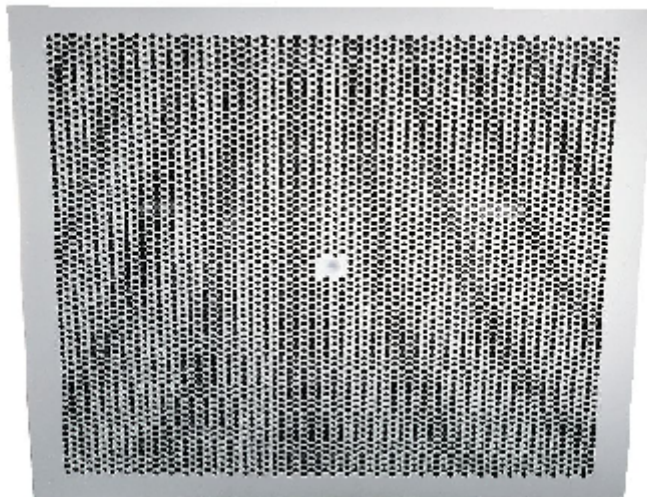
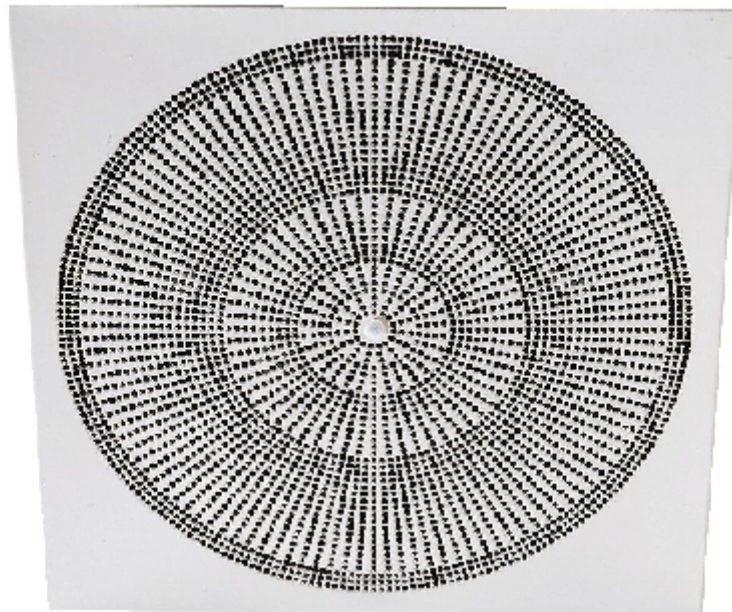




Additional operating instructions according to ATEX 2014/34/EU Ceiling Impulse Diffuser Model PIL



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Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

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Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

General conditions

General description and instructions



These additional operating instructions must be observed prior to mounting and commissioning the device.

These additional operating instructions contain basic information regarding its use in areas subject to explosion hazards to be observed during assembly, operation and maintenance.

Prior to mounting and commissioning and during maintenance work, the present additional operating instructions must be read by the installer and the responsible skilled personnel/system operator!

Personnel qualification and training

The personnel for assembly, inspection and maintenance must have the relevant qualification for this work.

The area of responsibility, competence and monitoring of the personnel must be exactly regulated by the system operator. If the personnel does not have the required knowledge, it must be trained and instructed. Moreover, the system operator must ensure that the contents of the additional operating instructions are understood completely by the personnel.

Safety-conscious work

The safety instructions given in these additional operating instructions, the existing national and international regulations on explosion protection, accident prevention and the system operator's internal work, operating and safety regulations must be observed.

Designated use

The ceiling impulse diffuser has the following test number and ATEX marking:


 II 2G Ex h IIC T6 Gb EPS 11 ATEX 2 306 X
 II 2D Ex h IIIC T80°C Db

The devices have been designed for use in ventilation systems in areas subject to explosion hazards according to ATEX of Category II, Zones 1, 2 and Category III, Zones 21, 22.

These devices are not suitable for use in unreleased Ex zones.

The operating safety of the delivered devices is only guaranteed when used in accordance with their designated use.

According to the ATEX marking, the diffuser may only be used for media with a maximum temperature of up to 80 °C

Special conditions

It must be ensured that all metal components are properly and permanently connected to the ground potential.

The attached and installed electrical devices must have a suitable explosion-proof design. The combination of electrical and non-electrical devices must be examined again from a safety point of view.

To avoid propagating brush discharges on diffusers with RAL coating, it must be ensured that the air in the ventilation system is not heavily contaminated with non-conductive particles.

