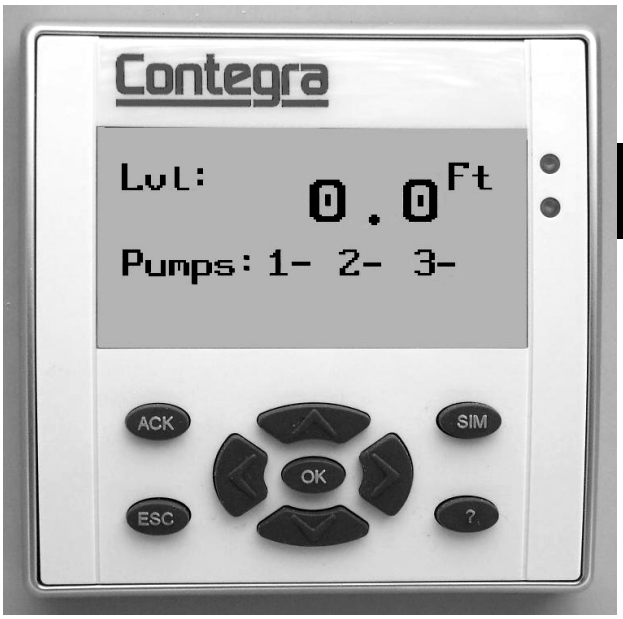
GRAPHICAL

PUMP CONTROLLER



Station Master 600 Series

FEATURES

- Duplex, Triplex or Quadraplex Pump-Up Control
- Constant Speed Control
- First On / First Off Pump Alternation
- Running Time Meters
- Pump Start Counters
- Failed Pump Replacement
- Accepts 4-20 mA, 0-10 VDC, 0-5 VDC analog input

The Station Master 600 Series of pump-up controllers are a powerful series of Duplex, Triplex or Quadruplex Pump Controllers with an "easy to see, easy to set" interface.

The large, backlit Liquid Crystal Display (LCD) typically shows the process level in 2" high characters for ease of viewing. As shown above, the display shows all pertinent information on a single screen including the process level and each pump's status.

The Station Master 600 Controllers incorporate First-On/First-Off (FOFO) pump alternation to minimize the number of pump starts. "Pump Failed" and "Pump Unavailable" inputs inform the controller's alternator to ignore the "off line" pump in the alternation sequence.

The controllers have integral Running Time Meters (RTMs) and Pump Start Counters. The Duplex pump controller has RTMs and Start counters for each pump and a 'Duplex' RTM and start counter to record the duplex running time and duplex pump starts.

The Station Master 600's control span is user configurable. The controller accepts a nominal 4-20 mADC input and transforms that input into any calibrated span to a maximum of 100'. The controller is ideally suited for use with Contegra's GPX or SLX 130-M transducers.

All of the analog setpoints are adjustable in feet and tenths of feet. The analog setpoints include: Low Alarm On & Off, Lead Pump On & Off, 1st, 2nd and 3rd Lag On & Off, High Level Alarm On & Off and Analog input signal Out of Range.

The optional analog output can be set for a 0-10 VDC span over any portion of the analog input's span.

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Station Master 600 Series

Specifications

Power: 24 VDC (20.4 - 28.8 VDC)
The 24 VDC can also power the submersible level transducer.

Display: LCD (Liquid Crystal Display)
Full graphics, legible to 0° C

Inputs:
Digital: Eleven
Analog: One — 0-10 VDC (1023 count)
The controller is provided with a 470Ω resistor for a 4-20 mA process level input.

Outputs:
Relay: Four, Normally Open
8A resistive 120 VAC
3A inductive
Analog: One, 0-10 VDC (1023 count)
(Optional: Suffix = A)

Connections: 26-21 AWG stranded
Spring clamps

Operating Temperature: -40° to +70° C

Dimensions:
Operator Interface:
3.25" x3.25" (WxH)
0.875" deep (in front of door)
I/O Modules
4.25" x 3.5" (WxH)
2.75" deep (behind door)

Ratings: UL 508

Station Master 600: Pump-Up Controllers
Station Master 500: Pump-Down Controllers.

