GENERAL **CATALOG**

CORE **ULTIMATE** **FIBEROPTIC** **MINIMAX**

THE **RELIABLE** EXPERT

Fischer
CONNECTORS ®

For over 60 years, you – our clients and partners – have been our main focus.

Finding ways to satisfy you has constantly and naturally guided the evolution of the Fischer Connectors global family business, whose strong culture is defined by these words: **Expertise, Reliability, Innovation.**

To date, we have placed our expertise at your service with **more than 30,000 references across our four product families:** Core, UltiMate, FiberOptic and MiniMax.

To give each of you easy access to these high-quality connectivity solutions, we have developed a **worldwide sales network** backed up by production and **cable assembly facilities in Europe, North America and Asia Pacific**. Aiming to continually improve your satisfaction, we have devoted the past decade to modernizing our company, innovating in both products and manufacturing systems, and meeting your quality and reliability requirements quickly and effectively.
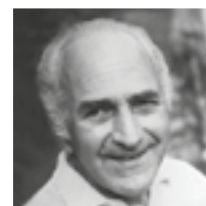
Proud of satisfying more than 10,000 active clients per year, we look forward to partnering with you to grow your business with our reliable and innovative connectivity solutions.

Jonathan Brossard

From left to right: Jonathan Brossard, CEO/General Director;
Sabrina Brossard-Fischer, Board of Directors; Peter Fischer, Chairman

Walter Werner Fischer,
Founder of Fischer Connectors

THE **RELIABLE** EXPERT

Expertise | Reliability | Innovation

At Fischer Connectors, we firmly believe that selecting the right connector for the right application is an important detail that, when designed into your projects, can have a significant impact on how people live and work, both locally and globally.

When you team up with us, you place your trust in an expert partner who understands your unique needs, designs applications in a streamlined and cost-effective way, and ensures you have a rugged, reliable solution. **Our unmatched focus on developing rugged connector and cable assembly solutions and on the innovation of products and business processes sets Fischer Connectors apart.**

Expertise

Guiding you from concept to delivery:

- Sustainable **supply chain** efficiency
- Performance via **lean manufacturing**
- Process control and **continuous improvement**

Reliability

Getting you where you want to be:

- **Products** that deliver quality over time
- **Service** that ensures on-time deliveries
- **Support** that responds quickly to your requests

Innovation

Helping you work smarter:

- **Technology** that speeds up production and delivery
- **Solutions** that help you overcome your challenges
- **Customer-first approach** that saves you time and money

FISCHER
CORE SERIES

Any size
Any configuration
Any application

FISCHER
ULTIMATE™ SERIES

Rugged
Compact
Lightweight

FISCHER
FIBEROPTIC SERIES

Robust
Optical performance
Easy cleaning

FISCHER
MINIMAX™ SERIES

High density
Signal & Power
Miniaturization

CONNECTORS OVERVIEW

FISCHER **CORE** SERIES

			Locking	Shell material	Plug Ø [mm]
	Any size Any configuration Any application	FISCHER CORE SERIES **BRASS**	Push-pull Quick-release Friction	Chromium Plated brass	9-34
		FISCHER CORE SERIES **STAINLESS STEEL**	Push-pull	Stainless Steel 316L	12-34
		FISCHER CORE SERIES **ALULITE™**	Push-pull	Aluminum	9-18
		FISCHER CORE SERIES **PLASTIC**	Push-pull	PBT / PEI	14.5-18.5
		FISCHER CORE SERIES **DISPOSABLE**	Friction	ABS	17.8
		FISCHER CORE SERIES **BROADCAST**	Push-pull	Brass	25.5

Pages 12 - 21

FISCHER **ULTIMATE™** SERIES

			Locking	Shell material	Plug Ø [mm]
	Rugged Compact Lightweight	FISCHER **ULTIMATE™** SERIES	Push-pull Quick-release	Brass Aluminum	12-29

Pages 22 - 25

FISCHER **FIBEROPTIC** SERIES

			Locking	Shell material	Plug Ø [mm]
	Robust Optical performance Easy cleaning	FISCHER **FIBEROPTIC** SERIES	Push-pull	Brass	24

Pages 26 - 29

FISCHER **MINIMAX™** SERIES

			Locking	Shell material	Plug Ø [mm]
	High density Signal & Power Miniaturization	FISCHER **MINIMAX™** SERIES	Push-pull Screw-locking Quick-release	Brass	9.9 - 12.9

Pages 30 - 33

Number of contacts	Contact type	Test voltage DC [kV]	Current rating [A]	Contact termination	Sealing level	Mating cycles
1 to 55	Low voltage High voltage Coax/Triax Hybrid	Up to 50	Up to 60	Crimp Solder PCB	IP50 - IP68/69 Hermetic	10,000
1 to 55	Low voltage High voltage Coax/Triax	Up to 50	Up to 60	Crimp Solder PCB	IP50 - IP68/69 Hermetic	5,000
2 to 27	Low voltage High voltage Coax/Triax	Up to 14	Up to 32	Crimp Solder PCB	IP50 - IP68/69 Hermetic	10,000
2 to 27	Low voltage Hybrid	Up to 4	Up to 30	Crimp Solder PCB	IP67	5,000
6 to 19	Low voltage Hybrid	Up to 2.7	Up to 3	Crimp	IP30 - IP40	10
1	Triax	Up to 1.7	Up to 14	Crimp Solder	IP68	5,000
2 to 42	Low voltage	Up to 2.5	Up to 9.2	Crimp Solder PCB	IP68/69 Hermetic	10,000
1 to 4 fibers Hybrid 4	Fiber optic Low voltage	Up to 2.8	Up to 10	Solder	IP67/68	1,000
4 to 24	Low voltage	Up to 1.5	Up to 10	Solder PCB	IP68	5,000

ANY SIZE
ANY CONFIGURATION
ANY APPLICATION

Over 20,000 references covering a multitude of applications: from standard to highly technical or complex ones.

