

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 freely accessible databases. *ExTox* uses the GESTIS database on hazardous substances (www.gestis.dguv.de).
- Cross sensitivities may vary from the values mentioned here for each sample of sensor. Also, additional cross sensitivities to not listed substances may exist.
- Specification of sensor life times are listed only if they differ from the common specification given in the transmitter data sheets.
- 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, e. g. biogas or landfill gas.
 - Transmitter ExSens ...-V-...: type with sealed sensor block for operation in sampling systems, e. g. *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 may be possible on demand.

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Acetone (CH ₃ COCH ₃)	0...20 % (v/v)	C3H6O-20-IR3	211332/ -----	
	0...100 % LEL			see: Flammable Gases
Acrylonitrile (C ₃ H ₃ N)				see: Ethylene Oxide
Acetylene (C ₂ H ₂)				see: Flammable Gases
Alcohols, e. g. Methanol, Ethanol	0...100 % LEL 0...200 ppm	CH3OH-200-EC	211306/ 251078	- Cross sensitivities: 100 ppm CO → appr. 60 ppm CH₃OH - unsaturated hydrocarbons → quantisation not possible - Temperature: -30 °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)	0...30000 ppm (3 % (v/v))	NH3-3-WT	211202/ 251000	- Main application: ammonia refrigerating plants: machine rooms (ambient air) and discharging lines (installation with pipe adapter) - Temperature: -20 °C to +55 °C - Response time t₉₀: 20 s
	0...5000 ppm	NH3-5000-EC	211319/ -----	- As F2-1-EC, except - Transmitter with extension of measuring range - Operation in sampling systems, e. g. <i>ExTox</i> IMC - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...1000 ppm	NH3-1000-EC	211201/ 251010	- Main application: ammonia refrigerating plants: machine rooms, production and storage rooms (ambient air) - Lifetime is dose dependent, basic load with ammonia at place of installation to be avoided. - Cross sensitivities: 20 ppm H₂S → appr. 20 ppm NH₃ 20 ppm SO₂ → appr. -10 ppm NH₃ (!) 20 ppm NO₂ → appr. -20 ppm NH₃ (!) - Temperature: -20 °C to +45 °C - Response time t₉₀: 75 s

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Ammonia (NH ₃) - continued -	0...1000 ppm	NH3-T-1000-EC	211220/ 251014	- Main application: ammonia refrigerating plants: machine rooms, production and storage rooms (ambient air) - Lifetime is dose dependent, basic load with ammonia at place of installation to be avoided. - Cross sensitivities: 20 ppm H₂S → appr. 20 ppm NH₃ 20 ppm SO₂ → appr. -10 ppm NH₃ (!) 20 ppm NO₂ → appr. -20 ppm NH₃ (!) - Temperature: -40 °C to +45 °C (low temperature application) - Response time t₉₀: 75 s
	0...1000 ppm	NH3-1000-HL2	211303/ 251073	- 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
	0...100 ppm	NH3-100-EC2	211296/ 251071	- Main application work places (ambient air) - Lifetime is dose dependent, basic load with ammonia at place of installation to be avoided. - Cross Sensitivities: 20 ppm H₂S → appr. 7 ppm NH₃ 20 ppm SO₂ → appr. -7 ppm NH₃ (!) 20 ppm NO₂ → appr. -20 ppm NH₃ (!) 20 ppm Cl₂ → appr. -55 ppm NH₃ (!) - Temperature: -10 °C to +40 °C - Response time t₉₀: 60 s
Ammonia (NH ₃) in fluid medium	0...20 ppm in brine	NH3-20-IS	291015 291054/ -----	- Main application: ammonia refrigerating plants: brine and cooling water circuits, basins - separate Data Sheet
Antimony Hydrogen (SbH ₃)				see: Hydride Gases (Silane, Phosphine)
Argon (Ar)				Can only be measured by means of oxygen deficiency
Arsine (AsH ₃)				see: Hydride Gases (Silane, Phosphine)
Benzene (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
Carbon Dioxide (CO ₂)	0...100 % (v/v)	CO2-100-IR2	211226/ 251031	- Main application: gas analysis, e. g. biogas and landfill gas - Operation in sampling systems, e. g. Ex-Tox 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)

