

FUJIKURA NEWS 7

2020 No.467

Fujikura Modern history -3

World-class Invention of Left/Right-hand Lay

After the economic boom in 1958-1961 and the Olympic Games, Fujikura cost reduction amid competition with imported electric lines accompanied by free trade. In addition, as a result of implementing VA (value analysis) aggressively, the sales, which had suffered a decline, surged to exceed the 10 billion yen mark in 1964. Cable technology development by Fujikura steadily progressed and revolutionized the manufacturing method, which the industry had long dreamed of. SZ alternate twisting developed by former Executive Vice President Masamichi Yoshimura became the best world-class invention, granted the patent in over 10 countries and the Okochi Memorial Technology Award.



Masamichi Yoshimura granted the 14th Okochi Memorial Technology Award (1968)

Power & Telecom

Release of Ultra-high-fiber-count Optical Cable Splicing Rack



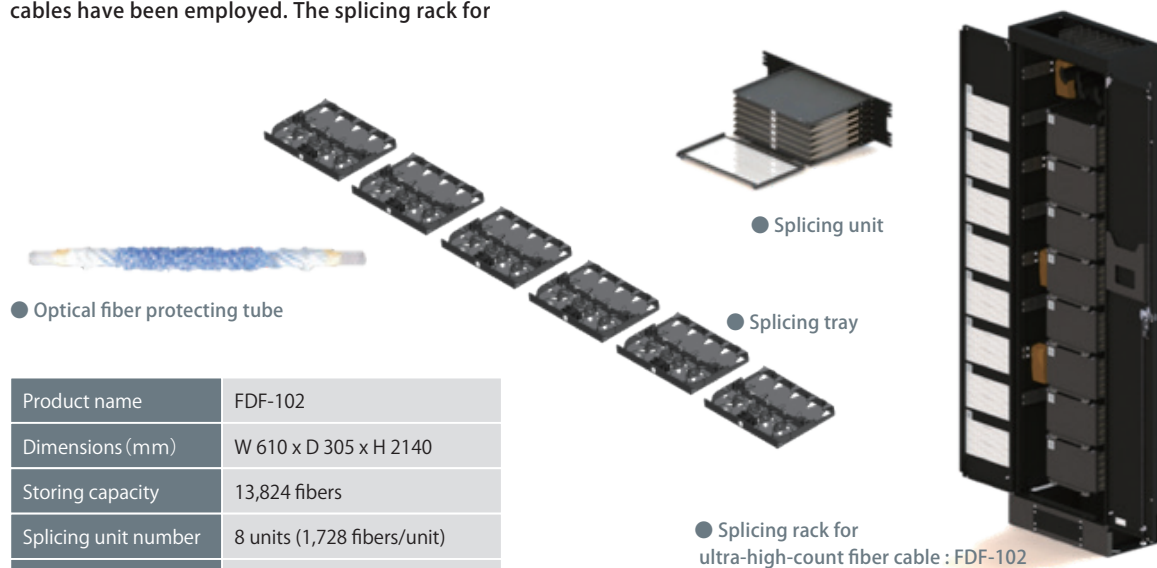
Fujikura has started the sales of a splicing rack for ultra-high-fiber-count optical cables. This product is made to accommodate a maximum of 13,824 optical fibers while miniaturized as much as possible by devising the tray size to contain optical fibers and wiring and storing in the rack. In addition, a new concept of using optical fiber protecting tubes and detachable optical fiber holding trays allows more than one operator to splice ultra-high-fiber-count optical fibers at the same time to decrease working time.

In recent years, as an increasing number of datacenters have been built, more ultra-high-fiber-count optical cables have been employed. The splicing rack for

ultra-high-fiber-count optic cables is essential to efficiently splice and divide the Fujikura-made cables such as Wrapping Tube Cable®(WTC®) with 3,456 fibers and 6,912 fibers.

We actively develop splicing racks that can be installed outdoors and on walls as well as indoors. The use of the same material that is used in this ultra-high-count optical cable splicing rack enables the same workability and reduce working time. We will push forward with the development of advanced products making it possible to splice and terminate ultra-high-fiber-count optical cables.

