# Operating and Maintenance Manual

# MOL®LIK Vessel

| | Type | Identification Nr. |
|---|---|---|
| ☐ | MOL®LIK-V 150.2 X | |
| ☐ | MOL®LIK-V 150.4 X | |

| | |
|---|---|
| Revision | 0 |
| Valid from | 14.06.2016 |
| It replaces the version of | - |

**Read and keep this operating and maintenance manual carefully!**
**Warranty and guarantee claims require demonstrable compliance with the instructions contained in this manual!**

## Table of contents

# 1 General

## 1.1 Structure of the documentation

In this documentation the user will find all important information of the specified MOL®LIK vessel:

- Safety instructions
- Instructions on transportation, commissioning, operation and maintenance
- Technical data

If you would like more information or should any problems occur that are not covered by this operating and maintenance manual, then please request the missing information directly to MOL Katalysatortechnik GmbH.

## 1.2 Information on the formal layout of this manual

- Listing and action steps are marked by a "•".
- References are indicated by "⇒".
- Highlighting is used to draw particular attention.

## 1.3 Warranty

The warranty is only accepted when

- The MOL®LIK-vessel is used in accordance with the information contained in this operating and maintenance manual,
- The MOL®LIK-vessel is handled correctly,
- Repairs are carried out exclusively by authorized personnel,
- Only original spare parts or spare parts recommended by MOL Katalysatortechnik GmbH are used for repairs,
- No unauthorized changes are made to the MOL®LIK-vessel.

Excluded from warranty are the typical wear and tear parts i.e., all movable parts, seals, lamps, etc.

# 2 General safety instructions

## 2.1 Duty of the operator to exercise due care

The MOL®LIK-vessel has been designed and built under careful consideration of the applicable harmonized standards and technical specifications. It reflects state-of-the-art technology and ensures the maximum amount of safety.

However, the safety of the device can only be achieved in practice if all necessary measures are taken. It is the operator's duty of care to plan these measures and check their implementation.

In particular, the operator must ensure that

- The MOL®LIK-vessel is used as intended (⇒ point 3.1),
- The MOL®LIK-vessel is operated in faultless, functional condition and in particular that the safety installations are regularly checked for their functionality,
- The required personal protective equipment (PPE) is available for service personnel (and its use must be ensured),
- This operating and maintenance manual is always available in a legible and complete way close to the place of installation of the MOL®LIK-vessel,
- Only qualified and authorized personnel may operate, maintain and repair the device,
- The staff are regularly instructed in all relevant aspects of occupational safety and environmental protection, and are familiar with the instructions and the safety information contained in this operating and maintenance manual,
- The safety and warning instructions attached to the device are not removed and are kept in a legible condition,
- Any modifications to the device may only be made by authorized and qualified personnel.

## 2.2 Specific safety information and symbols used

Specific safety instructions are given in this manual to indicate possible risks when operating the MOL®LIK-vessel.

These possible risks include hazards to

- Persons
- MOL®LIK-vessel
- MOL®LIK control unit (optional)
- Installation equipment
- Environment

The following symbols are primarily intended to draw attention to the safety instructions!

**This symbol indicates that particular danger to personnel is likely. (Danger to life and danger of injury)**

**This symbol indicates that particular danger to device, material and environment is likely.**

**This symbol indicates information. It does not identify any safety instructions.**

## 2.3 Basic safety measures during normal operation

Before commissioning the MOL®LIK-vessel, check and make sure that:

- Only authorized persons are present in the working area of the MOL®LIK-vessel,
- Nobody will be injured by a leakage from the MOL®LIK-vessel!

Before commissioning the MOL®LIK-vessel, check for signs of visible damage and make sure that it will only be operated in a faultless condition! Immediately report any deficiencies found to the person responsible!

Before commissioning the device, check and make sure that all safety devices are working properly!

## 2.4 Basic safety measures during maintenance and repair

Adhere strictly to the prescribed inspection and maintenance intervals contained in this manual and the respective planned procedures!
Follow the maintenance and repair instructions for the single components included in this manual!

Close access of the working area to unauthorized persons, before starting maintenance and repair work! Place information signs to indicate maintenance and repair work!
Drain the pressure in the area of the system and secure against restart!

Switch off power supply before starting maintenance and repair work!
Use only suitable and faultless loading equipment and slings for changing heavy components of the MOL®LIK-vessel!
Make sure that all components of the MOL®LIK-vessel are cooled down at room temperature before starting maintenance and repair work!

