HVAC & INDOOR AIR QUALITY CATALOGUE

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kenelec scientific

www.kenelec.com.au

HVAC & INDOOR AIR QUALITY CATALOGUE

Heating, Ventilation and Air Conditioning (**HVAC**) systems are a primary consumer of energy and can have a big influence on the operating costs of your business. In addition, Indoor Air Quality (**IAQ**) can have a big impact on the health and comfort of indoor workers.

Kenelec Scientific offers a range of monitoring options to ensure both optimal system performance and comfort of building occupants.

GOT A QUESTION? GET IN TOUCH!

Have an enquiry about a particular product? You can **contact our Sales Department** via the following channels:

+61 3 9873 1022
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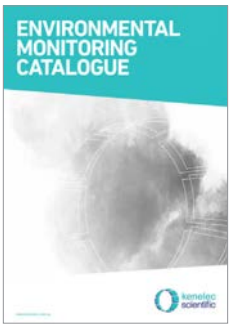
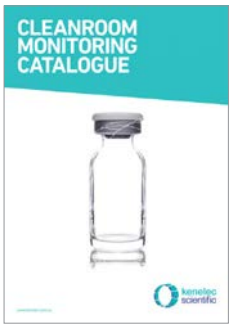
MORE SOLUTIONS FROM KENELEC SCIENTIFIC





VENTILATION TEST INSTRUMENTS

Heating, Ventilation and Air Conditioning (HVAC) systems are a primary consumer of energy and can have a big influence on the operating costs of your business, especially if not monitored and managed. Kenelec Scientific offers a range of monitoring options to measure air flow, temperature, humidity, pressure and other parameters key to ensure both optimal system performance and comfort of building occupants.

ROTATING VANE ANEMOMETERS

Vane anemometers are useful for measuring face velocities and velocity from supply ducts, with averaging capabilities for flow areas. Additional capabilities in temperature measurement, flow rate calculation, averaging and determining minimum and maximum readings make these instruments ideally suited for measuring unevenly distributed or fluctuating flows through heating and cooling coils, diffusers, grilles, and filters.

TSI 5725 VELOCICALC® ROTATING VANE ANEMOMETER

EQUIVALENT PRODUCT:
AIRFLOW INSTRUMENTS LCA501 ROTATING VANE ANEMOMETER

The 5725 is a high performance, yet simple-to-use, rotating vane anemometer. High accuracy and reliability make the 5725 the ideal tool for measuring unevenly distributed or fluctuating flows through heating and cooling coils, diffusers, grilles, and filters.

Features

- Measure and simultaneously display velocity and temperature
- Calculates volumetric flow rate when user inputs duct shape and size, or area
- Sampling function records multiple point measurements
- Automatic averaging of air velocity
- Sweep mode for one overall measurement
- Logs 12,700+ samples with a time and date stamp
- Recall, review, store data

Applications

- Heating and cooling coil analysis
- Diffuser and grille measurements
- Fume hood face velocity tests
- Indoor air quality tests
- Filter face velocity measurements

OPTIONAL ACCESSORIES:

TSI 801749 AIR CONE KIT

- Includes a 285 x 234mm rectangular cone and 180mm diameter round cone
- Works with any 100mm vane anemometer
- Rugged and reliable, easy to transport
- Ideal for toilet exhaust fans & small outlets

TSI 801748
TELESCOPIC EXTENSION ARM

- Extends out 1m allowing the vane head to sit around 1m plus over your head
- Features articulated knuckle so the vane head can be used at an angle
- Great for reaching high, hard to get places
- Rugged and reliable, easy to use

4M PROBE
EXTENSION CABLE

- Compatible with most TSI and Airflow Instruments vane models
- The vane head can be screwed off and fitted on any longer (self-made) pole with the 4m cable then connecting the vane head back to the instrument

HOT-WIRE ANEMOMETERS

Hot-wire or thermal anemometers operate on the principle of heat transfer, and accurately measure a wide range of velocities. They have small probe diameters which allow them to be placed in tight areas, such as measuring air velocity in between circuit boards in a PC or in small ducts. They are commonly used to measure velocity in paint spray booths, laminar flow hoods, air flow system balancing and duct traverses, pharmaceutical manufacturing areas, cleanroom biological safety cabinets and fume hood testing, room air currents and draft measurements.

TSI 9515 / 9535 / 9545 VELOCICALC® AIR VELOCITY METERS

EQUIVALENT PRODUCT: AIRFLOW INSTRUMENTS TA410 / TA430 / TA440 AIR VELOCITY METERS

The VelociCalc® series measure air velocity and temperature, calculate flow rate and perform statistical calculations. Some models also measure humidity, and perform dew point and wet bulb temperature calculations. They are ideal tools for measuring face velocity measurements in fume hoods and spray booths, or for IAQ and ventilation system checks:

Features

- Simple to operate
- Accurate air velocity measurement

Applications

- Optimizing HVAC system performance
- Commissioning
- Plant maintenance
- Critical environment certification*
- Duct traverses*

*9535 / 9545 only

GOOD

BETTER

BEST

TSI 9515 VELOCICALC® AIR VELOCITY METER

Economical instrument measures air velocity and temperature.

Features

- Velocity range 0 to 20 m/s
- Temperature range -18 to 93C
- Integrated probe attachment

TSI 9535 VELOCICALC® AIR VELOCITY METER

All the features of the 9515, plus basic datalogging and volumetric air flow.

Features

- Velocity range 0 to 30 m/s
- Temperature range -18 to 93C
- Simultaneously measure temperature and velocity
- Calculates volumetric flow and actual/ standard velocity
- Displays up to three measurements simultaneously
- Data log 12,700+ samples and 100 test IDs (manual)
- Articulated probe version available (9535-A)

TSI 9545 VELOCICALC® AIR VELOCITY METER

All the features of the 9535, plus full datalogging and humidity measurements.

Features

- Velocity range 0 to 30 m/s
- Temperature range -10 to 60C
- Simultaneously measure temperature and velocity
- Calculates volumetric flow and actual/ standard velocity
- Displays up to three measurements simultaneously
- Data log 12,700+ samples and 100 test IDs (manual and auto-save)
- Articulated probe version available (9535-A)
- Displays humidity as % relative humidity, wet bulb or dew point temperature

TSI 9600 / 9630 / 9650 VELOCICALC® MULTI-FUNCTION VENTILATION METERS

The 9600 VelociCalc® is a portable, handheld multi-function ventilation and IAQ test instrument featuring a menu-driven user interface for easy operation. The high-resolution colour screen displays multiple measurements simultaneously in real-time with on-screen prompts to guide you through instrument setup and operation.

Features

- Large, high-resolution colour display
- Intuitive menu structure allows for ease of use and setup
- Optional smart plug-in probes, including thermoanemometer, rotating vane and IAQ probes with calibration certificates
- Input for K-alloy thermocouple
- User-customizable soft keys for quick access to common functions
- Calculate the percentage of outdoor air with IAQ probe
- Integrated magnets for hands-free operation
- Supports multiple languages

Applications

- HVAC testing and balancing
- Cleanroom testing
- Biological safety cabinet and laboratory fume hood testing
- HVAC commissioning and troubleshooting
- IAQ investigations
- Ventilation effectiveness with percent outside air calculation

Parameter/Function	9600	9630	9650
Barometric Pressure	✓	✓	✓
Differential Pressure		✓	✓
Thermocouple (1)	✓	✓	✓
Thermoanemometer Probes (960, 962, 964, 966)	o	o	o
Rotating Vane Probe (995)	o	o	o
IAQ Probes (980, 982)	o	o	o
Pitot Tube		o	o
Air Density Correction	✓	✓	✓
Calculate Flow	✓	✓	✓
K-factor Flow		✓	✓
% Outside Air Calculation	✓	✓	✓
ASHRAE 111 Log-Tchebycheff Duct Traverse Worflow			✓
ASHRAE 111 Equal Area Duct Traverse Workflow			✓
EN 16211 Duct Travers Workflow			✓
EN 12599 Duct Travers Workflow			✓
Heat Flow Calculation (BTU/h, kW)			✓
Wired USB Printer	o	o	o
Bluetooth® Printer			o

o = Optional. Note: Displayed workflows are dependent on instrument model and attached probe.

