Orenco® | *Controls & Monitoring Products*

Product Catalog

Orenco®

To Our Customers

Thank you for the opportunity to introduce you to the products we design and manufacture for a variety of controls applications. Whether you are looking for residential alarm panels or motor controls for water or wastewater systems, a building management system, or a municipal environmental monitoring system with remote telemetry, products from Orenco Controls offer many advantages.

We're very proud of our controls products. They're carefully engineered, built with name-brand components, and competitively priced. Of course, we're also proud of our pre-sales and post-sales product support. We believe it's the best in the industry. Our sales and engineering staff are ready to assist with design, project delivery, and technical support.

In addition to the Controls and Monitoring products listed in this catalog, Orenco sells fiberglass tanks, wastewater treatment systems, general onsite wastewater products, and effluent sewer components and supplies. Please call us at 1-800-348-9843 or visit www.orenco.com/controls or www.orenco.com/product_catalogs to learn more.

We appreciate your business and look forward to serving you.

Respectfully,

Jerry Snyder

Sales Manager

About Orenco Controls

Orenco Controls is a division of Orenco Systems®, Inc., a Sutherlin, Oregon-based company with about 250 employees. The controls division builds about 15,000 panels a year at our 23-acre (9.3 ha) facility in Sutherlin, Oregon.

Our panels are used in diverse applications such as water, wastewater, and industrial processes. Products range from simple alarms to custom-built control systems with PLCs, telemetry, and graphical interfaces.

We have taken the lead in developing a number of innovative and affordable wastewater controls products, including the MVP™ digital programmable controller; the VeriComm® Remote Telemetry Control Panel, with its web-based Monitoring System (for residential wastewater applications); and the TCOM™ Remote Telemetry Control Panel (for a variety of commercial and municipal applications).

Orenco Controls products are distributed through a network of approximately 150 distributors and dealers in North America, Australasia, Southwest Asia, Europe, and Africa. Panels designed and built by Orenco Controls have been installed in more than 50 countries, serving a variety of markets and applications.

How to Use This Catalog

This catalog is designed and laid out to make your control panel selection process as easy and fast as possible. Each "Product Description" section covers products for specific applications so you can find what you need fast, and popular product model codes are provided to make ordering a panel easy. If you don't see what you need in our selection of popular product offerings, the "Product Ordering Information" section provides you with the full range of standard options available for each of our standard lines of control panels, along with handy product code diagrams.

Panel Application Guide: Demand-Dose, Timed-Dose, and Recirculating Timed Dose Controls

Orenco Controls offers panels for three types of water and wastewater applications: Demand-Dose, Timed-Dose, and Recirculating Timed-Dose (Wastewater Process) Controls.

Demand-Dose: Demand-Dose Controls are intended for controlling the transportation of water or wastewater from one location to another when the liquid level in the first location reaches a predetermined level. The "ON" and "OFF" signals for the pump are provided to the control panel by liquid level sensors or float switches. The control panel powers the pump(s) up or down based on these signals. Typical applications for demand-dose pumping controls include pumping from a tank or basin to another tank or basin, or discharging to a drainfield or dispersal area.

Timed-Dose: Timed-Dose Controls are intended for transporting metered doses of water or wastewater from one location to another at set intervals. When the liquid level in the first location reaches a predetermined level, a liquid level sensor or float switch activates a timer sequence in the control panel. The timer cycles the pump(s) "OFF" and "ON" at set intervals until the liquid level drops enough to deactivate the liquid level sensor or float switch. Typical applications for timed-dose pumping controls include controlled-dosing from tanks to sand filters and discharging to drainfields or dispersal areas where small, regularly scheduled doses of effluent are required.

Recirculating Timed-Dose: Recirculating Timed-Dose Controls are intended for recirculating metered doses of water or wastewater at set intervals. The timer cycles the pump(s) "OFF" and "ON" at set intervals unless the liquid level drops enough to deactivate the liquid level sensor or float switch and activate a low-level alarm function. Typical applications for recirculating timed-dose pumping controls are recirculating sand filters and advanced treatment media filters.

Contents

p. 9

p. 11

p. 13

p. 21

p. 22

p. 24

Terms and Conditions

Warranties

Notes

p. 26

Product Selection Charts

Selection Chart: Simplex Panels

	Application			Features								Options													Page
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	Uses Motor Contactor to Power Pump	Provides Separate On & Off Float Capability	Provides Visual Float Status Indicators	Uses Single Float Type for All Functions	Totalizes Run Time and Cycle Data	Logs Pump and Alarm Activity Data	Reports Data to Centralized Website	Allows Remote Adjustment of Parameters	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Current Sensor (CS)	Disconnect Switch (DS)	Remote Alarm (RA)	Test Switch (TS)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Pump Run Light (PRL)	Power Light (PL)	Surge Arrestor (SA)	
A Series	✓						✓							✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	21
S Series	✓	✓	✓	✓	✓		✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7
MVP Simplex	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	8
VCOM Simplex	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	9
VCOM AXA			✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	9

Selection Chart: Duplex Panels

	Application			Features									Options													Page
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	Duplex Alternation with Lead and Lag Function	Uses Motor Contactor to Power Pumps	Provides Separate On & Off Float Capability	Provides Visual Float Status Indicators	Uses Single Float Type for All Functions	Totalizes Run Time and Cycle Data	Logs Pump and Alarm Activity Data	Reports Data to Centralized Website	Allows Remote Adjustment of Parameters	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Current Sensor (CS)	Disconnect Switch (DS)	Remote Alarm (RA)	Test Switch (TS)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Pump Run Light (PRL)	Power Light (PL)	Surge Arrestor (SA)	
DAX Series	✓	✓	✓	✓	✓	✓			✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10
MVP Duplex	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
VCOM Duplex	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	12

Key: ✓ Standard equipment for all panels in this series

✓ Available for specific model configurations within this series

Product Selection Charts (continued)

Selection Chart: Advanced Wastewater Treatment Panels	Applications					Features									Options — Universal						Options — A-B¹						Options — B-C²						Page
	A-B¹		B-C²																														
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	Demand-Dosing	Timed-Dosing	Downstream High-Level Disables Upstream Pump(s)	Uses Motor Contactor to Power Pumps	Provides Separate On & Off Float Capability	Provides Visual Float Status Indicators	Uses Single Float Type for All Functions	Totalizes Run Time and Cycle Data	Logs Pump and Alarm Activity Data	Reports Data to Centralized Website	Allows Remote Adjustment of Parameters	Disconnect Switch (DS)	Remote Alarm (RA)	Test Switch (TS)	Heater (HT)	Power Light (PL)	Surge Arrestor (SA)	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)	Pump Run Light (PRL)	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)	Pump Run Light (PRL)	
SSF Series	✓	✓	✓	✓	✓	✓	✓	✓			✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	13
MVP SSF		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14
VCOM AXB			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15

Key: ✓ Standard equipment on all panels in this series

✓ Available on specific model configurations within this series

¹"Upstream" or treatment pump

² "Downstream" or dispersal pump

Simplex Motor Controls

Simplex motor control panels are used to provide control, alarm, and other functions for single motors in timed- and demand-dose wastewater systems. Orenco Controls' 60-Hz simplex control panels are UL-listed and UL-C listed. Simplex control panels for 50-Hz applications are available. Custom simplex motor controls for other applications are available through Orenco Controls' custom panel shop.

S Series Simplex Control Panels

S Series simplex control panels are electromechanical panels used to control single pumps and alarm functions in onsite septic systems and effluent pumping systems. They are also used to provide pump control with alarm functions into gravity sewer systems. S Series panels include a motor contactor, which increases system life by reducing the load requirements on the float switches. Options such as analog timers and event counters are available.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breaker
- Motor-start contactor for pump circuit
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Type 4X (IP 66) rated enclosure
- Pump motors used with these panels require internal overload protection.
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)

S1RO ETMCT

Popular S Series models include ...

Panel Model	Application			Voltage		Features/Options			
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)
S1	✓			✓					
S1ETMCT	✓			✓				✓	✓
S1RO	✓			✓			✓		
S1RO ETMCT	✓			✓			✓	✓	✓
S1PT		✓		✓		✓			
S1PTRO		✓	✓	✓		✓	✓		
S2	✓			✓	✓				

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

MVP Simplex Control Panels

MVP simplex control panels are digital, programmable panels used to control single pumps and provide alarm functions in onsite septic systems and effluent pumping systems. They include easy-to-use, programmable logic units that incorporate multiple built-in timing and logic functions, including multiple timer intervals to adjust for changing flow conditions. MVP panels offer several standard functions, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one type of float switch for all functions. Dual-mode MVP simplex control panels can be configured in the field for demand-dose or timed-dose applications.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breaker
- Motor-start contactor for pump circuit
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Built-in elapsed time meter
- Built-in event counter
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)

MVP-S1DM

Popular MVP simplex models include ...

