



COMMUNICATOR

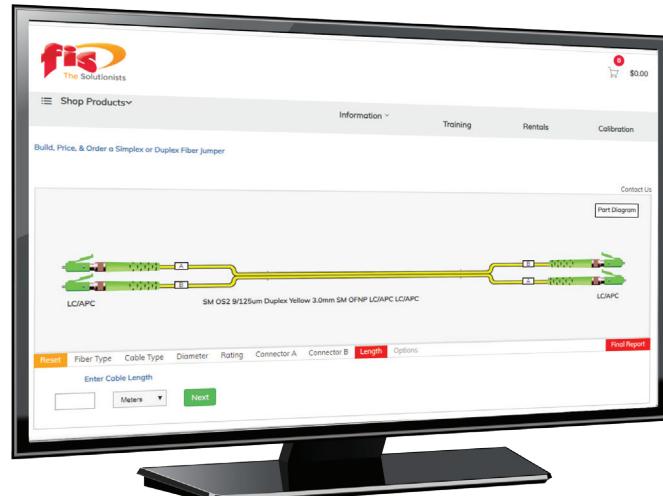


FIBER INSTRUMENT SALES, INC. | WWW.FIBERINSTRUMENTSALES.COM | 1-800-5000-FIS (347)

FIS Announces Three New Innovations To Service you Better

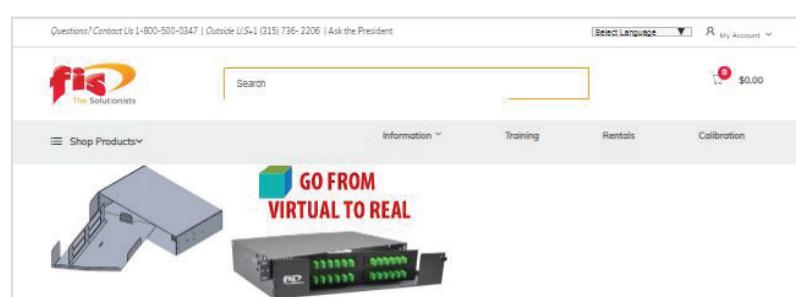
1. Patchcord Configurator Innovation

The first new innovation allows you to **create your own custom fiber optic patchcable** where you can design, price and order within minutes! This configurator allows you to build the exact type of cable you need. The choice is yours, from connector types to your choice of fiber. Test results provided after each is built.



2. 3-D Imaging Innovation

The second new innovation allows customers to **go from virtual to real using our Building Information Module (BIM)**. FIS can render 3-D representations of physical objects that can be rotated and examined from every angle on a computer screen before purchasing a product. Customers can download our 3-D models to view, manipulate and examine.



3. Video Conference Innovation

The third new innovation that allows FIS to further service our customers better is our video conference capability. **We are able to provide training and technical support to our customers with ease.** This support includes several different types of equipment such as fusion splicers, OTDRs, connector termination kits, optical loss test sets and much more.



Soon to be added. An all new filter to speed the way you locate product on the site. Also coming is our new multi fiber patch cable configurator.

Coming Next. Our site is constantly changing. We always strive to improve your user experience bringing you even more educational content. Ever evolving and changing on a daily basis we hope to increase your user experience at FIS.

Industry Advancements With Modern Fusion Splicers

Modern fusion splicers have pre-programmed splicing “recipes” that are built into the unit and which usually shouldn’t be tampered with. These recipes adjust the settings of the fusion splicer according to the type of fiber that is being spliced.

These parameters include strength of the electrical arc, duration of the arc, amount of pre-fusing, and control of fiber movement. Although these settings can be overridden, in most cases users should never have any reason to change them. In fact, doing so can adversely affect the quality of the finished splice.

Why would a technician be tempted to change these settings? Sometimes users begin to get faulty splices so they try changing settings. In most cases, the real problem is usually the result of dirty electrodes in the machine. So, the first thing to do when you begin to get bad splices is to clean or replace the electrodes in your fusion splicer.

There are a few instances when the average user may have to set their own parameters on their fusion splicer. One is when a new fiber comes on the market, and they don’t see the fiber name listed among the machine’s fiber menu selections. **When this happens it is best to contact the splicer manufacturer for tech support.** Chances are they can provide you with the recipe or settings for the new fiber so you can manually enter them into your machine. Another is if they are splicing a current fiber offering to an older legacy fiber.



