



Variable Speed and Soft Start Product Line

Variable Speed Product Line

Since 1997, CentriPro has been providing variable speed pump control solutions to its customers. The first product was the AQUAVAR® variable speed controller. Today, the AQUAVAR controls family offers a wide range of capabilities for the variable speed pump control market. Our philosophy has not changed: To provide quality, variety and systems solutions for our pump customers.



Our variable speed products include the following:

1 AQUAVAR® IPC

The Aquavar® Intelligent Pump Controller from CentriPro utilizes an all new Aquavar platform, and combines it with over 20 years of variable speed pumping experience.

APPLICATIONS

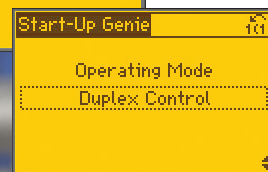
Designed to provide variable frequency pumping control of speed, pressure, flow and level over a wide range of submersible and above ground applications.

FEATURES

- Input Supply: 1Ø Input 208-230 volt 1.5 - 30 HP
3Ø Input 208-230 volt 1.5 - 60 HP
3Ø Input 380-460 volt 1.5 - 600 HP
3Ø Input 575 volt 1.5 - 600 HP
- Three phase output to motor
- Wall mounted with fan cooling
- Ambient temperatures up to 113° F (Up to 122° F with 10% derate)
- Indoor Enclosures to meet IP20 Open, UL TYPE 1, UL TYPE 12
- Outdoor enclosures to meet UL TYPE 3R and UL TYPE 4X
- Removable, graphical control panel with display
- Fully backlit display with large text makes the control pad easy to read
- Alarm Log key for quick access to last 5 alarms and maintenance events
- My Personal Menu allows user to focus on specific user selected and saved Parameters
- USB Connectivity - Remotely commission and monitor through PC Software
- Duplex variable speed pumping control with auto lead/lag and alternate
- Capable of controlling up to 2 fixed speed lag pumps, with one standard drive
- Hand on, Auto on, and Off buttons for easy pump operation at the keypad
 - No toggling between local and remote operation
- Modbus® RTU, included in standard drive - Other communications available with option cards
- Standard dual DC-link reactors - Reduces the level of harmonics similar to a 5% AC line reactor without the voltage drop across the full load range
- EMC/RFI filters designed to reduce drive noise emissions and interference to strict standards

YOUR WISH IS AQUAVAR'S COMMAND!

The proprietary CentriPro Start-Up Genie guides you through quick and easy commissioning. Take advantage of the complete Genie with 10 sections to configure applications with pump protections, I/O options, and Duplex operation, or for the more straightforward applications just set your motor information, operation mode and "Autoset" the rest of the parameters. With support for the most common control configurations, the Genie reduces set-up and configuration time to about 15 minutes!



2 AQUAVAR SOLO²

The Aquavar Solo is a variable speed, constant pressure controller designed for submersible well pumps! The controller monitors pressure and adjusts pump speed to maintain a constant pressure. Retrofit a conventional system into a premium constant pressure system using the Aquavar Solo controller.

APPLICATIONS

For residential, irrigation, and greenhouse applications.

FEATURES

- Input Supply: 1Ø Input 208-230 volt
- Single phase output to motor for ½ - 2 HP motors
- Three phase output to motor for ¾ - 5 HP motors
- Wall mounted with fan cooling
- Provides motor protection on long motor leads.
- Ambient temperatures up to 122° F
- Auto cooling fan with filter
- Outdoor rated painted steel enclosure, NEMA 3R
- LED display clearly indicates actual system pressure, output frequency, current draw and error log.
- Flashing LED for troubleshooting and status.
- Easy to adjust pressure control pushbuttons.
- More room for easy cable/wire connections
- Larger wiring terminals
- Dual system set points for advanced system application.
- Programmable output relay can be configured to run optional accessories such as a chlorinator, or link to a home monitoring system.
- Adjustable current overload protection to match motor Service Factor SFA.
- Built-in power surge protection
- Includes pressure sensor and shielded cable.
- The Aquavar Solo² controllers and GS stainless steel submersible pumps are now available in convenient ProPak kits.



3 AQUAVAR® e-ABII

Pre-packaged system that includes: pump/motor, pressure tank*, pressure transducer, piping tee, pressure gauge, wiring with flexible conduit. Self diagnostic variable speed controller is the next generation of constant pressure. Sold as stand alone unit or with packaged system.

