

Preliminary Remarks

- This list can only state a selection of gases and vapours which can be measured. In case of not listed gases we kindly ask you to contact *ExTox*.
- You will find parameters for explosion and health protection concerning the listed gases and vapours on our *ExTox*-Homepage.
- The following types are not mentioned in the list below. The *ExTox* Sales Team will inform you about article numbers on demand.
 - Transmitter *ExSens-I/Sens-I*: integrated RS 485-Interface for remote adjustment
 - Transmitter ...-IR3: measuring tolerances are more constricted for this type compared with Type ...-IR2. But this type is not suitable for measurement in aggressive medium, such as for example biogas or dump gas.
 - Transmitter *ExSens ...-V-...*: type with sealed sensor block for operation in sampling systems, for example *ExTox* IMC.
 - Transmitter *Sens ...-P-...-IR*: types including integrated pressure compensation
- Transmitter *Sens* with stainless steel (VA) housing for areas with special hygienic requirements
- On demand the Standard-Measuring range can at factory-sided adjustment be varied in range of 50 to 200 %. Higher deviations on demand.

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/Remarks
Acetone (CH ₃ COCH ₃)				see: Flammable Gases
Acetonitrile (CH ₃ CN)				see: Ethylene Oxide
Acetylene (C ₂ H ₂)				see: Flammable Gases
Alcohols, e. g. Methanol, Ethanol	CH ₃ OH-200-EC	211306/251078	0...100 % LEL 0...200 ppm	<ul style="list-style-type: none"> ▪ see: Flammable Gases ▪ Cross sensitivities: 100 ppm CO → appr. 60 ppm CH₃OH unsaturated hydrocarbons → quantisation not possible ▪ Temperature: -20 °C bis +45 °C ▪ Response time t₉₀: 30 s (Ethanol), 180 s (Methanol) ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm
Ammonia (NH ₃)	NH ₃ -3-WT	211202/251000	0...30000 ppm (3 % (v/v))	<ul style="list-style-type: none"> ▪ Main application: ammonia refrigerating plants: machine rooms (ambient air) and discharging lines (installation with pipe adapter) of ammonia refrigerating plants ▪ Temperature: -20 °C to +55 °C ▪ Response time t₉₀: 20 s
	NH ₃ -5000-EC	211319/-----	0...5000 ppm	<ul style="list-style-type: none"> ▪ Transmitter with extension of measuring range ▪ Operation in sampling systems, for example <i>ExTox</i> IMC ▪ Cross sensitivities: 20 ppm H₂S → appr. 2 ppm NH₃ 20 ppm SO₂ → appr. -40 ppm NH₃ (!) ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm ▪ Temperature: -20 °C to +45 °C ▪ Response time t₉₀: 60 s
	NH ₃ -1000-EC	211201/251010	0...1000 ppm	<ul style="list-style-type: none"> ▪ Main application: ammonia refrigerating plants: machine rooms, production and storage rooms (ambient air) ▪ Lifetime depends on application rate, basic load with ammonia at place of installation to be avoided. ▪ Cross sensitivities: 20 ppm H₂S → appr. 2 ppm NH₃ 20 ppm SO₂ → appr. -40 ppm NH₃ (!) ▪ Temperature: -20 °C to +40 °C ▪ Response time t₉₀: 60 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Ammonia (NH ₃) - continued -	NH ₃ -1000-EC	211320/ 251086	0...1000 ppm	<ul style="list-style-type: none"> Main application: ammonia refrigerating plants: machine rooms, production and storage rooms (ambient air) Lifetime depends on application rate, basic load with ammonia at place of installation to be avoided. Cross sensitivities: 20 ppm H₂S → appr. 20 ppm NH₃ 20 ppm SO₂ → appr. -5 ppm NH₃ (!) 20 ppm NO → appr. -20 ppm NH₃ (!) Temperature: -40 °C to +40 °C Response time t₉₀: 60 s
	NH ₃ -T-1000-EC	211220/ 251014	0...1000 ppm	<ul style="list-style-type: none"> Main application: ammonia refrigerating plants: machine rooms, production and storage rooms (ambient air) Lifetime depends on application rate, basic load with ammonia at place of installation to be avoided. Cross sensitivities: 100 ppm CO → appr. 100 ppm NH₃ 100 ppm H₂ → appr. 100 ppm NH₃ 20 ppm H₂S → appr. 40 ppm NH₃ 20 ppm SO₂ → appr. 5 ppm NH₃ Alcohol and amines Temperature: -40 °C to +40 °C (low temperature application) Response time t₉₀: 90 s
	NH ₃ -1000-HL2	211303/ 251073	0...1000 ppm	<ul style="list-style-type: none"> Main application ammonia refrigerating plants: machine room (ambient air) Warning device, measuring accuracy limited due to measuring principle Temperature: -20 °C to +55 °C Response time t₉₀: 60 s
