

FIBRE Ex
CONNECTORS

..... *For Harsh & Hazardous Environments*



In partnership with

acal | bfi

www.ehawke.com



Harsh & Hazardous

CONNECTOR SOLUTIONS

..... For Harsh & Hazardous Locations



Connecting you through Innovation

Experienced

With over 60 years experience protecting people and assets in the world's most demanding environments, Hawke is the obvious choice for reliability, quality and safety.

Worldwide

Our global network of distributors and sales representatives can support you wherever you are and supply you with a Hawke Connector.

Quality Driven

All Hawke products are designed to comply with ISO 9001 standards.

Rigorous in-house and third party testing ensures that all our products exceed expectations.

Complete Solution

With an extensive range of Cable Glands, Enclosures, Connectors, Accessories, Control Stations Hawke International can provide you with a complete solution, **no matter what your project is.**



Connecting you through innovation

In today's constantly changing world,
we are committed to always staying one step ahead.

We consider it our responsibility to provide connection and termination solutions that allow our customers to utilise fibre optic technology safely. That's why we've created a connector that combines the strength of our market-leading connection range with 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 FibreEx offers an easy-to-install solution that will keep your network running, even in the world's most arduous environments.

A Complete Termination Solution

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

Get In Touch

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Acal & Hawke

A match made in heaven

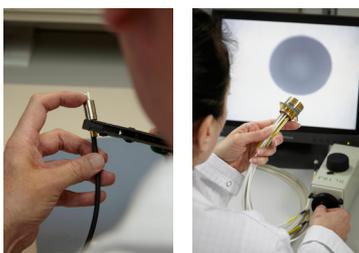


Who are Acal BFi?

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.

To find out more visit www.ehawke.com/fibre_connector

The Hawke Connectors Range

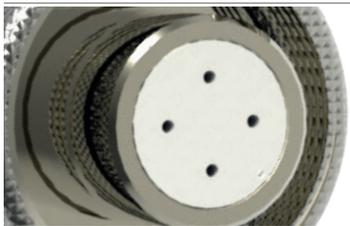
Utilising the most advanced technology, Hawke connectors are designed for quick and easy termination. Boasting market-leading features like the complete elimination of cross-mating, ingress and deluge protection, high reliability contacts and much more, the Hawke Connector range guarantees innovation, 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.



InstrumEx

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



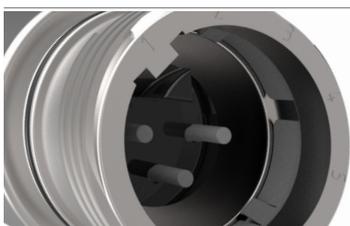
ControlEx

The ControlEx range is ideal for use in control and low/medium power applications.



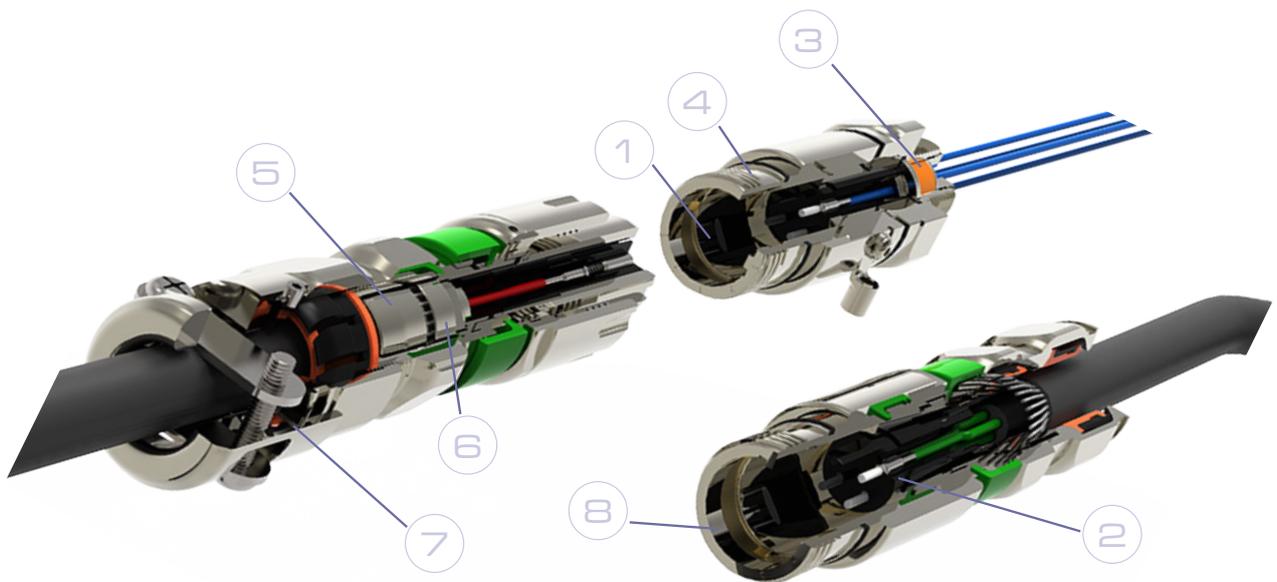
PowerEx

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.