In case one of the following circumstances occurs, the MOL®LIK vessel has to be inspected by authorized service staff:

- The MOL®LIK vessel is not working properly, even though the operating and maintenance instructions have been followed.
- The MOL®LIK vessel has been damaged.
- The MOL®LIK components exhibit obvious signs of damage.

## 2.5 Maintenance & cleaning work

Maintenance and repair work must only be carried out by authorized service staff!

Shut down and drain the system where the MOL®LIK vessel is installed, before starting maintenance and repair work.

Take out the MOL®LIK module from the vessel before starting cleaning work.

Before recommissioning after maintenance and repair work:

- Make sure that the removed components (e.g. vessel lid, seals, LED-module and/or MOL®LIK module) have been reinstalled.
- Check that any screw connections are tightened properly.

After completing any maintenance or repair work and before resuming production, make sure that:

- All the materials, tools and other equipment needed for the execution of any maintenance or repair work have been removed from the working area of the system,
- Any leaking liquids have been removed,
- All safety devices of the system function properly!

You may be injured if you insert your fingers into the interspaces of the MOL®LIK vessel.

Do not insert any objects into the interspaces of the MOL®LIK vessel, the catalyst module might be damaged.

Please remove the MOL®LIK module before cleaning the MOL®LIK vessel with a high pressure washer.

Do not use a wire brush, aggressive chemicals, and/or sharp or pointed objects to clean the MOL®LIK module.

## 2.6 Safety devices

The user must ensure the overall system, so that into the MOL®LIK-vessel the pressure given on the specification plate is not exceeded.

A possible need for insulation of the vessel is subject to the responsibility of the owner.

If the system is used in the field of hot water systems at above 35° C, protection against scalding should be taken by the user.

## 2.7 Observe the environmental protection regulations

WEEE notice:

According to Directive 2002/96/EC (Directive on Waste Electrical and Electronic Equipment), electrical and electronic equipment must not be disposed of as municipal waste (this applies since 13 August 2005).

This means that manufacturers are legally obliged to take back products (at the end of their product life) that had been in use, and subject them to a suitable form of waste disposal.

## 2.8 Dangers arising if the safety instructions are not observed

Non-observance of these safety instructions can result in danger to persons, material and environment. If these safety instructions are not observed, any claim for damages may become void.

# 3 Product description

## 3.1 Intended use

The treatment system MOL®LIK-vessel serves to keep a high functionality and quality in the water circuits).
**OPTIONAL:** An electronic control unit controls the activation of the LED-unit and signals the current status of the system to the user.

Main applications of this system include, for example, once-through systems and circuit systems for cooling and process water in conjunction with suitable filtering technology

The system will generally operate in bypass to the water circuit and can also in many cases treat the make-up water. Through this bypass operation, the water system is not adversely affected in case of failure due to maintenance or change of the medium.

**The system is a pressure vessel in compliance with Pressure Equipment Directive 97/23/EC and must not be pressurized with compressed air or other gases.**

The MOL®LIK-vessel must be only pressurized with an overpressure in compliance with the name-plate.

The device must be stored and operate frost-proof.

**ATTENTION: If the equipment is used in the area of hot water systems > 35 °C, is the customer's responsibility to take safety measures against scalding on site. The insulation of this system is responsibility of the customer.** The components reach the temperature of the water circuit.

For the operation of the treatment system additional valves such as back pressure flap or back pressure valve in the inlet and outlet are required, depending on the type of application. These valves are provided by the customer during assembly or optionally supplied with the unit.

We recommend installation by a specialist company.

**Any other use or any use beyond what is specified is deemed to be not the intended purpose.**

**The manufacturer or supplier does not accept any liability for damage resulting from such use. The risk is borne entirely by the user/operator.**

**The regulations and directions provided in this operating and maintenance manual and those locally applicable must be strictly complied with.**

**The manufacturer assumes no liability for damage caused by non-observance of this operating and maintenance manual and the other applicable regulations and by improper use.**

**The MOL®LIK-vessel is not subject to a monitoring duty by a supervisory authority, but it is defined as a pressure vessel and must be treated as such.**

