Sigma Controls, Inc.
PROCESS CONTROLS AND INSTRUMENTATION
217 S. Fifth Street, Perkasie, PA 18944
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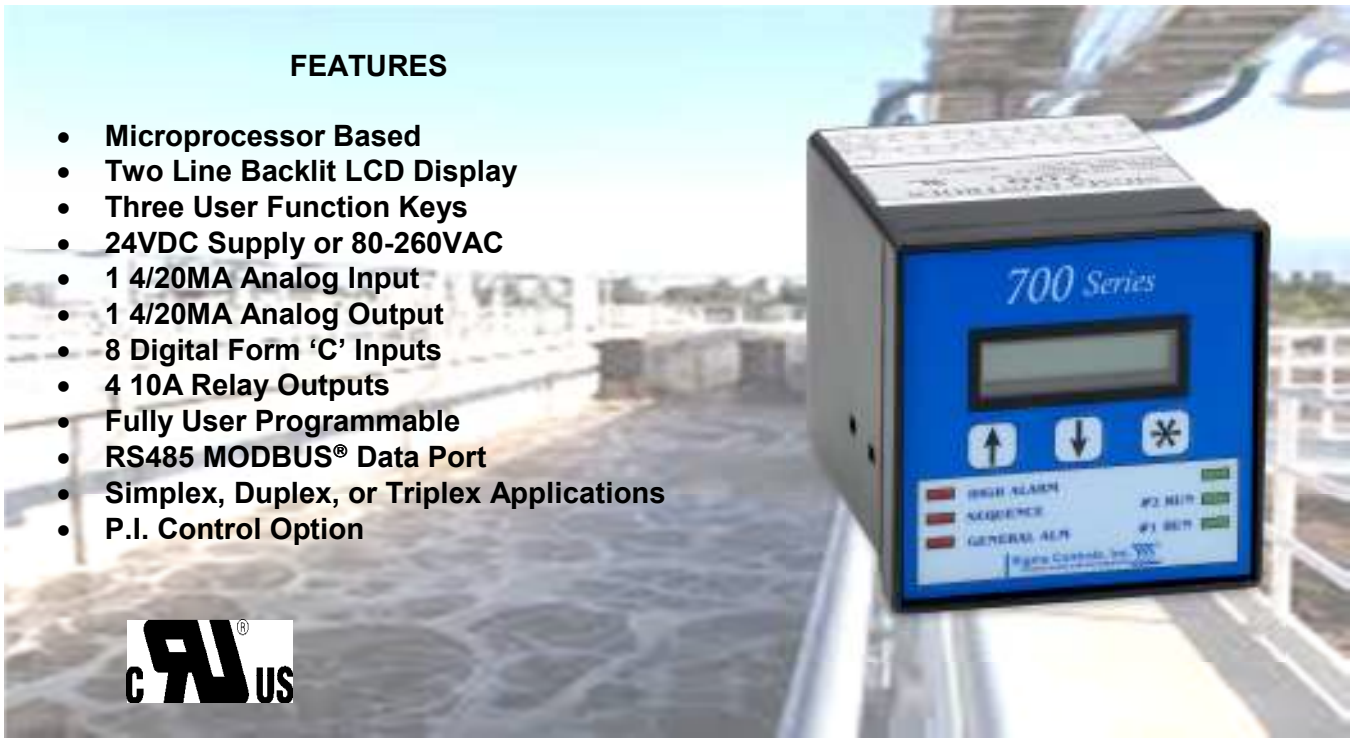
700 SERIES DPC PUMP CONTROLLERS

MADE IN AMERICA



FEATURES

- **Microprocessor Based**
- **Two Line Backlit LCD Display**
- **Three User Function Keys**
- **24VDC Supply or 80-260VAC**
- **1 4/20MA Analog Input**
- **1 4/20MA Analog Output**
- **8 Digital Form 'C' Inputs**
- **4 10A Relay Outputs**
- **Fully User Programmable**
- **RS485 MODBUS® Data Port**
- **Simplex, Duplex, or Triplex Applications**
- **P.I. Control Option**

Sigma Controls, Inc., 700 Series of cost effective multi application controllers are based on 25 years of pump control experience. Utilizing state of the art microprocessor technology, the 700 Series offers unmatched versatility and straightforward programming for most pumping applications.

