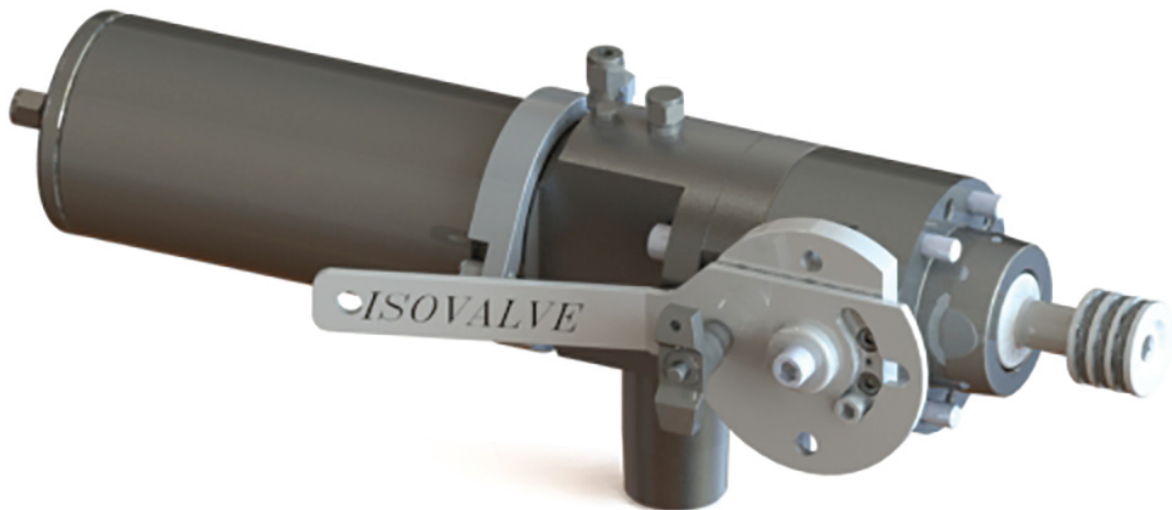


Original Instructions

Installation, Operation & Maintenance Manual

ISOLOK SAL-B Sampler Point Samplers

S-AS-IOM-00439-3 05-23





Do not install, maintain, or operate this equipment without reading, understanding, and following the appropriate Sentry Equipment Corp instructions. Otherwise, injury, damage, or both may result.

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Note

The information contained in this document is subject to change without notice.

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Safety Information

Please read the entire manual before attempting to unpack, set up, or operate this product. Pay careful attention to all Warnings, Cautions, and Notes. Failure to do so could result in serious personal injury and/or equipment damage.

Use of Hazard Information

If multiple hazards exist, the signal word corresponding to the greatest hazard shall be used.

Definitions

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

NOTE

Information that requires special emphasis.

TIP

Alternate techniques or clarifying information.

SHALL: This word is understood to be mandatory.

SHOULD: This word is understood to be advisory.

General Safety Precautions

Product Selection, Installation, and Use

WARNING

Improper selection, installation, or use can cause personal injury or property damage. It is solely the responsibility of users, through their own analysis and testing, to select products suitable for their specific application requirements, ensure they are properly maintained, and limit their use to their intended purpose.

Follow proper local, state, and federal regulations for proper installation and operational requirements.

Always use caution and common sense when working with any chemical. Read the product label and Safety Data Sheets (SDS) carefully and follow the instructions exactly.

Potential Equipment Hazards

WARNING

Hot surfaces! This equipment may have very hot surfaces. If an operator contacts a hot surface, injury may occur. Use protective clothing to prevent injury. If other equipment comes in contact with a hot surface, damage to the equipment may occur. Ensure the area around this equipment is kept clear to prevent damage from occurring.

High pressures! This equipment may contain fluids at very high pressures. Prior to installing, removing or maintaining this equipment, ensure that the equipment is isolated from all connecting piping, the equipment is depressurized, the contents have been drained, and the equipment is cool.

Moving parts! This equipment may contain moving parts. All drive guards and doors must be secured in place when this machine is being operated.