FibreEx

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.



- **Keyed Positions** - The insert keyway of the FibreEx connector guarantees correct alignment, every time. This prevents pin damage and expands the FibreEx's lifespan which reduces associated costs.



- **Integral Keying** - 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.



- **Pre-Terminated** - All BR connectors are supplied pre-terminated with encapsulated tails to suit your requirements. Whether for use in industrial, Exd, Exe or other applications, the versatile FibreEx will provide a solution to support your project's unique needs. CP and CR connectors are also available pre-terminated.



- **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.



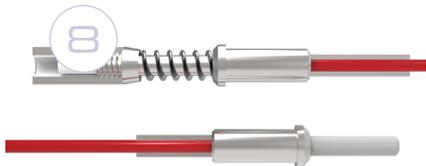
- **The Original Reversible Armour Clamp** - Our, industry-leading, RAC clamping system provides a fully inspecatable method of accommodating a variety of different armour or braided cable types. Trusted by some of the industry’s leading names, the FibreEx incorporates this technology for easy installation and inspection.



- **Anti Rotation** - The FibreEx’s profiled spigot and connector body prevent cable rotation to eliminate cable damage for an increased product lifespan.

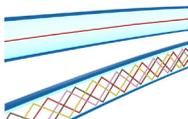


- **Cable Clamp** - A cable clamp, in the same material selected will be supplied with every Connector Plug and Connector receptacle to maintain cable pullout requirements.



- **Contacts** - The M29504 series pin and socket termination utilizes 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.

More Benefits



- **Fibre Technology** - Available in both single and multimode option, in 4 and 8 way configurations.

