» New Products

High End Fusion Splicers S185HS / S185PM / S185LDF

Figure 1 The appearance of the S185PM.

1. INTRODUCTION

The demand for a high end fusion splicer to be used for the manufacturing of the optical communication equipment and the fiber laser products has been increasing every year. The high end fusion splicer S183PMII, which we have sold so far, was a universal type that is capable of splicing the polarization maintaining fiber and the large core diameter fiber and also capable of making the high strength fusion splice, but it has been reported that “It is too difficult to operate because it is too universal.”, “Size of the equipment is too large.” etc. Therefore, we have developed the series S185HS / S185PM / S185LDF, in which the fusion splice function is limited and the equipment size is greatly reduced. S185HS is a fusion splicer for high strength fusion splice, S185PM is a fusion splicer for the polarization maintaining fiber splice and S185LDF is a fusion splicer for the large core diameter fiber splice.

2. FEATURES

2.1 Compact Size

Figure 1 shows the appearance of the S185PM. Compared with the conventional model S183PMII, the main body has achieved a reduction of 50% by volume and 40% by weight and also, the AC adapter has achieved a reduction of 40% by volume. The portability has been greatly improved and the equipment can be used under various situations because the battery drive (option) became available in addition to the compact size and the light weight.

2.2 The Improvement of the Fusion Splice Performance

The resolution of the centering mechanism used for the alignment of the optical fiber has been improved three times in comparison to the conventional model and more precise axis alignment has become possible. Moreover, the resolution of the optical fiber rotating mechanism necessary for the alignment of the polarization maintaining fiber is also doubled in comparison to the conventional model and the rotatable range is also possible up to 360°, as compared to the conventional 270°. Therefore, a precise and speedy rotational alignment can be performed.

2.3 The Improvement of the Manual Fusion Splice

For optical fibers that are difficult to splice using the image processing, the manual fusion splice function is used. But in the new product, a touch panel is adopted and the optical fiber can be actually moved by touching the arrow indicating the movable direction of the optical fiber. The optical fiber can move forward and backward without switching operation and if you touch the arrow for a short time, the fiber moves one step and if you touch it for a long time, the fiber moves continuously while touching it. (Figure 2)

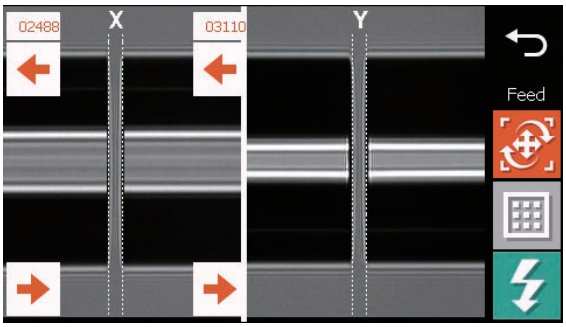

Figure 2 The screen of the manual fusion splicing.

2.4 The Improvement of the Discharge Control Method

In the conventional model, it was necessary to switch the discharge mode to High / Normal in order to obtain the resolution of the discharge intensity and there was a difficult problem to understand the discharge intensity duplicated in each mode. In the new product, the resolution was improved 4 times and made switching of the discharge mode unnecessary.

2.5 The Control by the Smartphone Application

With the PC control application (Splice Data Explorer 2), the screen display and the operation, the reading of the splicing history data, the setting of the fusion splice and the heating conditions and the updating the firmware of the fusion splicer can be performed easily. (Figure 3)

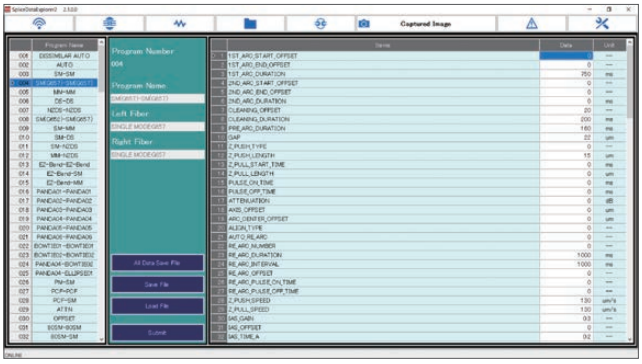

Figure 3 PC control application: Splice Data Explorer 2.

By installing a Wi-Fi adapter in the fusion splicer, the same operation as the PC control application can be performed from a dedicated application of the smartphone (Android / iPhone). The fusion splice / heating conditions can be sent to another user via e-mail or SNS by using the application. If the fusion splice cannot be performed normally, you can also easily transmit the various measured values and optical fiber images. (Figure 4)

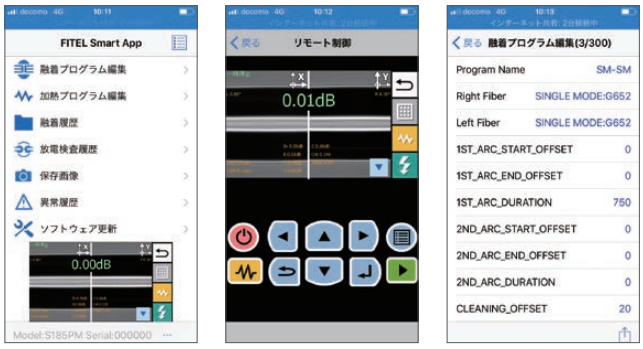

Figure 4 Smartphone control application: FITEL Smart App.

3. MAIN SPECIFICATIONS

Table 1 shows the main product specifications.

Table 1 Main specifications for S185 series.

Item	Specification
Applicable fiber type	SMF, MMF, DSF, NZDSF, BIF, EDF, PCF, etc.
Cladding diameter	80 – 150 µm / 80 – 500 µm (S185LDF)
Coating diameter	160 – 2000 µm / 160 – 1300 µm (S185PM)
Fiber cleave length	3 – 5 mm (coating clamp splicing) 8 – 11 mm (cladding clump splicing)
Splice loss	SMF: 0.014 dB
Typical extinction ratio	-36.8 dB / 0.6 deg. (S185PM)
Typical splice time	SMF: 15 sec.
Battery	Built-in lithium ion battery (option)
Data communication port	USB 2.0 x 2port LAN (10BASE-T) x 1port
Main body dimension	210W x 180D x 150H [mm]
Main body weight	4.5 kg / 4.75 kg (S185PM)

4. SAMMARY

We made the body compact and lightweight by dedicating to a single function and succeeded in developing the high end fusion splicer of the S185 series in which the fusion splice performance was improved by improving the resolution of the alignment, the rotation and the discharge.

We will address the splice of the special optical fiber, which new products are becoming available one after another, by upgrading the firmware and the smartphone application.

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