

## HR41A Series

# Waterproof Connectors for Outdoor Use



Harsh Environment



Waterproof



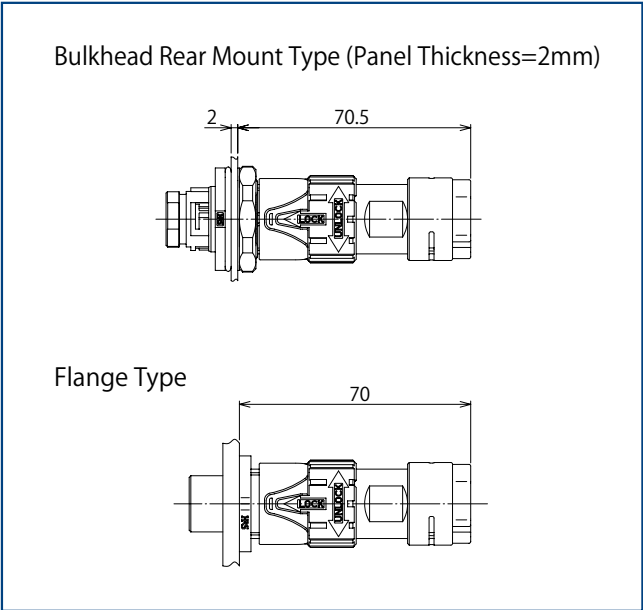
Bayonet



# Features

## 1. Waterproof Connector with Excellent Weather Resistance for Outdoor Use

With a highly weather resistant plastic shell made of UL compliant material (UL746C f1), HR41A is ideal for outdoor applications.



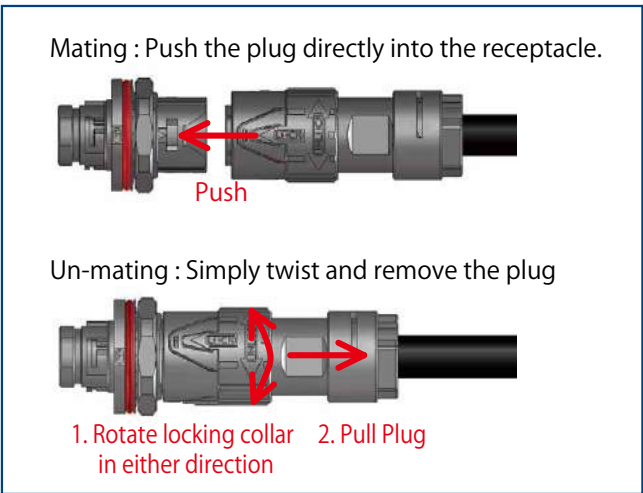
Mated Condition

## 2. Waterproof Performance

IP67, IP68 when mated.  
 IP67 : Left for 30 min. at a water depth of 1m.  
 IP68 : Left for 14 days at a water depth of 2m.

## 3. Easy to Operate Push-on Bayonet Lock

The push-on bayonet lock quickly achieves complete locking in a single action.



Locking Design (Push-on Bayonet Lock)

## 4. Easy Field Assembly

The simple crimp connection and easy assembly design are ideal for on-site assembly.

## 5. Sequential Contacts

Contacts are sequentially arranged.

## 6. Designed to Accommodate Hot Swapping

Hot swapping condition test methods meet UL1977 standards.

## 7. Surge Resistant

Walls between adjacent contacts provides insulation against 15kV surges caused by lightning.

## 8. Safety Standard Certified

UL1977 standard certified.