Ideally suited for:

- Broadcast
- Defense & Security
- Energy
- Industrial
- Instrumentation
- Medical
- Transportation

FISCHER **CORE** SERIES

FISCHER CORE SERIES **BRASS**

- Highly configurable
- High performance interconnections
- Available in sealed and vacuum tight versions

FISCHER CORE SERIES **STAINLESS STEEL**

- Corrosion and radiation resistance
- Decontamination and sterilization performance
- Easy handling with gloves

FISCHER CORE SERIES **ALULITE™***

- Lightweight, 50% lighter than brass equivalent
- Chromium plated aluminum for best chemical resistance
- Any size and body style for any integration

* Other colors are available on request.

FISCHER CORE SERIES **PLASTIC**

- Sterilizable
- Corrosion resistance
- High performing plastic materials

FISCHER CORE SERIES **DISPOSABLE**

- Cost-effective single use plugs, fast cable assembly
- Reliable and faultless handling
- Modular or turnkey solution

FISCHER CORE SERIES **BROADCAST**

- Optimized for broadcast cameras
- Outstanding durability
- The best of Triax

For more information, sizes, configurations, and accessories, please consult our Technical Specifications.

Fischer CONNECTORS

FISCHER CORE SERIES **BRASS**

PLUGS

CABLE MOUNTED

BODY STYLES	S	SC	SOV	SA
Locking system	Push-pull	Quick-release	Friction	Push-pull
Sealing	IP50/IP68	IP50/IP68	IP50/IP68	IP50/IP68
Design	Standard	Standard	Standard	Lanyard

BODY STYLES	SV	SS	SSC	WSO
Locking system	Push-pull	Push-pull	Quick-release	Push-pull
Sealing	IP50/IP68	IP50/IP68	IP50/IP68	IP50/IP68
Design	Tamperproof	Short/Overmolding	Short/Overmolding	Right-angle

PANEL FRONT MOUNTED

BODY STYLES	SF	SFU	SFE
Locking system	Friction	Friction	
Sealing	IP50	IP68	Hermetic
Design	Front-projecting	Front-projecting	

PANEL REAR MOUNTED

BODY STYLE	SFPU	SFPE
Locking system	Friction	
Sealing	IP68	Hermetic
Design	Front-projecting	

RECEPTACLES

CABLE MOUNTED

BODY STYLES	K	KE	KS	KSE
Sealing	IP50	IP68	IP50	IP68
Design	Standard		Short/Overmolding	

RECEPTACLES

PANEL FRONT MOUNTED

BODY STYLES	D	DB	DEU	DEE	DBEU	DBEE
Sealing	IP50	IP50	IP68	Hermetic	IP68	Hermetic
Design	Rear-projecting	Front-projecting	Rear-projecting		Front-projecting	

BODY STYLES	DK	DKE
Sealing	IP50	IP68
Design	Cable mounted	Cable mounted

PANEL REAR MOUNTED

BODY STYLES	DBP	DBPC	DBPU	DBPE	DBPLU	DBPLE
Sealing	IP50	IP50	IP68	Hermetic	IP68	Hermetic
Design	Rear-projecting	Right-angle PCB	Rear-projecting		Front-projecting	

BODY STYLE	DKBE
Sealing	IP68
Design	Cable mounted

RECEPTACLES & FEEDTHROUGH

SPECIAL DESIGN

BODY STYLES	DG	DGP	WDE
Sealing	IP50	IP50	Hermetic
Design	Completely threaded		Bulkhead feedthrough
	Solder/Crimp	PCB	

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

FISCHER CORE SERIES **ALULITE™**

PLUGS*

CABLE MOUNTED

BODY STYLES	**S**	**SC**	**SS**	**SSC**
Locking system	Push-pull	Quick-release	Push-pull	Quick-release
Sealing	IP50 / IP68	IP50 / IP68	IP50 / IP68	IP50 / IP68
Design	Standard	Standard	Short/Overmolding	Short/Overmolding

RECEPTACLES*

PANEL FRONT MOUNTED

BODY STYLES	**D**	**DEU**	**DEE**
Sealing	IP50	IP68	Hermetic
Design	Rear-projecting	Rear-projecting	

PANEL REAR MOUNTED

BODY STYLES	**DBPU**	**DBPE**	**DBPLU**	**DBPLE**
Sealing	IP68	Hermetic	IP68	Hermetic
Design	Rear-projecting		Front-projecting	

*Other colors are available on request.

FISCHER CORE SERIES **STAINLESS STEEL**

PLUGS

CABLE MOUNTED

BODY STYLES	S	ST
Locking system	Push-pull	Push-pull
Sealing	IP50/IP68	IP50/IP68
Design	Standard	Remote handling

RECEPTACLES

PANEL FRONT MOUNTED

BODY STYLES	DBEE	WDE
Sealing	Hermetic	Hermetic
Design	Front-projecting	Bulkhead feedthrough

PANEL REAR MOUNTED

BODY STYLE	DBPE
Sealing	Hermetic
Design	Rear-projecting

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

FISCHER CORE SERIES **PLASTIC**

PLUGS

CABLE
MOUNTED

BODY STYLES	**S(I) 405**	**SI 4032**
Locking system	Push-pull	Push-pull
Sealing	IP50/IP67	IP50/IP68
Design	Standard	Standard

RECEPTACLES

PANEL
MOUNTED

BODY STYLES	**DBP 405**	**DBP 4032**	**DBPO 4032**
Sealing	IP50	IP50	IP68
Design	Standard	Standard	Standard

FISCHER CORE SERIES **DISPOSABLE**

PLUGS

CABLE
MOUNTED

BODY STYLES	**WHITE**	**BLUE**	**VIOLET**	**TURQUOISE**
Locking system	Friction	Friction	Friction	Friction
Sealing	IP30/IP40	IP40	IP40	IP40
Design	Single/Two-piece shell	Two-piece shell	Two-piece shell	Two-piece shell

PRE-CABLED
SOLUTION

BODY STYLE	
Locking system	Friction
Sealing	IP65
Design	Turnkey

Mateable with all high performance panel receptacles of the Fischer Core Series 104.