OPTIONAL PITOT TUBES:

STATIC PITOT TUBES

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- Silver soldered connections
- Fully meets AMCA & ASHRAE specifications
- No correction factors or calibration required
- Insertion depth markings on the side
- Coefficient of “1”

Options

- TSI 634634000 Static Pitot probe
  5/16” (8 mm) diameter, 12” (30 cm)
- TSI 634634001 Static Pitot probe
  5/16” (8 mm) diameter, 18” (46 cm)
- TSI 634634002 Static Pitot probe
  5/16” (8 mm) diameter, 24” (61 cm)
- TSI 634634003 Static Pitot probe
  5/16” (8 mm) diameter, 36” (91 cm)
- TSI 634634005 Static Pitot probe
  5/16” (8 mm) diameter, 60” (152 cm)

TELESCOPING PITOT TUBE

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Extends out from 8 to 38 inches (20 to 96 cm)
- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- 1/8 inch diameter
- Fully meets AMCA & ASHRAE specifications
- Moulded hand grip
- Fully portable, easy to use

Options

- TSI 634634004 Telescoping Pitot tube
  8” to 38” (20 to 96 cm) length

TSI 9565 VELOCICALC®
MULTI-FUNCTION VENTILATION METER

EQUIVALENT PRODUCT: AIRFLOW INSTRUMENTS TA465 MULTI-FUNCTION ANEMOMETER

The portable, handheld 9565 is a multi-purpose anemometer unit which can be used for a variety of airflow and IAQ measurements with the addition of the right probe.

Features

- Interchangeable probes
- Compatible with all pitot tubes on the market
- 26,500 point advanced data logging (manual & automatic) with USB cable and software
- Toggle between actual and standard velocity
- Advanced menu driven multi-mode display
- Bluetooth bidirectional communications
- Remote polling from a PC

Applications

- HVAC testing and balancing
- Cleanroom testing
- Biological safety cabinet and laboratory fume hood testing
- HVAC commissioning and troubleshooting
- IAQ investigations
- Thermal comfort studies
- Ventilation evaluations
- Process airflow testing

OPTIONAL PROBES:

THERMOANEMOMETER PROBES

Measure air temperature, air velocities or air volume measurements in ductwork as well as lower velocity applications. Relative humidity sensor available with some models.

Options

- TSI 960 Air Velocity Probe, Straight
  Velocity, Temp
- TSI 962 Air Velocity Probe, Articulated
  Velocity, Temp
- TSI 964 Air Velocity Probe, Straight
  Velocity, Temp, Humidity
- TSI 966 Air Velocity Probe, Articulated
  Velocity, Temp, Humidity

ROTATING VANE PROBE

Measure air velocity and temperature accurately and reliably.

Options

- TSI 995 Rotating Vane Probe
  100 mm, Velocity, Temp

AIR FLOW PROBE

A straight pitot tube used to obtain single point air velocity or air volume measurements in ductwork.

Options

- TSI 800187 Air flow probe
  18” (46 cm)100 mm, Velocity, Temp

THERMOCOUPLE TEMP PROBES

Simple, robust & cost-effective temperature sensors used in a wide range of applications.

Options

- TSI 792 Surface Temperature Probe
  K-alloy Thermocouple
- TSI 794 Air Temperature Probe
  K-alloy Thermocouple

TEMP & HUMIDITY PROBE

Used to obtain temperature and humidity measurements along with wet bulb temperature and dewpoint temperature.

Options

- TSI 800220 Temp and Humidity Probe
  Temp, Humidity

IAQ/VOC PROBES (FOR 9565 ONLY)

Pre-calibrated plug-and-play accessory probes for multi-purpose meters used for a variety of indoor monitoring applications.

Options

- TSI 980 IAQ Probe
  CO_2, Temp, Humidity
- TSI 982 IAQ Probe
  CO_2, Temp, Humidity, CO
- TSI 984 VOC probe
  VOC (ppb), Temp
- TSI 985 VOC Probe
  VOC (ppm), Temp
- TSI 986 IAQ & VOC Probe
  VOC (ppb), CO_2, Temp, Humidity
- TSI 987 IAQ & VOC Probe
  VOC (ppm), CO_2, Temp, Humidity

DIGITAL MANOMETERS

A manometer is a differential pressure measuring device. It can be used with any standard pitot tube to measure static pressure, velocity, or volume. A digital micro manometer can be used in any position and does not require levelling. However, it should be zeroed periodically throughout a workday.

TSI 5815 / 5825 DP-CALC™ MICROMANOMETER

EQUIVALENT PRODUCT:
AIRFLOW INSTRUMENTS PVM610 / PVM620 MICROMANOMETER

The DP-Calc™ series allows you to easily make HVAC pressure measurements. These robust instruments can be used with pitot probes to measure duct velocity.

Features

- Measure differential and static pressure from -15 to +15 in. H2O (-3735 to +3735 Pa)
- Calculate and display air velocity through a Pitot tube

Applications

- HVAC commissioning and troubleshooting
- Testing and balancing
- Pitot tube duct traverses
- Static pressure measurements
- Pressure drop across filters, coils, fans, and diffusers
- Environmental air flow testing

GOOD

TSI 5815 DP-CALC™ MICROMANOMETER

Basic model for measuring differential and static pressure.

BEST

TSI 5825 DP-CALC™ MICROMANOMETER

A step up, including all the features of the 5815 plus datalogging and software.

RENT ME

Features

- Variable time constant
- Statistics
- Data logging with time and date stamp
- Stores 12,700+ samples and 100 test IDs
- Programmable K factors

OPTIONAL PITOT TUBES:

STATIC PITOT TUBES

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- Silver soldered connections
- Fully meets AMCA & ASHRAE specifications
- No correction factors or calibration required
- Insertion depth markings on the side
- Coefficient of “1”

Options

- TSI 634634000 Static Pitot probe
  5/16” (8 mm) diameter, 12” (30 cm)
- TSI 634634001 Static Pitot probe
  5/16” (8 mm) diameter, 18” (46 cm)
- TSI 634634002 Static Pitot probe
  5/16” (8 mm) diameter, 24” (61 cm)
- TSI 634634003 Static Pitot probe
  5/16” (8 mm) diameter, 36” (91 cm)
- TSI 634634005 Static Pitot probe
  5/16” (8 mm) diameter, 60” (152 cm)

TELESCOPING PITOT TUBE

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Extends out from 8 to 38 inches (20 to 96 cm)
- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- 1/8 inch diameter
- Fully meets AMCA & ASHRAE specifications
- Moulded hand grip
- Fully portable, easy to use

Options

- TSI 634634004 Telescoping Pitot tube
  8” to 38” (20 to 96 cm) length

HYDRONIC MANOMETERS

Facilities containing hydronic (water) systems are typically balanced for terminal flow using differential pressures. Hydronic manometers are used to balance hydronic systems, reducing energy consumption, saving money and enhancing system performance.

TSI HM675 HYDRONIC MANOMETER

The HM675 is used to balance hydronic heating and cooling systems, check pump performance and to set balancing valves. It can measure and display differential, high side and low side pressure simultaneously, without having to change hose connections or instrument valve settings. The HM675 features a backlit display and operates on four alkaline or NiMH rechargeable batteries.

Features

- Provides for inputs for two temperature probes
- Differential pressure range ±300 psi (±2068 kPa)
- Gauge pressure range -20 to 300 psi (-138 to 2068 kPa)
- Reads in H 2 O, ft. H 2 O, psi, in. Hg, mm H 2 O, kPa, mm Hg, or bar
- Large backlit display for use in low light areas
- Operates on four alkaline or NiMH rechargeable batteries
- Robust, splash-proof case
- Meter weight with batteries is 2.65 lbs (1.20 kg)

TSI HM685 HYDRONIC MANOMETER

The HM685 includes all items packaged with the HM675, plus a temperature probe, CompuDat™ USB downloading software and USB interface cable. It also calculates flow (Cv/Kv), heat flow, impeller diameter and brake power.

