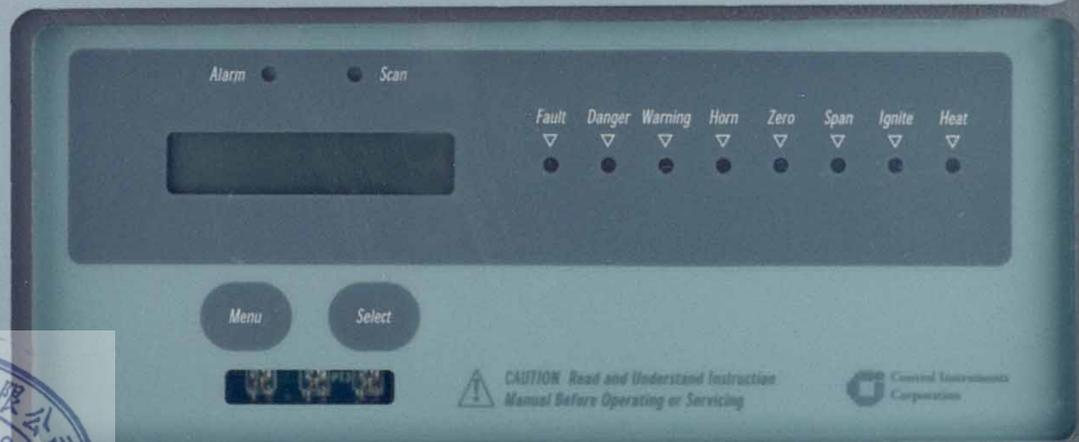


PrevEx

Flammability Analyzer



Control Instruments
Corporation

The PrevEx, formerly the 670 series of analyzers, is Control Instruments' Flammability Analyzer for Lower Flammable Limit monitoring. Its new name boasts its ability to prevent explosions and its new look adds flavor to the industrial environment. To top it off, it still solves all of the sampling, measuring, and reporting problems found in industrial process applications while promising accuracy, consistency, and reliability. The PrevEx allows you to protect your investment: it keeps your facility, employees, and environment safe while increasing your productivity and eliminating downtime. Its accuracy surpasses that of any other analyzer, due to its unique flame temperature technology, delivering the highest degree of safety. This exclusive design is based on a sensing-flame concept that has since proven itself to be the most reliable detection system in the industry. Unlike catalytic sensors that can become contaminated, give false readings or fail outright, the PrevEx has many impressive features to ensure unmatched safety, extreme accuracy, and ultra-fast response time, even when sampling a mixture of several different flammable vapors. The PrevEx Flammability Analyzer is efficient and economical, leaving you feeling confident in its performance. After all, a monitoring system is only as good as the sensor it employs! Read on to find out more of the PrevEx's exclusive features and see how it truly prevents fires and explosions.

PrevEx Delivers Unmatched Safety

The PrevEx Flammability Analyzer incorporates several fail-safe features designed to ensure perfect safety under all conditions. In fact, the inherent design of the sensing flame technology is that the flame must always be on and the system working properly or an alarm is given. This leaves no problem undetected. Whether it is a loss of fuel, air, sample flow or power, a malfunction relay is automatically tripped and the operator is notified immediately of a status change. By contrast, catalytic sensors and other "indirect" measuring systems can become corroded, obstructed or poisoned, yet still register as normal. The alarm relays include warning, danger, fault, horn, service needed, and system under calibration. These built-in relays guarantee complete safety and reliability, allowing for only true indications on the meter. From a safety viewpoint, the sensing flame technology has no equal. The PrevEx also exhibits a very stable zero with a calibration accuracy of less than 5% error per year. In recognition to the PrevEx's inclusive fail-safe features, our flammability analyzer has received the following approvals:



Prevent Exp



No Condensation Yields True Sample

The essence of the PrevEx detection system lies in its ability to perform accurately under the demands of the industrial environment. Industrial processes contain compounds that condense and contaminate a sensor. With condensation comes clogging, fouling, and poisoning, which restricts the sample flow to the analyzer, removing important elements from the sample stream. This results in an inaccurate reading. To combat this problem and assure a true sample, the PrevEx has a corrosion resistant, heated sample train through which the sample is delivered. The heat eliminates that condensation and withstands corrosive elements, leaving you with an accurate representation of your process. To be doubly sure that you are receiving an accurate reading free of contamination, the PrevEx Flammability Analyzer collects the sample using an aspirator, driven by compressed air. There is no pump or blower; instead microprocessor control guarantees constant sample flow and pressure through the train, assuring you of the highest level of accuracy. To top it off, even the sensor itself is free of poisoning from various organo-metallics, halogenated hydrocarbons, silicones, or plasticizers. This reliable performance leaves your plant safe and secure, avoiding unnecessary downtime and frequent maintenance.

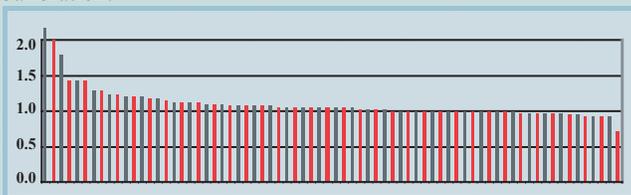




Flammability Solutions

Universal Calibration

The PrevEx gives consistent and reliable readings even when faced with multiple or changing solvent concentrations. In fact, the PrevEx Flammability Analyzer has the ability to read multiple solvent formulations more accurately than any other sensor in the entire industry, resulting in the least amount of detection error from solvent to solvent. This is due to the powerful universal calibration feature, made possible through the PrevEx's sensing flame technology. This technology provides the ability to accurately measure solvent concentrations for an array of solvents, even though the meter was calibrated on only one specific solvent. That's right with the PrevEx there is no need for recalibration, giving you excellent cross-calibration accuracy and ultimately eliminating incorrect readings. So, there is no need to shut down your system or buy multiple sensors to monitor various solvents simultaneously, with the PrevEx just one calibration offers protection with accuracy for your present and future needs. In the graph below, each bar illustrates the response factor for a particular solvent. For most combustible gases it ranges from 0.8 to 1.2 and for solvents from 0.9 to 1.1. The uniformity of the bars indicates Universal Calibration.

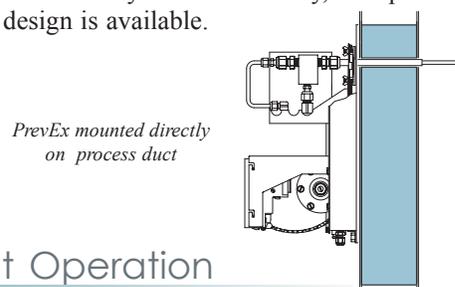


Sensing Flame Technology

The PrevEx Flammability Analyzer contains a carefully metered pilot, or sensing flame. It is a direct measure of the total flammability of the sample, not to be confused with the industry's FID. This flame burns continuously inside a small chamber of the sensor housing. Flammable vapors are drawn from the sample point into the chamber, where they are incinerated by the flame. A temperature detector measures the resulting change in flame temperature and transmits the information for display in % LFL format. Should a problem of any kind arise the flame temperature must change and the control monitor always lets you know immediately.

Direct Mount Provides Fastest Response Time

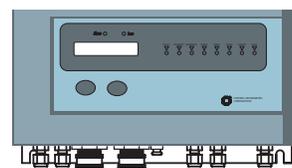
When it comes to giving you early warning no other design even comes close to the PrevEx's less than 1-second response time. This impressive response, which is eight times faster than the industry's average sensor, is due to the PrevEx's direct mount design. By mounting the sensor directly on the process duct without heat trace sample lines, pumps, or blowers, you eliminate the unpredictability of moving parts and shorten the sample path significantly. This radically reduces sample delivery time, while ultimately accelerating response time. The PrevEx Flammability Analyzers are readily accessible. They easily attach to a wide variety of process walls and duct types and are unaffected by high process temperatures, making installation and operation uncomplicated. Field pneumatic and electrical connections are easily made at the bottom of the analyzer. If necessary, an optional wall-mount design is available.