Type of ignition protection

The type of ignition protection of the diffuser is guaranteed by its safe design.

Quality

The SCHAKO production facilities are certified according to the QM procedure EN ISO 9001.

Delivery and storage

Upon receipt, the devices must be checked for completeness and transport damage. If delivered incompletely or damaged, the forwarding company and the SCHAKO KG have to be informed immediately.

The device must not be exposed directly to weather, solar radiation and moisture.

Mounting information

Mounting, electrical connection work and commissioning must be carried out by skilled personnel only and in accordance with the recognised technical rules and the safety and accident prevention regulations.

Maintenance

Only a device subjected to proper maintenance and kept in perfect condition can guarantee safe and reliable operation.

When defective parts are replaced with spare parts, only SCHAKO original spare parts may be used. The SCHAKO KG cannot be held liable for any damage caused by using spare parts that are not original and will not give any warranty.

Hazard caused by non-observance of the safety instructions

Non-observance of the safety instructions can result both in putting persons and the environment and operating units at risk. Likewise, non-observance of the safety instructions will result in the loss of any claims for damages.

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

Description

The ceiling impulse diffuser type PIL has been specially designed for use in **clean rooms, operating theatres and comfort rooms up to heights of 4 m**. It produces a **pulsating horizontal jet stream**. The supply air is discharged along the ceiling and, upon reaching the critical throw length, gradually sinks into the occupied zone at low velocity. The pulsating air pattern results in an **efficient reduction of the velocity and of the temperature difference in the air jet**. A displacement flow is created near the diffuser, which means the ceiling and diffuser itself are less prone to particles depositing on the outlet or near the ceiling. An integrated air guide funnel ensures that the supply air is discharged uniformly across the whole face of the diffuser. The diffuser can be used for cooling with a maximum temperature difference of -15K . A freely suspended installation is possible for sizes 500 and 600/625 up to a ΔT of -4K . Size 400 needs a size 500 faceplate for freely suspended installation.

The regular cleaning of the air diffuser required in clean rooms and operating theatres can be done easily and quickly due to the smooth surface of the front plate. The ceiling impulse diffuser can be used for supply and exhaust air. The ceiling impulse diffuser is connected to the ductwork using a plenum box type SAK for square models and a plenum box type SRK for round models. The supply air plenum box is fitted with an equalising grid, to ensure a certain admission pressure for optimal air distribution. At an extra charge, a throttle damper adjustable from underneath, which is used for air volume regulation, can be installed in the plenum box type SAK (even when already installed) for both supply and return air versions.

The ceiling diffuser is fitted to the plenum box with a central screw for a masked assembly (concealed mounting). The funnel shaped VM holder on the traverse makes assembly of the ceiling diffuser much easier. A volumetric flow meter can be integrated in the connection spigot of the plenum box at an extra charge. The measurement error of the volumetric flow meter is $\pm 5\%$ at a spigot velocity of 2-5 m/s and a straight flow pattern of at least $1 \times D$. The measurement is carried out with integrated diffuser. By adjusting the throttle damper, the required air volume of each diffuser can be set quickly and correctly.

To allow duct cleaning robots to be inserted from the room side, the diffusion plate, the damper, if built-in, and the volumetric flow meter can be removed in the ROB version of the plenum box SAK / SRK.

For square and round supply air models with SM mounting or for installation in grid ceilings, the ceiling impulse diffuser is connected to ductwork via a reduction piece type RF.

The ceiling impulse diffuser has been tested successfully by TÜV SÜD in accordance with the following regulations:

- VDI 6022 Sheet 1: Hygienic requirements of ventilation and air-conditioning systems
- VDI 6022 Sheet 2: Hygienic requirements of ventilation and air-conditioning systems - Measurement methods and investigations during hygienic controls and hygienic inspections
- DIN 1946 Sheet 2: Air-conditioning technology - Health requirements

Minimum volumetric flow range V_{\min} ($\Delta T = -12\text{K}$)

NW	V_{\min}			
	PIL-N-...		PIL-G-...	
	(m^3/h)	(l/s)	(m^3/h)	(l/s)
310	80	22	-	-
400	100	28	150	42
500	150	42	200	56
600 / 625	300	83	350	97

Attention!

The performance of the ceiling impulse diffuser type PIL is only guaranteed with plenum box type SAK or SRK.

This ceiling impulse diffuser complies with the regulations of the ATEX directives and can be used in ventilation systems in areas subject to explosion hazards.