Features

- Provides for inputs for two temperature probes
- Large backlit display for use in low light areas
- Operates on four alkaline or NiMH rechargeable batteries
- Reads in H2O, ft. H2O, psi, in.Hg, mmHg, mH2O, kPa or bar
- Differential pressure range ±300 psi (±2068 kPa)
- Gauge pressure range -20 to 300 psi (-138 to 2068 kPa)
- Performs on-board universal flow and btu/hr calculations
- Displays volumetric flow when a Cv (Kv) factor is programmed
- Allows up to 100 Cv (Kv) factors to be entered
- Calculates brake power, heat flow, Cv (Kv) factors, and impeller sizing
- Stores up to 4,000 data points for recall or downloading via USB interface
- Robust, splash-proof case
- Meter weight with batteries is 2.65 lbs (1.20 kg)

WIDE PRESSURE RANGE
±2,068 kPa

Leakage in commercial ducts can result in high operating costs as more air and energy are needed to maintain standard conditions. Duct leakage testing is a necessity to ensure costs are kept down and systems meet required standards.

AS PER AS4254

DUCT LEAKAGE TESTING

IS NOW REQUIRED FOR SYSTEMS OVER 3000 L/S

AIRFLOW INSTRUMENTS PAN341 DUCT LEAKAGE TESTER (PANDA)

The PANDA provides contractors, commissioning engineers, and research and development technicians with the best in class choice of test equipment to quantify air leakage in ductwork and other areas as well as the ability to measure the performance of ducted systems.

The PANDA provides a fast, accurate, automated solution and helps to ensure compliance with EN12237, EN1507, EUROVENT 2/2 and SMACNA standards, enhancing energy savings in buildings.

Features

- Positive & negative leakage testing in one rig
- Energy savings by testing & minimizing duct leaks
- Accuracy is ± 2.5% of volume flow
- Fan speed control for charging up of duct system to test static pressure within minutes
- Fits in the back of vans and station wagons
- Includes an Airflow TA465-P multi-function instrument and PVM610 micro manometer
- Automatically calculates leakage rate in real time
- Simultaneously displays flow leakage rate and static pressure
- Provides a pass/fail indication for a given tightness class
- Automatically corrects actual volume flow leakage rate to standard temperature and pressure (STP)
- Monitors barometric pressure and temperature in real time
- Stores data that can be downloaded for report generation and documentation
- Works with optional Model 8934 portable printer
- Compliant with the following standards:
  - EN12237
  - EN1507
  - EUROVENT
  - SMACNA

Specifications	
Range	-3735 Pa to +3,735 Pa
Resolution	0.1 Pa
Accuracy	1% of the reading
Duct static range	+/- 2,500 Pa
Volume Measurement (using TA465P)	
Wilson radial flow grid	10 to 200 l/s
15mm conical inlet Nozzle adapter	1-13 l/s low leak range
Resolution	0.01 l/s
Accuracy	2.5% of the reading
Voltage	240 Vac
Current	10 Amps
Dimensions	1130 x 660 x 600mm
Carry Weight	45Kg
Total Weight	55kg

AIR BALANCING HOODS

Offering durable, trouble-free operation, TSI's lightweight, ergonomically designed capture hood kits save time and money by combining multiple measurement tools into one package. These hoods and related accessories help you create healthy and energy-efficient environments while meeting local codes, guidelines and regulations for ventilation systems.

TSI 8380 ACCUBALANCE AIR CAPTURE HOOD

The 8380 is a multi-purpose electronic air balancing instrument primarily used for efficiently taking direct air volume readings at diffusers and grilles. It features a detachable micromanometer which can be used with optional probes for increased flexibility in multiple measurement applications.

Features

- Ergonomic design and ultra light weight for easy, one-person operation
- Automatically senses and displays supply or return flows, saving time on the job
- Back pressure compensation ensures accurate readings
- Multiple hood sizes available for easy, cost effective use across multiple jobs
- Detachable digital micromanometer offers flexibility to use in multiple applications

Applications

- HVAC commissioning
- Cleanroom certification
- Troubleshooting HVAC systems
- Testing and balancing HVAC systems

Inclusions

- 610x610mm hood
- 18"/46cm pitot
- Static pressure tips
- Tubing
- Software
- Calibration certificate

TSI 8380-STA ACCUBALANCE AIR CAPTURE HOOD BUNDLE

The 8380-STA turns single-handed (or at least, single-staffed) balancing into a reality.

The mobile telescopic stand effortlessly reaches ceiling diffusers and grilles up to 4.5m, allowing you to quickly move from point to point, while the included tablet gives you even more flexibility by letting you access data without having to be tethered to your equipment.

Save time and money by combining multiple measurement tools and accessories into one convenient package.

Inclusions

- 8380 AccuBalance Air Capture Hood
- 8715 DP-CALC Micromanometer
- Capture hood stand
- 8G 7" wi-fi enabled tablet loaded with LogDat™ Mobile App
- Instruction videos

TSI 8380-B ACCUBALANCE AIR CAPTURE HOOD (BASIC)

The 8380B is a cost-effective solution with all the essentials. Comprised of the 8380 and detachable manometer, the 8380-B is an ideal solution for those wanting a quality instrument for testing and balancing without unnecessary add-ons.

Features

- 610x610mm hood and frame kit
- 8715 DP Calc Multi-function Micromanometer
- Powered by 4 x AA Alkaline batteries
- LogDat CH downloading Software
- Wheeled Carry case
- Calibration certificate

Static pressure probes, pitot tube, rechargeable batteries and power adapter are not included.

ALNOR 6200 LOW FLOW BALOMETER AIR CAPTURE HOOD

The ideal way to measure very low volumetric flow. Confidently and accurately measure supply or return flows from 10 to 500 cfm (17 to 850 m3/h). This light weight instrument is great for residential or light commercial use. The compact size allows them to be used where full size hoods would not fit such as over bathroom stalls or filing cabinets.

Features

- Includes a 406x406 mm, 200 mm tall hood
- Weighs only 3 kg with the hood attached
- 559 mm in height
- Simulated analogue display shows air trends and digital readings
- Uses 4 C-size alkaline batteries; minimum 10 hours continuous use
- For small diffusers, the base can be used without a hood
- Optional hood and frame kits available

OPTIONAL ACCESSORIES:

STATIC PITOT TUBES

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- Silver soldered connections
- Fully meets AMCA & ASHRAE specifications
- No correction factors or calibration required
- Insertion depth markings on the side
- Coefficient of “1”

Options

- TSI 634634000 Static Pitot probe
  5/16” (8 mm) diameter, 12” (30 cm)
- TSI 634634001 Static Pitot probe
  5/16” (8 mm) diameter, 18” (46 cm)
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  5/16” (8 mm) diameter, 24” (61 cm)
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- TSI 634634005 Static Pitot probe
  5/16” (8 mm) diameter, 60” (152 cm)

TELESCOPING PITOT TUBE

Primarily used to obtain air velocity, air volume, and velocity pressure measurements within ductwork.

Features

- Extends out from 8 to 38 inches (20 to 96 cm)
- Ideal for use with precision manometers
- Long lasting 304 stainless steel construction
- 1/8 inch diameter
- Fully meets AMCA & ASHRAE specifications
- Moulded hand grip
- Fully portable, easy to use

Options

- TSI 634634004 Telescoping Pitot tube
  8” to 38” (20 to 96 cm) length

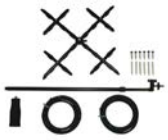
HOOD EXPANSION KITS

Additional hood sizes fit interchangeably on the instrument base to increase flexibility

- TSI 801206 Hood Expansion Kit
  1ft x 4ft (305mm x 1220mm) and
  2ft x 4ft (610mm x 1220mm)
- TSI 801207 Hood Expansion Kit
  1ft x 5ft (305mm x 1525mm) and
  3ft x 3ft (915mm x 915mm)

AIR VELOCITY MATRIX

Obtain area-averaged multi-point air velocity measurements



- TSI 801090 16 POINT VELOCITY MATRIX
  Velocity matrix, telescopic handle, (2) 8’ hoses, standoff stoppers

RELATIVE HUMIDITY & TEMPERATURE SENSORS

Controlling relative humidity and temperature is a vital part of climate control in a wide variety of applications within industrial production processes. It is essential to provide accurate and real-time data on temperature and humidity for precise environmental monitoring. Additionally, it offers valuable support in decision-making regarding equipment investments or maintenance.