Panel Model	Application			Voltage		Features/Options						
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Surge Arrestor (SA)
MVP-S1DM	✓	✓	✓	✓			✓	✓		✓	✓	
MVP-S1DMHTSA	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
MVP-S1IRDM	✓	✓	✓	✓		✓	✓	✓		✓	✓	
MVP-S2DM	✓	✓	✓	✓	✓		✓	✓		✓	✓	

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog

VeriComm® (VCOM) Simplex Control Panels

VeriComm® (VCOM) simplex control panels are digital, programmable, remote telemetry panels used to control single pumps in residential systems and decentralized wastewater collection. All VCOM simplex control panels are compatible with the VeriComm Monitoring System, a Web-based remote monitoring system available with a monthly subscription. The VeriComm Monitoring System gives wastewater system operators and service providers the ability to remotely monitor and control the performance of an individual site over the Internet, saving money on operation and maintenance while remaining virtually invisible to the homeowner. The VCOM panel and VeriComm Monitoring System are integral components of a complete remote monitoring system and cannot be ordered separately from each other.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breaker
- Motor-start contactor for pump circuit
- Automatic/Manual (Auto/Man) spring loaded toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Communication and alarm management
- "Start-up," "Test," and "Normal" operating modes
- Data collection and logs
- Troubleshooting and diagnostic logic
- Remote telemetry
- Advanced control logic for normal operation in the event of float failure.
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)
- Wireless connection kit ordered separately (see "Bluetooth Wireless Connection Kit" in this catalog)

VCOM - S1R0

Popular VCOM simplex models include ...

Panel Model	Application			Voltage		Features/Options					
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Programmable Timer (PT)	Redundant Off (R0)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Surge Arrestor (SA)
VCOM-S1R0	✓			✓			✓		✓	✓	
VCOM-S1R0HTSA	✓			✓			✓	✓	✓	✓	✓
VCOM-S1PTR0		✓		✓		✓	✓		✓	✓	
VCOM-S2R0	✓			✓	✓		✓		✓	✓	
VCOM-S2PTR0HT		✓		✓	✓	✓	✓		✓	✓	
VCOM-AX20A1			✓	✓		✓	✓		✓	✓	

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

Duplex Motor Controls

Duplex motor control panels are used to provide control, alarm, and other functions for two motors in wastewater systems. Orenco Controls' 60-Hz duplex control panels are UL-listed and UL-C listed. Duplex panels for 50-Hz applications are available. Custom duplex motor controls for other applications are available through Orenco Controls' custom panel shop.

DAX Series Duplex Control Panels

DAX Series duplex control panels are electromechanical panels used to control two alternating pumps and provide alarm functions in onsite septic systems, drainfields, effluent sewers (aka STEP sewers), and pressure sewers that require the use of two alternating pumps. A built-in alternating relay switches the "lead" and "lag" positions each pump cycle, and allows one pump to be manually selected and locked in for lead operation. DAX Series panels include motor contactors, which increase system life by reducing the load requirements on the float switches.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactors for pump circuits
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)

DAX1PTRO ETMCT

Popular DAX Series models include ...

Panel Model	Application			Voltage		Features/Options				
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)
DAX1	✓			✓						
DAX1ETMCT	✓			✓					✓	✓
DAX1RO	✓			✓				✓		
DAX1PTRO		✓	✓	✓			✓	✓		
DAX1IRROETMCT	✓			✓		✓		✓	✓	✓
DAX2	✓			✓	✓					

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

MVP Duplex Control Panels

MVP duplex control panels are digital, programmable panels used to control two alternating pumps and provide alarm functions in onsite septic systems, drainfields, effluent sewers (aka STEP sewers), and pressure sewers that require the use of two alternating pumps. Built-in alternating logic switches the "lead" and "lag" positions each pump cycle, and allows one pump to be manually selected and locked in for lead operation. MVP duplex panels offer several standard functions, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one type of float switch for all functions. Dual-mode MVP duplex control panels can be configured in the field for demand-dose or timed-dose applications.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactors for pump circuits
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Built-in elapsed time meter
- Built-in event counter
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (See "Float Switches" in this catalog)

MVP-DAX1DM

Popular MVP duplex models include ...

Panel Model	Application			Voltage		Features/Options							
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Intrinsically Safe (IR)	Programmable Timer (PT)	Redundant Off (RO)	Current Sensor (CS)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Surge Arrestor (SA)
MVP-DAX1DM	✓	✓	✓	✓			✓	✓			✓	✓	
MVP-DAX1DMHTSA	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓
MVP-DAX1DMCS	✓	✓	✓	✓			✓	✓	✓		✓	✓	
MVP-DAX2DM	✓	✓	✓	✓	✓		✓	✓			✓	✓	
MVP-DAX1IRDM	✓	✓	✓	✓		✓	✓	✓			✓	✓	

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

VeriComm® (VCOM)
Duplex Control Panels

VeriComm® (VCOM) duplex control panels are digital, programmable, remote telemetry panels used to control two alternating pumps and provide alarm functions in onsite septic systems, drainfields, effluent sewers (aka STEP sewers), and pressure sewers that require the use of two alternating pumps. Built-in alternating logic switches the "lead" and "lag" positions each pump cycle. All VCOM duplex control panels are compatible with the VeriComm Monitoring System, a Web-based remote monitoring system available with a monthly subscription. The VeriComm Monitoring System gives wastewater system operators and service providers the ability to remotely monitor and control the performance of an individual site over the Internet, saving money on O&M while remaining virtually invisible to the homeowner. VCOM panels and VeriComm Monitoring Systems are integral components of complete remote monitoring systems and cannot be ordered separately from each other.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactor for pump circuits
- Automatic/Manual (Auto/Man) spring loaded toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Communication and alarm management
- "Start-up," "Test," and "Normal" operating modes
- Data collection and logs
- Troubleshooting and diagnostic logic
- Remote telemetry
- Advanced control logic for normal operation in the event of float failure
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)
- Wireless connection kit ordered separately (see "Bluetooth Wireless Connection Kit" in this catalog)

VCOM-DAX1R0

Popular VCOM duplex models include ...

Panel Model	Application			Voltage		Features/Options						
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Programmable Timer (PT)	Redundant Off (RO)	Current Sensor (CS)	Heater (HT)	Elapsed Time Meter (ETM)	Event Counter (CT)	Surge Arrestor (SA)
VCOM-DAX1RO	✓			✓			✓			✓	✓	
VCOM-DAX1PTRO		✓	✓	✓		✓	✓	✓		✓	✓	
VCOM-DAX1ROHTSA	✓			✓			✓		✓	✓	✓	✓
VCOM-DAX2RO	✓			✓	✓		✓			✓	✓	

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

Advanced Wastewater Treatment Controls

Advanced wastewater treatment control panels are used to provide control, alarm, and other functions for pumps used in wastewater treatment and dispersal applications. All control a treatment pump that transports from an "A" point to a "B" point; most also control a dispersal pump that transports from a "B" point to a "C" point. Orenco Controls' 60-Hz control panels for advanced wastewater treatment are UL-listed and UL-C listed. Control panels for advanced wastewater treatment are also available for 50-Hz applications. Custom advanced motor controls for other applications are available through Orenco Controls' custom panel shop.

SSF Series Control Panels

Orenco's SSF Series control panels are electro-mechanical panels used to control two pumps when pumping from point "A" (first pump) to point "B," and then from point "B" (second pump) to point "C," and to provide alarm functions in sand filters and other systems where controls for motors in series are required. Interlocked controls prevent the first (upstream) pump from running if a high level alarm condition occurs in the downstream pump.

SSF Series panels include motor contactors, which increase system life by reducing the load requirements on the float switches.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactors for pump circuits
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)

SSF1 PTRO/

Popular SSF models include ...

| Panel Model | Applications | | | | Voltage | | Features/Options | | | | |
| | A-B[1] | | | B-C[2] | | | A-B[1] | | | | B-C[2] |
	Demand-Dosing	Timed-Dosing	Recirculating Timed-Dosing	Demand-Dosing	120 VAC Pump Circuit(s)	240 VAC Pump Circuit(s)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)	Elapsed Time Meter (ETM)
SSF1	✓			✓	✓						
SSF1PTETMCT/		✓		✓	✓		✓		✓	✓	
SSF1PTRO/		✓	✓	✓	✓		✓	✓			
SSF1PTROETM/ETM		✓	✓	✓	✓		✓	✓	✓		✓
SSF2PTRO/		✓	✓	✓	✓	✓	✓	✓			

✓ = Equipped in this panel
[1] "Upstream" or treatment pump
[2] "Downstream" or dispersal pump

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

MVP SSF Control Panels

Orenco's MVP SSF control panels are digital, programmable panels used to control two pumps when pumping from point "A" (first pump) to point "B," and then from point "B" (second pump) to point "C," and to provide alarm functions in systems where controls for motors in series are required. Interlocked controls prevent the first (upstream) pump from running if a high level alarm condition occurs in the down-stream pump. They include easy-to-use, programmable logic units that incorporate multiple timing and logic functions, including multiple timer intervals to adjust for changing flow conditions. MVP SSF panels offer several standard functions, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one type of float switch for all functions. In dual-mode MVP SSF control panels, the downstream pump can be configured in the field for demand-dose or timed-dose applications.

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactors for pump circuits
- Automatic/Off/Manual (Auto/Off/Man) toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Built-in elapsed time meter
- Built-in event counter
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)

MVP-SSF

Popular MVP SSF models include ...

Panel Model	Applications				Voltage		Features/Options									
	A-B[1]		B-C[2]				Universal		A-B[1]				B-C[2]			
	Timed-Dosing	Recirculating Timed-Dosing	Demand-Dosing	Timed-Dosing	120 VAC Pump Circuits	240 VAC Pump Circuits	Heater (HT)	Surge Arrestor (SA)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)
MVP-SSF1PTRO/DM	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓		✓	✓
MVP-SSF1SAPTRO/DM	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓
MVP-SSF1HTSAPTRO/DM	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓
MVP-SSF1PTRO/DMRO	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓
MVP-SSF2PTRO/DM	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓		✓	✓

✓ = Equipped in this panel

[1] "Upstream" or treatment pump

[2] "Downstream" or dispersal pump

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

VeriComm® (VCOM) AXB
AdvanTex® Control Panels

VeriComm® AXB control panels are digital, programmable, remote telemetry panels used to control a recirculation pump and a discharge pump, as well as provide alarm functions in AdvanTex® Treatment Systems. Interlocked controls prevent the recirculation pump from running if there is a high level alarm on the discharge side. All VCOM AXB control panels are compatible with the VeriComm Monitoring System, a Web-based remote monitoring system available with a monthly subscription. The VeriComm Monitoring System gives wastewater system operators and service providers the ability to remotely monitor and control the performance of an individual site over the Internet, saving money on operation and maintenance while remaining virtually invisible to the homeowner. It also allows remote operators to change system parameters, including timer settings, from the web interface. These panels are only sold as part of an AdvanTex Treatment System or as a replacement for a VCOM AXB panel.