## Product Specifications

|                        |                           |                                |               |
|------------------------|---------------------------|--------------------------------|---------------|
| Rated Current (Note 1) | 13A (Ambient Temp. 25°C ) | Operating Temperature (Note 2) | -40 to +105°C |
|                        |                           | Storage Temperature Range      | -10 to +60°C  |
| Rated Voltage          | 1000V AC/DC               |                                |               |

|        |                        |            |                                |               |
|--------|------------------------|------------|--------------------------------|---------------|
| UL,TÜV | Rated Current (Note 1) | 10A        | Operating Temperature (Note 2) | -40 to +105°C |
|        | Rated Voltage          | 600V AC/DC | Storage Temperature Range      | -10 to +60°C  |

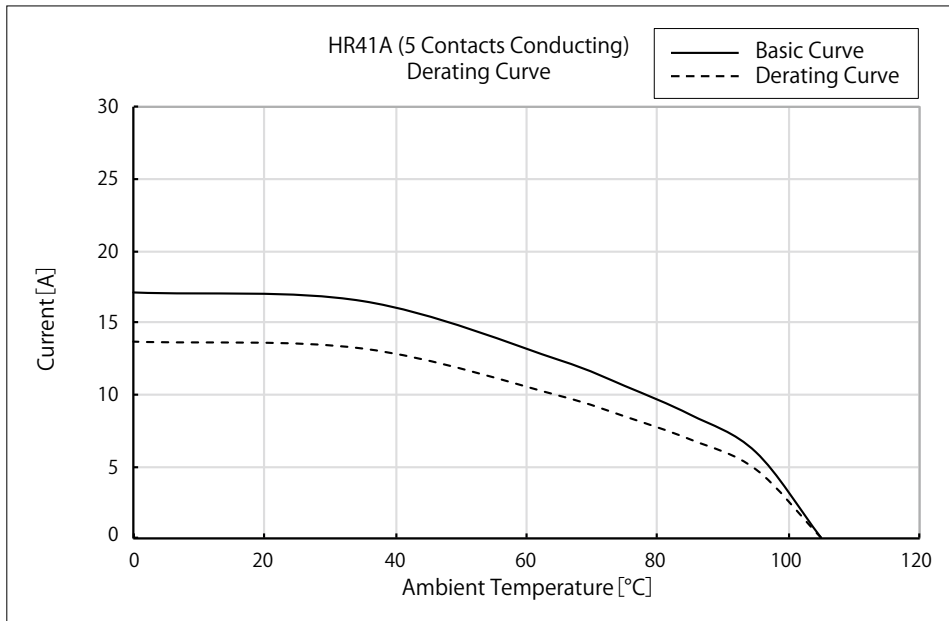
| Items                              | Specifications  | Conditions   |
|------------------------------------|---|--|
| Contact Resistance                 | 5mΩ Max.  | Measured at 1A DC  |
| Insulation Resistance              | 5000MΩ Min.   | Measured at 500V DC  |
| Withstand Voltage                  | No flashover or breakdown   | 2200V AC for one min.  |
| Vibration Resistance               | No electrical interruption of 10 μ s or more                          | Frequency : 10 to 55 to 10Hz/cycle<br>Half amplitude 0.75mm, 5 minutes/cycle<br>10 cycles each in 3 axis directions                                    |
| Shock Resistance                   | No electrical interruption of 10 μ s or more                          | Acceleration : 490m/s <sup>2</sup> , duration : 11ms,<br>3 times each in 3 axis directions   |
| Mating Durability                  | Contact resistance 10mΩ Max.  | 500 times  |
| Temperature Cycle                  | Insulation resistance 500MΩ Min.                                      | -40°C for 30 minutes → Room temperature for 2 to 3 minutes<br>→ +105°C for 30 minutes → Room temperature for 2 to 3 minutes.<br>Repeated for 5 cycles. |
| Moisture Resistance (Steady State) | Insulation Resistance : 50MΩ Min. (High Humidity)<br>500MΩ Min. (Dry) | Temperature : 40°C , relative humidity : 90 to 95%,<br>left for 96 hours   |
| Water Resistance                   | No water intrusion inside connector                                   | Left submerged at a water depth of 2m in the mated condition for 14 days   |

Note 1 : Varies depending on the temperature the connector is used at. Use within the derating curve is recommended.  
When applying the UL or TÜV standards, use within the derating curve.

