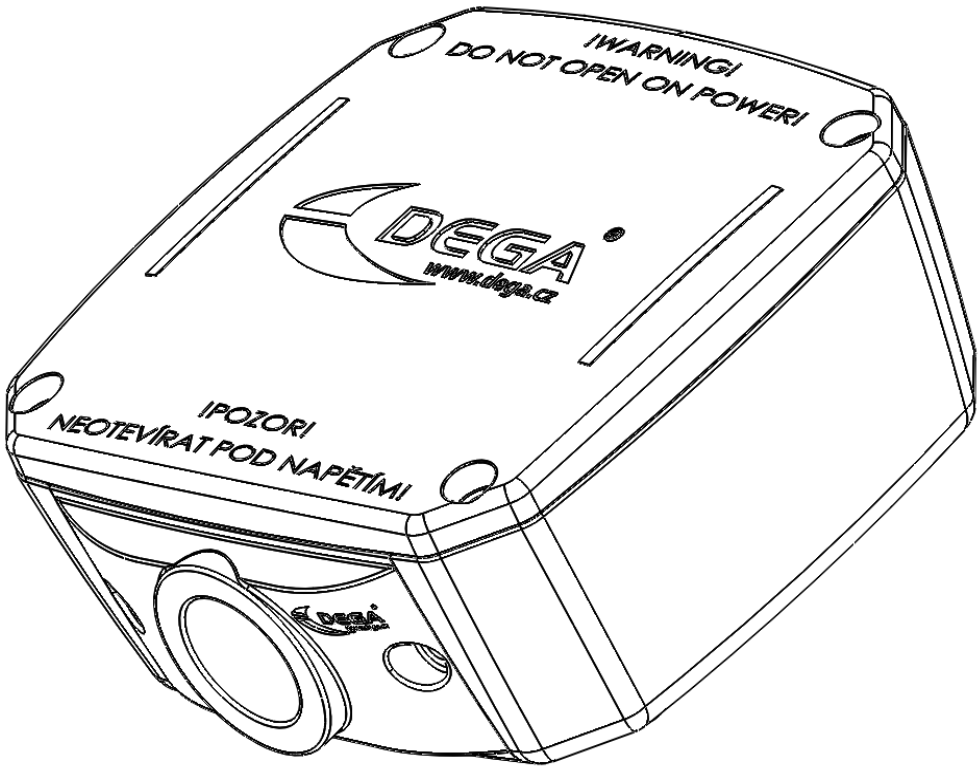
INSTRUCTION MANUAL

Gas Detection Transmitter

DEGA NB III



DEGA CZ s.r.o. reserves the right to alter the specifications of the hardware and software described in this manual at any time and without prior notice

DEGA CZ s.r.o. bears no liable for any damage resulting from use of this device

Content

For your safety

Assamble the transmitter with the sensor facing downwards

To maintain IP protection the transmitter must be assambled with the sensor module facing downwards

Beware of static electricity

Electronic components are sensitive to static electricity. Do not touch them directly - they may get damanged!

The device is intended to be installed by a trained person

The product is designed for installation only by a certified technician. The manufacturer is not liable for damages resulting from incorrect or improper handling.

In case of malfunction, immediately unplug from the power supply

If you notice an unusual smell or smoke emitting from the product, unplug it from the power supply, battery backup and all other attachments. Continued operation could result in injury or property damage. After disconnecting, have the device inspected at an authorized dealer or manufacturer.

The transmitters is designed for non-explosive environment only

For a potentially explosive environemnt use the transmitters DEGA NSx-yL II (ZONE 2) and NSx-yL III (ZONE 3)

Do not disassemble the product and ensure against it's contact with water

Contact with internal components of the product may cause an electric shock. In case of any malfuction entrust the servicing of the product exclusively to a certified service centre. Contact with water can create a short circuit in the product and consequent damange to property or personal injury.

Use appropriate cable types

To ensure compliance with the parameters of the product, only use cable types recommended in this guide.

Dispose of used products and trasmitter sensors with respect to the environment

Transmitter sensors contain hazardous substances. Dispose of them in accordance with the current legislation on environmental protection.

Use the transmitter only with the appropriate certified DEGA products

The device is certified as functionally and technically qualified only with original "DEGA" accessories. In case of using the device with any other products the manufacturer is not liable for any damages that may occur.

Undertake regular functional checks and calibrations of the transmitter

Perform regular "CALIBRATION" (setting the detection limits, checking the responsivness of the sensor, checking the functionality of the transmitter) and "OPERATIONAL AND FUNCTIONAL CHECKS" of the entire detenction system (sensor excitation with subsequent control of optical and audible alarms, triggering fans, shutdown technology, etc.). Perform calibration and operational and functional checks only at certified service centers with a valid certificate of competence or the manufacturer.

