

5.0 mm pitch
waterproof connector

FW SERIES



KEL

FW SERIES

P TYPE/B TYPE



**5.0 mm pitch
waterproof connector**

KEL has developed a waterproof connector "FW series" based on know-how of crimp connectors that have been commercialized. For examples, KEL drawer connectors FA & FAS series and KEL two cable crimp connectors FTC series are the result of meeting the needs of customers by adding unprecedented functions. KEL further evolved the know-how and ideas cultivated in the development of crimp connectors and realized the commercialization of "waterproof connector" as our new field.

KEL waterproof connector FW series conformed IP67 standard by the industry's smallest class height and size and commercialized 3 point contact stable connection with the same shape contacts on the plug side and the receptacle side.

KEL waterproof connector FW series will support customers' future new design with innovative specifications.

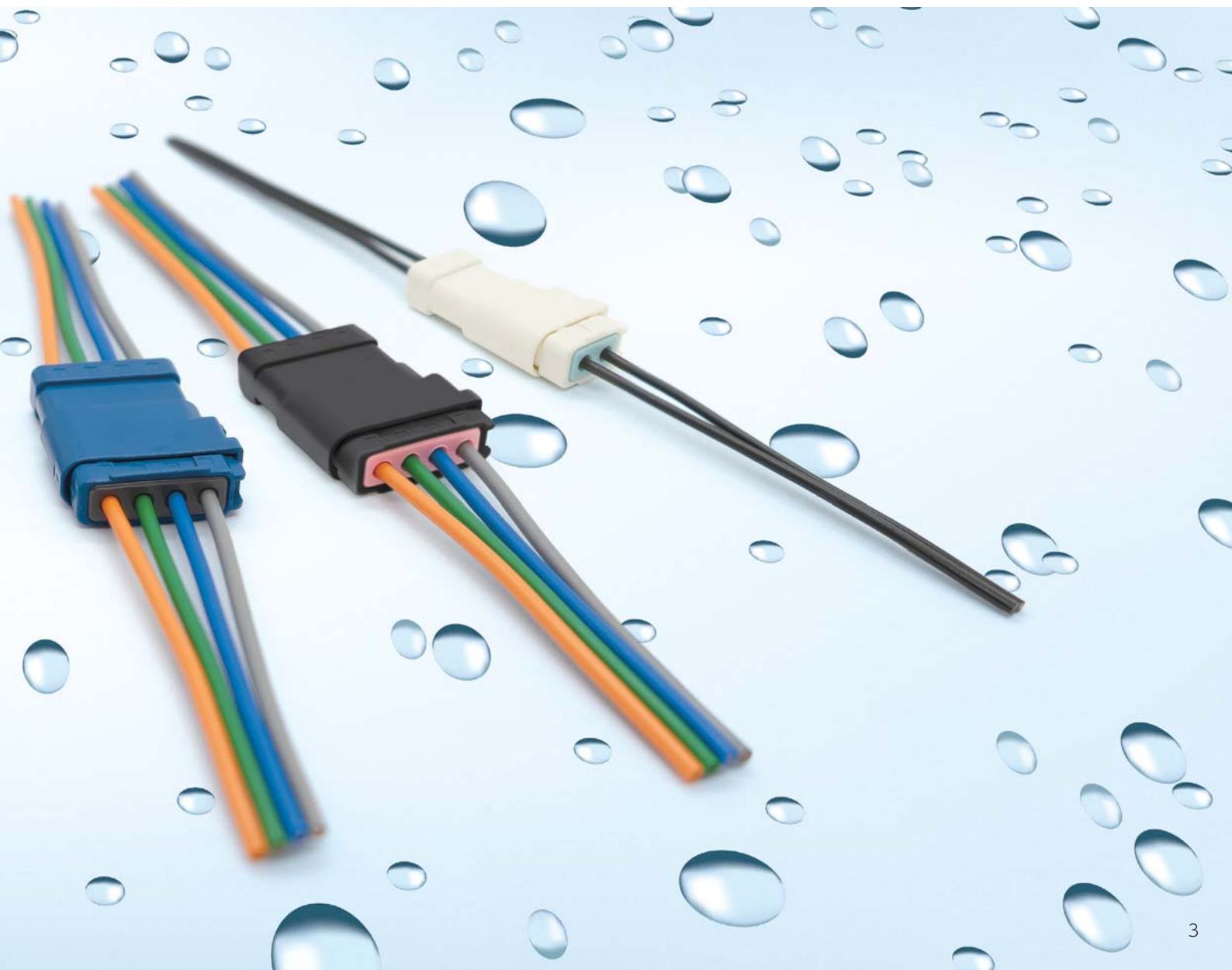
The next generation small waterproof



Product features

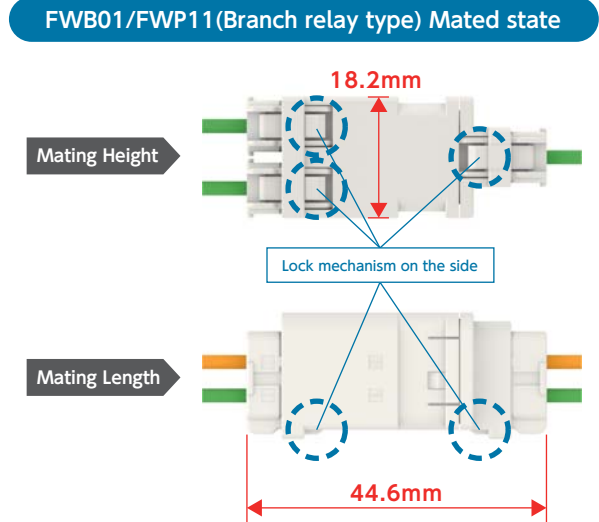
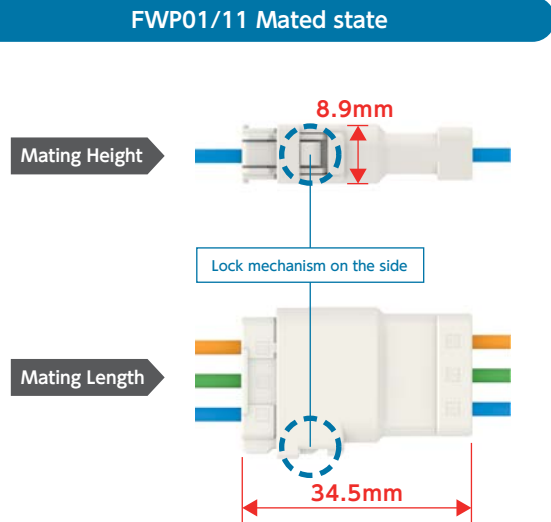
- 1** Industry's smallest class dimensions with 5.0 mm pitch waterproof connector.
- 2** Can be attached anywhere with binding band.
- 3** High reliability design with 3 point contact structure. KEL's original contacts on the plug side and the receptacle side have the same shape.
- 4** Connector structure realizing improvement in assembly workability.
- 5** Robust lock mechanism with reliable click feel.

connector.

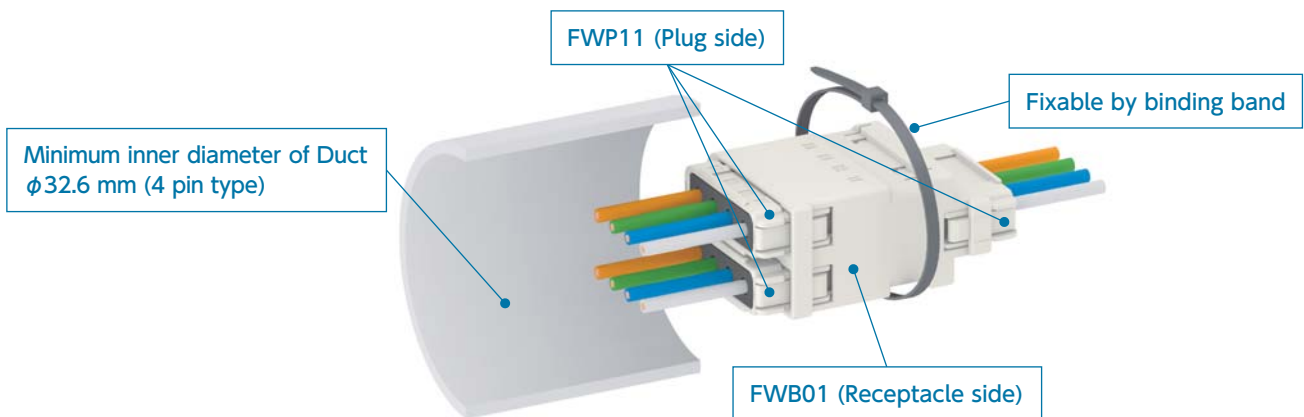


1 Industry's smallest class dimensions with 5.0 mm pitch waterproof connector.

- 5.0 mm pitch waterproof connector achieves the industry's smallest class height and length.

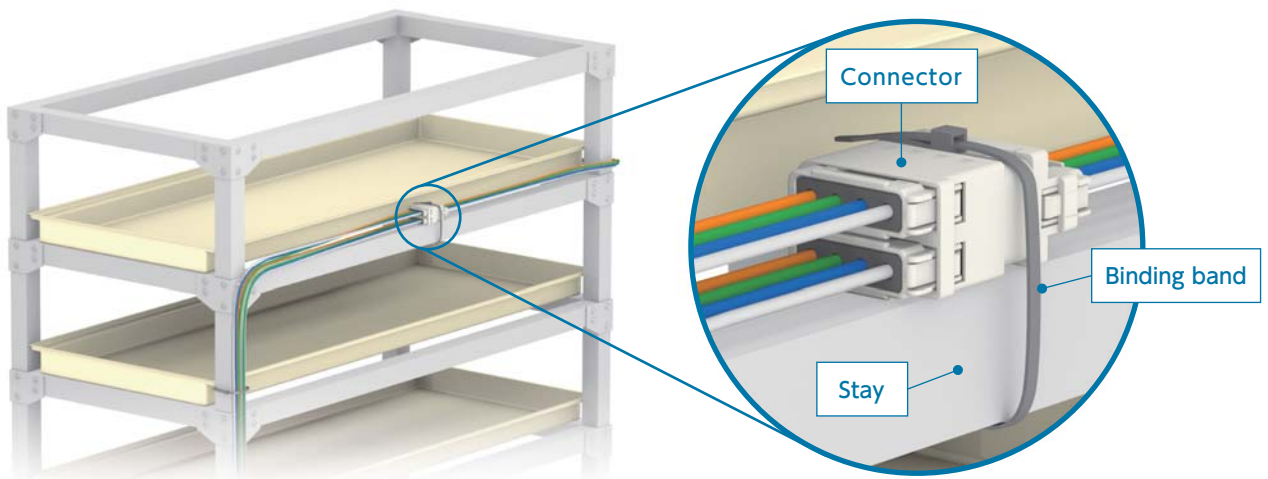


- The branch relay type (FWB01) can be passed through a duct with a minimum diameter of $\Phi 32.6$ mm. (4 pin type)



