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BASIC BOTTLE SAMPLING SYSTEM



The SENSOR Basic Bottle Sampling System (BBSS) is designed for safe and reliable closed-loop "grab" sampling of liquids at process pressures less than 150 psig (10 bar). The SENSOR sample valve is designed to operate under continuous flow via a bypass or parallel line off the main process piping. With inclusion of the optional Needle Evacuation System (NES), the BBSS provides for for complete removal of sampling residue from the ID of the Process Needle, therefore preventing plugging and cross-contamination between sampling operations.

Features and Benefits

- Highly customizable based on process conditions and operator requirements
- Primary Flow-Thru Sample Valve features a side-ported needle valve with packing below the threads; ensuring that the stem will not seize due to process build up.
- Side-ported Vent Needle prevents plugging of vent port
- 316L standard material; other materials available
- Replaceable Process and Vent Needles
- Non-metallic bottle shroud protects operator in case of shattered bottle
- Operation and Installation Manual for each system



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Materials of Construction

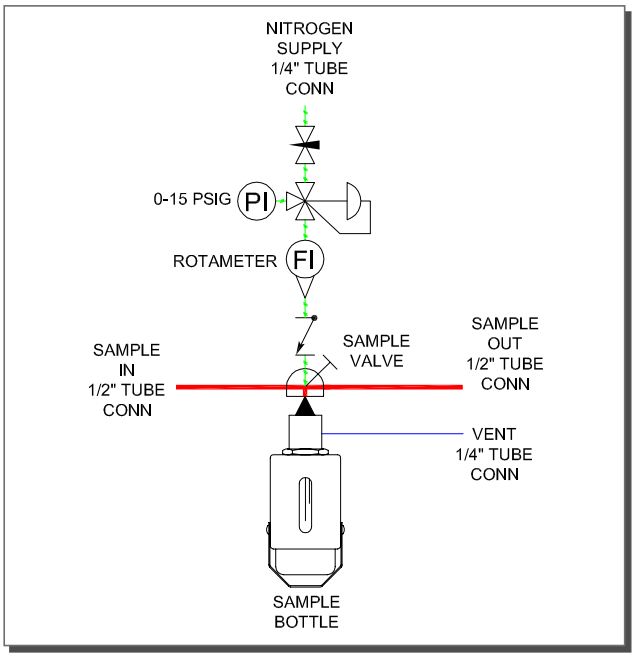
Sample Loop	316L Stainless Steel
Sample Valve	316L; 1/2" flow port
Process Needle	316SS; .083" - .148" OD
Vent Needle	316SS; .083" OD
O-Ring Material	Viton standard; optional Kalrez
Seal Material	Teflon
Bottle Shroud	PVC; 2 oz. - 32 oz.
Retaining Strap	Stainless Steel
Mounting Plate	Stainless Steel

Operating Pressure 150 psig maximum recommended pressure when sampling; sample valve and system rated to 2000 psig

Operating Temperature 135°F maximum without cooler; 800°F maximum with cooler and graphoil valve packing

Optional Equipment

SENSOR Needle Evacuation System (NES)	Includes check valve, regulator, rotameter, pressure gauge, and block valve
Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color to indicate saturated filter media
Isolation Valves	Isolation valves on sample inlet & outlet to allow for easy serviceability
Sample Coolers	For use when process temperature exceeds 135°F
Secondary Block Valve	Complies with double-block safety requirements
Enclosures	Stainless steel enclosures, available uninsulated or insulated and with steam or electric heater elements; other enclosure materials available
Mounting	2" X 60" pipe stand, galvanized



Shown with optional Needle Evacuation System (NES).

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How to Order

Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 4 and 5

1 Model

Basic Bottling Sample System	BBSS

2 Needle Size

.083” Process/.083” Vent (standard)	A
.109” Process/.083” Vent	B
.148” Process (TFE coated)/.083” Vent	C
.250” Sample Tube (stinger)	D

3 Shroud Size

2 oz.	02
4 oz.	04
8 oz.	08
16 oz.	16
32 oz.	32
None	NN
Special (please specify)	XX

4 Process Connection

05	1/2” Tubing (standard)
25	1/4” Tubing
37	3/8” Tubing
FF	Flanged (specify size and rating)

5 Optional Equipment

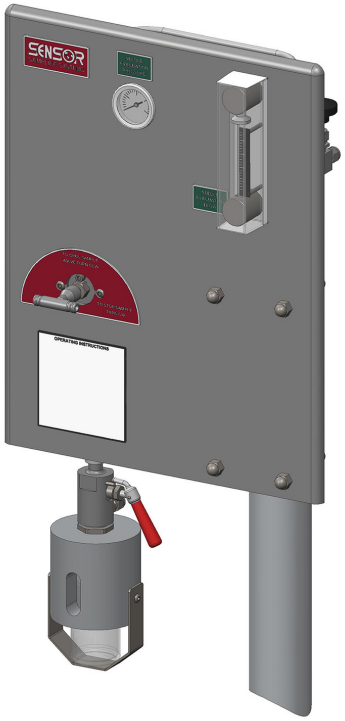
NV	Needle Evacuation System (NES)
CC	Emission Filter (Activated Carbon w/ Indication Crystals)
CF	Emission Filter (Activated Carbon)
DB	Double Block Valve
EB	Bottle Enclosure
EE	Enclosure w/ Electric Heater
EI	Enclosure (Insulated)
EN	Enclosure (Non-Insulated)
ES	Enclosure w/ Steam Heater
IB	Isolation Valves In/Out (Ball Valves)
KZ	Kalrez O-Rings
PC	Process Cooler
PS	2” Pipe Stand w/ Base
SL	Silconert Internal Coating
XX	Other Options (please specify)

BBSS - B - 04 - 05 - KZ/NV Example Model No.