	NH ₃ -100-EC2	211296/ 251071	0...100 ppm	<ul style="list-style-type: none"> Main application work places (ambient air) Lifetime depends on application rate, basic load with ammonia at place of installation to be avoided. Cross Sensitivities: 20 ppm H₂S → appr. 2 ppm NH₃ 20 ppm SO₂ → appr. -40 ppm NH₃ (!) Temperature: -20 °C to +40 °C Response time t₉₀: 60 s
Ammonia (NH ₃) in fluid medium	NH ₃ -20-IS	291015 291054/ -----	0...20 ppm in brine	<ul style="list-style-type: none"> Main application: ammonia refrigerating plants: brine and cooling water circuits, basins separate Data Sheet
Argon (Ar)				Can only be measured by means of oxygen deficiency
Arsine (AsH ₃)				see: Hydride Gases (Silane, Phosphine)
Benzol (C ₆ H ₆)				see: Flammable Gases
Boron Trichloride (BCl ₃)				see: Hydrogen Chloride
Boron Trifluoride (BF ₃)				see: Hydrogen Fluoride
Butane, n-/ Isobutane (C ₄ H ₁₀)				see: Flammable Gases
Butane-1-ol (C ₄ H ₉ OH)				see: Flammable Gases
Butane-2-ol (C ₄ H ₉ OH)				see: Flammable Gases
Butanone (CH ₃ COC ₂ H ₅)				see: Flammable Gases
Butylacetate (CH ₃ COOC ₄ H ₉)				see: Flammable Gases

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Carbon Dioxide (CO ₂)	CO2-100-IR2	211226/ 251031	0...100 % (v/v)	<ul style="list-style-type: none"> Main application: gas Analysis, for example biogas and dump gas Operation in sampling systems, for example ExTox IMC above 50 % (v/v) measuring accuracy is limited Temperature: -10 °C to +55 °C Response Time t₉₀: 25 s (operation by means of aspiration: 10 s)
	CO2-5-IR2	211236/ 251016	0...5 % (v/v)	<ul style="list-style-type: none"> Temperature: -10 °C to +55 °C Response Time t₉₀: 25 s
	CO2-T-5-IR2	211241/ 251051	0...5 % (v/v)	<ul style="list-style-type: none"> Temperature: -25 °C to +55 °C (low temperature application) Response Time t₉₀: 25 s
	CO2-10000-IR3	211292/ -----	0...10000 ppm (0...1 % (v/v))	<ul style="list-style-type: none"> Temperature: -0 °C to +45 °C Response Time t₉₀: 25 s
	CO2-5000-IR2	211237/ 251021	0...5000 ppm	<ul style="list-style-type: none"> Temperature: -10 °C to +55 °C Response Time t₉₀: 25 s
	CO2-1000-IR3	211307/ -----	0...1000 ppm	<ul style="list-style-type: none"> Temperature: -0 °C to +45 °C Response Time t₉₀: 25 s
	CO2-500-IR3	211261/ -----	0...500 ppm	<ul style="list-style-type: none"> Temperature: -0 °C to +45 °C Response Time t₉₀: 25 s
Carbon Monoxide (CO)	IR-Gascard	293007	0...100 % (v/v)	<ul style="list-style-type: none"> Special version (gas card) Operation only in sampling systems, for example ExTox IMC Top hat rail mounting in closed housings only
	IR-Gascard	293006	0...35 % (v/v)	<ul style="list-style-type: none"> Special version (gas card) Operation only in sampling systems, for example ExTox IMC Top hat rail mounting in closed housings only
	CO-30-IR-P	211305/ -----	0...30 % (v/v)	<ul style="list-style-type: none"> Special version Operation only in sampling systems, for example ExTox IMC Temperature: -10 °C to +40 °C Response Time t₉₀: 30 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	CO-4-EC	211256/ -----	0...4 % (v/v) (40000 ppm)	<ul style="list-style-type: none"> Cross sensitivities: 10000 ppm H₂ → appr. 10000 ppm CO 10000 ppm C₂H₄ → appr. 1000 ppm CO Temperature: -10 °C to +40 °C Response Time t₉₀: 40 s
	CO-2-IR-P	211278/ -----	0...2 % (v/v)	<ul style="list-style-type: none"> Special version Operation only in sampling systems, for example ExTox IMC Temperature: -10 °C to +40 °C Response Time t₉₀: 30 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	CO-4000-EC	211230/ 251030	0...4000 ppm	<ul style="list-style-type: none"> Cross sensitivities: 1000 ppm H₂ → appr. 600 ppm CO 1000 ppm C₂H₄ → appr. 100 ppm CO Temperature: -10 °C to +40 °C Response Time t₉₀: 40 s
	CO-2000-IR-P	211302/ -----	0...2000 ppm	<ul style="list-style-type: none"> Special version Operation only in sampling systems, for example ExTox IMC Temperature: -10 °C to +40 °C Response Time t₉₀: 30 s Dimensions Type Sens: 220 mm x 140 mm x 85 mm
	CO-300-EC	211205/ 251006	0...300 ppm	<ul style="list-style-type: none"> Cross sensitivities: 100 ppm H₂ → appr. 40 ppm CO 100 ppm C₂H₄ → appr. 50 ppm CO Temperature: -10 °C to +40 °C Response Time t₉₀: 40 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Carbon Monoxide (CO) - continued -	CO-50-EC	211308/ -----	0...50 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 10 ppm H₂ → appr. 4 ppm CO 10 ppm C₂H₄ → appr. 5 ppm CO 50 ppm C₂H₅OH → < 3 ppm CO ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 40 s
