

Manual

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Absorption sensor model

LAS

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Copyright

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Any further use beyond the copyright laws is not allowed without the written approval of Chemtronic Waltemode GmbH. **There are no further reaching warranty claims to take because of the content of existing document.**

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 places of warranty we explicitly name Chemtronic Waltemode GmbH, Monheim, Germany or Galvanic Applied Sciences Inc., Bedford MA, USA. In case of warranty service at the customer site, we will charge additional expenses e.g. travel expenses, overnight cost, etc. 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.

Before installation and start-up

Installation guidelines



Danger: Exceeding the specified maximum pressure and / or the specified maximum temperature will cause a very high safety risk.



Please read the additional safety instructions before installation and start-up.

- The sensor is manufactured according to the customer's application (variable line size, flange type, cleaning jets, gasket material etc.).
- It is recommended to run the calibration of the system before installation of the sensor.
- The location / installation of the sensor should be in a vertical standpipe.
- The process pressure should never exceed the specification of the delivered sensor.
- The process temperature should never exceed the specification of the delivered sensor.
- Avoid air- / gas- bubbles inside the sensor, they cause disturbances. Air and gas bubbles will cause noise and drift of the measurement signal. (The air bubbles are not expected at pressures upwards of 2 bar in aqueous solutions).
- In case the process temperature should fall under the dew point or rise above 85 °C purge the sensor optic housings with dry instrument air (approx. 10 l/h). Condensed water and excessive temperatures can damage the sensor and cause inaccurate measurements.
- Due to potential noise problems it is recommended not to extend the sensor cables.
- Due to potential noise problems use original sensor cables only.
- In case the optional cleaning jets are being used, make sure the pressure of the cleaning fluid is at least 50% higher than the process pressure.

Safety instructions

Pay attention 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

The reagents or standards 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 reagents or standards.

Electrical installation

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

Hazardous area

DO NOT INSTALL the system in hazardous area without the optional Ex-proof equipment. Operation of non Ex- proof systems in hazardous area will cause a high risk.



Using the system in hazardous areas (Ex Zone I / Ex Zone II) will only be safe with the installation of the optional special Ex-proof designs including all required 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 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 installed improperly, handled improperly, used outside of the technical specifications (of the instrument), or damaged by gross negligence.

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:

1. If the instrument has been in service, the wetted portion should be thoroughly cleaned (typically with clean water) and then thoroughly dried.
2. The instrument should be placed in the original packing material.
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.
3. The instrument should then be stored in a protected area until time of installation.

Transport damage

Please inspect the instrument immediately after receiving for potential shipping damages.

For any claims to the transportation insurance or warranty repair, it is absolutely required to notify transportation damages immediately after receiving the instrument. In case of obvious damages of the outer packaging, the carrier must give a receipt for this damage to make demands for the insurance.

In case of a delayed announcement the insurance will not pay for damages and Chemtronic Waltemode GmbH will not assume liability for these damages.

Shipment of the instrument

Please clean the instrument carefully before shipment (e.g. for revision / repair). Please use fixed packaging to protect the instrument against any shipping damages.

If at all possible the original packaging should be used.

Maintenance

Replacement of measurement lamp



Ignoring of the following hints will cause a loss of 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 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 lamp.
- Please be sure that no dust or other particles penetrates into the optical assembly.
- 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.

Required tools:

- Flat blade screwdriver - 2 mm
- Phillips screwdriver – medium size
- Hexagonal spanner – 2.5 mm
- Small bowl to store components



- Please loosen the upper hexagonal nut of the cable gland by using a 22 mm open-end wrench. Please assure that you do not twist the lamp cable.

Attention!

The lamp cable is marked with "lamp"



- Remove screws





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

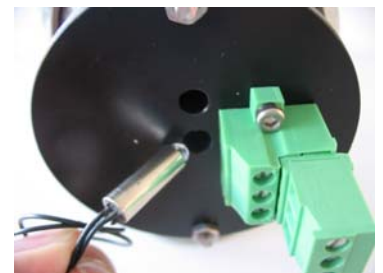


- Loosen all wires of the lamp cable by using the 2 mm flat blade screwdriver.



- Loosen Allen screw by using the 2.5 mm hexagonal spanner.

- Remove / replace the measurement lamp..



- Connect the wires of the measurement lamp.

- Tighten Allen screw by using the 2.5 mm hexagonal spanner to fix the lamp.