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Carbon Dioxide (CO ₂) - continued -	0...100 % (v/v)	Smart-Modul CO2-100-IR2	293006/ -----	- Special version - Operation in sampling systems only, e. g. ExTox IMC - Measuring gas cooler necessary at changing moisture contents - Temperature: -20 °C to +40 °C - Response Time t₉₀: 30 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...100 % (v/v)	IR-Gascard	293010 293001 293019 293011/ -----	- Special version (Gascard) - Pressure compensation (except art. 293001) - Operation in sampling systems only, e. g. ExTox IMC - Top hat rail mounting in closed housings only - Measuring gas cooler necessary at changing moisture contents - Temperature: -10 °C to +40 °C - Response Time t₉₀: 30 s
	0...100 % (v/v)	CO2-5-IR2	211236/ 251016	- Temperature: -10 °C to +55 °C - Response Time t₉₀: 25 s
	0...100 % (v/v)	CO2-T-5-IR2	211241/ 251051	- Temperature: -25 °C to +55 °C (low temperature application) - Response Time t₉₀: 25 s
	0...10000 ppm (0...1 % (v/v))	CO2-10000-IR3	211292/ -----	- Temperature: 0 °C to +45 °C - Response Time t₉₀: 25 s
	0...5000 ppm	CO2-5000-IR2	211237/ 251021	- Temperature: -10 °C to +55 °C - Response Time t₉₀: 25 s
	0...1000 ppm	CO2-1000-IR3	211307/ -----	- Temperature: 0 °C to +45 °C - Response Time t₉₀: 25 s
	0...500 ppm	CO2-500-IR3	211261/ 251089	- Temperature: 0 °C to +45 °C - Response Time t₉₀: 25 s
	0...100 % (v/v)	IR-Gascard	293013 293007 293018 293008 293021/ -----	- Special version (gas card) - Pressure compensation (except art. 293007 and 293008) - Operation only in sampling systems, e. g. ExTox IMC - Top hat rail mounting in closed housings only - Measuring gas cooler necessary at changing moisture contents - Temperature: -10 °C to +40 °C - Response Time t₉₀: 30 s
	0...100 % (v/v)	CO-50-IR-P	211339/ -----	- Special version - Operation only in sampling systems, e. g. ExTox IMC - Temperature: -10 °C to +40 °C - Response Time t₉₀: 20 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...30 % (v/v)	CO-30-IR-P	211305/ -----	- Special version - Operation only in sampling systems, e. g. ExTox IMC - Temperature: -10 °C to +40 °C - Response Time t₉₀: 20 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...4 % (v/v) (40000 ppm)	CO-4-EC	211256/ 251091	- Cross sensitivities: 10000 ppm H₂ → appr. 10000 ppm CO 10000 ppm C₂H₄ → appr. 1000 ppm CO Filter for NO and acidic gases integrated (Capacity: appr. 400000 ppm·h NO) - Temperature: -20 °C to +40 °C - Response Time t₉₀: 40 s