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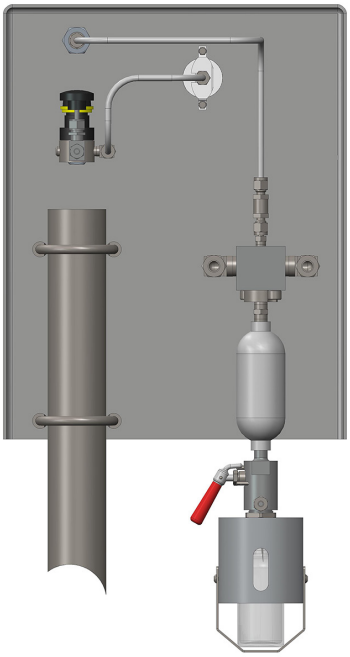
PRESSURE ISOLATING BOTTLE SAMPLING SYSTEM



The SENSOR Pressure Isolating Basic Sampling System (PIBSS) is designed for safe and reliable closedloop “grab” sampling of liquids at process pressures greater than 150 psig (X bar) or for any application for which the operator wishes to collect a repeatable volume of process liquids. The SENSOR sample valve is designed to operate under continuous flow via a bypass or parallel line off the main process piping. The inclusion of a secondary isolation valve ensures that the sample container is not exposed to process pressure.

Features and Benefits

- Highly customizable based on process conditions and operator requirements
- Primary Flow-Thru Sample Valve features a side-ported needle valve with packing below the threads; ensuring that the stem will not seize due to process build up.
- Side-ported Vent Needle prevents plugging of vent port
- Secondary Isolation Valve below Volume Cylinder prevents bottle exposure to process pressure
- Can be designed to produce repeatable sample volume
- 316L standard material; other materials available
- Replaceable Process and Vent Needles
- Non-metallic bottle shroud protects operator in case of shattered bottle
- Customized Operation and Installation Manual for each system



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Materials of Construction

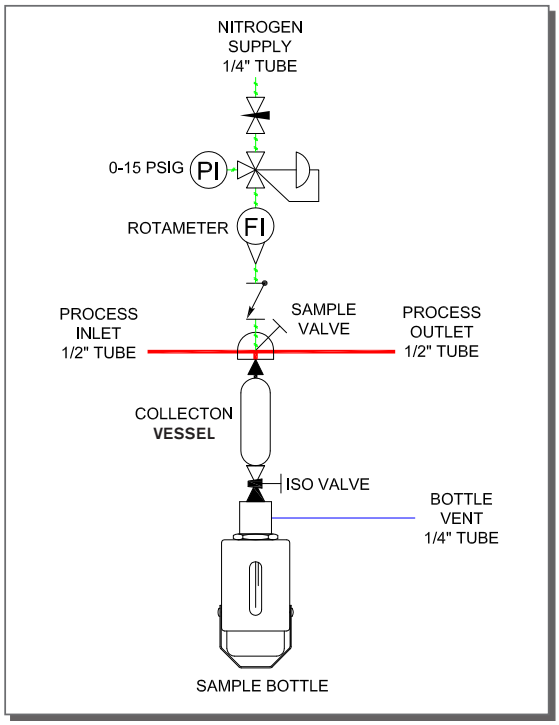
Sample Loop	316L Stainless Steel
Sample Valve	316L; 1/2" flow port
Process Needle	316SS; .083" - .148" OD
Vent Needle	316SS; .083" OD
O-Ring Material	Viton standard; optional Kalrez
Seal Material	Teflon
Bottle Shroud	PVC; 2 oz. - 32 oz.
Retaining Strap	Stainless Steel
Mounting Plate	Stainless Steel

Operating Pressure 2000 psig @ 70°F

Operating Temperature 135°F maximum without cooler; 800°F maximum with cooler and graphoil valve packing

Optional Equipment

Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color to indicate saturated absorbent media
Isolation Valves	Isolation valves on sample inlet & outlet to allow for easy serviceability
Sample Coolers	For use when process temperature exceeds 135°F
Secondary Isolation Valve	Complies with double-block safety requirements
Enclosures	Enclosures, available insulated or uninsulated and with steam or electric heater elements
Mounting	2" X 60" pipe stand; galvanized



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Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 4 and 5

1 Model

PIBSS	Pressure Isolating Bottle Sampling System with collection vessel

2 Needle Size

A	.083" Process/.083" Vent (standard)
B	.109" Process/.083" Vent
C	.148" Process/.083" Vent
D	.250" Sample Tube (stinger)

3 Collection Vessel Size

XX	Collection Vessel Size (please specify volume in oz.) typically 75% of bottle size

4 Shroud Size

02	2 oz.
04	4 oz.
08	8 oz.
16	16 oz.
32	32 oz.
NN	None
XX	Special (please specify)

5 Process Connection

05	1/2" Tubing (standard)
25	1/4" Tubing
37	3/8" Tubing
FF	Flanged (specify size and rating)

