

Ozone analyzer

Elektravägen 53
SE-126 30 Hägersten, Sweden
+46 10 252 30 00
www.mellifiq.com

High concentration ozone gas analyzer BMT 965 ST

The OZONE ANALYZER BMT 965 ST includes decades of experience with ozone photometers and their industrial applications.

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.

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.

Power supply is 100-240 VAC, or 12-36 VDC on request. As an option the instrument can be equipped with an Internal Purge Unit (IPU) (solenoid valve plus air pump) for fully automatic zeroing.

A broad spectrum of field-proven accessories - from simple fittings and tubing up to a thermoelectric sample gas dryer - helps the user with the application and installation of the OZONE ANALYZER BMT 965. Please ask for our assistance!



Applications

- Monitoring of ozone generator output
- Monitoring of residual ozone after a process
- Potable water treatment
- Waste water treatment
- Industrial ozone processes
- Semiconductor ozone processes



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The OZONE ANALYZER BMT 965 is a panel-mount instrument according to DIN IEC 61554. The front panel cut-out should be 139 x 67 mm. The instrument is held in place by two clamps.

Fittings for the inlet and outlet tubing, and the connectors for power, signals, and RS-232 interface, are located on the back panel. The total depth thus is about 250 mm.

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

- BMT 965 BT (Bench Top) for stand-alone applications on the bench
- BMT 965 C (Cabinet) for truly automatic stand-alone applications in a rough service environment
- BMT 965 AQ and BMT 965 AQ-INLINE for ozone measurement in DI (de-ionized) water
- BMT DH6 Sample Gas Dehumidifier for drying of wet ozone sample gas
- BMT 932 Ozone Monitor for TLV monitoring in ambient air (1, 3 & 6 channels)
- Ozone generators BMT 802X and BMT 803 for small scale ozone production from oxygen

Features

- Dual beam UV photometer
- Long-life mercury lamp
- Warranty 3 years, 5 years on the UV lamp
- High accuracy, error less than 0.5%
- Pressure and temperature compensated
- Ranges from 2 to 600 g/Nm³
- Built-in sample gas filter
- Internal Purge Unit (IPU) as an option
- Relay contact for control of external zeroing valve
- Error handling includes: summary error, lamp low, cuvette dirty, overrange
- Key functions programmable via the front panel, or a Windows PC
- Display in g/Nm³, %wt/wt, or ppmv
- High and low limit alarms
- Timing sequence for automatic zeroing
- Pressure readout in bar, psi, Torr or MPa
- 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
- RS-232 interface (bidirectional, isolated)

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Technical specification

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
Display	16 character alphanumeric backlit LCD
Concentration ranges	50, 100, 200, 300, 400, 500, 600 g/Nm ³ , selectable units g/Nm ³ , %wt/wt and ppm _v
Optional ranges	2, 5, 10, 20 g/Nm ³ , selectable units g/Nm ³ , %wt/wt and ppm _v
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 (display)
Zero drift	Typ. 0.2% of range per day, after warm-up, non-cumulative
Proof pressure	1 bar above pressure range
Ambient temperature	0 - 50 °C (non-condensing)
Materials in contact with ozone	Quartz (cuvette windows), stainless steel (cuvette, fittings, cuvette spacer), FFPM (window seals), FEP (tubing)
Gas ports	For PTFE tubing 3x5 mm (1/8" x 3/16"), opt. 4x6 mm PTFE or 1/8" Swagelok Built-in sample gas filter is standard
Recommended flow rate	0.1 to 1 l/min typical
Pressure drop	Approx. 3 mbar at 0.5 l/min (with sample gas filter)
Temperature compens.	Is standard
Pressure compensation	With built-in cuvette pressure transducer, for ozone measurement at an arbitrary systemic pressure, abs. pressure range 1.15 bar (optional 1.5 to 4.0 bar in steps of 0.5, please specify) minimum pressure 0.4 bar abs units selectable: bar, psi, Torr, MPa
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)

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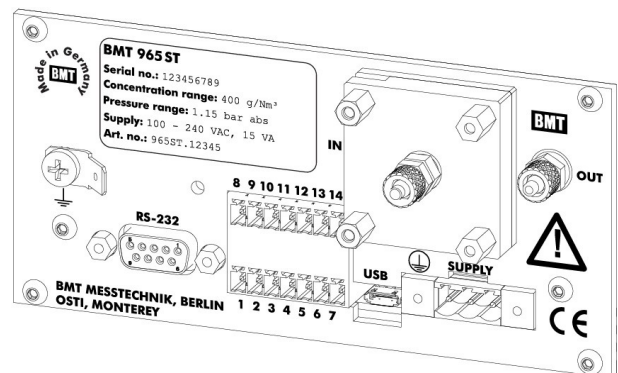
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Control outputs	Relay contacts, 28 V, 0.5 A, isolated: Lamp Low Warning Cuvette Dirty Warning High Alarm Low Alarm Purge Control
Error handling	Error Relay: 30 V, 0.5 A, summarizing instrument failures, Lamp Low Error, Lamp Off Error, Cuvette Dirty 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	RS-232, bidirectional, isolated, 2400 - 38400 Baud
Automatic zeroing	With optional Internal Purge Unit (IPU)
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)	144 x 72 x 230 mm, DIN IEC 61554
Panel cut-out (W x H)	139 x 67 mm
Weight	1.5 kg



Dimensional outline



Back panel

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