**The inspection intervals have to be determined in accordance with the operating rules.**

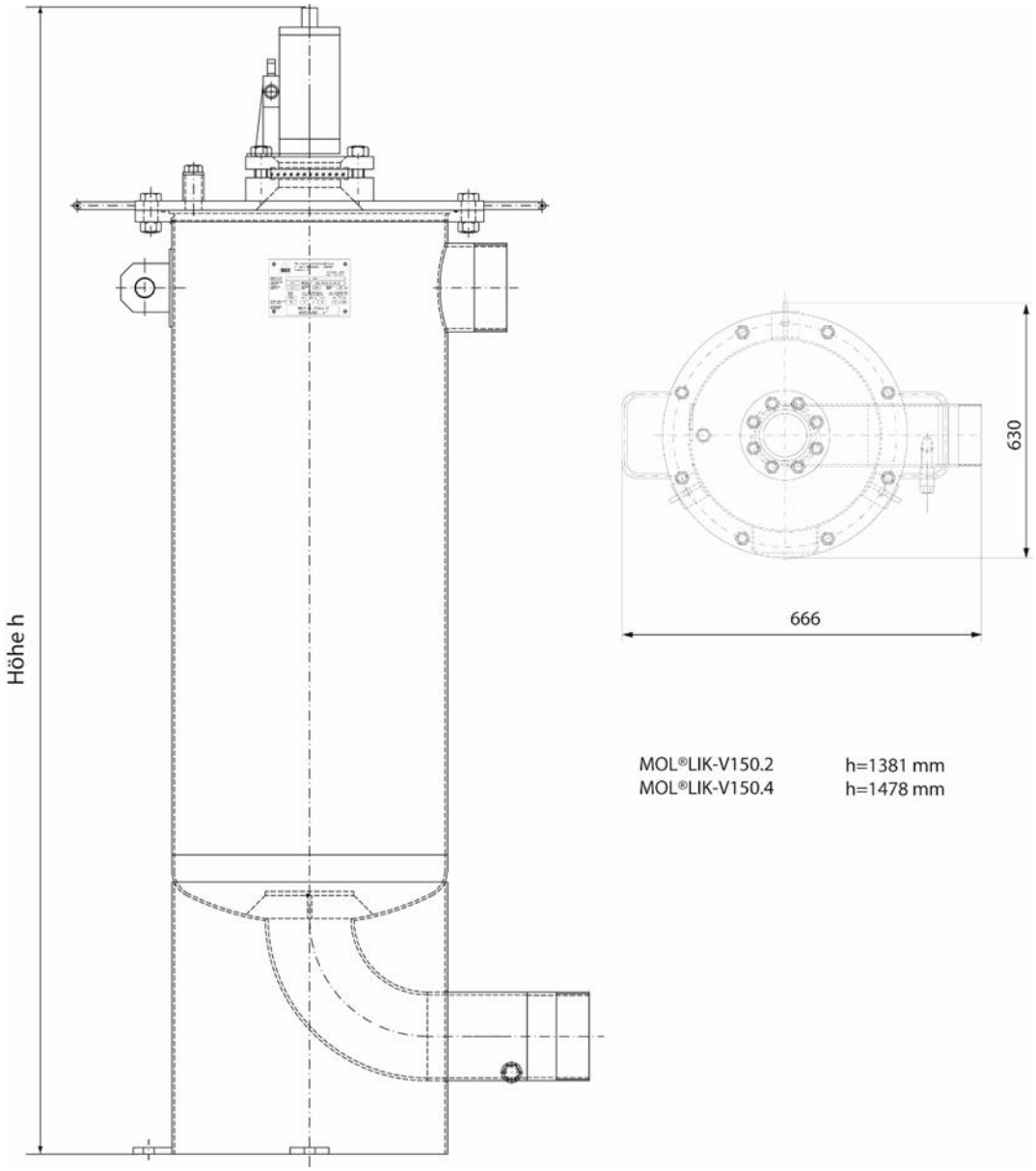
**Interior inspection on material weaknesses must be done by an expert.**

**Ensure that the medium temperature of 90 ° C is not exceed (risk of vapor formation).**

## 3.2 Technical data

| Type of vessel | MOL® LIK-V150.2 X | MOL® LIK-V150.4 X |
|---|---|---|
| **Allowable working overpressure max.** | 10 bar | 10 bar |
| **Flow max.** | 20 m³/h | 40 m³/h |
| **Allowable working temperature min-max.** | 0 °C - +90 °C | 0 °C - +90 °C |
| **Ambient temperature min-max.** | +5 °C - +40 °C | +5 °C - +40 °C |
| **Total volume** | 94 l | 94 l |
| **Medium** | Water | Water |
| **State of matter** | Liquid | Liquid |
| **Density** | 1,000 kg/m³ | 1,000 kg/m³ |
| **Toxic/Flammable/Explosive** | No | No |
| **Total height** | 1,478 mm | 1,478 mm |
| **Total width** | 666 mm | 666 mm |
| **Total depth** | 630 mm | 630 mm |
| **Required height (from the ground) for installing the MOL®LIK module into the vessel** | ≥ 2,300 mm | ≥ 2,300 mm |
| **Required area** | 1,500 mm x 1,500 mm | 1,500 mm x 1,500 mm |
| **Empty weight without internals** | 75 kg | 82 kg |
| **Weight including water and internals** | 169 kg | 176 kg |
| **Weight of the catalyst** | 8 kg | 8 kg |
| **Material Number** | 1.4571 | 1.4571 |
| **Surface treatment** | **Inside / Outside** are pickled and passivated<br>**Outer surfaces** are blasted | **Inside / Outside** are pickled and passivated<br>**Outer surfaces** are blasted |
| **Nozzle** | two connecting piece in 2" with outside thread (EN 10241) | two connecting piece in 4" with outside thread (EN 10241) |
| The LED-lamp is ATEX certified.<br>LED Type: Lumiglas-Leuchte-Edelstahl ESL 55 - LED - EX II 2G Exd II C Gb | | |

