

Launch of New Core Alignment Fusion Splicer and New Optical Fiber Cleaver

Fujikura Ltd. has started sales of the new core alignment fusion splicer 100S and the new optical fiber cleaver CT60.

The 100S is a core alignment fusion splicer designed for splicing low-loss optical fibers suitable for long-distance transmission. By combining the new optical fiber cleaver CT60 with the single fiber stripper SS05, the splicing work time can be reduced by 20%*1.

The single fiber stripper SS05 is capable of simultaneously removing the coating from two optical fibers. When combined with the new optical fiber cleaver CT60, which allows simultaneous cutting of two fibers, it helps reduce preparation time.

In addition, it features a Splice Coach function that provides guidance on the splicing process, enabling smooth operation even by less experienced operators. Furthermore, it is equipped with a GPS function that records splicing inspection results along with location information, enhancing construction management efficiency and traceability. This data can be downloaded to a smartphone via the smartphones app "Splice+"*2.

In addition to these new functions, it also retains features of the previous model, such as the automatic

wind protector opening and closing function, ACTIVE FUSION CONTROL TECHNOLOGY*3 which automatically controls discharge conditions, and ACTIVE BLADE MANAGEMENT TECHNOLOGY*4 which wirelessly manages the optical fiber cleaver's blade condition, ensuring stable, low-loss splicing performance.

The CT60 has also been improved by redesigning its mechanical components, resulting in more stable cutting quality compared with the previous model. It is equipped with an adjustable lever opening angle mechanism that opens wider for desk use and smaller for handheld use, pursuing operability in various working environments.

Moreover, the CT60 inherits the automatic blade rotation function driven by a motor from the previous model, which automatically rotates worn cutting edges.

By adopting a newly developed, highly wear-resistant blade, the CT60 eliminates the need for blade height adjustment required in the previous model.

Product Website
Core Alignment Fusion Splicer 100S Kit | Fujikura



*1 Approx. 20% reduction in optical fiber fusion splicing work time: Based on comparison with our previous model. Test results obtained by our company under specific conditions.

*2 Smartphone app "Splice+": A free utility application designed for use with our optical fiber fusion splicers. Once installed on a smartphone, the app allows users to check fusion splicing data and the number of cuts made by the optical fiber cleaver, and change the heating temperature settings of the tools. (Communication charges apply separately.)

*3 ACTIVE FUSION CONTROL TECHNOLOGY: A function that analyzes the condition of fiber end faces before fusion splicing and the thermal luminescence intensity of fibers during discharge, enabling real-time control of the discharge conditions.

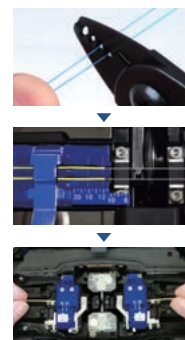
*4 ACTIVE BLADE MANAGEMENT TECHNOLOGY: A function in which the fusion splicer monitors the condition of the optical fiber cleaver blade and, upon detecting blade wear, automatically rotates the blade via wireless communication.



Core Alignment Fusion Splicer 100S



Optical Fiber Cleaver CT60



Work on two optical fibers simultaneously.

■ Points relevant to the 17 SDGs

In anticipation of the advancement of new social infrastructure, such as IoT and smart cities, as well as the acceleration and increased capacity of communications driven by advances in AI technology and expanding demand, we will contribute to the development of next-generation communication infrastructure and the digitalization of society.



Introduction of the 4-Row Board-to-Board Connector FB175B5 Series

As mobile and wearable devices continue to become smaller and more sophisticated, the need for compact and high-density connectors has grown to cope with the increasing number of wires associated with space-saving and high-functionality inside electronic devices.

In response to these market trends, we have developed the new ultra-high-density 4-row board-to-board connector series FB175B5.

By changing from the conventional 2-row structure to a 4-row structure, the mating pitch has been reduced by half, from 0.35 mm to 0.175 mm.

Although the mating pitch is reduced by half, the FB175B5 series maintains the same mounting pitch as the conventional product, ensuring equivalent mountability as the conventional product.

As a result, for a 64-signal-contact equivalent connector, the footprint on the PCB has been reduced by

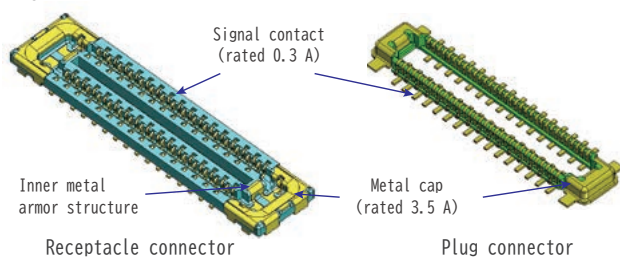
approximately 30% compared with conventional products, providing greater design flexibility in limited spaces.

