

## Technical Datasheet



### PolyXeta®2 Gas Detector PX2 for Zone 1 and 2 for toxic gases or oxygen

#### DESCRIPTION

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#### CROSS SENSITIVITY – SENSOR ELEMENT

#### CROSS SENSITIVITY – SENSOR ELEMENT (VOC SENSORS)

#### ORDERING INFORMATION

#### ELECTRICAL CONNECTION

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## DESCRIPTION

### Fixed PolyXeta®2 Gas Detectors of the

**PX2-1 series with Ex db protection for Zone 1 and 2**

**PX2-2 series with Ex ec protection only for Zone 2**

**designed for the continuous monitoring of the ambient air to detect toxic gases and vapours as well as of oxygen for use in the hazardous areas of zones 1 and 2 according to Directive 2014/34/EU.**

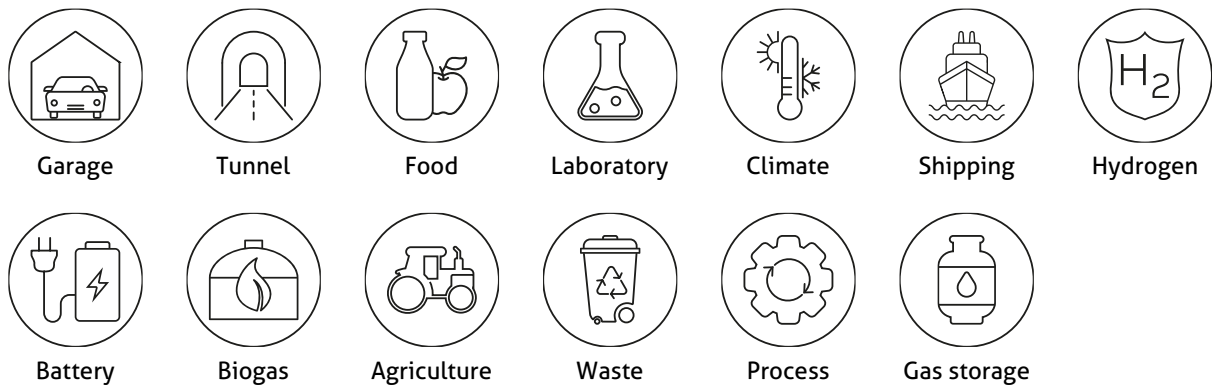
Microprocessor based gas detector with 4–20 mA / RS-485 Modbus output signal, alarm and fault relays (all SIL2 certified) for monitoring the ambient air to detect toxic gases and vapours and oxygen concentrations by means of an electrochemical sensor element. Optionally, the PolyXeta®2 gas detector is also available with LC display.

The calibration of gas detectors without LCD display is carried out via the calibration device STL06-PGX2 or the PC software PCE06-PGX2. Gas detectors with LCD display have an integrated calibration routine that is started from the outside by a permanent magnet without opening the housing. In case of an alarm or failure the backlight of gas detectors with LCD display changes from green to red.

## APPLICATION

The PolyXeta®2 gas detector PX2 is used in industrial areas like oil/gas industry, biogas plants, petrochemical industry, power plants etc. in Ex-Zone 1 (PX2-1) and/or 2 (PX2-2). The PolyXeta®2 gas detector is also suitable for commercial areas like gas transfer like e.g. gas transfer stations etc., and for use on ships, shipyards and offshore platforms etc.

With the 4–20 mA / RS-485 Modbus output signal the gas detector is suitable for connection to the PolyGard® gas controller series by MSR-Electronic GmbH, as well as to any other controllers or automation devices.



## CERTIFICATES / FEATURES

- ATEX and IECEx certificates MSR-Electronic GmbH for electrical Ex protection
- SIL2 safety functions 4–20 mA, RS-485 and relay
- **PX2-1 for zone 1 (and also suitable for zone 2):**
  - Type “Ex db” protection flame-proof enclosure
- **PX2-2 for zone 2:**
  - Type “Ex ec” protection increased safety
- Enclosure: Additional FM and CSA certificates for Class I, Div. 1
  
- Continuous self-monitoring
- Microprocessor with 12-bit converter resolution
- Reverse polarity protection
- Overload protection
- Easy calibration
- Calibration service by exchanging the sensor head
- Proportional 4–20 mA output
- Serial interface to the control centre
- Alarm and fault signal relay
- LCD display with status LEDs (optional)
- Connection of SSAX1 sensor head as an alternative to SX1 (optional)
- Stainless steel housing (optional)
- IP66 protection with SplashGuard accessories (optional, see data sheet Accessories)