VCOM-AX20B1

- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breakers
- Motor-start contactor for pump circuits
- Automatic/Manual (Auto/Man) spring loaded toggle switch
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Communication and alarm management
- "Start-up," "Test," and "Normal" operating modes
- Data collection and logs
- Troubleshooting and diagnostic logic
- Remote telemetry
- Advanced control logic for normal operation in the event of float failure
- Type 4X (IP 66) rated enclosure
- Mechanical or mercury float switches ordered separately (see "Float Switches" in this catalog)
- Wireless connection kit ordered separately (see "Bluetooth Wireless Connection Kit" in this catalog)

Popular VCOM AXB models include ...

Panel Model	Applications			Voltage				Features/Options							
	A-B[1]	B-C[2]				Universal		A-B[1]				B-C[2]			
	Recirculating Timed-Dosing	Demand-Dosing	Timed-Dosing	120 VAC Pump Circuit(s)	240 VAC Pump Circuit(s)	Heater (HT)	Surge Arrestor (SA)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)	Programmable Timer (PT)	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)
VCOM-AX20B1	✓	✓		✓				✓	✓	✓	✓			✓	✓
VCOM-AX20B1HT	✓	✓		✓		✓		✓	✓	✓	✓			✓	✓
VCOM-AX20B1HTSA	✓	✓		✓		✓	✓	✓	✓	✓	✓			✓	✓
VCOM-AX20B1/PT	✓		✓	✓				✓	✓	✓	✓	✓	✓	✓	✓
VCOM-AX20B2	✓	✓		✓	✓			✓	✓	✓	✓			✓	✓

✓ = Equipped in this panel

[1] "Upstream" or treatment pump

[2] "Downstream" or dispersal pump

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

Custom Controls

Orenco Controls' manufacturing facilities can produce UL-listed and UL-C listed telemetry and custom control panels, ranging from variations of our standard models to highly customized designs, to meet your specifications for a wide variety of applications. All of our standard options are available in custom panels. In addition, custom variations of standard panels include the addition of larger horsepower pumps, three-phase power, seal failure and over-temperature sensors, over- and under-current sensors, remote alarm indicators, extra alarm lights or alarm circuits, phone dialers, and heaters. We also install customer-supplied parts. 50-Hz custom control panels are available. For information on getting a quote for a custom panel, see the "Custom Panel Quote Request" in the "Product Ordering Information" section of this catalog.

Modified Stock Panels

Orenco Controls' modified stock panels are standard-type panels with custom features not found in our list of standard options. They can be configured in multiple ways for a wide range of applications, but they do not offer the extreme flexibility of our Built-to-Spec custom panels.

Electromechanical Custom Control Panels

Electromechanical custom panels are used to control one or more pumps and provide alarm functions in onsite septic systems, drainfields, effluent sewers (aka STEP sewers), and pressure sewers. Electromechanical custom panels include motor contactors, which increase system life by reducing the load requirements on the float switches. Options such as analog timers and event counters are available with electromechanical custom panels, as well as ...

- 1- and 3-phase motor power
- Seal failure sensors
- Over-temperature sensors
- Over- and under-current sensors
- Additional alarm lights or alarm circuits
- Remote alarm indicators

For the full range of options available for electromechanical custom panels, see the "Custom Panel Quote Request" page in the "Product Ordering Information" section of this catalog.

Electromechanical Custom Control Panel

MVP Custom Control Panels

MVP custom control panels are digital, programmable panels typically used to control one or more pumps in onsite septic systems and effluent pumping systems. They include easy-to-use, programmable logic units with multiple timing and logic functions, including multiple timer intervals to adjust for changing flow conditions. MVP custom control panels offer several standard functions, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one type of float switch for all functions. In addition to the full line of standard options, custom options are available, such as ...

- 1- and 3-phase motor power
- Seal failure sensors
- Over-temperature sensors
- Over- and under-current sensors
- Additional alarm lights or alarm circuits
- Built-in elapsed time meter
- Built-in event counter
- Remote alarm indicators

For the full range of options available, see the "Custom Panel Quote Request" page in the "Product Ordering Information" section of this catalog.

MVP-Custom Control Panel

OLS Custom VFD Control Panels

OLS custom VFD control panels by Orenco Controls contain integrated variable-frequency drives (VFDs), which optimize motor operation and can greatly reduce energy usage in pumping systems. VFDs also prolong pump and system life by reducing hard starts and water hammer. OLS control panels use a single, user-friendly, easy-to-understand human-machine interface (HMI) to configure one or more VFDs. A wide range of control configuration options are available with OLS series panels. Each OLS control panel (from simple control panels to complex multi-drive panels with programmable logic controllers) can be designed, built, and pre-programmed specifically for a site and application, making the panel virtually "plug and play." And the ability to adjust settings simply and easily streamlines operation for maintenance staff. In addition to our full line of standard options, custom options are available, such as ...

- Seal failure sensors
- Over-temperature sensors
- Over- and under-current sensors
- Additional alarm lights or alarm circuits
- Remote alarm indicators

For the full range of options available, see the "Custom Panel Quote Request" page in the "Product Ordering Information" section of this catalog.

OLS Series VFD Panel

TeleComm (TCOM)
Custom Control Panels

TeleComm (TCOM) custom control panels by Orenco Controls are cost-effective, digital, integrated telemetry panels that include controls for multiple applications, along with data logging, remote access, and control, all in real time. TCOM custom control panels require a dedicated phone line or data line to connect to a computer equipped with TCOM Viewer™ — or TCOM Viewer with optional graphical view — and a modem. When alarm conditions occur, notifications are sent to pagers. Panels can be accessed directly at the site with our Bluetooth® wireless connection kit. Because they provide many of the benefits of costly SCADA systems at a fraction of the cost, TCOM custom control panels are ideal for stand-alone monitoring and control systems. In addition to our full line of standard options, custom options are available, such as ...

- 1- and 3-phase motor power
- Seal failure sensors
- Over-temperature sensors
- Over- and under-current sensors
- Additional alarm lights or alarm circuits
- Remote alarm indicators
- Flow meters
- Wireless connection kit ordered separately (see "Bluetooth Wireless Connection Kit" in this catalog)

For the full range of options available, see the "Custom Panel Quote Request" page in the "Product Ordering Information" section of this catalog.

TCOM Panel with Touch Screen

PLC Custom Control Panels

PLC custom control panels are digital, programmable panels typically used to control one or more pumps in onsite septic systems and effluent pumping systems, when system requirements are greater than an MVP custom control panel can handle. PLC custom control panels have more memory and a larger number of available inputs and outputs than our MVP custom panels. Orenco Controls' PLC custom control panels offer several standard functions, including elapsed time meters, counters, digital indication of float switch status, different alarm/light signals for varying alarm conditions, and the ability to use one type of float switch for all functions. In addition to our full line of standard options, custom options are available, such as ...

- Multiple options for operator interface
- 1- and 3-phase motor power
- Seal failure sensors
- Over-temperature sensors
- Over- and under-current sensors
- Additional alarm lights or alarm circuits
- Remote alarm indicators

For the full range of options available, see the "Custom Panel Quote Request" page in the "Product Ordering Information" section of this catalog.

PLC Custom Control Panel with Programmable Logic Unit

Built-to-Spec Custom Control Panels

Orenco Controls' Built-to-Spec custom control panels are uniquely designed and configured for a customer's applications, and can incorporate any number of features needed to make the panel match the customer's specifications exactly. Built-to-Spec panels can be built from customer-supplied schematics and blueprints, or Orenco Controls' engineers and technicians can work with a customer to design and build panels with specified components to meet specific needs.

Built-to-Spec Custom Control Panel

Bluetooth® Wireless Connection Kit

Bluetooth® Wireless Connection Kit

The Bluetooth® wireless connection kit from Orenco Controls lets operators use a laptop computer to remotely monitor and control a VeriComm® (VCOM) or custom TeleComm™ (TCOM) control panel. Operators are no longer tied to the panel with wires, nor do they have to use the manual switch to control motor operation. This means operators may not need a second person to assist with maintenance and troubleshooting. Features and benefits of the Bluetooth® wireless connection kit include ...

- Hardware compatible with VCOM and TCOM panels
- VCOM panel compatible — BT-VCOM™ software available for Macintosh®, Windows®, and Android® operating systems, as well as Windows Mobile compatibility (up to rev. 6X)
- TCOM panel compatible — works with TCOM Viewer software (PC only)
- Easy installation in the field
- 30-ft (9-m) wireless operating radius
- Real-time adjustments to system operating parameters, on-site
- Input and output monitoring and control, on-site
- Data review, on-site
- Detailed history log access, on-site

Bluetooth® Wireless Connection Kit

Alarm Panels

Alarm panels provide "stand alone" visible and audible alarm notifications of undesirable liquid levels inside of tanks. They are used to indicate a high liquid-level condition in a system, typically one that does not use a discharge pump. Inputs are typically provided by a single float switch. Alarm panels are also used as remote alarms in water, wastewater, and other systems. Standard voltages for alarm panels are 9-VDC or 120-VAC; 240-VAC, 50-Hz alarm panels are also available. Box alarms are used exclusively as remote alarms in indoor settings and are available only in 120-VAC configuration.

