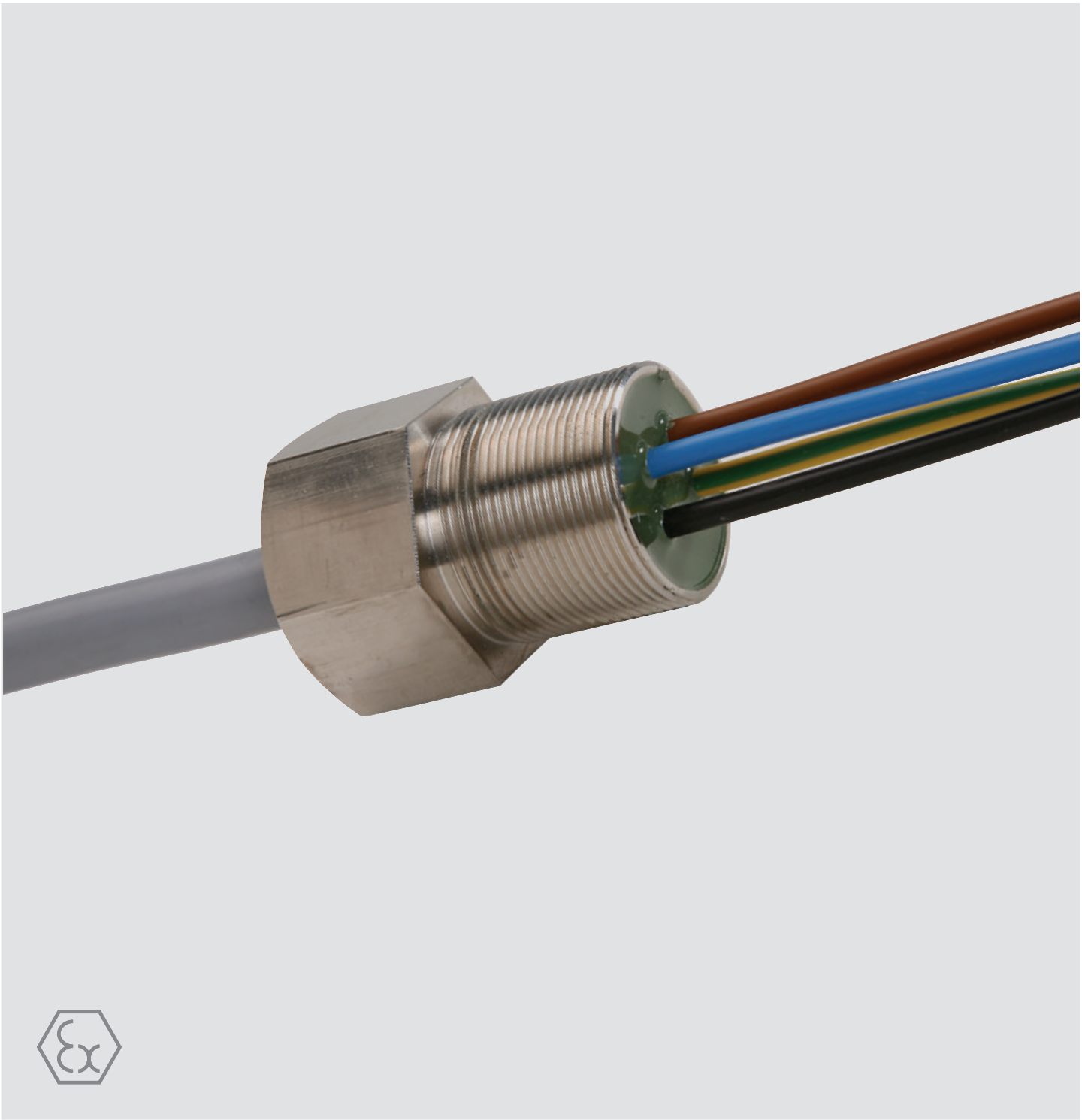
01-9200-7D0001-12/2021-ESS-456403

BARTEC

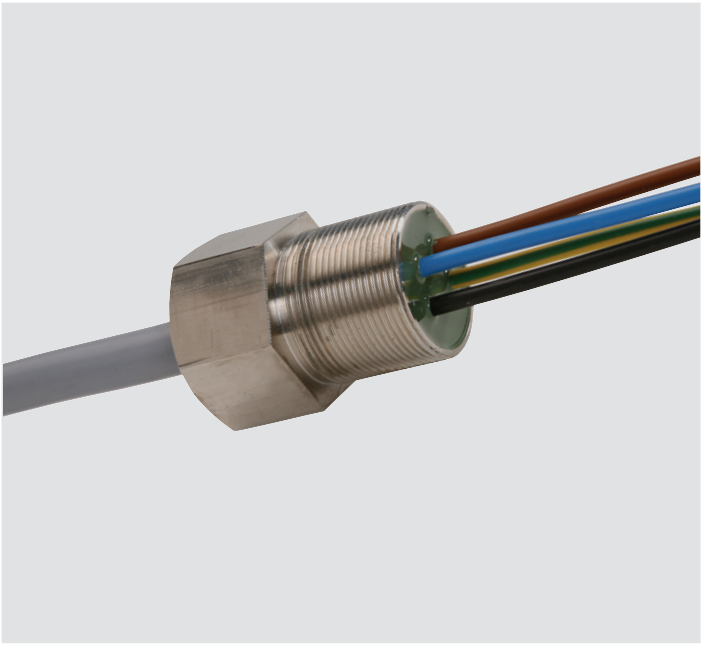
Leitungseinführung
Cable entries

Typ/Type 07-920*-****/**** bis/to 07-924*-****/****



Cable entries

Type 07-920*-****/**** to 07-924*-****/****



Note on instructions

When working in potentially explosive areas, the safety of people and systems depends on compliance with the relevant safety regulations. Persons responsible for assembly and maintenance bear a special responsibility.

A prerequisite for this is precise knowledge of the applicable rules and regulations.

The instructions summarise the most important safety measures and must be read by everyone working with the product, so that they are familiar with the correct handling of the product.

The instructions must be retained and must be available throughout the life of the product.

Description

The cable entries type 07-920*-****/**** up to type 07-924*-****/**** are connection elements with which electrical cables can be fed directly into Ex d enclosures in an explosion-proof manner.

The cable entry consists of a metal screw sleeve in which a hose line is cast in a strain-relieved and flameproof manner.

If individual wires are brought out, they must be installed in the d space.

The length of the connection wires and the cable are designed depending on the application. The pressure- and vacuum-tight cable entries, type 07-92**-****/*U** and 07-92**-****/*D**, are used to insert cables into flameproof enclosures. The pressure-tight and vacuum-tight cable entries ensure that there is no material transfer through the conductor and that a pressure/vacuum drop is avoided.

