n.e.t.

innovative gas sensing

Gas Sensing Elements

twenty years of advanced solutions for gas detection

Industrial safety

HVAC-Refrigeration

Laboratories and Medical

Parkings and tunnels

Landfill gas (LFG)/Biogas

Waste water/Water treatment

innovative gas sensing

COMPANY PROFILE

Nano Environmental Technology S.r.l. (N.E.T.) was founded in 2002 with the mission of setting new standards in the gas sensor market: high quality, excellent technical support, competitive pricing and short delivery times.

Nowadays, N.E.T. manufactures and sells a complete range of gas sensing devices on an OEM basis for industrial and commercial applications used by instrument manufacturers worldwide.

Our new, microprocessor-based range of NDIR sensors is now the most comprehensive on the market and includes solutions for the detection of hydrocarbons, CO2, SF6 and a high number of refrigerant gases. This technology is entirely engineered and manufactured at the N.E.T. headquarters in Milan, Italy.

N.E.T. has built a team of dedicated engineers and market specialists with extensive gas detection experience who, together, are able to provide a superior level of technical and commercial support.

N.E.T., an ISO9001 registered company since 2003, offers:

- A full range of gas sensors meeting the needs of every customer
- Quick, on-time deliveries
- The highest level of technical and integration support
- Realistic and competitive pricing to give our customers an effective cost advantage

QUALITY POLICY

Activities of NET S.r.l.. are supported by professional knowledge and skills of its employees, purposefulness and professionalism. The main business focus is to develop new gas sensors technologies. The services provided to our customers are a result of in-house research and development activities, and hence we can guarantee service of the highest quality, which is based on latest scientific and technological knowledge.

The policy of our company is directed towards continuous improvement of professional base, streamlining internal corporate processes, and increasing commercial activity in order to meet our customers' requirements. In relation to our customers the principle of building long-term transparent partnership based on mutual respect and professional approach is applied.

To achieve long-term strategy of the company we have established the following principles of quality policy:

- The company attaches great importance to the continuous improvement of quality management system in the provision of services, wherein the primary concern is customer satisfaction
- The company provides professional services that meet individual customer needs, while its parameters satisfy the market demands and standards
- Great emphasis is placed on communication with customers to build a reliable and stable longterm partnership
- The feedback from customers is seen as a motivational element to increase service quality, as well as to improve the management culture of all processes and the application of modern methods and technologies
- Management is committed to create conditions for implementation and continuous improvement of quality management
- We create conditions that promote quality performance of the functions and activities in the company by the appropriate choice of personnel
- The aim of the company is to create a highly motivational environment
- Provision of good working environment and conditions for all staff to achieve the best performance.

HISTORY

2001		Founded as NEMOTOTECH, official distributor of Nemoto Ltd. Industrial electrochemical cells and pellistors
2002		New projects under development with the name Nemoto Environmental Technology (NET)
2003		NET achieves ISO 9001 certification for its quality management system
2004		Market launch of the NET2X and NET3X ATEX detector heads
2005		Market launch of the CYBER TRANSMITTERS
2007		Brand name changed to Nano Environmental Technology Srl
2008		Market launch of the IRNET-PRO infrared sensors
2011		NET obtains international patent for its NDIR optical path
2013		Market launch of the IREF-PRO infrared sensors
2018		New logo – INNOVATIVE GAS SENSING
2019		Market launch of the IREF-LITE infrared sensors
2021		Market launch of the REMORA sensor modules
2022		New headquarters and factory

twenty years
of advanced solutions
for gas detection

CERTIFICATIONS

innovative gas sensing

At NET, we believe than an oganization's overall quality of work and processes is passed on to its products. This is why we maintain the industry's highest standards of certification, issued by the most renowned notified bodies.

ATEX

The ATEX directive 2014/34/EU consists of two EU directives that have been law since July 2003 describing what equipment and workspace is allowed in an environment with an explosive atmosphere and sets the minimum safety standards for both the Employer and Manufacturer.
NET products certified to the ATEX directive include IRNET PRO 20mm and all NET Heads.

SIL

Safety integrity level (SIL) is defined as a relative level of risk-reduction provided by a safety function, or to specify a target level of risk reduction. In simple terms, SIL is a measurement of performance required for a safety instrumented function (SIF). All NET Infrared sensors have reached a safety integrity level of SIL2, No other gas sensor on the market is provided with a higher, certified SIL capability, making our IR series the ideal choice for whoever is designing gas detection systems and SIL-rated functions aiming at the highest levels of functional safety.

SIL2

IECEx

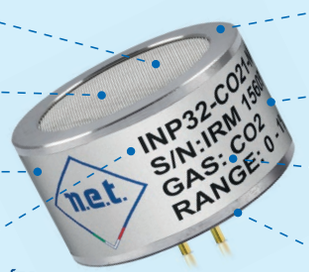
IECEx, which stands for International Electrotechnical Commission Explosive, is a voluntary system providing an internationally accepted means of proving compliance with IEC standards. The objective of IECEx standards is fostering international confidence in the product assessment process and maintaining the required level of safety. NET products certified to the IECEx directive include IRNET PRO 20mm and all NET Heads.

