



# Aquavar SPD Plus™

SIMPLEX VARIABLE SPEED SUBMERSIBLE  
AND ABOVE GROUND PUMP CONTROLLER

BRSPDP

 **GOULDS**  
WATER TECHNOLOGY  
a xylem brand

# Aquavar SPD Plus

Simplex Variable Speed Pump Controller

## SPD Plus

Do you want to simplify your commercial pumping system and save energy?

Goulds Water Technology Pumps "SPD Plus" variable speed, constant pressure pump controller is designed for the professional pump installer. With application specific features and Goulds Water Technology pumps designed software, the SPD Plus was developed specifically for commercial above ground centrifugal and submersible well systems. This variable speed controller goes beyond a "standard" drive, giving the pump professional a rugged design that is built for demanding conditions.

### Key Features

- **Energy Saving** - The SPD Plus is a true variable frequency controller which adjusts motor speed to match the hydraulic needs of the system and maintain pressure. Unlike valve controlled systems, the energy draw is substantially reduced during lower flow while operating the pump close to its best efficiency. Significant energy savings over fixed speed pumps are common.
- **Easy Set-up** - Pre-set for submersible or surface motor characteristics. Pre-wired and tested transducer. Touch button pressure setting. No complicated menus or electrical programming to manage. Total set up time including wiring is less than 30 minutes.
- **Flexible enclosure offerings - NEMA 3R** - Outdoor rated enclosures rated to 122°F, without derating the drive.  
**NEMA 1** - Indoor rated enclosure providing flexibility for use indoors or mounting within a user supplied enclosure. Load filters for NEMA 1 systems provided separately.
- **Dual Phase Input** - 230V drives can be used on either three phase or single phase power supplies. Drives are UL listed for either configuration.
- **Optional Integrated Load Reactor (NEMA 3R Only)** - The NEMA 3R SPD Plus is available with output filter rated to 1000 feet of motor lead. Programming is also pre-set to 30 Hz minimum to protect motor bearing lubrication required by some motor manufacturers.
- **True Motor Match** - The SPD Plus is rated for the higher amp requirements typical of submersible pumps. A 100 HP SPD Plus will run a 100 HP submersible pump!
- **Transducer** - As with all Goulds Water Technology drives, the pressure transducer is included with the drive so there is no need for separate sourcing and compatibility checks. The transducer is pre-wired and tested, with internal case grounding! Upsizing not required.
- **Full Diagnostics** - In addition to typical electrical protection and diagnostics, the SPD Plus has a full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down. These features require no added input devices.



Easy to navigate keypad with QUICKSTART feature and pump specific language!

