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HRS General-purpose Multi-Contact Circular Waterproof Connectors

RM-W Series

Overview

High performance waterproof circular connectors and cable assemblies used in variety of applications requiring high reliability, ease of assembly and small size.

Features

1. Variety of types

Plugs : Available in 3 types - straight / long back shell, straight / short back shell, right angle back shell.

Receptacles : Waterproof types with front, back or flange panel mounting.

All types with 2, 3, 4, 8, 10, 12, 15, 20, 31, 40, 55 contacts. Contacts in 2 plating types: gold or silver.

2. Dust and water protection

When fully mated, the connector meet requirements of IP67 (48 hours at depth of 1.8 m)
(Single-body waterproof receptacles also meet requirements of IP67.)

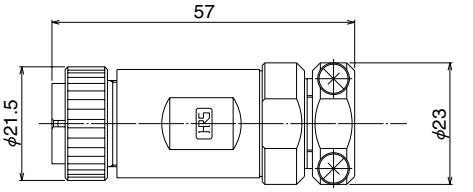
3. Cable exit in 360° directions

The right-angle plugs permit exiting of the cable over a 360-degree range in any direction.

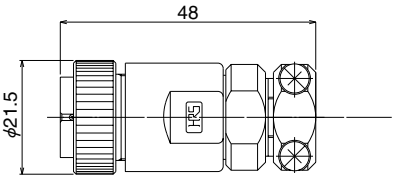
Applications

Base stations, factory automation equipment, robotic equipment, exploration and construction equipment, research instrumentation, variety of industrial and measuring instruments. Any other applications requiring high reliability waterproof circular connectors.

Plug – straight

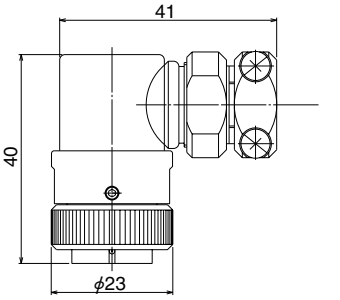


Long backshell

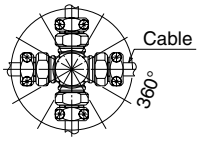


Short backshell

Plug – Right angle



360° Cable exit



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■Product Specifications (RM15WT size products)

Rating	Voltage rating	600V AC, 840V DC (2 pos.) 500V AC, 700V DC (3, 4, 8 pos.) 350V AC, 490V DC (10 pos.) 350V AC, 490V DC (12 pos.)
	Current rating	10A (2, 3, 4 pos.) 5A (8, 10, 12 pos.)
	Operating temperature range (Note 1)	-25℃ to +85℃
	Storage temperature range (Note 2)	-25℃ to +85℃

Characteristic	Specification	Conditions
1. Contact resistance	2 m Ω max.(2, 3, 4 pos.) 4 m Ω max.(8, 10, 12 pos.)	1A DC
2. Insulation resistance	1000 M Ω min	500V DC
3. Withstanding voltage	No flashover or insulation breakdown.	1800V AC/one minute (2 pos.) 2000V AC/one minute (3 pos.) 1500V AC/one minute (4, 8 pos.) 1000V AC/one minute (10, 12 pos.)
4. Vibration	No electrical discontinuity for 10μs max.	Frequency: 10 to 55Hz, single amplitude of 0.75mm,for 3 hours in 3 axis.
5. Shock	No electrical discontinuity for 10μs max.	Acceleration of 490m/s², 11ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis.
6. Durability (insertion/withdrawal)	4 m Ω max.(2, 3, 4 pos.) 8 m Ω max.(8, 10, 12 pos.)	2000 cycles
7. Temperature cycle	Insulation resistance: 100 M Ω min.	Temperature : -55℃ → Room temperature → +85℃ → Room temperature Time : 30 → 10 to 15 → 30 → 10 to 15 (Minutes) 5 cycles
8. Humidity	Insulation resistance: 100 M Ω min. (Dray state)	96 hours at temperature 0f 40℃ and humidity 0f 90% to 95%.
9. Water / dust protection	0When mated with corresponding connector.	Complete dust protection. No water penetration when submerged for 48 hours at the depth of 1.8 meter.

Note 1: Includes temperature rise caused by the current flow.
Note 2: The term “storage” refers to products stored for long period of time prior to mounting and use. Operating temperature range and humidity range covers non-conducting condition of installed connectors in storage, shipment or during transportation.

■Materials

Item	Material	Finish	Remarks
Body	Zinc alloy, brass, pliable PVC	Chrome plated or nickel plated	————
Insulator	Diallyl phthalate, PBT	Color: Black	UL94V-0
Contacts	Brass, phosphor bronze, or copper alloy	Silver plated or gold plated	————
Gasket	SIR (black or red), or NBR (gray)	Color: black or red (SIR), color: gray (NBR)	————

Note: Do not mix different contact plating.

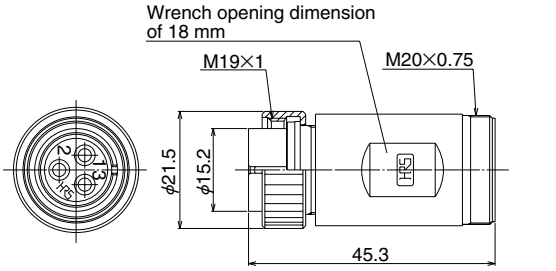
■Ordering Information

RM 15 W T P - 2 P (**)**
❶ ❷ ❶ ❸ ❹ ❺ ❻ ❼

❶ Series name : RM-W	❺ Number of Contacts
❷ Shell size	❻ Contact type P : Male contact S : Female contact
❸ Lock type T : Screw Lock	
❹ Connector type P : Plug R : Receptacle	❼ Plating (71) : Silver plated (72) : Gold plated

■Plugs - straight, long back shell

RM15WTPZA-10S(71)



(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

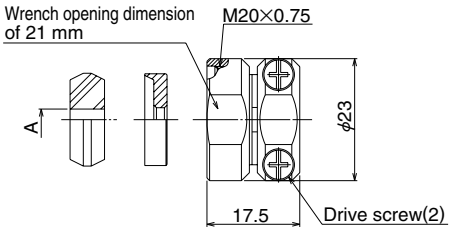
Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTPZA-2P(※※)	109-1734-5-※※	2	43g	YES
RM15WTPZA-3P(72)	109-1602-4- 72	3	45g	
RM15WTPZA-4P(※※)	109-1735-8-※※	4	44g	
RM15WTPZA-8P(※※)	109-1736-0-※※	8	43g	
RM15WTPZA-10P(※※)	109-1737-3-※※	10	44g	
RM15WTPZA-12P(※※)	109-1738-6-※※	12	44g	

Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTPZA-2S(※※)	109-1729-5-※※	2	45g	YES
RM15WTPZA-3S(※※)	109-1601-1-※※	3	47g	
RM15WTPZA-4S(※※)	109-1730-4-※※	4	45g	
RM15WTPZA-8S(※※)	109-1731-7-※※	8	45g	
RM15WTPZA-10S(※※)	109-1732-0-※※	10	45g	
RM15WTPZA-12S(※※)	109-1733-2-※※	12	45g	

■Applicable Strain reliefs

● External cable clamp + internal, self-tightening

JR16WCC-10(72)



