

SHAPING THE FUTURE WITH "TSUNAGU" TECHNOLOGY.

# FUJIKURA NEWS

**P**  
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FUJIKURA

## Release of New Core Alignment Fusion Splicer 90S



Fujikura, as a leading company in developing core alignment fusion splicers over 30 years, has released multifunctional products onto the global market ahead of other companies.

The newly released core alignment fusion splicer, the 90S, includes various functions to reduce splicing time and improve workability under a concept, "faster with higher precision," from the standpoint of customers involved in splicing. Specifically, since the basic design of the automatic open/close wind protector and automatic open/close heater, inherited from its predecessor, the 70S, underwent a review, the reaction time of these parts has become much faster. Improvements have also been made to the structure to match the protector sleeve to the fusion splice point, wireless communication with the optical fiber cutter, and the carrying case containing a work tray. The newly designed work tray is separable and can be reassembled according to use environments. In addition, the 90S does not need any additional parts to connect 900  $\mu$ m fibers with a loose tube structure or drop cables together.

The new fusion splicer identifies the type of the optical fiber before splicing and splices the fibers in optimal discharge conditions according to each optical fiber type. The intensity of discharge is monitored all the time by processing of the image and calibrated real time. The product ensures that customers do their work fast with precision.

### Main features

- Low-loss connection achieved by core alignment technology
- Automatic optical fiber identifying function
- Real-time calibration of discharge intensity
- Installation of automatic open/close wind protector and automatic open/close heater
- Protector sleeve positioning function
- Built-in separable, multifunctional, large-capacity work tray
- Incorporation of switching function for loose tube
- Automatic revolving function of optical fiber cutter blade



● Work tray



● 90S body



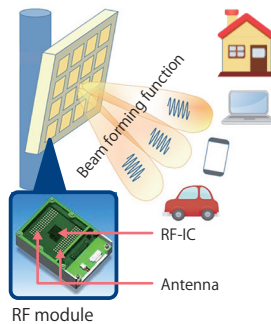
● Carrying case

# Fujikura's "Tsunagu" (connecting) Technology to support 5G

## 28 GHz RF module

Start of developing 28 GHz-band RF module for 5G

### RF module (RF-IC inside)



The application areas include high-definition image transfer, IoT connection, and V2X

Achievement of large-capacity communication in millimeter wave such as 28 GHz.

- Achievement of communication speed equivalent to wired broad band
- Acquisition of Millimeter-wave RF-IC technology license for 5G from IBM. RF module being developed by integrating IBM's chip and package design with Fujikura's circuit board technology and antenna technology



The fifth generation wireless technology for digital cellular network or 5G is the next generation mobile communication system characterized by ultra-high speed, simultaneous multiple connection and low latency. A future society, Society 5.0; where everything in the communication world is connected together, and real world and cyber space are united; is expected to solve social problems using big data, AI, and IoT. To realize Society 5.0, 5G is indispensable.

Technological development to use 28 GHz as the wireless range is needed for 5G to allow high-speed large-capacity communication, which is about 20 times higher than 4G in speed and capacity. Moreover, optical networks to connect base stations need not only to achieve higher-speed larger-capacity communication but also to be effectively constructed. This requires further reduction in loss, miniaturization, densification, and improvement in installation. Fujikura is committed to contributing to society through our Tsunagu (connecting) technology to support 5G.

## Connector for power supply (or base station)

One-touch-lock connector free of controlling tightening torque

### DCA3102



- Fitting method: bayonet
- Rated current: Max. 150 A/pin
- Dust and water proof: IP67

## Connector for power supply and control (for base station)

AISG (IEC60130-9)-compliant connector used in determining inclination angle of antenna

### AIC

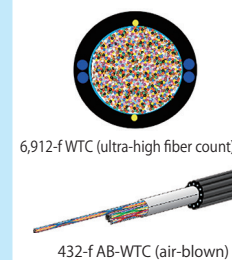


- Fitting method: screw
- Rated current: Max. 5 A/pin
- Dust and water proof: IP67

## High-density SWR®/WTC® optical cable

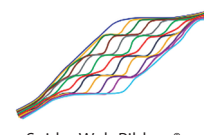
Small cable diameter enabling effective use of facilities such as conduits, reducing total installation costs

### WTC (Wrapping Tube Cable®)



- Small diameter and lightweight
- Outer diameter of 35 mm for 6,912-fiber (f hereafter) cable
- Achievement of 9.5 mm outer diameter for 432-f air-blown cable

### SWR (Spider Web Ribbon®)



- Flexible web ribbons enabling high-density packing
- One-time ribbon splicing possible
- Easy division into single fibers