The ceiling diffuser has been certified for the explosion protection group II for Zones 1, 2 and 21, 22.

Zones 1 and 2 represent the application range containing gases, while Zones 21 and 22 represent the application range containing dusts.

Classification by zone must be established by the system operator or planner in compliance with current standards.

Note:

In explosion-protected zones, only devices that have an ATEX approval for this use may be used.

Technical data, information

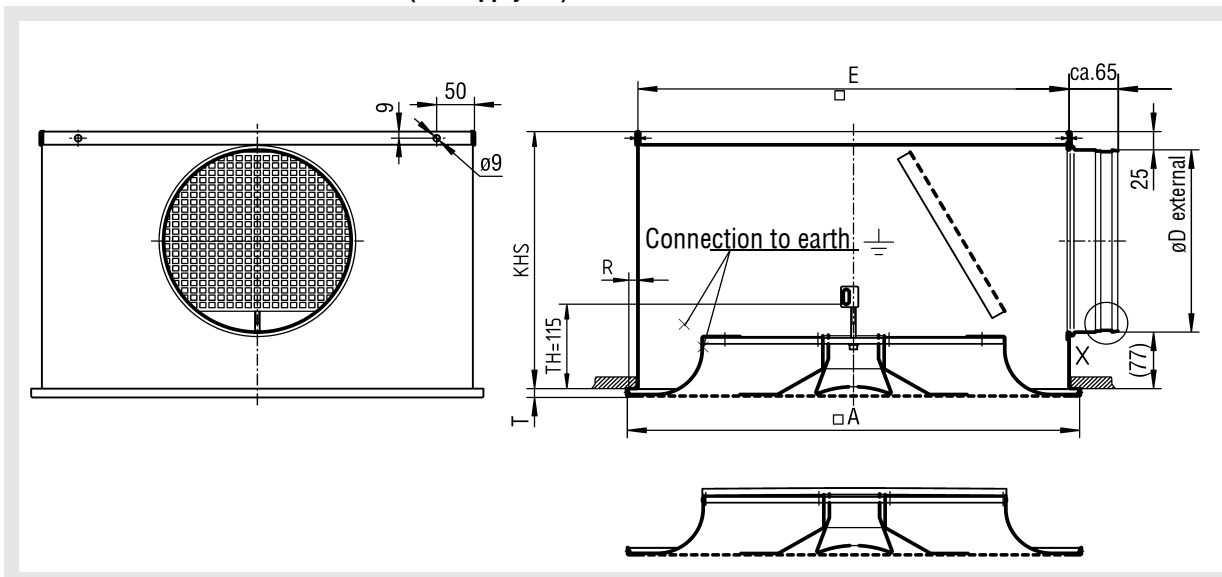
- the grounding terminal of the PIL must be connected to the SAK/SRK and to the equipotential bonding

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

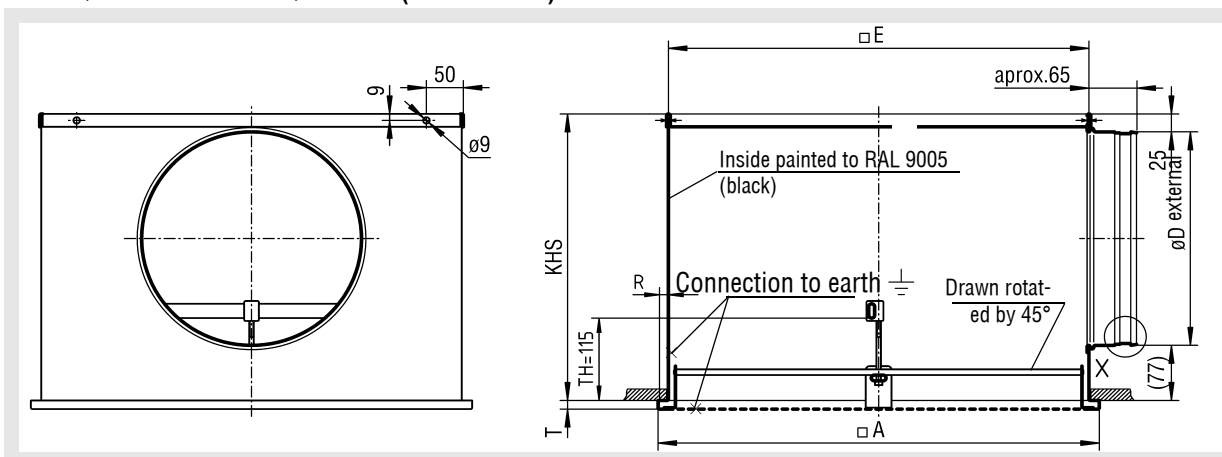
Models and dimensions

Dimensions

PIL-...-Q-...-Z-... with SK-Q-...-Z-... (for supply air)



