

FW SERIES

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

RoHS
Compliant

5.0mm PITCH WATERPROOF CONNECTOR CONFORMING TO IP67 STANDARD



FEATURES

- ▶ The smallest class external dimensions with 5.0mm pitch waterproof connector.
- ▶ Stable connection design of 3 point contact structure having same shape contacts on the plug side and the receptacle side.
- ▶ The crimp applicator can be used in common because the crimp contact on the plug side and the receptacle side have the same shape.
- ▶ Highly reliable design with an effective mating length of 1.5mm(0.059").
- ▶ Wiring can be reduced by mating FWP11 (Plug side) to FWB01 (Receptacle side / Branch relay type).
- ▶ The cable seal and the sealing ring are built in the connector housing.
- ▶ The locking mechanism is robust and has a click feeling.
- ▶ The housing color can be selected from white (natural), red, blue and black. (FWB01 has only two colors, white and black.)
- ▶ Three colors of cable seal, black, light blue and pink, are available according to the outer diameter of the cable coating.
- ▶ Dummy pins for closing the cable insertion hole are available. Dummy pin color are set to 2 colors, white and black, according to cable covering outer diameter.

ORDER CODE

FWP01- - -
1 2 3 4

*Please order in multiples of the quantity per package.

- ① **[Type] FWP01** : Receptacle (Cable-relay connector)
- ② **[Number of contacts]** 02 : 2pin 03 : 3pin 04 : 4pin
- ③ **[Housing color]** 1 : White 2 : Red 3 : Blue 4 : Black
- ④ **[Cable seal color]** 1 : Black (Cable covering diameter: ϕ 1.9 to 2.7mm)
2 : Light blue (Cable covering diameter: ϕ 1.5 to 1.9mm)
3 : Pink (Cable covering diameter: ϕ 2.7 to 3.1mm)

ORDER CODE

FWB01- -
1 2 3

*Please order in multiples of the quantity per package.

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

ORDER CODE

FWP11- - -
1 2 3 4

*Please order in multiples of the quantity per package.

- ① **[Type] FWP11** : Plug (Cable-relay connector)
- ② **[Number of contacts]** 02 : 2pin 03 : 3pin 04 : 4pin
- ③ **[Housing color]** 1 : White 2 : Red 3 : Blue 4 : Black
- ④ **[Cable seal color]** 1 : Black (Cable outer diameter: ϕ 1.9 to 2.7mm)
2 : Light blue (Cable outer diameter: ϕ 1.5 to 1.9mm)
3 : Pink (Cable outer diameter: ϕ 2.7 to 3.1mm)

* FWP01/11-□□-□□ is sold for housing only and crimp terminals are sold separately. For the order code of the crimp contact, please refer to the next page.
 * The combination of the crimp contact and cable seal may change depending on the outer diameter of the cable cover.
 For more information, please contact your local KEL sales office.

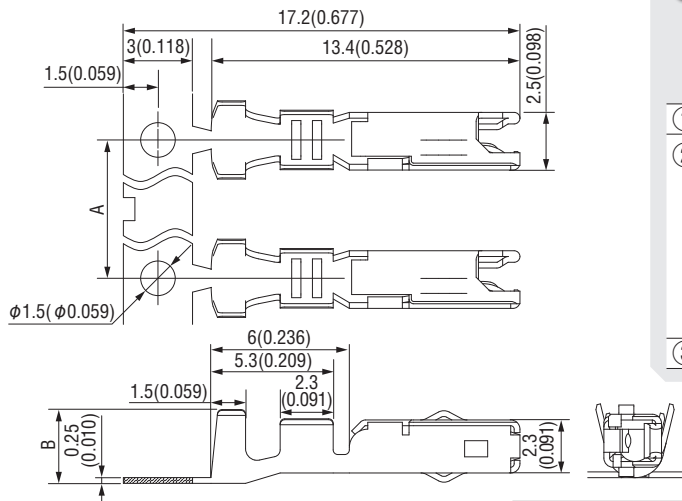
SPECIFICATIONS

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

Crimp contact

Unit : mm(inch)

◆ Crimp contact for FWP01/11-□□-□□ (Cable-relay connector)



Part number	Packaging style
#635-□	Reel
#635-□-B	Other

ORDER CODE

#635 - □ - □

① ② ③

*Please order in multiples of the quantity per package.

