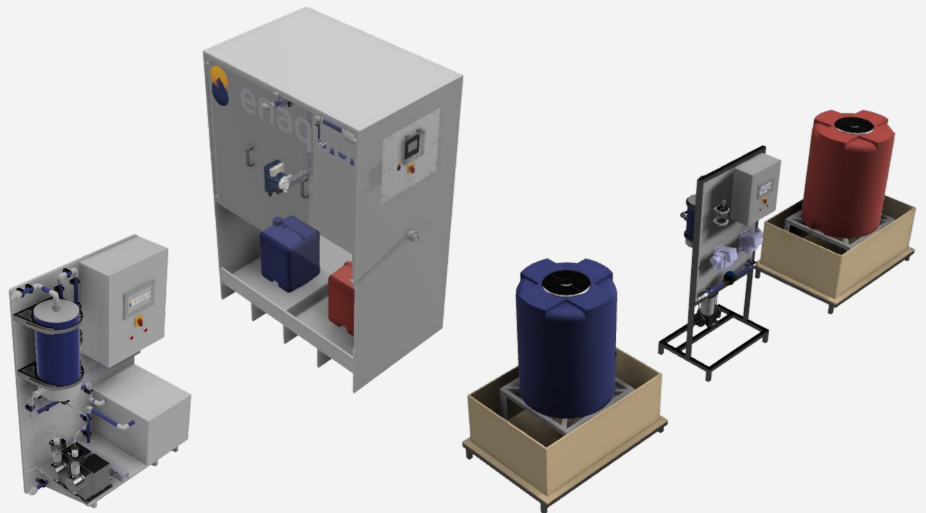




## Chlorine dioxide generation systems



Chlorine dioxide (ClO<sub>2</sub>) is a powerful oxidizing agent and biocide, with broad-spectrum efficacy against bacteria, fungi, algae, viruses and protozoa.

Due to the chemistry and properties of ClO<sub>2</sub>, it is generally required to be produced onsite at or close to the point of use. ClO<sub>2</sub> generation systems are the most cost effective and efficient means for applying chlorine dioxide into a process.

### Chlorine dioxide generation chemistries

The chlorine dioxide generation systems we offer are designed to use two or three precursor chemicals, this design is customized based on your application and requirements.

#### 2-Chemical: acid and chlorite systems:

- $5\text{NaClO}_2 + 4\text{HCl} \rightarrow 4\text{ClO}_2 + 5\text{NaCl} + 2\text{H}_2\text{O}$
- Available in batch type and inline type chlorine dioxide systems
- Concentrated or dilute chemical system options:
  - Concentrated precursor chemical systems utilise 25% Sodium chlorite and 30% Hydrochloric acid
  - Dilute precursor chemical systems utilise 7.5% Sodium chlorite and 9% Hydrochloric acid

#### 3-Chemical: chlorite, hypochlorite and acid systems:

- $2\text{NaClO}_2 + 2\text{HCl} + \text{NaOCl} \rightarrow 2\text{ClO}_2 + 3\text{NaCl} + \text{H}_2\text{O}$
- Available in batch type chlorine dioxide systems
- The preferred chemistry for batch-type chlorine dioxide systems due to the stability of the chlorine dioxide solution produced
- Concentrated chemical system options:
  - 25% Sodium chlorite, 12%-15% Sodium hypochlorite and 15% Hydrochloric acid

## System Features:

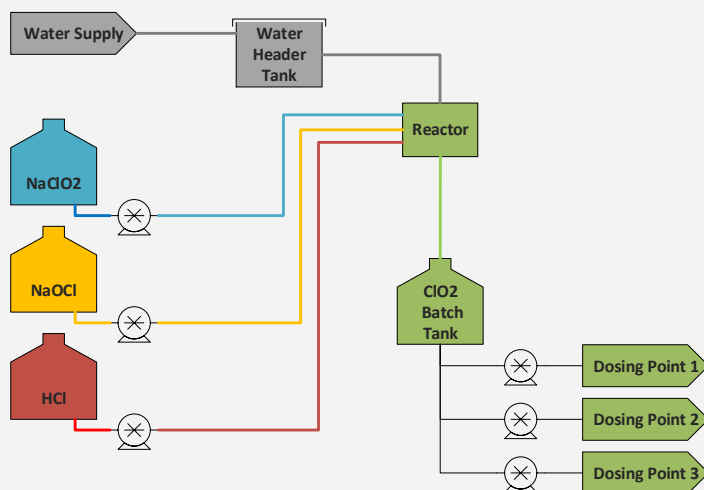
Safety and simplicity of operation are design principles we focus on. Some of the features include:

- Submerged reactor.
- Precursor chemical low level switches.
- Precursor flow monitoring.
- Motive water flow rate interlocks
- Intuitive Human machine interface (HMI) with detailed alarming and process control screens.
- Internet of things (IoT) Edge Gateway for remote monitoring, trending, alarming and interaction.
- 

## System Configurations:

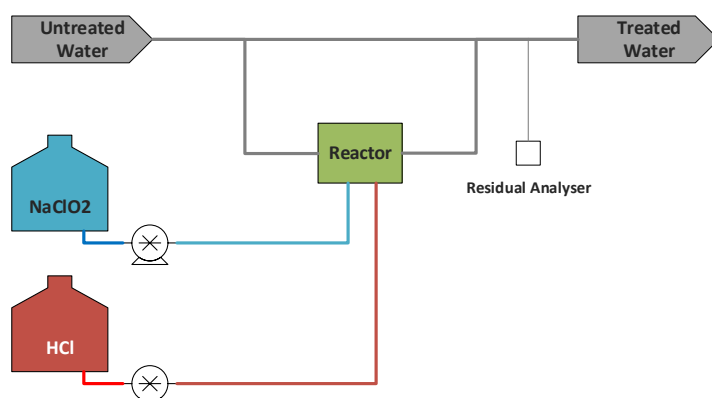
Chlorine dioxide systems are available in batch-type or inline-type configurations:

### Batch-type Chlorine dioxide systems:

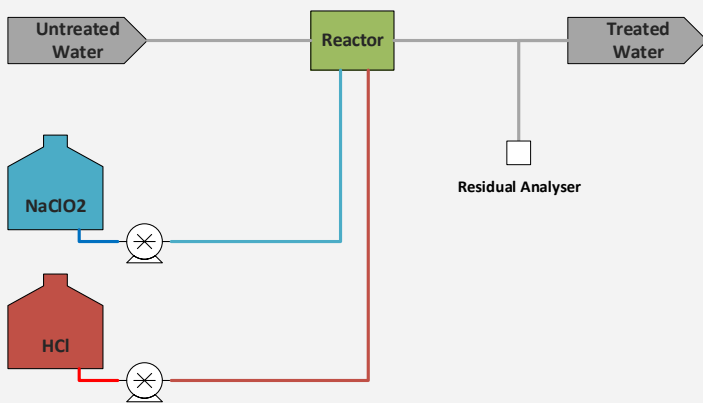


- Available in two or three precursor chemistry option.
- Chlorine dioxide is generated into a batch tank at a high concentration (1500-2000 mg/L) from where it can be dosed via a dosing system.
- Beneficial where there are multiple dosing points in a close proximity requiring different residuals or injection rates.

### Inline-type Chlorine dioxide systems in bypass configuration:



- Available in two precursor chemistry option.
- Concentrated and dilute precursor chemical options available
- Suitable for single treatment applications for the disinfection or oxidation of high flow rates of water