ISO9001:2015

The ISO 9000 family of standards addresses various aspects of quality management and contains some of ISO's best-known standards. The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements, and that quality is consistently improved. N.ET. has been ISO 9001 certified since 2003.

NET IRNET PRO

FOR CO_2, CH_4, HYDROCARBONS



- Individual calibration and testing, for measurements you can trust
- Internal microprocessor, for advanced signal processing
- Standard industrial size, to fit existing detectors
- Fast T90 response time, for critical, life-saving applications
- Solid, rugged construction with stainless steel enclosure
- Extended temperature range (40 to+60 °C), for use in any environment
- SIL2 rated, for certified dependability (fail-safe detection)
- ModBus or P2P digital communication, for ease of integration

SEE PAGE 8 FOR DETAILS

n.e.t.
innovative gas sensing

Innovative Gas Sensing. By constant research and innovation, NET has developed distinctive and unique technologies. Incorporated every day in our products, they enable exceptional benefits for our users.

IR INFRARED gas technology

INFRARED GAS TECHNOLOGY

- Non Dispersive Infrared (NDIR) gas sensing
- Dual wavelength, differential absorption technique
- Very gas-selective, low cross-sensitivity with interferent gases
- Corrosion-resistant and cannot be poisoned
- Fail-safe: events such as beam block or failed detectors or sources are revealed
- Requires no routine calibration

DYNAMIC GAS TECHNOLOGY

- Dependable detection accuracy over a full 0-100% volume range
- The sensor divides the 100% range in 3 different segments uses a different fitting curve for each one
- The set of coefficients for each range segment is individually determined for each sensor through the entire temperature range by an automated procedure

DYNAMIC gas technology

μPROCESSOR gas technology

MICROPROCESSOR GAS TECHNOLOGY

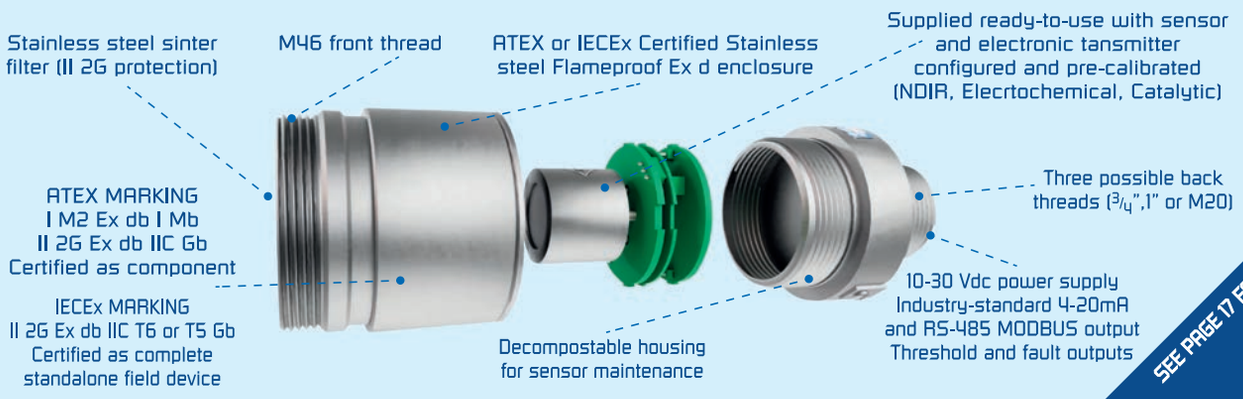
- Sensors based on an ARM® Cortex®-M4 core platform with industry-leading low power
- High-level interface, with a standardized, linear output
- No need to process low-level signals and calculations
- Bidirectional communication via digital protocols allows changing of communication and calibration parameters
- Faster response time, with FW accelerator algorithm
- Enhanced dependability and fail-safe operation

BLACK BODY SOURCE TECHNOLOGY

- SF6, Ethylene and refrigerant gases have absorption bands in the spectrum of 8 to 10 μm.
- Our IREF series use a state-of-the-art MEMS-based IR source, featuring true blackbody radiation band
- BBS emits in a wide wavelength range (2 to 14 μm)
- MEMS IR sources have superior speed and efficiency, smaller energy consumptions than filament lamps and excellent resistance against shocks and vibration