Chlorine (Cl ₂)	Cl2-10-EC	211209/ -----	0...10 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 1 ppm Br₂ → appr. 1 ppm Cl₂ 1 ppm F₂ → appr. 0.4 ppm Cl₂ 1 ppm ClO₂ → appr. 0.5 ppm Cl₂ 10 ppm SO₂ → appr. 2 ppm Cl₂ 10 ppm NO₂ → appr. 2 ppm Cl₂ ▪ At longer application of Hydrogen Sulphide the sensor gets insensitive. ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration. ▪ Type Sens: Sensor protection cap made of PTFE ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 30 s
	Cl2-50-EC	211298/ -----	0...50 ppm	As Cl2-10-EC
Chlorine Dioxide (ClO ₂)	ClO2-1-EC2	211276/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 1 ppm Cl₂ → appr. 0.6 ppm ClO₂ 20 ppm H₂S → appr. -5 ppm ClO₂ (!) 0.5 ppm O₃ → appr. 1.5 ppm ClO₂ ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration. ▪ Warning device, limited measuring accuracy ▪ An adjustment with Chlorine Dioxide is impossible under usual operation conditions. Calibration with replacement gas Chlorine. ▪ At place of installation a functional test can only be done with Chlorine ▪ Sensor protection cap made of PTFE ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 120 s, t₅₀: 20 s
Climatic Variables: Temperature, Humidity, Pressure	TF	211265/ 251047	-40...120 °C, 0...100 % r.H.,	separate Data Sheet
	TFD	211255/ -----	-40...120 °C, 0...100 % r.H., 0...2000 hPa (mbar)	separate Data Sheet
Cooling Agents	KM-1-HL	211213/ 251018	0...5000 ppm (0,5 % (v/v)) down to 0...500 ppm	<ul style="list-style-type: none"> ▪ Main application: leakage detection for cooling agents containing hydrogen (for example R134a, R404a, R507, R152a, R22, R1234yf, ...) ▪ Measuring range limited for some refrigerants, e. g. R22 or R1234yf ▪ Warning device, Measuring accuracy limited due to principle ▪ Temperature: -20 °C to +50 °C ▪ Response Time t₉₀: 60 s
	KM-2000-IR	211324/ -----	0...2000 ppm	<ul style="list-style-type: none"> ▪ Special version ▪ Broadband-Sensor for R134a, R23, R32, R125, R404a, R407a, R 407f, R410a, R448,a, R449a, R452a, R455a, R513a ▪ Temperature: -20 °C to +40 °C ▪ Response time t₉₀: 60 s ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	R1234ze-1000-IR	211325/ -----	0...1000 ppm	<ul style="list-style-type: none"> ▪ Special version ▪ Temperature: -20 °C to +40 °C ▪ Response time t₉₀: 60 s ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Cooling Agents - continued -	R134-2000-IR	211291/ -----	0...2000 ppm	<ul style="list-style-type: none"> Special version Temperature: -20 °C to +40 °C Response time t_{90}: 60 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	R410A-2000-IR	211312/ -----	0...2000 ppm	<ul style="list-style-type: none"> Special version Temperature: -20 °C to +40 °C Response time t_{90}: 60 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	R507-1000-IR	211294/ -----	0...1000 ppm	<ul style="list-style-type: none"> Special version Temperature: -20 °C to +40 °C Response time t_{90}: 60 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	R513A-2000-IR	211323/ -----	0...2000 ppm	<ul style="list-style-type: none"> Special version Temperature: -20 °C to +40 °C Response time t_{90}: 60 s Dimensions Type Sens: 188 mm x 105 mm x 65 mm
Diborane (B ₂ H ₆)				see: Hydride Gases (Silane, Phosphine)
Diethyl Ether (C ₂ H ₅ OC ₂ H ₅)				see: Flammable Gases
Dimethyl Ether (CH ₂ OCH ₄)				see: Flammable Gases
Ethane (C ₂ H ₆)				see: Flammable Gases
Ethanol (C ₂ H ₅ OH)				see: Alcohols
Ethine (C ₂ H ₂)				see: Flammable Gases
Ethene/ Ethylene (C ₂ H ₄)				see: Flammable Gases
	C2H4-2000-IR-P	211318/ -----	0...2000 ppm	<ul style="list-style-type: none"> Special version Operation only in sampling systems, for example <i>ExTox</i> IMC Temperature: -10 °C to +40 °C Response Time t_{90}: 30 s Dimensions Type Sens: 220 mm x 140 mm x 85 mm
	C2H4-1000-EC	211240/ 251022	0...1000 ppm	<ul style="list-style-type: none"> Cross sensitivities: <ul style="list-style-type: none"> 10 ppm H₂ → appr. 6 ppm C₂H₄ 10 ppm H₂S → appr. 25 ppm C₂H₄ 10 ppm SO₂ → appr. 6 ppm C₂H₄ 10 ppm NO → appr. 3 ppm C₂H₄ 10 ppm NO₂ → appr. 6 ppm C₂H₄ 10 ppm HCN → appr. 5 ppm C₂H₄ Temperature: -10 °C to +40 °C Response Time t_{90}: 40 s
Ethyl Acetate (CH ₃ COOC ₂ H ₅)				see: Flammable Gases