6 Optional Equipment

IB	Isolation Valves In/Out (Ball Valves)
CC	Emission Filter (Activated Carbon w/ Indication Crystals)
CF	Emission Filter (Activated Carbon)
DB	Double Block Valve
EB	Bottle Enclosure
EE	Enclosure w/ Electric Heater
EN	Enclosure (Non-Insulated)
ES	Enclosure w/ Steam Heater
KZ	Kalrez O-Rings
PC	Process Cooler
PS	2" Pipe Stand w/ Base
SL	Silconert Internal Coating
XX	Other Options (please specify)

PIBSS - B - XX - 04 - 25 - KZ/PS **Example Model No.**

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INLINE SAMPLING SYSTEM



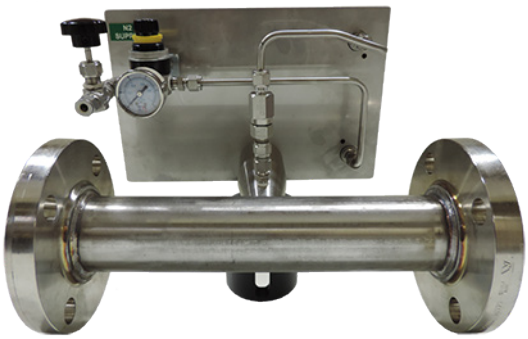
The SENSOR Inline Sampling System (ISS) fits directly into a piping system without the need to utilize, or create, a pressure differential to take a sample. It can be designed to fit into virtually any diameter piping system and any flange configuration. The ISS uses a special needle valve and can be configured as a fixed volume sampler for repeatable volume or high pressure.

SENSOR inline sample valve is attached to a spool piece matching your piping specification. The inline sample valve can be fully purged to eliminate dead volume and potential plugging issues.

Typical applications for the SENSOR ISS include hot oil, refinery “bottoms”, hot asphalt and resid oil. Our robust valve can be fitted with graphoil packing for high temperature applications. We can heat trace any exposed areas to maintain adequate process temperature to allow for a freely flowing sample. We can enclose the inline sample valve and sample receptacle in a specially designed enclosure for operator protection. The enclosure can also be fitted with an optional eductor to exhaust harmful vapors and smoke to a safe location.

Features and Benefits

- Can be provided in virtually any material to match the piping system in which it is installed
- Steam purge available for elimination of plugging
- Available with fixed volume, model IFVSS
- Operation & Installation Manual included
- Steam heated dispense tube available to eliminate plugging



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Materials of Construction

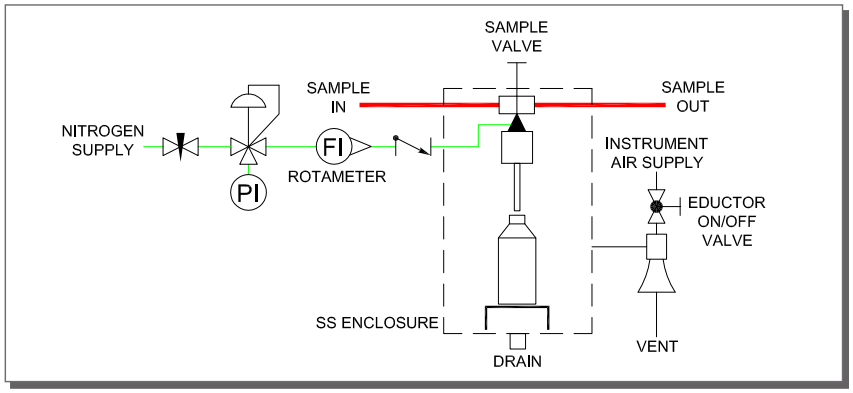
Spool Piece	316L Stainless Steel (SS) standard; flanged process connections
Sample Valve	316SSL
Process Needle	316SS; .083" - .148" OD; or 1/4"-1/2" dispense tube
Vent Needle	316SS; .083" OD
O-Ring Material	Viton standard; optional Kalrez
Seal Material	Teflon standard; optional Graphoil
Bottle Shroud	PVC; 2 oz. - 32 oz. standard (other sizes available) (Note: not recommended for resid and hot oil types of metal)
Retaining Strap	Stainless Steel
Mounting Plate	Stainless Steel

Operating Pressure 1500 psig max; 150 psig maximum recommended pressure when sampling without fixed volume option; unless dispense tube is used

Operating Temperature 135°F maximum without cooler; 800°F maximum with cooler and/or graphoil valve packing

Optional Equipment

Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color to indicate saturated filter media
Isolation Valves	Isolation valves on sample inlet & outlet to allow for easy serviceability
Sample Coolers	For use when process temperature exceeds 135°F
Secondary Block Valve	Complies with double-block safety requirements
Enclosures	Enclosures, available insulated or uninsulated and with steam or electric heater elements
Mounting	2" X 60" pipe stand; galvanized
Eductor	Utilizes steam plant air, or nitrigen to create motive force to remove vapor and/or smoke from inside an enclosure
Steam Tracing & Insulation	All components in contact with process are steam traced and insulated
Fixed Volume Chamber	Repeatable sample volumes, helps prevent overfilling of bottle and isolate bottle from process pressure
Steam Heated Stinger	Steam-traced stinger, prevents plugging



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Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 4 and 5

1 Model

Inline Sample System with Flanged Connections	ISS

2 Needle Size

.083" Process/.083" Vent (standard)	A
.109" Process/.083" Vent	B
.148" Process/.083" Vent	C
.250" Sample Tube (stinger)	D
Steam Stinger	E