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Carbon Monoxide (CO) - continued -	0...2 % (v/v)	CO-2-IR-P	211278/ -----	- Special version - Operation only in sampling systems, e. g. ExTox IMC - Temperature: -10 °C to +40 °C - Response Time t_{90}: 20 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...5000 ppm	CO-5000-IR-P	211329/ -----	- Special version - Operation only in sampling systems, e. g. ExTox IMC - Temperature: -10 °C to +40 °C - Response Time t_{90}: 20 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...4000 ppm	CO-4000-EC	211230/ 251030	- Cross sensitivities: 1000 ppm H₂ → appr. 600 ppm CO 1000 ppm C₂H₄ → appr. 100 ppm CO - Filter for NO and acidic gases integrated (Capacity: appr. 400000 ppm·h NO) - Temperature: -20 °C to +40 °C - Response Time t_{90}: 40 s
	0...2000 ppm	CO-2000-IR-P	211302/ -----	- Special version - Operation only in sampling systems, e. g. ExTox IMC - Temperature: -10 °C to +40 °C - Response Time t_{90}: 20 s - Dimensions Type Sens: 220 mm x 140 mm x 85 mm
	0...300 ppm	CO-300-EC	211205/ 251006	- Cross sensitivities: 100 ppm H₂ → appr. 40 ppm CO 10 ppm C₂H₄ → appr. 1 ppm CO - Filter for NO and acidic gases integrated (Capacity: appr. 400000 ppm·h NO) - Temperature: -30 °C to +40 °C - Response Time t_{90}: 40 s
	0...50 ppm	CO-50-EC	211308/ 251099	- Cross sensitivities: 10 ppm H₂ → appr. 4 ppm CO 10 ppm C₂H₄ → appr. 5 ppm CO 50 ppm C₂H₅OH → appr. 3 ppm CO - Temperature: -10 °C to +40 °C - Response Time t_{90}: 40 s
Chlorine (Cl ₂)	0...10 ppm	Cl2-10-EC	211209/ -----	- 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 20 ppm H₂S → appr. 0,1 ppm Cl₂ 10 ppm NO₂ → appr. 4 ppm Cl₂ - At longer application of Hydrogen Sulphide the sensor gets insensitive. - Before calibration all parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. - Sensor protection cap made of PTFE - Temperature: -20 °C to +40 °C - Response Time t_{90}: 60 s, t_{50}: 30 s
	0...50 ppm	Cl2-50-EC	211298/ -----	As Cl2-10-EC

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Chlorine Dioxide (ClO ₂)	0...1 ppm	ClO2-1-EC2	211276/ -----	▪ 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 ▪ Before calibration all parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. ▪ 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	-40...120 °C, 0...100 % r.H., -40...120 °C, 0...100 % r.H., 0...2000 hPa (mbar)	TF TFD	211265/ 251047 211255/ -----	separate Data Sheet separate Data Sheet
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 ₃ OCH ₃)				see: Flammable Gases
Ethane (C ₂ H ₆)				see: Flammable Gases
Ethanol (C ₂ H ₅ OH)				see: Alcohols/ Flammable Gases
Ethene (C ₂ H ₄)	0...100 % LEL 0...2000 ppm	C2H4-2000-IR-P	211318/ -----	▪ Special version ▪ Operation only in sampling systems, e. g. ExTox IMC ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 30 s ▪ Dimensions Type Sens: 220 mm x 140 mm x 85 mm
	0...1000 ppm	C2H4-1000-EC	211240/ 251022	▪ Cross sensitivities: 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. 5ppm C₂H₄ ▪ Temperature: -10 °C to +40 °C ▪ Response Time t₉₀: 40 s
Ethine (C ₂ H ₂)				see: Flammable Gases
Ethyl Acetate (CH ₃ COOC ₂ H ₅)				see: Flammable Gases
Ethylene (C ₂ H ₄)				see: Ethene
Ethylene Oxide (C ₂ H ₄ O)	0...500 ppm	EO-500-EC	211311/ -----	- As EO-100-EC with except of ▪ Transmitter with extension of measuring range ▪ Operation in sampling systems, e. g. ExTox IMC ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Ethylene Oxide (C ₂ H ₄ O) - continued -	0...100 ppm	EO-100-EC	211219/ 251013	- 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 (target gas/air) and the absolute measuring accuracy only plays a subordinated role. - Cross sensitivities (Selection): 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 ExTox on demand) - Calibration with replacement gas: please contact ExTox - Temperature: -20 °C to +40 °C - Response Time t₉₀: 90 s - Warm up time at cold start: 24 h
Flammable Gases and Vapours	0...100 % (v/v)	BG-100-IR2	211227/ 251024	- Main application: gas analysis methane (CH₄), e. g. biogas or landfill gas - Designed for measurement in the range of 40 to 60 % (v/v) CH₄ - Operation in sampling systems, e. g. ExTox IMC - Temperature: -20 °C to +55 °C - Response Time t₉₀: 30 s (operation by means of aspiration: 10 s)
	0...100 % (v/v)	IR-Gascard	293009	- Main application: gas analysis methane (CH₄), gas feed-in systems - Special version (Gascard) - Pressure compensation (except art. 293000) - Operation in sampling systems only, e. g. ExTox IMC - Top hat rail mounting in closed housings only - Measuring gas cooler necessary at changing moisture contents - Temperature: -10 °C to +40 °C - Response Time t₉₀: 30 s
	0...100 % (v/v)		293000	
	0...20 % (v/v)		293014	
	0...5 % (v/v)		293015/ -----	
	0...100 % LEL	BG-IR2	211216/ 251005	- Main application: areas with danger of sensor poison (e. g. waste water treatment 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)
	0...100 % LEL	BG-WT	211206/ 251001	- 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
	0...100 % LEL	BG-HL	211207/ 251004	- Main application: monitoring of ambient air, e. g. heating - Measuring gases: Hydrogen, Methane, Propane, Butane (other gases possible acc. to prior agreement with ExTox) - Warning device, measuring accuracy limited due to principle - Temperature: -25 °C to +55 °C - Response Time t₉₀: 30...60 s, depending on gas type