FISCHER CORE SERIES **BROADCAST**

PLUGS

CABLE MOUNTED

BODY STYLES	**SE**	**SE-SE**
Locking system	Push-pull	Push-pull
Sealing	IP68	IP50
Design	Standard	In-line adapter

PANEL MOUNTED

BODY STYLES	**DS**	**DSQ**	**DSR**	**DS-K**
Locking system	Push-pull	Push-pull	Push-pull	Push-pull
Sealing	IP50	IP50	IP50	IP50
Design	Standard	Square flange	Cable mounted	Bulkhead feedthrough

RECEPTACLES

CABLE MOUNTED

BODY STYLES	**KE**	**KE-KE**
Sealing	IP68	IP50
Design	Standard	In-line adapter

PANEL FRONT MOUNTED

BODY STYLES	**DB**	**DBQ**	**DKE**
Sealing	IP50	IP50	IP68
Design	Standard	Square flange	Cable mounted

PANEL REAR MOUNTED

BODY STYLES	**DKBE**	**KE-KE**
Sealing	IP68	IP50
Design	Cable mounted	Bulkhead feedthrough

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

RUGGED COMPACT LIGHTWEIGHT

Ideally suited for harsh environments:

- Defense & Security
- Energy
- Industrial
- Transportation

FISCHER **ULTIMATE**™ SERIES

fischer
CONNECTORS

FISCHER **ULTIMATE**™ SERIES

- Rugged and reliable
- IP68/69/Hermetic sealing, mated and unmated
- Highly configurable

FISCHER **ULTIMATE™** SERIES

PLUGS

CABLE MOUNTED

BODY STYLES	**UP01-L**	**UP01-Q**
Locking system	Push-pull	Quick-release
Sealing	IP68/IP69	IP68/IP69
Design	Short/Overmolding	Short/Overmolding

PANEL FRONT MOUNTED

BODY STYLE	**UP50**
Locking system	Friction
Sealing	IP68/IP69
Design	Front-projecting

RECEPTACLES

CABLE MOUNTED

BODY STYLE	**UR50**
Sealing	IP68/IP69
Design	Short/Overmolding

PANEL FRONT MOUNTED

BODY STYLE	**UR03**	
Sealing	IP68/IP69	Hermetic
Design	Front-projecting	

PANEL REAR MOUNTED

BODY STYLES	**UR01**		**UR02**	
Sealing	IP68/IP69	Hermetic	IP68/IP69	Hermetic
Design	Front-projecting		Rear-projecting	

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

ROBUST
OPTICAL PERFORMANCE
EASY CLEANING

A rugged solution ideal for :

- Faultless optic performance
- Indoor, outdoor and extreme applications
- Easy field cleaning

FISCHER **FIBEROPTIC** SERIES

FISCHER **FIBEROPTIC** SERIES

- The best of butt-joint optical performance, Singlemode (APC/UPC) and Multimode (UPC)
- Quick and easy field cleaning, IP67 unmated
- Removable mono-block mate adapter

FISCHER **FIBEROPTIC** HYBRID

- Combines power and data
- Up to 400V and 10 Amps
- Quick and easy field cleaning, IP67 unmated

FISCHER **FIBEROPTIC** SERIES

PLUGS

CABLE MOUNTED

BODY STYLE	**P01**
Locking system	Push-pull
Sealing	IP67 / IP68
Design	Standard

RECEPTACLES

CABLE MOUNTED

BODY STYLE	**R50**
Sealing	IP67 / IP68
Design	Standard

PANEL FRONT MOUNTED

BODY STYLES	**R03**	**R13**
Sealing	IP67 / IP68	IP67 / IP68
Design	Circular flange	Square flange

PANEL REAR MOUNTED

BODY STYLES	**R01**
Sealing	IP67 / IP68
Design	Circular flange

HIGH DENSITY SIGNAL & POWER MINIATURIZATION

Ideally suited for:

- Limited space and lightweight applications

- Combined needs of multiple signals and power

- Instrumentation, testing equipment and military applications

SS⟷ HDMI™

FISCHER **MINIMAX**™ SERIES

FISCHER **MINIMAX™** SERIES

- Miniature and lightweight
- High density and combined signals and power
- Tested to match most data transfer protocols

HIGH DENSITY **PC-BOARD TERMINATION**

- Rigid-flex solution available for SMD connectors
- Compatible with signal and power
- Custom design available on request

FISCHER **MINIMAX**™ SERIES

PLUGS

CABLE
MOUNTED

BODY STYLES	MP11-L	MP11-S	MP11-Q
Locking system	Push-pull	Screw-locking	Quick-release
Sealing	IP68	IP68	IP68
Design	Short/Overmolding	Short/Overmolding	Short/Overmolding

RECEPTACLES

CABLE
MOUNTED

BODY STYLES	MR50-L	MR50-S	MR50-Q
Locking system	Push-pull	Screw-locking	Quick-release
Sealing	IP68	IP68	IP68
Design	Short/Overmolding	Short/Overmolding	Short/Overmolding

PANEL REAR
MOUNTED

BODY STYLES	MR11-L	MR11-S	MR11-Q
Locking system	Push-pull	Screw-locking	Quick-release
Sealing	IP68	IP68	IP68
Design	Front-projecting	Front-projecting	Front-projecting

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

SAFE DATA STORAGE & TRANSPORTATION IN HARSH ENVIRONMENTS

- IP68 / IP69, 120 m / 24 hours
- Shock and vibration resistant
- Activity LED
- Protective cap

FISCHER
RUGGED FLASH DRIVE

Fischer
C O N N E C T O R S

FISCHER **RUGGED FLASH DRIVE**

The Fischer Rugged Flash Drive is a **robust memory stick** which has been specially designed to keep confidential and critical data **safe and secure** at all times, however tough the environment gets.

- Data **storage is SAFE** in all circumstances: the flash drive's virtually indestructible shell and durable encapsulation technique offer IP68/IP69 sealing, which protects data from extreme temperatures, shock or vibration.

- Data **access is SECURE** in case of loss or theft: thanks to the unique proprietary Fischer Connectors interface used by the flash drive – instead of a standard USB plug –, access is possible only by those equipped with the compatible interface on their computer.