Warning: The transmitter automatically checks it's calibration period - the period of validity of it's calibration. After 12 months since the last calibration (Max. calibration period) the transmitter will transmit this fact to the host system. The transmitter must be calibrated immediately at a certified service center with a valid certificate of competance or the manufacturer. See section "Monitoring the calibration peridos“.

Technical data and information

Supply voltage:	24 V nominal, operational range 8-30 V
Cable connections via 4-20 mA:	shielded cable 3 x 1 mm (max. 1200 m) shielded cable 3 x 1,5 mm (max. 2400 m)
Cable connections via RS485:	shielded cable 4 x 0,8 mm (max. 400 m) - see section “ instalation of wiring for RS485“
Diameter range of wires:	0,08-2,5 mm^2 – wire, double line cable 0,25-1,5 mm^2 – double line cable with internal space
Output:	4 - 20 mA RS485 - DEGA protocol
Dimensions without bushings:	110 x 100 x 50 mm (WxHxD)
Weight:	0,3 kg
Dead band:	max. 5 % of range

Consumption/input at 24 V (output RS485)

DEGA NBx-EL III	25 mA/0,6 W
DEGA NBx-CL III	70 mA/1,7 W
DEGA NBx-IL III	50 mA/1,2 W
DEGA NBx-SL III	70 mA/1,7 W
DEGA NBx-PL III PID	70 mA/1,7 W

Warm-Up time

DEGA NBx-EL III	some sensors max. 72 hours
DEGA NBx-CL III	max. 30 s
DEGA NBx-IL III	max. 15 s
DEGA NBx-SL III	max. 180 s
DEGA NBx-PL III PID	max. 15 s

Consumption/input at 24 V (output 4-20 mA)

DEGA NBx-EL III	45 mA/1,1 W
DEGA NBx-CL III	90 mA/2,2 W
DEGA NBx-IL III	70 mA/1,7 W
DEGA NBx-SL III	90 mA/2,2 W
DEGA NBx-PL III PID	90 mA/2,2 W

Time to stabilize (>5 day without power)

DEGA NBx-EL III	some sensors max. 72 hours
DEGA NBx-CL III	max. 1 h
DEGA NBx-IL III	max. 30 min
DEGA NBx-SL III	max. 1 h
DEGA NBx-PL III PID	max. 30 min

Response time (T90)		**Sensor lifetime in a clean environment**	
DEGA NBx-EL III	max. 180 s - based on sensor type	DEGA NBx-EL III	2 years
DEGA NBx-CL III	max. 30 s	DEGA NBx-CL III	2 years
DEGA NBx-IL III	max. 30 s	DEGA NBx-IL III	5 years
DEGA NBx-SL III	max. 30 s	DEGA NBx-SL III	2 years
DEGA NBx-PL III PID	max. 30 s	DEGA NBx-PL III PID	5000 hours

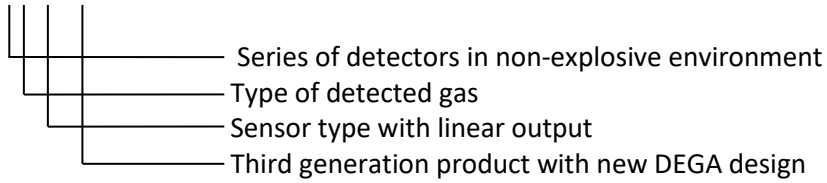
Operational conditions

Ambient temperature:	-20 °C to +60 °C (electrochemical, semiconductor and catalytic sensors) -20 °C to +40 °C (infrared sensors) and 0 °C to +40 °C (PID sensors)
Relative humidity:	0-95 % RH
Air pressure:	80-120 kPa
Flow of ambient air:	max. 2 m/s - flow directly to the sensor in not allowed
Protection level with a cover:	IP 54
Location:	BE1 - non-explosive environment

Terminology

The marking system for sensors DEGA NBx-yL III:

Gas sensor DEGA NBx-yL III



DEGA NBx-EL III with an electrochemical sensor

They operate on the principle of change of electrical parameters on the electrodes stored in electrolyte, due to oxidation/reduction reactions of the detected gas on it's surface. These sensors have good selectivity and the ability to detect very low concentrations of toxic gases.

