

(1) TYPE EXAMINATION CERTIFICATE



- (2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - **Directive 2014/34/EU**
- (3) Type-Examination Certificate Number

TÜV 20 ATEX 8525 X

Issue: 01

- (4) Equipment: Cuboidal sensors type ***_*_*_*_*_*_*_*
- (5) Manufacturer: Pepperl+Fuchs SE
- (6) Address: Lilienthalstraße 200
68307 Mannheim, Germany
- (7) This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.
- The examination and test results are recorded in the confidential report 557/Ex8525.01/20
- (9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN IEC 60079-0:2018

EN IEC 60079-7:2015/A1:2018

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.
- (12) The marking of the equipment shall include the following:



II 3 G

Ex ec IIC T6...T1 Gc

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2022-01-28

Dipl.-Ing. Christian Mehrhoff



This Type Examination Certificate without signature and stamp shall not be valid.
This Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax. + 49 (0) 221 806 114

(13) Annex

(14) **Type Examination Certificate**
TÜV 20 ATEX 8525 X Issue: 01

(15) Description of equipment

15.1 Equipment and type:

Cuboidal sensors type ***-*-*-*-*-*

The asterisks in the type designation will be replaced by letter or number combinations and indicate the respective type of the construction of the equipment.
The asterisks stand for following:

Cuboidal sensors Varikont L2 series type N**-L2-*-V1-*-*

1. Sensor series
The first asterisk will be replaced by the letters BB or BN or CB or CN.
2. Sensing range
The second asterisk stands for the sensing range in millimeters.
3. Electronics configuration
The third asterisk will be replaced by the letters A2 or E2 or N0.
4. Approval category: 3G or without a letter and number
5. Approval category (optional): 3D or without a letter and number
6. Custom specific variants (optional)

Cuboidal sensors PMI series type PMI*-F90-IU2EP-IO-V15-3G-*-*

1. Length
The first asterisk stands for the length in millimeters.
2. Approval category (optional): 3D
3. Custom specific variants (optional)

Cuboidal sensors V3 series type NB**-V3-*-3G-*-*

1. The first asterisk will be replaced by the letters B or N.
2. Sensing range
The second asterisk stands for the sensing range in millimeters.
3. Electronics configuration
The third asterisk will be replaced by the letters E2 or Z4 or Z4L.
4. Approval category (optional): 3D
5. Custom specific variants (optional)

All possible type-variations you can see in the table below under Technical Data.

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15.2 Description / Details of Change

General product information

The sensors are intended to convert mechanical displacement into electrical signals. The connection of the sensors will be made by connectors or by firmly connected cables, which are open ended.

Details of change

Two new types of equipment were created.

The new types are NBB*-L2-E2-V1-3G-*-* and NBN*-V3-E2-3G-*-*.

The safety relevant type of design of the new types keep the same as already certified.

Technical Data

Electrical Data and Environmental Data

The table below shows the maximum permissible ambient temperature T_a for each type of the equipment depend of the maximum input voltage and load current.

Position in Type Code									Maximum permissible ambient temperature in °C					
1	2	3	4	6	7	8	9	max. 30 Vdc load current			max. 60 Vdc load current		max. 9 Vdc with series-resistor of min. 562 Ω (NAMUR)	
								30 mA	100 mA	200 mA	30 mA	100 mA		
NBB	x	-L2	-A2	-V1	-3G	-x	-x	54	53	50	N/A	N/A	N/A	
NBB	x	-L2	-E2	-V1	-3G	-x	-x	55	54	51	N/A	N/A	N/A	
NBN	x	-L2	-E2	-V1	-3G	-x	-x	55	54	51	N/A	N/A	N/A	
NBN	x	-L2	-A2	-V1	-3G	-x	-x	54	53	50	N/A	N/A	N/A	
NCB	x	-L2	-N0	-V1			-x	N/A	N/A	N/A	N/A	N/A	65	
NCN	x	-L2	-N0	-V1			-x	N/A	N/A	N/A	N/A	N/A	65	
NBB	x	-V3	-E2		-3G	-x	-x	46	45	N/A	N/A	N/A	N/A	
NBB	x	-V3	-Z4		-3G	-x	-x	N/A	N/A	N/A	56	41	N/A	
NBB	x	-V3	-Z4L		-3G	-x	-x	60	N/A	N/A	N/A	N/A	N/A	
NBN	x	-V3	-E2		-3G	-x	-x	46	45	N/A	N/A	N/A	N/A	

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Position in Type Code									Maximum permissible ambient temperature in °C	
1	2	3	4	5	6	7	8	9	max. 30 Vdc (supply)	
									2 switching units each $I_{Lmax} = 100 \text{ mA}$	1 switching unit $I_{Lmax} = 100 \text{ mA}$
									1 analog output: $U_{Amax} = 10 \text{ V}$ or $I_{Amax} = 20 \text{ mA}$	analog output: not permitted
PMI	40	-F90	-IU2EP	-IO	-V15	-3G	-x	-x	32	50
PMI	80	-F90	-IU2EP	-IO	-V15	-3G	-x	-x	37	51
PMI	120	-F90	-IU2EP	-IO	-V15	-3G	-x	-x	37	50

$-25 \text{ °C} \leq T_a \leq T_{a_{max}}$ according to the table above

Maximum service temperature of the equipment T_s : 70 °C at $T_{a_{max}}$

Ingress protection according to IEC 60079-0: IP64

(16) Test-Report No. 557/Ex8525.01/20

(17) Special Conditions for safe use

- The environmental data must be taken into account – see 4. Technical Data and the operating instructions.
- The sensor shall be mounted in such a way that it is protected from ultraviolet radiation – see operating instructions.
- The sensor shall be mounted in such way that it is protected against mechanical hazard – see operating instructions.
- The sensor type N**-L2-*-V1-*-** and PMI-*-F90-V15-3G-*-** must not be connected or disconnected when energized.
- The plug and socked connection for the sensor type N**-L2-*-V1-*-** and PMI-*-F90-V15-3G-*-** shall be connected in compliance with IEC 60079-14 requirements, providing and maintaining degree of protection at least IP54 according to IEC 60079-0 requirements – see operating instructions.
- The sensor type PMI-*-F90-V15-3G-*-** shall only be opened in an area of at least pollution degree 2, as defined in IEC 60664-1.
- Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.

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(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2022-01-28

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