

TOTAL PROTECTION SOLUTION



An ISO 9001 : 2008 Certified Company

GAS HAZARDS

- Portable Gas Detectors
- Fixed Gas Detection Systems
- Leak Detectors / Leak Rate Detectors
- Aerosol Monitors, PM 1.0, PM 2.5, Resp., PM 10.0 and Total
- Air Quality (IAQ) Monitor
- Combustion Emission Analysers
- Gas Sensing Solution (Specialised)
- Standard NDIR Based Gas Benches
- Respiratory Air Monitors

TEMPERATURE

- Thermal Imagers
- Non Contact IR Thermometer
- Contact Type Thermometer
- Calibrators

Three S Instruments Pvt. Ltd. is engaged in businesses of International quality products based on complete knowledge & assured after sales-services with back up of



With complete technical know how & team of experts, we provide free warranty services. There after we undertake annual maintenance contracts as well as gas calibration contracts on regular basis.

*Calibration of Gas Instruments with International Certified Gases
Pickup and return of instruments from any where in India*

Contact at : sales@3si.co.in

● **Bangaluru** : bangalore@3si.co.in ● **Chennai** : chennai@3si.co.in ● **Kolkatta** : Kolkatta@3si.co.in ● **Mumbai** : mumbai@3si.co.in

www.3si.co.in



PORTABLE GAS DETECTORS

Multi Gas Detector **Polytector III G999**

With integrated suction pump and optional Bluetooth and radio module



- the smallest and most light-weighted 4-7gases.
- Send Live measured data - GfG Link or to mobile app by Bluetooth
- Individual sensor configuration-any profile requirement.
- Ex Protected Integrated lamp, ATEX approved
- Data logger & Man down alarm
- IP 67, Hybrid sensor (%LEL, PPM, % Vol.), PID & NDIR sensor

Multi Gas Detector **G460 & G450**

The World's Most Advanced Multi-sensor Atmospheric Detector



- Up to 7 gases of detection, including...**PID sensor for direct reading of Volatile Organic compounds**
- **Full 3-year warranty on O2, combustible, CO and H2S sensor's, CO2, (IR)**
- Wide range of additional sensors including CO2, SO2, Cl2, NH3, HCN, HCL, PH3, H2, NO, NO2, ClO2, O3, Silane, Sulphur dioxide & ETO and more with 2 year warranty



DS 400

Docking Station for G 450 & G 460

- **Fully automatic** functional bump test and calibration
- **automatic** test of alarms and charging
- **automatic** record keeping

Single Gas Detector



MICRO IV

smallest size. Non-disposable MICRO IV

- **Three years sensors* warranty**
- AutoCal® calibration
- User replaceable "AA" battery and sensors
- Ultra bright alarm lights and 91dB horn
- Interchangeable sensors
- TLV/STEL/TWA Reading & Datalogging (MICRO IV)
- ON "AA" Battery last upto 9 months

* For CO, H2S & Oxygen only



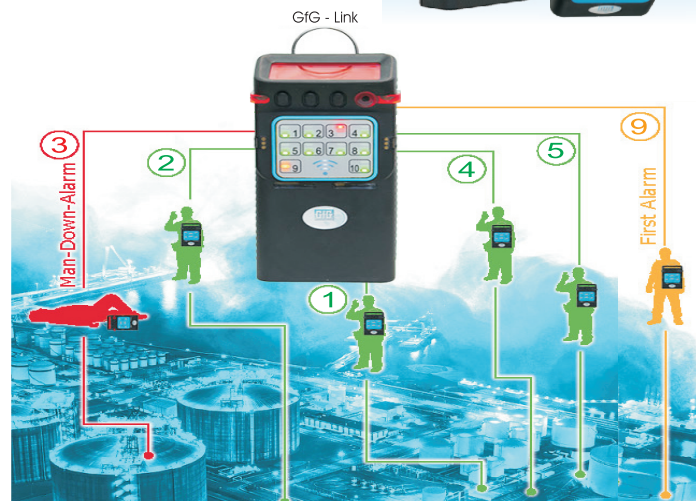
Docking Station

Multi Gas Detector **Microtector III G888**

Gas Detector with optional Bluetooth and radio module



- Send Live measured data - GfG Link or to mobile app by Bluetooth
- AutoCal function.
- Ex protected Integrated lamp
- Data logger & Man down alarm
- IP 67, ATEX APPROVED



