PERFECT SOLUTIONS FOR **GAS ALARM** SYSTEMS

Technical Datasheet

PolyXeta®2

Sensor Head SSAX1

With Premium Infrared Sensor
for Methane, Propane and Carbon Dioxide

MSR-Electronic GmbH | Buergermeister-Schoenbauer-Str. 13 | D-94060 Pocking

DESCRIPTION

Sensor head with local bus interface and 5 m cable for remote connection to WSB2 sensor board series

In addition to the high-quality infrared sensor element and the measuring amplifier, the sensor head SSAX1 contains a µController for processing the measured values. The IR measuring principle with integrated temperature compensation ensures highest accuracy, selectivity and reliability. All relevant data and measured values of the sensor element are stored fail-safe in the µController and are transmitted digitally via the local bus to the WSB2 board or output as a PWM signal. Calibration management is also integrated in the µController of the sensor head.

Calibration can be performed by simply changing the sensor head or by the integrated, convenient calibration routine directly at the system.

APPLICATION

The PolyXeta®2 SSAX1 sensor head is used to monitor leaks in enclosed spaces classified as ATEX Zone 1 or Zone 2.

The WSB2 board used for evaluation is not suitable for installation in hazardous areas!

FEATURES

- ATEX and IEC Ex certificates for electrical explosion protection
- **SSAX1-1 for Zone 1 (can also be used in Zone 2):**
  - "Ex d" version with flameproof enclosure
- Continuous monitoring
- Low zero-point drift
- Sensor with long service life (5 years)
- High accuracy, selectivity and reliability
- Easy calibration
- Calibration service by exchanging the sensor head
- Reverse polarity protected
- Overload protection
- Protection class IP65 with SplashGuard (see data sheet accessories)

SPECIFICATIONS

ELECTRICAL	
Power supply	5 V DC ± 3 %: external limitation to 5.6 V with Z diode, > 2 W, required
Power consumption (at 24 V DC)	60 mA, max. (0.28 W), external limitation with 250 mA fuse (not resettable) required
INTERFACE	
Serial interface	1-wire / 19200 baud; MSR local bus protocol
PWM signal (option)	Frequency: 4 kHz (250 µs); voltage swing 3.3 V: µC Push-pull output in series with 10 k
SENSOR DATA	
Gas type	See table
Sensor element	Inside gold-plated infrared sensor
Accuracy	± 3 % for < 50 % of range; ± 5 % for > 50 % of range
Stabilisation time	1 h
Warm-up time	30 s
Pressure range	700–1300 hPa
Storage temperature range	-40 °C to +80 °C (-40 °F to 176 °F)
Storage time	Max. 6 months
SENSOR HEAD HOUSING	
Material / colour	CrNi Stahl: 1.4404 / natural
Dimensions (d x H) mm	30 x 72 (+ ca. 27 for cable gland)
Weight	Ca. 0,25 kg
Protection class	IP54, with option splash proof IP65 (on request)
Installation	Vertical, gas inlet downwards
Cable gland, mounted	M25, Ex db approval
Max. tensile load	150 N
Cable with plug, factory assembled	Length 5 m to the remote WSB2 Board 3-pin standard plug for local bus version, customer specific for PWM signal
Cable type	Li-YCY-10x 0,34 diameter min. 7,2 mm
ENVIRONMENTAL CONDITIONS	
Humidity	20 to 90 % RH (not condensing)
Operating temperature	-25 °C to +60 °C (-13 °F to 140 °F)
Storage temperature	-5 °C to +30 °C
Pressure range	800 to 1200 mbar (80 to 120 kPa)
ATEX MARKING	
Marking	Ⓔx II2G Ex db IIC T4 Gb, CE 0158
EC-type examination certificate	BVS 19 ATEX E 055 X (electrical Ex protection) Ex d; EN 60079-0, -1
Certificates	IECEx_BVS_19.0052X (electrical Ex protection) Ex d IEC 60079-0, -1
WARRANTY	
	1 year on sensor (not if poisoned or overloaded), 2 years on device

Gas type	Ordering No.	Measuring range	Display resolution	Repeatability	t_{90}	Zero-point variation	Temperature range	Humidity range (non-condensing)	Life time[1] in air	Relative Gas density	Calibration interval[1]
	SSAX1-		**% / ppm**	**<± % Sig.**	**≤ sec.**	**± % LEL / Vol %**	**°C**	**% RH**	**> years**	**Air = 1**	**Months**
CH_4	I400-A	0–100 % LEL	0.1	2	90	4	-30 / +60	0–95	5	0.56	12
CH_4	I400-B	0–100 Vol %	0.1	5	90	4	-30 / +60	0–95	5	0.56	12
C_3H_8	I480-A	0–100 % LEL	0.1	2	90	4	-30 / +60	0–95	5	1.55	12
CO_2	I464-B	0–5 Vol %	0.001	5	90	n.d.	-30 / +60	0–95	5	1.53	12
CO_2	I464-D	0–5000 ppm	1	5	90	n.d.	-30 / +60	0–95	5	1.53	12
CO_2	I464-F	0–10 Vol %	0.01	5	90	n.d.	-30 / +60	0–95	5	1.53	12

All specifications were collected under optimal test conditions.
We confirm compliance with the minimum requirements of the applicable standard.

ORDER INFORMATION

SSAX1- **1-** **I4XX-X-** **XX-** **K5**

K5	Cable length 5 meters	**Cable length**

10	Local bus interface with 3-pin standard connector	
20	Local bus / PWM interface with 4-pin standard connector	
30	Local bus / PWM interface with 4-pin customer spec. connector	**Connector**

	Gas type	**Measuring range**	**Gas density (air = 1)**	**Mounting height**	
I400-A	Methane, CH_4	0–100 % LEL	0.55	Ceiling	
I400-B	Methane, CH_4	0–100 Vol %	0.56	Ceiling	
I480-A	Propane, C_3H_8	0–100 % LEL	1.55	Floor	
I464-B	Carbon dioxide, CO_2	0–5 Vol. %	1.53	0.6–1.5 m (2–5 ft.)	**Gas type/ Measuring range/ Gas density Mounting height**
I464-D	Carbon dioxide, CO_2	0–5000 ppm	1.53	0.6–1.5 m (2–5 ft.)	
I464-F	Carbon dioxide, CO_2	0–10 Vol %	1.53	0.6–1.5 m (2–5 ft.)	

1	Zone 1