WARNING

Equipment rated TX. Equipment maximum surface temperature depends on operating conditions. Ensure maximum surface temperature shall stay below ignition temperature of dust or gas atmosphere where it is installed based on process conditions. Failure to comply could result in an explosion, causing serious injury or death to personnel and damage to equipment.

If the sampler is mounted directly to a non-electrically conductive surface, sampler shall be bonded to a grounding electrode. Failure to comply could result in sparking, which could lead to an explosion, causing harm to personnel and equipment.

If the sample container is removed from the sampler, do not insert any body part or other item into the sample discharge port. Crushing will occur.

NOTICE

To ensure proper sampler operation, be sure the sampler is installed in a pipe large enough for the sampler plunger to extend without impacting the pipe. Failure to comply will result in equipment damage and poor sample quality.

CAUTION

Sampler may require a two-person lift. Please refer to the General Arrangement drawing for weight and dimensional information.

General Description

WARNING

Read these instructions completely before proceeding to assemble, install or operate this machine. This machine should be installed, operated and serviced by qualified individuals. All drive guards and doors must be secured in place when this machine is being operated. Follow proper local, state and federal regulations for proper installation and operational requirements.

The Sentry® ISOLOK® SAL-B automatic isolatable sampler is designed to obtain samples of liquid or slurry flowing in a process stream, into which extends a plunger with an annulus for sampling. The SAL-B sampler has been configured specifically for use in sampling the process media at the process conditions provided by the user at time of manufacture.

Each sampler cycle consists of a plunger extension and a plunger retraction. During plunger extension, the volume of the annulus is filled with a sample of the process stream. The plunger is then retracted into the body of the sampler, thereby capturing a volume of sample. This sample is then deposited into a sample collection container.

The ISOLOK SAL-B automatic fixed volume sampler is pneumatic operated. Pressurized air (or other gas) is used to provide the force to extend and retract the plunger. When in the retracted position, air or other inert gas may be used to assist the displacement of the sample material from the plunger annulus.

The ATEX Temperature Class rating is dependent upon process fluid temperature. Reference the following chart:

TX	maximum temperature
T2	572°F (300°C)
T3	392°F (200°C)
T4	275°F (135°C)
T5	212°F (100°C)
T6	185°F (85°C)

ATEX Ratings:

Ex h IIB T6...T2 Gb
Ex h IIIC T83°C...T300°C Db
 $-20^{\circ}\text{C} \leq T_a \leq +65^{\circ}\text{C}$

NOTE

The working pressure of the air cylinder is 120 psig with a max cycle rate of 10 cycles/min (standard version) or 6 cycles/min (park position version) on a continuous duty cycle. Additionally, actuating gas needs to be a non-combustible neutral gas and the working temperature must be between -4°F to 149°F (-20°C to 65°C).

NOTE

Figures in this manual may differ from actual purchased equipment. Please refer to the drawings in the appendices of this document.

Installation

Selection of Installation Location

Select a location to install the sampler where the material in the process stream is well mixed. Location of the sampler and controller is very important for accurate sampling results. They should be as close together as practical, within sight of each other, and protected from weather, traffic damage and normal work activities in the area.

When selecting a sampler location, ensure the sample collection container will clear vertical lines (or other obstructions) when mounted onto the sampler.

Line Adapter Mounting (if provided)

1. Reference the accompanying drawing to determine which line adapter had been provided.
 - a. SADDLE SHAPE line adapters are machine cut to fit the OD of sampler diameter process pipes.
 - b. PLUG SHAPE line adapters are installed through the wall of larger diameter pipes or sides of tanks.
2. After selecting a location and verifying the sampler orientation, cut a hole in the process line (or tank) according to the shape of the line adapter. Exact size to cut is shown on the accompanying drawings
3. Protect bore and face of adapter from weld spatter.
4. Tack weld adapter in position. Again, check orientation and position before continuing to weld.

NOTICE

Use industry code procedures to protect adapter from distortion. Major distortion cannot be corrected and will prevent installation of sampler.