## SPECIFICATIONS – GENERAL

|                                                                        |                                                                                                                                                                                                                                                                                                         |                             |
|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>ELECTRICAL</b>                                                      |                                                                                                                                                                                                                                                                                                         |                             |
| Power supply PX2-1 series                                              | 20–28 V DC reverse polarity protected                                                                                                                                                                                                                                                                   |                             |
| Power supply PX2-2 series                                              | 20–28 V DC reverse polarity protected or<br>24 V AC ± 10 % (21.6–26.4 V AC)                                                                                                                                                                                                                             |                             |
| Power consumption (at 24 V DC)                                         | 3.3 W, 90 mA, max. 130 mA                                                                                                                                                                                                                                                                               |                             |
| Control unit                                                           | Microprocessor with 12-bit converter resolution                                                                                                                                                                                                                                                         |                             |
| Digital filter                                                         | Averaging in order to increase the EMC immunity                                                                                                                                                                                                                                                         |                             |
| Visual indications                                                     | 3 LEDs for power, alarm and fault                                                                                                                                                                                                                                                                       |                             |
| Analog output signal (active)                                          | Proportional, overload and short-circuit proof,<br>Max. load for UE > 20 V = 350 Ω and UE > 22 V = 500 Ω<br>4–20 mA = measuring range<br>3.3–4 mA = tolerable underrange<br>20–21.2 mA = tolerable overrange<br>≥ 21.2 mA= error overrange<br>≤ 2 mA = fault<br>≤ 1 mA = processor or voltage breakdown |                             |
| Serial interface                                                       | Serial data bus                                                                                                                                                                                                                                                                                         |                             |
| Fault relay (SPNC)                                                     | Max. 30 V AC/DC, 1 A                                                                                                                                                                                                                                                                                    |                             |
| Alarm relay (SPDT)                                                     | Max. 30 V AC/DC, 1 A                                                                                                                                                                                                                                                                                    |                             |
| LCD (optional)                                                         | 2 x 16 characters, 3 status LEDs, 4 menu operating elements                                                                                                                                                                                                                                             |                             |
| <b>SENSOR ELEMENT (see also table SPECIFICATIONS - SENSOR ELEMENT)</b> |                                                                                                                                                                                                                                                                                                         |                             |
| Gas type and measuring range                                           | Toxic gases & oxygen, see ORDERING INFORMATION                                                                                                                                                                                                                                                          |                             |
| Measuring principle                                                    | Electrochemical                                                                                                                                                                                                                                                                                         |                             |
| Sensor data                                                            | See also tables SENSOR ELEMENT                                                                                                                                                                                                                                                                          |                             |
| Run-in time                                                            | 24 h                                                                                                                                                                                                                                                                                                    |                             |
| Warm-up time                                                           | Measuring mode after ≤ 60 s, for NH <sub>3</sub> ≤ 300 s                                                                                                                                                                                                                                                |                             |
| Poisoning                                                              | Electrochemical sensors are susceptible to poisoning by organic solvents.                                                                                                                                                                                                                               |                             |
| <b>RECOMMENDED STORAGE CONDITIONS</b>                                  |                                                                                                                                                                                                                                                                                                         |                             |
| Storage temperature range                                              | See table TECHNICAL DATA - SENSOR ELEMENT                                                                                                                                                                                                                                                               |                             |
| Storage time <sup>1</sup>                                              | Ca. 6 months                                                                                                                                                                                                                                                                                            |                             |
| Humidity range                                                         | 20–90 % RH non-condensing                                                                                                                                                                                                                                                                               |                             |
| Pressure range                                                         | 90–110 kPa                                                                                                                                                                                                                                                                                              |                             |
| <b>SENSOR HEAD SX1 HOUSING</b>                                         |                                                                                                                                                                                                                                                                                                         |                             |
| Material / colour                                                      | CrNi Stahl: 1.4404 / natural                                                                                                                                                                                                                                                                            |                             |
| Dimensions (Ø x H)                                                     | 30 x 61 mm (1.18 x 2.40 in.)                                                                                                                                                                                                                                                                            |                             |
| Protection class                                                       | IP64, with SplashGuard accessories IP66                                                                                                                                                                                                                                                                 |                             |
| Thread                                                                 | External thread NPT ¾" ANSI/ B1.20.1                                                                                                                                                                                                                                                                    |                             |
| <b>PHYSICAL CHARACTERISTICS</b>                                        |                                                                                                                                                                                                                                                                                                         |                             |
| Housing                                                                | <b>Type 1, type 2 and type 3</b>                                                                                                                                                                                                                                                                        | <b>Type stainless steel</b> |
| Material                                                               | Aluminum pressure die-casting, epoxy coating                                                                                                                                                                                                                                                            | Stainless steel 1.4401      |
| Colour                                                                 | RAL 7032 (pebble grey)                                                                                                                                                                                                                                                                                  | Natural                     |
| Dimensions (W x H x D)                                                 | Type 1 and 3: 125 x 167 x 83 mm<br>(4.92 x 6.57 x 3.27 in.)<br>Type 2: 145 x 170 x 107 mm<br>(5.71 x 6.70 x 4.21 in.)                                                                                                                                                                                   | 145 x 170 x 107 mm          |
| Weight                                                                 | Approx. 1.3 kg (2.87 lb) / 1,6 kg (3.53 lb.)                                                                                                                                                                                                                                                            | Approx. 2.5 kg (5.51 lb)    |
| Cable entry                                                            | 1x, 2x or 3 x NPT ¾" (Ansi B1.20.1)                                                                                                                                                                                                                                                                     | 2x NPT ¾" (Ansi B1.20.1)    |
| Protection class                                                       | Housing protection IP66 to IP68 (depending on the cable glands used)                                                                                                                                                                                                                                    |                             |
| Mounting                                                               | Wall mounting (sensor head downwards)                                                                                                                                                                                                                                                                   |                             |
| Wire connection                                                        | Spring-type terminal, 0.08–2.5 mm <sup>2</sup> (AWG 28–12)                                                                                                                                                                                                                                              |                             |
| <b>ENVIRONMENTAL CONDITIONS (operation and explosion protection)</b>   |                                                                                                                                                                                                                                                                                                         |                             |
| Temperature                                                            |                                                                                                                                                                                                                                                                                                         |                             |
| • Explosion protection                                                 | -40 °C to +60 °C (-40 to 140 °F)                                                                                                                                                                                                                                                                        |                             |
| • With display                                                         | -20 °C to +60 °C (-4 °F to 140 °F)                                                                                                                                                                                                                                                                      |                             |
| Pressure range <sup>2</sup>                                            | 80–110 kPa                                                                                                                                                                                                                                                                                              |                             |
| Air velocity                                                           | < 6 m/s                                                                                                                                                                                                                                                                                                 |                             |

