

# COMPONENTS FOR PRECISE SAMPLE CONDITIONING

## Cooling Water Iso Skid

The essential elements of representative sampling are precise temperature, pressure and flow control — these are at the core of any good sampling system. Sentry Equipment manufactures the largest variety of sampling components available for water, steam and process sampling. Sentry also integrates these components into standard and custom sampling and analysis systems.

### SAMPLE COOLERS

Heavy duty stainless steel construction, other materials available. Over 20 models to handle any application. ASME/CRN stamp available.

Ask for Bulletin 4.10

### VREL® PRESSURE REDUCER

U.S. Pat. No. RE37,153

Reduce high pressures without valve wear. Cleanable in place. Adjustable while in service.

Ask for Bulletin 1.10.1

### THERMAL SHUT-OFF VALVE

U.S. Pat. No. 5,826,790

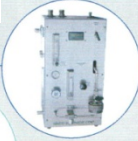
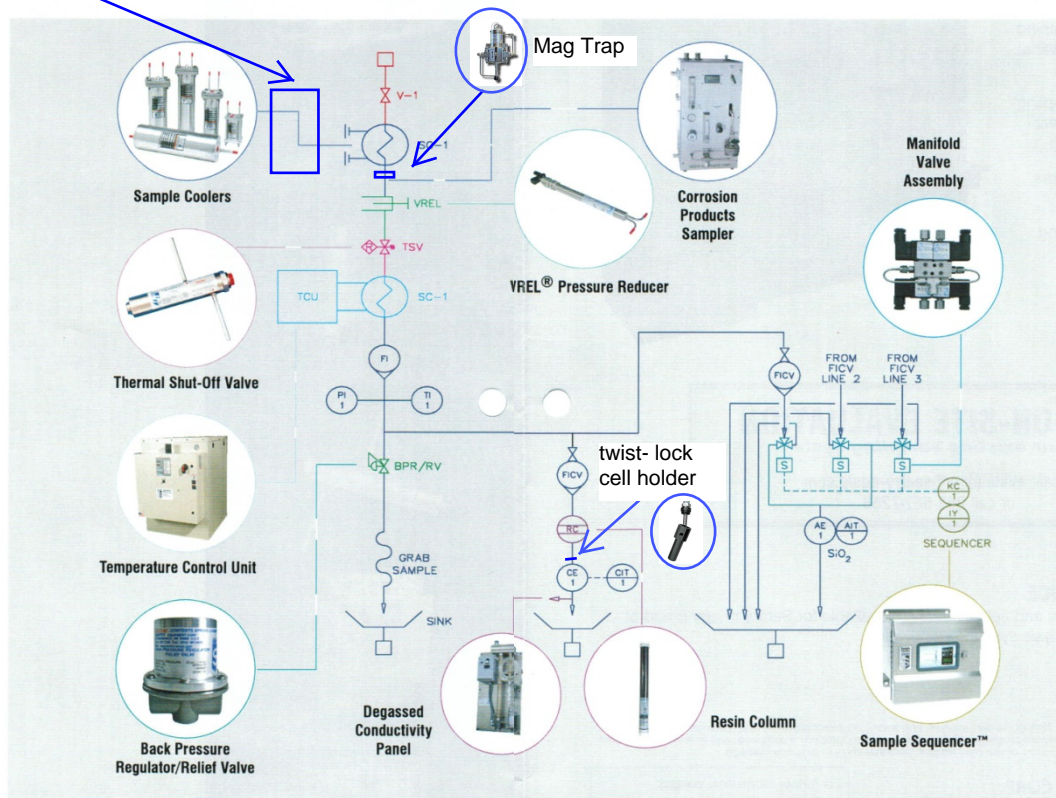
Shuts down high temperature sample in less than 5 seconds. Protects analyzers and operators.

Ask for Bulletin 13.1.1

### TEMPERATURE CONTROL UNIT

Maintain sample temperature at 77°F (25°C). Water or air cooled. Rugged design for power plant environment.

Application specific, contact Sentry



### BACK PRESSURE REGULATOR/RELIEF VALVE

Maintain precise sample pressure to assure proper flow control. Factory set to eliminate unnecessary adjustment of setting. Built-in relief valve to protect analyzers.