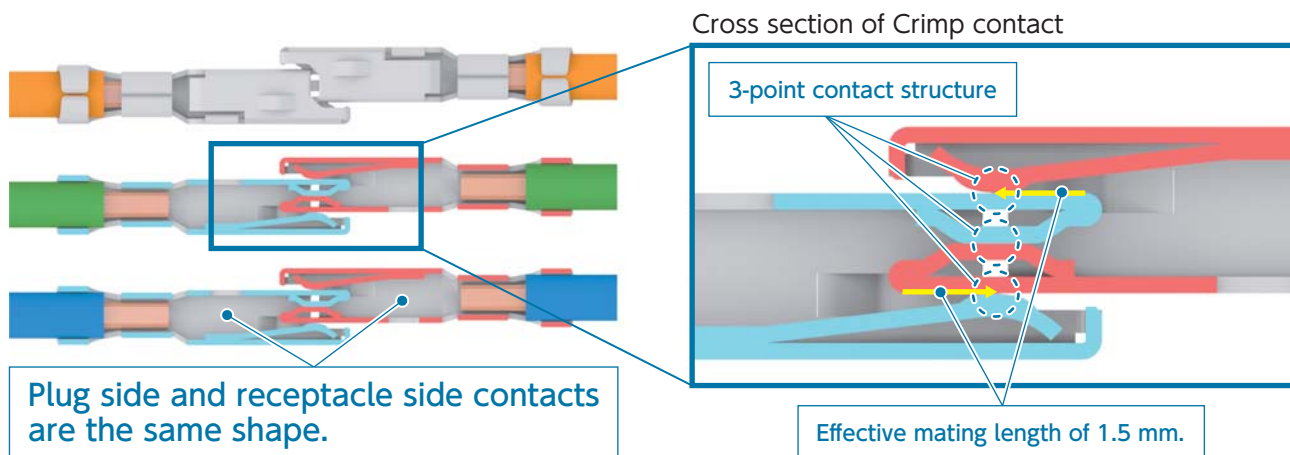
2 Can be attached anywhere with binding band.

- In consideration of attaching the connector to a processed sheet metal such as a stay, the connector has a shape that can be easily attached with binding band.



3 High reliability design with 3-point contact structure. KEL's original contacts on the plug side and the receptacle side have the same shape. (Patent pending)

- Crimp contact adopts the same shape on the plug side and the receptacle side and ensures stable contact by 3-point contact with independent spring.
- Highly reliable design with an effective mating length of 1.5 mm.



4 Connector structure considering assembly workability.

- The crimp contacts on the plug side and the receptacle side have the same shape, so the crimp applicator can be used in common.
- The cable seal and the sealing ring are pre-installed in the housing.
- By using dummy pins, it is possible to configure different contact numbers with the same connector.



5 Robust lock mechanism with click feel.

- Robust locking mechanism has tactile click feeling.

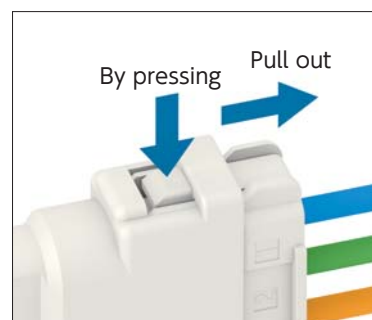
Lock/Insert



Push the plug until it clicks

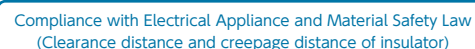


Lock release/Unlock



Pull out the plug while pressing the side lock

- Industry's smallest-class waterproof connector with 5.0 mm pitch.
- Although it is small, it has excellent waterproof and dustproof conforming to IP67 class.
- FWP11(plug side connector) branch relay type can reduce the number of cables by mating with FWB01(receptacle side connector).
- 3-point contact structure with independent always ensures stable contact.
- Robust lock mechanism with a tactile click feeling.
- The housing color can be selected from 2 colors, white and black.



FWB01 – –

① ② ③

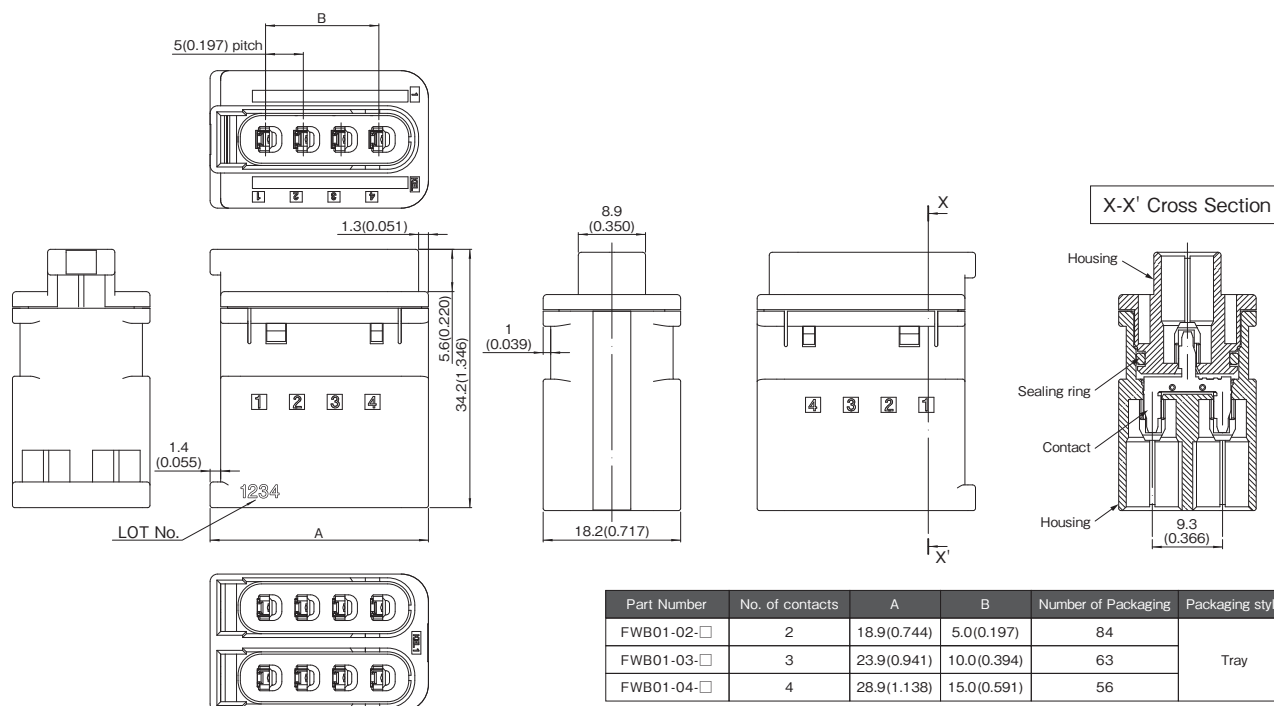
| | | | |
|----------------------|--|------------|------------|
| ① Type | FWB01 : Receptacle (Branch relay type) | | |
| ② Number of contacts | 02 : 2 pin | 03 : 3 pin | 04 : 4 pin |
| ③ Housing color | 1 : White 4 : Black | | |