Ethylene Oxide (C ₂ H ₄ O)	EO-100-EC	211219/ 251013	0...100 ppm	<ul style="list-style-type: none"> The used sensor disposes of a limited selectivity. But this fact allows an application for a lot of other gases, if these are only binary mixtures (measured gas/air) and the absolute measuring accuracy only plays a subordinated role. Cross sensitivities (Selection): <ul style="list-style-type: none"> 100 ppm C₂H₆O → appr. 55 ppm C₂H₄O 100 ppm C₇H₈O → appr. 20 ppm C₂H₄O 100 ppm C₄H₈O → appr. 10 ppm C₂H₄O 100 ppm CO → appr. 40 ppm C₂H₄O (further gases: please contact <i>ExTox</i> on demand) Calibration with replacement gas: please contact <i>ExTox</i> Temperature: -20 °C to +40 °C Response Time t_{90}: 120 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Ethylene Oxide (C ₂ H ₄ O) - continued -	EO-500-EC	211311/ -----	0...500 ppm	<ul style="list-style-type: none"> Transmitter with extension of measuring range Operation in sampling systems, for example <i>ExTox</i> IMC Dimensions Type Sens: 188 mm x 105 mm x 65 mm Else as transmitter EO-100-EC
Flammable Gases and Vapours	BG-100-IR2	211227/ 251024	0...100 % (v/v)	<ul style="list-style-type: none"> Main application: gas analysis methane (CH₄), for example biogas or dump gas Designed for measurement in the range of 40 to 60 % (v/v) CH₄ Operation in sampling systems, for example <i>ExTox</i> IMC Temperature: -20 °C to +55 °C Response Time t₉₀: 30 s (operation by means of aspiration: 10 s)
	IR-Gascard	293000/ -----	0...100 % (v/v)	<ul style="list-style-type: none"> Main application: gas analysis methane (CH₄), gas feed-in systems Special version (Gascard) Operation in sampling systems only, for example <i>ExTox</i> IMC Top hat rail mounting in closed housings only
	BG-IR2	211216/ 251005	0...100 % LEL	<ul style="list-style-type: none"> Main application: areas with danger of sensor poison (for example sewage plants), areas with oxygen reduction, areas with use of higher hydrocarbons Measuring gas: hydrocarbons (HC) Temperature: -20 °C to +55 °C Response Time t₉₀: 30 s (operation by means of aspiration: 10 s)
	BG-WT	211206/ 251001	0...100 % LEL	<ul style="list-style-type: none"> Main application: all standard applications for explosion protection Measuring gases: all flammable gases Temperature: -25 °C to +55 °C Response Time t₉₀: 15...60 s, depending on gas type
	BG-HL	211207/ 251004	0...100 % LEL	<ul style="list-style-type: none"> Main application: monitoring of ambient air, for example heating Measuring gases: Hydrogen, Methane, Propane, Butane (other gases possible acc. to prior agreement with <i>ExTox</i>) Warning device, measuring accuracy limited due to principle Temperature: -25 °C to +55 °C Response Time t₉₀: 30...60 s, depending on gas type
	BG-5000-HL	211215/ 251002	0...5000 ppm	<ul style="list-style-type: none"> Main application: detection of leakages and vestiges Measuring gases: Hydrogen, Methane, Propane or Butane (other gases possible acc. to prior agreement with <i>ExTox</i>) Warning device, measuring accuracy limited due to principle Temperature: -25 °C to +55 °C Response Time t₉₀: 30...60 s, depending on gas type
Fluorine (F ₂)	F2-10-EC	211258/ -----	0...10 ppm	<ul style="list-style-type: none"> As F2-1-EC, except Response Time t₉₀: 90 s, t₅₀: 40 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Fluorine (F ₂) - continued -	F2-1-EC	211228/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Warning device, limited measuring accuracy ▪ Lifetime: appr. 1...2 years ▪ Cross sensitivities: 0.2 ppm AsH₃ → appr. 1 ppm F₂ 0.5 ppm Cl₂ → appr. 0.7 ppm F₂ 0.5 ppm O₃ → appr. 0.6 ppm F₂ 0.3 ppm HCN → appr. -1 ppm F₂ (!) 0.5 ppm NO₂ → appr. -1 ppm F₂ (!) 0.5 ppm H₂S → appr. -1 ppm F₂ (!) Br₂, PH₃ (impossible to quantize) ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration. ▪ An adjustment with Fluorine is impossible under usual operation conditions. Calibration with replacement gas Chlorine. ▪ At place of installation a functional test can only be done with Chlorine ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 90 s, t₅₀: 30 s
Freons				see: Cooling agents
Fuels (Mixture)				see: Flammable Gases
German (GeH ₄)				see: Hydride Gases (Silane, Phosphine)
Helium (He)				Can only be measured by means of oxygen deficiency
Heptane, n- (C ₇ H ₁₆)				see: Flammable Gases
Hexane, n- (C ₆ H ₁₄)				see: Flammable Gases
Humidity, relative				see: Climatic Variables
Hydride Gases				see: Silane, Phosphine