LEAK DETECTORS / LEAK RATE DETECTORS

Portable Leak Detector

G 300 Series

- Small, light and durable leak detector
- For Methane, LPG, Natural gas, CNG, LNG Refrigerants and Ammonia
- More than 8 hours continuous operation
- Explosion-proof models available



GasCheck



Series G1, G2, G3 The GasCheck G gas leak detector represents the latest in gas detection technology. Its advanced system of micro thermal conductivity enables improved sensitivity for the rapid, effective detection of gas leaks down to cc/sec, mg/m³ or ppm levels.

Gases He, Hydrogen, Ammonia, Butane, Krypton, Methane, Sulfur hexafluoride, Acetone, Argon, Refrigerant R502, R404a, R410a, Duetrium oxide, Hydrogen Sulphide, Acetylene, Ethane, Ethylene Oxide, Nitrogen, Oxygen. The Only ATEX Approved Gas Leak Detector. The instrument can be used on an MRI scanner whilst in operation,

FIXED GAS DETECTION SYSTEM - CONTROLLERS

GMA200MW (Wall) / MT (Rack) / GMA200RT / RTD

- High Performance Gas Warning System
- Freely Programmable connection of detectors for measuring combustible and toxic gases/vapours & Oxygen
- Other measuring devices/transducers with 4...20mA output signal possible
- Freely programmable Relays
- 16 analogue inputs, 2 digital inputs and 2 RS485 BUS for relay modules or digital transmitters, 1 X RS485 Bus for relay module for extension to add 16 additional relays



GMA 300/100

Fixed gas monitoring system

- Intelligent & flexible Gas monitoring & warning system
- 1 to 4 sensor controller Function tested by DMT - IBS / PFG
- Retransmission output 4-20mA available
- Suitable for all combustible, Toxic, Oxygen & Hydrogen Transmitters



GMA 40 Series



GMA 40 Series

Gas Monitoring Controllers

- Single or four channel controller
- Easy mounting on DIN-rail
- Multiple alarm points with relays

IR based HC gas Detector IR 29i/Di Infrared Transmitter for Combustible Gases



IR 29Di *

IR 29i **

- First intrinsically safe infrared transmitter for explosion protection
- ATEX II 1G Ex ia IIC T4 Ga C0158 can also be used in Ex zone 0
- Temperature, moisture and pressure compensation
- Patented infrared (NDIR) 4-beam 4-wavelength
- The energized IR sensor head can be replaced in Ex areas
- Maintenance and service-friendly

* IR 29 Di - Intrinsically safe transmitter for hydrocarbons (LEL) with graphical display
** IR 29 i - Intrinsically safe transmitter for hydrocarbons (LEL)

Transmitters CC28 - Combustible gases



with Local Display & Alarm CC 28 DA

with Local Display & Alarm C 28 D

Blind CC 28

Display of gas concentration at transmitter
Ex-proof visual and audible alarm
ATEX approval II 2 G EEx dem ib IIC T4
Output 4-20 mA,
Casing Protection Ip64
Electromagnetic Interference Protected

Gases Name (Range in 0-100 % LEL)

| | | | | | |
|-------------------|--|-----------------|----------------------------------|----------------------|--|
| Methane | CH ₄ | Toluene | C ₇ H ₈ | Heptane | C ₇ H ₁₆ |
| Propane | C ₃ H ₈ | Ammonia | NH ₃ | Methanol | CH ₄ O |
| Hydrogen | H ₂ | Acetylene | C ₂ H ₂ | Methyl acetate | C ₃ H ₆ O ₂ |
| Aceton | C ₃ H ₆ O | Benzene | C ₆ H ₆ | Methylisobutylketone | C ₈ H ₁₂ O |
| Diethylether | C ₄ H ₁₀ O | n-Butane | C ₄ H ₁₀ | Octane | C ₈ H ₁₈ |
| Ethylene | C ₂ H ₄ | Butane-iso | C ₄ H ₁₀ | Pentane | C ₅ H ₁₂ |
| Ethyl acetate | C ₄ H ₈ O ₂ | 2-Butanol | C ₄ H ₁₀ O | Propine | C ₃ H ₄ |
| Hexane | C ₆ H ₁₄ | 2-Butanon (MEK) | C ₄ H ₈ O | Propylene | C ₃ H ₆ |
| CC sensor Methane | CH ₄ | Cyclohexane | C ₆ H ₁₂ | Xylene | C ₈ H ₁₀ |
| n-Nonane | C ₉ H ₂₀ | Dimethyl ether | C ₂ H ₆ O | Carbon monoxide | CO |
| Propane | C ₃ H ₈ | Ethane | C ₂ H ₆ | Natural gas | HC-Mixture |
| Isopropanol | C ₃ H ₈ O | Ethanol | C ₂ H ₆ O | | |

