Water Supply and Pressure Systems

Package Pressure System 32

Water Storage Temperature Management 34

Hydrokos 25 Variable Speed Pressure System Controller 36

Hydrostatic Pressure Test Unit 40

Hot Water Circulating System 42

Thermakos Control System 44

Water Supply and Pressure Systems Accessories 47

Case Study: Motive Apartments 48



Allied Pumps

Package Pressure System

Precision control and constant pressure, fixed or variable speed

Allied Pumps Package Pressure Systems are engineered to deliver precision control and constant pressure, eliminating cycling, pressure fluctuations and cyclic fatigue. Systems are available in fixed speed or variable speed configurations, with single or multiple pump units mounted on a common frame with interconnecting pipework and manifolds terminating in a single suction and discharge point.

Systems can be built with pressure tanks, valves, gauges and pressure and flow monitoring equipment, and configured for potable water transfer where tank fill is required, activated electrically or hydraulically. Typical transfer applications include high rise buildings and long-distance mining operations.

KEY FEATURES

- Constant, Non-Pulsating System Pressure
- Reduced Cycling and Cyclic Fatigue
- Lower Power Consumption and Energy Savings
- Reduces Water Hammer
- Increases Pump Life
- Single Suction and Discharge Connection Point
- WaterMark Certified

PRODUCT APPLICATIONS

- Town and Subdivision Water Supply
- Multi-Storey Buildings
- Processing Industry and Mechanical Services
- Remote Camp Water Supply
- Golf Course Reticulation



FIXED SPEED

In their simplest form, fixed speed systems use one or more pumps with cascade pressure switch control. The arrangement can be enhanced with a dedicated pump controller and pressure transducer for multiple-pump capability. Units are factory tested with operating parameters pre-set before delivery.



Frame mounted multi-pump system with control cabinet, ready for connection on site.

VARIABLE SPEED

Ultimate performance comes from varying the speed of one or more pump units to produce constant, non-pulsating pressure that responds to changing flow. A dedicated process controller works with a digital frequency converter to vary the lead pump speed and cascade the remaining pumps against the pressure transducer signal.

INTEGRATED FILTRATION AND TREATMENT

Where water quality is not acceptable or requires improvement, filtration and treatment can be built into the system. Sediment filters, UV filters and water softeners are commonly specified for mine camps, remote water supply, hospitals, commercial kitchens and rainwater reuse.

Water Storage Temperature Management

Stored water held at optimum temperature, potable or raw

Built in compliance with AS3500, the Water Storage Temperature Management System controls the temperature of stored water in both potable and raw water applications. Precise multipoint temperature sensors hold the stored water at optimum temperature, while careful positioning of circulation connection points maintains an even temperature throughout the water body.

Systems are built from a combination of methods selected to suit the application, including tank and pipework insulation, destratification, shading and chilled or in-line chilling. Tanks can be supplied in cyclone rated construction with insulated roofing, and options extend to containerised packages with distribution pumpsets, duty/standby chillers, data logging, temperature alarms and integrated sanitisation.

KEY FEATURES

- Multipoint Temperature Sensing and Control
- Even Temperature Throughout the Water Body
- Reduced Power Consumption and Equipment Sizing
- Insulation Applied to New or Existing Tanks
- Maintains Tank Water Below 25°C
- Materials in Contact With Water Comply With AS4020
- R134a Refrigerant With Low Global Warming Potential

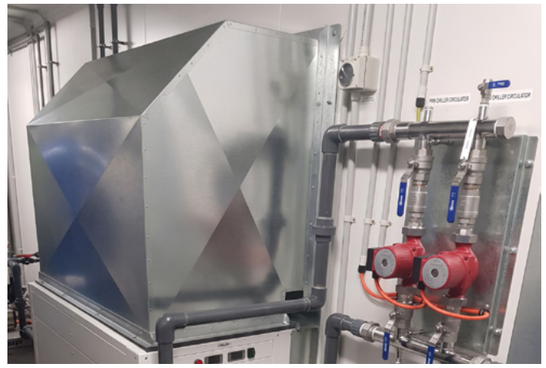
PRODUCT APPLICATIONS

- Hospitals and Health Care Centres
- Mine Sites and Accommodation Villages
- Defence Bases in High Ambient Temperatures
- Facilities in High Ambient Temperatures



WHY TEMPERATURE MATTERS

Reducing stored water temperature slows the natural gassing off of residual chlorine and inhibits bacterial growth. Legionella survives between 20 and 50°C and thrives between 25 and 42°C, so holding storage below 25°C removes the conditions it needs to establish. Circulation works alongside temperature reduction to prevent water going stale, improving the quality of water delivered at the tap.