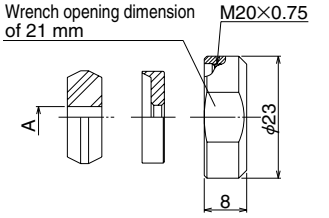
(shown one example)

Part Number	CL No.	A	Weight	RoHS
JR16WCC-4(72)	114-2052-6-72	4	17.5g	YES
JR16WCC-6(72)	114-2053-9-72	6	17.5g	
JR16WCC-8(72)	114-2054-1-72	8	17.5g	

Part Number	CL No.	A	Weight	RoHS
JR16WCC-10(72)	114-2055-4-72	10	17.5g	YES
JR16WCC-11(72)	114-2154-6-72	11	17.5g	
JR16WCC-12(72)	114-2056-7-72	12	17.5g	

● Internal, self tightening

JR16WCCA-10(72)



(shown one example)

Part Number	CL No.	A	Weight	RoHS
JR16WCCA-4(72)	114-2076-4-72	4	16g	YES
JR16WCCA-6(72)	114-2077-7-72	6	16g	
JR16WCCA-8(72)	114-2078-0-72	8	16g	

Part Number	CL No.	A	Weight	RoHS
JR16WCCA-10(72)	114-2079-2-72	10	16g	YES
JR16WCCA-11(72)	114-2155-9-72	11	16g	
JR16WCCA-12(72)	114-2080-1-72	12	16g	

Notes : 1. Cable jacket diameter:Use A ± 0.2mm
2. When using the self-tightening strain relief verify the cable pull force requirements.

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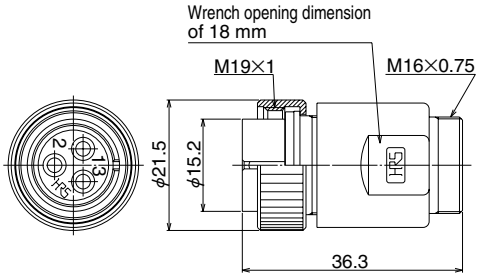
■Plugs - Straight, short back shell

RM15WTPZ-10S



(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

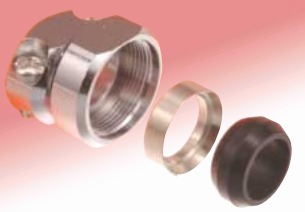
Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTPZ-2P(※※)	109-1616-9-※※	2	32g	YES
RM15WTPZ-3P(※※)	109-1622-1-※※	3	34g	
RM15WTPZ-4P(※※)	109-1617-1-※※	4	33g	
RM15WTPZ-8P(※※)	109-1618-4-※※	8	32g	
RM15WTPZ-10P(※※)	109-1619-7-※※	10	33g	
RM15WTPZ-12P(※※)	109-1620-6-※※	12	33g	

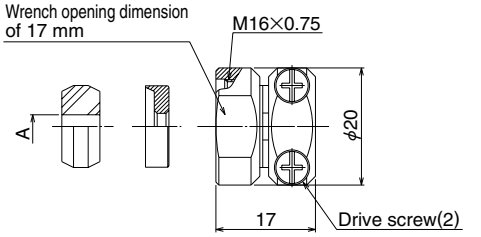
Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTPZ-2S(※※)	109-1611-5-※※	2	34g	YES
RM15WTPZ-3S(※※)	109-1621-9-※※	3	36g	
RM15WTPZ-4S(※※)	109-1612-8-※※	4	34g	
RM15WTPZ-8S(※※)	109-1613-0-※※	8	34g	
RM15WTPZ-10S(※※)	109-1614-3-※※	10	34g	
RM15WTPZ-12S(※※)	109-1615-6-※※	12	34g	

■Applicable Strain reliefs

● External cable clamp + internal, self-tightening

JR13WCC-10(72)





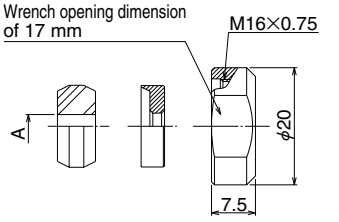
(shown one example)

Part Number	CL No.	A	Weight	RoHS
JR13WCC-4(72)	114-2045-0-72	4	17g	YES
JR13WCC-5(72)	114-2046-3-72	5	17g	
JR13WCC-6(72)	114-2047-6-72	6	17g	

Part Number	CL No.	A	Weight	RoHS
JR13WCC-7(72)	114-2048-9-72	7	17g	YES
JR13WCC-8(72)	114-2049-1-72	8	17g	
JR13WCC-9(72)	114-2050-0-72	9	17g	
JR13WCC-10(72)	114-2051-3-72	10	17g	

● Internal, self tightening

JR13WCCA-10(72)



(shown one example)

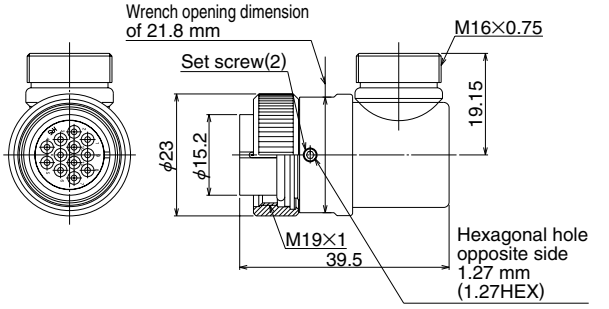
Part Number	CL No.	A	Weight	RoHS
JR13WCCA-4(72)	114-2069-9-72	4	12g	YES
JR13WCCA-5(72)	114-2070-8-72	5	12g	
JR13WCCA-6(72)	114-2071-0-72	6	12g	

Part Number	CL No.	A	Weight	RoHS
JR13WCCA-7(72)	114-2072-3-72	7	12g	YES
JR13WCCA-8(72)	114-2073-6-72	8	12g	
JR13WCCA-9(72)	114-2074-9-72	9	12g	
JR13WCCA-10(72)	114-2075-1-72	10	12g	

Notes : 1. Cable jacket diameter: Use A ± 0.2mm
2. When using the self-tightening strain relief verify the cable pull force requirements.

■Plugs - right angle

RM15WTLP-10S



(shown one example)

Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTLP-12P(71)	109-0997-9-71	12	62.3g	YES

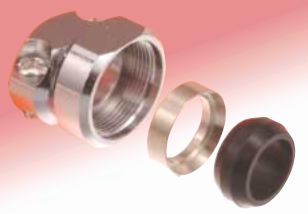
Part Number	CL No.	Number of Contacts	Weight	RoHS
RM15WTLP-10S(71)	109-0999-4-71	10	63.1g	YES

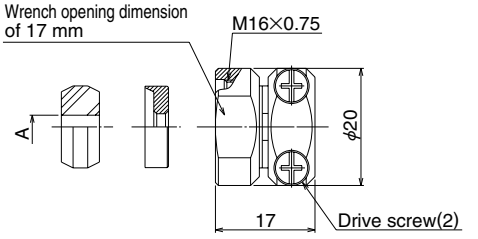
Notes : 1 Gasket material: NBR, body plating: nickel
2 Recommended set screw tightening torque: 0.2 to 0.3 N·m.
HRS recommended tool: PB205/1.27(CL 150-0066-3)

