Manual

Version 29.11.2022

Oil in Water Monitor

Model FLUORImat (FLU-I) / Messenger

UV- stimulated Fluorescence

Chemtronic Waltemode GmbH

40789 Monheim am Rhein Niederstr. 14
Tel.: +49-(0)2173-57007 Fax.: +49-(0)2173-56007
E-mail: info@chemtronic-gmbh.de
Internet: www.chemtronic-gmbh.de

chemtronic
Waltemode GmbH

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Copyright

Non-warranty

Chemtronic Waltemode GmbH takes no responsibility or warranty for technical or editorial mistakes or omissions in this document. The information in this publication will be provided without warranty for their correctness. Chemtronic Waltemode GmbH reserves all rights to make changes to this document without announcement.
Chemtronic Waltemode GmbH is by no means liable for any consequential damages or miscellaneous damages, which occur during the use or storage of the system.
Some countries do not allow the limitation of liability, so that this exclusion is possibly not valid for you.

Warranty conditions

The warranty for this product takes place according to the legal provisions. As place of warranty we explicitly name Chemtronic Waltemode GmbH, Monheim am Rhein, Germany. Chemtronic will charge the additional expenses e.g. travel expenses, overnight cost, etc., in case of warranty service at the customer site.
Consumable parts as well as wearing parts e.g. lamps, gaskets, etc. are not covered by warranty.
Improper use, gross negligence, use of the system outside of the technical specifications, missing or improper maintenance will cause a loss of the warranty claim. Please pay attention to our general terms of contract.

Storage

Please inspect the instrument immediately after receiving for potential shipping damages.
If the instrument has already been unpacked for inspection or testing, or if the instrument has been removed from the process and it is not to be installed or reinstalled for more than 1 day, the following procedure should be observed:

If the instrument has been in service, the wetted portion should be thoroughly cleaned (typically with clean water) and then thoroughly dried.
In case the original packing material is not available, place the instrument in a sealed heavy plastic bag with a desiccant added to assure clean dry storage.
The instrument should then be stored in a protected area until time of installation.

Safety instructions

Take notice to the following general safety instructions during use and operation of the system. Ignoring these instructions or special warnings inside of this manual can damage the sensor, cause inaccurate measurements, and possibly result in unsafe installations. Chemtronic Waltemode GmbH will not take any responsibility for consequences arising from ignoring the safety instructions and warnings.

For ALL chemical liquids

Reagents, standards or the measured product may be toxic or otherwise harmful to human health. Observe appropriate precautions when handling and disposing the reagents. Review the appropriate published material safety data sheets regarding the safe handling and disposal of all these products.

Electrical installation

Qualified technical personnel must perform the electrical installation of the system.

Hazardous area

DO NOT INSTALL the system in hazardous.

Do not install the system in hazardous areas (Ex Zone 0, Ex Zone I, Ex Zone II) without the optional explosion proof approvals and certifications.

Maintenance

Always disconnect the instrument from power during maintenance, replacement of components, installation of additional components or any other operations at the open instrument.
Only qualified technical personnel must perform this work.
Operating the instrument with open enclosure
Only qualified technical personnel should operate the instrument when the enclosure is open (e.g. during repair or calibration procedure). Be careful that no moisture enters the enclosure.

Some components inside the instrument are energized with voltages, which can cause lethal shocks in case of contact. Be careful during installation, handling and operation of the instrument.

Improper installation / operation of the system
Warranty is void if the system is / was installed improperly, handled improperly, used outside of the technical specifications or damaged by gross negligence.

Package Content

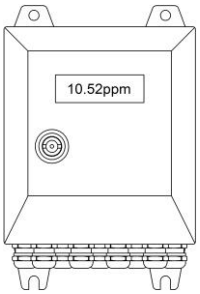
Transmitter model C1with FLUORImat sensor according to user's specification.
USB Stick with C1- Config- / Calibration Software / Documentation
USB cable.
Printed Manual and Documentation

Please contact us immediately in case of an incomplete delivery or in case of an damage off one of the components.

Before Start Up / Installation

Installation Instructions for Transmitter Model Messenger

Transmitter



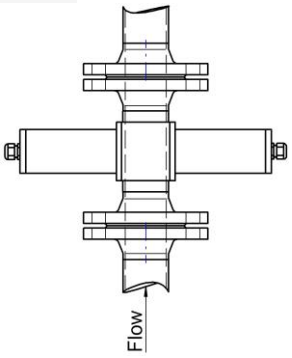
The system contains sensitive components, do not drop, handle with care.
Do not operate the system if there is visible damage!
Do not operate the device with an open housing. Exposed electronics increase the risk of electric shock, moisture penetration can damage the device.
Follow the wiring diagram in this manual.
Supply voltage: 24VDC+-10% (optional 100-240VAC, 50-60Hz), refer to nameplate!
Power consumption: <15W
The switching relays for alarm output to external devices are designed for max. 1A at 24VDC.
Analog output: 0/4-20mA, max. 500Ohm (isolated)
The housing of the system complies with protection class IP65 / Nema 4x.
The ambient temperature for the device must be in a range from -10°C to 45°C.
At temperatures above 40°C, cool with dry instrument air.
Translated with www.DeepL.com/Translator (free version)

Installation Instructions Sensor Model FLUORimat (FLU-l)

Exceeding the specified maximum pressure and/or the specified maximum temperature represents a high safety risk. Before installation, read the additional safety instructions listed below.

The distance between the measuring amplifier and the sensor must be kept as short as possible. The measuring cables of the sensor should be laid at least 0.5m away from power lines to prevent interference.
We strongly recommend leaving the measuring cables on the sensor 2m longer so that the sensor can be placed on the floor when calibrating.
Since in many cases liquid standards are used for calibration within the measuring cell, the sensors should not be installed into the pipe before calibration.
The sensor is manufactured according to the specification of your application (line size, flanges, cleaning jets, pressure rating, temperature rating, etc.), please check the specification.
If possible, the sensor should be installed in a vertical pipe with rising flow.
A sample with an oil droplet size that is as homogeneous as possible must be fed to the sensor, make sure that you avoid bubbles in your sample stream.
Air or gas bubbles inside the sensor are to be avoided, since these have a strong influence on the measurement results. At a minimum pressure of approx. 2 bar, no more gas bubbles are to be expected in aqueous solutions.
At product temperatures below the dew point, purge sensor with dry, oil-free instrument air (approx. 10 l/h), as the measurement is severely impaired by the formation of condensation. Condensation water inside the sensor can destroy the measuring system.
Do not extend or shorten the sensor cables in order to avoid problems with signal transmission and to ensure that the system functions correctly.
Use original spare parts only, in order to avoid measuring problems.
When using the optional cleaning jets (measuring cell cleaning) it must be ensured that the pressure of the cleaning liquid is at least 50% above the process pressure. The installation of a non-return valve is strongly recommended.

