

## DF22 Series

# 7.92mm Contact Pitch High Current Connectors for Internal Power Supplies (UL, C-UL and TÜV Listed)



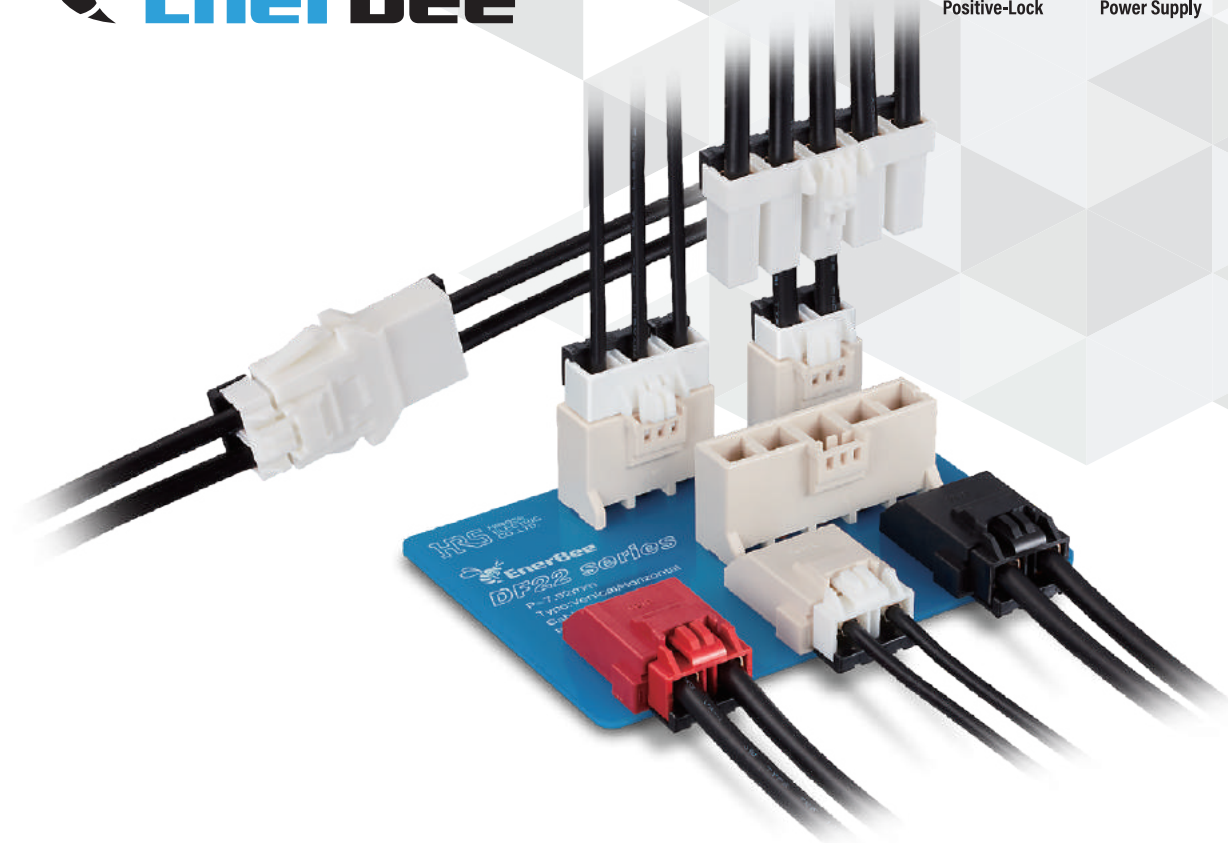
Positive-Lock



Power Supply



Wide Variation



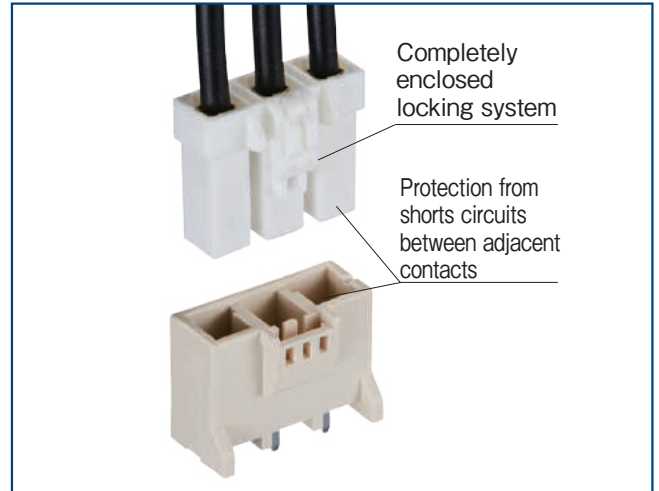
## Features

### 1. Rated up to 30A

Single position connector can carry current of 30A with 10 AWG conductor. Please refer to Table # 1 for current ratings for multi-position connectors using other conductor sizes.

### 2. Positive Locking Function

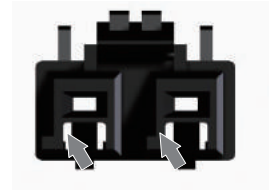
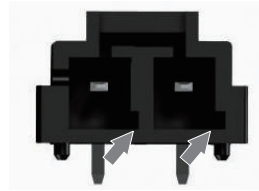
Reliable interior lock protects mated connectors from accidental disconnection.



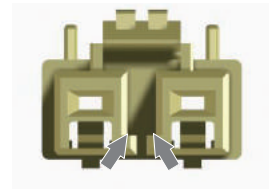
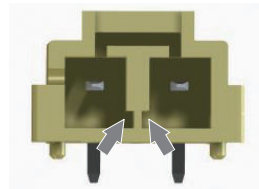
### 3. Prevention of Incorrect Connections

To prevent incorrect connection when using multiple connectors having the same Number of contacts, 3 product types having different mating configurations are available.

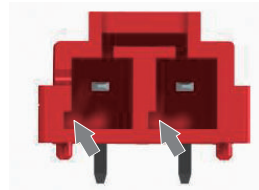
#### ● R Type (Guide Key : Right Side, Color : Black)



#### ● Standard Type (Guide Key : Inside, Color : Natural)



#### ● L Type (Guide Key : Left Side, Color : Red)



- The image on the left shows the header (the board dipside), the image on the right shows the socket (cable side).
- The guide key position is indicated in position facing the mating surface of the header.

