



Aquavar SPD (Single Pump Drive)

SIMPLEX VARIABLE SPEED PUMP CONTROLLER
FOR SUBMERSIBLE AND CENTRIFUGAL PUMPS

Commercial Water

CentriPro "Aquavar SPD" variable speed, constant pressure pump controller is designed for the professional pump installer.

With application specific features and CentriPro designed software, the SPD was developed specifically for use with submersible and centrifugal pumps.

This variable speed controller goes beyond a "standard" drive, giving the pump professional a rugged design that is built for demanding conditions.

TYPICAL APPLICATIONS

- **Irrigation** → Irrigation applications use both submersible and surface pumps. Choose an SPD for control standard 4" and 6" submersible motors as well as turbine pumps and surface centrifugal pumps up to 30 HP.
- **Rural Water**
- **Pressure Boosting**
- **Agriculture**
- **Retrofit** → Existing constant speed control systems
- **Phase Conversion** → 1 phase to 3 phase power
- **Two Versions for Submersible and Above Ground Installations**

SPD ____F (example: SPD20050F) Models have filters to reduce electrical noise created by drives with long wire runs, typical of submersible installations.

SPD ____0 (example: SPD20050) Models are for above ground installation with short wire runs.

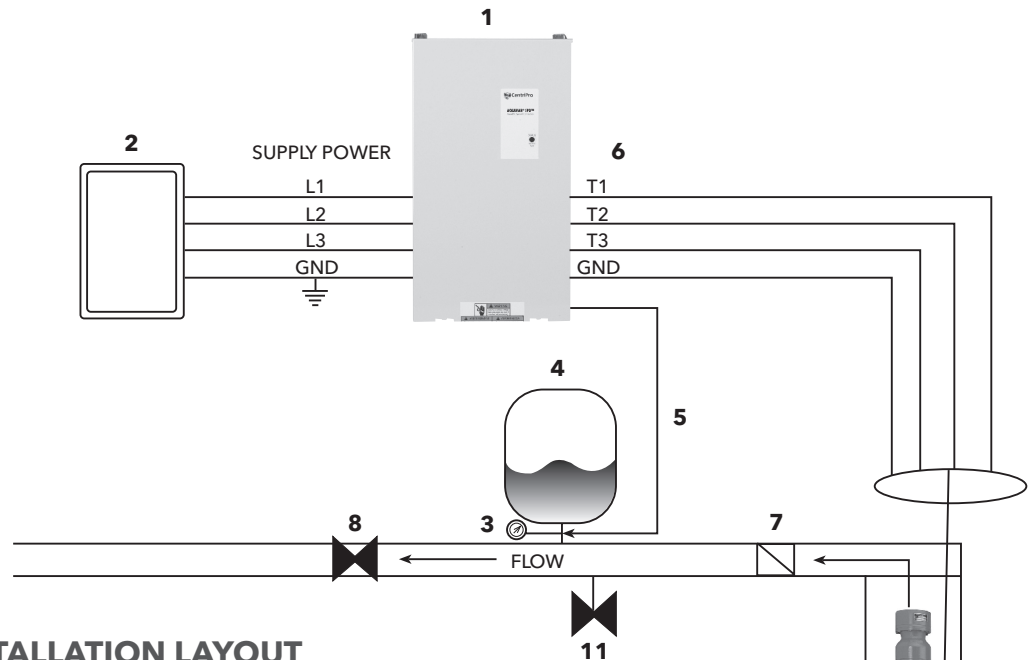


KEY FEATURES AND BENEFITS

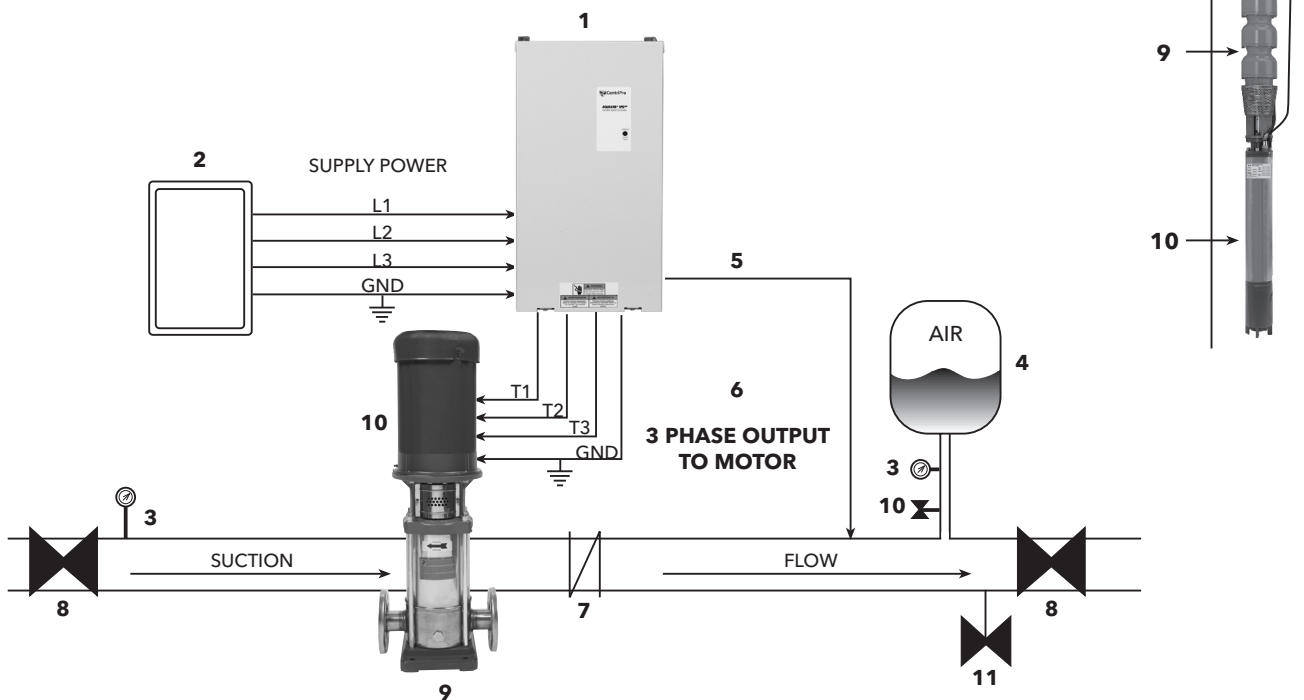
- **Energy Saving** → The SPD is a true variable frequency controller which adjusts motor speed to match the hydraulic needs of the system to maintain pressure. Unlike valve controlled systems, the energy draw is substantially reduced during lower flow while keeping the pump close to its best efficiency. Up to 70% energy savings over fixed speed pumps are common.