Sampler Mounting

CAUTION

Sampler may require a two-person lift. Please refer to the General Arrangement drawing for weight and dimensional information.

1. ISOLOK samplers are designed to mount to a line adapter that is welded or otherwise attached to a process line.
2. PLUNGER CLEARANCE. Ensure that adequate clear space exists ahead of nose of sampler to allow for full plunger movement.
3. Check orientation of sampler and line mounting adapter, and ensure that axis of sampler is mounted as shown on the accompanying general arrangement drawing.

Controller (if provided)

1. Make connections as shown on the accompanying drawings.

Service Connections

2. Make air line connections as shown on the accompanying drawings.
3. For most installations, the sampler requires compressed air at normal flow capacity of 2 standard cubic feet per minute (SCFM) at normal regulated pressures between 30 psig (2.1 barg) and 120 psi (5.5 barg), depending on process pressure.
4. At 80 psig (4.1 barg), air consumption is approximately 0.277 SCF for non-park samplers and 0.374 SCF for samplers with a park option per sampler cycle.
5. AIR LINES. Connect two air outlet ports on controller to sampler air fittings P5 on head and P6 on rear of cylinder using 1/4 in OD air lines. Use no more line than is necessary.

6. An adjustable restrictor (flow-control valve) should be used to control exhaust air flow from the air cylinder. Consult Sentry Equipment Corp if not furnished as part of the operating controller system.
7. Connect lines so that sampler dwells in retracted position while in between cycles or when off.
8. Check for proper connection of air lines by extending sampler plunger using the Hand or Grab option of the controller.
9. AIR EJECT (Optional). If an "air eject" function has been selected, the top port (P2) of the sampler body can be equipped with a compression style fitting. Connect this port to source of eject air (or other gas) at control using 1/4 in OD tubing. Samplers equipped with an air eject function **MUST** have suitable vent in bottle adapter to allow for exhaust of eject air. **DO NOT CLOSE VENT PORT**. Ensure any potentially hazardous fumes or product are conducted to a safe area.

Operation

DANGER

Dangerous gas! The gases being emitted from the bottle vent may be hazardous and toxic upon exposure. The vent line should be directed to a charcoal canister, flare or other sub atmospheric region for collection and treatment of sample vapors.

Sample Containers

1. Sample collection containers always should be clean and completely dry before being used. Containers (bottles) of polypropylene most often are utilized.
2. SCREW MOUNT CONTAINERS. Standard sampler body is provided with a 1-1/4MNPT discharge port. Adapters to fit sample collection bottles are available from Sentry Equipment Corp.
3. SEPARATE CONTAINERS. Suitable piping connections for metal or plastic components can be arranged to conduct sample portions to a separate container. Whenever such piping is installed, avoid long runs with multiple fittings, joints or other areas where solids or crystals could build up and block flow.

NOTE

IMPORTANT. Select sample container size that will not be filled completely even during longest sampling times. Use care when setting a cycle rate that may nearly fill a container.

WARNING

Always ensure control is OFF before mounting or exchanging sample containers.

Controller (if provided)

ISOLOK samplers require an operating controller which determines the time interval between cycles, speed of the plunger and dwell in product stream. Filtered, compressed air or gas is provided from controller to sampler air cylinder for operation.

Operation can be manual-pneumatic, electric-pneumatic, all-pneumatic, etc. A few are described:

- Manual-Pneumatic Control includes a filter, regulator, gauge, and lever operated four-way air valve with speed

controls and mounting bracket. The lever is depressed to extend the plunger and held approximately two seconds. The lever release retracts the plunger. A stainless steel enclosure with locking provision is optional.

- Electric-Pneumatic Control includes an electric power supply for the timer and solenoid operation with separate pneumatics. Time-based units include EXTEND-RETRACT adjustable plug-in timers to control time intervals and optional special time delay functions. Flow proportional or remote contact controls operate from the user's flow meter or pulse generating device and usually include an adjustable counter. NEMA 4 or NEMA 7 enclosure models are available.
- All-Pneumatic Control is suitable for explosion hazard-rated areas where compressed air is available for sampler operation or for areas where electric power supply is not available.

