



Cooling Tower Control & Dosing Oxidising Biocide (ORP)

XP2 Series

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.



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 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.

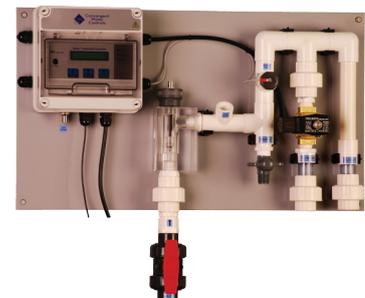
ORP control can be programmed to take place continuously or only during 28 day timer programs. High & Low Level and Maximum Dose Timer Alarms are standard features. Datalogging of the ORP (mV) level, output and alarm status is incorporated in the controller and can be downloaded via a Coms port on the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



DCON-RX2-P

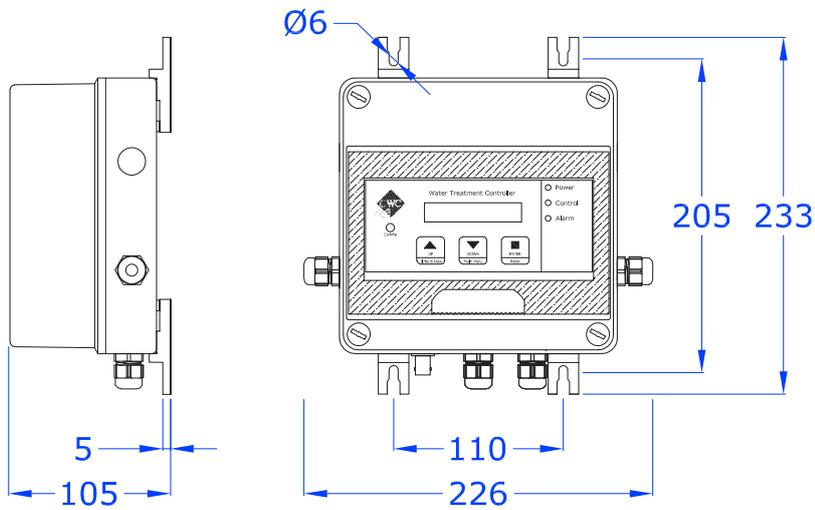
Features & Benefits

- 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



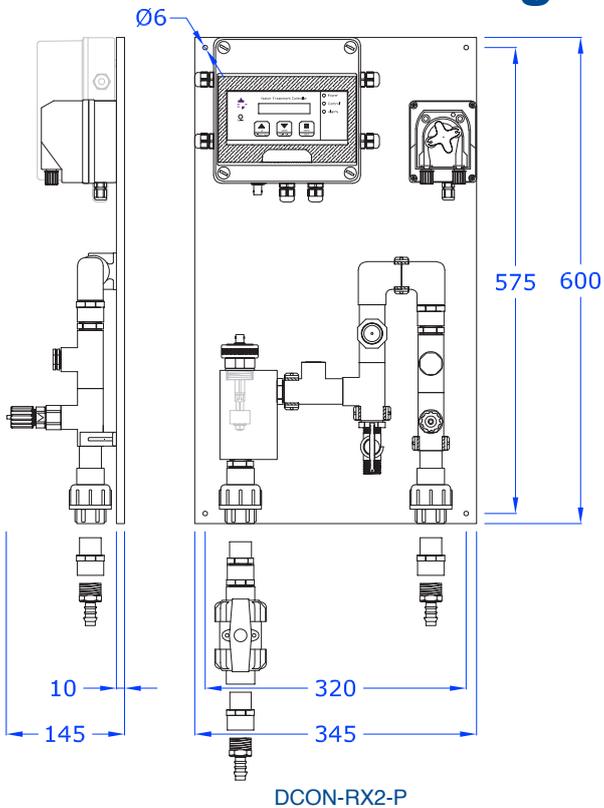
DCON-RX2-B

Dimensional Drawings - Controller only

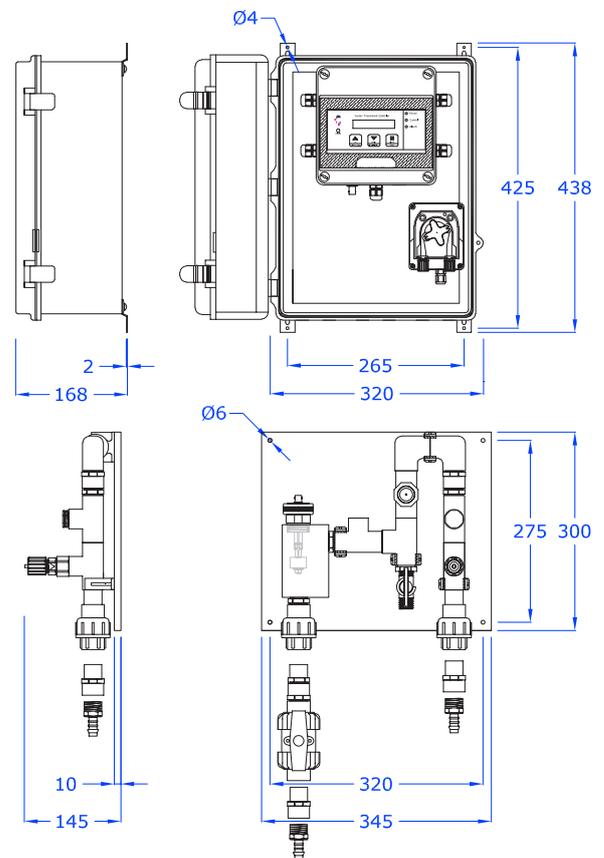


ORP-XP2

Dimensional Drawings - Chlorine Systems

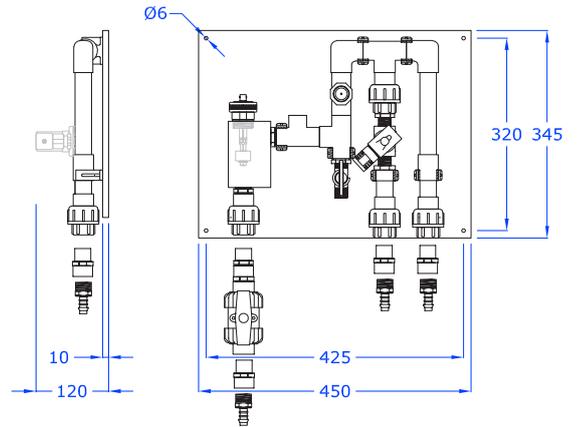
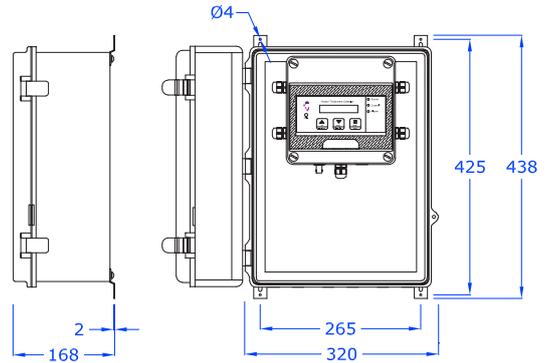
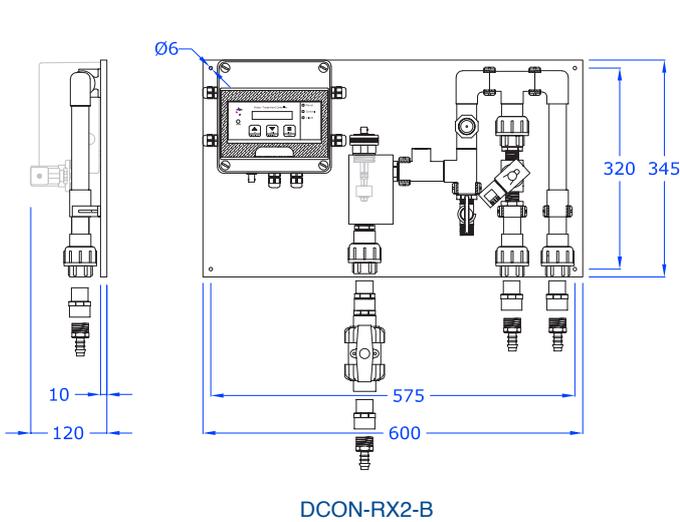


DCON-RX2-P



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