- **Easy Set-up** → Install wiring, set DIP switches and go! Total set up time including wiring is less than 30 minutes.
- **NEMA 3R** → Outdoor rated enclosure with operating temperatures from -22° F to 122° F!
- **Dual Phase Input** → UL listed for both **three phase** and **single phase** input (de-rated available).
- **Filter** → Includes output filter rated to 1000 feet of motor lead, standard on models with "F" suffix for submersible installations.
- **True Motor Match** → The SPD is designed for the higher amp requirements typical of submersible pumps on start-up. A 10 HP SPD will run a 10 HP submersible pump!
- **Transducer** → As with all CentriPro drives, the pressure transducer is included.
- **Full Diagnostics** → Electrical protection and diagnostics, plus a full range of pump protection features such as bound pump or motor shut down, low water or loss of prime shut down.
- **Lockout/Tagout** → Cover can be locked to prevent unauthorized entry.
- **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. 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 running speed (4-20 mA output based on speed), pump on, and system fault. The fault indicator can also be connected to devices like an auto-dialer. This enables control of pumps and drives in un-manned locations. The 4-20 mA output can be utilized for functions such as an external dosing system, or chlorine injection.
- **Pressure Drop** → The drive restart value can be adjusted from 5 PSI drop to 20 PSI. This allows for fewer starts and for small leaks that can be common in irrigation systems.
- **Dual Set Point** → Two pressure set points are available, controlled with an external switch, such as a timer.
- **No Water Restart** → Adjust the time delay after a "dry well" fault, from 10 minutes to 2 hours between each restart. Ideal for low yielding wells.



