

Manual

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Absorption sensor model

TURBImat-A (TBM-A)

Chemtronic Waltemode GmbH .

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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. 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.

- It is recommended to run the calibration of the system before installation of the sensor.
- System is typically factory calibrated at you first start up.
- 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 purge the sensor optic housings with dry instrument air (approx. 5 l/h). Condensed water and excessive temperatures can damage the sensor and cause inaccurate measurements.
- Do not to extend the sensor cables.
- Use original sensor cables only.

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.



DO NOT INSTALL the system in hazardous area.



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. The original packaging should be used if possible.

Calibration

The System arrives typically factory calibrated, there is no additional calibration required at the first start up. You have to uninstall the sensor from the process pipe and fill the flow cell calibration liquids (typically Fomazin) to calibrate the system.



Take Notice: You require an additional flow cell for calibration in case the sensor is glued to the pipe (without fittings or flanges). Refer to the manual of the transmitter model Messenger or CCAb to see the details of the calibration procedure.



Sensor Cleaning

Stop the flow and empty the flow cell to clean the sensor.

Clean the sapphire windows by removing the measurement arms via the fittings.

If necessary, use a mild detergent to clean the sensor. Do not use abrasive cleaning agents or solvents.



Do not use abrasive cleaning agents or solvents!



Assembly of the Sensor

If you reassemble the measuring arms, make sure they are in the same position as before disassembly. Guide and lead screw must be aligned during assembly.

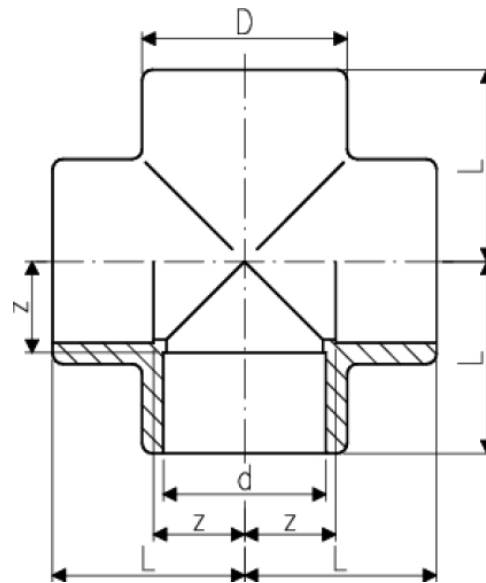


Guide Screw



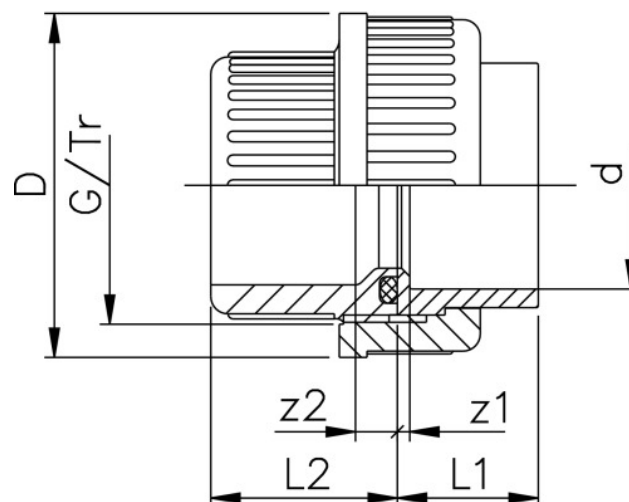
Lead Screw

Dimensional Drawing (PVC- Fitting / Flow Cell)