APPLICATIONS

Low water pressure applicaitons

Domestic and light commercial applications

Homes with multiple showers/baths

Irrigation

FEATURES

- Input Supply: 1Ø Input 115 volt 1 HP
1Ø Input 208-230 volt 1 - 5 HP
 - Three phase output to motor, 208 - 230 volt, $\pm 10\%$
 - Wall mounted with convection air cooling
 - Maximum ambient temperature 104° F
 - Outdoor rated, NEMA 3R enclosure, rain-tight; NEMA 1 option for 3 HP and 5 HP sizes
 - Signal lights for pump running, faults, stopped
 - 3 HP and 5 HP packages offer duplex operation for lead/lag and alternation applications
 - Self-diagnostic, plug-in display not needed
 - Field setting for booster pumps
 - Simple and quick installation
 - Pressure factory set for 50 psi
 - Field programmable pressure setting up to 80 psi, through 60 GPM packaged system
 - FCC compliant for interference
 - NSF / ANSI 61 (ANNEX G) certified
 - UL, CUL, CE approvals
 - Flows up to 100 GPM, with 5 HP pump
- * Tank and piping tee and prewired are not available in 3 HP and 5 HP configurations.



4 AQUAVAR SPD™

APPLICATIONS

Water pumps serving commercial buildings.

Pressure boosting for light industry, wash systems, filtration.

Rural water and municipal systems.

Groundwater/Irrigation

FEATURES

- **Input Supply:** 1Ø Input 208-230 volt 2 - 15 HP
3Ø Input 208-230 volt 5 - 30 HP
3Ø Input 380-460 volt 5 - 30 HP
- **Dual Phase Input** → The same drive can be used for either three phase or single phase input (de-rated).
- Three phase output to motor
- **True Motor Match** → Rated for the higher amps typical of higher HP submersible pumps.
- Wall mounted with fan cooling
- **With Filter** → for Submersible applications with long wire runs.
- **Without Filter** → for Surface Mount Systems with short wire runs.
- **Filter Pack** → Available with output filter rated to 1000 feet of motor lead. Programming is pre-set to 30 Hz minimum speed.
- **NEMA 3R** → Outdoor rated enclosure. Operating temperature -22° F to 122° F!
- **Easy Set-up** → Pre-set for submersible or surface motor characteristics. No complicated menus or programming, total set up time is less than 30 minutes.
- **Hand/Auto Option** → Allows the drive to be run at full speed without a pressure transducer for longer periods of time as in the case of new well development or system start up.
- **Pressure Drop** → The reaction time of the drive to pressure drops can be adjusted from the typical 5 PSI drop to as much as 20 PSI.
- **Dual Set Point** → May be programmed with two pressure set points. An external contact such as a timer can be used to change between them.
- **Remote on/off** → Permits external control by timers (irrigation), float or pressure switches (tank draining) or manual control. Dry contact closure required.
- **Remote Monitoring** → External monitors may be connected to the drive for monitoring pump running speed (4-20 mA output based on speed), pump on, and system fault. The 4-20 mA output can be utilized for functions such as an external dosing system, chlorine injection and auto dialer fault indication.
- **Full Diagnostics** → Full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down.
- **No Water Restart** → The time delay between "dry well" faults is adjustable from 10 minutes to 2 hours.
- **Pressure Transducer** → 316 SS, 17-4 PH stainless steel, ¼" NPT connection, shielded two wire cable, 0 - 300 PSI range. Included with drive. It is pre-wired and tested.



5 AQUAVAR® CPC

The Aquavar CPC is offered in a wall or floor mounted design up to 550 HP, 460 volt*, single phase input up to 50 HP, 208-230 volt and three phase 208-230 volt up to 100 HP*! The latest software provides more versatility and flexibility with centrifugal pump applications than ever before! With all the available Aquavar Products, CentriPro provides the pump professional with more options for a complete variable speed pumping system.

APPLICATIONS

Specifically designed for single or multipump systems in any submersible or above ground application.

