USER MANUAL
VERSION 26-09

SOFTWARE FOR TLR CONTROL UNITS

Tester TLR
User manual

Monitoring, input and output testing, parameters and service notes for TLR control units, directly from your PC.



CONTENTS

1. Introduction
2. System requirements
3. Installation
4. First start: language
5. License
6. Communication port setup
7. Connecting the TLR
8. Main menu
9. Monitor
10. Tester
11. Parameters
12. Additional functions
13. Board reset
14. Service notes and Note Archive
15. Messages and troubleshooting
16. Appendix A – TLR models
17. Appendix B – Parameters and default values

English

G.Milani s.a.s. · Made in Italy

1 Introduction

Tester TLR is the PC software that connects to the **TLR** control boards of pressure washers through the communication interface.



Monitor

Real-time status of inputs, outputs and alarms while the machine is running.



Tester

Individual testing of inputs and outputs, hour counter reading, service notes.



Parameters

Reading, editing, saving to file and writing to the board of times and safety settings.



Note Archive

Local history of service notes, filtered by model, serial number and date.

The software automatically recognises the connected TLR model and shows only the inputs, outputs, alarms, counters and parameters available on that model. The complete list for each model is given in Appendix A.

The available functions also depend on the installed license (see chapter 5).

2 System requirements

- PC with Windows operating system.
- One free USB port.
- TLR–PC communication interface with USB cable and test plug.
- FTDI USB-serial drivers for the interface: Windows normally installs them automatically the first time the interface is connected (see chapter 6).
- License code supplied by G.Milani.

3 Installation

1. Run the setup program **Setup TesterTlrPc**. If your antivirus reports the file, allow it to run.
2. Confirm the proposed installation folder (default: `C:\TesterTlr`) or choose another one.
3. If you wish, select the option to create a desktop icon.
4. When the installation is complete, start the **TesterTlrPc** program.

> **Updating to a new version**
> When a new version is installed in the same folder, the note archive (`db.db`) and the license are kept. The language, however, returns to the initial setting: repeat the steps in chapter 4.

4 First start: language

When started for the first time, the program is **in English**. To change the language:

1. In the main menu press **Options**.
2. In the **Language** box select the desired language.
3. Press **Save to file**: the setting is saved and the window closes.

The available languages are Italian, English, French, Spanish and German. The language can be changed at any time in the same way.

The **Options** window also shows the **software version**.

5 License

Without a valid license, the main menu shows `Invalid License` and the **Monitor**, **Tester** and **Parameters** buttons are not visible.

5.1 Entering the license

1. In the main menu press **Options**, then **License**.
2. Paste the code you received into the **Insert new license** field.
3. Press **Validate**. If the code is correct, the message `New License Inserted` appears.
4. Close the window: the name of the license holder appears at the bottom of the main menu.

The **License** window always shows the license holder and the customer the license is enabled for (**All** if it is enabled for all customers).

5.2 Functions by license type

License	Functions
Full	Monitor, Tester, reading and writing of parameters. Intended for manufacturers and authorised installers.
Read-only	Monitor, Tester and reading of parameters. Parameters are visible but cannot be changed: the **Write Parameters** and **Default Param.** buttons and the **Disable** boxes are not shown. Usually supplied to the service network.
Hour counter reset option	Enables the **Partial Resets** button in the Tester to reset the partial hour counters (see 10.6).

The license may also be linked to a **customer code**. On TLR models with a serial number, a TLR assigned to a customer other than the one in the license is recognised but shows `TLR NOT ENABLED` and cannot be used. TLRs with no assigned customer can always be used.

> **Tip**
> The license is stored in the file `Licenza.cfg` in the installation folder. Keep a copy of it, or of the code you received, so that you can enter it again if the software is reinstalled on another PC.

6 Communication port setup

This setup is needed the first time and whenever the interface is connected to a different USB port.

