

Stream Switching System

SSM Series



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Contents

Features	1
Technical Data	1
Materials of Construction	2
Flow Diagram	3
Ordering Information	4
Ordering Number Description	7

Stream Switching Systems

SSM Series Stream Switching System is a modular assembly designed for process analyzer systems. The system utilizes surface mount technology and modular design to integrate multiple streams into a compact assembly. It boasts the advantage of compact design, easy maintenance and high reliability.

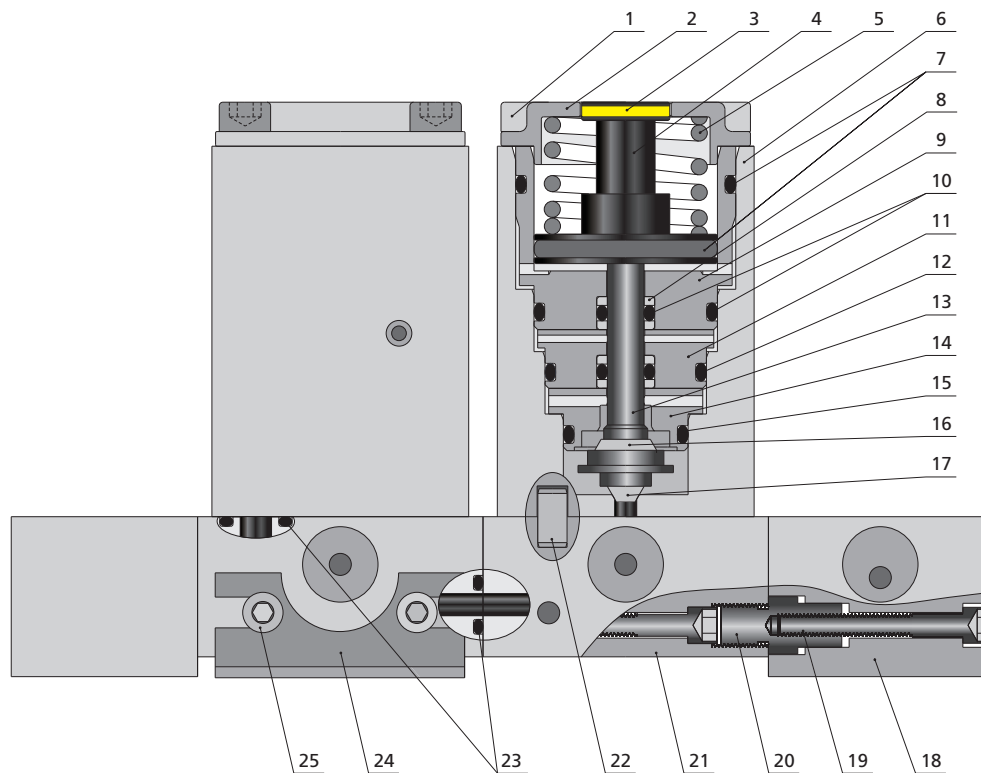
Features

- ⦿ Modular design for easy installation and maintenance
- ⦿ Compact design for low internal volume and maximum system efficiency
- ⦿ Built-in pneumatic actuator provides repetitive shutoff and fewer potential leak points
- ⦿ Position indicator for maximum system safety
- ⦿ Double block and bleed design prevents cross contamination
- ⦿ Multiple module options

Technical Data

- ⦿ Material: 316 SS for the main body
- ⦿ Orifice: 0.12" (3 mm)
- ⦿ Working pressure: 500 psig (34.5 bar)
- ⦿ Actuation pressure: 87 psig (6 bar)
- ⦿ O-ring working temperature:
 - FKM: -4°F to 392°F (-20°C to 200°C)
 - FFKM: -13°F to 464°F (-25°C to 240°C)
 - NBR: -22°F to 212°F (-30°C to 100°C)
 - EPDM: -40°F to 300°F (-40°C to 148°C)
- ⦿ Seat working temperature:
 - PCTFE: -20°F to 200°F (-28°C to 93°C)
 - PEEK: -20°F to 400°F (-28°C to 204°C)