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Product name	FDF-102
Dimensions (mm)	W 610 x D 305 x H 2140
Storing capacity	13,824 fibers
Splicing unit number	8 units (1,728 fibers/unit)
Splicing tray	288 fiber splicing
Application	indoors/front maintenance

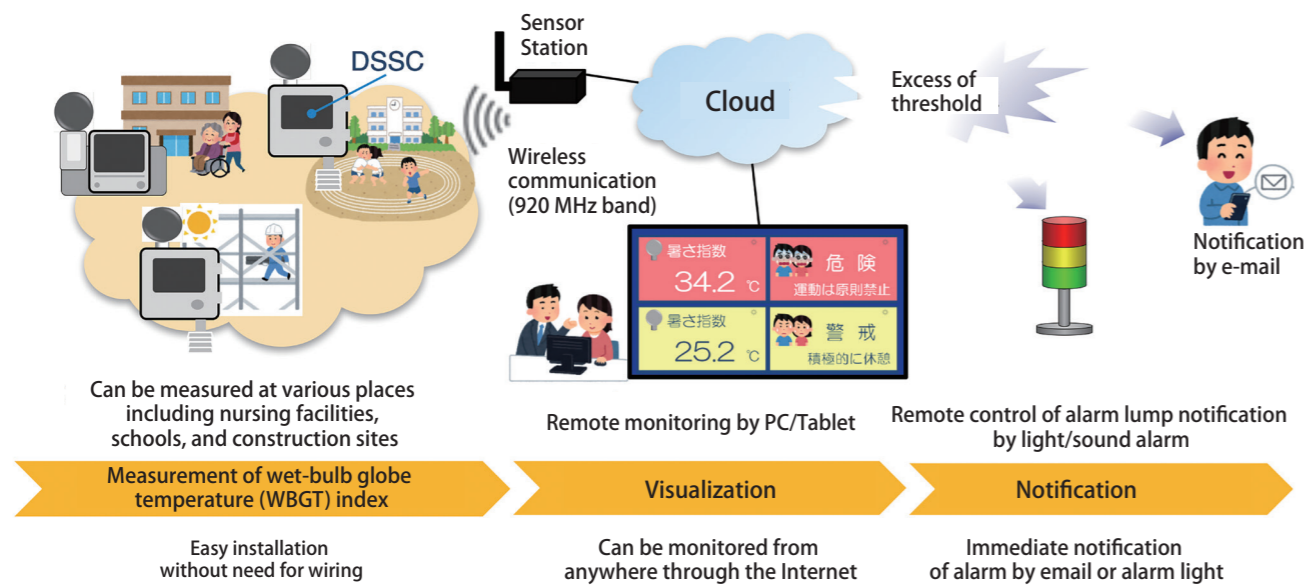
IoT Solution for Heatstroke Prevention

In recent years, the increase in the number of emergency transporters for heat stroke has become one of the issues related to the safety of daily life, and the awareness of related ministries and local governments is increasing. To solve this problem, various measures such as measuring the heat index are being studied. The heat index (WBGT) is a widely used index for the prevention of heat stroke. This heat index varies greatly depending on the environment, such as schools, construction sites, and nursing homes, so it is important to make detailed observations at individual locations to prevent heat stroke.

Visualization of WBGT index by IoT, plus warning of danger with alarm system

Easy installation of sensor node without wiring work

System structure



Verification by field testing

Fujikura and Nippon Telegraph and Telephone West Corporation (NTT West) have carried out the verification testing on the WBGT index sensor system in Fukuoka City (Kirin Nursery School, Imazu Sports Park), and Suita City Minamisenri Junior High School since 2018. Fujikura also installed the sensor system in NTT West's (Fukuoka, Kumamoto) office buildings for demonstrations. We verified that the notification by emails and flashing lights in addition to real-time display of measurement data on PCs and smartphones can call for customers' awareness of preventing heatstroke and attract their attention in real time.



● verification testing by indoor node



● verification testing by outdoor node

Special Feature of IoT Solution for Heatstroke Prevention



WBGT index sensor node



Outer dimensions of outdoor sensor node: approx. 153 (W) x 334 (H) x 103 mm (D)



Outer dimensions of indoor sensor node: approx. 149 (W) x 141 (H) x 43 mm (D)

● No replacing battery required and easy installation

Sensor nodes self-powered by Dye-sensitized Solar Cell which is an energy harvester realizes a completely wiring-less and maintenance-free sensor network.

