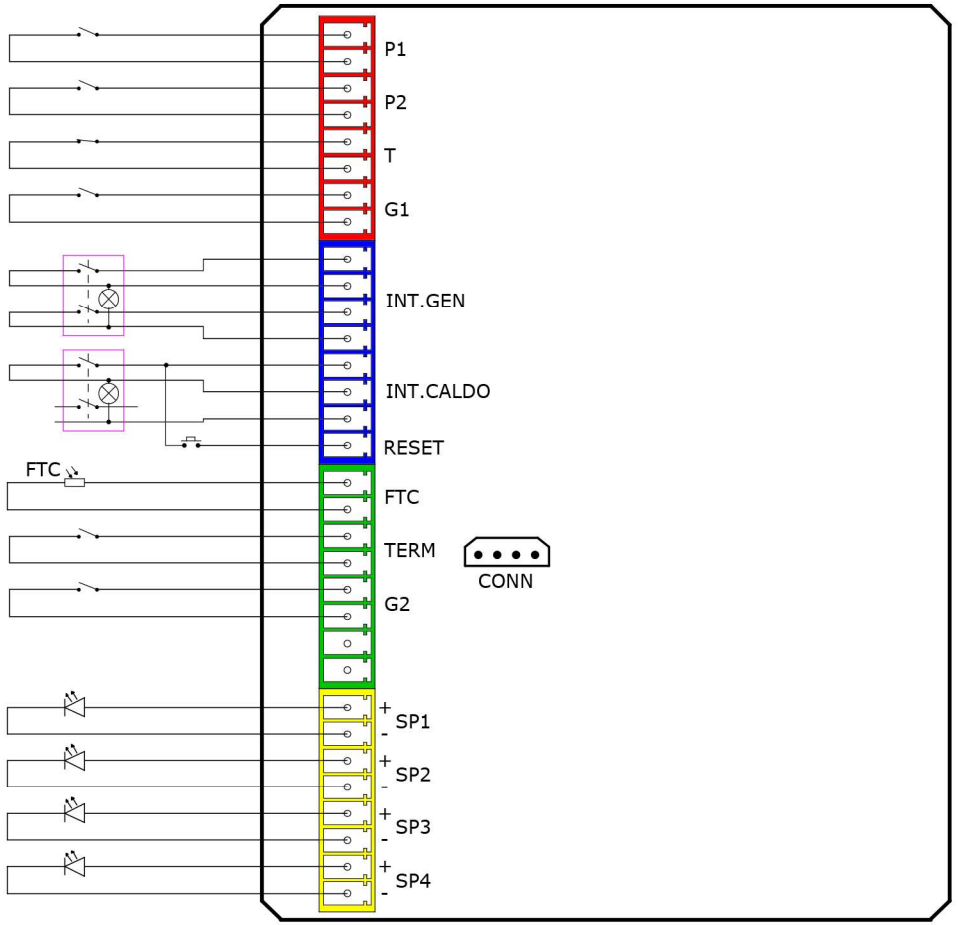

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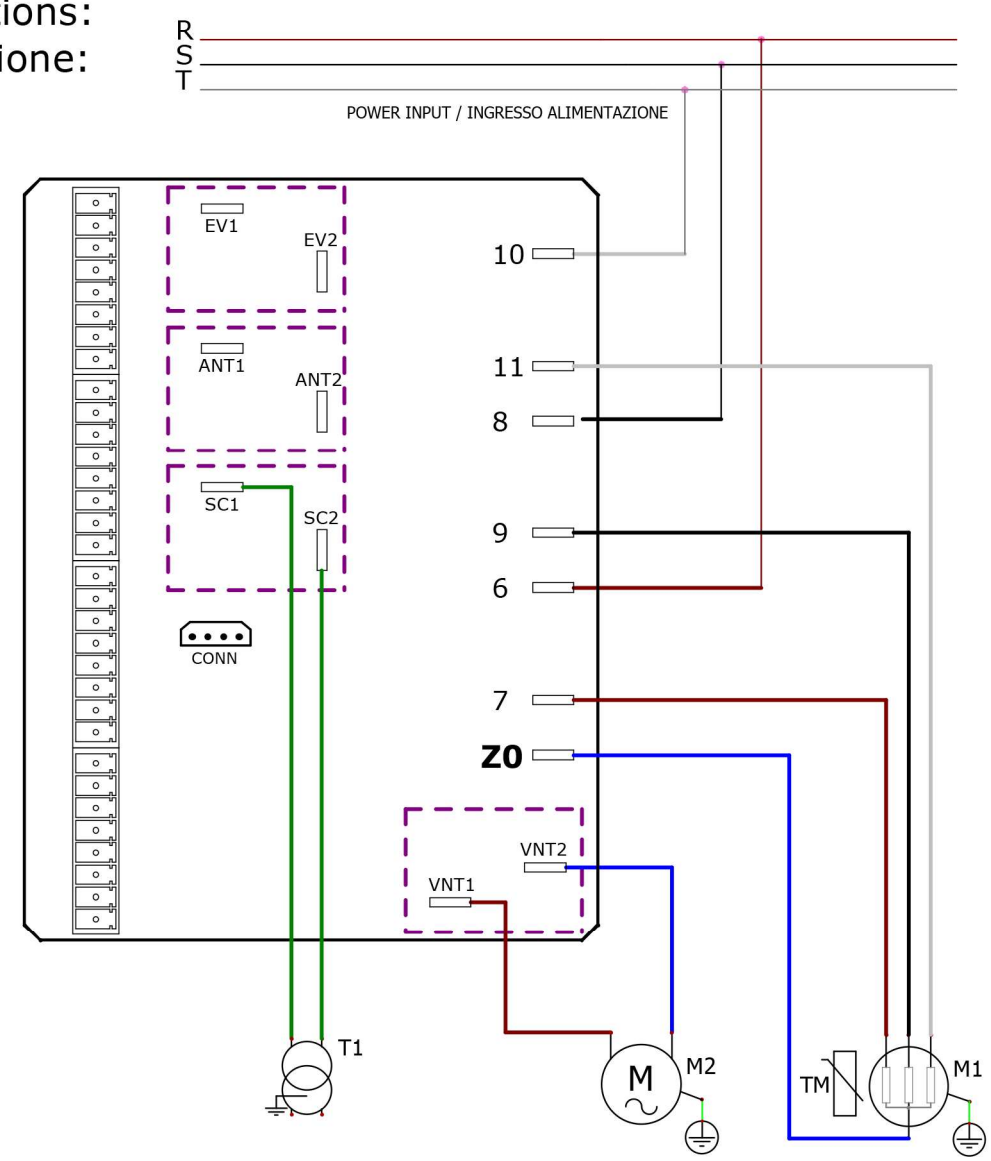

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