

MEMBREL® MkIV

Electrolytic Ozone Generators

OZONE

The most effective way to disinfect Ultra Pure Water loops in industrial and pharmaceutical applications. The MEMBREL® MkIV is Ozonia's latest generation of electrolytic ozone generators which uses solid polymer electrolyte and state-of-the-art electronics for ozone production.

APPLICATIONS

Pharmaceutical, Cosmetics:

- Purified water
- Highly-purified water
- Water for injection

Semiconductor:

- Pure water, ultrapure water

OPERATING LIMITS

Unit capacities :

- MEMBREL® MkIV/1 for 3g O₃/h
- MEMBREL® MkIV/2 for 6g O₃/h
- MEMBREL® MkIV/3 for 9g O₃/h

OZONE TECHNOLOGY: MEMBREL®

The MEMBREL® electrolytic process is a unique technology which produces ozone from water instead of gaseous air or oxygen. The feed water, taken from the main UPW loop, enters the anode chamber of the cell where it is dissociated into its two elements at the contact surface between the anode and the electrochemically stable membrane.

The hydrogen proton travels through the membrane and is reduced to hydrogen gas on the cathode side after which it is vented to atmosphere. On the anode side a portion of the liberated oxygen is converted into ozone which is quickly absorbed by the feed water. The water/oxygen/ozone mixture leaving the cell is reintroduced to the main body of water circulating in the loop.

HOW IT WORKS

The installation of a MEMBREL® MkIV is an effective way of sanitizing a pure water loop. Because the ozone is produced from the water being treated there are no contaminants. The use of chemicals or additional treatment steps is not necessary.

By dosing an ozone level of 0.1 to 0.2mg/l the colony forming unit count and formation of bio-film is kept to a minimum. Should ozone be undesirable in the process an ultraviolet irradiation ozone destruct unit is installed prior to the first point of use.



PRODUCT HIGHLIGHTS

- > Electrolytic ozone production
- > Easily upgradeable from 3g O₃/h to 9g O₃/h
- > User friendly with individual cell controls
- > Remote control capabilities
- > No ionic contamination
- > Easily installed maintaining system integrity
- > Recognized by all major pharmaceutical guidelines

OZONIA

TECHNICAL DATA

MEMBREL® Unit	Ozone Production (approx.) (g/h)	Feed Water			Electrical Rating (kW)
		Nominal Flow Rates (l/h)	Maximum Pressure (barg)	Conductivity (µS/cm)	
MkIV/1	3	100	< 6	< 20	0.46
MkIV/2	6	200	< 6	< 20	0.86
MkIV/3	9	300	< 6	< 20	1.27

TECHNICAL FEATURES

- Power supply: 1 x 230 VAC +10%/-20%, 50/60 Hz
- Regulation range: 8...100%
- Ambient temperature: +5...40°C / +41...104°F
- Design altitude: < 1000 m.a.s.l. / 3280 ft.a.s.l.
- Humidity: RH < 65% (yearly average)
- Protection class: IP 54, Nema 12
- Conformity: EN, IEC, ISO, CE, SN

MATERIALS

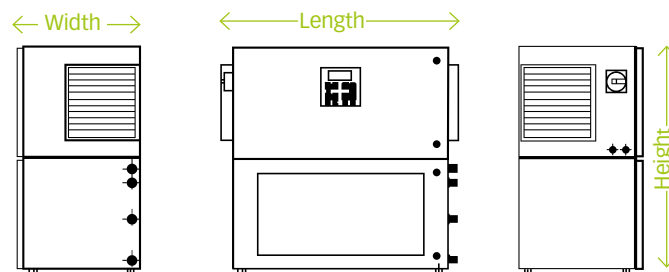
- Enclosure: stainless steel ANSI 304
- Wetted Surfaces: ANSI 316L SS, titanium, PTFE, PVDF, viton
- Bulkhead connections: SERTO ANSI 316L SS

COMPLEMENTARY EQUIPMENT

- Ultraviolet ozone destruct unit
- Residual ozone analyser
- Thermal vent ozone destructor
- Tri-clamp inserts for SERTO connections

REMOTE CONTROL AND ALARMS

- Ozone production ON/OFF
- External control
- Alarm acknowledgement
- Set-value (4...20mA)
- Collective alarm



CONNECTION DATA

Mechanical

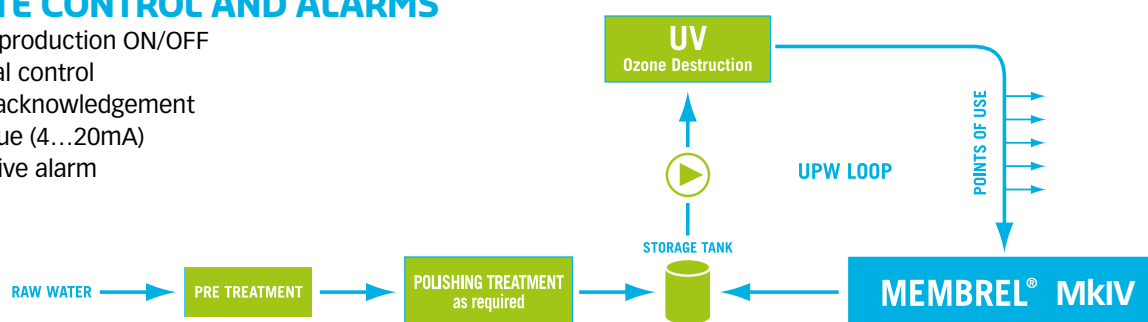
Bulkhead fitting SERTO for pipelines 10 mm (0.39 inch) I/D, 12 mm (0.47 inch) O/D.

Electrical

Mains connection 3 core cable

1.5 mm² / 0.0023 inch² (L,N,E), 12 gauge IEEE.

Control cables 1.0 mm² / 0.0015 inch²



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