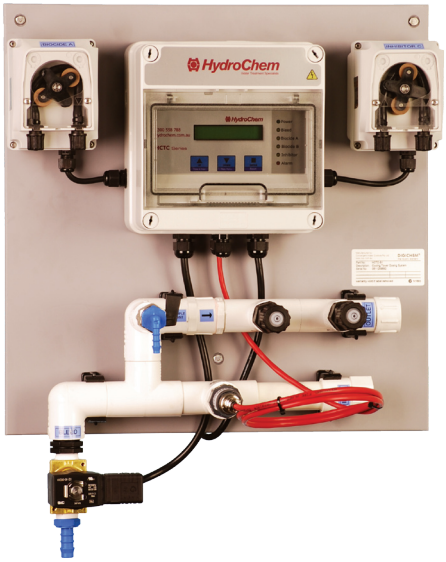
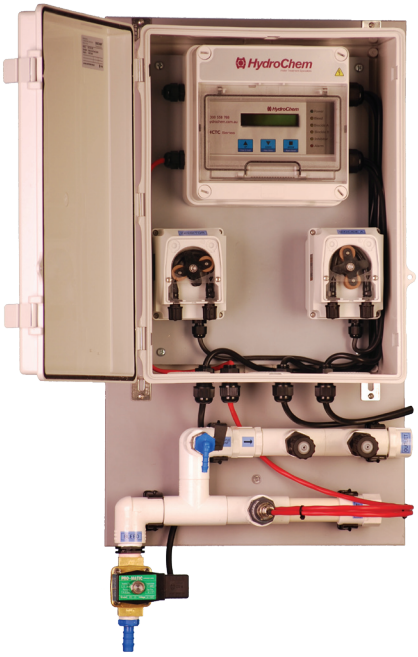
Cooling Tower Control & Dosing

Bleed, Inhibitor, Timed Biocides

Ordering Code	Description
HCTC	**DIGICHEM®** XP2 Conductivity controller for Cooling Towers with 2 x 28-day timers for Dual Biocide dosing. Relay outputs for optional bleed solenoid valve, Inhibitor & 2 Biocide Pumps. Includes conductivity probe wih PVC Tee. Datalogging with external access not included.
HCTC-B1	HCTC Controller with Inhibitor & Single Biocide Peristaltic Pumps with manifold on PVC back-board. (Incl. Bleed solenoid valve & conductivity probe)
HCTC-B1-CAB	HCTC-B1 with controller & pumps in Polyester hinged cabinet
HCTC-B2	HCTC Controller with Inhibitor & Dual Biocide Peristaltic Pumps with manifold on PVC back-board. (Incl. Bleed solenoid valve & conductivity probe)
HCTC-B2-CAB	HCTC-B2 with controller & pumps in Polyester hinged cabinet

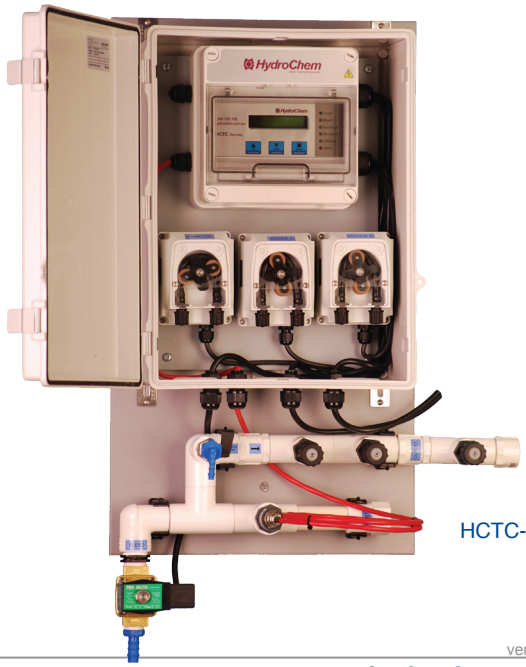


HCTC-B1



HCTC-B1-CAB

HCTC-B2



HCTC-B2-CAB

(Note: Specifications subject to change without notice)