- ① **[Contact name]** #635 : Crimp contact for FWP01/11
- ② **[Recommended cable size]**
 - No code** : #18/20 AWG (0.5 to 0.75sq)
(Cable coating outer diameter: Φ 1.5 to 2.7mm)
 - S** : #22 AWG (0.3sq)
(Cable coating outer diameter: Φ 1.5 to 2.7mm)
 - L** : #16/18 AWG (0.75 to 1.25sq)
(Cable coating outer diameter: Φ 2.7 to 3.1mm)
- ③ **[Type]** **No code** : Chain shape **B** : In pieces

▶ Product table / Dimensions

Part number	A	B	Number of packaging
#635, #635-S	10(0.394)	3.2(0.126)	6,000
#635-B, #635-S-B	10(0.394)	3.2(0.126)	100
#635-L	12(0.472)	4.2(0.165)	3,800
#635-L-B	12(0.472)	4.2(0.165)	100

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 KEL 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

*Please purchase the crimping machine and the applicator from Japan Automatic Machine Co.,Ltd.

Dummy pin

◆ Dummy pin for FW Series

ORDER CODE

FWP - □

① ②

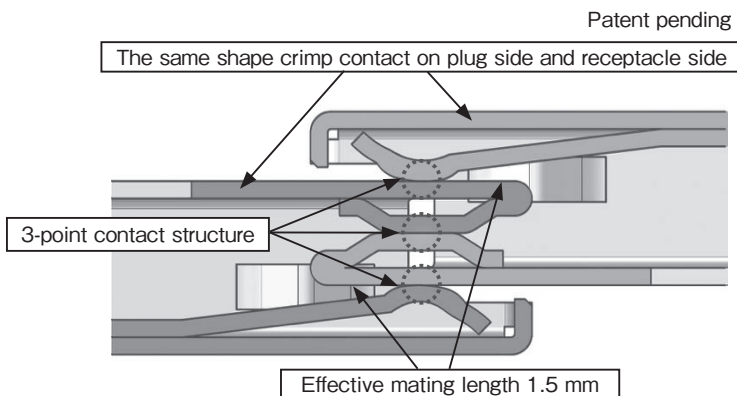
Packaging style
Other

- ① **[Type]** FWP : Dummy pin for FW Series
- ② **[Dummy pin color]** **1** : White (Applicable cable seal: Black, Light blue)
2 : Black (Applicable cable seal: Pink)

▶ Product table

Part number	Number of packaging
FWP-□	1,000

3-point contact with the same shape crimp contact on plug side and receptacle side



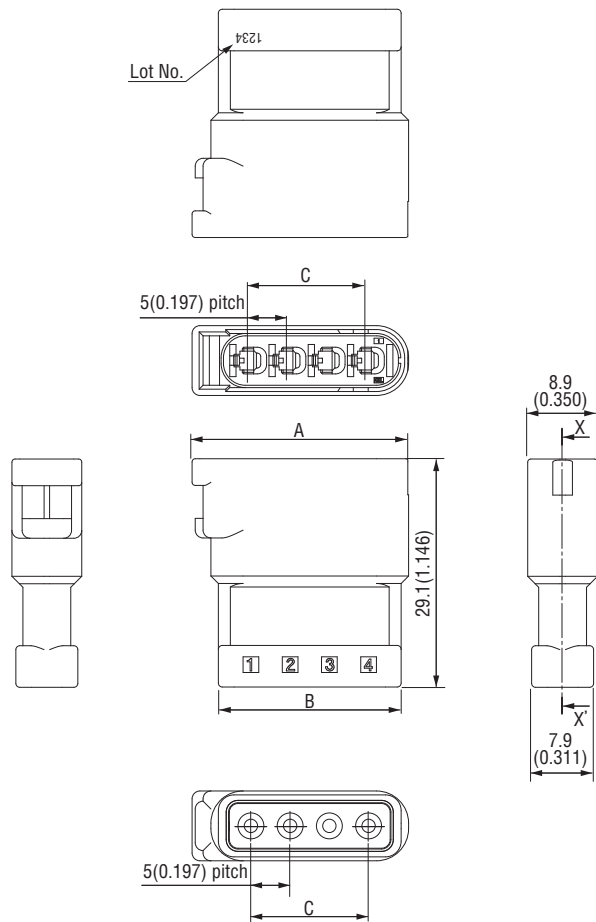
FW series adopts the same shape crimp contact on the plug side and the receptacle side.

