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GOVERNMENT APPROVED TEST LABORATORY

IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **30 May 2023**
*Expiry date: **30 May 2026**

Issue: 4

Ex – Type Examination Certificate

Certificate Number: **S-XPL/20.0715 X**
Equipment: **VEGAPULS**
Model / Type: **PS64 and PS69**
Supplied by: **VEGA Grieshaber KG**
Am Hohenstein 113, 77761 Schiltach,
Germany
Manufacturer: **VEGA Grieshaber KG**
Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
VEGA Grieshaber KG
Identified by Inspection Authority number
S-XPL/20.0715 X

And as described in the Explolabs file number **XPL/21518/20.0715 Issue 4** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

SANS 60079-0: 2019 Ed 6 **IEC 60079-0: 2017 Ed 7**	Explosive atmospheres Part 0: Equipment — General requirements
SANS 60079-1: 2015 Ed 5 **IEC 60079-1: 2014 Ed 7**	Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
SANS 60079-11: 2012 Ed 4 **IEC 60079-11: 2011 Ed 6**	Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
IEC/SANS 60079-26: 2014	Explosive atmospheres – Part 26: Equipment with equipment protection level (EPL) Ga
SANS 60079-31: 2014 Ed 2 **IEC 60079-31: 2013 Ed 2**	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
Very high	Ga Group II	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 0, 1 and 2	See Table 1
Very high	Da Group III		Equipment remains functioning in zones 20, 21 and 22	
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	
High	Db Group III		Equipment remains functioning in zones 21 and 22	
Enhanced	Dc Group III	Suitable for normal operation	Equipment remains functioning in zone 22	

This certificate supersedes all previous documents bearing the reference no XPL/21518/20.0715 Issue 3.

1. GENERAL

The marking of the Vegapuls shall include the following:
Refer to Table 1 for Ex rating

The Vegapuls had previously been certified by approved EC Type Examination Test laboratories as Refer to Table 1 for Ex rating (Certificate numbers as in Table). The marking of the Vegapuls was assessed for compliance with the requirements of standards listed above and against the certificate submitted. The authenticity of the certificate was assessed as well.

The differences between the standards were evaluated and found to comply.

See Appendix of this certificate for list of certificates.

2. SAFETY PARAMETERS

Refer to Appendix, Table 3 of this certificate for complete Safety Parameters.

3. INSTALLATION INSTRUCTIONS

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

4. SPECIAL CONDITIONS FOR SAFE USE *(denoted by X after certificate number)*

Explosion protected equipment used with special conditions of use are marked with an "X". Refer to Appendix, Table 2 of this certificate for complete special conditions of use.

5. CONDITIONS OF CERTIFICATION

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

6. MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier	: VEGA Grieshaber KG
Manufacturer	: VEGA Grieshaber KG
Equipment	: VEGAPULS
Model/Type	: PS64 and PS69
Serial No.	: ---
Ex Rating	: Refer to Table 1 for Ex rating
IA Certificate No	: S-XPL/20.0715 X

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
ii) Any conditions mentioned in the above report;
iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
v) A revision certificate replaces all previous version of the certificate.
vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

Responsible Testing Officer:

D Maree
Technical Specialist
EXPLOLABS EXPLOSION PREVENTION SERVICES

Table 1 - Marking					
No.	**EC Type Examination Certificate No.**	**Description**	**Manufacturer**	**Type/Model**	**Ex Rating**
1	**EC-Type:** IECEx BVS 16.0017X Issue No.: 2	Radar sensor	VEGA Grieshaber KG	VEGAPULS PS64/PS69(*). * * * * * * * * * * * * * (*)(*)	Ex ta IIIC T* Da Ex ta/tb IIIC T* Da/Db Ex ta/tc IIIC T* Da/Dc Ex tb IIIC T* Db IP66 *see manual
2	**EC-Type:** IECEx PTB 14.0040X Issue No.: 3	Level measuring devices based on microwave technology	VEGA Grieshaber KG	series VEGAPULS PS69(*).IC****HX/Z*****(*) (*) and type series VEGAPULS PS64(*).IC****HX*****(*)(*)	Ex ia IIC T6...T1 Ga, Ga/Gb, Gb
3	**EC-Type:** IECEx PTB 15.0023X Issue No.: 2	Level measuring instrument VEGAPULS	VEGA Grieshaber KG	type code PS64(*).*I/VE****H******(*)(*) and PS69(*).*I/VE****H/B/I/P/F/ U******(*)(*)	Ex db IIC T6…T1 Ga/Gb resp. Gb
4	**EC-Type:** PTB 14 ATEX 2007 X Issue 03	Level measuring devices based on microwave technology	VEGA Grieshaber KG	VEGAPULS PS69(*).AC****HX/Z*****(*)(*) and VEGAPULS PS64(*).AC****HX*****(*)(*)	Ex ia IIC T6...T1 Ga, Ga/Gb, Gb
5	**EC-Type:** PTB 15 ATEX 1009 X Issue 02	Level Measuring Instrument	VEGA Grieshaber KG	VEGAPULS PS64(*).*E/J****H******(*)(*), VEGAPULS PS69(*).*E/J****H/B/I/P/F/U******(*)(*)	Ex db IIC T6…T1 Ga/Gb resp. Gb
6	**EC-Type:** BVS 16 ATEX E 022 X Supplement 2	Radar-Sensor	VEGA Grieshaber KG	VEGAPULS PS64/PS69(*).**********(*)(*)	Ex ta IIIC T* Da Ex ta/tb IIIC T* Da/Db Ex ta/tc IIIC T* Da/Dc Ex tb IIIC T* Db IP66 *see manual

Table 2 – Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions
1	**EC-Type:** IECEx BVS 16.0017X Issue No.: 2	Radar sensor	- Variants of the radar sensor type VEGAPULS PS 69(*). **********(*)(*) for which aluminium is used shall be installed in such a way that sparking as a result of impact or friction between aluminium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded. - The level measuring devices in the version with swivelling holder shall be installed in such a way that if used as a Zone 0/1 equip ment the degree of protection IP67 is kept. - When installing in zone 20 a security device limiting the maximum input power to 2 W has to be installed. - Intensive electrostatic charging for instance by the process has to be avoided. In case of extremely ignitable dusts (MIE < 3 mJ) the equipment must not be used in areas where intensive charging processes are to be expected.
2	**EC-Type:** IECEx PTB 14.0040X Issue No.: 3	Level measuring devices based on microwave technology	If used as an EPL Ga-equipment the level measuring devices based on microwave technology type series VEGAPULS 69*** and VEGAPULS 64*** with integrated electronic assembly which include the material aluminum/titanium, shall be installed in such a way 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 level measuring devices with plastic enclosure, with metal enclosure with inspection window or none grounded metallic parts as well as components of the antennas out of plastic include surfaces that can become charged electrostatically (note warning label and the safety instructions No.: 49375, 53001). When used as an EPL Ga- or EPL-Ga/Gb equipment, the level measuring device shall be connected to the equipotential bonding conductor (contact resistance ≤ 1MΩ) (e.g. using the earth terminal) in order to prevent metal elements from being charged electrostatically. All parts of the level measuring devices that get in contact with media, must in applications requiring EPL Ga- or EGL Ga/Gb-equipment only be used in such media against the materials are sufficiently resistant. With the level measuring devices in the version with rinsing connection 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 reflux valve is guaranteed. After removing the reflux valve or the rinsing system at the reflux 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 used as an EPL Ga/Gb equipment shall be installed in such a way, that the degree of protection IP 67 is kept after alignment of the antenna by means of the swiveling holder and after fastening the screw connection of the clamp flange. For applications that require category 1/2G devices, the following level measuring devices can be supplied with an intrinsically safe supply and signal circuit that meets the Type of Protection Intrinsic Safety with Level of Protection “ib”: VEGAPULS PS64(*).ICD/U/G/I****HX*****(*)(*) VEGAPULS PS64(*).IOD/U/G/I****HX*****(*)(*) VEGAPULS PS64(*).IUD/U/G/I****HX*****(*)(*) VEGAPULS PS64(*).IHD/U/G/I****HX*****(*)(*) VEGAPULS PS64(*).VCD/U/G/I****HX*****(*)(*) VEGAPULS PS64(*).VOD/U/G/I****HX*****(*)(*) VEGAPULS PS69(*).ICU****HX*****(*)(*) VEGAPULS PS69(*).ICU****HZ*****(*)(*) VEGAPULS PS69(*).IHU****HX*****(*)(*)

