

PRODUCT INFORMATION



### PRODUCT DETAILS



**Fig 1.** Shows the larger OCD-162-30/OCD-162-60 system.

**Oxiperm Pro Chlorine Dioxide Systems ensure effective disinfection of water in a variety of applications and tackle the exceptionally resistant bacteria - Legionella.**

Water disinfection is of great importance in all buildings with drinking water consumption, and particularly in buildings that supply shower and bathing facilities. Water disinfection is also essential in applications where water mist is sprayed into the air, for instance cooling towers and evaporative condensers.

**Oxiperm Pro systems ensure safe, clean water to all end users in buildings such as:**

- Hotels
- Hospitals
- Sports & Swimming Facilities
- Fitness Centres
- Wellness Resorts
- Residential Buildings



**Fig 2.** Shows the OCD-162-5/OCD-162-10 system.

### The Problem

Naturally, the water we drink and shower in has to be clean if we are to stay healthy. Unfortunately, one of the most widespread health hazards in drinking water installations worldwide is connected to exceptionally resistant bacteria – legionella.

Legionella exist mainly in hot water systems with a low flow rate, areas of stagnation or badly serviced hot water tanks. A layer of slime in the water pipes called biofilm is the habitat for legionella and other microorganisms. The bacteria live, breed and thrive in biofilm in temperatures between 30 and 50°C and they constitute a severe health risk.

### The Solution

The Grundfos Oxiperm Pro system is the all round solution to the hazard of both legionella and other kinds of micro organisms. It offers the following unique benefits that remain unmatched by other disinfection methods:

- Works on both bacteria and biofilm
- Affects highly chlorine resistant germs
- Efficient in areas of the pipe system with no flow (dead ends)
- No effect on the taste and smell of the water
- Sustained release effect for long-term disinfection

### CHLORINE DIOXIDE EXPLAINED

Chlorine Dioxide is a chemical compound used to disinfect water of pathogenic microorganisms. This biocidal ability of Chlorine Dioxide is caused by its very strong oxidising power, which enables it to disinfect water supplies to a high purity.

Chlorine Dioxide is the only biocide agent that is a molecular free radical; it only reacts with materials that give off an electron. Therefore, due to the electron donating properties of many organic substances, Chlorine Dioxide will react and attack the membranes and cells of any microbes from the water supply. Due to its strong oxidising potential, it successfully kills pathogenic micro-organisms such as bacteria and viruses, keeping water systems sterile and clear of biofilms.

Chlorine Dioxide can be used in combination with systems to stop biological growth proliferating, and is a cost-effective solution, with the added advantage that it produces less harmful by-product's than chlorine.

#### Advantages

- Powerful disinfectant
- Active over a broad pH range
- Less harmful than chlorine
- Controls bacteria effectively
- Cost effective

#### Applications

Applications include sewage water disinfection, industrial treatment water, cooling towers, food production and industrial waste. Even at low concen-

trations due to its unique qualities and active pH range, it provides an effective disinfectant to water systems.

#### Legionella



Legionella bacteria are the primary source of legionnaire's disease – a potentially fatal disease, particularly for those with a weakened immune system. It is estimated that legionnaire's disease is responsible for 15-20,000 deaths in Europe every year.

Legionella bacteria and the biofilm where they live and feed are highly resistant to most disinfection methods. That makes effective combat against them difficult, and their successful elimination calls for specific and highly specialised solutions.

#### The right solution is both tough and gentle

There are many approaches to fighting legionella bacteria and biofilm, but no approach is as efficient or gentle as the Grundfos OxiperM Pro system. The system effectively battles legionella and biofilm without affecting the taste and smell of the water. By choosing OxiperM Pro, you have made the right choice for the safety and comfort of the end consumers.

### DISINFECTION SOLUTIONS COMPARED

The table illustrates how typical disinfection solutions perform on a number of parameters.