DEGA NBx-CL III with a catalytic sensor (Pelistor)

They operate on the principle of catalytic combustion - gas concentration is measured based on the amount of heat released in a controlled combustion reaction. The reaction is supported by a suitable temperature and the pressence of a catalyst. These sensors can be used to detect a broad range of flammable gases. The sensors are characterized by fast response,a long lifetime and high stability. A minimum of 10 % of oxygen in the air is required for it's proper function.

DEGA NBx-IL III with an infrared sensor (NDIR)

The top quality scanning method. They operate on the principle of infrared spectroscopy. The sensors have excellent selecivity in organic matter, do not require any oxygen in the atmoshpere and are resistant to catalyst poisons (sulfur and silicon compounds) which cause a change of sensitivity of catalytic sensors. The sensors are characterized by high stability and a long lifetime.

DEGA NBx-SL III with a semiconductor sensor

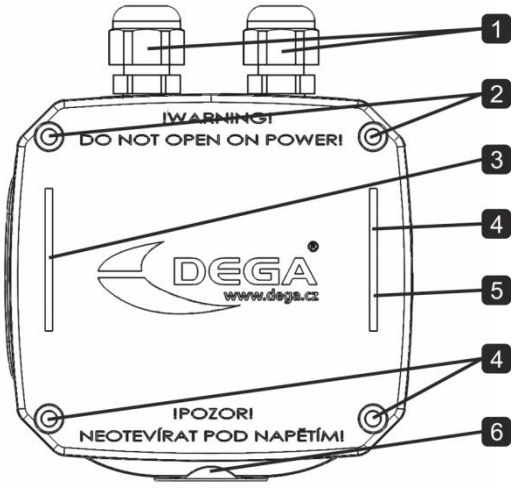
They operate on the principle of changes in electrical conductivity of semiconductors by changing the concentration of the detected gas. Their advatage is a long lifetime in a clean environment and a wide range of different types of gases and vapors. Their disadvatage is their low selectivity - the sensor largly responds to other gases for which it is not calibrated.

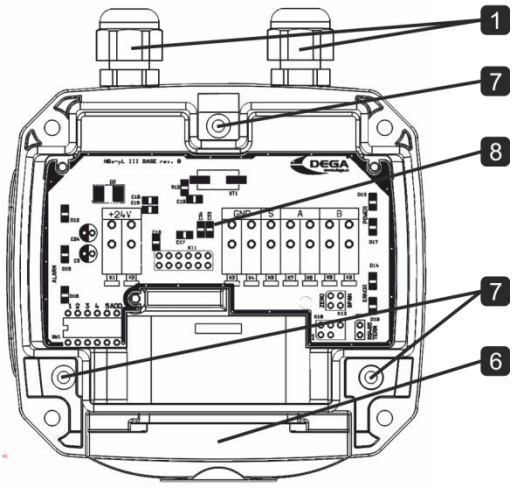
DEGA NBx-PL III PID with a photoionization sensor

The sensitive scanning method for detection of a wide range of VOC - volatile organic compounds. The sensor does not selectively detect all VOCs in the air at concentrations in ppm.

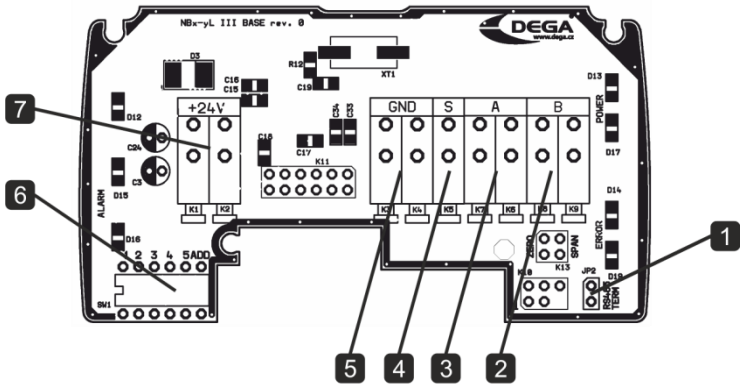
DegaConfig - sensor adjusting software enabling it's full configuration and calibration.

Product description





1	Bushings	2	Hexagon screws 3 mm	3	Status LED „ALARM“	4	Status LED „POWER“
5	Status LED „ERROR“	6	Sensor module	7	Mounting holes	8	PCB electronics



1	Jumper connector of the terminating resistor RS485	2	Terminal block RS485 B	3	Terminal block RS485 A	4	4-20 mA signal terminal block
5	GND power supply terminal block	6	DIP switch for the RS485 adress	7	+24 VDC Power supply terminal block		

Assembly and disassembly of the transmitter

Before assembling, read the valid instalation standarts EN 60079-29-2 (Selection, instalation, use and maintenance of detectors for combustible gases and oxygen) and EN 45544-4 (Guildelines for the selection, installation, use and maintenance of detectors of toxic substances).
Secure that the sensor is reachable by air. The transmitter must be in a free area with no obstacles in its way (furniture etc.)
Ensure that the input of the sensor cannot be polluted by layers of dust or other contamination.
To maintain IP protection the transmitter must be assambled with the sensor module facing downwards.