### 4. Molded-in contact retention tabs

Handling of terminated contacts during the crimping is easier and avoids entangling of wires, since there are no protruding metal tabs.

### 5. Prevention of incorrect board placement

Built-in posts assure correct connector placement and orientation on the board.

### 6. Supports resin sealing

Allows potting up to 10mm.

## 7. Prevention of Short Circuits Between Adjacent Contacts

Each contact is completely surrounded by the housing wall electrically isolating it from adjacent contacts.

## 8. Increased Retention Force of Crimped Contacts

Can withstand usage methods that result in cable stress.

## 9. Full Line of Crimp Socket Contacts

Hirose has released DF22C-#S-7.92C which has easy to push/release latch design. and DF22B-#S-7.92C/DF22C-#S-7.92C which has improved electrical insulation properties.

## 10. In-line Connections

Wire-to-wire connection is also available. Space is saved with 2-row (2×2) layout for 4pos.

## 11. UL, C-UL, and TÜV Certified.

## 12. Glow Wire compliance (Compliant with IEC 60695-2-11)

## Product Specifications

|                           |             |        |        |        |        |                                         |             |
|---------------------------|-------------|--------|--------|--------|--------|-----------------------------------------|-------------|
| Rated Current<br>(Note 1) | No of Pos.  | 10 AWG | 12 AWG | 14 AWG | 16 AWG | Operating Temperature Range<br>(Note 2) | -55 to +85℃ |
|                           | 1           | 30A    | 25A    | 20A    | 15A    | Storage Temperature Range<br>(Note 3)   | -10 to +60℃ |
|                           | 2           | 25A    | 20A    | 18A    | 15A    | Operating Humidity Range                | 20 to 80%   |
|                           | 3           | 25A    | 20A    | 18A    | 15A    | Storage Humidity Range<br>(Note 3)      | 40 to 70%   |
|                           | 4           | 22A    | 18A    | 15A    | 13A    |                                         |             |
|                           | 5           | 22A    | 18A    | 15A    | 13A    |                                         |             |
| Rated Voltage             | 1000V AC/DC |        |        |        |        |                                         |             |

|      | Rated Current   | Rated Voltage |
|------|-----------------|---------------|
| UL   | See table above | 600V AC/DC    |
| C-UL | See table above | 600V AC/DC    |
| TÜV  | See table above | 600V AC/DC    |

UL/C-UL/TÜV File No. and Recognition No.

UL : E52653

C-UL : E52653

TÜV : R9950703

| Item                                    | Specifications                                                       | Conditions                                                                                                        |
|-----------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Contact Resistance                      | No more than 5mΩ                                                     | Measured at 1mA and no higher than 20mV                                                                           |
| Insulation Resistance                   | No less than 1,000MΩ                                                 | Measured at 1000V DC                                                                                              |
| Withstand Voltage                       | No flashover or breakdown                                            | 2500V AC is applied for 1 minute.                                                                                 |
| Contact Insertion and Extraction Forces | 0.3N Min., 5N Max.                                                   | Measured with a steel pin of 1.6 × 0.8 ± 0.002 thickness                                                          |
| Durability                              | Contact resistance : no more than 10mΩ                               | 30 mating cycles                                                                                                  |
| Vibration Resistance                    | No electrical discontinuity of 1 μs or greater                       | Frequency 10 to 55 Hz, single amplitude 0.75 mm, at 2 h, for 3 directions.                                        |
| Shock Resistance                        | No electrical discontinuity of 1 μs or greater                       | Accelerated velocity : 490 m/s <sup>2</sup> for 11 ms, half-sine wave in 3 directions, 3 times for each direction |
| Moisture-Resistance                     | Contact resistance : no more than 10mΩ                               | Temperature : 40 ± 2°C ; humidity : 90 to 95% , left as it is for 96 hours                                        |
| Temperature cycles                      | Contact resistance : no more than 10mΩ                               | (-55°C : 30 minutes → 5 to 35°C : 5 minutes → 85°C : 30 minutes → 5 to 35°C : 5 minutes) for 5 cycles             |
| Solder heat Resistance                  | The resin parts should withstand the temperature and resist melting. | Flow : 260°C , 10 sec<br>Hand soldering : temperature of soldering iron at 300°C for 3 seconds                    |

Note 1 : This is the maximum current rating while all pins are powered or used as all power lines. If you split the current over multiple lines, please factor in your own safety margin.

Note 2 : Includes temperature rise caused by current flow.

Note 3 : The storage condition refers to long-term storage of the product on the shelf before assembly. Please use the operating temperature for temporary storage such as pre-assembly and during shipping.

Materials/Finish

| Product        | Part      | Material                       | Finish                       | Remarks |
|----------------|-----------|--------------------------------|------------------------------|---------|
| Sockets        | Insulator | Polyamide                      | Color : Natural white (Note) | UL94V-0 |
| Crimp Contacts | Contacts  | High Conductivity Copper Alloy | Gold Plated                  | -       |
| Headers        | Insulator | Polyamide (Glass Reinforced)   | Color : Natural beige (Note) | UL94V-0 |
|                | Contacts  | High Conductivity Copper Alloy | Gold Plated                  | -       |

Note : The Standard Colors, colors of the differing coupling forms are black for DF22R and red for DF22L.

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.