- IP68 / IP69 sealed even unmated
- Unique circular connector interface
- Lightweight
- Available in UltiMate and MiniMax versions

FISCHER **RUGGED FLASH DRIVE**

INTERFACE

ULTIMATE
DESIGN

BODY STYLES	Size 08	Size 07
Locking system	Push-pull / Quick-release	Push-pull / Quick-release
Sealing	IP68	IP68
Capacity	4 & 32 GB	32 / 64 / 128 GB
Protocol	USB 2.0	USB 2.0

MINIMAX
DESIGN

BODY STYLES	Size 08
Locking system	Push-pull / Screw-locking
Sealing	IP68
Capacity	32 / 64 / 128 GB
Protocol	USB 3.0

For more information on sizes, configurations, and accessories, please consult our Technical Specifications.

AT YOUR SERVICE

For more than 60 years, Fischer Connectors has been helping customers re-imagine their connection solutions to create more competitive, innovative and cost-effective products:

■ State-of-the-art products and solutions

■ Latest manufacturing techniques

■ Best-in-class global customer service

VALUE-ADDED **SERVICES**

FROM LOW TO
HIGH VOLUME BUSINESS

Since 2008, Fischer Connectors' headquarters in Saint-Prex, Switzerland has been home to an **ultramodern lean manufacturing facility**, able to produce our connectors in high volumes at an **affordable cost**:

- Logistics and **on-time deliveries**
- World's best **supply chain** technologies
- High **customer service** standards

CABLE ASSEMBLY

By choosing us for both connectors and assembly solutions, you can significantly save over the cost of handling multiple vendors. Our **worldwide cable assembly network, located in Europe, North America and Asia Pacific**, ensures short lead times and high quality standards:

- **Complete** solutions
- **Total** support
- **One-stop** shop

CUSTOM **SOLUTIONS**

We love solving engineering challenges, coming up with unique and highly innovative solutions, tailor-made to your needs. From initial concept through prototyping, testing, manufacturing and installation, we work closely with your development team to turn that seed of an idea into a perfect, functioning product from:

- **Initial concept** through production
- Connectors and cabled solutions to **finished goods**
- Custom solutions to **high volume business**

TECHNICAL DATA

Carefully defining your interconnection performance requirements is critical when selecting the ideal connector:

- Locking systems
- Sealing categories
- Materials
- Voltage limits
- Power and Signal
- Contact types
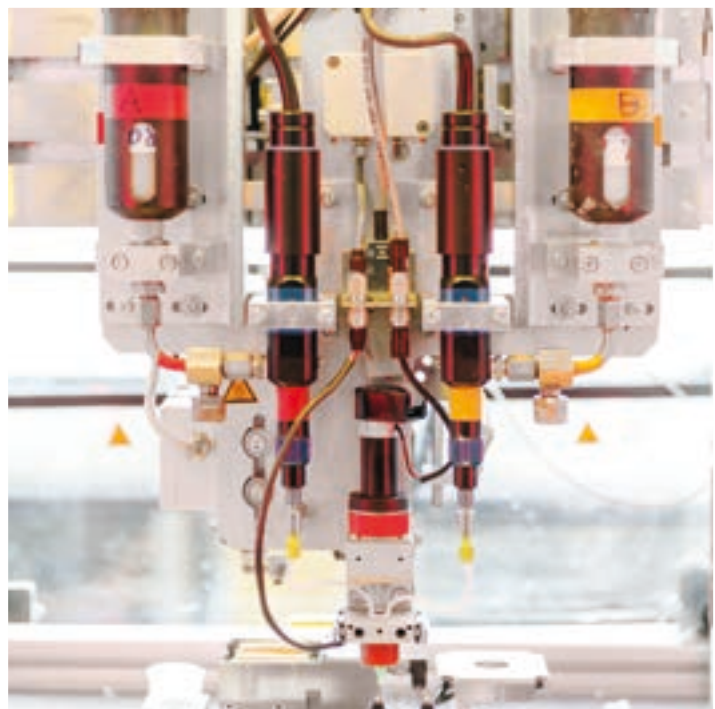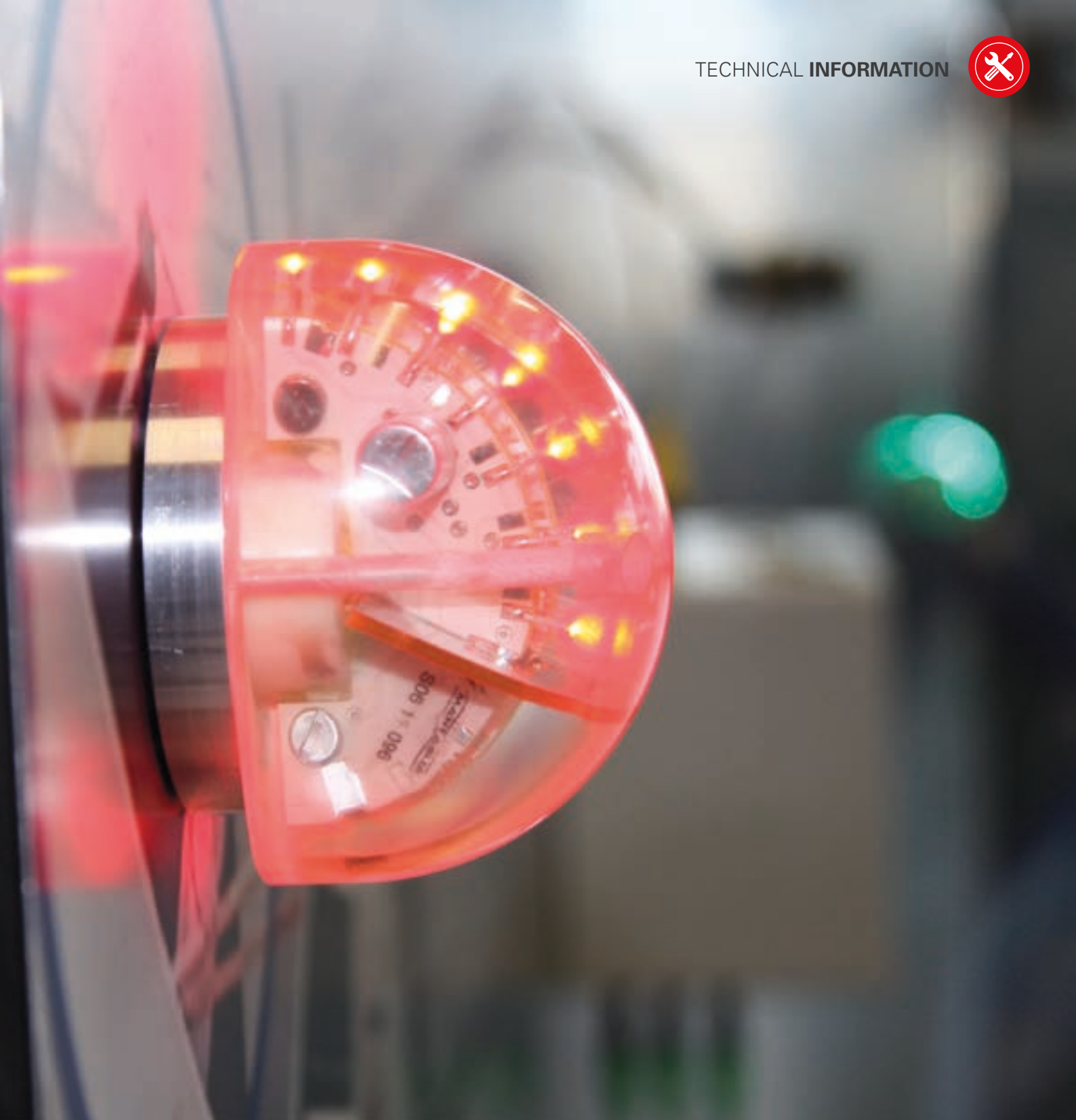
TECHNICAL **INFORMATION**

