



Cooling Tower Control & Dosing

Oxidising Biocide (ORP)

| Ordering Code | Description |
|------------------------|---|
| ORP-XP2 | ON/OFF or Proportional ORP Controller with powered relay output for optional Chlorine pump or Brominator. Datalogging standard. ORP & ground probe, flow switch & manifold not included. |
| DCON-RX2-P | ORP-XP2 Controller & Chlorine Peristaltic Pump with manifold on PVC backboard (Incl. Flow switch, ORP probe, solution ground probe & injection valve). |
| DCON-RX2-P-CABG | DCON-RX2-P with controller & pump in IP66 Polyester hinged cabinet. |
| DCON-RX2-B | ORP-XP2 Controller with manifold on PVC backboard for dosing via optional Brominator (Incl. Flow switch, ORP probe, solution ground probe and ORP Controlled Solenoid for optional Brominator). |
| DCON-RX2-B-CABG | DCON-RX2-B with controller in IP66 Polyester hinged cabinet. |

XP2 Series



ORP-XP2

Description

One complete ORP (Oxidation Reduction Potential, or Redox) dosing system for cooling towers, water features, or any circulating system requiring disinfection. The integrated ORP-XP2 controller maintains the system ORP via a Chlorine Pump or via an optional Brominator. An increase in ORP (mV) level is achieved by either liquid chlorine being dosed into the manifold (DCON-RX2-P systems) or bromine water passing through the brominator into the system (DCON-RX2-B systems).

The systems are supplied with manifold on PVC backboards or with controllers and pumps in IP66 hinged cabinets.

ORP control can be programmed to take place continuously or only during 28 day timer programs. High & Low Level and Maximum Dose Timer Alarms are standard features. Datalogging of the ORP (mV) level, output and alarm status is incorporated in the controller and can be downloaded via a Coms port on the front fascia.



DCON-RX2-P

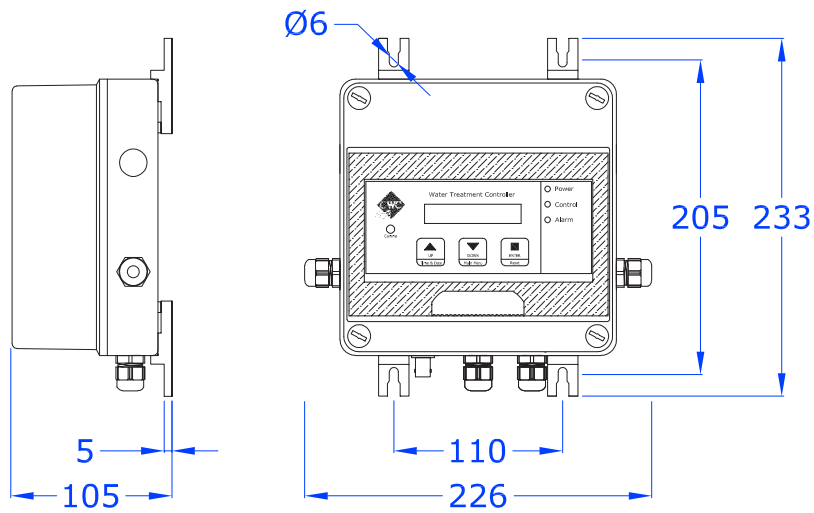
Features & Benefits

- ORP Control (with 28 day timer) of Chlorine and/or Bromine via dosing pumps or optional brominator
- Data logging of ORP, output status, alarm & power status
- Easy to program and calibrate
- Backlit LCDs simultaneously displays ORP & mV Setpoint
- Manual priming & testing via menu
- Automatic Slug Dose Feature
- Fail-safe alarm relay with remote power failure detection
- Flow switch logic can be reversed or disabled.
- Weatherproof - can be mounted outside