Socket, Header

**DF22 B L - 2 S - 7.92 C**  
1 2 3 4 5 6 7

Contacts

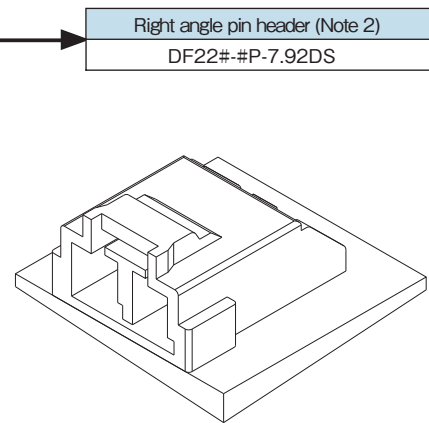
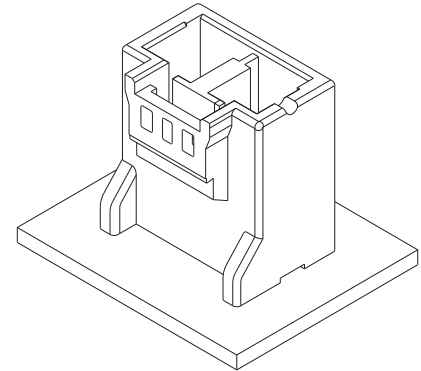
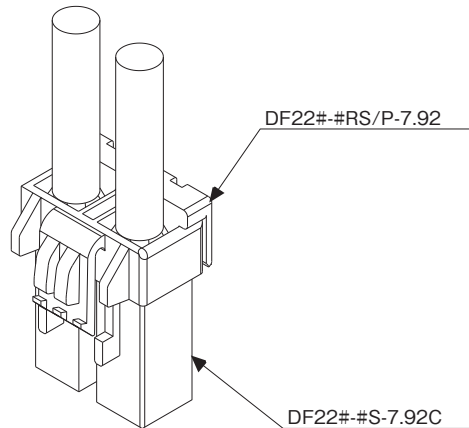
**DF22 A - 1416 SCF A**  
1 8 9 10 11

|                  |                                                                                                                                                                                                                        |                           |                                                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1 Series Name    | DF22                                                                                                                                                                                                                   | 6 Contact Pitch           | 7.92mm                                                                                                                               |
| 2 Form Type      | Sockets<br>Blank : Standard height, standard lock (Type I)<br>B : Long type, standard lock (Type III)<br>C : Long type, ergonomic lock (Type IV)<br>In-line Plugs<br>Blank : With panel stop<br>A : Without panel stop | 7 Type of Housing         | C : Crimp housing<br>DSA : Straight header<br>DS : Right-angle header<br>No letter : Retainer                                        |
| 3 Guide Key Type | Blank : Inside (Color : Natural)<br>R : Right side (Color : Black)<br>L : Left side (Color : Red)                                                                                                                      | 8 Applicable Cable        | Blank : UL1430<br>A : UL1015                                                                                                         |
| 4 Number of Pos. | 1 to 5                                                                                                                                                                                                                 | 9 Applicable Conductor    | 1416 : 14 to 16 AWG<br>1012 : 10 to 12 AWG                                                                                           |
| 5 Connector Type | S : Socket<br>DS : Double-row socket<br>P : Header<br>EP : In-line plug<br>DEP : Double-row in-line plug<br>RS/P : Retainer                                                                                            | 10 Packaging              | SCF : Socket contacts / reel<br>SC : Socket contacts / bag<br>PCF : In-line plug contacts / reel<br>PC : In-line plug contacts / bag |
|                  |                                                                                                                                                                                                                        | 11 Plating Specifications | A : Gold Plated                                                                                                                      |

## Diagram of Connector Mating Combinations

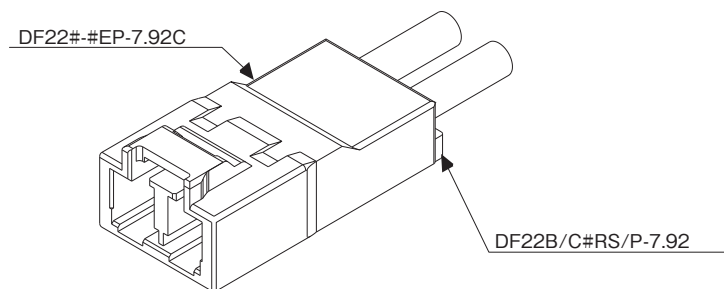
### ● Wire-to-Board Connection

| Crimp socket (Note 2) | Crimp contact for Socket | Retainer (Note 1) | Straight pin header (Note 2) |
|-----------------------|--------------------------|-------------------|------------------------------|
| DF22#-#S-7.92C        | DF22(A)-#SC(F)A          | DF22#-#RS/P-7.92  | DF22#-#P-7.92DSA             |



### ● In-line or Wire-to-Wire Connection

| In-line plug    | Crimp contact for in-line plug | Retainer (Note 1)  |
|-----------------|--------------------------------|--------------------|
| DF22#-#EP-7.92C | DF22(A)-#PC(F)A                | DF22B/C-#RS/P-7.92 |

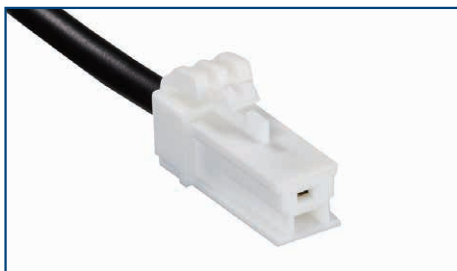


Note 1 : Since this product uses thick wires, a larger load is applied to the connector when inserting/extracting or routing the wires.  
Please use a retainer to reduce the load on the connector.

| Crimp socket   | Applicable Retainer | In-line plug    | Applicable Retainer |
|----------------|---------------------|-----------------|---------------------|
| DF22-#S-7.92C  | DF22-#RS/P-7.92     | DF22-#EP-7.92C  | DF22B/C-#RS/P-7.92  |
| DF22B-#S-7.92C | DF22B/C-#RS/P-7.92  | DF22A-#EP-7.92C |                     |
| DF22C-#S-7.92C |                     |                 |                     |

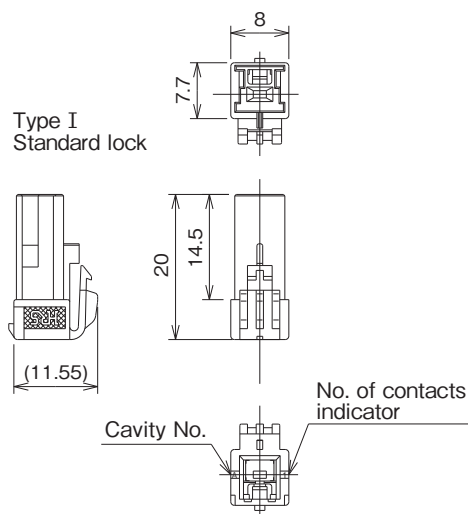
Note 2 : The key difference (L, R) product matches the mating connector of the same key (L, R).