120-VAC Alarm Panels

A Series Simplex Alarm Panels

A Series simplex alarm panels are used to control alarm functions and a pump motor in simplex pumping systems. They are intended as a low-cost option for pump controls into gravity or pressurized drainfields or for Effluent Sewers (aka STEP sewers or Septic Tank Effluent Pumping Systems), especially where cost is the critical factor. The primary advantage of an A Series panel over a liquid level alarm panel is the ability to manually pump liquid out of the tank in the event of a high-level alarm condition.

- Low-cost
- 120-VAC controls circuit breaker
- 120- or 120/240-VAC pump circuit breaker
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm silence reset
- Type 4X (IP 66) rated enclosure
- Motor-rated pump on/off float switch ordered separately (see "Float Switches" in this catalog)
- Limited optional features available

A1R0

Popular A Series models include ...

Panel Model	Application	Voltage		Features/Options		
	Demand-Dosing	120 VAC Pump Circuit	240 VAC Pump Circuit	Redundant Off (RO)	Elapsed Time Meter (ETM)	Event Counter (CT)
A1	✓	✓				
A1CT	✓	✓				✓
A1ETMCT	✓	✓			✓	✓
A1RO	✓	✓		✓		
A1ROCT	✓	✓		✓		✓
A2	✓		✓			

✓ = Equipped in this panel

For the full range of standard options, see the "Product Ordering Information" section in this catalog.

120-VAC Alarm Panels

AMAHW Liquid Level Alarm Panel

The AMAHW liquid level alarm panel is a 120-VAC, stand-alone alarm panel with an automatic alarm reset function. It has a watertight enclosure rated for indoor or outdoor use. The AMAHW can be used as a remote alarm panel when supplied with a 120-VAC signal from a primary control panel.

- 120 VAC
- 7⁄8-in (22-mm) red visible alarm
- 95 dB audible alarm
- Automatic alarm reset
- Type 4X (IP 66) rated enclosure
- Indoor or outdoor use
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AM-LAHW Liquid Level Alarm Panel

The AM-LAHW liquid level alarm panel is a 120-VAC, stand-alone alarm panel with a two-position toggle switch for silencing the audible alarm during alarm conditions. It has a watertight enclosure rated for indoor or outdoor use. The AM-LAHW can be used as a remote alarm panel when supplied with a 120-VAC signal from a primary control panel.

- 120 VAC
- 7⁄8-in (22-mm) red alarm light
- 95 dB audible alarm
- "Auto/Silence" 2-position booted toggle switch
- Type 4X (IP 66) rated enclosure
- Indoor or outdoor use
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AM-SGBA Single-Gang Alarm Box

The AM-SGBA single-gang alarm box is an in-wall remote alarm, designed to fit into a single-gang outlet box inside of a building.

- 120 VAC
- 7⁄8-in (22-mm) red alarm light
- 82 dB audible alarm
- Manual alarm reset
- Indoor use only
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AMAHW

AM-LAHW

AM-SGBA

9-VDC Alarm Panels

AMSENTI Liquid Level Alarm Panel

The AMSENTI Sentinel I is a 9-VDC alarm panel with an AC adapter that plugs into a common 120-VAC electrical outlet.

- 9 VDC with AC adapter
- Red LED alarm light
- 85 db audible alarm
- "Test/Silence/Auto" toggle switch
- Indoor use only
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AMSENTII Liquid Level Alarm Panel

The AMSENTII Sentinel II is a 9-VDC battery-powered alarm panel.

- 9 VDC (battery included)
- Red LED alarm light
- 85 db audible alarm
- "Test/Silence/Auto" toggle switch
- Indoor use only
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AMSENTII-W Liquid Level Alarm Panel

The AMSENTII-W Sentinel II is a 9-VDC battery-powered alarm panel with a watertight enclosure rated for indoor or outdoor use.

- 9 VDC (battery included)
- Red LED alarm light
- 80 db audible alarm
- "Test/Silence/Auto" toggle switch
- Type 4X (IP 66) rated enclosure
- Indoor or outdoor use
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

Sentinel Liquid Level Alarm

Digital Dose Counters

Digital dose counters accurately record and store dosing events in water, wastewater, and irrigation systems that operate without electrical dosing pumps. Inputs to the dose counter are typically provided by a signal-rated float switch. Digital dose counters are ideal for remote locations where electrical power is unavailable or for systems that use dosing siphons instead of pumps to discharge liquid.

AMDDC Digital Dose Counter

The AMDDC digital dose counter accurately records and stores dosing events, typically in systems where dosing siphons are used.

- Suitable for use with any dry contact signal
- Type 4X (IP 66) rated enclosure
- Rain-tight enclosure with viewing window
- Battery-powered (3.2-VDC long-life lithium battery included)
- Signal-rated float switch ordered separately (see "Float Switches" in this catalog)

AMDDC Digital Dose Counter

AMSSI Siphon Sitter I Kit

The AMSSI Siphon Sitter I Kit uses a signal float switch installed inside of a dosing siphon to record dosing events. The AMSSI Siphon Sitter I Kit includes ...

- AMDDC digital dose counter (3.2-VDC long-life lithium battery included)
- Signal-rated float switch
- Float switch collar

AMSSII Siphon Sitter II Kit

The AMSSII Siphon Sitter II Kit is an in-drainfield monitor used to record the number of times a drainfield is dosed. The signal float is contained in a baffled cannister. For alternating dual-siphon systems, one kit is needed for each siphon. The AMSSII Siphon Sitter II Kit includes ...

- AMDDC digital dose counter (3.2-VDC long-life lithium battery included)
- Signal-rated float switch
- Baffled cannister

AMSII Siphon Sitter I Kit

AMSII Siphon Sitter II Kit

Float Switches and Assemblies

Float switches from Orenco Controls are used to signal liquid level positions for alarm and pump control applications. Float switch housings are impact-resistant, noncorrosive PVC plastic for use in liquids up to 140° F (60° C). Float switch cords are flexible, two-conductor SJOW with a water-resistant neoprene coating. Float switch assemblies can be mounted in pump vaults, effluent screens, pump basins, and risers. All models are UL listed and CSA certified for use in water or sewage. For information on ordering float switch assemblies that are designed to work with specific models of Orenco Controls' standard control panels, see "Float Switch Assemblies" in the "Product Ordering Information" section of this catalog.

Float Switch Chart

Model	Rating	Type	Normal State	Instrisically safe	hp (kW)	AC Voltage	Amps	Tether Length in. (mm)	Drawdown in. (mm)
P*	Signal	Mechanical	Open	●				2.00 (50)	2.00 (50)
N*	Signal	Mechanical	Closed	●				2.00 (50)	2.00 (50)
B*	Motor	Mechanical	Open		½ (0.37)	120	13	2.00-4.00 (50.9-101.6)	4.00-4.75 (101.6-120.7)
					1 (0.75)	240	13		
C	Motor	Mechanical	Open		½ (0.37)	120	13	2.00-6.00 (50.9-152.4)	5.50-9.50 (139.7-241.3)
					2 (1.49)	240	15		
G	Motor	Mercury	Open	●	¾ (0.56)	120	15	2.00-4.00 (50-100)	4.50-5.50 (114-140)
					2 (1.49)	240	15		

Recommended float.

Signal-Rated <u>Mechanical</u> (Non-Mercury) Float Switches

Orenco® Signal-Rated Non-Mercury Float Switches are used with pump control panels and alarms in areas where components containing mercury are prohibited. They're intended for low-amperage signals and aren't capable of carrying the current necessary to start or operate a pump. They have a "drawdown" value — the difference in liquid level between the switch's activation and deactivation points.

"P" Model

- Normally-open default state (contact is open when float switch is hanging)
- Approved for intrinsically safe relays (very low amperage)
- Suitable for Orenco MVP and VCOM panels
- 2-inch (76-mm) drawdown
- Super Vu-Tron® cords: flexible 2-conductor (UL, CSA) SJOOW

"N" Model

- Normally closed default state (contact is open when float switch is floating)
- Approved for intrinsically safe relays (very low amperage)
- Suitable for electromechanical panels with "RO" option
- 2-inch (76-mm) drawdown
- Super Vu-Tron® cords: flexible 2-conductor (UL, CSA) SJOOW

"P" Model Float Switch

Motor-Rated <u>Mechanical</u> (Non-Mercury) Float Switches, "B" Model

"B" model float switches are used with pump control panels and alarms, as well as to carry starting and operating current for a pump. They have a "drawdown" value — the difference in liquid level between a float switch's activation and deactivation points. Drawdown can be altered by adjusting the tether length of the float switch cord.

- Normally-open default state (contact is open when float switch is hanging)
- Ideal for areas where components containing mercury are prohibited
- ½-hp (0.37 kW), 120-VAC switch power or 1-hp (0.75 kW), 240-VAC switch power
- 13 Amps (120-VAC and 240-VAC switches)
- 4.00-inch to 4.75-inch drawdown (100-mm to 120-mm)

"B" Model Float Switch

Motor-Rated Mechanical Floats, "C" Model

"C" model float switches are used with pump control panels and alarms, as well as to carry starting and operating current for a pump. They have a "drawdown" value — the difference in liquid level between a float switch's activation and deactivation points. Drawdown can be altered by adjusting the tether length of the float switch cord.