= Inferior  
 = Average  
 = Superior

| Disinfection principle | Benefits        |                                       |                                 |                               |                       |                 |                    |                  |
|------------------------|-----------------|---------------------------------------|---------------------------------|-------------------------------|-----------------------|-----------------|--------------------|------------------|
|                        | Removes biofilm | Effective against bacteria in biofilm | Effective against free bacteria | Affects water taste and smell | Sensitive to water pH | Life cycle cost | User scalding risk | Long-term effect |
| Thermal Treatment      | No              | Low                                   | Mid                             | No                            | No                    | High            | Yes                | No               |
| UV Radiation           | No              | No                                    | High                            | No                            | No                    | Mid             | No                 | No               |
| Filtration             | No              | No                                    | No                              | No                            | No                    | Mid             | No                 | No               |
| Chlorination           | No              | Mid                                   | High                            | Yes                           | Yes                   | Low             | No                 | Mid              |
| Ozone                  | No              | No                                    | High                            | No                            | No                    | Low             | No                 | No               |
| Chlorine Dioxide       | Yes             | High                                  | High                            | No                            | No                    | Low             | No                 | High             |

### TECHNICAL DETAILS

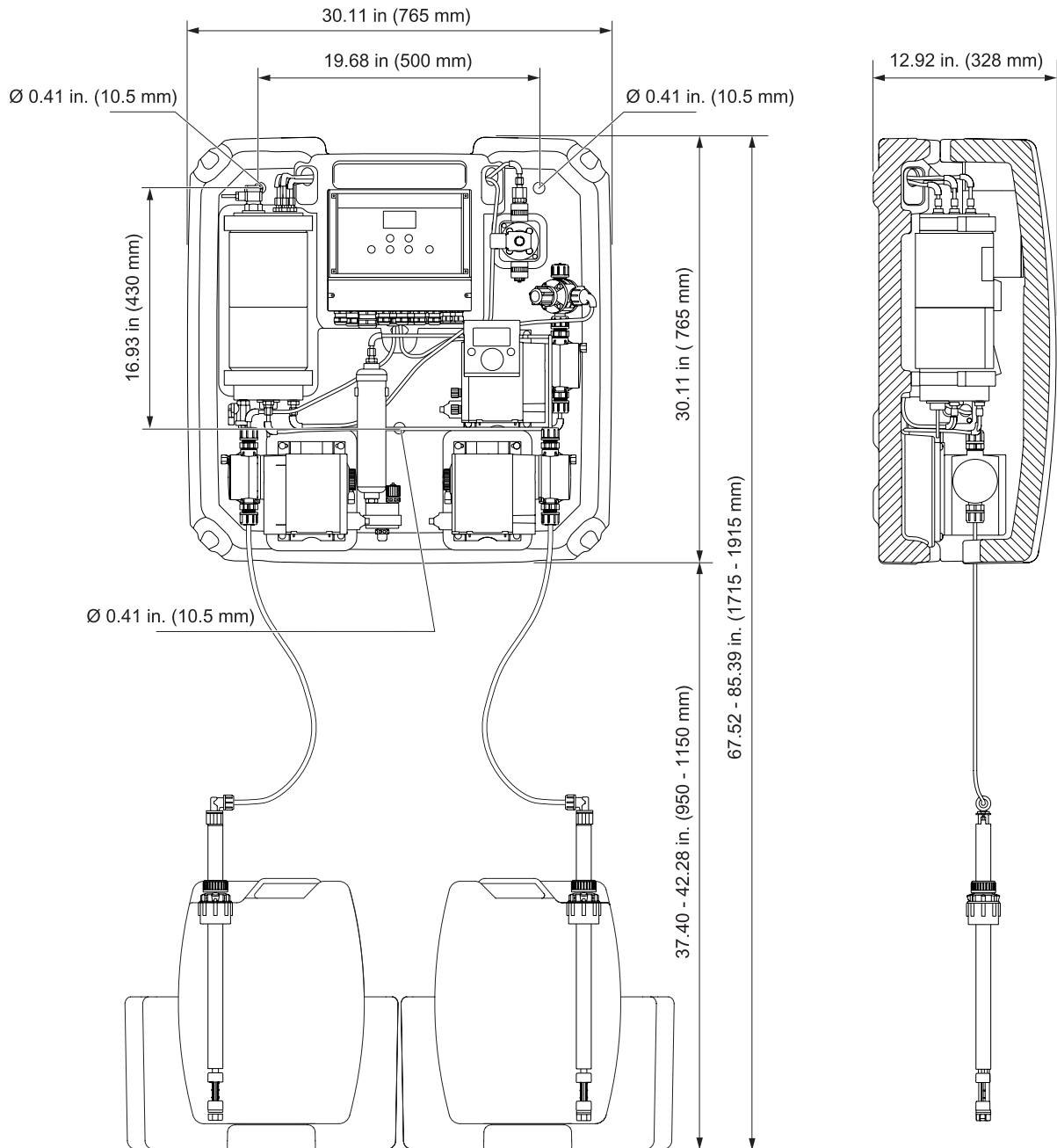
#### SYSTEM INFORMATION

| MODEL   |                              | 162-5                                | 162-10 | 162-30                 | 162-60 |
|---|------------------------------|--------------------------------------|--------|------------------------|--------|
| Connections   | ClO <sub>2</sub> dosing line | 1/8" ID x 1/4" OD tube               |        | 1/4" ID x 3/8" OD tube |        |
|   | Dilution water               | 1/4" ID x 3/8" OD tube               |        |                        |        |
|   | NPT adapter                  | 1/2" NPT connector                   |        |                        |        |