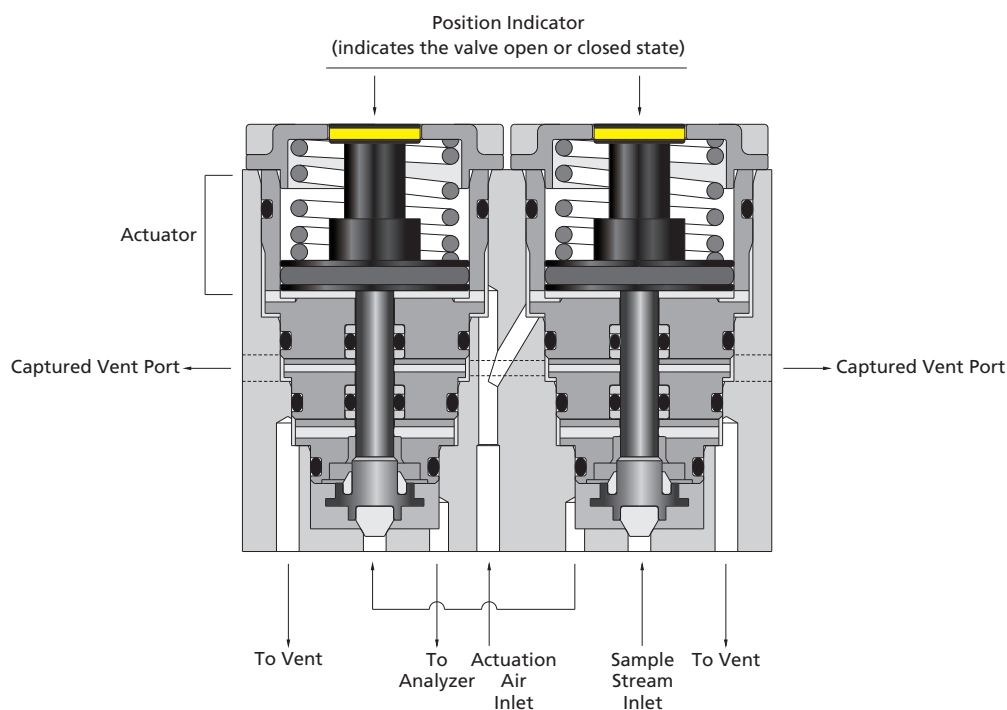
Materials of Construction



Item	Component	Material
1	Bolt	Stainless Steel
2	Cap	316 SS
3	Position Indicator	Polyester
4	Piston	Anodized Aluminium
5	Spring	S17700
6	Body	316 SS
7	O-ring	FKM/FFKM/NBR/EPDM
8	Backup Ring	PTFE
9	Upper Bonnet	316 SS
10	O-ring	FKM/FFKM/NBR/EPDM
11	Center Bonnet	316 SS
12	O-ring	FKM/FFKM/NBR/EPDM
13	Stem	316 SS
14	Lower Bonnet	316 SS
15	O-ring	FKM/FFKM/NBR/EPDM
16	Backseat	PCTFE/PEEK
17	Seat	PCTFE/PEEK
18	End Plate	316 SS
19	Bolt	S17400
20	Bolt	S17400
21	Base Plate	316 SS
22	Round Pin	Stainless Steel
23	O-ring	FKM/FFKM/NBR/EPDM
24	Mounting Bracket	304 SS
25	Bolt	304 SS

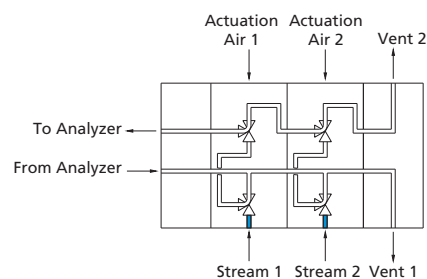
Note: For systems of other materials, please contact FITOK Group or our authorized distributors.