■Applicable Strain reliefs

● External cable clamp + internal, self-tightening

JR13WCC-10(72)





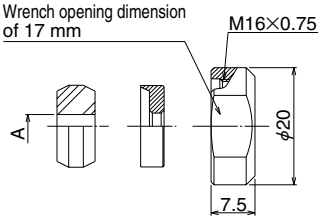
(shown one example)

Part Number	CL No.	A	Weight	RoHS
JR13WCC-4(72)	114-2045-0-72	4	17g	YES
JR13WCC-5(72)	114-2046-3-72	5	17g	
JR13WCC-6(72)	114-2047-6-72	6	17g	

Part Number	CL No.	A	Weight	RoHS
JR13WCC-7(72)	114-2048-9-72	7	17g	YES
JR13WCC-8(72)	114-2049-1-72	8	17g	
JR13WCC-9(72)	114-2050-0-72	9	17g	
JR13WCC-10(72)	114-2051-3-72	10	17g	

● Internal, self tightening

JR13WCCA-10(72)



(shown one example)

Part Number	CL No.	A	Weight	RoHS
JR13WCCA-4(72)	114-2069-9-72	4	12g	YES
JR13WCCA-5(72)	114-2070-8-72	5	12g	
JR13WCCA-6(72)	114-2071-0-72	6	12g	

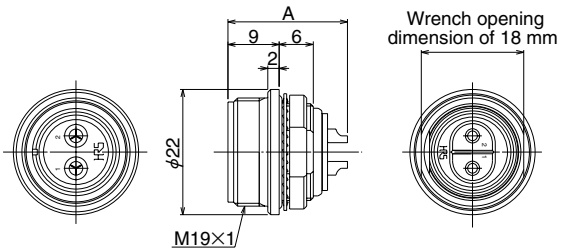
Part Number	CL No.	A	Weight	RoHS
JR13WCCA-7(72)	114-2072-3-72	7	12g	YES
JR13WCCA-8(72)	114-2073-6-72	8	12g	
JR13WCCA-9(72)	114-2074-9-72	9	12g	
JR13WCCA-10(72)	114-2075-1-72	10	12g	

Notes : 1 Cable jacket diameter: Use A ± 0.2mm
2 When using the self-tightening strain relief verify the cable pull force requirements.

■Receptacles

● Front panel mount

RM15WTRZ-10S(71)



(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

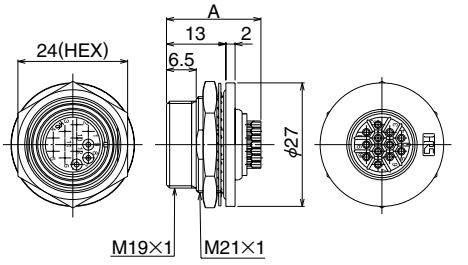
Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZ-2P(※※)	109-1631-2-※※	2	21	13g	YES
RM15WTRZ-3P(※※)	109-1632-5-※※	3	22.1	15g	
RM15WTRZ-4P(※※)	109-1633-8-※※	4	21	14g	
RM15WTRZ-8P(※※)	109-1634-0-※※	8	20.65	13g	
RM15WTRZ-10P(※※)	109-1635-3-※※	10	20.65	14g	
RM15WTRZ-12P(※※)	109-1636-6-※※	12	20.65	14g	

Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZ-2S(※※)	109-1637-9-※※	2	21.75	15g	YES
RM15WTRZ-3S(※※)	109-1638-1-※※	3	22.1	17g	
RM15WTRZ-4S(※※)	109-1639-4-※※	4	21.75	15g	
RM15WTRZ-8S(※※)	109-1640-3-※※	8	21.6	15g	
RM15WTRZ-10S(※※)	109-1641-6-※※	10	21.6	15g	
RM15WTRZ-12S(※※)	109-1642-9-※※	12	21.6	15g	

Notes : Recommended nut tightening torque: 3N·m

● Rear panel mount

RM15WTRZA-10S(71)



(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZA-2P(※※)	109-1651-0-※※	2	21	22g	YES
RM15WTRZA-3P(※※)	109-1652-2-※※	3	22.1	24g	
RM15WTRZA-4P(※※)	109-1653-5-※※	4	21	23g	
RM15WTRZA-8P(※※)	109-1654-8-※※	8	20.65	22g	
RM15WTRZA-10P(※※)	109-1655-0-※※	10	20.65	23g	
RM15WTRZA-12P(※※)	109-1656-3-※※	12	20.65	23g	

Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZA-2S(※※)	109-1657-6-※※	2	21.75	24g	YES
RM15WTRZA-3S(※※)	109-1658-9-※※	3	22.1	26g	
RM15WTRZA-4S(※※)	109-1659-1-※※	4	21.75	24g	
RM15WTRZA-8S(※※)	109-1660-0-※※	8	21.6	24g	
RM15WTRZA-10S(※※)	109-1661-3-※※	10	21.6	24g	
RM15WTRZA-12S(※※)	109-1662-6-※※	12	21.6	24g	

Notes : Recommended nut tightening torque: 3N·m

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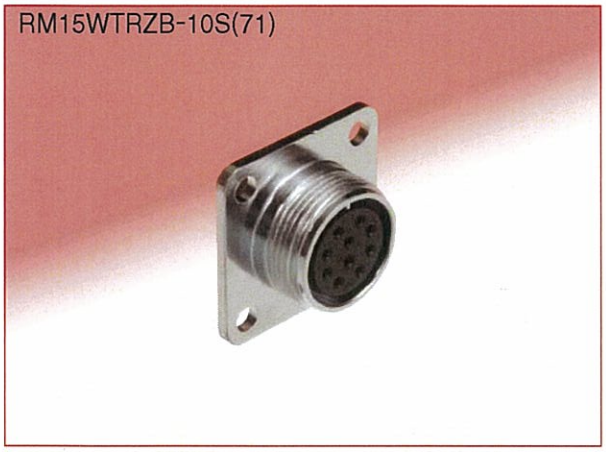
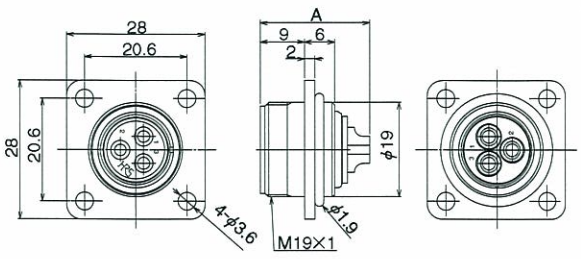
■Receptacles (Square flange)

● Waterproof (When mated with corresponding plug)

RM15WTRZB-10S(71)