1. Connect the interface USB cable to the PC.
2. In the main menu press **Options**, then **Serial Port**: the **Set Communications** window opens.
3. Under **Connection Type** select **Cable**.
4. Press **Refresh Com** to update the list of available ports.
5. Select the COM port of the interface.
6. Press **Save to file**, then **Exit**.

If the interface port does not appear

- Open Windows **Device Manager** and check that a new port appears under **Ports (COM & LPT)** when the interface is connected: that number is the one to select.
- If the device is not recognised (shown with an exclamation mark or as an unknown device), install the **FTDI VCP** (Virtual COM Port) drivers, available from the manufacturer's website **ftdichip.com**, and reconnect the interface.
- If the interface is connected to another USB port, Windows may assign a different COM port number: in this case repeat the procedure.

7 Connecting the TLR

> **⚠ Important – Safety**
> Do not connect or disconnect the test plug while the equipment is powered: this may damage the TLR board, the interface or the PC.

1. With the machine switched off, connect the interface test plug to the TLR.
2. Switch on the machine.
3. Open one of the **Monitor**, **Tester** or **Parameters** windows.

The TLR is recognised automatically: the top of the windows shows the **model** (for example `TLR FULL`) and, on models that have one, the **serial number** (for example `Serial Number: A00001234`, where the initial letter identifies the customer).

If the TLR does not respond for more than about 3 seconds, the message `Communication Error` is shown instead of the data; communication resumes automatically as soon as the connection is restored. For other messages see chapter 15.

8 Main menu

Button	Function
Monitor	Real-time display of the machine status (chapter 9).
Tester	Testing of inputs and outputs, hour counter reading, service notes (chapter 10).
Parameters	Reading, editing and writing of parameters (chapter 11).
Options	Language, communication port, license and software version.
Archivio Note	Viewing of saved service notes (chapter 14).
Close	Closes the program.

The **Monitor**, **Tester** and **Parameters** windows have buttons to switch directly from one to another without returning to the main menu. Each window remembers whether it was maximised and reopens the same way.

9 Monitor

The Monitor shows the machine status in real time **without interfering with its operation**: the machine works normally and the software only displays its status. It is the right tool to check how the machine behaves during use (for example when operating the lance).

- **Input**: status of each input (lamp on = input active).
- **Output**: status of each output (pump, fan, diesel, indicator lamps…).
- **Alarms**: alarms active on the board.
- **Flame Sensor**: value read by the photocell, on models equipped with one.

Status changes are displayed with a delay of about 1 second. Only the elements present on the connected model are shown (Appendix A).

The **Reset** button restarts the board (chapter 13).

10 Tester

When the Tester window is opened, the board enters **test mode**: normal machine operation is suspended and the outputs are controlled only by the PC. When the window is closed (or when switching to Monitor or Parameters), the board leaves test mode and returns to normal operation.

> **⚠ Caution**
> In test mode the outputs actually drive the machine components (pump, fan, diesel solenoid valve, ignition…). Before activating them, make sure the machine is in safe conditions, for example that the water supply is connected before activating the pump.

10.1 Input

The lamps show the status of the inputs (lamp on = input active). By operating the machine components (pressure switches, thermostat, reset button…) you can check that the board receives their signal correctly. On models with a photocell, the **Flame Sensor** value is also shown.

10.2 Output

Each output has a button that shows its status (**ON** / **OFF**) and switches it on or off. If the board does not confirm the command, the message `Output Command Error` appears and the button returns to its previous state.

10.3 Bistable mode

- **Not selected** (initial setting): the output stays active only while the button is held down.
- **Selected**: one click switches the output on, a second click switches it off.

10.4 Active Pump Mode

Available on the models indicated in Appendix A. When selected, some outputs are activated together with the pump:

- activating **Fan** or **Anti-limescale** also activates the **Pump**;
- activating **Diesel fuel** also activates **Pump** and **Fan**.