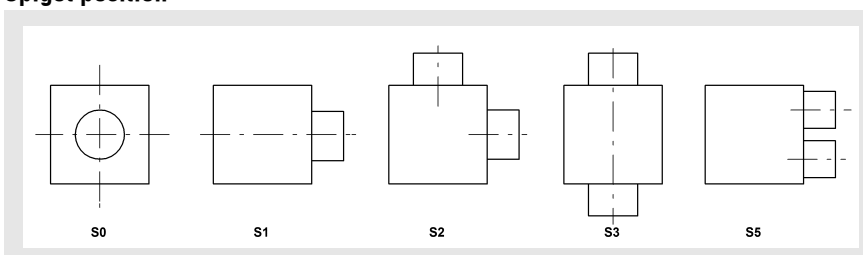
PIL-N-Q-...-A-... with SK-Q-...-A-... (for return air)



Available sizes

NW	$\square A$	$\square E$	T	R	PIL-N-Q...-Z		PIL-G-Q...-Z		PIL-N-Q...-A		$\varnothing D_{max}$ for ...- S5
					KHS	$\varnothing D$	KHS	$\varnothing D$	KHS	$\varnothing D$	
310	308	290	12	8	260	158	-	-	300	198	98
400	398	370		12	260	158	300	198	300	198	138
500	498	470		12	300	198	350	248	350	248	198
600	598	570		12	350	248	415	313	400	298	248
625	623	570		24	350	248	415	313	400	298	248