(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

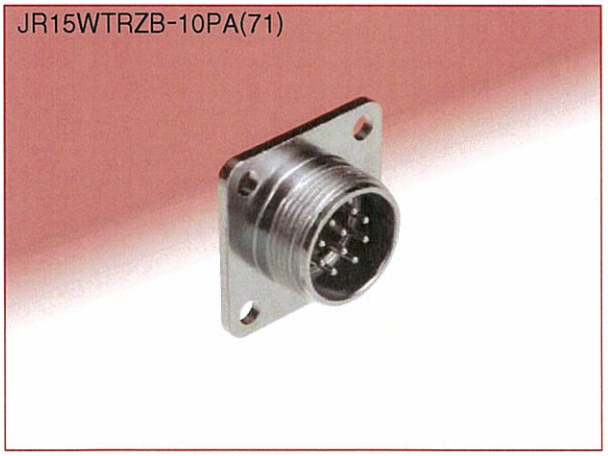
Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZB-2P(※※)	109-1671-7-※※	2	21	19g	YES
RM15WTRZB-3P(※※)	109-1672-0-※※	3	22.1	21g	
RM15WTRZB-4P(※※)	109-1673-2-※※	4	21	20g	
RM15WTRZB-8P(※※)	109-1674-5-※※	8	20.65	19g	
RM15WTRZB-10P(※※)	109-1675-8-※※	10	20.65	20g	
RM15WTRZB-12P(※※)	109-1676-0-※※	12	20.65	20g	

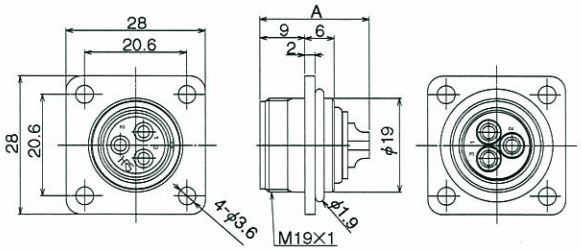
Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZB-2S(※※)	109-1677-3-※※	2	21.75	21g	YES
RM15WTRZB-3S(※※)	109-1678-6-※※	3	22.1	23g	
RM15WTRZB-4S(※※)	109-1679-9-※※	4	21.75	21g	
RM15WTRZB-8S(※※)	109-1680-8-※※	8	21.6	21g	
RM15WTRZB-10S(※※)	109-1681-0-※※	10	21.6	21g	
RM15WTRZB-12S(※※)	109-1682-3-※※	12	21.6	21g	

Notes : 1. Screw size: M3
2. Recommended nut tightening torque : 0.3 to 0.35N·m

● Waterproof (single body)

JR15WTRZB-10PA(71)





(shown one example)

[Specification number] (**), -**
(71) : Silver plated contacts
(72) : Gold plated contacts

Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZB-3PA(※※)	109-1692-7	3	22.1	20g	YES
RM15WTRZB-4PA(※※)	109-1693-0	4	21	21g	

Part Number	CL No.	Number of Contacts	A	Weight	RoHS
RM15WTRZB-8PA(※※)	109-1694-2	8	20.65	22g	YES
RM15WTRZB-10PA(71)	109-1695-5	10	20.6	24g	

Notes : 1. Screw size: M3
2. Recommended nut tightening torque : 0.3 to 0.35N·m

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.
All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

◆Plug – Disassembly / Assembly

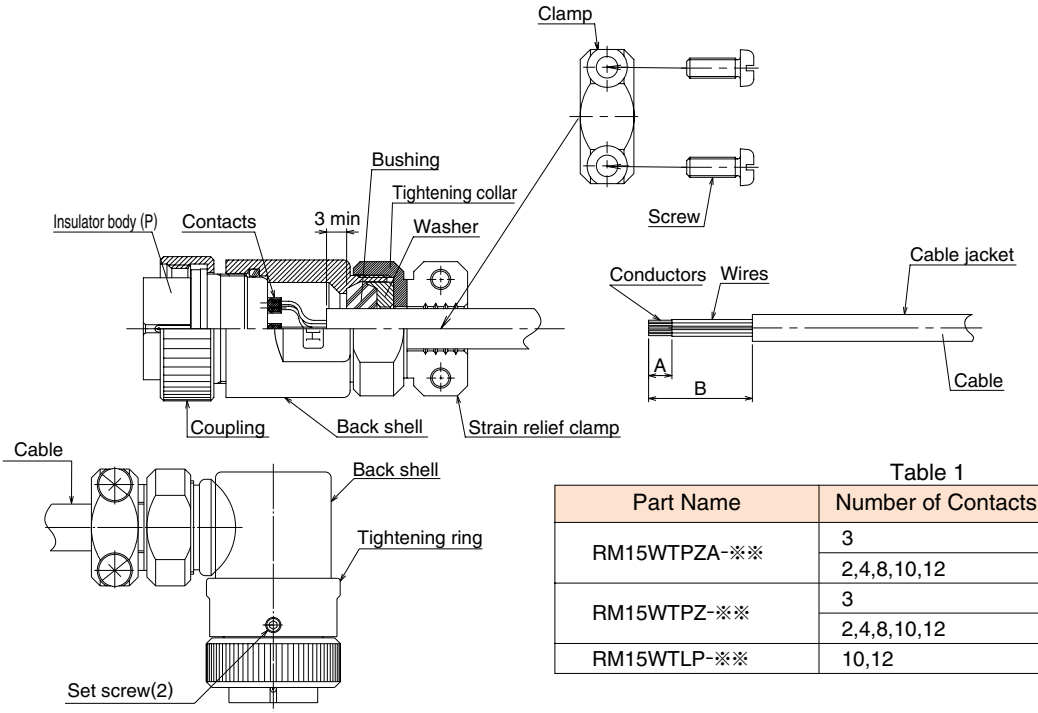


Table 1

Part Name	Number of Contacts	A	B
RM15WTPZA-※※	3	6mm	21mm
	2,4,8,10,12	3mm	21mm
RM15WTPZ-※※	3	6mm	12mm
	2,4,8,10,12	3mm	12mm
RM15WTLP-※※	10,12	3mm	25mm

1. Disassembly

① Fix the plug in the assembly fixture (RM15TP-T01 (CL150-0098-0)), then remove the insulator body (P) and the back shell. Right-angle plugs have set screws in the tightening ring at 2 locations. Loosen the set screws before removing the back shell.

② Remove the 2 screws of the strain relief clamp, and then remove the clamp from the tightening collar.

2. Wiring

① Assure that the cable outer diameter will fit the strain relief clamp, and is prepared as recommended in Table 1. It is recommended that the exposed conductors be pre-soldered, to assure easier insertion in the soldering cup.

② Pass the parts over the cable in the order of: tightening collar, washer, bushing, back shell, and coupling. Refer to the drawings (above) for assembly orientation of all components.

③ Solder the wires to the contacts of the insulator body (P).
Use of heat-shrink tubing or another insulating media between the soldered contacts is suggested.

3. Connector Assembly

Straight Plugs

① Place the completely wired insulator body (P) in the assembly fixture secured in a vise. Insert in the coupling, then back shell. The back shell should be tightened to a torque of 3 N·m.

Right-angle Plugs

① Place the completely wired insulator body (P) in an assembly fixture secured by a vise. Insert in the coupling, then back shell (with tightening ring). When attaching the back shell, orient the cable in the desired direction and fasten the tightening ring to the insulator body (P) with a torque of 3 N·m. After this, tighten and fix the 2 sets crews with a torque of 0.2 to 0.3 N·m.

Additional assembly recommendations:
In applications where continuous extremely high vibrations may be encountered it is recommended that a thread locking compound be applied to male threads prior to assembly (Loctite 271 ¸ manufactured by Henkel Japan K.K. or equivalent)

4. Waterproof verification - plug assembly

Apply air pressure of 17.6 kPa for 30 seconds from the mating side of the plug assembly. There shall not be any air leakage from inside the connector when submerged in the water tank.