The pressure-tight and vacuum-tight cable entries consist of a metal screw sleeve in which the electrical cables and individual conductors are embedded in cast resin so that they are longitudinally sealed. This means that sealing is guaranteed along the conductor insulation and through the stranded conductors.

The version type 07-92**-****/*U**, is suitable for an application range from -500 mbar to 6 bar. The version, type 07-92**-****/*D**, with an additional seal, is suitable for an application range from -500 mbar to 80 bar.

Explosion protection

Notified Body Number	CE 0044
Approved Body Number	UKCA 2503
ATEX / UKEX marking	⟨Ex⟩ II 2 G Ex db IIC T6, T5, T4 Gb ⟨Ex⟩ II 2 D Ex tb IIIC T80 °C, T95 °C, T110 °C Db[1]
IECEx	Ex db IIC T6, T5, T4 Gb Ex tb IIIC T80 °C, T95 °C,T110 °C Db[1]
Inspection documents	EPS 17 ATEX 1099 X IECEx EPS 17.0050X CML 21 UKEX 1854 X

Ambient temperature

The maximum ambient temperature (at max. rated current) is shown in the table below in relation to temperature classes T4 to T6. The use of the CE in the respective temperature class requires at least the following operating temperature markings (TS) of the CE. Please refer to the labelling (e.g. on the product/accompanying documents) for the maximum TS of your CE.

T-class	TS max. (see accompanying documents)	Ta max.
T6	≥ 60 °C	≥ 20 °C
	≥ 70 °C	≥ 30 °C
	≥ 75 °C	≥ 35 °C
	≥ 80 °C	≥ 40 °C
T5	≥ 90 °C	≥ 50 °C
	≥ 95 °C	≥ 55 °C
T4	≥ 105 °C	≥ 65 °C
	≥ 110 °C	≥ 70 °C
T_s max. as per the respective labeling: 110 °C, therefore this CE may be utilised as follows	In T class T6 to Ta of max. 40 °C or In T class T5 to Ta of max. 55 °C or In T class T4 to Ta of max. 70 °C Examples/Orientation	
Operating temperature	-60 ≤ TS ≤ 110 °C (maximum range) (-76 °F ≤ TS ≤ +230 °F) Depending on the design and the entries; see identification of the respective CE used	

[1] Please note the special installation requirements.