VAISALA HM40 SERIES HUMICAP® HANDHELD HUMIDITY AND TEMPERATURE METERS

The easy-to-use HM40 series is compact and portable humidity meters that provides reliable measurements in a wide range of applications. They are the ideal spot-checking tool for everything from structural moisture measurement and air conditioning systems to humidity measurement in industrial production processes. Four models available:

Features

- Compact, portable, and easy to use
- Versatile meter with wide measurement range and multiple calculated parameters
- Ideal for spot-checking in a wide variety of applications

HM41 Compact and Portable Humidity & Temperature Meter

- Humidity measurement accuracy:
  - at 0 to +40 °C ±1.5 %RH (0 to 90 %RH)
  - ±2.5 %RH (90 to 100 %RH)
  - at -10 to 0 °C ±3.0 %RH (0 to 90 %RH)
  - +40 to +60 °C ±4.0 %RH (90 to 100 %RH)
- Temperature measurement range: -10 to +60 °C
- Measurement probe interchangeable HMP113 probe

HM42 Humidity and Temperature Meter for Tight Spaces

- Humidity measurement accuracy:
  - at 0 to +40 °C ±1.5 %RH (0 to 90 %RH)
  - ±2.5 %RH (90 to 100 %RH) at -40 to 0 °C
  - ±3.0 %RH (0 to 90 %RH)
  - +40 to +80 °C ±4.0 %RH (90 to100 %RH)
  - at +80 to+100 °C ±4.0 %RH*
- Probe head temperature measurement range -40 to +100 °C
- Measurement probe HM42PROBE

HM45 Humidity and Temperature Meter with Remote Probe Humidity Measurement

- Humidity measurement accuracy:
  - at 0 to +40 °C ±1.5 %RH (0 to 90 %RH)
  - ±2.5 %RH (90 to 100 %RH)
  - at -40 to 0 °C ±3.0 %RH (0 to 90 %RH)
  - +40 to +60 °C ±4.0 %RH (90 to 100 %RH)
- Probe temperature
  - Measurement range -40 to +60 °C
  - Measurement probe interchangeable
- HMP113 with HM40HANDLE

HM46 Humidity and Temperature Meter for Mechanical Durability and Extra Reach

- Humidity measurement accuracy:
  - at 0 to +40 °C ±1.5 %RH (0 to 90 %RH)
  - ±2.5 %RH (90 to 100 %RH)
  - at -40 to 0 °C ±3.0 %RH (0 to 90 %RH)
  - +40 to +80 °C ±4.0 %RH (90 to 100 %RH)
  - at +80 to+100 °C ±4.0 %RH*
- Probe head temperature measurement range
  - -40 to +100 °C (short term up to 180 °C)

HM70 HAND-HELD HUMIDITY AND TEMPERATURE METER (INCLUDES HMP75 RH+T PROBE)

The HM70 is designed for demanding humidity measurements in spot-checking applications. It is also ideal for field checking and calibration of Vaisala's fixed humidity instruments.

Features

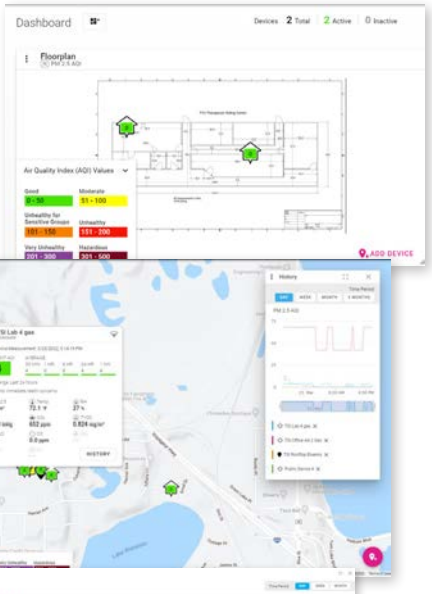
- Shows measurement trends graphically
- 3 probe alternatives, temperature measurement ranges between -70 and+180 °C
- Multi probe operation; dewpoint and CO_2 probes can also be connected
- 2 probes can be connected simultaneously
- Displays various humidity parameters
- Sensor preheat and chemical purge options for demanding conditions

AIR QUALITY MONITORING

TSI Link™ Solutions are designed to harness the power of TSI's precise measurement instruments and make managing, informing, analyzing, and guiding your decisions easier than ever. With TSI Link™ Solutions you have the ability to connect with your air quality data from anywhere at any time and customize an output that fits your needs best.

TSI LINK™ SOLUTIONS

Connect with your air quality data from anywhere at any time.

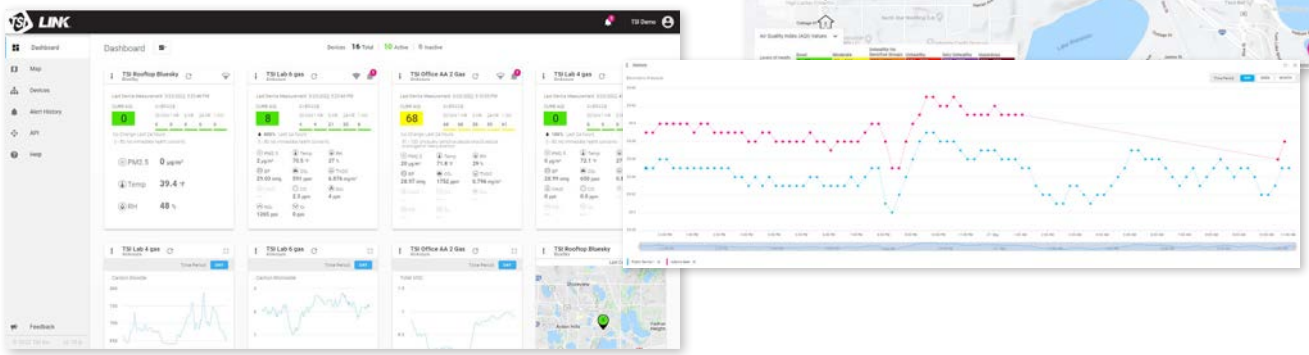


Features

- Remote device management with customisable dashboard, real-time alerts and data analytics and integration through API
- Measure the level of CO, CO_2, H_2CO, TVOC, SO_2, O_3, NO_2, as well as particulate matter (PM), barometric pressure, temperature and relative humidity
- Use AirAssure™ and BlueSky™ monitors in combination with TSI Link™ software for a full air monitoring solution
- Data integration with customers own platform, 3rd party software and analytical tools by TSI API Data Services

Applications

- Ideal for indoor (AirAssure™) and outdoor (BlueSky™) air quality monitoring
- Assessment of building filtration and ventilation efficacy
- Construction project monitoring
- Air quality monitoring in public occupied spaces
- Respiratory health studies



TSI 8144 AIRASSURE INDOOR AIR QUALITY MONITORS

Maintain building health and sustainability with IoT-enabled AirAssure™ Indoor Air Quality (IAQ) Monitors. Available in two, four, and six-gas these models are designed to install in less than ten minutes, each device measures gas and particulate pollutants (PM2.5 & PM10) along with essential IAQ parameters to help you achieve optimal indoor air quality.

The device purchase includes a subscription to both TSI Link™ Software (Premium account) and TSI API Data Services for one, two or three years depending on your choice.

TSI 8143 & 8145 BLUESKY™ AIR QUALITY MONITORS

The TSI BlueSky™ Air Quality Monitor is a lightweight, laser-based particle instrument designed to simultaneously measure PM1, 2.5, PM4, PM10, temperature and relative humidity (model 8143), and the additional CO2, CO, SO2, NO2, O3 (model 8145).

The device purchase includes a subscription to both TSI Link™ Software (Premium account) and TSI API Data Services for one, two or three years depending on your choice.

INDOOR AIR QUALITY

Indoor Air Quality (IAQ) refers to the air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants. Understanding and controlling common pollutants indoors can help reduce the risk of indoor health concerns. Kenelec Scientific supplies a range of equipment including indoor air quality meters, data loggers and accessories to ensure accurate results when conducting your IAQ investigations.