| Material and plating | |
|------------------------|---|
| Housing material | Glass-filled PBT (UL94V-0) Color: White, Black |
| Sealing ring material | Silicone rubber (Secondary vulcanized) |
| Crimp contact material | Copper alloy |
| Crimp contact plating | (Contact area / Crimping area) Tin over Nickel |

| Electrical characteristics | |
|--|---|
| Current rating | (AWG#16) 10A max. per contact (AWG#18/20/22) 7A max. per contact |
| Protection grade | IP67 |
| Contact resistance | 20 mΩ max. |
| Dielectric withstanding voltage | 1,700V AC for 1 minute |
| Insulation resistance | 1,000MΩ min. at 500V DC |
| Operating temperature | -55°C to +105°C |
| Durability of insertion and withdrawal | 50 times |

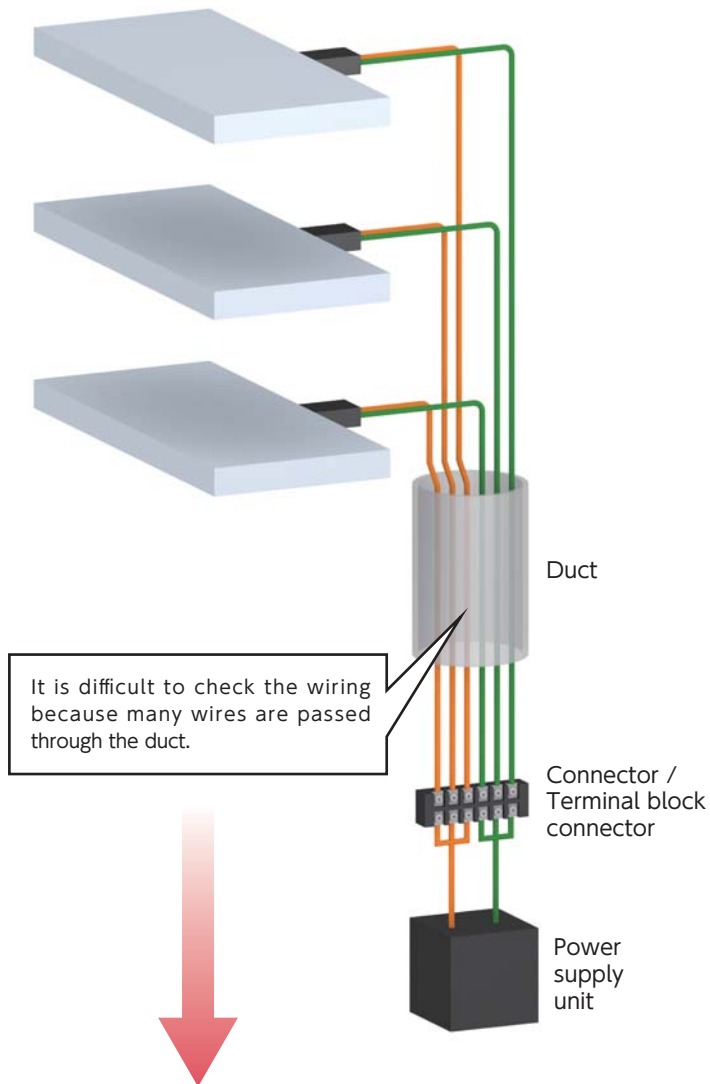
Unit: mm(inch)

FWB01-□□-□ (Receptacle, Branch relay type)



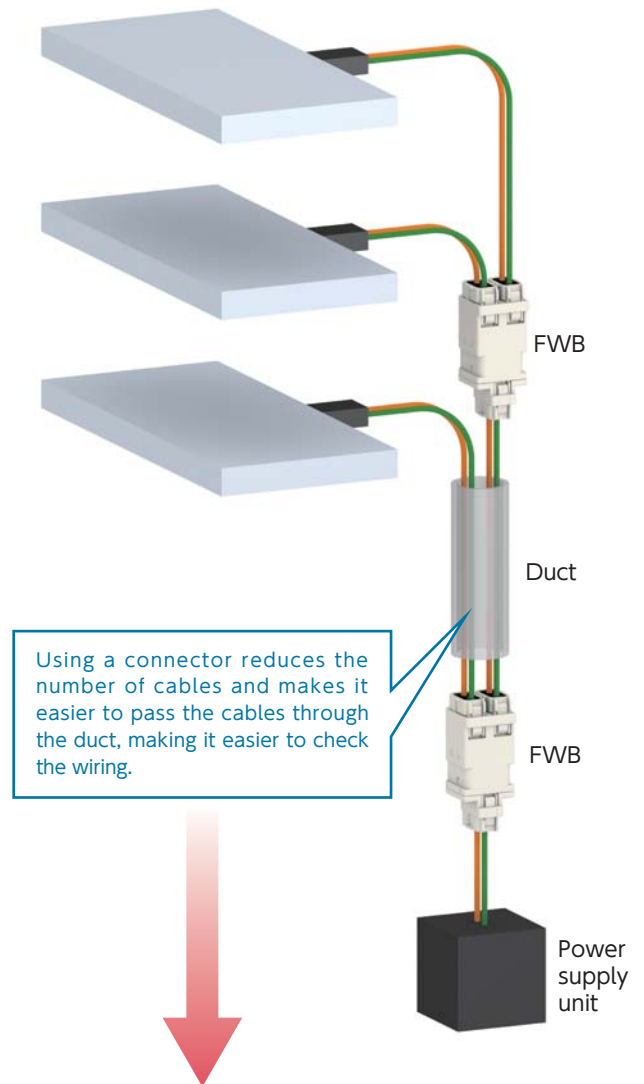
Advantages of using FWB (Branch relay type) ■■■■■■■■■■