Operating temperature examples for fixed installations:	
H05RNF/A05RNF	-40 °C to +60 °C (-40 °F to +140 °F)
H07RNF/A07RNF	-40 °C to +60 °C (-40 °F to +140 °F)
H05VV-F	-40 °C to +70 °C (-40 °F to +158 °F)
NSSHÖU	-40 °C to +90 °C (-40 °F to +194 °F)
Ölflex Classic	-40 °C to +70 °C (-40 °F to +176 °F)
RADOX 125	-40 °C to +110 °C (-40 °F to +230 °F)
RADOX 155	-60 °C to +110 °C (-76 °F to +230 °F)
BETAflam 145 flex	-60 °C to +110 °C (-76 °F to +230 °F)
BETAflam 145 C-flex	-60 °C to +110 °C (-76 °F to +230 °F)
Enviroflex 316	-40 °C to +105 °C (-40 °F to +221 °F)
Test pressure for type test	30 to 48.6 bar
Approved for the zones	1 and 2 as well as 21[2] and 22[2]
Pressure	
Type 07-92**-****/*U**	-500 mbar to 6 bar (-7.25 psi to 87 psi)
Type 07-92**-****/*D** with an additional seal	-500 mbar to 80 bar (-7.25 psi to 1160.3 psi)

Technical data

Electrical data (guideline values based on DIN VDE 0298-4)	
Rated voltage	max. 1140 V
Rated currents see table below Connection cross-section	0.2 mm² to 185 mm²

Rated currents		
Nominal cross-section of copper conductor	Ampacity of the hose line A07RN-F or H07RN-F	Load capacity (remaining cable types)
[mm²]	[A]	[A]
0.14	-	1,8
0.25	-	3,6
0.34	-	5,5
0.5	-	8,2
0.75	-	11
1	11	14
1.5	14	16
2.5	19	24
4	26	31
6	33	40
10	46	56
16	61	75
25	81	98
35	100	123
50	126	153
70	156	188
95	186	227
120	216	266
150	248	305
185	281	347

[2] Attention: Special installation conditions must be observed.

Conversion factors for different ambient temperatures					
At Ta	Permissible operating temperature of the cable (see TS marking of the CE). Conversion factors to be applied to the current-carrying capacity specifications				
[°C]	**60 °C**	**70 °C**	**80 °C**	**90 °C**	**110 °C**
10	1.29	1.22	1.18	1.00	1.00
15	1.22	1.17	1.14	1.00	1.00
20	1.15	1.12	1.10	1.00	1.00
25	1.08	1.06	1.05	1.00	1.00
30	1.00	1.00	1.00	1.00	1.00
35	0.91	0.94	0.95	1.00	1.00
40	0.82	0.87	0.89	1.00	1.00
45	0.71	0.79	0.84	1.00	1.00
50	0.58	0.71	0.77	1.00	1.00
55	0.41	0.61	0.71	0.94	1.00
60	-	0.50	0.63	0.87	1.00
65	-	0.35	0.55	0.79	1.00
70	-	-	0.45	0.71	1.00
75	-	-	0.32	0.61	1.00
80	-	-	-	0.50	1.00

(These values serve as guide values. The exact dimensioning must be carried out in the end application.) Depending on the version, see labelling of the cable entry, packaging label and accompanying documents.

Mechanic strength	Impact energy: max. 7 J
Sleeve material	Metal, bare or galvanized
Measurements	See separate dimensional drawing on the BARTEC website
Thread size	M16 x 1 to M72 x 1.5

Safety instructions

The cable entry is suitable for use in zones 1, 2, 21 and 22.

The cable entry may only be used for the approved purpose. Incorrect installation may result in malfunctions or loss of explosion protection.

When determining the maximum current-carrying capacity of the connecting wires, self-heating and housing heating at the installation site at the maximum permissible ambient temperature must be assumed.

Use in areas other than those specified or modification of the product by someone other than the manufacturer shall not be permitted and releases BARTEC from liability for defects and further liability.

The generally applicable legal rules and other binding guidelines on occupational safety, accident prevention and environmental protection must be observed.

The cable entry may only be operated if it is clean and undamaged.

Modifications and changes are not permitted.

Labelling

Passages of particular importance in these instructions are marked with a symbol:

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

Is used to address practices not related to personal injury.

NOTE

Important instructions and information on effective, esconomical and enviromentally compatible handling.

Compliance with standards

See Attestations of Conformity.

Transport, Storage

NOTICE

Damage to the cable entry due to incorrect transport or incorrect storage.

- Transport and storage shall only be permitted in the original packaging.

