Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 15 ATEX 1009 X **Issue: 2**

(4) Product: Level measuring instrument VEGAPULS, type code PS64(*).*E/J****H******(*)(*) and PS69(*).*E/J****H/B/I/P/F/U******(*)(*)

(5) Manufacturer: VEGA Griehaber KG

(6) Address: Am Hohenstein 113, 77761 Schiltach, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 21-10051.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 **EN 60079-1:2014+AC:2018** **EN 60079-26:2015**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

Ex II 1/2 G resp. 2 G Ex db IIC T6...T1 Ga/Gb resp. Gb

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, April 23, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

ZSEx001e c

(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 15 ATEX 1009 X, Issue:2**

(15) Description of Product

The Level measuring instrument VEGAPULS, type code PS64(*).*E/J****H******(*)(*) and PS69(*).*E/J****H/B/I/P/F/U******(*)(*) serves for the detection of the distance between the product surface and the sensor in areas with flammable gases.

Both types come either as an EPL-Ga/Gb equipment, when the electronics housing operates in a Gb-environment and the antenna in a Ga-environment, thus requiring a special designed process connector, which serves as a separation element between the zones 0 and 1 or as a sole EPL-Gb equipment, when both electronics housing and antenna operate in zone 1.

The meter housing with the type of protection flameproof enclosures is made of stainless steel or aluminum as a single chamber or double chamber housing. The single chamber housing constitutes a common terminal and electronics compartment for the sensor and transmitters. In the double chamber housing the terminal and electronics compartment are separated from one another, either in the form of merely communicating spaces or with Ex-d-compliant separation between the two compartments. Optionally, the enclosures enable the incorporation of an indicating and adjustment module. In this case, the housing is equipped with a modified cover with an integrated glass window.

Changes in Issue 01

1. New Models VEGAPULS PS64(*).A/VE****H******(*)(*) were added.
2. Protection Type acc. EN 60079-31 was omitted.
3. Use of re-certified empty enclosure with expanded ambient temperature range for models VEGAPULS PS69(*).A/VE****H/B/I/P/F/U******(*)(*)
4. New maximum ambient temperature of -60°C to +80°C for empty enclosure (KIWA 17 ATEX 0032 U, Issue 1) for EPL Gb models.

Changes in current Issue 02

A standard update has been carried out, as well as a minor change in the type code.
For the type VEGAPULS PS69(*).AE/J****H/B/I/P/F/U******(*)(*) the new ATEX certificate KIWA 17 ATEX 0032 U, Issue 2, had been taken as a base for the flameproof empty enclosure.

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Electrical Data

Model	Electronic	U
PS64(*).*E****H******(*)(*)	PS64HW	12 ... 35V DC
PS64(*).*E****H***B**(*)(*)	PS64HW+PLICSZEKX	12 ... 35V DC
PS69(*).*E****H******(*)(*)	PS60HW	12 ... 35V DC
PS69(*).*E****P******(*)(*)	PS60PAW	9...32V DC
PS69(*).*E****F******(*)(*)	PS60FFW	9...32V DC
PS69(*).*E****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC
PS69(*).*E****P***B**(*)(*)	PS60PAW+PLICSZEKX	9...32V DC
PS69(*).*E****F***B**(*)(*)	PS60FFW+PLICSZEKX	9...32V DC
PS69(*).*E****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC
PS69(*).*E****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC
PS69(*).*E****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC
PS69(*).*E****U******(*)(*)	PS60HW+PLICSZEMB	8...30V DC

Thermal Data

Maximum ambient temperature range:
-50° .... +80 °C with observation window
-60° .... +80 °C without observation window

Ambient temperature range for PULS64/69 for process temperatures up to +80 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**D**C/D/EH******(*)(*)
PS69(*).**B**C/D/EH/B/I/U/P/F******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-20°C...+60°C	-40°C...+54°C

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-40°C...+80°C	-40°C...+74°C

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Ambient temperature range for PULS64 for process temperatures up to +130 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**U**A/G/F/RH******(*)(*)
PS64(*).**G**I/K/PH******(*)(*)
PS64(*).**I**T/U/VH******(*)(*)
PS64(*).**I**IH******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6…T1	-15°C/-20°C…+60°C	-50°C/-60°C…+53°C

Note: *When using VEGAPULS PS64(*).**U**RH******(*)(*) or VEGAPULS PS64(*).**I**TH******(*)(*) it is not permitted to fall below -15°C with the process temperature. For all other PS64 it is not permitted to fall below -20°C with the process temperature.*
Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	X°C…+80°C	-50°C/-60°C …+73°C
T5	X°C…+95°C	-50°C/-60°C …+70°C
T4…T1	X°C…+130°C	-50°C/-60°C …+47°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

The minimal permitted process temperature, in the table above indicated by "X°C", is depending on the sealing material used. The applicable minimum process temperature can be taken from model code below:

VEGAPULS PS64(*).**U**A/FH******(*)(*) X = -40°C
VEGAPULS PS64(*).**U**GH******(*)(*) X = -20°C
VEGAPULS PS64(*).**U**RH******(*)(*) X = -15°C
VEGAPULS PS64(*).**G**I/K/PH******(*)(*) X = -60°C
VEGAPULS PS64(*).**I**TH******(*)(*) X = -15°C
VEGAPULS PS64(*).**I**U/VH******(*)(*) X = -20°C
VEGAPULS PS64(*).**I**IH******(*)(*) X = -60°C

Ambient temperature range for PULS69 for process temperatures up to +130 °C

The hereafter listed temperature derating tables are valid for:
VEGAPULS PS69(*).**U**A/F H/B/I/U/P/F******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6…T1	-20°C…+60°C	-50°C/-60°C…+53°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

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Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6	-40°C…+80°C	-50°C/-60°C …+73°C
T5	-40°C …+95°C	-50°C/-60°C …+73°C
T4…T1	-40°C …+130°C	-50°C/-60°C …+57°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Ambient temperature range for PULS64 for process temperatures up to +195 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**U**B/H/SH******(*)(*)
PS64(*).**G**J/L/QH******(*)(*)
PS64(*).**I**JH******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6…T1	-15°C/-20°C…+60°C	-50°C/-60°C…+55°C

Note: *When using VEGAPULS PS64(*).**U**SH******(*)(*) it is not permitted to fall below -15°C with the process temperature. For all other PS64 it is not permitted to fall below -20°C with the process temperature.*
Note: *Ambient temperature can be decreased to -60°C, if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	X°C…+80°C	-50°C/-60°C …+75°C
T5	X°C…+95°C	-50°C/-60°C …+77°C
T4	X°C…+130°C	-50°C/-60°C …+70°C
T3…T1	X°C…+195°C	-50°C/-60°C …+57°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

The minimal permitted process temperature, in the table above indicated by "X°C", is depending on the sealing material used. The applicable minimum process temperature can be taken from model code below:

VEGAPULS PS64(*).**U**BH******(*)(*)	X = -40°C
VEGAPULS PS64(*).**U**HH******(*)(*)	X = -20°C
VEGAPULS PS64(*).**U**SH******(*)(*)	X = -15°C
VEGAPULS PS64(*).**G**J/L/QH******(*)(*)	X = -60°C
VEGAPULS PS64(*).**I**JH******(*)(*)	X = -60°C

Ambient temperature range for PULS69 for process temperatures up to +195 °C

The hereafter listed temperature derating tables are valid for:
VEGAPULS PS69(*).**U**B H/B/I/U/P/F******(*)(*)
VEGAPULS PS69(*).**C**B H/B/I/U/P/F******(*)(*)

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Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6…T1	-20°C…+60°C	-50°C/-60°C…+54°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6	-40°C …+80°C	-50°C/-60°C …+74°C
T5	-40°C …+95°C	-50°C/-60°C …+77°C
T4	-40°C …+130°C	-50°C/-60°C …+69°C
T3…T1	-40°C …+195°C	-50°C/-60°C …+56°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Ambient temperature range for PULS64 for process temperatures down to - 196 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**G**W/YH******(*)(*)

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	-196°C…+80°C	-20°C …+75°C
T5	-196°C …+95°C	-20°C …+77°C
T4	-196°C …+130°C	-20°C …+70°C
T3…T1	-196°C …+195°C	-20°C …+57°C

Model Code

Type Code VEGAPULS PS64(*).A/VE/J**H******(*)(*)**

VEGAPULS PS64(*).*E/J****H******(*)(*)											
A	E	*	**	*	H	*	*	*	*	*	*
A	J	*	**	*	H	*	*	*	*	*	*
V	E	*	**	*	H	*	*	*	*	*	*
a	b	c	de	f	g	h	i	j	k	l	m

a	Scope		
A	ATEX		
V	Combination (ATEX, IECEx, FM, CSA)		
I	b	Approval	
I	E	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb	
I	J	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb oder II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T* Da, Da/Db, Da/Dc, Db (T* see safety instructions)	
I	Q	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb + ship approval	
	Z	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb + overfill protection (WHG, VLAREM)	
I	I	c	Antenna / with Ex d glass-feedthrough

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I	I	D	plastic horn antenna / with							
I	I	U	Thread with integrated horn antenna / with							
I	I	G	Flange with encapsulated antenna system / with							
I	I	I	Hygienic fitting with encapsulated antenna system / with							
I	I	I	de	Process fitting / Material						
I I I	I I I	I I I	**	process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards;						
I	I	I	I	f	Material / Seal / Process temperature					
I	I	I	I	A	PEEK / FKM (SHS FPM 70C3 GLT) / -40...130°C					
I	I	I	I	B	PEEK / FKM (SHS FPM 70C3 GLT) / -40...200°C					
I	I	I	I	G	PEEK / FFKM (Kalrez 6375) / -20...130°C					
I	I	I	I	H	PEEK / FFKM (Kalrez 6375) / -20...200°C					
I	I	I	I	F	PEEK / EPDM (A+P 75.5/KW75F) / -40...130°C					
I	I	I	I	R	PEEK / FFKM (Kalrez 6230) / -15...130°C					
I	I	I	I	S	PEEK / FFKM (Kalrez 6230) / -15...200°C					
I	I	I	I	T	PTFE / FFKM (Kalrez 6230) / -15...+130°C					
I	I	I	I	U	PTFE / FKM (75,5/VA75F) / -20...+130°C					
I	I	I	I	V	PTFE / EPDM (75,5/KW75F) / -20...+130°C					
I	I	I	I	I	PTFE / PTFE / -60...130°C					
I	I	I	I	J	PTFE / PTFE / -60...200°C					
I	I	I	I	W	PTFE / PTFE / -196...200°C					
I	I	I	I	K	PTFE / PTFE (8mm) / -60...+130°C					
I	I	I	I	L	PTFE / PTFE (8mm) / -60...+200°C					
I	I	I	I	Y	PTFE (8mm) / PTFE / -196...200°C					
I	I	I	I	P	PFA / PFA (8mm) / -60...130°C					
I	I	I	I	Q	PFA / PFA (8mm) / -60...200°C					
I	I	I	I	C	PP / -40...80°C					
I	I	I	I	D	PP / FKM (SHS FPM 70C3 GLT) und PP / -40...80°C					
I	I	I	I	E	PP / EPDM (COG AP310) und PP / -40...80°C					
I	I	I	I	I	g	Electronics				
I	I	I	I	I	H	Two-wire 4...20mA/HART®				
I	I	I	I	I	I	h	Additional electronics			
I	I	I	I	I	I	X	ohne			
I	I	I	I	I	I	I	i	Housing / Protection		
I	I	I	I	I	I	I	A	Aluminum / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	H	Special colour Aluminum / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	D	Aluminum double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	W	StSt double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	I	j	Cable entry / Connection	
I I	I I	I I	I I	I I	I I	I I	I I	*	single digit representing connection or cable gland suitable for the application	
I	I	I	I	I	I	I	I	D	M20x1,5 / Blind - plug	
I	I	I	I	I	I	I	I	1	M20x1,5 / without	
I	I	I	I	I	I	I	I	N	½NPT / Blind - plug	
L	I	I	I	I	I	I	I	Q	½NPT / without	
I	I	I	I	I	I	I	I	I	k	Display / Adjustment module PLICSCOM
I	I	I	I	I	I	I	I	I	X	Without
I	I	I	I	I	I	I	I	I	A	Mounted
I	I	I	I	I	I	I	I	I	F	Without PLICSCOM, cover with window
I	I	I	I	I	I	I	I	I	B	laterally mounted
I	I	I	I	I	I	I	I	I	K	Mounted, with Bluetooth and magnet pen operation