<sup>1</sup> If stocked for a longer period, we recommend checking the zero point and recalibrating if necessary

<sup>2</sup> The explosion protection test only covers the pressure range up to 110 kPa and the oxygen concentration up to 21 % vol.

| APPROVALS AND EXAMINATIONS                                                  | PX2-1 (Zone 1)                                                                                                                                                                                                                                                        | PX2-2 (Zone 2)                                            |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| EU Type Examination Certificate<br>Electrical Explosion Protection ATEX     | BVS 15 ATEX E 129 X<br>EN IEC 60079-0:2018; EN 60079-1:2014<br>(DEKRA Testing and Certification GmbH)                                                                                                                                                                 |                                                           |
| IECEX Type Examination Certificate<br>Electrical Explosion Protection       | IECEX BVS 16 0038X<br>IEC 60079-0:2017; IEC 60079-1:2014-06<br>(DEKRA Testing and Certification GmbH)                                                                                                                                                                 |                                                           |
| Type of Protection                                                          | Ex db IIC T4 Gb<br>-40 °C < Ta < +60 °C                                                                                                                                                                                                                               | Ex ec IIC T4 Gc<br>-40 °C < Ta < +60 °C                   |
| ATEX Marking                                                                | II 2 G Ex db IIC T4 Gb                                                                                                                                                                                                                                                | II 3 G Ex ec IIC T4 Gc                                    |
| Functional safety SIL2                                                      | Certificate: ZP/C029/21; DIN EN 61508-1;-2;-3:2011                                                                                                                                                                                                                    |                                                           |
| EMC test <sup>1</sup>                                                       | Certificate PR 18 03 53984 001<br>EN 50270-2015 Interference immunity & emission: Type 2<br>(industrial sector)                                                                                                                                                       |                                                           |
| Functional Test for toxic gases                                             | EN IEC 62990-1:2023 Typ SM                                                                                                                                                                                                                                            |                                                           |
| EU Declaration of Conformity                                                | CE_PX2-1_Zone1                                                                                                                                                                                                                                                        | CE_PX2-2_Zone2                                            |
| Electrical Explosion Protection                                             |                                                                                                                                                                                                                                                                       | EN IEC 60079-0:2018 +<br>EN IEC 60079-7:2016 +<br>A1:2018 |
| <b>Certificates only housing</b>                                            |                                                                                                                                                                                                                                                                       |                                                           |
| Housing type 1 and type 3:<br>FM Certificate of Compl. (3042541)            | <b>Class 3600, Class 3615, Class 3810, ANSI/NEMA 250.</b> Explosionproof for Class I, Division 1, Groups A, B, C and D; dust-ignition-proof for Class II, Division 1, Groups E, F and G, Class III, hazardous (classified) locations, indoors and outdoors (type 4X). |                                                           |
| Housing type stainless steel / type 2:<br>FM Certif. of Conf. (FM18US0036U) |                                                                                                                                                                                                                                                                       |                                                           |
| Housing type 1 and type 3:<br>CSA Certif. of Compl. (2472857)               |                                                                                                                                                                                                                                                                       |                                                           |
| Housing type stainless steel / type 2:<br>CSA Certif. of Compl. (1717515)   |                                                                                                                                                                                                                                                                       |                                                           |
|                                                                             | <b>Class 2258-02</b> PROCESS CONTROL EQUIPMENT - For Hazardous Locations                                                                                                                                                                                              |                                                           |
|                                                                             | <b>Class 4418-02</b> OUTLET BOXES AND FITTINGS – For Hazardous Locations Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G, Class III, Div. 1; Type 4X                                                                                       |                                                           |
| <b>WARRANTY</b>                                                             |                                                                                                                                                                                                                                                                       |                                                           |
|                                                                             | 1 year on sensor (not if poisoned or overloaded),<br>2 years on device                                                                                                                                                                                                |                                                           |

