ATEX Certified EExd Connectors for Worldwide Applications
**Ex Connector Features**

**ATEX EExd Flameproof**

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**Ex CONNECTOR FEATURES**

- **Acme Thread at Mating Interface**
  Wide thread pitch prevents thread binding and galling.

- **Electrical Insert Identification**
  Pin and socket inserts are numbered front and back to assist wiring and avoid potential termination errors.

- **Earthing Facility**
  - External earthing facility
  - Internal earthing facility

- **Threaded Bulkhead**
  Utilises industry standard threaded entries, not expensive spigot arrangements.

- **Fully Inspectable Flameproof Barrier**
  Provides direct inspection of the flameproof seal and offers users the peace of mind that the connector is safe for installation.

- **Slotted Spacer Tube**
  Improves accessibility for soldering/crimping conductors, as the Spacer Tube is retrofitted once electrical termination is complete.

- **Internal Keyway Sleeve**
  Provides an extended installation keyway, which assists connector assembly by making pin/socket insertion quick and easy.

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**Certification**

Flameproof EExd. II 2 GD T95. Baseefa Certificate No. Baseefa 03 ATEX 0355X. Bulkhead Connector may also be fitted to EExe certified equipment.

**EN50014, EN50018 and EN50281**

- Suitable for use in Zone 1, Zone 2, Zone 21 and Zone 22.
- Suitable for use in Gas Groups IIA, IIB and IIC.
- IP66 and IP67 ingress protection to IEC60529 with deluge protection to DTS01.
- Operating temperature range -40°C to +100°C. Temperature Class and Ambient T5 40°C. Optional T5 and T6 temperature classifications are available with ambients up to 65°C.
SIMPLE TO USE - QUICK TO TERMINATE

Temporary but safe disconnection of power is critical in many industries. To meet this requirement Hawke International has introduced a new series of EExd Connectors that are ATEX approved, easy to use and exceptionally robust. They permit the safe and rapid service, repair and replacement of key plant, or provide quick connection to temporary equipment. Their application is beneficial in capital-intensive processes where minimum downtime is essential.

The new connectors are ideal for Zone 1 and Zone 2 explosive environments commonly found in oil and gas exploration, production and process plants. However, their features also offer benefits in Zone 21 and Zone 22 explosive dust environments, or in harsh and hostile non-explosive applications.

In compliance with the ATEX Directive (94/9/EC), the new design retains many of the best features of Hawke’s previous connector range, but in addition adds innovations based on user feedback. The heavy duty, maintenance free stainless steel body construction is retained, along with the acclaimed Acme mating thread; enabling quick connection whilst preventing thread binding or galling.

Additional Benefits Include:-

- **Faster Assembly**
  An internal sleeve provides an extended installation keyway which assists connector assembly by making pin/socket insertion easier and quicker. This feature also helps to prevent insert misalignment and potential contact damage.

- **Impossible to Cross-mate**
  The unique visual 5 position keying system (3 on Ex16) prevents contact damage and ensures safe use by eliminating the possibility of misconnection of adjacent circuits.

- **Fully Inspectable Flameproof Barrier**
  The revolutionary removable compound chamber technology first seen on our compound cable glands is now incorporated into our Bulkhead Connector. This allows direct access for visual inspection of the flameproof barrier seal and offers users the peace of mind that the connector is safe for installation into Flameproof and Increased Safety equipment.

- **High Reliability Contacts**
  Each Pin and Socket is fitted with Multilam Band Technology to ensure reliable low resistance connection on each coupling.

- **Quick and Easy Fieldwiring**
  The Pin **AND** Socket Inserts are numbered front and back to assist wiring and avoid potential termination errors.
Typical Pin Layouts

ATEX Ex
EExd Flameproof

INSERT SELECTION TABLE

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Shell Size 16</th>
<th>Shell Size 25</th>
<th>Shell Size 32</th>
<th>Shell Size 40</th>
<th>Shell Size 50</th>
<th>Shell Size 63</th>
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<tr>
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<td>4 x 1.5mm²</td>
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Note: Inserts for use in bulkhead receptacles are solder termination only. Inserts for use with inline connectors are solder only for 1.5 and 2.5mm². For 6mm² and above, solder or crimp can be used.