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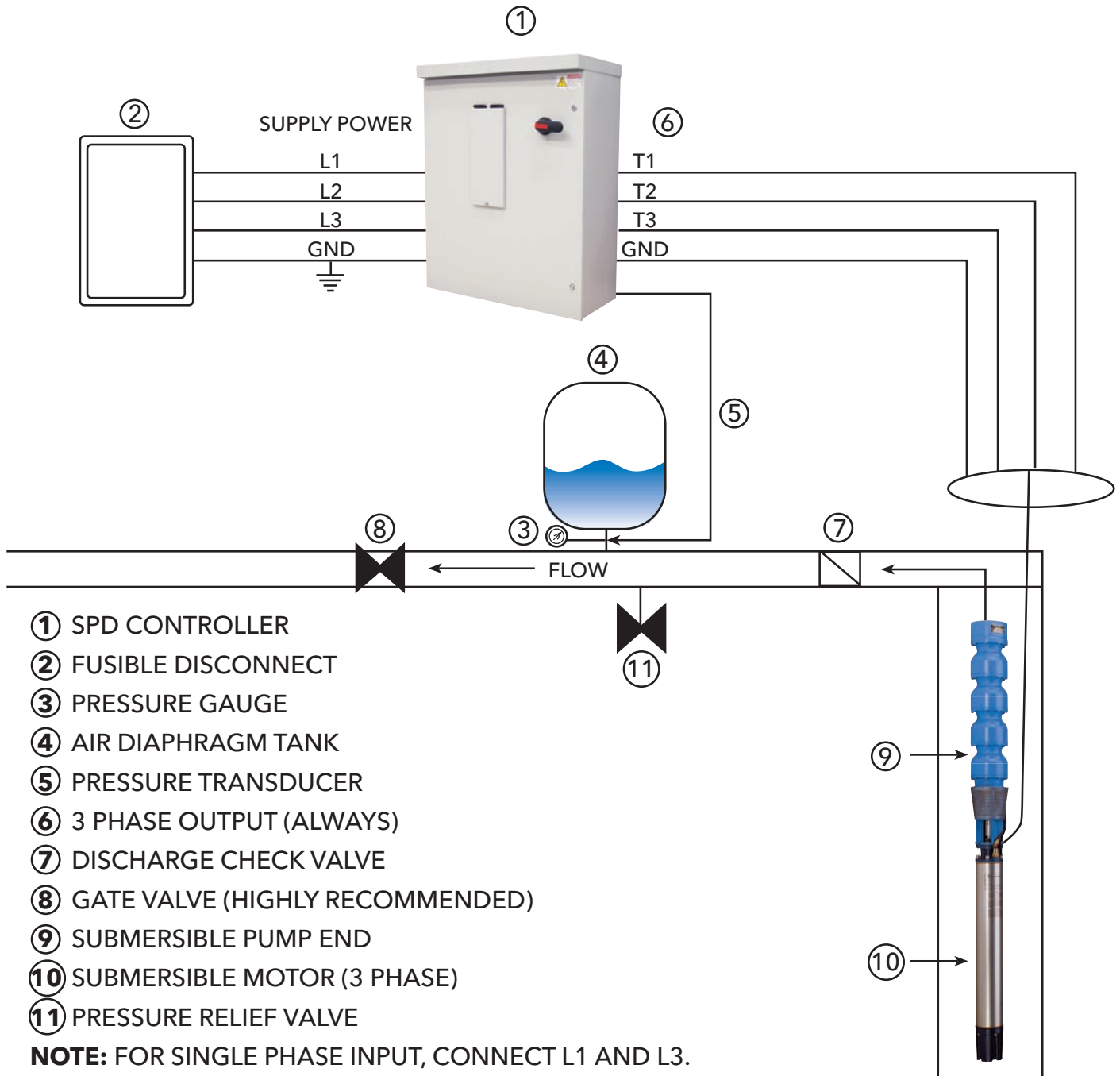
- **Remote on/off** - Permits external control by timers (irrigation), float or pressure switches (tank draining) or manual control. Dry contact closure required.
- **Hand/Auto Option** - Allows the drive to be run at full speed without a pressure transducer for the purpose of new well development or system start up. Turning the control back to auto resumes the automatic pressure tracking and control.
- **Remote Monitoring** - External monitors may be connected to the drive for monitoring pump speed (4-20 mA output based on speed), pump run, and system fault. The fault indicator can also be connected to an auto-dialer. This enables control of pumps and drives in un-manned locations. A 4-20 mA output can be utilized for functions such as an external dosing system.
- **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. This allows for fewer starts with leaky irrigation systems.
- **No Water Restart** - The SPD Plus has the capability to adjust the time delay in between each "dry well" fault. Adjustable from 10 minutes to 1 hour between each restart. Ideal for low yielding wells.

### Typical Applications

- **Irrigation** - Irrigation applications use both submersible and surface pumps. The SPD Plus can control standard 4" and 6" submersible motors as well as turbine pumps. The SPD Plus can also control surface mount centrifugal pumps up to 100 HP.
- **Rural Water** - Rural water districts often pump ground water from community wells with single pumps of less than 50 HP. Many have a single water tower, which limits system pressure during peak periods or at remote ends of the distribution system. The SPD Plus can automatically compensate for demand variations with either submersible or surface boosters.
- **Building Booster** - Commercial buildings of less than ten stories may require supplemental pressure to offset what is provided by the municipal system either on a permanent basis, or during periods of peak demand.
- **Agriculture** - Commercial farms for crops or livestock require a reliable source of irrigation, feeding or cooling water. Dairy, turkey, chicken, beef and various commercial crops all require a constant source of water with varying demands throughout the season.
- **Retro Fit** - Replace existing constant speed control panels. Upgrade your simplex commercial water system with the easy to use SPD Plus Constant Pressure Controller.
- **Phase Converter** - When only 1Ø power is available but 3Ø operation is desired for lower amps and smaller wire size.