## Crimp Sockets (Standard Height Type)



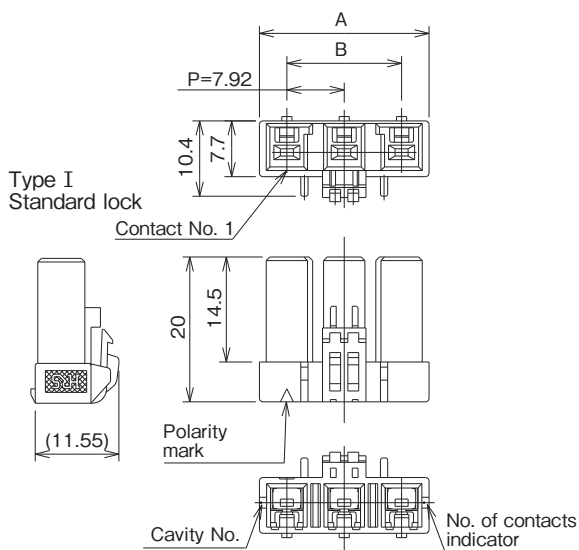
Shown with terminated and contacts installed.

### [1Pos.]



Shown with terminated and contacts installed.

### [2 to 5Pos.]





## [Type I]

## Height : Standard type, Standard lock

Note : The part number and HRS No. have changed to reflect the product form change of the 2 to 5 pos. types.

## Standard Type (Guide Key : Inside, Color : White)

Unit : mm

| Part No.          | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|-------------------|------------------|-------------|-------|-------|----------------|
| DF22-1S-7.92C(28) | CL0680-1012-2-28 | 1           | 8.00  | -     | 100pcs per bag |
| DF22-2S-7.92C(28) | CL0680-1004-4-28 | 2           | 15.50 | 7.92  |                |
| DF22-3S-7.92C(28) | CL0680-1005-7-28 | 3           | 23.42 | 15.84 |                |
| DF22-4S-7.92C(28) | CL0680-1006-0-28 | 4           | 31.34 | 23.76 |                |
| DF22-5S-7.92C(28) | CL0680-1007-2-28 | 5           | 39.26 | 31.68 |                |

## R Type (Guide Key : Right Side, Color : Black)

Unit : mm

| Part No.           | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|--------------------|------------------|-------------|-------|-------|----------------|
| DF22R-1S-7.92C(28) | CL0680-1026-7-28 | 1           | 8.00  | -     | 100pcs per bag |
| DF22R-2S-7.92C(28) | CL0680-1027-0-28 | 2           | 15.50 | 7.92  |                |
| DF22R-3S-7.92C(28) | CL0680-1028-2-28 | 3           | 23.42 | 15.84 |                |
| DF22R-4S-7.92C(28) | CL0680-1029-5-28 | 4           | 31.34 | 23.76 |                |
| DF22R-5S-7.92C(28) | CL0680-1030-4-28 | 5           | 39.26 | 31.68 |                |

## L Type (Guide Key : Left Side, Color : Red)

Unit : mm

| Part No.           | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|--------------------|------------------|-------------|-------|-------|----------------|
| DF22L-1S-7.92C(28) | CL0680-1031-7-28 | 1           | 8.00  | -     | 100pcs per bag |
| DF22L-2S-7.92C(28) | CL0680-1032-0-28 | 2           | 15.50 | 7.92  |                |
| DF22L-3S-7.92C(28) | CL0680-1033-2-28 | 3           | 23.42 | 15.84 |                |
| DF22L-4S-7.92C(28) | CL0680-1034-5-28 | 4           | 31.34 | 23.76 |                |
| DF22L-5S-7.92C(28) | CL0680-1035-8-28 | 5           | 39.26 | 31.68 |                |

Note : Every even number position has a different locking design.

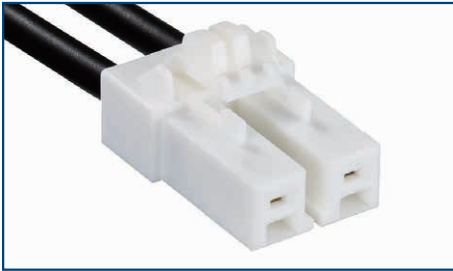
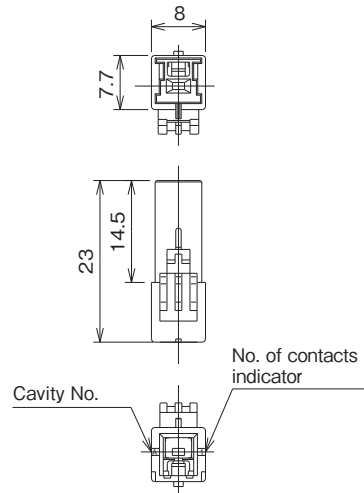
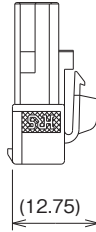
## Crimp Sockets (Height, Long Type)



Shown with terminated and contacts installed.

### [1Pos.]

Type IV  
Height : Long type,  
user-friendly operation

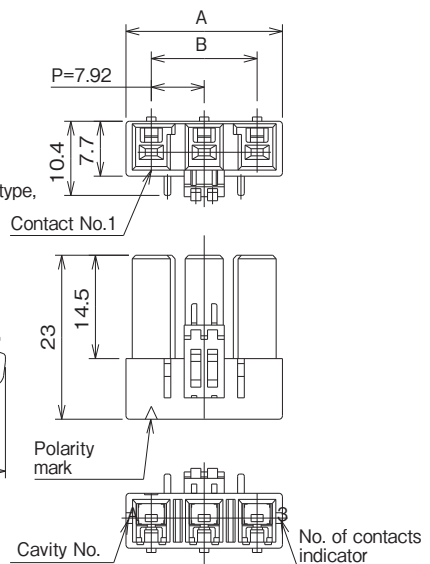
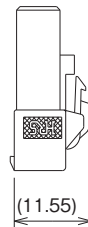
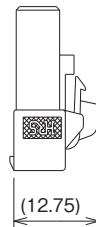


Shown with terminated and contacts installed.