Sensor



General

When working with oil, there is always a risk of leakage.

The Water Resources Act obliges everyone to. "to exercise the care required by the circumstances to prevent contamination of the water". Plants where there is a risk of oil leaking oil into water, in the event of operational malfunctions require continuous metrological monitoring.

When water is discharged into production plants, public waters or drinking water production, even the smallest amounts of oil must be detected. Continuous measurement helps to be able to react immediately to oil leakages.

What does UV- stimulated Fluorescence mean

The property of solid, liquid or gaseous substances after irradiation with

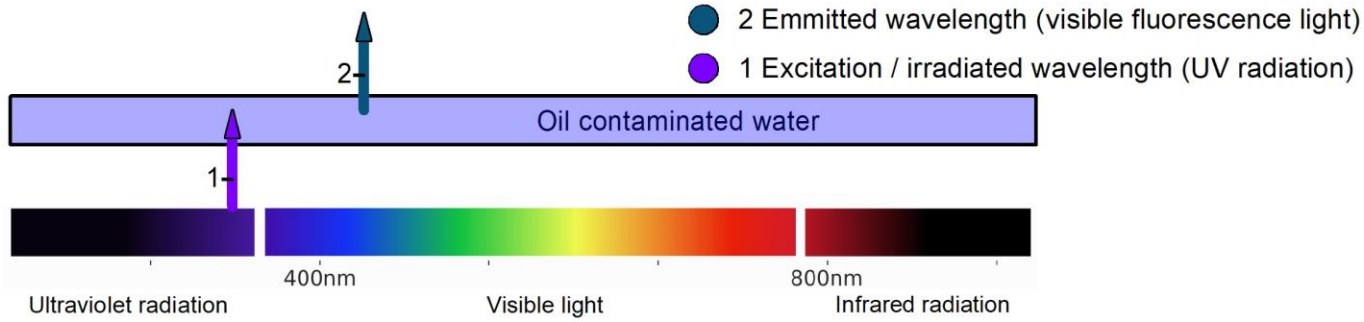
UV light, a part of the absorbed radiation energy is re-emitted at the same or a longer wavelength.

The aromatic components in mineral oil have the property of fluorescing and emitting visible light when illuminated with UV light.

Fluorescence of Mineral Oils

Short-wave UV light is absorbed and converted into long-wave light. If this effect were visible to the eye, one would see that UV light is converted into yellish-green fluorescent light.

Principle of UV- stimulated fluorescence by the example of oil in water



Take Notice

Different oils produce different fluorescence intensities. The intensity of the fluorescence typically depends on the concentration of unsaturated hydrocarbons in the respective oil. A calibration in ppm can therefore only be made for a specific oil.

Model FLUORImat

Used to detect low oil concentrations, partially invisible to the human eye.
In addition to fluorescence, UV transmission is also taken into account. UV- transmission is the portion of UV radiation that passes through the sample at an unchanged wavelength. The transmission decreases with increasing turbidity respectively oil content, the intensity of the fluorescence increases proportionally to the oil content.
The signals from fluorescence and UV- transmission are combined by the electronics. The quotient of the two signals forms the measurement result. This signal combination compensates for fluctuations in UV intensity, turbidity influences and soiling of the measuring windows.

Setup of the model FLUORImat

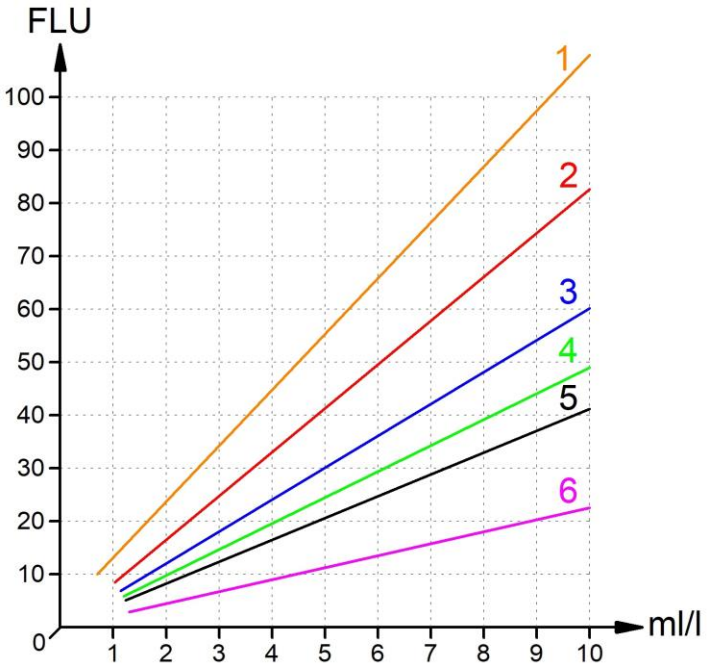
Fluoreszenz	(90°)	Die Detektoroptik ist im rechten Winkel (90°) zum Lichtstrahl angeordnet
UV- Transmission	(180°)	Die Detektoroptik ist direkt gegenüber der UV-Quelle angeordnet

Typical Measuring Units

ppm:	**P**arts **p**er **m**illion
mg/l:	Milligram per Liter
ml/l	**Mill**i**l**iter/**L**iter
FLU:	**Fl**uorescence **U**nit*

*The factory calibration is typically performed with quinine sulfate, independent of oil.
1 ppm quinine sulfate corresponds to a fluorescence light intensity of 1FLU (fluorescence unit).
Alternatively, the instrument can be calibrated with a user-supplied type of oil in the desired unit of measurement.

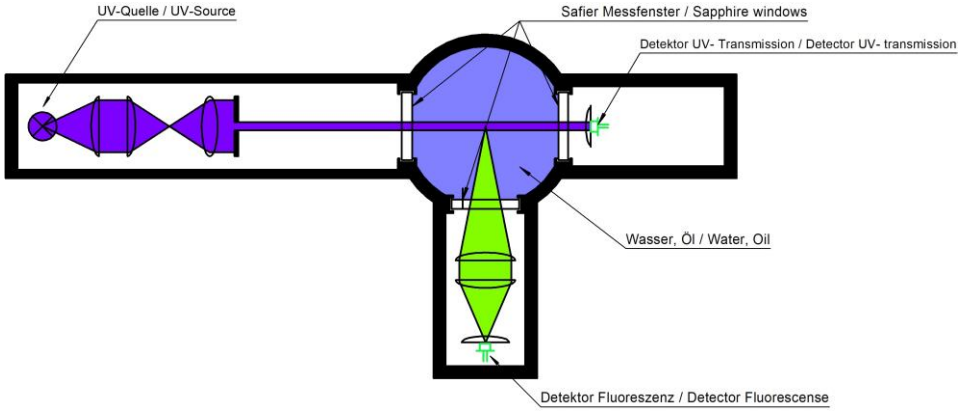
Fluorescence of different oils compared with the fluorescence unit (FLU)



1 Hydrauliköl / Hydraulic oil
2 Getriebeöl / Gearbox oil
3 Wärmetauscher Öl / Heat exchanger oil
4 Rohöl / Crude oil
5 Schweres Heizöl / Heavy heating oil
6 Diesel / Diesel fuel

Typical measuring Ranges

Fluorescence meters are designed to detect low oil concentrations in a range of about 0-10ppm. The resolution of these systems is in the range of 0.1ppm. The upper measuring range is in the optimal case below 300 ppm, but depending on the system used, measuring ranges of over 1000ppm can also be realized.