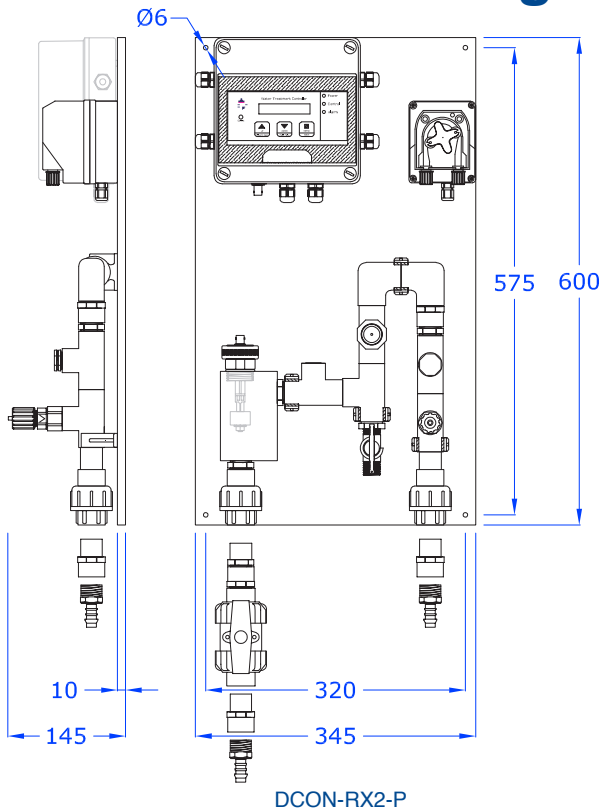
DCON-RX2-B

Dimensional Drawings - Controller only

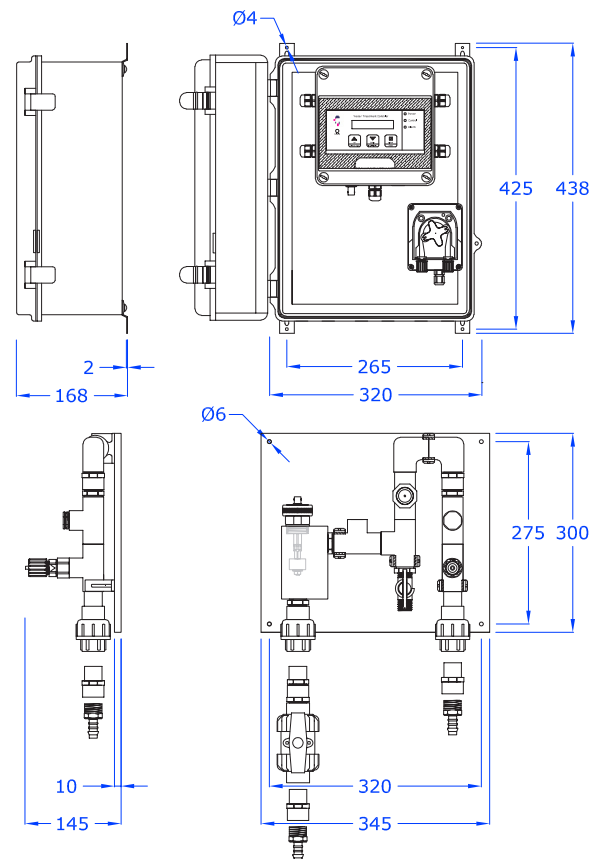


ORP-XP2

Dimensional Drawings - Chlorine Systems

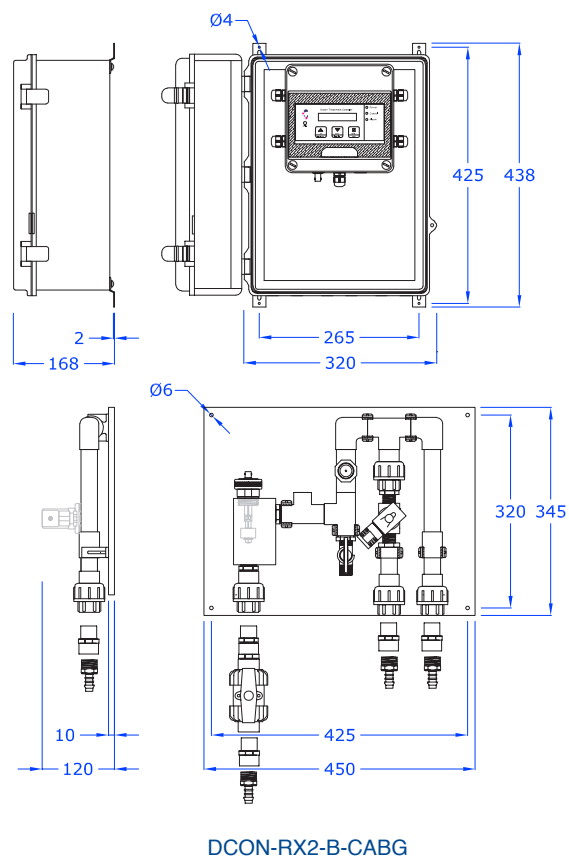
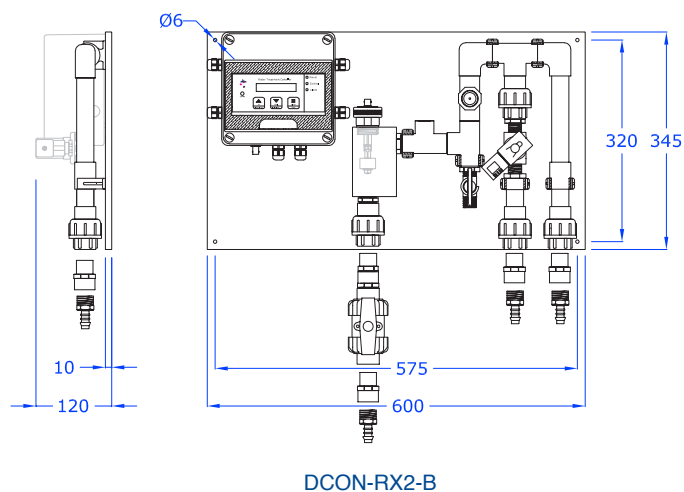