### [2, 3Pos.]

Type IV  
Height : Long type,  
Enhanced  
ergonomic lock

Type III  
Height : Long type,  
Standard lock



**[Type III]****Height : Long type, Standard lock****Standard Type (Guide Key : Inside, Color : White)**

Unit : mm

| Part No.       | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|----------------|------------------|-------------|-------|-------|----------------|
| DF22B-2S-7.92C | CL0680-1097-5-00 | 2           | 15.50 | 7.92  | 100pcs per bag |
| DF22B-3S-7.92C | CL0680-1098-8-00 | 3           | 23.42 | 15.84 |                |

Note : Every even number position has a different locking design.

**[Type IV]****Height : Long type, Enhanced ergonomic lock****Standard Type (Guide Key : Inside, Color : White)**

Unit : mm

| Part No.       | HRS No.          | No. of Pos. | A     | B    | Purchase Unit  |
|----------------|------------------|-------------|-------|------|----------------|
| DF22C-2S-7.92C | CL0680-1102-3-00 | 2           | 15.50 | 7.92 | 100pcs per bag |

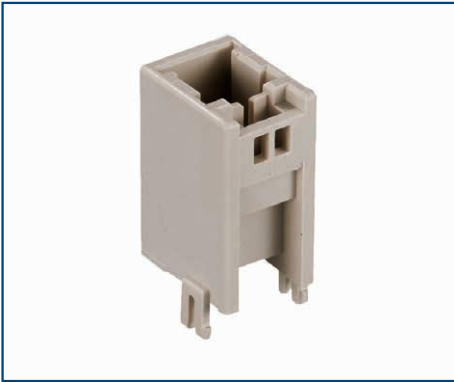
**R Type (Guide Key : Right Side, Color : Black)**

Unit : mm

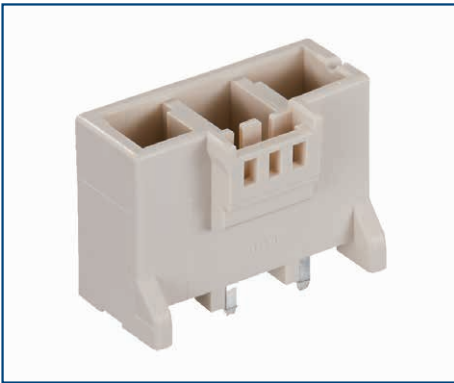
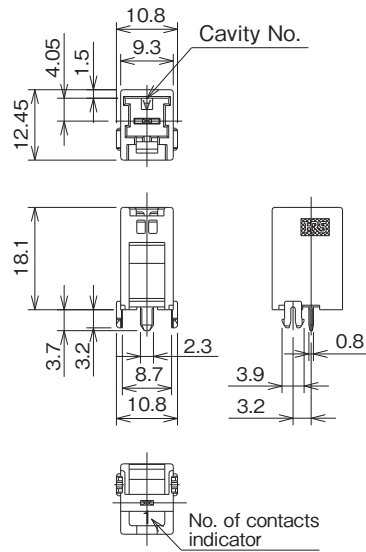
| Part No.        | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|-----------------|------------------|-------------|-------|-------|----------------|
| DF22CR-3S-7.92C | CL0680-1130-9-00 | 3           | 23.42 | 15.84 | 100pcs per bag |

Note : Every even number position has a different locking design.

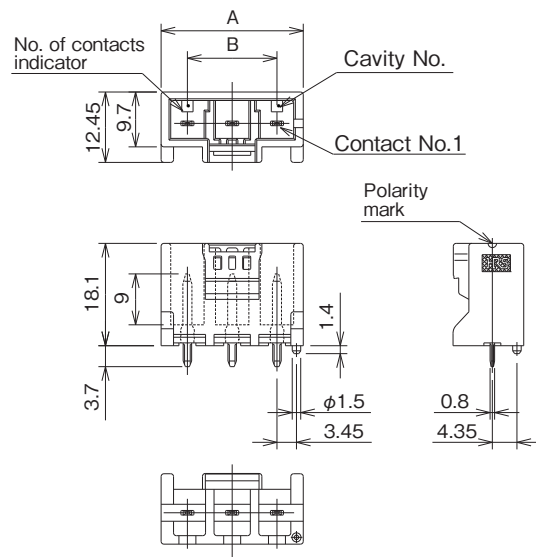
## Straight Header



### [1Pos.]



### [2 to 5Pos.]



## Standard Type (Guide Key : Inside, Color : Natural Beige)

Unit : mm

| Part No.            | HRS No.          | No. of Pos. | A     | B     | Bag Packaging | Tray Packaging |
|---------------------|------------------|-------------|-------|-------|---------------|----------------|
| DF22-1P-7.92DSA(##) | CL0680-1013-5-## | 1           | -     | -     | -             | ○              |
| DF22-2P-7.92DSA(##) | CL0680-1014-8-## | 2           | 17.22 | 7.92  | ○             | -              |
| DF22-3P-7.92DSA(##) | CL0680-1015-0-## | 3           | 25.14 | 15.84 | ○             | -              |
| DF22-4P-7.92DSA(##) | CL0680-1016-3-## | 4           | 33.06 | 23.76 | ○             | -              |
| DF22-5P-7.92DSA(##) | CL0680-1017-6-## | 5           | 40.98 | 31.68 | ○             | -              |

[Specification number (##)] (53) : Gold plated, bag packaging / (58) : Gold plated, tray packaging (only 1pos.)