MULTI-FUNCTION IAQ METERS

Providing a comfortable, safe, and healthy indoor environment is an increasingly important concern. Multi-function IAQ meters are designed to provide comprehensive measurements of temperature, humidity, air velocity, carbon dioxide (CO_2) levels, and other pollutants, indicating the need for proper ventilation.

TSI 7575 Q-TRAK™ INDOOR AIR QUALITY MONITOR

The 7575 Q-TRAK™ provides quick, accurate information to assess key indoor air quality (IAQ) parameters.

Features

- Simultaneously displays CO_2, CO, temperature and humidity measurements
- Calculates dew point, wet bulb and percent outside air
- Large graphic display displays up to 5 measurements and on-screen instructions
- One instrument with multiple plug-in probe options including VOCs and air velocity
- Store up to 39 days of data collected at one-minute log intervals
- TRAKPRO™ data analysis software provided for datalogging, analysis and documenting results
- Bluetooth communications for transferring data or remote polling

Applications

- IAQ investigations
- Industrial hygiene surveys
- Baseline trending and screening
- Building commissioning
- Tracking down emissions to their source (point source location)

OPTIONAL PROBES:

AIR VELOCITY / IAQ / VOC PROBES

Pre-calibrated plug-and-play accessory probes for multi-purpose meters used for a variety of indoor monitoring applications.

	960	962	964	966	980	982	984	985	986	987
Air Velocity	✓	✓	✓	✓						
Temperature	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Humidity			✓	✓	✓	✓			✓	✓
CO_2					✓	✓			✓	✓
CO						✓				
VOC (ppb)							✓		✓	
VOC (ppm)								✓		✓

TSI 7515 / 7525 / 7545 IAQ-CALC METERS

TSI IAQ-Calc™ Meters are outstanding instruments for investigating and monitoring indoor air quality (IAQ). Handheld, easy to use allowing you to gather your data and work with ease.

- Conduct IAQ evaluations
- Determine thermal comfort
- Examine building IAQ conditions to optimize worker productivity
- Comply with regulations and guidelines
- Model 7515 is a cost-effective meter for carbon dioxide (CO_2) measurements.
- Models 7525 and 7545 simultaneously measure and data log multiple parameters. Model 7525 measures CO_2, temperature, humidity, and calculates dew point, wet bulb temperature, and percentage outside air.
- Model 7545 adds detection of carbon monoxide (CO)

	7515	7525	7545
CO_2	✓	✓	✓
CO			✓
Temperature		✓	✓
Humidity		✓	✓
Percentage outside air		✓	✓
Dew point		✓	✓
Wet bulb temperature		✓	✓
Data logging/downloading		✓	✓
Statistics	✓	✓	✓
Review data		✓	✓
Certificate of Calibration	✓	✓	✓

VAISALA GM70 HAND-HELD CARBON DIOXIDE METER

The GM70 is a user-friendly meter for demanding spot measurements in laboratories, greenhouses and mushroom farms. The meter can also be used in HVAC and industrial applications, and as a tool for checking fixed CO_2 instruments. The GM70 has a short warm-up time and is ready for use almost immediately. It has a menu-based interface, a graphical LCD display and datalogging capability. The optional MI70 Link Windows® software in combination with a USB connection cable provides an easy way to handle data in a PC environment.

Features

- Configurable with new CARBOCAP Carbon Dioxide Probe GMP251 (% level) or GMP252 (ppm level)
- Proven Vaisala CARBOCAP® reliability
- Two optional sampling methods: diffusion or pump aspiration
- User-friendly meter with multilingual user interface
- Numerical and graphical display of measurements
- Data can be logged and transferred to PC via MI70 Link software
- Wide selection of measurement ranges
- Easy recalibration using the interchangeable probes
- Suitable for field checking of fixed CO_2 instruments
- Short warm-up time
- Compact and versatile

ULTRASONIC AIRTIGHTNESS & LEAK DETECTOR SYSTEM

Ultrasonic air leakage detection is a form of non-destructive testing. It uses ultrasound - sound with frequencies above the range of human hearing - to identify and locate air leaks as small as 0.06mm and diameter and quantifying leaks as small as 0.5mm in diameter with minimal disruption to normal operation.

COLTRACO PORTASCANNER® AIRTIGHT

The Portascanner® AIRTIGHT (Ultrasonic Airtightness and Leak Detector System) is a powerful and unique handheld tool to aid in ensuring a room, compartment or building is sufficiently airtight. It is the world's first micro air-leak detector, which uses ultrasound to detect, identify and locate air leakage sites. It facilitates effective and efficient ventilation, filtration, and heating/cooling of the building. It is also designed to promote energy efficiency, indoor comfort, occupant health benefits, and to deliver an effective ventilation strategy for buildings contributing towards Net Zero Strategy and Passive House.

Features

- Identify leak sites with a microscopic level of accuracy
- Measure and quantify leak sites and cross-sectional areas (mm^2) using sophisticated algorithm
- Generate a value for the air flow rate (m^3/h) through each leak
- Calculate the building or room's overall air permeability ($m^3/h\text{-}m^2$) and air change rate (ACH)
- Easy to navigate interface
- 7 inch touch screen LCD display, 8MP camera, USB drive stores photographic and quantitative data to generate traceable, exportable reports
- Complement in multiple stages of the Door fan test/pressurisation test where there are limitations: highly disruptive, intrusive, costly, unable to find where the leaks are and their extent
- Help to find leaks that could not be found by traditional and alternate methods (thermal cameras, smoke pencils, anemometers, blower door/door fan tests)
- Assist in failure diagnosis and periodic maintenance

Applications

- Construction/built environment to facilitate controlled ventilation and occupant health
- Cleanrooms/critical environments
- Air tightness testing and measurement
- Energy Efficiency - Passivhaus (Passive house) build
- Room integrity (to complement Door fan test or Pressurisation test)
- Component (e.g. door/window) manufacturing
- HVAC areas
- Building acoustics testing
- Isolation areas
- Quarantine areas
- Cruise lines
- Corridors e.g. shipping, offshore
- Escape pods within mining

Real-time data is of great benefit when using a personal monitor for exposure to dust and aerosols. Overexposure can be detected quickly and preventive measures such as changing ventilation rates and addressing equipment issues can be taken immediately. Kenelec Scientific offers a wide range of real-time dust and aerosol monitoring solutions to aid with your indoor air quality investigation including handheld units and personal sampling pumps.

TSI DUSTTRAK II AND DRX AEROSOL MONITORS

The DustTrak series measures aerosol contaminants such as dust, smoke, fumes and mists, giving you real-time aerosol mass readings. Offering a suitable solution for a range of environments from clean office settings to harsh industrial workplaces.

Features

- Measure size-segregated mass fraction concentrations corresponding to PM1, PM2.5, PM4 (Respirable), PM10 and Total PM
- Lightweight and portable
- Highly accurate measurements down to 0.1µm
- 60,000+ point datalogging capability
- Complete with software and accessories

Applications

- Industrial / occupational hygiene surveys
- Indoor air quality investigations
- Baseline trending and screening
- Engineering control evaluations
- Remote monitoring
- Process monitoring

TSI 8532 DUSTTRAK II HANDHELD AEROSOL MONITOR

Features

- Measure PM fractions one at a time
- 3600mA rechargeable Li-Ion battery
- 3.5” VGA colour touchscreen

TSI 8534 DUSTTRAK DRX HANDHELD AEROSOL MONITOR

Features

- Measure PM fractions simultaneously
- 3600mA rechargeable Li-Ion battery
- 3.5” VGA colour touchscreen

TSI AM520 SIDEPAK™ PERSONAL AEROSOL MONITOR

The AM520 provides real-time aerosol mass concentration readings of dusts, fumes, mists, smoke and fog within a worker breathing zone, and is the perfect solution for real-time, personal aerosol sampling in a variety of workplace environments including general industry, construction sites, power and utilities, transportation, aerospace, maritime and confined spaces.