- Push the measurement arm carefully into it's original position.

- Tighten screws and cable gland.carefully.



Using the calibration filters



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- 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:

- Flat blade screwdriver - 2 mm
- Hexagonal spanner – 2.5 mm
- Phillips screwdriver – medium size
- Small bowl to drop components

The Sensors model LAS are equipped with a build in calibration adapter.

This calibration dapter can simulate two different turbidities by using calibration filters.

Please note:

The sensor must be filled with a low turbidity liquid (normally clean water) to procced a calibration.

The calibration procedure depends on the Monitek transmitter used. Please read users manual of the transmitter for detailed information of the calibration procedure.



- Please loosen the upper hexagonal nut of the cable gland. Please! assure that you do not twist the lamp cable.

- Remove screws.



- Shift the lamp arm until you have access to the calibration adapter.

- Read zero calibration sample first, with calibration adapter in middle position.



- Shift calibration adapter into the position with the lower turbidity value* and read this calibration sample by using the Monitek Transmitter.
- *The calibration adapter is labeled with the specific turbidity values. This turbidity values depend on the technical specification of the sensor as well as on the specified measurement range of the sensor.

- Shift calibration adapter into the position with the lower higher value* and read this calibration sample by using the Monitek transmitter.
- Please read the instruction manual of your Monitek transmitter for a detailed explanation how to enter calibration samples.
Please note:
Some transmitters require 1 calibration sample only.



