Original Instructions

Installation, Operation & Maintenance Manual

Sentry RPG Hazardous Controller

Sampler Controllers

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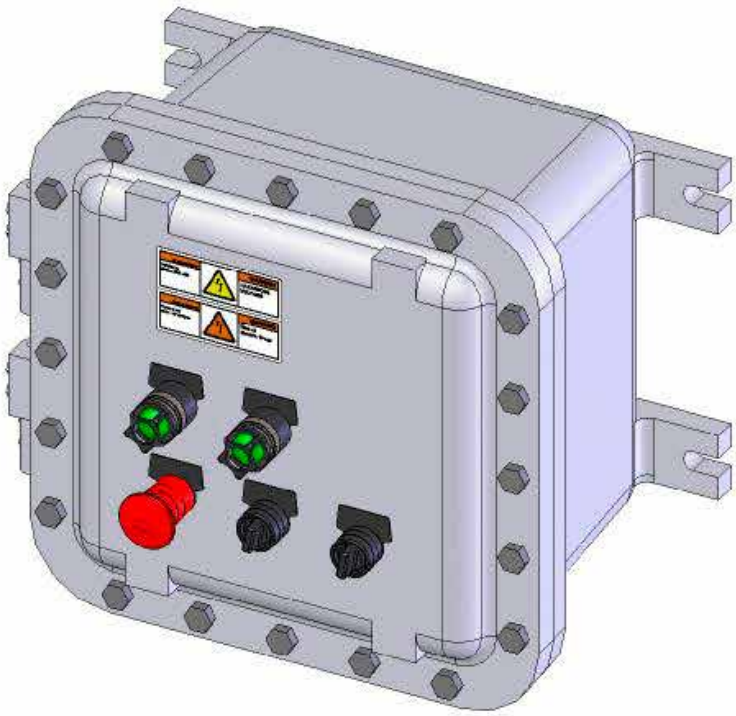

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

SENTRY

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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.

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.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could 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.

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 Material Safety Data Sheets (MSDS) 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.

General Description

The Sentry® RPG Hazardous Controller is a manually-operated explosion-proof sampler controller used to operate Sentry RPG samplers. The sampler controller is connected to a pneumatic solenoid. The sampler controller can be used to control the size and frequency of the sample.

Specifications

The Sentry RPG hazardous controller is suitable for use in the following environments:

- Class I, Div 2, Groups B, C & D
- Class II, Groups E, F & G

Installation

- Installation should be performed by qualified personnel in accordance with local codes and procedures.
- If the sampler controller is to be mounted near the sampler, then the sampler controller must meet the National Electrical Code for the area. (Sentry Equipment Corp supplies electrical components to meet the standards specified by the customer. For example, class, division and group as outlined in the National Electrical Code.)
- Mount the sampler controller in a location that is easily accessible.
- Mount the sampler controller in a vibration-free location and have a qualified electrician wire the sampler controller to the collection system, motor, limit switch, solenoid (pneumatic), electrical supply, etc.
- The sampler controller should be hard wired to instrument-quality power using appropriate certified conduit, fittings, and wiring or cable.
- For fixed wiring methods, the ground conductor shall have green with a yellow stripe as the insulation.
- Surge suppression and filtering is recommended but not required.
- A suitable external over-current protection device—e.g., a fuse or circuit breaker (15 A)—and a disconnect device are recommended.
  - The over-current protection and disconnect devices shall be installed on both the hot (L) and neutral (N) leads.
  - The disconnect device shall be located near the equipment and marked with appropriate ON(1) OFF(O) markings as specified by local codes.

➲ NOTE

When penetrating the sampler controller enclosure, use tubes & fittings that maintain the environmental rating of the enclosure.