NEW



Fujikura 41S Fusion Splicer

FEATURES

- Warm Splice Imaging (WSI) loss estimation technology
- Bluetooth enabled cleaver management
- Two-camera active v-groove alignment
- 5" touchscreen monitor
- Interchangeable sheath clamps and fiber holders
- Fully ruggedized for shock, moisture and dust resistance
- Extended-life electrodes, 5,000 splices, exchangeable without tools
- Long-life battery (200 splices/shrinks per charge)

The Fujikura 41S is a fully ruggedized, active cladding alignment fusion splicer. Core sensing loss estimation technology provides the most accurate assessment of splice loss available in any active cladding alignment splicer in the world. Enabled by Warm Splice Imaging (WSI), the 41S can determine the accuracy of core alignment by evaluation of the splice during the heating process. This technology delivers splice loss estimates with a greater level of accuracy as opposed to those based on only cladding alignment. State-of-the-art cleaver management via Bluetooth® connection with the CT50 Cleaver tracks usage and enables automated blade rotation as needed. The dual-camera, active V-groove alignment system provides consistent splicing performance in the most challenging conditions. A 6-second splice time and 25-second shrink time offers unmatched speed and productivity, while an easy-to-use touchscreen monitor provides simple and intuitive menu navigation. Interchangeable sheath clamps or fiber holders provide versatility for user preference, and compatibility with fusion installable connectors. The extended-life battery is rated for up to 200 splice and heat cycles. Long-life electrodes, lasting 5,000 splices, help minimize downtime for replacement and stabilization. The large 5" monitor provides a crystal clear image, even in the brightest sunlight. Software updates are accomplished via the internet allowing users to quickly update their software as new splice programs become available.

Order your **FREE** FIS Catalog today!
www.fiberinstrumentsales.com



Fiber Optic Cleavers

Choosing the right tool for the job

A cleaver scores the cladding of an optical fiber so that the end of the fiber can be broken off cleanly. A good cleave will result in a 90 degree end face on the end of the fiber.

Cleavers can range in price from \$130 to over \$5,000. The quality of a cleaver is based on features such as the unit's cleave angle spec (the number of degrees the cleave is from a perpendicular 90 degree end face), repeatability, and the number of cleaves per blade. **Cleavers priced under \$500 are primarily used to prepare single fibers for mechanical splices, quick termination connectors or bare fiber adapter applications.** These cleavers have cleave angles typically between 1 and 2 degrees. For mechanical splice applications these angles are fine because most mechanical splices have matching gel inside of them that fills in any gaps between the two mated fibers due to the cleave angle mismatch. These cleaver styles tend to use a 'stapler' motion to score the fiber. The simple mechanics of these low cost cleavers limit their repeatability and performance.

When preparing fiber for fusion splicing, a high precision cleaver is necessary. These cleavers have a cleave angle spec of .5 degrees or less and a repeatability of 90% or higher. Cleavers obtain this level of quality by using precision carbide blades set into finely machined blade carriages, which allow the blade height to be precisely adjusted. The blade slides past the fiber, scoring the glass to the correct depth to yield near perfect cleaves every time.

Recent advancements in cleaver technology include cleave counters that rotate the blade automatically when each position has performed the optimal number of cleaves for that position. Others actually monitor cleave quality via a Bluetooth connection with the fusion splicer and automatically adjust the blade position when quality falls below a certain threshold.



Free FIS AC4 Fusion Splicer
with purchase of 1,250 FIS Splice-On Connectors.

Call Your FIS Sales Representative TODAY!
1-800-5000-FIS(347)

*minimum purchase 1,250 pieces FIS Splice-On Connectors

Optical Network Certification

Tier 1 and Tier 2 Fiber Optic Testing

We can all agree that it's great having today's high bandwidth optical networks to fulfill our needs within our daily lives. While the capabilities that these networks provide cannot be matched, their higher sensitivity to back reflection and attenuation can be a constant concern. As the internet takes over more and more of our daily regimens in business, entertainment, etc. this concern becomes elevated.

For these reasons, end users are depending on the consistent reliability of these networks to support their day to day use. This makes selecting the proper test equipment so much more important today than it was a decade ago.

Within the industry there are two different levels or tiers of certifying a fiber optic network drawn up by the Telecommunications Industry Association (TIA): Tier 1 and Tier 2 testing. Depending which tier is required, specific test equipment is needed. Tier 1 is a basic test for attenuation, continuity, and polarity. Many times this testing can be achieved with a simple power meter and light source. Tier 2 is a bit more comprehensive. It involves an Optical Time Domain Reflectometer (OTDR) and in addition to measuring attenuation, it can measure back reflection, optical return loss (ORL) and give a pass/fail status for each event on the cable. This is what needs to be done to "certify" a network. The OTDR has the ability to characterize events and faults on the cable with several connections and shorter jumpers connecting patch panels. Because most OTDRs are available with on board power meters, light sources, ORL readings, and distance readings, it makes this piece of test equipment an all in one tester for Tier 2 Certification.