Maintenance

The measuring transmitter model Messenger is maintenance-free!
The sensor model FLUORImat (FLU-I) has a regular maintenance requirement, which is limited to the replacement of the wearing parts (seals) and the cleaning of the measuring windows.
The UV Led's of the sensor have a life span of approx. 4-8 years.
Depending on the application, coatings may form on the windows.
This may make it necessary to clean the measuring windows at fixed intervals.
Optional cleaning jets are possible for some applications.
The service life of the seals is between 6 months and 10 years depending on the liquid to be measured, the sealing material, the process temperature and the process pressure.
The intervals for cleaning cycles and seal replacements will be determined by the operator on an application-specific basis.
Contact Chemtronic if you have any questions about the service life of the respective seals.

Please take notice:
When measuring hazardous substances (corrosive / toxic substances).
Appropriate protective measures must be taken before cleaning.
(Protective clothing, safety goggles, gloves, respiratory mask if necessary).
Make absolutely sure that the measuring cell is emptied and depressurized before you start cleaning.

Please take notice:
A factory inspection is strongly recommended after 5 years of operation.

Sensor Maintenance

Replacement measuring LED

Failure to observe the following instructions will result in a loss of the warranty

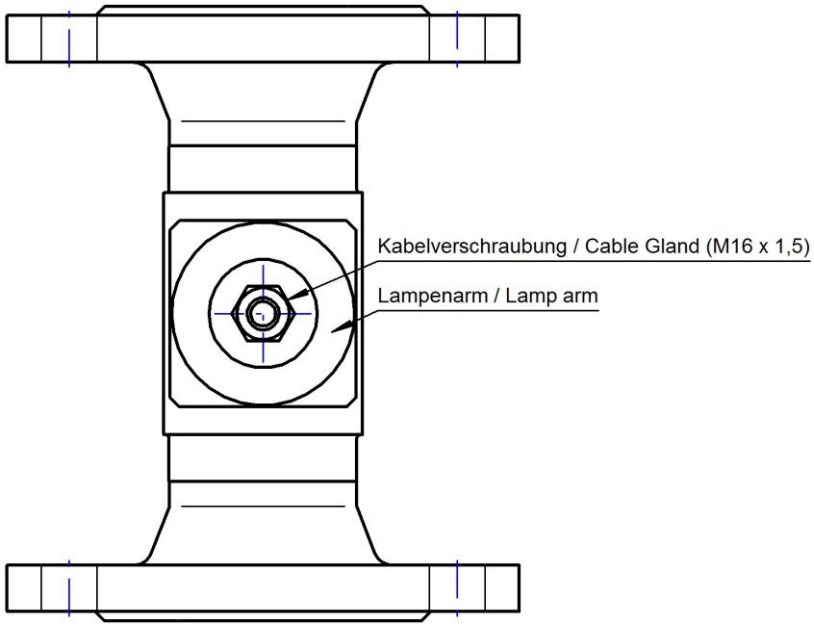
Notice:

- Qualified technical personnel must perform repair and maintenance.
- Before beginning any work the sensor must be cleaned and flushed thoroughly. Depending on customers' application product residues can be very dangerous (aggressive, poisonous). Please handle the system very careful due to possible leakage etc.
- Avoid pulling and twisting of the lamp cable.
- Avoid applying excessive force during assembling and disassembling of the sensor.
- Screw in all bolts and cable glands stalwart only.
- Please work carefully during the replacement of the measurement lamp.
- The lamp replacement should be done in a dry and clean location, to protect the optical components from dirt.
- Please be sure that no dust or other particles penetrates into the optical assembly.
- Do not touch the lenses.
- In case of dirty component please clean carefully by using fresh water and a cloth (lint-free), dry all components by using instrument air.
- Use suitable tools only.

- Please loosen the upper hexagonal nut of the cable gland by using a 22 mm open-end wrench. Use the second 22 mm open-end wrench to hold the lower hexagonal nut of the cable gland in position. This will assure that you do not twist the lamp cable.

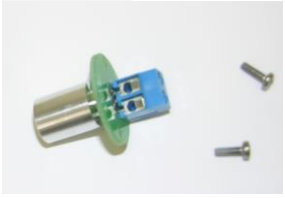
  Attention!

  The lamp cable is marked with "lamp"

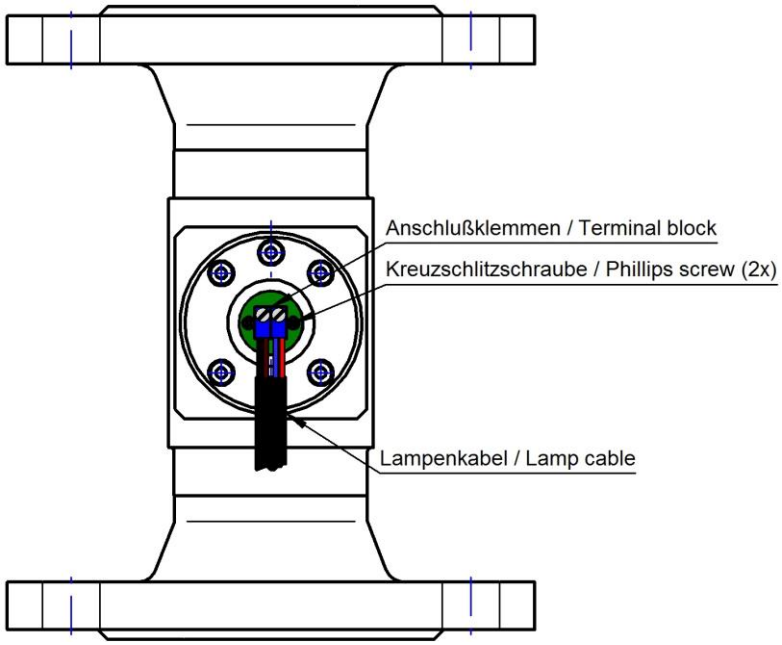


Loosen the slotted screws of the connector and remove the lamp cable Loosen the Phillips screws and carefully pull out the measuring LED.

LED socked



Replace UV Led and reassemble the sensor in reverse order.