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									L	laterally mounted, with Bluetooth and magnet pen operation			
										I	Additional equipment		
										X	without		
										V	with rinsing connection and reflux valve		
										1	Antenna system with DD varnish		
											m	Certificates	
											X	No	
											M	Yes	

Type Code VEGAPULS PS69(*).IAVE/J**H/B/I/P/F/U******(*)(*)**

VEGAPULS PS69(*).A/V*****H/B/I/P/F/U******(*)(*)											
A	E	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
A	J	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
V	E	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
a	b	c	de	f	g	h	i	j	k	l	m

a	Scope								
A	ATEX								
V	Combination (ATEX, IECEx, FM, CSA)								
I	b	Approval							
I	E	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb							
I	J	II 1/2G, 2G Ex db IIC T6…T1 Ga/Gb, Gb oder II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T* Da, Da/Db, Da/Dc, Db (T* see safety instructions)							
I	I	c	Antenna / Material						
I	I	B	plastic horn antenna / PP						
I	I	C	Metal framed lens antenna with cleaning connection / PEEK						
I	I	U	Thread with integrated horn antenna						
I	I	I	de	Process fitting / Material					
I	I	I	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.					
I	I	I	I	f	Seal / Process temperature				
I	I	I	I	*	Any other comparable seal suitable for the application including the given process temperature				
I	I	I	I	A	PEEK / FKM (SHS FPM 70C3 GLT) / -40...130°C				
I	I	I	I	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40…200°C				
I	I	I	I	C	PP/-40…+80°C				
I	I	I	I	D	FKM (SHS FPM 70C3 GLT) und PP/-40…+80°C				
I	I	I	I	E	EPDM (COG AP310) und PP/-40…+80°C				
I	I	I	I	F	PEEK / EPDM (A+P 75.5/KW75F) / -40...130°C				
I	I	I	I	I	g	Electronics			
I	I	I	I	I	H	Two-wire 4...20mA/HART®			
I	I	I	I	I	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz			
I	I	I	I	I	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC			
I	I	I	I	I	P	Profibus PA			
I	I	I	I	I	F	Foundation Fieldbus			
I	I	I	I	I	U	Modbus			
I	I	I	I	I	I	h	Additional electronics		
I	I	I	I	I	I	X	ohne		
I	I	I	I	I	I	Z	Additional current output 4...20mA		
I	I	I	I	I	I	I	i	Housing / Protection	
I	I	I	I	I	I	I	A	Aluminum / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	H	Special colour Aluminum / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	D	Aluminum double chamber / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	W	StSt double chamber / IP66/IP68 (0.2bar)	
I	I	I	I	I	I	I	I	j	Cable entry / Connection

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								*					any rated connection or cable gland suitable for the application
								D					M20x1,5 / Blind - plug
								1					M20x1,5 / without
								N					½NPT / Blind - plug
								Q					½ NPT / without
									k				**Display / Adjustment module PLICSCOM**
									X				Without
									A				Mounted
									F				Without PLICSCOM, cover with window
									B				laterally mounted
									K				Mounted, with Bluetooth and magnet pen operation
									L				laterally mounted, with Bluetooth and magnet pen operation
										I			**Additional equipment**
										X			without
										R			Reflux valve for rinsing connection
										V			Rinsing connection and reflux valve(only with antenna B)
											m		Certificates
											X		No
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	M		Yes

Explanation Note to Type Codes VEGAPULS

The construction of VEGAPULS types PS64(*).*J****H******(*)(*) and types PS69(*).*J****H/B/I/P/F/U******(*)(*) is fulfilling the requirements of the Ex d approval (PTB 15 ATEX 1009 X)and at the same time the requirements of the Ex t approval (BVS 16 ATEX E 022 X).

VEGAPULS type PS64(*).*Q****H******(*)(*) have in addition to this Ex d approval (PTB 15 ATEX 1009 X) also an approval for the installation on ships.

VEGAPULS PS64/69(*).*/Q with approval ATEX, IECEx, FM and CSA. They are identical in construction with VEGAPULS PS64/69(*).*E.

The ship certification, the Ex t certification, the FM certification and the CSA certification are not part of the assessment within this application.

The approvals "IQ" (Ex d and ship) or "IJ" (Ex d and Ex t) or "VE", "VQ" are combination approvals of the type "Ex d and other certificates". It is VEGA's responsibility to ensure that the "other certificates" are available before marketing instruments with approval "IQ", "IJ", "VE" or "VQ".

(16) Test Report PTB Ex 21-10051

(17) Specific conditions of use

The ambient temperature range, determined in IEC 60079-0 may be restricted. An itemization of the different thermal ranges can be found in the applicable Safety Instructions or in the Annex of this certificate under "Thermal Data".

Flameproof joints are not intended for repair.

Installation of radar sensors shall be such that the following is prevented:

- Electrostatic charging at operation, maintenance and repair.

- Electrostatic charging as consequence of process.

Additional notes for safe installation and operation:

Components attached or installed (e.g. terminal compartments, bushings, cable glands, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They shall be suited for the operating conditions and have a separate examination certificate. The special conditions specified for the components shall be complied with, and the components shall be included in the type test, if necessary. This equally applies to the components mentioned in the technical description.

The end user has to assure, that the media temperature, when used in Zone 0, does not exceed 80% of the auto ignition temperature of the respective media (in °C) inside of the process vessel and does not exceed the maximum permissible flange temperature in dependence of the Temperature Class. When used with flammable media, the parts of the level gauge in contact with the media have to be included into the periodic overpressure test of the facility.

If parts of the level gauge inside the EPL Ga-area with contact to the medium are made of materials with an electrical conductivity of less than 10−8 S/m, the medium must have an electrical conductivity of at least 10−8 S/m, in order to avoid an electrostatic charging. If this is not possible to maintain, the level gauge must not be used, when heavy charging processes, such as mechanical friction or cutting processes, electron emission, etc., are present. Especially the antenna of the level gauge must not be mounted into a pneumatic conveying stream.

If aluminum and/or titanium are used in the EPL Ga-area, it has to be ensured, that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded

The radar sensor type VEGAPULS PS64 and PS69 shall be installed in such a way, that contact between the measuring sensor (antenna) and the tank wall will be excluded considering the installations and the flow conditions inside the tank and the length of the antenna.

For the operation of the VEGAPULS PS69(*).*E/J****H/B/I/P/F/U******(*)(*) and VEGAPULS PS64(*).*E/J****H******(*)(*) with the antenna in EPL Ga-area, a process pressure range between 0.8 and 1.1 bar has to be maintained.

For radar sensors Category 2 the following process pressures are applicable depending on the antenna version:

Type PS64	Model	Process pressure
plastic horn antenna	PS64(*).*E/JD***H******(*)(*)	-1…+2bar
thread with integrated horn antenna	PS64(*).*E/JU***H******(*)(*)	-1…+20bar
flange with encapsulated antenna system	PS64(*).*E/JG***H******(*)(*)	-1…+25bar
Aseptic/hygienic antenna	PS64(*).*E/JI***H******(*)(*)	-1…+16bar

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Type PS69	Model	Process pressure
plastic horn antenna	PS69(*).*E/JB***H/B/I/U/P/F******(*)(*)	-1…+2bar
Metal framed lens antenna with cleaning connection	PS69(*).*E/JC***H/B/I/U/P/F******(*)(*)	-1…+3bar
thread with integrated horn antenna	PS69(*).*E/JU***H/B/I/U/P/F******(*)(*)	-1…+20bar

For process pressures outside the standard atmospheric conditions of 80 kPa (0.8 bar) to 110 kPa (1.1 bar) additional requirements may be applied.

With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of EPL Ga/Gb the degree of protection IP 67 at the connection to the return valve is guaranteed. After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.

The level measuring devices in the version with swiveling holder shall be installed in such a way that using the level measuring devices as an equipment of EPL Ga/Gb after the alignment of the antenna by means of the swiveling holder and after screw connection of the clamp flange the degree of protection IP 67 is kept.

With the radar sensors in the version with ball valve it is to be made certain that the ball valve is locked before the separation of the flange connection.

Connection conditions

1. The VEGAPULS types PS64/69... shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued. If the VEGAPULS types PS64/69... is connected to conduit systems, the required sealing device shall be provided immediately at the enclosure.
2. Openings that are not used shall be sealed in compliance with the specifications in IEC 60079-1, section 11.9.
3. If connection is made in the potentially explosive area, the connecting wire of the VEGAPULS types PS64/69... shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0, section 1.
4. The connecting wire of the VEGAPULS types PS64/69... shall be fixed and routed so that it will be adequately protected against mechanical damage.
5. If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.
6. The VEGAPULS types PS64/69... shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially explosive location.

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7. Covers shall not be opened when an explosive gas atmosphere is present. Covers shall be marked with

   "WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

8. Radar sensors shall be used only for process media against which the materials in contact with the media are resistant.
9. If necessary a suitable overvoltage protector shall be mounted prior to the radar sensor.

These notes and instructions shall accompany each apparatus in an adequate form.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, March 30, 2021
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 15 ATEX 1009 X **Issue: 01**

(4) Product: Level Measuring instrument types VEGAPULS PS64(*).AE/J****H******(*)(*)
VEGAPULS PS69(*).AE/J****H/B/I/P/F/U******(*)(*)

(5) Manufacturer: VEGA Griehaber KG

(6) Address: Am Hohenstein 113, 77761 Schiltach, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 18-16138.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013 **EN 60079-1:2014** **EN 60079-26:2015**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

II 1/2 G resp. 2 G Ex db IIC T6...T1 Ga/Gb resp. Gb

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, June 18, 2018
On behalf of PTB:

Dr.-Ing. D. Markus
Direktor und Professor

ZSEx001e c

(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 15 ATEX 1009 X, Issue: 01**

(15) Description of Product

The level measuring instrument, types VEGAPULS PS64(*).AE/J****H******(*)(*) and VEGAPULS PS69(*).AE/J****H/B/I/P/F/U******(*)(*) serve for the detection of the distance between the product surface and the sensor in areas with flammable gases.