## R Type (Guide Key : Right Side, Color : Black)

Unit : mm

| Part No.             | HRS No.          | No. of Pos. | A     | B     | Bag Packaging | Tray Packaging |
|----------------------|------------------|-------------|-------|-------|---------------|----------------|
| DF22R-1P-7.92DSA(##) | CL0680-1036-0-## | 1           | -     | -     | -             | ○              |
| DF22R-2P-7.92DSA(##) | CL0680-1037-3-## | 2           | 17.22 | 7.92  | ○             | -              |
| DF22R-3P-7.92DSA(##) | CL0680-1038-6-## | 3           | 25.14 | 15.84 | ○             | -              |
| DF22R-4P-7.92DSA(##) | CL0680-1039-9-## | 4           | 33.06 | 23.76 | ○             | -              |
| DF22R-5P-7.92DSA(##) | CL0680-1040-8-## | 5           | 40.98 | 31.68 | ○             | -              |

[Specification number (##)] (53) : Gold plated, bag packaging / (57) : Gold plated, tray packaging (only 1pos.)

## L Type (Guide Key : Left Side, Color : Red)

Unit : mm

| Part No.             | HRS No.          | No. of Pos. | A     | B     | Bag Packaging | Tray Packaging |
|----------------------|------------------|-------------|-------|-------|---------------|----------------|
| DF22L-1P-7.92DSA(##) | CL0680-1041-0-## | 1           | -     | -     | -             | ○              |
| DF22L-2P-7.92DSA(##) | CL0680-1042-3-## | 2           | 17.22 | 7.92  | ○             | -              |
| DF22L-3P-7.92DSA(##) | CL0680-1043-6-## | 3           | 25.14 | 15.84 | ○             | -              |
| DF22L-4P-7.92DSA(##) | CL0680-1044-9-## | 4           | 33.06 | 23.76 | ○             | -              |
| DF22L-5P-7.92DSA(##) | CL0680-1045-1-## | 5           | 40.98 | 31.68 | ○             | -              |

[Specification number (##)] (53) : Gold plated, bag packaging / (57) : Gold plated, tray packaging (only 1pos.)

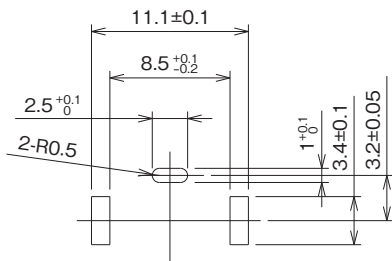
Note 1 : Bag packaging (100pcs per bag). Order by number of packs.

Note 2 : Tray packaging (150pcs per tray). Order by number of 150.

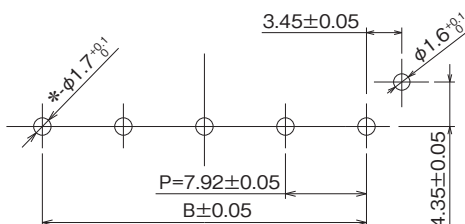
Note 3 : Every even number position has a different locking design.

## ■ Recommended PCB Layout (Board thickness : 1.6±0.1)

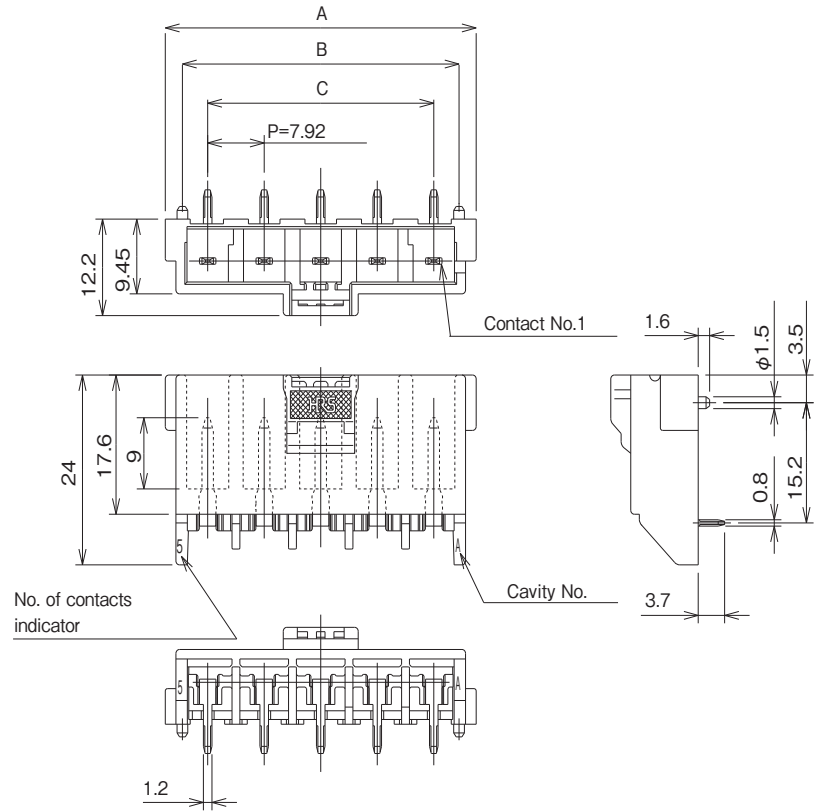
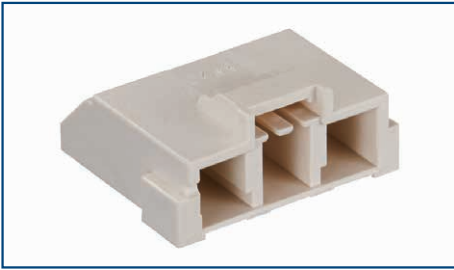
## [1Pos.]



