

# (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 8526 X**

Issue: 02

- (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 26<sup>th</sup> 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/Ex8526.02/20

- (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 60079-31:2014**

- (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 D Ex tc III C T80°C Dc**

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-02-07

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 8526 X

Issue: 02

(15) Description of equipment

15.1 Equipment and type:

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

Type designation:

#### Model Code Description FP series

1. **Sensor series** - inductive sensors in classic/ basic configuration in flush or non flush geometry
2. **Sensing range** in mm
3. **Enclosure shape**
4. **Electronics configuration**
5. **Base part** configuration
6. -None-
7. **Approval** indicator for EPL Gc equipment (optional): -3G
8. **Approval** indicator for EPL Dc equipment: -3D
9. **Additional information** - Any letter or number combination as indicator for custom specific variants.

#### Model Code Description Varikont U1K series

1. **Sensor series** - inductive sensors in classic/ basic configuration in flush or non flush geometry
2. **Sensing range** in mm
3. **Enclosure shape**
4. **Electronics configuration**
5. -None-
6. -None-
7. **Approval** indicator for EPL Gc equipment (optional): -3G
8. **Approval** indicator for EPL Dc equipment: -3D
9. **Additional information** - Any letter or number combination as indicator for custom specific variants.

This Type Examination Certificate without signature and official stamp shall not be valid.  
This certificate may be circulated without alteration. Extracts or alterations are subject to approval by:  
Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH

### Model Code Description Varikont L2 series

1. **Sensor series** - inductive sensors in basic configuration in flush or non flush geometry
2. **Sensing range** in mm
3. **Enclosure shape**
4. **Electronics configuration**
5. –None–
6. **Connection** is a standard M12 connector with 4 pins
7. **Approval** indicator for EPL Gc equipment (optional): -3G or without a letter and number (for electronic configuration -N0: without a letter and number)
8. **Approval** indicator for EPL Dc equipment: -3D or without a letter and number (for electronic configuration -N0: without a letter and number)
9. **Additional information** - Any letter or number combination as indicator for custom specific variants.

### Model Code Description PMI series

1. **Sensor series** – inductive position sensors
2. **Length** in mm
3. **Enclosure shape**
4. **Electronics configuration**
5. **Interface** is IO-Link
6. **Connection** is a standard M12 connector with 5 pins
7. **Approval** indicator for EPL Gc equipment (optional): -3G
8. **Approval** indicator for EPL Dc equipment: -3D
9. **Additional information** - Any letter or number combination as indicator for custom specific variants.

### Model Code Description V3 - Series

1. **Sensor series** - inductive sensors in basic configuration in flush geometry
2. **Sensing range** in mm
3. **Enclosure shape**
4. **Electronics configuration**
5. Configuration of base part
6. –None–
7. **Approval** indicator for EPL Gc equipment (optional): -3G
8. **Approval** indicator for EPL Dc equipment: -3D
9. **Additional information** - Any letter or number combination as indicator for custom specific variants.

All possible type-variations are listed in the tables under Technical Data.

This Type Examination Certificate without signature and official stamp shall not be valid.  
This certificate may be circulated without alteration. Extracts or alterations are subject to approval by:  
Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH

## 15.2 Description / Details of Change

### General product information

The cuboidal sensors type \*\*\*-\*\*-\*\*-\*\*-\*\* are intended to convert mechanical displacement into electrical signals.

The connection of the sensors will be made by terminals, connectors or by firmly connected cables, which are open ended.

### Technical Data

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

1	Position in Type Code								Maximum permissible ambient temperature in °C					
	2	3	4	5	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	
NCB	x	-FP	-A2	-P1		-x	-3D	-x	57	56	53	48	47	N/A
NCN	x	-FP	-A2	-P1		-x	-3D	-x	57	56	53	48	47	N/A
NBB	x	-U1K	-E2			-x	-3D	-x	54	52	50	N/A	N/A	N/A
NBN	x	-U1K	-E2			-x	-3D	-x	54	52	50	N/A	N/A	N/A
NBB	x	-L2	-A2		-V1	-x	-3D	-x	54	53	50	N/A	N/A	N/A
NBB	x	-L2	-E2		-V1	-x	-3D	-x	55	54	51	N/A	N/A	N/A
NBN	x	-L2	-E2		-V1	-x	-3D	-x	55	54	51	N/A	N/A	N/A
NBN	x	-L2	-A2		-V1	-x	-3D	-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			-x	-3D	-x	46	45	N/A	N/A	N/A	N/A
NBB	x	-V3	-Z4			-x	-3D	-x	N/A	N/A	N/A	58	41	N/A
NBB	x	-V3	-Z4L			-x	-3D	-x	60	N/A	N/A	N/A	N/A	N/A
NBN	x	-V3	-E2			-x	-3D	-x	46	45	N/A	N/A	N/A	N/A

1	Position in Type Code								Maximum permissible ambient temperature in °C	
	2	3	4	5	6	7	8	9	max. 30 Vdc (supply)	
									2 switching units each $I_{Lmax} = 100$ mA	1 switching unit $I_{Lmax} = 100$ mA
									1 analog output: $U_{Amax} = 10$ V or $I_{Amax} = 20$ mA	analog output: not permitted
PMI	40	-F90	-IU2EP	-IO	-V15	-x	-3D	-x	32	50
PMI	80	-F90	-IU2EP	-IO	-V15	-x	-3D	-x	37	52
PMI	120	-F90	-IU2EP	-IO	-V15	-x	-3D	-x	37	50

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

This Type Examination Certificate without signature and official stamp shall not be valid.  
 This certificate may be circulated without alteration. Extracts or alterations are subject to approval by:  
 Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH

Details of Change

- Qualification of alternative casting resins.
- Add new sensor types.

(16) Test-Report No. 557/Ex8526.02/20

(17) Special Conditions for safe use

1. The environmental data must be taken into account – see Technical Data and the operating instructions.
2. The risk of electrostatic charges shall be minimized – see operating instructions.
3. The sensor shall be mounted in such a way that it is protected from ultraviolet radiation – see operating instructions.
4. The sensor shall be mounted in such way that it is protected against mechanical hazard – see operating instructions.
5. The sensor types N\*\*-L2\*-V1-\*-\*-, PMI\*-F90-V15-\*-3D-\*, NC\*\*-FP-A2-P1-\*-3D-\* and NB\*\*-U1K-E2-\*-3D-\* must not be connected or disconnected when energized.
6. The plug and socked connection for the sensor types N\*\*-L2\*-V1-\*-\*-\* and PMI\*-F90-V15-\*-3D-\* shall be connected in compliance with EN 60079-14 requirements, providing and maintaining degree of protection at least IP64 according to EN 60079-0 requirements – see operating instructions.

(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-02-07

Dipl.-Ing. Christian Mehrhoff



This Type Examination Certificate without signature and official stamp shall not be valid.  
This certificate may be circulated without alteration. Extracts or alterations are subject to approval by:  
Zertifizierungsstelle of TÜV Rheinland Industrie Service GmbH