Features

- Robust impactors for higher mass concentration range
- Audible and visual alarms with user-selectable alarm levels
- Measure PM1, PM2.5, PM4 (Respirable), PM5 (China Respirable), M10, with 0.8um cyclone for DPM measurement
- High capacity battery enabling 20+ hours of continuous operation
- Real-time mass concentration measurement and data logging for “in-the-field” data analysis

TSI AM520I SIDEPAK™ PERSONAL AEROSOL MONITOR

The new AM520i SidePak™ aerosol monitor provides real-time monitoring of respirable dust exposure with the bonus of intrinsically safe certifications for use in potentially explosive or volatile environments (certified by SIMTARS - IECEx SIM 19.0009X).

Measuring PM10, PM4 (respirable), PM2.5, PM1 and 0.8µm for diesel particulate matter (DPM) exposures, the AM520i combines TSI’s proven direct reading measurement technology, portability, data-logging, and long-running batteries with global certifications for use in environments requiring intrinsically safe instrumentation.

Features

- IECEx and ATEX certified
- Audible and visual alarms
- 0.8 µm DPM impactor
- High capacity battery
- Color OLED display

CLEANROOM PARTICLE COUNTERS

The TSI range of AeroTrak® particle counters provide the flexibility and features to exactly match your requirements, from simple spot checking to meeting rigid cleanroom classification standards.

TSI 9306 AEROTRAK® HANDHELD PARTICLE COUNTER

The 9603 offers the most features and flexibility for customers interested in versatile handheld particle contamination monitoring.

Features

- Complies with all requirements of ISO 21501-4
- 0.3 to 25 µm size range
- 0.1 CFM (2.83 L/min) flow rate
- Integrated handle for one hand operation
- Removable, rechargeable Li-ion battery
- Long life laser diode

ULTRAFINE PARTICLE COUNTERS

Ultrafine particles (UFPs) are everywhere: polluting the air, eroding our health, and affecting our climate. The first step in cleaning the air of these potentially hazardous particles is to measure them. Kenelec Scientific offers a range of instruments from handheld spot-checking instruments to research grade instruments suitable for long-term air quality monitoring networks.

TSI 8525 P-TRAK ULTRAFINE PARTICLE COUNTER

The 8525 is ideal for measuring workplace ultrafine particulate levels, as well as helping eliminate indoor air quality (IAQ) problems. This portable instrument detects and counts particles smaller than 1 micrometer that often accompany or signal the presence of pollutants.

Features

- Real-time ultrafine particle counter
- Measure particle sizes 0.02-1µm
- Easy to use
- Data log information

Applications

- Check office equipment
- Cleanroom containment checks
- Filter checks
- Check fume hoods
- Check safety cabinets
- Vehicle emission migration
- Combustion leaks
- Control smoking areas

TSI 3007 CONDENSATION PARTICLE COUNTER

The 3007 is one of TSI's smallest Condensation Particle Counters (CPC), providing greater versatility not generally found with larger particle counters.

Features

- Particle size range of 0.01 to >1.0 µm
- Concentration range of 0 to 100,000 particles/cm3
- Built-in LCD display
- RS-232 serial data port
- Battery-powered operation
- Programmable data-logging capabilities

Applications

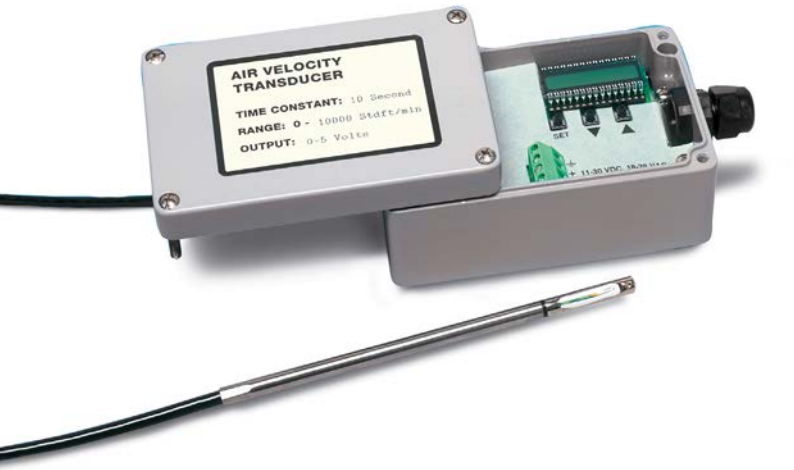
- Indoor air quality measurements
- Inhalation and exposure studies
- Health effects studies
- Mobile aerosol studies

INDUSTRIAL TRANSMITTERS

As well as standalone instruments, Kenelec Scientific offers a variety of transmitters and dataloggers for industrial applications.

AIR VELOCITY TRANSDUCERS

Air Velocity Transducers are ideal for both temporary and permanent installations for air velocity measurements in research and development labs, manufacturing processes, and other applications. The full-scale range, signal output, and time constant are user selectable and can be easily changed to meet the needs of your application.

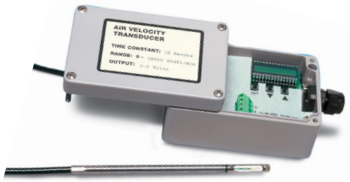


TSI 8455 / 8465 / 8475 AIR VELOCITY TRANSDUCERS

The 8455, 8465, and 8475 are ideal for applications including comfort and draft studies, critical environment installations (cleanrooms and hospitals), monitoring air flows in tunnels and subways, environmental monitoring in greenhouses and IAQ applications as well as general engineering applications.

Features

- Protected probe tip
- Rugged ceramic sensor
- Wide range of measurement applications
- Fast response time



TSI 8455 SERIES AIR VELOCITY TRANSDUCER

Protective window to prevent impact damage.

Features

- Protected probe tip
- Available with choice of 7.5 cm, 15 cm, 22.5 cm, or 30 cm probe
- Rugged ceramic sensor
- Wide range of measurement applications
- Fast response time
- Range: 0.125–50 m/s, selectable

TSI 8465 SERIES AIR VELOCITY TRANSDUCER

Windowless sensor for higher sensitivity.

Features

- Less flow blockage
- Available with choice of 7.5 cm, 15 cm, 22.5 cm, or 30 cm probe
- Ideal for measuring in confined spaces
- Fast response time
- Range: 0.125–50 m/s, selectable

TSI 8475 SERIES AIR VELOCITY TRANSDUCER

Accurate at low velocities; omnidirectional 360° sensor.

Features

- Omnidirectional probe tip
- Available with choice of 7.5 cm, 15 cm, 22.5 cm, or 30 cm probe
- Range: 0.125 to 2.54 m/s
- Accurate at low velocities from 10 to 100 ft/min (0.05 to 0.5 m/s)
- Ideal for unknown or varying flow direction

REFRIGERANT TRANSMITTERS

Refrigerant leaks can significantly reduce the efficiency of your air conditioning or refrigeration system. Many refrigerants are CFCs and will damage the ozone layer if released into the atmosphere. From a health perspective, some refrigerants are toxic to health and others, even though non-toxic at low levels, can cause health issues such as nausea, headache and even asphyxiation at very high levels. Detecting refrigerant leaks saves you money, saves the environment and eliminates a health risk.

	cGAS-A / cGAS-D	cGAS-AP / cGAS-DP	cGAS-IR-A / cGAS-IR-D
Sensor / Refrigerant	**Solid state**	**Solid state**	**NDIR**
R123			X
R134A	X		X
R143A			X
R22	X		X
R227EA			X
R32	X	X	X
R402A	X		X
R404A	X		X
R407A			X
R407C	X		X
R407F	X		X
R410A	X	X	X
R417A			X
R422A	X		X
R422D	X		X
R427A	X		X
R434A			X
R438A	X		X
R442A			X
R448A	X		X
R449A	X		X
R450A	X		X
R452A	X		X
R453A			X
R454A			X
R454B			X
R455A			X
R507A	X	X	X
R513A	X		X
R514A	X		X
Sulfur Hexafluoride Sensor			X
HFO R1233ZD			X
HFOR1234YF			X
HFOR1234ZE			X
R477A(CO_2)			X

NON-DISPERSIVE INFRARED SENSOR

CET cGAS DETECTOR IR REFRIGERANT TRANSMITTER

The cGas Detector IR Refrigerant provides continuous monitoring of a wide range of refrigerant gases commonly used in commercial refrigeration systems. Dual beam, non-dispersive infrared sensor technology overcomes the limitations of solid state refrigerant sensors, accurately detects refrigerant gases without cross interference from toxic or combustible gases and is low maintenance with a longer lifespan.