Another testing standard to be aware of is the International Electrotechnical Commission (IEC) standard for connector end face inspection. In this standard, there are four distinct zones that have an allotment or tolerance for each. Zone "A", which is the zone encompassing the core of the fiber cannot have any debris or defects in it. The other zones each have a specific tolerance and if any tolerance is exceeded the image will be marked failing. There are many digital inspection probes that come with software that analyzes an image to the IEC standard. This is a requirement needed by some customers who request images of each connector end face and whether it passed or failed when measured up to the IEC. This stresses the importance of proper cleaning techniques.

Ask Bruno

Vice President of
Technical Services

I've seen the term **FIS University** in some of your companies training literature. Does this mean that your training courses are accredited?

Among various industry organizations, the answer is yes. Most of our courses offer continuing education credits (CEC's). These include BICSI, ETA, and SCTE credits that technicians require for maintaining their professional certifications. FIS training is available at numerous training locations including:

- Our Brightside training facility in the Adirondack Mountains
- In various cities across the United States
- At your place of business

The two day Fiber Optics I & II course combines fiber optic theory with plenty of hands on work. Students learn cable preparation, connector polishing, cleaving, mechanical and fusion splicing, power meter and light source testing, OTDR theory and workshop and Cheetah SOC Installation and Certification.

For more information about FIS University training contact our training coordinator, **Grace Edel directly at 315-737-2169 or 1-800-500-0347, extension 2169 or gedel@fissales.com.**

Visit us online to view our full library of instructional videos!



TECH TALK Corner

with Fiber Instrument Sales



Cleaving a fiber is a process that creates a controlled fracture in glass fiber, resulting in a smooth, flat end that is suitable for mechanical splicing or fusion splicing.

The process begins by making a microscopic fracture or nick on the fiber, using the blade of a fiber optic cleaving tool. While the fracture is being made, or immediately thereafter; tension is applied to the fiber. This causes the fracture to continue across the diameter of the fiber, resulting in a smooth, flat surface at the point where the fiber separates into two pieces.

Consistent, reliable, and accurate fiber cleaves are crucial elements to achieving successful fusion splices. If a technician makes a bad cleave, more than 2 degrees off the cleave angle, it can create as much as 1 dB loss after splicing. This amount of loss is unacceptable for precision splices in today's FTTx applications. Failure to make a good cleave can also result in core deformation, an anomaly in which fibers become misaligned and light escapes.

The introduction of one step cleavers has eliminated most of the human error that used to come along with the multiple steps techs used to perform to accurately cleave fiber.

Fun Fact

A writer predicted how the Titanic would sink in 1898, 13 years before it was even built.

UPCOMING EVENTS

FIS 2019 Tradeshow and Training Schedule

February 2 - 3 | BiOS, San Francisco, CA

February 4 - 5 | FISU Fiber Optic I & II Training, Dallas, TX

February 5 - 7 | Photonics West, San Francisco, CA

February 5 | FDA Show, Keesler AFB, Biloxi, MS

February 6 - 7 | FISU Fiber Optic I & II Training, Houston, TX

February 19 - 20 | FISU Fiber Optic I & II Training, Albany, NY

February 27 | FDA Show, Barksdale AFB, Shreveport, LA

March 4 - 5 | FISU Fiber Optic I & II Training, Phoenix, AZ

March 5 - 7 | OFC, San Diego, CA

March 6 - 7 | FISU Fiber Optic I & II Training, Las Vegas, NV

March 11 - 13 | TechAdvantage, Orlando, FL

March 12 - 14 | FTTH Conference, Amsterdam, The Netherlands

March 13 | FDA Show, Dover AFB, Dover, DE

March 14 | FDA Show, JBMDL, Wrightstown, NJ

March 19 - 20 | FISU Fiber Optic I & II Training, Pittsburgh, PA

March 19 - 22 | Data Center World, Phoenix, AZ

March 20 | FDA Show, Hill AFB, Layton, UT

April 2 - 4 | TCEI Expo, Belton, TX

April 6 - 11 | NAB, Las Vegas, NV

April 8 - 9 | FISU Fiber Optic I & II Training, Jackson, MS

April 8 - 11 | Broadband Communities Summit, Austin, TX

April 10 - 11 | FISU Fiber Optic I & II Training, New Orleans, LA

April 15 - 17 | CommTech East Show, Mississauga, ON

April 23 - 24 | FISU Fiber Optic I & II Training, Baltimore, MD

April 29 | FDA Show, BFS, Parkersburg, WV