3 Shroud Size

2 oz.	02
4 oz.	04
8 oz.	08
16 oz.	16
32 oz.	32
None	NN
Special (please specify)	XX

4 Process Connection

FF	Flanged (specify size and rating)

5 Face To Face Dimension

XX	Please Specify (tolerance +/– 1/8")

6 Optional Equipment

NP	SENSOR Needle Purge (SNP)
CC	Emission Filter (Activated Carbon w/ Indication Crystals)
CF	Emission Filter (Activated Carbon)
EB	Bottle Enclosure
ED	Eductor
EE	Enclosure w/ Electric Heater
EI	Enclosure (Insulated)
EN	Enclosure (Non-Insulated)
ES	Enclosure w/ Steam Heater
IB	Isolation Valves In/Out (Ball Valves)
KZ	Kalrez O-Rings
PC	Process Cooler (fixed volume cooler only)
SI	Secondary Isolation Valve
SL	Silconert Internal Coating
ST	Steam Trace & Wrap
XX	Fixed Volume Size (please specify- typically 75% of bottle size)
XX	Other Options (please specify)

ISS - B 04 FF XX KZ — Example Model No.

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SENSOR
SAMPLING SYSTEMS

IVSS INLINE VALVE SAMPLING SYSTEM



Inline Flanged Valve

The SENSOR Inline Valve Sampling System (IVSS) fits directly into the process piping system without the need to utilize, or create, a pressure differential to collect a sample. It can be designed to fit into 1", 2" or 3" vertical or horizontal piping orientation. The IVSS can be configured to utilize a thread-in bottle or needles for a bottle with cap and septa.

Two Configurations Available

The IVSS can be provided with a wafer or inline flange configuration, providing the ability to be installed in virtually any piping system.

The wafer configuration is designed to be sandwiched between two existing flanges. The inline version includes mating flanges on each end that can be specified to any required face-to-face dimension.

How Valve is Designed

The valve has been designed with the user in mind. The easy to use pull-type lever allows the operator to control the flow of the liquid into the bottle while collecting a sample. Upon release of the handle the valve springs closed forming a tight seal and terminating the sample collection.

Applications

The IVSS was designed for smaller batch processes, typically chemical facilities, where more specialty products are produced. These applications often require a dedicated sample collection system that ensures a homogeneous collection process and eliminates outside contamination of the media and/or exposure to the operator.



Wafer Valve

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Features and Benefits

Spring-Loaded Handle	Valve automatically closed off after releasing the handle.
Weep Hole Above Packing	When packing begins to fail, weep hole provides early warning.
Interchangeable Adapter	Several types of adapters can be used to allow for various bottle types with thread-in or needle configuration.
Throttle Handle	Operator has the ability to control the bottle fill rate with the handle.
Lockable Handle with Insertion Pin	To perform maintenance or to prevent accidental opening when not intended to be used.
Wafer or Inline Type Design	The IVSS can fit in any new or existing piping configurations.
Body Materials	Standard is 316SS but available in HC276 to handle corrosive chemicals.

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Materials of Construction

Inline Flanged Valve	316LSS standard, HC276 optional
Wafer Valve	316LSS standard, HC276 optional
Threaded Bottle Adapter	PTFE
Process Needle	316SS standard, HC276 optional
Vent Needle	316SS standard, HC276 optional
O-Ring Material	Viton standard, optional Kalrez
Valve Packing Material	Teflon™ standard
Bottle Shroud	PVC, 2 oz. - 32 oz. standard (other sizes available)
Retaining Strap	Stainless Steel

Max Operating Pressure 232 psig

Max Operating Temperature 350°F

Optional Equipment

SENSOR Needle Evacuation System (NES)	Includes check valve, regulator, rotameter, pressure gauge, and block valve.
Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color when filter media is saturated.
Bottle Enclosure	Available to house the bottle to protect the operator during collection and prevent outside contamination.
Kalrez® Seals	Kalrez® is offered to provide chemical compatibility when needed.
Secondary Isolation Valve	Available when double-block is required or desired.
Silconert Internal Coating	To prevent adsorption of collected media to the sample valve or needles.
Steam Tracing & Insulation	All components in contact with process are steam traced and insulated to prevent unwanted cooling.

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How to Order

Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 6 and 7

1 Model

Inline Valve Sample System	IVSS

2 Mount Arrangement

Vertical	V
Horizontal	H

3 Body Material

316SS	36
Hastelloy C276	HC

4 Needle/Bottle Size

.083” Process/.083” Vent (standard)	A
.109” Process/.083” Vent	B
.148” Process/.083” Vent	C
.065”/.109” CONCENTRIC Needle	D
.083”/.148” CONCENTRIC Needle	E
.109”/.203” CONCENTRIC Needle	F
.250” Sample Tube (stinger)	G
Threaded Bottle Type 38-430	H
Threaded Bottle Type GL45	I

See page 5 for details on CONCENTRIC needle.

5 Shroud Size

2 oz.	02
4 oz.	04
8 oz.	08
16 oz.	16
32 oz.	32
Special (please specify)	XX
Threaded Bottle	TB

6 Process Connection

FF	Flanged face-to-face (1”=7.9”, 2”= 9.4”, 3”=11”)
WF	Wafer (3’ face-to-face)
XX	Custom face-to-face dimensions (i.e. 06=6”, 18=18”)

7 Flange Type

RF	Raised Face
RJ	Ring Type Joint
FF	Flat Face

8 Flange Size & Ratings

01	1” x 150lb/DN25 x PN16
02	2” x 150lb/DN50 x PN16
03	3” x 150lb/DN80 x PN16

9 Optional Equipment

NP	SENSOR Needle Evacuation System (NES)
CC	Emission Filter (Activated Carbon w/Indication Crystals)
CF	Emission Filter (Activated Carbon)
EB	Bottle Enclosure
KZ	Kalrez Seals
SI	Secondary Isolation Valve
SL	Silconert Internal Coating
ST	Steam Trace & Insulation
XX	Other Options (please specify)

Example Model No.