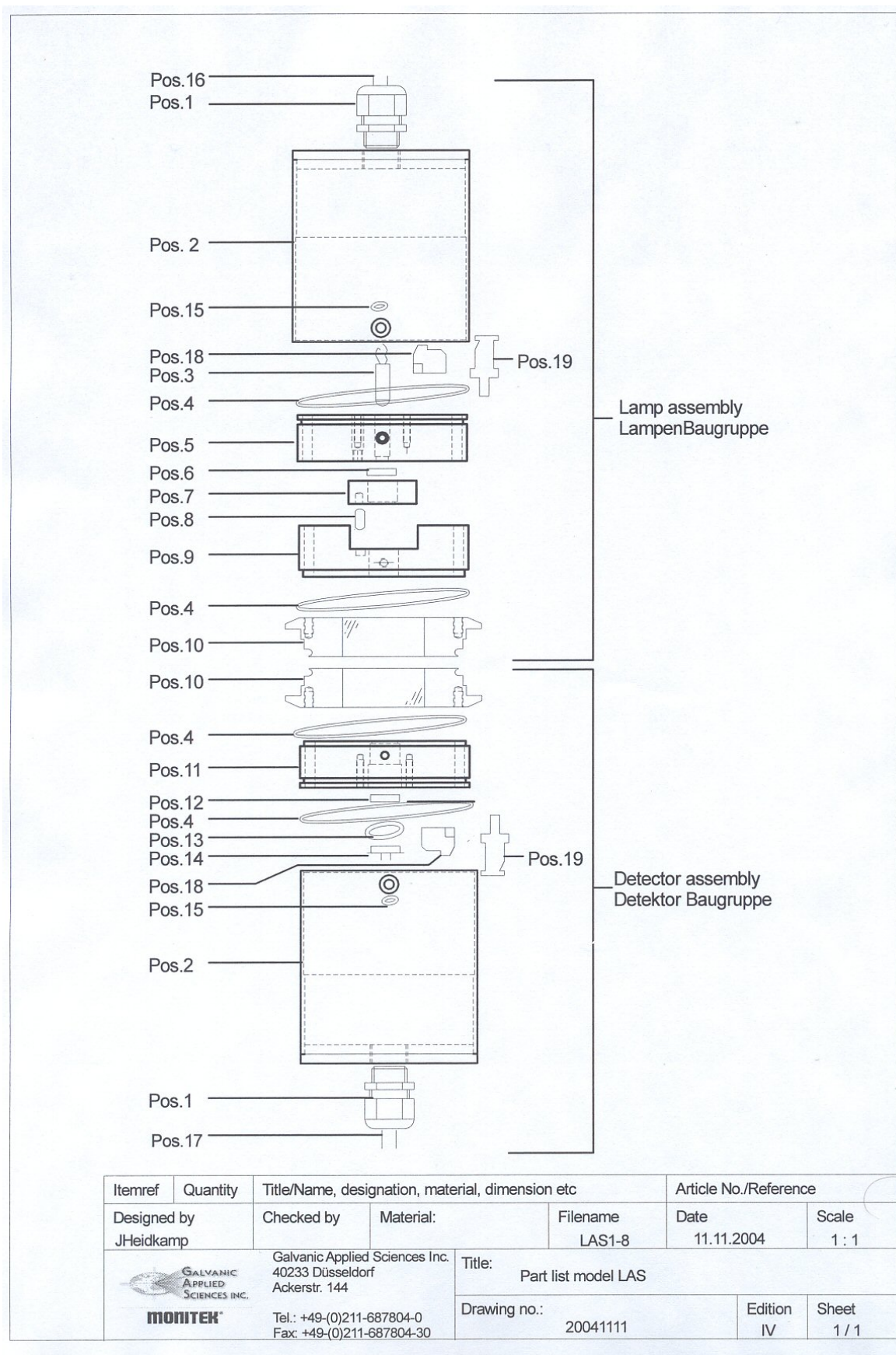


- Shift the calibration adapter back into middle position.

Push the measurement arm carefully into it's original position.
Tighten screws and cable gland.carefully.



Spare Part List





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Katalog-Nr. (Modell) / Catalogue-No. (Model)

LAS

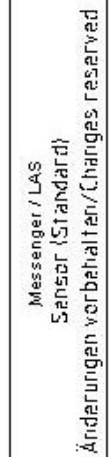
Pos. Item	Bezeichnung Description	Anz./Sys Qty./Sys	Teile Nr. Part No.	EUR
1	Kabelverschraubung / Cable gland (M16x1,5)	2		
2	Lampen-/Detektorarm / Lamp-/detectorarm	2	D800-0006-00	
3	Messlampe / Measuring lamp	1	C402-0047-00	
3a	alternativ IR- LED inkl. Fassung / alternative IR-LED assy.	1	0900-6001-00	
4	O-Ring 68x2	4	C208-5013-VI	
5	LAS Lampenbaugruppe Teil 3 / LAS lamp assy. part 3	1	D800-0004-00	
6	Anwendungsspez. Kalibrierfilter / Appl. specific cal. Filter (0.1... 4AU)	2		
7	LAS Lampenbaugruppe Teil 2 / LAS lamp assy. part 2	1	D800-0003-00	
8	Passtift / fitting bolt (ISO2338 - B3 x 7)	1		
9	LAS Lampenbaugruppe Teil 1 / LAS lamp assy. part 1	1	D800-0002-00	
10	Metaglas Variventplatte / Metaglas Varivent plate	2	D800-0001-00	
11	LAS Detektorfassung / LAS detector assembly	1	D800-0005-00	
12	IR- Filter 850nm	1	C410-0085-00	
13	O-Ring 9,25x1,78	1	C208-2012-00	
14	Detektor / Detector	1	C407-6061-00	
15	O-Ring 3,68x1,78	4	C208-2007-00	
16	Lampenkabel / Cable lamp (Preis/price per m)		C604-1002-00	
17	Detektorkabel / Detector lamp (Preis/price per m)		C604-1001-00	
18	Steckersockel 3pin / socket plug male 3pin	2	D800-0008-00	
19	Steckbuchse 3pin / Connector female 3pin	2	D800-0009-00	