## Ultra-low-loss MPO Optical Connector with 12 fibers/24 fibers

Ultra-low-loss MPO optical connector with enhanced workability by one-time multi-fiber splicing, thus allowing high-density packing

### Ultra-low-loss MPO products: Insertion loss 0.2 dB or lower



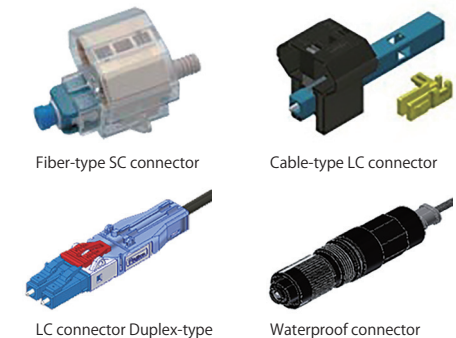
- Multi-fiber MPO connector with extremely low level of loss equivalent to single-mode optical connector by high-precision resin formation technology
- High-density installation available by one-time multi-fiber packing

In the future, the cable will fit various connection types, including outdoor multi-fiber optical connectors, in edge computers,

## Optical connector FAST® installable at worksite

Connector with easy connection to optical fiber at worksite and thus increased workability

### Field-installable optical connector FAST®



- Reduced installation work while antenna and base station for 5G increasing in number
- Wide product lineup and stable quality
- Sufficient performance for FTtx with world's recognition





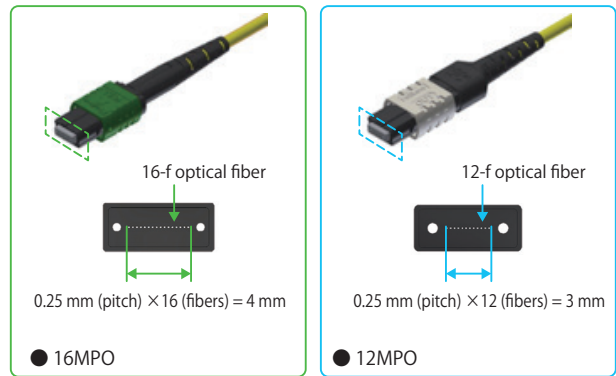
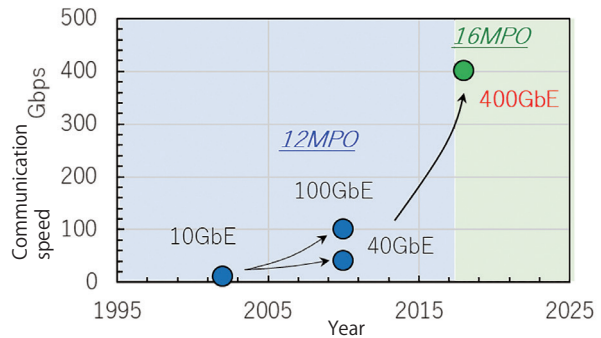
# One-row 16-fiber Ultra-low-loss MPO Connector for Single-mode Optical Fiber



Today, communication data volume has rapidly been increasing because of the introduction of Cloud computing and different services such as 5G. In step with this, data centers, which are equipped with a lot of communication devices and optical fibers, extensively use multi-fiber optical connectors that can be connected to high-density multi-fiber optical fibers to economically construct optical fiber networks. In addition, the data transfer speed of communication devices is being changed to 400 GbE (Gigabit Ethernet), which enables higher-speed larger-capacity communication, from the current 40/100 GbE. For 400 GbE, 1-row 16-fiber MPO connectors are required as a multi-fiber optical connector interface used for communication in addition to existing one-row 12-fiber MPO connectors. The standardization of the new connector is being discussed at IEC.

In June 2019, Fujikura released a 1-row 12-fiber-based (12 fibers/24 fibers) ultra-low-loss MPO connector with an ultra-low-loss connection characteristic (0.2 dB or lower), the same level as a single-fiber optical connector. This connector also offers excellent connection/disconnection stability. Applying the technology of the connector, we have developed a 1-row 16-fiber ultra-low-loss MPO connector and are going to release it. The stable ultra-low-loss characteristic of this product supports smooth construction of 1-row 16-fiber-based networks. In addition, the new product has achieved low-loss connectivity similar to a single-fiber optical connector while retaining features of multi-fiber optical connectors including high-density packing by one-time multi-fiber packing and reduced installation time. With such high versatility of use, the product is expected to be used in different places in networks.

## Roadmap to Ethernet standardization



Item	Feature
Fiber type	Single mode
Fiber count	12, 24
	16 <span style="background-color: #0056b3; color: white; padding: 2px;">NEW</span>
Connection loss	0.2 dB or lower
Interface	12 fiber, 24 fiber
	IEC61754-7 compliant For 16 fiber, formulating specification under discussion

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