# IQ 1000

## MEGA-Channel™

## Gas & Vapor Detector

*with the exclusive MEGA-Gas™ Sensor*

and GAS SEARCH feature

ISO 9001 CERTIFIED

MATHESON

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Introducing

# MEGA-Channel™ Gas Detector

## *Model IQ1000*

Description

## Description

The MATHESON Model IQ1000 is a very unique gas detection instrument offering features not found in any other portable multi-channel monitor. Its innovative technology gives you the flexibility to monitor for more than 100 gases and vapors, without having to change sensors.

### Exclusive MEGA-Gas™ Sensor and GAS SEARCH Feature

Equipped with the MEGA-Gas™ Sensor, the IQ1000's exclusive GAS SEARCH feature enables the IQ1000 to scan the air and quickly determine the presence or absence of more than 100 gases or vapors. This provides you with a rapid confirmation that it is either safe or unsafe to enter an area, without the need for multiple detectors or expensive analyzers. Additionally, the IQ1000 contains a library of calibration curves so the MEGA-Gas Sensor can be set to monitor for a particular gas or vapor.


### Easy to Follow Menu-Driven Controls

The IQ1000 is an intelligent, microprocessor based instrument that is operated through easy to follow menu driven controls. The viewing screen is a large, 8 line, 40 character per line LCD supertwist display with backlight switch and display contrast adjustment for easy viewing in any lighting condition.

### User Adjustable Alarm Set Points

The IQ1000 furnishes three user-adjustable alarm set points (low, mid, high) for each sensor with both audible and visual alarm indicators. An alarm acknowledgement function silences the audible alarm while keeping the visual alarm active as long as the alarm condition exists.

### Advanced Data Management

An optional data logging feature stores months of readings which can easily be downloaded to a printer or computer at a later date or time using its RS232 serial interface. The IQ1000's optional data management software, Einstein, allows you to plot accumulated data and calculate time weighted averages. Data can also be exported to your favorite spreadsheet program.

The IQ1000 will operate approximately 20 hours on its 6, size D alkaline batteries, or 14 hours on optional rechargeable NiCad batteries. The level of battery power remaining is monitored on the LCD display screen.

Other features include touch of a button calibration, built-in sampling pump with sampling wand and weatherproof case. UL Intrinsic Safety Approval for use in Class 1, Division 1, Group B,C,D locations is pending.

# Specifications

**Power:** Six size D alkaline batteries, standard. Rechargeable NiCad system, optional.

**Operating Time:** 20 hours on alkaline batteries, 14 hours on NiCad battery.

**Sampling:** Built-in sample pump with sampling wand draws up to 1000 cc/min.

**Controls:** Touch button. Optional magnetic switches.

**Display:** Backlit LCD supertwist with backlight switch and contrast adjustment. 8 lines, 40 characters per line.

**External Interface:** With optional data logging feature, RS232 using a DB-9 connector (1200 – 38400 baud).

**Temperature:** 0˚ to 50˚C operating, -20˚ to 60˚C storage

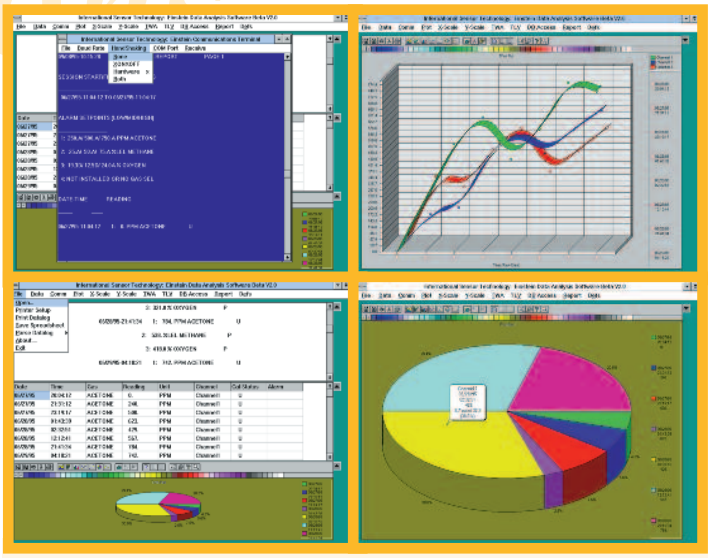
**Humidity:** 0-95% RH non-condensing

**Size:** 9.0"L X 4.5"W X 5.4"H (229mm X 114mm X 137mm)

**Weight:** 6lbs (2.7kg) including batteries

**Approvals:** Pending UL Intrinsic Safety Approval for Class 1, Division1, Group B, C, D locations.

**Warranty:** 1 year



## *INTRODUCING…* **EINSTEIN**

*WINDOWS® Based Data-Analysis Software for the IQ-1000*

**Features**

- Automatically uploads data from your IQ-1000
- Plotting, plotting and more plotting!
- Displays multi-channel 3-dimensional plots and pie charts
- Calculates Time Weighted Average (TWA) and Threshold Limit Value (TLV)
- Exports data into your favorite spreadsheet program
- Database feature organizes your data
- Produces custom reports