BBS BLACK BODY gas technology

NET CYBER HEADS



SEE PAGE 17 FOR DETAILS

TECHNOLOGIES

PRODUCT OVERVIEW

CORE TECHNOLOGIES

NDIR
PAGE 8-10

IRNET PRO
32mm

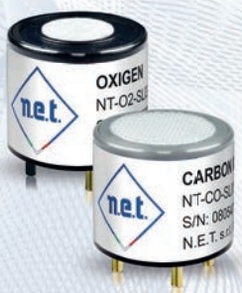
IRNET PRO
20mm

IRNEx PRO
20mm

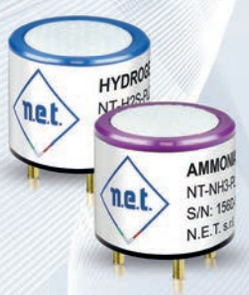
IREF PRO
32mm

IREF LITE
32mm

ELECTROCHEMICAL
PAGE 11-13



SAFETY LINE
Electrochemical Cells



PREMIUM LINE
Electrochemical Cells

CATALYTIC
PAGE 14

SHM/SHP
Pellistors
Single Head
SAFETY LINE

SMM
Pellistors
Matched Pair
INDUSTRIAL LINE

Gas Sensing Elements

twenty years of advanced solutions for gas detection

INTEGRATED SOLUTIONS

CYBER
Transmitter boards
PAGE 15

CYBER TTL
Single board
Voltage and TTL output

CYBER 4-20
3-board - 4-20mA
and RS-485 output

REMORA®
OEM sensor module

NET HEADS
Certified enclosures
PAGE 16-17

NET2X - NETC2
20mm

NET3X - NETC3
32mm

NET3X - NETC3
CYBER HEAD
32mm

NETC3/PB
PLASTIC HEAD
32mm

ACCESSORIES

IR DEMO BOARD

IR ASPIRATION CAP

ZMTEST 2/3
Net Head Splash Guard

NET-CAP 2 /3
Net Head Aspiration Cap

NET-CONE 2 /3

CYBER DEMO BOARD

PRODUCT OVERVIEW

innovative gas sensing

IRNET-PRO 32mm

the sensor for industrial CO2, CH4, Refrigerants, Propane and hydrocarbon monitoring

Output:	Linearized voltage output 0.4V– 2V
Power supply voltage:	3.5 - 5.5 Vdc
Communication:	Modbus, UART P2P • Default speed 4800bps
Operating temperature:	-40 to +60 °C
Typical Accuracy:	±1% of FS range for readings below 25% FS ±2% of FS range for readings below 50% FS ±5% of FS range above 50% FS

IR INFRARED gas technology

µPROCESSOR gas technology

SIL2

GASES	DETECTION RANGES
CO2	0-5000ppm • 0-1%vol • 0-2%vol • 0-5%vol
Methane	0-4.4%vol • 0-5%vol
Propane	0-1.7%vol • 0-2.1%vol
Propylene	0-2%vol
Iso-Butane	0-1.3%vol
n-Butane	0-1.4%vol
R-32	0-14.4%vol
R-454B	0-7.7%vol
R-452B	0-11.9%vol

Calibration and correction factors for other Hydrocarbons available on request (see 1)

Learn more:

IRNET-PRO 20mm

the sensor for industrial hydrocarbon monitoring

Output:	Linearized voltage output 0.4V– 2V Bridge output available (0-100mV)
Power supply voltage:	3.0 - 5.5 Vdc
Communication:	Modbus, UART P2P • Default speed 38400bps
Operating temperature:	-40 to +60 °C
Typical Accuracy:	±1% of FS range for readings below 25% FS ±2% of FS range for readings below 50% FS ±5% of FS range above 50% FS

IR INFRARED gas technology

µPROCESSOR gas technology

DYNAMIC gas technology

SIL2

GASES	DETECTION RANGES
CO2	0-5000ppm • 0-1%vol • 0-2%vol • 0-5%vol 0-10%vol • 0-20%vol • 0-30%vol • 0-100%vol
Methane	0-4.4%vol • 0-5%vol • 0-100%vol
Propane	0-1.7%vol • 0-2.1%vol
Propylene	0-2%vol
Iso-Butane	0-1.3%vol
n-Butane	0-1.4%vol
R-32	0-14.4%vol
Dual range	CO2 5000ppm + CO2 5%vol CH4 100%vol + Propane 2.1%vol

Calibration and correction factors for other Hydrocarbons available on request (see 1)

Learn more:

IRNEx-PRO 20mm

the ATEX/IECEx certified IR sensor for industrial hydrocarbon monitoring

Output:	Linearized voltage output 0.4V– 2V Bridge output available (0-100mV)
Power supply voltage:	3.0 - 5.5 Vdc
Communication:	Modbus, UART P2P • Default speed 38400bps
Operating temperature:	-40 to +60 °C
Typical Accuracy:	±1% of FS range for readings below 25% FS ±2% of FS range for readings below 50% FS ±5% of FS range above 50% FS

