

Cooling Tower Dosing Systems (Internet enabled) Bleed, Inhibitor, Secondary Biocide, ORP (pH optional)

Ordering Code	Description
DP-CA-RXP-HC1	DIGICHEM® Plus⁺ Cooling Tower Controller, Pumps & Manifold mounted on 1 PVC back-board. Includes Inhibitor, Non-Ox Biocide, & Chlorine Peristaltic Pumps (1.3 l/hr, 2.7b). Manifold incorporates TDS/ORP/Gnd probes, flow switch, bleed valve & 3 injection points.
DP-CA-RXB-HC1	DIGICHEM® Plus⁺ Cooling Tower Controller, Pumps & Manifold mounted on 1 PVC back-board. Includes Inhibitor & Non-Ox Biocide Peristaltic Pumps (1.3 l/hr 2.7b), and has a 2m lead with DIN plug for optional brominator valve. Manifold incorporates TDS/ORP/Gnd probes, flow switch, and bleed valve
DP-CA-RXB-HC2	DIGICHEM® Plus⁺ Cooling Tower Controller, Pumps & Manifold mounted on 1 PVC back-board. Includes Inhibitor & Non-Ox Biocide Peristaltic Pumps (1.3 l/hr 2.7b). Manifold incorporates TDS/ORP/Gnd probes, flow switch, bleed valve, and solenoid valve for optional brominator

Description

The Ultimate Control for cooling tower water treatment is achieved with the revolutionary **DIGICHEM® Plus⁺** controller. Incorporating a plethora of features as standard, including data logging, the user-friendly menu system ensures you are up and running in no time. With a SIM card fitted in the optional GPRS modem module, remote access to the unit is childs play. Simply log on at www.digichemplus.com and it is like you are standing in front of the unit. Downloaded logged data is automatically presented in an informative and graphical format. (NOTE: Additional costs may apply).

Accurate control of system Conductivity & ORP is achieved together with dosing control of Biocides, and Inhibitors. Acid dosing (pH control), Dispersant dosing, Tank empty detection, 4-20mA inputs and outputs are available as ordering options.