Replacement of gaskets/windows

Ignoring of the following hints will cause a loss of warranty

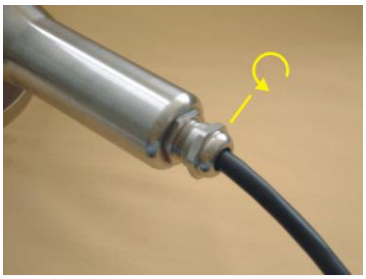
The interval to replace the gaskets depends on the specific application.
The replacement cycle depends on process pressure, process temperature, sealing material and product characteristics. In worst case (high temperature, high pressure, aggressive medium) the gaskets must be replaced every month. Under normal conditions the gaskets should be replaced every year. The maximum lifetime in easy applications can go up to 2 years.
We strictly recommend that the customer establishes a maintenance interval based on local conditions. If you have any questions or if you require more information contact Galvanic Applied Sciences USA.

Notice:

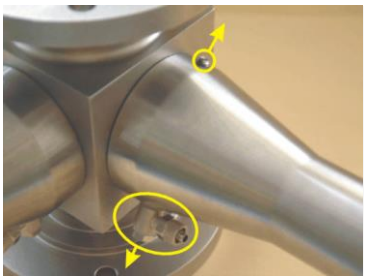
- Qualified technical personnel must perform repair and maintenance.
- Before beginning any work the sensor must be cleaned and flushed thoroughly. Depending on customers' application product residues can be very dangerous (aggressive, poisonous). Please handle the system very carefully due to possible leakage etc.
- Avoid pulling and twisting of the lamp cable.
- Avoid applying excessive force during assembling and disassembling of the sensor.
- Screw in all bolts and cable glands stalwart only.
- Please work carefully during the replacement of the measurement gaskets.
- The lamp replacement should be done in a dry and clean location, to protect the optical components from dirt.
- Please be sure that no dust or other particles penetrates into the optical assembly.
- Do not touch the lenses.
- In case of any dirty component please clean carefully by using fresh water and a cloth (lint-free), dry all components by using instrument air.
- Use suitable tools only.

Required tools:

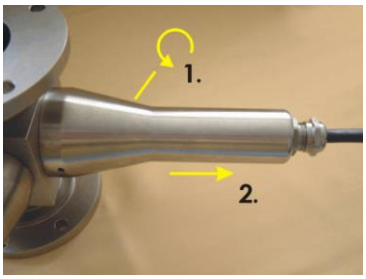
- 2 x open end wrench - 22 mm
- Flat blade screwdriver - 2 mm
- Hexagonal spanner – 1.5 mm
- Hexagonal spanner – 2.5 mm
- Hexagonal spanner – 3.0 mm
- Small bowl to drop components



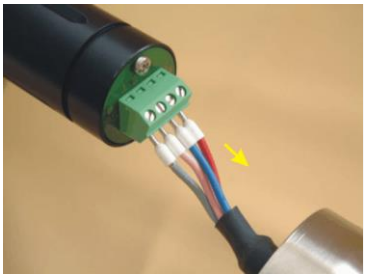
- Please loosen the upper hexagonal nut of the cable gland by using a 22 mm open-end wrench. Use the second
  22 mm open-end wrench to hold the lower hexagonal nut of the cable gland in position. This will assure that you do not twist the lamp cable.



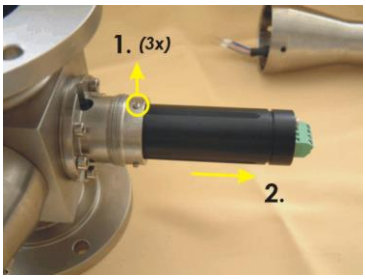
- Remove Allen screws and / or air purge connectors.



- Screw off lamp / detector arm.
- Shift the lamp / detector arm until you have access to the electrical/cable connections.



- Loosen all wires of the lamp cable by using the 2 mm flat blade screwdriver.
- Remove lamp arm and cable carefully.



- Loosen Allen screws (3x) by using the 1,5 mm hexagonal spanner.
- Remove lamp assembly carefully.

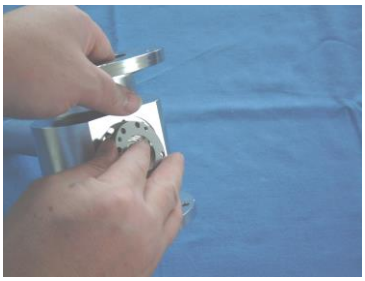
- Loosen Allen screws (6pc. M4 x 16 [DIN 912]) by using the 3 mm hexagonal spanner.

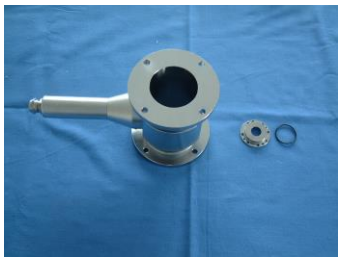
- Carefully remove sapphire window out of the window holder.

Attention!
If the window sticks in the holder, remove the holder first after that carefully push the window out of it's sealing.

- Remove the window holder carefully out of the flow cell.

  Attention!
  If the holder sticks inside the flow cell, please use the mounting screws to push the holder out of its sealing. Please make sure that the holder does not tilt during this procedure. Do not apply excessive force during this procedure; be careful not to damage the sealing surfaces for the holder or flow cell.





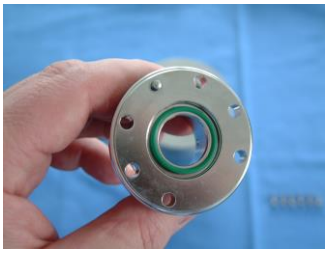
- Replace the outer O- ring of the holder.

- Insert the window holder including the new O- ring into the flow cell.
- Adjust the holder so that the mounting holes of the plate match the mounting threads of the flow cell.

  Attention!
  Please clean the sealing surfaces carefully before reassembling the unit. If necessary use lubrication grease to guarantee proper sealing.
  Do not damage or sheer the O- rings.

- Put the new O- ring into the groove of the window holder.

- Put the window into the holder.

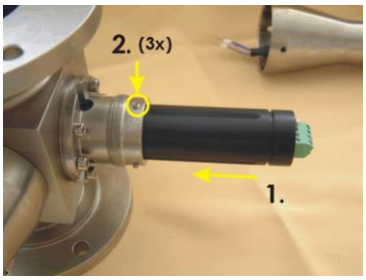


- Put a new O- ring into the optic holder.

  Attention!
  This O- ring does not have a sealing function; it protects the window against damages.

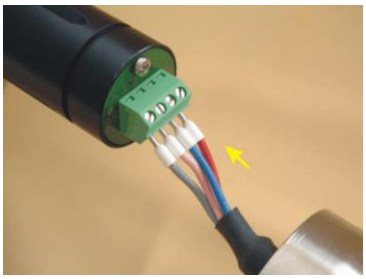
- Put the optic holder over the window and screw it by using the mounting screws.

