

Waterproof D-Sub Connector Solutions

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Robust Waterproof D-Sub Connector Solutions provide protection in harsh environments from external particles including dust, foreign objects and moisture up to temporary immersion in water (IP67)



Waterproof D-Sub Connector Solutions

Features and Advantages

Metal watertight frame

Provides mechanical strength, shielding and rust prevention

Available in mixed layout

Offers various contact arrangements which include signal contacts, high power, coaxial or pneumatic

Machined copper alloy contacts

Provides robust contact with low resistance

Silicone seal

Affords confidence in water protection with a pre-installed integrated O-ring seal

Watertight insulator

Delivers watertight insulation between contacts and watertight lining to shell



Mixed Layout, Metal Frame, Rear Mount, High Power



RoHS compliant by exemption

Meets European Union regulations for banned materials hazardous to the environment

Additional Product Information

FWA series- IP67 when mated.
Simple sealing of non-waterproof connectors.

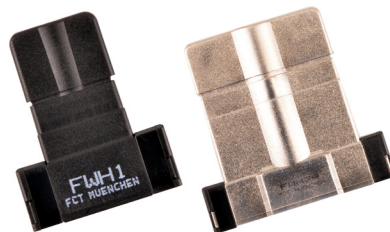


Waterproof Backshells



Waterproof Dust Caps

FWH series- IP67 mated or unmated. Must be used with D-sub connectors with modification -K700 or -2429.



Easy sealing of non-waterproof interfaces
IP67 rating when fully assembled & mated
Shell sizes 1, 2 and 3 available

Markets and Applications

Commercial Vehicle

- Telemetry
- GPS Navigation
- Marine

Industrial Automation

- Food processing equipment
- Sanitary equipment
- Devices exposed to water spray

Industrial

- Control panels on ruggedized laptops
- Outdoor Installations
 - Communication towers
 - Security cameras



Food and Beverage Equipment



Outdoor Installations

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Specifications

STANDARD WATERPROOF CONNECTORS

ELECTRICAL

Test Voltage (max.): 1200V/1 minute

Current (max.): 5.0A

Contact Resistance:

Straight contacts ≤ 10 milliohms

Right-angled contacts ≤ 25 milliohms

Right-angled contacts 50 way ≤ 35 milliohms

Insulation Resistance: $\geq 5000 M\Omega$

MECHANICAL

Mating Force per Signal Contact: $\leq 3.4N$

Unmating Force per Signal Contact: $\geq 0.2N$

Torque (max.): 40Ncm

HIGH DENSITY WATERPROOF CONNECTORS

ELECTRICAL

Test Voltage (max.): 1000V/1 minute

Current (max.): 3.0A

Contact Resistance:

Straight contacts ≤ 15 milliohms

Right-angled contacts ≤ 25 milliohms

Right-angled contacts 50 way ≤ 35 milliohms

Insulation Resistance: $\geq 3000 M\Omega$

MECHANICAL

Mating Force per Signal Contact: $\leq 3.4N$

Unmating Force per Signal Contact: $\geq 0.2N$

Torque (max.): 40Ncm

WATERPROOF BACKSHELLS

PHYSICAL

Standard Versions: PC-ABS, Flame Retardant

Shielded Versions: PC-ABS, Flame Retardant with

Nickel plating over Copper

Locking Screw: Brass, nickel plated

Color / Plating

Standard Versions: Black

Shielded Versions: Nickel

Waterproofing elements: Silicone

Operating Temperature:

Standard -35 to +120°C

Shielded -25 to +70°C

WATERPROOF PROTECTIVE CAPS

PHYSICAL

Cap: PC+ABS (black)

Locking Screw: Brass, nickel plated

Waterproofing elements: Elastomer

Operating Temperatures:

-35 to +120°C

PHYSICAL

Shell: Brass

Shell Plating: Tin over nickel

Insulator: Thermoplastic, glass fiber filled

Metal watertight frame: nickel plated zinc die-cast

Contact: Machined copper alloy

Contact Plating: Au over Ni

Waterproofing elements: Silicone

Operating Temperatures: -25 to +70°C

PHYSICAL

Shell: Brass

Shell Plating: Tin over nickel

Insulator: Thermoplastic, glass fiber filled

Metal watertight frame: nickel plated zinc die-cast

Contact: Machined copper alloy

Contact Plating: Au over Ni

Waterproofing elements: Silicone

Operating Temperatures: -25 to +70°C

MECHANICAL

Torque (max.): 40Ncm

REFERENCE INFORMATION

Protection Standard: DIN EN 60529 – IP67

RoHS: Yes by exemption

PACKAGING

All components are seal packed together in a transparent bag

MECHANICAL

Torque (max.): 40Ncm

REFERENCE INFORMATION

Protection Standard: DIN EN 60529 – IP67

RoHS: Yes by exemption

PACKAGING

Box

REFERENCE INFORMATION

Based on: IEC 60807-3 / DIN 41652

UL Recognized File No 168813

Protection Standard: DIN EN 60529 – IP67

Packaging: Box

RoHS: Yes by exemption

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Packaging: Box

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Ordering Information

Part No.	Engineering No.	Contact Type	Shell Size	No. Contacts	Termination	Panel Mount
High Density Waterproof Connectors						
<u>1731100004</u>	FWDR09P	Plug	1	9	Solder Cup	Rear
1731100006	FWDR15P	Plug	2	15		Rear
1731100008	FWDR25P	Plug	3	25		Rear
1731100005	FWDR09S	Socket	1	9		Rear
1731100007	FWDR15S	Socket	2	15		Rear
1731100009	FWDR25S	Socket	3	25		Rear
1731100114	FWDF09P	Plug	1	9		Front
1731100022	FWDF15P	Plug	2	15		Front
1731100092	FWDF25P	Plug	3	25		Front
1731100021	FWDF09S	Socket	1	9		Front
1731100023	FWDF15S	Socket	2	15		Front
1731100142	FWDF25S	Socket	3	25		Front
1731100024	FWDR09P1	Plug	1	9	Straight, PCB	Rear
1731100028	FWDR15P1	Plug	2	15		Rear
1731100031	FWDR25P1	Plug	3	25		Rear
1731100026	FWDR09S1	Socket	1	9		Rear
1731100030	FWDR15S1	Socket	2	15		Rear
1731100033	FWDR25S1	Socket	3	25		Rear

