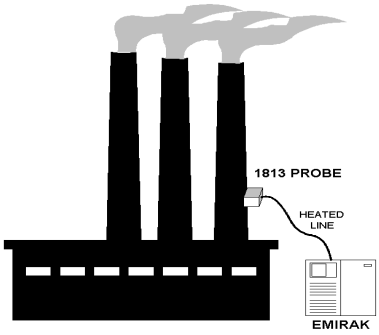
SIGNAL AMBITECH

Data Sheet



Gas Sampling Probe
Model 1813

- Rugged flue gas probe
- In-situ filtration of gas stream
- Pulsed filter blowback
- Duct sizes up to 8m
- All stainless steel construction
- Optional Heat traced insertion tube

Application

The Model 1813 gas sampling probe is designed for sampling gaseous emissions from combustion processes where process tempreratures are in the range of 80-450^{0}C.

Principle of operation

The model 1813 is a flange mounted unit incorporating an insertion tube with sintered filter, and a blowback housing assembly.

Gas sample is extracted by the analyser system through the sintered filter insertion tube and blowback valve, to a heated sample line for transport to the analyser system.

The insertion tube is a concentric double skin arrangement, with insulation between the two concentric tubes to prevent sample temperature falling as gas is extracted. The in-situ stainless steel sintered filter prevents large particles being extracted from the duct or flue, eliminating particle blockage of the system.

The blowback oven incorporates a pneumatically actuated heated blowback valve operated by a pilot solenoid valve. An air supply pressure regulator provides regulated, preheated blowback air into the blowback valve. Periodically, the pilot solenoid valve is switched by a signal from the analyser system, to actuate the pneumatic blowback valve. This temporarily stops sampling, allowing a blast of air to backpurge the insertion tube and sinter, clearing any accumulated particulate matter. The blowback sequence normally consists of 5 pulses, at 6 second intervals between pulses.

The frequency of such blowback will depend on the process conditions and is determined and set on comissioning. The control signal for blowback is a 24V DC drive from the analyser/ system controller. The oven includes a low temperature thermostat, to provide a system interlock on loss of temperature or power failure.

All wetted parts in the probe are stainless steel (316) except the blowback valve diaphragm assembly which is high temperature viton. The probe is run at a minimum temperature of 180^{0}C to avoid corrosive condensation.

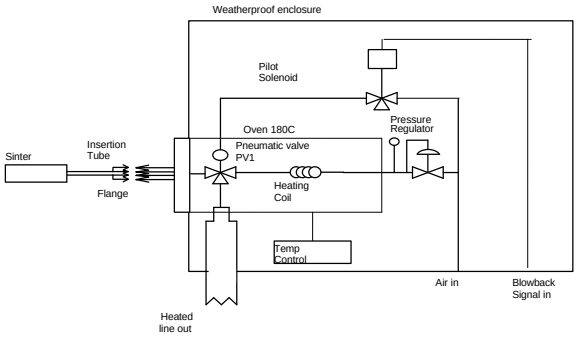
The insertion tube length can be varied to suit different duct sizes, and the sinter length is matched to insertion length. Heat tracing of the insertion tube is available optionally where low temperatures may give a risk of condensation.

Specification

Probe insertion length	0.5, 1.0, 1.5, 2.0, 2.5m
Flange size	4" nom bore flange to BS 1560 ANSI B16.5 1501b RF
Flange Material	316SS
Sinter Material	316SS
Sinter Length	100mm (up to 1.5m insertion). 250mm (2.0 or 2.5m insertion).
Sinter Porosity	18µ
Insertion tube material	316SS
Blowback oven temperature	180^{0}C
Temperature interlock signal	Undertemperature thermostat 150^{0}C
Blowback housing material	IP65 stainless steel enclosure
Blowback valve	Double acting, 3 way pneumatic
Blowback initiation	24V DC from analyser system
Air supply	4-7 barg, clean, dry, oil free air
Consumption	50 litres/min on blowback (3-6 seconds per blowback)
Blowback sequence frequency	Variable. Timing set in analyser system
Power supply	110V or 220/240V AC 50 Hz or 110V 60Hz All -10% +6%
Consumption	150VA 400VA max with heated insertion tube

Environmental operating conditions

The probe is designed for use in a nonhazardous area in outdoor



environment.

Temperature	-10^{0}C to 40^{0}C
Humidity	Up to 95% RH
Storage temperature	-10^{0}C to 40^{0}C dry conditions

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