Assembly, Installation and Commissioning

WARNING

Risk of serious injury due to incorrect proceedings.

- Work on assembly, disassembly, installation and commissioning may only be carried out by authorised specialist personnel.

Assembly/ Disassembly

WARNING

Risk of serious injury due to incorrect assembly.

- When assembling equipment, IEC/EN 60079-14 and other applicable national standards and installation regulations shall be taken into account.
- Tapped holes into which cable entries are screwed must meet the minimum requirements of IEC/EN 60079-1, Section 5.3 (Tables 4 and 5). Observe the minimum screw-in depth.
- To do this, the thread length of the cable entry must be matched to the minimum screw-in depths in Table 4. The thread length must be greater than or equal to the values specified in Table 4.
- When laying the hose line in Ex zones, observe the installation regulations for potentially explosive areas.
- Select the quality of the cable so that it corresponds to the thermal and mechanical requirements of the area of application.
- The sealing surface on the electrical equipment, on which the collar surface of the cable entry rests, must have an average roughness depth of at least Rz 16 and be produced in one clamping with the thread in order to achieve IP protection.
- In order to ensure protection against twisting and self-loosening, no additional mechanical elements may be used between the collar of the sleeve and the housing of devices marked with the dust mark.

During assembly, please note:

– Suitable tools are to be utilised.

Thread size	Max starting torque
M10 x 1	10 Nm (7.38 ft-lb)
M16 x 1	15 Nm (11.06 ft-lb)
M16 x 1.5	15 Nm (11.06 ft-lb)
M20 x 1.5	25 Nm (18.45 ft-lb)
M24 x 1.5	35 Nm (25.82 ft-lb)
M25 x 1.5	35 Nm (25.82 ft-lb)
M33 x 1.5	50 Nm (36.88 ft-lb)
M36 x 1.5	50 Nm (36.88 ft-lb)
M38 x 1.5	50 Nm (36.88 ft-lb)
M42 x 1.5	50 Nm (36.88 ft-lb)
M48 x 1.5	70 Nm (51.63 ft-lb)
M56 x 1.5	70 Nm (51.63 ft-lb)
M64 x 1.5	100 Nm (73.76 ft-lb)
M72 x 1.5	100 Nm (73.76 ft-lb)

- Check that the cable entry is in perfect condition.
- Fasten the cable entry in the electrical equipment in such a way that it is secured against twisting and self-loosening. Common tools are: lock washer, hexagon nut, adhesive, etc. For installation instructions, see page 6.
- It must be ensured that the metal sleeve of the cable entry is grounded via the housing of the end device.
- During installation, the minimum bending radius of the wires used must be observed. The beginning of the bending radius must be at least 5 mm away from the cast resin outlet. There must be no lateral tensile stress on the cables, otherwise the cast resin edge can work its way into the insulation. For installation instructions please see page 6.
- The insertion point of the cable is to be provided with a radius.
- When using a cable entry for shielded cables, only insert permanently installed cables.
- If sealing materials are used, they must be selected in such a way that the specified operating temperature and chemical resistance are given.
- Do not use sealing material over Ex gaps.

Installation

During the installation, please note:

- The connection of the wire lines in the hazardous area must be protected by a housing with a standardised type of protection in accordance with IEC/EN 60079-0.
- Wire any wires that are not required to the terminals.
- If temperature assignments other than those specified in the EU type examination certificate are used, the operating conditions of the cable entry must be specified in the type test for the respective electrical equipment.
- Observe the Pressure Equipment Directive 2014/68/EU and the relevant standards contained therein.
- During installation, no tension may be applied to the wire/hose line at the cast resin outlet.
- The relevant standard sections of IEC/EN 60079-14 must be considered in the end application.

Commissioning

Before starting up, please ensure that:

- the assembly was carried out according to the regulations.
- the installation was carried out according to the regulations.
- the cable entry and the cables are not damaged.
- the wires are laid correctly.
- the terminal compartment is clean.
- the connection has been made properly.

PLEASE NOTE

The temperature ranges and voltage specifications are given for “fixed and protected installation” of the cables. Consultation with the manufacturer is required for “flexible installations”.

Operation

DANGER

Death or risk of injury due to improper use.

- Operate the cable entry only within the technical limits that apply to it (see page 1).

Maintenance and Fault Clearance

WARNING

Risk of serious injury due to incorrect procedure.

- Only authorized qualified personnel may do any of the work relating to maintenance and fault clearance.
- IEC/EN 60079-17 must be observed.

Maintenance

WARNING

Serious accidents caused by damaged components.

