AMETEK®
PROCESS INSTRUMENTS

PRODUCT DATA SHEET

Sigma4000 Multipoint Stream Selectors

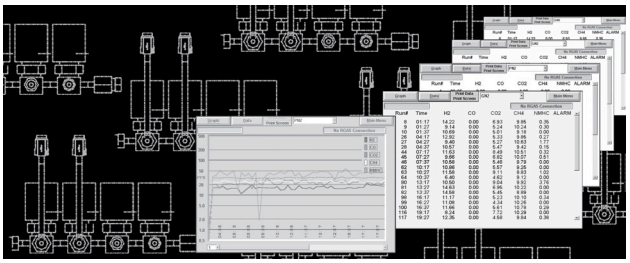
Dramatically reduce the cost of ultra-high-purity gas monitoring

By multiplexing several sampling points to two ta3000 or ta5000 process gas analyzers, a gas manager can ensure that ultra-high-purity (UHP) quality product is supplied to process tools without dedicating an instrument to each gas stream. Controlled by the process gas analyzer, a Sigma4000 stream selector can poll several gas streams in sequence or can be programmed to switch between the inlets and outlets of large-scale purifiers to verify their performance.

Get the most out of your analyzer
Sigma4000 multipoint stream selectors improve the confidence in your gas supply by making it practical to monitor impurity concentrations such as hydrogen, carbon monoxide, carbon dioxide, methane and non-methane hydrocarbons in all your most critical gas streams.

Technical excellence
Rapid sequencing between gas steams requires high flow velocity and low dead volume in each sample flow path. To meet this challenge, Sigma4000 stream selectors incorporate a specialized purge assembly and bypass network that eliminates dead volume upstream of each shut-off valve, while maintaining sample flow. Sample cross-contamination is prevented by eliminating dead volume downstream of each valve and by rapidly purging the common flow channel to the analyzer via a precisely designed bi-flow manifold. Only orbitally welded or vacuum-brazed joints are used in the analyzer flow path.

Data archiving/presentation
Data collection viewer software organizes data from the process gas analyzer in tabular form, and on 24-hour trend reports. Sample stream ID number, time of day, analytical data and any alarm conditions are readily available for local viewing, or for sharing over networks.
Sigma4000 has sample inlet positions for sequential or "on demand" analysis of up to four separate oxygen or inert gas streams. In addition, two separate sampling positions are reserved for permanent connection of zero and span gases. The sequence and frequency of analysis can be specified via the stream sequencer program in the process gas analyzer.



KEY BENEFITS:

- Pressure-controlled splitter provides low flow rate without reducing flow velocity in external sample lines
- Digital display of manifold pressure
- Gas handling components located in electrically isolated purge housing for safe operation
- Designed to maintain high flow velocities – free of dead volume and uses only UHP wetted components
- Compatible with ta3000 and ta5000 process gas analyzers

APPLICATIONS:

- Purifier outlet monitoring
- Multi-gas analytical racks

KEY MARKETS:

- Air separation
- Semiconductor
- LCD/LED display manufacturing

PERFORMANCE SPECIFICATIONS

Gas Inlets	Sigma4000: 4 samples, ¼-inch face seal fitting, female, S.S. Zero gas, Span gas: ¼-inch face seal fitting, female, S.S. Purge gas: ¼-inch face seal fitting, female, S.S.
Sample Requirements	Supply Pressure: 15 to 40 psig (1.03 to 2.76 bar) Continuous Flow: 0.35 L/min. N_2 @ 15 psig (1.03 bar)
Gas Outlets	Selected stream outlet: 1/16-inch compression fitting Sample vent: ¼-inch face seal fitting, female, S.S. Purge vent: ¼-inch face seal fitting, female, S.S.
Front Panel	Stream ID number Pressure, selected stream
Electrical	Mains: 115 VAC / 50 to 60 Hz, 230 VAC / 50 to 60 Hz, or 100 VAC / 50 to 60 Hz Operating current: 3 amps, max.
Materials of Construction	Manifold: Orbitally welded UHP branch valves; <1x10-9 cc-atm/sec He leak rate Sample Inlets: Orbitally welded EP tubing
Control/Communication	Serial RS-232 communication link from ta3000/ta5000 sequencer program to stream selector Stream ID number and data reported to optional host computer by ta3000/ta5000
Physical dimensions (W x H x D)	427 x 133 x 457 mm (16.8 x 5.2 x 18 in.)
Weight	Net: 17.3 kg (38.0 lb) Shipping: 18.9 kg (41.5 lb)

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