The connector is also equipped with a metal cap capable of carrying up to 3.5 A, which prevents resin damage during mating and achieves high connection reliability even under harsh operating conditions. The metal area has been enlarged to further increase strength. In addition, the connector adopts an Inner Metal Armor Structure* to ensure high durability.

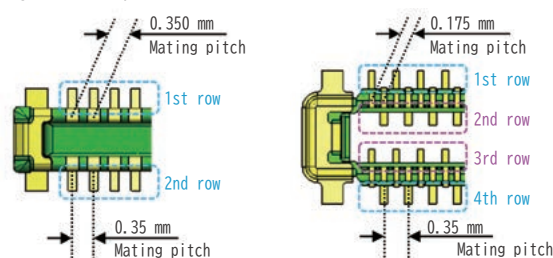
Combining ultra-high-density design with high reliability, the FB175B5 series serves as a new connector solution that expands the potential of next-generation mobile and wearable devices and contributes to the development of a wide range of future products.

* Inner metal armor structure: a design where metal is positioned at the center of a receptacle connector

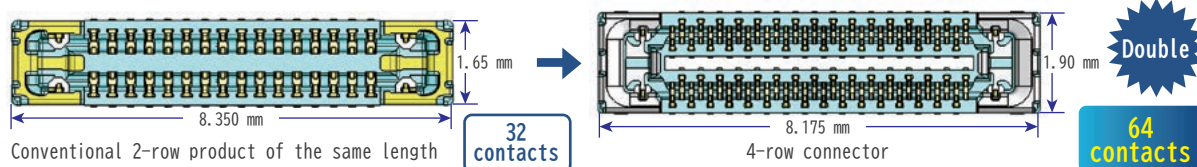
■ Figure 1: Connector mechanism



■ Figure 2: Comparison of 2-row and 4-row structures



■ Figure 3: Comparison of contact count with a conventional 2-row, 0.35 mm-pitch product of equal length



■ Table 1: Specifications

	Current product	New product
Series	FB35AT5	FB175B5
Mating height	0.5 mm	
Width	1.65 mm	1.90 mm
Footprint	23.01 mm ² (for a 64-signal-contact equivalent)	15.53 mm ² (for a 64-signal-contact)
Rated voltage	30 V AC (r.m.s.) / DC 30 V	
Rated current	Signal contact : 0.4 A/pin Metal cap : 3.0 A/pin	Signal contact : 0.3 A/pin Metal cap : 3.5 A/pin
Withstand voltage	200 V AC (r.m.s.)/minute	
Dielectric resistance	100 MΩ at 200 V DC or more	
Contact resistance	Signal contact: 30 mΩ or less Metal cap: 20 mΩ or less	
Operating temperature range	-40 °C ~ +85 °C	
Number of contacts	Signal contact : 64 contacts Metal cap : 2 contacts	Signal contact : 48,64 contacts Metal cap : 2 contacts

■ Points relevant to the 17 SDGs

We contribute to the advancement of mobile and wearable devices by enhancing design flexibility with our high-density board-to-board connectors, leveraging our technological expertise.



✉ Connector Division : connector@jp.fujikura.com

Expansion of the Size Lineup for Water-Proof High-Voltage Fire-Proof Cables

Fujikura Dia Cable's water-proof high-voltage fire-proof cable (6600V NH-FP(WP)-T) was released in April 2024 with four sizes: 150, 200, 250, and 325 mm².

Since its release, the cable has received significant feedback from customers and resulted in numerous orders. At the same time, there were requests for smaller sizes. In response, we obtained the necessary fire-proof certifications from the registered certification bodies and, in September 2025, added three additional sizes – 38, 60, and 100 mm² – to the lineup.

The certification documents for the additional sizes are shown in Figure 1, and the cable construction dimensions and characteristics are listed in Table 1.

In addition, a straight joint sections by 3M Japan Limited, that can be used in combination with the water-proof high-voltage fire-proof cable has already been evaluated and certified.

Owing to the adoption of a water-blocking sheath, the water-proof high-voltage fire-proof cable provides long-term reliability in a variety of environments, contributing to the robustness and safety enhancement of electrical infrastructure and disaster-prevention equipment. Furthermore, measures such as shield copper tape breakage prevention have been implemented to mitigate electrical faults and accidents during operation. The expanded size lineup is expected to further contribute to the construction of a disaster prevention and mitigation society.