Both types come either as an EPL-Ga/Gb equipment, when the electronics housing operates in a Gb-environment and the antenna in a Ga-environment, thus requiring a special designed process connector, which serves as a separation element between the zones 0 and 1 or as a sole EPL-Gb equipment, when both electronics housing and antenna operate in zone 1.

The meter housing with the type of protection flameproof enclosures is made of stainless steel or aluminum as a single chamber or double chamber housing. The single chamber housing constitutes a common terminal and electronics compartment for the sensor and transmitters. In the double chamber housing the terminal and electronics compartment are separated from one another, either in the form of merely communicating spaces or with Ex-d-compliant separation between the two compartments. Optionally, the enclosures enable the incorporation of an indicating and adjustment module. In this case, the housing is equipped with a modified cover with an integrated glass window.

Changes to Issue 00

1. New Models VEGAPULS PS64(*).A/VE****H******(*)(*) were added.
2. Protection Type acc. EN 60079-31 was omitted.
3. Use of re-certified empty enclosure with expanded ambient temperature range for models VEGAPULS PS69(*).A/VE****H/B/I/P/F/U******(*)(*)
4. New maximum ambient temperature of -60°C to +80°C for empty enclosure (KIWA 17 ATEX 0032 U, Issue 1) for EPL Gb models.

Electrical Data

Model	Electronic	U
PS64(*).AE****H******(*)(*)	PS64HW	12 ... 35V DC
PS64(*).AE****H***B**(*)(*)	PS64HW+PLICSZEKX	12 ... 35V DC
PS69(*).AE****H******(*)(*)	PS60HW	12 ... 35V DC
PS69(*).AE****P******(*)(*)	PS60PAW	9...32V DC

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Model	Electronic	U
PS69(*).AE****F******(*)(*)	PS60FFW	9...32V DC
PS69(*).AE****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC
PS69(*).AE****P***B**(*)(*)	PS60PAW+PLICSZEKX	9...32V DC
PS69(*).AE****F***B**(*)(*)	PS60FFW+PLICSZEKX	9...32V DC
PS69(*).AE****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC
PS69(*).AE****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC
PS69(*).AE****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC
PS69(*).AE****U******(*)(*)	PS60HW+PLICSZEMB	8...30V DC

Thermal Data

Maximum ambient temperature range:

-50° .... +80 °C with observation window

-60° .... +80 °C without observation window

Ambient temperature range for PULS64/69 for process temperatures up to +80 °C

The hereafter listed temperature derating tables are valid for:

PS64(*).**D**C/D/EH******(*)(*)

PS69(*).**B**C/D/EH/B/I/U/P/F******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-20°C...+60°C	-40°C...+54°C

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-40°C...+80°C	-40°C...+74°C

Ambient temperature range for PULS64 for process temperatures up to +130 °C

The hereafter listed temperature derating tables are valid for:

PS64(*).**U**A/G/F/RH******(*)(*)

PS64(*).**G**I/K/PH******(*)(*)

PS64(*).**I**T/U/VH******(*)(*)

PS64(*).**I**IH******(*)(*)

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Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-15°C/-20°C...+60°C	-50°C/-60°C...+53°C

Note: *When using VEGAPULS PS64(*).**U**RH******(*)(*) or VEGAPULS PS64(*).**I**TH******(*)(*) it is not permitted to fall below -15°C with the process temperature. For all other PS64 it is not permitted to fall below -20°C with the process temperature.*
Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	X°C...+80°C	-50°C/-60°C ...+73°C
T5	X°C...+95°C	-50°C/-60°C ...+70°C
T4...T1	X°C...+130°C	-50°C/-60°C ...+47°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

The minimal permitted process temperature, in the table above indicated by "X°C", is depending on the sealing material used. The applicable minimum process temperature can be taken from model code below:

VEGAPULS PS64(*).**U**A/FH******(*)(*) X = -40°C
VEGAPULS PS64(*).**U**GH******(*)(*) X = -20°C
VEGAPULS PS64(*).**U**RH******(*)(*) X = -15°C
VEGAPULS PS64(*).**G**I/K/PH******(*)(*) X = -60°C
VEGAPULS PS64(*).**I**TH******(*)(*) X = -15°C
VEGAPULS PS64(*).**I**U/VH******(*)(*) X = -20°C
VEGAPULS PS64(*).**I**IH******(*)(*) X = -60°C

Ambient temperature range for PULS69 for process temperatures up to +130 °C

The hereafter listed temperature derating tables are valid for:
VEGAPULS PS69(*).**U**A/F H/B/I/U/P/F******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-20°C...+60°C	-50°C/-60°C...+53°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6	-40°C...+80°C	-50°C/-60°C ...+73°C
T5	-40°C ...+95°C	-50°C/-60°C ...+73°C
T4...T1	-40°C ...+130°C	-50°C/-60°C ...+57°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

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Ambient temperature range for PULS64 for process temperatures up to +195 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**U**B/H/SH******(*)(*)
PS64(*).**G**J/L/QH******(*)(*)
PS64(*).**I**JH******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-15°C/-20°C...+60°C	-50°C/-60°C...+55°C

Note: *When using VEGAPULS PS64(*).**U**SH******(*)(*) it is not permitted to fall below -15°C with the process temperature. For all other PS64 it is not permitted to fall below -20°C with the process temperature.*
Note: *Ambient temperature can be decreased to -60°C, if enclosure does not have cover with viewing window.*

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	X°C...+80°C	-50°C/-60°C ...+75°C
T5	X°C...+95°C	-50°C/-60°C ...+77°C
T4	X°C...+130°C	-50°C/-60°C ...+70°C
T3...T1	X°C...+195°C	-50°C/-60°C ...+57°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

The minimal permitted process temperature, in the table above indicated by "X°C", is depending on the sealing material used. The applicable minimum process temperature can be taken from model code below:

VEGAPULS PS64(*).**U**BH******(*)(*)	X = -40°C
VEGAPULS PS64(*).**U**HH******(*)(*)	X = -20°C
VEGAPULS PS64(*).**U**SH******(*)(*)	X = -15°C
VEGAPULS PS64(*).**G**J/L/QH******(*)(*)	X = -60°C
VEGAPULS PS64(*).**I**JH******(*)(*)	X = -60°C

Ambient temperature range for PULS69 for process temperatures up to +195 °C

The hereafter listed temperature derating tables are valid for:
VEGAPULS PS69(*).**U**B H/B/I/U/P/F******(*)(*)
VEGAPULS PS69(*).**C**B H/B/I/U/P/F******(*)(*)

Category 1/2, EPL Ga/Gb – instrument (antenna in zone 0 and electronics in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6...T1	-20°C...+60°C	-50°C/-60°C...+54°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

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Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 0	Permitted ambient temperature range at the enclosure in zone 1
T6	-40°C ...+80°C	-50°C/-60°C ...+74°C
T5	-40°C ...+95°C	-50°C/-60°C ...+77°C
T4	-40°C ...+130°C	-50°C/-60°C ...+69°C
T3...T1	-40°C ...+195°C	-50°C/-60°C ...+56°C

Note: *Ambient temperature can be decreased to -60°C if enclosure does not have cover with viewing window.*

Ambient temperature range for PULS64 for process temperatures down to - 196 °C

The hereafter listed temperature derating tables are valid for:
PS64(*).**G**W/YH******(*)(*)

Category 2, EPL Gb – instrument (antenna and electronics both in zone 1)

T-Class	Permitted process temperature range at the sensor/the antenna in zone 1	Permitted ambient temperature range at the enclosure in zone 1
T6	-196°C...+80°C	-20°C ...+75°C
T5	-196°C ...+95°C	-20°C ...+77°C
T4	-196°C ...+130°C	-20°C ...+70°C
T3...T1	-196°C ...+195°C	-20°C ...+57°C

Model Code

Type Code VEGAPULS PS64(*).A/VE/J**H******(*)(*)**

VEGAPULS PS64(*).*E/J****H******(*)(*)											
A	E	*	**	*	H	*	*	*	*	*	*
A	J	*	**	*	H	*	*	*	*	*	*
V	E	*	**	*	H	*	*	*	*	*	*
a	b	c	de	f	g	h	i	j	k	l	m

a	Scope			
A	ATEX			
V	Combination (ATEX, IECEx, FM, CSA)			
I	b	Approval		
I	E	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb		
I	J	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb oder II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T* Da, Da/Db, Da/Dc, Db (T* see safety instructions)		
I	Q	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb + ship approval		
	Z	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb + overfill protection (WHG, VLAREM)		
I	I	c	Antenna / with Ex d glass-feedthrough	
I	I	D	plastic horn antenna / with	
I	I	U	Thread with integrated horn antenna / with	
I	I	G	Flange with encapsulated antenna system / with	
I	I	I	Hygienic fitting with encapsulated antenna system / with	
I	I	I	de	Process fitting / Material
I I I	I I I	I I I	**	process fitting / material: two-digit alphanumeric code for industry recognized type connection with suitable pressure ratings and any type which complies with appropriate international or national standards;

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				f	Material / Seal / Process temperature							
				A	PEEK / FKM (SHS FPM 70C3 GLT) / -40...130°C							
				B	PEEK / FKM (SHS FPM 70C3 GLT) / -40...200°C							
				G	PEEK / FFKM (Kalrez 6375) / -20...130°C							
				H	PEEK / FFKM (Kalrez 6375) / -20...200°C							
				F	PEEK / EPDM (A+P 75.5/KW75F) / -40...130°C							
				R	PEEK / FFKM (Kalrez 6230) / -15...130°C							
				S	PEEK / FFKM (Kalrez 6230) / -15...200°C							
				T	PTFE / FFKM (Kalrez 6230) / -15...+130°C							
				U	PTFE / FKM (75,5/VA75F) / -20...+130°C							
				V	PTFE / EPDM (75,5/KW75F) / -20...+130°C							
				I	PTFE / PTFE / -60...130°C							
				J	PTFE / PTFE / -60...200°C							
				W	PTFE / PTFE / -196...200°C							
				K	PTFE / PTFE (8mm) / -60...+130°C							
				L	PTFE / PTFE (8mm) / -60...+200°C							
				Y	PTFE (8mm) / PTFE / -196...200°C							
				P	PFA / PFA (8mm) / -60...130°C							
				Q	PFA / PFA (8mm) / -60...200°C							
				C	PP / -40...80°C							
				D	PP / FKM (SHS FPM 70C3 GLT) und PP / -40...80°C							
				E	PP / EPDM (COG AP310) und PP / -40...80°C							
					g	Electronics						
					H	Two-wire 4...20mA/HART®						
						h	Additional electronics					
						X	ohne					
							i	Housing / Protection				
							A	Aluminum / IP66/IP68 (0.2bar)				
							H	Special colour Aluminum / IP66/IP68 (0.2bar)				
							D	Aluminum double chamber / IP66/IP68 (0.2bar)				
							S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)				
							V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)				
							W	StSt double chamber / IP66/IP68 (0.2bar)				
								j	Cable entry / Connection			
								*	single digit representing connection or cable gland suitable for the application			
								D	M20x1,5 / Blind - plug			
								1	M20x1,5 / without			
								N	½NPT / Blind - plug			
L								Q	½NPT / without			
									k	Display / Adjustment module PLICSCOM		
									X	Without		
									A	Mounted		
									F	Without PLICSCOM, cover with window		
									B	laterally mounted		
									K	Mounted, with Bluetooth and magnet pen operation		
									L	laterally mounted, with Bluetooth and magnet pen operation		
										I	Additional equipment	
										X	without	
										V	with rinsing connection and reflux valve	
										1	Antenna system with DD varnish	
											m	Certificates
											X	No
											M	Yes