3-point contact structure and independent spring mechanism realize stable connection.

The crimp contact has the same shape on the plug side and the receptacle side, so the crimp applicator can be used in common.

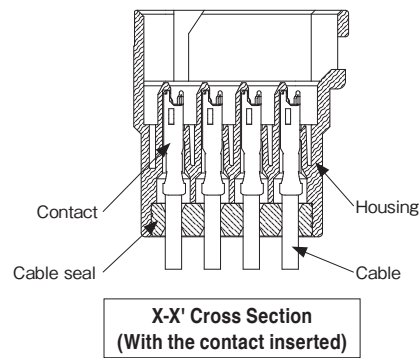
FWP01-□□-□□ (Receptacle, Cable-relay connector)

Unit : mm(inch)



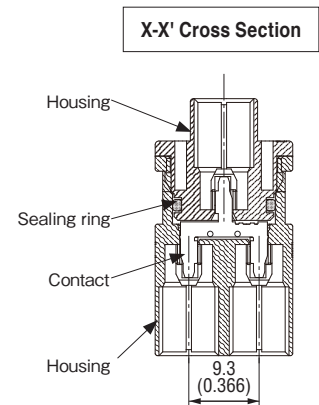
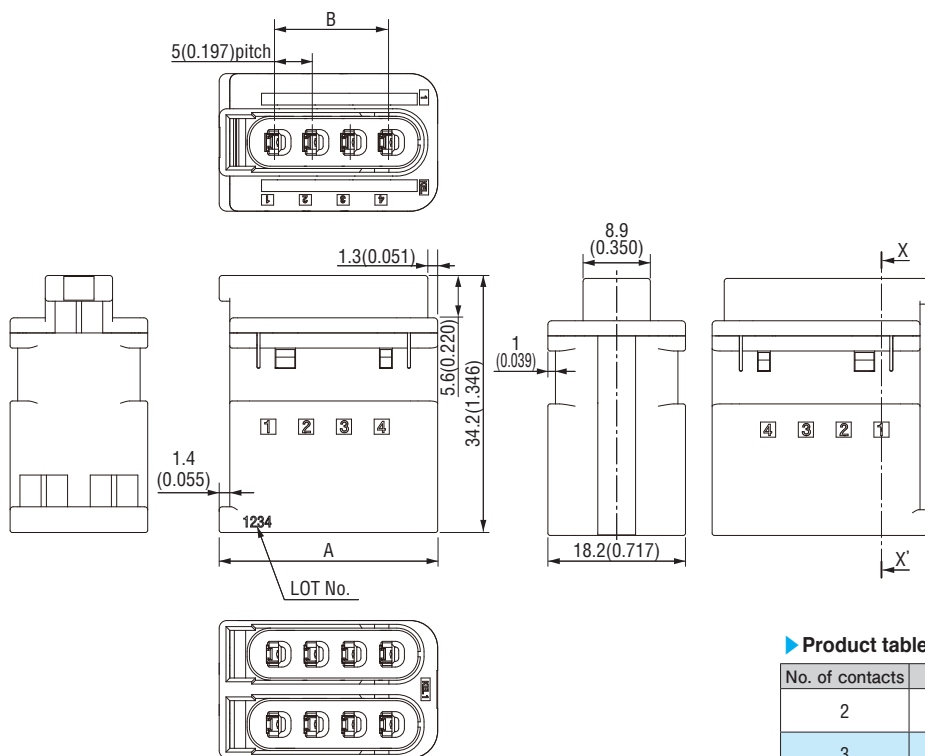
Product table / Dimensions

