HAWKE International

FIBRE Ex CONNECTORS

For Harsh & Hazardous Environments

In partnership with acal bfi

www.hubbell.com/hawke

HUBBELL® Harsh & Hazardous

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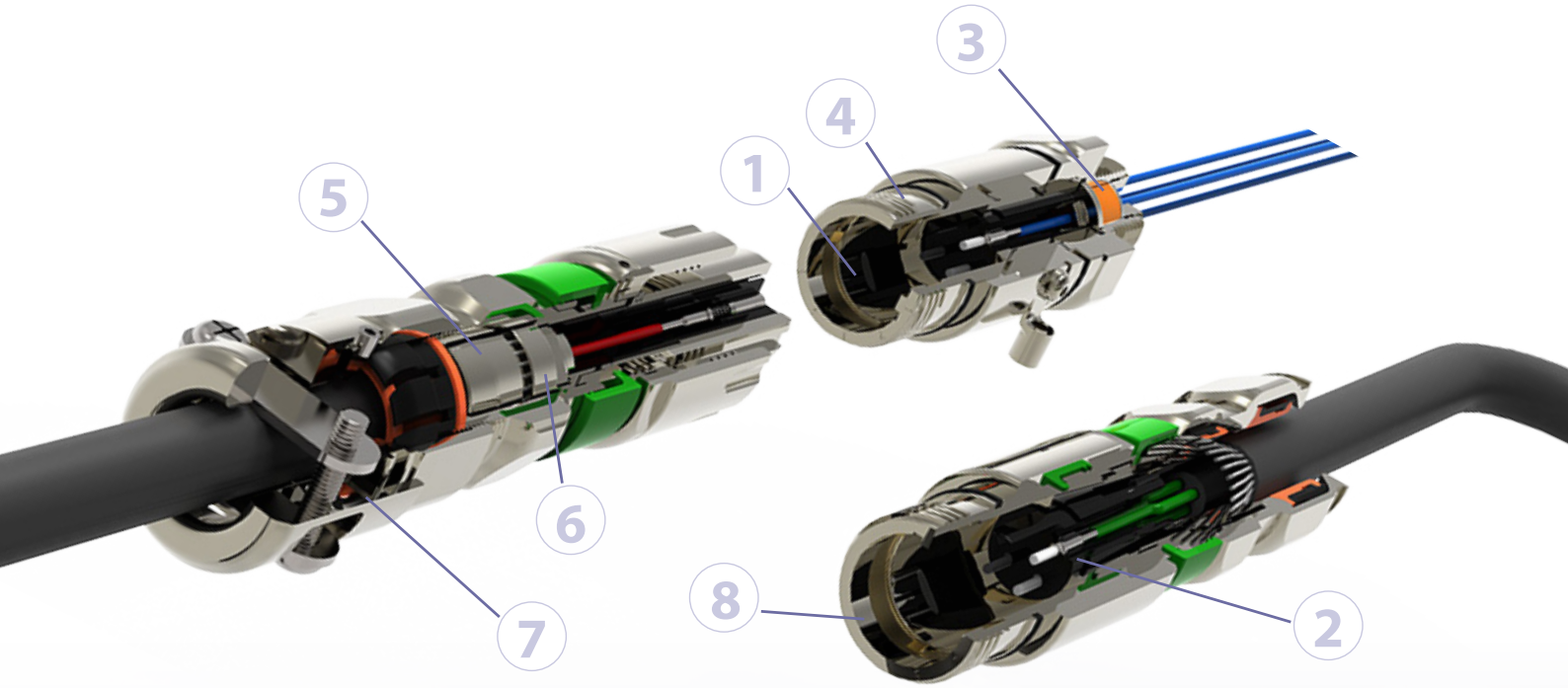
MADE IN BRITAIN

Introducing Hawke's **Fibre** Ex range of Connectors

Our fibre connector combines the strength of our market-leading connection range with the latest in Ex Fibre Optic specifications. Designed to meet the latest BS EN 60079-28:2015 standard for protection of equipment using fibre optics in explosive atmospheres; the **Fibre Ex** offers an easy-to-install solution that will keep your network running, even in the world's most arduous environments.

Dedicated to providing our customers with complete solutions, we've united with of the most prominent Fibre Termination services in the world, Acal BFi. Acal will provide a custom cable jumper termination service with our Fibre Ex connectors, so that you can install the Fibre Ex without the need for costly fibre termination engineers.



