Large diameter fiber fusion splicer FSU 15 LD





Fusion Splicing Technology for Production Lines and R&D Labs

Based on the well known FSU 15 FA, the FSU 15 LD comes optimized for splicing of large diameter fibers. For the first time ever, fibers up to 600 μ m can be spliced automatically.

Large diameter fibers are being more widely spread throughout the industry but never before has it been so easy to achieve the desired results.

Being able to do everything that the FSU 15 FA is capable of, including specialty fiber splicing, the FSU 15 LD combines cold image alignment with warm image processing to splice fibers with different diameters.

Another world-first from Ericsson!

Splicing of large diameter fibers has always been problematic, particularly for fiber combinations of significantly different cladding diameters or non-circular shapes. But not anymore! The FSU 15 LD is specifically designed to splice fibers with diameters up to 600 μ m, automatically. Just like the FSU 15 FA, the FSU 15 LD includes software for specialty fiber splicing such as erbium fibers and other rare earth doped fibers. The FSU 15 LD is also equipped with attenuator making software.

The combination of cold image alignment and warm image processing ensures the best possible splice result, whatever fiber you are using. This also gives you extremely accurate splice loss estimation*.

The FSU 15 LD is equipped with fiber platforms for fiber holders to give the machine high strength capabilities.

The user interface on the FSU 15 LD is menu-driven with dynamic function buttons. An automatic arc check that compensates for changed electrode condition (e.g. electrode wear) and operating conditions (e.g. altitude, temperature and humidity) is of course included as well. The FSU 15 LD has a MFD estimation process that will fine tune the splice loss estimator.

Splicing large diameter fibers has never been easier.

- automatic splicing of fibers with up to 600µm diameter
- erbium fiber splicing
- attenuator software
- high strength capabilities
- cold/ warm image analysis tools
- ultra fast splice time
- cold core alignment and warm image processing
- menu-driven user interface
- arc check process
 - automatic, semi-automatic or manual alignment

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Easy to Work With – All the Tools That You Need



High Strength Concept

- Fiberholders for all fiber diameters
- Short strip length
- Conventional High Strength tools* or
- Automated PrepStation**
- Splice ready for recoating



Attenuator Maker

- Real time controlled process
- Wavelength dependence model
- 3-5% accuracy





- Higher accuracy for specialty fiber splicing
- Longer electrode lifetime
- Easy to use
- User-defined arc current and time for soft or hard cleaning

Arc check

• Assures independence from factors such as

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- environment (temp, humidity, altitude)
 - electrode conditions
 - machine characteristics
- Recovers fusion temperature in term of fusion current with accuracy of 0.1-0.2 mA
- Tested up to 5000 m



Image analysis tools

- Images from
 - before the splice
 - during the splice
 - after the splice
- Heat distribution profiles
- Angle and distance measurement
- Zoom function



*Accessories available from Ericsson

** Nyfors/3SAE products



SPECIFICATION

Fiber Types	Single-Mode (SMF) Multi-Mode (MMF) Erbium Fibers (EDF) Dispersion-Shifted (DSF) Non-Zero Dispersion Shifted (NZ-DSF) (LEAF, TrueWave etc.) Cut-off Shifted (CSF) Dispersion compensating (DCF) Other Specialty Fibers
Fiber diameters	125/250 μm to 600/800 μm fibers, typical strip length 5mm
Typical Splice Loss	Typical 0.02dB for identical SM fibers Typical 0.01dB for identical MM fibers
Typical Return Loss	> 60dB
Splice Time	Typical 15 seconds
Heat Oven Shrink Time	Typical 35 seconds without cooling Typical 55 seconds with cooling
TCT, Total Cycle Time (Splice & Shrink Time)	Typical 50 seconds without cooling Typical 70 seconds with cooling
High Strength Splicing	Depending on prep tools 20-40 N (clamping on coating). Equipped with platforms for fiber holders
Arc-check	Automatic compensation for changes in altitude, humidity, temperature, electrode condition etc. Tested up to 4500 m
Sensors	Altitude, temperature and humidity
Power sources	From power supply 90-264 V AC, 50-60Hz or attachable battery (NiMH) 12V DC.
Operating/Storage Environment	0 - 45°C / -10°- 60°C, 0-95% RH (non-condensing)
Splice Programs	36 predefined 100 programmable
Splice Modes	Automatic, semi-automatic or Manual
Storage of splice data	Approx. 1000 splices incl. splice loss, date, programmable file name prefixes and all by the splicer measured/estimated splice data.
Alignment Technique	Cold image, core-to-core detection, center focusing, core with eccentricity compensation, optional cladding to cladding detection
Estimation Technique	Warm image, core-to-core detection, cladding deformation, based on Mode Field Diameter (MFD) mismatch and Micro Bending Theory
Monitor	5" TFT color LCD
Dimensions	180x235x165mm (WxDxH) 180x235x200mm (WxDxH) incl. power supply
Weight	3 kg 3,9 kg, incl. power supply 5,5 kg, incl. battery
External Connectors	VGA compatible monitor output RS232 serial PC communication port Battery charger (power) port