



STATION CONTROLLER SC100

**MADE IN
THE U.S.A.**



UL FILE # E101681



DESCRIPTION

The SC100 controller is a low cost, simple to use simplex or duplex controller for lift station liquid level control. It operates the pumps based on the selected setup parameter values and the 4-20mA wet well level input signal. The controller has relays for two pump call outputs, and for high and low level alarms outputs. A regulated 24 VDC power supply is provided for powering the pressure transducer circuit. A four digit seven segment red LED display is provided for parameter setup and level display. Red LED's are provided for pump 1 and 2 call and for high and low level alarm indication. Alternation of the pumps is provided, and a fixed 1-2 or 2-1 sequence may also be selected through the menu. The controller can be setup to perform either pump up control (fill a tank) or pump down control (empty a tank). It also has a fixed 10 second power-up delay, and an adjustable lag pump delay to prevent the turning on of one or both of the pumps immediately after a power interruption. Zero and Span parameters are provided for field calibration of the level input for a wide variety of submersible pressure transducers. The level display is made even more flexible by the addition of a parameter to set the decimal point position, and by a parameter to adjust how fast the level display responds to changes in the level input signal, from very slow to fast. A level simulation feature is provided to test the lift station controls and pump operation.

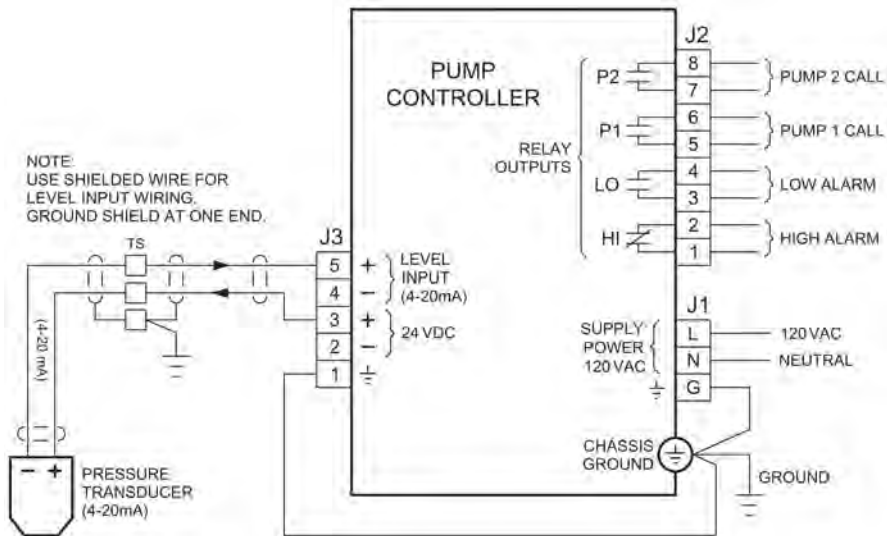
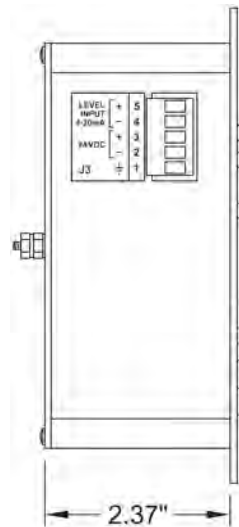
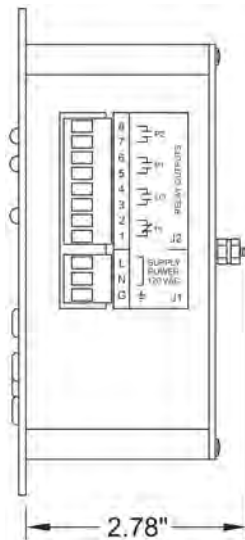
SPECIFICATIONS

Input Power:	120VAC ±10%, 7.8VA max
Power for Analog Input:	24VDC ±1V, Transient Protected
Agency Approval:	UL 508, CAN/CSA
Operating Temperature:	-20 °C to +65 °C
Storage Temperature:	-45 °C to +85 °C
Display Type:	4 Digit, 7 Segment, Red LED
Display Range:	0 - 2310 Feet (Selectable Decimal Point Position)
Indicators:	Red LED
Relay Outputs:	10A Resistive @ 120VAC 3.6A Inductive @ 120VAC
Level Analog Input:	4-20mA, 147Ω Load, Transient Protected
Color:	White with Blue Lettering
Enclosure Material:	Aluminum
Dimensions:	6.10" H x 7.70" W x 2.78" D