Ask for Bulletin 9.1.1

### CATION CONDUCTIVITY ACCESSORIES

Cation resin columns designed specifically for power plants. Complete panels to measure specific, cation, and degassed conductivity or any individual measurement. Custom analysis panels including degassed conductivity, DO, and corrosion product sampling.

Ask for Bulletins 6.1.1 (resin column) & 1.43.1 (degassed panel)

### SAMPLE SEQUENCER™

Time share several streams with one analyzer. Operates with either batch type or continuous reading analyzers.

Ask for Bulletin 5.5.25

### MANIFOLD VALVE

U.S. Pat. No. 5,469,751

No cross contamination. Continuous sample flow in all lines.

Ask for Bulletin 5.5.20

### CORROSION PRODUCTS SAMPLER

Identify and quantify corrosion throughout the thermal cycle. Portable or panel mount versions available.

Ask for Bulletin 11.1

To learn more about sample conditioning and to download referenced bulletins visit us at:

[www.sentry-equip.com](http://www.sentry-equip.com)

# Single Line Sample Panels

Optimize Plant Performance

FOR STEAM & WATER



MORE THAN 85 YEARS OF  
SAMPLING EXPERIENCE

[www.sentry-equip.com](http://www.sentry-equip.com)



# PRE-ENGINEERED ASSEMBLIES FOR CONDITIONING WATER, STEAM, OR PROCESS LIQUIDS

**S**ingle line sample panels are pre-piped assemblies used to simplify the conditioning of steam, water or non-hazardous process samples. The major application is for individual samples that are remotely located throughout the plant or for a small number of samples in a central location. Any sample can be easily conditioned to give a safe and representative sample with just the addition of cooling water.

There are two versions of Sentry® single line sample panels — one for grab samples only (SL-100) and the other for both grab and on-line analysis (SL-200).

Model selection is based on pressure and temperature limits. For samples up to 500 psig/450°F (34 barg/232°C) low pressure models (SL-100L & SL-200L) are appropriate. High pressure models (SL-100H & SL-200H) handle sample pressures and temperatures up to 3030 psig/1000°F (209 barg/538°C).

Note: High pressure panels rated up to 5000 psig (345 barg) are available upon request.

Whether you purchase an individual single line sample panel or an integrated rack, you get a completely engineered sample conditioning system from one reliable source – Sentry Equipment – the world leader in sampling components and systems.

## Select from a Variety of Standard and Optional Features to Meet Your Specific Sampling Needs

### SL-100

*for grab samples*

#### SL-100 Includes:

- TLR-4225 Sample Cooler
- Cooling Water Valves
- Sample Isolation Valve
- Thermometer
- Sink
- Pressure Reducer Needle Valve for SL-100L, or VREL® Valve for SL-100H

#### SL-100 Options:

- Cooling Water Sight Glass
- FLR-6225 Sample Cooler
- Secondary Sample Cooler
- High Pressure Blowdown Valve
- Sample Side Relief Valve
- Shell Side Relief Valve
- Thermal Shut-Off Valve
- Total Flow Indicator
- Floor/Wall Mounted Rack

### SL-200

*for grab samples & on-line analysis*

#### SL-200 Includes:

- TLR-4225 Sample Cooler
- Cooling Water Valves
- Sample Isolation Valve
- Sink
- Pressure Reducer Needle Valve for SL-200L, or VREL® Valve for SL-200H
- Back-Pressure Regulator/Relief Valve
- Thermometer
- Total Flow Indicator
- Analyzer Connection

#### SL-200 Options:

- Cooling Water Sight Glass
- FLR-6225 Sample Cooler
- Secondary Sample Cooler
- High Pressure Blowdown Valve
- Sample Side Relief Valve
- Shell Side Relief Valve
- Thermal Shut-Off Valve
- Low Pressure Blowdown Valve
- Sample Filter
- Pressure Gauge
- Floor/Wall Mounted Rack
- Sample Sentry II

## OPTIMIZE PLANT PERFORMANCE WITH SENTRY SINGLE LINE SAMPLE PANELS

To learn more about Sentry Equipment and to download referenced bulletins visit us at:

[www.sentry-equip.com](http://www.sentry-equip.com)

# INTEGRATED RACK SYSTEM CONFIGURATIONS

## Floor and Wall Racks Simplify Installation

Sentry® single line racks can be mounted in a variety of configurations to create custom sample systems.