Hydrogen (H ₂)	WLD-Gascard H2	293012 293016 293020/ -----	0...100 % (v/v) 0...50 % (v/v) 0...10 % (v/v)	<ul style="list-style-type: none"> ▪ Measuring principle: Thermal conductivity ▪ Main application: Gas analysis ▪ Special version ▪ Operation in sampling systems only, for example ExTox IMC ▪ Installation in closed housings only ▪ Gas cooler required in case of changing humidity ▪ Measurement in binary gas mixtures only (Every additional component will affect the readings due to different thermal conductivity) ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 30 s
	BG-WT	211206/ 251001	0...100 % LEL	see: Flammable Gases
	BG-HL	211207/ 251004	0...100 % LEL	see: Flammable Gases
	H2-2-EC	211229/ 251026	0...2 % (v/v)	<ul style="list-style-type: none"> ▪ Cross sensitivities: 100 ppm H₂S → appr. 200 ppm H₂ unsaturated hydrocarbons (impossible to quantize) ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 60 s
	H2-1-EC	211251/ 251077	0...1 % (v/v)	<ul style="list-style-type: none"> ▪ Maximum measuring range: 1 % H₂ (v/v) ▪ Cross sensitivities: 100 ppm CO → appr. 60 ppm H₂, 10 ppm NO₂ → appr. -40 ppm H₂ (!), H₂S: Filter with dose dependent life time, unsaturated hydrocarbons (impossible to quantize) ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 60 s
	BG-5000-HL	211215/ 251002	0...5000 ppm	see: Flammable Gases

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Hydrogen (H ₂) - continued -	H2-1000-EC	211225/ 251017	0...1000 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 10 ppm H₂S → appr. 2 ppm H₂ 10 ppm H₂S → appr. 2 ppm H₂ 10 ppm NO → appr. 3 ppm H₂ 10 ppm HCN → appr. 3 ppm H₂ 10 ppm C₂H₄ → appr. 8 ppm H₂ unsaturated hydrocarbons (impossible to quantize) ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 60 s
	H2-1000-EC incl. Activated carbon filter	211243/ -----	0....1000 ppm	<ul style="list-style-type: none"> ▪ Main application: biogas analysis ▪ Activated carbon filter for reduction of cross sensitivities ▪ Operation only in sampling systems, for example ExTox IMC ▪ Cross sensitivities: activated carbon filter have to be replaced depending on contamination, otherwise penetration takes place ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 50 s
Hydrogen Bromide (HBr)				see: Hydrogen Chloride
Hydrogen Chloride (HCl)	HCL-50-EC	211210/ -----	0...50 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 1 ppm HBr → appr. 1 ppm HCl 20 ppm H₂S → appr. 15 ppm HCl 20 ppm SO₂ → appr. 10 ppm HCl 20 ppm HCN → appr. 10 ppm HCl 100 ppm NO → appr. 45 ppm HCl 0.2 ppm As → appr. 0.8 ppm HCl 0.1 ppm PH₃ → appr. 0.8 ppm HCl ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 90 s, t₅₀: 40s
Hydrochloric Acid Vapours (HCl)				see: Hydrogen Chloride
Hydrogen Cyanide (HCN)	HCN-30-EC	211239/ -----	0...30 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 50 ppm NO → appr. -3 ppm HCN (!) 20 ppm NO₂ → appr. -14 ppm HCN (!) 20 ppm H₂S → appr. 40 ppm HCN (delayed) ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 60 s
Hydrogen Fluoride (HF)	HF-10-EC	211235/ -----	0...10 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 1 ppm Cl₂ → appr. 0.7 ppm HF 20 ppm SO₂ → appr. 16 ppm HF 10 ppm HCl → appr. 6 ppm HF Fluoride (impossible to quantize) ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration. ▪ Calibration with replacement gas Hydrogen Chloride or Chlorine. ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 100 s, t₅₀: 50 s
Hydrogen peroxide (H ₂ O ₂)	H2O2-100-EC	211301/ -----	0...100 ppm	<ul style="list-style-type: none"> ▪ Cross sensitivities: 10 ppm SO₂ → appr. 10 ppm H₂O₂ ▪ Temperature: -20 °C to +40 °C ▪ Response time t₉₀: 60 s

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Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/Remarks
Hydrogen Sulphide (H ₂ S)	H2S-5000-EC/ H2S-V-5000-EC	211297/ 251075	0...5000 ppm	<ul style="list-style-type: none"> Main application: gas analysis, for example biogas and dump gas Operation only in sampling systems, for example <i>ExTox</i> IMC Cross sensitivities: <ul style="list-style-type: none"> 10 ppm NO₂ → appr. -25 ppm H₂S (!) 10 ppm Cl₂ → appr. -15 ppm H₂S (!) 50 ppm NO → appr. 10 ppm H₂S 20 ppm SO₂ → appr. 20 ppm H₂S Temperature: -20 °C to +45 °C Response Time t₉₀: 60 s