5. Precautions

① Follow the correct assembly sequence, cable preparation and tightening torques.

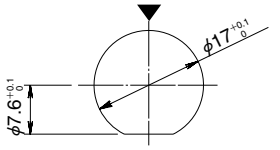
② Assure that the applicable cable outer surfaces are free of scratches, oil, grease or any other contamination.

③ Do not use excessive forces or improper tools when assembling or mounting the connectors.

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.
All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

Receptacle - recommended panel cut-outs

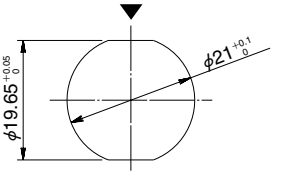
Front mounting, rear nut



Panel thickness: 0.5 to 2 mm

For RM15WTRZ receptacles

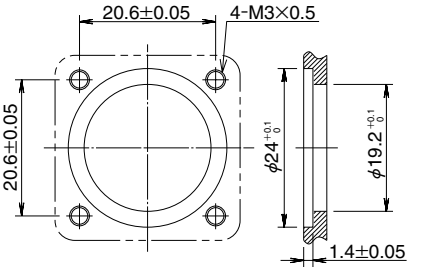
Rear mounting, front nut



Panel thickness: 0.5 to 2.5 mm

For RM15WTRZA receptacles

Square flange, screw mounting

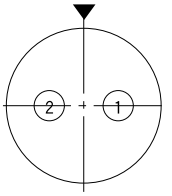
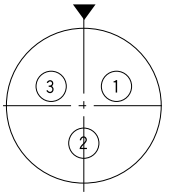
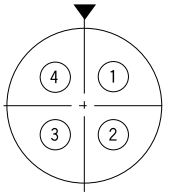
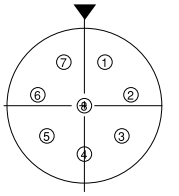
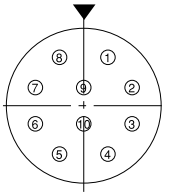
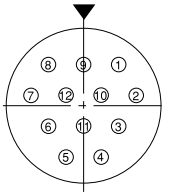


Panel thickness: 2.5 to 4 mm

For RM15WTRZB receptacles

Notes : 1. When attaching the receptacle to the panel, be certain to check that the gasket is in place in the groove. Do not pinch the gasket.
2. The view of the above diagrams is from the receptacle mating side.
3. The ▼ symbol in the above diagrams indicates the coupling guide position of the receptacles.

Contact Position Arrangement and Specifications

	Shell size : 15					
Contact configuration						
Number of contacts	2	3	4	8	10	12
Withstanding voltage	1800V AC / 1 minute	2000V AC / 1 minute	1500V AC / 1 minute	1500V AC / 1 minute	1000V AC / 1 minute	1000V AC / 1 minute
Current rating	10A	10A	10A	5A	5A	5A
Insulation resistance	1000MΩ min.	1000MΩ min.	1000MΩ min.	1000MΩ min.	1000MΩ min.	1000MΩ min.
Contact resistance	2mΩ max.	2mΩ max.	2mΩ max.	4mΩ max.	4mΩ max.	4mΩ max.
Solder pot inner diameter	1.7mm	2.8mm	1.7mm	1.1mm	1.1mm	1.1mm

Notes : 1. The contact configuration as viewed from the wiring side.
2. The ▼ symbol in the above diagrams indicates the coupling guide position of the receptacles.
3. Withstanding voltages indicate test voltage values.

Precautions

1. Switch off the power of the circuit before disconnecting or plugging- in the connectors.
2. Use a connectors with socket contacts at the power side of the circuit.
3. Make sure that the coupling is in completely cocked position.
4. Use correct plug / receptacle to assure dust and water protection.

■Product Specifications (RM21WT to RM31WT size products)

Rating	Voltage rating	600V AC, 840V DC (40 pos.) 500V AC, 700V DC (15, 31, 55 pos.) 350V AC, 490V DC (20 pos.)
	Current rating	5A
	Operating temperature range (Note 1)	-25℃ to +85℃
	Storage temperature range (Note 2)	-25℃ to +85℃

Characteristic	Specification	Conditions
1. Contact resistance	4 m Ω max.	1A DC
2. Insulation resistance	1000 M Ω min	500V DC
3. Withstanding voltage	No flashover or insulation breakdown.	1800V AC/one minute (4 pos.) 1500V AC/one minute (15, 31, 55 pos.) 1000V AC/one minute (20 pos.)
4. Vibration	No electrical discontinuity for 10μs max.	Frequency: 10 to 55Hz, single amplitude of 0.75mm,for 3 hours in 3 axis.
5. Shock	No electrical discontinuity for 10μs max.	Acceleration of 490m/s², 11ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis.
6. Durability (insertion/withdrawal)	8 m Ω max.	2000 cycles
7. Temperature cycle	Insulation resistance: 100 M Ω min.	Temperature : -55℃ → Room temperature → +85℃ → Room temperature Time : 30 → 10 to 15 → 30 → 10 to 15 (Minutes) 5 cycles
8. Humidity	Insulation resistance: 100 M Ω min. (Dray state)	96 hours at temperature 0f 40℃ and humidity 0f 90% to 95%.
9. Water / dust protection	0When mated with corresponding connector.	Complete dust protection. No water penetration when submerged for 48 hours at the depth of 1.8 meter.

Note 1: Includes temperature rise caused by the current flow.
Note 2: The term “storage” refers to products stored for long period of time prior to mounting and use. Operating temperature range and humidity range covers non-conducting condition of installed connectors in storage, shipment or during transportation.

■Materials

Item	Material	Finish	Remarks
Body	Brass	Chrome plated or nickel plated	————
Insulator	Diallyl phthalate	Color: Black	UL94V-0
Contacts	Brass, copper alloy	Silver plated or gold plated	————
Gasket	Chloroprene rubber or SIR	Color: black	————

Note: Do not mix different contact plating.

■Ordering Information

RM ❶ 21 ❷ W ❶ T ❸ P ❹ - 2 ❺ P ❻ (**) ❼**

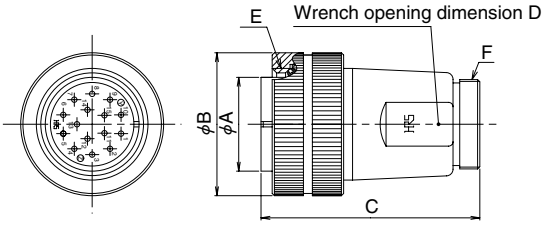
RM 21 W T P - CP ❽ (10) ❾ (**)

❶ Series name : RM-W	❺ Number of Contacts
❷ Shell size	❻ Contact type P : Male contact S : Female contact
❸ Lock type T : Screw Lock	
❹ Connector type P : Plug R : Receptacle	❼ Plating (71) : Silver plated (72) : Gold plated

❽ CP: Strain relief	❾ () with : External cable clamp () without : Internal cable clamp 4～18 : Cable size

■Plugs - straight, long back shell

RM21WTPS-15S(71)