General Specifications

In most cases, an automatic electric sampler cycle controller requires an 115VAC power supply. IN ALL CASES controls require a suitable ground and means to disconnect the electrical supply.

When connecting a contact closure or pulse input from the flow meter to the controller, using shielded cable is recommended if the run is more than 10 feet or if the conduit contains leads of higher voltage.

The controller location should be within sight of the sampler and require connecting air lines to the sampler of no more than 30 feet.

Connect a compressed air supply line to the sampler operating controller of nominal flow capacity in the range of 2 SCFM at 80 psig (5.5 barg) to 120 psig (8.3 barg). Dry, oil-free air gives best operation with minimum maintenance. Adequate use of air filters is recommended. Minimum pressure setting of 30 psig (2.1 barg) is required. The maximum pressure setting should be less than the incoming air supply to ensure steady, regulated pressure on the sampler.

Automatic Cycle Rate

Select a cycle rate on an adjustable delay timer that will provide an adequate sample composite for the container in use. DO NOT overfill the container. Sample delivery is charted for samplers with 8 cc and 25 cc liquid volumetric displacement per cycle. A partial chart is shown on the following page. Cycle rate is a combination of the time needed to fully extend the plunger into the product line, then completely retract and discharge the sample collected.

↪ NOTE

The plunger should remain extended into the process flow for the shortest amount of time possible.

To convert cubic centimeters to fluid ounces, multiply by .0338. There are approximately 30cc (29.5735) to one fluid ounce, 128 fluid ounces to one U.S. gallon.

$$\text{*CYCLE TIME} = \frac{\text{CC PER CYCLE X TOTAL SAMPLING TIME (SEC)}}{\text{TOTAL SAMPLE (CC)}}$$

$$\text{* CYCLE TIME (SEC)} = \text{EXTEND TIME} + \text{RETRACT TIME}$$

Specialized controls are available on request to suit various requirements.

total sample (cc) at 8 cc per cycle						
	total sampling time					
cycle time*	5 min	10 min	30 min	1 hr	8 hr	24 hr
5 sec	480	960	2880	5760	46080	138240
10 sec	240	480	1440	2880	23040	69120
15 sec	160	320	960	1920	15360	46080
20 sec	120	240	720	1440	11520	34560
30 sec	80	160	480	960	7680	23040
60 sec	40	80	240	480	3840	11520
120 sec	16	40	120	240	1920	5760
300 sec	8	16	48	96	768	2304
480 sec	--	8	24	56	480	1440
600 sec.	--	8	24	48	384	1152

total sample (cc) at 25 cc per cycle						
	total sampling time					
cycle time*	5 min	10 min	30 min	1 hr	8 hr	24 hr
5 sec	1500	3000	9000	18000	144000	432000
10 sec	750	1500	4500	9000	72000	216000
15 sec	500	1000	3000	6000	48000	144000
20 sec	375	750	2250	4500	36000	108000
30 sec	250	500	1500	3000	24000	72000
60 sec	125	250	750	1500	12000	36000
120 sec	50	125	375	750	6000	18000
300 sec	25	50	150	300	2400	7200
480 sec	--	25	75	175	1500	4500
600 sec.	--	25	75	150	1200	3600

The sampler design precludes marking each component of the sampler with a part or serial number. We recommend the user uniquely identify each sampler and controller. Equipment identification becomes invaluable when operating more than one sampling instrument serviced through a central maintenance facility. Identification tags can be provided from Sentry Equipment in laminated plastic or metal to be attached to the sampler or controller. Price of the tags is available upon request.

Sampling should be performed only when the product is moving. Sampling from stagnant (stationary) product can bias the sample. Starting and stopping the sampling system can be done manually or by interlocking to a pump or valve. Special controls are available for use with flow meters or for remote computer operation.