## 3.3 Dimension sheet




*This image is an example, the connections can vary.*

The process water in the water circuit passes through the vessel (from bottom to the top). In the vessel, the water flows through the inserted catalyst module.

# 4 Transport

## 4.1 Transport

- The MOL®LIK vessel have to be transported carefully, do not throw it! To avoid damage, protect the equipment supplied from impact or shocks.
- Store in a dry place.
- Observe the permissible ambient temperatures!

When moving the equipment, use suitable means of transport in order to rule out any transport damage.

Minimum load capacity of the lifting equipment: ⇒ see point 3.2 "Technical data".

The entire shipment should be checked for completeness and transport damage immediately on arrival. Transport damage must be reported to the supplier immediately.

## 4.2 Content of the shipment

- MOL®LIK vessel including MOL®LIK module
- LED-Lamp in an explosion-proof version (ATEX certified)
- Operating and maintenance manual for the vessel
- **Optional:** MOL®LIK control unit

## 4.3 Storage

Do not store and use the MOL®LIK-equipment at temperatures over 50°C or below -20°C, which may damage it.

The MOL®LIK-equipment can be stored for a period of several months if the storage conditions are complied with.

# 5 Installation and Assembly

## 5.1 Assembly

- Assembly must be performed according to the MOL Katalysatortechnik GmbH documentation and by qualified personnel in accordance with DIN, VDE or locally valid specifications
- The user must ensure that the MOL®LIK-vessel is assembled and installed in such a way that their safe use (and maintenance) is not affected.

The MOL®LIK-vessel must be assembled in a frost-proof room. Please consider an ambient temperature between +5°C till +40°C.
For assembling the vessel, you need an horizontal and hard ground. For a safe installation and maintenance of the equipment, we recommend an installation area of minimum 1.50m x 1.50m and a minimum height of 2.30m from the ground. The installation site should be easily accessible.

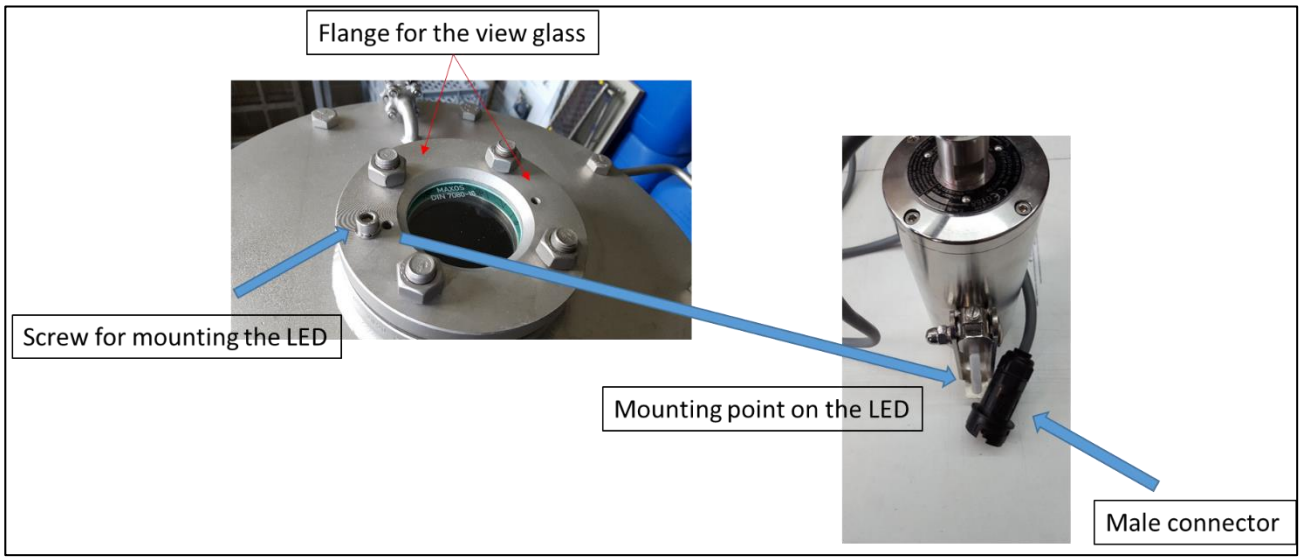
The area above the installation site and the vessel should be kept clear for installation purposes, maintenance, and works on system equipment (e.g. pipes, air ducts, etc.), and a sufficient space for this system equipment must be provided.