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Flammable Gases and Vapours - continued -	0...5000 ppm	BG-5000-HL	211215/ 251002	- Main application: detection of leakages and gas traces - Measuring gases: Hydrogen, Methane, Propane or Butane (other gases possible acc. to prior agreement with ExTox) - Warning device, measuring accuracy limited due to principle - Temperature: -25 °C to +55 °C - Response Time t_{90}: 30...60 s, depending on gas type
Fluorine (F ₂)	0...10 ppm	F2-10-EC	211258/ -----	As F2-1-EC, except
	0...1 ppm	F2-1-EC	211228/ -----	- Response Time t_{90}: 90 s, t_{50}: 40 s - Warning device, limited measuring accuracy - Lifetime: appr. 1...2 years - Cross sensitivities: 0.1 ppm AsH₃ → appr. -0.15 ppm F₂ (!) 0.5 ppm Cl₂ → appr. 0.7 ppm F₂ 0.5 ppm O₃ → appr. 0.6 ppm F₂ 1 ppm HCl → appr. -1.5 ppm F₂ (!) 0.3 ppm HCN → appr. -1 ppm F₂ (!) 10 ppm SO₂ → appr. -0.1 ppm F₂ (!) 5 ppm NO₂ → appr. 4 ppm F₂ 0.5 ppm H₂S → appr. -1 ppm F₂ (!) - Br₂, PH₃ (impossible to quantize) - Before calibration all parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. - 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 t_{90}: 80 s, t_{50}: 30 s
Freons				see: Refrigerants
Fuels (Mixture)				see: Flammable Gases
Germane (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)	0...100 % (v/v)	WLD-Gascard	293012	- Measuring principle: Thermal conductivity - Main application: Gas analysis - Special version (Gascard) - Operation in sampling systems only, e. g. ExTox IMC - Top hat rail mounting in closed housings only - Measuring gas cooler necessary at changing moisture contents - Measurement in binary gas mixtures (H₂/air) only. Every additional component will affect the readings due to different thermal conductivity) - Temperature: -10 °C to +40 °C - Response Time t_{90}: 30 s
	0...50 % (v/v)	H2	293016	
	0...10 % (v/v)		293020	
	0...5 % (v/v)		293022/ -----	
	0...100 % LEL	BG-WT	211206/ 251001	see: Flammable Gases
	0...100 % LEL	BG-HL	211207/ 251004	see: Flammable Gases