Efficient Operation Reduces Maintenance

The PrevEx Flammability Analyzer's all inclusive design is easily operated and maintained. The front panel includes a complete set of status indicators and an eight-character alpha-numeric LCD display. Using just two pushbuttons, you can access all calibration, programming and diagnostic routines. And for complete access, contacts are also provided for two external control inputs. A window in the outer cover lets you see the entire front panel. This is where calibration adjustments can be initiated. Since the PrevEx comes equipped with solenoid valves for both zero and span test gas, an integral microprocessor automatically makes all calibration adjustments for you. The window also permits non-intrusive local access; you simply shine a flashlight at photo-transistors to activate a command menu. To make operation even more efficient the PrevEx can be accessed remotely. You simply connect directly to your PLC or a display meter in the operator panel through the built-in 4-20mA analog output. If you need true, two-way digital communication with remote control, the PrevEx provides a Modbus RS-485 serial port and optional operator interface panels. This extremely efficient process greatly reduces maintenance time. Of course, all parts are readily available and quickly replaced when needed, so when you want to inspect or service a unit the job is fast and easy.

Field pneumatic and electrical connections made at bottom of PrevEx



PrevEx Tailored To Your Requirements

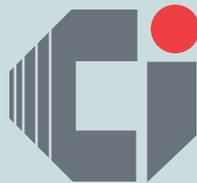
The PrevEx Flammability analyzer consists of several models designed to fit your specific monitoring needs. All models monitor a number of common vapors and are unaffected by processes as diverse as flexographic printing and ceramic kilns. The first two industrial strength analyzers, the SNR675 running at 270°C and the SNR674 running at 200°C, are suitable for the most demanding conditions of industrial monitoring, where high flash point solvents, resins, and plasticizers may be present. The next model, the SNR672 running at 120°C above the dew point of water vapor and most industrial solvents, is intended for application conditions that aren't as severe. These models are all available with the NEMA 4X outdoor housing for outdoor installation in any kind of climate. And for relatively clean applications such as rotogravure and flexographic printing we offer the SNR671 which is run at 60°C.



Find Out More Today

Control Instruments Corporation has been engineering solutions to gas and solvent vapor monitoring problems since 1969. We work hard to assess your risks and carefully tailor a monitoring system to meet your needs. For detailed information, system specifications, and pricing, please contact us today.

PrevEx



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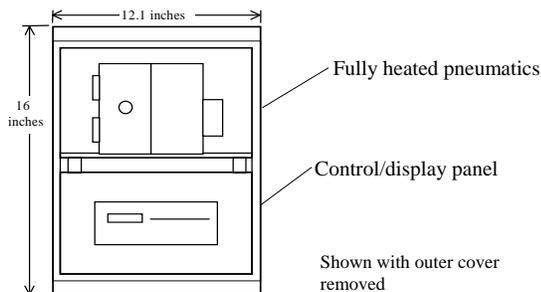
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SNR671 PreVEx® Flammability Analyzer

Analyzer Design

The Model SNR671 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 SNR671 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% O2 in sample (propane fuel) 12 to 21% O2 in sample (hydrogen fuel) 0 to 21% O2 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	42 SCFH, 21 liters/minute
Humidity Range	0% to 100% Relative Humidity
Relays	Three (3) SPDT 60 Watt contacts Three (3) SPST 60 Watt contacts
Relay functions	Six relays for: Warning; Danger; Fault; Horn; Calibration-in-Progress and Service needed
Alarm Function	Adjustable alarm ranges
Analog Output	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 Purged to Class I Division 1 (optional)
Enclosure Rating	NEMA 12/13, indoor
Assembly Dimensions	16" H x 12.1" W x 8.5" D
Approvals	FM (standard) FMc, CE, ATEX (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: single-pole, double-throw relays for Warning, Danger, Fault; and single-pole, single-throw relays for Horn, Calibration-in-Progress and Service Needed. Other standard outputs include a 4-20mA analog output 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.



