

WATERCO
water, the liquid of life

www.waterco.com

DIGICHEM[®] Plus⁺

COMMERCIAL DOSING CONTROL SYSTEM

DIGICHEM[®] Plus⁺ controller is the Ultimate Dosing Control System for Commercial Swimming Pools which automatically measure and precisely controls set levels of sanitiser (chlorine) and pH balance (acid) through feedback from inline sensors.







DIGICHEM® Plus+

constantly monitors and doses the pool with the appropriate chemicals to keep it at a healthy level.

- ORP and pH monitoring and control
- Data logging of approx 17 variables including ORP, pH, conductivity and temperature
- Easy to program and calibrate
- 4 line backlit LCD screen simultaneously displays conductivity, ORP, pH, temperature & set points, as well as output status
- Manual priming & testing via menu
- Automatic Slug Dose feature
- 28 day timer
- Fail-safe alarm relays with remote power failure detection
- 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 (Superchlorination)
- Logging of make-up water consumption, bleed (Backwash) Water Usage (with optional water meters connected to the controller)
- Weatherproof (rated IP54) - can be mounted outside

DIGICHEM® Plus+ - Remote Monitoring

DIGICHEM® Plus+ can be monitored and controlled remotely installing the optional GPRS modem module (requires a SIM card). Simply log on at www.digichemplus.com and it is like you are standing in front of the unit .

- 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 web server
- 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 (e.g. 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, i.e. from View Only to Full Access



The screenshot shows the 'Controller Data Dashboard' section of the DIGICHEM Plus+ web interface. It displays a table of data log readings for the 'Monaco Estate Swimming Pool'. The table includes columns for Date, Time, Conductivity (µS/cm), Temperature (°C), pH, ORP (ppm), and Chlorine (ppm).

Date	Time	Conductivity (µS/cm)	Temperature (°C)	pH	ORP (ppm)	Chlorine (ppm)
2013-05-06	08:00:00	0	24	6.90	740	0
2013-05-06	09:15:00	0	23	7.00	740	0
2013-05-06	09:30:00	0	23	6.94	751	0
2013-05-06	09:45:00	0	23	7.01	755	0
2013-05-06	10:00:00	0	23	7.00	757	0
2013-05-06	10:15:00	0	23	7.00	755	0
2013-05-06	10:30:00	0	23	7.00	761	0
2013-05-06	10:45:00	0	23	7.00	763	0
2013-05-06	11:00:00	0	23	7.00	760	0
2013-05-06	11:15:00	0	23	7.00	764	0
2013-05-06	11:30:00	0	23	7.00	764	0



Technical Specifications

Control Functions

Parameter	Conductivity	ORP	pH	Temperature
Range	0-9999 µS/TDS	1-999mV	0.01-13.99	0-100°C
Resolution	1 µS/ 1 ppm TDS	1mV	0.01	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	1-20%	1-20% (ON/OFF control only)		-
ON/OFF Dose	-	ON/OFF = 0-99s/0-99s (ON/OFF control only)		-
Proportional Band	-	1-90% (Proportional control only)		-
Cycle Time	-	10-100s (Proportional control only)		-

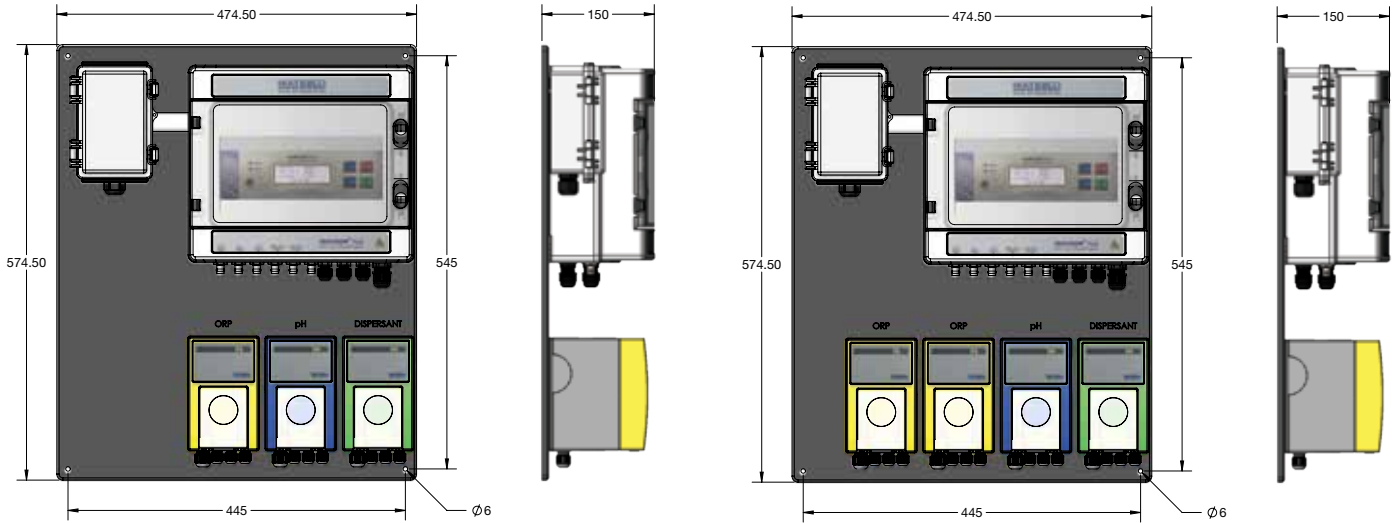
Alarms

Parameter	Conductivity	ORP	pH	Temperature
Level Alarms	High & Low µS/TDS	High & Low ORP	High & Low pH	-
Max Dose Timer Alarm	-	0-999m (0=disabled)	0-999m (0=disabled)	-
Tank Level Low Alarm	With Optional card			
Alarm Output	Common alarm via N/O & N/C failsafe volt-free contact			