Note 2 : Includes temperature rise due to current flow.

Note 3 : Depending on the cable design and specifications, cable clamping force, rotation force, waterproof performance, etc. may differ. Please confirm before use.

## [Reference] Derating Curve



Note 1 : The derating curve is derived from the basic curve multiplied by the derating factor of 0.8.

Note 2 : The measurement method of the derating curve is as follows:

- HR41A, unused prior to testing.
- Conductor cross-sectional area of test cable : 16 AWG (1.31mm<sup>2</sup>)
- Test condition : Measured after power supplied while the mated connectors are in a stationary state.

## Materials / Finish

| Component      | Materials       | Finish                | UL Standard (Noncombustible) |
|----------------|-----------------|-----------------------|------------------------------|
| Insulator      | Polyamide, PBT  | -                     | UL94V-0                      |
| Contact        | Copper Alloy    | Partially Gold Plated | -                            |
| O-ring, Gasket | Silicone Rubber | -                     | -                            |

## Product Number Structure

Refer to the chart below when determining the product specifications from the product number.  
Please select from the product numbers listed in this catalog when placing orders.

### ■ Connector

**HR41A - 17 W B P A - 5 S C (##)**

①      ②    ③   ④   ⑤   ⑥    ⑦   ⑧   ⑨   ⑩

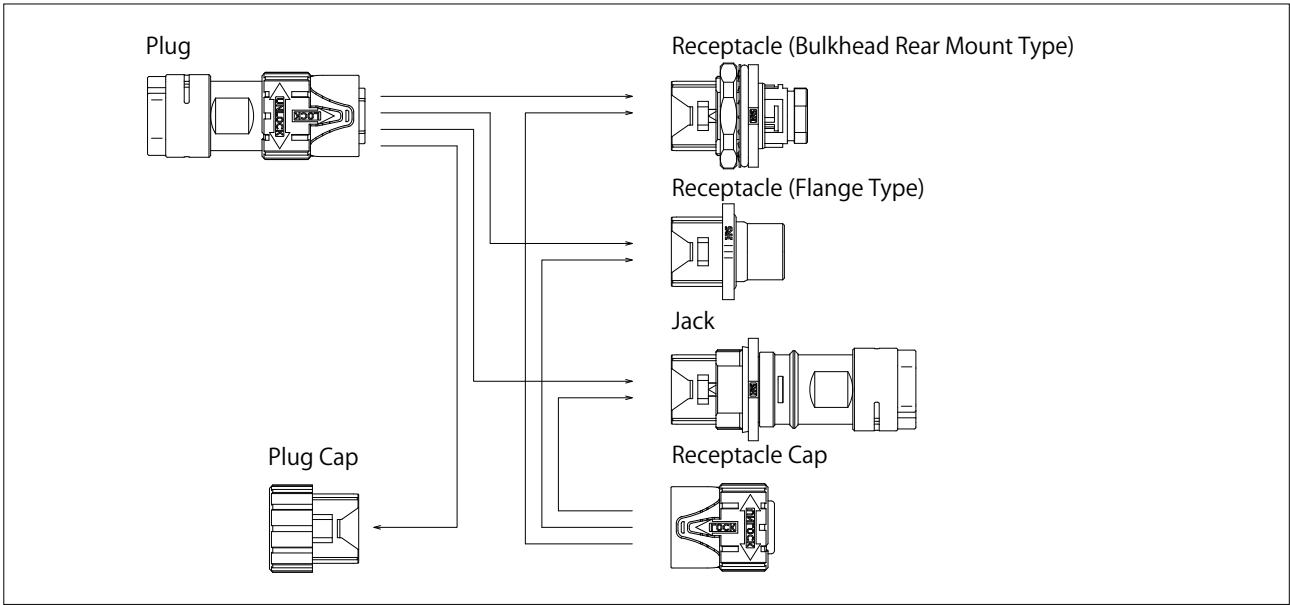
### ■ Crimp Contact

**HR41A - S C - 1 1 1 (##)**

①      ⑧   ⑨    ⑪   ⑫   ⑬    ⑩

|  |                     |                        |  |
|--|---------------------|------------------------|--|
| ① Series Name  | HR41A               | ⑦ No. of Pos.          | 3 or 5   |
| ② Shell Size   | 17                  | ⑧ Contact Gender       | S : Female Contact<br>P : Male Contact   |
| ③ Specialty  | W : Waterproof Type | ⑨ Contact Assembly     | C : Crimp  |