DP-CA-RXP-HC1



DP-CA-RXB-HC1



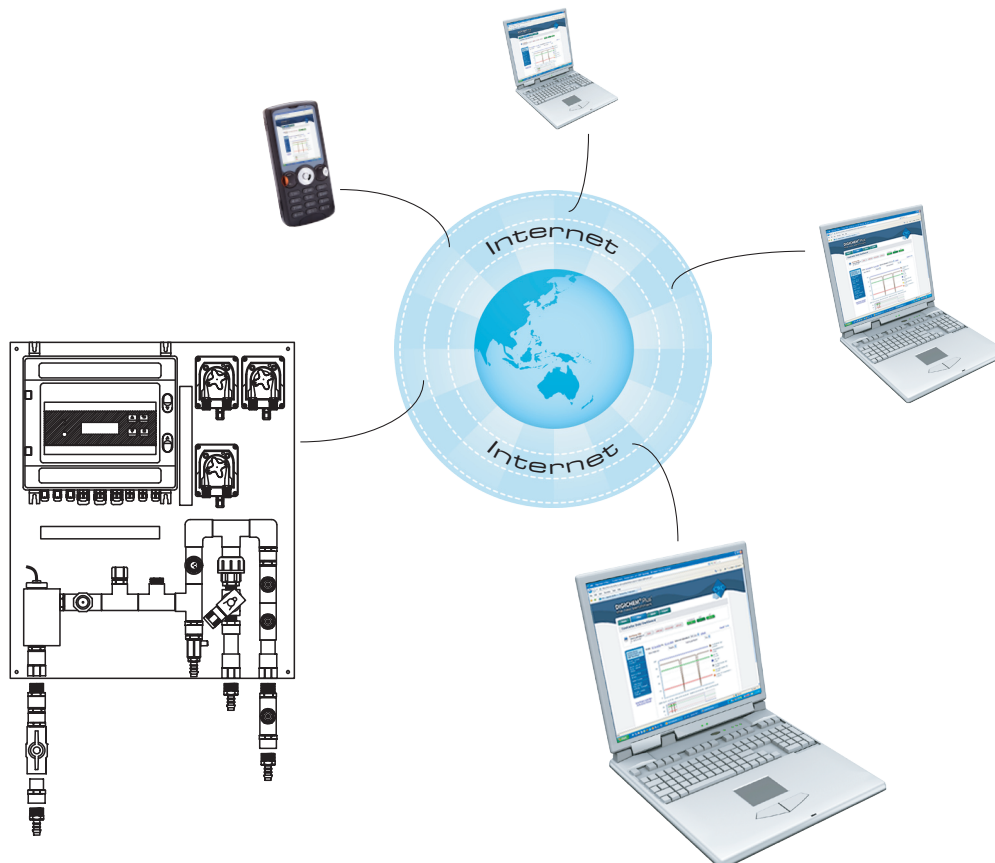
DP-CA-RXB-HC2

Features & Benefits - Controller

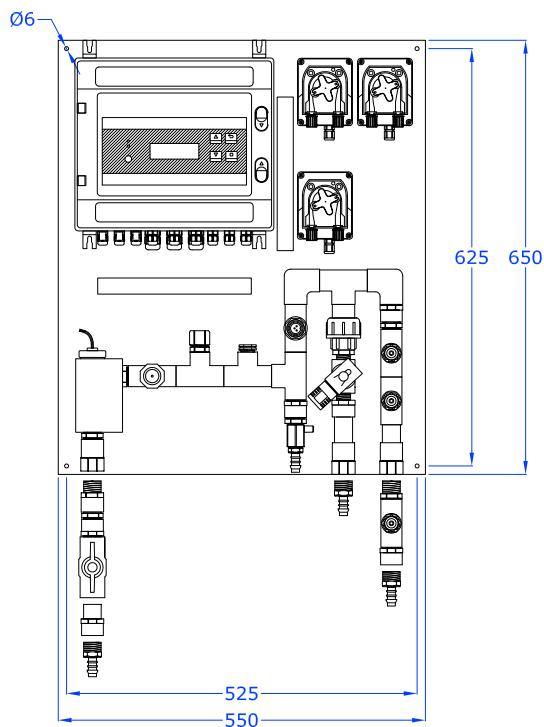
- Bleed Control via solenoid valve (or via optional actuated ball valve)
- Non Oxidising Biocide on 28 day timer
- Inhibitor & Dispersant Modes: On Bleed, After Bleed, Cycle, via Make-up or Bleed water meter pulses
- ORP Control (with 28 day timer) of Chlorine or optional brominator
- Optional pH monitoring and/or control
- Data logging of approx 17 variables including Conductivity, Temperature, pH, ORP
- Easy to program and calibrate
- 4 line backlit LCD simultaneously displays Conductivity, ORP, pH, Temp & setpoints, as well as output status
- Manual priming & testing via menu
- Automatic Slug Dose Feature
- Fail-safe alarm relays with remote power failure detection
- Condenser pump override facility with delay-off timer - ensures flow through manifold during & after secondary biocide dosing
- Integrated flow switch can be configured to disable different combinations of outputs on no-flow
- Disinfection feature to temporarily run ORP at higher mV level
- Logging of Make-up Water Consumption, Bleed Water Usage & Evaporation & Losses (with optional make-up and bleed water meters connected to the controller)
- Logging of Cycles of Concentration
- Weatherproof - can be mounted outside

Features & Benefits - Remote Internet Access

- Remote Access via secure website - No software installation or upgrades required. No telephone line required
- View logged data from any Internet connection
- View or change controller settings from any Internet connection
- Complete data history stored on secure webserver
- Alarms & events sent via SMS and/or e-mail
- Different alarms can be sent to up to 8 different people
- Alarm notification when connection lost (eg. power failure)
- Summary view of all controllers on one screen
- Comparison of data trends with customisable graph overlay feature
- Selectable full-scale plots or Min-Max only
- Problems quickly identified with graph zoom feature
- Multiple Access levels, ie from View Only to Full Access