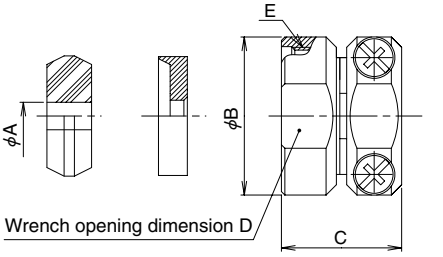
(shown one example)

Part Number	CL No.	Number of Contacts	ϕA	ϕB	C	D	E	F	Weight	Remarks	RoHS
RM21WTPS-15S(71)	109-1860-0-71	15	21	32	49	23	TM25×2	M20×0.75	104.5	Silver plated only	YES
RM24WTPB-31S(71)	109-1852-1-71	31	24.3	36	54	26	TM29×2	M24×0.75	144.6		
RM24WTPB-31P(71)	109-1855-0-71	31	24.3	36	54	26	TM29×2	M24×0.75	140.0		

■Applicable Strain reliefs

● External cable clamp + internal, self-tightening

RM24WTP-CP14(71)



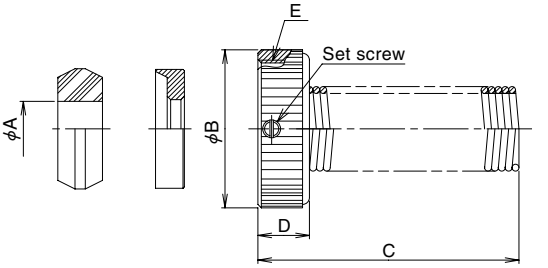
(shown one example)

Part Number	CL No.	ϕA	ϕB	C	D	E	Weight	Remarks	RoHS
JR16WCC-4(72)	114-2052-6-72	4	23	17.5	21	M20×0.75	17.5g	For RM21WT	YES
JR16WCC-6(72)	114-2053-9-72	6	23	17.5	21	M20×0.75	17.5g		
JR16WCC-8(72)	114-2054-1-72	8	23	17.5	21	M20×0.75	17.5g		
JR16WCC-10(72)	114-2055-4-72	10	23	17.5	21	M20×0.75	17.5g		
JR16WCC-11(72)	114-2154-6-72	11	23	17.5	21	M20×0.75	17.5g		
JR16WCC-12(72)	114-2056-7-72	12	23	17.5	21	M20×0.75	17.5g		
RM24WTP-CP14(71)	109-1851-9-71	14	29	17.5	26	M24×0.75	17.5g	For RM24WT	

Notes : 1. Cable jacket diameter:Use A ± 0.2mm. Notes : 2. Recommended set screw tightening torque : 0.3 to 0.4 N·m.
HRS recommended tool : PB205/1.27(CL 150-0066-3)

● Internal, self tightening

RM21WTP-CP(8)(71)



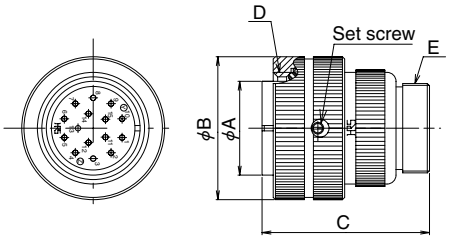
(shown one example)

Part Number	CL No.	ϕA	ϕB	C	D	E	Weight	Remarks	RoHS
RM21WTP-CP(8)(71)	109-1405-3-71	8	23	38	7.5	M20×0.75	22.5	For RM21WT	YES
RM21WTP-CP(10)(71)	109-1406-6-71	10	23	38	7.5	M20×0.75	22.0		
RM21WTP-CP(12)(71)	109-1407-9-71	12	23	38	7.5	M20×0.75	21.5		
RM24WTP-CP(10)(71)	109-1493-0-71	10	27	38.5	8	M24×0.75	28.5	For RM24WT	
RM24WTP-CP(12)(71)	109-1494-3-71	12	27	38.5	8	M24×0.75	28.5		
RM24WTP-CP(14)(71)	109-1495-6-71	14	27	38.5	8	M24×0.75	28.0		
RM24WTP-CP(16)(71)	109-1496-9-71	16	27	38.5	8	M24×0.75	26.5		

Notes : 1. Cable jacket diameter:Use A ± 0.2mm. Notes : 2. Recommended set screw tightening torque : 0.2 to 0.3 N·m.
Notes : 3. When using the self-tightening strain relief verify the cable pull force requirements.

■Plugs - Straight, short back shell

RM21WTP-15S(71)



(shown one example)

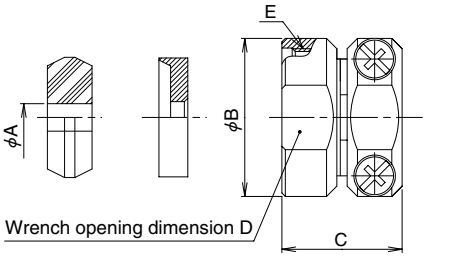
Part Number	CL No.	Number of Contacts	φA	φB	C	E	F	Weight	Remarks	RoHS
RM21WTP-15S(71)	109-1401-2-71	15	21	32	37.5	TM25×2	M20×0.75	88.5	Silver plated only	YES
RM21WTP-20S(71)	109-1402-5-71	20	21	32	37.5	TM25×2	M20×0.75	88.5		
RM21WTP-15P(71)	109-1403-8-71	15	21	32	37.5	TM25×2	M20×0.75	85		
RM21WTP-20P(71)	109-1404-0-71	20	21	32	37.5	TM25×2	M20×0.75	85		
RM24WTP-31S(71)	109-1491-5-71	31	24.3	36	44	TM29×2	M24×0.75	128		
RM24WTP-31P(71)	109-1492-8-71	31	24.3	36	44	TM29×2	M24×0.75	123		
RM31WTP-40S(71)	109-1571-2-71	40	30.8	42	52	TM35×2	M28×0.75	152		
RM31WTP-55S(71)	109-1572-5-71	55	30.8	42	52	TM35×2	M28×0.75	157		
RM31WTP-40P(71)	109-1573-8-71	40	30.8	42	52	TM35×2	M28×0.75	152		
RM31WTP-55P(71)	109-1574-0-71	55	30.8	42	52	TM35×2	M28×0.75	150		

Notes : Recommended set screw tightening torque : 0.2 to 0.3 N·m.

■Applicable Strain reliefs

● External cable clamp + internal, self-tightening

RM24WTP-CP14(71)



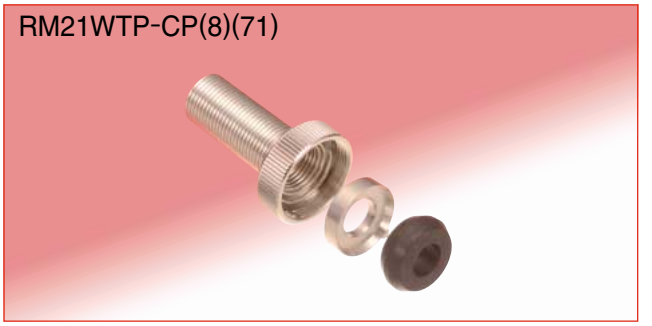
(shown one example)

