

**SPECIFICATION
FOR
POLARIZATION MAINTAINING FIBER
ARC FUSION SPLICER
FSM-20PMII
(TYPE T)**

1. General

This specification covers a polarization maintaining fiber arc fusion splicer, FSM-20PMII(type T), with a built-in monitor and external operation box. The FSM-20PMII(type T) offers fully automatic splice procedure by profile alignment system(PAS) for 3M Tiger fiber as well as Fujikura PANDA fiber.

2. Components

One set of FSM-20PMII(type T) includes the following items.

Item	Description	Q'ty
1	FSM-20PMII(Type T)	1 pc
2	Controller	1 pc
3	AC power cable	1 pc
4	DC power cord for Controller	1 pc
5	Control cord for Controller	1 pc
6	Monitor extension cord	1 pc
7	V-groove for 0.25 mm OD fiber	1 pair
8	V-groove for 0.4 mm OD fiber	1 pair
9	V-groove for 0.9 mm OD fiber	1 pair
10	Sheath clamp for 0.25 mm OD fiber	1 pair
11	Sheath clamp for 0.4 mm OD fiber	1 pair
12	Sheath clamp for 0.9 mm OD fiber	1 pair
13	Fiber guide	2 pcs
14	Spare electrode (ELCT1-25)	1 pair
15	Spare mirror (UDM-01)	1 pc
16	Spare fuse(3.15 A) for splicer	1 pc
17	Spare fuse(0.5A) for controller	1 pc
18	FRP carrying case	1 pc
19	Hexagon wrench (0.89 mm)	1 pc
20	Hexagon wrench (1.5 mm)	1 pc
21	Tweezers	1 pc
22	Instruction manual(English)	1 pc

3. Specifications

3.1 Applicable optical fibers

Fiber material	Silica base
Fiber type	Singlemode fiber, Graded index fiber, and Polarization maintaining fiber
Cladding diameter	125 μ m and 80 μ m By switching the position of the spring plate of the fiber clamp, fiber clamping strength can be optimized.
Coating diameter	0.25 mm, 0.4 mm and 0.9 mm with respective set of sheath clamp and sheath V-groove.

3.2 Fiber cleaved length

- 16 mm for 0.4 mm and 0.9 mm OD fiber
- 10 to 16 mm for 0.25 mm OD fiber

3.2 Fiber alignment method

3.2.1 Polarization maintaining fibers

Other than manual fiber alignment, the following aligning method can be used.

Method 1) Fiber to fiber axial(X and Y) and angular(θ) alignment by PAS
 (P1 mode) Applicable fiber is Fujikura PANDA fiber and 3M Tiger fiber for this method.
 Mode No. and applicable fiber combinations are shown in the following table.

Mode	Fibers to be spliced	
	Left	Right
P1-PP	PANDA fiber	PANDA fiber
P1-PT	PANDA fiber	Tiger fiber
P1-TP	Tiger fiber	PANDA fiber
P1 TT	Tiger fiber	Tiger fiber

Method 2) Core to core axial alignment(X and Y) by Remote Injection and
 (P2 mode) Detection System(RIDS) with an external power meter and light source, and angular(θ) alignment by PAS
 Applicable fiber is Fujikura PANDA fiber and 3M Tiger fiber for this method.
 Mode No. and applicable fiber combinations are shown in the following table.

Mode	Fibers to be spliced	
	Left	Right
P2-PP	PANDA fiber	PANDA fiber
P2-PT	PANDA fiber	Tiger fiber
P2-TP	Tiger fiber	PANDA fiber
P2 TT	Tiger fiber	Tiger fiber

Method 3) Core to core axial alignment(X and Y) and angular(θ) alignment by
 (P3 mode) RIDS with an external power meter and light source.
 In addition, polarizer and analyzer are also required for this method.
 Any kinds of polarization maintaining fiber can be applied for this
 method.

Mode	Fibers to be spliced	
	Left	Right
P3	Any fiber	Any fiber

For P2 mode and P3 mode, the following power meter is required as well as light source.

Power meter : ML9001A
 Sensor : MA9612A
 Manufacturer : Anritsu

3.2.2 Singlemode fiber

Core to core axial(X and Y) alignment by PAS

3.2.3 Mutimode fiber

Fiber to fiber axial (X and Y) alignment by PAS

3.3 Splice loss(Identical fiber combination and concentricity error of less than $0.3 \mu m$)

Typical 0.07 dB with PANDA fiber
 Typical 0.07 dB with Tiger fiber
 Typical 0.03 dB with singlemode fiber
 Typical 0.02 dB with multimode fiber

3.4 Extinction ratio

>30 dB with PANDA fiber to PANDA fiber, or Tiger fiber to Tiger fiber
 >27 dB with Panda to Tiger fiber

3.5 Splice time (typical)

P1-PP mode :	180 sec.
P1-PT mode /P1-TP mode :	360 sec.
P1 TT mode :	270 sec.
SM mode /MM mode :	60 sec.

3.6 Automatic altitude compensation range

0 to 3,500m

3.7 Displayed language

English

3.8 Monitor

Built-in 4" LCD monitor

It is also available to remove the monitor from the body and place it on a table for customer's convenient.

3.9 Interface

RS-232C port for controller

Video out terminal (RCA jack, NTSC signal)

DC out for controller

GP-IB port for a power meter (for RIDS alignment)

3.10 Dimensions

325(W) x 210(D) x 143(H) mm

3.11 Weight

12 kg

3.12 Power supply

AC 100 to 240 V, 50 to 60Hz

3.13 Operating temperature/Humidity

-10 to +50 °C

3.14 Operating humidity

< 95 % RH, non-condensing