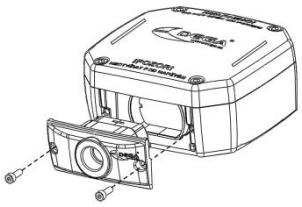
1. Assembly of the transmitter

The transmitter consists of four parts - the body of the transmitter, the removable sensor and bushings.

Transmitter assembly procedure is as follows:

a) Disassemble the transmitter with the four hexagon socket screws 3 mm
b) Use a screwdriver to break out holes for the bushings
c) Mount the transmitter on a flat surface with four 6 mm fasteners in height above the floor with the gas entrance facing downwards, as specified by the detected substance
d) Direct the cable trough the bushings
e) Connect the wiring to the terminal block according to " Installation of wiring for RS485".
f) Assemble the transmitter with the four hexagon sockets scews 3 mm

2. *Replacement of the sensor module*

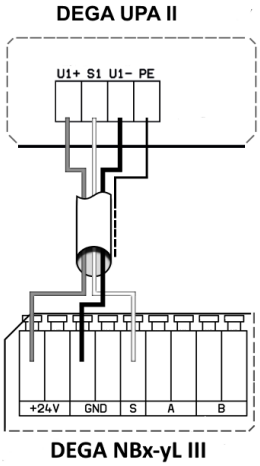


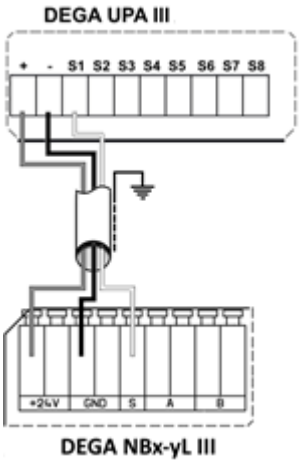
This activity must not be performed when the sensor is energized.

In case of need to replace the sensor module with a new piece, unscrew and remove the cover. Unscrew a pair of 3 mm hexagon screws on the sensor module and carefully remove the sensor module so as not to damage the pins of the sensor unit. Carefully insert the new sensor module – be careful not to bend the pins! Screw the two 3 mm hexagons screws and put back the cover. Screw the cover.

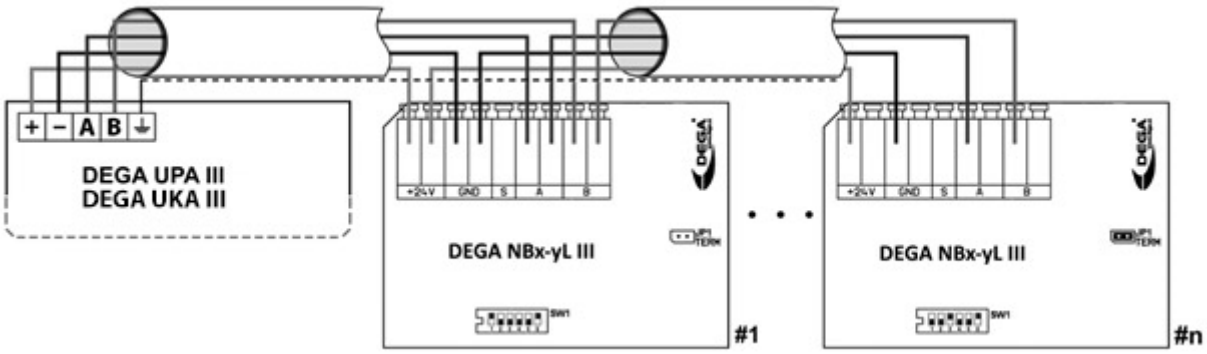
3. *Connecting the transmitter via current loop to the controler DEGA UPA II/DEGA UPA III*

Connect one transmitter to each channel of the controler as shown in the picture below





4. *Connecting the sensor via RS485 to the controller DEGA UKA III/DEGA UPA III*



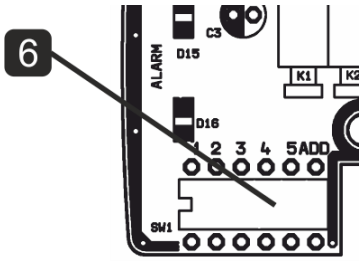
Note: Connection of transmitters with control panel only by DEGA protocol, not MODBUS protocol.