SUBMERSIBLE WELL SPD WITH FILTER CONSTANT PRESSURE LAYOUT



RECOMMENDED INSTALLATION LAYOUT



- | | |
|----------------------------------|--|
| 1 Aquavar SPD Controller | 7 Discharge Check Valve |
| 2 Fusible Disconnect | 8 Gate Valve (Highly Recommended) |
| 3 Pressure Gauge | 9 Pump End |
| 4 Air Diaphragm Tank | 10 Submersible Motor (3-Phase) |
| 5 Pressure Transducer | 11 Pressure Relief Valve |
| 6 3-Phase Output (Always) | |

NOTE: For single phase input, connect L1 and L3 terminals, and adjust motor overload switches to 50% of controller rating or lower.

POWER SUPPLY AND WIRING

Single Phase Power Supply

The SPD can be used with single phase input power for 208 V or 230 V power supplies. The maximum output of the drive and horsepower must be derated to 50% current.

The chart below shows the full load output current ratings of the controller when single phase or 3 phase power is used. If single phase input power is used the Motor Overload switches must be set to 50% or 40%.

Supply Voltage	Frame Size	Model Number	Nominal HP Rating with 3 Phase Input	Nominal HP Rating with 1 Phase Input	Maximum Output Current with 3 Phase Input	Maximum Output Current with 1 Phase Input	
208/230	1	SPD20050	5.0	2.0	17.8	8.1	
		SPD20050F					
	2	SPD20075	7.5	3.0	26.4	10.9	
		SPD20075F					
		SPD20100	10.0	5.0	37.0	17.8	
		SPD20100F					
	3	SPD20150	15.0	7.5	47.4	26.4	
		SPD20150F					
		SPD20200	20.0	10.0	60.6	33.0	
		SPD20200F					
	4	SPD20250	25.0	12.0	76.0	40.2	
		SPD20250F					
		SPD20300	30.0	15.0	94.0	47.4	
		SPD20300F					
	460	1	SPD40050	5.0		8.9	
			SPD40050F				
SPD40075			7.5		13.2		
SPD40075F							
2		SPD40100	10.0		18.5		
		SPD40100F					
		SPD40150	15.0		23.7		
		SPD40150F					
		SPD40200	20.0		30.3		
		SPD40200F					
3		SPD40250	25.0		37.5		
		SPD40250F					
		SPD40300	30.0		47.0		
		SPD40300F					

STARTING THE SYSTEM

Setting the Motor Overload Switches

The Motor Overload Setting Switches adjust the level of motor overload current protection necessary to protect the motor in case of an over current condition.

Bank 1 switches 1, 2 and 3 allow adjustment of the motor overload setting. These switches adjust the motor overload protection as a percentage of the full load output current rating of the controller. Choose a motor overload setting that meets or is less than the motor's SFA rating. For example, if the full load output current rating of the controller is 37A and the motor SFA rating is 33A, the motor overload setting should be set to 85% ($33A/37A = 89\%$, next lowest setting is 85%).

In applications where the pump and motor are not used to the full capacity the system may not draw current close to the motor's SFA rating. In this case choose a motor overload setting that is close to the actual full load running current.

NOTE: If single phase input power is used the motor overload switches must be set to 50% or lower or nuisance input phase loss errors can result.

SWITCH SETTINGS									
BANK1			BANK2			BANK3			
1	2	3	1	2	3	1	2		
U = Up			D = Down						
MOTOR OVERLOAD SETTINGS					ACCEL/DECEL RAMP SETTINGS				
BANK1	2	3	% OF RATING	BANK1&2	4	1	2	RAMP	SETTING
U	U	U	100%	U	U	U	0.5	SEC	
U	U	D	95%	U	U	D	1	SEC	
U	D	U	90%	U	D	U	2	SEC	
U	D	D	85%	U	D	D	3	SEC	
D	U	U	80%	D	U	U	4	SEC	
D	U	D	70%	D	U	D	5	SEC	
D	D	U	50%	D	D	U	6	SEC	
D	D	D	40%	D	D	D	7	SEC	
NO WATER RESTART TIME				BANK3		MIN FREQ			
				1		U			
				U		30Hz			
				D		D			
				D		15Hz			
BANK2	3	4	RESTART TIME	BANK3		CARRIER			
U	U		10 MIN	2		U			
U	D		30 MIN	FREQ		2			
D	U		1 HOUR	U		2KHz			
D	D		2 HOURS	D		8KHz			

The chart below shows the motor overload setting for each model.