Transmitters EC28 - Electrochemical Sensors

For toxic gases, oxygen and hydrogen
ATEX certificate Ⓢ II 1 G EEx ia IIC T4 / Ⓢ II 2 G EEx em [ib] IIC T4
One-man calibration at transmitter Plug-in smart sensor



- Output signal 4 – 20 mA,
- Casing protection IP64
- Intrinsically safe (EC28i, EC28 Di) 1 relay (EC28 DAR),
- Electromagnetic Interference Protected - EN 50270

Gases and Detection Ranges (ppm)

| Ammonia NH ₃ | Chlorine Cl ₂ | Chlorine dioxide ClO ₂ | Hydrogen chloride HCl | Hydrogen cyanide HCN | Ethylene oxide C ₂ H ₄ O | Hydrogen fluoride HF | Carbon monoxide CO |
|-----------------------------------|-----------------------------|---|--------------------------|-------------------------|--|-------------------------|-----------------------|
| 0 .. 200 0 .. 500 0 .. 1000 | 0 .. 50 0 .. 250 | 0 .. 2 | 0 .. 30 0 .. 200 | 0 .. 50 0 .. 200 | 0 .. 100 | 0 .. 10 | 0 .. 500 0 .. 2000 |

| Ozone O ₃ | Phosgene COCl ₂ | Oxygen O ₂ | Sulfur dioxide SO ₂ | Hydrogen sulfide H ₂ S | Silan SiH ₄ | Nitrogen dioxide NO ₂ | Nitrogen monoxide NO | Hydrogen H ₂ |
|-------------------------|-------------------------------|--------------------------|-----------------------------------|--------------------------------------|---------------------------|-------------------------------------|-------------------------|---|
| 0 .. 1 0 .. 5 | 0 .. 2 | 0 .. 30 Vol.-% | 0 .. 50 0 .. 500 | 0 .. 200 0 .. 1000 | 0 .. 50 | 0 .. 50 0 .. 200 | 0 .. 300 0 .. 1500 | 0 .. 2000 0 .. 1 Vol.-% 0 .. 4 Vol.-% |

Transmitter IR 24

- a For Carbon Dioxide (CO₂) and methane Infrared based Transmitter with Infrared (NDIR) Sensor Stationary Monitoring of CO₂ Range 0-5% vol., 0-15%vol., 0-20%vol., 0-25%vol., 0-50%vol. or 0-70%vol.
- b for Methane 0 - 100% Volume



TVOC is a fixed continuous VOC detector for the detection and measurement of total volatile organic compounds (VOCs).

A robust fixed VOC detector, TVOC has a selectable detection range of 0 – 10 ppm, 0 – 100 ppm or 0 – 1000 ppm and is ideal for use in manufacturing and process industries where VOCs are typically present.

With a 4 - 20 mA analogue output, the TVOC VOC detector can be simply integrated into a DCS control system to provide warnings and enable control of high VOC levels in the working environment, ATEX approved.



Transmitter ZD21

Prevention of oxygen deficiency/enriched
Extremely fast response time: t90 < 2 sec.
No influences from pressure, humidity or temperature, "intelligent" transmitter.

CS 21 Transmitter

Lowest solid state sensor high sensitivity to observe Range of refrigerants sensor.
CS 21 with external sensor, detection principal - chemosorption.
For CH₄, C₂H₆, C₃H₈, CO, H₂, NH₃ etc.