- Normally-open default state (contact is open when float switch is hanging)
- Ideal for areas where components containing mercury are prohibited
- ½-hp (0.37 kW), 120-VAC switch power or 2-hp (1.49 kW), 240-VAC switch power
- 13 Amps (120-VAC switch)
- 15 Amps (240-VAC switches)
- 5.50-inch to 9.50-inch drawdown (140-mm to 241-mm)

"C" Model Float Switch

Motor-Rated <u>Mercury</u> Floats, "G" Model

"G" model float switches are used with pump control panels and alarms, as well as to carry starting and operating current for a pump. They have a "drawdown" value — the difference in liquid level between a float switch's activation and deactivation points. Drawdown can be altered by adjusting the tether length of the float switch cord.

- Normally-open default state (contact is open when float switch is hanging)
- Approved for intrinsically safe relays (very low amperage)
- ¾-hp (0.56 kW), 120-VAC switch power or 2-hp (1.49 kW), 240-VAC switch power
- 15 Amps (120-VAC and 240-VAC switches)
- 4.50 to 5.50-inch drawdown (120-mm to 140-mm)
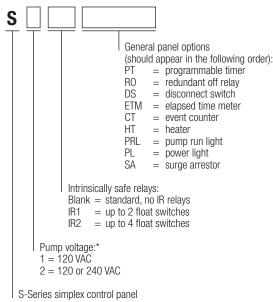
"G" Model Float Switch

Product Ordering Information

S Series Simplex Control Panels

A product code diagram and a complete list that describes standard options available for S Series Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

S ☐ ☐ ☐☐☐

General panel options
(should appear in the following order):
PT = programmable timer
RO = redundant off relay
DS = disconnect switch
ETM = elapsed time meter
CT = event counter
HT = heater
PRL = pump run light
PL = power light
SA = surge arrestor

Intrinsically safe relays:
Blank = standard, no IR relays
IR1 = up to 2 float switches
IR2 = up to 4 float switches

Pump voltage:*
1 = 120 VAC
2 = 120 or 240 VAC

S-Series simplex control panel

* All controls circuits require 120 VAC power

Product Code Options, S Series Simplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
PT	Programmable timer	Repeat cycle from 0.05 seconds to 30 hours; separate variable controls for OFF & ON time periods
RO	Redundant off relay	DIN rail mount; provides a secondary off; sounds alarm upon low level condition
ETM	Elapsed time meter	7-digit, non-resettable; limit of 99,999 hours; accurate to 0.01 hours
CT	Event counter	6-digit, non-resettable
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
PRL	Pump run light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
TS	Test Switch	Momentary switch for alarm testing

MVP Simplex Control Panels

A product code diagram and a complete list that describes standard options available for MVP Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

MVP - S ☐ ☐ **DM** ☐

Standard options (list in order):
HT = heater
SA = surge arrestor
PRL = pump run light
PL = power light

Dual-mode (timed- and demand-dose)

Intrinsically safe relays (requires larger panel):
Blank = standard, no IR relays
IR = intrinsically safe relays

Pump voltage:
1 = 120 VAC
2 = 120 or 240 VAC

Simplex motor control

MVP control panel
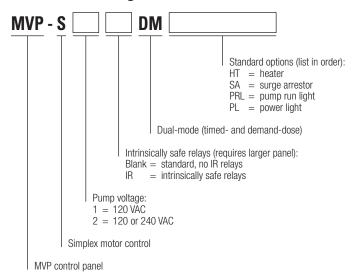
Product Code Options, MVP Simplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge Arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump Run Lights	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power Light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

VeriComm® Simplex Control Panels

A product code diagram and a complete list that describes standard options available for VeriComm Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

VCOM-S ☐ ☐ **RO** ☐

Standard options (list in order):
HT = heater
SA = surge arrestor
PRL = pump run light
PL = power light

Redundant off

Programmable timer:
Blank = no programmable timer feature
PT = programmable timer

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

Simplex motor control

VeriComm® control panel

Product Code Options, VCOM Series Simplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
PT	Programmable timer	Repeat cycle; separate variable controls for OFF & ON time periods
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump run light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

VeriComm® AXA Simplex Control Panels

A product code diagram and a complete list that describes standard options available for VeriComm AXA Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

VCOM-AX20A ☐ ☐

Standard options (list in order):
HT   = heater
SA   = surge arrestor
PRL = pump run light
PL   = power light

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

AXA Simplex motor control

VeriComm® control panel

Product Code Options, VCOM AXA Simplex Control Panels
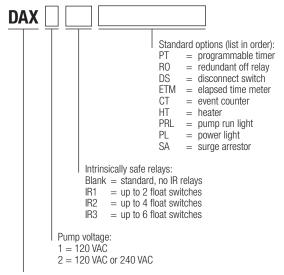
Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump run light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

DAX Series Duplex Control Panels

A product code diagram and a complete list that describes standard options available for DAX Series Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.
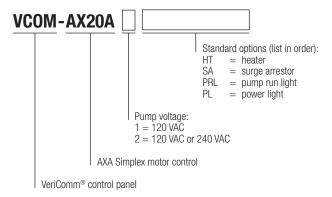
Product Code Diagram

DAX ☐ ☐ ☐

Standard options (list in order):
PT = programmable timer
RO = redundant off relay
DS = disconnect switch
ETM = elapsed time meter
CT = event counter
HT = heater
PRL = pump run light
PL = power light
SA = surge arrestor

Intrinsically safe relays:
Blank = standard, no IR relays
IR1 = up to 2 float switches
IR2 = up to 4 float switches
IR3 = up to 6 float switches

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

Product Code Options, DAX Series Duplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
PT	Programmable timer	Repeat cycle; separate variable controls for OFF & ON time periods
RO	Redundant off	Provides a secondary off; sounds alarm upon low-level condition
ETM	Elapsed time meter	7-digit, non-resettable; limit of 99,999 hours; accurate to 0.01 hours
CT	Event counter	6-digit, non-resettable
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump run light	⁷⁄₈-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power light	⁷⁄₈-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

MVP Duplex Control Panels

A product code diagram and a complete list that describes standard options available for MVP Duplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

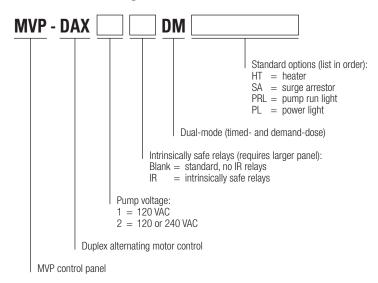MVP - DAX ☐ ☐ DM ☐

Standard options (list in order):
HT = heater
SA = surge arrestor
PRL = pump run light
PL = power light

Dual-mode (timed- and demand-dose)

Intrinsically safe relays (requires larger panel):
Blank = standard, no IR relays
IR = intrinsically safe relays

Pump voltage:
1 = 120 VAC
2 = 120 or 240 VAC

Duplex alternating motor control

MVP control panel

Product Code Options, MVP Duplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge Arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump Run Lights	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power Light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

VeriComm® DAX Duplex Control Panels

A product code diagram and a complete list that describes standard options available for VeriComm DAX Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

VCOM-DAX ☐ ☐ **RO** ☐

Standard options (list in order):
HT = heater
SA = surge arrestor
PRL = pump run light
PL = power light

Redundant off

Programmable timer:
Blank = no programmable timer feature
PT = programmable timer

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

Duplex motor control

VeriComm® control panel

Product Code Options, VeriComm® DAX Duplex Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
PT	Programmable timer	Repeat cycle from 0.05 seconds to 30 hours; separate variable controls for OFF & ON time periods
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
PRL	Pump run light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

SSF Series Control Panels

A product code diagram and a complete list that describes standard options available for SSF Series Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

SSF ☐ ☐ ☐ **/** ☐

Standard options, sand filter (point "B") pump (list in order):
IR = intrinsically safe relays
PT = programmable timer
RO = redundant off relay
ETM = elapsed time meter
CT = event counter
PRL = pump run light

Standard options, sand filter (point "A") pump (list in order):
IR = intrinsically safe relays
PT = programmable timer
RO = redundant off relay
ETM = elapsed time meter
CT = event counter
PRL = pump run light

Shared options:
Blank = no shared options
HT = heater
PL = power light
SA = surge arrestor

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

SSF serial control panel

Product Code Options, SSF Series Control Panels

Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
PL	Power light	7/8-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
PT	Programmable timer	Repeat cycle from 0.05 seconds to 30 hours; separate variable controls for OFF & ON time periods
RO	Redundant off relay	DIN rail mount; provides a secondary off; sounds alarm upon low-level condition
ETM	Elapsed time meter	7-digit, non-resettable; limit of 99,999 hours; accurate to 0.01 hours
CT	Event counter	6-digit, non-resettable
PRL	Pump run light	7/8-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

MVP SSF Control Panels

A product code diagram and a complete list that describes standard options available for MVP SSF Series Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

MVP - SSF ☐☐ DM ☐☐☐☐☐☐☐☐ / ☐☐☐☐☐☐☐

Standard options, discharge pump (list in order):
CS = current sensor
DS = disconnect switch
RA = remote alarm (dry contact)
TS = test switch
HT = heater
PRL = pump run light
PL = power light
SA = surge arrestor

Standard options, recirculation pump (list in order):
CS = current sensor
DS = disconnect switch
RA = remote alarm (dry contact)
TS = test switch
HT = heater
PRL = pump run light
PL = power light
SA = surge arrestor

Dual-mode (timed- and demand dose)