Supply Voltage	Frame Size	Model Number	Motor Overload Setting							
			100%	95%	90%	85%	80%	70%	50%	40%
208/230	1	SPD20050	17.8	16.9	16.0	15.1	14.2	12.5	8.9	7.1
		SPD20050F								
	2	SPD20075	26.4	25.1	23.8	22.4	21.1	18.5	13.2	10.6
		SPD20075F								
		SPD20100								
		SPD20100F								
	3	SPD20150	47.4	45.0	42.7	40.3	37.9	33.2	23.7	19.0
		SPD20150F								
		SPD20200								
		SPD20200F								
	4	SPD20250	76.0	72.2	68.4	64.6	60.8	53.2	38.0	30.4
		SPD20250F								
SPD20300										
SPD20300F										
460	1	SPD40050	8.9	8.5	8.0	7.6	7.1	6.2	4.5	3.6
		SPD40050F								
		SPD40075								
	2	SPD40075F	13.2	12.5	11.9	11.2	10.6	9.2	6.6	5.3
		SPD40100								
		SPD40100F								
		SPD40150								
		SPD40150F								
		SPD40200								
	SPD40200F									
	3	SPD40250	37.5	35.6	33.8	31.9	30.0	26.3	18.8	15.0
		SPD40250F								
SPD40300										
SPD40300F										

INPUT AND OUTPUT FUNCTIONS

CONTROL TERMINALS		
POSITION	FUNCTION	DESCRIPTION
1	COM	SIGNAL COMMON
2	RUN/STOP	CLOSED = RUN OPEN = STOP
3	COM	SIGNAL COMMON
4	HAND/AUTO	CLOSED = HAND OPEN = AUTO
5	COM	SIGNAL COMMON
6	INPUT	TRANSDUCER INPUT
7	+24V	24VDC SUPPLY
8	+5V	5VDC SUPPLY
9	COM	SIGNAL COMMON
10	ANALOG OUTPUT	4-20mA OUTPUT
11	SP2/SP1	CLOSED = SETPOINT2 OPEN = SETPOINT1
12	PRESSURE DROP	CLOSED = 20PSI OPEN = 5PSI
13	RELAY1 - NO	MOTOR RUN
14	RELAY1 - NC	STOP: NC = COM
15	RELAY1 - COM	RUN: NO = COM
16	RELAY2 - NO	SYSTEM FAULT
17	RELAY2 - NC	OK: NC = COM
18	RELAY2 - COM	FAULT: NO = COM

The control terminal strips allow for a variety of input and output functions.

Warning: Turn off all power to the controller before wiring devices to the control terminals.

Warning: Inputs RUN/STOP, HAND/AUTO, SP2/SP1 and PRESSURE DROP are switch inputs. Do not connect power to these inputs or damage to the controller will result. Only connect non-powered switch contacts to these inputs.

RUN/STOP: This input allows the pump/motor to be turned on and off by an external switch. Connect the contacts of a non-powered external switch to terminals 1 (COM) and 2 (RUN/STOP). When the switch is closed the controller is in RUN mode (output to motor is enabled). When the switch is open the controller is in STOP mode (output to motor is disabled).

HAND/AUTO: This input allows the controller to run the motor at full speed without the use of a pressure transducer. This input can be controlled by an external non-powered switch. Connect the contacts

of a non-powered external switch to terminals 3 (COM) and 4 (HAND/AUTO). When the switch is closed the controller is in HAND mode. While in HAND mode the RUN/STOP input is used to start and stop the motor and the pressure transducer input is ignored. When the switch is open the controller is in AUTO mode. While in AUTO mode the controller uses the pressure transducer feedback to control the speed of the motor.

INPUT and +24V: These terminals are the transducer feedback and transducer power supply. Connect the white lead from the transducer cable to terminal 6 (INPUT). Connect the brown lead from the transducer cable to terminal 7 (+24V). Connecting the drain (bare) wire to the chassis allows grounding of the case of the pressure transducer. The controller is configured with a 300 PSI 4-20mA output pressure transducer.

