• For indirect connection/earthing of functionally separate system parts at lightning strikes

• Unit for lightning equipotential bonding according to IEC 61024-1 for hazardous areas (Zone 2)

• Corresponds to “ATEX Guideline” 94/9/EG

• Corrosion-resistant enclosure of zinc die casting with synthetic cover and flexible conductor connection

• For bridging insulating pieces, insulating flanges, etc. in cathodic protected pipe sections

• Highly loadable unit

EXFS L ...: Isolating spark gap for explosive zones with flexible connecting cable
EXFS KU: Isolating spark gap for explosive zones with 1.5 m long connecting cables for underground installation

The Ex isolating spark gaps of the product family EXFS L / EXFS KU are used for conductive system parts that cannot be interconnected directly in hazardous zones. This affects, for example, pipe sections furnished with a cathodic corrosion protection system.

The spark gaps EXFS L and EXFS KU certified by ATEX provide approved and tested safety according to harmonised European standards.

The arc-resistant tungsten-copper electrodes provide the Ex spark gaps with a long service life.

The approved type EXFS L with flexible conductor connection adjusts itself quickly to every application environment. The prewired spark gaps include connecting cables with different lengths with cable lug, M10 screw and nut. The flat and/or angled connecting clips (IF) available as accessories allow an easy connection of the spark gap at pipeline flanges.

The EXFS KU unit is enclosed by a damp-proof PVC housing and thus ideally suitable for underground installation at insulating couplings.
**EXFS L100**

- Lightning impulse current (10/350) \(I_{\text{imp}}\): 50 kA
- Nominal discharge current (8/20) \(I_n\): 100 kA
- 100% lightning impulse sparkover voltage \(U_{\text{as100}}\): \(\leq 2.5\) kV
- Power frequency sparkover voltage (50 Hz) \(U_{\text{aw}}\): \(\leq 1.2\) kV
- Type of protection according to EN 50014, EN 50021: II 3 G Ex nC II T4
- Approvals, Certifications: ZELM 03 ATEX 3192X
- Enclosure length \(L\): 90 mm
- Diameter of enclosure \(D\): 63 mm
- Enclosure material: zinc die casting, plastic
- Connecting cable: H01N2-D 25 mm² with cable lug and M10 screw/nut
- Suitable for flange size: 20-130 mm

**EXFS L200**

- Lightning impulse current (10/350) \(I_{\text{imp}}\): 50 kA
- Nominal discharge current (8/20) \(I_n\): 100 kA
- 100% lightning impulse sparkover voltage \(U_{\text{as100}}\): \(\leq 2.5\) kV
- Power frequency sparkover voltage (50 Hz) \(U_{\text{aw}}\): \(\leq 1.2\) kV
- Type of protection according to EN 50014, EN 50021: II 3 G Ex nC II T4
- Approvals, Certifications: ZELM 03 ATEX 3192X
- Enclosure length \(L\): 90 mm
- Diameter of enclosure \(D\): 63 mm
- Enclosure material: zinc die casting, plastic
- Connecting cable: H01N2-D 25 mm² with cable lug and M10 screw/nut
- Suitable for flange size: 120-230 mm

**EXFS L300**

- Lightning impulse current (10/350) \(I_{\text{imp}}\): 50 kA
- Nominal discharge current (8/20) \(I_n\): 100 kA
- 100% lightning impulse sparkover voltage \(U_{\text{as100}}\): \(\leq 2.5\) kV
- Power frequency sparkover voltage (50 Hz) \(U_{\text{aw}}\): \(\leq 1.2\) kV
- Type of protection according to EN 50014, EN 50021: II 3 G Ex nC II T4
- Approvals, Certifications: ZELM 03 ATEX 3192X
- Enclosure length \(L\): 90 mm
- Diameter of enclosure \(D\): 63 mm
- Enclosure material: zinc die casting, plastic
- Connecting cable: H01N2-D 25 mm² with cable lug and M10 screw/nut
- Suitable for flange size: 220-320 mm

**Accessory Part for EXFS L / EXFS KU**

**Angled Connection Bracket – IF 1 –**

- Angled connection bracket for EXFS L; diameter corresponds to bolt diameter of the flange screw joint (d1 possible up to max. 60 mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>PU</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 1</td>
<td>St/tZn</td>
<td>1</td>
<td>923 011</td>
</tr>
</tbody>
</table>

**Flat Connection Bracket – IF 3 –**

- Flat connection bracket for EXFS L; diameter corresponds to bolt diameter of the flange screw joint (d1 possible up to max. 60 mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>PU</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 3</td>
<td>St/tZn</td>
<td>1</td>
<td>923 016</td>
</tr>
</tbody>
</table>
## EXFS KU

**Lightning impulse current (10/350) \( I_{imp} \)**
50 kA

**Nominal discharge current (8/20) \( I_n \)**
100 kA

**100% lightning impulse sparkover voltage \( U_{a100} \)**
\( \leq 2.5 \) kV

**Power frequency sparkover voltage (50 Hz) \( U_{aw} \)**
\( \leq 1.2 \) kV

**Type of protection according to EN 50014, EN 50021**
II 3 G Ex nC II T4

**Approvals, Certifications**
ZELM 03 ATEX 3192X

**Enclosure length \( L \)**
90 mm

**Diameter of enclosure \( D \)**
63 mm

**Enclosure material**
zinc die casting, plastic

**Connecting cable**
NYY-J-1x25 mm²

**Cable length**
2 x approx. 1500 mm

### Ordering information

<table>
<thead>
<tr>
<th>Type</th>
<th>EXFS KU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>923 019</td>
</tr>
<tr>
<td>Packing unit</td>
<td>1 pc(s)</td>
</tr>
</tbody>
</table>