This mode is required on machines where the pump motor acts as the neutral for the 230 Vac accessories: without the pump active, these accessories would not be powered.

10.5 Counter

The **Counter** panel shows the hour counters and counters available on the connected model (pump working hours in hot and cold mode, total and partial, hours with no water, number of resets, thermal cut-out trips). The values are read again automatically every 10 seconds; while reading, the symbol `?` may appear briefly.

10.6 Partial Resets

The **Partial Resets** button is available only if the license allows it. It resets the **partial** hour counters; the total hour counters are not changed and the number-of-resets counter is not incremented.

1. Press **Partial Resets** and confirm the question `Partial Resets?` .
2. When finished, `Partial reset performed correctly` appears and the counters are read again.

10.7 Nota

On models with a serial number, the **Nota** button creates a service note for the connected TLR (chapter 14).

11 Parameters

The Parameters window lets you read the times and settings stored in the board, change them, save them to a file and write them to the board. Only the parameters available on the connected model are shown.

11.1 Reading the parameters

1. With the TLR connected, open the **Parameters** window.

2. Press **Read Parameters**.
3. When finished, `Parameters Received Correctly` appears and the list of parameters and the management buttons are displayed.

The parameter list is displayed only after a reading. In case of error, `Parameters Received NOT Correctly` appears: check the connection and repeat the reading.

11.2 Editing

- Each parameter accepts values from **1 to 9999**, in the unit shown in its name (seconds, minutes, hours or tenths of a second). For example, 9999 seconds are about 166 minutes and 9999 minutes about 166 hours.
- The **Disable** box next to a parameter disables the corresponding function: the value is no longer shown and 0 is written to the board.
- For parameter 08 the box is called **Esclude FTC** and excludes the photocell (flame) control.

To disable…	select Disable on parameter
the flame control	08 – No flame timeout (sec.) (box **Esclude FTC**)
the false start control	05 – Number of false starts
the maximum pump on time	03 – Maximum pump on time (min.)
the maximum stand-by time	04 – Maximum stand-by time (min.)

11.3 Writing to the board

1. Press **Write Parameters** and confirm `Send Parameters to TLR?`.
2. The software sends the parameters and the additional functions, then automatically resets the board to make them active.
3. When finished, `Parameters Sent Correctly` appears.

If `Parameters Sent NOT Correctly` appears, check the connection and repeat the writing. Do not disconnect the TLR while writing.

11.4 Configuration files and default values

Button	Function
Save to file	Saves the displayed values (parameters and additional functions) to an `.ini` file, for example to reuse the same configuration on other machines.
Read from file	Loads into the window the values of a previously saved `.ini` file. The name of the loaded file is shown in the window.
Default Param.	Loads into the window the factory values for the connected model (Appendix B).
Additional funct.	Opens the additional settings of the model (chapter 12).

> **Note**
> **Read from file** and **Default Param.** only change the displayed values. To transfer them to the board, press **Write Parameters** afterwards.

11.5 Parameter list

Depending on the connected model, some or all of the following parameters appear. For the parameters available on each model and their default values see Appendices A and B.

No.	Parameter (as on screen)	Description
01	Total stop time (sec.)	Pump total stop time (first start without pressing the lance).
02	Pump on time after lance release (sec.)	Time the pump keeps running after the lance is released.
03	Maximum pump on time (min.)	Maximum continuous pump running time; when exceeded the machine locks (alarm `Pump Timeout`).
04	Maximum stand-by time (min.)	Maximum idle time; when exceeded the machine locks (alarm `Stopped Timeout`).
05	Number of false starts	Number of false starts allowed before the lock (alarm `False Departures`).
06	False starts time (sec.)	Time interval in which false starts are counted.
07	No water timeout (sec.)	Time after which lack of water triggers the alarm `No Water`.
08	No flame timeout (sec.)	Time after which lack of flame triggers the alarm `No Flame`. With **Esclude FTC** the photocell control is excluded.
09	No diesel fuel timeout (sec.)	Time after which lack of diesel triggers the alarm `No Diesel`.
10	Ignition delay time ev. diesel oil (sec.)	Opening delay of the diesel solenoid valve when the burner is ignited.
11	Smoke fan shutdown time (sec.)	Delayed switch-off time of the smoke fan.
13	Minimum oressure time false start (dec.)	Minimum pressure duration (tenths of a second) for a start not to be counted as a false start.
14	Maintenance warning time (hours)	Working hours after which maintenance is signalled (alarm `Hour counter block (Notify)`).
15	Block time for lack of maintenance (hours)	Working hours after which the machine locks because maintenance was not carried out (alarm `Hour counter block (Block)`).
16	Antiscale activation time (min.)	Interval between two activations of the anti-limescale.
17	Anti-scale duration time (sec.)	Duration of each anti-limescale activation.