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Hydrogen (H ₂) - continued -	0...2 % (v/v)	H2-2-EC	211229/ 251026	▪ Cross sensitivities: 25 ppm H₂S → appr. 50 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
	0...1 % (v/v)	H2-1-EC	211251/ 251077	▪ 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
	0...5000 ppm	BG-5000-HL	211215/ 251002	see: Flammable Gases
	0...5000 ppm	H2-5000-EC	211328/ 251093	▪ Cross sensitivities: 100 ppm CO → appr. 70 ppm H₂ 50 ppm H₂S → appr. 10 ppm H₂ 50 ppm NO → appr. 20 ppm H₂ 50 ppm C₂H₄ → appr. 40 ppm H₂ other unsaturated hydrocarbons (impossible to quantize) ▪ Temperature: -20 °C to +50 °C ▪ Response Time t₉₀: 60 s
	0...1000 ppm	H2-1000-EC	211225/ 251017	▪ Cross sensitivities: 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 CO, unsaturated hydrocarbons (impossible to quantize) ▪ Temperature: -20 °C to +50 °C ▪ Response Time t₉₀: 60 s
	0...1000 ppm	H2-1000-EC incl. Activated carbon filter	211243/ -----	▪ Main application: biogas analysis ▪ Active coal filter for reduction of cross sensitivities ▪ Operation only in sampling systems, e. g. ExTox IMC ▪ Cross sensitivities: active coal 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)	0...50 ppm	HCL-50-EC	211210/ -----	▪ Cross sensitivities: 20 ppm HBr → appr. 10 ppm HCl 20 ppm H₂S → appr. 30 ppm HCl 20 ppm Cl₂ → appr. 0.5 ppm HCl 20 ppm HCN → appr. 10 ppm HCl 20 ppm NO₂ → appr. -4 ppm HCl (!) 10 ppm TBM → appr. 3 ppm HCl ▪ Before calibration all parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. ▪ Temperature: -20 °C to +50 °C ▪ Response Time t₉₀: 45 s, t₅₀: 15 s
Hydrochloric Acid Vapours (HCl)				see: Hydrogen Chloride

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Hydrogen Cyanide (HCN)	0...30 ppm	HCN-30-EC	211239/ -----	▪ Cross sensitivities: 50 ppm NO → appr. -3 ppm HCN (!) 20 ppm NO₂ → appr. -14 ppm HCN (!) 20 ppm H₂S → appr. 40 ppm HCN (de- layed) ▪ Temperature: -30 °C to +40 °C ▪ Response Time t₉₀: 60 s, t₅₀: 30 s
Hydrogen Fluoride (HF)	0...10 ppm	HF-10-EC	211235/ -----	▪ 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) ▪ Before calibration all parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. ▪ 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)	0...100 ppm	H2O2-100-EC	211301/ -----	▪ Cross sensitivities: 10 ppm SO₂ → appr. 10 ppm H₂O₂ ▪ Temperature: -20 °C to +40 °C ▪ Response time t₉₀: 60 s
Hydrogen Sulphide (H ₂ S)	0...5000 ppm	H2S-5000-EC/ H2S-V-5000-EC	211297/ 251075	▪ Main application: gas analysis, e. g. biogas and landfill gas ▪ Operation only in sampling systems, e. g. ExTox IMC ▪ Cross sensitivities: 5 ppm NO₂ → appr. -3 ppm H₂S (!) 10 ppm NO → appr. 1 ppm H₂S 10 ppm Cl₂ → appr. -1.5 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) H₂ → appr. 20 ppm H₂S 100 ppm CO → appr. 2 ppm H₂S ▪ Hydrogen Sulphide concentrations above the end value of measuring range may destroy the sensor already after a short time. ▪ Temperature: -30 °C to +45 °C ▪ Response Time t₉₀: 60 s
	0...3000 ppm	H2S-3000-EC/ H2S-V-3000-EC2	211224/ 251049	▪ Main application: gas analysis, e. g. biogas and landfill gas ▪ Transmitter with extension of measuring range ▪ Operation in sampling systems, e. g. ExTox IMC ▪ Cross sensitivities: 5 ppm NO₂ → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) H₂ → appr. 15 ppm H₂S 100 ppm CO → appr. 2 ppm H₂S ▪ Hydrogen Sulphide concentrations above the end value of measuring range may destroy the sensor already after a short time. ▪ Temperature: -30 °C to +45 °C ▪ Response time t₉₀: 60 s ▪ Dimensions Type Sens: 188 mm x 105 mm x 65 mm