Table 2 – Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions
			VEGAPULS PS69(*).IHU****HZ*****(*)(*) VEGAPULS PS69(*).VCU****HX*****(*)(*) VEGAPULS PS69(*).VCU****HZ*****(*)(*) For the level measuring devices type series VEGAPULS PS69(*).*** type code position a “scope V” and position b “approval H” additional certificates were issued. For the level measuring devices type series VEGAPULS PS64(*).*** type code position a “scope V” and position b “approval O, U, H” additional certificates were issued
3	**EC-Type:** IECEx PTB 15.0023X Issue No.: 2	Level measuring instrument VEGAPULS	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 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(*).IE****H/B/I/P/F/U******(*)(*) and VEGAPULS PS64(*).IJ****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 Zone 1, the following process pressures are applicable depending on the antenna version:

Type PS64	Model	Process pressure
plastic horn antenna	PS64(*).*ED***H******(*)(*)	-1…+2bar
thread with integrated horn antenna	PS64(*).*EU***H******(*)(*)	-1…+20bar
flange with encapsulated antenna system	PS64(*).*EG***H******(*)(*)	-1…+25bar
Aseptic/hygienic antenna	PS64(*).*EI***H******(*)(*)	-1…+16bar

Table 2 – Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions

Type PS64	Model	Process pressure
plastic horn antenna	PS69(*).*EB***H/B/I/U/P/F******(*)(*)	-1…+2bar
Metal framed lens antenna with cleaning connection	PS69(*).*EC***H/B/I/U/P/F******(*)(*)	-1…+3bar
thread with integrated horn antenna	PS69(*).*EU***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
- 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.
- Openings that are not used shall be sealed in compliance with the specifications in IEC 60079-1, section 11.9.
- 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.
- The connecting wire of the VEGAPULS PS64/69... shall be fixed and routed so that it will be adequately protected against mechanical damage.
- If the temperature at entry fittings exceeds 70 °C, temperature-resistant connecting cables shall be used.
- The VEGAPULS PS64/69... shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially explosive location.
- 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”
- Radar sensors shall be only used only for process media against which the materials in contact with the media are sufficiently resistance.
- 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.

Table 2 – Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions
4	**EC-Type:** PTB 14 ATEX 2007 X Issue 03	Level measuring devices based on microwave technology	If used as an EPL Ga-equipment the level measuring devices based on microwave technology type series VEGAPULS 69*** and VEGAPULS 64*** with integrated electronic assembly which include the material aluminum/titanium, shall be installed in such a way 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 level measuring devices with plastic enclosure, with metal enclosure with inspection window or none grounded metallic parts as well as components of the antennas out of plastic include surfaces that can become charged electrostatically (note waring label). When used as EPL-Ga/Gb equipment, the level measuring devices shall be connected to the equipotential bonding conductor (contact resistance ≤ 1MΩ) (e.g. using the earth terminal) in order to prevent metal elements from being charged electrostatically. In applications requiring EPL Ga- or EGL Ga/Gb-equipment, all parts of the level measuring devices that come in contact with media, shall only be used in such media against which the materials are sufficiently resistant. With the level measuring devices in the version with rinsing 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 used as an EPL Ga/Gb equipment shall be installed in such a way, that the degree of protection IP 67 is kept after alignment of the antenna by means of the swiveling holder and after fastening the screw connection of the clamp flange.
5	**EC-Type:** PTB 15 ATEX 1009 X Issue 02	Level Measuring Instrument	The ambient temperature range, determined in IEC/SANS 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 the ATEX 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 applied 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 ad 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.

Table 2 – Special Conditions of Safe Use (X)

No.	EC Type Examination Certificate No.	Description	Special Conditions

If aluminium 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 aluminium/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 installation 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 Zone 1 application, the following process pressure 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

Type PS69	Model	Process pressure
Plastic horn antenna	PS69(*).*E/JB***H******(*)(*)	-1…+2bar
Metal framed lens antenna with cleaning connection	PS69(*).*E/JC***H******(*)(*)	-1…+3bar
Thread with integrated horn antenna	PS69(*).*E/JU***H******(*)(*)	-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 device 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 IP67 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 IP67 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 IP67 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
The VEGAPULS PS64/69… shall be connected with suitable cable glands or conduit systems that meet the requirements set forth in IEC/SANS 60079-1, section 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.
Openings that are not used shall be sealed in compliance with the specifications in IEC/SANS 60079-1, section 11.9.
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/SANS 60079-1, section 1.
The connecting wire of the VEGAPULS PS64/69… shall be fixed and routed so that it will be adequately protected against mechanical damage.
If the temperature at entry fittings exceeds 70°C, temperature-resistant connecting cables shall be used.
The VEGAPULS PS64/69… shall be included in the local equipotential bonding solution (contact resistance ≤ 1MΩ) of the potentially