IVSS - V 36 B 04 WF RF 01 NP/CF

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C◎NCENTRIC **Needle System**

The C◎NCENTRIC Needle design combines the function of the 2-needle system in one concentric combination of two different sized needles, one within the other. Process travels through the inner needle into the bottle and the displaced air and vapors are vented back through the annulus between the two needles and plumbed to a safe area.

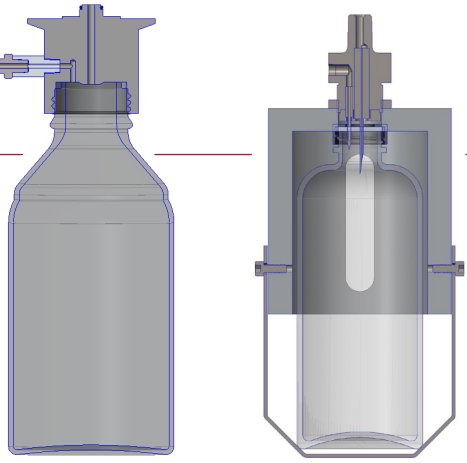


C◎NCENTRIC **NEEDLE FEATURES**

- Aligns the process and venting functions with the center of the sample bottle
- Can be ordered as an OPTION without changing the sample station design
- Can be supplied in the same materials as the dual needle system
- Can improve reliability of the sample station in the field, if utilized for the right applications
- Can be used with vials with crimp-on caps
- Can be used for small sample bottles (less than 1 oz.)

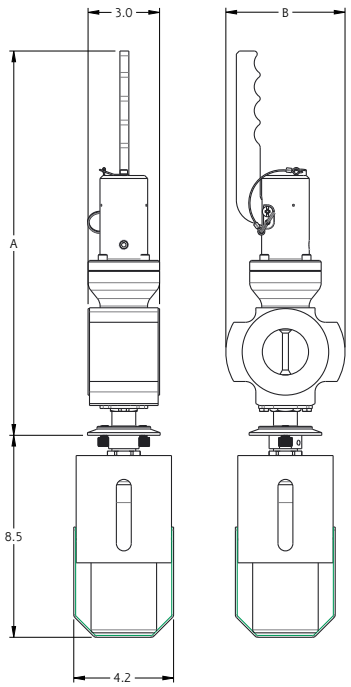
Process vent sizes
.065”/.109”
.083”/.148”
.109”/.203”

Thread-in versus needle adapter.

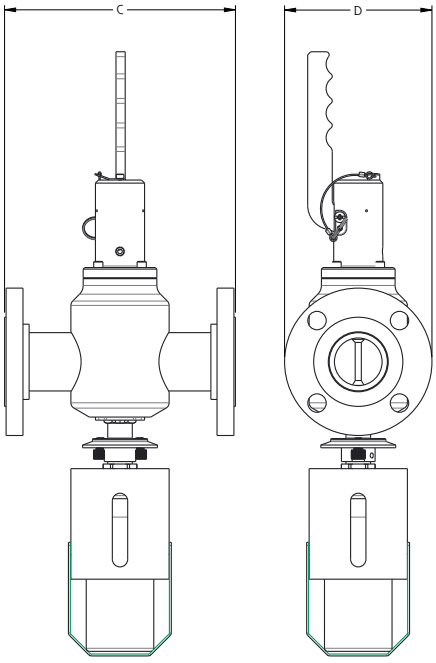


Dimensions

Wafer Valve



Inline Flanged Valve



	VALVE SIZE		
DIM	1"	2"	3"
A	15.6"	16.1"	17.4"
B	4.3"	5.0"	6.0"
C	7.9"	9.4"	11.0"
D	4.3"	6.0"	7.5"

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SENSOR SAMPLING SYSTEMS

RSS
RAM SAMPLING SYSTEM



The SENSOR RAM Sample System (RSS) is designed to attach directly to the side of a tank or pipeline without the need to utilize, or create, a pressure differential to take a sample. The RSS uses a Piston Type Ram Sample Valve which works very well in high viscosity or high particulate applications which are prone to plugging. As the valve is rotated the piston draws back and allows the liquid to flow through to the sample port. When the Piston Ram Valve is rotated to close, it pushes back any remaining product to ensure no cross contamination between samples and zero dead volume.

SENSOR RAM Sample System can be supplied with a flanged, threaded, or welded connection to mate up to existing piping. It can also be supplied with a piping spool to fit into an existing pipe line with either a threaded or flanged type of connection. The RAM Valve can be fully purged with use of a purge adapter to eliminate any dead volume below the valve and eliminate potential plugging issues.

Typical Applications for the SENSOR RSS include hot oil, refinery “bottoms”, hot asphalt, resid oil, and any other low vapor pressure hydrocarbons where a fast loop is not present or easily achievable. The RAM Sample valve can be fitted with Teflon® or Graphoil packing to meet the requirements of most applications. We can heat trace any exposed areas to maintain adequate process temperature to ensure a free flowing sample. We can enclose the Ram Sample Valve and sample receptacle in a specially designed enclosure for operator protection while sampling. The enclosure can also be fitted with an optional eductor to exhaust harmful vapors and smoke to a safe location if open top container sampling is preferred.