ORIGINAL **PUSH-PULL LOCKING SYSTEMS**

Fischer Connectors' original push-pull automatic locking is widely adopted by the industry for its ease of use, safety of mating and speed in connection and disconnection.
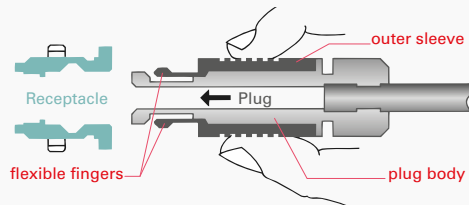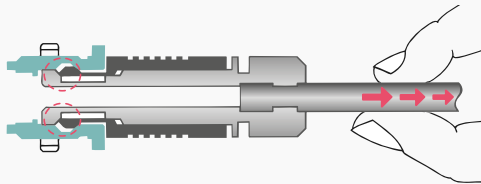
PLUGGING
The plug has an outer sleeve, with flexible fingers, which slides forwards and backwards along the plug body.
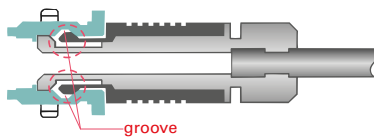
WHEN CONNECTED
The beveled edges are firmly captured by a locking groove located inside the receptacle.

PULLING THE CABLE
The beveled edges of the fingers are forced into the groove, securing the connection.
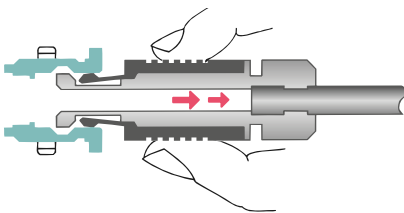
UNPLUGGING
Pulling on the outer sleeve of the plug unlocks the latching mechanism.

OTHER **LOCKING SYSTEMS**

LANYARD   Combines push-pull automatic locking with an emergency release lanyard.

QUICK-RELEASE   Designed without a locking mechanism for emergency release.

FRICTION   Designed without a snapping mechanism.

TAMPERPROOF   Features an integral safety locking ring to prevent unauthorized or unintentional disengagement.

SCREW-LOCKING   Enables firm locking by circular movement with the plug's outer sleeve and receptacle feature threading.

SEALING CATEGORIES

The IP (Ingress Protection) classification system provides a reliable method of comparing relative levels of sealing between various connector products.

The protection level offered by a typical envelope is described in IEC 60529, published by the International Electrotechnical Commission (IEC). While the first number describes the level of protection from solid objects, the second one relates to protection from liquids.

Tests performed during the design and qualification of Fischer Connectors' environmentally sealed products are standardized to IP68 at a depth of 2 meters and for duration of 24 hours. Fischer Connectors' hermetically sealed products achieve IP69.

The digits indicate conformity with the conditions summarized in the tables below.

IP RATING

SOLIDS

0	Non-protected
1	Protected against solid objects greater than 50 mm
2	Protected against solid objects greater than 12 mm
3	Protected against solid objects greater than 2.5 mm
4	Protected against solid objects greater than 1.0 mm
5	Dust protected
6	Dust tight

WATER

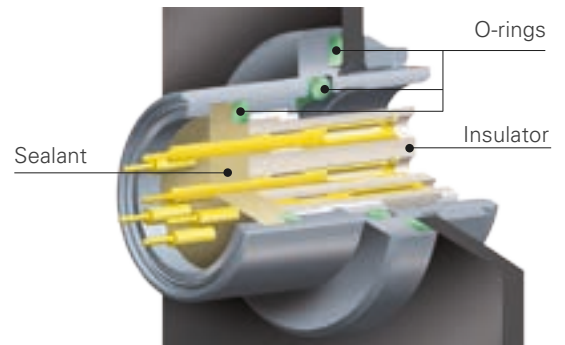| 0	Non-protected
1	Protected against dripping water
2	Protected against dripping water when filled, up to 15°
3	Protected against spraying water
4	Protected against splashing water
5	Protected against water jets
6	Protected against heavy seas
7	Protected against immersion effects
8	Protected against submersion
9	Protected against intense water jets

Example: **IP68**

INGRESS **P**ROTECTION

COMMONLY USED SEALING LEVELS

- IP50 Indoor / Unexposed applications
- IP68 Watertight sealing
- Hermetic sealing

Each requires different sealing levels and, therefore, different connector solutions.