EC30 Transmitter

Remote transmitter for O₂ & Toxic gases
Explosion proof handling

Transmitter Series 22 - Affordable Solution

- Optional Display
- Long Service Life of the sensors
- High Efficiency & low follow-up costs
- Sturdy plastic housing (IP54)
- Cost-effective single-man adjustment
- On-site alarm through colored display & integrated audible alarm



Transmitter EC22 For Toxic Gas ,O₂ and Hydrogen
Transmitter CC22 for Combustible gases
Transmitter ZD22 Fro O₂ based upon Zirconia sensor



Transmitter CI 21 Carrier Injection NH₃ Monitoring in Refrigeration Plants

Low temperature operate in upto -40 °C
Selective and precise detection even in almost dry air and up to 100 % rel. humidity. No false alarm from hydrogen, natural gas, carbon monoxide, oil vapours. No damage by high ammonia concentrations. NH₃ - 0 to 200ppm, 0 to 1000 ppm or 0 to 10000ppm.



AEROSOL MONITORS

DUSTTRAK™ DRX and DUSTTRAK™ II

AEROSOL MONITORS

MODELS 8533, 8533EP AND 8534

MODELS 8530, 8530EP AND 8532

Real-time Dust & Aerosol Monitoring For Any Environment, Any Application

Features and Benefits All Models

- Real-time mass concentration and size fraction readings, as well as data logging allow for data analysis during and after sampling.
- Simultaneously measure size-segregated mass fraction concentrations corresponding to PM1, PM2.5, Respirable, PM10, and Total PM size fractions
- Easy-to-use graphical user interface with color touch-screen for effortless operation



Environmental DUSTTRAK™ Aerosol Monitor EDT2.5/EDT 10/EDT DRX

- Simultaneously measure size-segregated mass fraction concentrations corresponding to PM1, PM2.5, Respirable, PM 10 and total PM size fractions
- Perform in-line gravimetric analysis for custom reference calibrations
- Environmentally protected and tamper-proof with environmental enclosure
- Cloud Data Management System for efficient remote monitoring anywhere



PERSONAL AEROSOL MONITOR SIDEPAK™ AM-520

- Real-time aerosol readings of dusts, fumes, mists, smoke and fog within a worker breathing zone.
- Real-time mass concentration range PM10, Respirable (PM4), PM2.5, PM1 and 0.8µm Diesel Particulate Matter (DPM).
- Audible and Visual Alarms
- High capacity battery (more than 20 hours)
- Aerosol Concentration Range 0.001 to 100 mg/m3



PORTACOUNT® RESPIRATOR FIT TESTER

Models 8040/8048

available for proven quantitative fit testing of all respirators,

- Half-mask fit testing
- Full-face fit testing
- SCBA, Gas mask and PAPR fit testing
- Quantitative respirator fit testing (QNFT)
- Automates fit testing with FitPro+™ Fit Test Software
- Disposable filtering-face piece fit testing for Series 100/99/95/P1/P2/P3 masks



Primary Calibrator

- Provides continuous real-time volumetric flow rate readings, so pump adjustment and calibration is fast and easy
- Battery powered, compact and lightweight
- Comes with a NIST traceable calibration certificate



AIR QUALITY MONITORS

AIRASSURE™ INDOOR PM2.5 Mass Concentration Monitor MODEL IPM2.5-AD

REAL-TIME AQ MONITORING
THAT YOU CAN TRUST



- Measures PM2.5 at a glance
- Wall mounted ideal - inside commercial buildings
- Analog & Ethernet output - ideal for multiple networking units
- Auto Zero Mechanism



Q-TRAK™ MULTI-FUNCTION INDOOR Air Quality Monitor MODEL 7575 with VOCs

- Simultaneously measures CO2, CO, temperature and humidity
- Calculates dew point, wet bulb and percent outside air.
- One instrument with multiple plug-in probe options including VOCs in PPB and air velocity
- Stores up to 39 days of data @ 1 minute interval
- Track pro Data analysis software
- Blue tooth communication



AQ EXPERT Portable Indoor Air Quality Monitor

- Customize parameter up to 7 Gases
- CO2, CO, % RH, Temp, TVOC's, O2, NO, NO2, O3, CH2O, SO2, H2S, Barometric Pressure
- Real-Time Data-Logging Software For Graphs, Data Review, IAQ Reports
- Wireless Communications

PORTABLE EMISSIONS AND COMBUSTION ANALYSERS

Providing the Latest in Combustion Gas & Emissions Analyzers for Boiler, Engine, Furnace, and Other Combustion Applications