Features and Benefits

- Can be provided in virtually any material to match the piping or nozzel in which it is connected to
- Steam purge available for elimination of plugging
- Available with fixed volume, model FVRSS
- Operation & Installation Manual included
- Steam heated dispense tube available to eliminate plugging
- Can be designed to work with existing RAM Valve if desired



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Materials of Construction

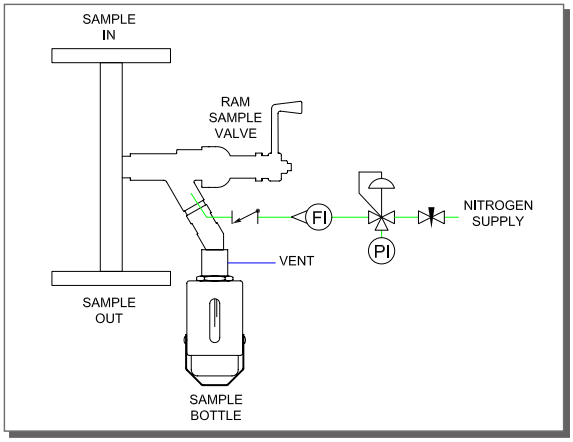
Sample Valve	316SSL
Spool Piece	316L Stainless Steel (SS) standard; flanged process connections
Process Needle	316SS; .083" - .148" OD; or 1/4"-1/2" dispense tube
Vent Needle	316SS; .083" OD
O-Ring Material	Viton standard; optional Kalrez
Seal Material	Teflon standard; optional Graphoil
Bottle Shroud	PVC; 2 oz. - 32 oz. standard (other sizes available) (Note: not recommended for resid and hot oil types of media)
Retaining Strap	Stainless Steel
Mounting Plate	Stainless Steel

Operating Pressure 1500 psig max; 150 psig maximum recommended pressure when sampling without fixed volume option; unless dispense tube is used

Operating Temperature 135°F maximum without cooler; 800°F maximum with cooler and/or graphoil valve packing

Optional Equipment

Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color to indicate saturated filter media
Sample Coolers	For use when process temperature exceeds 135°F (Typical Fixed Volume type Coolers used with RSS unit)
Secondary Block Valve	Complies with double-block safety requirements
Enclosures	Enclosures, available insulated or uninsulated and with steam or electric heater elements
Mounting	2" X 60" pipe stand; galvanized
Eductor	Utilizes steam plant air, or nitrigen to create motive force to remove vapor and/or smoke from inside an enclosure
Steam Tracing & Insulation	All components in contact with process are steam traced and insulated
Fixed Volume Chamber	Repeatable sample volumes, helps prevent overfilling of bottle and isolate bottle from process pressure
Steam Heated Stinger	Steam-traced stinger, prevents plugging



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Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 4 and 5

1 Model

RAM Sample System with Threaded Connections	RSS

2 Needle Size

.083" Process/.083" Vent (standard)	A
.109" Process/.083" Vent	B
.148" Process/.083" Vent	C
.250" Sample Tube (stinger)	D
Steam Stinger	E

3 Shroud Size

2 oz.	02
4 oz.	04
8 oz.	08
16 oz.	16
32 oz.	32
None	NN
Special (please specify)	XX

4 Process Connection

50	1/2" MPT
75	3/4" MPT
FF	Flanged (specify size and ANSI ratings)

5 Optional Equipment

NP	SENSOR Needle Purge (SNP)
CC	Emission Filter (activated carbon w/ indication crystals)
CF	Emission Filter (activated carbon)
EB	Bottle Enclosure
ED	Eductor
EE	Enclosure w/ Electric Heater
EI	Enclosure insulated)
EN	Enclosure (non-Insulated)
EP	Extended Piston (specify length)
ES	Enclosure w/ Steam Heater
IL	Inline Pool
KZ	Kalrez O-Rings
PC	Process Cooler (fixed volume cooler only)
SI	Secondary Isolation Valve
SL	Silconert Internal Coating
ST	Steam Trace & Wrap
TH	Thread-o-let
WE	Weld-o-let
XX	Fixed Volume Size (please specify- typically 75% of bottle size)
XX	Other Options (please specify)

RSS - B 04 50 XX — Example Model No.

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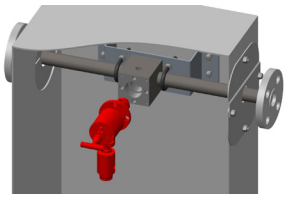
HEAVY PRODUCTS SAMPLING SYSTEM



The SENSOR Heavy Products Sample System (HPSS) is designed to collect samples of hot, heavy products (such as resid, asphalt, hot tar, gas oil, resins, slurries, surfactants and emulsions) while maintaining personnel safety.

Sample Heavy Products with Minimal Downtime

The HPSS comes with 3 standard features unique to SENSOR which include a removable cartridge valve, condensate-free steam flush assembly and twist lock purge adapter.



1. **Removable Cartridge Valve.** Allows for separating the valve's critical components from the sample line without removing the valve body and pipe spool from the process line in the event of required maintenance. The cartridge can simply be removed from the sample valve base and repaired or replaced with a new one, greatly reducing downtime.