GASES	DETECTION RANGES
CO2	0-5000ppm • 0-1%vol • 0-2%vol • 0-5%vol 0-10%vol • 0-20%vol • 0-30%vol • 0-100%vol
Methane	0-4.4%vol • 0-5%vol • 0-100%vol
Propane	0-1.7%vol • 0-2.1%vol
Propylene	0-2%vol
Iso-Butane	0-1.3%vol
n-Butane	0-1.4%vol
R-32	0-14.4%vol
Dual range	CO2 5000ppm + CO2 5%vol CH4 100%vol + Propane 2.1%vol

Calibration and correction factors for other Hydrocarbons available on request (see 1)

CERTIFICATION	
EN 50271 & SIL2 (TUV) APPROVED	ATEX/IECEx certificates CESI 11 ATEX 039U / IECEx CES 12.0008U
IEC 60079-29-1 PERFORMANCE	ATEX marking II 2G Ex d IIC Gb, I M2 Ex d I Mb, I M1 Ex d+ia I Ma
ATEX & IECEx certified (CESI)	IECEx marking Ex d IIC Gb, Ex d I Mb, Ex d+ia I Ma

Learn more:

(1) Complete list of hydrocarbon cross reference factors avaialble: Acetic acid, Acetone, Benzene, Butadiene, Cyclo-hexane, Cyclo-pentane, Dimethyl Ether, Ethane, Ethanol, Ethyl acetate, Ethylene, Heptane, Hexane, Iso-butane, Isobutylene, Iso-octane, Iso-propanol, Methanol, N-butane, N-heptane, N-hexane, N-pentane, n-octane, Propylene, Toluene, Styrene, Xylene.

NDIR

DUAL RANGE SENSORS

IRNET-PRO/IRNEX PRO 20MM - FOR SIMULTANEOUS MEASUREMENT OF DIFFERENT GASES/RANGES

>implementing DYNAMIC gas technology

Data sheet:

CO2 5000ppm + CO2 5%vol

Unprecedented accuracy for 0-5%vol CO2 detection

- ±0.01%Vol accuracy for readings below 0.25%Vol
- ±0.1%Vol accuracy for readings below 2.5%Vol
- ±0.25% Vol accuracy for readings above 2.5%Vol

Data sheet:

CH4 100%vol + Propane 2.1%vol

The most complete hydrocarbon sensor yet

- Full 100%vol CH4 sensor with Dynamic range technology for best-in-class accuracy over full detection range
- Cross factor to detect 30 different hydrocarbons using the 2.1%vol Propane range

IREF PRO 32mm

Market's most DEPENDABLE refrigerant gas sensor now offers the most comprehensive range of detected gases available.

Output:	Linearized voltage output 0.4V– 2V
Power supply voltage:	4.5 - 5.5 Vdc
Communication:	UART P2P • Default speed 4800bps
Gas Types:	Ethylene, SF6 and Refrigerant gases Calibration and correction factors for other Refrigerants available on request (see 2)
Operating temperature:	standard: -20 to +50°C - extended: -40 to +60°C
Typical Accuracy:	±1% of FS range for readings below 25% FS ±2% of FS range for readings below 50% FS ±5% of FS range above 50% FS

GASES	DETECTION RANGES
SF6 • R-1233zd • R-1234yf R-1234ze • R-125 • R-134a • R-143a R-227ea • R-32 • R-404a • R-407a R-407f • R-410a • R-417a • R-422d R-448a • R-449a • R-450a • R-452b R-507 • R-513a	0-2000ppm
Ethylene • R-1234yf • R-1234ze R-32 • R-452b R-454a • R-454b R-454c • R-455a	0-100%LFL

Learn more:

(2) Complete list of refrigerant cross reference factors avaialble: R-123, R-22, R-407c, R-422a, R-424a, R-427a, R-434a, R-438a, R-452a, R-454b, R-454c, R-455a, R-453a

IREF LITE 32mm

the new low-cost, high-performance NDIR sensor for A2L refrigerants

Output:	Linearized voltage output 0.4V– 2V or 2 customizable Thresholds output
Power supply voltage:	4.5 - 5.5 Vdc
Communication:	Modbus, UART P2P
Gas Types:	A2L Refrigerant gases
Operating temperature:	-10 to +50 °C
Typical Accuracy:	±5% of FS range below 50% FS ±7% of FS range above 50% FS

GASES	DETECTION RANGES
ppm	R-1234yf (0-5.000ppm) • R-1234ze (0-5.000ppm) • R-134a (0-5.000ppm) R-32 (0-10.000ppm) • R-404a (0-5.000ppm) • R-407c (0-5.000ppm) R-410a (0-10.000ppm)
0-100%LFL	R-1234yf (6.2%vol) • R-1234ze (6.5%vol) R-32 (14.4%vol) • R-454a (6.3%vol) R-454b (7.7%vol) • R-454c (6.2%vol) R-455a (11.8%vol)

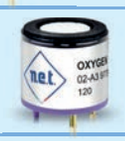
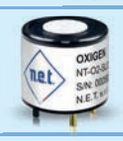
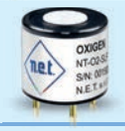
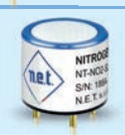
Learn more:

SAFETY LINE

Cost-effective electrochemical sensor range for residential or building automation applications and car park ventilation

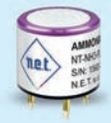
Learn more:

Extremely cost-effective, this sensor range include different solutions for Oxygen (O2) depletion, including a brand new lead-free version, Carbon Monoxide (CO) and Nitric Oxide (NO2) for light industrial, residential or building automation applications along with car park ventilation according to EN 50545-1.

