

Check List Testomat® EVO

Dear customers and service technicians,

The following checklist is no substitute for your expertise and experience applied to the process of troubleshooting. It should assist you and facilitate swifter and more systematic detection and logging of errors. No claim of completeness may be inferred from this list. We are grateful to receive supplementary feedback at any time. General operating instructions are included on the rear of this checklist.

Your device manufacturer

Block 1 / System and device data

	Testomat® EVO TH				
System type	Device type	Device number	Indicator type	Software version	Pump No.

Block 2 / error message and error history Please place a cross as appropriate (X)

What does the error history of the device indicate?				(Text of the error history)
Does an error message appear on the display? e.g. "Water low" etc. (See instruction manual "Error messages / Help dealing with faults")	Yes	No		(Text of the error message)

Block 3 / Visual and functional check Please place a cross as appropriate (X) where applicable values / comments

Is the mains voltage for the device in accordance with the type plate?	Yes	No	
Does an indicator appear on the display?	Yes	No	
Do the three green LEDs light up to indicate the stresses on the motherboard?	Yes	No	
Do LEDs flash on the control card?	Yes	No	Which LED?
Are the measuring chamber and hoses carrying water leakproof?	Yes	No	
Is the measuring chamber clean and free of film?	Yes	No	
Has the correct indicator type been programmed in? (TH 2025 => 0.25 up to 2.5 °dH = Factory default)	Yes	No	Type:
Is the water pressure in the stipulated range (400 ml/min)? (See type plate of the device)	Yes	No	System pressure:
Is the outflow over the entire length laid to ensure no back pressure? (No "siphon effect"!!)	Yes	No	
Is the drain hose free? (Micro-organisms due to contamination etc.)	Yes	No	
Is the purge cycle / rinsing water quantity set such that Fresh water can always be measured?	Yes	No	Purge cycle:
Are the hoses to the dosing pump free of air bubbles? (Operate pump by hand / Perform manual analysis)	Yes	No	

PERFORM A (MANUAL) ANALYSIS

Does the water level rise uniformly when filling the measuring chamber up to the overflow hole (5 mm under the top edge of the measuring chamber)? (If no: check water pressure, water flow/flow regulator)	Yes	No	
Does the indicator pump dose when an analysis is triggered? (LED on the pump comes on!)	Yes	No	Number of dosing strokes:
After the dosing process, is the indicator correctly mixed with the water in the measuring chamber? Check the stirrer! => See maintenance manual "Alignment operation"	Yes	No	

PROGRAMMING DATA / OPERATING CONDITIONS

Are the configured limit values correct? (Within the measurement range/corresponding to the performance limit of the system?)	Yes	No	Limit values:
Is the Testomat continually supplied with mains voltage – except during maintenance work/emergency cases? (Intermediate switching off only with "PAUSE" button or "Stop"! input)	Yes	No	

More details of error messages and possible causes of errors can be found in the **operating instructions** under "Error messages / Help dealing with faults".

Further functional tests (e.g. overflow detection and gain adjustment => "Special function alignment operation") and service indications can be found in the **maintenance manual**.

After performing these tests, experience supports the assumption that the checked functions (Block 3) work flawlessly if the questions are answered with "Yes". We recommend carrying out these tests systematically during each inspection or any disruptions which arise.

Device settings for Testomat® EVO TH

Caution!

Your settings may be deleted in the event of a repair. Accordingly, export your device settings onto an SD card before sending the device for repair to our service team. The settings can be re-imported after the repair.

Menu	Setting
MODE OF OPERATION	
Time controlled	
Volume interval	
Volume and time	
INTERVAL	
Time	
Volume	
BOTTLE SIZE	
500ml bottle	
100ml bottle	
TYPE OF REAGENT	
Type TH2005	
Type TH2025	
Type TH2100	
Type TH2250	
DISPLAY OF UNIT	
Display °dH	
Display °f	
Display ppm CaCO ₃	
Display mmol/l	
LIMIT VALUES	
LV1:	
LV2:	
FLUSH TIME	
Flush	
ExceedanceFlush	
WATER METER	
1 l/Impulse	
2,5 l/Impulse	
5 l/Impulse	
10 l/Impulse	
100 l/Impulse	
500 l/Impulse	
1000 l/Impulse	
Imp./L	
BOB	
Function on	
FUNCTION LV1/LV2	
Limit value	
Two point	
Range	
RELAY LV1	
Hysteresis LV1	
Duration	
Impuls	
Interval	
Time:	
RELAY LV2	