- Up To FOUR Gas Sensors
- Combustion Efficiency
- Low NOx & Total NOx
- CO Sensor w/ NOx Filter
- Draft & Differential Pressure
- 2 Channel Thermometer

E1500 For O2, CO, CO2 (H2 Compensated w/built in NOx Filter)

E4500 Up to Four Gases (O2, CO, CO2, NO, NOx, NO2, SO2 & HC)

E6000 Up to Six Gases (O2, CO, CO2, NO, NOx, NO2, SO2, HC & H2S)

Rest Same as above 4500

E8500 Plus

Industrial Combustion Gas & Emissions Analyzer Providing the latest in Combustion Gas & Emissions Analyzers for Boiler, Engine, Furnace, and other Combustion Applications O2, CO2, CO, NO, NO2, NOx, SO2, H2S, CxHy, Flue Gas & Air Temp., Draft & Diff. Pressure, Stack Gas Velocity



E9000 Portable Industrial Flue Gas & Emissions Analyzer, Up to 9 Total Gas Sensors



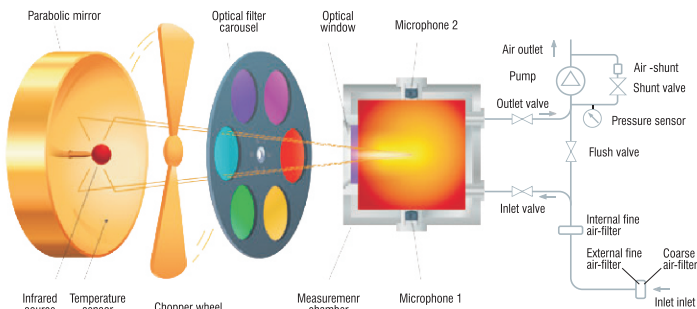
- Built-In Thermoelectric Chiller
- Automatic Condensate Drain Pump
- Wireless Remote Printer
- True NOx Measurements
- NDIR Sensors
- Rechargeable Battery
- Wireless Communications with Computer & Remote Printer
- CO Dilution Auto-Range
- Up to 9 Total Gas Sensors
- Gas Velocity with Pitot Tube

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LUMASENSE SOLUTION FOR GAS SENSING

PHOTOACOUSTIC SPECTROSCOPY



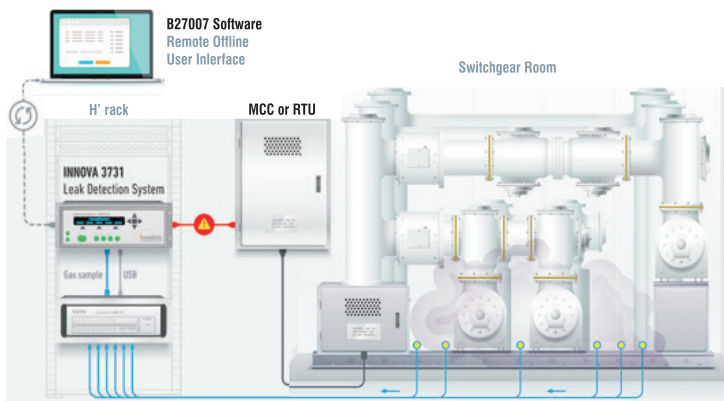
Photoacoustic Spectroscopy (PAS) gas instruments were pioneered and perfected by INNOVA™. With PAS, the absorption (proportional to the concentration) is measured directly and not relative to a background, making PAS highly accurate and stable. Furthermore, all gases and vapor in small volumes can be monitored sequentially in a single measurement chamber as it is possible to detect up to five substances and humidity to be monitored individually.

