

Ozone monitor

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

Low concentration ambient ozone monitor BMT 932



The ozone monitor BMT 932 is a state-of-the-art UV photometer for measuring and monitoring ozone content of the ambient air.

The instrument may be ordered with 1, 3, or 6 sample channels. Switching from channel to channel is automatic, or manual via push button.

The scrubber is the most important element of any photometric ozone monitor. The ozone monitor BMT 932 has two precisely ozone selective scrubbers: one utility scrubber, and one reserve scrubber. Additionally it has a built-in ozone generator which periodically tests the ability of the utility scrubber to remove all of the ozone from the sample. When the utility scrubber fails this test the reserve scrubber takes over. Now the scrubber warning is activated and the scrubber test is verifying the reserve scrubber.

The sample gas flow rate is maintained constant by a pump which is automatically controlled by a built-in electronic flow meter.

Applications

- Monitoring of ozone in ambient air
- TLV monitoring (Threshold Limit Value) ozone measurement in the field
- Ambient monitoring in ozone plants
- Vent-Gas monitoring



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The BMT 932 can be configured via the front panel alphanumeric display or on a Windows PC using the provided software. A complete error and event log, with timestamps from the internal clock, can be printed out for trouble shooting.

The ozone monitor BMT 932 comes in a 19" rack mount enclosure 132 x 300 mm (H x D), or in a wall mount aluminum cabinet 357 x 440 x 133 (W x H x D). This cabinet is named BMT 932 C. The cabinet can be wall mounted using the four brackets provided at the rear (four mounting holes 6 mm ID, spaced 307 x 397 mm, W x H).

Dirt, organic compounds, and other contaminants in the ambient air can react with the ozone in the sample gas tubes. It is important that the sample gas tubes and the ozone monitor are kept clean inside. Therefore filters have to be provided at the inlet ports of the sample tubes. Filter holders and filter inserts are shipped with the instrument.

The filter inserts are of fine pure glass fibre felt to remove aerosol particles without affecting the ozone. This latter property may decrease with increasing dirt being retained by the filter. Therefore the filters should be replaced on a regular basis. Each user must determine the replacement interval optimum for the specific situation.

Features

- Dual beam UV photometer
- Warranty 3 years
- Long-life mercury lamp (5 years warranty)
- High accuracy, error less than 1%
- Resolution 0.001 ppm_v
- Pressure and temperature compensated
- Ranges from 1 to 250 ppm_v
- 19" rack mount, or cabinet versions
- Traceable to international standard (NIST)
- 1, 3, 6 channel versions
- Two individual threshold alarm levels for each channel, three configurable EMO outputs
- Cycle time 20 s per channel
- Two scrubbers (utility + reserve)
- Ozone generator for automatically testing the utility scrubber every 24 hours
- Reserve scrubber automatically replaces the utility scrubber when it is faulty
- Sample gas flow 1 l/min, auto controlled via an electronic flow meter

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Technical specification

Measurement principle	Dual-beam UV photometer (254 nm)
UV lamp	Low pressure mercury lamp, long life design, burnt-in for 300 h
Display	Alphanumeric LCD 2 x 20 char.
Concentration ranges	1 ppm _v (1.000 ppm _v), 2.000, 5.000, 10.000, 20.00, 100.0 and 250.0 ppm _v
Noise	±0.001 ppm _v
Min. detectable concentration	0.002 ppm _v
Accuracy	Max. error, traceable to NIST, is the sum: 0.8% of measurement + 0.2% of scale
Response time	20s (0-95%)
Temp & pressure compensation	Standard
Flow rate	1 l/m, automatically controlled by an electronic flow meter
Sample ports	1, 3 or 6 (please specify), automatic and manual selection of sample port
Scrubber life	> 8 years (safety monitor operation)
Threshold alarms	Two individual alarm thresholds for each channel, 3 EMO outputs controlled by any combination of alarms
Error delay	Indicating any instrument failure, including: lamp low (easy lamp replacement), low flow, scrubber failure (tested for every 24 h, reserve scrubber takes over automatically), warmup
Gas ports	Compression type for ¼" PFA/FEP/PTFE tubing (cabinet: ¼" one-touch fitting) safety catalyst for off gas included
Signal outputs	Concentration 4-20 mA (isolated, active), concentration 0-1 V, 0-10 V (isolated) sample port identification by binary output. Option: 932-RELAY with contacts identifying each port plus its low/high alarm, access by 50-pole D-Sub connector
Control outputs	Lamp low (relay contact, 30 V, 1 A)
Digital interface	RS-232, isolated, showing concentration and error messages. Link mode commands allow full control from Windows PC or PLC.
Accessories kit (included)	One filter holder & one mounting fitting for filter holder per sample port, 200 filter inserts
Spare parts (available)	UV lamp, scrubber, filter holder
Warmup time	7 min. max., 4 min. typical

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Technical specification

Power	Universal line voltage: 100 - 240 VAC, 35 VA, 50/60 Hz Optional: 18-36 VDC, 25W (19" rack mount)
Ambient temperature	0 - 45 °C (non-condensing)
Cabinet version	IP65, NEMA 4X
Dimensions (H x D)	132 x 300 mm (19" rack mount)
(W x H x D)	357 x 440 x 133 mm (wall mount BMT 932 C)
Weight	9 kg (19" rack mount) 7 kg (wall mount BMT 932 C)
Compliance	CE-marked (EMC & safety), cTUVus NRTL-listed, RoHS

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