<sup>1</sup> Not in conjunction with remote sensor head SSAX1

## SPECIFICATIONS - SENSOR ELEMENT

| Gas type           | Order No.      | Measuring range <sup>1</sup> | Accuracy | Display resolution | Repeatability | t <sub>90</sub> time | Reaction time | Zero-point variation | Drift in air   | Temperature range | Humidity range (non-condensing) | Pressure range | Storage temperature range <sup>2</sup> | Life time <sup>3</sup> in air | Relative gas density <sup>4</sup> | Calibration interval <sup>5</sup> |
|--------------------|----------------|------------------------------|----------|--------------------|---------------|----------------------|---------------|----------------------|----------------|-------------------|---------------------------------|----------------|----------------------------------------|-------------------------------|-----------------------------------|-----------------------------------|
|                    | PX2-1-X-SK1-1- | ppm                          | ± % sig. | ppm                | ± % sig.      | ≤ sec.               | ≤ sec.        | ± ppm                | < % sig./month | °C                | % RH                            | kPa            | °C                                     | > years                       | Air = 1                           | > months                          |
| CO                 | E1110-A        | 0–50                         | 2        | 0.01               | 3             | 35                   | 5             | 1                    | 2              | -20 / +50         | 15–90                           | 90–110         | 10–30                                  | 2                             | 0.97                              | 12                                |
| CO                 | E1110-C        | 0–150                        | 2        | 0.1                | 5             | 40                   | 5             | 4                    | 0.4            | -20 / +50         | 10–95                           | 80–120         | 0–20                                   | 6                             | 0.97                              | 12                                |
| CO                 | E1110-E        | 0–250                        | 2        | 0.1                | 5             | 40                   | 5             | 4                    | 0.4            | -20 / +50         | 10–95                           | 80–120         | 0–20                                   | 6                             | 0.97                              | 12                                |
| CO                 | E1110-F        | 0–300                        | 2        | 0.1                | 5             | 40                   | 5             | 4                    | 0.4            | -20 / +50         | 10–95                           | 80–120         | 0–20                                   | 6                             | 0.97                              | 12                                |
| CO                 | E1110-H        | 0–500                        | 2        | 0.1                | 5             | 40                   | 5             | 4                    | 0.4            | -20 / +50         | 10–95                           | 80–120         | 0–20                                   | 6                             | 0.97                              | 12                                |
| NH <sub>3</sub>    | E1125-A        | 0–100                        | 5        | 0.1                | 10            | 200                  | 10            | 5                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 0.60                              | 12                                |
| NH <sub>3</sub>    | E1125-B        | 0–300                        | 3        | 0.1                | 10            | 200                  | 10            | 5                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 0.60                              | 12                                |
| NH <sub>3</sub>    | E1125-C        | 0–500                        | 3        | 0.1                | 10            | 200                  | 10            | 5                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 0.60                              | 12                                |
| NH <sub>3</sub>    | E1125-D        | 0–1000                       | 3        | 1                  | 10            | 200                  | 10            | 10                   | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 0.60                              | 12                                |
| NH <sub>3</sub>    | E1125-E        | 0–5000                       | 2        | 1                  | 5             | 170                  | 10            | 100                  | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 0.60                              | 12                                |
| NO                 | E1129-C        | 0–100                        | 2        | 0,1                | 5             | 40                   | 5             | 3                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 1,04                              | 12                                |
| NO <sub>2</sub>    | E1130-E        | 0–100                        | 5        | 0.1                | 2             | 120                  | 10            | 2                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 2.80                              | 12                                |
| CH <sub>3</sub> OH | E1150-A        | 0–250                        | 5        | 0.1                | 5             | 180                  | 10            | 5                    | 2              | -20 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 1.10                              | 6                                 |
| VOC                | E1160-A        | 0–10                         | 5        | 0.01               | 5             | 70                   | 10            | 0.5                  | 1              | -40 / +55         | 15–95                           | 80–120         | 0–20                                   | 3                             | -                                 | 12                                |
| VOC                | E1160-B        | 0–5                          | 5        | 0,001              | 5             | 70                   | 10            | 0,5                  | 1              | -40 / +55         | 15–95                           | 80–120         | 0–20                                   | 3                             | -                                 | 12                                |
| VOC                | E1160-C        | 0–200                        | 5        | 0.1                | 5             | 90                   | 10            | 5                    | 1              | -40 / +55         | 15–95                           | 80–120         | 0–20                                   | 3                             | -                                 | 12                                |
| HCN                | E1183-B        | 0–50                         | 5        | 0.01               | 5             | 40                   | 10            | 2                    | 2              | -20 / +50         | 15–90                           | 90–110         | 5–20                                   | 2                             | 0.93                              | 6                                 |
| HCN                | E1183-C        | 0–100                        | 5        | 0.1                | 5             | 60                   | 10            | 2                    | 2              | -20 / +50         | 15–90                           | 90–110         | 5–20                                   | 2                             | 0.93                              | 6                                 |
| HCl                | E1186-D        | 0–20                         | 5        | 0.01               | 5             | 60                   | 15            | 0.5                  | 2              | -20 / +50         | 15–90                           | 90–110         | 5–20                                   | 2                             | 1.27                              | 6                                 |
| H <sub>2</sub>     | E1194-A        | 0–1000                       | n.d.     | 1                  | 5             | 90                   | 10            | 10                   | 2              | -20 / +50         | 15–90                           | 90–110         | 10–30                                  | 2                             | 0.07                              | 12                                |
| H <sub>2</sub> S   | E1197-A        | 0–50                         | 3        | 0.01               | 2             | 70                   | 10            | 1                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 1.19                              | 6                                 |
| H <sub>2</sub> S   | E1197-B        | 0–100                        | 3        | 0.1                | 2             | 70                   | 10            | 1                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 1.19                              | 6                                 |
| H <sub>2</sub> S   | E1197-C        | 0–200                        | 3        | 0.1                | 2             | 45                   | 10            | 2                    | 2              | -30 / +50         | 15–90                           | 80–120         | 0–20                                   | 2                             | 1.19                              | 6                                 |
| H <sub>2</sub> S   | E1197-D        | 0–500                        | 3        | 0.1                | 2             | 45                   | 10            | 5                    | 2              | -30 / +50         | 15–90                           | 80–120         |                                        | 2                             | 1.19                              | 6                                 |
| H <sub>2</sub> S   | E1197-E        | 0–1500                       | 3        | 1                  | 5             | 90                   | 10            | 15                   | n.d.           | -30 / +50         | 15–90                           | 90–110         |                                        | 2                             | 1.19                              | 6                                 |
|                    |                | % vol                        |          |                    |               |                      |               |                      |                |                   |                                 |                |                                        |                               |                                   |                                   |
| O <sub>2</sub>     | E1195-A2       | 0–25                         | 2        | 0.01               | 2             | 40                   | 10            | n.d.                 | 0.4            | -40 / +50         | 5–95                            | 80–120         |                                        | 2                             | 1.11                              | 6                                 |
| O <sub>2</sub>     | E1195-A3       | 0–25                         | 2        | 0,01               | 2             | 40                   | 10            | n.d.                 | 0,4            | -40 / +50         | 5–95                            | 80–120         |                                        | 3                             | 1,11                              | 6                                 |
| O <sub>2</sub>     | E1195-A5       | 0–25                         | 2        | 0,01               | 2             | 40                   | 10            | n.d.                 | 0,4            | -40 / +60         | 15–90                           | 80–120         |                                        | 5                             | 1,11                              | 12                                |
| O <sub>2</sub>     | E1195-A7       | 0–25                         | 2        | 0,01               | 2             | 40                   | 10            | n.d.                 | 0,4            | -40 / +60         | 15–90                           | 80–120         |                                        | 7                             | 1,11                              | 12                                |