ANALOG OUTPUT: This output is a 4-20mA signal based on motor speed (4mA = 0Hz, 20mA = 60Hz) and can be connected to external monitoring or external control devices. Connect terminal 10 (ANALOG OUTPUT) to the 4-20mA input of the external device. Connect terminal 9 (COM) to the negative side of the current loop on the external device. The external device must have an input resistance (impedance) in the range of 45Ω to 250Ω. The maximum output voltage is 24V.

SP2/SP1: This input allows the system to operate at one of 2 pressure settings. This input can be controlled by an external non-powered switch. Connect the contacts of a non-powered external switch to terminals 5 (COM) and 11 (SP2/SP1). When the switch is closed pressure set point 2 is enabled (preset to 75 PSI when used with a 300 PSI transducer). When the switch is open pressure set point 1 is enabled (preset to 50 PSI when used with a 300 PSI transducer).

PRESSURE DROP: This input allows the user to select the amount of pressure drop in the system before the pump starts. This input can be controlled by an external non-powered switch. Connect the contacts of a non-powered external switch to terminals 5 or 9 (COM) and 12 (PRESSURE DROP). When the switch is closed the system pressure will drop 20 PSI (when used with a 300 PSI transducer) before restarting the pump. When the switch is open the system pressure will drop 5 PSI (when used with a 300 PSI transducer) before restarting the pump.

RUN RELAY: This output indicates when the pump/motor is running. This output can be used to control power to a light, an alarm or other external device. When the pump/motor is off terminal 13 (RELAY1 - NO) will be open and terminal 14 (RELAY 1 - NC) will be connected to terminal 15 (RELAY1 - COM). When the pump/motor is on terminal 13 (RELAY1 - NO) will be connected to terminal 15 (RELAY1 - COM) and terminal 14 (RELAY 1 - NC) will be open. The relay rating is 250Vac, 5 amps maximum.

FAULT RELAY: This output indicates when the system is faulted. This output can be used to control power to a light, an alarm or other external device. When the system is not faulted terminal 16 (RELAY2 - NO) will be open and terminal 17 (RELAY 2 - NC) will be connected to terminal 18 (RELAY2 - COM). When the system is faulted terminal 16 (RELAY2 - NO) will be connected to terminal 18 (RELAY2 - COM) and terminal 17 (RELAY 2 - NC) will be open. The relay rating is 250Vac, 5 amps maximum.

SWITCH SETTINGS									
BANK1		BANK2		BANK3					
1	2	3	4	1	2	3	4	1	2
U = Up				D = Down					
MOTOR OVERLOAD SETTINGS				ACCEL/DECEL RAMP SETTINGS					
BANK1		% OF RATING		BANK1&2		RAMP SETTING			
1	2	3		4	1	2			
U	U	U	100%	U	U	U	0.5 SEC		
U	U	D	95%	U	U	D	1 SEC		
U	D	U	90%	U	D	U	2 SEC		
U	D	D	85%	U	D	D	3 SEC		
D	U	U	80%	D	U	U	4 SEC		
D	U	D	70%	D	U	D	5 SEC		
D	D	U	50%	D	D	U	6 SEC		
D	D	D	40%	D	D	D	7 SEC		
NO WATER RESTART TIME				BANK3		MIN FREQ			
BANK2		RESTART TIME		1					
3	4			U			30Hz		
U	U		10 MIN	D			15Hz		
U	D		30 MIN	BANK3		CARRIER FREQ			
D	U		1 HOUR	2					
D	D		2 HOURS	U			2KHz		
				D			8KHz		

Motor Overload/Ramp Switches

CONTROL TERMINALS		
POSITION	FUNCTION	DESCRIPTION
1	COM	SIGNAL COMMON
2	RUN/STOP	CLOSED = RUN OPEN = STOP
3	COM	SIGNAL COMMON
4	HAND/AUTO	CLOSED = HAND OPEN = AUTO
5	COM	SIGNAL COMMON
6	INPUT	TRANSDUCER INPUT
7	+24V	24VDC SUPPLY
8	+5V	5VDC SUPPLY
9	COM	SIGNAL COMMON
10	ANALOG OUTPUT	4-20mA OUTPUT
11	SP2/SP1	CLOSED = SETPOINT2 OPEN = SETPOINT1
12	PRESSURE DROP	CLOSED = 20PSI OPEN = 5PSI
13	RELAY1 - NO	MOTOR RUN
14	RELAY1 - NC	STOP: NC = COM
15	RELAY1 - COM	RUN: NO = COM
16	RELAY2 - NO	SYSTEM FAULT
17	RELAY2 - NC	OK: NC = COM
18	RELAY2 - COM	FAULT: NO = COM