All Hawke Connectors have a Maximum working voltage of 600V DC (600V AC).
**Ex Connector Order Code**

**ATEX**

**EExd Flameproof**

**Exd – 32 – S – CP – V – 19 x 1.5 – S – S – FLFPC-A**

### Protection Code
- Flameproof: Exd

### Shell Size Code
- 16
- 25
- 32
- 40
- 50
- 63

### Material Code
- Brass: B
- Stainless Steel (as standard): S

### Connector Style Code
- Connector Plug: CP
- Connector Receptacle: CR
- Bulkhead Receptacle: BR

### Keying System Code
- Fixed Keying: F
- Variable Keying: V

### Termination Style Code
- 1.5 mm²: 1.5
- 2.5 mm²: 2.5
- 4 mm²: 4
- 6 mm²: 6
- 10 mm²: 10
- 16 mm²: 16
- 25 mm²: 25
- 35 mm²: 35
- X: No Insert

### Contact Type Code
- P: Pin
- S: Socket
- X: No Insert

### Contact Size Code
- 1.5 mm²: 1.5
- 2.5 mm²: 2.5
- 4 mm²: 4
- 6 mm²: 6
- 10 mm²: 10
- 16 mm²: 16
- 25 mm²: 25
- 35 mm²: 35
- X: No Insert

### Maximum Conductor Acceptance Diameter (mm)**
- 1.5 mm²: 1.75
- 2.5 mm²: 2.75
- 4 mm²: 2.75
- 6 mm²: 3.25
- 10 mm²: 3.75
- 16 mm²: 4.75
- 25 mm²: 6.25
- 35 mm²: 7.75

**Note:** Inserts for use in bulkhead receptacles are solder termination only. Inserts for use with inline connectors are solder only for 1.5 and 2.5 mm². For 6 mm² and above, solder or crimp can be used.

**See Insert Selection Chart**

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**HAWKE International**

**Safety First**

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HWK19 August ’03
Shell Configurations & Dimensions

ATEX

EExd Flameproof

HAWKE Ex SERIES DIMENSIONS (MM)

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</table>
To select the shell size of the connector, it is essential that you calculate the dissipated wattage of the arrangement. This ensures that the arrangement does not exceed the maximum permitted temperature classification with regard to the upper ambient temperature for the area of installation. (please refer to table 1 for the maximum allowable dissipated wattage per connector size).

### Dissipated Wattage Calculation

**Equation Definitions**

\[ W = \text{Dissipated wattage factor of the connector} \]

\[ N = \text{The number of conductors to be terminated/number of contacts required.} \]

(Note: A contact comprises of a pin and socket).

\[ I = \text{The current requirement per contact.} \]

(Note: This must be equal to or less than the maximum current rating of the contact, as shown in table 2).

\[ R = \text{The contact resistance (see table 2).} \]

Values pertinent to these definitions must then be input into the following equation to calculate the dissipated wattage \( W \) of your chosen arrangement:

\[ W = N \times I^2 \times R \]

(Note: The results must be lower than the maximum figure shown in table 1 for the appropriate temperature class and ambient temperature).

E.g. T6 40°C ambient application with 4 x 1.5mm² conductors, running at 9 amps.

\[ N = 4 \text{ contacts} \quad I = 9 \text{ amps} \quad R = 0.0073 \Omega \quad (1.5 \text{mm}^2 \text{ contact resistance}) \]

Therefore \[ W = 4 \times 81 \times 0.0073 = 2.37 \text{ watts.} \]

Therefore an Ex25 Connector should be specified for this application as the shell size can accommodate the required 4 x 1.5mm² pin/socket inserts (see page 3 - Insert Selection Table) and the resultant dissipated wattage (2.37 watts) is below the maximum permitted 8 watts (see table 1).

This equation can also be transposed to facilitate the calculation of the maximum number of conductors permitted in your selected connector (1) and the maximum allowable current within the upper ambient temperature of your location (2)

\[ 1 \quad N = \frac{W}{R \times I^2} \]

\[ 2 \quad I = \sqrt{\frac{W}{N \times R}} \]

(Note: The result of equation 2 must not exceed the maximum current rating of the contacts (see table 2).

**Note:** Unless otherwise requested, connectors will be marked as T5 with an upper ambient temperature of +40°C.
Complete Connection Solutions

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