Ordering Information

(See example below**)

Model:	Options:
SM602CF = 2 Pump SM603CF = 3 Pump SM604CF = 4 Pump	Suffix A = Analog Output

Consult your Contegra representative, the factory, or www.Contegra.com for additional options

**** A typical model number is SM603CFA**
This includes the Station Master Pump Controller with an analog output .

Specifications are subject to change without notice.

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Engineering Specifications

This specification covers a complete and operational automatic duplex (SM602)/triplex (SM603)/ Quadraplex (SM504) pump control and alarm system responding to the _____ level as shown on the plan drawings.

The controller shall accept a single analog input signal over a user definable, field configurable range. The controller shall automatically control the operation of two (SM602)/three (SM603)/four (SM504) constant speed pumps in response to fluctuations in the process level and as determined by the customer's field-configurable setpoint adjustments.

To reduce exposure to corrosive environments and ensure the control system's reliable, long-term operation, the controller shall have a sealed, user-friendly, interface rated NEMA 4/IP 65. The interface shall be comprised of a graphical four-line by 16-charactuer liquid crystal display (LCD), and nine backlit pushbuttons [Up, Down, Left, Right, SIM (simulation), ACK (Acknowledge), '?' (HELP) and ESC (Escape)]. The controller shall contain an easily understood hierarchical menu structure. The operator interface shall contain an easily understood, informative "HOME" screen. The HOME screen shall show the present process level in double-high characters. The third line of the four-line display shall indicate the pump status including Off (O), Unavailable (U) [2-Pump or 3-Pump only], Called (C), Running (R) and Failed (F). When supplied with the optional 0-10 VDC analog output the HOME screen's fourth line shall show the controller's present analog output value in percent ranging from 0 to 100%. The analog output shall provide a configurable 0-10 VDC output over a portion of the input analog signal's range.

The controller shall automatically return to the HOME screen following a period of keypad inactivity. A further period of keypad inactivity shall cause the controller to reconfigure the LCD such that the present process level is displayed in characters that are four times the normal character height. The controller's integral LCD backlight shall go into a power saving mode following a period of keypad inactivity.

The controller shall contain a hierarchical menu structure that contains individual screens for the Lead and Lag pump(s) [i.e. Lead, Lag1, Lag2 & Lag3 pumps as appropriate] Start/Stop setpoints. Additionally, screens shall be provided for the configuration of the analog output . Adjustment shall not require tools or movable and easily misplaced/lost pins.

The controller shall contain an external alarm input (customer's alarm) and an alarm output driver. The alarm driver shall activate on customer's alarm, high level alarm, low level alarm or signal out-of-range (high or low). The controller shall contain an integral 'silence' pushbutton and shall accept an external silence input.

Upon power restoration, the controller shall enable its pump-control outputs in a time-step sequence as required to meet the demand. The controller shall provide a 1st On/1st Off (FOFO) alternation sequence with automatic failed pump replacement. The controller shall contain inputs for Pump Running, Pump Unavailable (2-pump and 3-pump only) and Pump Failure indication.

The controller shall contain integral Pump Running Time Meters (RTMs) and Pump Start Counters. Pump Unavailable and Pump Failure inputs shall cause the controller's integral FOFO alternator to advance to the next available pump.

The controller shall contain integral span, offset, and damping adjustments. The controller's scale shall be adjustable in 1/10th foot increments over a span of 0.0 to 100.0 feet.

The controller shall be powered by 24 VDC power supply. The controller shall contain a level simulation function that allows manual manipulation of the displayed process variable. While simulating, the controller shall display both the actual process level and the simulated level.

The controller shall contain a single 1024 count analog input. The analog input shall accept a nominal 0-10 VDC signal.

The complete assembly shall be designed easily mountable on the door of an enclosure by means of two 22.5 mm diameter (i.e. 7/8") mounting holes. The complete assembly shall be designed for use in UL508 Industrial Control Panels. All job connections shall be at conveniently located spring-clamp type terminals.

It is the specific intention of this functional requirement that a standard controller shall be provided with features as described herein. Additionally, this controller shall be a fully-integrated assembly. That is, the furnishing of similar functions using multiple setpoint modules, or extensive relay/ timer logic to accomplish control sequences, etc., is specifically precluded by this specification and is not acceptable. The controller shall be a Contegra STATION MASTER 600 Series Pump Controller.

(Refer to web site for specifications which may be copied and pasted into a word processor.)