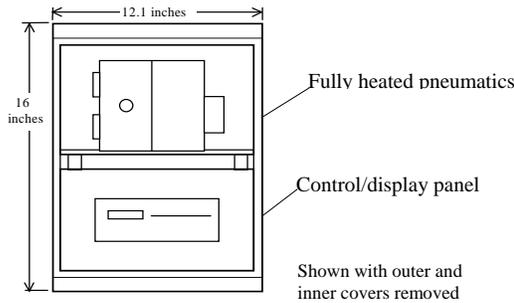
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SNR672 PrevEx® Flammability Analyzer

Analyzer Design

The Model SNR672 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 SNR672 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 120°C (248°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 400Watts maximum, 230 VAC (optional)
Oxygen	12 to 21% O ₂ in sample (hydrogen fuel) 0 to 21% O ₂ in sample (optional)
Fuel Requirements	99.99% prepurified Hydrogen
Fuel Consumption	58 liters/day 40-45PSIG hydrogen
Compressed Air	20 PSIG, regulated, clean, dry
Air Consumption	42 SCFH, 21 liters/minute
Humidity Range	0% to 100% Relative Humidity
Relays	Three (3) SPDT 60 Watt contacts Three (3) SPST 60 Watt contacts
Relay functions	Six relays for: Warning; Danger; Fault; Horn; Calibration-in-Progress and Service Needed
Alarm Function	Adjustable alarm ranges
Analog Output	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 & stainless steel
Flame Cell Rating	Explosion Proof Class I, Division 1
Hazardous Area Rating	Class I, Div 2, Groups A, B, C, D Purged to Class I Division 1 (optional)
Enclosure Rating	NEMA 12/13, indoor NEMA 4X, outdoor (optional)
Assembly Dimensions	16" H x 12.1" W x 8.5" D
Approvals	FM (standard) FMc, CE, ATEX (optional)

Heated Sampling System

To avoid condensation during sampling, the entire analyzer pneumatic assembly is heated to 120°C (248°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.

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

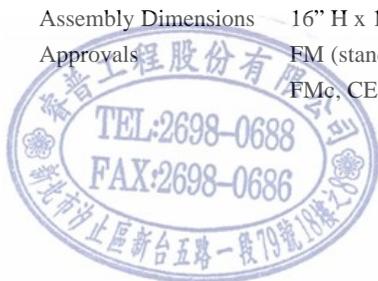
A fault relay de-energizes whenever any of the following occur: controller electrical failure; loss of system power; loss of heat; loss of flow through the flame cell; and downscale readings caused by loss of flame or fuel.

Outputs

The system includes six relays: single-pole, double-throw relays for Warning, Danger, Fault; and single-pole, single-throw relays for Horn, Calibration-in-Progress and Service Needed. Other standard outputs include a 4-20mA analog output 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.





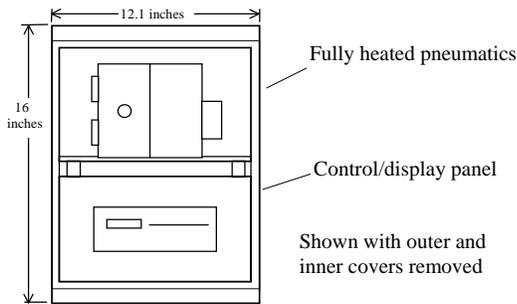
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SNR674 PrevEx® Flammability Analyzer