SPECIFICATIONS

- Power Supply: 24VDC ± 2% @ 4VA Optional AC supply, 85-260VAC
- Relay Outputs (4): 10A @ 120VAC, 8A @ 30VDC
- 1 4/20MA Analog Input, 1 4/20 Analog Output
- 8 Digital Inputs, Form 'C' Dry Contacts Designed for intrinsic safety
- Operating Temperature: -20° to 60 C Storage: -40° to 85°C
- Relay Life: 100K Cycles
- Termination: Removal Screw Compression Terminal Strips (2)
- Two Line Alphanumeric, Backlit Display
- Data Communication: RS485, MODBUS®
- 6 Multifunction LED Indicators on Panel Face

MECHANICAL

- 1/4 DIN Panel Mount, 96m X 96m X 110 (3.77 X 3.774.33")
- Weight: 15.5 Oz.
- Nema 4X Front Panel
- Removable Chassis From Front of Enclosure without Tools
- Removable Barrier Terminal Strips, Screw Compression, (2 ea.)
- Optional Nema 4X FRP Wall Mount Enclosure with Back Panel for Accessory Items, 9-1/4" X 7-1/4" X 5"

MODEL VARIATIONS

DUPLEX MODEL 700-DPC

OPERATION

- Designed for the operation of two pumps, requiring alternation to equalize wear, where the primary element is any 4/20MA transmitter.
- The 700-DPC offers user selectable pump alternation, based on end of cycle or hours run. Should a pump fault or critical alarm occur, the failed pump is removed from the cycle and the operating pump moved to the 'lead' position, a 'pop up' alarm will be shown on the screen and a pump fault LED will be illuminated. The general alarm relay output will be energized for any system alarm.
- All user setpoints and programming parameters are shown on the alphanumeric screen in 'Plain English' prompts, no confusion interpreting numeric LED symbols.
- Pump run times are logged for recording purposes.
- H-O-A in auto, run feedback and critical alarm inputs provided.
- Integral simulator allows a test of the operating sequence.
- All programming is password protected.
- Constant speed or variable speed control is standard with selectable level vs speed setpoints for optimizing pump control.
- Alarm functions include Fail to Run (2), Pump Fault (2), Critical Alarm, High Level Low Level, Sensor Fail, etc.
- RS485 MODBUS® dataport is standard for SCADA or Telemetry applications.

DUPLEX FLOAT OPERATED 700-DPC-F

OPERATION

- The 700-DPC-F is designed for the operation of two loads requiring sequencing for the equalization of wear, where floats or pressure switches are the primary sensors.
- The 700-DPC-F is similar to the PC101-S with monitoring functions for hand/off/auto selector position and critical alarm inputs such as pump overtemperature, VFD fault, etc.
- Operation differs from the PC101-S in that primary level detection is from float switches.
- Additional inputs are provided to allow the controller to monitor each pump's H-O-A is in the auto position.
- All other features are the same as the PC101-S.

TRIPLEX MODEL 700-TPC

OPERATION

- Designed for operating 3 loads requiring sequencing and alternation, with 'AUTO' selector switch monitoring.
- The 700-TPC accepts 5 float switch inputs, high level alarm and low alarm in addition to the primary level transmitter.
- Operational status is via the two line alphanumeric display.
- Inputs are provided for monitoring the 'AUTO' position of each pump. If any pump is deselected via its H-O-A, it will be removed from the operational sequence automatically.
- User programmable, sequencing alternation and fixed sequence.
- RS485 MODBUS® data port provides SCADA interface.
- 4/20MA input/output.

NOTE: 700-TPC-F utilizes 5 float inputs and no analog level transmitter.

SPECIALTY UNITS (Factory Order)