APPLICATIONS with Specialised Software

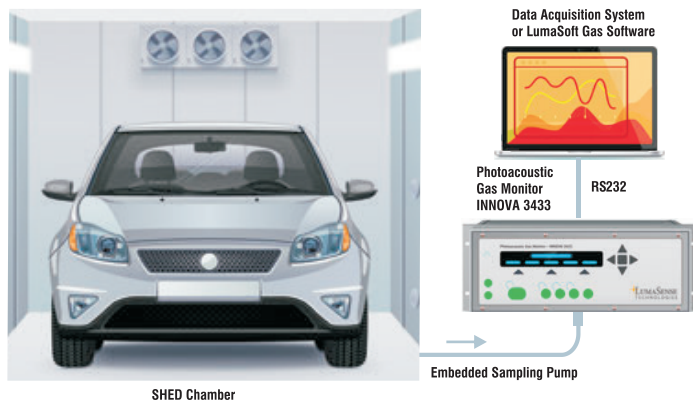
SF₆ LEAK MEASUREMENT SOLUTION

Sf₆ Leak Detection System – 3731

- Ultra-sensitive, with a limit of detection at 6 ppb
- Available in 12 or 24 channels, with sampling lines that can extend to 75 m
- Exceptional accuracy with auto-compensation for temperature and pressure fluctuations, and for water vapor interference



Automotive Emissions Monitoring



LumaSense's INNOVA 3433 Multi Gas monitor is used to measure evaporation emissions (SHED) and vehicle exhaust gas (Constant Volume Samples CVS) approved by EPA and CARB. The INNOVA 1412i can also be used for measurements of Mobile Air Conditioner emissions R134a and HFO-1234yf.

PAS BASED GAS MONITORING SYSTEMS

INNOVA 1412i



1412i : Emission monitoring of greenhouse gases from agricultural production, Monitoring of anaesthetic agents in hospitals, Ventilation and air exchange using tracer gas, OHS measurements

INNOVA 1314i



1314i : **Emission monitoring** - of exhausts from chemical processes, NH₃ in stacks, scrubber efficiency, and filter break-through, Process quality control measurements, OHS measurements and Automotive monitoring - of alcohol content in vehicle exhausts and production of NH₃ and N₂O in diesel exhausts.

INNOVA 3434i



3434i : **SF₆ Leak Detector** - Fast, accurate, quantitative leak testing of GIS for routine quality control or during field commissioning, Area monitoring in substations, Circuit breaker leak testing and Power Utility (Energy T&D)

INNOVA 1403 Multi Point Sampler & Doser



1403 : Multipoint sampler & Doser Full remote control from a PC With special software.

INNOVA Multi Point Sampler 1409



1409 : Multi Point Sampler upto 24 points Full remote control from a PC With special software.

APPLICATIONS with Specialised Software

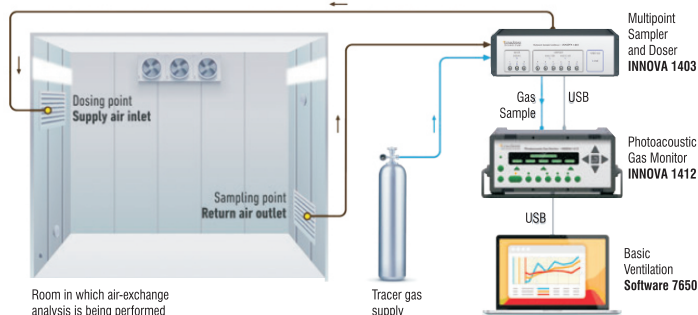
Environmental Emission Monitoring



There is an expanding list of environmental and emission applications where gas sensing solutions are needed. Our INNOVA gas instruments have measured NH₃ in swine and poultry stables, CH₄ in cattle and poultry stables, N₂O from stables and fertilizer, CH₄ from decomposing biomass, and in greenhouses and rice cropping.

Ventilation Performance

Advance Tracer Gas Systems - 3751-2 / 3751-5

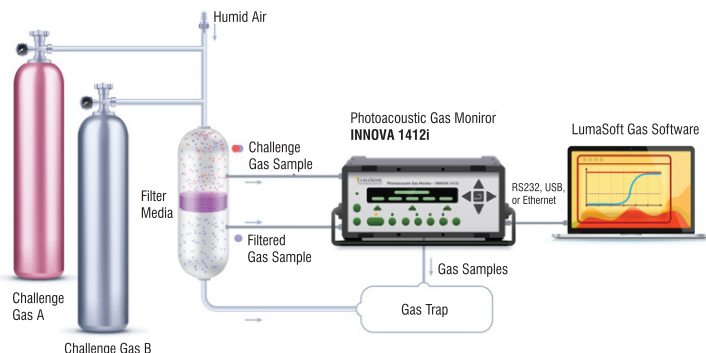


Air Change Rate, or Age-of-air determination Infiltration (or leakage) characterization Volumetric or mass flow rate measurement using tracer gas dilution Contaminant spread analysis, Re-circulation or re-entrainment testing Capture efficiency of extraction systems