It is possible to connect up to max. 16 transmitters on each controller input (BUS 0, BUS 1), depending on their electrical distance from the controller.

5. *Installation of wiring for RS485*

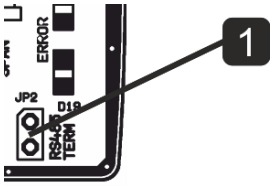
Wiring must be done using bus topology and according to the RS485 principles.
Maximum number of connected transmitters per controler channel is 16 (may be less depending on the configuration of the controller), while the total length of the connecting cable (electrical distance between the controller and the last transmitter) should not exceed 400 meters.
Selecting the appropriate type of cable depends on the fire report and the protocol for determining external influences.

6. *Setting the RS485 adress of the transmitter*



Each transmitter must have a unique adress within the entire bus, otherwise there will be communication collisions and malfunctions.
The transmitter adress can either be set internally using the DegaConfig program or using the DIP switch on the PCB.
If the position 6 (labeled ADD) is in the ON position, then the adress according to the setting of pins 1-5 is considered. Otherwise the adress set in DegaConfig is considered.
The adress can be set from range 1-31 using binary values. A table with DIP settings for individual adresses is listed in the attachment "Chart for setting the transmitter adress"

7. *Terminating resistor*



According to the RS485 specifications, the last device on the bus must be ending with a terminating resistor 120 R. Plug a jumper on the JP2 connector of the last device on the bus to include the 120 R terminating resistor. In the default configuaration the jumper connector is not plugged.

Transmitter functions

The detector's motherboard is equipped by status LEDs, which help in detecting problems during the installation.

LED „POW“ shines at correct power
LED „ALARM“ shines when the alarm level is crossed
LED „ERROR“ shines in case of malfunction or an unstandard situation

1. *Turning on the transmitter*

After turning on the power the LED "POW" starts shining and the LED "ERROR" starts flashing, indicating a forming sequence of the sensor and automatic testing procedures, which can take up to 180 s depending on the sensor used. The output of the current loop is 1 mA. During this sequence, testing of internal electronics and stabilization of the sensor in order to eliminate false alarms after turning on, is taking place. After completion of the formation, a 4 mA current begins to flow on the output of the current loop and the transmitter starts working according to it's settings.

2. *Gas detection*

The transmitter continuously measures the detected gas concentration in the atmoshpere and converts it's current value into a 4-20 mA signal or transmits it's value to the evaluation unit via DEGA protocol (RS485).

3. *Malfunction*

If a malfunction of the electronics or the sensor is found during operation, the transmitter will continue transmitting via current loop 0,5 mA. On the PCB this condition is indicated by the orange „ERROR“ LED.

4. *Monitoring the calibration periods*

The transmitter continuously checks the calibration validity of the connected sensor.

After 12 months since the last calibration (max. calibration interval) the LED "ERROR" starts flashing. The connected sensor must be calibrated immediately. The transmitter will transmit the information about the ending calibration via current loop. The transmission will be the following: 10 s transmitting a 4-20 mA signal informing about the actual gas concentration following a 1 second interval of 2 mA current.

Operation, maintenance, inspection and service of the transmitter

1. *Usage limits*

To maintain proper operation of the transmitter it is neccesery to respect the fact, that step changes of humidity, condensation or rapid changes of pressure can cause incorrect indication of the measured value. Each sensing technology is suited for different methods of application, which is described below. All sensors are characterized by a smaller or larger

cross-sensitivity to other gases than those which are set. Therefore before processing project documentation we recommend to have the air in the deployment area of the detection system analyzed.

a) catalytic sensors: Trace amount of vapors of silicon compounds and sulfur compounds cause a permanent loss of sensitivity, which requires recalibration or replacement of the sensor. Longterm crossing of the measuring range causes a decrease in sensitivity. In case of an atmoshpere having an oxygen content of less than 17 %, there will be an underestimaton of the measured value. In case of an atmoshpere having an oxygen content of more than 25 %, there will be an overestimation of the measured value.

b) electrochemical sensors: Constant exposure to toxic gases or short-term exposure to gases, which greatly exceed the maximum range of the sensor, can damage the electrochemical sensor, which requires recalibration or replacement. High temperature along with low relative humidity have a negative effect on the sensor's lifetime. In case of an atmoshpere having an oxygen content of less than 1 % for longer than 1 hour, there will be an underestimation of the measured value.

c) infrared sensors: Vapor acids and alkalis can etch the optical system and distort the measurements. A check or a calibration may be neccesery.

d) semiconductor sensors: Short-term exposure to gases or vapors of organic solvents, which greatly exceed the maximum range of the sensor, may damage the sensor and a recalibration or replacement may be required. In case of an atmoshpere having na oxygen content of less than 18 %, there will be an underestimation of the measured value.

e) photoionization sensors: the UV lamp or sensor must be replaced regularly, as its clogging of can cause loss of signal.