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X, Issue: 01

Type Code VEGAPULS PS69(*).IAVE/J****H/B/I/P/F/U******(*)(*)

VEGAPULS PS69(*).A/V*****H/B/I/P/F/U******(*)(*)											
A	E	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
A	J	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
V	E	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
a	b	c	de	f	g	h	i	j	k	l	m

a	**Scope**									
A	ATEX									
V	Combination (ATEX, IECEx, FM, CSA)									
I	**b**	**Approval**								
I	E	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb								
I	J	II 1/2G, 2G Ex db IIC T6...T1 Ga/Gb, Gb oder II 1D, 1/2D, 1/3D, 2D Ex ta IIIC T* Da, Da/Db, Da/Dc, Db (T* see safety instructions)								
I	I	**c**	**Antenna / Material**							
I	I	B	plastic horn antenna / PP							
I	I	C	Metal framed lens antenna with cleaning connection / PEEK							
I	I	U	Thread with integrated horn antenna							
I	I	I	**de**	**Process fitting / Material**						
I	I	I	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.						
I	I	I	I	**f**	**Seal / Process temperature**					
I	I	I	I	*	Any other comparable seal suitable for the application including the given process temperature					
I	I	I	I	A	PEEK / FKM (SHS FPM 70C3 GLT) / -40...130°C					
I	I	I	I	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40...200°C					
I	I	I	I	C	PP/-40...+80°C					
I	I	I	I	D	FKM (SHS FPM 70C3 GLT) und PP/-40...+80°C					
I	I	I	I	E	EPDM (COG AP310) und PP/-40...+80°C					
I	I	I	I	F	PEEK / EPDM (A+P 75.5/KW75F) / -40...130°C					
I	I	I	I	I	**g**	**Electronics**				
I	I	I	I	I	H	Two-wire 4...20mA/HART®				
I	I	I	I	I	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz				
I	I	I	I	I	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC				
I	I	I	I	I	P	Profibus PA				
I	I	I	I	I	F	Foundation Fieldbus				
I	I	I	I	I	U	Modbus				
I	I	I	I	I	I	**h**	**Additional electronics**			
I	I	I	I	I	I	X	ohne			
I	I	I	I	I	I	Z	Additional current output 4...20mA			
I	I	I	I	I	I	I	**i**	**Housing / Protection**		
I	I	I	I	I	I	I	A	Aluminum / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	H	Special colour Aluminum / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	D	Aluminum double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	W	StSt double chamber / IP66/IP68 (0.2bar)		
I	I	I	I	I	I	I	I	**j**	**Cable entry / Connection**	
I	I	I	I	I	I	I	I	*	any rated connection or cable gland suitable for the application	
I	I	I	I	I	I	I	I	D	M20x1,5 / Blind - plug	
I	I	I	I	I	I	I	I	1	M20x1,5 / without	
I	I	I	I	I	I	I	I	N	½NPT / Blind - plug	
I	I	I	I	I	I	I	I	Q	½ NPT / without	
I	I	I	I	I	I	I	I	I	**k**	**Display / Adjustment module PLICSCOM**
I	I	I	I	I	I	I	I	I	X	Without
I	I	I	I	I	I	I	I	I	A	Mounted
I	I	I	I	I	I	I	I	I	F	Without PLICSCOM, cover with window
I	I	I	I	I	I	I	I	I	B	laterally mounted
I	I	I	I	I	I	I	I	I	K	Mounted, with Bluetooth and magnet pen operation
I	I	I	I	I	I	I	I	I	L	laterally mounted, with Bluetooth and magnet pen operation

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X, Issue: 01

I		**Additional equipment**
X		without
R		Reflux valve for rinsing connection
V		Rinsing connection and reflux valve(only with antenna B)
m		Certificates
X		No
M		Yes

Explanation Note to Type Codes VEGAPULS

The construction of VEGAPULS PS64(*).AJ****H******(*)(*) and VEGAPULS PS69(*).AJ****H/B/I/P/F/U******(*)(*) is fulfilling the requirements of the Ex d approval (PTB 15 ATEX 1009 X) and at the same time the requirements of the Ex t approval (BVS 16 ATEX E 022 X).

The construction of the VEGAPULS PS64(*).IQ****H******(*)(*) is fulfilling the requirements of the Ex d approval (PTB 15 ATEX 1009 X) and at the same time the requirements for the installation on ships.

VEGAPULS PS64/69(*).VE/Q with approval ATEX, IECEx, FM and CSA and carrying approval code "VE" and "VQ" are identical in construction with VEGAPULS PS64/69(*).AE.

The ship certification, the Ex t certification, the FM certification and the CSA certification are not part of the assessment within this application.

The approvals "IQ" (Ex d and ship) or "IJ" (Ex d and Ex t) or "VE", "VQ" are combination approvals of the type "Ex d and other certificates". It is VEGA's responsibility to ensure that the "other certificates" are available before marketing instruments with approval "IQ", "IJ", "VE" or "VQ".

(16) Test Report PTB Ex18-16138

(17) Specific conditions of use

The ambient temperature range, determined in IEC 60079-0 may be restricted. An itemization of the different thermal ranges can be found in the applicable Safety Instructions or in the Annex of this certificate under "Thermal Data".

Flameproof joints are not intended for repair.

Installation of radar sensors shall be such that the following is prevented:

- Electrostatic charging at operation, maintenance and repair.
- Electrostatic charging as consequence of process.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X, Issue: 01

Additional notes for safe installation and operation:

Components attached or installed (e.g. terminal compartments, bushings, cable glands, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They shall be suited for the operating conditions and have a separate examination certificate. The special conditions specified for the components shall be complied with, and the components shall be included in the type test, if necessary. This equally applies to the components mentioned in the technical description.

The end user has to assure, that the media temperature, when used in Zone 0, does not exceed 80% of the auto ignition temperature of the respective media (in °C) inside of the process vessel and does not exceed the maximum permissible flange temperature in dependence of the Temperature Class. When used with flammable media, the parts of the level gauge in contact with the media have to be included into the periodic overpressure test of the facility.

If parts of the level gauge inside the EPL Ga-area with contact to the medium are made of materials with an electrical conductivity of less than 10−8 S/m, the medium must have an electrical conductivity of at least 10−8 S/m, in order to avoid an electrostatic charging. If this is not possible to maintain, the level gauge must not be used, when heavy charging processes, such as mechanical friction or cutting processes, electron emission, etc., are present. Especially the antenna of the level gauge must not be mounted into a pneumatic conveying stream.

If aluminum and/or titanium are used in the EPL Ga-area, it has to be ensured, that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded

The radar sensor type VEGAPULS PS64 and PS69 shall be installed in such a way, that contact between the measuring sensor (antenna) and the tank wall will be excluded considering the installations and the flow conditions inside the tank and the length of the antenna.

For the operation of the VEGAPULS PS69(*).AE/J****H/B/I/P/F/U******(*)(*) and VEGAPULS PS64(*).AE/J****H******(*)(*) with the antenna in EPL Ga-area, a process pressure range between 0.8 and 1.1 bar has to be maintained.

For radar sensors Category 2 the following process pressures are applicable depending on the antenna version:

Type PS64	Model	Process pressure
plastic horn antenna	PS64(*).AE/JD***H******(*)(*)	-1…+2bar
thread with integrated horn antenna	PS64(*).AE/JU***H******(*)(*)	-1…+20bar
flange with encapsulated antenna system	PS64(*).AE/JG***H******(*)(*)	-1…+25bar
Aseptic/hygienic antenna	PS64(*).AE/JI***H******(*)(*)	-1…+16bar

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X, Issue: 01

Type PS69	Model	Process pressure
plastic horn antenna	PS69(*).AE/JB***H/B/I/U/P/F******(*)(*)	-1...+2bar
Metal framed lens antenna with cleaning connection	PS69(*).AE/JC***H/B/I/U/P/F******(*)(*)	-1...+3bar
thread with integrated horn antenna	PS69(*).AE/JU***H/B/I/U/P/F******(*)(*)	-1...+20bar

For process pressures outside the standard atmospheric conditions of 80 kPa (0.8 bar) to 110 kPa (1.1 bar) additional requirements may be applied.

With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of EPL Ga/Gb the degree of protection IP 67 at the connection to the return valve is guaranteed. After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.

The level measuring devices in the version with swiveling holder shall be installed in such a way that using the level measuring devices as an equipment of EPL Ga/Gb after the alignment of the antenna by means of the swiveling holder and after screw connection of the clamp flange the degree of protection IP 67 is kept.

With the radar sensors in the version with ball valve it is to be made certain that the ball valve is locked before the separation of the flange connection.

Connection conditions

1. The VEGAPULS PS64/69... shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued. If the VEGAPULS PS64/69... is connected to conduit systems, the required sealing device shall be provided immediately at the enclosure.
2. Openings that are not used shall be sealed in compliance with the specifications in IEC 60079-1, section 11.9.
3. If connection is made in the potentially explosive area, the connecting wire of the VEGAPULS PS64/69... shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0, section 1.
4. The connecting wire of the VEGAPULS PS64/69... shall be fixed and routed so that it will be adequately protected against mechanical damage.
5. If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.
6. The VEGAPULS PS64/69... shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially explosive location.

7. Covers shall not be opened when an explosive gas atmosphere is present. Covers shall be marked with

   "WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT"

8. Radar sensors shall be used only for process media against which the materials in contact with the media are resistant.

9. If necessary a suitable overvoltage protector shall be mounted prior to the radar sensor.

These notes and instructions shall accompany each apparatus in an adequate form.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, June 18, 2018
On behalf of PTB

Dr.-Ing. D. Markus
Direktor und Professor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 15 ATEX 1009 X

(4) Equipment: Level Measuring instrument types
VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) und
VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*)

(5) Manufacturer: VEGA Griehaber KG

(6) Address: Am Hohenstein 113, 77761 Schiltach, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report PTB Ex 15-15097.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 **EN 60079-1:2007** **EN 60079-26:2007** **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 EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

ZSEx001e b

EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X
(Translation)

(12) The marking of the equipment shall include the following:

Type VEGAPULS PS69(*).A/IE**H/B/I/P/F/U******(*)(*):**

II 1/2 G resp. 2 G Ex d IIC T6...T1 Ga/Gb resp. Gb

Type VEGAPULS PS69(*).A/IJ**H/B/I******(*)(*)**

II 1/2 G resp. 2 G Ex d IIC T6...T1 Ga/Gb resp. Gb

II 1 D, 1/2 D, 1/3 D resp. 2 D Ex ta IIIC T (see manual) Da, Da/Db Da/Dc resp. Db

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 31, 2016

Dr.-Ing. U. Klausmeyer
Direktor und Professor

ZSEx001e b

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

(15) Description of equipment

The level measuring instrument VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) serves for the detection of the distance between the product surface and the sensor in areas with flammable gases, type VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*) additionally in areas with flammable, dust generating bulk solids.