ORDERING INFORMATION

Part Number:
SC100

STATION CONTROLLER SC100





STATION CONTROLLER SC1000

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TYPICAL APPLICATIONS

Simplex, Duplex, Triplex Single Speed Pump Control
Level Pump Down (Empty a Tank) or Pump Up (Fill a Tank) Control

DESCRIPTION

The SC1000 is a SCADA ready pump controller designed to perform level control in a wide range of lift station applications. The SC1000 operates the pumps based on the selected setup values and the wet well level signal. The level input source is menu selectable for either a 4-20mA pressure transducer, or a 10 point conductance probe. The SC1000 alternates the pumps, performs lag pump delays, and provides high and low level alarms. The SC1000 has a variety of control options available in the setup menu that may be used to customize the controller for a specific application. The SC1000 comes standard with an analog input for level control.

ORDERING INFORMATION

Product Type SC1000
(12 Discrete Inputs Standard)

For Isolated Analog Level Input, add S to end of part number.

For Ethernet Port, add E to end of part number.

STATION CONTROLLER SC1000 STANDARD FEATURES:

- ◆ All Setup Parameter Values May be Viewed or Changed From the Front of Unit
- ◆ 120 VAC input power
- ◆ Level Input Source - Menu Selectable
 - Analog Level Input (4-20mA from Pressure Transducer)
 - Level Probe (Conductance Probe with 10 Electrodes)
- ◆ 20 VDC Power for Analog Level Input Loop
- ◆ 6 Amp Relay Outputs for: Pump Call, High Level, and Low Level Alarms
- ◆ RS-232 Serial Port, Modbus RTU Protocol
- ◆ Optional Ethernet Port for Modbus TCP and Modbus RTU Protocols
- ◆ Alternation Modes - Menu Selectable
 - Standard Alternation
 - Pump 1 Always Lead - Stays On with Other Pumps
 - Pump 1 Always Lead - Turns Off with Other Pumps On
 - Pumps 1 & 2 Alternate, and Pump 3 Always Last
 - Fixed Sequence - Pump 1 Always Leads
 - Stepped On/Off - Only One Pump Runs at a Time
- ◆ Alternation - First On - Last Off or First On - First Off
- ◆ Alternator Logic Skips Disabled Pumps
- ◆ Remembers Lead Pump Position During Power Outage
- ◆ Timed [1 minute] Level Simulation
- ◆ Plug-in Style Connectors
- ◆ 12 Discrete Inputs that can be Programmed for the Following Functions:
 - Pump Disable with HOA in OFF, or Pump Fault
 - External Lead Pump Selector Switch
 - All Pump Disable - for Connection to Phase Monitor
 - Limit Number of Pumps Called While on Emergency Power
 - Alternation by External Time Clock
 - Float Switch Backup
 - A Variety of Telemetry Functions
- ◆ Status of Discrete Inputs May Be Viewed From Front of Controller
- ◆ Flush Cycle Feature to Reduce Sludge Build-up within the Wetwell
- ◆ Flow Calculator Feature for Latest Inflow Rate, Average Daily Flow, Pump Outflow Rate
- ◆ Unused Output Relays Programmable via SCADA for Additional Control Uses
- ◆ Full manual available in pdf format at our website: www.mpelectronics.com

SPECIFICATIONS

Input Power:	120VAC ±10%, 13VA max
Agency Approvals:	UL 508, CAN/CSA
Ambient Operating Temp:	-20°C to +65°C
Level Display:	3 Digit, 7 Segment LED
Level Display Range:	0 - 999 ft. Decimal Point Position Menu Selectable
Indicators:	LED
Color:	White with Blue Lettering
Relays:	6A @250VAC
Level Analog Input:	4-20mA, 250Ω Load Transient Protected
External Dimensions:	6.9"H x 8.5" W x 4.1" D
Cut Out Dimensions:	6.0" H x 7.5" W

Power for Discrete Inputs:	24VDC Unregulated Transient Protected
Power for Analog Regulated Input:	20VDC ±1V Transient Protected
Power For Level Probe:	±8V Square-Wave, 60 Hz.



STATION CONTROLLER SC2000

MADE IN THE U.S.A.