Flow Diagram

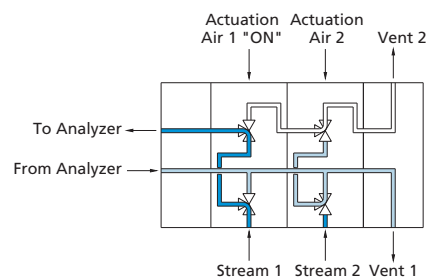


Example shown is a two stream switching system with the flow diagram as follows:

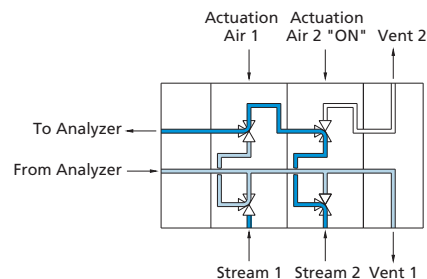
1. The system is in the "off" position.



2. When Stream 1 is in the "on" position, the sample flows from Stream 1, through the analyzer, and is routed to Vent 1. Other streams are in the "off" position.



3. When Stream 2 is in the "on" position, the sample flows from Stream 2, through the analyzer and is routed to Vent 1. Other streams are in the "off" position.



Dimensions

[illegible]

Basic Ordering Number	End Connection	Bracket Quantity	Dimensions, in. (mm)		
			A	B	C
SSM□□-FNS2-□-□-2	Inlet, outlet, vent and actuation air inlet: 1/8" Female NPT	1 pair	5.26 (133.7)	4.40 (110.9)	3.08 (78.3)
SSM□□-FNS2-□-□-3		2 pairs	6.80 (172.6)		
SSM□□-FNS2-□-□-4		2 pairs	8.33 (211.5)		
SSM□□-FNS2-□-□-5		3 pairs	9.86 (250.4)		

To get a complete ordering number, add corresponding designators to the basic ordering number. For dimensions of other modules or other assemblies, please contact FITOK Group.

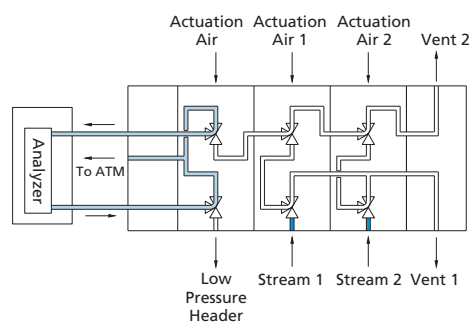
Module Options

Atmospheric Reference Vent (ARV) Module

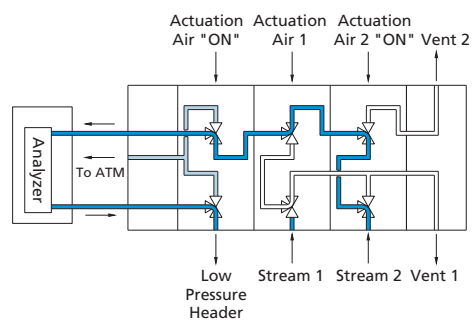
The ARV Module is positioned between the analyzer and stream modules and is used to equalize the sample loop pressure to atmospheric pressure. It has all the features available to a standard stream module and is configured with a dedicated ARV base plate.

Example shown is a two stream switching system with the flow diagram as follows:

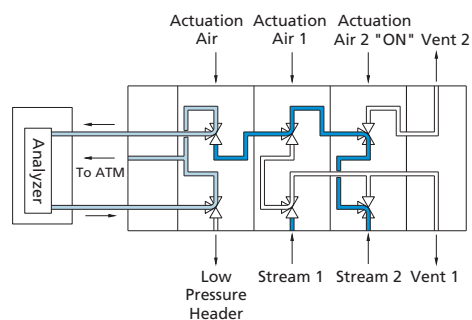
1. All valves are in the "off" position. The system is "open" to atmospheric vent (ATM).



