



## OmniSmart Controller

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### Water Innovation Partners

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## The ultimate range in pump control

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### How our 'Smarts' in OmniSmart Benefit You:

*Protects and enhances the life of your pump by:*

- Monitoring the motor current and mains voltage to ensure these remain within the safe operating ranges
- Preventing excessive starts and long run times, extending the life of your pump
- Limiting excessive 'idle-time', consequently reducing the potential of seizing and the need for unscheduled maintenance
- Protecting your pump against dry running, thereby preventing damage to pump
- Giving an over pressure protection in case of a blocked pipe or excessive pressures in the reticulation network.

*Protects and maintains the reticulation system by:*

- Creating daily 'flushing waves' which scour the inside of the pipe, preventing slime build-up and eliminating unnecessary maintenance and potential blockages
- Prioritises operation in a 'controlled' state after power failure, based on the effluent levels in each tank or by staggering 'pre-set' on times, which automatically turns pumps on. This controls the start-up sequence and minimises excessive pressures in the reticulation caused by all pumps starting up together in an 'uncontrolled' state
- Improves flow and minimises retention issues through diurnal (daily) flow modification, by staggering operation and storing effluent in tanks with the flow being metered out on a timed basis
- Over pressure protection to prevent damage to pipework, joins, and valves.

*Our promise is to save you costs by:*

- Being able to upgrade and/or reconfigure the OmniSmart in the future if your requirements or desires change
- Having the ability to diagnose faults and correct them remotely without attending site
- Giving you event history to help identify problems or long-term trends such as additional water costs through leaking taps etc.
- Giving you the choice to only operate at designated periods of the day, to provide you the ability to:
  - a. Choose a cheaper power tariff (time of day) or self-consuming solar power alternative
  - b. Avoid downstream infrastructure upgrades due to capacity issues - all of which has to be funded.

# OmniSmart Feature Matrix



Features	500	1000A	1000B	6000A	6000B	6000C
Certified to all Australian and New Zealand Standards	•	•	•	•	•	•
Key lockable IP66 polycarbonate enclosure	•	•	•	•	•	•
Backing plate for easy mounting on wall or post	•	•	•	•	•	•
90Db audible alarm with automatic mute	•	•	•	•	•	•
External mute button for audible alarm	•	•	•	•	•	•
Single Pump Control	•	•	•	•	•	•
High-level alarm (low voltage) LED strobe light	•	•	•	•	•	•
Automatic and manual pump modes	•	•	•	•	•	•
Microprocessor based operation with upgradeable firmware	•	•	•	•	•	•
LED system status indication	•	•	•	•	•	•
Compatible with level switches or hydrostatic transducer	+	•	•	•	•	•
Back up high level switch compatible	•	•	•	•	•	•
Adjustable Over Pressure Protection	•	•	•	•	•	•
Motor current monitoring and protection for both low and high amps	+	•	•	•	•	•
Brown out/Low voltage protection		•	•	•	•	•
High voltage protection		•	•	•	•	•
Real time Clock (date and time)		•	•	•	•	•
Pump protection from Anti-seize, excessive run time and motor starts		•	•	•	•	•
Adjustable pump and alarm activation points		•	•	•	•	•
Adjustable Alarm delays		•	•	•	•	•
Internal memory with status history (last 4000+ events including motor state, adjustable fluid levels granularity, configurational changes and alarms)		•	•	•	•	•
USB Plug and Play administration interface and history		•	•	•	•	•
SCOP Compatible for improved system health and diurnal curve flattening.		•	•	•	•	•
Controller behaviour and activation based on time of day		•	•	•	•	•
Adjustable start delay after power failure based on fluid levels		•	•	•	•	•
Automatic scouring, time delay, and storage modes		•	•	•	•	•
Output to control external devices		•	•	•	•	•
Battery Backup for Alarms, fluid levels, history, and telemetry/SMS.		•	•	•	•	•
Hours run and pump start counter *		*	•	•	•	•
Backlit LCD screen for system status, diagnostics and liquid level			•	•	•	•
Telemetry/SCADA RS485 and RS232 MODBUS				•	•	•
Telemetry/SCADA 3G Cellular and DNP3					•	•
Telemetry/SCADA WiFi/Ethernet and DNP3						•
SMS notifications, remote diagnostics, pump control and set point control/adjustment					•	•
Email Alarm notifications					•	•
FTP support of historical event data transfer					•	•
LPWAN/IoT Integration				•	•	•