Electrical

Parameter	
Power Supply	220-240 VAC, 50/60Hz (110VAC available on request)
Power Consumption	10W max (with no loads and outputs)
Fuses	Circuit Fuse (2A, 5x20mm), Output Fuse (4A, 5x20mm)
Auxiliary Mains Output	240VAC Continuous (4A fused)
Control Relay Output	Switched 240VAC continuous (4A fused)
Alarm Relay Output	N/O & N/C Volt-free (6A/250VAC resistive) 4A fused. Relay Coil de-energises on power failure
Condenser Relay Output	N/O Volt-free (6A/250VAC resistive) 4A fused
Protection	IP65
Operating Temperature	0-50°C

Dimensional Drawings



Typical configuration for systems from 50kL up to 300 kL with dispersant pump

Typical configuration for systems up to 600 kL with dispersant pump

Typical Equipment Configuration

Parameter/ Pool Size	up to 50kL	up to 300kL	up to 600kL	up to 1000kL
Chlorine (ORP) pump (L/Hr)	3	15	30	45
Acid (pH) pump(L/Hr)	3	3	15	15
Dispersant Pump (L/hr)*	3	3	3	15
Suction Lances	1150mm/600mm			
GSM/GPRS CARD**	Included			
pH/ORP Sensor	Included			
TDS/Conductivity Sensor	Included			

* There are two possible configurations: with or without dispersant pump.

** Do not include SIM card required for remote communication.



Waterco Case Study

Monarco Estate

“ The beauty of the DIGICHEM Plus+ is that it constantly monitors the water balance and adjusts its dosage to cater to the changing conditions. ”

says Steve Emett,
a technician with local pool store
Swimart Carlingford



DIGICHEM Plus+ provides automatic control and monitoring of pH, and ORP for commercial pools and spas.

Automated system overcomes cloudy water issue at resort-style complex

With luxury facilities including a tennis court, sauna, spa and swimming pool, gym and beautifully manicured lawns, Monarco Estate is one of the most sought after new addresses in the Sydney suburb of Westmead. The residential complex is positioned as perfect for anyone seeking resort style living in the heart of Sydney.

Just like any luxury resort, Monarco Estate boasts an impressive 300,000 litre outdoor swimming pool. However, it didn't always have clean and clear pool water.

“The challenges this pool poses to the sanitisation process is that the bather load can increase from 10 people to few hundred very quickly,” explains Steve Emett, a technician with local pool store Swimart Carlingford, which services the facility. “So the water would become cloudy when there was a very high bather load, especially if it was combined with hot weather.”

The pool was already fitted with an automated sanitation and monitoring system, but Steve still had to visit the site several times a week to manually dose it with chlorine and acid – and, in some cases, to superchlorinate it after a heavy bather load or bad weather.

The lack of clarity in the water and the need for constant maintenance indicated to the facility's operators that the system was not adequate for the water and swimmer volume of this particular pool.

However, after installing Waterco's DIGICHEM Plus+ 18 months ago, the situation has improved immensely.

“Since the new system has been put in place, I have not had to dose the pool once,” says Steve. “The beauty of the DIGICHEM Plus+ is that it constantly monitors the water balance and adjusts its dosage to cater to the changing conditions.”

The client also has peace of mind, because the system sends email and SMS notifications to Steve if there are any problems with the water balance. Since the DIGICHEM Plus+ was installed, the residents have commented on how clear the water is all the time, even when there are lots of people in the water.

The other features of the DIGICHEM Plus+ at the pool at Monarco Estate is benefiting from include continuous monitoring and control of pH, ORP (Oxidation Reduction Potential), optional 28 day control and a super-chlorination function.

“The system is very reliable,” says Steve. “It sure makes my job easier!”

CONTACT WATERCO

Waterco's head office is situated in Sydney, Australia with international offices, manufacturing plants and warehouses located in Australia, New Zealand, Malaysia, Indonesia, Singapore, China, the US, Canada, France and the UK.

OFFICES - AUSTRALIA

NSW - Sydney (Head Office)
Tel: +61 2 9898 8600
QLD - Brisbane
Tel: +61 7 3299 9900
VIC/TAS - Melbourne
Tel: +61 3 9764 1211
WA - Perth
Tel: +61 8 9273 1900
SA/NT - Adelaide
Tel: +61 8 8244 6000
ACT Distribution
Tel: +61 2 6280 6476

OFFICES - OVERSEAS

Waterco (Europe) Limited
Sittingbourne, Kent, UK
Tel: +44 (0) 1795 521 733
Waterco (USA) Inc
Augusta, Georgia, USA
Tel: +1 706 793 7291
Waterco Canada
Longueuil, Quebec, Canada
Tel: +1 450 748 1421
Waterco (NZ) Limited
Auckland, New Zealand
Tel: +64 9 525 7570

Waterco (C) Limited
Guangzhou, China
Tel: +86 20 3222 2180

Waterco (Far East) Sdn Bhd
Selangor, Malaysia
Tel: +60 3 6145 6000

PT Waterco Indonesia
Jakarta, Indonesia
Tel: +62 21 4585 1481

Waterco Singapore Int'l
Pte Ltd
Nehsons Building, Singapore
Tel: +65 6344 2378

Waterco France
SAINT PRIEST, France.
Tel: +33 4 72 79 33 30

DISTRIBUTED BY:

WATERCO
water, the liquid of life

