



SCOTMAS BRAVO ULTRA-PURE

Pre and Post Desalination Water Treatment with Ultra-Pure Chlorine Dioxide

Use one Ultra-Pure system to disinfect seawater intakes, feedwater pre-treatment including for RO membranes, and finished stock; without generating disinfection by products (DBP).

APPLICATIONS

Seawater intakes. Prevent macro fouling by dosing Chlorine Dioxide direct to seawater intakes. Low chemical concentration and no DBP minimise environmental impact. Scotmas Reactive Dosing™ takes account of unique patterns at the dosing location and ensures the minimum level of biocide is used to remove the target organisms.

Feedwater Pre Treatment. Pre treatment with chlorine or other biocides requires high chemical concentrations. Potential impacts include increased corrosivity and creation of toxic DBP, which can be multiplied by disinfectant reapplications further down the treatment train. Pre treatment with Ultra-Pure Chlorine Dioxide is at very low concentration, does not create DBP and minimises corrosivity risk.

Reverse Osmosis Membranes. Studies show that 20-30% of SWRO plant OPEX is due to biofouling of membranes, chlorine rapidly degrades membranes and cannot be used. Apply Ultra-Pure Chlorine Dioxide at the membrane to prevent biofilm build up, without degrading membrane, preventing biofouling giving reduced energy consumption, increased membrane life and lower maintenance costs.

Finished Water Stock. Disinfect finished water stocks prior to entry into distribution network. Unlike chlorine, disinfection throughout the treatment train with Chlorine Dioxide does not result in cumulative multiplication of disinfection by products and potential breach of WHO guidelines.

Dose multiple locations. One Bravo Ultra-Pure generation system will dose all applications via a dosing manifold, reducing TOTEX.

- Ultra-Pure: Chlorine Dioxide solution certified as 99.7% pure in independent testing by DTRI, Saudi Arabia.
- Physical barrier prevents impurities from reaching treated water.
- Near neutral pH makes a more stable, less corrosive solution than other Chlorine Dioxide generators.
- Engineered to industry WIMES¹ 8.02 specifications.
- Produces Chlorine Dioxide to BS EN 12671, thereby Article 10 of the EU Drinking Water Directive 98/83/EC for use in Public Water Supplies.
- Pre-engineered containerised or skid mount solution with 25 year service life for rapid installation and long term durability.
- Rapidly meet the requirements of water utility and heavy industrial clients; MODBUS integration and a flexible, industry standard deployment framework.
- Built-in control of all bulk chemical transfer pumps, air scrubbers and safety systems associated with the package.
- Dose different levels of ClO₂ independently at up to 12 points via an in-line dosing manifold from one Bravo Ultra-Pure generator. No requirement for multiple generators or potentially hazardous intermediate bulk storage of Chlorine Dioxide solutions.
- Guarantee performance 24/7 with full duty/standby/rotation capabilities.

¹ Water Industry Mechanical and Electrical Specifications, ensuring consistent mechanical and electrical specifications for the U.K. water industry, supported by all U.K. water utilities.

BRAVO ULTRA-PURE MODELS

UP 6,000	6,000,000 l/hr water (144MLD) treated @ 1 mg/l ClO ₂ Generates up to 6,000g ClO ₂ /hr
UP 12,000	12,000,000 l/hr water (288MLD) treated @ 1 mg/l ClO ₂ Generates 6,000 - 12,000g ClO ₂ /hr
UP 25,000	25,000,000 l/hr water (600MLD) treated @ 1 mg/l ClO ₂ Generates 12,000 - 25,000g ClO ₂ /hr
UP 40,000	40,000,000 l/hr water (960MLD) treated @ 1 mg/l ClO ₂ Generates 25,000 - 40,000g ClO ₂ /hr



Scotmas Bravo Ultra-Pure duty/standby system in 40' container, installed in desalination plant in Saudi Arabia.



Full duty / standby / rotation capability as standard.

SCOTMAS YOUR ClO₂ EXPERTS

Scotmas are internationally renowned, specialist manufacturers of Chlorine Dioxide generation systems with more than 30 years' experience in the field. Employing over 50 staff worldwide, Scotmas are solely dedicated to Chlorine Dioxide technology and can provide all required chemical / process engineering, chemistry, microbiology, and application-specific technical support needed for successful project execution, in conjunction with strong local civil engineering and service delivery partners.