| ④ Lock Mechanism                                       | B : Bayonet Lock    | ⑩                      | Additional specifications are identified by adding (01), (02), etc.                                |
| ⑤ Shell Type<br>P : Plug<br>R : Receptacle<br>J : Jack |                     | ⑪ Contact Type         | 1 : Loose Contacts<br>2 : Reel Contacts  |
|  |                     | ⑫ Design               | 1 : If the design of contacts of the same size differs, 1, 2, 3 etc. are added to distinguish them |
| ⑥ Serial Symbol  |                     | ⑬ Contact Area Plating | 1 : Gold Plated  |

## Connector Mating Combinations Diagram



### ● Connector

| Plug             | Receptacle                           | Jack  |
|------------------|--------------------------------------|---|
| HR41A-17WBPA-5SC | HR41A-17WBRA-5PC<br>HR41A-17WBRB-5PC | HR41A-17WBJ-5PC<br>HR41A-17WBJB-5PC<br>HR41A-17WBJD-5PC<br>HR41A-17WBJF-5PC |
| HR41A-17WPAB-5SC |                                      |   |
| HR41A-17WPAD-5SC |                                      |   |
| HR41A-17WPAE-5SC |                                      |   |
| HR41A-17WPAF-5SC |                                      |   |
| HR41A-17WBP-3PC  | HR41A-17WBRA-3SC                     | -   |
| HR41A-17WPAB-3PC |                                      |   |

### ● Plug Cap

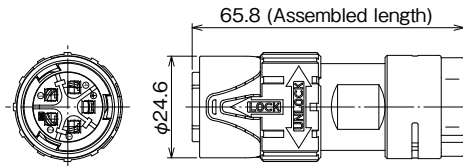
| Plug             | Cap           |
|------------------|---------------|
| HR41A-17WBPA-5SC | HR41A-17WBP-C |
| HR41A-17WPAB-5SC |               |
| HR41A-17WPAD-5SC |               |
| HR41A-17WPAE-5SC |               |
| HR41A-17WPAF-5SC |               |
| HR41A-17WBP-3PC  |               |
| HR41A-17WPAB-3PC |               |

### ● Receptacle/Jack Cap

| Receptacle/ Jack | Cap           |
|------------------|---------------|
| HR41A-17WBRA-5PC | HR41A-17WBR-C |
| HR41A-17WBRB-5PC |               |
| HR41A-17WBRA-3SC |               |
| HR41A-17WBJ-5PC  |               |
| HR41A-17WBJB-5PC |               |
| HR41A-17WBJD-5PC |               |
| HR41A-17WBJF-5PC |               |