  Attention!
  Please make sure that the O- rings stay inside their grooves during this procedure. We strictly recommend a 30-minute pressure test under process conditions (without the optical components) to guarantee proper sealing. This procedure will avoid possible damages in case of leakage.

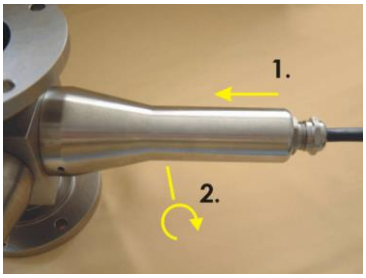


- Push the optical assembly into the holder.
- Tighten Allen screws (3x)

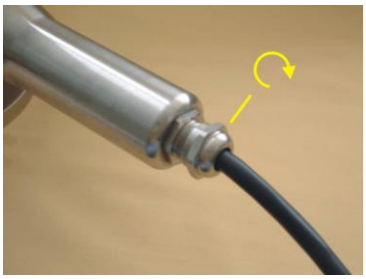
Attention!
Please pay attention to the position of the optical assembly. The three grooves on the outside of the barrel must be in line with the three Allen screws.



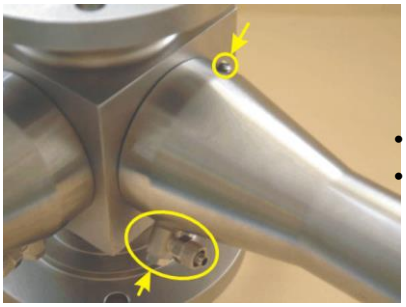
- Reconnect the wires of lamp / detector cable and perform a lamp test.



- Push lamp / detector arm to the thread.
- Tighten lamp / detector arm

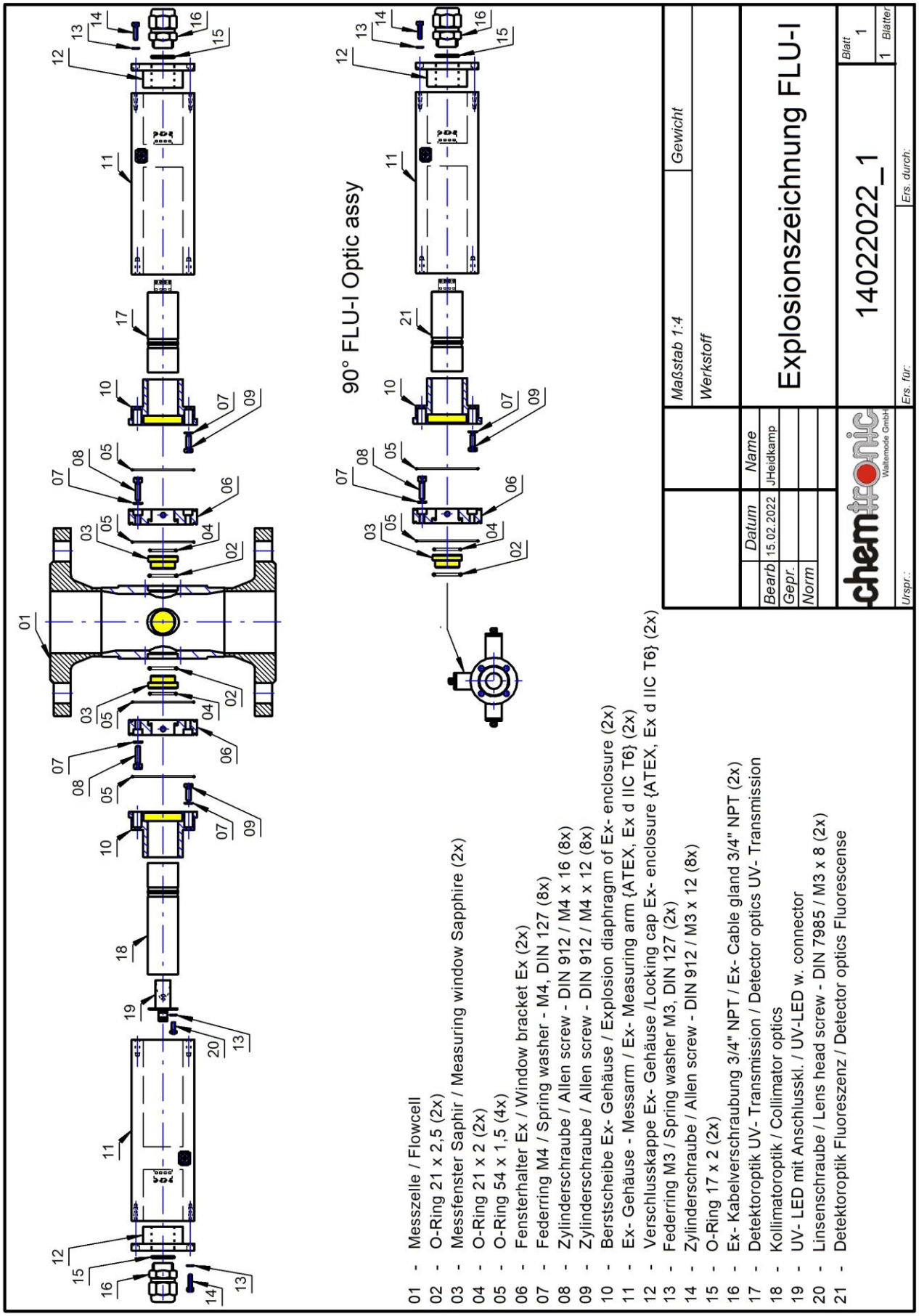


- Tighten cable gland



- Screw in Allen screws and / or air purge connectors
- Functional test and eventual calibration.