Both the freestanding and wall mountable racks come with full-width worktable sinks and pre-piped cooling water headers to reduce installation time and cost.

## You Choose the Options

Individual single line panels or multi-panel racks can be customized to meet your special requirements. Complete mechanical and electrical systems with full documentation are available.

- Add an analyzer or other analysis product.
- Create a complete sample system with analyzers and conditioning on the same rack.
- Use the back side of a freestanding floor rack to mount analysis equipment.
- Combine critical conditioning and analysis on a portable skid.

As the world leader in sample conditioning and analysis products and systems, Sentry has the skills and experience to design and build a sample system that will meet your needs.

# CUSTOM APPLICATIONS

### 5-Line Freestanding Floor Rack

with a common sink and worktable; instruments mounted on rear side



### 3-Line Wall Mount Rack

with cation conductivity columns and cells mounted side-by-side (analyzers mounted in sample room)



### 2-Line Wall Mount Rack

with conductivity and pH cells and analyzers mounted side-by-side



# AUTOMATED SAMPLE CONDITIONING MODULE

Ask for bulletin 1.39.2



The Sample Sentry® II is a fully automated sample conditioning system providing:

- Automatic startup (including blowdown)
- Flow control
- Shut down
- Automatic blowdown operation reduces crud build up and improves sample representativity
- Meets sampling guidelines recommended by EPRI (Report #CS-5164, Project 2712-2)



## ⚠ WARNING

It is solely the responsibility of the end-user, through its own analysis and testing, to select products and materials suitable for their specific application requirements, ensure they are properly installed, safely applied, properly maintained, and limit their use to their intended purpose. Improper selection, installation, or use may result in personal injury or property damage.



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QUALITY MANAGEMENT SYSTEM  
CERTIFIED BY DNV

ISO 9001:2008

For further information, contact:



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# SAMPLING SYSTEMS for Water & Steam