Problems without FWB



As the number of units increases, the number of lines increases, resulting in more complicated wiring.

Advantages of using FWB



Even if the number of units increases, wiring can be made smarter by branching the circuit using FWB.

Main Applications



Plant Factory



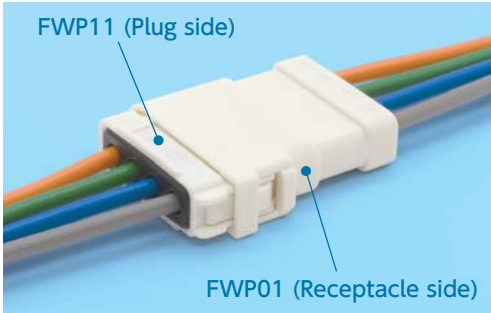
Vending Machine



Refrigerated Showcase

Features

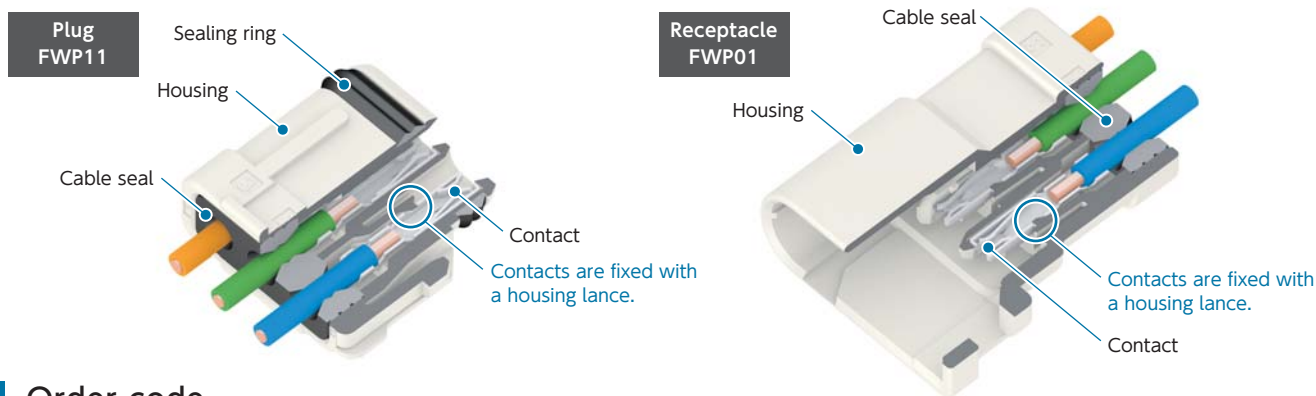
- Industry's smallest-class waterproof connector with 5.0 mm pitch.
- The size is small and thin, but it has excellent waterproof and dustproof conforming to IP67 class.
- 3-point contact structure with independent springs always ensures stable contact.
- Crimp connectors have the same shape, the crimp applicator can be shared.
- Highly reliable design with the effective mating length 1.5 mm.
- Built-in cable seal and sealing ring.
- Robust lock mechanism with a tactile click feel.
- The housing color can be selected from 4 colors, white, red, blue and black.
- The cable seal color is 3 colors of black, light blue, pink, according to the cable covering diameter.
- Dummy pins for plugging cable insertion holes are available.
(There are two colors of white and the black by cable coating outer diameter.)
- Can be mated with branch relay type (FWB01)



Compliant with the revised RoHS Directive (EU) 2015/863

Compliance with Electrical Appliance and Material Safety Law
(Clearance distance and creepage distance of insulator)

Sectional view



Order code

| | | |
|--|----------------------|---|
| <div>FWP01-□□-□□</div> <div>① ② ③ ④</div> | ① Type | FWP01: Receptacle (Cable-Relay Connector) |
| | ② Number of contacts | 02: 2 pin 03: 3 pin 04: 4 pin |
| | ③ Housing color | 1: White 2: Red 3: Blue 4: Black |
| | ④ Cable seal color | 1: Black (Cable outer diameter: ϕ 1.9 to 2.7 mm) 2: Light blue (Cable outer diameter: ϕ 1.5 to 1.9 mm) 3: Pink (Cable outer diameter: ϕ 2.7 to 3.1 mm) |
| <div>FWP11-□□-□□</div> <div>① ② ③ ④</div> | ① Type | FWP11: Plug (Cable-Relay Connector) |
| | ② Number of contacts | 02: 2 pin 03: 3 pin 04: 4 pin |
| | ③ Housing color | 1: White 2: Red 3: Blue 4: Black |
| | ④ Cable seal color | 1: Black (Cable outer diameter: ϕ 1.9 to 2.7 mm) 2: Light blue (Cable outer diameter: ϕ 1.5 to 1.9 mm) 3: Pink (Cable outer diameter: ϕ 2.7 to 3.1 mm) |

* FWP01/11-□□-□□ is sold only for housing, crimp terminal is sold separately. Please check page 10 for order code of crimp contact.
 * Depending on cable outer diameter, the combination of terminal and cable seal may change. For details please contact your local KEL sales office.