## Plug

### ● 5pos. Type



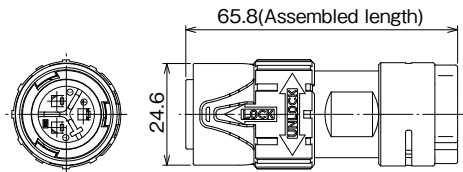
| Part No.          | HRS No.          | No. of Pos. | Applicable Cable Diameter | Remarks           | Purchase Unit          |
|-------------------|------------------|-------------|---------------------------|-------------------|------------------------|
| HR41A-17WBPA-5SC  | CL0141-0203-1-00 | 5           | 10.7 to 11.5              | Sequential Mating | 1pc per bag            |
| HR41A-17WBPAB-5SC | CL0141-0210-7-00 |             | 9.0 to 9.8                |                   | 10pcs per bag (Note 2) |
| HR41A-17WBPAD-5SC | CL0141-0226-7-00 |             | 8.2 to 9.0                |                   | 20pcs per bag (Note 3) |
| HR41A-17WBPAE-5SC | CL0141-0223-9-00 |             | 7.4 to 8.2                |                   |                        |
| HR41A-17WBPAF-5SC | CL0141-0228-0-00 |             | 9.9 to 10.7               |                   | 10pcs per bag (Note 2) |

Note 1 : Please refer to the specification document for details on the sequential mating design.

Note 2 : Orders are accepted in multiples of 10pcs.

Note 3 : Orders are accepted in multiples of 20pcs.

### ● 3pos. Type



| Part No.          | HRS No.          | No. of Pos. | Applicable Cable Diameter | Remarks | Purchase Unit          |
|-------------------|------------------|-------------|---------------------------|---------|------------------------|
| HR41A-17WBP-3PC   | CL0141-0217-6-00 | 3           | φ 10.7 to 11.5            | -       | 10pcs per bag (Note 1) |
| HR41A-17WBPAB-3PC | CL0141-0232-0-00 |             | φ 9.0 to 9.8              | -       | 20pcs per bag (Note 2) |

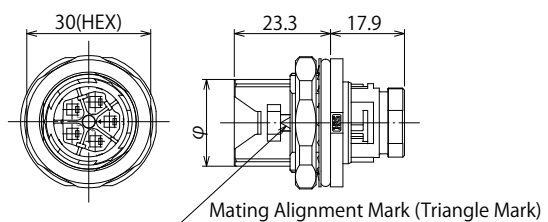
Note 1 : Orders are accepted in multiples of 10pcs.

Note 2 : Orders are accepted in multiples of 20pcs.



## Receptacle

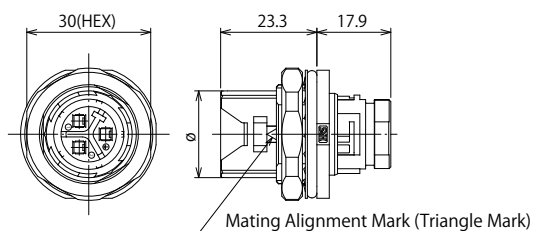
### ● Bulkhead Rear Mount Type (5pos. Type)



| Part No.         | HRS No.          | No. of Pos. | Purchase Unit        |
|------------------|------------------|-------------|----------------------|
| HR41A-17WBRA-5PC | CL0141-0201-6-00 | 5           | 10pcs per bag (Note) |

Note : Orders are accepted in multiples of 10pcs.

### ● Bulkhead Rear Mount Type (3pos. Type)

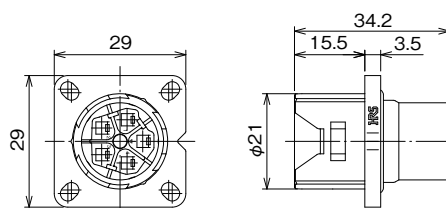


| Part No.         | HRS No.          | No. of Pos. | Remarks         | Purchase Unit          |
|------------------|------------------|-------------|-----------------|------------------------|
| HR41A-17WBRA-3SC | CL0141-0218-9-00 | 3           | Sequence Mating | 20pcs per bag (Note 2) |

Note 1 : Please refer to the specification document for details on the sequential mating design.

Note 2 : Orders are accepted in multiples of 20pcs.