2. **Condensate-free Steam Flush Assembly.** This assembly utilizes a unique 3-way valve and steam trap to ensure that condensate-free steam is consistently available for purge operations. The steam purge clears any potential blockage from the sample path without disrupting the process flowing in the sample line.

3. **Twist Lock Purge Adapter.** Without the need for tools, an operator can easily install the twist lock purge adapter onto the dispense tube and utilize steam to completely flush out the sample pathway to the drain of the enclosure. The steam flush is directed in a controlled manner without creating a mess on the inside of the enclosure or window from splatter.



Features and Benefits

- Safe collection of hot liquid without exposure to the operator
- High Viscosity "HV" Sample Valve allows the operator to control the rate of flow into the container
- Sample Valve includes a "Cartridge Design" that allows it to be changed quickly without removing the entire Flanged Spool Assembly
- Sample Valve has increased port size over the typical BBSS valve to handle heavier products
- Steam Heated Dispense Tube ensures that any residual that remains in the dispense tube (due to vapor lock when the sample valve is closed) remains hot and fluidized until it can be purged out
- Steam Purge after each sample collection ensures the sample valve and dispense tube are fully cleaned out after each use eliminating the chance of plugging
- Steam Supply is kept hot and condensate- free with the use of a unique 3-way Needle Valve and Steam Trap
- Twist Lock Purge Adapter ensures that all residual material that is purged out is contained and pushed down the metal flex hose to the drain of the enclosure instead of spraying out inside of the enclosure

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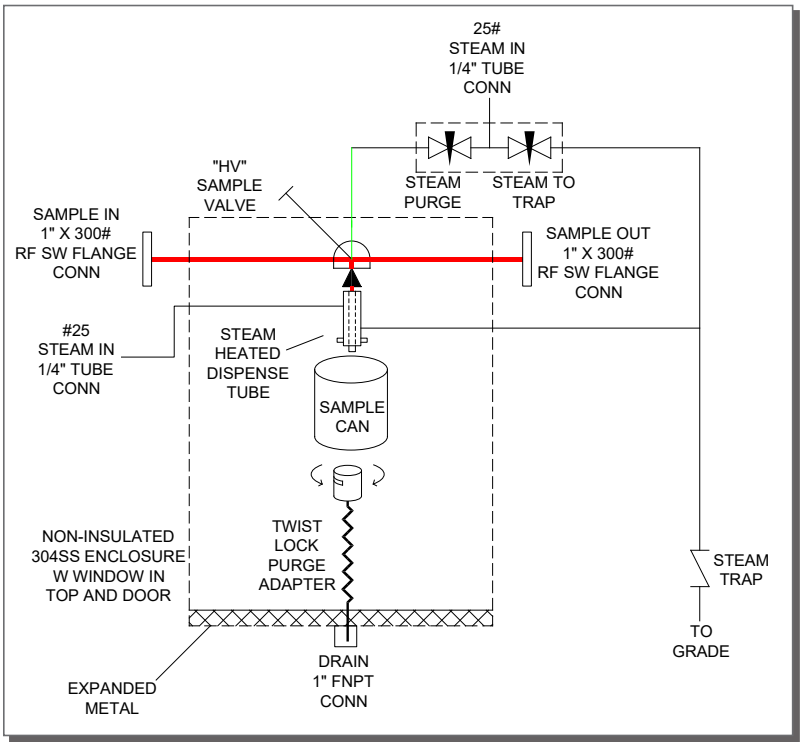
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Materials of Construction/Standard Configuration

Sample Valve	316SSL Cartridge Type
Spool Piece	316L Stainless Steel (SS) standard; flanged process connections
Process Dispense Tube	316SS; 3/8"-1/2" steam heated dispense tube
Steam Heated Dispense Tube	Steam-traced dispense tube, prevents plugging
Seal Material	Graphoil
Container Shelf	304SS
Flush/Purge Adapter	316SS
Enclosure	304SS, non-insulated
Operating Pressure	2000 psig max
Operating Temperature	850°F max

Optional Equipment

Pressure Isolating Chamber Sample Cooler	For use when process temperature exceeds auto ignition temperature or has high smoke point. Typically uses low pressure steam for cooling medium
Secondary Block Valve	Complies with double-block safety requirements
Enclosure	Options include: insulated enclosure, steam or electric heating
Mounting	2" X 60" pipe stand; galvanized
Eductor	Utilizes steam, plant air, or nitrogen to create motive force to remove vapor and/or smoke from inside the enclosure
Steam Tracing	All components in contact with process are steam traced and insulated
Pressure Isolating Chamber	Repeatable sample volumes helps prevent overfilling of container (recommended to heat trace chamber to prevent media from adhearing to inner wall)



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Below is the quick select model number tree that provides you with all the options to configure and order a sampling system for your application.

- You must select a designator for each component
- You must supply a completed Application Data Sheet shown on pages 4 and 5

1 Model

HPSS Heavy Product Sampling System	HPSS

2 Dispense Tube

3/8" Steam Stinger	E
1/2" Steam Stinger	F

3 Container Size

2 oz.	02
4 oz.	04
8 oz.	08
16 oz.	16
32 oz.	32
None	NN
Special (please specify)	XX

4 Process Connection Size

1/2"	08
3/4"	12
1.0"	16

5 Process Connection

Male NPT	M
Female NPT	F
Tube	T
Flanged	X

6 Pressure Rating

150	ANSI 150# RF
300	ANSI 300# RF
600	ANSI 600# RF
XXX	if NPT or Tube Process Connection

7 Connection Type

SW	Socket Welded
WN	Weld Neck
XX	if NPT or Tube Process Connection

8 Optional Equipment

ED	Eductor
EE	Electric Heated Enclosure
EI	Insulated Enclosure
ES	Steam Heated Enclosure
HC	Hast C
M4	Monel
PC	Process Cooler (fixed volume cooler only)
SI	Secondary Isolation Valve
SL	Silconert Internal Coating
ST	Steam Trace & Wrap
XX	Fixed Volume Size (please specify- typically 75% of bottle size)
XX	Other Options (please specify)

HPSS - E 04 08 X 150 SW XX Example Model No.