*Published in Fujikura News No. 496 (March 2024 issue)

■ Figure 1: Cable certification document



■ Table 1: Structure, dimensions, and characteristics of water-proof high-voltage fire-proof cable

Conductor			Insulation thickness mm	Insulation outer diameter mm	Shield copper tape thickness Approx. mm	Sheath thickness mm	Core outer diameter Approx. mm	Finished outer diameter Approx. mm	Approximate mass kg / km	Test voltage kV	Maximum conductor resistance (20 °C) Ω/km	Minimum insulation resistance MΩ · km	Capacitance (reference) μF/km
Nominal cross-sectional area mm ²	Shape	Outer diameter mm											
38	Circular compression	7.3	4.0	18.3	0.1	2.3	25	53	2,900	17	0.491	2,000	0.20
60	Circular compression	9.3	4.0	20.3	0.1	2.5	27	59	3,810	17	0.311	2,000	0.24
100	Circular compression	12.0	4.0	23.0	0.1	2.6	30	65	5,280	17	0.187	1,500	0.28
150	Circular compression	14.7	4.0	25.7	0.1	2.8	33	71	6,960	17	0.124	1,500	0.33
200	Circular compression	17.0	4.5	29.0	0.1	3.0	37	79	8,890	17	0.0933	1,500	0.34
250	Circular compression	19.0	4.5	31.0	0.1	3.2	40	85	10,690	17	0.0754	1,500	0.37
325	Circular compression	21.7	4.5	33.7	0.1	3.4	43	91	13,220	17	0.0579	1,500	0.41

■ Points relevant to the 17 SDGs

By expanding the lineup to meet customer needs, we can expect to contribute even more to the creation of a disaster prevention and mitigation society.



✉ Fujikura Dia Cable Ltd. : <http://www.fujikura-dia.co.jp/contact>

Selected for the NEDO “Research and Development Project of the Enhanced Infrastructures for Post-5G Information and Communication Systems / Accelerated Development Toward Industrialization of Quantum Computers (Grant Program)”

Fujikura has been selected for the NEDO (New Energy and Industrial Technology Development Organization) “Research and Development Project of the Enhanced Infrastructures for Post-5G Information and Communication Systems / Accelerated Development Toward Industrialization of Quantum Computers (Grant Program),” based on the company’s proposal on “Low-Temperature Operation Compact Cables and Connectors.”

This project will be conducted jointly with Toshiba Corporation (Representative Director, Corporate Officer, President & CEO: Taro Shimada), the National Institute of Advanced Industrial Science and Technology (President: Kazuhiko Ishimura), and Utsunomiya University (President: Tsukasa Ikeda).

Quantum computers are expected to serve as a new computational platform that surpasses the limitations of conventional computers, with applications in areas such as drug discovery and finance. Countries worldwide are actively developing quantum computers with performance and scale suitable for industrial use.

Among them, superconducting quantum computers, which are leading in terms of social implementation, require wiring materials that can operate reliably at cryogenic conditions, support high-density configurations for large-scale systems, and allow efficient assembly.

Achieving both technological sophistication and mass productivity in these areas is a key challenge.

Fujikura supplies high-quality wires and cables across a wide range of industries, including telecommunications, automotive, and energy. In the electronics sector, the company has provided high-density cables and compact connectors, contributing to enhanced usability of electronic devices.

In this R&D project, Fujikura will leverage its expertise in fine wiring, precision processing, and splicing technologies to develop and study manufacturing methods for various wiring modules required for superconducting quantum computers, including the following:

- 1) Superconducting high-density flat cables and connectors
- 2) Normal-conducting high-density flat cables and connectors
- 3) Ultra-fine coaxial cables and connectors

These wiring modules will enable high-density wiring and stable high-frequency signal transmission under cryogenic conditions required for superconducting quantum computers, thereby contributing to scaling up quantum computers and accelerating their implementation in society.

Determination of the Implementation Framework for the “Research and Development Project of the Enhanced Infrastructures for Post-5G Information and Communication Systems / Accelerated Development Toward Industrialization of Quantum Computers and Human Resource Development Project Related to the Industrialization of Quantum Computers”

https://www.nedo.go.jp/koubo/CD3_100396.html



Details of project adoption

<https://www.nedo.go.jp/content/800029601.pdf>



■ Points relevant to the 17 SDGs

By leveraging our advanced technologies in fine wiring, precision machining, and splicing, we aim to provide compact cables and connectors capable of low-temperature operation, thereby contributing to the acceleration of development toward the large-scale implementation and industrialization of quantum computers.



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