For all installations (e.g., pipe installations), it is necessary to keep the maximum allowable pressure of the MOL®LIK-vessel. In case of a higher pressure of the system, the appropriate safety arrangements (e.g., pressure-relief valve) must be provided.

Suitable catalyst modules are available for use in pressure vessels. The use of appropriate upstream filter technology has been proven to minimize the cleaning time on the catalyst module.

The inlet and outlet pipes must be provided with shut-off valves by the customer, in order to make maintenance work possible.

After the complete installation, it is necessary to verify the impermeability of all pipelines and valves. This can be done through a pressure test with normal water pressure.




*Fixing the LED on the vessel.*

## 5.2 Electrical connection

- Electrical connection must be made in accordance with the applicable local regulations (e.g.: VDE).
- **Before starting work, make sure that all electrical wiring, power supplies and power packs are disconnected and secured against being switched on again.**
- The type of current and voltage of the mains connection must comply with the specifications on the appliance rating plate of the unit.
- The system must be electrically connected via a shockproof plug.
- Dangerous charges may still be present, even if the control unit (optional) is turned off and the power supply disconnected.
- All supplied equipment must be assembled in accordance with the terminal connection diagram (⇒ Point 11.3) and must be connected to power supply.
- In case of installations in ATEX area, a suitable control unit must be used (e.g. MOL®LIK-I/O control unit).

Danger of electric shocks!

Electric systems and devices must not be cleaned with water or solvents.

# 6 Commissioning

**In order to avoid faults and damages, please read all the instructions (including the instructions of the component suppliers) prior to the commissioning of the system!**

**The system must be started up for the first time only by an authorized employee or service technician from MOL Katalysatortechnik GmbH!**

**Before each initial commissioning, the operating staff must make sure that a safe commissioning is possible, and that no one can be injured in the process. All fittings and fastenings must be checked to see whether they are tightened securely!**

**With regard to the control unit (optional):**
Each MOL®LIK control unit will be delivered with a preconfigured factory setting. A modification of the pre-set parameters requires a specific knowledge about all functions of the system and should only be made after consultation with MOL Katalysatortechnik GmbH. The revised data must be recorded.

## 6.1 Checks prior to commissioning:

**Before commissioning the system, it is first necessary to ensure the following points:**

- **The pressure of the system must conform to the specifications (⇒ Point 3.2 “Technical data”).**
- **The minimum and maximum values for the working pressure and working temperature must be complied with (⇒ Point 3.2 “Technical data”).**

**The following additional conditions must be met:**

- The system has been correctly and completely installed.
- A function and impermeability test have been carried out on the system with water.
- The environmental conditions conform to the specifications.
- All electrical installations must be checked by a qualified electrician.
- The operating staff must be trained on all parts of the system and be aware of the structure, function, operation and maintenance of the system.
- All devices, fixtures and fittings, and valves are ready for use and are in operating condition.
- The main valves must be open in the main direction flow. The pumps must not work against closed valves, as this can cause a damage to the system.
- Manual vent valves must be closed.
- Manual waste water valves and drain valves must be closed.

- Manual bypass pipe connections (if available) must be closed.
- The wastewater pipework are prepared and can be used.
- The supply of water, corresponding to the specifications, has to be ensured.
- The quality of the water has to conform with the specifications and water analysis.

## 6.2 Filling the system

**Before opening the vessel, it is always necessary to first open the manual vent and expansion valve on the lid. Here, depending on the use, water with higher temperature can possibly leak.**

The system must be filled by the inlet pipe of the vessel. During the filling of the system, the expansion valve on the lid must be opened for depressurization.