2. *Operation*

To maintain proper operation of the transmitter it is neccesery to respect the fact, that the presence of certain concentrations of gases or vapors, other than those for which the sensor is set, can cause an alarm, even if the concentration of the gas does not exceed the set level. Given the range of disturbing gases or vapors (diluents, exhaust gases, vapors of organic substances, disinfectants, etc.) a generally allowable concentration of interfering gases can not be determined. Data on cross-sensitivity to certail gases are included at the apporpriate sensors. Therefore before processing project documentation we recommend to have the air in the deployment area of the detection system analyzed.

3. *Operation/Maintenance*

In case of contamination the surface can be cleaned with a slightly moistened cloth. The connected transmitters require performing of regular calibrations.

Recommended Default settings:

1 x every 6 months carry out a **„calibration“** - adjust the sensitivity of the sensor using calibration gas and check the functionality of the system. The exact interval depends on the purity of the environment, required accuracy and the occurrence of disturbing gases in the atmosphere.

The calibration interval can be changed by the DEGA Config software.

Perform calibration only at certified service centers with a valid certificate of competence or the manufacturer.
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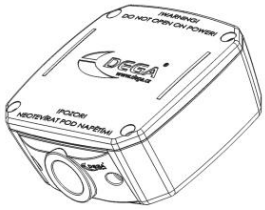
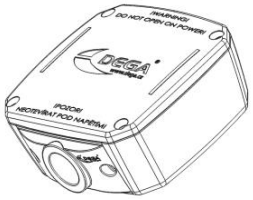
Accessories

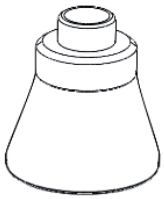
1. ***Calibration adapter/connection to the gas pump DEGA GAS INLET***

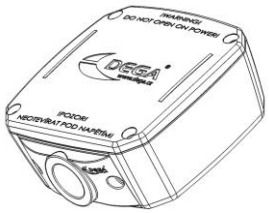


2. ***Cover against splashing water DEGA WATER CAP***

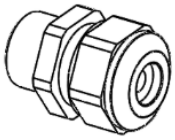


3. ***Funnel for gas collection DEGA COLLECT CAP***





4. ***Additional DEGA CABLE GLAND for NB III***



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Gas specification

Gas	Formula	CAS	Measuring range
Acetylene	C_2H_2	74-86-2	0-100 % LEL
Ammonia	NH_3	7664-41-7	0-100 ppm
Ammonia	NH_3	7664-41-7	0-1000 ppm
Ammonia	NH_3	7664-41-7	0-10000 ppm
Ammonia	NH_3	7664-41-7	0-500 ppm
Ammonia	NH_3	7664-41-7	0-5000 ppm
Ammonia	NH_3	7664-41-7	0-2000 ppm
Bromine	Br	7726-95-6	0-20 ppm
Bromine	Br	7726-95-6	0-200 ppm
Butane / Propan-Butane / LGP	C_4H_{10}	106-97-8	0-100 % LEL
Carbon dioxide	CO_2	124-38-9	0-5 % vol.
Carbon dioxide	CO_2	124-38-9	0-100 % vol.
Carbon monoxide	CO	630-08-0	0-1000 ppm
Carbon monoxide	CO	630-08-0	0-200 ppm
Carbon monoxide	CO	630-08-0	0-500 ppm
Carbon monoxide	CO	630-08-0	0-2000 ppm
Ethane	C_2H_6	74-84-0	0-100 % LEL
Ethanol	C_2H_5OH	64-17-5	0-100 % LEL
Ethylene	C_2H_4	74-85-1	0-10 ppm
Ethylene	C_2H_4	74-85-1	0-200 ppm
Ethylene	C_2H_4	74-85-1	0-1500 ppm
Ethylene	C_2H_4	74-85-1	0-100 % LEL
Ethylene oxide	C_2H_4O	75-21-8	0-10 ppm
Ethylene oxide	C_2H_4O	75-21-8	0-100 ppm
Ethylene oxide	C_2H_4O	75-21-8	0-1000 ppm
Ethylene oxide	C_2H_4O	75-21-8	0-500 ppm
Ethylene oxide	C_2H_4O	75-21-8	0-100 % LEL
Formaldehyde	CH_2O	50-00-0	0-10 ppm
Formaldehyde	CH_2O	50-00-0	0-50 ppm
Formaldehyde	CH_2O	50-00-0	0-1000 ppm
Hexane (Petrol)	C_6H_{14}	110-54-3	0-100 % LEL
Hydrogen	H_2	1333-74-0	0-100 % LEL
Hydrogen	H_2	1333-74-0	0-1000 ppm
Hydrogen	H_2	1333-74-0	0-4000 ppm
Hydrogen	H_2	1333-74-0	0-40000 ppm
Hydrogen bromide	HBr	10035-10-6	0-20 ppm
Hydrogen bromide	HBr	10035-10-6	0-200 ppm
Hydrogen cyanide	HCN	74-90-8	0-50 ppm
Hydrogen fluoride	HF	7664-39-3	0-10 ppm
Hydrogen chloride	HCl	7647-01-0	0-20 ppm
Hydrogen chloride	HCl	7647-01-0	0-200 ppm