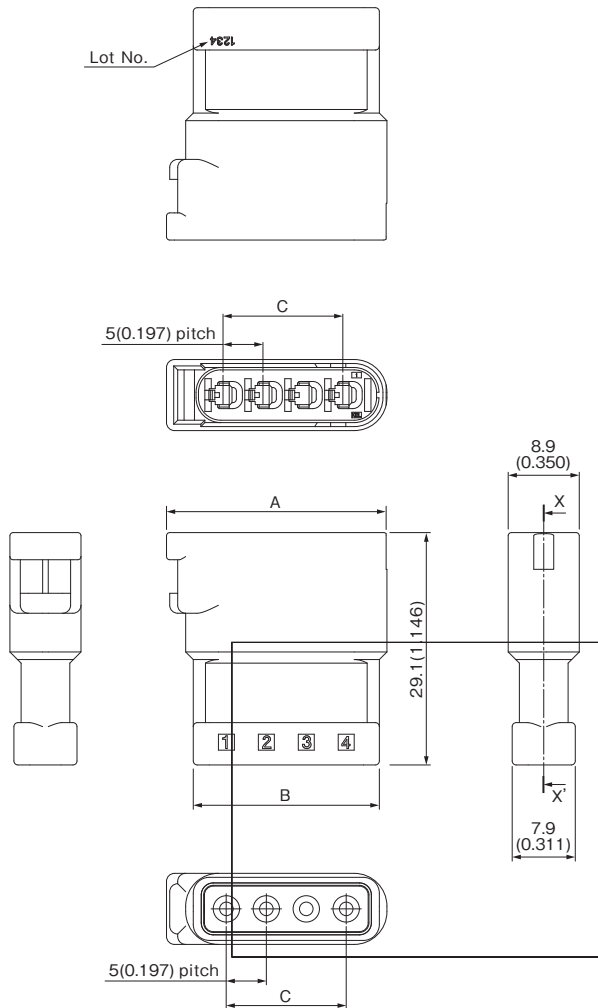
Specifications

| Material and plating | | Electrical characteristics | |
|------------------------|--|--|---|
| Housing material | Glass-filled PBT (UL94V-0) Color: White, Red, Blue, Black | Current rating | (AWG#16) 10A max. per contact (AWG#18/20/22) 7A max. per contact |
| Cable seal material | Silicone rubber (Secondary vulcanized) Color: Black, Light blue, Pink | Protection grade | IP67 |
| Sealing ring material | Silicone rubber (Secondary vulcanized) | Contact resistance | 10 mΩ max. |
| Crimp contact material | Copper alloy | Dielectric withstanding voltage | 1,700V AC for 1 minute |
| Crimp contact plating | (Contact area / Crimping area) Tin over Nickel | Insulation resistance | 1,000MΩ min. at 500V DC |
| | | Operating temperature | -55°C to +105°C |
| | | Durability of insertion and withdrawal | 50 times |
| | | Recommended cable | #16/18/20/22 AWG (0.3 to 1.25 sq) (Cable outer diameter: ϕ 1.5 to 3.1 mm) |

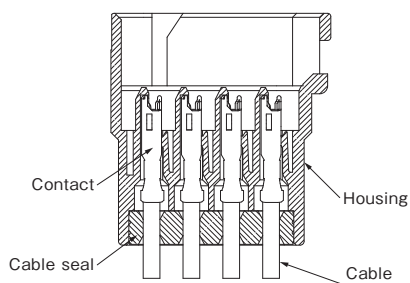
Product outline drawing

Unit: mm(inch)

FWP01-□□-□□ (Receptacle, Cable-Relay Connector)

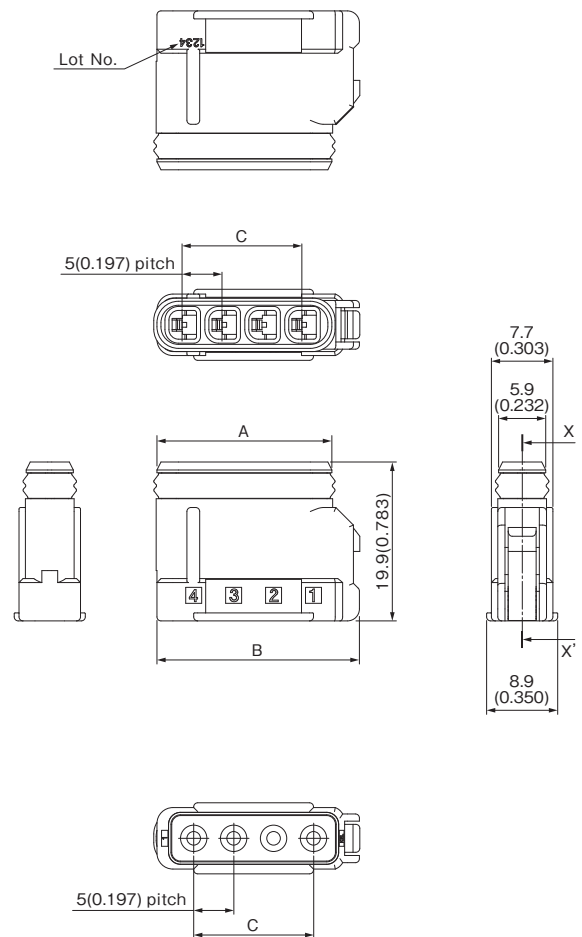


X-X' Cross Section (Contact Inserted)

