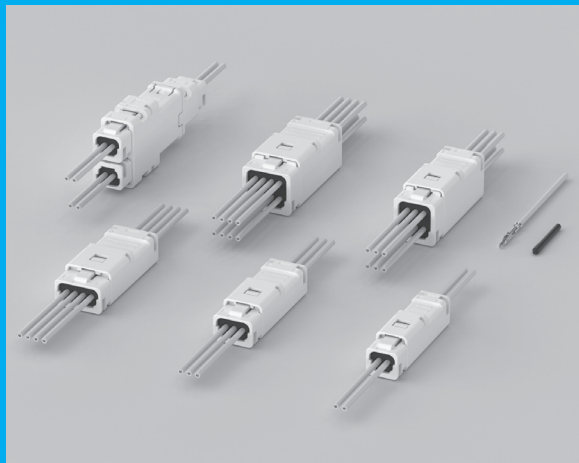


FWS SERIES

2.0mm PITCH WATERPROOF CONNECTOR CONFORMING TO IP67 STANDARD

RoHS
Compliant



FEATURES

- ▶ The smallest class external dimensions with 2.0mm pitch waterproof connector.
- ▶ Stable connection design of 4-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.
- ▶ Wiring can be reduced by mating FWSP1A (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, red and black.
- ▶ Two colors of cable seal, blue and orange, are available according to the outer diameter of the cable coating.
- ▶ Dummy pins for closing the cable insertion hole are available.

ORDER CODE

FWSP0A- -

① ② ③ ④

*Please order in multiples of the quantity per package.

① **[Type] FWSP0A** : Receptacle (Cable-relay connector)

② **[Number of contacts]** 02 : 2pin 03 : 3pin 04 : 4pin 06 : 6pin 08 : 8pin

③ **[Housing color]** 1 : White 2 : Red 3 : Black

④ **[Cable seal color]** 3 : Blue (Cable outer diameter ϕ 1.3 to 1.7mm) 4 : Orange (Cable outer diameter ϕ 1.0 to 1.3mm)

ORDER CODE

FWSB01-02-1

① ② ③

*Please order in multiples of the quantity per package.

① **[Type] FWSB01** : Receptacle (cable-branch / relay connector)

② **[Number of contacts]** 02 : 2pin

③ **[Housing color]** 1 : White

ORDER CODE

FWSP1A- -

① ② ③ ④

*Please order in multiples of the quantity per package.

① **[Type] FWSP1A** : Plug (Cable-relay connector)

② **[Number of contacts]** 02 : 2pin 03 : 3pin 04 : 4pin 06 : 6pin 08 : 8pin

③ **[Housing color]** 1 : White 2 : Red 3 : Black

④ **[Cable seal color]** 3 : Blue (Cable outer diameter ϕ 1.3 to 1.7mm) 4 : Orange (Cable outer diameter ϕ 1.0 to 1.3mm)

*FWSP0A/1A-□□-□□ 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.