Chiller unit with circulator pumps and stainless steel plate heat exchanger, ready for connection on site.

CHILLER SYSTEM

Chilled storage or in-line chilling is available, built around high efficiency screw compressors, dual thermostat, condenser, evaporator and a stainless steel plate heat exchanger. R134a refrigerant is used for its low global warming potential, and all materials in contact with water comply with AS4020. Systems are designed to maintain tank water below 25°C in line with Department of Health guidelines.

INSULATED STORAGE TANKS

Insulation can be applied to new or existing tanks using a range of materials and methods, so an existing installation struggling with temperature can be improved without replacement. Reducing heat gain lowers both power consumption and the equipment sizing needed to hold temperature, often reducing the chilling capacity a site requires. Tanks are available in cyclone rated construction with insulated roofing, shading and air circulation to reduce condensation, in a choice of colours.

Hydrokos 25 Variable Speed Pump Controller

The Hydrokos 25 is a variable speed controller for one to six pumps, with a colour touch screen interface and a streamlined setup process. Level, pressure and temperature modes cover most duties, and time stamped alarms, logged data and trend graphs give the information needed for tuning and preventative maintenance. One drive is fitted per pump.





PANEL VARIATIONS

The standard panel suits most installations, and five factory variations cover the rest. Rain and mains changeover holds water supply when the pumping system is off or locked out. Generator variations allow manual or automatic changeover to standby power. Enclosures can be upgraded to IP56, 316 stainless steel or free standing. The variations are:

- /BMS: volt free outputs for power on, low pressure, pump run and fault
- /SMS: ME-Link module for alarm and status messaging
- /RMC: rain and mains changeover with pulse latching solenoid valve
- /GEN: generator input socket and manual changeover switch
- /ATS: automatic generator changeover

PANEL HARDWARE

Every panel is built around a pad-lockable mains isolator, with circuit breaker protection on the control circuitry, the inputs and each pump individually. Supply is single phase 230Vac or three phase 400Vac. An analog 4-20mA input takes the level, pressure or temperature transducer, and up to eight digital 24Vdc inputs cover backup floats, pressure switches, thermostats, a system enable and a low flow switch. A 16 bar pressure transducer and shielded VSD motor cables are supplied with the panel.

KEY FEATURES

- Colour Touch Screen HMI
- Variable Speed Drive per Pump
- Level, Pressure and Temperature Modes
- Control of One to Six Pumps
- IP44 Powder Coated Enclosure
- Modbus RS485 for SCADA

PRODUCT APPLICATIONS

- Water Transfer and Tank Fill
- Pressure Boosting
- Sewage and Stormwater Pump Out
- Hot Water Recirculation and Chiller Supply

PRODUCT SPECIFICATION

Variable Speed Drive Range

Model No.	No. of Pumps	Phase / Voltage	Variable Speed Drive Rating Options	Enclosure Size
ALC-63121	1	1 Phase / 230Vac	-A to -C	500 x 500 x 300mm +
ALC-63120	1	3 Phase / 400Vac	-A to -K	500 x 500 x 300mm +
ALC-63221	2	1 Phase / 230Vac	-A to -C	500 x 500 x 300mm +
ALC-63220	2	3 Phase / 400Vac	-A to -K	500 x 500 x 300mm +
ALC-63321	3	1 Phase / 230Vac	-A to -C	600 x 600 x 300mm +
ALC-63320	3	3 Phase / 400Vac	-A to -K	600 x 600 x 300mm +
ALC-63421	4	1 Phase / 230Vac	-A to -C	600 x 600 x 300mm +
ALC-63420	4	3 Phase / 400Vac	-A to -K	600 x 600 x 300mm +

Single phase panels take 1 Phase 230Vac in and 3 Phase 230Vac out.
Enclosure sizes increase for higher kW ratings, and additional panels for up to six pumps are available.

VARIABLE SPEED DRIVE RATING GUIDE

Each panel code carries a suffix that sets the drive rating fitted per pump. Eleven standard ratings are available, from 0.75 kW at -A, through 1.5, 2.2, 3, 4, 5.5, 7.5, 11, 15 and 18.5 kW, to 22 kW at -K. Additional ratings can be supplied on request.

Single phase panels take -A to -C, so 2.2 kW is the single phase ceiling. Three phase panels take the full range. Confirm the final panel dimensions against the selected rating, since the sizes in the range table are a starting point.

ENCLOSURE AND CONNECTIVITY OPTIONS

The standard IP44 enclosure is powder coated mild steel with a removable gland plate, integral ventilation and a thermostatically controlled fan. It can be upgraded to IP56 with an inner door and vent covers, to 316 stainless steel for corrosive environments, or to a free standing cabinet on a plinth. Separate compartments for power authority meters are available where the panel doubles as the point of supply.