| ClO <sub>2</sub> production [g/hr]                                |                              | 5                                    | 10     | 30                     | 55     |
| ClO <sub>2</sub> concentration [ppm]                              |                              | 2000                                 |        |                        |        |
| Max continuous ClO <sub>2</sub> dosing feed rate* [l/hr]          |                              | 2.5                                  | 5.0    | 15.0                   | 27.5   |
| Consumption data [l/hr]   | NaClO <sub>2</sub>           | 0.17                                 | 0.37   | 0.88                   | 1.57   |
|   | HCl                          | 0.14                                 | 0.30   | 0.86                   | 1.49   |
|   | H <sub>2</sub> O             | 2.30                                 | 4.80   | 14.80                  | 29.80  |
| Precursor concentration by weight                                 | HCl                          | 9%                                   |        |                        |        |
|   | NaClO <sub>2</sub>           | 7.5%                                 |        |                        |        |
| Precursor safety equipment  |                              | Capacity monitored via level control |        |                        |        |
| Temperature range [°C]  | Ambient                      | 5 - 35                               |        |                        |        |
|   | Dilution H <sub>2</sub> O    | 10 - 30                              |        |                        |        |
|   | HCl & NaClO <sub>2</sub>     | 10 - 35                              |        |                        |        |
| Dilution water pressure [bar]                                     |                              | 3 - 6                                |        |                        |        |
| Max Admissible relative air humidity (not condensing)             |                              | 80%                                  |        |                        |        |
| Total volume - reaction tank                                      |                              | 1.00                                 | 1.80   | 6.10                   | 13.40  |
| Total volume - reservoir tank (up to max. level alarm) [litres]   |                              | 1.00                                 | 1.80   | 7.00                   | 13.90  |
| Filling volume - reaction tank [litres]                           |                              | 0.85                                 | 1.65   | 5.50                   | 12.00  |
| Filling volume - reservoir tank (up to max. level alarm) [litres] |                              | 0.85                                 | 1.65   | 6.50                   | 13.00  |