2. Stream 2 and the ARV Module are in the "on" position, purging the sample loop to the low pressure header to ensure representative sampling.



3. Stream 2 is in the "on" position and the ARV Module is in the "off" position, equilibrating the sample loop pressure to atmospheric vent pressure.



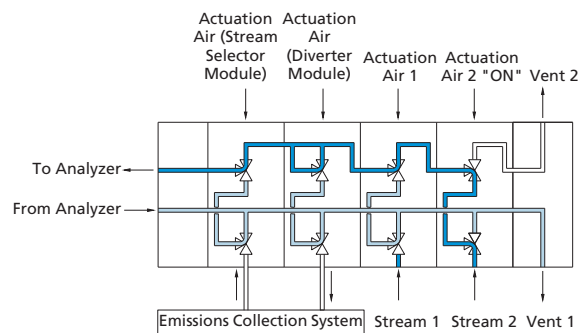
CEMS (Continuous Emissions Monitoring System) Module

CEMS Module consists of a Diverter Module and a Stream Selector Module. By actuating the CEMS module, the selected gas can be directed either up the emissions collection system or goes directly to the analyzer.

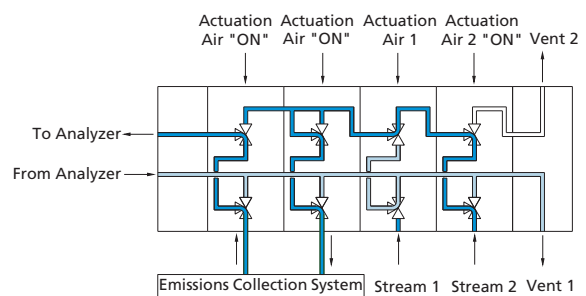
The system can be configured for continuous emissions monitoring, analyzer calibration and validation routines.

Example shown is a two stream switching system with the flow diagram as follows:

1. The Stream 2 is in the "on" position and the sample flows directly to the analyzer.

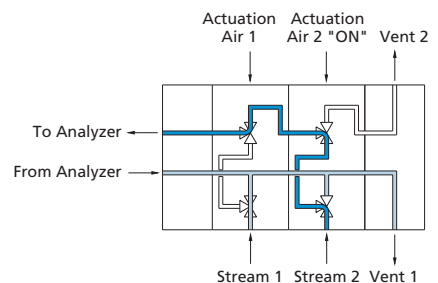


2. The Stream 2 and CEMS Module are in the "on" position. The sample is flowing through CEMS Module to the analyzer.



Fast Loop (FL)

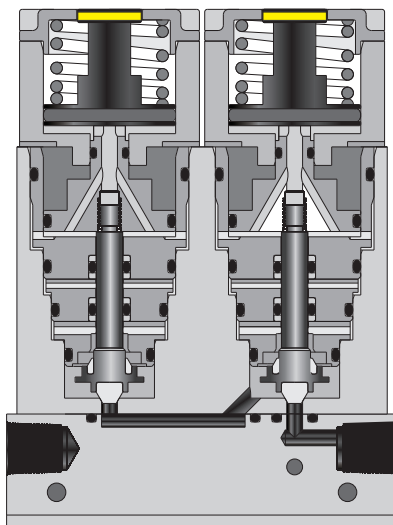
Example shown on the right is a two stream switching system. Stream 1 is illustrated in the "off" position and sample flows to the Vent 1. Stream 2 is illustrated in the "on" position, and the flow is directed to the analyzer. The internal fast loop maintains the double block and bleed feature.



Actuating Air Pressure Options

Low Pressure Actuation (LPA) Module

The LPA Assembly can be incorporated onto existing system without affecting all other features and requires only 36 psig (2.5 bar) actuating air pressure.