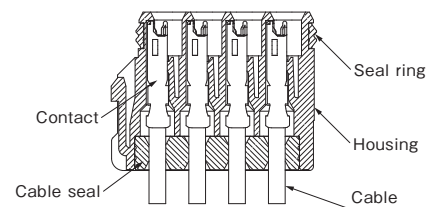


| Part Number | Number of contacts | A | B | C | Number of packaging | Packaging style |
|-------------|--------------------|-------------|-------------|-------------|---------------------|-----------------|
| FWP01-02-□□ | 2 | 17.5(0.689) | 13.3(0.524) | 5.0(0.197) | 112 | Tray |
| FWP01-03-□□ | 3 | 22.5(0.886) | 18.3(0.720) | 10.0(0.394) | 88 | |
| FWP01-04-□□ | 4 | 27.5(1.083) | 23.3(0.917) | 15.0(0.591) | 72 | |

FWP11-□□-□□ (Plug, Cable-Relay Connector)



X-X' Cross Section (Contact Inserted)

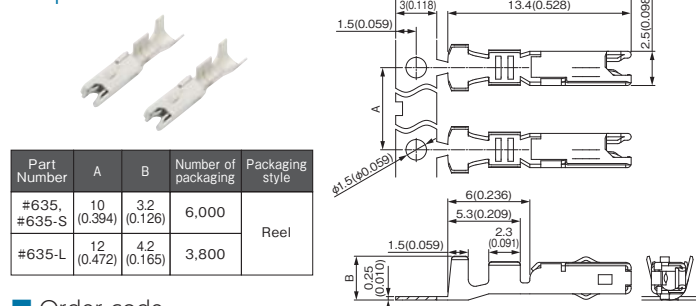


| Part Number | Number of contacts | A | B | C | Number of packaging | Packaging style |
|-------------|--------------------|-------------|--------------|-------------|---------------------|-----------------|
| FWP11-02-□□ | 2 | 11.9(0.469) | 15.45(0.608) | 5.0(0.197) | 112 | Tray |
| FWP11-03-□□ | 3 | 16.9(0.665) | 20.45(0.805) | 10.0(0.394) | 88 | |
| FWP11-04-□□ | 4 | 21.9(0.862) | 25.45(1.002) | 15.0(0.591) | 72 | |

Crimp contact/Dummy pin

Crimp contact

Crimp contact for FWP01/11-□□-□□

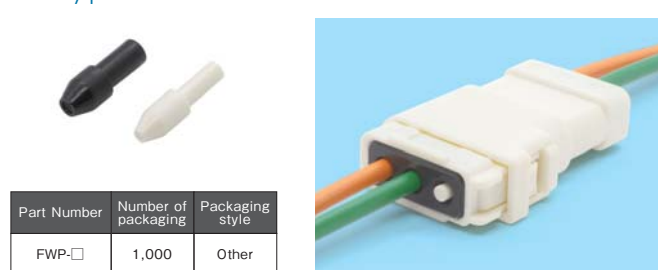


Order code

| | | | | |
|--------|---|---|--------------------------|---|
| #635-□ | ① | ② | ① Contact name | #635: Crimp contact for FWP01/11 |
| | ① | ② | ② Recommended cable size | No code: #18/20 AWG (0.5 to 0.75sq) (Cable outer diameter: ϕ 1.5 to 2.7mm) S: #22 AWG (0.3sq) (Cable outer diameter: ϕ 1.5 to 2.7mm) L: #16/18 AWG (0.75 to 1.25sq) (Cable outer diameter: ϕ 2.7 to 3.1mm) |

Dummy pin

Dummy pin for FW Series



Order code

| | | | | |
|-------|---|---|-------------------|---|
| FWP-□ | ① | ② | ① Type | FWP: Dummy pin for FW Series |
| | ① | ② | ② Dummy pin color | 1: White * Applicable cable seal: Black, Light blue 2: Black * Applicable cable seal: Pink |

Assembly Tool



Crimping hand tool

| | |
|-----------------------|----------------------------|
| Part Number | CH-19 |
| Applicable cable size | #16/18/20/22 AWG |
| Crimp contact | #635-□, #635-S-□, #635-L-□ |

* Please note that the recommended cable differs depending on the contact.
 * Use CH-15 when crimping #635-L to AWG #18 cables.
 * Please contact your K&L sales representative to purchase the CH-15.

Crimping machine












| | | |
|------------------|----------------------------------|---------------|
| Crimp contact | #635, #635-S | #635-L |
| Manufacturer | JAPAN AUTOMATIC MACHINE CO., LTD | |
| Crimping machine | LPC220S | |
| Applicator | CFX030500K-UP | CFX046400K-UP |

























Product List

FWP series is available in 3 types, 2, 3, 4 pins, 4 colors of housing, white, red, blue, black, 3 colors of cable seal, black, light blue, pink, total 72 Various types of variations are available. Refer to the table below for cable specifications, cable sheath outer diameter, crimp terminals, and dummy pins that match the housing color and cable seal color.

*Please understand that the color may differ slightly from the actual product.

| Type | Part Number | No. of contacts | Housing color | Cable seal color | Recommended cable size | Cable covering diameter | Crimp contact | Dummy pin |
|------------|-------------|-----------------|---------------|------------------|------------------------|-------------------------|---------------|-----------|
| Receptacle | FWP01-02-11 | 2 | ○ | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP01-02-12 | 2 | ○ | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP01-02-13 | 2 | ○ | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP01-02-21 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP01-02-22 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP01-02-23 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP01-02-31 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP01-02-32 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP01-02-33 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP01-02-41 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP01-02-42 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP01-02-43 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| Plug | FWP11-02-11 | 2 | ○ | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP11-02-12 | 2 | ○ | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP11-02-13 | 2 | ○ | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP11-02-21 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP11-02-22 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP11-02-23 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP11-02-31 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP11-02-32 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP11-02-33 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |
| | FWP11-02-41 | 2 | ● | ● | AWG#18/20 | ϕ 1.5 to 2.7 mm | #635 | FWP-1 |
| | FWP11-02-42 | 2 | ● | ● | AWG#22 | ϕ 1.5 to 2.7 mm | #635-S | FWP-1 |
| | FWP11-02-43 | 2 | ● | ● | AWG#16/18 | ϕ 2.7 to 3.1 mm | #635-L | FWP-2 |

