

OZONE-IN-CLEAN-WATER SENSOR **BMT 965 AQ-LC**



*Low Concentration
Ozone Sensor
for Clear and
Clean Water*

FEATURES

- Dual beam UV photometer
- Stainless steel cuvette
- Long-life mercury lamp
- Warranty 3 years, 5 years on the UV lamp
- High accuracy, error less than 0.5%
- Ranges from 0.5 to 15 g/m³ (ppm_w)
- Simple cleaning of the cuvette windows
- Relay contact for control of external zeroing valve
- Error handling includes: summary error, lamp low, cuvette dirty, overrange
- Early warnings: lamp low, cuvette dirty
- Key functions programmable via optional Remote Display, or a Windows PC
- High and low limit alarms
- 4-20 mA and 0-10 V isolated outputs
- 8 GB non-volatile log memory (binary and Excel CSV)
- USB On-The-Go, Firmware upgrades in the field
- Option: RS-232 interface (bidirectional, isolated)
- Option: Remote Display for readout and control
- Backward compatible to BMT 964 AQ-LC

APPLICATIONS

- Monitoring of ozone in clear and clean water systems, or water with constant turbidity
- Pharmaceutical
- Biotechnology
- Food, baby food
- Beverages

The OZONE-IN-CLEAN-WATER SENSOR BMT 965AQ-LC is a precise UV photometer for direct measurement of the ozone content of clear and clean water, or water with constant turbidity, without gas bubbles. Clear means: very low turbidity. Clean means: very low deposits on inner surfaces.

Cleaning of the quartz cuvette windows, if necessary, is quite simple. Materials in contact with the ozonated water are: stainless steel, PVDF, PFA, quartz and FFPM.

Superior stability of the photometer is achieved by use of a true dual beam optical system with an extremely long-life mercury lamp. MTBF of the instrument, including the lamp, is in excess of 65,000 hours. Excluding the lamp, it is 120,000 hours.

The BMT 965AQ-LC is a SENSOR because it does not have a display. It is designed to directly be connected to a workstation via a 4 - 20 mA, or 0 - 10 V signal line, or via an optional isolated RS-232 serial connection.

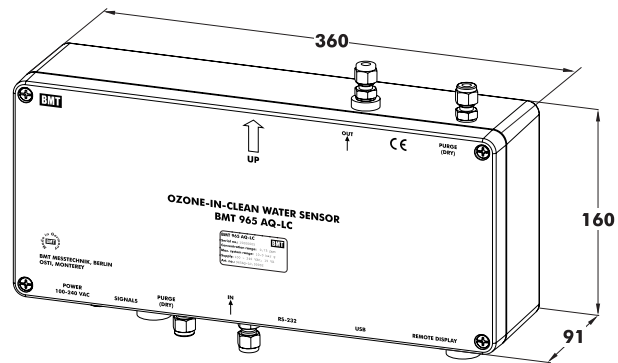
An optional Remote Display BMT 965 RD is available for installations without a workstation. To operate with the Remote Display, the BMT 965 AQ-LC has to be ordered in the version BMT AQ-LC/RD.

An eight gigabyte non-volatile log memory is included, providing virtually unlimited storage capacity for concentration and error logs. If connected to a PC, the instrument acts as an external USB drive, from which concentration and error logs can be downloaded. Logs can also be copied and firmware can be upgraded without an external computer just by connecting a USB flash drive.

Complete control of all operating parameters is provided with the Windows software BMT 965 Link.

SPECIFICATIONS

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|------------------------------------|--|
| measurement principle | dual-beam UV photometer (254 nm), no moving parts |
| MTBF | instrument incl. UV lamp 65,000 h, excl. UV lamp 120,000 h |
| UV lamp | low pressure mercury lamp, long life design, burnt-in for 300 h |
| concentration ranges | 0.5, 0.75, 2, 5, 10 and 15 g/m ³ (ppm _w), selectable units g/m ³ and ppm _w |
| accuracy | after zeroing the max. error is the sum: 0.4% of measurement + 0.1% of scale |
| repeatability error | 0.2 % of measurement |
| response time | 0.1 s (analog output), 0.3 s (remote display) |
| zero drift | typ. 0.2 % of range per day, after warm-up, non-cumulative |
| max. inlet pressure | 10 bar |
| ambient temperature | 0 - 50 °C (non-condensing) |
| materials in contact with ozone | SS, PVDF, PFA, quartz, FFPM |
| fluid ports | PVDF compression fittings for 4x6 mm (5/32" x 1/4") PTFE tubing or 1/4" Swagelok |
| recommended flow rate | 0.05 to 0.1 l/min typical |
| pressure drop without valve | approx. 10 mbar at 0.1 l/min |
| signal outputs | concentration 4 - 20 mA (isolated, active) concentration 0 - 10 V (isolated) |
| concentration alarms | High Alarm, Low Alarm, latching, not latching |
| control input | set to zero (24 V, 8 mA, isolated) |
| control outputs | relay contacts, 28 V, 0.5 A, isolated: Lamp Low Warning Cuvette Dirty Warning High Alarm Low Alarm Purge Control |
| error handling | Error Relay: 30 V, 0.5 A, summarizing instrument failures, Lamp Low Error, Lamp Off Error, Cuvette Dirty Error, Overrange, Overpressure |
| early warnings | Lamp Low Warning, Cuvette Dirty Warning |
| Memory | 8 GB for error and concentration logs |
| USB | On-The-Go, Device/Host mode, Full speed |
| serial interface (option) | RS-232, bidirectional, isolated, 2400 - 38400 Baud |
| automatic zeroing | possible via control input |
| software | BMT 965 Link, instrument configuration and readout of Concentration, Event and Error Logs on a Windows PC |
| power | wide range input: 100 - 240 VAC, 15 VA optional: 12 - 36 VDC, 15 W |
| dimensions (W x H x D) | 360 x 160 x 91 mm |
| weight | 4 kg |
| compliance | CE-marked (EMC & safety) |



dimensional outline

The OZONE - IN - WATER SENSOR BMT 965 AQ-LC comes in a splash proof aluminum enclosure (IP 65, NEMA 4X) 360 x 160 x 91 mm (W x H x D) with sea water resistant coating (RAL 5009, azure), and weighs about 4 kg. Four mounting brackets are provided for installing the SENSOR where it is needed, e.g. underneath a work bench. All electric connectors are water proof.

As long as the cuvette of the SENSOR remains clean, zeroing of the instrument is not necessary for weeks, or even for months. But for safety, zero reading should be checked on a regular basis.

Additional BMT Products (for details, refer to the appropriate data sheets):

- BMT 965AQ for ultra-pure DI (de-ionized) water
- BMT 965ST for ozone measurement in the gas phase
- BMT 932 Ozone Monitor for TLV monitoring in ambient air (1, 3 & 6 channels)
- BMT 802N (4 g/h) & BMT 803N (8 g/h) Ozone Generators
- Broad spectrum of field-proven accessories for ozone measurement