Gas	Formula	CAS	Measuring range
Hydrogen peroxide	H_2O_2	7722-84-1	0-100 ppm
Hydrogen peroxide	H_2O_2	7722-84-1	0-500 ppm
Hydrogen sulfide	H_2S	7783-06-4	0-50 ppm
Hydrogen sulfide	H_2S	7783-06-4	0-500 ppm
Hydrogen sulfide	H_2S	7783-06-4	0-100 ppm
Hydrogen sulfide	H_2S	7783-06-4	0-2000 ppm
Chlorine	CL_2	7782-50-5	0-20 ppm
Chlorine	CL_2	7782-50-5	0-200 ppm
Chlorine dioxide	ClO_2	10049-04-4	0-50 ppm
Methane	CH_4	74-82-8	0-100 % LEL
Nitric oxide	NO	10102-43-9	0-25 ppm
Nitric oxide	NO	10102-43-9	0-250 ppm
Nitric oxide	NO	10102-43-9	0-1000 ppm
Nitrogen dioxide	NO_2	10102-44-0	0-20 ppm
Nitrogen dioxide	NO_2	10102-44-0	0-100 ppm
Nitrogen dioxide	NO_2	10102-44-0	0-500 ppm
Nitrous oxide	N_2O	10024-97-2	0-1 % vol.
Organic acids	RCOOH		0-100 ppm
Other flammable and combustible gases and vapors	HC		0-100 % LEL
Oxygen	O_2	17778-80-2	0-1 %
Oxygen	O_2	17778-80-2	0-30 %
Ozone	O_3	10028-15-6	0-5 ppm
Ozone	O_3	10028-15-6	0-100 ppm
Pentane	C_5H_{12}	109-66-0	0-100 % LEL
Phosphine	PH_3	7803-51-2	0-5 ppm
Phosphine	PH_3	7803-51-2	0-20 ppm
Phosphine	PH_3	7803-51-2	0-200 ppm
Phosphine	PH_3	7803-51-2	0-2000 ppm
Propylene	C_3H_6	115-07-1	0-100 % LEL
Refrigerant	R		0-2000 ppm
Refrigerant	HFO	754-12-1	0-2000 ppm
Silane	SiH_4	7803-62-5	0-1 ppm
Sulfur dioxide	SO_2	7446-09-5	0-20 ppm
Sulfur dioxide	SO_2	7446-09-5	0-200 ppm
Sulfur dioxide	SO_2	7446-09-5	0-2000 ppm
Sulfur dioxide	SO_2	7446-09-5	0-100 ppm
Sulfur dioxide	SO_2	7446-09-5	0-1000 ppm
Sulfur dioxide	SO_2	7446-09-5	0-10000 ppm
Volatile organic compounds	VOC		0-20 ppm (el. sensor)
Volatile organic compounds	VOC		0-3000 ppm - according to gas (PID sensor)

Add-on modules

Product code	Name	Product description
20200009	DEGA NB III RS485	Internal output RS485