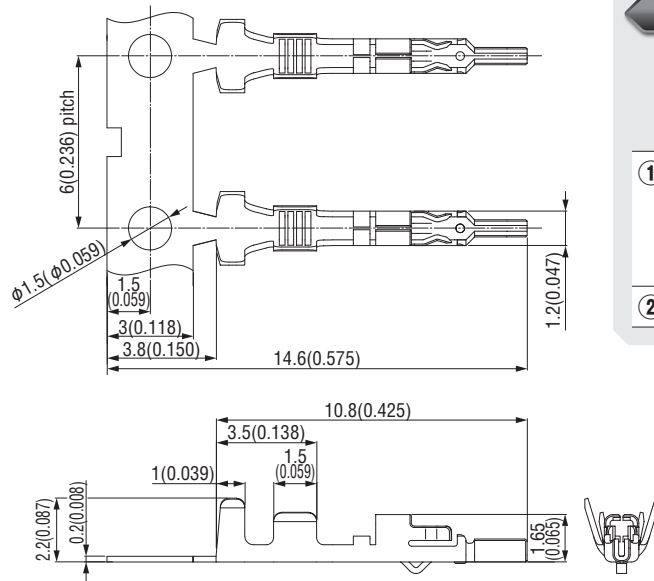
SPECIFICATIONS

Material and plating		Electrical characteristics	
Housing material	Glass filled PBT (UL94V-0) (FWSP) Color: White, Red, Black (FWSB) Color: White	Rated current	3A max. per contact
		Protection grade	IP67
		Contact resistance	[FWSP] 10m Ω max. [FWSB] 20m Ω max.
Cable seal material	Silicone rubber Color: Blue, Orange	Dielectric withstanding voltage	1000V AC for 1 minute
		Insulation resistance	1,000M Ω min. at 500V DC
Sealing ring material	Silicone rubber	Operating temperature	-55°C to +105°C
Contact material	Copper alloy	Durability of insertion and withdrawal	50 times
Contact plating	(FWSP) Reflow tin over Copper (FWSB) Tin over Nickel	Applicable cable	#22/24/26/28 AWG Discrete wire cables (0.08 to 0.3sq) (Cable outer diameter: ϕ 1.0 to 1.7mm)

Crimp contact

Unit : mm(inch)

◆ Crimp contact for FWSP0A/1A-□□-□□ (Cable-relay connector)



ORDER CODE

#668 - □

① ②

*Please order in multiples of the quantity per package.

① **[Contact name]** #668 : Crimp contact for FWSP0A/1A
 Applicable cable size : AWG#22/24/26/28
 (0.08 to 0.3sq)
 (Cable outer diameter : ϕ 1.0 to 1.7mm)

② **[Type]** No Code : Chain shape(Reel) B : In pieces(Plastic bag)

▶ Product table

Part number	Number of packaging	Packaging style
#668	10,000	Reel
#668-B	100	Other

Assembly tool

◆ Crimping hand tool

Part number	CH-20
Applicable cable size	AWG#22/24/26/28
Crimp contact	#668-□

◆ Crimping machine

Crimp contact	#668-□
Manufacturer	Japan Automatic Machine Co.,Ltd.
Crimping machine	LPC220S
Applicator	EFX075900K-UP