Intrinsically safe relays:
Blank = standard, no IR relays
IR1 = up to 2 float switches
IR2 = up to 4 float switches

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

Product Code Options, MVP SSF Series Control Panels
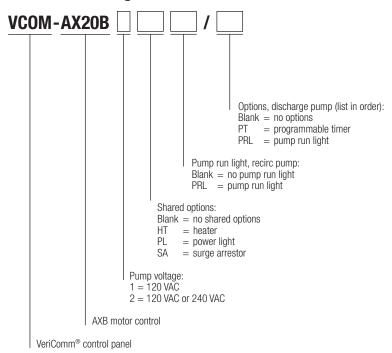
Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
IR	Intrinsically safe control relays	Listed per UL 698A, for Class 1 Div. 1, groups A, B, C, D hazardous locations (requires larger enclosure)
RO	Redundant off relay	DIN rail mount; provides a secondary off; sounds alarm upon low level condition
PRL	Pump run lights	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

VeriComm® AXB Control Panels

A product code diagram and a complete list that describes standard options available for VeriComm AXB Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

VCOM-AX20B ☐ ☐ ☐ **/** ☐

Options, discharge pump (list in order):
Blank = no options
PT = programmable timer
PRL = pump run light

Pump run light, recirc pump:
Blank = no pump run light
PRL = pump run light

Shared options:
Blank = no shared options
HT = heater
PL = power light
SA = surge arrestor

Pump voltage:
1 = 120 VAC
2 = 120 VAC or 240 VAC

AXB motor control

VeriComm® control panel

Product Code Options, VeriComm® AXB Control Panels
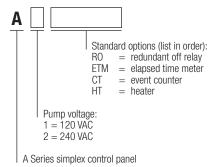
Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops
PL	Power light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light
SA	Surge arrestor	Status light on unit; protects incoming power supply from electrical surges
PT	Programmable timer	Repeat cycle from 0.05 seconds to 30 hours; separate variable controls for OFF & ON time periods
PRL	Pump run light	⅞-in. (22-mm) diameter green lens; UL Type 4X (IP66), 1 W LED light

A Series Simplex Control Panels

A product code diagram and a complete list that describes standard options available for A Series Simplex Control Panels are provided below. When selecting options for the product code, please use the ranking order provided in the diagram and in the options list.

Product Code Diagram

A ☐ ☐

Standard options (list in order):
RO = redundant off relay
ETM = elapsed time meter
CT = event counter
HT = heater

Pump voltage:
1 = 120 VAC
2 = 240 VAC

A Series simplex control panel

Product Code Options, A Series Simplex Control Panels
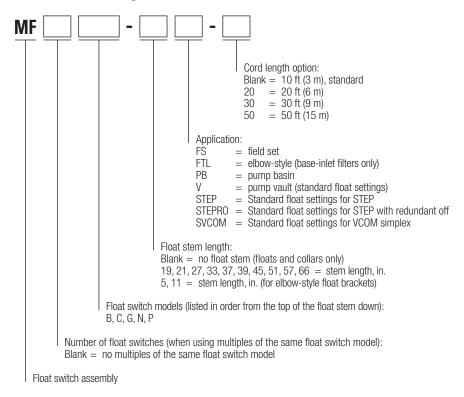
Code	Name	Specifications (all voltages are 120 VAC unless otherwise noted)
RO	Redundant off relay	DIN rail mount; provides a secondary off; sounds alarm upon low level condition
ETM	Elapsed time meter	7-digit, non-resettable; limit of 99,999 hours; accurate to 0.01 hours
CT	Event counter	6-digit, non-resettable
HT	Heater	Anti-condensation heater; self-adjusting: radiates additional wattage as temperature drops

Float Switch Assemblies

A product code diagram and a complete list that describes standard options available for Orenco Float Switch Assemblies are provided below.

Product Code Diagram

MF ☐☐ - ☐☐ - ☐

Cord length option:
Blank = 10 ft (3 m), standard
20   = 20 ft (6 m)
30   = 30 ft (9 m)
50   = 50 ft (15 m)

Application:
FS   = field set
FTL   = elbow-style (base-inlet filters only)
PB   = pump basin
V   = pump vault (standard float settings)
STEP   = Standard float settings for STEP
STEPRO = Standard float settings for STEP with redundant off
SVCOM   = Standard float settings for VCOM simplex

Float stem length:
Blank = no float stem (floats and collars only)
19, 21, 27, 33, 37, 39, 45, 51, 57, 66 = stem length, in.
5, 11 = stem length, in. (for elbow-style float brackets)

Float switch models (listed in order from the top of the float stem down):
B, C, G, N, P

Number of float switches (when using multiples of the same float switch model):
Blank = no multiples of the same float switch model

Float switch assembly

Custom Panel Quote Request

To start your custom panel ordering process, go to www.orenco.com/controls and complete the online quote request. You can also complete the information below and fax it to Orenco Controls at +1 (541) 459-6781, or call us at (800) 348-9843.

Project Name: _____   Engineer Name: _____
Your Name: _____   Your Company: _____
Address: _____   City: _____ State/Province: _____ ZIP Code: _____
Phone/Fax: _____   E-mail: _____

Preferred Contact Method: ☐ Phone   ☐ Fax   ☐ E-mail   ☐ Other: _____

Panel Power

Supply Power (Choose One)

☐ 120 VAC, Single-Phase   ☐ 208 VAC, Three-Phase   ☐ 480 VAC, Three-Phase
☐ 240 VAC, Single-Phase   ☐ 240 VAC, Three-Phase   ☐ Other: _____

Controls Circuit Power (Choose One)

☐ 120 VAC, Single-Phase Available for Controls
☐ Controls Transformer Required

Panel Features

Panel Type	Beacon Light (Optional)	Phone Dialer (Optional)	Other Panel-Specific Options	
☐ Electromechanical	☐ 2-inch (50-mm)	☐ 2-Channel	☐ Heater	☐ Voltage Monitor (Single-Phase)
☐ MVP	☐ 4-inch (100-mm)	☐ 4-Channel	☐ Surge Arrestor	☐ Phase Monitor (Three-Phase)
☐ PLC/OLS	☐ 5-inch (125-mm)	☐ 8-Channel	☐ Power Light	☐ Dead Front (Inner Door)
☐ TCOM			☐ Dry Alarm Contact	☐ Alarm Test Switch
			☐ AX Vent Fan(s), Qty: _____	☐ GFCI Receptacle

Tank/Sensor/Pump Info & Pump-Specific Options

Tank #1 Application:	Tank #2 Application:	Tank #3 Application:	Tank #4 Application:
Tank #1 Sensor Information	**Tank #2 Sensor Information**	**Tank #3 Sensor Information**	**Tank #4 Sensor Information**
☐ Float Switches, Qty: ___	☐ Float Switches, Qty: ___	☐ Float Switches, Qty: ___	☐ Float Switches, Qty: ___
☐ Pressure Transducer	☐ Pressure Transducer	☐ Pressure Transducer	☐ Pressure Transducer
☐ Ultrasonic Transducer	☐ Ultrasonic Transducer	☐ Ultrasonic Transducer	☐ Ultrasonic Transducer
☐ Probe	☐ Probe	☐ Probe	☐ Probe
Tank #1 Pump Information	**Tank #2 Pump Information**	**Tank #3 Pump Information**	**Tank #4 Pump Information**
☐ Demand-Dose ☐ Timed-Dose	☐ Demand-Dose ☐ Timed-Dose	☐ Demand-Dose ☐ Timed-Dose	☐ Demand-Dose ☐ Timed-Dose
Total Number of Pumps in Tank:___	Total Number of Pumps in Tank:___	Total Number of Pumps in Tank:___	Total Number of Pumps in Tank:___
Pumps Running per Dose, Qty: ___	Pumps Running per Dose, Qty: ___	Pumps Running per Dose, Qty: ___	Pumps Running per Dose, Qty: ___
Horsepower: ___	Horsepower: ___	Horsepower: ___	Horsepower: ___
Voltage/Amps: ___	Voltage/Amps: ___	Voltage/Amps: ___	Voltage/Amps: ___
FLA: ___	FLA: ___	FLA: ___	FLA: ___
☐ Seal Fail	☐ Seal Fail	☐ Seal Fail	☐ Seal Fail
☐ Heat Sensors	☐ Heat Sensors	☐ Heat Sensors	☐ Heat Sensors
☐ Capacitors	☐ Capacitors	☐ Capacitors	☐ Capacitors
Tank #1 Other Options	**Tank #2 Other Options**	**Tank #3 Other Options**	**Tank #4 Other Options**
☐ Variable-Frequency Drive	☐ Variable-Frequency Drive	☐ Variable-Frequency Drive	☐ Variable-Frequency Drive
☐ Pump Run Light	☐ Pump Run Light	☐ Pump Run Light	☐ Pump Run Light
☐ Elapsed Time Meter	☐ Elapsed Time Meter	☐ Elapsed Time Meter	☐ Elapsed Time Meter
☐ Event Counter	☐ Event Counter	☐ Event Counter	☐ Event Counter
☐ Intrinsically Safe	☐ Intrinsically Safe	☐ Intrinsically Safe	☐ Intrinsically Safe
☐ Redundant Off	☐ Redundant Off	☐ Redundant Off	☐ Redundant Off

Comments: _____

Orenco Systems®, Inc. Terms and Conditions

1. Agreement; Acceptance

This document contains all of the terms and conditions with respect to the sale and purchase of the merchandise ordered by Purchaser and sold by Orenco Systems,® Inc. ("Orenco"), unless a separate written agreement executed by duly authorized representatives of Purchaser and Orenco explicitly supersedes these Terms and Conditions.