| Type | Part Number | No. of contacts | Housing color | Cable seal color | Recommended cable size | Cable covering diameter | Crimp contact | Dummy pin |
|------------|---|-----------------|---------------|------------------|------------------------|-------------------------|---------------|-----------|
| Receptacle |  FWP01-03-11 | 3 | ○ | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-03-12 | 3 | ○ | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-03-13 | 3 | ○ | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-03-21 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-03-22 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-03-23 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-03-31 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-03-32 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-03-33 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-03-41 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-03-42 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-03-43 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-04-11 | 4 | ○ | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-04-12 | 4 | ○ | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-04-13 | 4 | ○ | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-04-21 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-04-22 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-04-23 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-04-31 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-04-32 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-04-33 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP01-04-41 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP01-04-42 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP01-04-43 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |

| Type | Part Number | No. of contacts | Housing color | Cable seal color | Recommended cable size | Cable covering diameter | Crimp contact | Dummy pin |
|------|---|-----------------|---------------|------------------|------------------------|-------------------------|---------------|-----------|
| Plug |  FWP11-03-11 | 3 | ○ | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-03-12 | 3 | ○ | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-03-13 | 3 | ○ | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-03-21 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-03-22 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-03-23 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-03-31 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-03-32 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-03-33 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-03-41 | 3 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-03-42 | 3 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-03-43 | 3 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-04-11 | 4 | ○ | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-04-12 | 4 | ○ | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-04-13 | 4 | ○ | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-04-21 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-04-22 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-04-23 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-04-31 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-04-32 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-04-33 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |
| |  FWP11-04-41 | 4 | ● | ● | AWG#18/20 | φ 1.5 to 2.7 mm | #635 | FWP-1 |
| |  FWP11-04-42 | 4 | ● | ● | AWG#22 | φ 1.5 to 2.7 mm | #635-S | FWP-1 |
| |  FWP11-04-43 | 4 | ● | ● | AWG#16/18 | φ 2.7 to 3.1 mm | #635-L | FWP-2 |

FWB series is available in 3 types with 2, 3, and 4 pins, and 2 housing colors, white and black.

| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| Receptacle (Branch relay type) |  |  |  |  |  |  |
| | FWB01-02-1 | FWB01-03-1 | FWB01-04-1 | FWB01-02-4 | FWB01-03-4 | FWB01-04-4 |

KEL Crimp Connectors Product Lineup

Crimp connectors have long been contributing to the electronics industry as electronic equipment connection. Recently, customer demands for high performance and easy to use crimp connectors have increased. KEL is developing unique crimp connectors such as drawer connectors, side cable type connectors, waterproof connectors, and two-cable-crimp connectors. KEL also develops half-pitch crimp connectors that can be mated to conventional half-pitch connectors.

| Series name | | FA | FAS | FTC | FTCS | FW | FWS | FBC | FJC | 8929E |
|-------------------------------------|-------------|----------------|----------------|---------------------|-----------------|-------------------|-------------------|----------------|----------------|----------------|
| Pitch | | 2.5 mm | 1.5 mm | 5.08 mm | 2.5 mm | 5.0 mm | 2.0 mm | 2.0 mm | 0.75 mm | 1.27 mm |
| Number of contacts | | 4 to 40 | 4 to 40 | 6, 10, 12, 20 | 6, 12, 16, 20 | 2, 3, 4 | 2, 3, 4, 6, 8 | 26 to 40 | 30 | 30 to 68 |
| TypeS *1 | | 18 | 19 | 4 | 4 | 3 | 5 | 3 | 1 | 5 |
| Connection Type | Right angle | — | — | ✓ | ✓ | — | — | — | ✓ | ✓ |
| | Straight | ✓ | ✓ | ✓ | ✓ | ✓ | — | ✓ | — | ✓ |
| | Relay | ✓ | ✓ | ✓ | ✓ | Branch relay type | Branch relay type | — | — | — |
| Rated current *2 | | 3 A | 1.5 to 3.0 A | 7 to 16 A | 2 to 6.5 A | 7 to 10 A | 3 A | 3 A | 1 A | 1 A |
| Mounting type | | DIP | DIP | DIP | DIP | — | — | DIP | SMT | DIP / SMT |
| Lock mechanism | | — | — | Lock-type available | ✓ | ✓ | ✓ | E-Lock | ✓ | Eject Lock |
| Drawer mechanism | | ✓ | ✓ | ✓ | — | — | — | — | — | — |
| Insertion and extraction durability | | 7,000 max. | 7,000 max. | 100, 500 | 100, 500 | 50 | 50 | 20 | 100 | 500 |
| Operating temperature | | -40°C to +85°C | -40°C to +85°C | -55°C to +105°C | -55°C to +105°C | -55°C to +105°C | -55°C to +105°C | -40°C to +85°C | -40°C to +85°C | -40°C to +85°C |

* 1 More product types will be added. Please consult a KEL sales representative.

* 2 It is possible to design a current capacity exceeding the standard current rating depending on pin count and cable size. Please contact your local KEL sales office.

KEL Company Profile

Trade Name: KEL CORPORATION

Established : July 23, 1962

Total Capital: 1,617 Million Yen

President : Akira Kasuga

Head Office : 6-17-7 Nagayama, Tama,
Address Tokyo 206-0025, Japan

URL : www.kel.jp

Factories

- Yamanashi Factory (Nishi-Yatsushiro, Yamanashi)
- Nagano Factory (Kita-azumi, Nagano)
- Minami-Alps Factory (Minami-Alps, Yamanashi)

Global Network



www.kel.jp

KEL provides the products from a connector to a rack.

KEL CORPORATION

More Information
https://www.kel.jp/feature/fw_b_lp