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

Dummy pin

◆ Dummy pin for FWSP0A/1A-□□-□□

ORDER CODE

FWSP - 1

① ②

① **[Type]** FWSP : Dummy pin for FWSP0A/1A

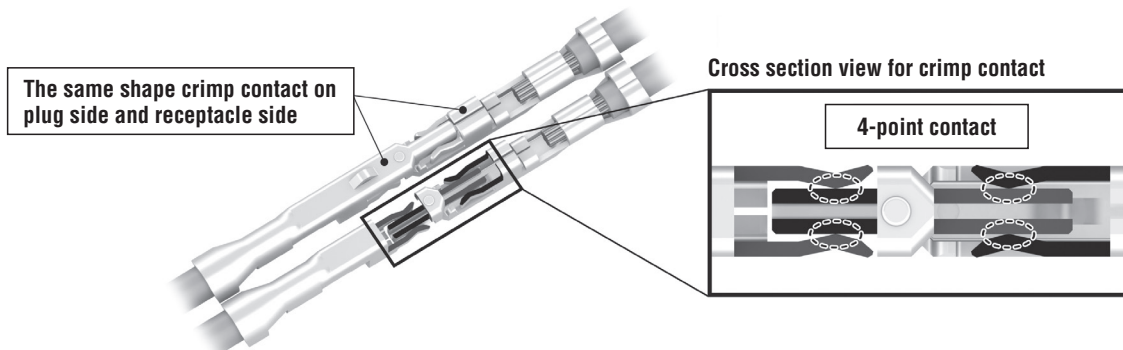
② **[Dummy pin color]** 1 : Black

Packaging style
Other

▶ Product table

Part number	Number of packaging
FWSP-1	1,000

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



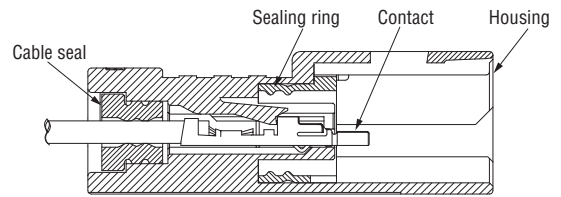
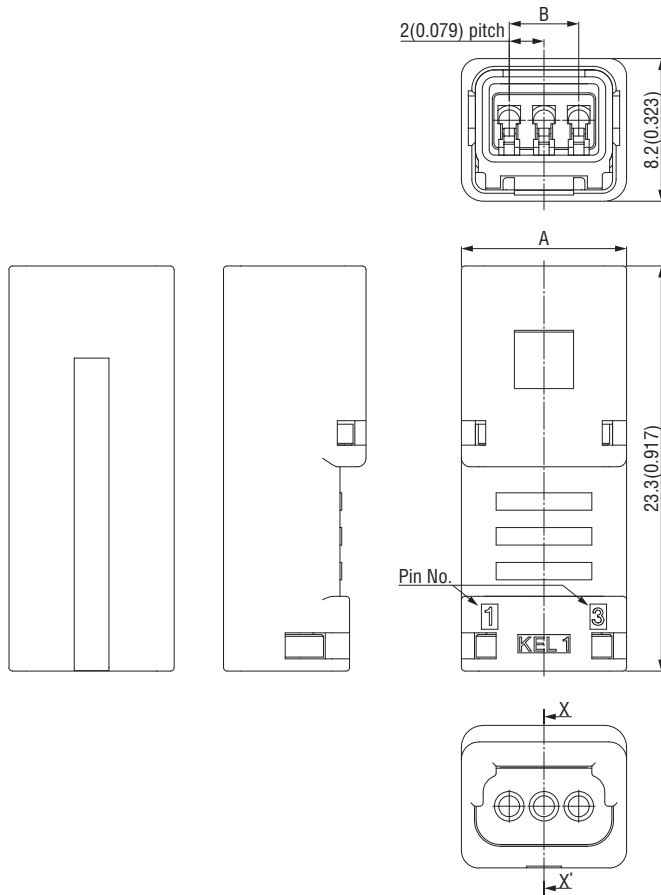
FWS series adopts the same shape crimp contact on the plug side and the receptacle side.

4-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.

FWSP0A-□□-□□ (Receptacle, Cable-relay connector 2pin, 3pin, 4pin)

Unit : mm(inch)



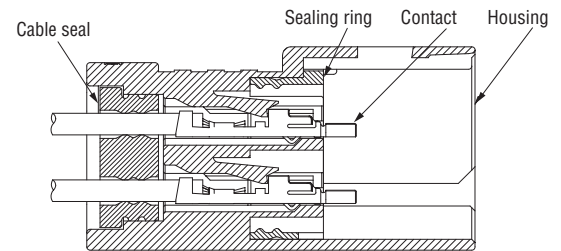
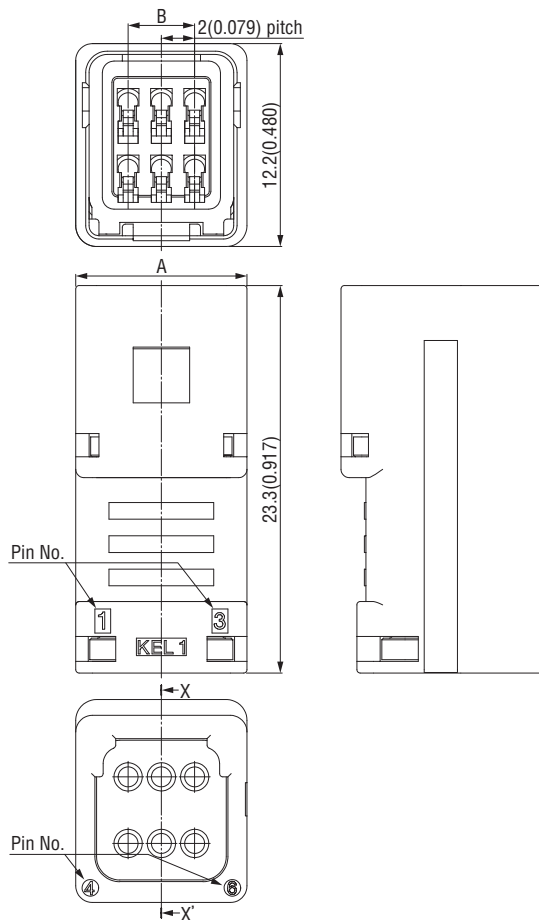
**X-X' Cross section
(With the contact inserted)**

▶ **Product table / Dimensions**

No. of contacts	Part number	A	B	Packaging style	
				Other	Number of packaging
2	FWSP0A-02-□□	7.5 (0.295)	2.0 (0.079)	Other	800
3	FWSP0A-03-□□	9.5 (0.374)	4.0 (0.157)	Other	600
4	FWSP0A-04-□□	11.5 (0.453)	6.0 (0.236)	Other	500

FWSP0A-□□-□□ (Receptacle, Cable-relay connector 6pin, 8pin)

Unit : mm(inch)