⚠ CAUTION

Product collected with each sampler plunger cycle drains from the discharge port (P1) of the sampler into the container. However, there is always some clingage to wetted parts. Those collecting samples should be instructed in proper techniques and care when handling containers. If required, users should wear protective equipment such as gloves, masks or other clothing at all times when operating sampling equipment where exposure to the sampled product could be hazardous.

Venting

Samplers used on pressurized lines – where expansion of entrained gas, air, steam or fumes could cause a pressure rise in the sample bottle – require adequate venting.

1. Venting may be provided by a port in the bottle adapter or body top port of the sampling instrument. Ensure any potentially hazardous fumes or product are conducted to a safe area. Periodically check to ensure the vents are open and unclogged.
2. Vent or drain ports always should be located to avoid accidental exposure of an operator to hazardous or hot material. Where evaporation or vapor loss through a vent is undesirable, the vent should be equipped with a proper control.
3. Contact Sentry Equipment Corp for clarification of any questions on venting of the sampler system.

Sample Collection Containers

WARNING

Always ensure controller is OFF before mounting or exchanging sample containers.

The sampler has been provided with one of a variety of sample collection container connections. See the accompanying drawing to identify which has been provided.

4. Sample collection containers always should be clean and completely dry before being used. Containers (bottles) of polypropylene most often are used.
5. SCREW MOUNT CONTAINERS. These adapters have a suitable threaded port and mount onto a discharge port.
6. SEPARATE CONTAINERS. Suitable piping connections for metal or plastic components can be arranged to conduct sample portions to a separate container. Whenever such piping is installed, avoid long runs with multiple fittings, joints or other areas where solids or crystals could build up and block flow.

Maintenance

WARNING

Sampler must not be disassembled or removed from line until line is free of product, is at atmospheric pressure, all components are at safe temperature, and all services have been shut off.

Sampler Cleaning

1. Operating an accurate and valid sampling installation is critically dependent on effective cleaning procedures. ISOLOK samplers incorporate materials, finishes and design to allow effective cleaning of seals, ports, vents and interior body cavities.
2. Whenever a sampler is cleaned, it should be lubricated and inspected for wear and damage that can affect its continued successful operation. The sampler periodically should be checked for proper operation and to ensure that any wear is detected for preventive maintenance.

3. On continuous duty installations, the sampler should be checked once a day for proper operation. On all installations, a definite schedule of inspection should be established to ensure safe and accurate sampling operation. ISOLOK samplers initially must be installed and periodically inspected to ensure all connections, clamps and fasteners are firmly tightened. Failure to keep screws or connections properly secured could result in leakage or damage.
4. Do not weld, machine or otherwise modify the sampler or control in any manner. Consult Sentry Equipment Corp before undertaking any changes. Follow your plant safety procedures whenever maintenance or inspection is required on this equipment.
5. We recommend that service records be maintained on sampling equipment. Data should include:
 - a. Sampler: Record date of installation, date of seal replacement, which seals were replaced and the condition of used seals, and the reason they were replaced. Accurate records will assist in determining seal life or if abnormal operating conditions exist. Contact Sentry Equipment Corp if unusual wear or chemical attack to the seals or the metal parts of the sampler occurs.
 - b. Controller: Record the date of installation, the date of timer or air valve replacement, items replaced and the condition of used parts. Indicate the reason they were replaced. Frequent replacement of timers may indicate an issue with the controller operating environment. Impurities in the air supply source may cause premature failure of pneumatic components.

Sampler Removal

WARNING

Sampler must not be disassembled or removed from line until line is free of product, is at atmospheric pressure, all components are at safe temperature, and all services have been shut off.

Refer to the included general arrangement and assembly drawings for removal information. All service to the sampler should be performed with it removed from the process line.