- Check the cable entry, seals and cables regularly for cracks, damage and tightness and check the cables regularly for cracks, damage and a tight fit.

The operator of the cable entry must keep the same in good condition, operate it properly and monitor it.

Fault Clearance

WARNING

Serious accidents due to the use of non-original spare parts.

- Any defect or broken parts must be replaced by original parts.

Damaged or defective cable entries cannot be repaired. They must be exchanged in accordance with the operating instructions.

Accessories, spare parts

See BARTEC catalogue.

Disposal

The cable entry components contain metal and plastic parts.

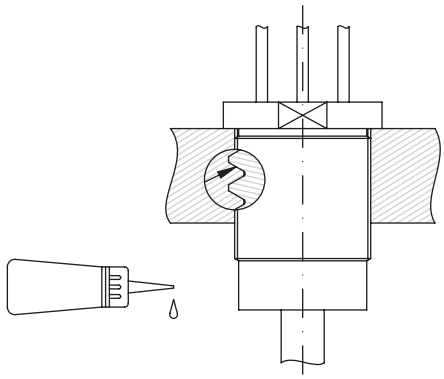
For this reason, the legal requirements for electronic waste must be observed for disposal (e.g. disposal by an approved disposal company).

Installation instructions

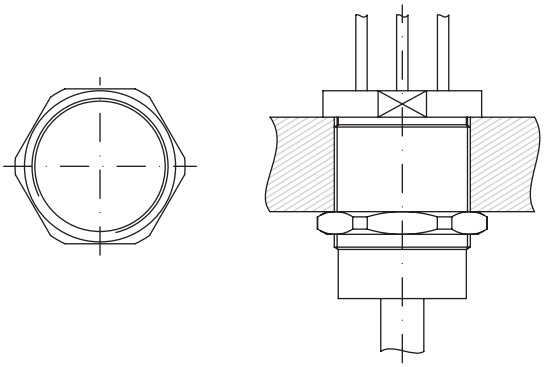
NOTE

The cable entries depicted in the graphics are exemplary for all cable entries. The screw sleeves are mounted from the d-space outwards.

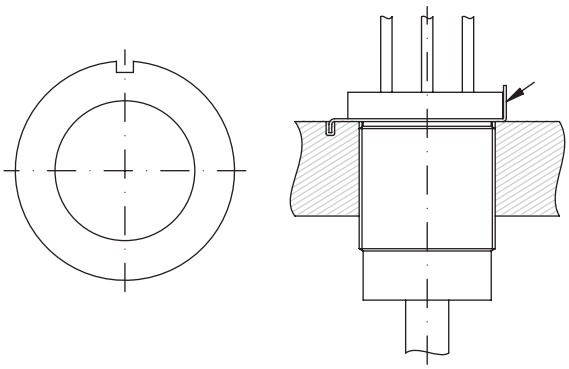
– Protection against twisting and self-loosening by gluing using temperature-resistant adhesive.



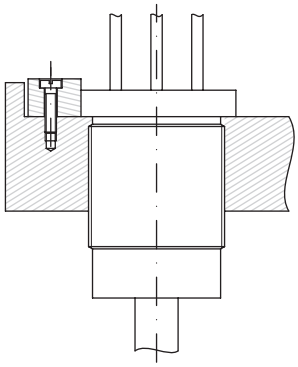
– Protection against twisting and self-loosening by locking with a counter nut.



– Protection against twisting and self-loosening by using a locking plate.



– Protection against twisting and self-loosening by using an anti-loosening lock.



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EU Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de conformité
№ 01-9200-7C0002_C

BARTEC

Wir	We	Nous

BARTEC GmbH
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Germany

erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
Leitungseinführung	**Cable entry**	**Entrée de câble**

Typ 07-920*-**/**** bis 07-924*-****/****

auf das sich diese Erklärung bezieht den Anforderungen der folgenden **Richtlinien (RL)** entspricht	to which this declaration relates is in accordance with the provision of the following **directives (D)**	se référant à cette attestation correspond aux dispositions des **directives (D)** suivantes
ATEX-Richtlinie 2014/34/EU	**ATEX-Directive 2014/34/EU**	**Directive ATEX 2014/34/UE**
RoHS-Richtlinie 2011/65/EU	**RoHS-Directive 2011/65/EU**	**Directive RoHS 2011/65/UE**
und mit folgenden Normen oder normativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou documents normatifs ci-dessous

EN IEC 60079- 0:2018/AC:2020
EN 60079-1:2014/AC:2018
EN 60079-31:2014

Verfahren der EU-Baumusterprüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié

EPS 17 ATEX 1 099 X

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