Features

- Accurate, low level leak detection
- Long life, non-dispersive infrared refrigerant sensor, dual beam technology
- Easy Plug & Play Smart Sensor replacement at end of life, comes pre-calibrated
- 1 SPDT relay rated 30 volts, 2 amp max
- Internal audible alarm rated 90 dB @10 cm/4 in

Applications

- Supermarkets/Grocery Stores/ Convenience Stores
- Refrigerated Mechanical Rooms
- Commercial Chiller Equipment Rooms
- Food Storage/Cold Rooms/Walk-in Freezers
- Food Processing Plants
- Food Service Facilities

cGas-A Analogue

cGas-D Digital

cGas-AP /
cGas-DP

ANALOG OR FIELD CONFIGURABLE BACNET OR MODBUS OUTPUT MODELS

SOLID STATE SENSORS

cGAS SERIES REFRIGERANT TRANSMITTERS

One or two channel gas detector with an aesthetically pleasing design to reduce noticeability when used in publicly occupied spaces such as hotels and schools.

Features

- Solid state refrigerant sensor, single-channel configuration
- Bright LCD display
- USB port for configuration changes and firmware upgrades
- Easy Plug & Play Smart Sensor replacement at end of life, comes pre-calibrated

cGAS-A / cGAS-D MODELS:

- 4-20 mA analog output (cGAS-A)
- Field-configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output signal for communicating with BAS or controller (cGAS-D)
- Standard water/dust tight, corrosion resistant enclosure (drip proof), IP54 rated
- Optional Dry contact relay, Splash guard, RH & Temperature sensor and Low temperature operation package

cGAS-AP / cGAS-DP MODELS:

- Low profile enclosure to reduce noticeability in public spaces
- Both the analog (cGAS-AP) and digital (cGAS-DP) models may be configured with an internal gas sensor or a remote refrigerant sensor (dongle)
- The internal sensor model is ideal for vertical terminal air conditioner (VTAC) systems
- The remote refrigerant sensor model, with a 9m/29.5ft dongle cable, is ideal for use in packaged terminal air conditioner (PTAC) applications
- Optional RH & Temperature sensor and Dry contact relay

COMPARISON OF SOLID STATE REFRIGERANT SENSORS & INFRARED REFRIGERANT SENSORS

Sensor/Refrigerant	Solid State Refrigerant Sensors	Non-dispersive Infrared Refrigerant Sensors
CET Refrigerant Transmitter model	cGAS-A/cGAS-AP or cGAS-D/cGAS-DP	cGAS-A-IR or cGAS-D-IR
Specific Refrigerant Gases Detected in CETCI Gas Detectors	Solid State Refrigerants - R134A, R22, R32, R402A, R404A, R407C, R407F, R410A, R422A, R422D, R427A, R438A, R448A, R449A, R450A, R452A, R507A, R513A, R514A	Infrared Refrigerants - R123, R134A, R143A, R22, R227EA, R32 R402A, R404A, R407A, R407C, R407F, R410A, R417A, R422A, R422D, R427A, R434A, R438A, R442A, R448A, R449A, R450A, R452A, R453A, R454A, R454B, R455A, R507, R513A, R514A, R1234YF, R1234ZE, R1233ZD, RSF6 (Sulfur hexafluoride), R744 (CO_2)
Output	Linear 4-20 mA analog or jumper selectable 0-10 or 2-10 volts (cGAS-A/cGAS-AP) or Field configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 (cGAS-D/ cGAS-DP)	Linear 4-20 mA analog or jumper selectable 0-10 or 2-10 volts (cGAS-A-IR) or Field configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 (cGAS-D-IR)
Life Expectancy	~ 5 yr	> 5 yr (Longer)
Accuracy (gas dependent)	±10% of range @ STP (with regular calibration maintenance of sensor)	±1.0% of range for readings below 25% of range ±2.0% of range for readings below 50% of range ±5.0% of range for readings above 50% of range (with regular calibration maintenance of sensor)
Response Time T90	≤120 seconds	≤60 seconds
Drifting/Aging	Susceptible to temperature and humidity changes, require regular calibration to compensate for drift/aging	Less susceptible to temperature and humidity changes, little drift, moderate aging
Response to Temperature Changes	Sensitive to changes in temperature	Short term response to large changes in temperature
Presence/Absence of Oxygen (Air)	Requires oxygen for proper functioning	No minimum level of oxygen required; operates in the absence of, or enriched presence of oxygen
Cross Contamination	Non-specific, sensitive to many other gases, vapours and chemicals, susceptible to false alarms	Can be configured for broad range or gas specific, few false alarms. Cross sensitivity to other refrigerants
Exposure to High Concentrations of Gas (poisoning)	Moderately resistant to poisoning	Will not burnout, immune to poisoning. May require a long time to clear before accurate readings can be taken again
Cost	Economical	More expensive

APPLICATIONS FOR REFRIGERANT SENSORS: RECOMMENDED BY SENSOR TYPE

Application	Sensor Type	Reason
Boiler / Machinery Rooms	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Breweries	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Chiller Rooms	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Convenience Stores	Solid State Refrigerant Sensors	IR too expensive
Hotels	Solid State Refrigerant Sensors	Requires a small remote sensor on a cable for rooms with air conditioners
Shopping Malls	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Supermarkets	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Universities	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Office Buildings	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance
Hospitals	Non-dispersive Infrared Refrigerant Sensors	No false alarms, longer life span, less maintenance

GAS DETECTORS

Gas detectors are required by industry best practices and regulations, and are the only way that workplaces can identify gas leaks and potential threats within the workplace. They are extremely important and are a critical piece of safety equipment that can be used to detect explosive atmospheres, oxygen deficiency, and toxic gases that may have leaked into the air. Without gas detectors being used to detect threats, workers are exposed to potentially damaging gases that can cause harm to their minds and bodies, or even result in death.

	AST-I Industrial Analog Transmitter	cGAS-A / cGAS-D Detector Transmitter	cGAS-AP / cGAS-DP Detector Transmitters for Indoor Public Spaces	LPT Low Power Transmitter	DCC Dual Channel Controller	SCC Single Channel Controller
Sensors						
Ammonia (NH_3)		X				
Carbon Monoxide (CO)		X	X	X	X	X
Carbon Dioxide (CO_2)	X	X	X			
Chlorine (Cl_2)		X		X		
Chlorine Dioxide (ClO_2)		X				
Ethane (C_2H_6)		X				
Ethanol (C_2H_6O)		X				
Ethylene (C_2H_4)		X			X	
Ethylene Oxide (C_2H_4O)		X				
Fluorine (F_2)		X				
Formaldehyde (CH_2O)		X	X			
Hydrogen (H_2)		X				X
Hydrogen Sulphide (H_2S)		X			X	
Hydrogen Chloride (HCl)		X				
Hydrogen Cyanide (HCN)		X				
Hydrogen Fluoride (HF)		X				
Methanol (CH_4O)		X				
Methane (CH_4)	X	X	X			X
Nitrogen Dioxide (NO_2)		X		X	X	X
Nitric Oxide (NO)		X			X	
Nitrous Oxide (N_2O)	X					
Oxygen (O_2)		X		X	X	
Ozone (O_3)		X				
Propane (C_3H_8)		X				X
Sulphur Dioxide (SO_2)		X		X	X	
TVOCs		X	X			

cGAS-A / cGAS-D DETECTOR TRANSMITTERS

Features

- Designed for use in commercial, light industrial and non-hazardous (non-explosion rated) environments
- Ideal for monitoring toxic, combustible and refrigerant gases
- Single-channel (cGAS-A) or up to 2-channel configuration (cGAS-D models only)
- 4-20 mA analog output (cGAS-A)
- Field-configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output signal for communicating with BAS or controller (cGAS-D)
- Bright LCD display
- USB port for configuration changes and firmware upgrades
- Easy Plug & Play Smart Sensor replacement at end of life, comes pre-calibrated
- Standard water/dust tight, corrosion resistant enclosure (drip proof), IP54 rated
- Optional 2A SPDT Dry contact relay, Splash guard, RH & Temperature sensor and Low temperature operation package
- Sensor Calibration Extending Firmware (CEF) for parking applications

cGAS-AP / cGAS-DP DETECTOR TRANSMITTERS FOR INDOOR PUBLIC SPACES

Features

- Low profile enclosure to reduce noticeability in public spaces such as hotels and schools
- Ideal for use where integrated demand controlled ventilation (DCV) is used to regulate a comfortable working environment, maintain air quality and promote energy savings.
- Single-channel (cGAS-AP) or up to 2-channel configuration (cGAS-DP models only)
- Available with user selectable PM1, PM2.5 or PM10 particulate sensor
- 4-20 mA analog output (cGAS-AP)
- Field-configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output signal for communicating with BAS or controller (cGAS-DP)
- Bright LCD display
- USB port for configuration changes and firmware upgrades
- Easy Plug & Play Smart Sensor replacement at end of life, comes pre-calibrated
- Optional 2A SPDT Dry contact relay, RH & Temperature sensor