Digital Input Controls/Relays

Motor Overload Setting:

May be set from 40-100%

Minimum Speed:

15 Hz and 30 Hz minimum frequency settings. (Permanently set to 30 Hz on filtered product.)

Carrier Frequency:

2 KHz to 8 KHz (Permanently set to 2 KHz on filtered product.)

Ramp Setting:

Adjust acceleration and deceleration ramps from .5 to 7 seconds

No Water Restart Time:

Restart delay after ddry well or loss of prime fault adjustable from 10 minutes to 2 hours.

Commercial Water

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

Outputs

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

Pump run status: Relay to indicate pump run status.

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

LED Lights: **Green** - standby or pump running

Orange - Under voltage

Red - Number of blinks determine: replace controller, no water/loss of prime, sensor fault, pump or motor bound, short circuit/ground fault, input phase loss, temperature, over-voltage, or motor overload.

Electrical Efficiency Over 95% at Full Load

No water restart time Adjustable restart time for "dry well" function from 10 min. to 2 hours.

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

Max. Elevation 2000 m (6600 ft.)

Ambient Temp. -22° F to 122° F

Max. Humidity 95% at 104F non-condensing

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

Approvals UL, cUL, CE

Enclosure Painted Steel enclosure, NEMA 3R, IP43, (rain tight)

Mounting Wall mount

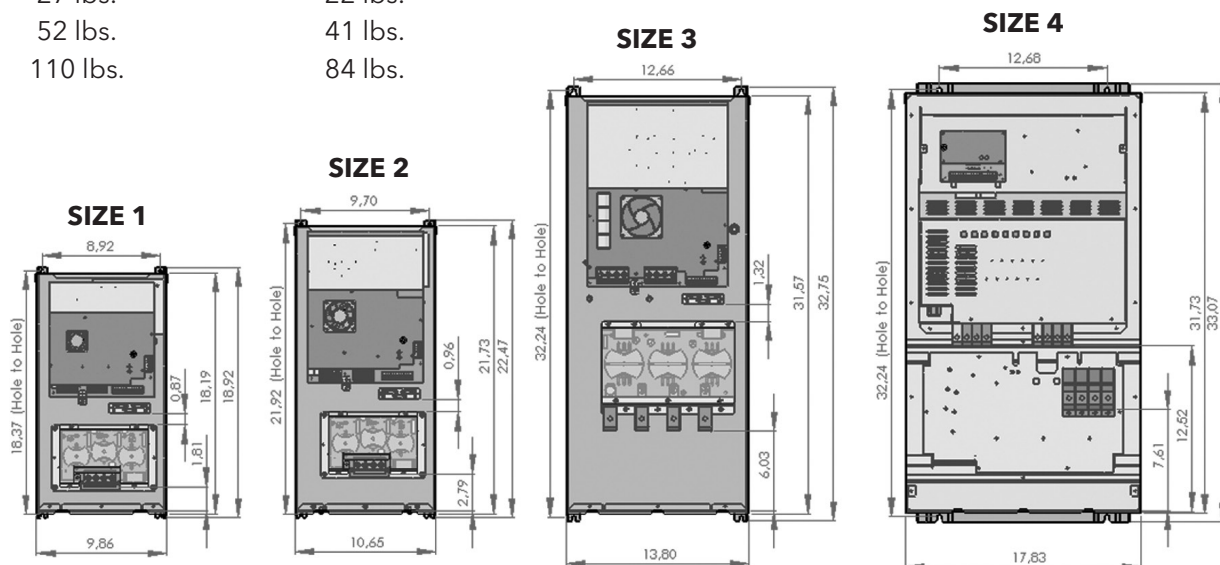
Cooling Attached heat sink and fan.

Transducer 4-20 mA rated to 300 PSI with 180-inch, 3 core shielded cable, with internal case ground.

Output Filter (Optional) Integrated filters protect the motor from voltage spikes even with up to 1,000 feet of wire between controller and motor.