Table 2 – Special Conditions of Safe Use (X)			
No.	**EC Type Examination Certificate No.**	**Description**	**Special Conditions**
			explosive location. Convers shall not be opened when an explosive gas atmosphere is present. Covers shall be marked with: “WARNING – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPEHRE IS PRESENT” Radar sensors shall be used only for process media against which the materials in contact with the media are resistant. 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.
6	**EC-Type:** BVS 16 ATEX E 022 X Supplement 2	Radar-Sensor	Variants of the radar sensor type VEGAPULS PS69(*).**********(*)(*) for which aluminium is used shall be installed in such a way that sparking as result of impact or friction between aluminium and steel (with the exception of stainless steel if the presence of rust particles can be excluded) is excluded. The level measuring device in the version with swiveling holder shall be installed in such a way that if used as Zone 0/1 equipment the degree of protection IP67 is kept. When installing in Zone 20 a security device limiting the maximum input power to 2 W has to be installed. Intensive electrostatic charging for instance by the process has to be avoided. In case of extremely ignitable dust (MIE < 3 mJ) the equipment must not be used in areas where intensive charging processes are to be expected.

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
1	**EC-Type:** IECEx BVS 16.0017X Issue No.: 2	Radar sensor	The maximum power given to the radar sensor with HART-signal, has to be limited to the indicated value (P_{max} <=2 W), when it is installed in zone 20. Electrical data VEGAPULS PS64(*).IR****H******(*)(*) VEGAPULS PS64(*).IR****H***B**(*)(*) Supply terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version — U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).IR****H******(*)(*) VEGAPULS PS69(*).IR****H***B**(*)(*) Supply terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version — U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).IR****HZ*****(*)(*) Supply and signal circuit 1 terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version — U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) Supply and signal circuit 2 terminals 7 [+], 8 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version — U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).IR****P/F******(*)(*) Supply and signal circuit terminals 1 [+], 2 [-] in the electronics compartment — U = 9 V .... 32 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).IR****P/F***B**(*)(*) Supply and signal circuit terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version — U = 9 V .... 32 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).IR****B******(*)(*) supply (terminals 1, 2 in the terminal compartment) — AC 90...253 V, 50/60 Hz output (terminals 5[+], 7[-] in the terminal compartment) — 4...20 mA with superposed HART-signal passive signal current, input (terminals 6[+], 7[-] in the terminal compartment) — 4...20 mA with superposed HART-signal VEGAPULS PS69(*).IR****I******(*)(*) supply — AC 20...42 V, 50/60 Hz or