● Product lineup for indoor and outdoor use

User can choose indoor nodes or outdoor nodes depending on an installation place, and the outdoor device complies with the waterproof standard, IPX4.

● Accurate WBGT index

The device employs a globe temperature sensor measuring radiation heat, and it contributes accurate WBGT measurement (compliant with JISB7922 class 2). This globe temperature sensor measures the radiation heat from direct sunlight and others.

● Applicable to various cases by the choice of two kinds of wireless radio types

We offer both multi-hop communication model with high obstacle avoiding capabilities and LoRaWANTM communication model performing long-distance communication distance from several hundred meters to 10 km at the line-of-sight condition.

Cloud application for visualization

This is a Cloud application specialized in visualizing data measured by the sensor system on the Internet.

● Remote monitoring

Collected data can be checked in real time from anywhere with PCs or smartphones.

● Data collection and storage function

The average, maximum, and minimum values of measured data can be calculated in real time and referred to as historical data.

● Various notification function

It is possible to set a "threshold" for the measured data and send a warning by "email" or "patrol lamp" when exceeding.

● Flexible display design

Templates for WBGT visualization screen can be modified flexibly responding to users' requests such as changes in colors or messages.

Construction site



School

Nursing facility



● Example of visualized application screen

DFAC Series

Expanded lineup of board-to-board connectors for industry use



We have developed 0.6 mm-pitch board-to-board connectors, the DFAC series, for industrial equipment. The DFAC series embody the concept of adding grand tab and saving space.

Feature

1 The connector is compact while having grand tabs on both sides.

(Comparison to a Fujikura product: plug 10%, receptacle 45% reductions)

Connector dimensions

Unit: mm

		Number of contacts	W	D	H
Plug	Straight	50 contacts	21.4	6.5	14.7
		70 contacts	27.4	6.5	14.7
Right angle		50 contacts	21	7.8	10.2
Receptacle		50 contacts	19	5.2	7.8
		70 contacts	25	5.2	7.8

2 Mating Combination

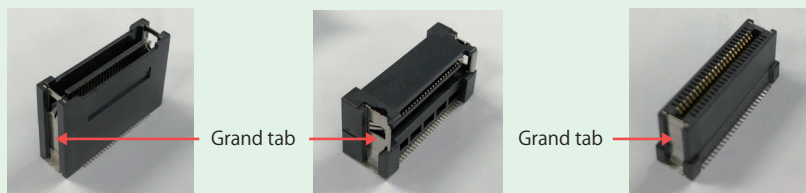
Number of contacts	Mating Combination	Stacking height
50 contacts / 70 contacts	Straight plug-straight receptacle	18 mm
50 contacts	Right angle plug-straight receptacle	—

3 Proved two-point-contact structure (contact at two points of roll surface and punching face)

Specifications

Rated voltage	50 V AC (r.m.s.)	Contact resistance	100 mΩ max. (Initial)
Rated current	0.5 A /contact	Operating temperature range	-55 °C to 105 °C
Dielectric withstand voltage	150 V AC (r.m.s)/minute	Grand tab	2 pin (Fixed tab with ground)
Insulation resistance	100 MΩ min. at 100 V DC		

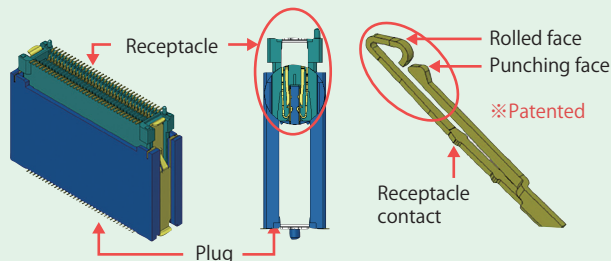
Appearance of connector



● Straight plug

● Right angle plug

● Straight receptacle



Two-point contact structure

Improve of highly reliable two-point contact structure by securing contact at rolled face in addition to punching face despite limited dimensions.

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