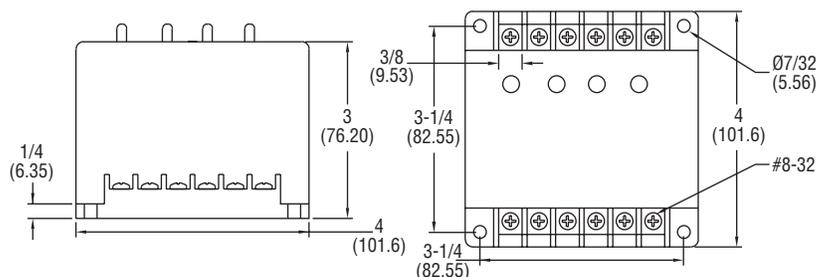




Series QPC Quadraplex Pump Controller

Specifications - Installation and Operating Instructions



The **Series QPC** is used where four pumps are required to alternate to provide equal run time on each. Alternating loads allows for equal wear on all pumps lengthening their operation life. The Series QPC has five inputs allowing the four outputs to operate properly even if one of the inputs fails to open or close. Four LED indicators show the load that is energized by the SPST output contacts. The QPC is available in two sequence configurations: sequence-on-simultaneous-off (SOSO) and first-on-first-off (FOFO). In the SOSO sequence, an additional load is energized each time a higher level switch is activated, and all loads are de-energized simultaneously when the lowest level switch deactivates. In the FOFO sequence, the loads are energized in the same manner as the SOSO sequence, but loads are de-energized individually as each level switch deactivates. In either sequence, the lead load position is advanced to equalize run time on each pump. An inrush delay on both models reduces line sags by preventing multiple loads from energizing simultaneously. See the next page for more details on SOSO and FOFO sequencing.

Important: Read the following carefully and completely before installing or connecting QPC units.

Note: DO NOT exceed specified electrical rating. Doing so may result in damage to control unit and load device.



WARNING: To prevent ignition in hazardous locations, disconnect before servicing.

INSTALLATION

1. Lock out all electrical current to relevant control panel during installation.
2. Fasten the surface mount QPC unit in the control panel.
3. Make the appropriate connections as shown in the wiring diagram (Figure A) to the corresponding numbered contacts on the QPC unit. For use in hazardous location, refer to control drawing 194 in Figure B.
4. Resume power to control panel and monitor system for proper functionality.

SPECIFICATIONS

Power Requirement: 120 VAC, 50/60 Hz.

Power Consumption: 2.5 VA (approximate).

Sensitivity: 100 k ohm.

Isolation Voltage: 2500 V (input to output).

Temperature Limits:

Operating: -4 to 131°F (-20 to 55°C);

Storage: -40 to 185°F (-40 to 85°C).

Switch Type: SPST.

Switch Voltage: 5.1 V open circuit.

Switching Current: 10 µA, short circuit.

Electrical Rating: 5 A @ 120 VAC resistive; 278 VA inductive.

Response Times:

Power Up: <1 s;

Operate: <25 ms;

Inrush: 5 s;

Release: <150 ms.

Indicators: (4) LED's show active output relay.

Enclosure: Polycarbonate dust cover.

Mounting: Surface.

Weight: 16 oz (454 g).

Agency Approvals: Intrinsically safe to UL standard 913. For use in hazardous (classified) locations: Class I, Group A, B, C, D; Class II, Group E, F, G; Class III.

EXCITATION TABLE

		Increasing Level					Decreasing Level					
		A	B	C	D	E	F	E	D	C	B	A
SOSO Outputs	Load 1	Off	Off	On	On	On	On	On	On	On	On	Off
	Load 2	Off	Off	Off	On	On	On	On	On	On	On	Off
	Load 3	Off	Off	Off	Off	On	On	On	On	On	On	Off
	Load 4	Off	Off	Off	Off	Off	On	On	On	On	On	Off
FOFO Outputs	Load 1	Off	Off	On	On	On	On	On	Off	Off	Off	Off
	Load 2	Off	Off	Off	On	On	On	On	On	Off	Off	Off
	Load 3	Off	Off	Off	Off	On	On	On	On	On	Off	Off
	Load 4	Off	Off	Off	Off	Off	On	On	On	On	On	Off

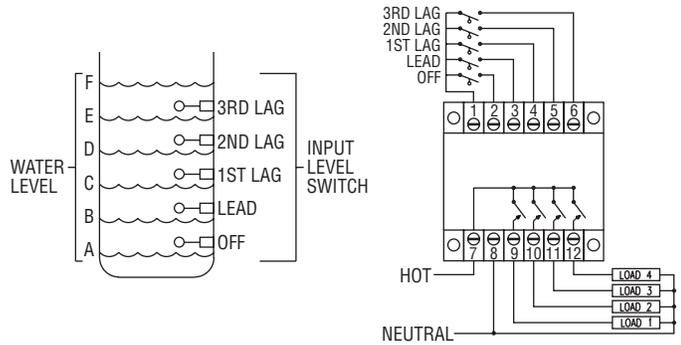


Figure A

SEQUENCING DESCRIPTION

SOSO - As the 3rd lag, 2nd lag, lag and lead switches open, the loads remain energized. When the off switch opens, all four loads de-energize simultaneously. If any switch fails to open, the loads still de-energize when the off switch opens. The lead advances one position each time the loads de-energize.

FOFO - When the 3rd lag switch opens, all four loads remain energized. The 2nd lag switch opens next, and the lead load de-energizes. When the lag switch opens, the lag load de-energizes. Next, the lead switch opens and the 2nd lag load de-energizes. Finally, the off switch opens and the 3rd lag load de-energizes. At the end of each cycle, the lead advances one position for each load energized during the cycle. For example: if loads one and two cycle on and off, the lead will advance two positions. Load three will be the lead load for the next cycle.

MAINTENANCE

Upon final installation of the Series QPC Quadraplex Pump Controller, no routine maintenance is required. A periodic check of the system calibration is recommended. The Series QPC is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

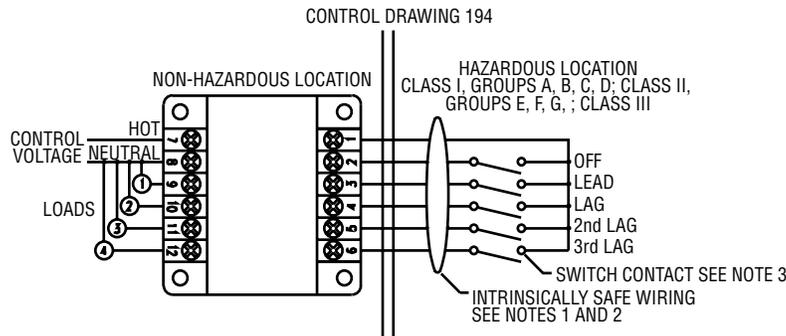


Figure B

NOTES:

1. Maximum distance between unit and switch is 1000 feet.
2. All intrinsically safe wiring shall be separated from non-intrinsically safe wiring. Refer to article 504 of the National Electrical Code ANSI/ NFPA 70 for installation of intrinsically safe wiring.
3. Switch contact shall be any non-energy strong or generating mechanical switch type device containing no capacitance or inductance.