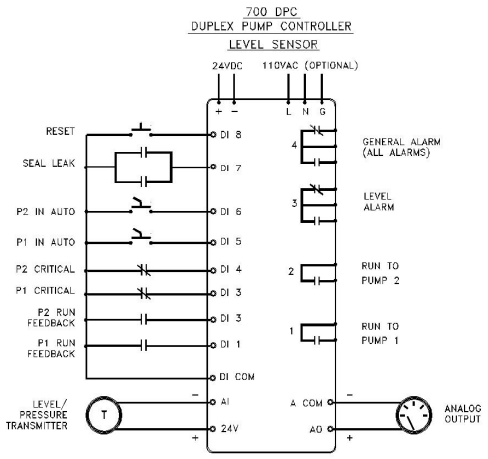
TRIPLEXER MODEL 700-TPC-F WITH EXTERNAL ALTERNATOR INPUT

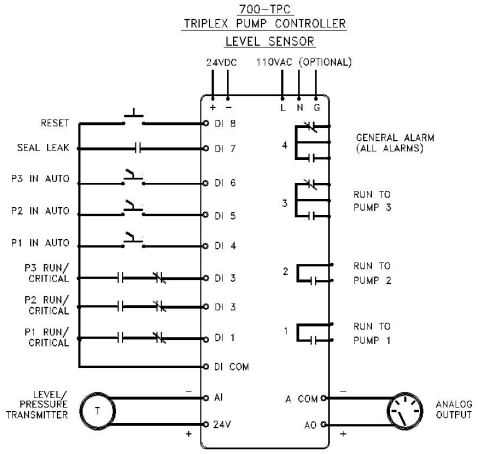
Triplexer with float operation

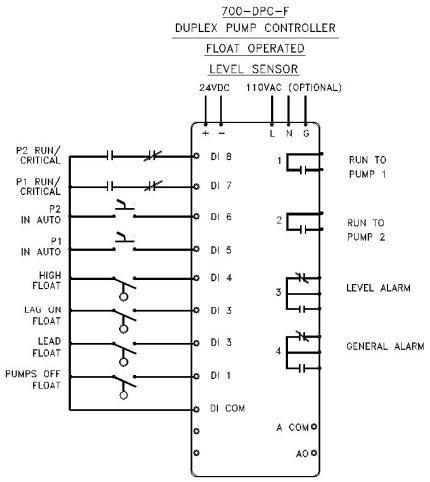
- Allows for user alternation of loads based on external clocking device such as a repeat cycle timer to allow alternation based on time rather than pump cycle.
- Each lead input stops/starts a load in an alternating sequence. The clocked input will alternate running loads when activated.
- Inputs provided for 'AUTO' selection.
- All other features similar to 700-DPC.

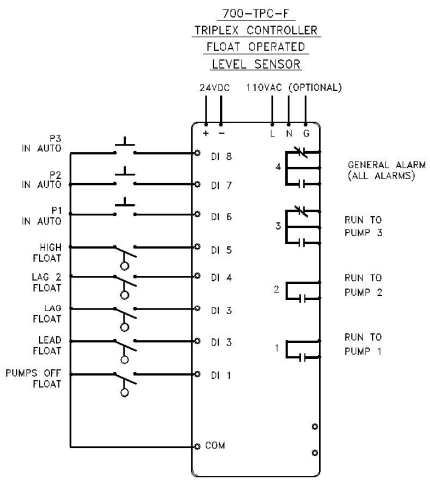
QUADRAPLEX 700-QPC CONTROLLER

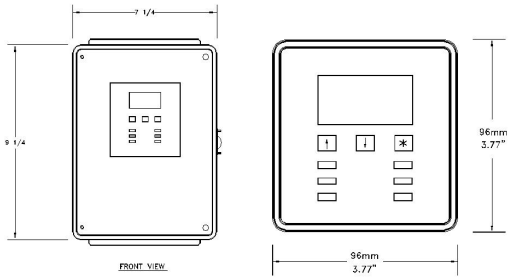
- Designed to operate 4 pumps with alternation and sequencing
- Level sensing is via 4/20MA level sensor
- Run feed back and critical alarm input provided.
- All other features similar to 700-DPC

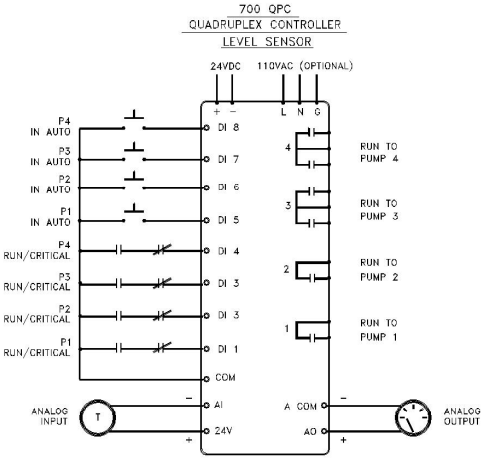












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700 SERIES PUMP CONTROLLERS AND ALTERNATORS

Client:	SIGMA CONTROLS, INC.			
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