**Features Under Development**

- On-line IQ1000 maintenance and calibration via modem
- Enhanced reporting features
- Windows 95 version

### Models Available/Description:

**IQ1000-01:** MEGA-Channel Gas Detector with MEGA-Gas Sensor
**IQ1000-02:** MEGA-Channel Gas Detector with 1 additional sensor
**IQ1000-03:** MEGA-Channel Gas Detector with 2 additional sensors
**IQ1000-04:** MEGA-Channel Gas Detector with 3 additional sensors

**IQ1000-11:** Optional rechargeable NiCad battery system
**IQ1000-12:** Optional data logging system and RS232 interface
**IQ1000-13:** Optional **Einstein** data management software
**IQ1000-14:** Optional MEGA-Gas Calibration Parameters

# MEGA-Gas Sensor
# Gas and Vapor List

Mega Gas Sensor
Gas and Vapor List

| Gas | Full Scale Range(s) | Gas | Full Scale Range(s) | Gas | Full Scale Range(s) |
|---|---|---|---|---|---|
| Acetic Acid | 1000 ppm | Dichlorosilane | 100 ppm | Methyl Bromide | 50 ppm |
| Acetic Aldehyde | 1000 ppm | Diesel Fuel | 2000 ppm | Methyl Butanol | 2000 ppm |
| Acetone | 1000 ppm | Diethyl Benzene | 2000 ppm | Methyl Chloride | 100, 1000 ppm |
| Acetonitrile | 200, 1000 ppm | Epichlorohydrin | 100 ppm | Methyl Ethyl Ketone | 100ppm,100% LEL |
| Acetylene | 1000 ppm, 100% LEL | Ethane | 1000 ppm, 100% LEL | Methyl Isobutyl Carbinol | 2000 ppm |
| Acrolein | 50, 200 ppm | Ethanol | 1000 ppm, 100% LEL | Methyl Isobutyl Ketone | 1000 ppm |
| Acrylonitrile | 1000 ppm | Ethyl Acetate | 500 ppm, 100% LEL | Methyl Mercaptan | 50 ppm |
| Allyl Methacrylate | 1000 ppm | Ethyl Benzene | 1000 ppm, 100% LEL | Methyl Methacrylate | 500 ppm,100% LEL |
| Ammonia | 200, 500 ppm | Ethyl Chloride | 100 ppm | Methylene Chloride | 100, 500 ppm |
| Anisole | 4000 ppm | Ethyl Ether | 500 ppm, 100% LEL | Monoethylamine | 500 ppm |
| Arsine | 10 ppm | Ethylene | 1000 ppm, 100% LEL | Naphtha | 500 ppm, 100% LEL |
| Benzene | 100 ppm | Ethylene Oxide | 50 ppm | Nonane | 2000 ppm |
| Boron Trichloride | 1000 ppm | Formaldehyde | 100 ppm | Pentane | 1000 ppm, 100% LEL |
| Boron Trifluoride | 2000 ppm | Formic Acid | 2000 ppm | Pentanol | 1000 ppm |
| Butadiene | 100 ppm | Freon 22 | 1000 ppm | Pentene | 1000 ppm |
| Butane | 1000 ppm, 100% LEL | Freon 502 | 1000 ppm | Phosphine | 10 ppm |
| Butanol | 2000 ppm, 100% LEL | Gasoline | 1000 ppm | Propane | 1000 ppm, 100% LEL |
| Butene | 1000 ppm, 100% LEL | Hexane | 1000 ppm, 100% LEL | Propanol | 500 ppm, 100% LEL |
| Butyl Acetate | 1000 ppm | Hexene | 1000 ppm | Propylene | 1000 ppm, 100% LEL |
| Carbon Disulfide | 50, 1000 ppm | Hydrogen | 500 ppm | Propylene Oxide | 100, 1000 ppm |
| Carbon Monoxide | 500 ppm | Hydrogen Bromide | 100 ppm | Silane | 50 ppm |
| Carbon Tetrachloride | 1000 ppm | Hydrogen Chloride | 200 ppm | Styrene | 100% LEL |
| Carbonyl Sulfide | 100 ppm | Hydrogen Cyanide | 100 ppm | Sulfur Dioxide | 50 ppm |
| Cellosolve Acetate | 2000 ppm | Hydrogen Sulfide | 50 ppm | Tetrahydrofuran | 200, 1000 ppm |
| Chloroform | 200 ppm | Isobutane | 1000 ppm | Toluene | 200 ppm |
| Cyanogen Chloride | 100 ppm | Isobutanol | 1000 ppm | Trichloroethane | 100 ppm |
| Cyclohexane | 1000 ppm, 100% LEL | Isobutylene | 1000 ppm, 100% LEL | Trichloroethylene | 500 ppm |
| Cyclohexanol | 2000 ppm | Isopropanol | 1000 ppm, 100% LEL | Triethylamine | 200 ppm |
| Cyclopentane | 1000 ppm | JP-4 | 2000 ppm | Trifluoroethanol | 1000 ppm |
| Diborane | 10 ppm | JP-5 | 2000 ppm | Trimethylamine | 500 ppm |
| Dibromomethane | 100 ppm | Methane | 1000 ppm, 100% LEL | Vinyl Acetate | 50 ppm |
| Dichlorobutane | 1000 ppm | Methanol | 500 ppm, 100% LEL | Vinyl Chloride | 50 ppm |
| Dichloroethane | 500 ppm | Methyl Acrylate | 500 ppm | Xylene | 1000 ppm |