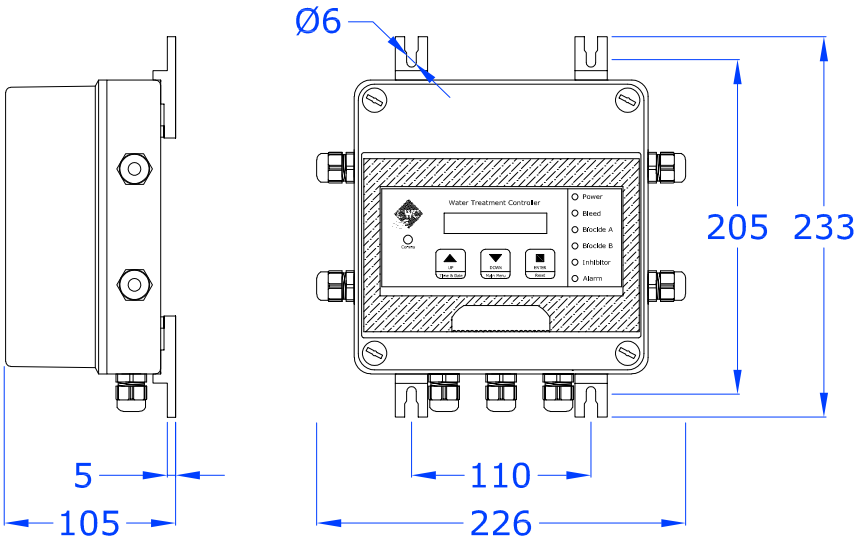
Description

One complete system for cooling towers – Conductivity control, Inhibitor & Dual Biocide Dosing with manifold on PVC panel – ready for installation – ready to control. The integrated **DIGICHEM**® XP2 controller maintains the conductivity of the tower water via its bleed solenoid valve. Corrosion Inhibitors are dosed on bleed, on a cycle or proportional to make-up. Biocide chemicals are dosed according to 10 independent 28-day timer programs. The circulating/condenser pump can be configured to automatically run during and after any biocide dosing program to ensure that the biocide mixes thoroughly.

Features & Benefits

- Bleed Control via solenoid valve (or via optional actuated ball valve)
- Dual Biocide Dosing via 10 x 28-day timer programs with programamble pre-bleed & bleed lockout
- Inhibitor Dosing on bleed, on cycle or proportional to make-up (via water meter pulses)
- Easy to program and calibrate
- Backlit LCD simultaneously displays Conductivity, Temperature & Setpoint
- Manual priming & testing via menu
- Automatic Slug Dose Feature
- Fail-safe alarm relay with remote power failure detection
- Condenser pump override facility with delay-off timer - ensures flow through manifold during & after biocide dosing
- Optional flow switch can be configured to disable different combinations of outputs on no-flow
- Manifold with sample valve
- Weatherproof - can be mounted outside