Analyzer Design

The Model SNR674 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 SNR674 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 200°C (392°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	12 to 21% oxygen in sample 0 to 21% oxygen in sample (optional)
Fuel Requirements	99.99% prepurified Hydrogen
Fuel Consumption	58 liters/day 40-45PSIG hydrogen
Compressed Air	20 PSIG, regulated, clean, dry
Air Consumption	42 SCFH, 21 LITERS/minute
Humidity Range	0% to 100% Relative Humidity
Relays	Three (3) SPDT 60 Watt contacts Three (3) SPST 60 Watt contacts
Relay functions	Six relays for: Warning; Danger; Fault; Horn; Calibration-in-Progress and Service Needed
Alarm Function	Adjustable alarm ranges
Analog Output	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 & stainless steel
Flame Cell Rating	Explosion Proof Class I, Division 1
Hazardous Area Rating	Class I, Div 2, Groups A, B, C, D Purged to Class I Division 1 (optional)
Enclosure Rating	NEMA 12/13, indoor NEMA 4X, outdoor (optional)
Assembly Dimensions	16" H x 12.1" W x 8.5" D
Approvals	FM (standard) FMc, CE, ATEX (optional)

Heated Sampling System

To avoid condensation during sampling, the entire analyzer pneumatic assembly is heated to 200°C (392°F). This eliminates both inaccurate readings caused by solvent dropout as well as excessive maintenance time due to sample condensation and clogging. A concentric sampling probe further assures accurate, trouble-free sampling.

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.

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

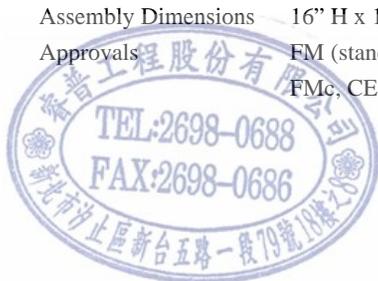
A fault relay de-energizes whenever any of the following occur: controller electrical failure; loss of system power; loss of heat; loss of flow through the flame cell; and downscale readings caused by loss of flame or fuel.

Outputs

The system includes six relays: single-pole, double-throw relays for Warning, Danger, Fault; and single-pole, single-throw relays for Horn, Calibration-in-Progress and Service Needed. Other standard outputs include a 4-20mA analog output 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.



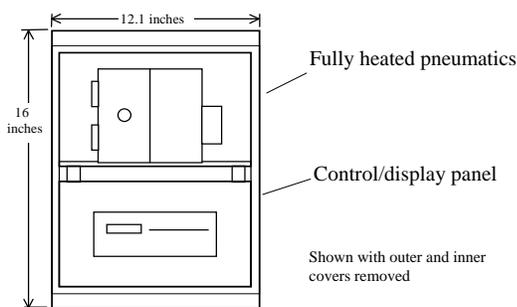


SNR675 PrevEx® Flammability Analyzer

Analyzer Design

The Model SNR675 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 SNR675 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 up to 270°C (518°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	12 to 21% oxygen in sample 0 to 21% oxygen in sample (optional)
Fuel Requirements	99.99% prepurified Hydrogen
Fuel Consumption	58 liters/day 40-45PSIG hydrogen
Compressed Air	20 PSIG, regulated, clean, dry
Air Consumption	42 SCFH, 21 liters/minute
Humidity Range	0% to 100% Relative Humidity
Relays	Three (3) SPDT 60 Watt contacts Three (3) SPST 60 Watt contacts
Relay functions	Six relays for: Warning; Danger; Fault; Horn, Calibration-in-Progress and Service Needed
Alarm Function	Adjustable alarm ranges
Analog Output	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 & stainless steel
Flame Cell Rating	Explosion Proof Class I, Division 1
Hazardous Area Rating	Class I, Div 2, Groups A, B, C, D Purged to Class I Division 1 (optional)
Enclosure Rating	NEMA 12/13, indoor
Assembly Dimensions	16" H x 12.1" W x 8.5" D
Approvals	FM (standard) FMc, CE, ATEX (optional)

Heated Sampling System

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Autocalibration solenoids, which allow remote activation of calibration tests, are standard.

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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: single-pole, double-throw relays for Warning, Danger, Fault; and single-pole, single-throw relays for Horn, Calibration-in-Progress and Service Needed. Other standard outputs include a 4-20mA analog output 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.