<sup>1</sup> Exceeding the measuring range limit will include a risk of damaging the sensor element

<sup>2</sup> A deviating storage temperature can have a negative effect on sensitivity and service life.

<sup>3</sup> Expected service life under normal ambient conditions

<sup>4</sup> The recommended mounting height depends on the relative gas density of the type of gas to be monitored. Depending on the relative gas density (d), the following recommendation therefore applies:

d ≤ 0,85: Mounting 0.3–0.5 m below the ceiling

0,85 < d < 1,15: Mounting at 1.2–1.8 m height

d ≥ 1,15: Mounting 0.3–0.5 m above the floor

<sup>5</sup> Manufacturer-recommended calibration intervals for normal environmental conditions

## CROSS SENSITIVITY<sup>1</sup> - SENSOR ELEMENT

Gas concentration of cross gas / reaction of sensor

| Gas type           | Order No.             | Ammonia, NH <sub>3</sub> | Chlorine, Cl <sub>2</sub> | Ethanol, C <sub>2</sub> H <sub>6</sub> O | Ethylene, C <sub>2</sub> H <sub>4</sub> | Carbon dioxide, CO <sub>2</sub> | Carbon monoxide, CO | Sulphur dioxide, SO <sub>2</sub> | Hydrogen sulphide, H <sub>2</sub> S | Nitrogen dioxide, NO <sub>2</sub> | Nitrogen monoxide, NO | Hydrogen, H <sub>2</sub> |
|--------------------|-----------------------|--------------------------|---------------------------|------------------------------------------|-----------------------------------------|---------------------------------|---------------------|----------------------------------|-------------------------------------|-----------------------------------|-----------------------|--------------------------|
|                    | PX2-X-X-SX1-1-        |                          | ppm                       | ppm                                      | ppm                                     | ppm                             | ppm                 | ppm                              | ppm                                 | ppm                               | ppm                   | ppm                      |
| CO                 | E1110-A               | 50/-0.5                  | 15/0.0                    | 200/<1.0                                 | 100/11.5                                | -                               | -                   | 10/-0.1                          | 15/0.5                              | 10/-0.3                           | 50/-3.0               | 100/8.5                  |
| CO                 | E1110-C               | -                        | 2/<0.5                    | -                                        | -                                       | -                               | -                   | -                                | 25/0                                | 20/<0.5                           | 50/<10                | 100/<20                  |
| CO                 | E1110-E               | -                        | 2/<0.5                    | -                                        | -                                       | -                               | -                   | -                                | 25/0                                | 20/<0.5                           | 50/<10                | 100/<20                  |
| CO                 | E1110-F               | -                        | 2/<0.5                    | -                                        | -                                       | -                               | -                   | -                                | 25/0                                | 20/<0.5                           | 50/<10                | 100/<20                  |
| CO                 | E1110-H               | -                        | 2/<0.5                    | -                                        | -                                       | -                               | -                   | -                                | 25/0                                | 20/<0.5                           | 50/<10                | 100/<20                  |
| NH <sub>3</sub>    | E1125-A               | -                        | -                         | 100/0                                    | -                                       | 5000/0                          | 500/0               | 20/-6                            | 25/30                               | 5/-7.5                            | 50/0                  | 100/0                    |
| NH <sub>3</sub>    | E1125-B               | -                        | -                         | 100/0                                    | -                                       | 5000/0                          | 500/0               | 20/-6                            | 25/30                               | 5/-5                              | 50/0                  | 100/0                    |
| NH <sub>3</sub>    | E1125-C               | -                        | -                         | 100/0                                    | -                                       | 5000/0                          | 500/0               | 20/-6                            | 25/35                               | 5/-5                              | 50/0                  | 100/0                    |
| NH <sub>3</sub>    | E1125-D               | -                        | -                         | 100/0                                    | -                                       | 5000/0                          | 500/0               | 20/-6                            | 25/35                               | 5/-5                              | 50/0                  | 100/0                    |
| NH <sub>3</sub>    | E1125-E               | -                        | -                         | 100/0                                    | -                                       | 5000/0                          | 500/0               | 20/-6                            | 25/35                               | 5/-5                              | 50/0                  | 100/0                    |
| NO                 | E1129-C               | -                        | -                         | -                                        | -                                       | -                               | 200/0               | 20/0                             | 25/<10                              | 20/0                              | -                     | -                        |
| NO <sub>2</sub>    | E1130-E               | 50/0                     | 1/0.5                     | -                                        | -                                       | 5000/0                          | 300/0               | 20/0                             | 15/<1                               | -                                 | 50/<-1                | 200/0                    |