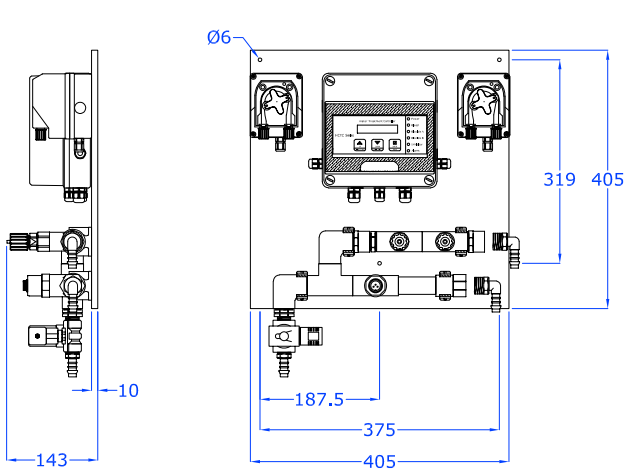
Dimensional Drawing - Controller only



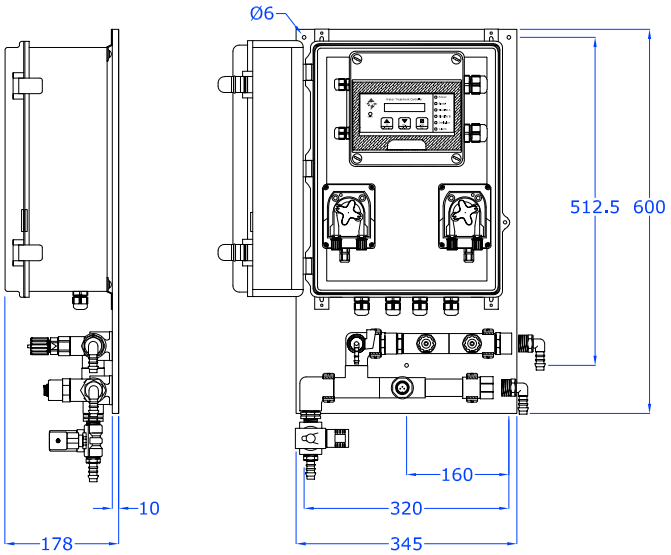
HCTC Controller

HCTC Controller

Dimensional Drawings - Single Biocide Systems

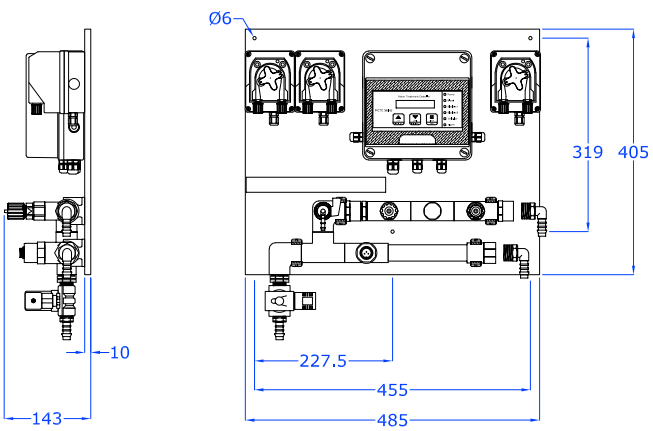


HCTC-B1

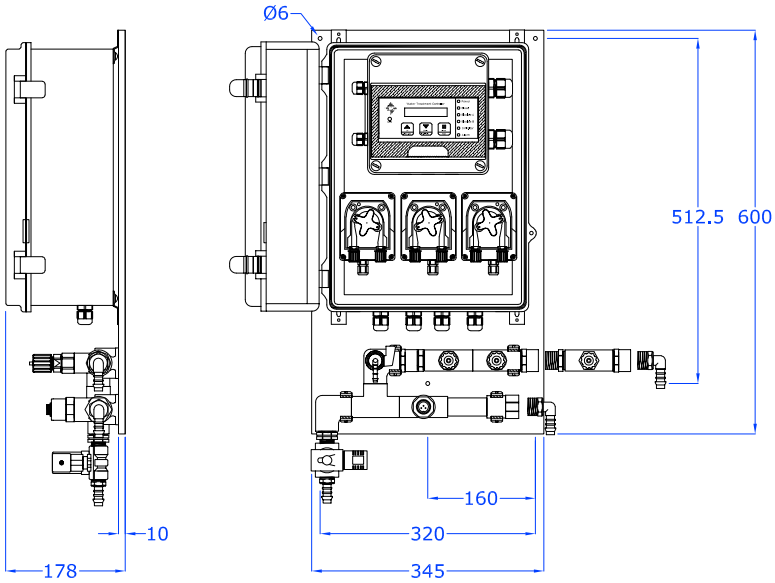


HCTC-B1-CAB

Dimensional Drawings - Dual Biocide Systems



HCTC-B2



HCTC-B2-CAB

Options & Accessories

Ordering Code	Description
AF02	Replace ½" direct acting solenoid valve with pilot assisted ¾" solenoid valve
AF02-1/2-LRU230	Replace 1/2" solenoid valve with Actuated Ball Valve 1/2" F/F (15mm) 240VAC, Full bore, Continuous voltage to close, Apply voltage to open (3-wire connection A, A, N), 3.5 bar, 100 degC max, IP54 (Weather protection recommended)
AF02-3/4-LRU230	Replace 1/2" solenoid valve with Actuated Ball Valve 3/4" F/F (20mm) 240VAC, Full bore, Continuous voltage to close, Apply voltage to open (3-wire connection A, A, N), 3.5 bar, 100 degC max, IP54 (Weather protection recommended)
AF04-M	Option on new system: Add Flow Switch To Manifold during manufacture (Configuration of outputs disabled on no-flow is programmable via the HCTC menu)
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
AF09-XP2	Isolated 4-20mA output card (proportional to 0-5000uS/TDS).
AF10-XP2	Output Card for BMS/DDC, incl. isolated 4-20mA (proportional to 0-5000uS/TDS), plus open collector NPN logic outputs for each pump & solenoid valve status, and for alarm & power status.
SP-XP2-COMCABLE-2	Serial cable for local download of logged data from HCTC controllers (plugs into internal circuit board. 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)
Available on Request	WATER METERS - refer to Water Meters Data Sheet
Available on Request	CORROSION COUPON RACKS - refer to Corrosion Coupon Racks Data Sheet

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
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
SP-DIGI-XP2-BAT	Replacement battery type CR-2032 (3.0VDC) for HCTC controller