### ● Flange Type (5pos.)

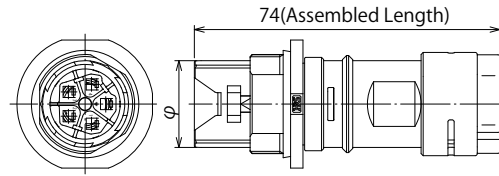


| Part No.         | HRS No.          | No. of Pos. | Purchase Unit        |
|------------------|------------------|-------------|----------------------|
| HR41A-17WBRB-5PC | CL0141-0222-6-00 | 5           | 20pcs per bag (Note) |

Note : Orders are accepted in multiples of 20pcs.

## Jack

### ● 5pos. Type

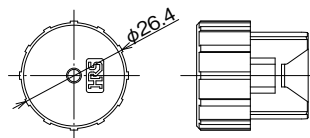


| Part No.         | HRS No.          | No. of Pos. | Applicable Cable Diameter | Purchase Unit        |
|------------------|------------------|-------------|---------------------------|----------------------|
| HR41A-17WBJ-5PC  | CL0141-0202-9-00 | 5           | 10.7 to 11.5              | 10pcs per bag (Note) |
| HR41A-17WBJB-5PC | CL0141-0212-2-00 |             | 9.0 to 9.8                |                      |
| HR41A-17WBJD-5PC | CL0141-0216-3-00 |             | 8.2 to 9.0                |                      |
| HR41A-17WBJF-5PC | CL0141-0229-5-00 |             | 9.9 to 10.7               |                      |

Note : Orders are accepted in multiples of 10pcs.

## Caps

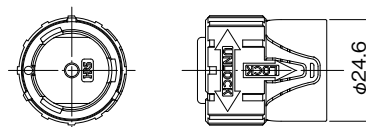
### ● Plug Cap



| Part No.      | HRS No.          | Applicable Connectors   | Purchase Unit        |
|---------------|------------------|---|----------------------|
| HR41A-17WBP-C | CL0141-0219-1-00 | HR41A-17WBPA-5SC<br>HR41A-17WPAB-5SC<br>HR41A-17WBPAD-5SC<br>HR41A-17WBPAE-5SC<br>HR41A-17WBP AF-5SC<br>HR41A-17WBP-3PC<br>HR41A-17WPAB-3PC | 20pcs per bag (Note) |

Note : Orders are accepted in multiples of 20pcs.

### ● Receptacle/Jack Cap

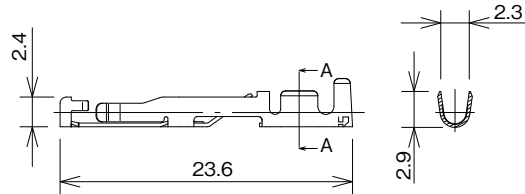


| Part No.      | HRS No.          | Applicable Connectors   | Purchase Unit        |
|---------------|------------------|---|----------------------|
| HR41A-17WBR-C | CL0141-0220-0-00 | HR41A-17WBRA-5PC<br>HR41A-17WBRB-5PC<br>HR41A-17WBRA-3SC<br>HR41A-17WBJ-5PC<br>HR41A-17WBJB-5PC<br>HR41A-17WBJD-5PC<br>HR41A-17WBJF-5PC | 20pcs per bag (Note) |

Note : Orders are accepted in multiples of 20pcs.