11.6 Notes on maintenance times (parameters 14 and 15)

- Times 14 and 15 are independent.
- Enter the desired values in both fields (for example 100 hours for the warning and 500 hours for the lock).
- If the two values are the same, the total lock prevails.

12 Additional functions

The **Additional funct.** button in the Parameters window opens the additional settings of the connected model, for example the inversion of an input's logic. They are available only on the models that provide them (Appendix A).

1. Read the parameters (11.1), then press **Additional funct.**.
2. Select or clear the desired boxes and close the window with **Close**.
3. Press **Write Parameters**: the additional functions are written to the board together with the parameters.

Input / function	Box	Effect when selected
Pressure Switch Pump	Inverted	Inverts the input logic (normally open / normally closed contact).
Pressure switch Valve	Inverted	Inverts the input logic.
Thermostat	Inverted	Inverts the input logic.
Lack of Diesel	Inverted	Inverts the input logic.
Thermic	Inverted	Inverts the logic of the thermal cut-out input.
Thermic	Disabled	Excludes the thermal cut-out control.
Detergent Level	Inverted	Inverts the input logic.
Auxiliary input	Inverted	Inverts the logic of the auxiliary input. On the TLR11 CNT it changes the behaviour of the **Pressure Lance Switch Open** input.
Reset Button	Disabled	Disables the reset button on the machine.
Output Light Count Hours	Count Hours	Uses the indicator lamp output to signal the maintenance hour counter.
Pressure Lance Switch Open	Inverted	Inverts the input logic.

With a read-only license the boxes are visible but cannot be changed.

13 Board reset

The **Reset** button, available in the Monitor, Tester and Parameters windows, restarts the TLR board without switching off its power. It is used, for example, to unlock the board after a lock caused by a safety device.

1. Press **Reset** and confirm `Restore TLR operation?` .
2. When finished, `Reset Ok` appears. In the Tester, test mode restarts automatically.

If `Reset Failed` appears, check the connection; if necessary switch the machine off and on again.

14 Service notes and Note Archive

14.1 Creating a note

1. With the TLR connected, open the **Tester** and press **Nota** (available on models with a serial number).
2. In the **Edit Note** window, the model, the serial number and the counter values at the time of the note are filled in automatically.
3. Fill in the **Title** and the text of the **Note** (description of the work, remarks...).
4. Press **Confirm** to save, or **Cancel** to exit without saving.

Pressing **Nota** again on the same TLR, without closing the program, reopens the same note so you can complete it. Connecting a different TLR creates a new note.

14.2 Note Archive

From the main menu, the **Archivio Note** button opens the **Note Archive** window, which lists the saved notes with **TLR Type**, **Serial Number**, **Date\Time** and **Title**. The list can be filtered and sorted with:

- **TLR Type Filter**: only the notes of the selected model;
- **Serial Number Filter**: only the notes of the given serial number;
- **From** / **To**: only the notes of the given period (dates in dd/mm/yy format);
- **Sort**: by date and time or by serial number.

Double-click a note to open it for viewing or editing. From this window the note can also be deleted with **Delete Note** (confirmation is requested).