	PART NUMBER	MAIN FEATURES	DATA SHEET
	NT-O2-A2 (2 years lifetime)	Oxygen Range: 0-25% vol Output: 80-120 µA @ 20,9% O2 E.C. OEM (Alphasense for NET)	Learn more:
	NT-O2-A3 (3 years lifetime)	Oxygen Range: 0-25% vol Output: 80-120 µA @ 20,9% O2 E.C. OEM (Alphasense for NET)	Learn more:
	NT-O2-SLI3 (3 years lifetime)	Oxygen Range: 0-25% vol Output: 70 nA/ppm E.C. for light industrial environments.	Learn more:
	NT-O2-SLF (5 years lifetime)	Oxygen-Lead Free Range: 0-25% vol Output: 70 nA/ppm	Learn more:
	NT-CO-SLI1000 UL2075 APPROVED	Carbon Monoxide Range: 0-1000 ppm 55 nA/ppm E.C. for car parks and light industrial environments.	Learn more:
	NT-NO2-SLI30 UL2075 APPROVED	Nitrogen Dioxide Range: 0-30 ppm 600 ± 150 nA / ppm	Learn more:

NET INTEGRATED SOLUTIONS

UPGRADING AND SIMPLIFYING THE USE OF GAS SENSORS



NET EC CELL
- nA output
- 3 pins
- Requires calibration and dedicated electronics

NET CYBER
- 4-20mA and RS-485 Modbus output
- 12-24Vdc Power Supply
- Fault and Threshold outputs
- Docking connector
- Linearized and pre-calibrated output

NET CYBER HEAD
- Integrates NET CYBER technology
- Wiring for direct connection to terminals
- ATEX/IECEx/IP65 certification
- Optimal mechanical protection

>implementing µPROCESSOR gas technology

n.e.t.
innovative gas sensing

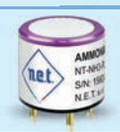
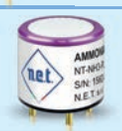
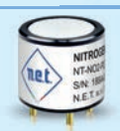
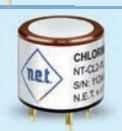
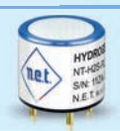
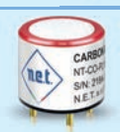
PREMIUM LINE

Top quality electrochemical gas sensor range according to EN45544-2 for Harsh Environment Applications

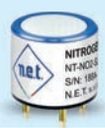
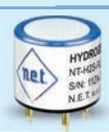
- Manufactured in Japan exclusively for N.E.T. and under our exact specifications
- Compliant with performance requirements of EN 45544-2 for harsh environments.
- Superior stability
- Long expected lifetime

Learn more:

PREMIUM LINE - Standard sensors

	PART NUMBER	MAIN FEATURES	DATA SHEET
	NT-NH3-PL100	Ammonia Range: 0-100 ppm 100 nA/ppm	Learn more:
	NT-NH3-PL300	Ammonia Range: 0-300 ppm 40 nA/ppm	Learn more:
	NT-NH3-PL1000	Ammonia Range: 0-1000 ppm 8 nA/ppm	Learn more:
	NT-NH3-PL5000	Ammonia Range: 0-5000 ppm 4 nA/ppm	Learn more:
	NT-NO2-PL30	Nitrogen Dioxide Range: 0-30 ppm 600 nA/ppm	Learn more:
	NT-CL2-PL10	Chlorine Range: 0-10 ppm 600 nA/ppm	Learn more:
	NT-H2S-PL100	Hydrogen Sulfide Range 0-100 ppm 700 nA/ppm	Learn more:
	NT-SO2-PL20	Sulfur Dioxide Range: 0-20 ppm 500 nA/ppm	Learn more:
	NT-CO-PL1000	Carbon Monoxide Range: 0-1000 ppm 70 nA/ppm	Learn more:

PREMIUM LINE - Special sensors available on request MOQ 10pcs.