FEATURES

- Input Supply: 1Ø Input 208-230 volt 1 - 50 HP
3Ø Input 208-230 volt 1 - 100 HP
3Ø Input 380-460 volt 3 - 550 HP
3Ø Input 575 volt 2 - 150 HP
- Output: 3 phase 380 V to 480 V +10%/-15%
1 phase 208 V to 240 V +10%/-15%
3 phase 208 V to 240 V +10%/-15%
3 phase 575 V +10%/-15%
Frequency 48 to 63 Hz
.98 power factor
- Three phase output to motor
- Wall or floor mounted with fan cooling
- Ambient temperatures up to 104° F (Up to 122° F with 10% derate)
- NEMA 1 standard design (indoor), with NEMA 12 enclosures available.
- Help text and programming "Wizards" to assist with set up.
- Multi-Pump without additional PLC's or controls. Automatic Lead-lag and alternation up to four (4) Aquavar controlled pumps.
- Compatible with some older model Aquavars for existing multi-pump applications.
- Control: Analog input control (4 - 20mA) control based on pressure, flow, level or differential pressure.
- Dual pressure control with programmable differential pressure starting.
- Fixed speed control relays. Control up to three fixed speed pumps with one Aquavar CPC with programmable relays (additional motor starters required).
- Pump protection built in! Protects based on RUN-DRY, "DEAD-HEADING", CAVITATION and "RUN-OUT" conditions.
- Motor protection built in! Protects based on OVERCURRENT, OVER/UNDER VOLTAGE, PHASE LOSS, SHORT CIRCUIT, GROUND FAULT, OVERTEMPERATURE.
- MODBUS® compatible. MODBUS is standard protocol with SCADA networks.
- Built-in line choke. Similar to a line reactor, it provides the equivalent of 3% impedance against transient voltage spikes and surges. Reduces harmonic distortion.
- EMC/RFI filters reduce drive noise interference and emissions.
- Pressure Transducer: 316 SS, 17-4 PH stainless steel, ¼" NPT connection, shielded two wire cable, 0 - 300 PSI range. Included with drive.
- UL, CUL, CE approvals.
- Preventative maintenance reminders.



6 HYDROVAR®

Hydrovar is the intelligent pump controller that matches the performance to system demand. The Hydrovar is easily mounted directly on the motor of the pump and will fit on any standard TEFC NEMA motor. This makes the Hydrovar an excellent choice for retrofitting and upgrading of fixed speed systems. There's no need for an external control panel when using Hydrovar.

APPLICATIONS

Designed for centrifugal pump systems requiring constant pressure, flow control or differential pressure in commercial and municipal applications.

FEATURES

- **Input Supply:** 1Ø Input 208/230 volt 2 - 5 HP
3Ø Input 208/230 volt 2 - 15 HP
3Ø Input 460 volt 2 - 30 HP
- **Three Phase:** 208/230V, 2 HP to 15 HP (208 - 240V $\pm$ 10%, 15 - 70 Hz)
460V, 2 HP to 30 HP (380 - 460V $\pm$ 10%, 15 - 70 Hz)
- **Motor Requirements:** 3 phase, TEFC, 208 - 230V or 460V, 0 - 60 HZ, Class F insulation, NEMA design A or B
- Motor mount to fan cover of TEFC motor for a packaged unit with a small footprint
- Maximum ambient temperature 104° F.
- **Indoor enclosure:** NEMA 1. Avoid excessive dust, corrosives, salts and direct sunlight.
- **Display:** Large LCD display. Easy to read pump language, pump on, system pressure, fault codes and system conditions are displayed.
- Control up to 8 pumps in parallel
- **Control:** Analog input control (4 - 20mA) two point control based on pressure, flow or differential pressure.
- **Alternate Input:** Up to two transducers may be used with each controller. These may be pressure, flow, differential pressure, temperature or other 4 - 20mA signals.
- Remote start/stop via switch input (low water, low pressure, etc.) and emergency stop.
- Dry relay contacts available for pump run and fault.
- **Protection:** Over/Under voltage, motor overload, short circuit, ground fault, programmable no/low flow shut-down, low suction pressure, pump run-out.
- MODBUS® and BACnet as standard. Optional Wi-Fi card for the flexibility of wireless connection.
- Advanced motor control to reduce heating and extend the lifetime of the motor
- Embedded THDi filter for better electricity quality from the grid, extending the lifetime of the equipment.
- **Pressure Transducer:** 316 SS, 17-4 PH stainless steel, ¼" NPT connection, shielded two wire cable, 0 - 300 PSI range. Included with drive.

**Pump Mounted
Variable Speed
Controller**



7 AQUASTART COMBINATION SOFT STARTERS

AquaStart is a combination soft starter that allows easy installation with factory pre-set pump parameters. It is designed to work directly with centrifugal and submersible pumps with ease of installation. AquaStart utilizes Thermal Image Motor Protection (TIMP) to get the highest level of motor performance while fully protecting the motor for longer life.

APPLICATIONS

AquaStart offers enhanced motor and system protection for irrigation, commercial and industrial pumping applications.