Acceptance of this offer by Purchaser is expressly limited to the exact terms contained herein, and any attempt by Purchaser to alter or omit any such terms shall be deemed a rejection and a counteroffer. Purchaser's acknowledgment, acceptance, or purchase order form that stipulates different conditions shall not effect a modification of these Terms and Conditions. Unless Purchaser notifies Orenco in writing to the contrary prior to its receipt of the merchandise, or a separate written agreement explicitly supersedes these Terms and Conditions, Purchaser's acceptance of the merchandise shall conclusively evidence Purchaser's acceptance of these Terms and Conditions.

2. Custom Products

Merchandise not listed in Orenco's catalogs or standard price lists, or that must be custom built to the specifications of Purchaser, shall be considered "Custom Products" within this document. Custom Products do not include standard merchandise that requires minor modifications, such as being cut to a specified length. If Purchaser orders a Custom Product, and Orenco is agreeable to manufacturing and/or selling it, Purchaser agrees to defend Orenco at its cost and expense, and shall indemnify and hold Orenco harmless from and against any United States or foreign patent infringement suit related to the Custom Product brought upon Orenco by third parties. In addition, Purchaser assumes all responsibility for the compatibility of the Custom Product for its intended use, and for the adequacy of the engineering, design or specifications furnished by Purchaser to Orenco.

Prior to releasing an order for a Custom Product for manufacturing, Orenco shall submit its drawings, schematics, and/or other documentation of the critical elements of the Custom Product to the designer for review, to ensure that it will be manufactured to meet the designer's functional requirements and/or specifications. Orenco will only manufacture the Custom Product once it has received confirmation that the designer has reviewed and approved any such submittal documents.

3. Delivery

Orenco agrees to deliver all merchandise ordered by Purchaser for shipping within 30 days of the date Orenco receives and accepts a written purchase order, unless Orenco notifies Purchaser prior to the expiration of the 30-day period of any reasonable, foreseeable delays.

Merchandise shall be delivered when it is staged for shipping from Orenco's facilities (FOB Origin [Shipping]), and Purchaser shall assume the risk of loss for the merchandise at that time.

In the event Purchaser requests expedited delivery of merchandise, and Orenco is agreeable to the request, Purchaser shall be charged an Expedite Fee equal to the greater of $50.00 or 10% of the merchandise price.

4. Shipping

Purchaser is responsible for shipping its merchandise from Orenco's facilities. Purchaser may transport the merchandise itself, arrange for transportation of the merchandise with carriers of its choosing, or have Orenco arrange transportation of the merchandise on its behalf. If Purchaser fails to clearly identify which party it chooses to make the arrangements on a purchase order, Orenco will arrange the transportation of the merchandise associated with the order on Purchaser's behalf.

Purchaser shall be responsible for all costs associated with transporting the merchandise from Orenco's facilities, including all freight and insurance costs, as follows:

(a) **Will-Call; Collect.** If Purchaser transports the merchandise itself or arranges transportation of the merchandise with a third-party carrier, Purchaser shall pay Orenco a commercially-reasonable fee for each pallet, crate, container, or other packaging provided by Orenco. In addition, if Purchaser arranges transportation with a third-party carrier, Purchaser will arrange to pay for the service directly.

(b) **Prepaid and Add.** If Purchaser elects to have Orenco arrange transportation of the merchandise on its behalf, Orenco shall pay for the service directly. Purchaser shall pay Orenco for both Shipping and Handling, as itemized on a quotation or invoice, as follows: (i) "Shipping" shall consist of reimbursement of all freight and insurance costs paid by Orenco, including all accessorial charges from the carrier for items such as residential or construction site deliveries or use of lift gates, as well as any other fees, duties, tariffs, or taxes that may be applied on the merchandise by third parties after they are delivered, including storage fees and import, export, and transportation fees, duties, tariffs, and taxes. (ii) "Handling" shall consist of a fee equal to 5% of the Shipping costs paid by Orenco as identified above, and a commercially-reasonable fee for each pallet, crate, container, or other packaging provided by Orenco.

Large or special merchandise may require cranes or special equipment for unloading after transport. In instances where Orenco arranges for the transportation of this type of merchandise on Purchaser's behalf, Orenco shall immediately notify Purchaser of any delay in the scheduled delivery of the merchandise for shipping, or of any information it receives from a carrier indicating a delay in the scheduled arrival of the transport, and Purchaser agrees to ensure that the equipment necessary to unload the merchandise is present at the carrier's destination, and shall reimburse and indemnify Orenco against any back charges or other fees charged by the carrier for delivery delays caused by failing to have the necessary equipment present at the agreed-upon destination and delivery time.

5. Taxes

Purchaser shall be responsible for the payment of all federal, state, provincial, county, local, or government taxes, including but not limited to, sales tax, use tax, value-added tax, goods and services tax, or other excise tax that may be applied on the merchandise ("Taxes"), and shall indemnify and hold Orenco harmless from those Taxes. Orenco shall be responsible for any tax based solely upon its net income. Purchaser may supply Orenco with a valid Resale Certificate or other form certifying an exemption from the payment of Taxes from the taxing authority having proper jurisdiction over the order.

6. Payment Terms

Purchaser shall promptly pay Orenco for merchandise, and any Taxes, Shipping, Handling, or other costs associated with the merchandise, in accordance with the terms below:

(a) **Prepayment.** Purchaser may pay Orenco prior to delivery for merchandise, Taxes, estimated Shipping and Handling, and other costs associated with the purchase order. However, Purchaser must pay Orenco prior to delivery in the following circumstances: (i) If Purchaser does not have a credit account with Orenco, Purchaser must pay 100% of the full price of the merchandise, plus estimated Shipping and Handling, and other associated costs, before Orenco will accept a purchase order and release it for manufacturing. (ii) If Purchaser does not have available credit remaining on its credit account with Orenco, it must pay all amounts in excess of its available credit, up to 100% of the full price of the merchandise, Taxes, estimated Shipping and Handling, and other associated costs, before Orenco will accept a purchase order and release it for manufacturing.

(b) **On Account.** If Purchaser has a credit account with Orenco, has available credit on its account, and has not prepaid, Orenco shall invoice Purchaser for amounts owed for delivered merchandise, Taxes, Shipping, Handling, and other associated costs. Purchaser shall pay each invoice in full within 30 days from the date of the invoice ("Net 30"). Past due invoices shall bear a finance charge of 1.5% per month. Daily accrual of the finance charge shall begin on the 31st day from the date of the invoice. If Orenco employs a collection agency to collect any amount not paid by Purchaser under these terms, Purchaser shall pay all of Orenco's reasonable collection expenses. If any suit, action, or proceeding is instituted by Orenco to collect any amount not paid by Purchaser in accordance with these terms, Purchaser shall pay all of Orenco's investigation and litigation costs, including reasonable attorneys' fees, whether incurred before, during, or after trial or appeal.

7. Limited Warranty

Subject to the exclusions, limitations, and conditions contained herein, Orenco warrants that all merchandise will be free from defects in materials and workmanship for a period of 1 year after delivery of such merchandise to Purchaser, except as may be otherwise provided in a separate written warranty instrument between Orenco and Purchaser or from another manufacturer. If a separate written warranty instrument exists, the terms and conditions of said instrument control.

Exclusive Remedy. The exclusive remedy for any claim under this Limited Warranty shall be the obligation of Orenco to repair or replace, at its discretion, any defective merchandise. Labor is not covered under this Limited Warranty.

In the event Orenco determines that returned merchandise is defective in materials or workmanship and covered by this Limited Warranty, Orenco will credit or reimburse Purchaser for all reasonable transportation charges incurred in returning the merchandise, and will be responsible for all transportation charges to return repaired or replacement merchandise to Purchaser. Such repaired or replacement merchandise shall continue to be warranted under the Limited Warranty of the original purchase. In the event Orenco determines that returned merchandise is not defective in materials or workmanship, or is not covered by this Limited Warranty, Orenco shall charge Purchaser a testing fee and all reasonable transportation charges required to return the merchandise to the Purchaser.

ORENCO SHALL NOT BE LIABLE FOR ANY LOSS, INJURY, OR DAMAGES TO PERSONS OR PROPERTY RESULTING FROM FAILURE OF, OR ANY DEFECT IN, THE MERCHANDISE. NOR SHALL ORENCO BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES OF ANY KIND. IN NO EVENT SHALL THE LIABILITY OF ORENCO UNDER THIS LIMITED WARRANTY EXCEED THE TOTAL INVOICED PRICE OF THE MERCHANDISE.

Disclaimer. EXCEPT AS SPECIFIED IN THIS LIMITED WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, ACCURACY OF INFORMATIONAL CONTENT, OR THOSE ARISING FROM A COURSE OF DEALINGS, LAW, USAGE, OR TRADE PRACTICE, MAY ONLY BE CLAIMED DURING THE WARRANTY PERIOD, AND THEREAFTER ARE HEREBY EXPRESSLY DISCLAIMED AND EXCLUDED TO THE EXTENT ALLOWED BY LAW.

8. Return of Merchandise

Purchaser may not return merchandise without the prior approval of Orenco. Merchandise must be securely packed to reach Orenco without damage. Merchandise accepted for return is subject to a restocking fee and all transportation charges. Orenco, in good faith, will determine the restocking fee and the amount that will be credited or refunded to Purchaser for the returned merchandise.

9. Waiver

The failure of either Party on any occasion to exercise a right granted hereunder shall not operate as a waiver of such right as to subsequent occasions, and shall not effect a modification of these Terms and Conditions.