3

V-5  
V-4

VREL

PCV-1

V-3

V-3

TSV-1

SC-1

FI 1

FI 1

PI 1

TW 1

TI 1

PI 1

TW 1

TI 1

BPR/RV

BPR/RV

SC

CE-1

K=

RC

CC

CE-1

K=

SC

FICV 1

pH

AE-1

TO LINE 1

SC

FICV 1

SC

CE-1

K=

RC

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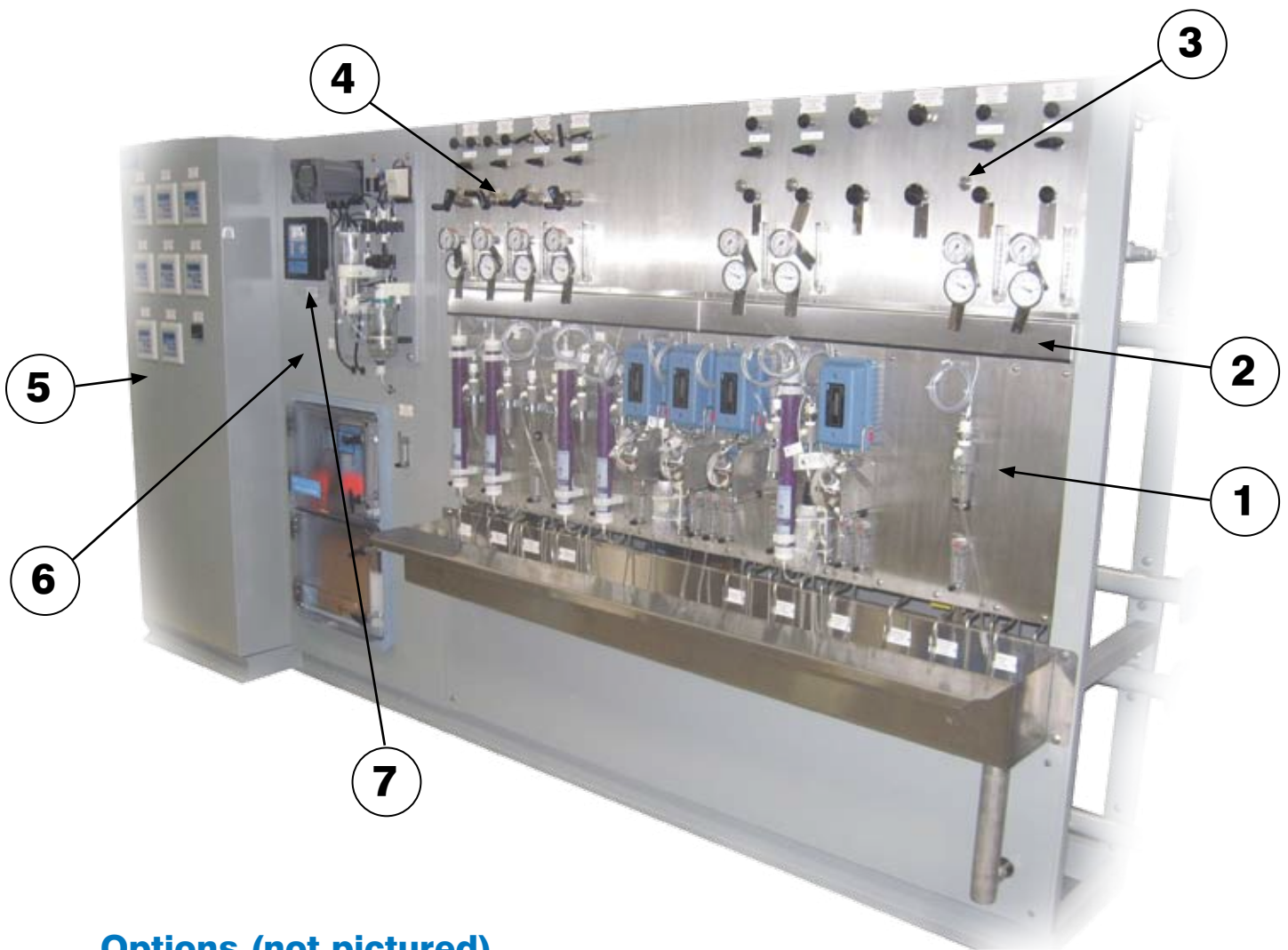
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# FEATURES OF A USER-FRIENDLY SAMPLE PANEL

## Sampling and Analysis Systems (front view)

- 1) Valves and sensors mounted on front of panel over sink for ease of calibration and maintenance.
- 2) Recessed wireway located along front of panel with SS cover plate to simplify probe replacement.
- 3) Thermal shut-off valve with visual trip indication on panel front.
- 4) Pressure reducing valve, VREL<sup>®</sup> with speed handle — sample line flow is set with one adjustment.
- 5) Control/monitor panel isolates electrical components from wet section.
- 6) Wet analyzer panel; flush, surface, or rear-mounted analyzers.
- 7) Sample sequencing featuring Sample Sequencer<sup>®</sup> IV to reduce the number of required analyzers.

