



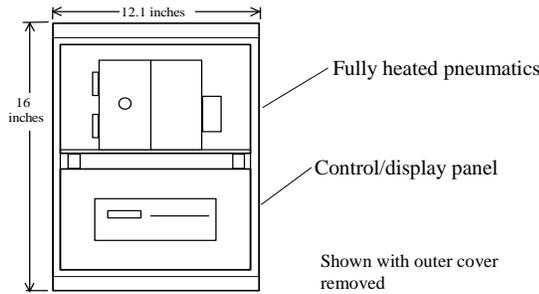
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SNR701 PrevEx® Flammability Analyzer

Analyzer Design

The Model SNR701 is an industrial strength assembly consisting of a heated flame cell and an integrated controller that continuously measures total flammable vapor concentrations from 0 to 100% of the Lower Flammable Limit (LFL) range. Optional modifications allow the SNR701 to sample low oxygen and inert atmospheres.

Control Instruments' proprietary flame temperature technology assures an accurate and linear response. A carefully metered pilot flame incinerates the sample; the resulting change in flame characteristics is proportional to the total concentration of flammable vapors present.



Specifications

Calibration	0 to 100% Lower Flammable Limit (LFL)
Operating Temperature	Sensor heated to 60°C (140°F)
Accuracy	± 3% of full scale reading or 10% of applied gas whichever is greater
Repeatability	Within 1% of measurement range
Zero Stability	± 1% in 30 days
Span Stability	± 5% per year
Cell Response Time	Less than 1 second
Power Requirement	120 VAC +10% -15% 50/60 Hertz 400 Watts maximum, 230 VAC optional
Oxygen	18 to 21% O ₂ in sample (propane fuel) 12 to 21% O ₂ in sample (hydrogen fuel) 0 to 21% O ₂ in sample (H ₂ fuel, optional)
Fuel Requirements	CP Grade (99.0%) Propane 99.99% prepurified Hydrogen (optional)
Fuel Consumption	1 pound/month 30-35PSIG Propane 58 liters/day 40-45PSIG hydrogen (optional)
Compressed Air	20 PSIG, regulated, clean, dry
Air Consumption	64 SCFH, 32 liters/minute including purge
Humidity Range	0% to 100% Relative Humidity
Relays	Four Form A redundant safety relays Two Form A SPST relays
Relay functions	Six relays for: Warning; Danger; Fault; Air/Fuel; Calibration-in-Progress and Service needed
Alarm Function	Adjustable alarm ranges
Analog Output	Two 4-20mA, 275 Ω max., includes line length
Digital Output	RS-485 Serial, Modbus protocol
Flame Cell Material	Hard-coat aluminum
Sample Train Material	Hard-coat aluminum & brass (stainless steel optional)
Flame Cell Rating	Explosion Proof Class I, Division 1
Hazardous Area Rating	Class I, Div 2, Groups A, B, C, D
Enclosure Rating	TYPE 12/13, indoor
Assembly Dimensions	16" H x 12.1" W x 8.5" D
Approvals	FM (standard), FMc (optional) Approvals pending: CE, ATEX, IECEx, UKEX (optional)

Heated Sampling System

To avoid condensation during sampling, the entire analyzer pneumatic assembly is heated to 60°C (140°F). This eliminates both inaccurate readings caused by solvent dropout as well as excessive maintenance time due to sample condensation and clogging.

It is suitable for monitoring many common solvent vapors. The analyzer is unaffected by the temperature of the process and can sample streams above 1500°F.

The assembly mounts directly onto the process ductwork, as close as possible to the sample pickup point. This eliminates external heated sample lines and allows the fastest response time. An optional modification allows the assembly to mount to the wall with side access to sample and exhaust ports (limited by application).

The analyzer employs customer-supplied compressed air to drive its integrated air-aspirated sampling system. This method is simple, has no moving parts and requires very little maintenance. The sampling system does not require bottled air or sample pumps. Autocalibration solenoids, which allow remote activation of calibration tests, are standard.

Failsafe Operation

A fault relay de-energizes whenever any of the following occur: controller electrical failure; loss of system power; loss of heat; loss of flow through the flame cell; and downscale readings caused by loss of flame or fuel.

Outputs

The system includes six relays: four Form A redundant safety relays for Warning, Danger, Fault and Calibration-in-Progress and two Form A single-pole, single-throw relays for Service Needed and Air/Fuel cutoff. Other standard outputs include two 4-20mA analog outputs and an RS-485 serial port with Modbus protocol. Digital remote access and control is made possible with optional operator interface panels.

Performance

Detector response time is less than 1 second. The analyzer exhibits a very stable zero: less than one percent drift in thirty days. Calibration accuracy has less than five percent error per year.