No. of contacts	Part number	A	B	C	Number of packaging
2	FWP01-02-□□	17.5 (0.689)	13.3 (0.524)	5.0 (0.197)	112
3	FWP01-03-□□	22.5 (0.886)	18.3 (0.720)	10.0 (0.394)	88
4	FWP01-04-□□	27.5 (1.083)	23.3 (0.917)	15.0 (0.591)	72



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

Unit : mm(inch)

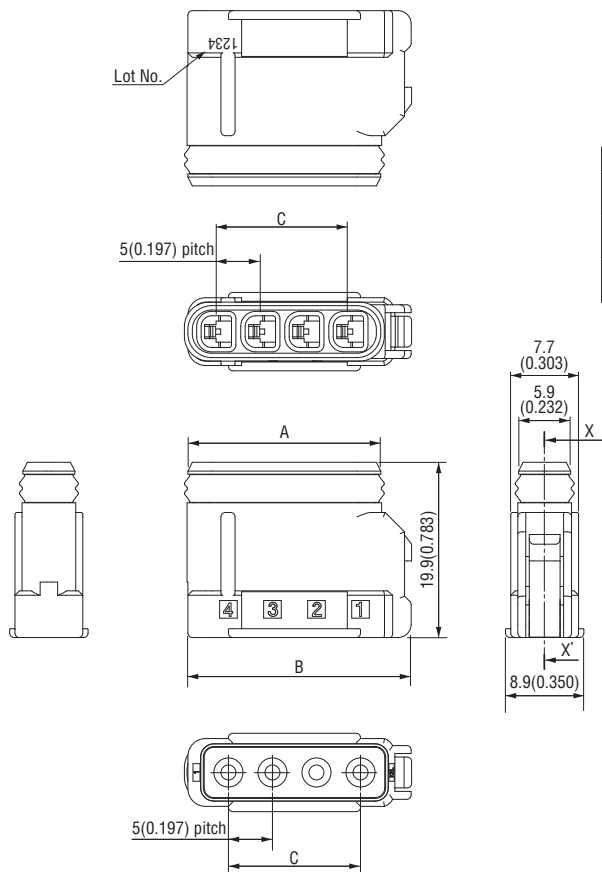


Product table / Dimensions

No. of contacts	Part number	A	B	Number of packaging
2	FWB01-02-□□	18.9 (0.744)	5.0 (0.197)	84
3	FWB01-03-□□	23.9 (0.941)	10.0 (0.394)	63
4	FWB01-04-□□	28.9 (1.138)	15.0 (0.591)	56

FWP11-□□-□□ (Plug, Cable-relay connector)

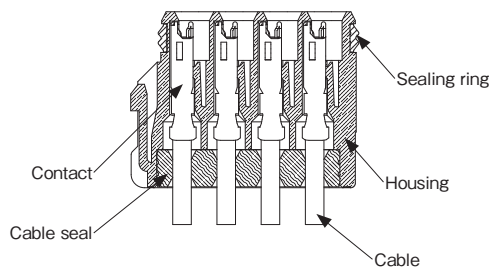
Unit : mm(inch)



Product table / Dimensions

Packaging style
Tray

No. of contacts	Part number	A	B	C	Number of packaging
2	FWP11-02-□□	11.9 (0.469)	15.45 (0.608)	5.0 (0.197)	112
3	FWP11-03-□□	16.9 (0.665)	20.45 (0.805)	10.0 (0.394)	88
4	FWP11-04-□□	21.9 (0.862)	25.45 (1.002)	15.0 (0.591)	72



X-X' Cross Section
(With the contact inserted)