

## S121A/S121M Fusion Splicers for FTTH Applications

### 1. OUTLINE

In the rapidly expanding field of FTTH services and LANs, simple operation and low cost are required. Accordingly, we have developed and marketed ultra-miniature optical fiber fusion splicers which combine the same low cost as a mechanical splicer with high-quality connections.

### 2. FEATURES

#### 2.1 Appearance

In terminal connection which covers a wide range of installation environments, conventional box-type splicers have not been regarded as the most suitable method for FTTH services, due to the large size of the equipment and difficulty of operation. The adoption of an original T-shaped body enables connections using a minimum of excess fiber length when the splicer's head is inserted into the enclosure, and at the same time allows the user to hold the fusion splicer in one hand when conducting operations in locations with insufficient working space. A 2.5-inch LCD monitor is built into the main body, so that the user can observe the splicing condition.

#### 2.2 Compact, Lightweight Body

The S121A fusion splicer is only one-third the size and weight of Furukawa Electric's previous model. The

unit itself weighs 980 g, or a total of 1,150 g with the removable battery included. Although the S121A does not have loss estimation functions or connection inspection using high-resolution image processing, it does offer all the functions required to increase reliability and ease of connection operations. The drive mechanism has been simplified and the parts count reduced, and parts with the memory function and the operation function have been adopted. The footprint on the substrate was reduced about 1/3 over the past, so that the size of the S121A as a whole could be miniaturized. The compact battery of exclusive use is also a new design.

#### 2.3 Superb Portability

Because of its compact size, light weight and use of a battery for the power supply, the S121A can be carried to various connection locations. The S121A also comes with



Photo 1 Appearance of S121A.



Photo 2 Small body (S121A and S199).



Photo 3 High portability (suspended by strap).

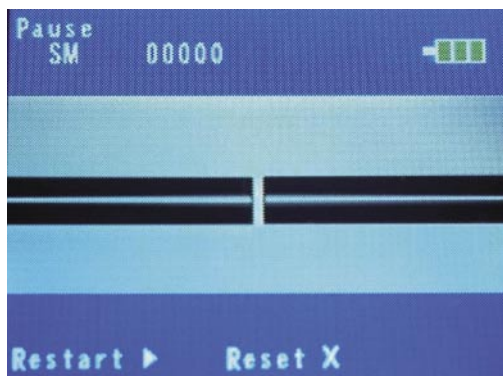


Photo 4 LCD display.



Photo 5 Appearance of S121M.

Table 1 Specifications of S121A.

Item	Specification
Applicable fibers	SM1/MM1
Clad diameter	φ 0.125 mm
Coating diameter	φ 0.25 mm, φ 0.9 mm
Number of splice programs	2 (SM, MM)
Screening force	1.96 N
Working time per splice	13 sec
Strip length	10 mm
Size	140W×196D×95H mm
Weight	980 g (body), 170 g (battery)
DC input voltage	12 V
Number of splices per battery charge	50 times (splicing only)
AC input voltage	100 V~240 V

a standard soft carrying case and strap, so that it can be suspended around the user's neck or attached to a belt, making it as portable as a camera.

#### 2.4 Easy Operation

As in previous models, the use of fiber holders from pre-processing to connection ensures easy operation for any user. Once an optical fiber is set to a splicer, connection is made automatically at the push of a button. An enlarged image of the fiber is displayed using a CCD camera and 2.5-inch LCD monitor, to ensure stable, high-quality connections. The type of optical fiber connection can be switched easily between single-mode fiber and multi-mode fiber by selecting a pre-set connection program. An operation guide and the remaining battery charge are displayed on screen.

#### 2.5 Optional Accessories

Two power supplies are available: a removable, rechargeable battery included as standard equipment, and an optional DC adaptor to allow AC power input. And by attaching an optional heat shrink oven or simple

reinforcement tool to the back of the unit, connections can be strengthened using popular Japanese thermal protection sleeves or the ULTRAsleeve<sup>®</sup>, which is used extensively in the United States.

### 3. PRODUCT SPECIFICATIONS

Very low connection loss is ensured in terminal connections (average 0.1 dB or less in the case of single-mode fiber connections), and operability and reliability are good.

### 4. FUTURE PRODUCT DEPLOYMENT

We added the S121A and S121M splicers to the product lineup in November 2003.

They can be used in the branch portion in front of a terminus, because they can splice from one to four fibers simultaneously.

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† ULTRAsleeve<sup>®</sup> is a registered trademark of The Siemon Company.