## 6.3 Commissioning the system

**Before each initial start-up, the operating staff must make sure that a safe start-up is possible, and that no one can be injured in the process.**

**All fittings and fastenings must be checked to see whether they are tightened securely!**

During the commissioning, while keeping close the outlet pipe and keeping open the expansion valve, slowly fill the vessel and slowly remove air from it. The customer has to ensure that the maximum water flow is not exceeded.

## 6.4 Decommissioning the system in normal situation

The system must be shut down for maintenance or repair work. This applies for work at the pipework or when opening the vessel.

**The vessel must be depressurized during work at the pipework or when opening the vessel. For this purpose, the inlet and outlet pipework must be closed.**

**Afterwards, the expansion valve of the vessel must be opened and, if required, the water should be emptied out of the vessel.**

## 6.5 Recommissioning after maintenance or repair

**Before each recommissioning, the operating staff must make sure that a safe recommissioning is possible, and that no one can be injured in the process.**

**All fittings and fastenings must be checked to see whether they are tightened securely!**

During the commissioning, while keeping close the outlet pipe and keeping open the expansion valve, slowly fill the vessel and slowly remove air from it. The customer has to ensure that the maximum water flow is not exceeded.

# 7 Operation

## 7.1 Required operating conditions

The system performance depends significantly on the water quality. This topic has to be discussed and agreed with MOL Katalysatortechnik GmbH.
In any case, the specifications for the working pressure and working temperature must be adhered to.

**To avoid condensation, a sufficient ventilation of the room must be provided. If necessary, a dehumidification system must be installed.**

**The maximum values for the working pressure and the working temperature must not be exceeded.**

**Working pressure: 0 - 10 bar**

**Maximum working temperature: 90° C**

## 7.2 Operating the system

The operation of the system must comply with MOL Katalysatortechnik GmbH operating instructions and maintenance manual, as well as the documentation of the component suppliers. The system must be regularly checked and maintained (⇒ Point 8 “Maintenance”).

**The system may be only operated by trained and authorized personnel. Comprehensive knowledge of the system and all its individual components, as well as knowledge of operation and maintenance are essential.**

**If an unauthorized modification to the system is carried out without consultation with MOL Katalysatortechnik GmbH, this is performed at the operator’s own risk.**

**The prescribed and required water quality must be ensured solely by the operator of the system. The use of pre-treated water is only possible if the water quality requirements have been met.**

## 7.3 Faults

For the connection, the respective local valid regulations and conditions of the electric supply companies apply. In case faults still occur, you should solved them only through authorized technicians.

Possible faults, their causes and their remedies: ⇒ See point 8.3.

During commissioning, maintenance or repair work, the power supply and the main switch must be basically switched-off, free of voltage and secured against being switched on again.

# 8 Maintenance

- Use only original spare parts!
- Always stop the water flow before parts are loosened or removed! The system must be depressurized!
- Switch off the system if electrical components or assemblies are touched or removed!

Service technician

| |
|---|
| Business card |

We recommend the user to sign a maintenance contract with MOL Katalysatortechnik GmbH and have the system checked annually by the customer service for having a long term high performance level of the delivered equipment.

## 8.1 Maintenance and inspection

**Operating the system with damaged parts may endanger the operating personnel and cause further damage to the system.**

**Damaged parts must be replaced immediately!**

**We recommend working with an operations log in which all relevant data is entered at specified intervals.**

**During cleaning of the system with chemicals, the MOL® LIK module must be removed.**

## 8.2 Maintenance and inspection intervals

| Parameter | Recommended Interval | Desired value/condition |
|---|---|---|
| Check of the equipment | Daily | Piping and vessel should not leak.<br>• If not ➔ Repair!<br><br>Repairing pipes in case of damages or leaking (support and materials from MOL Katalysatortechnik GmbH). |
| Check the water level | Weekly | **The MOL®LIK module must be completely covered by water.**<br>• If not<br>➔ Check pipework connection<br>➔ Check the valves of the vessel and of the pipework |
| Control the circulating water for detached biofilm fragments. | Weekly | Detached biofilm fragments must be removed from the circulating water.<br>• If necessary, partially replace the water. |
| Check of the MOL®LIK module for possible deposits. | Monthly | Such deposits can reduce the microbial effect.<br>• If necessary, remove these deposits with a soft brush and soft water flow |
| Functional check by an authorized service technician. | Annually | |
| Function check of the LED-module and control unit **(optional)** | Weekly | The LEDs must be lighting. The control unit should be fully functional.<br><br>Test light on/off |

**In case errors or faults occur, the operator of the system must notify MOL Katalysatortechnik GmbH. The operator is obliged to take every necessary step to prevent any damage or the shutdown of the system.**