	PART NUMBER	MAIN FEATURES	DATA SHEET
	NT-H2S-PL100-HT	Hydrogen Sulfide High Temperature Range 0-100 ppm • 700 nA/ppm Temperature range: -40°C +65°C.	Learn more:
	NT-H2S-PL20-HT	Hydrogen Sulfide High Temperature Range 0-20 ppm • 1500 nA/ppm Temperature range: -40°C +65°C.	Learn more:
	NT-C2H4-PL100	Ethylene Range: 0-100 ppm 100 nA/ppm	Learn more:
	NT-H2O2-PL300	Hydrogen Peroxide Range: 0-300 ppm 500 nA/ppm	Learn more:
	NT-SO2-PL100	Sulfur Dioxide Range: 0-100 ppm 200 nA/ppm	Learn more:
	NT-CL2-PL05	Chlorine Range: 0-5 ppm 900 nA/ppm	Learn more:
	NT-NO-PL300	Nitric Oxide Range: 0-300 ppm 400 nA/ppm	Learn more:

SHM/SHP PELLISTORS (SINGLE HEAD - SAFETY LINE)

- Consist of a matched pair of elements mounted on a single header and protected by a metal mesh filter.
- Standard 4-series enclosure (Ø20.4 mm x H100) to fit a exsisting gas detector.
- SHM housing is stainless steel, while SHP's is plastic.

SHM/SHP Type

General purpose single head pellistors with poison resistance and excellent stability.

Mounted in a 4 series housing (Diameter 20 mm).

PART NUMBER	MAIN FEATURES	DATA SHEET
NP-17SHM	2 V - 175 mA Single header pellistor with high temperature range (150°C/-40°C).	Learn more:
NP-17SHP		Learn more:
NP-18SHM	Single header pellistor for hydrocarbon in % LFL range Specific Ammonia and Hydrogen detection is possibile powering the sensor at a different Voltage HC: 2.5 V - 180 mA I H2: 1.6 V - 140 mA I NH3: 2.2 V - 170 mA	Learn more:
NP-18SHP		Learn more:
NP-30SHM	2.0 V - 300 mA Low cost version of NP-30SMM mounted on single header. Excellent long term stability.	Learn more:
NP-30SHP		Learn more:

SMM (MATCHED PAIR – INDUSTRIAL LINE)

- Consist of a matched pair of elements mounted on TO4 size headers and protected by a metal can.
- The matched pair is housed in standard 7-series plastic enclosure (Ø32 mm x H100) to fit a standard gas detector.
- Our NP-ACSMM is a special-purpose Pellistor sensor, designed to monitor %LFL levels of Acetylene with outstanding poison resistance.

SMM Type

General purpose matched pairs pellistors with poison resistance and excellent stability.

Mounted in a 7 series plastic housing (Diameter 32 mm).

PART NUMBER	MAIN FEATURES	DATA SHEET
NP-18SMM	Specific Ammonia and Hydrogen detection is possibile powering the sensor at a different Voltage. HC: 2.5 V - 180 mA I H2: 1.6 V - 140 mA I NH3: 2.2 V - 170 mA	Learn more:
NP-17SMM	2.0 V — 175 mA	Learn more:
NP-ACSMM	2.0 V — 145 mA Special purpose pellistor sensor designed to monitor % LEL levels of Acetylene, poison resistant.	Learn more:

innovative gas sensing

NET CYBER TRANSMITTER BOARD

Microprocessor driven electronic interface to turn any gas sensor in a legitimate detector, with current, voltage and digital output, contacts for fault and alarms.

CYBER TTL

Gas sensor interface with voltage and Modbus (TTL) output

- 32 mm Ø, to fit industry standard 4- or 7-series sensors
- 0.8-4V analogue output
- MODBUS RTU interface UART TX and RX at TTL levels
- Power Supply 5Vdc ±5%
- Supplied complete with sensor, configured and pre-calibrated
- 3 Threshold Alarms, Fault Alarm, Watchdog

µPROCESSOR gas technology

Data Sheet:

CYBER 4-20

Gas sensor interface with current and Modbus RS-485 output

- 32 mm Ø, to fit industry standard 4- or 7-series sensors
- 4-20mA analogue output
- RS-485 MODBUS RTU interface
- Power Supply 12-24Vdc
- Supplied complete with sensor, configured and pre-calibrated
- 3 Threshold Alarms, Fault Alarm, Watchdog

Data Sheet:

µPROCESSOR gas technology

REMORA®

The new sensor module with iref-zero for hydrocarbons, CO_2 and A2L refrigerants

- Power Supply 4-5 – 5.5 Vdc
- 0.4 – 2 Vdc Analog Output
- MODBUS RTU interface UART TX and RX at TTL levels
- No Poison effects
- 10 years expected lifetime
- Extremely low maintenance requirements
- Fully compliant with IEC 60335-2-40 ANNEX LL ISO 5149-3, EN 378-3, EN 50676

IR INFRARED gas technology

µPROCESSOR gas technology

BBS BLACK BODY gas technology

Data Sheet: ppm Range %LFL Range

Gas Sensing Elements

twenty years of advanced solutions for gas detection

CYBER TRANSMITTERS

innovative gas sensing

NET HEADS

Ready to use, certified detection heads, also available with built in analog and digital output.