Attachments

1. *Chart for setting the transmitter adress*

adress	1	2	3	4	5
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
5	ON	OFF	ON	OFF	OFF
6	OFF	ON	ON	OFF	OFF
7	ON	ON	ON	OFF	OFF
8	OFF	OFF	OFF	ON	OFF
9	ON	OFF	OFF	ON	OFF
10	OFF	ON	OFF	ON	OFF
11	ON	ON	OFF	ON	OFF
12	OFF	OFF	ON	ON	OFF
13	ON	OFF	ON	ON	OFF
14	OFF	ON	ON	ON	OFF
15	ON	ON	ON	ON	OFF
16	OFF	OFF	OFF	OFF	ON

adress	1	2	3	4	5
17	ON	OFF	OFF	OFF	ON
18	OFF	ON	OFF	OFF	ON
19	ON	ON	OFF	OFF	ON
20	OFF	OFF	ON	OFF	ON
21	ON	OFF	ON	OFF	ON
22	OFF	ON	ON	OFF	ON
23	ON	ON	ON	OFF	ON
24	OFF	OFF	OFF	ON	ON
25	ON	OFF	OFF	ON	ON
26	OFF	ON	OFF	ON	ON
27	ON	ON	OFF	ON	ON
28	OFF	OFF	ON	ON	ON
29	ON	OFF	ON	ON	ON
30	OFF	ON	ON	ON	ON
31	ON	ON	ON	ON	ON
32	OFF	OFF	OFF	OFF	ON

2. *Signalization transmitted by the current loop 4-20 mA*

Measurement: The measure concentration is directly proportional to 4-20 mA current output
Exceeding the range of measured concentrations: Current output ranges from 20-22 mA
End of valid calibration: Current output transmits the actual measured concentration for 9 s in a 4-20 mA range and for 1 s 2 mA current
Malfunction: Current output will be set to 0,5 mA
Service intervention (forming sequence of the sensor): Current output will be set to 1 mA

3. *Content of package*

1 x NB III body
1 x NB III sensor unit

General warranty terms and conditions

When following the instructions for installation, operation and maintenance, the manufacturer guarantee 24 months from the date of receipt for the product. Should the product purchased be put into operation by an entity other than the seller, the warranty period commences from the date that the product is put into operation, provided that the buyer ordered its commissioning within three weeks of its receipt. The customer expressly acknowledges that during the warranty period that extends beyond the length of the warranty period that is specified in the Commercial Code (the statutory warranty) s/he can neither require replacement of the product nor may s/he withdraw from the contract.

1. When claiming a product defect it is necessary to submit a proof of purchase that contains the following information: name and surname, name and business name, address and the warranty card, if the buyer received one from the seller. The validity of the warranty shall not be affected by non-compliance with the obligations related to the issuance of the warranty card.
2. Claims concerning the product (for a warranty repair only complete devices are accepted) may be filed during the warranty period only with the seller from which it was purchased; subsequently the seller is required to forward the product to an authorised service centre or to the manufacturer.
3. A condition for the recognition of the rights under the warranty is the installation of the product having been undertaken by an authorised person in possession of a valid certificate from the manufacturer.
5. Claims regarding a product defect that can be dealt with reasonably quickly and without additional consequences will be resolved by remedying the defect (repair) or by replacement of the product part , because in such a case it is a contradiction of the standard norms that the entire product shall be replaced (§ 616, paragraph 4 of the Commercial Code).
6. The buyer who exercises the right of warranty repair is not entitled to the return of the parts that have been replaced.
7. The warranty period can be extended for up to 48 months and its validity can be extended beyond the standard length on the basis of the conclusion of an individual warranty contract. Further information may be obtained through a specific business meeting

This warranty is not applicable to:

- a product that has not **been put into operation by the manufacturer or by a certified employee** in possession of a valid certificate issued by the manufacturer
- A product that did not have regulary performed calibrations and functional checks by the manufacturer or by a certified employee is possession of a valid certificate issued by the manufacturer.
- damage caused by fire, water, static electricity, power surges in the electric supply or in the public network, accident, improper use of the product, wear and tear
- contamination of the product and its subsequent cleaning
- damage caused by **improper installation, any adjustment, modification** or improper manner of use inconsistent with the instruction manual, the technical standards or the applicable safety regulations in the Czech Republic
- damage to the product during transportation caused by improper handling or handling of the product in a manner contrary to the advice provided in the instruction manual
- DEGA products that have **been used in association with other than original DEGA products**, including consumables and accessories
- **transmitter calibrations,** setting the detection limits
- **detoriation or destruction of the sensors, including their replacement**
- bearing additional parts or consumables (e.g. a foil label, seal, etc.), that are detrimental to normal wear and tear during operation, together with wear and tear of the product and its parts caused by their normal use.

For the complete version of the general business conditions and of the claims procedure go to www.dega.cz

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