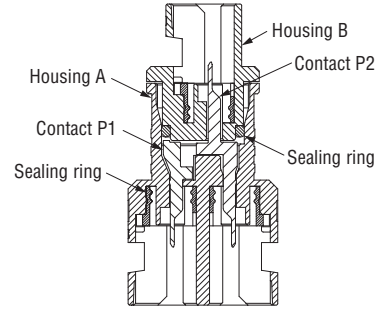
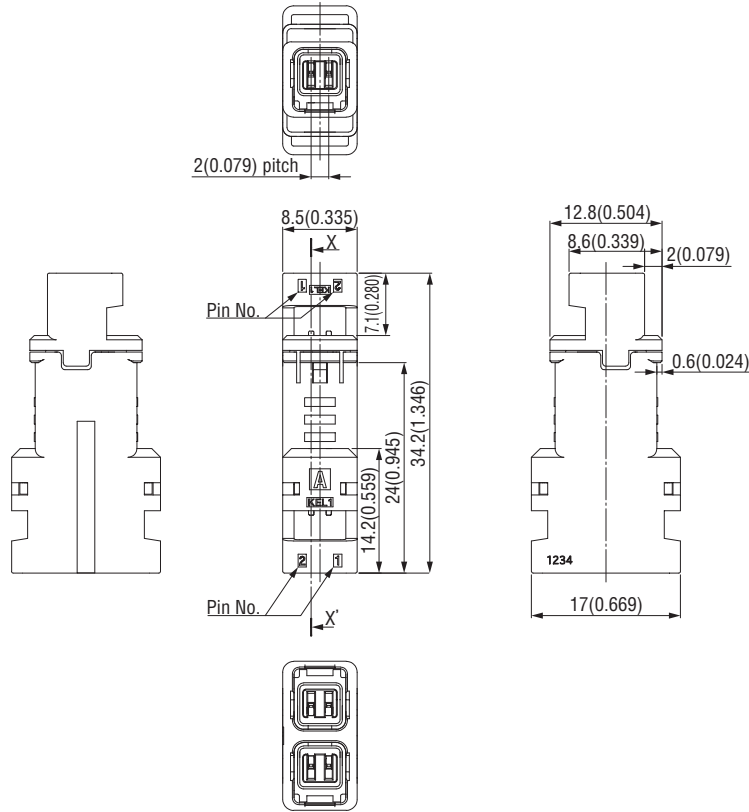
**X-X' Cross section
(With the contact inserted)**

▶ **Product table / Dimensions**

No. of contacts	Part number	A	B	Packaging style	
				Other	Number of packaging
6	FWSP0A-06-□□	10.3 (0.406)	4.0 (0.157)	Other	400
8	FWSP0A-08-□□	12.3 (0.484)	6.0 (0.236)	Other	300

FWSB01-02-1 (Receptacle, cable-branch / relay connector, 2 pin)

Unit : mm(inch)



**X-X' Cross section
(With the contact inserted)**

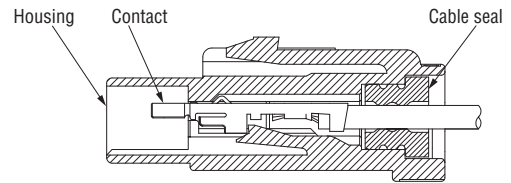
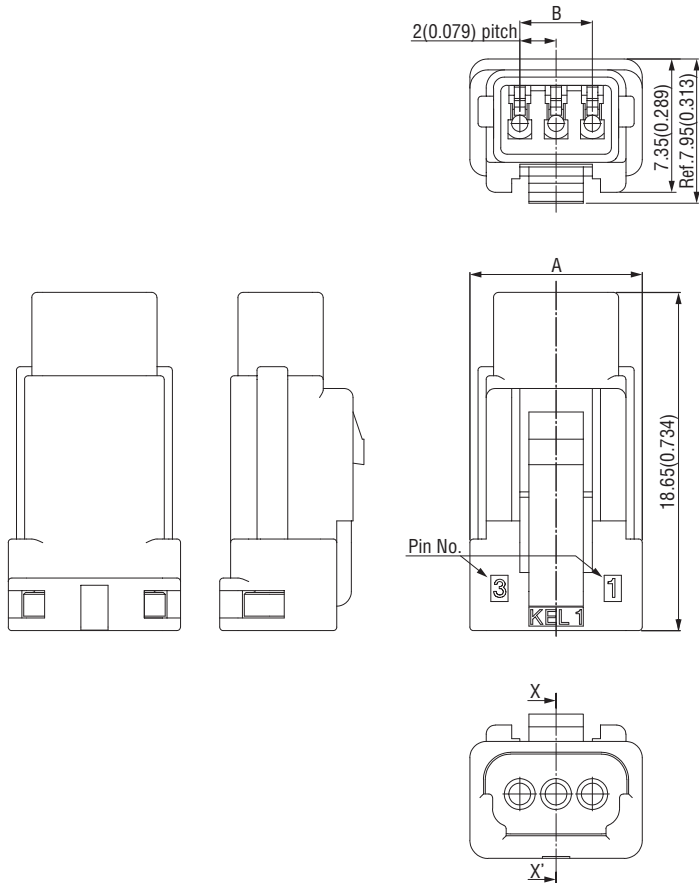
Packaging style
Other