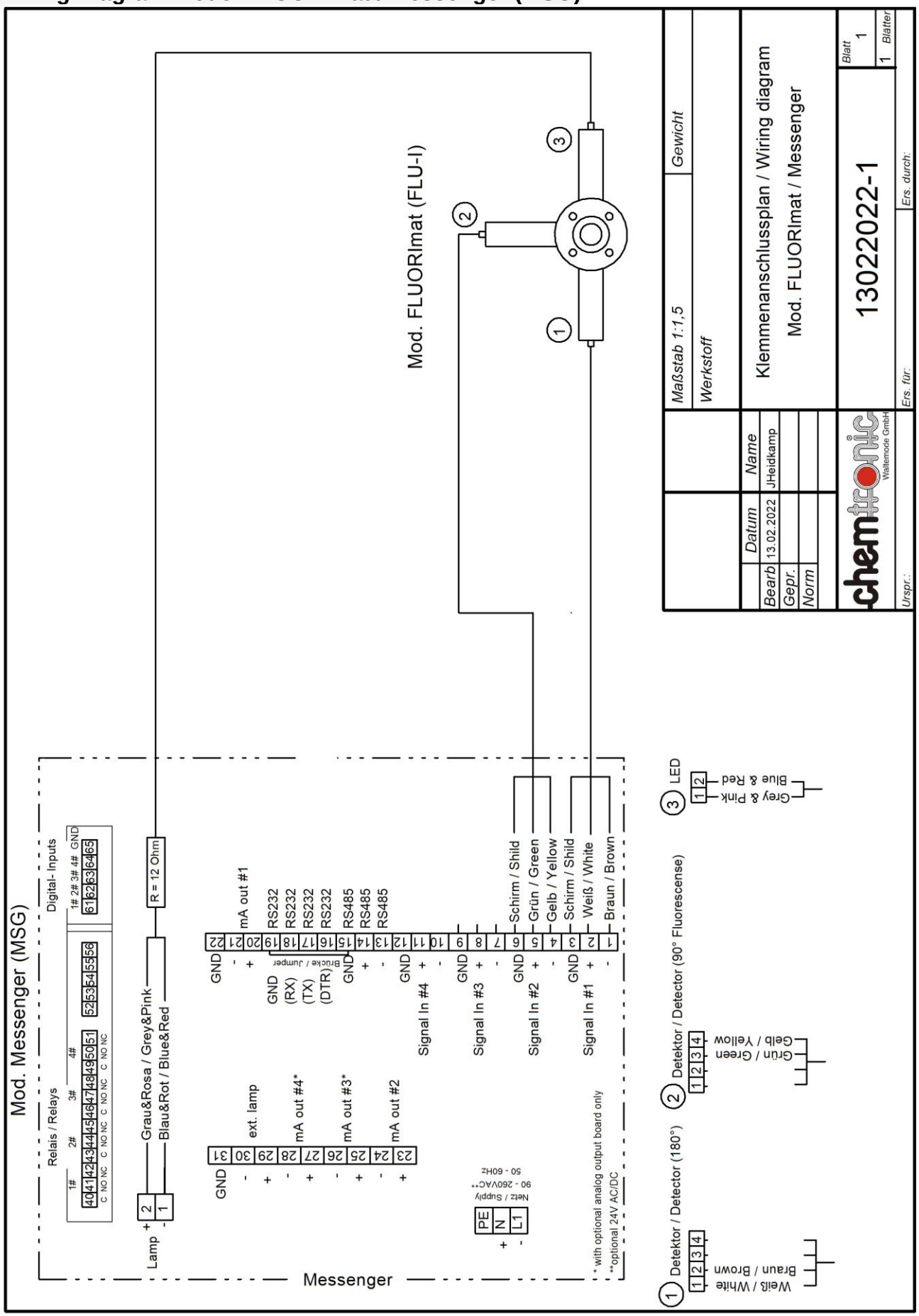
Exploded Drawing Model MoniSpec-AD



Spare Part List FLUORImat (FLU-I)

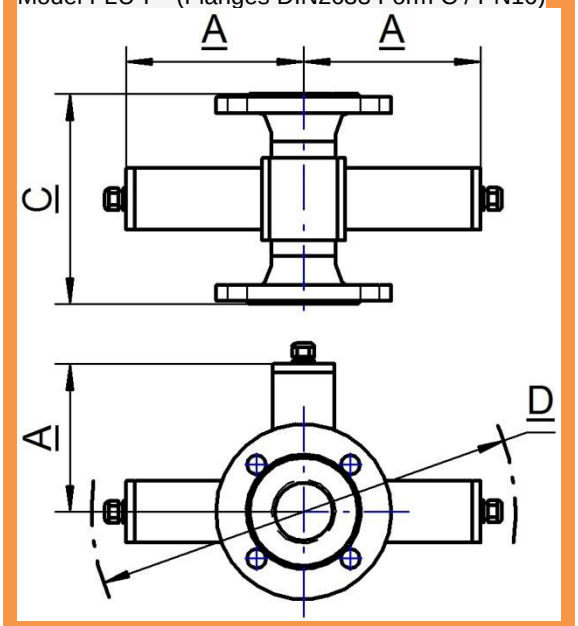
Pos.	Qty required	Article-No.	Article-Description
001	1	S-0000-0114-00	Stückliste FLUORUmat (FLU-I)
001.1	3	C208-6000-VI	O-Ring (MTC/MSC • FKM • 21x2,5)
001.2	3	C208-6000-KA	O-Ring (MTC/MSC • FFKM • 21x2,5)
001.3	3	2200-1100-SA	Messfenster / measuring window (OPL45- Saphir 11mm) - (22 , 45, MTC)
001.4	3	2200-1400-SA	Messfenster / measuring window (OPL40- Saphir 14,0mm) - (22 , 45, MTC)
001.5	3	2200-1900-SA	Messfenster / measuring window (OPL30- Saphir 22.0mm) - (22 , 45, MTC)
001.6	2	2200-2400-SA	Messfenster / measuring window (OPL20- Saphir 24,0mm) - (22 , 45, MTC)
001.7	3	2200-2900-SA	Messfenster / measuring window (OPL10- Saphir 29,0mm) - (22 , 45, MTC)
001.8	3	2200-3150-SA	Messfenster / measuring window (OPL5- Saphir 31,5mm) - (22 , 45, MTC)
001.9	3	2200-3300-SA	Messfenster / measuring window (OPL2- Saphir 33mm) - (22 , 45, MTC)
001.10	3	C208-6001-VI	O-Ring (MTC/MSC • FKM • 22x2)
001.11	3	C208-6001-KA	O-Ring (MTC/MSC • FFKM • 22x2)
001.12	3	D650-0004-00	Fensterhalter Std. / Window bracket std. (MTC)
001.13	6	C208-6006-VI	O-Ring (MTC/MSC • FKM • 54x1,5)
001.14	3	D650-0011-00	Fensterhalter Ex / Window bracket Ex (MTC)
001.15	3	D650-0001-00	Messarm Edelstahl / Measuring arm SS (MTC)
001.16	3	D650-0003-00	Verschlußkappe Messarm / Locking cap (MTC)
001.17	3	C208-6005-VI	O-Ring (MTC/MSC • FKM • 52x1,5)
001.18	3	C305-1038-00	Kabelverschraubung VA/Cable gland 316SS (M16x1,5)
001.19	3	C305-1039-00	Kabelverschraubung Polyamid/Cable gland Polyamid (M16x1,5)
001.20	1	C604-1001-00	Detektorkabel / detector cable - (MT, MS) per 1m
001.21	1	C604-1002-00	Lampenkabel / lamp cable - (MT , MS) per 1m
001.22	2	C305-1002-00	Luftanschluss 90°/Connector air purge 90°
001.23	1	2001-1000-01	Verschraubung Reinigungsdüse (1/4" MNPT • MT, MS)
001.24	1	C608-1002-00	Reinigungssonde, 120mm lang / Cleanig probe 120mm length (MT, MS)
001.25	1	2001-0511-00	Baugruppe Detektoroptik / Detector optics Transmission (FLU-I)
001.26	1	2001-0510-00	Baugruppe Detektoroptik Fluoreszenz / Detector optics fluorescense (FLU-I)
001.27	1	2001-0512-00	Baugruppe Kollimator / Detector Collimator UV-LED (FLU-I)
001.28	1	C402-1200-00	UV- LED inkl Fassung u. Anschlusspl. / UV- LED incl. socked a. terminal board