10. Governing Law

The laws of the state of Oregon shall govern these Terms and Conditions, together with all rights, obligations, and disputes arising out of or related thereto. The Parties hereby expressly disclaim any and all rights, obligations, or procedural or jurisdictional requirements granted or imposed by the United Nations Convention on Contracts for the International Sale of Goods ("CISG"). Any dispute or legal action arising out of or relating to these Terms and Conditions shall be brought in and decided by State Courts of Oregon. In any such dispute or action, Purchaser consents to the jurisdiction and venue of the Circuit Court of the State of Oregon for Douglas County.

Orenco® Controls

Limited Warranty for Electrical Control Panels

L I M I T E D   W A R R A N T Y

Commitment to Quality

For over 30 years, Orenco® Controls (a division of Orenco Systems®, Incorporated – "Orenco") has been known as a company that designs, manufactures, and sells high-quality standard and custom electrical control panels. We provide custom solutions for every application – from simple alarm panels with a single custom component to highly sophisticated panels that are totally customized with programmable logic, variable frequency drives, reduce voltage starters, or remote telemetry. Our assembly facility is equipped to build virtually any electrical control panel to your specifications, whether you need one unit or thousands.

Limited Warranty Coverage

Subject to the exclusions, limitations, and conditions contained herein, Orenco warrants that all of its standard and custom electrical control panels, which are not covered by a separate written warranty, will be free from defects in materials and workmanship for a period of three years after the panel has been delivered to the end-user (the "Warranty Period"), except as follows:

(a) The Warranty Period for Variable Frequency Drive (VFD) components in an electrical control panel shall be one year from the date of the component's manufacture.

(b) The Warranty Period for Reduced Voltage Soft Start (RVSS) components in an electrical control panel shall be one year from the date of the component's manufacture.

Exclusions

The following components in an electrical control panel are not covered by this Limited Warranty, though any warranties offered by the components' manufacturer may still apply:

(a) Customer-supplied components, or

(b) Customer-specified components that are not approved by Orenco.

Obtaining Warranty Service

To make a claim under this Limited Warranty contact your Orenco Dealer, Supplier, or Distributor ("Orenco's Representative"), who will process your claim. Please provide them with the control panel's unique UL® Number, typically located on the inside of the enclosure door, to aid in processing the claim.

If for some reason Orenco's Representative is unavailable, or if you purchased the product directly from Orenco, contact Orenco by phone (800-348-9843 or +1-541-459-4449) or by e-mail (electricalreturns@orenco.com) to make your claim.

Warranty claims must be made no later than the expiration of the Warranty Period listed above.

If requested by Orenco, potentially defective products must be returned to Orenco's Sutherlin, Oregon facility through Orenco's Representative, if applicable, transportation prepaid.

Exclusive Remedy

The exclusive remedy for any claim under this Limited Warranty shall be the obligation of Orenco to repair or replace, at its discretion, any defective products. Labor is not covered under this Limited Warranty. Defects in materials or workmanship will be determined in good faith by Orenco upon receipt and inspection of a returned product. Products shall not be deemed to be defective if the failure, malfunction, or damage was caused by, or resulted from:

(a) the product not being installed, operated, or maintained in accordance with any applicable instructions provided;

(b) abuse, misuse, accident, or negligence;

(c) a lightning strike or other catastrophic event beyond the control of Orenco; or

(d) modification of the product.

In the event Orenco determines that a returned product is defective in materials or workmanship and is covered by this Limited Warranty, Orenco will credit or reimburse you for all reasonable transportation charges incurred in returning the product, and will be responsible for all transportation charges to return the repaired or replacement product to you. Such repaired or replacement product shall continue to be warranted under the Limited Warranty of the original purchase. In the event Orenco determines that a returned product is not defective in materials or workmanship, or is not covered by this Limited Warranty, Orenco may charge you a testing fee and all reasonable transportation charges required to return the product to you.

ORENCO SHALL NOT BE LIABLE FOR ANY LOSS, INJURY, OR DAMAGES TO PERSONS OR PROPERTY RESULTING FROM FAILURE OF, OR ANY DEFECT IN, THE PRODUCT, OR FOR ANY TECHNICAL ASSISTANCE OR INFORMATION THAT ORENCO MAY HAVE PROVIDED TO YOU. NOR SHALL ORENCO BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, PLANT DOWNTIME, FINES OR PENALTIES, OR LAWSUITS BY THIRD PARTIES. IN NO EVENT SHALL THE LIABILITY OF ORENCO UNDER THIS LIMITED WARRANTY EXCEED THE TOTAL INVOICED PRICE, EXCLUDING INSTALLATION AND/OR STARTUP COSTS, OF THE PRODUCT.

Disclaimer

EXCEPT AS SPECIFIED IN THIS LIMITED WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, ACCURACY OF INFORMATIONAL CONTENT, OR THOSE ARISING FROM A COURSE OF DEALINGS, LAW, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW, AND ARE EXPRESSLY DISCLAIMED BY ORENCO.

Orenco® Wastewater Systems

Limited Warranty for
General Onsite Wastewater Products

L I M I T E D   W A R R A N T Y

Commitment to Quality

Since 1981, Orenco Systems®, Incorporated ("Orenco"), has been a company that researches, designs, manufactures, and sells high-quality products. We see ourselves as more than a "business." We see ourselves as a company that makes the planet a cleaner, healthier place, a company that is *Changing the Way the World Does Wastewater.*®

Any wastewater system can be affected by improper design, installation, lack of maintenance, or system abuse. Although our products are carefully designed and constructed, it's still important to pay strict attention to system design and installation instructions and to follow through with intelligent usage and regular maintenance.

Limited Warranty Coverage

Subject to the exclusions, limitations, and conditions contained herein, Orenco warrants that all of its products designed for use in wastewater applications, which are not components in an Orenco collection or treatment system covered by a separate written warranty or individual products covered by a separate written warranty, will be free from defects in materials and workmanship for a period of time corresponding to the type of product (the "Warranty Period"), as follows:

(a) If the product is a Biotube® Effluent Filter used in a single-family residential wastewater system: for the life of the wastewater system.

(b) If the product is a 500-, 1,000-, 1,500-, or 2,000-gallon (1900-, 3785-, 5678-, or 7570-L) Orenco fiberglass reinforced polyester ("FRP") tank: for five years after the tank has been delivered to the end-user.

(c) If the product is an Orenco PVA-series, multiple-stage, high-head, submersible turbine effluent pump: for 18 months from the date of manufacture on the liquid end of said pump.

(d) If the product is an Orenco PF-series, multiple-stage, high-head, submersible turbine effluent pump: for five years from the date of manufacture on the liquid end of said pump.

(e) For all other products not specifically listed above: for one year after the product has been delivered to the end-user, except as may be otherwise provided in a separate written warranty instrument between Orenco and the end-user or from another manufacturer. If a separate warranty instrument exists, the terms and conditions of said instrument control.

Obtaining Warranty Service

To make a claim under this Limited Warranty, contact your Orenco Dealer, Supplier, or Distributor ("Orenco's Representative"), who will process your claim. If for some reason Orenco's Representative is unavailable, or if you purchased the product directly from Orenco, contact Orenco by phone (800-348-9843 or +1-541-459-4449) to make your claim.

Any warranty claim must be received no later than the expiration of the Warranty Period listed above.

If requested by Orenco, potentially defective products must be returned to Orenco's Sutherlin, Oregon facility through Orenco's Representative, if applicable, transportation prepaid.

Exclusive Remedy

The exclusive remedy for any claim under this Limited Warranty shall be the obligation of Orenco to repair or replace, at its discretion, any defective products. Labor is not covered under this Limited Warranty. Defects in materials or workmanship will be determined in good faith by Orenco upon receipt and inspection of a returned product. Products shall not be deemed to be defective if the failure, malfunction, or damage was caused by, or resulted from:

(a) the product not being installed, operated, or maintained in accordance with any applicable instructions provided;

(b) abuse, misuse, accident, or negligence;

(c) a lightning strike or other catastrophic event beyond the control of Orenco; or

(d) modification of the product.

In the event Orenco determines that a returned product is defective in materials or workmanship and covered by this Limited Warranty, Orenco will credit or reimburse you for all reasonable transportation charges incurred in returning the product, and will be responsible for all reasonable transportation charges to return the repaired or replacement product to you. Such repaired or replacement product shall continue to be warranted under the Limited Warranty of the original purchase. In the event Orenco determines that a returned product is not defective in materials or workmanship, or is not covered by this Limited Warranty, Orenco may charge you a testing fee and all reasonable transportation charges required to return the product to you.

Orenco shall not be liable for any loss, injury, or damages to persons or property resulting from failure of, or any defect in, the product, or for any technical assistance or information that Orenco may have provided to you. Nor shall Orenco be liable for any incidental, consequential, special, or indirect damages of any kind, including, but not limited to, loss of profits, plant downtime, fines or penalties, or lawsuits by third parties. In no event shall the liability of Orenco under this Limited Warranty exceed the total invoiced price, excluding installation and/or startup costs, of the product.

Disclaimer

Except as specified in this limited warranty, all express or implied conditions, representations, and warranties including, without limitation, any implied warranty or condition of merchantability, fitness for a particular purpose, satisfactory quality, accuracy of informational content, or those arising from a course of dealings, law, usage, or trade practice, are hereby excluded to the extent allowed by applicable law, and are expressly disclaimed by Orenco.

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Orenco® | *Controls & Monitoring Products*

Product Catalog

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Orenco Systems®, Incorporated
814 Airway Ave., Sutherlin, OR 97479 USA
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