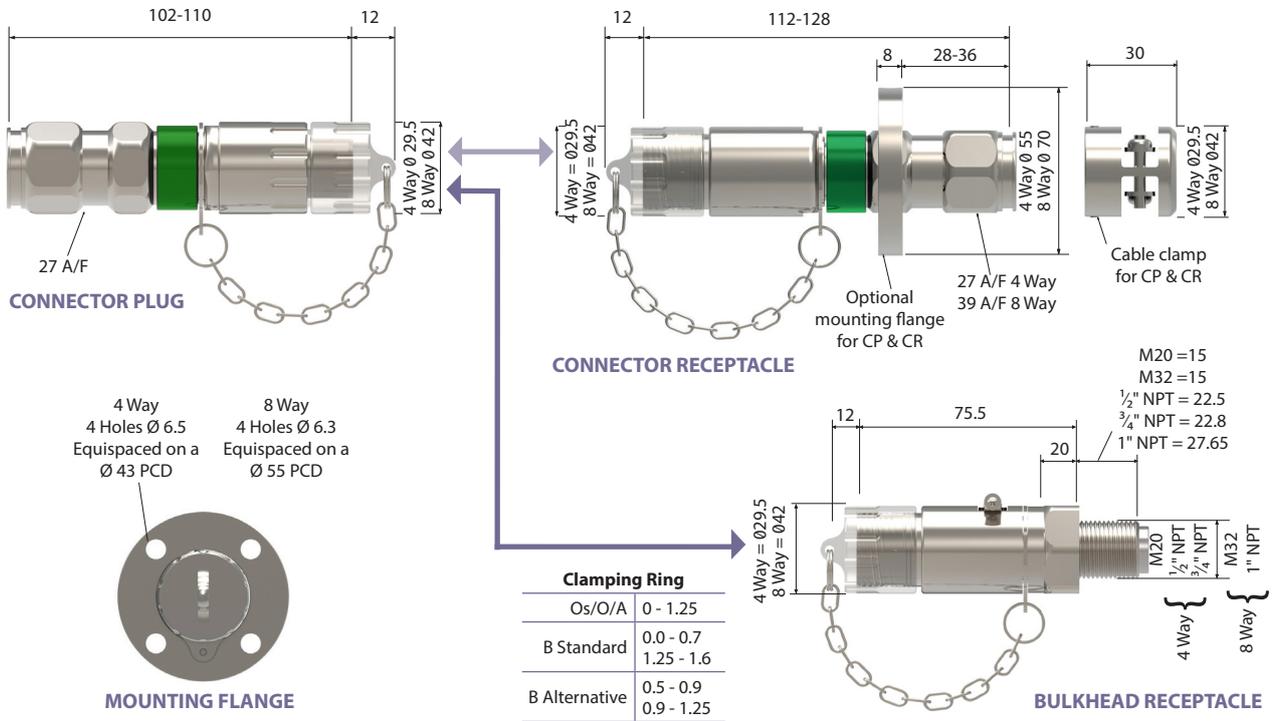


- **Termination Service Available** – Hawke have united with one of the most prominent Fibre termination services in the world, Acal BFI to offer you a complete solution. Acal will provide a custom cable jumper termination service for our FibreEx Connector so that you can install our leading-edge connector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



- **Contact Cleaner** - A one click, fibre optic cleaner pen is provided with every cable assembly to allow for quick and easy onsite cleaning prior to interface.

Dimensions & Technical Specifications



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	Singlemode 9/125µm Multimode 50/125µm Multimode 62.5/ 125 standard Other options available on request	Contact Technology	Low loss ceramic PC technology in both multimode and singlemode
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		

Testing Data

QFCI NEK TS 606 (62.5/125)			
Fibre Ex			
Tensile Strength (OEC 6074-1-21, E1)		Fire and Smoke Classifications	
Max tensile load during installation	1500N	IEC 60331-25 (750°C, 90 minutes)	<1.0 dB excess loss
Max tensile load during operation	500N	Upgraded IEC 60331-25 (1000°C, 3 hours)	<1.5 dB excess loss
Crush (IEC 60794-1-21, E3)	3000 N/10cm	IEC 60331-1 (830°C, 120 minutes incl. hammer shock, flowed by water jet acc. to BS 8491:2008)	<1.5 dB excess loss
Impact (IEC 60794-1-21, E4)	30J	IEC 6033102 (830°C, 90 minutes incl. hammer shock) followed by water spray acc. to EN50200	<1.5 dB excess loss
Torsion (IEC 60794-1-21, E17)	-±1 turn/1m	IEC 60331-2 (830°C, 90 minutes incl. hammer shock)	<1.5 dB excess loss
Cable Bending		IEC 61034	
Minimum bending diameter	-250mm	IEC 60332-3-22 (Cat A)	
Cable Bend (IEC 60794-1-21, E11)	<0.1dB/+5 turn	IEC 60332-3-24 (Cat C)	
Temperature window (IEC 60794-21-22, F1)		IEC 60754-1	
Operation	-40°C to +70°C	IEC 60754-2	
Installation	-10°C to +70°C		
Storage	-40°C to +70°C	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

In-Depth Product Features

Take a more in-depth look at some of the leading-edge features of the FibreEx range.

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, reliable and cutting edge solution that exceeds your expectations.

Take a closer look, below.

- 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

Cleaning Stick



A 1.6mm ferrule cleaning device will be supplied with each order. This device is used to maintain a clean dust/dirt free surface on the polished end of the contact. To ensure that this surface is kept in optimum condition please use the cleaning stick before every engage and after

each disengage. When the connector pair are not mated it is imperative that the protective cap is used to maintain the IP rating of the connector. Not fitting the cap will render the contact useless if left unprotected. The cap must only be removed before engagement.

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 cetified CP/CR please state the key postion. 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 configutations	All	A
	Customer Specific. Drawings needed	C
	N/A All CP & CR	X
Certification	ATEX/IECEX	A

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



Harsh & Hazardous

Hubbell Harsh & Hazardous

Extreme environments demand superior performance, which is why you will find Hubbell products and systems installed in some of the most arduous and safety critical locations worldwide.

The Hubbell Harsh & Hazardous group combines dedicated, market leading brands within the Hubbell portfolio to provide a complete package for companies operating in some of the toughest environments on the planet.

We are committed to providing quality products and services that will meet and exceed your expectations. Our principal activities include the design and manufacture of rugged and hard wearing products. These include telephones and communication products, lighting, control gear and electrical connection products, all designed to operate primarily in extreme outdoor, hazardous and corrosive areas.

Our Brands

All of our brands are long established and well respected businesses within each of their industries, our primary industry sectors include:

Oil & Gas, Petrochemical, Industrial, Marine, Military, Transport and Commercial.



Corporate Information

Hubbell Incorporated HQ is based in Connecticut, U.S.A. and you can find out more information about the Hubbell Group on our corporate website at www.hubbell.com

www.harshandhazardous.com

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