More Benefits

Fibre Technology - Available in both single and multi-mode option, in 4 and 8 way configurations.

Ex Certified - Ex op pr and Ex op is options available.

Termination Service Available - Hawke have united with one of the most prominent Fibre termination services in the world, Acal BFi to offer you a complete solution. Acal will provide a custom cable jumper termination service for our Fibre Ex Connector so that you can install our leading-edge connector without the need for expensive fibre termination engineers.

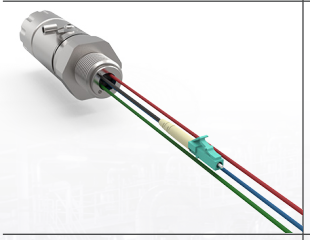
FIBRE Ex

1 Keyed Positions

The insert keyway of the Fibre Ex connector guarantees correct alignment, every time. This prevents pin damage and expands the Fibre Ex's lifespan which reduces associated costs.

2 Integral Keyring

Our machined keyway ensures perfect connector alignment without damage to pins or contacts for fast installation and a longer product lifespan. The 5 positions for OP-PR and a unique 6th position for OP-IS prevents cross-mating between two protection concepts.



3 Pre-Terminated

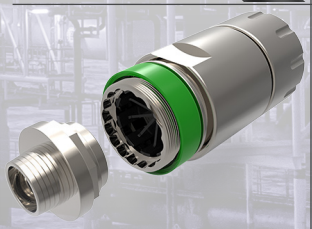
All BR connectors are supplied pre-terminated with encapsulated tails to suit your requirements. CP and CR connectors are also available pre-terminated.

4 Quick Connect

Our unique 4 start ACME thread offers a smooth and quick fully mating action in less than two turns, for fast and simple installation. Earth continuity is achieved via a 360° contact clip.

5 Original Reversible Clamp

Our, industry-leading, RAC clamping system provides a fully inspectable method of accommodating a variety of different armour or braided cable types.

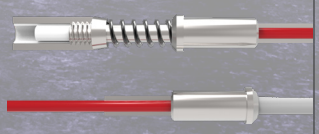


6 Anti Rotation

The Fibre Ex's profiled spigot and connector body prevent cable rotation to eliminate cable damage for an increased product lifespan.

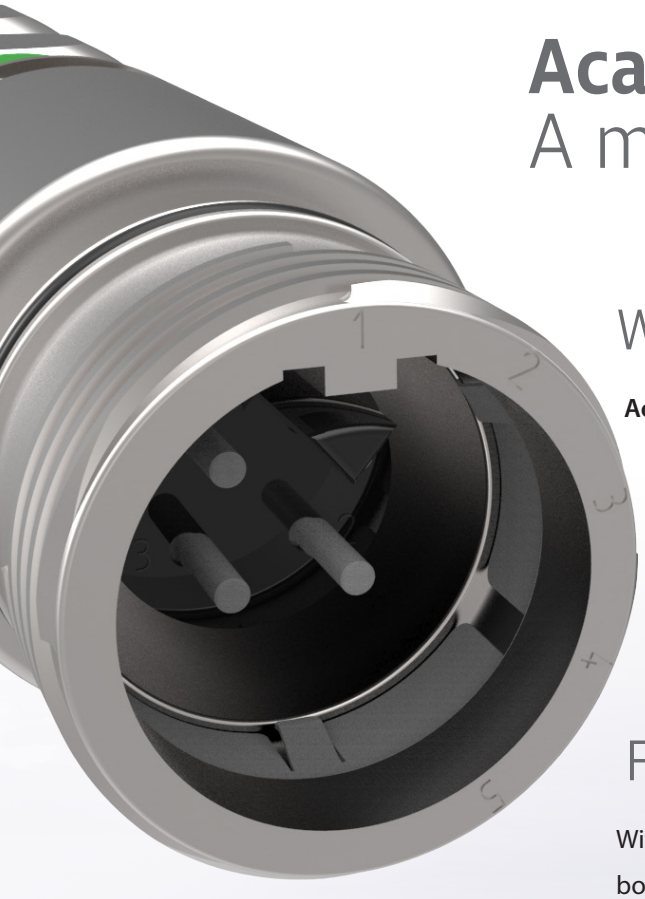
7 Cable Clamp

A cable clamp, in the material selected will be supplied with every Connector Plug and Connector receptacle to maintain cable pullout requirements.