DCON-RX2-P



DCON-RX2-P-CABG

Dimensional Drawings - Brominator Systems



How to Order

Controller Only (excludes probes, pumps, manifold, backboard & cabinets)

Ordering Code → **ORP - XP2**

Conductivity Bleed & Dosing Systems Supplied with Peristaltic Dosing Pumps

Ordering Code → **DCON - RX2 - P - CABG**

| Explanation of Fixed Part Codes | |
|---------------------------------|---|
| DCON | System with XP2 Series controller (supersedes DCON Series controller) |
| RX2 | ORP Control Incorporated |

| Mounting of Controller & Pumps | |
|--------------------------------|---|
| blank | Controller & pumps on PVC backboard. |
| CABG | Controller & pump in IP66 hinged cabinet (No pump for DCON-RX2-B) |

| ORP Output | |
|------------|---|
| P | Chlorine Pump included |
| B | Solenoid valve included for optional brominator |



Options & Accessories

| Ordering Code | Description |
|----------------------|--|
| RV ILS-3/4-T20E | In-line Strainer, 3/4" NPTF ports, transparent Nylon bowl, 20% glass filled PP body, EPDM gasket, 20 mesh (915 micron) SS304 screen, max 6.9 bar @ 52 degC or 10.3 bar @ 21 degC, mounting in any orientation |
| RV ILS-1-T20E | In-line Strainer, 1" NPTF ports, transparent Nylon bowl, 20% glass filled PP body, EPDM gasket, 20 mesh (915 micron) SS304 screen, max 6.9 bar @ 52 degC or 10.3 bar @ 21 degC, mounting in any orientation |
| SEKO PE-0.4-FP | Peristaltic Pump (0.4 l/hr, 2.7 bar) for Bromine to add to ORP output so that pump doses simultaneously with Chlorine Pump to produce Hypobromous Acid (DCON-RX2-P only) |
| DP-OPT-MIX-PVDF | Add PVDF (Kynar) Mixing chamber for neat mixing of Chlorine & Bromine to return neat via tube to tower basin |
| DP-OPT-MIXS-PVDF | Add PVDF (Kynar) Mixing chamber to go in-line with manifold outlet |
| AF09A-XP2 | Isolated 4-20mA output card (proportional to 0-1000mV) |
| AF10A-XP2 | Output Card for BMS/DDC, incl. isolated 4-20mA (proportional to 0-1000mV), plus open collector NPN logic outputs for pump/solenoid valve status, and for alarm & power status. |
| SP-XP2-COMCABLE-1 | Serial cable for local download of logged data from DIGICHEM ® XP2 & ORP-XP2 controllers (plugs into Comms port on controller fascia. Software for download at www.cwc.com.au) |
| HOBO-CABLE-USB-232 | USB to Serial Adaptor to connect SP-XP2-COMCABLE-1 Serial cable to USB port. (Converts any serial DE-9 or DB-9 Connector to USB) |
| Available on Request | BROMINATORS - refer to Brominators Data Sheet |
| Available on Request | CIRCULATION PUMPS - refer to Onga Pumps Data Sheet |

Recommended Spare Parts & Consumables

| Ordering Code | Description |
|---------------------|--|
| WA OPF10-PBN10-1.5m | Replacement ORP probe, 1.5m cable |
| SP-DCON-CMR | Replacement Solution Ground Probe |
| SP-SOL-1/2-S | Replacement SMC direct acting solenoid valve (0-2.7bar) |
| SP-SK-01A-BK | Replacement Squeeze tube, EPDM 3x8mm (pre-greased with connectors) for SEKO PE-1.3 peristaltic pump with SP-SK-06 rotor assembly |
| SP-SK-06 | Replacement rotor assembly for SEKO PE-1.3 pump with SP-SK-01A-BK squeeze tube |