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			(terminals 1, 2 in the terminal compartment) DC 9.6...48 V output 4...20 mA with superposed HART-signal (terminals 6[+], 7[-] in the terminal compartment) passive signal current, input 4...20 mA with superposed HART-signal (terminals 6[+], 7[-] in the terminal compartment) VEGAPULS PS69(*).IR***H/P/F******(*)(*) VEGAPULS PS69(*).IR***H/P/F***B**(*)(*) adjustment and indication circuit (terminals 5, 6, 7, 8 in the electronics compartment) only for connection to the associated VEGA adjustment and indication unit VEGADIS61/81 according to IECEx BVS 06.0014 (DE/BVS/06.2104) VEGAPULS PS69(*).IR***H/P/F/B/I/U******(*)(*) adjustment and indication circuit only for connection to the certified adjustment and indication unit PLICSCOM or VEGACONNECT <u>Thermal data</u> <u>Permitted process temperature at the probe</u> VEGAPULS PS64(*).IR***X*********(*)(*) X: A = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+130 °C with short temperature reduction piece B = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+200 °C with long temperature reduction piece C = PP/ -40 °C…+ 80 °C D = FKM (SHS FPM 70C3 GLT) + PP / -40 °C...+ 80 °C E = EPDM (COG AP310) und PP / -40 °C...+ 80 °C F = EPDM (COG AP302) und PEEK (FDA)/ -40 °C...+130 °C with short temperature reduction piece G = PEEK / FKM (Kalrez 6375) / -20 °C… +130 °C H = PEEK / FKM (Kalrez 6375) / -20 °C … +200 °C R = PEEK / FKM (Kalrez 6230) / -15 °C … +130 °C S = PEEK / FKM (Kalrez 6230) / -15 °C … +200 °C T = PTFE / FFKM (Kalrez 6230) / -15 °C … +130 °C U = PTFE / FKM (75,5/VA75F) / -20 °C … +130 °C V = PTFE / EPDM (75,5/KW75F) / -20 °C … +130 °C I = PTFE / PTFE / -40 °C … +130 °C J = PTFE / PTFE / -40 °C … +200 °C K = PTFE (8mm) / PTFE / -40 °C … +130 °C L = PTFE (8mm) / PTFE / -40 °C … +200 °C P = PFA (8mm) / PFA / -40 °C … +130 °C Q = PFA (8mm) / PFA / -40 °C … +200 °C VEGAPULS PS69(*).IR***X*********(*)(*) X: A = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+130 °C with short temperature reduction piece B = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+200 °C with long temperature reduction piece

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			C = PP/ -40 °C…+80 °C D = FKM (SHS FPM 70C3 GLT) + PP / -40 °C...+ 80 °C E = EPDM (COG AP310) und PP / -40 °C...+ 80 °C F = EPDM (COG AP302) und PEEK (FDA)/ -40 °C...+130 °C with short temperature reduction piece G = PEEK / FKM (Kalrez 6375) / -20 °C … +130 °C H = PEEK / FKM (Kalrez 6375) / -20 °C … +200 °C R = PEEK / FKM (Kalrez 6230) / -15 °C … +130 °C S = PEEK / FKM (Kalrez 6230) / -15 °C … +200 °C Permitted ambient temperature at the electronics enclosure -40 °C…+ 60 °C max. surface temperature T The max. surface temperature is the higher one of the following: a) Maximum surface temperature at the probe process temperature + 2 K b) Maximum surface temperature at the electronics enclosure VEGAPULS PS64/PS69(*).IR ****H******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).IR****P/F******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).IR****HZ******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).IR****U*****(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).IR****B/I******(*)(*) with thermo fuse limited to 102 °C Maximum surface temperature at the electronics enclosure VEGAPULS PS64/PS69(*).IR ****H******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).IR****P/F******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).IR****HZ******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).IR****U*****(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).IR****B/I******(*)(*) with thermo fuse limited to 102 °C Degrees of protection according to IEC/SANS 60529 IP66
2	**EC-Type:** IECEx PTB 14.0040X Issue No.: 3	Level measuring devices based on microwave technology	Electrical data: Supply and signal circuit I: (Terminals 1[+], 2[-] in the connection compartment of the 2-chamber housing) VEGAPULS PS69(*).IC****HX*****(*)(*) and PS64(*).IC****HX*****(*)(*). In type of protection Intrinsic Safety Ex ia IIC For connection to a certified intrinsically safe circuit with linear characteristics. Maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW The effective inner capacitance is negligible small. The effective inner inductance is Li ≤ 10 µH. In the version with permanently mounted connection cable, $C_{iwire/wire}$ =159 pF/m, $C_{iwire/screen}$ =270 pF/m Li = 0.55 µH/m must be taken into account. Supply and signal circuit II: (Terminals 7[+], 8[-] in the connection compartment of the In type of protection type Intrinsic Safety Ex ia IIC For connection to a certified intrinsically safe circuit with linear characteristics. Maximum values:

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			2-chamber housing) VEGAPULS PS69(*).IC****HZ*****(*)(*) Ui = 30 V Ii = 131 mA Pi = 901 mW The effective inner capacitance is negligible small. The effective inner inductance is Li ≤ 5µH Display and adjustment circuit: Terminals 5, 6, 7, 8 in electronic compartment or plug connection of the VEGAPULS PS69(*).IC****HX/Z*****(*)(*) and PS64(*).IC****HX*****(*)(*). In type of protection Intrinsic Safety Ex ia IIC The rules for the interconnection of intrinsically safe circuits between the level measuring devices type series VEGAPULS PS 69*** and PS64***and the external display and adjustment unit VEGADIS61/81 are complied with if the total inductance and total capacitance of the connecting line between the level measuring devices type series VEGAPULS PS 69*** and the external display unit VEGADIS 61/81, L_{cable} = 212 µH and C_{cable} =1.98 µF, is not exceeded. When using the enclosed connection cable between the level measuring devices type series VEGAPULS PS 69*** and PS64*** and the external indicating unit VEGADIS 61/81, the following values for the cable inductance Li and cable capacitance Ci must be taken into account. Li = 0.62 µH/m $C_{iwire/wire}$ = 132 pF/m $C_{iwire/screen}$ = 208 pF/m Display and adjustment circuit: spring contacts in electronic compartment or connection compartment of the VEGAPULS PS69(*).IC****HX/Z*****(*)(*) and PS64(*).IC****HX*****(*)(*). In type of protection Intrinsic Safety Ex ia IIC For connection to the indicating and adjustment module PLICSCOM or PLICSCOM(*).*B/W/U/C* (TUN 16.0002 U) or VEGACONNECT. The metal elements of the level measuring devices based on microwave technology type series VEGAPULS PS69*** are electrically connected to the earth terminals. The intrinsically safe circuits are safely electrically isolated from elements that may be earthed. The intrinsically safe signal and supply circuits are safely galvanic isolated from each other.
3	**EC-Type:** IECEx PTB 15.0023X Issue No.: 2	Level measuring instrument VEGAPULS	**Ratings:** **Electrical** 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

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters

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

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

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters

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 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 …+73°C
T4…T1	X°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.

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters

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.

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	-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******(*)(*)

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			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
4	**EC-Type:** PTB 14 ATEX 2007 X Issue 03	Level measuring devices based on microwave technology	Supply and signal circuit I: (Terminals 1[+], 2[-] in the connection Compartment of the 2-chamber housing) VEGAPULS PS69(*).AC****HX******(*)(*) and PS64(*).AC****HX******(*)(*) in type of protection intrinsic safety Ex ia IIC For connection to a certified intrinsically safe circuit with linear characteristics. Maximum values: Ui = 30 V Ii = 131 mA Pi = 983 mW The effective inner capacitance is negligible small. The effective inner inductance is Li ≤ 10 µH In the version with permanently mounted connection cable, $Ci_{wire/wire}$ = 159 pF/m, $Ci_{wire/screen}$=270 pF/m and Li ≤ 0.55 µH/m must be taken into account. Supply and signal circuit II: (Terminals 7[+], 8[-] in the connection Compartment of the 2-chamber housing) VEGAPULS PS69(*).AC****HZ******(*)(*) In type of protection intrinsic safety Ex ia IIC For connection to a certified intrinsically safe circuit with linear characteristics. Maximum values: Ui = 30 V Ii = 131 mA Pi = 901 mW The effective inner capacitance is negligible small. The effective inner inductance is Li ≤ 5 µH Display and adjustment circuit: Terminals 5, 6, 7, 8 in electronic Compartment or plug connection of the VEGAPULS PS69(*).AC****HX/Z******(*)(*) and PS64(*).AC****HX******(*)(*) In type of protection Intrinsic Safety Ex ia IIC For connection to the intrinsically safe circuit of the associated external indicating unit VEGADIS 61/81 (PTB 02 ATEX 2136 X). The rules for the interconnection of intrinsically safe circuits between the level measuring devices type series VEGPULS PS 6***/PS64*** and the external display and adjustment unit VEGADIS 61/81 are compiled with if the total inductance and total capacitance of the connecting line between the level measuring device type series VEGAPULS PS 69*** / PS 64*** are the external display unit VEGADIS 61/81 (L_{cable} = 212 µH and C_{cable} = 1.98 µF) is not exceeded. When using the enclosed connection cable between the level measuring devices type series VEGAPULS PS 69*** / PS64*** and the external indicating unit VEGADIS