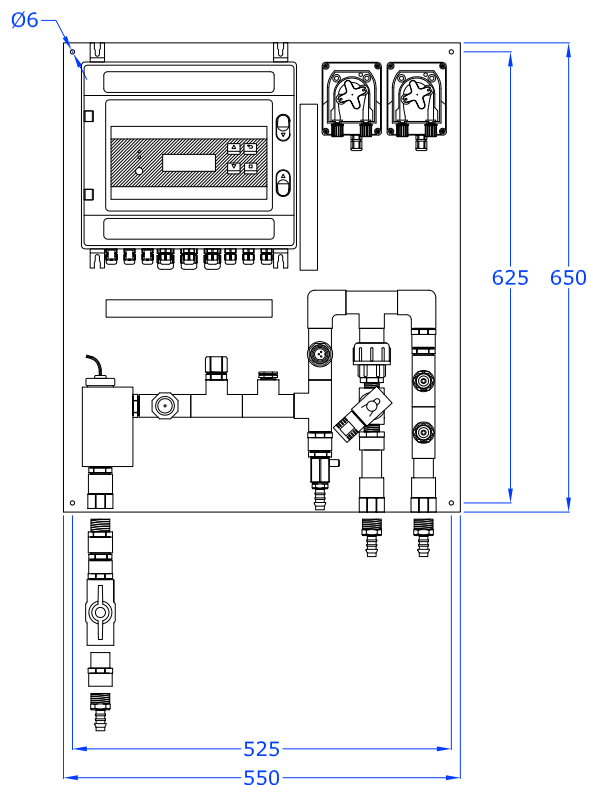


Dimensional Drawing - Liquid Chlorine Program

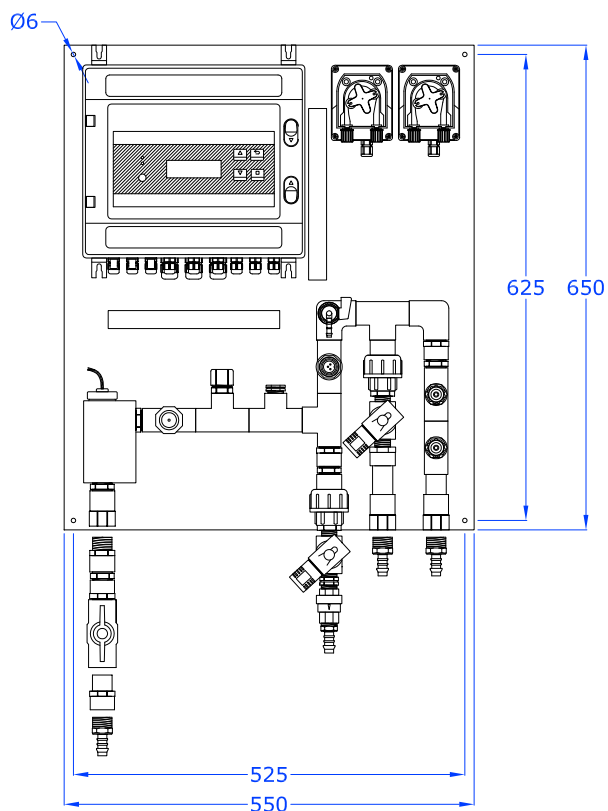


DP-CA-RXP-HC1

Dimensional Drawings - Brominator Program



DP-CA-RXB-HC1



DP-CA-RXB-HC2

How to Order

Ordering Code → **DP - CA - RX** **P** - **HC** **1**

Oxidising Biocide Options	
P	Liquid Chlorine Program
B	Brominator Program

Explanation of Fixed Part Codes	
DP	System with DIGICHEM® Plus⁺ controller
C	Inhibitor Pump included
A	Secondary Biocide Pump included
RX	ORP Control
HC	HydroChem exclusive system