CERTIFICATION			
Certificate number	CESI 01 **ATEX** 066U (NET2X/NET3X heads)	CESI 10 **ATEX** 032X (NETC2/NETC3 heads)	**IECEx** CES 12.0009X (NETC2/NETC3 heads)
Marking (only gas)	I M2 Ex db I Mb II 2G Ex db IIC Gb	II 2G Ex db IIC T6 or T5 Gb	Ex db IIC T6 or T5 Gb
Marking (gas and dust, with dust cover)	I M2 Ex db I Mb II 2GD Ex db IIC Gb Ex tb IIIC Db IP65	II 2G Ex db IIC T6 or T5 Gb II 2D Ex tb IIIC T85°C or T100°C Db IP65	Ex db IIC T6 or T5 Gb Ex tb IIIC T85°C or T100°C Db IP65

NET2X/NETC2 DETECTION HEAD

Stainless Steel detection head for 20mm (4-series) gas sensor

- ATEX component certification (NET2X)
- ATEX and IECEx full conformity certification (NETC2)
- ¾"or 1" back thread for connection to the detector's body
- Front M35 thread for connection to flanges and calibration caps
- Front sinter filter
- Optional GD protection (II 2GD and IP65)
- Completely sealed device

NET2X NETC2

Data Sheet:

NET3X/NETC3 DETECTION HEAD

Stainless Steel detection head for 32mm (7-series) gas sensor

- Decomposable in two parts, for easy sensor replacement
- ¾", 1"or M20 back thread for connection to the detector's body
- Front M46 thread for connection to flanges and calibration caps
- Front sinter filter
- Optional GD protection (II 2GD and IP65)
- ATEX component certification (NET3X)
- ATEX and IECEx full conformity certification (NETC3)

NET3X NETC3

Data Sheet:

Gas Sensing Elements

twenty years of advanced solutions for gas detection

NET3X/NETC3 CYBER HEAD

Combines CYBER technology with the NET3X/NETC3 range of detection heads

- Available for all technologies and head body material
- Industry standard 4-20 mA and RS-485 MODBUS RTU interface
- Supplied ready to use, configured and pre-calibrated from NET's comprehensive gas sensor range
- ATEX component certification (NET3X)
- ATEX and IECEx full conformity certification (NETC3)

NET3X CYBER HEAD

NETC3 CYBER HEAD

Data Sheet:

μPROCESSOR gas technology

NETC3/PB DETECTION HEAD

IP65 certified enclosure for residential, commercial, light-industrial applications

- Decomposable in two parts, for easy sensor replacement
- ¾", 1"or M20 back thread for connection to the detector's body
- Front M46 thread for connection to flanges and calibration caps
- Available with CYBER technology

μPROCESSOR gas technology

NETC32 PLASTIC

NETC32 CYBER HEAD PLASTIC

Data Sheet:

A full range of ready–to–use detector heads or gas sensor housings, already certified as a component or a complete device to be mounted on a gas detector in any environment.

The N.E.T. detector head is the ideal solution for gas detection system manufactu rers who prefer not to invest in designing their own detection head and/or obtaining ATEX/IECEx certification for it.

N.E.T. heads can enclose N.E.T.'s full array of detection technologies (NDIR, Electrochemical and catalytic) and, if needed, N.E.T.'S CYBER transmitters. The user can select among ¾",1" or M20 thread for connection to the detector's main body.

GAS SENSORS FOR INDUSTRIAL SAFETY DETECTION

TYPICAL TYPES OF HAZARDOUS GAS AND VAPORS ARE:

- Combustibles – Liquids with flash point between 37.8°C (100°F) F and 93.3°C (200°F).
- Flammables – Liquids with flash point under 37.8°C (100°F), gases that form flammable mixtures with air at 13% volume concentration or less.
- Asphyxiating – Causing suffocation by displacing O2 (e.g. H2, CO) or by interfering with blood's ability to carry O2 (e.g. CO).
- Irritants/Corrosives – Causing inflammatory effect on tissue by chemical action (e.g. NH3, Cl2, O3, SO2)
- Toxic Agents – Poisonous to one or several organs (e.g. CS2, AsH3, CCl4)
- Carcinogens – Causing cancers (e.g. vinyl chloride)

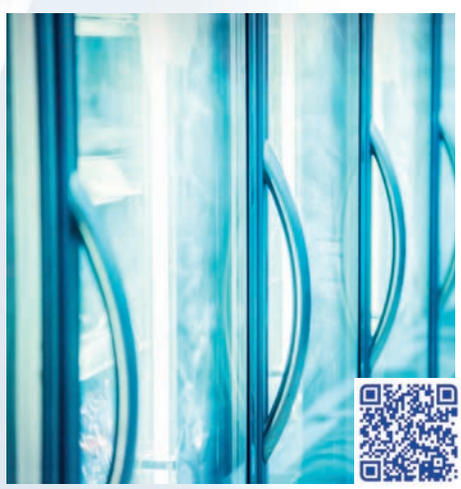
TYPICAL TYPES OF HAZARDOUS GAS AND VAPORS ARE:

- Central Nervous System Depressants – Causing disturbances to CNS (e.g. benzene, acetone)

SOLUTIONS FOR INDUSTRIAL REFRIGERATION AND REFRIGERANT GAS LEAK DETECTION

MOST OF THE GASES USED IN REFRIGERATION SYSTEMS ARE IN FACT DANGEROUS TO HUMANS:

- Carbon Dioxide (CO2) displaces oxygen, causing asphyxiation and affects respiratory capacity
- Ammonia (NH3) is flammable and can also be lethal at high concentrations. Its use is subject to EN 378:2008 (see below)
- Hydrocarbons (HC) such as butane and propane are flammable, and its use is subject to EN 378:2008 (see below)
- Fluorinated gases, often referred to as "F Gas" (CFCs, HCFCs, HFCs, HFOs), displace oxygen causing asphyxiation other than having serious environmental impact. CFCs have, in fact, been phased out and they're not commercially available nowadays even though older plants may still have them in their system.
- The new class of lower Global Warming Potential HFO refrigerants, often referred to as "A2L" (per their ISO 817-2014 classification, in many cases possess some level of flammability.



GAS DETECTION SOLUTIONS FOR MEDICAL LABORATORIES AND HOSPITALS

Modern medical laboratories and hospitals use a range of gases which can cause both immediate and long-term risks for patients, visitors and the staff. Medical gas detection systems aim at controlling insidious leaks of gases that often have no taste, color or smell.

Medical laboratories and hospitals use a range of gases such as enriched oxygen (O2), nitrous oxide (N2O), helium (He), nitrogen (N2) and carbon dioxide (CO2). Many gases used in hospitals and laboratories have no taste, color or smell, which makes it hard to tell if there is a gas leak. A leak from a gas cylinder or fixed piped gas system can cause potentially fatal incidents.

GAS DETECTION SOLUTIONS FOR CAR PARK AND TUNNEL APPLICATIONS

The presence of vehicles in underground or otherwise confined parking structures, tunnels, loading docks, and warehouses represent a constant source of airborne contaminants – notably CO, NO2, oil and gasoline fumes.

An efficient gas detection system will ensure a safe breathing environment for users and workers in parking, tunnels and other confined spaces with constant presence of vehicles. This while reducing costs for the facility and increasing the overall environmental quality and well-being for all.

N.E.T Safety line electrochemical cells are designed to meet or exceed the specifications given in EN 50545-1 (for linearity, repeatability, temperature and humidity dependence, interfering gases, recovery from high gas concentrations, response time and long-term stability) and are tested and approved by TUV Rheinland with Certificate No. S 459 2014 C2.

GAS DETECTION SOLUTIONS FOR BIOGAS AND LANDFILL GAS (LFG) PLANTS

Landfill gas (LFG) and Biogas are similar in creation process and composition – and for the fact of representing both a resource and a hazard, with appropriate monitoring and management tipping the balance between the two extremes.

N.E.T. high-volume IRNET sensors are the ideal fit for Landfill gas (LFG) and Biogas applications due to:

- 0...100% detection range for Methane (CH4) and Carbon dioxide (CO2)
- Rugged stainless steel built and protective coatings to ensures resistance to the acid gases associated with the application
- Available in ATEX or IECEx certified versions for maximum safety and use in classified areas
- Our exclusive Dynamic Range technology ensures optimal performances and unprecedented accuracy

GAS DETECTION SOLUTIONS FOR WATER TREATMENT PLANTS

NET OFFERS A COMPLETE RANGE OF SOLUTION TO MONITOR THE MOST HAZARDOUS GASES INVOLVED WITH WATER TREATMENT:

- Hydrogen sulphide (H2S) is extremely toxic.
- Methane (CH4) is a highly flammable gas
- Ammonia (NH3), ozone (O3), and chlorine (Cl2) are all toxic gases used in the decontamination stage of wastewater treatment and water purification plants.
- Carbon dioxide (CO2) displaces oxygen causing asphyxiation and affects respiratory capacity.

Gas hazards associated with wastewater plants and drinking water facilities are often underestimated. But both converting wastewater into a state suitable for discharge and transforming extracted supplies into clean water for civil use involve the employment and production of different toxic and flammable gases. As usual in these situations, reliable gas detection is the way of protecting personnel, facilities and the environment. Although gas risk may vary depending on the application, location and treatment process, some of these are common to most plants.

20 YEARS ANNIVERSARY

twenty years
of advanced solutions
for gas detection

HEADQUARTERS AND FACTORY

n.e.t.
innovative gas sensing

µPROCESSOR gas technology

INFRARED gas technology

DYNAMIC gas technology

BLACK BODY gas technology

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