LUMASENSE SOLUTION FOR GAS SENSING

AIR PURIFICATION DEVICES TESTING USING PRECISE MULTI GAS MONITORS



Schematic view of a typical set-up for testing of filter breakthrough characteristics, with a single Photoacoustic Gas Monitor capable of measuring both the upstream and the downstream concentrations for a selection of challenge gases

7950 MULTI-POINT SOFTWARE

- Perform gas-monitoring tasks in up to 24 different locations
- Stores up to five gas concentrations for each location
- Real time displays of measurement data in both table and graphical window
- Login-secured access to measurement data
- Alarm reporting for each gas at each measurement location

Multi Gas Monitor



INNOVA 1316-1

- Measures up to 5 gases HC, CO, CO₂, NO & O₂ for Process control, Chemical plant monitoring, Biogas monitoring, Fermentation monitoring, Exhaust monitoring.

INNOVA 1316-2

- Refrigerant Leak Monitor INNOVA 1316-2 : Measures most common refrigerants for Refrigerant leak monitoring & Leak Detection.

INNOVA 1316-3

- Fermentation Monitor INNOVA 1316-3 : Oxygen, Carbon Dioxide, and Ethanol monitoring from a single sampling point for laboratory, pilot, and light industrial applications.

ANDROS NDIR Standard Bench for Automotive and Industrial Gas Monitoring

Model 6500 for Hexane or Propane, CO₂, CO with NO_x & O₂ with DP Transducer

Model 6520 for Hexane or Propane, CO₂, CO with NO_x & O₂ w/o DP Transducer

Model 6511 for Methane, CO₂, CO with NO_x & O₂

Model 6552 Freon for Refrigerant Leak Detection Calibrated for R404A, R507C and CO₂.



RESPIRATORY AIR MONITORS

RAM 741 - Portable/Multi user option

- Meets OSHA Requirements for Compressed Breathing Air
- Continuous Monitoring of Supplied Air
- Carbon Monoxide and Vapor Detection
- AutoCal® Calibration and Maintenance
- Three Stage Filtering Option for up to 8 users



RAM 4021 - with CO, Dew Point & CO with Dew Point

- Meets OSHA Requirements for Compressed Air
- Continuous Monitoring of Breathing Air
- Optional Oxygen or Dew Point Monitoring
- AutoCal® Calibration
- Multiple Filter Panel Options



Portable Remote Compressed Air Monitor



TEMPERATURE MEASURING INSTRUMENTS



HEATSPY

a50 Inspector/a30 Detector

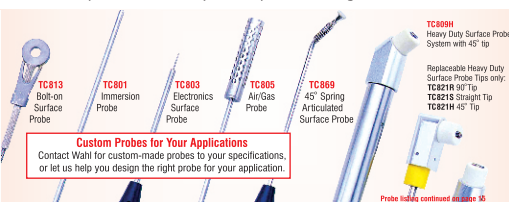
upgrade both models, "a" speed at 9 Hertz captures clear, sharp images!

Camera acclimates quickly, every Pixel is individually calibrated! "Double Vision" provides simultaneous capture, Hands-free flashlight



HEAT Prober 2500/1370 Series Type K Thermocouple Meters

Meter range -100 to 2500°F or -70 to 1370°C
Meter accuracy is $\pm 0.2\%$ of reading ± 1 digit
Maxi-Temp® automatically holds peak reading



WAHL Heat-Prober Dipstick high-temperature Thermometers Measure Temperature of ferrous and non ferrous molten metals in monitor stoke



WAHL UNIVERSAL CALIBRATORS

Simultaneous Measurement and Source or Dual Measurement Channels

IP54 Automatic Calibration on HART Protocol Transmitter 21 CFR part 11 compliant

Measure and Generate Voltage, Current, Frequency, Resistance Signals, Resistive Probes and Thermocouples Pressure Measurements when used with optional External Pressure Module for Absolute or Relative Pressure



Wahl Temp-Plate®

Irreversible Temperature Recorders These economical non-reversible chemical change thermometers instantly record an overheat occurrence and provide a permanent, NIST - traceable record.

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For Calibration & Services E-mail : service@3si.co.in