The VEGAPULS PS69... comes either as an EPL-Ga/Gb equipment, when the electronics housing operates in a Gb-environment and the antenna in a Ga-environment, thus requiring a special designed process connector, which serves as a separation element between the zones 0 and 1 or as a sole EPL-Gb equipment, when both electronics housing and antenna operate in zone 1.

The meter housing with the type of protection flameproof enclosures is made of stainless steel or aluminum as a single chamber or double chamber housing. The single chamber housing constitutes a common terminal and electronics compartment for the sensor and transmitters. In the double chamber housing the terminal and electronics compartment are separated from one another, either in the form of merely communicating spaces or with Ex-d-compliant separation between the two compartments. Optionally, the enclosures enable the incorporation of an indicating and adjustment module. In this case, the housing is equipped with a modified cover with an integrated glass window.

The electronics compartment contains the operation module (electronic insert) PS60HW, PS60PAW or PS60FFW and the communication module, the process connection assemblies and the sensor itself.
The modules PLICSZEKX, PLICSZEZSA, PLICSZEBVH, PLICSZEBVL or PLICSZEMB are always installed in the connection compartment.
The device can be equipped with a display module PLICSCOM or module VEGACONNECT for parameterization or visualization.

The electronic insert PS60HW is already certified under IECEx PTB 14.0040X (PTB 14 ATEX 2007X), thus requiring no further examination for the current certification of the VEGAPULS PS69....

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

Electrical Data

Model	Electronics	U	Um
PS69(*).A/IE****H******(*)(*)	PS60HW	12 ... 35V DC	250V AC
PS69(*).A/IJ****H******(*)(*)	PS60HW	12 ... 35V DC	35V DC
PS69(*).A/IE****P******(*)(*)	PS60PAW	9...32V DC	250V AC
PS69(*).A/IE****F******(*)(*)	PS60FFW	9...32V DC	250V AC
PS69(*).A/IE****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC	250V AC
PS69(*).A/IJ****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC	35V DC
PS69(*).A/IE****P***B**(*)(*)	PS60PAW+PLICSZEKX	9...32V DC	250V AC
PS69(*).A/IE****F***B**(*)(*)	PS60FFW+PLICSZEKX	9...32V DC	250V AC
PS69(*).A/IE****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC	250V AC
PS69(*).A/IJ****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC	35V DC
PS69(*).A/IE****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC	250V AC
PS69(*).A/IJ****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC	250V AC
PS69(*).A/IE****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC	250V AC
PS69(*).A/IJ****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC	250V AC
PS69(*).A/IE****U******(*)(*)	PS60HW+PLICSZEMB	8...30V DC	30V DC

Electronic variants with Ex d 1-chamber housing A, H or V:

VEGAPULS PS69(*).IE**H******(*)(*)**	built-in two-wire HART-electronic
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 12...35 V DC • U_m = 250 V AC
VEGAPULS PS69(*).IE**P/F******(*)(*)**	built-in two-wire profibus PA or two-wire foundation fieldbaus electronic
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 9...32V DC • U_m = 250 V AC

Electronic variants with Ex d 2-chamber housing D, S or W: Supply- and signal circuit in terminal compartment (lateral chamber):

VEGAPULS PS69(*).IE**H***B**(*)(*)**	built-in two-wire HART- electronic in the electronics compartment and PLICSZEKX in the terminal compartment
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 12...35 V DC • U_m = 250 V AC
VEGAPULS PS69(*).IE**P/F***B**(*)(*)**	built-in two-wire profibus PA or two-wire foundation fieldbus electronic in the electronics compartment and PLICSZEKX in the terminal compartment
Supply and signal circuit (terminals KI1/1,	• U = 9...32 V DC

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

KI1/2)	• U_m = 250 V AC
VEGAPULS PS69(*).IE**HZ*****(*)(*)**	Built-in electronic 2. Current output
Supply and signal circuit I: (terminals KI1/1, KI1/2)	• U = 12…35 V DC • Um = 250 V AC
Supply and signal circuit II: (terminals KI2/7, KI2/7)	• U = 12…35 V DC • Um = 250 V AC
VEGAPULS PS69(*).IE**B******(*)(*)**	Four-wire electronic
Supply circuit I: (terminals 1[+], 2[-])	• U = 90…253 V AC • U_m = 250 V AC
Active 4 … 20 mA-Signal circuit: (terminals KI5[+], KI7[-])	• I_{out} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
Passive 4 … 20 mA-Signal circuit: (terminals KI6[+], KI7[-])	• I_{in} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
VEGAPULS PS69(*).IE**I******(*)(*)**	Four-wire electronic
Supply circuit I: (terminals 1[+], 2[-])	• U = 9,6… 48 VDC, 20 … 42 VAC • U_m = 250 V AC
Active 4 … 20 mA-Signal circuit: (terminals KI5[+], KI7[-])	• I_{out} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
Passive 4 … 20 mA-Signal circuit: (terminals KI6[+], KI7[-])	• I_{in} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
VEGAPULS PS69(*).IE**U******(*)(*)**	Four-wire MODBUS electronics

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

Supply circuit I: (terminals 1[+], 2[-])	• U = 8 … 30 V DC • U_m = 250 V AC
Signal circuit: (terminals MB[+], MB[-])	• U_{max} = 5 V with MODBUS-signal (Telegramm) • U_m = 250 V AC
USB port: (6-pole mini USB-socket)	• U_{max} = 5 V • USB-signal (USB-protocoll) • U_m = 250 V AC

Thermal Data

The relationships between temperature class, max. permissible temperature at the sensor and max. permissible temperature at the electronics enclosure are listed in the following tables:

VEGAPULS PS69(*).A/IEB**C/D/E H/B/I/P/F/U******(*)(*) (80°C Version)

Category 1/2, EPL Ga/Gb – instrument (sensor in zone 0, electronics in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 0	-20°C…+60°C	-20°C… +60°C
Max. permissible ambient temperature on the enclosure in zone 1	-40°C…+53.7°C	-40°C…+53.7°C

Category 2, EPL Gb – instrument (sensor and electronics both in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 1	-40°C…+80°C	-40°C… +80°C
Max. permissible ambient temperature on the enclosure in zone 1	-40°C…+52.1°C	-40°C…+52.1°C

VEGAPULS PS69(*).A/IEC**BH/B/I/P/F/U******(*)(*) (200°C Version)

Category 1/2, EPL Ga/Gb – instrument (sensor in zone 0, electronics in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 0	-20°C…+60°C	-20°C… +60°C
Max. permissible ambient temperature on the electronics in zone 1	-40°C…+53.7°C	-40°C…+53.7°C

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Category 2, EPL Gb – instrument (sensor and electronics in zone 1)

T class	T6	T5	T4	T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 1	-40°C...+85°C	-40°C...+100°C	-40°C..+135°C	-40°C... +200°C
Max. permissible ambient temperature on the electronics in zone 1	-40°C...+50.0°C	-40°C...+47.8°C	-40°C...+42.6°C	-40°C...+33.0°C

For all variants, mentioned in the tables above the following applies:
When the sensor antenna inside the vessel is subjected to higher temperatures than permitted in the tables above, it has to be safeguarded, that no ignition hazard due to hot surfaces is caused by the VEGAPULS PS69.... Therefore, suitable measures must be taken so that the temperature on the housing does not exceed the respective maximum permissible value, given in the tables above.

Model Code Listing Breakdown VEGAPULS PS69(*).A/IE****H/B/I/P/FU******(*)(*), Ex d

VEGAPULS PS69(*).IE****H/B/I/P/FU******(*)(*)											
I	E	*	**	*	H/B/I/P/FU	*	*	*	*	*	*
I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII

I		**Scope**
	I	IECEx
II		**Approval**
	E	IEC Ex d IIC T6...T1 Ga/Gb, Gb
III		**Antenna / Material**
	B	plastic horn antenna / PP
	C	Metal framed lens antenna with cleaning connection / PEEK
IV		**Process fitting / Material**
	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.
	XX	ohne Überwurfflansch
	XC	Montagebügel 170mm / 316L
	XD	Montagebügel 300mm / 316L
	YJ	Überwurfflansch 3" 300lb, ASME / PP-GF30
	YD	Kombi-Überwurfflansch DN80 PN16, DIN; 3" 150lb, ASME / PP-GF30
	AA	Adapter flange DN100 PN16 Form B, DIN / PP-GF30
	AB	Adapter flange DN125 PN6 Form B, DIN / PP-GF30
	AC	Adapter flange DN125 PN16 Form B, DIN / PP-GF30
	AD	Adapter flange DN150 PN16 Form B, DIN / PP-GF30
	AE	Adapter flange DN200 PN10 Form B, DIN / PP-GF30
	AF	Adapter flange DN200 PN16 Form B, DIN / PP-GF30
	AG	Adapter flange DN250 PN10 Form B, DIN / PP-GF30
	AH	Adapter flange DN250 PN16 Form B, DIN / PP-GF30
	AI	Adapter flange DN300 PN10 Form B, DIN / PP-GF30
	AJ	Adapter flange 4" Table E .10, BS / PP-GF30
	AK	Adapter flange 6" Table E .10, BS / PP-GF30

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	AL	Adapter flange 4" 150lb FF, ASME / PP-GF30
	AM	Adapter flange 6" 150lb FF, ASME / PP-GF30
	AN	Adapter flange 6" 300lb FF, ASME / PP-GF30
	AO	Adapter flange 8" 150lb FF, ASME / PP-GF30
	AP	Adapter flange 10" 150lb FF, ASME / PP-GF30
	AQ	Adapter flange DN100 10K FF, JIS / PP-GF30
	AR	Adapter flange DN150 10K FF, JIS / PP-GF30
	FA	Flange DN80 PN16 Form B, DIN / 316L
	FB	Flange DN100 PN16 Form B, DIN / 316L
	FC	Flange DN150 PN16 Form B, DIN / 316L
	FD	Flange 3" 150lb FF, ASME / 316L
	FE	Flange 4" 150lb FF, ASME / 316L
	FF	Flange 6" 150lb FF, ASME / 316L
	FG	Flange DN80 10K FF, JIS / 316L
	FH	Flange DN100 10K FF, JIS / 316L
	FI	Flange DN150 10K FF, JIS / 316L
	SA	Swiveling holder with flange DN100 PN16 Form B, DIN / 316L
	SB	Swiveling holder with flange DN150 PN16 Form B, DIN / 316L
	SC	Swiveling holder with flange DN200 PN16 Form B, DIN / 316L
	SD	Swiveling holder with flange 4" 150lb FF, ASME / 316L
	SE	Swiveling holder with flange 6" 150lb FF, ASME / 316L
	SF	Swiveling holder with flange 8" 150lb FF, ASME / 316L
	SG	Swiveling holder with flange DN100 10K FF, JIS / 316L
	SH	Swiveling holder with flange DN150 10K FF, JIS / 316L
	SI	Swiveling holder with flange DN200 10K FF, JIS / 316L
V		**Seal / Process temperature**
	*	Any other comparable seal suitable for the application including the given process temperature
	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40…200°C
	C	PP/-40…+80°C
	D	FKM (SHS FPM 70C3 GLT) und PP/-40…+80°C
	E	EPDM (COG AP310) und PP/-40…+80°C
VI		**Electronics**
	H	Two-wire 4...20mA/HART®
	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC
	P	Profibus PA
	F	Foundation Fieldbus
	U	Modbus
VII		**Additional electronics**
	X	without
	Z	Additional current output 4...20mA
VIII		**Housing / Protection**
	A	Aluminum / IP66/IP68 (0.2bar)
	H	Special colour Aluminum / IP66/IP68 (0.2bar)
	D	Aluminum double chamber / IP66/IP68 (0.2bar)
	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)
	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)
	W	StSt double chamber / IP66/IP68 (0.2bar)
IX		**Cable entry / Connection**
	O	M20x1,5 / Cable gland brass nickel-plated
	D	M20x1,5 / Blind - plug
	1	M20x1,5 / without
	N	½NPT / Blind - plug
	Q	½ NPT / without
X		**Display / Adjustment module PLICSCOM**

