

(1)

CERTIFICATE

(2) No. of the type certificate:

ZP/C022/16

(3) Product:

**PolyXeta2, ATEX/IECEX certified transducers for Zone 1 and 2
Same class for Tox and Combustible transducers**

(4) Manufacturer:

MSR-Electronic GmbH

(5) Address:

**Würdingerstr. 27 + 27a
94060 Pocking
Germany**

(6) The design of this product and any acceptable variation thereto are specified in the appendix to this type certificate.

(7) The Certification Body of DEKRA EXAM GmbH certifies that this product complies with the requirements of the test regulations listed under item 8 below. The test results are recorded in report 20160120.

(8) The requirements are assured by compliance with

DIN EN 61508-1:2011 DIN EN 61508-2:2011 DIN EN 61508-3:2011

(9) This type certificate relates only to the design and tests of the specified product in accordance to the contemplated requirements. Further requirements applied to the manufacturing process and supply of this product are not covered by this certificate.

(10) This type certificate is valid until 2021-08-24.

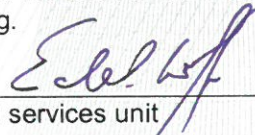
DEKRA EXAM GmbH
Bochum, 2016-08-25

Signed: Wiegand
Certification Body

Signed: Kötting
Special services unit

We confirm the correctness of the translation from the German original. In the case of arbitration only the German wording shall be valid and binding.


Certification body


Special services unit

Head	Output	λ_s	λ_D	λ_{dd}	λ_{du}	SFF	PFH _D	PFD _{AV}
		Safe failures	Dangerous failures	Dangerous detected failures	Dangerous undetected failures			
TOX	Relays	226,5 FIT	558,3 FIT	518,8 FIT	39,6 FIT	94,96%	39,6 E-09	2,13E-04
TOX	Current	199,0 FIT	520,2 FIT	507,6 FIT	12,6 FIT	98,25%	12,6 E-09	9,26E-05
TOX	MODBUS	195,1 FIT	533,2 FIT	520,5 FIT	12,7 FIT	98,25%	12,7 E-09	9,41E-05
EX	Relays	226,5 FIT	558,3 FIT	518,8 FIT	39,6 FIT	94,96%	39,6 E-09	2,13E-04
EX	Current	199,0 FIT	520,2 FIT	507,6 FIT	12,6 FIT	98,25%	12,6 E-09	9,26E-05
EX	MODBUS	195,1 FIT	533,2 FIT	520,5 FIT	12,7 FIT	98,25%	12,7 E-09	9,41E-05

System	Type B
Proof-Test-Interval	1 Year (8760 h)
Architecture	1oo1
Fault tolerance HFT	HFT 0
MTTR	72 h
Temperature for usage	-30°C ...+65°C

- (14) Test report
20160120, 2016-05-31
- (15) Special conditions for safe use
For usage of the above mentioned transducer the standards DIN EN 61508 and DIN EN 50271 or DIN EN 50402 and DIN EN 50545-1 have to be considered.

(11) Appendix to

(12) **Type certificate**
ZP/C022/16

(13) 13.1 Subject and type

PolyXeta2, ATEX/IECEX certified transducers for Zone 1 and 2

Same class for Tox and Combustible transducers of MSR-Electronic GmbH

13.2 Description

The evaluated system is a gas detector that consists of an IO unit and a transducer head. The amount of gas is measured by the transducer head and evaluated with the transducers head logic. The IO unit is for the connection to the MODBUS network, the output of the transducer value on a current output (4 - 20 mA) or the issue of the limit value via a relay output. For the safe transfer of the readings a proprietary MODBUS security protocol has been developed by the company MSR. It was thoroughly investigated by DEKRA EXAM. Correct handling of the limits is defined by the safety manual.

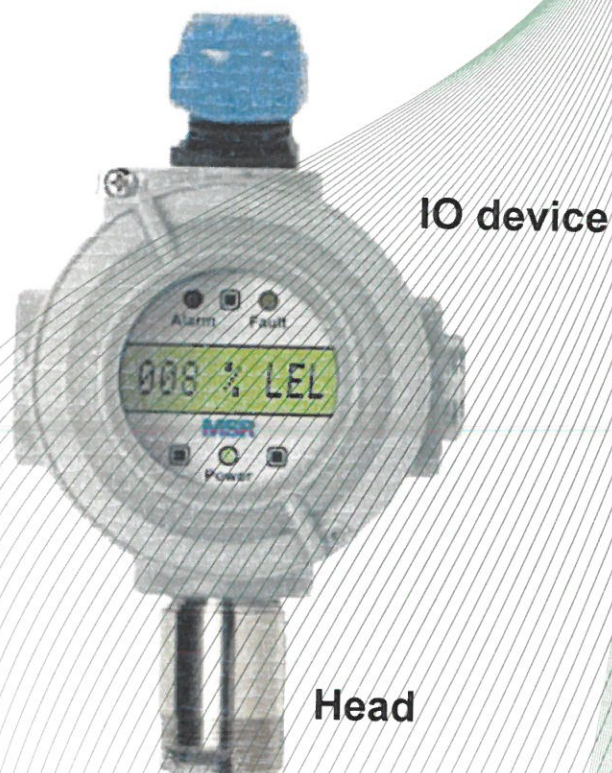


Figure: Picture of the device. Head unit and I/O unit (mounted)

13.3 Parameters

The safety function "Safe detection of gas and output of the limit value over relays" claims, conform to EN 61508 a SIL 2.

The safety function "Safe detection of gas and output of the limit value over current output" claims, conform to EN 61508 a SIL 2.

The safety function "Safe detection of gas and output of the limit value over MODBUS" claims, conform to EN 61508 a SIL 2.

The transducer can be delivered for the use with differed heads, for toxic and explosive gas.