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Goulds Pumps

Variable Speed Product Line



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Since 1997, Goulds Pumps has been providing variable speed pump control solutions to its customers. The first product was the AQUAVAR® variable speed controller. Today, Goulds Pumps 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 HYDROVAR® (Commercial / Municipal Applications)

The G&L Series HYDROVAR Pump controller is a combination of a variable frequency drive (VFD) and a PLC for pump mounted applications. Controllers are specifically designed to work with all configurations of centrifugal pumps, matching pump output to varying system conditions while protecting the pump, the motor and the pumping system.

- **Single Phase Input**, 230V, 2 and 3 HP (220 – 240V ± 10%, 40 – 70 Hz)
 - **Motor Requirements:** 3 phase, TEFC, 208 – 230V, 0 – 60 HZ, Class F insulation, NEMA design A or B
- **Three Phase**, 460V, 3 HP to 15 HP (380 – 460V ± 15%, 40 – 70 Hz)
 - **Motor Requirements:** 3 phase, TEFC, 460 volt, 0 – 60 HZ, Class F insulation, NEMA design A or B
- **Pressure Transducer:** 316 SS, 17-4 PH stainless steel, 1/4" NPT connection, shielded two wire cable, 0 – 300 PSI range. Included with drive.
- **Display:** Two line LCD display. Easy to read pump language, pump on, system pressure, fault codes and system conditions are displayed.
- **Motor Speed:** Variable between 0 – 70 HZ , or maximum RPM at 60 HZ depending on speed rating of standard AC induction motor.
- **Inverter Design:** IGBT Pulse Width Modulated (PWM) output frequency
- **Enclosure:** NEMA 4, IP 55. (Avoid excessive dust, corrosives or salts.)
- **Safety Agency Listings:** Packaged Hydrovar – , Hydrovar only – 
(UL Recognized Component)
- **Protection:** Over/Under voltage, motor overload, short circuit, ground fault, programmable no/low flow shut-down, low suction pressure, pump run-out.
- **Control:** Analog input control (4 – 20mA) two point control based on pressure, flow or differential pressure.
- Control up to 8 pumps in parallel.
- Remote start/stop via switch input (low water, low pressure, etc.) and emergency stop.



Pump Mounted Variable Speed Controller



Packaged Hydrovar

NOTE: Pressure Transducer, fused disconnect, complete wiring and conduit included.



- Dry relay contacts available for pump run and fault.
- **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.

2 AQUAVAR CPC (Commercial / Municipal Applications)



Latest generation of the Aquavar® series of Variable Speed Pump Controllers. This unit 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 the original Aquavar and the Aquavar CPC, Goulds Pumps provides the pump professional with more options for a complete variable speed pumping system. Features and benefits include:

- Single phase input up to 50 HP* 208-230 volt.
- Three phase 208-230 volt input up to 100 HP.
- 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.
- Built-in line choke. Similar to a line reactor, it provides the equivalent of 3 -5% impedance against transient voltage spikes and surges. Reduces harmonic distortion.
- EMC/RFI filters reduce drive noise interference and emissions.
- Multi-Pump without additional PLC's or controls. Automatic Lead-lag and alternation up to four (4) Aquavar controlled pumps.
- Fieldbus compatible. MODBUS® is standard protocol with SCADA networks.
- Fixed speed control relays. Control up to three fixed speed pumps with one Aquavar CPC with programmable relays (starter panel extra).
- Help text and programming "Wizards" to assist with set up.
- Pressure transducer with shielded cable included.
- Compatible with other Aquavar software for multi-pump.
- UL, cUL, CE approvals.
- NEMA 1 standard design (indoor), with NEMA 12 and outdoor enclosures available.
- Preventative maintenance reminders.
- Dual pressure control with programmable differential pressure starting.

*Always check motor full load amps compared to drive rating.

3 S-DRIVE™ (Commercial, Variable Speed Controls)

- **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.
- **NEMA 3R** → Outdoor rated enclosure. Operating temperature -22° F to 122° F!
- **Dual Phase Input** → The same drive can be used for either three phase or single phase input (de-rated).
- **Filter Pack** → The S-Drive comes complete with output filter rated to 1000 feet of motor lead. Programming is pre-set to 30 Hz minimum speed.
- **True Motor Match** → The S-Drive is rated for the higher amps typical of higher HP submersible pumps.
- **Transducer** → 0 – 300 PSI pressure transducer is included with the drive. It is pre-wired and tested.
- **Full Diagnostics** → The S-Drive has a full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down.
- **Remote on/off** → Permits external control by timers (irrigation), float or pressure switches (tank draining) or manual control. Dry contact closure required.
- **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.
- **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.
- **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.
- **No Water Restart** → The time delay between “dry well” faults is adjustable from 10 minutes to 2 hours.



4 AQUABOOST II (Residential, Commercial Applications)

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.

- Single phase input voltage ONLY, 208 – 230 volt, $\pm 15\%$ tolerance.
- Maximum amperage on motor is 16.6 Amps with 5 HP controller.
- Motor must be three phase, 208 – 230 volt, $\pm 10\%$.
- Flows up to 110 GPM, with 5 HP pump.
- Pressure factory set for 50 psi.
- Field programmable pressure setting up to 80 psi, total system.
- Outdoor rated, NEMA 3R enclosure, rain-tight.
- UL, cUL, CE approvals.
- FCC compliant for interference.
- Signal lights for pump running, faults, stopped.
- Self-diagnostic, plug-in display not needed.
- Field setting for booster pumps.
- Wall mounted with convection air cooling.
- Maximum ambient temperature 104° F.
- Electrical efficiency above 95%.
- Simple and quick installation.



5 AQUAVAR SOLO™ (Residential, Submersible)

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.

- Standard sizes 2, 3 and 5HP.
- Single phase input voltage 208-240 Volt.
- Requires 3 phase submersible motor.
- Reduces motor cable wire size.
- More room for easy cable/wire connections.
- Larger wiring terminals.
- Outdoor rated painted steel enclosure, NEMA 3R.
- Ambient temperatures up to 122° F
- Lightning and power surge protection.
- Auto cooling fan with filter
- Easy to adjust pressure control pushbuttons.
- Provides motor protection on long motor leads.
- Flashing LED for troubleshooting and status.
- Includes pressure sensor and shielded cable.
- 2-year standard warranty with optional 3-year.
- Adjustable current overload protection to match motor Service Factor SFA.
- The Aquavar Solo controllers and GS stainless steel submersible pumps are now available in convenient ProPak kits.





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

Ask your authorized Goulds Pumps distributor or check us out on the web at www.goulds.com.



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