8 Contacts

The M29504 series pin and socket termini utilises proven, harsh environment ceramic ferrule technology and a ceramic alignment sleeve to reduce insertion (signal) loss in some of the world's most arduous environments.



Acal & Hawke
A match made in heaven

Who are Acal BFi?

Acal BFi have been providing custom, cost-effective solutions for specialist electronic applications since 1986. They offer strategic design consultancy advice, bespoke manufacturing and custom solutions for a variety of sectors. This includes: medical, military, defence, communications, transportation, industrial and renewable energy.

Fibre Optic Innovation

With over 20 years experience in the design and manufacture of both fibre only and hybrid fibre / copper cables, Acal have a long standing reputation as market leaders for fibre optic innovation. Having designed, produced and installed cable assemblies for many diverse environments including nuclear submarines, oil exploration vessels, trains, open cast mines and roadside traffic gantries, Acal are more than equipped to tailor make solutions for your unique needs.

Connection and Termination

Acal BFi is built upon three primary objectives: to consult, design and integrate solutions for their customers. The integration segment is where Hawke and Acal's partnership was borne. Whilst Hawke can provide a connector designed and utilised in some of the world's toughest environments, Acal's 20 years of termination experience can ensure that your connector is installed safely, securely and without the need for costly termination. This partnership is a part of Acal and Hawke's determination to provide a complete solution for our customers.

acal bfi HAWKE International

Order Codes

Fibre Optic Connector

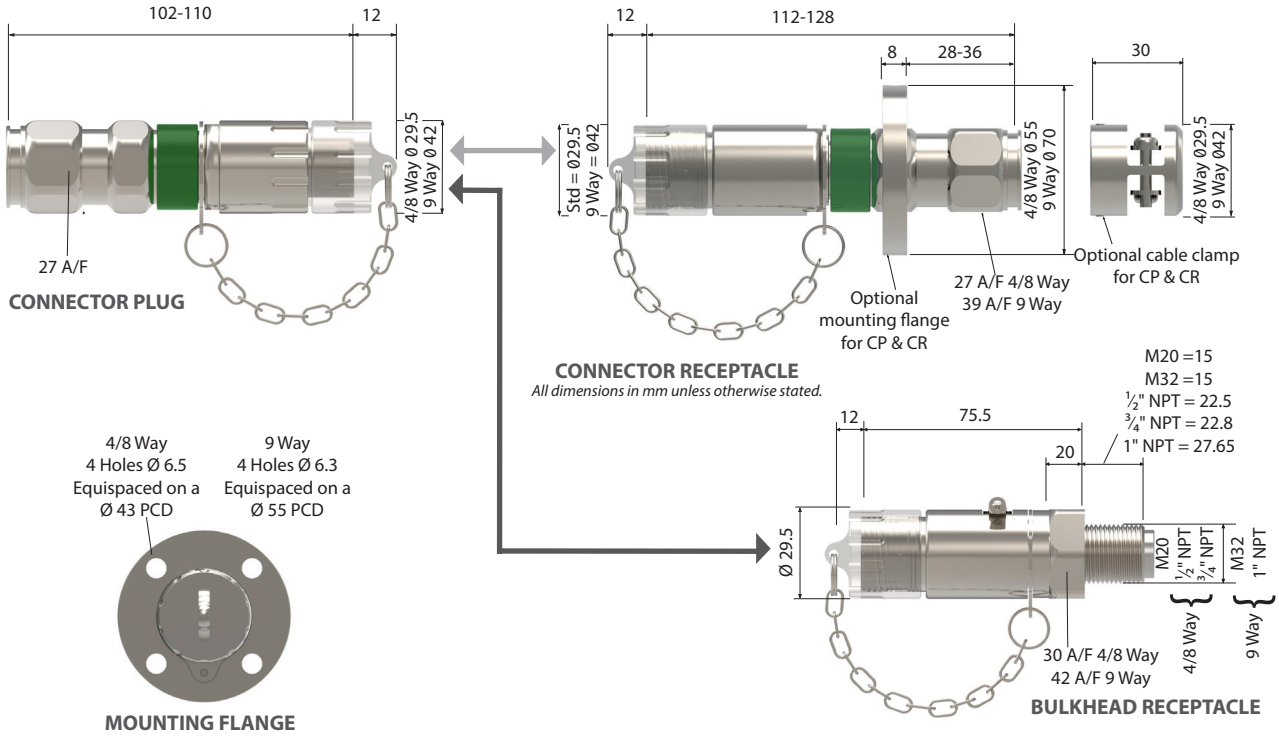
PROTECTION CONCEPT	Protected Radiation	PR
	Inherently Safe	IS*
NUMBER OF CONTACT / SHELL SIZE	4 Way	4
	8 Way	8
MATERIAL	Nickel Plated	N
	Stainless Steel	S
CONNECTOR STYLE IS versions for Bulkhead receptacle will only be available in keyway position 6 ** for Hawke terminated PR certified CP/CR please state the key position. ie CP1 etc…..	Connector Plug	CP**
	Connector Receptacle	CR**
	Flanged Receptacle	FR**
	Bulkhead Receptacle Position 1	BR1
	Bulkhead Receptacle Position 2	BR2
	Bulkhead Receptacle Position 3	BR3
	Bulkhead Receptacle Position 4	BR4
	Bulkhead Receptacle Position 5	BR5
	Bulkhead Receptacle Position 6 (IS* only)	BR6
BULKHEAD ENTRY THREAD Only applicable for BRs	Metric - M20 4 way, M32 8 way	M
	NPT - 1/2"4 way, 1"8 way	N
	NPT - 3/4"4 way, 1 1.4"8 way	R
	NA for CP and CR	X
CONTACT TYPE	Pin	P
	Socket	S
BULKHEAD CONNECTOR TYPE Only applicable for BRs	LC	1
	SC	2
	ST	3
	Flying Leads	4
	Custom	C
	NA for CP and CR	X
CABLE TYPE OM1 & OS1 cable as std. Other options are available on request.	Singlemode	S1
	Multimode	M1
CABLE LENGTH Please state 1 - 100	Per metre	100
	N/A Non factory terminated CP & CR	X
SPECIFICATION FOR CABLE JUMPER - connector to connector jumper cable etc for Hawke terminated assemblies	Connector Plug with Pins	1
	Connector Plug with Sockets	2
	Connector Receptacle with Pins	3
	Connector Receptacle with Sockets	4
	None	5
	N/A for Bulkhead Receptacle and Non factory terminated CP & CR	X
BULKHEAD TERMINATED CONTACTS All contact will be terminated for CP and CR configurations	All	A
	Customer Specific. Drawings needed	C
	N/A All CP & CR	X
CERTIFICATION	ATEX/IECEx	A