## Direct inline-type Chlorine dioxide systems:

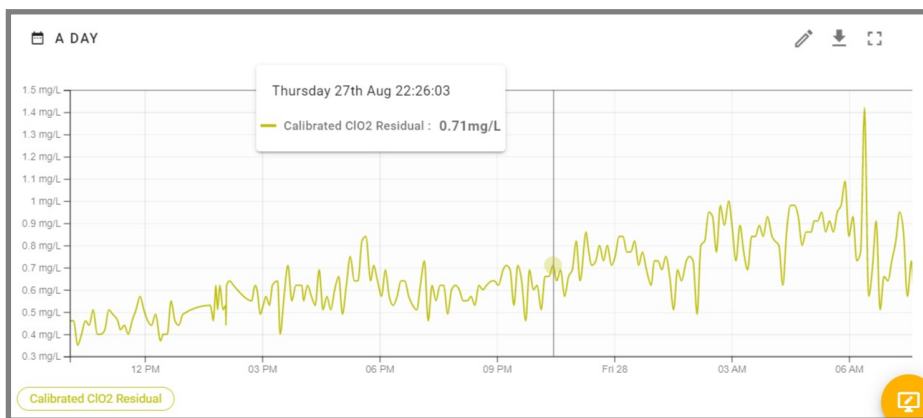
- Available in two precursor chemistry option
- Generally applicable for dilute precursor chemical systems
- Suitable for single treatment applications for the disinfection or oxidation of low flow rates of water

## Internet of things (IoT) edge gateway:

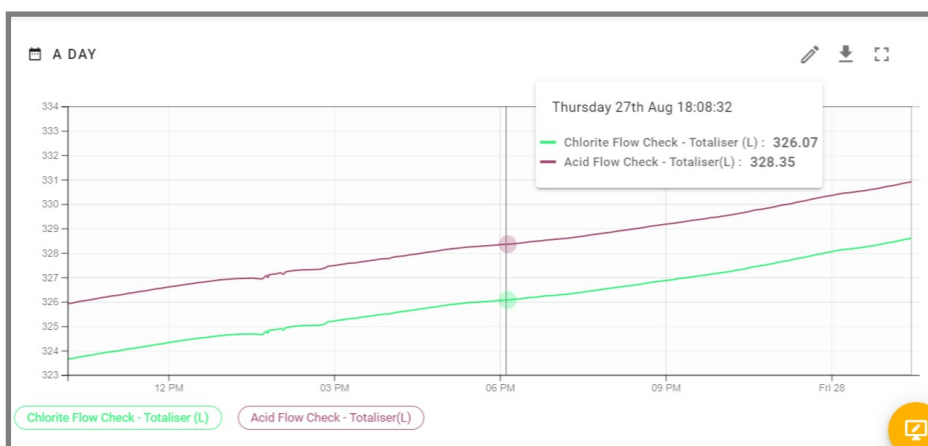
Initial price includes a one-year licence inclusive of data. Thereafter a low annual licencing fee applies

All systems are supplied with an IoT edge gateway device that allows for:

- SMS, email and WhatsApp alarming
- Remote resetting of alarms
- Trending of alarms, residuals, totalisers, and other system variables



- Remote system configuration.
- Web-based console for management and reporting



## System sizes and options:

Capacity	2 or 3 Chem Variant	Dilute or concentrated precursor chemicals	Flow checking Yes or No	Built in residual analyser Yes or No
<b>Batch type systems</b>				
3000g/hr	3-Chem	Concentrated precursor chemicals	Yes	Not applicable for batch type systems
			No	
	2-Chem	Concentrated precursor chemicals	Yes	
			No	
1000g/hr	3-Chem	Concentrated precursor chemicals	Yes	
			No	
	2-Chem	Concentrated precursor chemicals	Yes	
			No	
500g/hr	3-Chem	Concentrated precursor chemicals	Yes	
			No	
	2-Chem	Concentrated precursor chemicals	Yes	
			No	
250g/hr	2-Chem	Dilute precursor chemicals	Yes	
			No	
<b>Inline type systems</b>				
1000g/hr	2-Chem	Concentrated precursor chemicals	Yes	Yes
			No	No
			Yes	Yes
			No	No
500g/hr	2-Chem	Concentrated precursor chemicals	Yes	Yes
			No	No
			Yes	Yes
			No	No
250g/hr	2-Chem	Dilute precursor chemicals	Yes	Yes
			No	No
			Yes	Yes
			No	No
20g/hr	2-Chem	Dilute precursor chemicals	Yes	Yes
			No	No

### Additional:

- All systems are back-board mounted
- Mounting frames available on request
- Special builds and capacities available on request
- Full system builds and installations available
- Systems can be labelled or branded according to customers requirements
- Please contact us for individual system spec sheets and further information.