	H2S-3000-EC/ H2S-V-3000-EC2	211224/ 251049	0...3000 ppm	<ul style="list-style-type: none"> Main application: gas analysis, for example biogas and dump gas Transmitter with extension of measuring range Operation in sampling systems, for example <i>ExTox</i> IMC Cross sensitivities: <ul style="list-style-type: none"> 1 % (v/v) H₂ → appr. 10...20 ppm H₂S Dimensions Type Sens: 188 mm x 105 mm x 65 mm Temperature: -20 °C to +45 °C Response time t₉₀: 60 s
	H2S-100-EC	211212/ 251003	0...100 ppm	<ul style="list-style-type: none"> Main application: ambient air monitoring, gas analysis Cross sensitivities: <ul style="list-style-type: none"> 5 ppm NO₂ → appr. -1 ppm H₂S (!) 10 ppm HCN → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) ppm H₂ → appr. 15 ppm H₂S Hydrogen Sulphide concentrations above the end value of measuring range may destroy the sensor already after a short time. Temperature: -40 °C to +45 °C Response Time t₉₀: 60 s
	H2S-100-EC-BIO	211289/ ---	0...100 ppm	<ul style="list-style-type: none"> Main application: gas analysis, for example biogas and dump gas Operation only in sampling systems, for example <i>ExTox</i> IMC Protection above Hydrogen Sulphide concentrations above the end value of measuring range up to appr. 500 ppm Cross sensitivities: <ul style="list-style-type: none"> 1 % (v/v) H₂ → appr. 15 ppm H₂S Dimensions Type Sens: 188 mm x 105 mm x 65 mm Temperature: -40 °C to +45 °C Response Time t₉₀: 60 s
	H2S-50-EC	211287	0...50 ppm	<ul style="list-style-type: none"> Low cross sensitivity to H₂ Cross sensitivities: <ul style="list-style-type: none"> 5 ppm NO₂ → appr. -1 ppm H₂S (!) 10 ppm HCN → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) ppm H₂ → < 5 ppm H₂S H₂S concentrations above the end value of measuring range may destroy the sensor already after a short time. Temperature: -40 °C to +45 °C Response Time t₉₀: 60 s
IPA				see: Propanol
Isopropyl Acetate (CH ₃ COOC ₃ H ₇)				see: Flammable Gases
Kerosine (Mixture)				See: Flammable Gases
Laughing gas (N ₂ O)				see: Nitrous Oxide
Methane (CH ₄)				see: Flammable Gases
Methanol (CH ₃ OH)				see: Alcohols
Methyl Acetate (CH ₃ COOCH ₃)				see: Flammable Gases

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Methyl Ethyl Ketone/ MEK (CH ₃ COC ₂ H ₅)				see: Flammable Gases
Nitrogen (N ₂)				Can only be measured by means of oxygen deficiency
Nitrogen Oxide (NO _x)				see Nitrogen Monoxide
Nitrogen Dioxide (NO ₂)	NO2-5000-EC	211293/ -----	0...5000 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Temperature: -20 °C to +45 °C ▪ Response Time t₉₀: 60 s
	NO2-1000-EC	211223/ -----	0...1000 ppm	<ul style="list-style-type: none"> ▪ Operation in sampling systems, for example ExTox IMC ▪ Transmitter with extension of measuring range ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 10 ppm H₂S → appr. -1 ppm NO₂ (!) 10 ppm SO₂ → appr. -0.1 ppm NO₂ (!) 10 ppm Cl₂ → appr. 10 ppm NO₂ ▪ Dimensions Type Sens: <ul style="list-style-type: none"> 188 mm x 105 mm x 65 mm ▪ Temperature: -20 °C to +45 °C ▪ Response Time t₉₀: 60 s
	NO2-20-EC	211222/ 251015	0...20 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 10 ppm H₂S → appr. -1 ppm NO₂ (!) 10 ppm SO₂ → appr. -0.1 ppm NO₂ (!) 10 ppm Cl₂ → appr. 10 ppm NO₂ ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 40 s
	NO2-1-EC	211317/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 10 ppm Cl₂ → appr. 20 ppm NO₂ 10 ppm H₂S → appr. -10 ppm NO₂ (!) 10 ppm SO₂ → appr. -0,1 ppm NO₂ (!) 1 ppm O₃ → appr. 2 ppm NO₂ ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 60 s
Nitrogen Monoxide (NO)	NO-3000-EC	211275/ -----	0...3000 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 100 ppm NO₂ → appr. 1 ppm NO ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 30 s
	NO-100-EC	211214/ 251008	0...100 ppm	<ul style="list-style-type: none"> ▪ Can be used for sum measurement of NO_x ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 15 ppm SO₂ → appr. 5 ppm NO 10 ppm NO₂ → appr. 4 ppm NO ▪ unsaturated hydrocarbons and hydrogen: impossible to quantize ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 30 s
	NO-25-EC	211316/ -----	0...25 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 10 ppm H₂S → appr. 3 ppm NO 20 ppm NO₂ → appr. 3 ppm NO ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 30 s