Specifications

| ORP-XP2 CONTROLLER | |
|------------------------------|--|
| Control Functions | |
| Measured Variables | ORP |
| Range | 1-999mV |
| Resolution | 1mV |
| Accuracy | 0.4% of Range |
| Repeatability & drift | 0.8% of Range |
| Control Type | ON/OFF or proportional |
| Hysteresis | 1-90% (ON/OFF control only) |
| ON/OFF Dose [Bleed] Cycle | ON/OFF = 0-99s/0-99s (ON/OFF control only) |
| Proportional Band | 1-90% (Proportional control only) |
| Cycle Time | 10-100s (Proportional control only) |
| Timer Programs | ORP control can be programmed to occur continuously or only during 28 day timer programs |
| Alarms | |
| Level Alarms | High & Low ORP |
| Max Dose [Bleed] Timer Alarm | 0-999m (0=disabled) |
| Alarm Output | Common alarm via N/O & N/C failsafe volt-free contact |
| General | |
| Display | Backlit Single Line LCD displays ORP (mV), Setpoint, Flow & Alarm Status |
| Keypad | UP, DOWN & ENTER pushbuttons |
| LED Indication | None required as all output status indicated on LCD display |
| Manual Test | All outputs independently activated via menu |
| Flow Sensing | Can be enabled/disabled |
| Calibration | Menu driven |
| Datalogging Interval | Programmable from 5 min to 240 min |
| Logged Variables | ORP, %Output, %Alarm |
| Data Retention | 100 years |
| Battery Backup | 1 year (approx) |
| Battery Type | CR2032 (3VDC) |
| Electrical | |
| Power Supply | 220-240 VAC, 50/60Hz (110VAC available on request) |
| Power Consumption | 10W max (with no loads on outputs) |
| Fuse | 2A, 5x20mm (in-line with circuit & powered relays) |
| Auxiliary Mains Output | 240VAC continuous (2A fused) |
| Control Relay Outputs | Switched 240VAC outputs rated 6A/250VAC resistive (4A fused) |
| Alarm Relay Outputs | N/O & N/C Volt-free (6A/250VAC resistive) 2A fused. Relay Coil de-energises on power failure |



| | DCON-RX2-P & DCON-RX2-P-CABG | DCON-RX2-B & DCON-RX2-B-CABG |
|---------------------------|---|------------------------------|
| Dosing Pumps Incl. | | |
| Chlorine (ORP controlled) | 1.3 l/hr | - |
| Bromine (ORP controlled) | optional | - |
| Acid/Base (pH controlled) | - | - |
| Pump Type | Peristaltic Pump (SEKO PE-1.3-FP-T), 2.7 bar max (EPDM Compound Squeeze tube, PP injection valve, PVC foot valve, Clear PVC suction tubing, Black UV stable PE discharge tubing). Bromine Pump 0.4 l/hr, 2.7bar | |

| | | |
|-------------------------|---|---|
| Solenoid Valves | | |
| For optional Brominator | - | 1/2" (15mm) |
| Valve Type | | SMC 240VAC NC Direct Acting 0-2.7 bar (higher pressure valve, larger sizes, and actuated ball valves available as options on request) |

| | | |
|-------------------------------|---|--|
| Manifold | | |
| Description (Inlet to Outlet) | Inlet, isolation valve, flow switch, ORP Probe, solution ground probe, sample point, check valve, injection points, outlet. | Inlet, isolation valve, flow switch, ORP Probe, solution ground probe, sample point, Solenoid valve for optional brominator, outlet. |
| Probes Included | ORP (WA OPF10-PBN10-1.5m), Solution ground probe (SP-DCON-CMR), N/O volt-free flow switch | |
| Inlet & Outlet | 20mm solvent weld union ends, or 3/4" BSP Female thread (3/4" Male x 12mm hosetails supplied loose) | |
| Max Pressure & Temp | 270 kPa (2.7 bar), 50°C | |

| | DCON-RX2-P DCON-RX2-B | DCON-RX2-P-CABG DCON-RX2-B-CABG |
|---------------------------------|-----------------------------|------------------------------------|
| Physical | | |
| Protection | IP65 | IP66 |
| Operating Temperature | 0-50°C | |
| Pump and/or Controller mounting | PVC backboard | IP66 Polyester Hinged cabinet |
| Manifold mounting | PVC backboard | |
| Packaged dimensions | 630(l) x 370(w) x 290(h) mm | 480(l) x 370(w) x 400(h) mm |
| Actual Packaged weight | 9kg | 12kg |