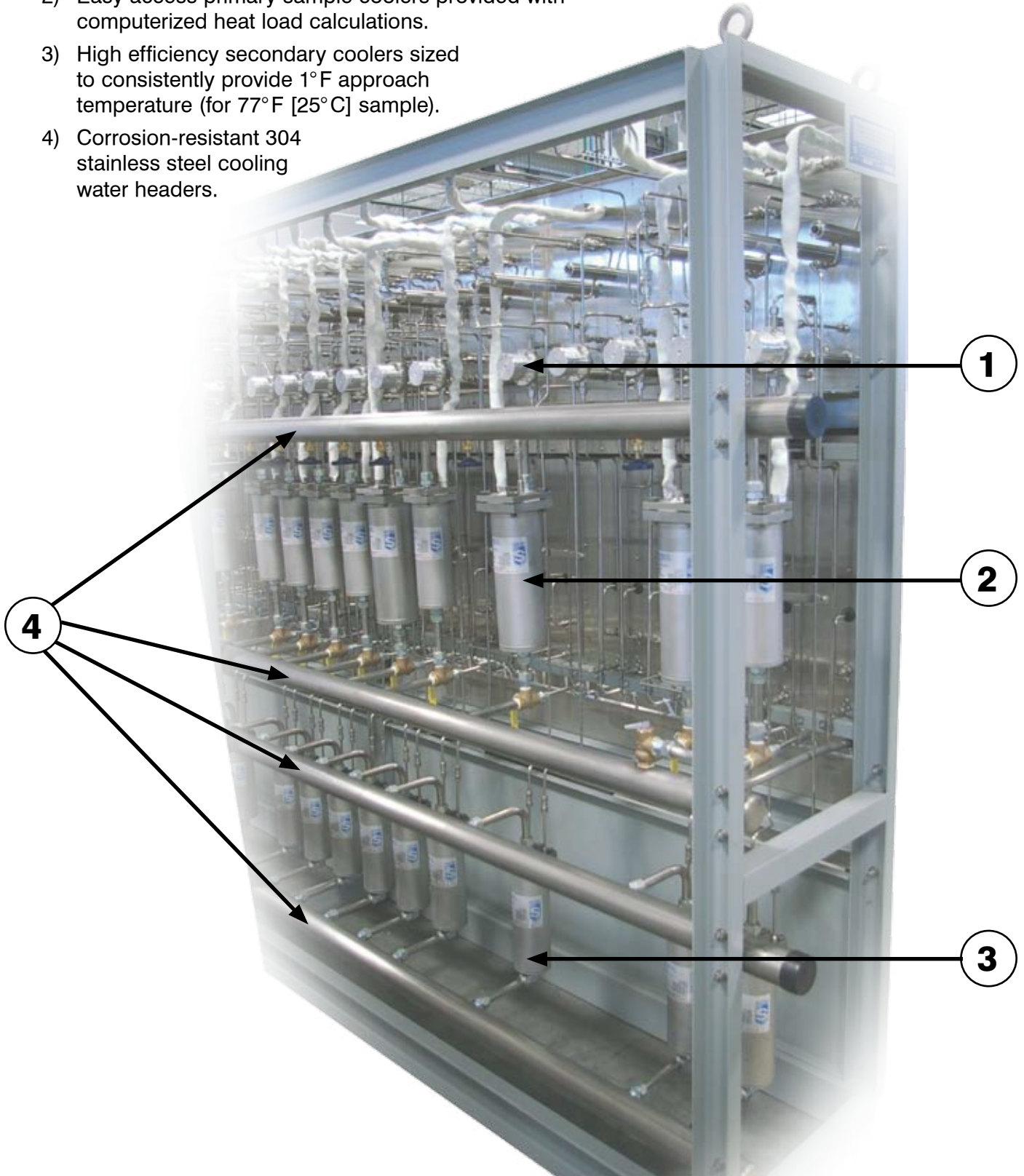


## Options (not pictured)

- Temperature Control Units (TCU) for precise 77°F (25°C) samples.
- Cooling Water Isolation Skids (CWIS) to prevent poor quality cooling water from plugging sampling components.
- Totally automated Sample Sentry<sup>®</sup> II system to minimize startup time while reducing manpower requirements.

## Sampling and Analysis Systems (rear view)

- 1) BPRV — back pressure control and pressure relief maintains steady flow to analyzers.
- 2) Easy access primary sample coolers provided with computerized heat load calculations.
- 3) High efficiency secondary coolers sized to consistently provide 1°F approach temperature (for 77°F [25°C] sample).
- 4) Corrosion-resistant 304 stainless steel cooling water headers.





# INSTALLATIONS

## Shelters

- From sun and rain protection to heavy snow, wind or seismic protection.
- Lab facilities can be incorporated to offset the costs of a lab room within the plant. A variety of colors, construction methods, and accessories are available.



## Wall Mount

- All components accessible from the front — no rear panel access required.

## Automated (Sample Sentry® II)

- Fully automated sample conditioning system providing automatic startup (including blowdown) flow control, and shut down.
- Improves sample accuracy; better chemistry control.
- Self-cleaning; longer analyzer cell life.



Sample Sentry® II



## SENTRY EQUIPMENT CORP

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QUALITY MANAGEMENT SYSTEM  
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