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**EXFS KU: Ex Isolating spark gap with connecting cables for above- and underground installation**

**Dimension drawing EXFS KU**

EXFS KU: Ex Isolating spark gap with connecting cables for above- and underground installation.
**LIGHTNING EQUIPOTENTIAL BONDING**

**ISOLATING SPARK GAPS**

EXFS C1 / EXFS C1 KU

For explosive Areas

- For indirect connection/earthing of functionally separate installation parts at lightning effects

- Unit for lightning equipotential bonding according to IEC 61024-1 in hazardous areas

- For bridging insulating units, insulating flanges, etc. in pipe sections protected against cathodic corrosion

- Especially low sparkover voltage

- Unit with extremely high loadability and fail-safe performance

ATEX-certified isolating spark gap for lightning equipotential bonding according to IEC 61024-1 with low sparkover voltage.

EXFS C1: Isolating spark gap for explosive zones with threaded M10 bolt and nut

EXFS C1 KU: Isolating spark gap for explosive zones with 2 m long connecting cables for underground installation

The Ex isolating spark gaps of the EXFS C1 / EXFS C1 KU family are used when electrically conductive installation parts in explosive areas cannot be connected directly.

The low sparkover voltages of the spark gaps have proved themselves for protection, when the separate installation parts had only a low insulation resistance against each other.

The ATEX-certified spark gaps EXFS C1 / EXFS C1 KU provide approved safety according to harmonised European standards.

The powerful Ex isolating spark gaps are furnished with a fail-safe device, which establishes a safe state (short circuit) even in case of overloads.

For connecting the EXFS C1 spark gaps, prewired connecting cables with different lengths are available as accessories.

Flat and angled connection brackets (IF) make the connection of the spark gaps at pipe flanges easier.

The variant EXFS C1 KU is enclosed by a damp-proof plastic coating. Therefore, it is ideal for underground installation at insulating couplings.
EXFS C1 / EXFS C1 KU

EXFS C1

Lightning impulse current (10/350) \( I_{\text{imp}} \)
75 kA

Nominal discharge current (8/20) \( I_{\text{n}} \)
100 kA

100 % Lightning impulse sparkover voltage \( U_{\text{imp}} \) ≤ 0.95 kV

Power-frequency sparkover voltage (50 Hz) \( U_{\text{aw}} \) ≤ 0.07 kV

Type of protection according to EN 50014, EN 50021
II 2 G Ex m II T3

Approvals, Certifications
ZELM 02 ATEX 0096X

Enclosure length \( L \)
160 mm

Enclosure diameter \( D \)
50 mm

Enclosure material
stainless steel / plastic

Connection of enclosure
hexagon screw M10x16 mm and M10 nut

Ordering information
Type
EXFS C1

Part No.
923 070

Packing unit
1 pc(s)

Accessory Part for EXFS C1 / EXFS C1 KU

Connecting Cable Cu 25 mm²
Connecting cable for EXFS C1; with cable lug Ø10.5 mm, M10 hexagon screw and nut, StSt (V2A) and spring washer

<table>
<thead>
<tr>
<th>Type</th>
<th>Cable lug material</th>
<th>Cross section</th>
<th>Cable length</th>
<th>PU</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL EXFS L100</td>
<td>Cu gal Sn</td>
<td>25 mm²</td>
<td>100 mm</td>
<td>1</td>
<td>923 026</td>
</tr>
<tr>
<td>AL EXFS L200</td>
<td>Cu gal Sn</td>
<td>25 mm²</td>
<td>200 mm</td>
<td>1</td>
<td>923 036</td>
</tr>
<tr>
<td>AL EXFS L300</td>
<td>Cu gal Sn</td>
<td>25 mm²</td>
<td>300 mm</td>
<td>1</td>
<td>923 046</td>
</tr>
</tbody>
</table>

Accessory Part for EXFS C1 / EXFS C1 KU

Angled Connection Bracket – IF 1 –
Angled connection bracket for EXFS ...; diameter corresponds to bolt diameter of the flange screw joint (d1 possible up to max. 60 mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>PU</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 1</td>
<td>StZn</td>
<td>1</td>
<td>923 011</td>
</tr>
</tbody>
</table>

Flat Connection Bracket – IF 3 –
Flat connection bracket for EXFS ...; diameter corresponds to bolt diameter of the flange screw joint (d1 possible up to max. 60 mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>Material</th>
<th>PU</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF 3</td>
<td>StZn</td>
<td>1</td>
<td>923 016</td>
</tr>
</tbody>
</table>
EXFS C1 KU

Lightning impulse current (10/350) \(I_{imp}\) 75 kA
Nominal discharge current (8/20) \(I_n\) 100 kA
100 % Lightning impulse sparkover voltage \(U_{imp} \leq 0.95\) kV
Power-frequency sparkover voltage (50 Hz) \(U_{aw} \geq 0.07\) kV
Type of protection according to EN 50014, EN 50021 II 2 G EEx m II T3
Approvals, Certifications (EXFS C1) ZELM 02 ATEX 0096X
Enclosure length \(L\) 160 mm
Enclosure diameter \(D\) 50 mm
Enclosure material stainless steel / plastic
Connection of enclosure NYY-J-1x25 mm\(^2\), approx. 2 m long

Ordering information
Type EXFS C1 KU
Part No. 923 071
Packing unit 1 pc(s)