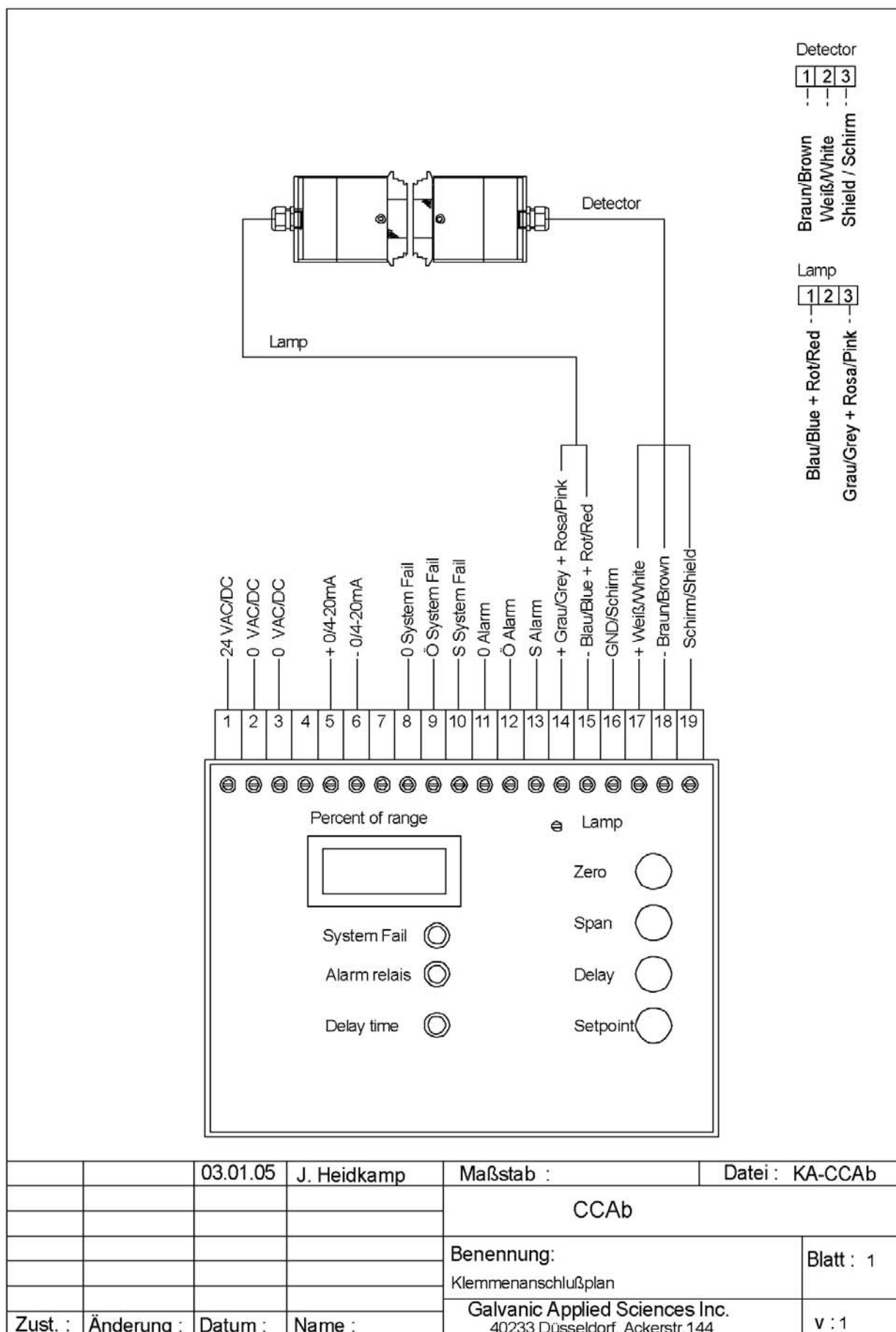
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13.11.2004