Modbus RS485 for SCADA is standard, and a Modbus TCP gateway with an ethernet port suits sites running on IP networks. An output can also be provided for a normally closed tank top up valve.

CONTROL MODES

System type is selected at commissioning and sets how the controller behaves. Speed is controlled proportionally for level and temperature, and by PID for pressure, with adjustable responsiveness. Control direction covers filling or emptying a tank, boosting or dropping pressure, and heating or cooling. Each mode adds its own functions, as follows:

- Level: hydrostatic transducer, maintain minimum level, tank top up from mains
- Pressure: jacking pump control, pipe fill, sleep assist, mains bypass on RMC
- Temperature: sleep enabled at setpoint, or one pump always circulating

PUMP MANAGEMENT

The controller runs up to six pumps in any combination of duty, duty assist and standby. Duty is shared on an adjustable change period with bumpless transfer, and additional pumps are staged in to hold setpoint and dropped again when demand falls. Starts and stops are staggered to limit current draw and reduce surge and hammer. Pump limiting caps maximum flow or power, and manual mode reverts to auto after ten minutes.

FAULT PROTECTION

Protections cover high and low level, pressure or temperature according to the system type, with automatic restart attempts on low pressure. Maximum run activates after thirty minutes at full speed to protect against a burst pipe, and no flow protection after thirty seconds where a flow switch is fitted. Pump cycle protection catches repeated short cycling from a faulty non-return valve. Anti-seize runs pumps during low use, and a failed transducer shuts all pumps down.



WATER SUPPLY AND PRESSURE SYSTEMS

Hydrostatic Pressure Test Unit

Allied Pumps Hydrostatic Pressure Test Units meet the pressure testing requirements of the plumbing and fire services industries. Designed to test the integrity of new and existing pipework installations, the unit saves the time and effort of common hand operated pressure test pumps, with an electric piston pump boosting to a maximum of 3450 kPa.



KEY FEATURES

- 240V AC Electric Pump With Switch and Lead
- Adjustable Pressure Relief to Prevent Over Pressurising
- Liquid Filled Pressure Gauge
- Anti-Vibration Resilient Mount Base
- Carry Handles
- Suction Strainer
- Diesel Option Available

PRODUCT APPLICATIONS

- New Pipework Installations
- Existing Pipework Integrity Testing
- Plumbing Services
- Fire Services

PRODUCT SPECIFICATION

Parameter	Values (Model APPT-5330-IRV)
Maximum Pressure	3450 kPa (500 psi)
Maximum Flow Rate	10 L/min
Approximate Weight	30kg
Approximate Dimensions	L550 x W400 x H450mm



WHY TEMPERATURE MATTERS

Mains water feeds through the unit into the pipework being tested. Once the line reaches mains pressure, the piston pump takes over and boosts to whatever setting the job requires, up to 3450 kPa. An adjustable relief valve caps the maximum, so the installation cannot be damaged by over pressurising.

Hot Water Circulating System

Allied Pumps Packaged Hot Water Circulation Systems are automated twin pump packages designed to reduce energy consumption and maintain consistent hot water temperature. Pumps are supplied on a base with all interconnecting pipework, valves, sensors and associated components, pre-tested to ensure component compatibility and remove the possibility of incorrect installation. Control is provided by the Thermakos Control System, giving precise temperature control, monitoring and alarm.



PRODUCT SPECIFICATION

Five models cover connection sizes from 25mm to 50mm in three-speed and single-speed configurations. Select by connection size and duty, then confirm against the pump curves.

Model No. (APHWP)	Connection Size	Maximum Watts	Maximum Amps	Speed
N2060	25mm	90W	0.37	3
N2560	32mm	90W	0.40	3
N3280	40mm	245W	1.05	3
AVN101	40mm	370W	3.00	1
AVN151	50mm	1100W	7.00	1

REDUCED INSTALLATION COST

Coordinating multiple trades around a hot water plant room adds time and cost to any project. Supplying the circulation system as a complete assembled package removes that coordination entirely. Pumps, pipework, valves, sensors and controls arrive tested as one unit, ready to connect rather than build, cutting installation time and overall cost.

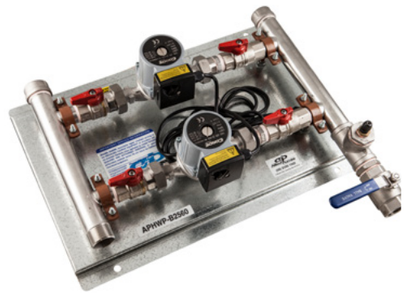
KEY FEATURES

- Dual Stainless Steel Pumps With Automatic Alternation
- Digital Temperature Readout
- Temperature or Timer Control
- Duty Override Selector
- Multi-Speed Pumps
- Plug In Control for Simple Installation
- Pre-Tested for Component Compatibility
- WaterMark™ Certified

CONFIGURATION OPTIONS

Where site limitations prevent installation of a complete package, a pump system is available as an alternative.