Operation

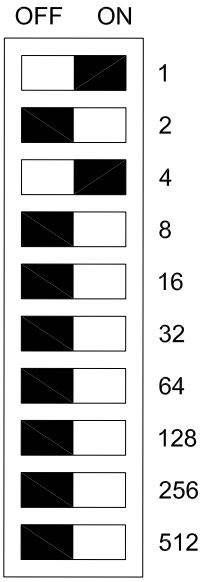
Control Logic

The manual sampler controller included with the sampler is designed to operate the sampler. The control logic includes:

1. Cycle time: Determines the duration between samples.
2. Sample time: Determines the duration the sample probe is extended into the process. Setting this timer determines the sample volume collected per cycle.
3. Manual Sample (HAND): Allows the operator to immediately collect a sample.
4. Automatic Sample (AUTO): Allows the operator to initiate continuous sampling.
5. Sampling light: Indicates sampler is currently sampling.
6. Remote start contact: Allows the sampler to start/stop by providing remote signal contact.

Starting and Stopping the Sampler Controller

Confirm the power is off before setting timers. Before operating the sampler controller, set the timers to the desired values.



Timers

Set the timer (TD 125, TD-127, TD-129, TD-131) by placing the DIP switches in the ON or OFF position.

- The number next to each DIP switch indicates the number of seconds that switch represents.
- To determine the timer setting, add the number values of the DIP switches in the ON position.
  - For example, in the image the timer is set for 1 + 4 = 5 seconds.
  - See the electrical wiring diagram for further details.

Starting the Sampler Controller

To start the sampler controller and begin sampling, select HAND or AUTO position using the selector switch.

- HAND position: Hold the selector switch in the HAND position for one second. The sampler will perform one sampling sequence and then stop after the sample has been deposited.
- AUTO position: Place the switch in AUTO position to initiate continual sampling. A light indicates that the sampler is in Auto mode. An optional relay contact location is provided to allow remote starts. See the electrical wiring diagram for details.

Remote Start/Stop

This allows remote operation of the controller. Sampling starts when a contact from an external source is closed. Continuous sampling occurs for as long as the contact is closed. Opening this contact will reset all timers and prepare them for a new sequence.

Stopping the Sampler Controller

- To stop sampling and return the sample probe to the retracted position, place the selector switch in the OFF position.

Maintenance

Normal control maintenance should require draining the water from the filter bowl and replacing the dirty or clogged filter element. A lockable shut-off valve, available from other suppliers, is required to perform lockout/tagout procedures.

⚠ CAUTION

Always disconnect air before inspection or maintenance of the control or sampler.

With the relieving type of filter or regulator, outlet pressure can be reduced even though the system is dead-ended. Turn the adjusting knob counter-clockwise to open the relief passage and allow air to escape.

⚠ WARNING

Clean the filter/regulator bowl with warm water only. The polycarbonate plastic bowls used on these filters/regulators can become damaged and possibly burst if exposed to such substances as certain solvents, strong alkalies, compressor oils containing ester-based additives, or synthetic oils. Fumes of these substances in contact with the polycarbonate bowl, externally or internally, also can result in damage.

Filter

Drain filter as frequently as necessary to keep the liquid level in the bowl below the element mounting stud. If the liquid level rises above the stud, liquid will be carried into air lines. Replace the filter element when plugged or dirty.

1. Shut off inlet pressure. Turn adjusting knob counter-clockwise until it stops, reducing pressure to zero.
2. Remove the bowl and unscrew the mounting stud to replace the filter element.
3. Clean the plastic bowl using warm water only. If the plastic bowl shows signs of cracking, cloudiness or other signs of deterioration, replace with a metal bowl. Consult Sentry Equipment Corp for replacement parts.
4. Lubricate the o-ring seal before reassembly. Tighten the element stud and/or bowl to 5-10 in lb.

Regulator

Upon detection of air leaks, pressure fluctuation or creep, the regulator can be disassembled for cleaning.

1. Shut off the inlet pressure. Turn the adjusting knob counter-clockwise until it stops, reducing pressure to zero. Remove the entire air control assembly by unscrewing two (2) tube fittings and removing the fasteners holding the four-way valve to the mounting bracket.
2. Unscrew the plastic bonnet from the regulator and carefully remove parts. Observe arrangement of components for future reassembly.
3. Clean the parts with warm water and soap. Dry the parts and blow out the internal passage in the body using clean, dry, compressed air.
4. Inspect the parts carefully and reassemble.
5. Tighten the plastic bonnet to 50–60 in lb.
6. Replace the air control assembly and tighten the panel nut securely.

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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