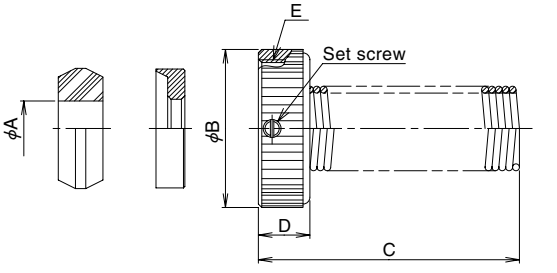
Part Number	CL No.	φA	φB	C	D	E	RoHS
RM21WTP-CP10(71)	109-1478-7-71	10	25	17	21	M20×0.75	YES
RM21WTP-CP12(71)	109-1477-4-71	12	25	17	21	M20×0.75	
RM24WTP-CP14(71)	109-1851-9-71	14	29	17.5	26	M24×0.75	

Notes : 1. Cable jacket diameter:Use A ± 0.2mm. Notes : 2. Recommended set screw tightening torque : 0.3 to 0.4 N·m.
HRS recommended tool : PB205/1.27(CL 150-0066-3)

● Internal, self tightening

RM21WTP-CP(8)(71)





(shown one example)

Part Number	CL No.	φA	φB	C	D	E	Weight	RoHS
RM21WTP-CP(8)(71)	109-1405-3-71	8	23	38	7.5	M20×0.75	22.5	YES
RM21WTP-CP(10)(71)	109-1406-6-71	10	23	38	7.5	M20×0.75	22	
RM21WTP-CP(12)(71)	109-1407-9-71	12	23	38	7.5	M20×0.75	21.5	
RM24WTP-CP(10)(71)	109-1493-0-71	10	27	38.5	8	M24×0.75	28.5	
RM24WTP-CP(12)(71)	109-1494-3-71	12	27	38.5	8	M24×0.75	28.5	
RM24WTP-CP(14)(71)	109-1495-6-71	14	27	38.5	8	M24×0.75	28.5	
RM24WTP-CP(16)(71)	109-1496-9-71	16	27	38.5	8	M24×0.75	28.5	
RM31WTP-CP(10)(71)	109-1575-3-71	10	31	42	12	M28×0.75	46	
RM31WTP-CP(12)(71)	109-1576-6-71	12	31	42	12	M28×0.75	46	
RM31WTP-CP(14)(71)	109-1579-4-71	14	31	42	12	M28×0.75	45	
RM31WTP-CP(16)(71)	109-1577-9-71	16	31	42	12	M28×0.75	43.5	
RM31WTP-CP(18)(71)	109-1578-1-71	18	31	42	12	M28×0.75	42	

Notes : 1. Cable jacket diameter:Use A ± 0.2mm. Notes : 2. Recommended set screw tightening torque : 0.2 to 0.3 N·m.
Notes : 3. When using the self-tightening strain relief verify the cable pull force requirements.

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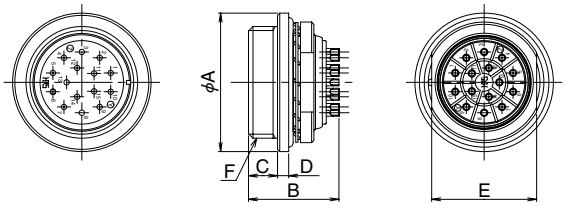
■Receptacles

● Front panel mount

RM21WTR-15P(71)



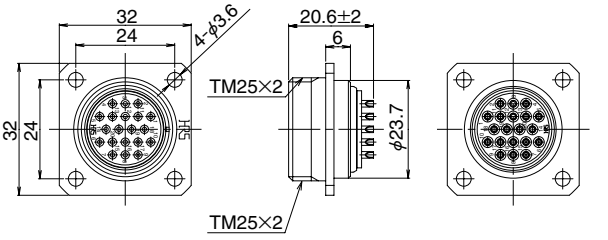
(shown one example)

Part Number	CL No.	Number of Contacts	φA	B	C	D	E	E	Weight	Remarks	RoHS
RM21WTR-15P(71)	109-1445-8-71	15	31	21	6.5	2	23.5	TM25×2	28	Silver plated only	YES
RM21WTR-15S(71)	109-1447-3-71	15	31	21	6.5	2	23.5	TM25×2	31.5		
RM21WTR-20P(71)	109-1446-0-71	20	31	21	6.5	2	23.5	TM25×2	31.5		
RM21WTR-20S(71)	109-1448-6-71	20	31	21	6.5	2	23.5	TM25×2	31.5		
RM24WTR-31P(71)	109-1483-7-71	31	35	21	6.5	2.5	28	TM29×2	41.5		
RM24WTR-31S(71)	109-1484-0-71	31	35	21	6.5	2.5	28	TM29×2	42		
RM31WTR-40P(71)	109-1525-5-71	40	41	21	6.5	2.5	34	TM35×2	50		
RM31WTR-40S(71)	109-1527-0-71	40	41	21	6.5	2.5	34	TM35×2	52		
RM31WTR-55P(71)	109-1526-8-71	55	41	21	6.5	2.5	34	TM35×2	53.5		
RM31WTR-55S(71)	109-1528-3-71	55	41	21	6.5	2.5	34	TM35×2	54		

Notes : Recommended nut tightening torque : 3 N·m

● Waterproof (single body)

RM21WTRK-20P(71)



(shown one example)

Part Number	CL No.	Number of Contacts	Remarks	RoHS
RM21WTRK-20P(71)	109-1466-8-71	20	Gold plated only	YES

Notes : 1. Screw size : M3
2. Recommended nut tightening torque : 0.3 to 0.35 N·m
3. Use a 1.9 to 2.0 mm dia.thick O-ring for the waterproof gasket that is used in the connector mounting portion.

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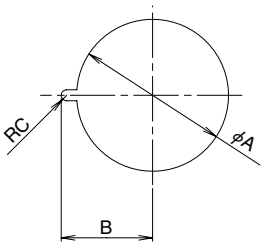
Receptacle - recommended panel cut-out

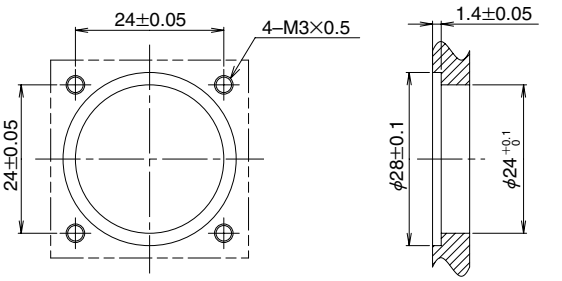
Front mounting, rear nut



Panel thickness: 0.5 to 2 mm

For RM**WTR receptacles

Square flange, screw mounting



Panel thickness: 2.5 to 4 mm

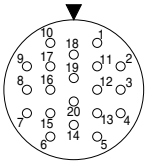
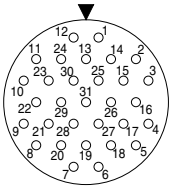
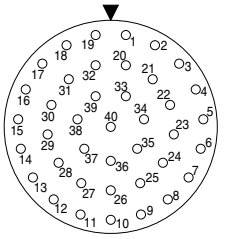
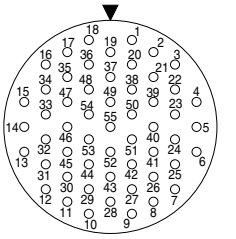
For RM21WTRK receptacles

Part Number	φA	B	RC
For RM21WTR	22.1	13.3	0.8
For RM24WTR	26.1	15.1	0.8
For RM31WTR	32.1	18.3	0.85

Notes : Tolelance is +0.1/0.

