

# SA-77® Electric Samplers; U-Control Series

## What is a U-Control Sampler (You Control it)?

SA-77 designed the U-Control line of Samplers and Accessories so that customers could have an economical way to add automatic sampling to existing or new process applications that already have a control system for that process.

If your process already has a PLC, Programmable SCADA Control RTU, DCS or even basic relay logic... SA-77 and Peterson Instruments will give you the required Programming Narrative so that you can develop your own custom sampling application. We have full examples and drawing to get you started.



Shown with optional 5 litre Sample Bottle

## Specifications:

### Valve Electrical Listings:

Valves are U.L. Listed and CSA Certified for Hazardous Locations—Class I, Div 1, Group C and D; Class II, Div 1, Groups E, F, and G; Div 2 Groups A,B,C,D,E,F, and G.

### Electric Switch Listing:

UNITED STATES AND CANADA / UL Listed, cUL Certified  
Class I, Div 1 and 2, Groups A, B, C & D; Class II, Div 1 and 2, Groups E, F & G;  
Class III; Class I, Zone 1, Group IIC  
Dual seal certified to ANSI/ISA 12.27.01 (meets CEC & NEC secondary seal requirements)

### Operation Voltages:

**AC Voltage Models:** 110/120 Volts AC, 60 Hertz

**DC Voltage Models:** 24 Volts DC, 12 Volt DC option with Class 1, Div 2 Rated Converter

### Operation Pressure: *(see chart on next page for model numbers etc)*

**150# ANSI:** 290 psi *(400 psi also available)*; **300# ANSI:** 750 psi **600# ANSI:** 1440 psi

### Valve Mechanical Characteristics:

**Body and Inner Valves:** Stainless steel **Valve Plugs:** Kel-F® **Body Seals:** Aflas®

**Burst Pressure:** 5000 PSI (on dual valve versions)

**Electrical Housing:** 1/2" NPT conduit **Process Connection:** 1/4" NPT

### Pressure Switch Mechanical Characteristics:

**Body & All Wetted Parts:** Stainless steel **Burst Pressure:** 2500 PSI

**Electrical Housing:** 1/2" NPT conduit **Process Connection:** 1/2" NPT

### Mounting Options:

Standard Bracket is mountable on 2" pipe running either horizontally or vertically; Pipe mounting brackets included.

### Sample Bottle/Jar Options:

Standard bottle is 1.8 litres; 5 Litre is optional

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## What are the U-Control Models & Applications Choices?

110/120 Volt AC 60 Hertz, Versions

Part Number	Description	Max Pressure
SA-77ESEHOUCNTRL120AC	<b>EHO</b> , Heavy Oil- Large Orifice, Dual Valve Sampler, 120VAC, <i>(Valves Rated to 300 psi)</i>	300 PSI
SA-77ESEHPUCNTRL120AC	<b>EHP</b> , Conventional Crude Oil, Dual Valve Sampler, 120VAC, <i>Valves (Valves Rated to 3,000 psi)</i>	1440 PSI
SA-77ESELPUCNTRL120AC	<b>ELP</b> , Conventional Crude Oil, Dual Valve Sampler, 120VAC, <i>Valves (Valves Rated to 1,000 psi)</i>	750 PSI

24 Volt DC, Versions

Part Number	Description	Max Pressure
SA-77ESEHOUCNTRL24DC	<b>EHO</b> , Heavy Oil- Large Orifice, Dual Valve Sampler, 24VDC, <i>(Valves Rated to 500 psi)</i>	500 PSI
SA-77ESEHPUCNTRL24DC	<b>EHP</b> , Conventional Crude Oil, Dual Valve Sampler, 24VDC, <i>Valves (Valves Rated to 3,000 psi)</i>	1440 PSI
SA-77ESELPUCNTRL24DC	<b>ELP</b> , Conventional Crude Oil, Single Valve Sampler, 24VDC, <i>Valves (Valves Rated to 400 psi)</i>	400 PSI

## Configuring a Control system for the SA-77E Series U- Control Sampler

The SA-77E Series Sampler uses two solenoid style valve actuators... one is the inlet valve the other is the exhaust valve.

1. To have the control system call for a sample: Send a 24VDC pulse to the inlet solenoid. This pulse should be 1.5 to 3.0 seconds long. This will cause the SA-77E Sampler to connect the liquid being sampled with the Sample Sizer Assembly. . In de-energizing this first pulse the sample is captured within the Sampler.
2. Wait 0.5 to 1.0 seconds then send a 24VDC pulse to the exhaust solenoid. This pulse should be 1.5 to 4.0 seconds long (recommend 4 seconds to ensure full sample through sampler). This will deposit the captured sample into the sample receiver jar/jug.
3. Have an adjustable timer to function has the **Master Timer** that starts the above sequence... This Master Timer may be triggered by the dump valve or shipping pump status...
4. The master timer is interrupted by the pressure switch when the sample jar is full. This logic should have latching ladder/relay logic on it and require a push button to reset.

### Timer/Logic Summary:

- Timer on each solenoid driver (2 timers fixed "Ton"); Delay timer for time between valve cycle (1 timer fixed); Master Timer to control cycle;
- Ladder/relay logic to lock out Master timer when sample bottle
- Start and Stop Push Buttons for operations control and resetting after bottle change...

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