O-rings

Insulator

Sealant

IP50 INDOOR / UNEXPOSED APPLICATIONS

Typically for indoor or industrial applications, the required sealing level is IP50, since the device needs to be protected against dust but not exposed to water.

The IP50 rating can be improved with additional accessories like boots or protective sleeves.

IP68 WATERTIGHT SEALING

Typically for applications requiring outdoor use where they might be exposed to water submersion, rain, sand, mud or any other environmental stress.

HERMETIC SEALING

Typically for applications requiring gas tightness like vacuum applications and pressurized vessels, immersed for long periods of time or exposed to strong jets.

100 % of the hermetic pieces are tested with a leak testing instrument to ensure a leak smaller than 10^{-8} mbar l/s.
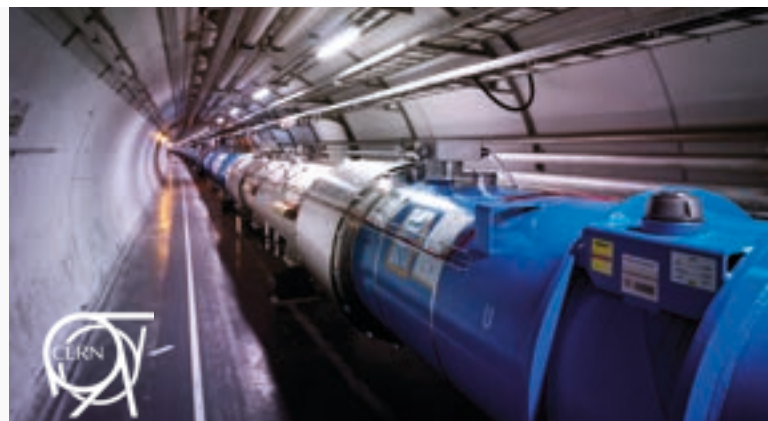
HOW TO CHOOSE YOUR **RECEPTACLE BODY STYLES**
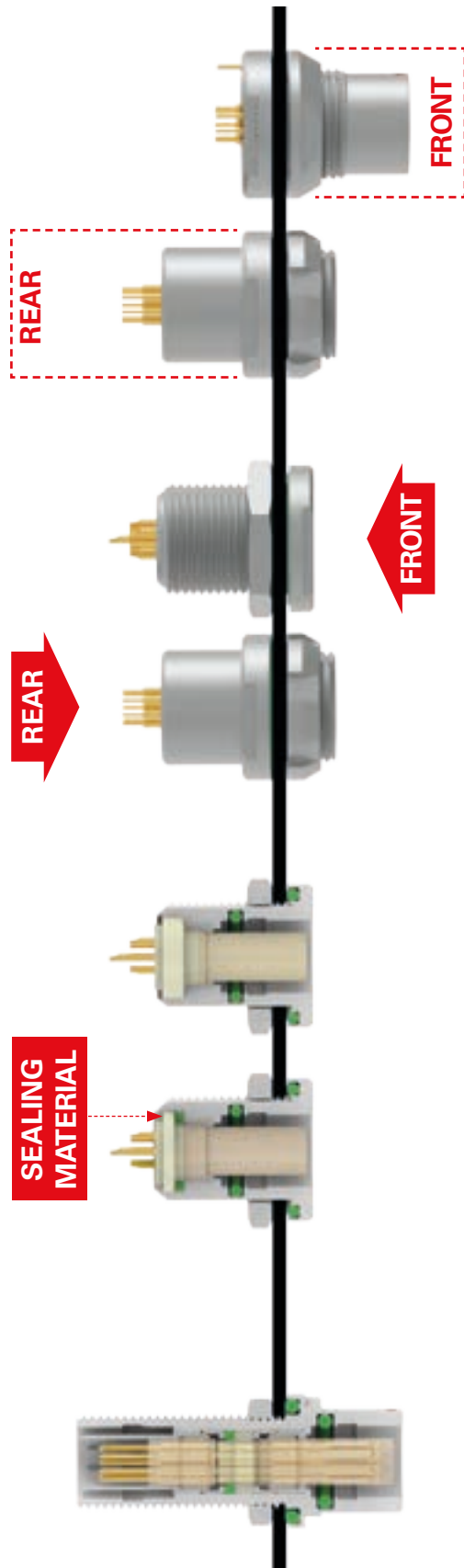
FRONT

REAR

Front and rear projecting

- Depending on whether you need the space saving inside or outside the device
- Also available in front or rear mounting

FRONT

REAR

Front and rear mounting

- Depending on how you need to process your assembly
- Rear mounting is commonly used for PCB mount

SEALING MATERIAL

IP68 watertight or hermetic designs

- Hermetic has a specific sealing material for best sealing under high pressures

Feedthrough

- Hermetic panel bulkhead feedthrough

MATERIALS

SHELL MATERIAL

MATERIAL NAME	BEST FOR	TEMPERATURE	MAIN ATTRIBUTES
Chromium-plated brass	Ruggedness	-100 to +200°C	Salt mist and mechanical resistance, cost efficiency, electrical conductivity
Aluminum	Lightweight	-100 to +200°C	Lightweight
Stainless steel	Cleaning / Radiation	-100 to +350°C	Corrosion resistance, surface cleanability, nuclear radiation and mechanical resistance
PEI	Sterilization	-65 to +200°C	Sterilization in autoclave, EtO, Cidex, gamma radiation, Steris®, Sterrad®
PBT	Insulation	-65 to +135°C	Electrical insulation, low temperature manipulation
ABS	Cost efficiency	-20 to +65°C	Disposable solutions, medical applications

CONTACT BLOCK MATERIAL

MATERIAL NAME	BEST FOR	TEMPERATURE	MAIN ATTRIBUTES
PEEK	High temperature	-65 to +250°C	High temperature, high chemical and high radiation resistance
LCP	High temperature	-65 to +200°C	High temperature and high chemical resistance
PBT	Cost efficiency	-65 to +135°C	High chemical resistance, cost efficiency
PTFE	Electrical insulation	-65 to +160°C	High dielectric strength, high chemical resistance
ABS	Cost efficiency	-20 to +65°C	Disposable solutions, good stability