Specifications - HCTC Controller

	DIGICHEM® XP2 CONTROLLER
Control Function	
Measured Variable	Conductivity
Range	0 - 9999 µS/TDS
Resolution	1 µS / 1 ppm TDS
Accuracy	0.2% of Range
Repeatability & Drift	1% of Range
Control Type	ON/OFF (controlling bleed valve)
Hysteresis	Deadband: 3% (fixed)
ON/OFF Bleed Cycle	ON/OFF = 0-99s/0-99s (00s/00s = disabled)
Alarms	
Activation	High/Low Conductivity/TDS, Max bleed time, Flat battery, Power Failure, No Flow
Level Alarms	High & Low µS/TDS
Max Bleed Timer Alarm	0-999m (0 = disabled)
Alarm Output	Common alarm via N/O & N/C failsafe volt-free contact
Dosing Settings	
Inhibitor	Programmable Cycle (ON/OFF) - in Modes: Continuous or On Bleed OR Proportional to Make-up pulses (pulse water meter optional)
Biocide A	Timed doses via 28 day timer programs (10 max per day)
Biocide B	Timed doses via 28 day timer programs (10 max per day)
Pre-Bleed	Conductivity Setpoint lowered by 15%, Duration (0 - 250 min) immediately before Biocide Dosing
Bleed Lock-out	Conductivity Setoint raised by (0-50%) when Biocide Starts until (0 - 999 min) after Biocide Stops
Condenser pump override	During Biocide dosing and during Manual Dose with delay-off timer (15 - 240 min)
General	
Display	Backlit Single Line LCD displays Conductivity (µS/TDS), Setpoint, Water Temperature, Flow & Alarm Status
Keypad	UP, DOWN & ENTER pushbuttons
LED Indication	green (Power on), yellow (Bleed, Inhibitor, Biocide A, Biocide B), red (Alarm)
Manual Test	All outputs independently activated via menu
Flow Sensing	Flow sensing individually set per output
Calibration	Menu driven
Datalogging Interval	Programmable from 5 min to 240 min. However logs cannot be downloaded externally. A laptop needs to be plugged via a special optional cable (p/n SP-XP2-COMCABLE-2) directly to the internal circuit board.
Logged Variables	Conductivity, Temp, %Bleed, %Inhib, %Biocide A, %Biocide B, %Bleed, %Alarm
Data Retention	100 years
Battery Backup	1 year (approx)
Battery Type	CR2032 (3VDC), part no SP-DIGI-XP2-BAT
Electrical	
Power Supply	220-240 VAC, 50/60 Hz (110 VAC available on request)
Power Consumption	10W max (with no loads on outputs)
Fuse	2A, 5x20mm (in-line with circuit and powered relay outputs)
Auxilliary Mains Output	240VAC continuous (2A fused)
Control Relay Outputs	Switched 240VAC outputs rated 8A/250VAC resistive (2A fused)
Alarm Relay Output	N/O & N/C Volt-free (6A/250VAC resistive) 2A fused. Relay Coil de-energises on power failure
Condenser Pump Relay	N/O Volt-free (6A/250VAC resistive) 2A fused
Water Meter Input	Volt-free pulse

Specifications - HCTC Dosing Systems

	HCTC-B1	HCTC-B1-CAB	HCTC-B2	HCTC-B2-CAB
Dosing Pumps Incl.				
Inhibitor	1.3 l/hr		1.3 l/hr	
Timed Biocide A	1.3 l/hr		1.3 l/hr	
Timed Biocide B	-		1.3 l/hr	
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)			
Manifold Standard				
Description	Inlet, (flow switch - optional), conductivity probe (carbon electrodes), sample point, 1/2" bleed valve to drain, check valve, injection points, outlet			
Bleed Solenoid Valve	SMC (or similar) 240VAC N/C Direct Acting 0-2.7 bar solenoid valve, 10mm orifice			
Inlet & Outlet	3/4" BSP Female Thread (3/4" x 12mm hosetails supplied loose)			
Max pressure & temp.	270 kPa (2.7 bar) @ 50°C			
Physical				
Protection	IP55	IP66 (best suited to outdoor installation)	IP55	IP66 (best suited to outdoor installation)
Lockable Cabinet containing Controller & Dosing pumps	-	Polyester, 390 (h) x 290 (w) x 160 (d) mm, Mounting brackets incl.	-	Polyester, 390 (h) x 290 (w) x 160 (d) mm, Mounting brackets incl.
10mm PVC panel with Cabinet & Manifold mounted	405 (h) x 405 (w) mm	600 (h) x 345 (w) mm	405 (h) x 485 (w) mm	600 (h) x 345 (w) mm
Packaged dimensions	860(l) x 590(w) x 230(h)mm	630(l) x 370(w) x 290(h) mm	860(l) x 590(w) x 230(h)mm	630(l) x 370(w) x 290(h) mm
Packaged weight	11kg	13kg	12kg	14kg

How to Order

Controller with Conductivity Probe Only (excludes pumps, manifold, backboard & cabinets)

Ordering Code → **HCTC**

Conductivity Bleed & Dosing Systems Supplied with Peristaltic Dosing Pumps

Ordering Code → **HCTC - B1 - CAB**

Biocide Pumps	
B1	1 Peristaltic Biocide Pump (ie. Single Biocide)
B2	2 Peristaltic Biocide Pumps (ie. Dual Biocide)

Mounting of Controller & Pumps	
blank	Controller & pumps on PVC backboard.
CAB	Controller & pumps in hinged plastic cabinet, mounted with manifold on PVC panel

Explanation of Fixed Part Codes	
HCTC	System with HydroChem Special version of the **DIGICHEM®** XP2 Series controller