## [2 to 5Pos.]



## Right Angle Header



## Standard Type (Guide Key : Inside, Color : Natural Beige)

Unit : mm

| Part No.           | HRS No.          | No. of Pos. | A     | B     | C     | Purchase Unit  |
|--------------------|------------------|-------------|-------|-------|-------|----------------|
| DF22-2P-7.92DS(##) | CL0680-1008-5-## | 2           | 19.80 | 15.00 | 7.92  | 100pcs per bag |
| DF22-3P-7.92DS(##) | CL0680-1009-8-## | 3           | 27.72 | 22.92 | 15.84 |                |
| DF22-4P-7.92DS(##) | CL0680-1010-7-## | 4           | 35.64 | 30.84 | 23.76 |                |
| DF22-5P-7.92DS(##) | CL0680-1011-0-## | 5           | 43.56 | 38.76 | 31.68 |                |

## R Type (Guide Key : Right Side, Color : Black)

Unit : mm

| Part No.            | HRS No.          | No. of Pos. | A     | B     | C     | Purchase Unit  |
|---------------------|------------------|-------------|-------|-------|-------|----------------|
| DF22R-2P-7.92DS(##) | CL0680-1018-9-## | 2           | 19.80 | 15.00 | 7.92  | 100pcs per bag |
| DF22R-3P-7.92DS(##) | CL0680-1019-1-## | 3           | 27.72 | 22.92 | 15.84 |                |
| DF22R-4P-7.92DS(##) | CL0680-1020-0-## | 4           | 35.64 | 30.84 | 23.76 |                |
| DF22R-5P-7.92DS(##) | CL0680-1021-3-## | 5           | 43.56 | 38.76 | 31.68 |                |

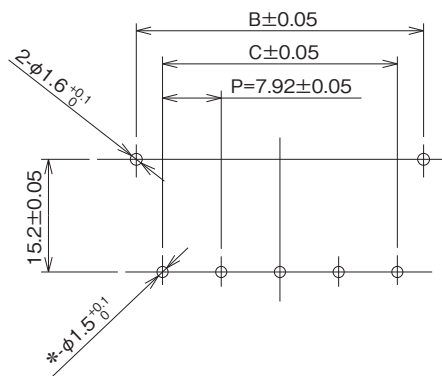
## L Type (Guide Key : Left Side, Color : Red)

Unit : mm

| Part No.            | HRS No.          | No. of Pos. | A     | B     | C     | Purchase Unit  |
|---------------------|------------------|-------------|-------|-------|-------|----------------|
| DF22L-2P-7.92DS(##) | CL0680-1022-6-## | 2           | 19.80 | 15.00 | 7.92  | 100pcs per bag |
| DF22L-3P-7.92DS(##) | CL0680-1023-9-## | 3           | 27.72 | 22.92 | 15.84 |                |
| DF22L-4P-7.92DS(##) | CL0680-1024-1-## | 4           | 35.64 | 30.84 | 23.76 |                |
| DF22L-5P-7.92DS(##) | CL0680-1025-4-## | 5           | 43.56 | 38.76 | 31.68 |                |

[Specification number (##)] (53) : Gold Plated

Note : Every even number position has a different locking design.

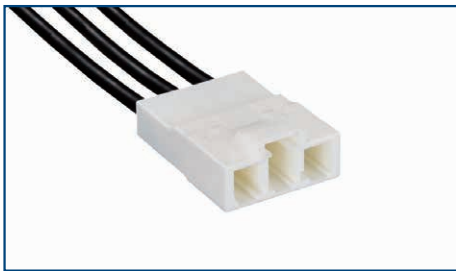
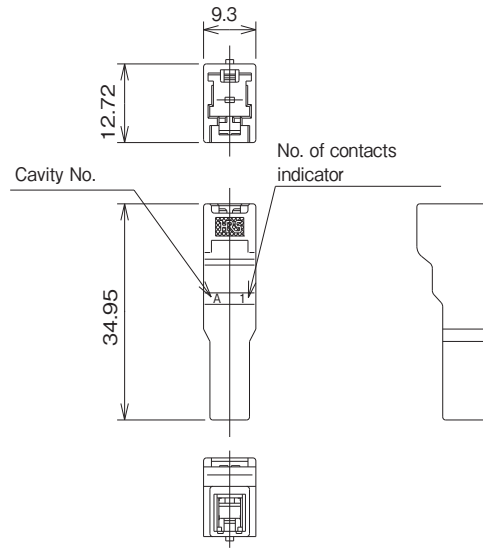
■ Recommended PCB Layout (Board thickness :  $1.6 \pm 0.1$ )

## In-line Plug



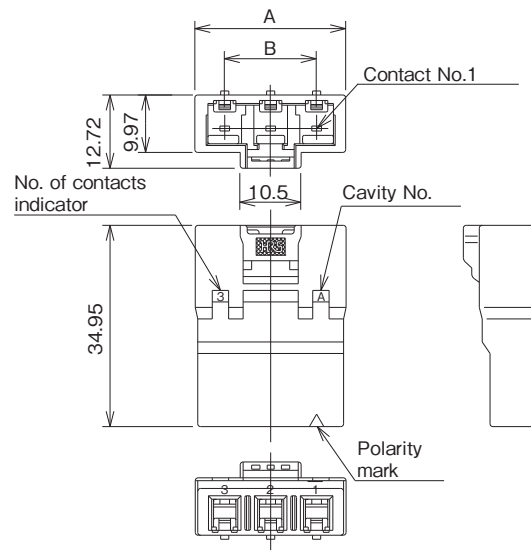
Shown with terminated and contacts installed.

### [1Pos.]



Shown with terminated and contacts installed.

### [2, 3Pos.]



## Standard Type (Guide Key : Inside, Color : Natural Beige)

Unit : mm

| Part No.        | HRS No.          | No. of Pos. | A     | B     | Purchase Unit  |
|-----------------|------------------|-------------|-------|-------|----------------|
| DF22A-1EP-7.92C | CL0680-1053-0-00 | 1           | 9.30  | -     | 100pcs per bag |
| DF22A-2EP-7.92C | CL0680-1054-2-00 | 2           | 18.00 | 7.92  |                |
| DF22A-3EP-7.92C | CL0680-1055-5-00 | 3           | 26.00 | 15.84 |                |

Note : Every even number position has a different locking design.