WEIGHTS AND DIMENSIONS

	Filtered Product	Non-Filtered Product
Size 1	21 lbs.	17 lbs.
Size 2	27 lbs.	22 lbs.
Size 3	52 lbs.	41 lbs.
Size 4	110 lbs.	84 lbs.



TROUBLESHOOTING

General

The Aquavar SPD drives are self-diagnosing controllers. If a problem occurs, observe the Status Code Indicator Light on the front of the unit. No Status Code Indicator Light means either no or low input voltage (less than 140Vac).

Refer to the status code label on the side of the controller access cover to diagnose system errors. See the following diagram.

STATUS CODES	
GREEN LIGHT CODES	
CONSTANT	STANDBY
BLINKING	PUMP RUNNING
ORANGE LIGHT CODES	
CONSTANT	UNDER VOLTAGE
RED LIGHT CODES	
CONSTANT	REPLACE CONTROLLER
2 BLINKS	NO WATER/LOSS OF PRIME
3 BLINKS	SENSOR FAULT
4 BLINKS	PUMP OR MOTOR BOUND
5 BLINKS	SHORT CIRCUIT/GROUND FAULT
6 BLINKS	INPUT PHASE LOSS
7 BLINKS	TEMPERATURE
8 BLINKS	OVER VOLTAGE
9 BLINKS	MOTOR OVERLOAD

Red Flashes	Fault Code	Restart Action
Constant	Replace Controller	Controller will not restart. Power must be reset to clear the fault.
2 Blinks	No Water/Loss of Prime	Controller will restart automatically according to the No Water Restart Time switches (switches 3 & 4 of bank 2).
3 Blinks	Sensor Fault	Controller will restart automatically when the sensor signal is within the valid operating range.
4 Blinks	Pump or Motor Bound	Controller will restart automatically 5 times. After 5 faults the power must be reset to clear the fault.
5 Blinks	Short Circuit/Ground Fault	Controller will not restart. Power must be reset to clear the fault.
6 Blinks	Input Phase Loss	Controller will restart automatically 5 times. After 5 faults the power must be reset to clear the fault.
7 Blinks	Temperature	Controller will restart automatically when temperature is within the operating range of the controller.
8 Blinks	Over Voltage	Controller will restart automatically when the input voltage is within the operating range of the controller.
9 Blinks	Motor Overload	Controller will restart automatically.