Solenoid Valves Included	
1	Solenoid valve included for bleed. No Brominator Solenoid valve included
2	2 Solenoid valves included: 1 for Bleed 1 for optional Brominator

Note: Manifold included
Dispersant Pump Optional on all systems
pH Probe & pH Pump Optional on all systems

Options & Accessories

Ordering Code	Description
DP-OPT-PROBE-PH	Add standard pH Probe (model WA SOTA-A-1.5m) for pH monitoring
WA OPF10-NNN-1.5m	Add higher spec pH Probe (model WA OPF10-NNN-1.5m) for pH monitoring
DP-OPT-PUMP-PH	Add pH Pump (Acid or Base) to any system, includes extra manifold fittings (NOTE: DP-OPT-PROBE-PH or WA OPF10-NNN-1.5m also required for this option)
DP-OPT-PUMP-DIS	Add Dispersant pump to any PVC mounted system, incl. extra manifold fittings
DP-OPT-CARD-IP-TL	Input card to monitor 6 tank levels with optional low level tank switches (available soon)
DP-OPT-CARD-OP	Output card for BMS/DDC incl. 4 x isolated 4-20mA outputs, 9 x NPN open collector logic outputs for each pump & solenoid valve status, and for flow, alarm & power status
SP-XP2-COMCABLE-1	Serial cable for local download of logged data from DIGICHEM® Plus⁺ controller (plugs into Comms port on controller fascia. Software for download at www.cwc.com.au). NOTE: HOBO CABLE-USB-232 also required if serial port not available on laptop
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)
RV-ILS-1-T20E	In-line Strainer (protects solenoid valve & flow switch from blockage)
DP-OPT-HC-CABG	Mount Dosing System inside Glass Reinforced Polyester cabinet 800x600x300mm
Available on Request	COUPON RACKS, BROMINATORS, CIRCULATION PUMPS & WATER METERS

Upgrades - ORP Probe, Belimo Valve, 5 l/hr Pumps

Ordering Code	Description
DP-UPGRADE-PROBE-M10-ORP	Replace WA SOTA-ORP-A-1.5m or IONODE IH30 probe that is supplied as standard in a new system with a higher spec WA OPF10-NNN-1.5m 1/2" threaded ORP probe (NOTE: The price of this item is an upgrade cost, i.e. It must be ordered with a new system)
AF02-1/2-LRU230	Upgrade Solenoid Valve to Belimo Electric Actuated Ball Valve for Bleed and/or Brominator (NOTE: This is not weatherproof unless option DP-OPT-HC-CABG is also ordered)
DP-UPGRADE-PUMP-PE-5.0	Replace SEKO PE-1.3 pump that is supplied as standard in a new system with a SEKO PE-5.0 (5l/hr, 1.5 bar) (NOTE: The price of this item is an upgrade cost, i.e. It must be ordered with a new system). PRICE PER PUMP UPGRADED

Recommended Spare Parts & Consumables

Ordering Code	Description
SP-DCON-P10T-P	Replacement conductivity probe 3/4" BSPM
SP-DCON-P10AT-P-PL	Replacement probe lead, 1.5m
WA SOTA-ORP-A-1.5m	Replacement standard ORP probe, 1.5m cable, 12mm diameter smooth body
WA OPF10-PBN10-1.5m	Replacement higher spec ORP probe, 1.5m cable, process connection - 1/2" MNPT thread
WA SOTA-A-1.5m	Replacement standard pH probe, 1m cable, 12mm diameter smooth body
WA OPF10-NNN-1.5m	Replacement higher spec pH probe, 1.5m cable, process connection - 1/2" MNPT thread
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
SP-DP-BAT	Replacement battery type CR-2032 (3.0VDC) for DIGICHEM Plus+ controller

