



FLINT & WALLING

Zoeller Family of Water Solutions™

Artesian Drive®

CONSTANT PRESSURE CONTROLS FOR CENTRIFUGAL PUMP APPLICATIONS

FW1141
1016
Supersedes
0512

Artesian Drive® is a line of custom programmed Variable Speed Drives (VFD) that enhance the performance of standard centrifugal pumps. When applied correctly to three phase motor driven pumps, the Artesian Drive® eliminates pressure cycling associated with conventional pressure switch controlled water pumping systems and provides a constant output pressure by increasing or decreasing motor speed, based upon demand.

Artesian Drive® is factory programmed for F&W centrifugal pumps to provide optimum performance and motor protection. The Artesian Drive can be used with other pump brands, providing the pump is powered by a three phase motor that does not exceed the maximum current output rating of the drive.



INCLUDED ITEMS

- Factory programmed variable speed drive unit
- NEMA 1 enclosure
- Pressure sensor, preset at 50 PSI
- Sensor adjustment tool
- Sensor cable (10 ft.)

FEATURES

- Pre-programmed Drives: No need for field technician to program the drive at the site
- Drives are available for any 1 thru 20 HP centrifugal pump that is powered by a three phase motor
- Drives up to 3 HP permit the use of widely available 230 volt, single phase power source
- Constant water pressure with a wide range of settings (30 - 80 PSI)*
- Pressure is easily adjusted with a 7/32" allen wrench
- Works with a small pressure tank or a larger tank, already in place
- No in-rush current at startup
- Soft start reduces mechanical/electrical stress, prolonging pump and motor life
- Built-in protection and diagnostics
 - Motor overload
 - Locked or bound pump - with auto reversing torque
 - Low line voltage
 - Short circuit
 - High voltage / lightning protection
 - Dry run conditions, using intelligent load monitoring
 - Overheated drive with automatic reset

NOTE: The maximum obtainable system pressure is limited by the performance of the pump installed.

DRIVE SPECIFICATIONS AND DIMENSIONS

Model Number	AD052045	AD070059	AD096074	AD096096	AD150145	AD420210	AD220210	AD280280	AD420410	AD540530	
Input from power source	Voltage						180 - 264 AC (Single or Three Phase)				
	Frequency						50/60 Hz				
	Current (Max) - RMS	14.2 Amps 1ø (6.7 Amps 3ø)	17.4 Amps 1ø (8.7 Amps 3ø)	23.2 Amps 1ø (11.9 Amps 3ø)	23.2 Amps 1ø (11.9 Amps 3ø)	29.5 Amps 1ø (15.7 Amps 3ø)	43.1 Amps	22.6 Amps	28.3 Amps	43.1 Amps	54.3 Amps
	Power Factor	1.0 (constant)									
Output to Motor (Three Phase)	Voltage										
	Voltage Automatically Adjust with Frequency (0 thru 230 Volts)										
	Frequency Range										
	15 - 60 Hz										
Current, Factory Programmed* (RMS, Each Phase)	4.5 Amps	5.9 Amps	7.4 Amps	9.6 Amps	14.5 Amps	20.0 Amps	20.0 Amps	28.0 Amps	41.0 Amps	53.0 Amps	
	Current (Max) (RMS, Each Phase)	5.2 Amps	7.0 Amps	9.6 Amps	9.6 Amps	15.0 Amps	21.0 Amps	21.0 Amps	28.0 Amps	42.0 Amps	54.0 Amps
For Use With	Motor										
	Standard 60 Hz. Pump & 230 Volt 3 Phase Motor Combination										
Reference HP Rating*	1	1.5	2	3	5	7.5	7.5	10	15	20	
	Factory preset										
Pressure Setting	50 PSI										
	Adjustable Range										
30 - 80 PSI											
Operating Conditions	Temperature (@ 230 VAC input)						0° to 50° C (32° to 122° F.)		0° to 50° C (32° to 122° F.)		
	Relative Humidity										
Max 95% Non-condensing											
Controller Size	NEMA 1 (indoor)	10.47" H x 3.35" W x 6.15" D		12.54" H x 3.94" W x 6.90" D		15.60" x 4.48" x 8.05"		14.5" H x 9.9" W x 10.4" D		14.5" H x 6.1" W x 8.6" D	14.5" H x 9.9" W x 10.4" D
	Weight	2.9 lbs.	3.1 lbs.	4.6 lbs.	4.6 lbs.	9.9 lbs.	33.1 lbs.	15.4 lbs.	15.4 lbs.	33.1 lbs.	

RMS = ROOT MEAN SQUARED

*The electrical characteristics of motors vary slightly. See Amp draw on motor nameplate. If the maximum motor current value (Amp draw) is more than 5% of the programmed value of the Drive, the Drive will need to be set to the current value of the motor to provide proper protection..

The Artesian Drive® needs only a small Captive Air pressure tank to maintain constant pressure. A larger tank can be used if desired.

MINIMUM PRESSURE TANK SIZE

TANK SIZE	PUMP CAPACITY		
	Less than 12 GPM	Greater than 12 GPM but less than 25 GPM	Greater than 25 GPM
TOTAL VOLUME	4 Gallon (AT15)	8 Gallon (AT25)	14 Gallon (AT44)

The pressure tank pre-charge setting should be 70% (± 2 PSI) of the sensor pressure setting.