FEATURES

- Input Supply: 3Ø Input 208-230 volt 5 - 175 HP
3Ø Input 380 volt 10 - 200 HP
3Ø Input 460 volt 10 - 200 HP
3Ø Input 575 volt 15 - 200 HP
- Three phase output to motor
- Wall-mounted enclosure - Frames A-D
- Floor mount kit for Frame Size E
- Maximum ambient temperature 131° F
- Standard NEMA 4 outdoor rated enclosures
- Built-in fusible disconnect
- Optional keypad control available
- Standard, built-in AC1 Run Rated Bypass, between start and stop
- AC3 Bypass Contactor and DOL selector switch as option (allows user to bypass SSW-07 for DOL start and stop)
- 3 programmable inputs (120V)
- 2 relay outputs with NO contacts
- 240V, 11A programmable output
- Adjustable current, ramp time and voltage overloads
- **Protection from:** - Excess starting time - Locked rotor- Current imbalance- Phase loss- Over / under current- Under voltage
- cULus Certified, CE available as option.



8 ACCESSORIES

FLOAT SWITCHES

- Gold plated contacts for low current applications
- Operates on a 45° differential, above or below horizontal
- Includes a mounting clamp for attaching to pipe (as shown)
- Not sensitive to rotation
- 18 gauge, 2 conductor wire
- Maximum submergence is 30'
- Maximum water temperature 140° F
- Polypropylene float housing is impact and corrosion resistant



9K585 - MOISTURE SENSOR WITH RELAY

- 5 VDC power supply is provided by VFD
- Will detect any conductive non-flammable liquid
- Ideal anywhere water damage could occur
- Automatic reset



6K210 GAUGE GUARD

- Low unit cost - makes it feasible to protect even moderate priced instruments.
- Compact size makes these isolators ideal for limited-space installations.
- Hermetically-sealed, molded uni-body construction - avoids possibility of leaks
- Glass-filled Polypro bodies for chemical compatibility and maximum temperatures to 100° F
- Each Gauge Guard features a durable and flexible Buna-N diaphragm which serves as a protective barrier between the process fluid and instrument



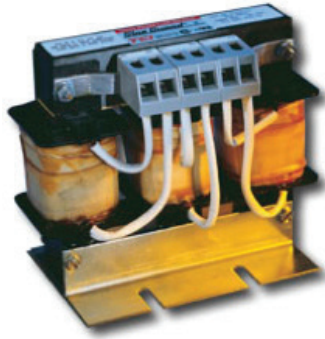
9K589 - OVER PRESSURE SWITCH

- Range scale from 60 - 120 PSI
- Factory set at 80 PSI
- Lead-free brass construction
- Gold plated contacts for long life
- Use as over-pressure protection on Aquavar SOLO or S-Drive Controller
- Normally Closed contacts - connect leads to Secondary (dry) Contact Switch
- Wire length - 72 inches
- Use a 5/32" Allen wrench to unlock barrel to change pressure setting
- Snap action, opens and closes on $\pm 1 - 2$ PSI range, not a differential pressure switch.



LINE/LOAD REACTORS

- High Z (Application where 5% reactor would be applied)
- 208/240V
- NEMA 3R Enclosure
- Ambient Temperature 40° C
- Fundamental Frequency: 50/60 Hz
- Agency Approvals: UL, cUL; UL Recognized, CE Marked
- Short term overload rating – 200% rated current for minimum of 3 minutes
- Inductance Characteristics
 - Min 95% L at 110% Load
 - Min 80% L at 150% Load



TCI MODEL V1K DV/DT FILTERS

- 2 - 130 amps; 240V - 600V; 2 - 125HP
- NEMA 3R Enclosure
- Carrier Frequency: 1 - 12 kHz
- Fundamental Frequency: 0 - 60 Hz
- Efficiency: > 98%
- Insulation Rating 600V Class



TCI MODEL HG7 HARMONIC FILTER

- 3 Phase 240 - 600V
- NEMA 3R Enclosure
- Ambient Temperature 40° C
- Typical Efficiency: 98 - 99%
- Internal fusing protection
- Fundamental Frequency: 60 Hz (50 Hz for 400V)
- Agency Approvals: UL, cUL
- Maximum Altitude: 6,000 feet





Whatever your application; whether it is for above ground booster systems or controlling a submersible pump, CentriPro brand of high quality pumps and controls are behind you with over 100 years of experience.

Ask your authorized CentriPro distributor or check us out on the web at www.centripro.com.



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