\*Derated suggested maximum pump output for continuous ClO<sub>2</sub> feed

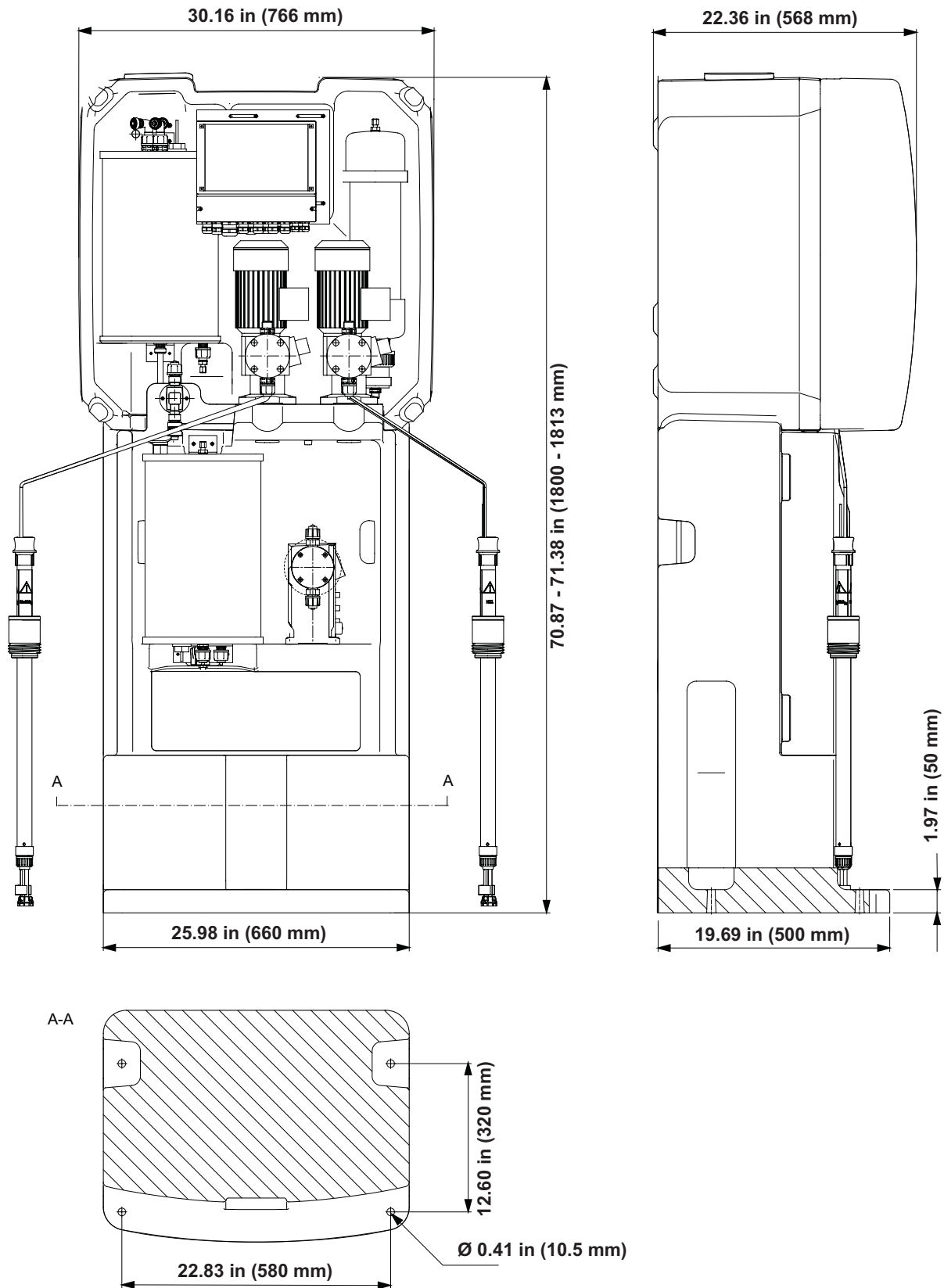
### PRODUCT DIMENSIONS

#### Oxiperm Pro OCD-165-5 and OCD-162-10



**PRODUCT DIMENSIONS**

**Oxiperm Pro OCD-165-30 and OCD-162-60**





**XION WATER LTD.**

**t:** +44 (0)1733 66 66 55

**e:** [service@xionwater.com](mailto:service@xionwater.com)

**w:** [www.xionwater.com](http://www.xionwater.com)