	NO-1-EC	211315/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 2 years ▪ Cross sensitivities: <ul style="list-style-type: none"> 10 ppm H₂S → appr. 3 ppm NO 20 ppm HCl → appr. 10 ppm NO 20 ppm HBr → appr. 5 ppm NO 10 ppm H₂S → appr. 3 ppm NO 5 ppm O₃ → appr. 1 ppm NO 10 ppm NO₂ → appr. 3 ppm NO ▪ Temperature: -20 °C to +35 °C ▪ Response Time t₉₀: 30 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Nitrous Oxide (N ₂ O)	N2O-1-IR2	211253/ 251067	0...1 % (v/v) (10000 ppm)	<ul style="list-style-type: none"> Alarm levels from 0.05 % (v/v) (500 ppm) (Estimation based on most unfavourable operation conditions) Temperature: -25 °C to +55 °C Response Time t₉₀: 30 s
Nonane, n- (C ₉ H ₂₀)				see: Flammable Gases
Octane, n- (C ₈ H ₁₈)				see: Flammable Gases
Oxygen (O ₂)	O2-25-KE	211218/ 251012	0...25 % (v/v)	<ul style="list-style-type: none"> Main application monitoring of ambient air, inertisation, gas analysis, for example biogas and dump gas Lifetime: appr. 5 years (longlife) Hydrocarbons, for example CH₄, as well as Carbon Monoxide, Carbon Dioxide, Hydrogen, Chlorine and inert gases don't interfere. Indication is proportional to the oxygen partial pressure, that means fluctuations of the ambient pressure lead to changes. High concentrations of ammonia in the measured gas (> 100 ppm NH₃) may reduce lifetime of the sensor. Ozone (O₃) may influence sensitivity of the sensor and may affect sensor materials During operation sensor opening has definitely to be placed downwards. Temperature: +5 °C to +40 °C, -10 °C to +5 °C: Measuring signal up to 10 % lower than at +20 °C Response Time t₉₀: 20 s (operation by means of aspiration: 10 s) Dimensions of type Sens: 188 mm x 105 mm x 65 mm
	O2-25-EC	211208/ 251007	0...25 % (v/v)	<ul style="list-style-type: none"> Main application monitoring of ambient air Lifetime: appr. 2 years, reduced by operation in Carbon Dioxide. Temperature: -20 °C to +50 °C Response Time t₉₀: 20 s
	Paramagnetic		0...25 % (v/v)	<ul style="list-style-type: none"> Special version on demand Measuring range: 5 to 100 % (v/v) possible Operation only in sampling systems, for example ExTox IMC
	O2-25-ZrO2	211282/ -----	0...25 % (v/v)	<ul style="list-style-type: none"> Special version on demand Measuring principle: Zirconium oxide-sensor
	O2-0.5-KE	211279/ -----	0...0.5 % (v/v)	<ul style="list-style-type: none"> Operation in sampling systems only , for example ExTox IMC Lifetime: appr. 5 years (longlife) Temperature: +5 °C to +40 °C Response Time t₉₀: 120 s
	O2-200-EC	211280/ 251070	0...200 ppm	<ul style="list-style-type: none"> Operation in sampling systems, for example ExTox IMC Lifetime: appr. 2 years (inert operation) Temperature: -10 °C to +40 °C Response Time t₉₀: 20 s

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Ozone (O ₃)	O3-1-EC	211211/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 1...2 years ▪ Warning device, limited measuring accuracy ▪ Cross sensitivities: 100 ppm NH₃ → appr. -3 ppm O₃ (!) 20 ppm SO₂ → appr. -0.2 ppm O₃ (!) 10 ppm NO₂ → appr. 5 ppm O₃ 20 ppm H₂S → appr. 2 ppm O₃ 1 ppm Cl₂ → appr. 1.5 ppm O₃ 1 ppm F₂ → appr. 1 ppm O₃ ▪ At longer application of Hydrogen Sulphide the sensor gets insensitive. ▪ All parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. before calibration. ▪ An adjustment with Ozone is impossible under usual operation conditions due to its high reactivity. Calibration with replacement gas Chlorine. ▪ At place of installation a functional test can only be done with Chlorine ▪ Temperature: -20 °C to +40 °C ▪ Response Time t₉₀: 30 s
Pentane, n- (C ₅ H ₁₂)				see: Flammable Gases
Phosphorous Trichloride (PCl ₃)				see: Hydrogen Chloride
Phosgene/ Carbonyl Chloride (COCl ₂)	COCl2-1-EC	211259/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Lifetime: appr. 1...2 years ▪ Cross sensitivities: 0.2 ppm AsH₃ → appr. 0.2 ppm COCl₂ 0.5 ppm Cl₂ → appr. 0.2 ppm COCl₂ 10 ppm HCl → appr. 25 ppm COCl₂ 0.3 ppm O₃ → appr. 0.03 ppm COCl₂ 10 ppm NO₂ → appr. -1 ppm COCl₂ (!) 1 ppm ClO₂ → appr. -3 ppm COCl₂ (!) H₂S (prefilter, after penetration indication which cannot be quantized) ▪ Warning device, limited measuring accuracy ▪ An adjustment with Ozone is impossible under usual operation conditions. Calibration with replacement gas Chlorine. ▪ At place of installation a functional test can only be done with Chlorine ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 120 s, t₅₀: 60 s