Assembly Options

Assembly Name	Ordering Number	Content
Standard stream module	SSMSS-FNS2-K-VI-SM	Standard base plate, valve module and instructions
Standard base plate	SSMSS-FNS2-VI-SB	Base plate, O-ring, bolt kits, mounting bracket, round pin, instructions
Valve module	SSMSS-K-VI-VM	Valve body, cap, bonnet, stem seal kit, O-ring, spring, piston, position indicator, bolts, instructions
Valve seal kit	SSMSS-K-VI-SR	Bonnet, stem seal kit, O-ring, spring, piston, position indicator, instructions

Additional Options

Special Cleaning and Packaging (FC-02)

Special cleaning and packaging are available to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C. To order, add the suffix **-F2** to the end of standard ordering number.

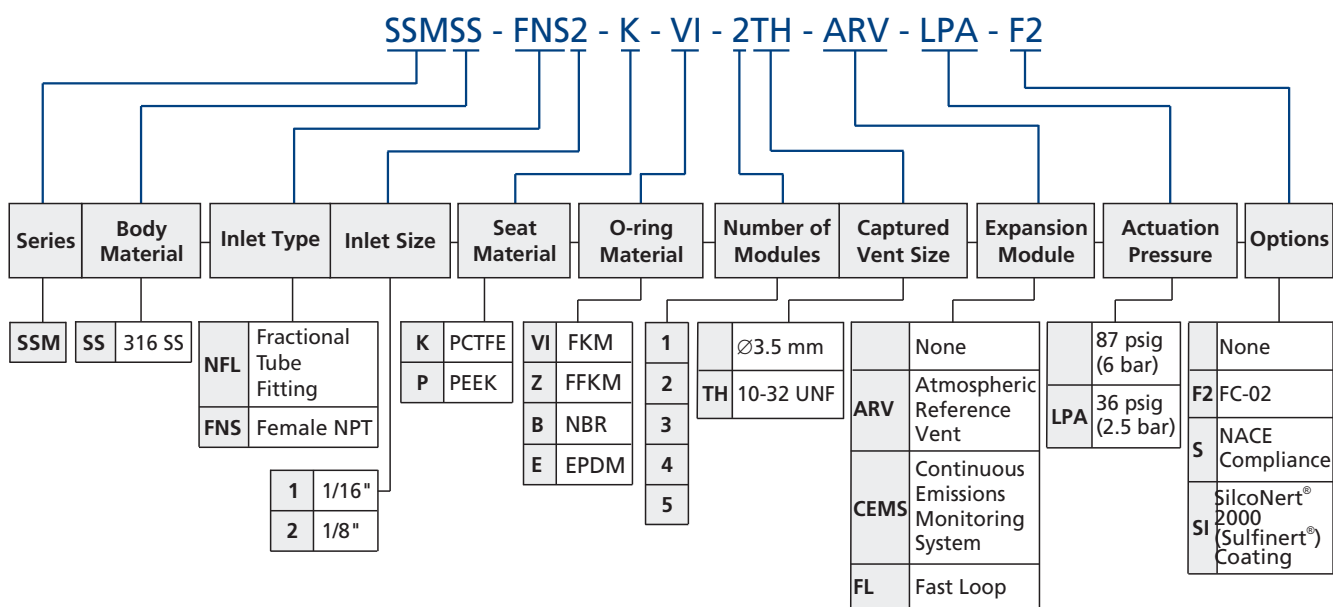
NACE Compliance

NACE compliance is available to meet the requirements of NACE MR0175/ISO 15156. To order, add the suffix **-S** to the end of standard ordering number.

SilcoNert® 2000 (Sulfinert®) Coating

All wetted metal components are SilcoNert® 2000 (Sulfinert®) coated. To order, add the suffix **-SI** to the end of standard ordering number.

Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