# Sensor Technologies

The IQ1000 can accommodate several kinds of sensor technologies. Which ones to select depend upon your application requirements.

## MEGA-Gas Sensor

The revolutionary MEGA-Gas Sensor is a specially developed solid state sensor capable of detecting over 100 gases and vapors. While it cannot readily differentiate between these gases, the MEGA-Gas Sensor does enable you to perform a GAS SEARCH of the air, determining if any of these gases or vapors are present. In addition, because the IQ1000 is micro-processor controlled with 256K memory, it can contain a library of the setup and calibration parameters for the gases you choose. At the touch of a button, you can configure the instrument to monitor for any one of these gases, and can then switch gases as frequently as you like without changing any sensors. If the target gas is present, the IQ1000 will provide you with an accurate concentration. See the table inside for the MEGA-Gas Sensor gas list.

## Solid State Sensors

In addition to the MEGA-Gas Sensor, any of more than 140 gas specific solid state sensors can be selected to provide more selective gas detection than the MEGA-Gas solid state sensor. Consult MATHESON or the attached listing of *Solid State Sensor Gases and Ranges,* TB-321.

## Electrochemical Sensors

Electrochemical Sensors, a popular sensor used in many gas detection instruments, can also be accommodated by the IQ1000. Choose from 11 available gases and vapors (ranges in ppm):

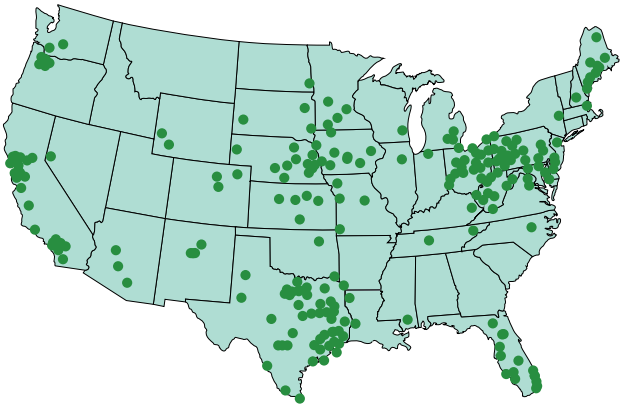
*Ammonia (0-50, 0-100)*
*Carbon Monoxide (0-50, 0-100)*
*Chlorine (0-5, 0-10)*
*Hydrogen (0-500)*
*Hydrogen Chloride (0-25)*
*Hydrogen Cyanide (0-25)*
*Hydrogen Sulfide (0-20, 0-50)*
*Nitric Oxide (0-50)*
*Nitrogen Dioxide (0-10)*
*Oxygen (0-25%)*
*Sulfur Dioxide (0-10, 0-20)*

## Catalytic Bead-Sensors

For combustibles, a Catalytic Bead Sensor is available to detect for LEL levels of most combustible gases and vapors.

## Sensor Configuration

While there are hundreds of sensor combinations, keep the following guidelines in mind when customizing your Model IQ1000 detector: Channel 1 is reserved for the MEGA-Gas Sensor; other channels are optional. Channel 2 can be equipped with any of the four sensor types listed; Channels 3 and 4 can only be equipped with electrochemical sensors.



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