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Hydrogen Sulphide (H ₂ S) - continued -	0...100 ppm	H2S-100-EC	211212/ 251003	- Main application: ambient air monitoring, gas analysis - Cross sensitivities: 5 ppm NO₂ → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) H₂ → appr. 15 ppm H₂S 100 ppm CO → appr. 2 ppm H₂S - Hydrogen Sulphide concentrations above the end value of measuring range may destroy the sensor already after a short time. - Temperature: -30 °C to +45 °C - Response Time t₉₀: 60 s
	0...100 ppm	H2S-100-EC-BIO	211289/ ---	- Main application: gas analysis, e. g. biogas and landfill gas - Protection against Hydrogen Sulphide concentrations above the end value of measuring range up to appr. 500 ppm - Operation only in sampling systems, e. g. ExTox IMC - Cross sensitivities: 5 ppm NO₂ → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 1 % (v/v) H₂ → appr. 15 ppm H₂S 100 ppm CO → appr. 2 ppm H₂S - Temperature: -30 °C to +45 °C - Response Time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...50 ppm	H2S-50-EC	211287/ -----	- Low cross sensitivity to H₂ - Cross sensitivities: 5 ppm NO₂ → 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: -30 °C to +50 °C - Response Time t₉₀: 60 s
	0...10 ppm	H2S-10-EC	211336/ -----	- Cross sensitivities: 5 ppm NO₂ → appr. -1 ppm H₂S (!) 5 ppm SO₂ → appr. 1 ppm H₂S 0.5 % (v/v) ppm H₂ → < 10 ppm H₂S 300 ppm CO → appr. 1 ppm H₂S 10 ppm Mercaptan (MM, TBM) → appr. 3 to 5 ppm H₂S - H₂S concentrations above the end value of measuring range may destroy the sensor already after a short time. - Temperature: -30 °C to +50 °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
Mercaptan				see: Tetrahydrothiophene
Methane (CH ₄)				see: Flammable Gases
Methanol (CH ₃ OH)				see: Alcohols/ Flammable Gases
Methyl Acetate (CH ₃ COOCH ₃)				see: Flammable Gases
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

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Nitrogen Dioxide (NO ₂)	0...5000 ppm	NO2-5000-EC	211293/ -----	- Lifetime: appr. 2 years - Cross sensitivities: 10 ppm H₂S → appr. -1 ppm NO₂ (!) 1 ppm O₃ → appr. 1 ppm NO₂ 10 ppm Cl₂ → appr. 7 ppm NO₂ - Temperature: -30 °C to +45 °C - Response Time t₉₀: 60 s
	0...1000 ppm	NO2-1000-EC	211223/ -----	- Operation in sampling systems, e. g. Ex-Tox IMC - Transmitter with extension of measuring range - Lifetime: appr. 2 years - Cross sensitivities: 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 +45 °C - Response Time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...20 ppm	NO2-20-EC	211222/ 251015	- Lifetime: appr. 2 years - Cross sensitivities: 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 +45 °C - Response Time t₉₀: 40 s
	0...1 ppm	NO2-1-EC	211317/ -----	- Lifetime: appr. 2 years - Cross sensitivities: 10 ppm H₂S → appr. -15 ppm NO₂ (!) 1 ppm O₃ → appr. 2 ppm NO₂ 10 ppm Cl₂ → appr. 20 ppm NO₂ - Temperature: -30 °C to +45 °C - Response Time t₉₀: 60 s
Nitrogen Monoxide (NO)	0...3000 ppm	NO-3000-EC	211275/ -----	- Lifetime: appr. 2 years - Cross sensitivities: 100 ppm H₂S → appr. 0.5 ppm NO 100 ppm NO₂ → appr. 1 ppm NO - Temperature: -20 °C to +40 °C - Response Time t₉₀: 20 s
	0...100 ppm	NO-100-EC	211214/ 251008	- Can be used for sum measurement of NO_x - Lifetime: appr. 2 years - Cross sensitivities: 100 ppm H₂S → appr. 1 ppm NO 10 ppm NO₂ → appr. 3 ppm NO - Temperature: -20 °C to +40 °C - Response Time t₉₀: 20 s
	0...25 ppm	NO-25-EC	211316/ -----	- Lifetime: appr. 2 years - Cross sensitivities: 100 ppm H₂S → appr. 3 ppm NO 10 ppm NO₂ → appr. 3 ppm NO - Temperature: -20 °C to +40 °C - Response Time t₉₀: 20 s
Nitrous Oxide (N ₂ O)	0...1 % (v/v) (10000 ppm)	N2O-1-IR2	211253/ 251067	- Temperature: -25 °C to +55 °C - Response Time t₉₀: 30 s
	0...1000 ppm	N2O-1000-IR3	211327/ 251092	- 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