| CH <sub>3</sub> OH | E1150-A               | 50/-4.6                  | 100/-5.8                  | -                                        | -                                       | 1000/0                          | 20/8.5              | 20/6.7                           | 20/12.3                             | 10/4.8                            | 10/11.8               | 1000/2.6                 |
| HCN                | E1183-X <sup>2</sup>  | -                        | -                         | -                                        | 100/0                                   | -                               | 100/~2              | 20/~38                           | 15/~25                              | 5/~-12                            | 25/0                  | 100/~2                   |
| HCl                | E1186-D               | 80/0                     | 20/<0.5                   | 30/<0.3                                  | 100/0                                   | -                               | 1000/0              | 100/0                            | 20/<40                              | 20/-6                             | 25/0                  | -                        |
| H <sub>2</sub>     | E1194-A               | -                        | 10/0                      | -                                        | 100/80                                  | -                               | 50/200              | 5/0                              | 25/0                                | 5/0                               | 35/<10                | -                        |
| O <sub>2</sub>     | E1195-XX <sup>2</sup> | -                        | -                         | -                                        | -                                       | -                               | -                   | -                                | -                                   | -                                 | -                     | -                        |
| H <sub>2</sub> S   | E1197-A               | 50/0                     | 15/0                      | -                                        | 100/0                                   | 5000/0                          | 100/<2              | 20/0                             | -                                   | 5/<0.5                            | 50/<0.5               | -                        |
| H <sub>2</sub> S   | E1197-B               | 50/0                     | 15/0                      | -                                        | 100/0                                   | 5000/0                          | 100/<2              | 20/0                             | -                                   | 5/<0.5                            | 50/<0.5               | -                        |
| H <sub>2</sub> S   | E1197-C               | 50/0                     | 15/0                      | -                                        | 100/0                                   | 5000/0                          | 100/<2              | 20/0                             | -                                   | 5/<0.5                            | 50/<0.5               | -                        |
| H <sub>2</sub> S   | E1197-D               | 50/0                     | 15/0                      | -                                        | 100/0                                   | 5000/0                          | 100/<2              | 20/0                             | -                                   | 5/<0.5                            | 50/<0.5               | -                        |
| H <sub>2</sub> S   | E1197-E               | -                        | -                         | -                                        | -                                       | -                               | 100/<5              | 20/4                             | -                                   | -                                 | -                     | 100/<5                   |

<sup>1</sup> The table does not claim to be complete. Other gases, too, can have an influence on the sensitivity. The mentioned cross sensitivity data are only reference values valid for new sensors.

<sup>2</sup> Cross sensitivities valid for all (other) measuring ranges of the sensor.

## CROSS SENSITIVITY<sup>1</sup> – SENSOR ELEMENT (VOC Sensor)

Gas concentration of cross gas / reaction of sensor

| Gas type | Order No.            | Ammonia, NH <sub>3</sub> | Arsine, AsH <sub>3</sub> | Hydrogen cyanide, HCN | Ethanol, C <sub>2</sub> H <sub>6</sub> O | Ethylene, C <sub>2</sub> H <sub>4</sub> | Ethylene oxide, C <sub>2</sub> H <sub>4</sub> O | Carbon dioxide, CO <sub>2</sub> | Carbon monoxide, CO | Methane, CH <sub>4</sub> | Ozone, O <sub>3</sub> | Phosphine, PH <sub>3</sub> | Sulphur dioxide, SO <sub>2</sub> | Nitrogen dioxide, NO <sub>2</sub> | Hydrogen, H <sub>2</sub> |
|----------|----------------------|--------------------------|--------------------------|-----------------------|------------------------------------------|-----------------------------------------|-------------------------------------------------|---------------------------------|---------------------|--------------------------|-----------------------|----------------------------|----------------------------------|-----------------------------------|--------------------------|
|          | PX2-X-X-SX1-1-       | ppm                      | ppm                      | ppm                   | ppm                                      | ppm                                     | ppm                                             | %                               | ppm                 | %                        | ppm                   | ppm                        | ppm                              | ppm                               | ppm                      |
| VOC      | E1160-X <sup>2</sup> | 1/0                      | 1/4                      | 1/0,8                 | 1/0,5                                    | 1/0                                     | 1/0,35                                          | 10/0                            | 100/105             | 1/0                      | 1/-0,5                | 1/3,75                     | 1/0,6                            | 1/-1,2                            | 2000/625                 |

<sup>1</sup> The tables do not claim to be complete. Other gases, too, can have an influence on the sensitivity. The mentioned cross sensitivity data are only reference values valid for new sensors.