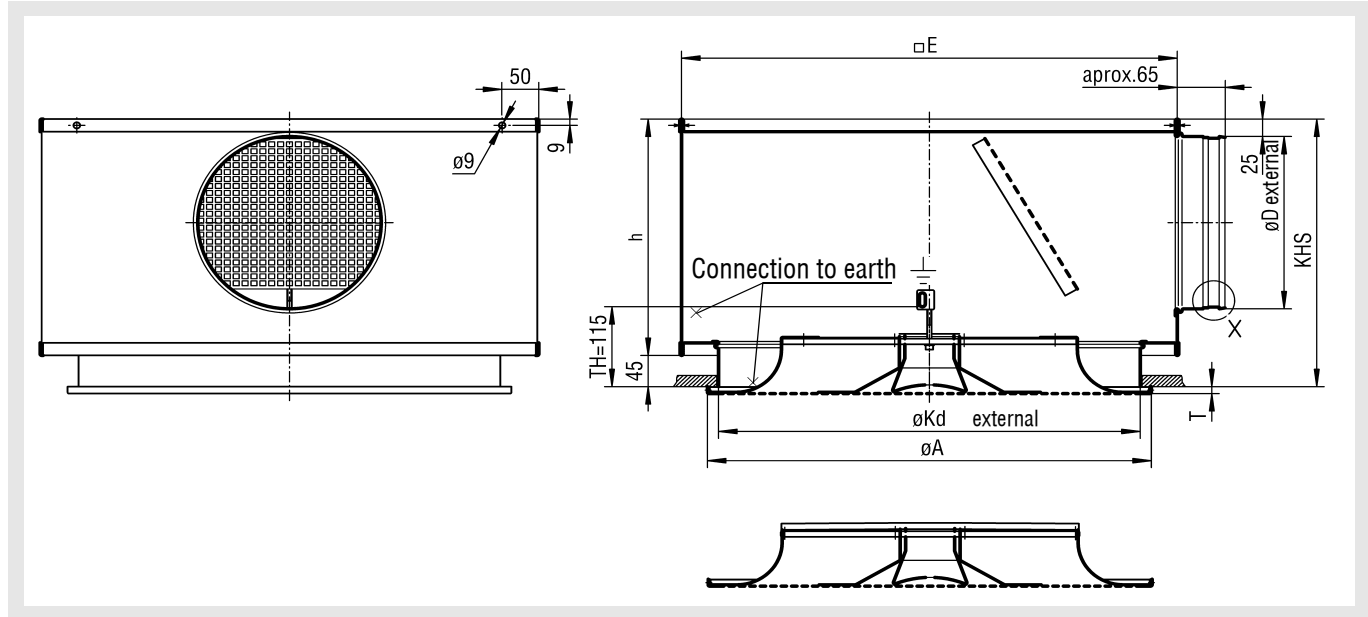
Spigot position



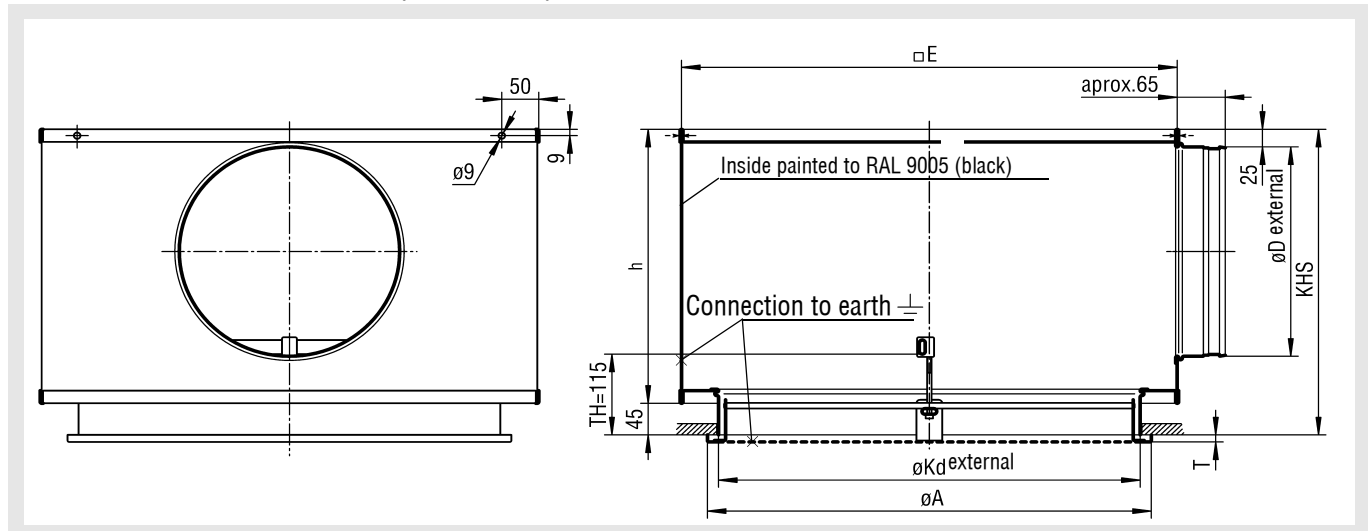
KHS= standard height of plenum box
Special height of plenum box = $\varnothing D + 102$

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

PIL-...-R-...-Z with SK-R-...-Z-... (for supply air)



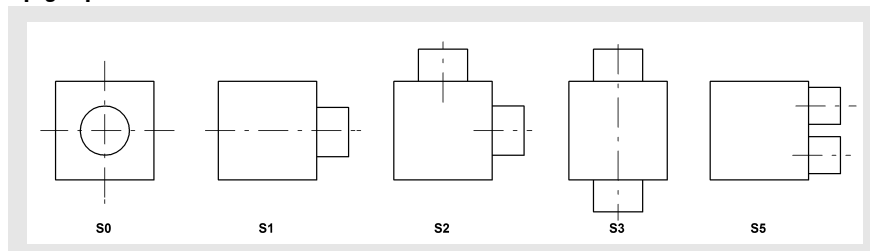
PIL-N-R-...-A-... with SK-R-...-A-... (for return air)



Available sizes

NW	øA	øKd	□E	T	TH	PIL-N-R...-Z-...			PIL-G-R...-Z-...			PIL-N-R...-A-...			øD _{max} for ...-S5
						KHS	øD	h	KHS	øD	h	KHS	øD	h	
310	310	298	405	10	115	295	158	250	-	-	-	335	198	290	158
400	400	370	445			295	158	250	335	198	290	335	198	290	178
500	500	470	545			335	198	290	385	248	340	385	248	340	198
600	600	570	670			385	248	340	450	313	405	435	298	390	298
625	625	570	670			385	248	340	450	313	405	435	298	390	298

Spigot position



KHS = standard height of plenum box = øD + 137mm,

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL

Information regarding assembly and commissioning

Prior to being installed in the ventilation system, the ceiling impulse diffuser must be checked for damage. Damaged fire dampers must not be installed.

The device may only be used in accordance with its designated use in air ventilation systems for supply air and return air.

Use only approved fastening material for mounting.

The ceiling impulse diffuser must be connected to the ventilation duct network in electrically conducting manner.