Removal of Cylinder/Plunger Modules

1. Ensure the plunger is fully retracted. Shut off and vent compressed air. Remove the compressed air lines from P5 and P6.
2. Remove the lockpin and close the isolation valve. Reinstall the lockpin.
3. Check the telltale port TT2 to ensure the process pressure has been sealed. Telltale port TT2 provides a means to determine that the isolation valve has effectively sealed the process pressure.
4. Carefully open the TT2 port valve. The hex head TT2 plug valve may release process media out the 1/8 in. bleed port as soon as it is two revolutions out (ccw). Stand clear of the bleed port. The TT2 valve should be opened five revolutions to confirm the isolation valve is working properly. If pressure is not present, the sampler can be removed safely for maintenance.
5. Separate the sampler body from the head by removing the four 3/8-16 x 1-1/4 SHCS. Jack screw holes are provided. DO NOT pry or pound on sampler components.
6. Install the closure using the 3/8-16 x 1-1/4 SHCS provided to protect the shell module.

Disassembly of Cylinder/Plunger Modules

1. Work on a clean, well-lit bench area with a copy of the sampler drawing available for reference.

2. Before removing the bolts, carefully apply compressed air to the rear cylinder port, fully extending the plunger. Plunger seals now can be accessed for inspection without further disassembly. Worn plunger seals can be cut carefully with an exacto knife and removed. Be careful not to scratch the metal plunger. New seals can be installed using loaders.
3. Remove the clamp attaching the cylinder barrel to the head. Holding the plunger and barrel, remove the piston.

⚠ CAUTION

Do not try to remove the body before separating the plunger and piston rod.

4. Using a 3/8 inch hex socket wrench in the piston and another 3/8 inch hex socket wrench in the plunger, unscrew the plunger.
5. Inspect the bore of the barrel for scoring or wear. Wipe it out with a dry, non-abrasive cloth. **DO NOT USE SOLVENTS.** A heavily scored barrel should be replaced.
6. Inspect and replace the piston seals and rod seals if needed.
7. New O-ring seals can be installed using an installation loader and sleeve. Seals will stretch easier if they are warmed on a hot plate or in hot water. Also, lubricate seals before stretching them over the loader.
8. Reassemble the plunger to the piston and torque to 58-foot lbs.
9. Reassemble the barrel to the body and clamp securely.

Shell Module Removal

1. The shell module includes the isolation valve. The process line therefore must be shut down and drained before removing the shell from the line adapter.
2. Remove the lockpin and slowly open the isolation valve to verify the process line is not pressurized. Rotating the ball also will relieve pressure trapped in the shell cavity.
3. If it is impossible to operate the isolation ball valve, verify by other means that the process line is not pressurized. Carefully remove the 1/8 in. pipe plug from the TT1 port located on the shell's opposite handle to relieve any pressure trapped in the shell cavity.
4. Remove four 3/8-16 x 3 1/2 SHCS and separate the shell module from the line adapter. Jack screw holes are provided. **DO NOT pry or pound on sampler components..**

Reassembly

1. Reattach the shaft and cam assembly to the shell, making sure the pins are fully engaged. Loosely assemble the handle to the shaft.
2. Rotate the handle to the closed position, aligning the shaft tab with the shell axis.
3. With seats and seals in place, insert the ball into the shell.
4. Assemble the head to the shell.
5. Rotate the handle back to the open position and insert the lockpin.
6. Using an acrylic alignment tool or a straight-edge such as a six in. scale, precisely align the bore in the ball with the bores in the shell and head assemblies. Tighten the four 1/4-20 x 1/2 SHCS fasteners securely.

- 7.** Using a 1-1/8 in. open-end wrench, tighten the 3/4-16 UNF jam nut onto the handle. Be careful not to cross-thread the nut onto the shaft.
- 8.** The shell module is now ready to be reinstalled into the process line.