<sup>2</sup> Cross sensitivity data valid for all measuring ranges of the sensor.

All specifications were collected under optimal test conditions.

We confirm compliance with the minimum requirements of the applicable standard.

The T 021 (DGVU-I-213-056) and T 023 (DGVU-I-213-057) as well as T 055 leaflets must be observed.

## ORDERING INFORMATION

| PX2- | X- | X- | E11XX-X(X)- | 0X | GAS DETECTOR                        |                                                                 |                  |
|------|----|----|-------------|----|-------------------------------------|-----------------------------------------------------------------|------------------|
|      |    |    |             |    | 01 <sup>1</sup>                     | Type 1: Aluminum die-cast housing, 1x cable entry               |                  |
|      |    |    |             |    | 03 <sup>1</sup>                     | Type 3: Aluminum die-cast housing, 3x cable entry               |                  |
|      | 1  |    |             |    | 04 <sup>2</sup>                     | Remote sensor SSAX1-1-E11XX-X(X)-10-KX, housing type 1          |                  |
|      | 1  |    |             |    | 05 <sup>2</sup>                     | Remote sensor SSAX1-1-E11XX-X(X)-10-KX, housing type 3          |                  |
|      |    | 1  |             |    | 06 <sup>1</sup>                     | Type stainless steel housing, 2x cable entry                    |                  |
|      |    | 1  |             |    | 07 <sup>2</sup>                     | Remote sensor SSAX1-1-E11XX-X(X)-10-KX, type stainless steel h. |                  |
|      |    | 1  |             |    | 08 <sup>1</sup>                     | Type 2: Aluminum die-cast XL housing, 2 x cable entry           |                  |
|      |    | 1  |             |    | 09 <sup>2</sup>                     | Remote sensor head SSAX1-1-E11XX-X(X)-10 KX, housing type 2     | Version          |
| SX1- | 1- |    | E11XX-X(X)- | 0  | EXCHANGE HEAD <sup>3</sup>          |                                                                 |                  |
|      |    |    |             |    | Gas type                            | Measuring range                                                 |                  |
|      |    |    | E1110-A     |    | Carbon monoxide, CO                 | 0–50 ppm                                                        |                  |
|      |    |    | E1110-C     |    | Carbon monoxide, CO                 | 0–150 ppm                                                       |                  |
|      |    |    | E1110-E     |    | Carbon monoxide, CO                 | 0–250 ppm                                                       |                  |
|      |    |    | E1110-F     |    | Carbon monoxide, CO                 | 0–300 ppm                                                       |                  |
|      |    |    | E1110-H     |    | Carbon monoxide, CO                 | 0–500 ppm                                                       |                  |
|      |    |    | E1125-A*    |    | Ammonia, NH <sub>3</sub>            | 0–100 ppm                                                       |                  |
|      |    |    | E1125-B*    |    | Ammonia, NH <sub>3</sub>            | 0–300 ppm                                                       |                  |
|      |    |    | E1125-C*    |    | Ammonia, NH <sub>3</sub>            | 0–500 ppm                                                       |                  |
|      |    |    | E1125-D*    |    | Ammonia, NH <sub>3</sub>            | 0–1000 ppm                                                      |                  |
|      |    |    | E1125-E*    |    | Ammonia, NH <sub>3</sub>            | 0–5000 ppm                                                      |                  |
|      |    |    | E1129-C     |    | Nitrogen monoxide, NO               | 0–100 ppm                                                       |                  |
|      |    |    | E1130-E     |    | Nitrogen dioxide, NO <sub>2</sub>   | 0–100 ppm                                                       |                  |
|      |    |    | E1150-A     |    | Methanol, CH <sub>3</sub> OH        | 0–250 ppm                                                       |                  |
|      |    |    | E1160-A     |    | VOC                                 | 0–10 ppm                                                        |                  |
|      |    |    | E1160-B     |    | VOC                                 | 0–5 ppm                                                         |                  |
|      |    |    | E1160-C     |    | VOC                                 | 0–200 ppm                                                       |                  |
|      |    |    | E1183-B     |    | Hydrogen cyanide, HCN               | 0–50 ppm                                                        |                  |
|      |    |    | E1183-C     |    | Hydrogen cyanide, HCN               | 0–100 ppm                                                       |                  |
|      |    |    | E1186-D     |    | Hydrogen chloride, HCl              | 0–20 ppm                                                        |                  |
|      |    |    | E1194-A     |    | Hydrogen, H <sub>2</sub>            | 0–1000 ppm                                                      |                  |
|      |    |    | E1197-A     |    | Hydrogen sulphide, H <sub>2</sub> S | 0–50 ppm                                                        |                  |
|      |    |    | E1197-B     |    | Hydrogen sulphide, H <sub>2</sub> S | 0–100 ppm                                                       |                  |
|      |    |    | E1197-C     |    | Hydrogen sulphide, H <sub>2</sub> S | 0–200 ppm                                                       |                  |
|      |    |    | E1197-D     |    | Hydrogen sulphide, H <sub>2</sub> S | 0–500 ppm                                                       |                  |
|      |    |    | E1197-E     |    | Hydrogen sulphide, H <sub>2</sub> S | 0–1500 ppm                                                      |                  |
|      |    |    | E1195-A2    |    | Oxygen – 2 years, O <sub>2</sub>    | 0–25 % vol                                                      |                  |
|      |    |    | E1195-A3    |    | Oxygen – 3 years, O <sub>2</sub>    | 0–25 % vol                                                      |                  |
|      |    |    | E1195-A5    |    | Oxygen – 5 years, O <sub>2</sub>    | 0–25 % vol                                                      |                  |
|      |    |    | E1195-A7    |    | Oxygen – 7 years, O <sub>2</sub>    | 0–25 % vol                                                      | Gas type / Range |
|      |    | 0  |             |    | Without LC Display                  |                                                                 |                  |
|      |    | 2  |             |    | With LC Display                     |                                                                 | Display          |
|      | 1  |    |             |    | Zone 1 and 2                        |                                                                 |                  |
|      | 2  |    |             |    | Zone 2                              |                                                                 | ATEX Zone        |