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

	X	Without
	A	Mounted
	B	laterally mounted
XI		**Additional equipment**
	X	Without
	R	Reflux valve for rinsing connection
	V	Rinsing connection and reflux valve(only with antenna B)
XII		Certificates
	X	No
	M	Yes

Model Code Listing Breakdown VEGAPULS PS69(*).IJ****H/B/I******(*)(*), Ex d + Ex t

VEGAPULS PS69(*).IJ****H/B/I******(*)(*)											
I	E	*	**	*	H/B/I	*	*	*	*	*	*
I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII

I		**Scope**
	I	IECEx
II		**Approval**
	J	IEC Ex d IIC T6...T1 Ga/Gb, Gb + IEC Ex ta IIIC T... Da, Da/Db, Da/Dc, Db
III		**Antenna / Material**
	B	plastic horn antenna / PP
	C	Metal framed lens antenna with cleaning connection / PEEK
IV		**Process fitting / Material**
	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.
	XX	ohne Überwurfflansch
	XC	Montagebügel 170mm / 316L
	XD	Montagebügel 300mm / 316L
	YJ	Überwurfflansch 3" 300lb, ASME / PP-GF30
	AA	Adapter flange DN100 PN16 Form B, DIN / PP-GF30
	AB	Adapter flange DN125 PN6 Form B, DIN / PP-GF30
	AC	Adapter flange DN125 PN16 Form B, DIN / PP-GF30
	AD	Adapter flange DN150 PN16 Form B, DIN / PP-GF30
	AE	Adapter flange DN200 PN10 Form B, DIN / PP-GF30
	AF	Adapter flange DN200 PN16 Form B, DIN / PP-GF30
	AG	Adapter flange DN250 PN10 Form B, DIN / PP-GF30
	AH	Adapter flange DN250 PN16 Form B, DIN / PP-GF30
	AI	Adapter flange DN300 PN10 Form B, DIN / PP-GF30
	AJ	Adapter flange 4" Table E .10, BS / PP-GF30
	AK	Adapter flange 6" Table E .10, BS / PP-GF30
	AL	Adapter flange 4" 150lb FF, ASME / PP-GF30
	AM	Adapter flange 6" 150lb FF, ASME / PP-GF30
	AN	Adapter flange 6" 300lb FF, ASME / PP-GF30
	AO	Adapter flange 8" 150lb FF, ASME / PP-GF30
	AP	Adapter flange 10" 150lb FF, ASME / PP-GF30
	AQ	Adapter flange DN100 10K FF, JIS / PP-GF30
	AR	Adapter flange DN150 10K FF, JIS / PP-GF30
	FA	Flange DN80 PN16 Form B, DIN / 316L
	FB	Flange DN100 PN16 Form B, DIN / 316L
	FC	Flange DN150 PN16 Form B, DIN / 316L
	FD	Flange 3" 150lb FF, ASME / 316L

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

	FE	Flange 4" 150lb FF, ASME / 316L
	FF	Flange 6" 150lb FF, ASME / 316L
	FG	Flange DN80 10K FF, JIS / 316L
	FH	Flange DN100 10K FF, JIS / 316L
	FI	Flange DN150 10K FF, JIS / 316L
	SA	Swiveling holder with flange DN100 PN16 Form B, DIN / 316L
	SB	Swiveling holder with flange DN150 PN16 Form B, DIN / 316L
	SC	Swiveling holder with flange DN200 PN16 Form B, DIN / 316L
	SD	Swiveling holder with flange 4" 150lb FF, ASME / 316L
	SE	Swiveling holder with flange 6" 150lb FF, ASME / 316L
	SF	Swiveling holder with flange 8" 150lb FF, ASME / 316L
	SG	Swiveling holder with flange DN100 10K FF, JIS / 316L
	SH	Swiveling holder with flange DN150 10K FF, JIS / 316L
	SI	Swiveling holder with flange DN200 10K FF, JIS / 316L
V		**Seal / Process temperature**
	*	Any other comparable seal suitable for the application including the given process temperature
	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40...200°C
	C	PP/-40...+80°C
	D	FKM (SHS FPM 70C3 GLT) und PP/-40...+80°C
	E	EPDM (COG AP310) und PP/-40...+80°C
VI		**Electronics**
	H	Two-wire 4...20mA/HART®
	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC
VII		**Additional electronics**
	X	Without
	Z	Additional current output 4...20mA
VIII		**Housing / Protection**
	A	Aluminum / IP66/IP68 (0.2bar)
	H	Special colour Aluminum / IP66/IP68 (0.2bar)
	D	Aluminum double chamber / IP66/IP68 (0.2bar)
	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)
	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)
	W	StSt double chamber / IP66/IP68 (0.2bar)
IX		**Cable entry / Connection**
	O	M20x1,5 / Cable gland brass nickel-plated
	D	M20x1,5 / Blind – plug
	1	M20x1,5 / without
	N	½NPT / Blind - plug
	Q	½ NPT / without
X		**Display / Adjustment module PLICSCOM**
	X	Without
	A	Mounted
	B	laterally mounted
XI		**Additional equipment**
	X	without
	R	Reflux valve for rinsing connection
	V	Rinsing connection and reflux valve(only with antenna B)
XII		Certificates
	X	No
	M	Yes

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

(16) Test report PTB Ex15-15097

(17) Special conditions for safe use

Repairs on flameproof joints may only be performed in accordance with the manufacturer's design specifications. A repair on the basis of the values in the tables 1 resp. 2 of EN 60079-1 is not permitted.

The ambient temperature range, determined in IEC 60079-0 may be restricted. An itemization of the different thermal ranges is listed in the upper chapter "Thermal Data".

Additional notes for safe operation:

Components attached or installed (e.g. terminal compartments, bushings, cable glands, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They shall be suited for the operating conditions and have a separate examination certificate. The special conditions specified for the components shall be complied with, and the components shall be included in the type test, if necessary. This equally applies to the components mentioned in the technical description.

The end user has to assure, that the media temperature, when used in Zone 0, does not exceed 80% of the auto ignition temperature of the respective media (in °C) inside of the process vessel and does not exceed the maximum permissible flange temperature in dependence of the Temperature Class. When used with flammable media, the parts of the level gauge in contact with the media have to be included into the periodic overpressure test of the facility.

If parts of the level gauge inside the EPL Ga-area with contact to the medium are made of materials with an electrical conductivity of less than 10^{-8} S/m, the medium must have an electrical conductivity of at least 10^{-8} S/m, in order to avoid an electrostatic charging. If this is not possible to maintain, the level gauge must not be used, when heavy charging processes, such as mechanical friction or cutting processes, electron emission, etc., are present. Especially the antenna of the level gauge must not be mounted into a pneumatic conveying stream.

If aluminum and/or titanium are used in the EPL Ga-area, it has to be ensured, that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded

The radar sensor type VEGAPULS PS69... shall be installed in such a way, that contact between the measuring sensor (antenna) and the tank wall will be excluded considering the installations and the flow conditions inside the tank and the length of the antenna.

For the operation of the VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) and VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*) with the antenna in EPL Ga-area, a process pressure range between 0.8 and 1.1 bar has to be maintained. When the antenna solely operates in EPL Gb-environment, process pressure ranges of up to 3 bar are allowed.

With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of EPL Ga/Gb the degree of protection

IP 67 at the connection to the return valve is guaranteed. After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.

The level measuring devices in the version with swiveling holder shall be installed in such a way that using the level measuring devices as an equipment of EPL Ga/Gb after the alignment of the antenna by means of the swiveling holder and after screw connection of the clamp flange the degree of protection IP 67 is kept.

With the radar sensors in the version with ball valve it is to be made certain that the ball valve is locked before the separation of the flange connection.

Connection conditions

1. The VEGAPULS PS69... shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued. If the VEGAPULS PS69... is connected to conduit systems, the required sealing device shall be provided immediately at the enclosure.

2. Openings that are not used shall be sealed in compliance with the specifications in IEC 60079-1, section 11.9.

3. If connection is made in the potentially explosive area, the connecting wire of the VEGAPULS PS69... shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0, section 1.

4. The connecting wire of the VEGAPULS PS69... shall be fixed and routed so that it will be adequately protected against mechanical damage.

5. If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.

6. The VEGAPULS PS69... shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially explosive location.

These notes and instructions shall accompany each apparatus in an adequate form.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB

Braunschweig, March 31,2016

Dr.-Ing. U. Klausmeyer
Direktor und Professor

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 15 ATEX 1009 X

(4) Equipment: Level Measuring instrument types
VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) und
VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*)

(5) Manufacturer: VEGA Griehaber KG

(6) Address: Am Hohenstein 113, 77761 Schiltach, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report PTB Ex 15-15097.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 **EN 60079-1:2007** **EN 60079-26:2007** **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 EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

ZSEx001e b

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X
(Translation)

(12) The marking of the equipment shall include the following:

Type VEGAPULS PS69(*).A/IE**H/B/I/P/F/U******(*)(*):**

II 1/2 G resp. 2 G Ex d IIC T6...T1 Ga/Gb resp. Gb

Type VEGAPULS PS69(*).A/IJ**H/B/I******(*)(*)**

II 1/2 G resp. 2 G Ex d IIC T6...T1 Ga/Gb resp. Gb

II 1 D, 1/2 D, 1/3 D resp. 2 D Ex ta IIIC T (see manual) **Da, Da/Db Da/Dc resp. Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 31, 2016

Dr.-Ing. U. Klausmeyer
Direktor und Professor

ZSEx001e b

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

(15) Description of equipment

The level measuring instrument VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) serves for the detection of the distance between the product surface and the sensor in areas with flammable gases, type VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*) additionally in areas with flammable, dust generating bulk solids.