Wiring Diagram Model FLUORImat / Messenger (MSG)



Dimensional Drawings Model FLUORImat (FLU-I)

Model FLU-I (Flanges DIN2633 Form C / PN16)



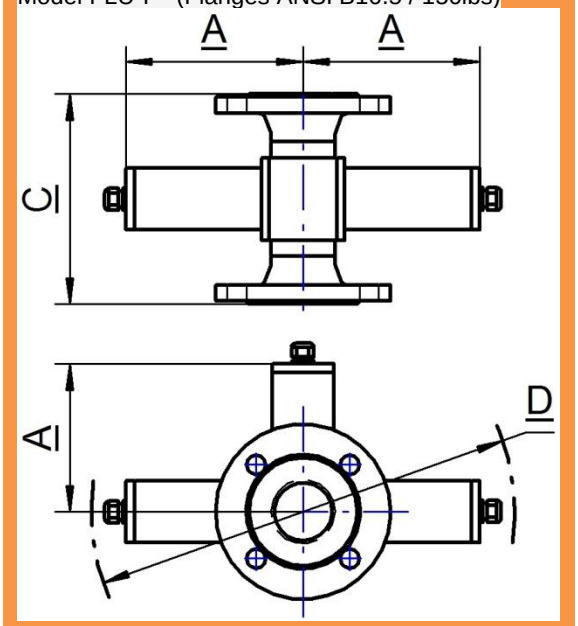
Version for installation in safe Area

	A		C	D
DN25	191		221	444
DN32	191		225	444
DN40	191		229	444
DN50	191		198	444
DN65	201		198	464
DN80	208		208	478
DN100	219		212	500
DN125	233		218	528

Version for installation in hazardou Area

	A		C	D
DN25	246		221	602
DN32	246		225	602
DN40	246		229	602
DN50	246		198	602
DN65	256		198	622
DN80	263		208	636
DN100	274		212	658
DN125	288		218	686

Model FLU-I (Flanges ANSI B16.5 / 150lbs)



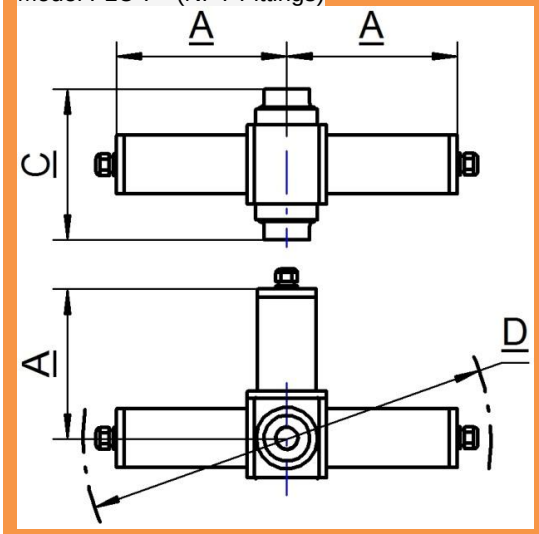
Version for installation in safe Area

	A		C	D
1”	191		259,2	444
1 ¼”	191		262,4	444
1 ½”	191		272	444
2”	191		235	444
2 ½”	201		248	464
3”	208		247	478
4”	219		260	500
5”	233		284	528

Version for installation in hazardous Area

	A		C	D
1”	246		259,2	602
1 ¼”	246		262,4	602
1 ½”	246		272	602
2”	246		235	602
2 ½”	256		248	622
3”	263		247	636
4”	274		260	658
5”	288		284	686

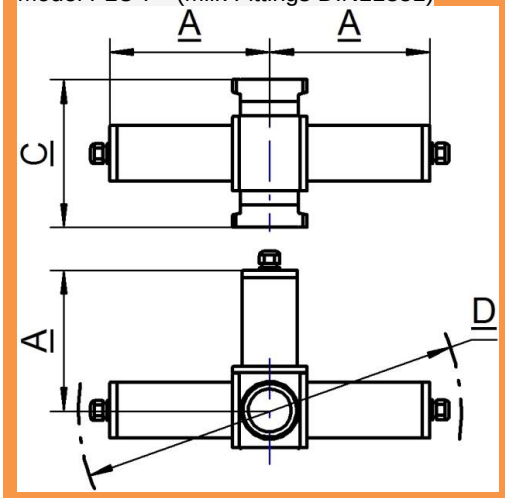
Model FLU-I (NPT Fittings)



Version for installation in safe Area

	A		C	D
¼”	191		148	444
½”	191		148	444
¾”	191		148	444
1”	191		148	444
1 ¼”	191		148	444
1 ½”	191		148	444

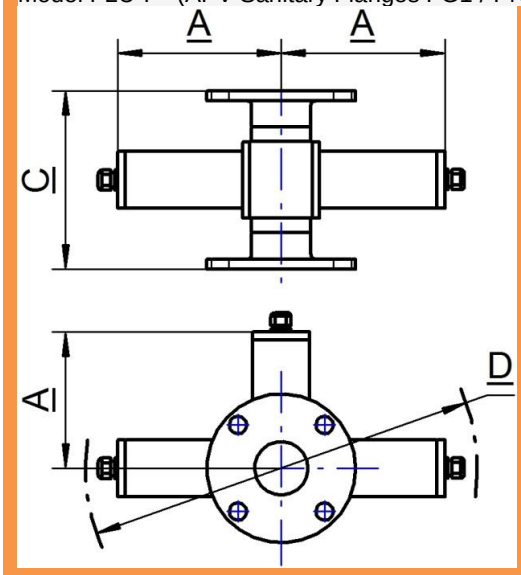
Model FLU-I (Milk Fittings DIN11851)



Version for installation in safe Area

	A		C	D
DN25	191		192	444
DN32	191		192	444
DN40	191		192	444
DN50	191		154	444
DN65	201		158	464
DN80	208		158	478
DN100	219		168	500
DN125	233		o. R.	528

Model FLU-I (APV Sanitary Flanges FG1 / PN10)



Version for installation in safe Area

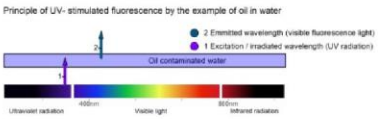
	A		C	D
DN25	191		196	444
DN40	191		196	444
DN50	191		156	444
DN65	201		156	464
DN80	208		156	478
DN100	219		156	500
DN125	233		162	528

Model FLUORImat (FLU-I)