<sup>1</sup> Including one cable gland for PX2-1 with Ex d approval (Zone 1) in metal (-40 °C to +60 °C), for PX2-2 with Ex e approval (Zone 2) in plastic (-20 °C to +60 °C).

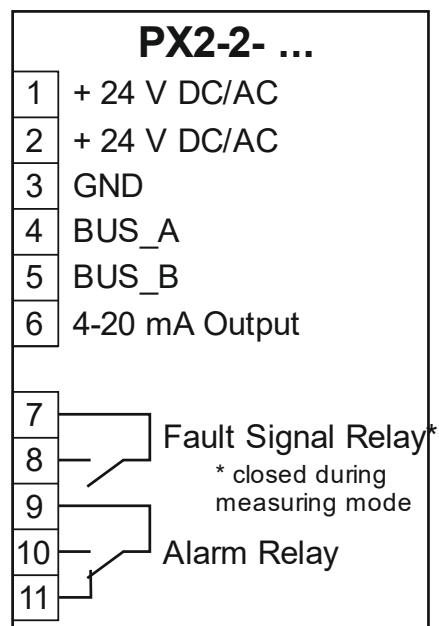
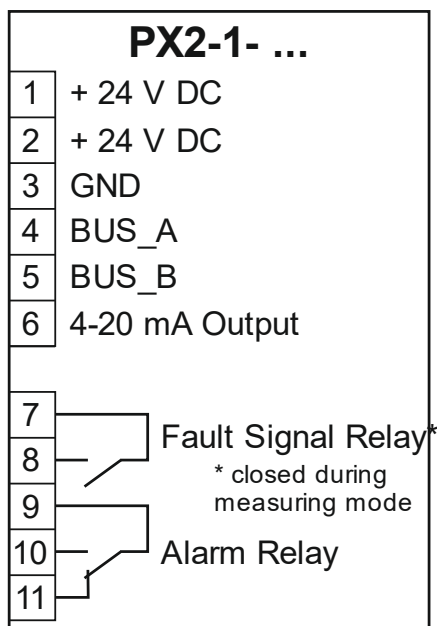
<sup>2</sup> Instead of the fixed sensor head SX1, the PX2-1 (only type Zone 1) is supplied with a remote sensor head SSAX1, which must be ordered separately in addition. For ordering information and sensor data see datasheet DB\_SSAX1\_Tox.

<sup>3</sup> The exchangeable sensor head is only to be used in connection with the PolyXeta®2 Gas Detector. Otherwise, it loses its ATEX approval.

\* Only on request

| Accessories                                                                         | Order number:   |
|-------------------------------------------------------------------------------------|-----------------|
| Calibration adapter                                                                 | CAL01-PX2       |
| Stainless steel splash guard                                                        | SG-PX2          |
| ATEX metal cable gland (Ex d) for zone 1 and 2, Temperature range: -40 °C to +60 °C | ZU-PX2-CG-SN    |
| ATEX plastic cable gland (Ex e) for zone 2, Temperature range: -20 °C to +60 °C     | ZU-PX2-CG-PL    |
| Magnetic pen for operation                                                          | MSR_PEN_PX2     |
| Sensor Head Protection                                                              | ZU-PX2-SHP-20   |
| Service-Tool for display, calibration, addressing and parameter changes             | STL06-PGX2-XX   |
| PC-Software set for display, calibration, addressing and parameter changes          | PCE06-PGX2-XX-X |

## ELECTRICAL CONNECTION



## FURTHER MEASURING PRINCIPLES

**MPS™:**Hydrogen ( $H_2$ )

→ See data sheet DB\_PX2\_MPS

**Semiconductor/Freon:**Ammonia ( $NH_3$ )

→ See data sheet DB\_PX2\_Freon

**Catalytic:**Ammonia ( $NH_3$ ), Hydrogen ( $H_2$ ), Methanol ( $CH_3OH$ )

→ See data sheet DB\_PX2\_Ex



Documents



Catalog



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