**IS protection concept has a std rating of T6, this is limited to 15mW radiated power and 5mW/mm2 Irrandiance.*
Other options available on request

MADE IN BRITAIN

International Approvals

Dimensions & Technical Specifications



Armour Clamping Ring Size Selection			
Size Ref	**Code**	**Orientation 1**	**Orientation 2**
O	S - Standard Ring	0.8- 1.25	0.0 - 0.8
A	S - Standard Ring	0.8 - 1.25	0.0 - 0.8
B	S - Standard Ring	1.25 - 1.6	0.0 - 0.7
	R - Alternative Ring	0.9 - 1.25	0.5 - 0.9

Additional Product Features

Pin and Socket

The Pin and Socket has been designed to incorporate the latest in fibre technology and precision engineering to provide an easy-to-install and reliable solution.

Take a closer look

- **Precision fiber optic ceramic ferrules**
- **Pre-radius ferrule design**
- **Precision "press fit" stainless steel design**
- **Accurate ferrule alignment system**
- **Solid reliable connectivity through a wide range of harsh environmental conditions**
- **Fast termination and polish time**
- **Reliable, repeatable and durable connections**
- **Easy to clean**

For all enquiries please contact Hawke Sales +44 (0) 141 810 9644 **E:** hhsales1@hubbell.com
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Testing Data

QFCI NEK TS 606 (62.5/125)

Fibre Ex

Tensile Strength (OEC 6074-1-21, E1	
Max tensile load during installation	1500N
Max tensile load during operation	500N
Crush (IEC 60794-1-21, E3)	3000 N/10cm
Impact (IEC 60794-1-21, E4)	30J
Torsion (IEC 60794-1-21, E17)	-±1 turn/1m
Cable Bending	
Minimum bending diameter	-250mm
Cable Bend (IEC 60794-1-21, E11)	<0.1dB/-+5 turn
Temperature window (IEC 60794-21-22, F1)	
Operation	-40°C to +70°C
Installation	-10°C to +70°C
Storage	-40°C to +70°C