O-RING & SEALING MATERIAL

MATERIAL NAME	BEST FOR	TEMPERATURE	MAIN ATTRIBUTES
FPM (Viton®)	Hermeticity	-20 to +200°C	Acids, weather, ozone, fuels, mineral and silicone oils, high vacuum, gamma rays
EPDM	Low temperature	-50 to +160°C	Alcohol, weather, hot water, vapour, detergents, gamma rays
NBR	Oil resistance	-30 to +110°C	Acids, mineral oils, petrol, weather, detergents
FVMQ	High temperature oil resistance	-55 to +200°C	Mineral oils, alcohol, weather, hot water, detergents
TPE	Soft accessories	-55 to +130°C	Very resistant, except to aromatic and chlorinated hydrocarbon
"U" Type Resin	IP68 sealing	-55 to +200°C	Mineral oils, acids, alkalines, inorganic saline solutions
"E" Type Resin	Hermeticity	-65 to +150°C	High chemical and radiation resistance

DATA **TRANSMISSION**

SYMBOL					
Protocol	USB 2.0	USB 3.0	Ethernet Cat 5	Ethernet Cat 6	HDMI
Speed	60 Mb/s	625 Mb/s	1Gb/s	10Gb/s	-
Required contacts	4	9	8	8	19

For more information, please visit www.fischerconnectors.com or contact our technical support team.

A/Z POLARITY

To protect users from contact with dangerous voltage, most of Fischer Connectors' products are available in two versions:

STANDARD **A POLARITY**
The contacts of the receptacle are protected against accidental touch.
Recommended when voltage is present on the receptacle.

INVERTED **Z POLARITY**
The contacts of the plug are protected against accidental touch.
Recommended when voltage is present on the plug.

TEST VOLTAGE & **OPERATING VOLTAGE**

100%

÷ Safety factor

75%

Creepage distance & airgap

Typical scatter of breakdown voltage values

Breakdown voltage

Test voltage

Operating voltage

Operating voltage

BS 9520 / EIA-364-20   IEC 60664
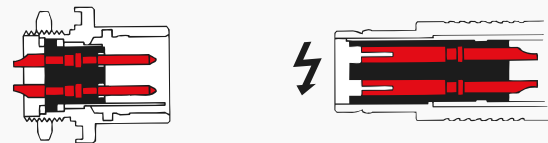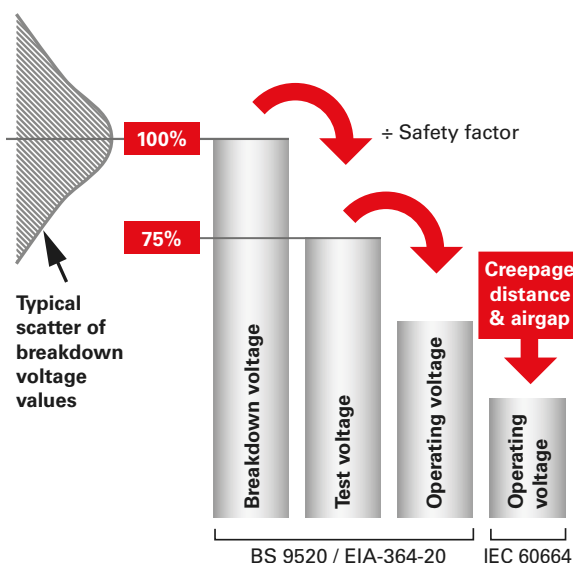
BREAKDOWN VOLTAGE
Maximum voltage difference that can be applied before the occurrence of a disruptive discharge between mutually insulated portions of a connector or between insulated portions and the ground.

TEST VOLTAGE (or withstanding voltage)
Voltage level at which the connector is tested during the qualification test. This value represents the upper physical limit. It is usually set at 75% of breakdown value.

OPERATING VOLTAGE (or rated voltage)
Voltage under which the connector will actually work in the equipment over the normal expected lifetime and in typical environmental conditions.

CONTACTS & **ACCESSORIES**

SOLDER
CONTACTS

Most versatile
Pre-installed contacts
Qualified assemblers required

- Can be produced with any type of contact block material and accept a wide range of wire sizes.

- Contacts are pre-installed in the insulator block, and the wires can be terminated with any appropriately sized soldering iron.

- May require operators who are qualified in specialized soldering techniques.

PCB
CONTACTS

PCB or Flex circuit mount
Reduced pin diameter
Wave soldering

- Designed to be mounted directly onto a PCB or flex circuit, can be used in wave soldering operations for faster production assembly.

- Preferred for high rates of data transmission due to the low distance to the board that their integration allows. This helps reducing signal perturbations.

- PCB pins are generally used on rear mounted panel connectors.

CRIMP
CONTACTS

Selectively annealed area
Special tools required
Limited range of wire sizes

- Each contact has a selectively annealed area which is deformed during assembly by specialized tooling to assure proper termination of the wire to the contact.

- Commonly used for field termination or repair, as no soldering process is required.

- Not available for sealed or hermetic connectors.

STAMPED
CONTACTS

High volume
Automated cable assembly
Disposable applications

- Optimized for very high volume and automated cable assembly.

- Come on specific reels to be accommodated in automated cable assembly machines.

- Mainly used in disposable applications due to their limited number of mating cycles.

FIBER OPTIC BUTT-JOINT
CONTACTS

High optical performance
IP67 unmated
UPC & APC polishing

- The FiberOptic termini rely on butt-joint technology commonly used in the telecom industry to ensure ultra-low insertion and return losses.

- A unique sealing feature on the termini allows easy cleaning and device protection even unmated (IP67) without compromising on the alignment once mated.

- Guaranteed, tested and certified optical performance platform using high precision polishing process.

- The alignment sleeve parts are located in a removable mate adapter for easy maintenance, replacement and cleaning.