## Crimp Contacts

### ● Female Contact Gold Plated



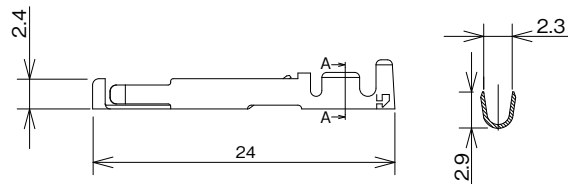
| Type                    | Part No.         | HRS No.          | Plating Thickness of Contact Portion | Applicable Cable                            | Remarks                 |
|-------------------------|------------------|------------------|--------------------------------------|---|-------------------------|
| Loose Contacts (Note 1) | HR41A-SC-111     | CL0141-0213-5-00 | Gold : 0.76 $\mu$ m                  | 16 to 20 AWG<br>0.52 to 1.31mm <sup>2</sup> | 100pcs per bag (Note 3) |
|                         | HR41A-SC-111(01) | CL0141-0213-5 01 | Gold : 0.2 $\mu$ m                   |   |                         |
| Reel Contacts (Note 2)  | HR41A-SC-211     | CL0141-0206-0-00 | Gold : 0.76 $\mu$ m                  |   | 5,000pcs per reel       |
|                         | HR41A-SC-211(01) | CL0141-0206-0-01 | Gold : 0.2 $\mu$ m                   |   |                         |

Note 1 : Use a cable with an outer diameter of  $\phi$  1.9- 2.55.

Note 2 : Use a cable with an outer diameter of  $\phi$  1.9- 3.2.

Note 3 : Orders are accepted in bag increments.

### Silver Plated

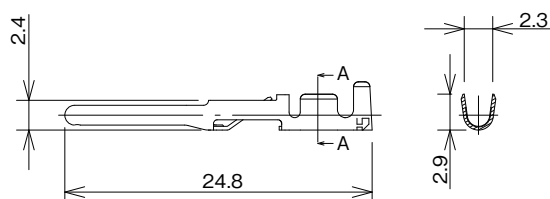


| Type           | Part No.   | HRS No.          | Plating Thickness of Contact Portion | Applicable Cable                            | Remarks                 |
|----------------|------------|------------------|--------------------------------------|---|-------------------------|
| Loose Contacts | JRC-SC-112 | CL0114-0241-8-00 | Silver : 5 $\mu$ m                   | 16 to 20 AWG<br>0.52 to 1.31mm <sup>2</sup> | 100pcs per bag (Note 2) |
| Reel Contacts  | JRC-SC-212 | CL0114-0242-0-00 |                                      |   | 5,000pcs per reel       |

Note 1 : Use a cable with an outer diameter of  $\phi$  1.9- 2.55.

Note 2 : Orders are accepted in bag increments.

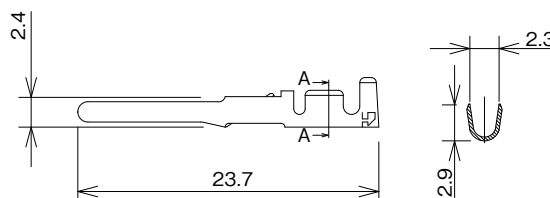
## ● Male Contact Gold Plated



| Type                    | Part No.         | HRS No.          | Plating Thickness of Contact Portion | Applicable Cable                            | Remarks                 |
|-------------------------|------------------|------------------|--------------------------------------|---|-------------------------|
| Loose Contacts (Note 1) | HR41A-PC-111     | CL0141-0214-8-00 | Gold : 0.76 $\mu$ m                  | 16 to 20 AWG<br>0.52 to 1.31mm <sup>2</sup> | 100pcs per bag (Note 3) |
|                         | HR41A-PC-111(01) | CL0141-0214-8-01 | Gold : 0.2 $\mu$ m                   |   |                         |
| Reel Contacts (Note 2)  | HR41A-PC-211     | CL0141-0207-2-00 | Gold : 0.76 $\mu$ m                  |   | 5000pcs per reel        |
|                         | HR41A-PC-211(01) | CL0141-0207-2-01 | Gold : 0.2 $\mu$ m                   |   |                         |

Note 1 : Use a cable with an outer diameter of  $\phi$  1.9- 2.55.  
 Note 2 : Use a cable with an outer diameter of  $\phi$  1.9- 3.2.  
 Note 3 : Orders are accepted in bag increments.