> **Archive backup**
> The notes are stored in the file `db.db` in the installation folder. To avoid losing them, for example when replacing the PC, keep a copy of it regularly.

15 Messages and troubleshooting

Message	Cause	What to do
`Communication Error`	The TLR does not respond: not powered, test plug disconnected, interface disconnected or wrong COM port.	Check power and connections; check the port in **Options → Serial Port** (chapter 6).
`TLR NOT RECOGNIZED`	The connected model is not supported by this software version.	Install the latest version of the software.
`TLR NOT ENABLED`	The TLR is assigned to a customer other than the one in the license.	Contact G.Milani.
`Invalid License`	License missing or wrong code.	Enter the code you received (chapter 5).
`Parameters Received NOT Correctly`	Communication interrupted while reading.	Check the connection and repeat **Read Parameters**.

Message	Cause	What to do
`Parameters Sent NOT Correctly`	Communication interrupted while writing.	Check the connection and repeat **Write Parameters**.
`Output Command Error`	The board did not confirm an output command in the Tester.	Check the connection and repeat the command.
`Reset Failed`	The board did not respond to the reset command.	Check the connection; if necessary switch the machine off and on again.
`Partial Reset FAILED`	The board did not confirm the reset of the partial hour counters.	Check the connection and try again.
`FILE LINGUA NON TROVATO`	The files of the `def` folder are missing from the installation folder.	Reinstall the software.
`Error Open DB!`	The note archive cannot be accessed.	Check that the file `db.db` is not open in another program; if necessary reinstall the software (the existing archive is not overwritten).

A Appendix A – TLR models

For each model, the elements displayed by the software are listed with the names shown on screen. Next to each parameter is the default value loaded with **Default Param.**; *Disab.* indicates a parameter disabled by factory default.

Inputs · Outputs · Alarms · Analogue input · Counters · Additional functions

TLR4

Inputs	Pressure Switch Pump · Pressure Switch Valve · Thermostat · Flame
Outputs	Pump · Diesel fuel · Led 1
Alarms	Stopped · Pump Timeout · No Water · False Departures · Stopped Timeout · No Flame · Sensor Error
Analogue input	Flame Sensor
Counters	Hot Pump On Counter (Total) · Pump On Cold Counter (Total)
Parameters	**01** Total stop time (sec.) (default 8) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (default 60) **04** Maximum stand-by time (min.) (default 60) **05** Number of false starts (default 10) **06** False starts time (sec.) (default 10) **07** No water timeout (sec.) (default 12) **08** No flame timeout (sec.) (default 5) **10** Ignition delay time ev. diesel oil (sec.) (default 3)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Thermostat – Inverted
Active Pump Mode	**Yes**
Note function and Serial Number	No

TLR4 FTC STT

Inputs	Pressure Switch Pump · Pressure Switch Valve · Thermostat · Flame
Outputs	Pump · Diesel fuel · Led 1
Alarms	Stopped · Pump Timeout · Stopped Timeout · No Flame · Sensor Error
Analogue input	Flame Sensor
Counters	Hot Pump On Counter (Total) · Pump On Cold Counter (Total)
Parameters	**01** Total stop time (sec.) (default 8) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 60) **08** No flame timeout (sec.) (default 5) **10** Ignition delay time ev. diesel oil (sec.) (default 3)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Thermostat – Inverted
Active Pump Mode	**Yes**
Note function and Serial Number	No

TLR 15/20

Inputs	Pressure Switch Pump
Outputs	Pump · Led 1
Alarms	Stopped · Pump Timeout · False Departures · Stopped Timeout · Hour counter block (Notify) · Hour counter block (Block)
Counters	Pump On Cold Counter (Total) · Pump On Cold Counter (Partial) · Reset Number Counter
Parameters	**01** Total stop time (sec.) (default 15) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 20) **05** Number of false starts (default 5) **06** False starts time (sec.) (default 30) **13** Minimum oressure time false start (dec.) (default 1) **14** Maintenance warning time (hours) (default 300) **15** Block time for lack of maintenance (hours) (default 500)
Additional functions	Pressure Switch Pump – Inverted · Output Light Count Hours – Count Hours
Active Pump Mode	No
Note function and Serial Number	**Yes**