Note: Designed for use with most technology manufacturers' equipment (retrofitable)

• Standard

• Optional

\* Available via USB on 1000A

+ Level switches and high amp protection only

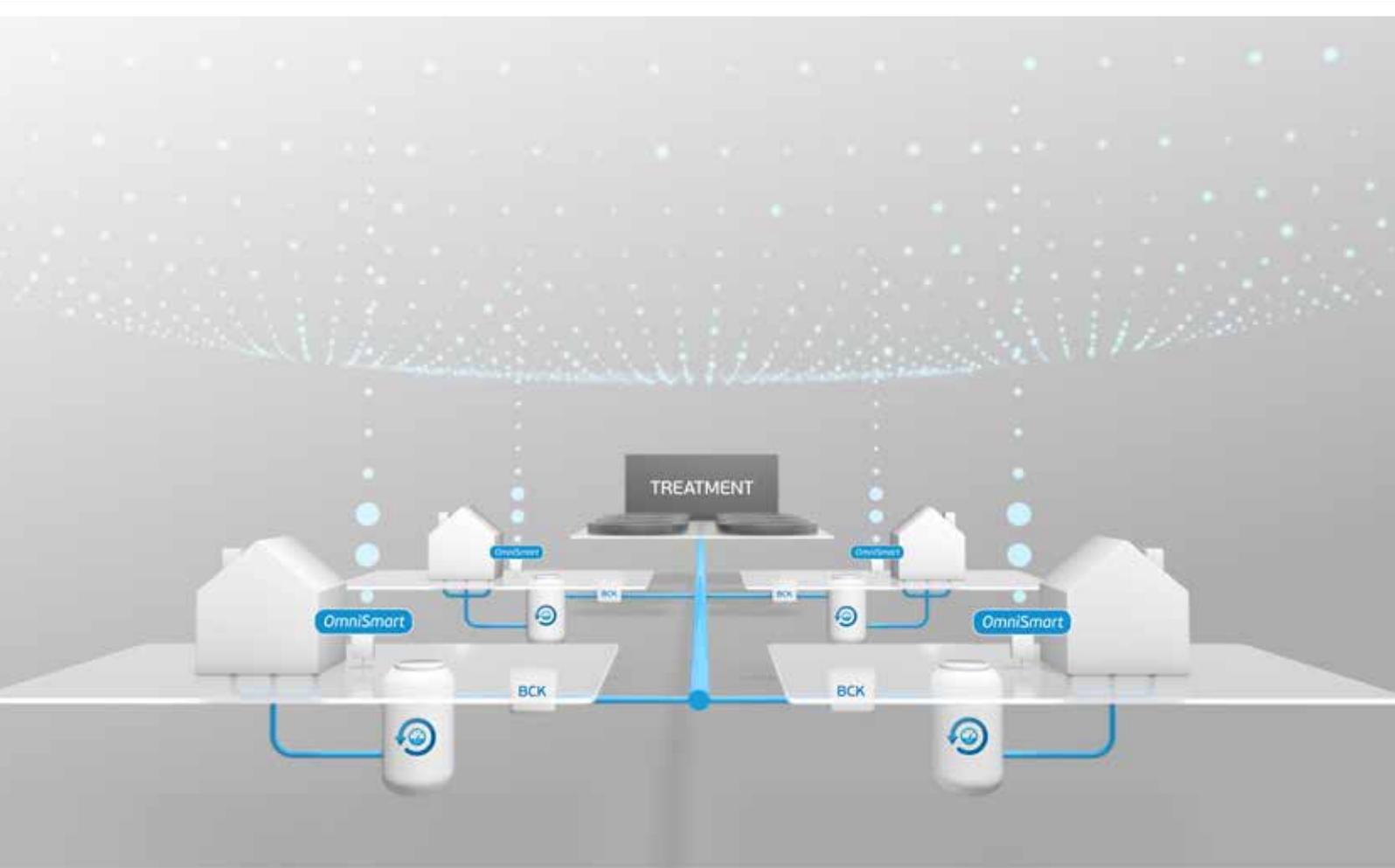
## Driving innovation

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“We are living in a world which is becoming more and more connected, with the vast majority of homes globally having access to the internet. The IoT (Internet of Things) is opening up functionality which has previously only been allocated to big SCADA platforms and large Water Authorities, due to the cost and complexity of infrastructure. Now, the value proposition for councils, developers, body corporates, and even home owners themselves has increased through IoT. With IoT’s ability to receive fault notifications and provide performance analytics from assets to gain system efficiencies, reduce maintenance costs and provide remote visibility, it has become a simple and affordable reality.”

**Bruce Seeley**  
CEO, Aquatec



# Flexibility

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## Upgrades

Aquatec's OmniSmart controller is adaptable to suit the requirements of any project. This includes the ability to be upgraded to replace existing control panels within a sewer network, which may be failing or do not provide an upgrade path for the asset owner.

## Firmware

The OmniSmart's firmware is fully configurable in every way. As your needs change over time, new firmware can be loaded to support additional functionality and hardware modules. As settings are locally saved, communications failure does not affect operation.

## Cellular Modem

The addition of a cellular modem (via a simple plug-in card) allows the OmniSmart to directly connect to the internet or a Corporate WAN (Wide Area Network). Furthermore, this enables the OmniSmart to SMS alerts to you if there is ever an issue, while allowing you to SMS instructions or changes to the unit.

## WiFi

The OmniSmart's optional WiFi module can connect to a local WiFi access point, to send fault notifications and receive instructions or updates remotely. This may be through the connected home or another network within range.

## Ethernet

The OmniSmart Ethernet module allows a physical wired connection to a network or the internet. This gives higher reliability in areas of poor wireless connection for example, or where you wish to connect it to a fibre modem.



# Remote Capabilities



## SCADA

The standard OmniSmart Controller has inbuilt 'smarts' for localised analysis and decision making. It is easily upgradable to become an edge device within your SCADA network by simply inserting a plug-in module. This has the benefits of reducing demand on both your network and SCADA servers, improving response times while still giving you realtime operational and management capabilities. As an edge device, the OmniSmart also continues to give you all the benefits of an optimised reticulation network, even during loss of communication or SCADA system outages. The OmniSmart also supports remote upgrade of its firmware via DNP3.

