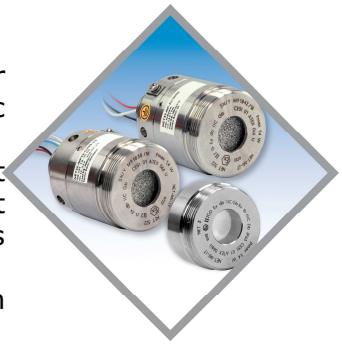
NET-EX Cyber SENSOR

State-of-the-art ATEX gas sensor with integrated electronics and sensor

Description

The NET-Ex sensor is the most modern ATEX class solution with 4-20 mA and Modbus transmitter outputs, enclosed in a metal housing.

An electrochemical, infrared or pellistor sensor can be connected to the electronic system integrated in the housing.
NET-Ex is built in a two-element flameproof casing. The lower part contains a stainless steel filter that allows gas, the electronics and the sensor.
The upper part contains a connection board and signaling LEDs.



The selected sensor is mounted in a special protective capsule, holding it in the right position, ensuring the highest efficiency of its work.

The versatility of the housing and protective capsules enable the installation of standard electrochemical, oxygen, flamable and toxic gas sensors in the NET-Ex. The two-element NET-Ex housing enables easy sensor replacement. The bottom of the housing has an M46X1.5 thread for easy accessory mounting. The upper part includes threads for mounting M20x1.5 cable glands.

NET-Ex has been tested and certified according to the ATEX directive.
Protection against dust and increasing IP is available on request as an additional threaded adapter.
In 3D/2D version dust filter is miunted in a standard.

ATEX CERTIFIED PRODUCT

Features

- 4-20 mA output for connection to analog systems
- RS485 (Modbus) output for operation in digital systems, SCADA, BMS
- Operation signal, service and alarm signals
- Compatibility with IR, EC and pellistors sensors
- The system comes complete with a configured and calibrated sensor; a basic sensor test is performed each time when it is turned on
- Custom design is available on request. Simple on-site calibration
- System management software, including calibration
- Full ATEX compliance of the certified flameproof enclosure
- Optional protection against damage to the catalytic sensor or EC

Technical specification

Sensors:	IR, electrochemical, pellistor
Analog output:	4-20 mA
Digital communication:	RS485

LED signals: OK, error, alarms 1 and 2

Power:	10-28 VDC Nominally 12, 24V
Current (in standard) @12V	130 mA @EC 150 mA @CT 150 mA @IR
Current (in standard) @24V	100 mA @EC 120 mA @CT 120 mA @IR

Range:	Depends on a sensor
Time od reaction:	Depends on a sensor
Calibration:	via RS485 interface

Working parameters:

Working temperature:	Depends on a sensor
Humidity:	20-90% RH, without condensation
Air pressure:	90-110 kPa

Versions:

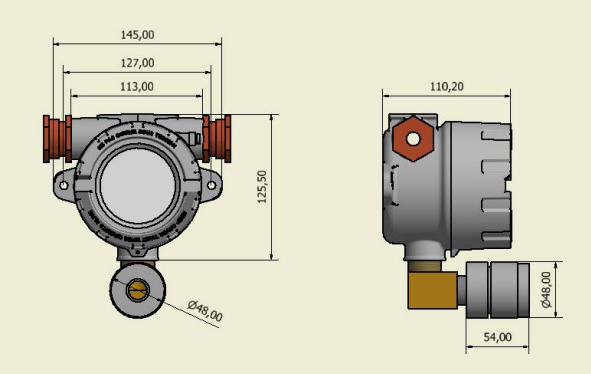
- standard (Std)
- with head on a cable (Cab)
- with angular head (Ang)

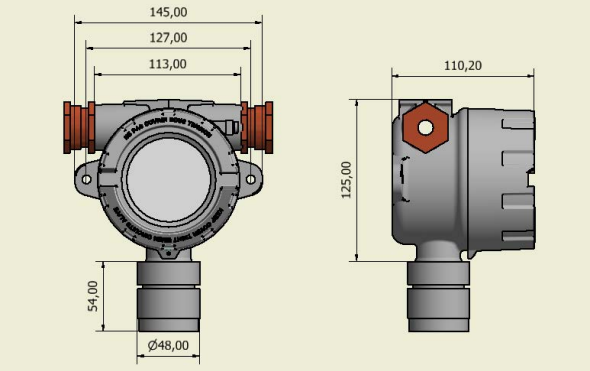
Wires

The cable coming from the head to the junction box is sealed with hermetic mass. The zones of the sensor head and the junction box are separated.
EMC shielded cables, adapted to work in explosion hazard zones, should be used for power supply and signals, e.g Bit 500 Black FR 2x2x0.75mm2.