UL FILE # E101681



TYPICAL APPLICATIONS

Simplex, Duplex, Triplex or Quadraplex Pump Control
Single Speed or Variable Speed Control

DESCRIPTION

The SC2000 is a SCADA ready pump controller designed to perform level control in a wide range of lift station applications. The SC2000 operates the pumps based on the selected setup values and the wet well level signal. The level input source is menu selectable for either a 4-20 mA pressure transducer, or a conductance probe. The SC2000 alternates the pumps, performs lag pump delays, and provides high and low level alarms. The SC2000 has a variety of control options available in the setup menu that may be used to customize the controller for a specific application. Optional I/O is available for VFD speed control and for additional telemetry inputs. The SC2000 comes standard with an analog input for level control.

ORDERING INFORMATION

SC2000 - X X

Product Type (18 Discrete Inputs Standard)

Analog Outputs

- 0 = No Analog Outputs
- 1 = 1 Analog Output
- 2 = 2 Analog Outputs
- 3 = 3 Analog Outputs
- 4 = 4 Analog Outputs

Analog Inputs

- 0 = No Aux. Analog Inputs
- 1 = 1 Aux. Analog Input
- 2 = 2 Aux. Analog Inputs
- 3 = 3 Aux. Analog Inputs
- 4 = 4 Aux. Analog Inputs

For Isolated Analog Level Input, add S to end of part number.

For Ethernet Port, add E to end of part number.

STATION CONTROLLER SC2000 STANDARD FEATURES:

- ◆ All Setup Parameter Values May be Viewed or Changed From the Front of Unit
- ◆ 120 VAC input power
- ◆ Level Input Source - Menu Selectable
 - Analog Level Input (4-20 mA from Pressure Transducer)
 - Level Probe (Conductance Probe with 10 Electrodes)
- ◆ 20 VDC Power for Analog Level Input Loop
- ◆ 6 Amp Relay Outputs for: Pump Call, High Level, and Low Level Alarms
- ◆ RS-232 Serial Port, Modbus RTU Protocol
- ◆ Optional Ethernet Port for Modbus TCP and Modbus RTU Protocols
- ◆ Alternation Modes - Menu Selectable
 - Standard Alternation
 - Pump 1 Always Lead - Stays On with Other Pumps
 - Pump 1 Always Lead - Turns Off with Other Pumps On
 - Split Alternation - Pumps 1 & 2, and Pumps 3 & 4
 - Fixed Sequence - Pump 1 Always Leads
 - Stepped On/Off - Only One Pump Runs at a Time
- ◆ Alternation - First On - Last Off or First On - First Off
- ◆ Alternator Logic Skips Disabled Pumps
- ◆ Remembers Lead Pump Position During Power Outage
- ◆ Timed [1 minute] Level Simulation
- ◆ Security Code Protected Parameter Setup
- ◆ 18 Discrete Inputs that can be Programmed for the Following Functions:
 - Pump Disable with HOA in OFF, or Pump Fault
 - External Lead Pump Selector Switch
 - All Pump Disable - for Connection to Phase Monitor
 - Limit Number of Pumps Called While on Emergency Power
 - Alternation by External Time Clock
 - Call Pump Last - for Connection to VFD/Bypass Logic
 - Float Switch Backup
 - A Variety of Telemetry Functions
- ◆ Status of Discrete Inputs May Be Viewed From Front of Controller
- ◆ Flush Cycle Feature to Reduce Sludge Build-up within the Wetwell
- ◆ Flow Calculator Feature for Latest Inflow Rate, Average Daily Flow, Pump Outflow Rate
- ◆ Unused Output Relays Programmable via SCADA for Additional Control Uses
- ◆ Plug-In Style Connectors
- ◆ Full manual available in pdf format at our website: www.mpelectronics.com

SPECIFICATIONS

Input Power: 120VAC ±10%, 13VA max Agency Approvals: UL 508, CAN/CSA Ambient Operating Temp: Without Analog Outputs: -20°C to +65°C With Analog Outputs: -20°C to +50°C Level Display: 3 Digit, 7 Segment LED Level Display Range: 0 - 999 ft. Decimal Point Position Menu Selectable Indicators: LED Color: White with Blue Lettering Relays: 6A @250VAC Analog Level Input: 4-20mA, 250Ω Load Transient Protected External Dimensions: 6.9"H x 8.5" W x 4.9" D Cut Out Dimensions: 6.0" H x 7.5" W	Power for Discrete Inputs: 24VDC Unregulated Transient Protected Power for Analog Input: 20VDC ±1V Regulated Transient Protected Analog Outputs: Isolated 4-20mA Maximum Load 600Ω Transient Protected Aux. Analog Inputs: Isolated 4-20mA 250Ω Load Transient Protected Power for Level Probe: ±8V Square-Wave, 60 Hz
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