The VEGAPULS PS69... comes either as an EPL-Ga/Gb equipment, when the electronics housing operates in a Gb-environment and the antenna in a Ga-environment, thus requiring a special designed process connector, which serves as a separation element between the zones 0 and 1 or as a sole EPL-Gb equipment, when both electronics housing and antenna operate in zone 1.

The meter housing with the type of protection flameproof enclosures is made of stainless steel or aluminum as a single chamber or double chamber housing. The single chamber housing constitutes a common terminal and electronics compartment for the sensor and transmitters. In the double chamber housing the terminal and electronics compartment are separated from one another, either in the form of merely communicating spaces or with Ex-d-compliant separation between the two compartments. Optionally, the enclosures enable the incorporation of an indicating and adjustment module. In this case, the housing is equipped with a modified cover with an integrated glass window.

The electronics compartment contains the operation module (electronic insert) PS60HW, PS60PAW or PS60FFW and the communication module, the process connection assemblies and the sensor itself.
The modules PLICSZEKX, PLICSZEZSA, PLICSZEBVH, PLICSZEBVL or PLICSZEMB are always installed in the connection compartment.
The device can be equipped with a display module PLICSCOM or module VEGACONNECT for parameterization or visualization.

The electronic insert PS60HW is already certified under IECEx PTB 14.0040X (PTB 14 ATEX 2007X), thus requiring no further examination for the current certification of the VEGAPULS PS69....

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

Electrical Data

Model	Electronics	U	Um
PS69(*).A/IE****H******(*)(*)	PS60HW	12 ... 35V DC	250V AC
PS69(*).A/IJ****H******(*)(*)	PS60HW	12 ... 35V DC	35V DC
PS69(*).A/IE****P******(*)(*)	PS60PAW	9...32V DC	250V AC
PS69(*).A/IE****F******(*)(*)	PS60FFW	9...32V DC	250V AC
PS69(*).A/IE****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC	250V AC
PS69(*).A/IJ****H***B**(*)(*)	PS60HW+PLICSZEKX	12 ... 35V DC	35V DC
PS69(*).A/IE****P***B**(*)(*)	PS60PAW+PLICSZEKX	9...32V DC	250V AC
PS69(*).A/IE****F***B**(*)(*)	PS60FFW+PLICSZEKX	9...32V DC	250V AC
PS69(*).A/IE****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC	250V AC
PS69(*).A/IJ****HZ*****(*)(*)	PS60HW+PLICSZEZSA	12 ... 35V DC	35V DC
PS69(*).A/IE****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC	250V AC
PS69(*).A/IJ****B******(*)(*)	PS60HW+PLICSZEBVH	90 ... 250V AC	250V AC
PS69(*).A/IE****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC	250V AC
PS69(*).A/IJ****I******(*)(*)	PS60HW+PLICSZEBVL	9.6 ... 48V DC, 20 ... 42V AC	250V AC
PS69(*).A/IE****U******(*)(*)	PS60HW+PLICSZEMB	8...30V DC	30V DC

Electronic variants with Ex d 1-chamber housing A, H or V:

VEGAPULS PS69(*).IE**H******(*)(*)**	built-in two-wire HART-electronic
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 12...35 V DC • U_m = 250 V AC
VEGAPULS PS69(*).IE**P/F******(*)(*)**	built-in two-wire profibus PA or two-wire foundation fieldbaus electronic
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 9...32V DC • U_m = 250 V AC

Electronic variants with Ex d 2-chamber housing D, S or W: Supply- and signal circuit in terminal compartment (lateral chamber):

VEGAPULS PS69(*).IE**H***B**(*)(*)**	built-in two-wire HART- electronic in the electronics compartment and PLICSZEKX in the terminal compartment
Supply and signal circuit: (terminals KI1/1, KI1/2)	• U = 12...35 V DC • U_m = 250 V AC
VEGAPULS PS69(*).IE**P/F***B**(*)(*)**	built-in two-wire profibus PA or two-wire foundation fieldbus electronic in the electronics compartment and PLICSZEKX in the terminal compartment
Supply and signal circuit (terminals KI1/1,	• U = 9...32 V DC

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

KI1/2)	• U_m = 250 V AC
VEGAPULS PS69(*).IE**HZ*****(*)(*)**	Built-in electronic 2. Current output
Supply and signal circuit I: (terminals KI1/1, KI1/2)	• U = 12…35 V DC • Um = 250 V AC
Supply and signal circuit II: (terminals KI2/7, KI2/7)	• U = 12…35 V DC • Um = 250 V AC
VEGAPULS PS69(*).IE**B******(*)(*)**	Four-wire electronic
Supply circuit I: (terminals 1[+], 2[-])	• U = 90…253 V AC • U_m = 250 V AC
Active 4 … 20 mA-Signal circuit: (terminals KI5[+], KI7[-])	• I_{out} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
Passive 4 … 20 mA-Signal circuit: (terminals KI6[+], KI7[-])	• I_{in} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
VEGAPULS PS69(*).IE**I******(*)(*)**	Four-wire electronic
Supply circuit I: (terminals 1[+], 2[-])	• U = 9,6… 48 VDC, 20 … 42 VAC • U_m = 250 V AC
Active 4 … 20 mA-Signal circuit: (terminals KI5[+], KI7[-])	• I_{out} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
Passive 4 … 20 mA-Signal circuit: (terminals KI6[+], KI7[-])	• I_{in} = 4…20 mA with overlaid HART-signal • U_m = 60 V AC/DC
VEGAPULS PS69(*).IE**U******(*)(*)**	Four-wire MODBUS electronics

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

Supply circuit I: (terminals 1[+], 2[-])	• U = 8 … 30 V DC • U_m = 250 V AC
Signal circuit: (terminals MB[+], MB[-])	• U_{max} = 5 V with MODBUS-signal (Telegramm) • U_m = 250 V AC
USB port: (6-pole mini USB-socket)	• U_{max} = 5 V • USB-signal (USB-protocoll) • U_m = 250 V AC

Thermal Data

The relationships between temperature class, max. permissible temperature at the sensor and max. permissible temperature at the electronics enclosure are listed in the following tables:

VEGAPULS PS69(*).A/IEB**C/D/E H/B/I/P/F/U******(*)(*) (80°C Version)

Category 1/2, EPL Ga/Gb – instrument (sensor in zone 0, electronics in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 0	-20°C…+60°C	-20°C… +60°C
Max. permissible ambient temperature on the enclosure in zone 1	-40°C…+53.7°C	-40°C…+53.7°C

Category 2, EPL Gb – instrument (sensor and electronics both in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 1	-40°C…+80°C	-40°C… +80°C
Max. permissible ambient temperature on the enclosure in zone 1	-40°C…+52.1°C	-40°C…+52.1°C

VEGAPULS PS69(*).A/IEC**BH/B/I/P/F/U******(*)(*) (200°C Version)

Category 1/2, EPL Ga/Gb – instrument (sensor in zone 0, electronics in zone 1)

T class	T6	T5, T4, T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 0	-20°C…+60°C	-20°C… +60°C
Max. permissible ambient temperature on the electronics in zone 1	-40°C…+53.7°C	-40°C…+53.7°C

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

Category 2, EPL Gb – instrument (sensor and electronics in zone 1)

T class	T6	T5	T4	T3, T2, T1
Max. permissible temperature on the sensor (process) in zone 1	-40°C...+85°C	-40°C...+100°C	-40°C..+135°C	-40°C... +200°C
Max. permissible ambient temperature on the electronics in zone 1	-40°C...+50.0°C	-40°C...+47.8°C	-40°C...+42.6°C	-40°C...+33.0°C

For all variants, mentioned in the tables above the following applies:
When the sensor antenna inside the vessel is subjected to higher temperatures than permitted in the tables above, it has to be safeguarded, that no ignition hazard due to hot surfaces is caused by the VEGAPULS PS69.... Therefore, suitable measures must be taken so that the temperature on the housing does not exceed the respective maximum permissible value, given in the tables above.

Model Code Listing Breakdown VEGAPULS PS69(*).A/IE**H/B/I/P/FU******(*)(*), Ex d**

VEGAPULS PS69(*).IE****H/B/I/P/FU******(*)(*)											
I	E	*	**	*	H/B/I/P/F/U	*	*	*	*	*	*
I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII

I		**Scope**
	I	IECEx
II		**Approval**
	E	IEC Ex d IIC T6...T1 Ga/Gb, Gb
III		**Antenna / Material**
	B	plastic horn antenna / PP
	C	Metal framed lens antenna with cleaning connection / PEEK
IV		**Process fitting / Material**
	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.
	XX	ohne Überwurfflansch
	XC	Montagebügel 170mm / 316L
	XD	Montagebügel 300mm / 316L
	YJ	Überwurfflansch 3" 300lb, ASME / PP-GF30
	YD	Kombi-Überwurfflansch DN80 PN16, DIN; 3" 150lb, ASME / PP-GF30
	AA	Adapter flange DN100 PN16 Form B, DIN / PP-GF30
	AB	Adapter flange DN125 PN6 Form B, DIN / PP-GF30
	AC	Adapter flange DN125 PN16 Form B, DIN / PP-GF30
	AD	Adapter flange DN150 PN16 Form B, DIN / PP-GF30
	AE	Adapter flange DN200 PN10 Form B, DIN / PP-GF30
	AF	Adapter flange DN200 PN16 Form B, DIN / PP-GF30
	AG	Adapter flange DN250 PN10 Form B, DIN / PP-GF30
	AH	Adapter flange DN250 PN16 Form B, DIN / PP-GF30
	AI	Adapter flange DN300 PN10 Form B, DIN / PP-GF30
	AJ	Adapter flange 4" Table E .10, BS / PP-GF30
	AK	Adapter flange 6" Table E .10, BS / PP-GF30

SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 15 ATEX 1009 X

	AL	Adapter flange 4" 150lb FF, ASME / PP-GF30
	AM	Adapter flange 6" 150lb FF, ASME / PP-GF30
	AN	Adapter flange 6" 300lb FF, ASME / PP-GF30
	AO	Adapter flange 8" 150lb FF, ASME / PP-GF30
	AP	Adapter flange 10" 150lb FF, ASME / PP-GF30
	AQ	Adapter flange DN100 10K FF, JIS / PP-GF30
	AR	Adapter flange DN150 10K FF, JIS / PP-GF30
	FA	Flange DN80 PN16 Form B, DIN / 316L
	FB	Flange DN100 PN16 Form B, DIN / 316L
	FC	Flange DN150 PN16 Form B, DIN / 316L
	FD	Flange 3" 150lb FF, ASME / 316L
	FE	Flange 4" 150lb FF, ASME / 316L
	FF	Flange 6" 150lb FF, ASME / 316L
	FG	Flange DN80 10K FF, JIS / 316L
	FH	Flange DN100 10K FF, JIS / 316L
	FI	Flange DN150 10K FF, JIS / 316L
	SA	Swiveling holder with flange DN100 PN16 Form B, DIN / 316L
	SB	Swiveling holder with flange DN150 PN16 Form B, DIN / 316L
	SC	Swiveling holder with flange DN200 PN16 Form B, DIN / 316L
	SD	Swiveling holder with flange 4" 150lb FF, ASME / 316L
	SE	Swiveling holder with flange 6" 150lb FF, ASME / 316L
	SF	Swiveling holder with flange 8" 150lb FF, ASME / 316L
	SG	Swiveling holder with flange DN100 10K FF, JIS / 316L
	SH	Swiveling holder with flange DN150 10K FF, JIS / 316L
	SI	Swiveling holder with flange DN200 10K FF, JIS / 316L
V		**Seal / Process temperature**
	*	Any other comparable seal suitable for the application including the given process temperature
	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40...200°C
	C	PP/-40...+80°C
	D	FKM (SHS FPM 70C3 GLT) und PP/-40...+80°C
	E	EPDM (COG AP310) und PP/-40...+80°C
VI		**Electronics**
	H	Two-wire 4...20mA/HART®
	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC
	P	Profibus PA
	F	Foundation Fieldbus
	U	Modbus
VII		**Additional electronics**
	X	without
	Z	Additional current output 4...20mA
VIII		**Housing / Protection**
	A	Aluminum / IP66/IP68 (0.2bar)
	H	Special colour Aluminum / IP66/IP68 (0.2bar)
	D	Aluminum double chamber / IP66/IP68 (0.2bar)
	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)
	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)
	W	StSt double chamber / IP66/IP68 (0.2bar)
IX		**Cable entry / Connection**
	O	M20x1,5 / Cable gland brass nickel-plated
	D	M20x1,5 / Blind - plug
	1	M20x1,5 / without
	N	½NPT / Blind - plug
	Q	½ NPT / without
X		**Display / Adjustment module PLICSCOM**

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	X	Without
	A	Mounted
	B	laterally mounted
XI		**Additional equipment**
	X	Without
	R	Reflux valve for rinsing connection
	V	Rinsing connection and reflux valve(only with antenna B)
XII		Certificates
	X	No
	M	Yes

Model Code Listing Breakdown VEGAPULS PS69(*).IJ**H/B/I******(*)(*), Ex d + Ex t**

VEGAPULS PS69(*).IJ****H/B/I******(*)(*)											
I	E	*	**	*	H/B/I	*	*	*	*	*	*
I	II	III	IV	V	VI	VII	VIII	XI	X	XI	XII

I		**Scope**
	I	IECEx
II		**Approval**
	J	IEC Ex d IIC T6...T1 Ga/Gb, Gb + IEC Ex ta IIIC T... Da, Da/Db, Da/Dc, Db
III		**Antenna / Material**
	B	plastic horn antenna / PP
	C	Metal framed lens antenna with cleaning connection / PEEK
IV		**Process fitting / Material**
	**	TRI- CLAMP, DN or ASME industry type flange with pressure ratings and any type which comply with an international or national standard.
	XX	ohne Überwurfflansch
	XC	Montagebügel 170mm / 316L
	XD	Montagebügel 300mm / 316L
	YJ	Überwurfflansch 3" 300lb, ASME / PP-GF30
	AA	Adapter flange DN100 PN16 Form B, DIN / PP-GF30
	AB	Adapter flange DN125 PN6 Form B, DIN / PP-GF30
	AC	Adapter flange DN125 PN16 Form B, DIN / PP-GF30
	AD	Adapter flange DN150 PN16 Form B, DIN / PP-GF30
	AE	Adapter flange DN200 PN10 Form B, DIN / PP-GF30
	AF	Adapter flange DN200 PN16 Form B, DIN / PP-GF30
	AG	Adapter flange DN250 PN10 Form B, DIN / PP-GF30
	AH	Adapter flange DN250 PN16 Form B, DIN / PP-GF30
	AI	Adapter flange DN300 PN10 Form B, DIN / PP-GF30
	AJ	Adapter flange 4" Table E .10, BS / PP-GF30
	AK	Adapter flange 6" Table E .10, BS / PP-GF30
	AL	Adapter flange 4" 150lb FF, ASME / PP-GF30
	AM	Adapter flange 6" 150lb FF, ASME / PP-GF30
	AN	Adapter flange 6" 300lb FF, ASME / PP-GF30
	AO	Adapter flange 8" 150lb FF, ASME / PP-GF30
	AP	Adapter flange 10" 150lb FF, ASME / PP-GF30
	AQ	Adapter flange DN100 10K FF, JIS / PP-GF30
	AR	Adapter flange DN150 10K FF, JIS / PP-GF30
	FA	Flange DN80 PN16 Form B, DIN / 316L
	FB	Flange DN100 PN16 Form B, DIN / 316L
	FC	Flange DN150 PN16 Form B, DIN / 316L
	FD	Flange 3" 150lb FF, ASME / 316L

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	FE	Flange 4" 150lb FF, ASME / 316L
	FF	Flange 6" 150lb FF, ASME / 316L
	FG	Flange DN80 10K FF, JIS / 316L
	FH	Flange DN100 10K FF, JIS / 316L
	FI	Flange DN150 10K FF, JIS / 316L
	SA	Swiveling holder with flange DN100 PN16 Form B, DIN / 316L
	SB	Swiveling holder with flange DN150 PN16 Form B, DIN / 316L
	SC	Swiveling holder with flange DN200 PN16 Form B, DIN / 316L
	SD	Swiveling holder with flange 4" 150lb FF, ASME / 316L
	SE	Swiveling holder with flange 6" 150lb FF, ASME / 316L
	SF	Swiveling holder with flange 8" 150lb FF, ASME / 316L
	SG	Swiveling holder with flange DN100 10K FF, JIS / 316L
	SH	Swiveling holder with flange DN150 10K FF, JIS / 316L
	SI	Swiveling holder with flange DN200 10K FF, JIS / 316L
V		**Seal / Process temperature**
	*	Any other comparable seal suitable for the application including the given process temperature
	B	FKM (SHS FPM 70C3 GLT) und PEEK / -40…200°C
	C	PP/-40…+80°C
	D	FKM (SHS FPM 70C3 GLT) und PP/-40…+80°C
	E	EPDM (COG AP310) und PP/-40…+80°C
VI		**Electronics**
	H	Two-wire 4...20mA/HART®
	B	Four-wire 4...20mA/HART®; 90...253V AC; 50/60Hz
	I	Four-wire 4...20mA/HART®; 9,6...48V DC; 20...42V AC
VII		**Additional electronics**
	X	Without
	Z	Additional current output 4...20mA
VII I		**Housing / Protection**
	A	Aluminum / IP66/IP68 (0.2bar)
	H	Special colour Aluminum / IP66/IP68 (0.2bar)
	D	Aluminum double chamber / IP66/IP68 (0.2bar)
	S	Special colour Aluminum double chamber / IP66/IP68 (0.2bar)
	V	StSt (precision casting) 316L / IP66/IP68 (0.2bar)
	W	StSt double chamber / IP66/IP68 (0.2bar)
IX		**Cable entry / Connection**
	O	M20x1,5 / Cable gland brass nickel-plated
	D	M20x1,5 / Blind – plug
	1	M20x1,5 / without
	N	½NPT / Blind - plug
	Q	½ NPT / without
X		**Display / Adjustment module PLICSCOM**
	X	Without
	A	Mounted
	B	laterally mounted
XI		**Additional equipment**
	X	without
	R	Reflux valve for rinsing connection
	V	Rinsing connection and reflux valve(only with antenna B)
XII		Certificates
	X	No
	M	Yes

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(16) Test report PTB Ex15-15097

(17) Special conditions for safe use

Repairs on flameproof joints may only be performed in accordance with the manufacturer's design specifications. A repair on the basis of the values in the tables 1 resp. 2 of EN 60079-1 is not permitted.

The ambient temperature range, determined in IEC 60079-0 may be restricted. An itemization of the different thermal ranges is listed in the upper chapter "Thermal Data".

Additional notes for safe operation:

Components attached or installed (e.g. terminal compartments, bushings, cable glands, connectors) shall be of a technical standard that complies with the specifications on the cover sheet. They shall be suited for the operating conditions and have a separate examination certificate. The special conditions specified for the components shall be complied with, and the components shall be included in the type test, if necessary. This equally applies to the components mentioned in the technical description.

The end user has to assure, that the media temperature, when used in Zone 0, does not exceed 80% of the auto ignition temperature of the respective media (in °C) inside of the process vessel and does not exceed the maximum permissible flange temperature in dependence of the Temperature Class. When used with flammable media, the parts of the level gauge in contact with the media have to be included into the periodic overpressure test of the facility.

If parts of the level gauge inside the EPL Ga-area with contact to the medium are made of materials with an electrical conductivity of less than 10^{-8} S/m, the medium must have an electrical conductivity of at least 10^{-8} S/m, in order to avoid an electrostatic charging. If this is not possible to maintain, the level gauge must not be used, when heavy charging processes, such as mechanical friction or cutting processes, electron emission, etc., are present. Especially the antenna of the level gauge must not be mounted into a pneumatic conveying stream.

If aluminum and/or titanium are used in the EPL Ga-area, it has to be ensured, that sparking as a result of impact or friction between aluminum/titanium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded

The radar sensor type VEGAPULS PS69... shall be installed in such a way, that contact between the measuring sensor (antenna) and the tank wall will be excluded considering the installations and the flow conditions inside the tank and the length of the antenna.

For the operation of the VEGAPULS PS69(*).A/IE****H/B/I/P/F/U******(*)(*) and VEGAPULS PS69(*).A/IJ****H/B/I******(*)(*) with the antenna in EPL Ga-area, a process pressure range between 0.8 and 1.1 bar has to be maintained. When the antenna solely operates in EPL Gb-environment, process pressure ranges of up to 3 bar are allowed.

With the level measuring devices in the version with flushing connector it is to be made certain that using the level measuring devices as an equipment of EPL Ga/Gb the degree of protection

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IP 67 at the connection to the return valve is guaranteed. After removing the check valve or the flushing system at the check valve, the opening is to be locked with a suitable plug in such a way, that the degree of protection IP 67 is kept.

The level measuring devices in the version with swiveling holder shall be installed in such a way that using the level measuring devices as an equipment of EPL Ga/Gb after the alignment of the antenna by means of the swiveling holder and after screw connection of the clamp flange the degree of protection IP 67 is kept.

With the radar sensors in the version with ball valve it is to be made certain that the ball valve is locked before the separation of the flange connection.

Connection conditions

1. The VEGAPULS PS69... shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC 60079-1, sections 13.1 and 13.2, and for which a separate test certificate has been issued. If the VEGAPULS PS69... is connected to conduit systems, the required sealing device shall be provided immediately at the enclosure.

2. Openings that are not used shall be sealed in compliance with the specifications in IEC 60079-1, section 11.9.

3. If connection is made in the potentially explosive area, the connecting wire of the VEGAPULS PS69... shall be connected in an enclosure that meets the requirements of an approved type of protection in accordance with IEC 60079-0, section 1.

4. The connecting wire of the VEGAPULS PS69... shall be fixed and routed so that it will be adequately protected against mechanical damage.

5. If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.

6. The VEGAPULS PS69... shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially explosive location.

These notes and instructions shall accompany each apparatus in an adequate form.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB

Braunschweig, March 31,2016

Dr.-Ing. U. Klausmeyer
Direktor und Professor