Fire and Smoke Classifications	
IEC 60331-25 (750°C, 90 minutes	<1.0 dB excess loss
Upgraded IEC 60331-25 (1000°C, 3 hours)	<1.5 dB excess loss
IEC 60331-1 (830°C, 120 minutes incl. hammer shock, followed by water jet acc. to BS 8491:2008)	<1.5 dB excess loss
IEC 6033102 (830°C, 90 minutes incl. hammer shock) followed by water spray acc. to EN50200	<1.5 dB excess loss
IEC 60331-2 (830°C, 90 minutes incl. hammer shock)	<1.5 dB excess loss
IEC 61034	
IEC 60332-3-22 (Cat A)	
IEC 60332-3-24 (Cat C)	
IEC 60754-1	
IEC 60754-2	
Chemical Resistance	
Mineral oils IRM 902 (IEC60811-404)	7 days/23°C 4 hours/70°C
Diesel - IRM 903 (IEC60811-404)	7 days/23°C 4 hours/70°C

Technical Data

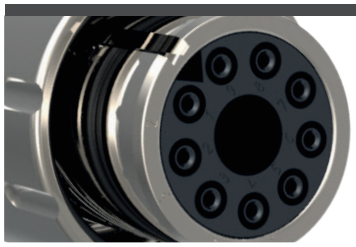
Fibre Ex

Attenuation/Insertion Loss	0.45 typical (measured with 62.5/125mm fiber @ 1310nm	**Mating Durability**	500 cycles
Back Reflection	Better than -40dB - PC polish	**Ingress Protection**	IP66/67
Fibre Types	Single-mode 9/125µm Multi-mode 50/125µm Multi-mode 62.5/ 125 standard Other options available on request	**Contact Technology**	Low loss ceramic PC technology in both multi-mode and single-mode
Termination Method	Anaerobic as standard	**Materials**	Nickel Plated or Stainless Steel
Termination Range	-40°C to + 60°C	**T Ratings at different power**	T6 + 60
Certification	Ex II 2GD Ex op pr IIC T6 Gb, Ex tb IIIC T85°C Db (Tamb 0 -40°C to +60°C) IP66/67 Ex [dbe] op pr IIC T6 Gb - for bulkhead/box mount version Ex [op is] IIC T* Ga - with separately certified 'op is' source		

Hawke **Connectors Range**

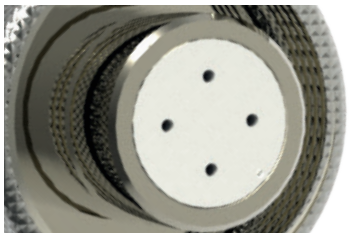
Utilising the most advanced technology, Hawke connectors are designed for quick and easy termination. Boasting market-leading features like the complete elimination of cross-mating, high reliability contacts and much more, the Hawke Connector range guarantees innovation, safety and reliability. The range is ideal for use in dust and gas hazardous areas commonly found in Oil and Gas exploration and production and chemical process plants. Hawke connectors may also be used in explosive dust environments and hostile non-explosive environments.

The Hawke Connector range has been designed for four electrical application areas: Instrumentation, Control, Power and Fibre. Take a closer look at our range, below.



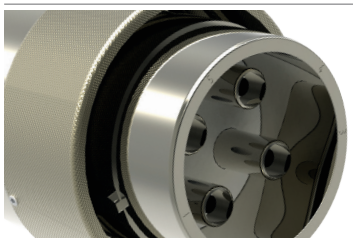
Instrum

The revolutionary InstrumEx allows for the live mate and de-mating of signal and low power in hazardous areas safely and quickly.



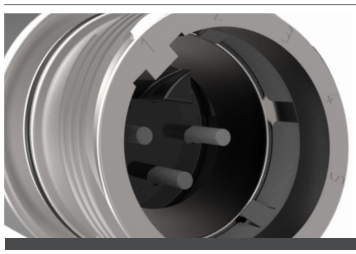
Control

The ControlEx range is ideal for use in control and low/ medium power applications. Front loaded design allows for easy assembly and installation of Exd compound barriers during termination.



Power

The PowerEx range has been designed specifically for the extremely demanding requirements of higher power applications up to 780A and 750V as standard. Other voltages are available on special request.



Fibre

The Fibre Ex from Hawke and Acal BFi combines the strength of Hawke's market-leading connection range with the latest in Ex Fibre-Optic specifications.

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