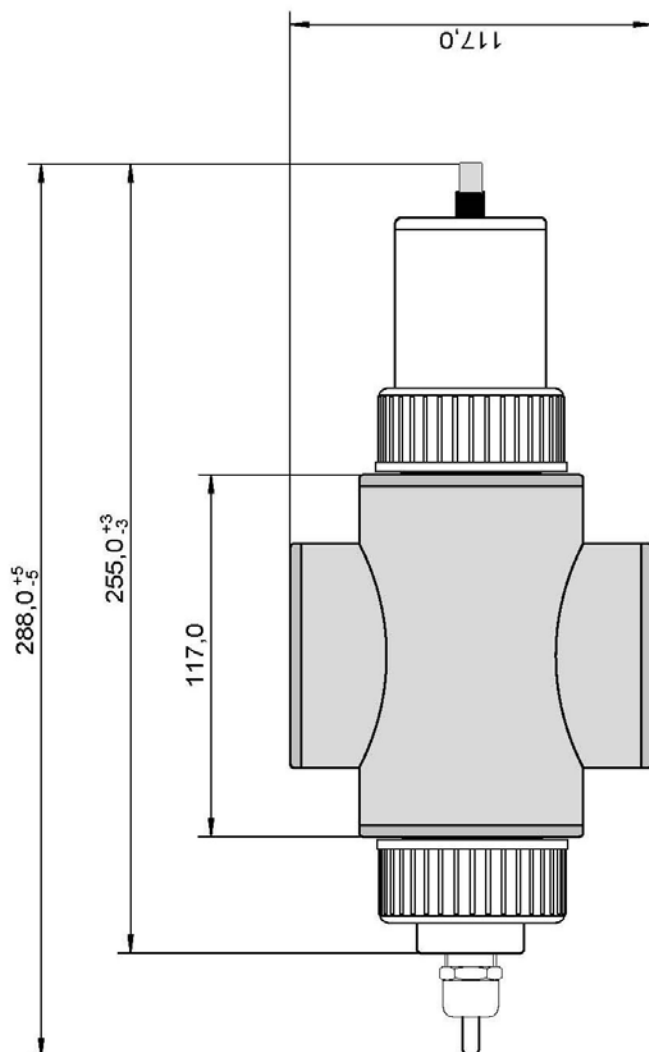
z	27
d	50mm
D	63mm
L	60mm

Dimensional Drawing PVC- Fitting (DN50 / d63)



z1	3mm
z2	18mm
D	100mm
L1	41mm
L2	58mm
G/Tr	2 3/4"

Dimensional Drawing



Zur einfachen Montage / Demontage der Messarme sollte rechts und links der Arme ein Montageabstand von 120mm eingehalten werden!

Maßstab 1:2		Gewicht	
Werkstoff		PVC-U	
Datum		Name	
Bearb. 14.05.2012		J. Heidkamp	
Gepr.			
Norm			
chemtronic Waltemode GmbH		Abmessung TURBImat-A (d63 / DN50)	
Utspr.:		Ers. für:	
		Ers. durch:	
		Blatt 1	
		1 Blätter	

Technical Data Turbidity Sensor Model TURBlmat-A



- Low Maintenance
- NIR LED- Technology (860nm DIN / EN 27027 / ISO7027)
- Wide measuring Range
- Typical calibration Interval 12 Month
- PVC-U Flow Cell (d63 DN50) / PN16 / 50°C
- Access to Sapphire Windows via GF- Fittings
- Ultra fast Window cleaning
- Process connection via Solvent Cement jointing, Flanges or GF- Fittings

The sensor model TURBlmat-A uses the principle of NIR- light absorption to detect dissolved or suspended particles in liquids. The transmitter model Messenger or CCAb will be required to use this sensor. The system has been designed for continuous operation with long life time. Calibration can be done in multiple ranges and measurement units like NTU, ppm, FTU, etc.. Due to the availability of multiple optical path lengths (2mm up to 60mm) the sensors can cover measurement ranges from 0-50NTU up to 0-20000FTU. The sensor detects the absorption of infra red light. Therefore the measurement results are not affected by product colour. The sapphire windows of the sensor are accessible via GF- fittings, this allows a very fast window cleaning if required.

Applications:

- Process water
- Potable water
- Product separation
- Centrifuge In- / Outlet
- Filtration control (break through)

Areas of Application:

- Chemical Industry
- Waste water treatment
- Food Industry
- ...

Technische Daten:

Line size: DN50 / d63
 Pressure rating: PN 16
 Process temperature: maximum 50°C
 Sensor material: PVC-U
 Window material: Sapphire
 Gasket material: EPDM (other on request)

Measuring range: typical 0-50 ...20000FTU
 Optical path length: 2mm to 60mm*
 Reproducibility: $\pm 2 \%$
 Detector system: Silica Pin diode
 Measuring wavelength: 830nm
 Protection class: IP65 / NEMA 4X

*optical path length depends by specified range!