INFRARED GAS DETECTORS

CET LPT LOW POWER TRANSMITTER

The LPT is an economical, single sensor, analog transmitter for monitoring toxic gases non-hazardous, non-explosion proof rated commercial and light industrial applications. This basic transmitter is designed to be part of a fixed system with a controller for applications such as car parks, vehicle repair, aquatic centers, ice rinks and oxygen depletion applications.

Features

- Single channel
- Linear 4 – 20 mA output signal
- 2-wire loop, 3-wire VDC or 4-wire VAC power
- Standard water/dust tight, corrosion resistant enclosure (dri p proof)
- IP54 rated with optional splash guard installed

AST-ICD / AST-IHC INDUSTRIAL TRANSMITTER

Features

- Single channel configuration
- Linear analog (4 - 20 mA) output
- Low power consumption
- Dual temperature compensated pyroelectric infrared detectors
- Fast response with accurate low-level gas detection
- Long sensor life
- Water/dust tight/corrosion resistant polycarbonate enclosure

GAS CONTROLLERS

Flexible and easy to use, CET's range of gas controllers are field configurable for small or large fixed systems, and feature water-tight and dust-tight enclosures making them suitable for a variety of applications.

SCC SINGLE CHANNEL CONTROLLER

Combines toxic and/or combustible gas detection with basic control functionality for non-hazardous, non-explosion rated, commercial applications.

Features

- Internal or remote sensors configurations
- Six conduit entry ports
- Thermal resetting fuse
- LED indicators
- Audible alarm
- Two 5-amps SPDT dry contact relays
- Optional 4 – 20 mA input (replaces remote combustible sensor)
- Standard water/dust tight, corrosion resistant enclosure (drip proof); IP54 certified with optional splash guard installed
- RoHS compliant circuit boards

DCC DUAL CHANNEL CONTROLLER

A self-contained system that offers one or two channel configurations for monitoring toxic, combustible and refrigerant gases with straightforward control functionality for non-hazardous, non-explosion rated and commercial applications.

Features

- Single or dual channel operation
- Flexible internal and remote sensor configurations
- Six conduit entry ports
- Two line LCD display with embedded LED indicators
- Two 4- 20 mA outputs and one configurable 4 – 20 mA input
- VFD control functionality
- Optional extra loud buzzer
- Thermal resetting fuses

FCS FLEXIBLE CONTROL SYSTEM

A sophisticated, high performance controller that offers up to 128 (or limited to 4) gas channel configurations for monitoring toxic, combustible or refrigerant gases with versatile control functionality for non-hazardous, non-explosion rated, commercial and light industrial applications.

Features

- Available in 4 channels (FCS-4), 8 channels (FCS-8), 32 channels (FCS-32) and 128 gas channels (FCS)
- FCS-4-M,FCS-8-M, FCS-32-M, FCS-M offer Modbus® RS-485 digital output signal for LAN and WAN communications (with Modbus® RTU RS-485 WAN output)
- FCS-4-B, FCS-8-B, FCS-32-B, FCS-B offer BACnet® MS/TP output signal for WAN communications (with BACnet® MS/TP WAN output)
- 4 dry contact relays, 5-amps @240 volts each
- Door mounted audible alarm, optional water tight version
- Optional configurable internal analogue inputs and/or analogue outputs
- Graphic, full colour LCD resistive touch screen with LED indicators

MASS FLOW METERS

Mass flow meters can be used for a multitude of gas flow measurement applications. Whether measuring gas flows in a laboratory or manufacturing setting, TSI's general purpose mass flow meters provide accurate results with multiple data output options. The display versions come complete with accessories making setup and operation fast and convenient.

FLOW METERS

TSI 4000 SERIES FLOW METERS

The 4000 Series is designed for ultra-low pressure loss to minimize flow circuit back pressure and its impact on the system. These meters include digital and analogue outputs for flow rate, absolute pressure, and temperature. Volume measurements can be made through the RS232 digital interface.

Features

- Accuracy of 2% of reading (not full scale)
- High turndown ratio
- Multi-gas, user-selectable
- 4 ms response to changes in flow
- Ultra-low pressure drop
- RS 232 interface for digital outputs and configurable device options
- Voltage output of flow rate
- Measure flow rate, temperature, and pressure (display unit only) in one instrument
- Built-in temperature and pressure compensation
- NIST-traceable calibration certificate included with purchase

TSI 5000 SERIES FLOW METERS

Built upon proven TSI flow sensor technology, the 5000 Series redefines what a flow meter can do for you. This all-in-one gas mass flow meter simplifies your work by eliminating the need for multiple instruments and is flexible enough to fit your unique application. The 5000 Series offers a mix of models with varying features and functionality.

Features

- 4 millisecond bi-directional flow response
- High accuracy (±2% of reading, ±1.7% of reading optional)
- Low pressure drop minimizes back pressure
- Wide dynamic operating range (1000:1 turndown ratio)
- Multiple gas calibrations available, user-selectable
- 2.8 inch colour touchscreen operation
- Measure up to 6 parameters with a single instrument
- Display four measurement parameters simultaneously
- Configurable tube end connectors
- Datalogging options
- USB power and data communications
- 10 Point NIST-traceable Calibration Certificate included
- Temperature and pressure compensated flow measurements, optional humidity compensation
- Comes with FLO-Sight™ companion PC software

Want further information about any of the products or accessories featured in this catalogue? Visit our website: **www.kenelec.com.au** for specifications, or **contact our team** to discuss your options.

KENELEC SCIENTIFIC

Our company:

Established in 1962, Kenelec Scientific is one of Australia's leading scientific and environmental technology companies. Based in Melbourne, with distributors located throughout Australia and New Zealand, we are industry leaders in the supply of globally sourced, latest generation technologies at competitive prices.

Our services:

Sales
Buy the latest equipment from some of the most trusted brands in the industry.

Rental
Short and long term hire available on an extensive range of instruments.

Calibration
Professional calibration of your instruments in our accredited laboratories.

Validation
Wide range of validation services to ensure compliance with regulations.

Service & Repairs
Local after-sales service and support from our experienced technicians.

Education
Product education and support available in-house, onsite or online.

Financing
Secure your equipment without relying on up-front capital funding.

More solutions:

In addition to the options in this catalogue, we also offer a number of other specialised monitoring solutions, as well as being able to build a system to meet your exact requirements. Get in touch or visit our website for more information.

Have you considered renting?

Renting can be a cost-effective solution to ensure you have the tools you need, when you need them.

As one of Australia's leading specialist suppliers of testing and monitoring equipment, Kenelec Scientific stocks an extensive range of instruments with no minimum hire period to help your business perform at its best without the financial stress of needing to buy.

All of our units are regularly checked and calibrated by our experienced technicians to ensure accurate and reliable performance, and we are constantly updating our range so you have access to the best equipment in the industry.

We also offer up to 20% off our standard rental rates for instruments you rent while your own unit is being calibrated, and for equipment that is hired long-term.

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We look forward to working with you.

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