OVERMOLDING BEND RELIEFS

STRAIGHT
BEND RELIEF

High-end quality feel

Straight & right angle

Wide choice of colors and materials

RIGHT ANGLE
BEND RELIEF

Straight & right angle cable orientations available:

- Can accommodate a wide range of cable diameters
- Polyurethane material for ultra-ruggedness
- Silicon material for ultra-cleanliness
- Best protection to improve cable flex life

CABLE
BEND RELIEF

High-end quality feel

No tooling required

Wide choice of colors

Tool-free terminations for field installations:

- High quality and improved protection
- Wide range of colors for easy cable identification
- Can accommodate a wide range of cable diameters

PROTECTIVE SLEEVE

Improved protection
Ideal for dusty environments
Improved sealing

Improves mechanical protection
on the whole interface:

- Prevents contamination of the locking
  mechanism in highly dusty environments

- Improves sealing efficiency
  in submerged applications

- Covers both plug and receptacle

HEAT SHRINKING TUBE

Protection to exposed wires
Ideal for quick prototyping
Bend relief protection

Allows submersion with adhesive versions:

- Enables quick prototyping

- Can accommodate a wide range of cable diameters

- Can match multiple cable output

Over 30,000 references covering a multitude of applications: **standard, volume programs to highly technical or complex ones**.
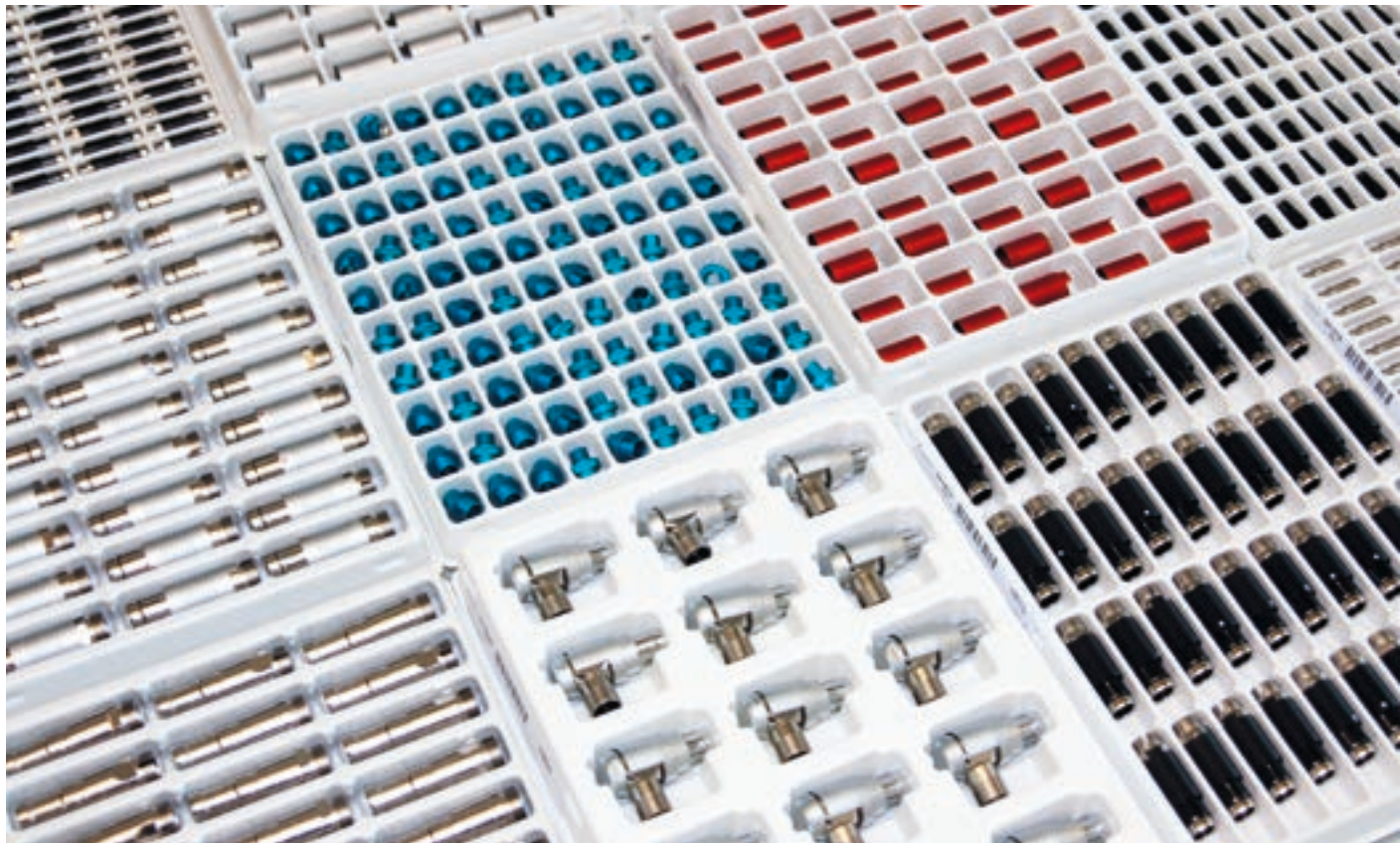
Expertise | Reliability | Innovation

ISO 9001   ISO 13485   ISO 14001   OHSAS 18001   NUCLEAR KTA 1401 - IAEA 50-C-Q   REACH   R✓HS compliant   SONY green partner

FISCHER CONNECTORS, over six decades of **Expertise, Reliability** and **Innovation**

A pioneer in connector technology, Fischer Connectors has kept the spirit of innovation alive for more than sixty years. We are known for our breakthrough technologies, high-quality products and highly responsive customer service.

We fully support companies build reliable applications by designing, manufacturing and distributing high performance, rugged circular connectors and cable assembly solutions. Our innovative circular push-pull connectors are known for their reliability, precision and resistance to demanding and harsh environments.

With our primary manufacturing facility in Saint-Prex, Switzerland, and cable assembly facilities in Europe, North America and Asia Pacific, backed by our global engineering and customer support teams, we are able to expertly serve customers throughout the world.

WARRANTY & DISCLAIMER

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