### SUBMERSIBLE WELL SPD CONSTANT PRESSURE LAYOUT



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Supply Voltage	Model Number	Nominal HP Rating*		Full Load Output Current (50C)		Full Load Output Current (40C)		Frame Size
		3 Phase Input	1 Phase Input	3 Phase Input	1 Phase Input	3 Phase Input	1 Phase Input	
208/230	SPD20400	40	20	103	51	114	57	N6
	SPD20400F	40	20	129	64	143	72	N6
	SPD20400N1	40	20	103	51	114	57	R4
	SPD20500	50	25	129	64	143	72	N6
	SPD20500F	50	25	160	80	178	89	N6
	SPD20500N1	50	25	129	64	143	72	R6
	SPD20600	60	30	160	80	178	89	N6
	SPD20600F	60	30	199	99	221	111	N6
	SPD20600N1	60	30	160	80	178	89	R6
460	SPD40400	40	–	53	–	59	–	N4
	SPD40400F	40	–	65	–	72	–	N4
	SPD40400N1	40	–	53	–	59	–	R4
	SPD40500	50	–	65	–	72	–	N4
	SPD40500F	50	–	87	–	97	–	N5
	SPD40500N1	50	–	65	–	72	–	R4
	SPD40600	60	–	87	–	97	–	N5
	SPD40600F	60	–	87	–	97	–	N5
	SPD40600N1	60	–	87	–	97	–	R4
	SPD40750	75	–	113	–	125	–	N6
	SPD40750F	75	–	113	–	125	–	N6
	SPD40750N1	75	–	113	–	125	–	R5
	SPD41000	100	–	141	–	157	–	N6
	SPD41000F	100	–	141	–	157	–	N6
	SPD41000N1	100	–	141	–	157	–	R6
575	SPD50400N1	40	–	47	–	52	–	R4
	SPD50500N1	50	–	69	–	77	–	R6
	SPD50600N1	60	–	69	–	77	–	R6
	SPD50750N1	75	–	89	–	99	–	R6
	SPD51000N1	100	–	130	–	144	–	R6

\* Horsepower values are for reference purposes only. Size drive by maximum amperage draw.

Frame Size	Height	Width	Depth	Maximum Weight
N4	38.1"	20.9"	15.3"	218 lbs
N5	39.0"	30.0"	15.5"	236 lbs
N6	62.6"	36.0"	21.5"	450 lbs
R4	27.1"	8.0"	10.3"	50.2 lbs
R5	29.1"	10.4"	11.3"	82 lbs
R6	34.6"	11.8"	15.8"	176 lbs

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### Specifications

**Input Power** - 208-230V 1Ø or 3Ø 50/60 Hz  
380-460V 3Ø 50/60 Hz  
575V 3Ø 60 Hz

**Output Power** - 208-230V 60Hz 3Ø 40-60HP (20-30HP with 1Ø input)  
380-460V 60Hz 3Ø 40-100HP  
575V 60Hz 3Ø 40-100HP

### Motor Overload/Ramp Switches Digital Input Controls/Relays

**Run enable:** Start and stop switch contact.

**Hand mode:** Enables the controller to run with or without pressure sensor feedback.

**Adjustable pressure drop:** Digital input to set the pressure drop allowed before the pump/ motor is turned on.  
Pressure setting: Up and down buttons to set required pressure.

**Motor overload setting:** Adjustable based upon motor full load amps.

**Ramp and minimum speed:** Adjustable acceleration on and deceleration on ramp times and minimum speed setting.

**Carrier (IGBT switching) frequency:** 2 KHz to 8 KHz

**Analog output:** 4-20mA output based on drive frequency. 0-60 Hz.

**Pump run status:** Relay to indicate pump run status. May be connected to outside warning device or auto-dialer.

**Drive fault status:** Relay to indicate pump, motor or controller fault. May be connected to outside warning device or auto-dialer.

**Simple LCD Interface:** View System Pressure, Set/View Setpoint Pressure, and View System Speed. Display of statuses and system alarms in simple, pump specific language.

**No water restart time:** Adjustable restart time for "dry well" function from 10 min. to 1 hour.

**Protection Against:** Short circuit, under voltage, motor overload, temperature, dead heading, run out, suction loss, sensor fault, bound pump, overvoltage, static discharge, dry well.

**Maximum Elevation:** 2,000 m (6,600 ft.) (Derating required above 1,000 m)

**Ambient Temperature:** -22° F to 122° F (NEMA3R)

**Maximum Humidity:** 95% at 104° F non-condensing

**Air Pollution:** Avoid mounting in areas with excessive dust, acids, corrosives and salts.

**Approvals:** UL, cUL, CE

**Enclosure:** Available in NEMA 1, IP21 (indoor only) or painted steel enclosure, NEMA 3R, IP43, (rain tight)

**Mounting** Wall mount or floor mount

**Cooling:** Attached heat sink and fan.

**Transducer:** 4-20 mA rated to 300 PSI with 200", 3 core shielded cable, with internal case ground.

**Optional Output Filter:** Filters protect the motor and drive from voltage spikes for up to 1,000 feet of wire between controller and motor in submersible pump applications.

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For all of your pump and control needs, contact your Goulds Water Technology Pump Professional.



## Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

**For more information on how Xylem can help you, go to [www.xylem.com](http://www.xylem.com)**



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