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			61/81, the following values for the cable inductance Li and cable capacitance Ci must be taken into account. Li = 0.62 µH/m $Ci_{wire/wire}$ = 132 pF/m, $Ci_{wire/screen}$=208 pF/m and Display and adjustment circuit: In type of protection intrinsic safety Ex ia IIC Spring contacts in electronic compartment or For connection to the indicating and adjustment module Connection compartment of the PLICSCOM or PLICSCOM(*).*B/W/U/C* (TUV 15ATEX161127U) VEGAPULS PS69(*).AC****HX/Z******(*)(*) or VEGACONNECT (PTB 07 ATEX 2013 X). and PS64(*).AC****HX******(*)(*) The metal elements of the level measuring device based on microwave technology type series VEGAPULS PS69*** / PS64 *** are electrically connected to the earth terminals. The intrinsically safe circuits are safely electrically isolated from elements that may be earthed. The intrinsically safe signal and supply circuits are safely galvanic isolated from each other.
5	**EC-Type:** PTB 15 ATEX 1009 X Issue 02	Level Measuring Instrument	<table><tr><th>Model</th><th>Electronic</th><th>U</th></tr><tr><td>PS64(*).*E****H******(*)(*)</td><td>PS64HW</td><td>12…35V DC</td></tr><tr><td>PS64(*).*E****H***B**(*)(*)</td><td>PS64HW+PLICSZEKX</td><td>12…35V DC</td></tr><tr><td>PS69(*).*E****H******(*)(*)</td><td>PS60HW</td><td>12…35V DC</td></tr><tr><td>PS69(*).*E****P******(*)(*)</td><td>PS60PAW</td><td>9…32V DC</td></tr><tr><td>PS69(*).*E****F****** (*)(*)</td><td>PS60FFW</td><td>9…32 V DC</td></tr><tr><td>PS69(*).*E****H***B** (*)(*)</td><td>PS60HW+PLICSZEKX</td><td>12…35V DC</td></tr><tr><td>PS69(*).*E****P***B**(*)(*)</td><td>PS60PAW+PLICSZEZSA</td><td>9…32V DC</td></tr><tr><td>PS69(*).*E****F***B**(*)(*)</td><td>PS60FFW+PLICSZEBVH</td><td>9…32V DC</td></tr><tr><td>PS69(*).*E****HZ*****(*)(*)</td><td>PS60HW+PLICSZEBVL</td><td>12…35V DC</td></tr><tr><td>PS69(*).*E****B*****(*)(*)</td><td>PS60HW+PLICSZEBVL</td><td>90…250V AC</td></tr><tr><td>PS69(*).*E****I*****(*)(*)</td><td>PS60HW+PLICSZEMB</td><td>9.6…48V DC, 20…42V AC</td></tr><tr><td>PS69(*).*E****U*****(*)(*)</td><td>PS60HW+PLICSZEMB</td><td>8…30V DC</td></tr></table> **Thermal Data** Maximum ambient temperature range: -50°C…+80°C with observation window -60°C…+80°C without observation window
6	**EC-Type:** BVS 16 ATEX E 022 X Supplement 2	Radar-Sensor	The maximum power given to the radar sensor with HART-signal, has to be limited to the indicated value (P_{max} <=2 W), when it is installed in zone 20. <u>Electrical data</u> VEGAPULS PS64(*).AR****H******(*)(*) VEGAPULS PS64(*).AR****H***B**(*)(*) Supply

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			Terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version: U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).AR****H******(*)(*) VEGAPULS PS69(*).AR****H***B**(*)(*) Supply terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version: U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).AR****HZ*****(*)(*) Supply and signal circuit 1 terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version: U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) Supply and signal circuit 2 terminals 7 [+], 8 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version: U = 12 V ... 35 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).AR****P/F******(*)(*) Supply and signal circuit terminals 1 [+], 2 [-] in the electronics compartment: U = 9 V .... 32 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).AR****P/F***B**(*)(*) Supply and signal circuit terminals 1 [+], 2 [-] in the electronics compartment or in the terminal compartment regarding the two cell enclosure version: U = 9 V .... 32 V DC, P_{max} <= 2 W (Zone 20) VEGAPULS PS69(*).AR****B******(*)(*) supply (terminals 1, 2 in the terminal compartment): AC 90...253 V, 50/60 Hz output (terminals 5[+], 7[-] in the terminal compartment): 4...20 mA with superposed HART-signal passive signal current, input (terminals 6[+], 7[-] in the terminal compartment): 4...20 mA with superposed HART-signal VEGAPULS PS69(*).AR****I******(*)(*) supply (terminals 1, 2 in the terminal compartment): AC 20...42 V, 50/60 Hz or DC 9.6...48 V output (terminals 6[+], 7[-] in the terminal compartment): 4...20 mA with superposed HART-signal passive signal current, input (terminals 6[+], 7[-] in the terminal compartment): 4...20 mA with superposed HART-signal