* Pipe Schedule is sized for design pressure
* All flanges are raised face type

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SENSOR SAMPLING SYSTEMS

LGSS LIQUEFIED GAS & VSS VAPOR (GAS) SAMPLING SYSTEMS



LGSS

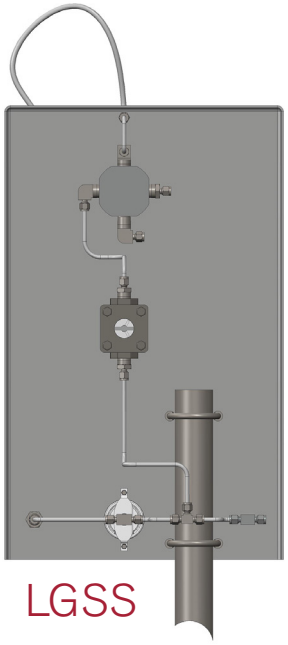
The SENSOR Liquified Gas Sampling System (LGSS) and Vapor Sampling System (VSS) are designed for safe and reliable closed-loop "grab" sampling of high vapor pressure liquids and vapors, or for any liquid process for which the operator desires to collect the sample in a sample cylinder. The LGSS and VSS are designed to operate under continuous flow via a bypass or parallel line off the main process piping. For Liquified Petroleum Gases (LPG's), the inclusion of a sight flow indicator allows for direct visual indication of safe cylinder outage.



VSS

Features and Benefits

- Highly customizable based on process conditions and operator requirements
- Standard system is designed for operation to 1400 psig (96.5 bar); high pressure systems available
- Simple operation (single 4-way Sampling Valve) enhances ease of use and operator safety
- Proprietary SENSOR fitting ensures secure orientation of sample cylinder
- Standard mounting on 304 SST plate with non-metallic cylinder clamping to safely mount sample cylinders



LGSS

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Standard Equipment

Mounting Plate	Stainless Steel
Sight Flow Level Indicator	600# ANSI with flow indicator
Quick Connect Fittings	Stainless Steel, double-ended shutoff
Cylinder Clamp	1 each, Stainless Steel
Tubing	1/4" Stainless Steel
Optional Sample Cylinder	Stainless Steel; includes cylinder valves
Operation/Instruction Tags	Included as standard on plate

Operating Pressure 1440 psig; 2000 psig max @ 70°F

Operating Temperature 350°F maximum

Materials of Construction

Sample Loop	316SS
Sample Valve	316LSS
O-Ring Material	Viton standard; optional Kalrez
Seal Material	Teflon

Optional Equipment

System Purge	Includes check valve, regulator, rotameter, pressure gauge, and block valve
Isolation Valves	Isolation valves on sample inlet & outlet to allow for easy serviceability
Sample Coolers	For use when process temperature exceeds 135°F
Enclosures	Enclosures, available insulated and uninsulated and with steam or electric heater elements
Mounting	2" X 60" pipe stand; galvanized
Sample Cylinder	Stainless Steel; includes cylinder valves and quick connect fittings
Sample Cylinder Accessories	Dip tubes; rupture discs, coatings
High Pressure System	Includes reflex sight glass and extended operator handle

VSS Systems only

Emissions Filter	Canister with activated carbon for use when no vent to flare is available; also available with indication crystals which change color to indicate saturated absorbent media
Armored Rotameter	Sized for flow rate provided on Application Data Sheet

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- You must select a designator for each component
- You must supply a completed application data sheet

1 Model

Liquefied Gas Sampling System	LGSS
Vapor (Gas) Sampling System	VSS

2 Cylinder Size

Cylinders supplied with system as option

300cc (standard)	30
150cc	15
1000cc	1K
Special (please specify)	XX

3 Process Connection

1/4" Tubing (standard)	25
3/8" Tubing	37
3/4" Tubing	75
Flanged (specify size and rating)	FF

4 Optional Equipment

AR	Armored Rotameter
CC	Emission Filter (Activated Carbon w/ Indication Crystals)
CF	Emission Filter (Activated Carbon)
CY	Sample Cylinder (Size to match Cylinder Size in Model Number)
DT	Cylinder Dip Tube (available on LGSS only)
EE	Enclosure w/ Electric Heater
EI	Enclosure (Insulated)
EN	Enclosure (Non-Insulated)
ES	Enclosure w/ Steam Heater
HP	High Pressure System (>1400 psig)
IB	Isolation valves In/out (Ball Valves)
KZ	Kalrez O-Rings
PC	Process Cooler
PS	2" X 60" Pipe Stand w/ Base
RD	Rupture Discs
SL	Silconert Internal Coating
SP	System Purge
XX	Other Options (please specify)

[ ] - [ ] - [ ] - [ ]

LGSS - 30 - 75 - IB/KZ Example Model No.

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