## Silver Plated



| Type           | Part No.   | HRS No.          | Plating Thickness of Contact Portion | Applicable Cable                            | Remarks                 |
|----------------|------------|------------------|--------------------------------------|---|-------------------------|
| Loose Contacts | JRC-PC-112 | CL0114-0239-6-00 | Silver : 5 $\mu$ m                   | 16 to 20 AWG<br>0.52 to 1.31mm <sup>2</sup> | 100pcs per bag (Note 2) |
| Reel Contacts  | JRC-PC-212 | CL0114-0240-5-00 |                                      |   | 5000pcs per reel        |

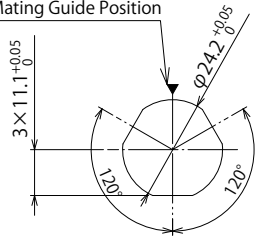
Note 1 : Use a cable with an outer diameter of  $\phi$  1.9- 2.55.  
 Note 2 : Orders are accepted in bag increments.

## Receptacle Panel Mounting Hole Dimensions

Bulkhead, Rear Mount Type

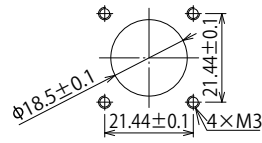
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Mating Guide Position

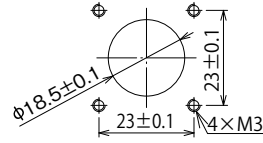


Flange Type

Minimum Mounting Dimensions



Maximum Mounting Dimensions



## Applicable tools

- Manual Crimp Tool
- Manual Crimp Tool
- Automatic Crimp Press



HT802/HR41A-11



JRC-TC-11, JRC-TC-12



CM-105C

- Extraction Tool



HR41A-TP

| Type      | Items                    | Part No.          | HRS No.          | Applicable Contacts          | Applicable Cable                                      |
|-----------|--------------------------|-------------------|------------------|------------------------------|---|
| Manual    | Manual Crimp Tool (Note) | HT802/HR41A-11-16 | CL0150-0408-5-00 | HR41A-SC-111<br>HR41A-PC-111 | 16 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55       |
|           |                          | HT802/HR41A-11-18 | CL0150-0404-4-00 |                              | 18 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55       |
|           |                          | HT802/HR41A-11-20 | CL0150-0407-2-00 |                              | 20 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55       |
|           |                          | JRC-TC-11         | CL0150-0033-4-00 | JRC-PC-112<br>JRC-SC-112     | 16 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55       |
|           |                          | JRC-TC-12         | CL0150-0034-7-00 | JRC-PC-112<br>JRC-SC-112     | 18 to 20 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55 |
| Automatic | Automatic Crimp Press    | CM-105C           | CL0901-0001-0-00 | -                            | -   |
|           | Press Applicator (Note)  | AP105-HR41A-1     | CL0901-2055-3-00 | HR41A-SC-211<br>HR41A-PC-211 | 16 to 20 AWG<br>Jacket Outer Diameter :<br>φ 1.9-3.2  |
|           |                          | AP105-JRC-1       | CL0901-2039-7-00 | JRC-PC-212<br>JRC-SC-212     | 16 to 20 AWG<br>Jacket Outer Diameter :<br>φ 1.9-2.55 |
|           | Extraction Tool          | HR41A-TP          | CL0150-0405-7-00 | -                            | -   |

(Note) When using a cable with jacket outer diameter of φ 2.55 to 3.2, use AP105-HR41A-1.

## Connector Usage Precautions

- Assembly and installation of connectors and components should be done in reference to the specified assembly procedures and with the proper amount of tightening torque.  
If the torque is too low or too strong it may result in loosening or damage.  
(Please contact your Hirose representative for the correct procedures.)
- After mating a connector, pull on the cable slightly to confirm the connector is firmly in place.

## While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please confirm the Drawing and Product Specifications sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

If assembly process is done by jigs & tools which are not identified by Hirose, assurance will not be given.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.