# 9 Spare Parts

Order spare parts and operating equipment directly from MOL Katalysatortechnik.
Get expert advice anytime:

MOL Katalysatortechnik GmbH
Leunastraße 6
06258 Schkopau - Germany
Tel.: +49 (0) 3461 / 72 30 97
Fax: +49 (0) 3461 / 72 31 25
info@molkat.de

## 9.1 List of spare parts

| Description | HS number | KN number |
|---|---|---|
| Seal Ø 382 x 3 mm | 401 693 | 4016 9300 |
| LED Lamp ESL 55-LED-Ex II 2G Exd IIC Gb | 940 540 | 9405 4010 |
| MOL®LIK Control Unit | 853 710 | 8537 1099 |
| Extension cable | 854 411 | 8544 1190 |

If you need more spare parts or other components, please do not hesitate to contact us.

# 10 Standards and Regulations

The following standards and regulations have been applied in developing and producing the device and when drawing up the operating and maintenance manual. The country-specific standards can differ in detail. Compliance with applicable country-specific standards is up to the user.

**Table: Standards**

| | |
|---|---|
| DIN 1988 | Technische Regeln für Trinkwasserinstallationen |
| DIN EN 292, Teil 1 + 2 | Sicherheit von Maschinen – Grundbegriffe, allgemeine Gestaltungsleitsätze |
| DIN EN 50081, Teil 2 | Elektromagnetische Verträglichkeit (EMV) – Allgemeine Emissionsrichtwerte Teil 2: Betriebliche Umwelt |
| DIN EN 50082, Teil 2 | Elektromagnetische Verträglichkeit (EMV) – Allgemeine Schutzregeln |
| DIN EN 60204, Teil 1 | Sicherheit von Maschinen – Elektrische Ausrüstung von Maschinen<br>Teil 1: Allgemeine Anforderungen |
| DIN EN 60439, Teil 1 | Niederspannungs-Schaltgerätekombination<br>Teil 1: Typgeprüfte und partiell typgeprüfte Kombinationen |
| DIN ISO 6394 | Geräuschmessung an Maschinen |
| 97/23/EG | Richtlinien über Druckgeräte |
| Anhang I Nr. 3.2 (Art. 3 Abs. 3) | 97/23/EG Abnahme Druckgeräte |
| AD 2000 | Sicherheitsanforderungen Druckgeräte |

**Table: Regulations**

| | |
|---|---|
| Trinkwasserverordnung | |
| Druckbehälterverordnung | |
| VDE 0100/VDE 0113 | Elektrische Ausrüstung von Industriemaschinen |
| VBG 125 | Sicherheitskennzeichnung am Arbeitsplatz |

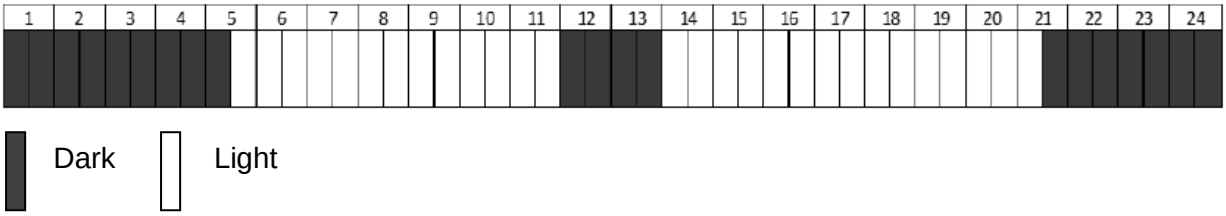
# 11 Annex

## 11.1 EG Declaration of conformity

**Declaration of conformity**
Pressure Equipment Directive 97/23/EC
Manufacturer's declaration of conformity on manufacture and testing
Approval according to Annex I Nr. 3.2 (art. 3 par. 3)