Optional Remote Internet Access

Ordering Code	Description
DP-OPT-CARD-GPRS	GSM/GPRS Modem card to enable full remote connectivity via the Internet from any Internet browser. Enables changing controller settings and viewing logged data remotely. Automatic notification of alarms sent up to 8 recipients via SMS and/or e-mail. (Excludes Access Fees - see options below)
DP-OPT-WEB-SIM-V-12M	Annual Fee per Controller to access the Webserver incl. e-mail & SMS costs. SIM card provided and all data costs included (Uses the Vodafone network)
DP-OPT-WEB-SIM-T-12M	Annual Fee per Controller to access the Webserver incl. e-mail & SMS costs. SIM card provided and all data costs included (Uses the Telstra network)
DP-OPT-WEB-12M	Annual Fee per Controller to access the Webserver incl. e-mail & SMS costs (Excludes SIM card & associated data costs)

www.digichemplus.com



Screen Shot of Graphical Data Log from www.digichemplus.com

The screenshot shows the 'Controller Settings Dashboard' for a Digichem Plus+ controller. It displays various configuration options for Conductivity, ORP, and pH. The 'Conductivity Setup' section includes fields for Conductivity Units, Bleed Setpoint, Hysteresis, Bleed Cycle On Time, and Bleed Cycle Pause Time. The 'ORP Setup' section includes fields for ORP Control Enabled, Dosing, Setpoint, and Control Method. The 'pH Setup' section includes fields for pH Control Enabled, Dosing, Setpoint, and Control Method. The dashboard also includes navigation tabs for Home, Site, Admin, and Login, and a sidebar with links to various system components like Water Volume, Bleed Valve, and Alarm Events.

Screen Shot of Settings from www.digichemplus.com

Specifications

DIGICHEM® Plus⁺ CONTROLLER

Control Functions

Measured Variables	Conductivity	ORP	pH	Temperature
Range	0-9999 μ S/TDS	1-999mV	0.01-13.99pH	0-100°C
Resolution	1 μ S / 1 ppm TDS	1mV	0.01pH	1°C
Accuracy	0.2% of Range	0.4% of Range	0.4% of Range	1% of Range
Repeatability & drift	1% of Range	0.8% of Range	0.8% of Range	-
Control Type	ON/OFF	ON/OFF or proportional		-
Hysteresis	1-90%	1-20% (ON/OFF control only)		-
ON/OFF Dose [Bleed] Cycle	ON/OFF=0-99s/0-99s	ON/OFF = 0-99s/0-99s (ON/OFF control only)		-
Proportional Band	-	1-90% (Proportional control only)		-
Cycle Time	-	10-100s (Proportional control only)		-

Alarms

Level Alarms	High & Low μ S/TDS	High & Low ORP	High & Low pH	-
Max Dose [Bleed] Timer Alarm	0-999m (0=disabled)	0-999m (0=disabled)	0-999m (0=disabled)	-
Tank Level Low Alarms	With optional card, ordering code DP-OPT-CARD-IP-TL (available soon)			
Alarm Output	Common alarm via N/O & N/C failsafe volt-free contact			

Dose Settings

Dispersant	Programmable Cycle (ON/OFF) – in Modes: Continuous, On Bleed or After Bleed. Or Proportional to Make-up pulses or Bleed pulses (pulse water meter optional) NOTE: Dispersant output functions independently of Inhibitor output
Inhibitor	Programmable Cycle (ON/OFF) – in Modes: Continuous, On Bleed or After Bleed. OR Proportional to Make-up or Bleed pulses (pulse water meter optional)
Primary Biocide	ORP controlled (ON/OFF or Proportional modes with 28 day timer) Or timed only doses via 28 day timer programs (10 max per day)
Secondary Biocide	Non-oxidising Biocide Timed doses via 28 day timer programs (10 max per day)
Pre-Bleed	Conductivity Setpoint lowered by (0-50%), Duration (0-999 min) before timed Biocide dosing
Bleed Lock-out	Conductivity Setpoint raised by (0-50%) when timed Biocide Starts until (0-999min) after Biocide stops
Condenser pump override	During timed Biocide dosing and during Manual Dose with delay-off timer (15-240min)
Acid or Base	pH controlled (ON/OFF or Proportional modes with 28 day timer)