Inline- fluorescence measuring unit, Oil in Water Monitor

Abb. 1: Sensor FLUORImat

Abb. 2: Principle of Measurement



- **Method of measurement UV- stimulated fluorescence**
- **Low maintenance / long service life**
- **Optimized measuring cell for simplified maintenance/cleaning**
- **Typical calibration/maintenance interval 24 months (depending by application)**
- **UV emitter (λ 365nm Deep UV-LED), service life approx. 3 years**
- **Protection class: IP65 / Nema 4x**
- **Material measuring cell: stainless steel (optional titanium, PTFE, ...)**
- **Material measuring window: sapphire (optional Suprasil)**
- **Gasket material: FKM (optional FFKM, EPDM, Silicone, ...)**
- **Process connections: DIN flanges, ANSI flanges, NPT, ...**
- **Measuring range: 0-0.5ppm to 0-100ppm**

Description:

The oil monitor model FLUORImat uses the measuring principle of UV- stimulated fluorescence to detect oil in water.
In the fluorescence of mineral oils, UV- light is absorbed by the unsaturated hydrocarbons inside the oil. These absorbed UV- light is converted into light with longer wavelength. If this effect were visible to the human eye, we would see that the UV light is converted into yellow-green fluorescent light. As higher the oil concentration, as higher the fluorescence intensity. The intensity of the fluorescence increases proportionally to the oil concentration and ensures high measurement sensitivity.

The model FLUORImat is designed for continuous operation with long service life.
Transmitter model C or C1 will be used as measuring amplifiers.
Calibration is application specific in the specified measuring ranges and units of measurement, depending on the application.
Any influence of turbidity, aging of the UV source or window contamination on the measured values is compensated by a ratio measurement.
The sensor can be installed directly in a pipeline up to a nominal diameter of DN50. For larger nominal diameters it is recommended to measure in bypass.
Process connections and sealing materials are specifically designed for your application.

Application:

- Oil in potable Water
- Oil in Condensate
- Oil in cooling Water
- Oil in produced Water

Operational areas:

- Chemical Industry
- Petro chemical Industry
- Beer and Beverages
- Food

Technical Data:

Line size:	DN 20 – DN 100 / 1“ to 4“	Measuring range:	typical 0–0,5ppm, 0–100ppm
Proces pressure:	PN 16 / ANSI class 150	Reproducibility:	± 2 %
Temperature range:	maximum 80°C	Detector system:	Silica pin diodes
Sensor material:	1.4404	Environment:	IP65 / NEMA 4X
Window material:	Sapphire	Cleaning:	optional cleaning jet probe / CIP
Gasket material:	Application specific		

Chemtronic Waltemode GmbH
40789 Monheim am Rhein, Niederstr. 14, Germany, Tel.: +49-(0)2173-57007, Fax: +49-(0)2173-56007, E-mail: info@chemtronic-gmbh.de, Internet: www.chemtronic-gmbh.de

Model Monitek Messenger

Universal Transmitter, Monitek Product Line of Galvanic Applied Sciences Inc.

- **Configuration via PC, Laptop**
- **Optional with implemented Panel PC**
- **Menu - based, intuitive User Interface**
- **Instruction Manual available via Help Function**
- **Serial Interface RS 232C / RS 485 (Modbus RTU Protocol)**
- **Simultaneous Use of up to 4 Sensors**
- **Sensors for Turbidity, Colour or Absorption measurement**
- **Fully Programmable Units (ppm, EBC, FTU, g/l, % TS...)**
- **Two Independent, fully programmable Cleaning Cycles**
- **Linearization of Measurement Values**
- **Integrated Data Logger for up to 8000 measurement Values**
- **Recovery via Back-up File**

Description:

The universal transmitter model Messenger can be used with all optical sensors of the Monitek series. The Messenger allows the simultaneous use of multiple sensors. Hereby you can use up to four single channel sensors. Even different sensors can be used with one transmitter. The measurement results can be linked together using almost any mathematical equation. This ensures an easy setup of e.g. dosage systems. The programming / calibration of the system will be done via a PC, Netbook or Laptop using the menu-based software. Only one PC or Panel- PC is required to configure an instrument in a network of up to 255 Messengers. Using the Messenger with an integrated Panel- PC allows the paperless recording or displaying of the measurement results as bar- or line graph's.

Applications:

- Scatter light turbidity measurement
- Absorption turbidity measurement
- Single channel color measurement
- Dual channel color measurement

Operational areas:

- Chemical industry
- Petrochemical industry
- Pulp & Paper
- Beer and beverages

Technical Data:

Supply voltage:	90-260VAC, 50-60Hz (opt.: 24VDC ±10%)	optional digital inputs:	4x 5V High
Power consumption:	maximum 50 VA	Reproducibility:	± 1 %
Relay capacity:	4 Relays fully programmable (48V / 2A)	Temperature:	-10°C to 50°C
Analogue output:	Up to 4x 0/4 - 20mA (isolated)	Enclosure / Protection:	1.4301 / IP65 (NEMA 4X)
Interfaces:	RS 232C / RS 485 Modbus RTU	optional hazardous area:	ATEX Zone I / Zone II

Chemtronic Waltemode GmbH your European distributor for your MONITEK products.
40789 Monheim Niederstr.14 Phone: +49-(0)2173-57007 Fax: +49-(0)2173-56007 E-mail: info@chemtronic-gmbh.de Internet: www.chemtronic-gmbh.de

EU Certificate of Conformity (CE)

Declaration of Conformity

The Manufacturer of the Products covered by this Declaration is

GALVANIC APPLIED SCIENCES U.S.A. INC.

41 Wellman St., Lowell, MA 01851 USA
Email: liquidparts@galvanic.com
Tel: + 978-848-2701, Fax: + 978-848-2713

The Directives covered by this Declaration: 2004/108/EC
2006/95/EC

The Products covered by this Declaration

Monitek Messenger Transmitter Model # MSG-LD

The Basis on which Conformity is being Declared

The manufacturer hereby declares under his sole responsibility that the products identified above comply with the protection requirements of the EMC directive and with the principal elements of the safety objectives of the Low Voltage directive listed above and that the following standard have been applied: EN / CSA /UL 61010-1
EN 61000-6-2: 2005
EN 61000-6-4: 2007

The technical documentation required to demonstrate that the products meet the requirements of the Low Voltage and EMC directives have been compiled and are available for inspection by the relevant enforcement authorities. The CE mark was first applied in: 2010.

Technical Documentation is available for inspection at these addresses:

Chemtronic Waltemode GmbH
Niederstrasse 14
D-40789 Monheim
Germany

ANAEL, SAS
15, rue Nobel
Zone Industrielle
F-45700 VILLEMANDEUR
France

Authority: V.P. and General Manager, Jack Cotter

Attention!

The attention of the specifier, purchaser, installer or user is drawn to the special measures and limitations to use which must be observed when these products are taken into service to maintain compliance with the above directives.

Details of these special measures and limitations are available on request, and are also contained in the product manuals.

Rev. A effective July 29, 2010