Hysteresis LV2	
Duration	
Impuls	
Interval	
Time:	
RELAY AUX	
Before retry	
Before analysis	
During analysis	
Before + during analysis	
After analysis	
Time	
WATER LOW COUNT	
Count	
FUNCTION STOP	
Normally closed	
Normally open	
FUNCTION WM	
Normally closed	
Normally open	
EXTERN ACK.	
Normally closed	
Normally open	
CURRENT INTERFACE TYPE	
Type 0-20 mA	
Type 4-20 mA	
SERIAL INTERFACE	
Baudrate	
LCD SETTINGS	
Brightness	
Contrast	
FUNCTION SD CARD	
Store measurement	
Store error	
Import basic data	
Export basic data	
SERVICE TIME	
Interval	
LANGUAGE	
English	
German	
Français	
Nederlands	
Espanol	
Türkçe	

General user instructions for Testomat 2000[®] and Testomat[®] ECO

Basic design of the instrument

Both Testomat 2000[®] and Testomat[®] ECO are designed for the permanent monitoring of water with up-to-the-minute measurements. Numerous measurements are carried out each day in standard application areas. If the instruments are to be operated with large analysis intervals, please observe the flushing times and the quantity of flush water for the respective plant type. Non-observance may result in residual or mixed water being measured from the lines and limit values being exceeded. The expiry date of the indicator can, in certain cases, also be exceeded. The following example will illustrate this:

If the instrument is used once a day to check soft water at roughly zero degrees, the annual requirement of indicator would be approximately 21.6 ml !! (Approx. 360 days x 60µl). The bottle contains 500 ml. More than 95% of the indicator must be replaced and disposed of, since the expiry date has been reached.

Large intervals often make little sense. Instead of achieving the desired savings, you may be left with unnecessary problems. The amount of water required per analysis is also only approx. 100 ml.

Switching off the instruments / Stopping the measurements

Always use the specified "Standby" (at the instrument) and "Stop" (external) functions to stop measurements. We do not recommend **disconnecting the mains power supply** to switch off the instruments, as

- the instruments may stop with a full measuring chamber, resulting in increased soiling of the measuring chamber/sight-glass windows/stirring bar, as well as the diffusion of water in the indicator hose
- an alarm message is output when restarting the instruments (due to the safety-related "de-energised contact function" of the alarm relay)

In these cases, malfunctioning cannot be ruled out due to incorrect restart and unclear error messages.

If an instrument is to be switched off for several days, make sure the measuring chamber is empty and that the instrument is restarted in the same way as it was initially started. The dosing pump, at least, should be operated manually until the hose is free of air.

Initial start-up of new plants

In the case of new plants, we recommend you to **flush the pipelines** thoroughly prior to connecting the instrument. All the instruments are equipped with a fine filter for inlet water, which may become blocked with increased concentrations of solid particles. If this is not detected, the reduced water throughput may result in faults and error messages. At such high concentrations and despite the installed filter, particles can reach the solenoid valves whose functioning may be impaired as a result.

Operation/Indicator

Correct operation of Testomat instruments can only be achieved when **using original Heyl Testomat[®] indicators**. These indicators allow the precise measurement of even the smallest quantities of substances. As with all reactive chemical substances, the effectiveness is also influenced by ambient conditions.

The specified expiry dates relate to usage and storage at a room temperature of 15 to 20°C and away from direct sunlight. Deviating or, as yet, untested determining factors and ambient parameters may result in the expiry date being modified.

The indicator should always be replaced after reaching its expiry date in order to ensure reliable functioning. Please pay attention to the expiry date printed on the label.

Water inlet

Always observe the pressure range specified on the type plate for the water inlet. Insufficient water throughput (e.g. also when the sieve is soiled) results in incorrect filling of the measuring chamber and a poor analysis.

The measuring procedure is repeated several times, finally resulting in the error messages "Measuring fault analysis" (Display => "Mf analysis") or "Low water level".

Water outlet

When installing Testomat instruments, make sure there is no risk of **backwater** in the **outlet**. This is described in more detail in the operating instructions under "Water outlet". A "syphoning effect" in the drain hose will prevent correct filling of the measuring chamber, forcing water through the vent hole in the measuring chamber. The overflowing water may cause further damage to the instrument. This assembly fault leads to complaints of a "leaky instrument / measuring chamber". The message "Mf analysis" appears on the display due to, amongst other things, the incorrect amount of water in the measuring chamber.

Contamination of the plant

If the upstream plant contains a large number of germs, it can, depending on their type and concentration, lead to an increase in microorganisms and thus clogging of the entire drain duct in exceptional cases. This must be prevented by carrying out appropriate plant inspections and maintenance.



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