Product table

Part number	Number of packaging
FWSB01-02-1	260

FWSP1A-□□-□□ (Plug, Cable-relay connector 2pin, 3pin, 4pin)

Unit : mm(inch)



**X-X' Cross section
(With the contact inserted)**

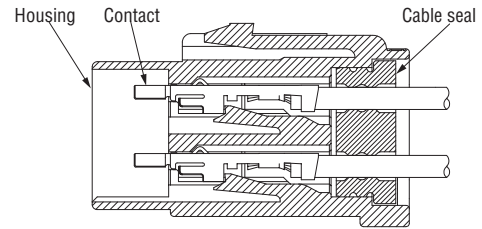
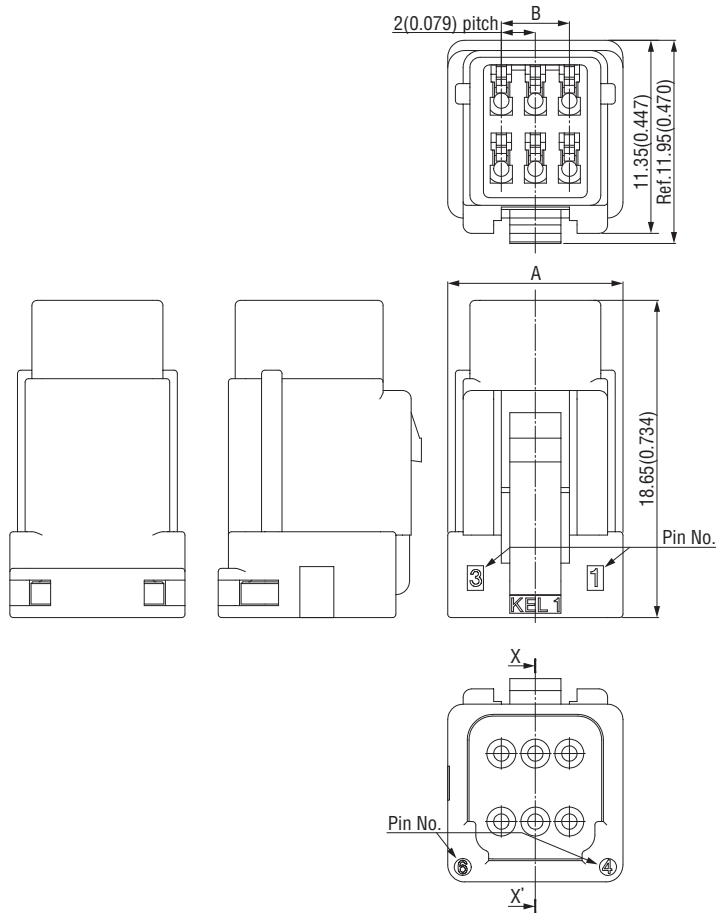
Packaging style
Other

Product table / Dimensions

No. of contacts	Part number	A	B	Number of packaging
2	FWSP1A-02-□□	7.5 (0.295)	2.0 (0.079)	800
3	FWSP1A-03-□□	9.5 (0.374)	4.0 (0.157)	600
4	FWSP1A-04-□□	11.5 (0.453)	6.0 (0.236)	500

FWSP1A-□□-□□ (Plug, Cable-relay connector 6pin, 8pin)

Unit : mm(inch)



**X-X' Cross section
(With the contact inserted)**

Product table / Dimensions

No. of contacts	Part number	A	B	Packaging style	
				Other	Number of packaging
6	FWSP1A-06-□□	10.3 (0.406)	4.0 (0.157)	Other	400
8	FWSP1A-08-□□	12.3 (0.484)	6.0 (0.236)	Other	300