TLR FULL

Inputs	Warm Selection · Pressure Switch Pump · Pressure Switch Valve · Thermostat · Lack of Diesel · Flame · Thermic · Reset Button · Detergent Level
Outputs	Pump · Fan · Diesel fuel · Led 1 · Led 2 · Led 3 · Led 4 · Spark · Anti-limescale
Alarms	Stopped · Pump Timeout · No Water · False Departures · Stopped Timeout · No Flame · No Diesel · Sensor Error · Thermic · Hour counter block (Notify) · Hour counter block (Block) · Lack of detergent
Analogue input	Flame Sensor
Counters	Hot Pump On Counter (Total) · Pump On Cold Counter (Total) · Hot Pump On Counter (Partial) · Pump On Cold Counter (Partial) · Pump On Counter No Water · Reset Number Counter · Thermal Intervention Counter
Parameters	**01** Total stop time (sec.) (default 15) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 20) **05** Number of false starts (default 5) **06** False starts time (sec.) (default 30) **07** No water timeout (sec.) (default 12) **08** No flame timeout (sec.) (default 5) **09** No diesel fuel timeout (sec.) (default 10) **10** Ignition delay time ev. diesel oil (sec.) (default 3) **11** Smoke fan shutdown time (sec.) (default 20) **13** Minimum oressure time false start (dec.) (default 1) **14** Maintenance warning time (hours) (default 300) **15** Block time for lack of maintenance (hours) (default 500) **16** Antiscale activation time (min.) (default 25) **17** Anti-scale duration time (sec.) (default 3)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Thermostat – Inverted · Lack of Diesel – Inverted · Thermic – Inverted · Thermic – Disabled · Detergent Level – Inverted · Reset Button – Disabled
Active Pump Mode	**Yes**
Note function and Serial Number	**Yes**

TLR11 CNT

Inputs	Pressure Switch Pump · Pressure Switch Valve · Pressure Lance Switch Open
Outputs	Pump · Diesel fuel · Led 1
Alarms	Stopped · Pump Timeout · No Water · False Departures · Stopped Timeout · Hour counter block (Notify) · Hour counter block (Block)
Counters	Hot Pump On Counter (Total) · Hot Pump On Counter (Partial) · Pump On Counter No Water · Reset Number Counter
Parameters	**01** Total stop time (sec.) (default 15) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 20) **05** Number of false starts (default 5) **06** False starts time (sec.) (default 30) **07** No water timeout (sec.) (default 12) **10** Ignition delay time ev. diesel oil (sec.) (default 3) **13** Minimum oressure time false start (dec.) (default 1) **14** Maintenance warning time (hours) (default 300) **15** Block time for lack of maintenance (hours) (default 500)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Auxiliary input – Inverted · Pressure Lance Switch Open – Inverted
Active Pump Mode	**Yes**
Note function and Serial Number	**Yes**

TLR4 FTC

Inputs	Pressure Switch Pump · Pressure Switch Valve · Thermostat · Flame
Outputs	Pump · Diesel fuel · Led 1
Alarms	Stopped · Pump Timeout · No Water · False Departures · Stopped Timeout · No Flame · Sensor Error · Hour counter block (Notify) · Hour counter block (Block)
Analogue input	Flame Sensor
Counters	Hot Pump On Counter (Total) · Pump On Cold Counter (Total) · Hot Pump On Counter (Partial) · Pump On Cold Counter (Partial) · Pump On Counter No Water · Reset Number Counter
Parameters	**01** Total stop time (sec.) (default 15) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 20) **05** Number of false starts (default 5) **06** False starts time (sec.) (default 30) **07** No water timeout (sec.) (default 12) **08** No flame timeout (sec.) (default 5) **10** Ignition delay time ev. diesel oil (sec.) (default 3) **13** Minimum oressure time false start (dec.) (default 1) **14** Maintenance warning time (hours) (default 300) **15** Block time for lack of maintenance (hours) (default 500)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Thermostat – Inverted
Active Pump Mode	**Yes**
Note function and Serial Number	**Yes**