Connection code	Description
Shield	Shield
RS485 A	Modbus RTU A
RS485 B	Modbus RTU B
+24V	power 12-24VDC
GND	Ground
An Out	4-20mA output
An Gnd	4-20mA ground

Dimentions





* *All dimensions in mm*

ATEX certification

The NET-Ex gas sensor is a device fully ATEX compliant and certified according to Ex zones 2, 22, 1, 21.

Certificate

Number od certificate:	OBAC 20 ATEX 0036X	
ATEX coding (gas only):	II 2G Ex db IIC T6 lub T5 Gb(1)	II 3G Ex db IIC T6 lub T5 Gb(1)
ATEX coding (dust,with filter)	II 2D Ex tb IIIC T85°C lub T100°C Db IP65(1)	II 3D Ex tb IIIC T85°C lub T100°C Db IP65(1)

(1) The temperature class (T6 or T5) depends on the sensor power dissipated inside the head and is directly related to the type of sensor used and ambient temperature.
Detailed data are included in the certification document.

Coding

NET-Ex /GSV - Std - 3G - PEL - CH4 - 100%LEL - MB,420mA - APO

Structure:

Optional interlock against damage with excessive gas concentration (PEL, EC, SC sensors)

Communication type: Modbus RTU, 4-20mA, relays

Measuring range in ppm, LEL or VOL

Measured gas

Sensor type: PEL, EC, IR, SC

Atex zone: 3G, 3D, 2G, 2D

Sensor version: Std, Cab, Ang

Special version

When selecting the appropriate sensor, the customer must specify the basic parameters appropriate to the intended application. This is done by selecting the catalog number below. Appropriate fields for the catalog number should be selected according to the needs.

SIL2 certification

The NET-Ex sensor head has been tested in accordance with IEC 61508-1 and has been certified with SIL2 Safety Integrity Level for continuous operation.
SIL levels, as an important parameter of failure / error classification, are used in the design of devices that must meet above-standard safety requirements.

Examples of typical gas types and measuring ranges

Gas		Technology	Range	Description
Hydrocarbons	HC	Pellistor	0-100% LEL	
Ammonia	NH_3	Pellistor	0-100% LEL	
Hydrogen	H_2	Pellistor	0-100% LEL	
Methane	CH_4	NDIR	0-100% LEL (4,4%Vol)	
Methane	CH_4	NDIR	0-100% LEL (5%Vol)	
Propane	C_3H_8	NDIR	0-100% LEL (1,7%Vol)	
Propane	C_3H_8	NDIR	0-100% LEL (2,1%Vol)	
Carbon Dioxide	CO_2	NDIR	0-5000 ppm	
Carbon Dioxide	CO_2	NDIR	0-5% vol	
Sulfur Hexafluoride	SF_6	NDIR	0-1000ppm	
R-134a	CH_2FCF_3	NDIR	0-1000ppm	
Carbon Monoxide	CO	Electrochemical cell	0-300 ppm	
Hydrogen Sulfide	H_2S	Electrochemical cell	0-100 ppm	
Ammonia	NH_3	Electrochemical cell	0-100 ppm	
Ammonia	NH_3	Electrochemical cell	0-1000 ppm	
Nitrogen Dioxide	NO_2	Electrochemical cell	0-30 ppm	
Nitrogen Oxide	NO	Electrochemical cell	0-300 ppm	
Chlorine	Cl_2	Electrochemical cell	0-10 ppm	
Sulfur Dioxide	SO_2	Electrochemical cell	0-20 ppm	
Oxygen	O_2	Electrochemical cell	0-25% vol	

* if LEL is not specified, 5% Vol is assumed for methane and 2.1% Vol is assumed for propane.

Special, untypical gases and/or ranges avaliable on a request.

JBK's policy is aimed at continuous development and implementation of new products.
The specifications of the devices described in this bulletin may be changed due to development changes.