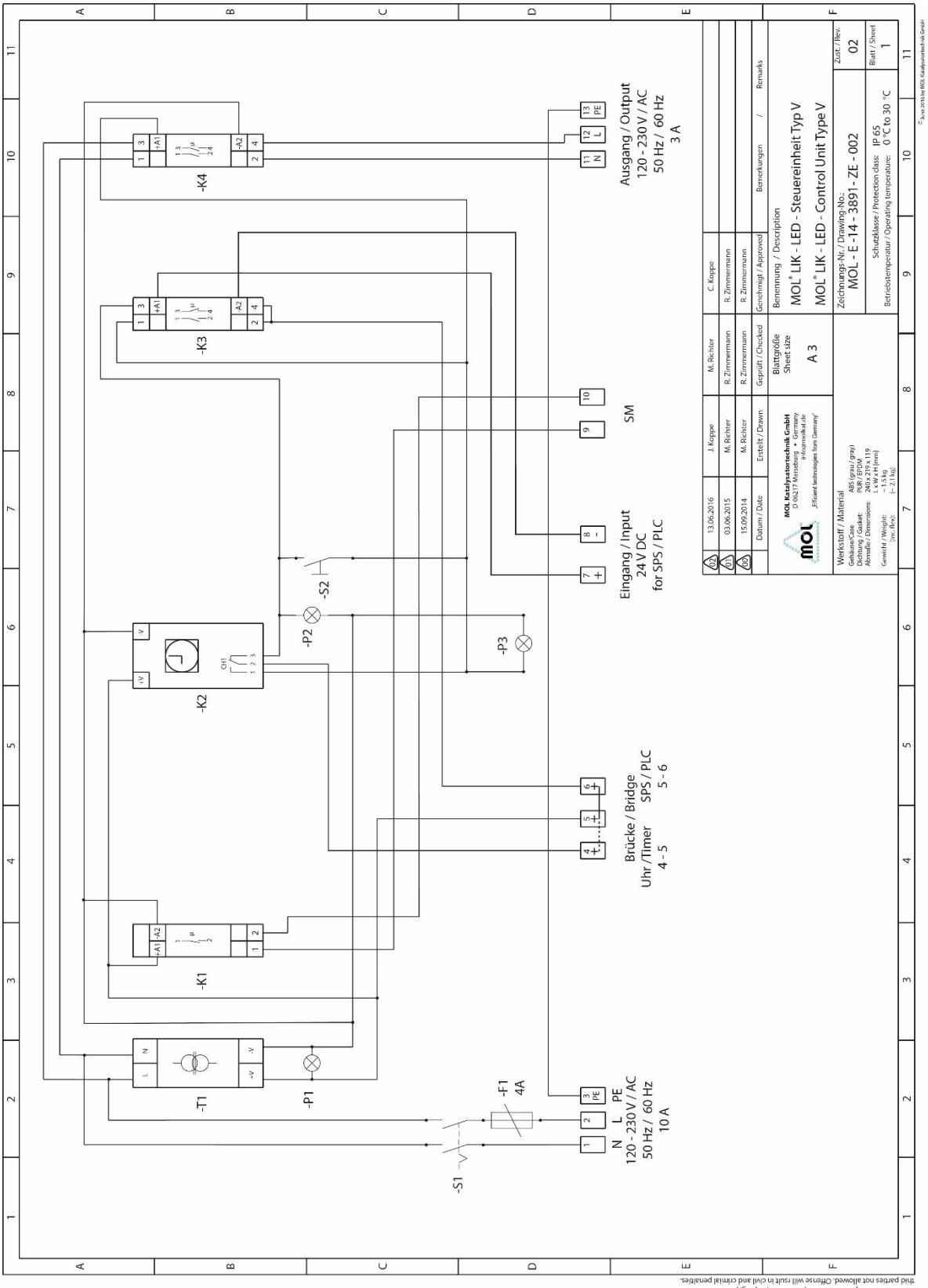
A declaration of conformity, containing the serial number of the vessel, is issued for each produced pressure vessel.

## 11.2 Factory setting / activation sequence of “light” and “dark” operating modes




The optimization should be carried out in cooperation with an authorized service technician.

## 11.3 Circuit diagram



## 11.4 Certificates

# Certificate

Standard **ISO 9001:2008**

Certificate Registr. No. 01 100 005111

Certificate Holder: **MOL Katalysatortechnik GmbH**
Fritz-Haber-Str. 9
D - 06217 Merseburg

Scope: development, production and sale of solid metal catalysts and solid metal solar foils and technologies based on this, installation and service

Proof has been furnished by means of an audit that the requirements of ISO 9001:2008 are met.

Validity: The certificate is valid from 2016-05-13 until 2018-09-14.
First certification 2001

2016-04-21

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

TÜVRheinland®
Precisely Right.

# Certificate

Standard **ISO 14001:2004**

Certificate Registr. No. 01 104 042133

Certificate Holder: **MOL Katalysatortechnik GmbH**
Fritz-Haber-Str. 9
D - 06217 Merseburg

Scope: development, production and sale of solid metal catalysts and solid metal solar foils and technologies based on this, installation and service

Proof has been furnished by means of an audit that the requirements of ISO 14001:2004 are met.

Validity: The certificate is valid from 2016-05-13 until 2018-09-14.
First certification 2004

2016-04-21

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



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