TLR EC

Inputs	Pressure Switch Pump · Pressure Switch Valve · Thermic · Reset Button
Outputs	Pump · Led 1 · Led 2
Alarms	Stopped · Pump Timeout · No Water · False Departures · Stopped Timeout · Thermic · Hour counter block (Notify) · Hour counter block (Block) · Lack of detergent
Counters	Pump On Cold Counter (Total) · Pump On Cold Counter (Partial) · Pump On Counter No Water · Reset Number Counter · Thermal Intervention Counter
Parameters	**01** Total stop time (sec.) (default 15) **02** Pump on time after lance release (sec.) (default 12) **03** Maximum pump on time (min.) (Disab.) **04** Maximum stand-by time (min.) (default 20) **05** Number of false starts (default 5) **06** False starts time (sec.) (default 30) **07** No water timeout (sec.) (default 12) **13** Minimum oressure time false start (dec.) (default 1) **14** Maintenance warning time (hours) (default 300) **15** Block time for lack of maintenance (hours) (default 500)
Additional functions	Pressure Switch Pump – Inverted · Pressure switch Valve – Inverted · Thermic – Inverted · Thermic – Disabled · Reset Button – Disabled
Active Pump Mode	**Yes**
Note function and Serial Number	**Yes**

B Appendix B – Parameters and default values

For each model, the table shows the available parameters and the default value loaded with **Default Param.**. The symbol – indicates a parameter not present on the model; *Disab.* indicates a parameter present but disabled by factory default.

Parameter	TLR4	TLR4 FTC STT	TLR 15/20	TLR FULL	TLR11 CNT	TLR4 FTC	TLR EC
01 Total stop time (sec.)	8	8	15	15	15	15	15
02 Pump on time after lance release (sec.)	12	12	12	12	12	12	12
03 Maximum pump on time (min.)	60	*Disab.*	*Disab.*	*Disab.*	*Disab.*	*Disab.*	*Disab.*
04 Maximum stand-by time (min.)	60	60	20	20	20	20	20
05 Number of false starts	10	–	5	5	5	5	5
06 False starts time (sec.)	10	–	30	30	30	30	30
07 No water timeout (sec.)	12	–	–	12	12	12	12
08 No flame timeout (sec.)	5	5	–	5	–	5	–
09 No diesel fuel timeout (sec.)	–	–	–	10	–	–	–
10 Ignition delay time ev. diesel oil (sec.)	3	3	–	3	3	3	–
11 Smoke fan shutdown time (sec.)	–	–	–	20	–	–	–
13 Minimum oressure time false start (dec.)	–	–	1	1	1	1	1
14 Maintenance warning time (hours)	–	–	300	300	300	300	300
15 Block time for lack of maintenance (hours)	–	–	500	500	500	500	500
16 Antiscale activation time (min.)	–	–	–	25	–	–	–
17 Anti-scale duration time (sec.)	–	–	–	3	–	–	–

Contacts and support

G.Milani s.a.s. di Tettoni Fabrizio & C.

Via Cavaglietto 25 · 28010 Cavaglio d'Agogna (NO) · Italy

Tel. **+39 0322 80 68 20** · **info@gmilani.it** · Technical department **ufficiotecnico@gmilani.it**

Websites **www.gmilani.it** · **gmilani.cloud**

PEC g.milanisas@pec.it · VAT IT02626650036 · SDI W7YVJK9

Tester TLR
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