General

Display	4 line x 20 character backlit LCD display
Keypad	UP, DOWN, ENTER & BACK (ESC) pushbuttons
LED Indication	None required as all output status indicated on LCD display
Manual Test	All outputs independently activated via menu
Flow Sensing	Flow sensing individually set per output
Calibration	Menu driven (Auto-buffer detect for pH)
Datalogging Interval	Programmable from 5 min to 240 min
Logged Variables	Conductivity, Temp, pH, ORP, %Bleed, %pH, %ORP, %Inhib, %Secondary Biocide, %Dispersant, %Flow, %Alarm, Cycles of Concentration, Make-up water volume, Bleed water volume, Evaporation & Losses
Data Retention	100 years
Battery Backup	1 year (approx)
Battery Type	CR2032 (3VDC), part no SP-DP-BAT

Electrical

Power Supply	220-240 VAC, 50/60Hz (110VAC available on request)
Power Consumption	10W max (with no loads on outputs)
Fuses	Circuit Fuse (2A, 5x20mm), Output Fuse (4A, 5x20mm)
Auxiliary Mains Output	240VAC continuous (4A fused)
Control Relay Outputs	Switched 240VAC outputs rated 6A/250VAC resistive (4A fused)
Alarm Relay Output	N/O & N/C Volt-free (6A/250VAC resistive) 4A fused. Relay Coil de-energises on power failure.
Condenser Pump Relay	N/O Volt-free (6A/250VAC resistive) 4A fused
Water Meter Inputs	Bleed (volt-free pulse), Make-up (volt-free pulse)

	DP-CA-RXP-HC1	DP-CA-RXB-HC1	DP-CA-RXB-HC2
Dosing Pumps Incl.			
Dispersant	optional	optional	optional
Inhibitor	1.3 l/hr	1.3 l/hr	1.3 l/hr
Chlorine (ORP controlled)	1.3 l/hr	-	-
Bromine (ORP controlled)	-	2m Solenoid Valve Lead with DIN Plug (Valve Optional)	1/2" Solenoid Valve
Secondary Biocide (28 day timer control)	1.3 l/hr	1.3 l/hr	1.3 l/hr
Acid/Base (pH controlled)	optional	optional	optional
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, 2.7 bar		

Solenoid Valves	
For Bleed or Brominator	1/2" (15mm)
Valve Type	SMC (or similar type) 240VAC NC Direct Acting 0-2.7 bar, 10mm orifice (higher pressure valve, larger sizes, and actuated ball valves available as options on request)

	DP-CA-RXP-HC1, DP-CA-RXB-HC1	DP-CA-RXB-HC2
Manifold		
Description (Inlet to Outlet)	Inlet, isolation valve, Check valve, Flow switch, Solution ground probe, ORP probe, Port for optional pH probe, Sample point, Conductivity Probe, Bleed solenoid valve, Check valve, Injection points, Outlet.	Inlet, isolation valve, Check valve, Flow switch, Solution ground probe, ORP probe, Port for optional pH probe, Brominator solenoid valve with Check valve, Conductivity Probe, Sample point, Bleed solenoid valve, Check valve, Injection points, Outlet.
Probes Included	Conductivity (SP-DCON-P10AT-P), ORP (SOTA-ORP-A-1.5m), Solution ground (SP-DCON-CMR), N/O volt-free flow switch (incorporated in Acrylic flow cell)	
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	
Physical		
Protection	IP65	
Operating Temperature	0-50°C	
Mounting	PVC backboard	
Packaged dimensions	860(l) x 590(w) x 230(h) mm	
Actual Packaged weight	15Kg	