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WHITE PAPER
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Hydrovar® Variable Speed System

ENERGY AND COST SAVING SOLUTIONS FOR YOUR PUMPING SYSTEM

FEATURES

- Motor mount variable speed pump controller series.
- Update to the established Aquavar motor mount drive series
- Simplified programming
- Available as individual drives or as prepackaged pump/motor/drive sets
- Space saving design: Drive mounted directly on vertical pump motor (TEFC), with significantly smaller diaphragm tank.
- Error log and diagnostic display shows temperature and real time current and voltage
- Multiple sensor inputs and signal outputs
- MODBUS compatible
- Uses 4-20mA transducer similar to Aquavar product 0-300 PSI range
- Master, Basic and Single drive options…Provides flexibility at lower costs.
- 2 to 15 HP range with 230V Single phase and 460V, 3 phase options
- Illuminated 2 Line LCD display on Master and single drives
- Easy to navigate programming designed FOR pumps
- cUL listed
- NEMA 4 Outdoor use, (not direct sunlight)

PACKAGED HYDROVAR

- Includes pump, motor, fused disconnect and drive
- Prewired and Preprogrammed for single pump use
- Checked for rotation…Just complete plumbing, including transducer, bring power to disconnect, turn on and hit start

RETROFIT AND SAVE

- Opportunities exist where the centrifugal pump system is oversized and underutilized. The Hydrovar is designed for centrifugal pump systems. Constant pressure, flow control or differential pressure systems.
  Example: Circulation pumps with nominal power in partial load operation.

When designing piping systems in which the system demand varies, variable speed pumps may be an effective energy and cost savings option. By slowing the speed of the pump, the Hydrovar eliminates the inefficiencies of full speed systems. With lower energy and maintenance costs they can pay for themselves in under 2 years!

Capacity In %	Power consumption as per curve		Saving in kW	Saving per ⅓ year (2,920 hours)
	Pump at constant speed	Pump at constant speed		
25%	5.8 kW	1.8 kW	4.0 kW	11.68 kWh
50%	7.6 kW	3.2 kW	4.4 kW	12.84 kWh
75%	9.2 kW	5.7 kW	3.5 kW	10.22 kWh
Energy savings within 1 year (8,760 hours)				34.74 kWh

TECHNICAL INFORMATION

Horsepower Range	Electrical Requirement
2 and 3	1 phase, 230 V
3, 5, 7½, 10, 15	3 phase, 460 V

Single Phase Version: 2 and 3 HP

Motor Rating: 3 phase, TEFC, 208 – 230 volt, 0 – 60 HZ, Class F insulation, NEMA design A or B

Power Supply: single phase input, 220 – 240 volt, ±10%, 40 – 70 HZ

Three Phase Version: 3 HP to 15 HP

Motor requirements: 3 phase, TEFC, 460 volt, ±10%, 0 – 60 HZ, Class F insulation, NEMA design A or B

Power Supply: 3 phase, 380 – 460 volt, ±10%, 40 – 70 HZ

Pressure Transducer: 316 SS, 17-4 PH stainless steel, ¼" NPT connection, shielded two wire cable, operating temperature –13° F to 250° F, supply voltage 7- 35 Vdc, 4 – 20mA output. Accuracy is .5% of full scale, proof pressure is 4 x full scale.

Display: Two line, 16 characters per 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.

Ambient Temperatures (operating): 32 – 104° F (0 – 40° C),

Humidity: 50% relative at 104° F (non-condensing)
90% relative at 68° F (non-condensing)

Inverter design: IGBT, output frequency is a sinus valuated Pulse Width Modulated (PWM)

Enclosure: NEMA 4, IP 55. Avoid excessive dust, corrosives or salts.

Approvals: cUL Listed

Protection: Over/Under voltage, motor overload, short circuit, ground fault, motor overheat (with thermistor), 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.

Terminals: Dry relay contacts are available for pump run, pump error, low pressure switch, remote ON/OFF control, analog output 0 – 10 Vdc (system pressure) and full opened slave pump starter.

Multi-Pumps: RS485 communication SIO (local only) up to four pumps.

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.

The HYDROVAR Pump controller is a combination of a variable frequency motor drive (VFD) and a programmable logic controller (PLC) in one compact package, which can be mounted on the fan cover of the TEFC pump motor. Each controller is pre-programmed with patented pump specific software. 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.

For more information, visit us at:
www.xyleminc.com/brands/gouldswatertechnology

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