VFD INPUT WIRE SIZING CHARTS

Controller Input	Ratings		Maximum Allowable Conductor Length (40°C Ambient, 5% Voltage Drop)																					
	Motor HP	Input Current	Conductor Size (75°C Rated Wire)																					
			1/2	3/4	1	1½	2	3	4	6	8	10	12	14	1	1/0	2/0	3/0	4/0	250	300	350	400	500
230V, Single Phase Input	½	7.2	400	618	1020	1532	2348	3530	4242	5335	6338	7562	8633	10297	11821	13013	14156	15361	16333	17959	19017	20579	22421	
	¾	9.4	301	467	775	1167	1790	2693	3236	4071	4851	5770	6587	7858	9021	9931	10893	11722	12465	13705	14513	15705	17111	
	1	11.6	239	374	623	941	1445	2175	2615	3290	3921	4664	5325	6352	7293	8029	8734	9477	10078	11081	11734	12698	13834	
	1½	15.1	178	282	475	721	1110	1673	2012	2533	3019	3592	4102	4894	5618	6186	6729	7302	7764	8537	9041	9784	10659	
	2	18.8		219	375	623	941	1445	2175	2615	3290	3921	4664	5325	6352	7293	8029	8734	9477	10078	11081	11734	12698	
	3	25.0		273	426	715	1068	1603	2003	2524	3030	3621	4200	4974	5853	6737	7626	8520	9419	10323	11232	12146	13065	
	5	42.1			378	583	896	1307	1711	2216	2722	3229	3737	4245	4753	5261	5769	6277	6785	7293	7801	8309	8817	
	7½	64.3				366	549	818	1165	1548	1971	2434	2937	3441	3945	4449	4953	5457	5961	6465	6969	7473	7977	
	10	81.7					441	634	896	1220	1583	2006	2479	2953	3427	3901	4375	4849	5323	5797	6271	6745	7219	
	15	117.3							432	606	853	1153	1493	1883	2313	2703	3133	3523	3913	4303	4693	5083	5473	
	½	3.4	818	1263	2087	3160	4908	7511	9123	11653	14168	17119	19844	24266	28469	32000	35524	39133	42344	47573	51360	56659	63177	
	¾	4.5	623	962	1591	2410	3745	5731	6962	8993	10812	13064	15144	18519	21727	24421	27111	29865	32315	36306	39196	43240	48214	
	1	5.5	501	776	1285	1948	3027	4633	5628	7189	8741	10562	12244	14972	17566	19744	21919	24146	26127	29354	31690	34960	38981	
	1½	7.2	383	595	988	1499	2331	3568	4335	5538	6734	8137	9433	11536	13534	15213	16888	18604	20131	22617	24417	26936	30035	
	2	8.9	304	474	790	1201	1869	2863	3478	4444	5404	6530	7571	9258	10862	12210	13555	14932	16157	18153	19598	21620	24107	
3	11.9	224	351	590	900	1403	2152	2615	3342	4065	4912	5696	6966	8173	9187	10199	11235	12158	13659	14747	16268	18140		
5	20.0		196	339	527	826	1272	1548	1981	2410	2915	3381	4136	4853	5456	6058	6674	7222	8114	8760	9665	10777		
7½	30.6			333	527	826	1272	1548	1981	2410	2915	3381	4136	4853	5456	6058	6674	7222	8114	8760	9665	10777		
10	38.8			254	333	527	826	1272	1548	1981	2410	2915	3381	4136	4853	5456	6058	6674	7222	8114	8760	9665		
15	54.1				280	409	641	785	1009	1231	1492	1734	2124	2495	2806	3117	3435	3718	4178	4511	4978	5550		
20	70.6					412	536	660	805	941	1156	1362	1670	1906	2171	2466	2701	28893	32461	35045	38661	43109		
25	89.4					410	509	624	734	905	1069	1207	1343	1482	1607	1808	1953	2158	2406					
30	110.6							493	584	722	856	969	1080	1193	1295	1459	1576	1742	1943					
5	10.0	539	843	1409	2145	3339	5117	6219	7945	9662	11677	13537	16555	19424	21834	24239	26701	28893	32461	35045	38661	43109		
7½	15.3	335	534	906	1391	2174	3337	4059	5189	6312	7630	8847	10821	12697	14274	15846	17457	18890	21224	22913	25278	28186		
10	19.4		406	701	1087	1704	2622	3192	4082	4968	6006	6967	8522	10001	11244	12483	13752	14882	16721	18052	19916	22206		
15	27.1			482	763	1207	1868	2279	2918	3554	4301	4991	6108	7170	8062	8952	9863	10674	11994	12949	14286	15950		
20	35.3				568	909	1418	1734	2225	2715	3288	3819	4676	5491	6176	6859	7558	8180	9193	9925	10951	12211		
25	43.5					721	1135	1394	1792	2190	2656	3089	3784	4446	5003	5557	6124	6630	7452	8045	8878	9900		
30	55.3					874	1080	1394	1792	2190	2656	3089	3784	4446	5003	5557	6124	6630	7452	8045	8878	9900		
40	70.6						824	1072	1320	1610	1882	2313	2725	3071	3414	3766	4079	4588	4954	5470	6100			
50	92.9							785	976	1198	1409	1738	2054	2320	2581	2850	3090	3479	3757	4151	4629			
60	105.9							841	1036	1225	1514	1793	2028	2259	2495	2707	3049	3293	3641	4061				
75	128.2									990	1230	1464	1660	1852	2049	2226	2511	2712	3001	3348				
100	170.6										1072	1224	1371	1521	1658	1875	2027	2248	2509					
125	211.8													1083	1207	1320	1499	1621	1803	2013				
150	258.8															1063	1212	1312	1466	1638				
200	317.6																		1052	1182	1323			

Lengths in BOLD require 90°C wire Input connections for models SPD20300 and SPD20300F require 90°C wire
 For output cable sizing and maximum length, consult MAID Manual (BMAID).

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



Xylem, Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (800) 453-6777
Fax: (888) 322-5877
www.centripro.com

CentriPro and Aquavar SPD are trademarks of Xylem Inc. or one of its subsidiaries.
© 2012 Xylem Inc. BSPDDRIVE R2 February 2013