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/Remarks
Oxygen (O ₂)	0...25 % (v/v)	O2-25-KE	211218/ 251012	- Main applications: monitoring of ambient air, inertisation, gas analysis, e. g. biogas and landfill gas - Lifetime: appr. 5 years (longlife) - Hydrocarbons, e. g. 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
	0...25 % (v/v)	O2-25-EC	211208/ 251007	- 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
	0...25 % (v/v)	Paramagnetic		- Special version on demand - Operation only in sampling systems, e. g. ExTox IMC - Measuring ranges from 5 to 100 % (v/v) possible
	0...25 % (v/v)	O2-25-ZrO2	211282/ -----	- Special version on demand - Measuring principle: Zirconium oxide-sensor
	0...200 ppm	O2-200-EC	211280/ 251070	- Operation in sampling systems, e. g. ExTox IMC - Lifetime: appr. 2 years (inert operation) - Cross sensitivities: H₂S, SO₂ impossible to quantify - Temperature: -30 °C to +40 °C - Response Time t₉₀: 20 s
Ozone (O ₃)	0...1 ppm	O3-1-EC	211211/ -----	- Lifetime: appr. 1...2 years - Warning device, limited measuring accuracy - Cross sensitivities: 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 - NH₃, N₂H₄ negative reponse (!) - F₂, Br₂, I₂ (impossible to quantify) - At longer application of Hydrogen Sulphide the sensor gets insensitive. - Before calibration ll parts which are in touch with gas have to be rinsed with test gas for minimum 30 min. - 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

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Pentane, n- (C ₅ H ₁₂)				see: Flammable Gases
Phosphorous Trichloride (PCl ₃)				see: Hydrogen Chloride
Phosgene/ Carbonyl Chloride (COCl ₂)	0...1 ppm	COC12-1-EC	211259/ -----	- 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: -20 °C to +40 °C - Response Time t₉₀: 120 s, t₅₀: 60 s
Phosphine (PH ₃)	0...1 ppm	PH3-1-EC	211234/ -----	- Also suitable for measurement of other Hydride Gases - Cross sensitivities: 5 ppm SiH₄ → appr. 1 ppm PH₃ 1 ppm GeH₄ → appr. 0.6 ppm PH₃ 1 ppm B₂H₆ → appr. 1.5 ppm PH₃ 2 ppm Cl₂ → appr. -0.5 ppm PH₃ (!) 5 ppm SO₂ → appr. 1 ppm PH₃ 5 ppm NO₂ → appr. -1 ppm PH₃ (!) 10 ppm H₂S → appr. 5 ppm PH₃ 20 ppm HCN → appr. 1 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 0...14	pH-IS	291024	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
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
Refrigerants R...	0...5000 ppm (0,5 % (v/v)) down to 0...500 ppm	KM-1-HL	211213/ 251018	- Main application: leakage detection for cooling agents containing hydrogen (e. g. 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
	0...2000 ppm	KM-2000-IR	211324/ -----	- Special version (low measuring range) - Broadband-Sensor for R134a, R23, R32, R125, R404A, R407A, R 407F, R410A, R448A, 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