Notes : 1. When attaching the receptacle to the panel, be certain to check that the gasket is in place in the groove. Do not pinch the gasket.
2. The view of the above diagrams is from the receptacle mating side.
3. The ▼ symbol in the above diagrams indicates the coupling guide position of the receptacles.

Contact Position Arrangement and Specifications

	Shell size : 21		Shell size : 24	Shell size : 31	
Contact configuration					
Number of contacts	15	20	31	40	55
Withstanding voltage	1500V AC / 1 minute	1000V AC / 1 minute	1500V AC / 1 minute	1800V AC / 1 minute	1500V AC / 1 minute
Current rating	5A	5A	5A	5A	5A
Insulation resistance	1000MΩ min.	1000MΩ min.	1000MΩ min.	1000MΩ min.	1000MΩ min.
Contact resistance	4mΩ max.	4mΩ max.	4mΩ max.	4mΩ max.	4mΩ max.
Solder pot inner diameter	1.1mm	1.1mm	1.1mm	1.1mm	1.1mm

Notes : 1. The contact configuration as viewed from the wiring side.
2. The ▼ symbol in the above diagrams indicates the coupling guide position of the receptacles.
3. Withstanding voltages indicate test voltage values.

Precautions

1. Switch off the power of the circuit before disconnecting or plugging- in the connectors.
2. Use a connectors with socket contacts at the power side of the circuit.
3. Make sure that the coupling is in completely cocked position.
4. Use correct plug / receptacle to assure dust and water protection.

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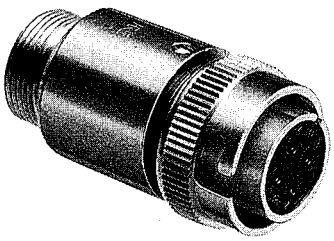
Waterproof RM Series

The Waterproof RM Series has been developed by redesigning the standard RM Series, but maintaining the same electrical speicifications as the standard RM Series.

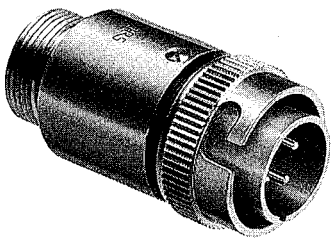
Model RM12WB Connectors

The RM12B is designed to be watertight for 48 hours at 0.5 M under water, and the RM15T or above is designed to be watertight for 48 hours at 1.0 M under water.

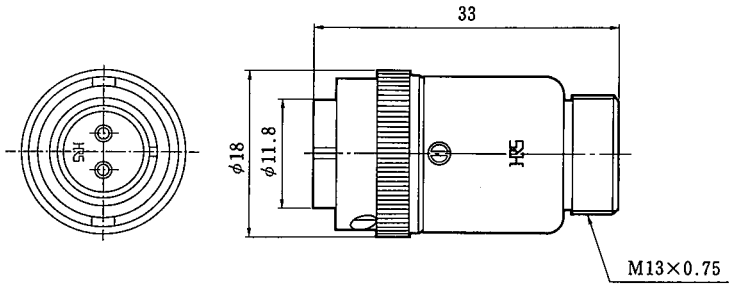
Plug



RM12WBP–4S



RM12WBP–4P



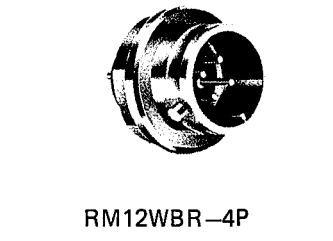
(An example in shape)

HRS No.	Part No.	No. of pins
109–1141–3	RM12WBP–2S	2
109–1142–6	RM12WBP–3S	3
109–1143–9	RM12WBP–4S	4
109–1144–1	RM12WBP–5S	5
109–1145–4	RM12WBP–6S	6

HRS No.	Part No.	No. of pins
109–1146–7	RM12WBP–2P	2
109–1147–0	RM12WBP–3P	3
109–1148–2	RM12WBP–4P	4
109–1149–5	RM12WBP–5P	5
109–1150–4	RM12WBP–6P	6

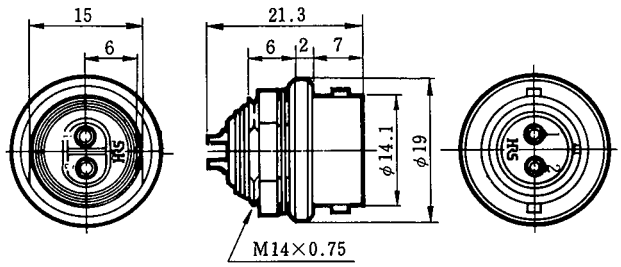
Note 1: Be sure to use plugs in combination with code clamps.

Receptacle



RM12WBR–4P

RM12WBR–4S



(An example in shape)

HRS No.	Part No.	No. of pins
109–1021–1	RM12WBR–2P	2
109–1022–4	RM12WBR–3P	3
109–1023–7	RM12WBR–4P	4
109–1024–0	RM12WBR–5P	5
109–1025–2	RM12WBR–6P	6

HRS No.	Part No.	No. of pins
109–1026–5	RM12WBR–2S	2
109–1027–8	RM12WBR–3S	3
109–1028–0	RM12WBR–4S	4
109–1029–3	RM12WBR–5S	5
109–1030–2	RM12WBR–6S	6

Remark: For mounting holes, see page 60.

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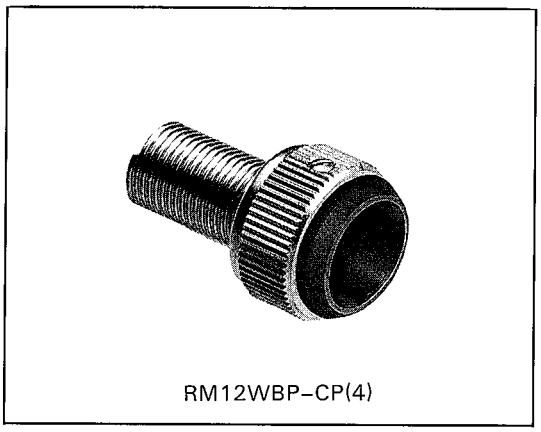
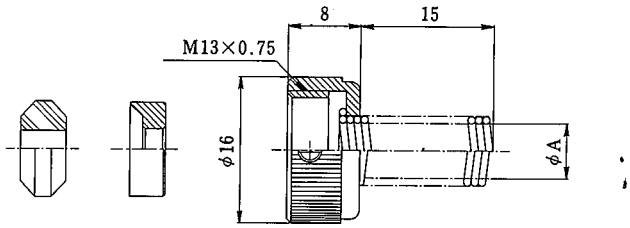
Cord Clamp



RM12WBP-CP(4)



(An example in shape)

HRS No.	Part No.	φA	Cable dia.
109–1151–7	RM12WBP-CP(4)	5.5	φ4
109–1152–0	RM12WBP-CP(5)	5.5	φ5
109–1153–2	RM12WBP-CP(6)	7.5	φ6
109–1154–5	RM12WBP-CP(7)	7.5	φ7

Note: Carefully choose the applicable cable because clamping force and waterproofness differ according to the type.