Version:01.12.2004

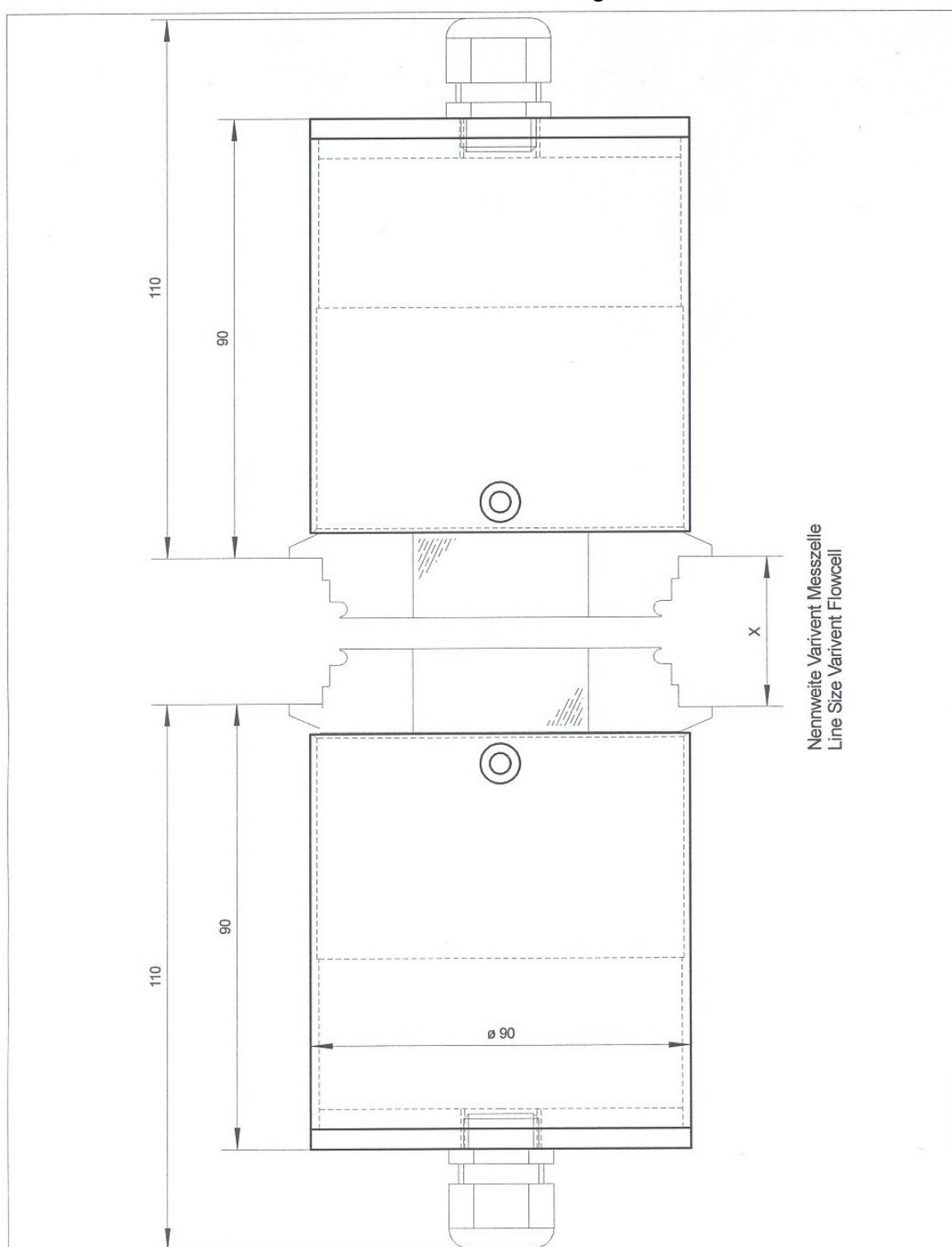
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				Benennung:	Blatt : 1
				Klemmenanschlußplan	
				Galvanic Applied Sciences Inc.	v : 1
				40233 Düsseldorf, Ackerstr.144	
Zust. :	Änderung :	Datum :	Name :		

Dimensional Drawing



Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference	
Designed by JHeidkamp		Checked by	Material: Metaglas	Filename LAS1-9	Date 12.11.2004	Scale 1 : 1
		Galvanic Applied Sciences Inc. 40233 Düsseldorf Ackerstr. 144			Title: Dimesional Drawing	
		Tel.: +49-(0)211-687804-0 Fax: +49-(0)211-687804-30			Drawing no.: 20041211	Edition IV Sheet 1 / 1

Technical Data / Data Sheet



- **Material 1.4404 (316L) / Metaglas**
- **Nema4X (IP 65)**
- **Process installation via Varivent plates**
- **Line size DN 40 up to DN 125 mm (1 1/4" to 5")**
- **Max. pressure PN10 (150 lbs)**
- **Maximum process temperature 140 °C**
- **Cleaning in place**
- **Perfect hygienic Design**
- **Implemented calibration filters**
- **Detector system 850nm**

Applications

The sensor model LAS, in connection with a Monitek converter, measures turbidity in liquids. The use of metal melted measurement windows without any additional gaskets guarantees for an perfect hygienic design. The installation by using Varivent plates offers a cost saving process installation via standardized flowcells.

- **Drinking water • Beer • Beverages • Wine • Spirits • Milk •**
- **Separator inlet / outlet • Yeast • Suspension • Product concentration • Wort •**

Description

The concentration sensor Model LAS works on the principle of light absorption, to detect dissolved or suspended solids in liquids. The sensors can be installed into almost any type of pipe. The implemented calibration filters allow to calibrate the system without using liquid calibration standarts.

Specifications

Line size:	DN 40 – DN 125	Optical path length:	Depending on line size
Pressure:	Max. 10 bar	Measurement range:	Appliation specific 0-100 -...500 EBC
Temperature range:	Max. 140 ° C	Detector system:	850nm
Sensor material:	1.4404 (316L)	Optional hazardous area:	not available
Gasket material:	No window gasked required	CIP:	Standard