Part No.	Engineering No.	Contact Type	Shell Size	No. Contacts	Termination	Panel Mount
Standard Waterproof Connectors						
<u>1731100025</u>	FWDR09P25	Plug	1	9	Right Angle, PCB	Rear
1731100029	FWDR15P25	Plug	2	15		Rear
1731100032	FWDR25P25	Plug	3	25		Rear
1731100027	FWDR09S25	Socket	1	9		Rear
1731100104	FWDR15S25	Socket	2	15		Rear
1731100034	FWDR25S25	Socket	3	25		Rear
1731100010	F09P-K700	Plug	1	9	Solder Cup	For FWH
1731100012	F15P-K700	Plug	2	15		For FWH
1731100014	F25P-K700	Plug	3	25		For FWH
<u>1731090648</u>	F37P-K700	Plug	4	37		For FWH
1731100011	F09S-K700	Socket	1	9		For FWH
1731100013	F15S-K700	Socket	2	15		For FWH
1731100015	F25S-K700	Socket	3	25		For FWH
1731100233	F37S-K700	Socket	4	37		For FWH

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Ordering Information

Part No.	Engineering No.	Contact Type	Shell Size	No. Contacts	Termination	Panel Mount
High Density Waterproof Connectors						
<u>1731100035</u>	FWDRM09-15P-K1444	Plug	1	15		Rear
1731100097	FWDRM15-26P-K1444	Plug	2	26		Rear
1731100099	FWDRM25-44P-K1444	Plug	3	44		Rear
1731100036	FWDRM09-15S-K1444	Socket	1	15		Rear
1731100098	FWDRM15-26S-K1444	Socket	2	26		Rear
1731100100	FWDRM25-44S-K1444	Socket	3	44		Rear
1731100095	FWDFM09-15P-K1444	Plug	1	15		Front
1731100180	FWDFM15-26P-K1444	Plug	2	26		Front
1731100183	FWDFM25-44P-K1444	Plug	3	44		Front
1731100179	FWDFM09-15S-K1444	Socket	1	15		Front
1731100181	FWDFM15-26S-K1444	Socket	2	26		Front
1731100184	FWDFM25-44S-K1444	Socket	3	44		Front

Part No.	Engineering No.	Contact Type	Shell Size	No. Contacts	Termination	Panel Mount
High Density Waterproof Connectors						
<u>1731140378</u>	FWDRM09-15P1-K1676	Plug	1	15	Straight, PCB	Rear
1731140379	FWDRM15-26P1-K1676	Plug	2	26		Rear
1731140381	FWDRM25-44P1-K1676	Plug	3	44		Rear
<u>1731100247</u>	FWDRM09-15S1-K1676	Socket	1	15		Rear
1731140380	FWDRM15-26S1-K1676	Socket	2	26		Rear
1731140382	FWDRM25-44S1-K1676	Socket	3	44		Rear
1731140231	CT09-15P-2429	Plug	1	15	Solder Cup	For FWH
1731100235	CT15-26P-2429	Plug	2	26		For FWH
1731140376	CT25-44P-2429	Plug	3	44		For FWH
1731100111	CT09-15S-2429	Socket	1	15		For FWH
1731140396	CT15-26S-2429	Socket	2	26		For FWH
1731100236	CT25-44S-2429	Socket	3	44		For FWH

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Ordering Information

Part No.	Engineering No.	Shell Size	Metalized (Y or N)	Orientation	Cable Diameter (mm)
WATERPROOF BACKSHELLS					
1727040192	FWA1GAE	1	Y	Straight	6.00 to 8.00
1727040105	FWA1GE	1	N	Straight	6.00 to 8.00
1727040193	FWA2GAE	2	Y	Straight	6.00 to 8.00
1727040194	FWA2GE	2	N	Straight	6.00 to 8.00
1727040195	FWA3GAE	3	Y	Straight	8.00 to 10.50
1727040196	FWA3GE	3	N	Straight	8.00 to 10.50
1727040197	FWA4GAE	4	Y	Straight	8.00 to 10.50
1727040198	FWA4GE	4	N	Straight	8.00 to 10.50
1727040199	FWA5GAE	5	Y	Straight	9.00 to 11.00
1727040200	FWA5GE	5	N	Straight	9.00 to 11.00
1727040106	FWH1AE	1	Y	Straight	6.00 to 8.00
1731100016	FWH1E	1	N	Straight	6.00 to 8.00
1727040107	FWH2AE	2	Y	Straight	6.00 to 8.00
1731100017	FWH2E	2	N	Straight	6.00 to 8.00
1727040108	FWH3AE	3	Y	Straight	8.00 to 10.50
1731100018	FWH3E	3	N	Straight	8.00 to 10.50
WATERPROOF PROTECTIVE CAPS					
1731100103	FWAB1	1	N	Straight	
1731100093	FWAB2	2	N	Straight	
1731100102	FWAB3	3	N	Straight	

www.molex.com/link/dsubconnectors.html

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