- Complete Packaged System on Base
- Pump System With Unions, Cord and Plug
- Heavy Duty Lockable Metal Weatherproof Enclosure



Thermakos Control System

Advanced control management for hot water circulation

The Thermakos Control System provides advanced control management for Allied Pumps Hot Water Circulation Systems. Smart technology delivers precise temperature control and monitoring across every circulation pump application, with auto and manual operation, alternating pump control, and temperature or timer based operation configurable to suit the installation.



Everything the operator needs sits on one panel. Loop temperature, pump status and faults are shown on the digital display, with auto and manual selection, alternating pump control and a programmable seven day timer. An RS485 interface allows the controller to report to a building management system where remote monitoring is required.

KEY FEATURES

- Auto and Manual Operation
- Alternating Pump Control With Separate Circuit Protection
- Temperature or Timer Based Control
- Digital Temperature Readout
- Pump and Temperature Alarm Output
- Programmable 7 Day, 24 Hour Cycle Timer
- Pump Current Monitoring
- Building Management System Interface
- Plug In Socket for Each Pump

PRODUCT SPECIFICATION

Parameter	Values (Model D1378)
Mains Input Voltage Range	190 Vac - 260 Vac
Pump Power Rating	840W
Internal Fuse Rating	3.15A (semi delay)
Pump Current Threshold	40mA
Temperature Sensor	NTC thermistor
Temperature Sender Cable Length	0.9m
External Interface	RS485
Pumps Connected	1 or 2
Temperature Range	40°C - 99.5°C
Dead Band Hysteresis	1°C - 20°C
Pump Fault Delay (Programmable)	1 minute - 120 minutes
Operating Time	3 start times per day, 7 days
Operating Duration	24 hours
Display Resolution	0.5° - 1°
External Connection	Volt free with long life battery
External Connection Battery	5 years - 10 years
Unit Dimensions	D85 x W170 x H145mm

INSTALLATION AND MAINTENANCE

A plug in socket for each pump and separate circuit protection simplify both installation and later servicing. Each pump can be isolated without disturbing the other, and the controller mounts and connects without specialist tools.

VOLT FREE CONTACTS

Five volt free contacts allow the controller to report status directly to a building management system or remote monitoring equipment.

- Pump Fail
- Fault Present
- Pump Running
- Power On
- Temperature Fault



Water Supply and Pressure Systems Accessories



Flex Connectors



Antibration Mounts



Judo Filter



UV Light



Bag Filter



Enclosure

Case Study: Motive Apartments

West Leederville, WA



The Project

Completed in January 2017, Motive is a two tower residential development of 143 one and two bedroom apartments in West Leederville, minutes from the Perth CBD. Resort style facilities include a 16 metre solar heated pool, sauna, bar, games area and gymnasium, all served by a purpose built water supply package.

The Challenge

In most new apartment buildings a single basement tank and basement pumps pressurise water all the way to the top of the block. The method works, but it demands large pumps running against high head, and with them come heavy peak power draws on start, water hammer through the risers and noise carried into the building. For a development of 143 apartments across two towers, we saw a better way.

Our Approach

We took the conventional arrangement and turned it upside down, pressurising down from the roof rather than up from the basement. A transfer pump and tank at basement level move water to the rooftop tanks at low flow, keeping rooftop storage full at all times. From there, a low pressure variable speed pump serves the top few floors where available head is insufficient, and every level below is fed by gravity alone. That changes the duty asked of every pump in the building.

The Solution

The configuration allows the whole building to be served by smaller pumps that run less often. Pump duties and control logic are simpler than a conventional pressure up system, and the tank capacities required are reduced. Because rooftop storage is filled at low flow rather than pressurised on demand, the transfer pump works steadily instead of cycling against peak draw. Across the life of the building that delivers a substantial and continuing saving on electricity consumption.

The Outcome

On paper the arrangement looks like double the infrastructure for double the capital cost. In practice it did not work out that way. Smaller pumps, simpler controls and reduced tank capacities held the initial spend on a par with a conventional installation, while smaller pumps at lower duty reduce consumption for the life of the building. The rooftop tanks also carry a full charge at all times, so residents keep supply through a power outage or a maintenance shutdown.

Why it mattered?

- ✓ Smaller pumps running less often cut power consumption for the life of the building.
- ✓ Residents keep water supply through maintenance shutdowns and power outages.

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