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			VEGAPULS PS69(*).AR****H/P/F******(*)(*) VEGAPULS PS69(*).AR****H/P/F***B**(*)(*) adjustment and indication circuit (terminals 5, 6, 7, 8 in the electronics compartment) only for connection to the associated VEGA adjustment and indication unit VEGADIS61/81 according to IECEx BVS 06.0014 (DE/BVS/06.2104) VEGAPULS PS69(*).AR****H/P/F/B/I/U******(*)(*) adjustment and indication circuit only for connection to the certified adjustment and indication unit PLICSCOM or VEGACONNECT <u>Thermal data</u> <u>Permitted process temperature at the probe</u> VEGAPULS PS64(*).AR***X*********(*)(*) X: A = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+130 °C with short temperature reduction piece B = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+200 °C with long temperature reduction piece C = PP/ -40 °C…+ 80 °C D = FKM (SHS FPM 70C3 GLT) + PP / -40 °C...+ 80 °C E = EPDM (COG AP310) und PP / -40 °C...+ 80 °C F = EPDM (COG AP302) und PEEK (FDA)/ -40 °C...+130 °C with short temperature reduction piece G = PEEK / FKM (Kalrez 6375) / -20 °C… +130 °C H = PEEK / FKM (Kalrez 6375) / -20 °C … +200 °C R = PEEK / FKM (Kalrez 6230) / -15 °C … +130 °C S = PEEK / FKM (Kalrez 6230) / -15 °C … +200 °C T = PTFE / FFKM (Kalrez 6230) / -15 °C … +130 °C U = PTFE / FKM (75,5/VA75F) / -20 °C … +130 °C V = PTFE / EPDM (75,5/KW75F) / -20 °C … +130 °C I = PTFE / PTFE / -40 °C … +130 °C J = PTFE / PTFE / -40 °C … +200 °C K = PTFE (8mm) / PTFE / -40 °C … +130 °C L = PTFE (8mm) / PTFE / -40 °C … +200 °C P = PFA (8mm) / PFA / -40 °C … +130 °C Q = PFA (8mm) / PFA / -40 °C … +200 °C VEGAPULS PS69(*).AR***X*********(*)(*) X: A = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+130 °C with short temperature reduction piece B = FKM (SHS FPM 70C3 GLT) + PEEK / -40 °C...+200 °C with long temperature reduction piece C = PP/ -40 °C…+80 °C D = FKM (SHS FPM 70C3 GLT) + PP / -40 °C...+ 80 °C E = EPDM (COG AP310) und PP / -40 °C...+ 80 °C F = EPDM (COG AP302) und PEEK (FDA)/ -40 °C...+130 °C with short temperature reduction piece G = PEEK / FKM (Kalrez 6375) / -20 °C … +130 °C H = PEEK / FKM (Kalrez 6375) / -20 °C … +200 °C

Table 3 - Safety parameters

No.	EC Type Examination Certificate No.	Description	Safety Parameters
			R = PEEK / FKM (Kalrez 6230) / -15 °C … +130 °C S = PEEK / FKM (Kalrez 6230) / -15 °C … +200 °C Permitted ambient temperature at the electronics enclosure -40 °C…+ 60 °C max. surface temperature T The max. surface temperature is the higher one of the following: a) Maximum surface temperature at the probe process temperature + 2 K b) Maximum surface temperature at the electronics enclosure VEGAPULS PS64/PS69(*).AR ****H******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).AR****P/F******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).AR****HZ******(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).AR****U*****(*)(*) ambient temperature + 86 K VEGAPULS PS69(*).AR****B/I******(*)(*) with thermo fuse limited to 102 °C Maximum surface temperature at the electronics enclosure VEGAPULS PS64/PS69(*).AR ****H******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).AR****P/F******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).AR****HZ******(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).AR****U*****(*)(*) ambient temperature + 36 K VEGAPULS PS69(*).AR****B/I******(*)(*) with thermo fuse limited to 102 °C Degrees of protection according to IEC/SANS 60529 IP66