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## PP-4600 Series Pump Controls

### Manual Control Specification:

Provide a manual control attached to the pump cable at the manufacturers factory. The control shall be designed and manufactured for submersible pump applications and supplied by the pump manufacturer to insure compatibility and proper motor protection. The control shall have the following features:

Short circuit and overload protection shall be provided by a combination hydraulic/magnetic or thermal/magnetic circuit breaker/overload. The circuit breaker/overload shall also provide manual reset and ON-OFF control of the pump.

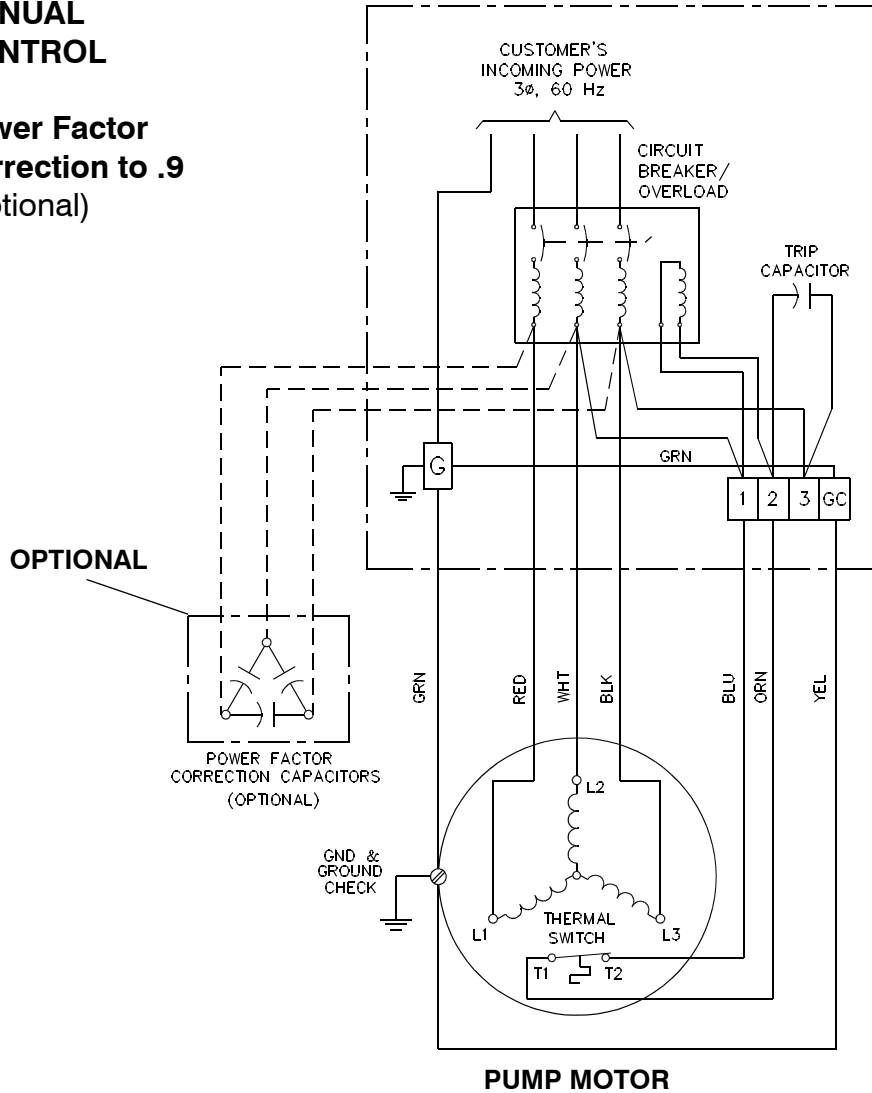
There shall be provisions for connection of the stator thermal switches. The circuit breaker/overload must be reset after tripping due to a thermal overload in the stator but must not require resetting following a power failure.

The control shall be contained in a NEMA 4x watertight/dusttight plastic enclosure with a 115 volt 1Ø \_\_\_Amp convenience outlet..

# PP-4600 Series Pump Controls

## MANUAL CONTROL

**Power Factor Correction to .9**  
(Optional)



Pump	HP	Non-compensated PF	Required KVAR to achieve .9 PF	Motor Utilization Voltage
PP-4630	2.5	.75	.99	200, 230, 460, 575
PP-4640	4	.73	1.76	200, 230, 460, 575
PP-4650	8.3	.66	6.00	200, 230, 460, 575
PP-4660	15	.63	10.8	200, 230, 460, 575
PP-4670	20	.61	15.2	200, 230, 460, 575
PP-4680	40	.63	27	200, 230, 460, 575

## PP-4600 Series Pump Controls

### Variable Frequency Drive Pump Control Specification:

A variable frequency drive pump control designed and manufactured for submersible pump applications where a range of variable pumping speeds is required.

The control should have the following standard features:

Short circuit protection shall be provided by a thermal magnetic circuit breaker.

A control circuit which enables the variable frequency drive when the motor thermal switch is closed (normal condition). Optional monitoring devices such as those listed below under optional items may be incorporated into the enabling circuitry.

A variable frequency drive which includes the following standard features:

- Pulse width modulated design with output current rating that meets or exceeds the current rating of the pump.
- Microprocessor based logic and digital controls for input parameter adjustments.
- Electronic motor overload protection.
- A current limit circuit to limit motor current to a preset adjustable maximum level.
- Programmable acceleration and deceleration rates upon start, stop and speed change selection.
- Adjustable Volts/Hertz profile.
- Analog input signal circuitry for remote speed control.
- Analog and digital output signals for drive status indication.
- Automatic restart upon malfunction or interruption of power with user selectable restart attempts (0-3) before manual reset is required.
- Critical frequency avoidance circuitry with a minimum of 3 user selectable jump points.
- Protective features including: AC input fuses, logic common at ground potential, phase loss protection, power loss ride through (6 cycles), short circuit and ground fault protection, transient and voltage surge protection, and starting into a rotating motor.

The variable frequency drive may have additional features as required by the user.

The control shall have available, but not be limited to, the following optional item:

An Flygt ENM-10 level sensor based control circuit to ensure the pump is submerged during operation.