

# Installation, Operation & Maintenance Manual

## Sentry R Hazardous Controller for ATEX/IECEX Environments Sampler Controllers

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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.

### **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 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® R Hazardous Controller is a manually-operated explosion-proof sampler controller used to operate Sentry R 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 R hazardous controller is suitable for use in the following environments:

- ZP-XCEX 121208 N4/IP66 EX D (ATEX/IECEX IIB+H2) T6
-  0539  II 2 G Ex d IIB+H2 T6 Gb
- DEMKO 15 ATEX 1554X  
IP66
- Ex d IIB+H2 T6 Gb
- IECEx UL 15.0093X  
IP66
- Ambient Temp:  $-20 \leq T_a \leq 60^\circ\text{C}$

# Installation

## WARNING

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

- 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.

## 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 allows the anulus to fill properly.
3. Manual Sample (HAND): Allows the operator to immediately collect a sample.
4. Automatic Sample (AUTO): Allows the operator to initiate continuous sampling.
5. Auto light: Indicates sampler is currently sampling or is ready for a remote start signal.
6. Batch Complete light: Indicates batch counter has reached the set number.
7. Sampling light: Indicates sampler is extended into process stream
8. Auger light: Indicates collected sample is being transferred to container.

# Starting and Stopping the Sampler Controller

Before operating the sampler controller, set the timers to the desired values.

## Timers

Set the timers by turning the dials to the appropriate time intervals.

- When the timers are set, make sure the selector switch is in the OFF position before applying power to the sampler controller.
- TDR 107: 0 seconds (being used as a relay)
- TDR 120: 5 seconds (typical)
- TDR 122: 5 seconds (minimum); time chosen must allow screw to retract into the motor coupling
- TDR 124: 5–10 seconds; time needed for product to transfer through screw
- TDR 132: as needed; time required between sampling events  
(NOTE: Per the timer function AC, the time setting will need to be 50% of the actual time required; for example, 10 minutes between samples = timer setting of 5 minutes.)
- TDR 134: 0–5 seconds (time begins with TDR 132)

## Counter

Set the counter by adjusting the DIP switches.

### NOTE

For CE applications, power must be removed before changing DIP switches.

## 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. The sampler extends and remains extended until the selector switch is released. When the switch is released, the sampler retracts and the sample is 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 is provided to allow remote starts. A jumper must be removed and a circuit must be completed. See the electrical wiring diagram for details.

## Stopping the Sampler Controller

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

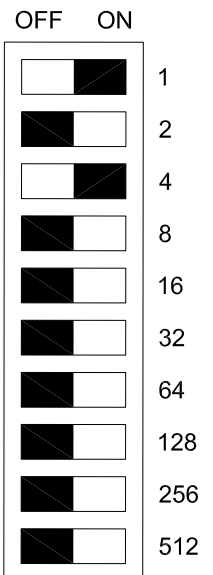
### NOTE:

An emergency stop, if required, shall be provided by others.

## Reset

To reset the batch counter (CTR-107), place the HOA in the OFF position, or cycle power on the remote start relay (CR-155).

## CTR107



# 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](http://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.

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