Phosphine (PH ₃)	PH3-1-EC	211234/ -----	0...1 ppm	<ul style="list-style-type: none"> ▪ Also suitable for measurement of other Hydride Gases ▪ Cross sensitivities: 1 ppm SiH₄ → appr. 0.6 ppm PH₃ 1 ppm GeH₄ → appr. 0.6 ppm PH₃ 1 ppm AsH₃ → appr. 0.6 ppm PH₃ 1 ppm B₂H₆ → appr. 0.6 ppm PH₃ 2 ppm Cl₂ → appr. -0.15 ppm PH₃ (!) 10 ppm SO₂ → appr. 0.75 ppm PH₃ 5 ppm NO₂ → appr. -0.75 ppm PH₃ (!) 20 ppm H₂S → appr. 4 ppm PH₃ 20 ppm HCN → appr. 0.4 ppm PH₃ ▪ Calibration with replacement gas Silane ▪ High humidity may lead to reduction of indication and delayed response due to high solubility of the measured gas ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 30 s, t₅₀: 10 s
pH in fluid mediums	pH-IS	291024	pH 0...14	Separate Data Sheet
Pressure				see: Climatic Variables
Propane (C ₃ H ₈)				see: Flammable Gases
Propanol, 1- (C ₃ H ₇ OH)				see: Flammable Gases

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Propanol, 2-, iso-, i-/ IPA (C ₃ H ₇ OH)				see: Flammable Gases
Propene/Propylene (C ₃ H ₆)				see: Flammable Gases
Propylene Oxide (C ₃ H ₆ O)				see: Flammable Gases
R... (Refrigerants), containing hydrogen				see: Cooling Agents
Smoke Detector		297000		Separate Data Sheet
Smoke Detector (Zone 0)		297005		Separate Data Sheet
Sulphur Dioxide (SO ₂)	SO2-1000-EC	211284	0...1000 ppm	<ul style="list-style-type: none"> Operation in sampling systems only, for example ExTox IMC Transmitter with extension of measuring range Cross sensitivities: <ul style="list-style-type: none"> 10 ppm NO₂ → appr. -10 ppm SO₂ (!) 10 ppm H₂S → appr. 10 ppm SO₂ 10 ppm HCN → appr. 5 ppm SO₂ 10 ppm HCl → appr. 2 ppm SO₂ Dimensions Type Sens: <ul style="list-style-type: none"> 188 mm x 105 mm x 65 mm Temperature: -10 °C to +40 °C Response Time t₉₀: 45 s Dimensions of type Sens: <ul style="list-style-type: none"> 188 mm x 105 mm x 65 mm
	SO2-20-EC	211217/ 251011	0...20 ppm	<ul style="list-style-type: none"> Cross sensitivities: <ul style="list-style-type: none"> 10 ppm NO₂ → appr. -10 ppm SO₂ (!) 10 ppm H₂S → appr. 10 ppm SO₂ 10 ppm HCN → appr. 5 ppm SO₂ 10 ppm HCl → appr. 2 ppm SO₂ Temperature: -10 °C to +40 °C Response time t₉₀: 45 s
	SO2-5-EC	211269/ -----	0...5 ppm	<ul style="list-style-type: none"> Measuring range 0...5 ppm and possible Alarm levels from 0.5 ppm for monitoring of work places. Cross sensitivities: <ul style="list-style-type: none"> 10 ppm NO₂ → appr. -15 ppm SO₂ (!) 10 ppm H₂S → appr. 10 ppm SO₂ Temperature: -10 °C to +40 °C Response time t₉₀: 45 s
Sulphur Hexafluoride (SF ₆)	SF6-2000-IR	211322	0...2000 ppm	<ul style="list-style-type: none"> Special version Temperature: -20 °C to +40 °C Response time t₉₀: 60 s Dimensions of type Sens: <ul style="list-style-type: none"> 188 mm x 105 mm x 65 mm
	SF6-1000-IR	211277	0...1000 ppm	As SF6-2000-IR
Silane (SiH ₄)	SiH4-50-EC	211233/ 251019	0...50 ppm	<ul style="list-style-type: none"> Also suitable for measurement of other hydride gases Cross sensitivities: <ul style="list-style-type: none"> 1 ppm AsH₃ → appr. 1 ppm SiH₄ 1 ppm GeH₄ → appr. 1 ppm SiH₄ 1 ppm PH₃ → appr. 2 ppm SiH₄ 1 ppm B₂H₆ → appr. 0.4 ppm SiH₄ 1 ppm ClO₂ → appr. 0.2 ppm SiH₄ 10 ppm SO₂ → appr. 2 ppm SiH₄ 10 ppm NO₂ → appr. -1.5 ppm SiH₄ (!) H₂S (impossible to quantize) High humidity may lead to reduction of indication and delayed response due to high solubility of the measured gas Temperature: -10 °C to +40 °C Response Time t₉₀: 60 s, t₅₀: 10 s
	Silicium Tetrachloride (SiCl ₄)			See: hydrogen chloride

Gas and Transmitter List

Measured Gas	Transmitter	Article-No. Sens/ExSens	Standard Range	Type Specific Features/ Remarks
Styrol/ Vinylbenzol / Styrene/ Ethenylbenzol (C ₈ H ₈)	C8H8-IR2	211270/	0...100 % UEG	<ul style="list-style-type: none"> ▪ Operation in sampling systems, for example <i>ExTox</i> IMC. ▪ Pay attention to adsorption at gas carrying components. ▪ Cross sensitivities: unsaturated hydro carbons: impossible to quantize ▪ Temperature: -25 °C to +55 °C ▪ Response time t₉₀: 30 s
Temperature				See: climatic variable
Toluol (C ₇ H ₈)				See: flammable gases
Tetrahydrothiopene (C ₄ H ₈ S)	THT-15-EC	211238/ 251023	0...15 ppm (0...55 mg/m ³)	<ul style="list-style-type: none"> ▪ Main application: odorising of natural gas ▪ Cross sensitivities: 10 ppm C₄H₁₀S → appr. 10 ppm THT 100 ppm CO → appr. 2 ppm THT 100 ppm C₃H₈O → appr. 50 ppm THT H₂S and unsaturated hydrocarbons, for example C₂H₄ (impossible to quantize) ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 60 s
Water Detector				separate Data Sheet
Xylol, o- (C ₈ H ₁₀)				See: flammable gases

(Subject to Technical Changes)