## Internet of Things (IoT)

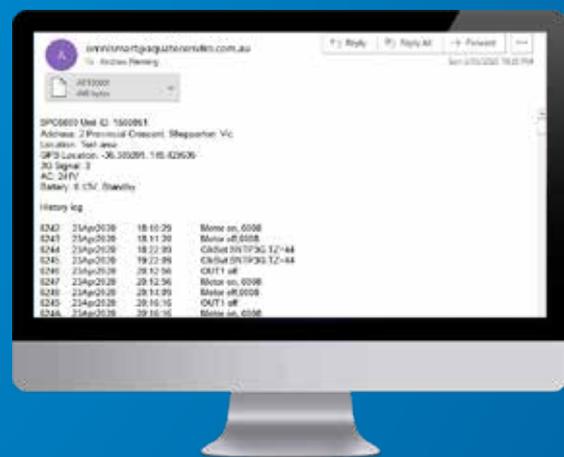
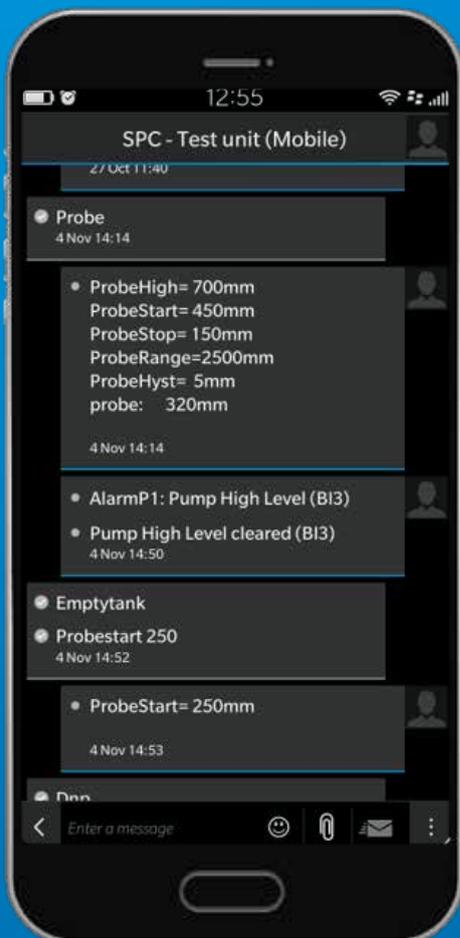
The OmniSmart can connect to a LPWAN (Low Powered Wide Area Network) base station many kilometres away, to send notifications of fluid level changes and/or issues onsite. This data is then on-forwarded to a secure IoT platform in the cloud, which can be fed into your SCADA system via DNP3 as if it were a traditional RTU.

## SMS/Email

The OmniSmart supports two way SMS communication for fault notification along with remote diagnostics, adjustment and rectification. It can also email faults directly to your job management system to automate ticket issuing and prioritisation. The OmniSmart also has the ability to produce nightly historical exports via email for in-depth reporting and analytics.

## File Transfer Protocol (FTP)

The OmniSmart transfers historical events to your FTP site at defined intervals, for automated phasing into your data warehouse. This gives you near real time data for reporting and analytics without the need of a SCADA system. OmniSmart supports CSV, tab delimited, and XML data file formats. The OmniSmart also supports remote upgrade of its firmware via FTP.



## OmniSmart Multi Pump Controllers

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As part of our product innovation and development, Aquatec have utilised the ground-breaking OmniSmart technology to incorporate multiple pump control for commercial and industrial applications. This includes the Duplex, Triplex and Quadplex pump control systems. In fact, the OmniSmart Multi is capable of operating up to five pumps in single or three phase, up to a maximum of 60 Amps per pump.

The OmniSmart Multi has evolved and advanced from the Simplex (single pump) control panel hardware, in order to leverage the same level of intelligence and expandability, and is cross-compatible with any single pump controller in an existing sewer network. As with the Simplex version, the OmniSmart Multi provides a seamless upgrade path to accommodate future requirements for telemetry or 'smart' functions.

*The OmniSmart Multi controller includes:*

- Individual Auto/Off/Manual switches
- Pump Current Sensing per phase, and phase failure detection
- Pump-specific Over Pressure Protection
- Ability to be supplied as a free-standing switchboard with mains metering functionality
- Numerous pump exercising algorithms to give multiple options for pump selection, such as duty/standby, pump prioritisation, longest idle time, total number of starts, total run hours etc.
- Compatibility with all types of level controls
- Configurable inputs for pump faults, such as thermal or moisture ingress detection
- Pump protection from lock rotor, excessive run time and excessive motor starts
- Backlit LCD screen for system status, fault diagnostics and liquid level visualisation
- USB Plug and Play administration interface and history