In order to avoid the risk of static charges, the diffuser must be connected to the grounding connection on the SK-... grounding connection provided for this purpose. The SAK/SRK must be connected to the on-site equipotential bonding.

Make sure that the ventilation systems are not subjected to any anomalous operating conditions, such as vibrations, pressure surges or high proportions of solids in the medium.

If required, the electrical connection diagrams can be found in the respective SCHAKO additional information.

Electrical wiring and commissioning work must be performed by skilled personnel only.

Information regarding maintenance and inspection

Proper maintenance increases operational safety and the service life of the device. This is why the devices should be subjected to regular inspection.

If inspection dates are prescribed by law, they must be complied with.

The operating personnel must be informed, prior to starting maintenance and inspection work.

The personal safety measures must be looked up in the safety data sheet. Hazard caused by contact or inhaling hazardous substances must be excluded by taking appropriate safety measures.

Prior to maintenance or inspection, all system components up- and downstream of the device must be switched off and secured against being switched on again.

The following maintenance and inspection criteria must be observed:

- The air diffusers must be cleaned as required or at the defined cleaning intervals. There must be no dust deposits on the air diffusers.
- Visual inspection of the device
- Check the fastening of the device
- Check the grounding connection for tight fit and good contact
- Functional check
- For additional inspections, please refer to the technical documentation or additional maintenance instructions



Deckenimpulsauslässe Typ PIL..,

Baugröße

Baujahr

Auftragsnummer

Positionsnummer

Seriennummer



II 2G Ex h IIC T6 Gb

II 2D Ex h IIIC T80°C Db

EPS 11 ATEX 2 306X

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL Certificate of conformity



**BUREAU
VERITAS**



- (1) **Konformitätsbescheinigung**
- (2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen –
Richtlinie 2014/34/EU
- (3) Bescheinigungsnummer
- EPS 11 ATEX 2 306 X** **Revision 2**
- (4) Gerät: Deckenimpulsauslässe Typ PIL
Ideal Komfort Auslass Typ IKA
Deckendrallauslass Typ DQJ
Deckenauslass Typ 4DF
- (5) Hersteller: Schako KG
- (6) Anschrift: Steigstraße 25-27
78600 Kolbingen
Deutschland
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Konformitätsbescheinigung festgelegt.
- (8) Bureau Veritas Consumer Products Services Germany GmbH bescheinigt aufgrund einer freiwilligen Prüfung auf Basis der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014 die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie. Die Ergebnisse der Prüfung sind in der vertraulichen Dokumentation unter der Referenznummer 10TH0561 festgelegt.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:
- EN ISO 80079-36:2016** **EN ISO 80079-37:2016**
- (10) Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese Konformitätsbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Gerätes gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.
- (12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

 II 2G Ex h IIC T6 Gb

 II 2D Ex h IIIC T80°C Db



Hamburg, 20.10.2020

Seite 1 von 2

Bescheinigungen ohne Unterschrift und Siegel haben keine Gültigkeit. Diese Bescheinigung darf nur unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung von Bureau Veritas Consumer Products Services Germany GmbH. EPS 11 ATEX 2 306 X, Revision 2.

Additional operating instructions according to ATEX 2014/34/EU for ceiling impulse diffuser PIL



(13)

Anlage

(14) Konformitätsbescheinigung EPS 11 ATEX 2 306 X

Revision 2

(15) Beschreibung des Gerätes:

Die verschiedenen Luftauslässe dienen zur Luftstrahlführung in Räumen. Die Auslässe bestehen aus Stahlblech mit einer antistatischen Lackierung.

(16) Referenznummer: 10TH0561

(17) Besondere Bedingungen:

Es muss sichergestellt werden, dass alle metallischen Teile ordnungsgemäß und dauerhaft mit dem Erdpotential verbunden sind.

Die an- und eingebauten elektrischen Geräte müssen in geeigneter Weise explosionsgeschützt ausgeführt sein. Die Zusammenführung von elektrischen und nichtelektrischen Geräten muss erneut sicherheitstechnisch betrachtet werden.

Zur Vermeidung von Gleitstielbüschelentladungen muss bei den Auslässen mit RAL Lack sichergestellt werden, dass die Luft im Lüftungssystem keine starke Belastung an nichtleitfähigen Partikeln aufweist.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen:

Durch Übereinstimmung mit Normen abgedeckt.



Zertifizierungsstelle Explosionsschutz

H. Schaffler

Hamburg, 20.10.2020

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