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Refrigerants R... - continued -	0...5000 ppm	R1234yf-5000-IR3	211231/ -----	- Temperature: -10 °C to +45 °C - Response time t₉₀: 30 s - Further refrigerants on request
	0...5000 ppm	R1234ze-5000-IR3	211235/ -----	- Temperature: -10 °C to +45 °C - Response time t₉₀: 30 s - Further refrigerants on request
	0...1000 ppm	R1234ze-1000-IR	211325/ -----	- Special version (low measuring range) - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...5000 ppm	R134A-5000-IR3	211230/ -----	- Temperature: -10 °C to +45 °C - Response time t₉₀: 30 s - Further refrigerants on request
	0...2000 ppm	R134A-2000-IR	211291/ -----	- Special version (low measuring range) - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...10000 ppm	R32-10000-IR	211237/ -----	- Temperature: -10 °C to +45 °C - Response time t₉₀: 30 s - Further refrigerants on request
	0...5000 ppm	R404A-5000-IR3	211233/ -----	- Temperature: -10 °C to +45 °C - Response time t₉₀: 30 s - Further refrigerants on request
	0...2000 ppm	R410A-2000-IR	211312/ -----	- Special version (low measuring range) - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...1000 ppm	R507-1000-IR	211294/ -----	- Special version (low measuring range) - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
	0...2000 ppm	R513A-2000-IR	211323/ -----	- Special version (low measuring range) - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions Type Sens: 188 mm x 105 mm x 65 mm
Smoke Detector			297000	Separate Data Sheet
Smoke Detector (Ex Zone 1)			297005	Separate Data Sheet
Sulphur Dioxide (SO ₂)	0...2000 ppm	SO2-2000-EC	211340/ -----	
	0...1000 ppm	SO2-1000-EC	211284/ -----	- Operation in sampling systems only, e. g. ExTox IMC - Transmitter with extension of measuring range - Cross sensitivities: 50 ppm NO → appr. -10 ppm SO₂ (!) 10 ppm NO₂ → appr. 10 ppm SO₂ 10 ppm HCN → appr. 5 ppm SO₂ - Dimensions Type Sens: 188 mm x 105 mm x 65 mm - Temperature: -20 °C to +50 °C - Response Time t₉₀: 65 s - Dimensions of type Sens: 188 mm x 105 mm x 65 mm
	0...100 ppm	SO2-100-EC	211285/ ---	As SO2-1000-EC
	0...20 ppm	SO2-20-EC	211217/ 251011	- Cross sensitivities: 50 ppm NO → appr. -10 ppm SO₂ (!) 10 ppm NO₂ → appr. 10 ppm SO₂ 10 ppm HCN → appr. 5 ppm SO₂ - Temperature: -20 °C to +50 °C - Response time t₉₀: 45 s

Gas and Transmitter List

Target Gas	Standard Range	Transmitter	Article-No. Sens/ExSens	Type Specific Features/ Remarks
Sulphur Dioxide (SO ₂) - continued -	0...5 ppm	SO2-5-EC	211269/ -----	- Cross sensitivities: 10 ppm NO₂ → appr. -15 ppm SO₂ (!) 10 ppm H₂S → appr. 10 ppm SO₂ - Temperature: -20 °C to +50 °C - Response time t₉₀: 45 s
Sulphur Hexafluoride (SF ₆)	0...2000 ppm	SF6-2000-IR	211322/ -----	- Special version - Temperature: -20 °C to +40 °C - Response time t₉₀: 60 s - Dimensions of type Sens: 188 mm x 105 mm x 65 mm
	0...1000 ppm	SF6-1000-IR	211277/ -----	As SF6-2000-IR
Silane (SiH ₄)	0...50 ppm	SiH4-50-EC	211233/ 251019	- Also suitable for measurement of other hydride gases - Cross sensitivities: 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. 1.5 ppm SiH₄ 1 ppm ClO₂ → appr. 0.2 ppm SiH₄ 10 ppm SO₂ → appr. 5 ppm SiH₄ 10 ppm H₂S → appr. 5 ppm SiH₄ 10 ppm NO₂ → appr. -2.5 ppm SiH₄ (!) - High humidity may lead to reduction of indication and delayed response due to high solubility of the measured gas - Temperature: -20 °C to +40 °C - Response Time t₉₀: 60 s
Silicium Tetrachloride (SiCl ₄)				See: hydrogen chloride
Styrol/ Styrene (C ₈ H ₈)	0...100 % LEL	C8H8-IR2	211270/	- Operation in sampling systems, e. g. Ex-Tox IMC. - Pay attention to adsorption at gas carrying components. - Cross sensitivities: hydro carbons: impossible to quantize - Temperature: -25 °C to +50 °C - Response time t₉₀: 30 s
Temperature				See: Climatic variable
Toluene (C ₇ H ₈)				See: Flammable gases
Tetrahydrothiopene (C ₄ H ₈ S)	0...15 ppm (0...55 mg/m ³)	THT-15-EC2	211238/ -----	- 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, e. g. C₂H₄ (impossible to quantize) - Temperature: -10 °C to +40 °C - Response Time t₉₀: 40 s
Xylene, o- (C ₈ H ₁₀)				See: Flammable gases

(Subject to Technical Changes)