Troubleshooting

symptom	possible problem(s)	remedy
Sampler leaks product or air out of bottom ports	<ul style="list-style-type: none"> ▪ Worn seals ▪ Incorrect installation ▪ Other worn parts 	<ul style="list-style-type: none"> ▪ Thorough inspection is required ▪ Replace worn seals ▪ Check any recently replaced seals against drawings for correct installation ▪ Replace other worn sampler parts: Body, head, barrel or plunger
Sampler leaks product at pipe connection	<ul style="list-style-type: none"> ▪ Installation misaligned ▪ Fastener, clamp/gasket or seals issue 	<ul style="list-style-type: none"> ▪ Check installation for misalignment ▪ If the installation is threaded, replace locknut fastener and add commercial grade Teflon tape when reinstalling ▪ If the installation is tri-clamp or instrument hub, check the clamp/gasket (TC) or o-rings/fasteners (IH) attaching the sampler to the line adapter ▪ Replace seals if they are damaged or show signs of chemical attack
Sample discharge is decreasing	<ul style="list-style-type: none"> ▪ Buildup in sample spool cavity or sampler nose 	<ul style="list-style-type: none"> ▪ Check sample spool cavity for buildup; if present, add flush or air eject provision to sampler body ▪ Check sampler nose for buildup; if present on nose or pipe wall interior, remove the body from the line frequently and clean it using plant procedures
Sampler will not operate	<ul style="list-style-type: none"> ▪ Issues with power source and/or air connections 	<ul style="list-style-type: none"> ▪ Check power source and air connections; connect as required ▪ Check air lines for proper connection, as plunger must dwell retracted; air lines connected backwards will cause sampler to dwell (pause) extended into the process line ▪ Check for air bind; depending on the density of the product sampled, this sometimes can be resolved by opening a top port on the sampler ▪ Check sampler operating air pressure and process line pressures; operating air pressure must be sufficient to move the plunger against process pressure. Issue may be resolved by increasing or decreasing air to sampler or relocating sampler.
Controller does not operate	<ul style="list-style-type: none"> ▪ Issues with pneumatic and/or electric power source 	<ul style="list-style-type: none"> ▪ Verify correct 115V or other specified power to controller ▪ If using a remote contact unit, check the output signal to the controller from the flow meter; check purchase records, and if an incorrect output signal was specified, contact Sentry Equipment ▪ Secure a qualified technician to run a complete operating check of timing circuits, remote contact inputs and/or counter inputs that sequence the electric or pneumatic power valve

Standard Warranty

Sentry Equipment Corp (“Seller”) warrants products manufactured by it and supplied hereunder (“Products”) to be free from defects in workmanship and, to the extent materials are selected by Seller, to be free from defects in materials, in each case for a period as defined in the table below:

Product Line	Product Category	Warranty Period
Sentry®	1. Automatic Sampling 2. Corrosion Monitoring 3. Manual Sampling 4. Sample Conditioning 5. Sampling & Analysis Systems 6. Replacement Parts (without expiration dates)	Eighteen months from date of shipment or twelve months from startup, whichever occurs first
Waters Equipment	1. Sampling & Analysis Systems 2. Replacement Parts (without expiration dates)	Twelve months from date of shipment

To view the full warranty, go to www.sentry-equip.com/warranty.

Customer Support

With proven sampling expertise since 1924, Sentry products and services provide business operations the critical insights to optimize process control and product quality. We deliver true representative sampling and analysis techniques to customers around the globe, empowering them to accurately monitor and measure processes for improved production efficiency, output, and safety. Standing behind our commitments, we are determined to tackle any application, anywhere.

We know that running an efficient operation isn’t easy. It requires thorough, careful analysis of controlled, real-time data achieved through reliable, accurate, and repeatable process monitoring, and measuring. By effectively conditioning, sampling, and measuring gas, liquid, slurry, powder, solids, steam, or water within their production environments, our customers obtain the critical insights they need to control and optimize their processes.

Yet, controlling your processes also means reliable customer support throughout the life cycle of your equipment.

- Customer Service—General information, warranty claims, order management.
- Installation Service—For systems that require specialized expertise upon installation.
- Technical Support—Troubleshooting, training, and technical manuals.
- Field Service & Retrofits—When a problem needs immediate attention.
- Replacements Parts & Consumables—Order your replacement parts and consumables.
- Sentry ProShield Services—Select from four ProShield Guardian service plans providing different levels of support to protect your large system investments with regularly scheduled maintenance.

To learn more, go to www.sentry-equip.com/support.

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