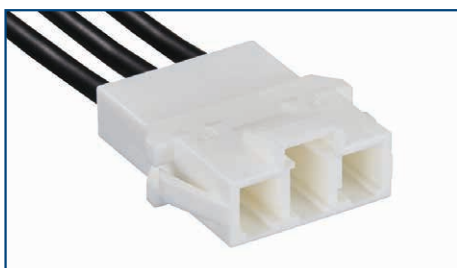
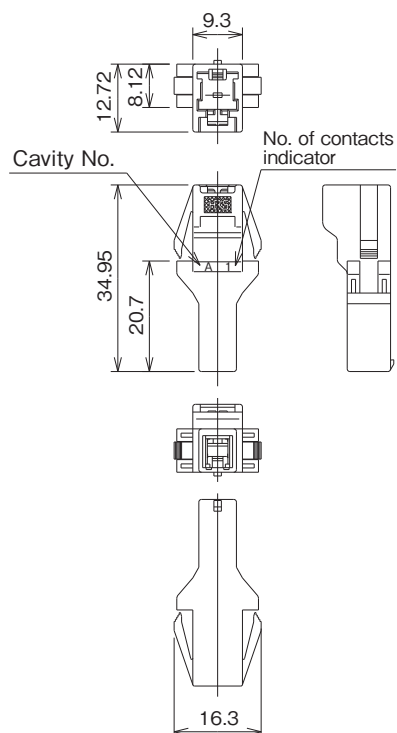


## In-line Plug (Panel Lock Type)



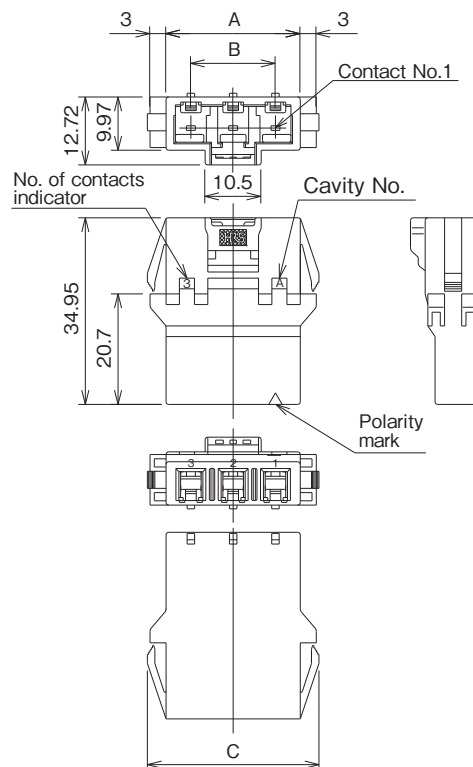
Shown with terminated and contacts installed.

### [1Pos.]



Shown with terminated and contacts installed.

### [2, 3Pos.]



Standard Type (Guide Key : Inside, Color : White)

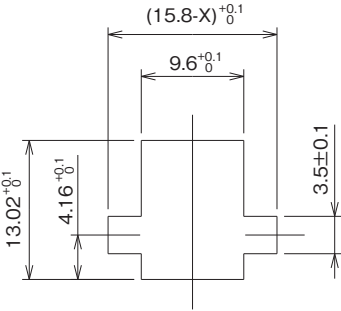
Unit : mm

| Part No.       | HRS No.          | No. of Pos. | A     | B     | C     | Purchase Unit  |
|----------------|------------------|-------------|-------|-------|-------|----------------|
| DF22-1EP-7.92C | CL0680-1048-0-00 | 1           | 9.30  | -     | 16.30 | 100pcs per bag |
| DF22-2EP-7.92C | CL0680-1049-2-00 | 2           | 17.22 | 7.92  | 24.22 |                |
| DF22-3EP-7.92C | CL0680-1050-1-00 | 3           | 25.14 | 15.84 | 32.14 |                |

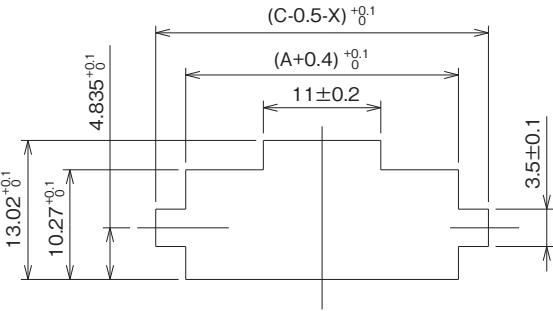
Note : Every even number position has a different locking design.

■ Panel Cutout

[1Pos.]



[2, 3Pos.]

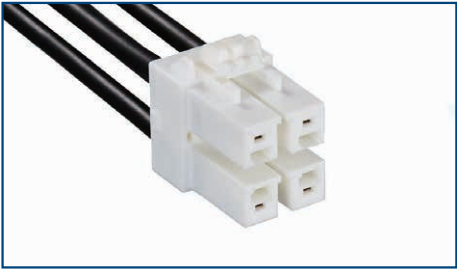


Unit : mm

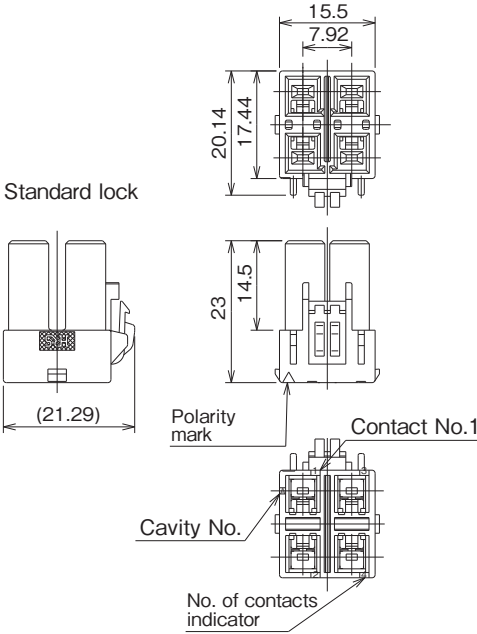
| Panel thickness | X    |
|-----------------|------|
| 2.0             | 0.48 |
| 1.6             | 0.96 |
| 1.2             | 1.44 |
| 0.8             | 1.92 |

Note : Do not use a rounded surface at the panel tab portion.

In-line Double-row Socket



Shown with terminated and contacts installed.

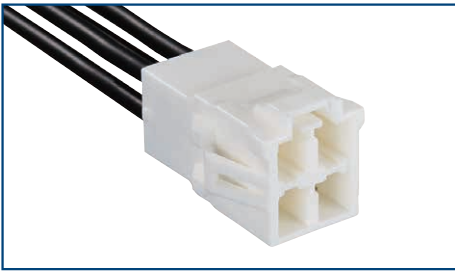


Standard Type (Guide Key : Inside, Color : White)

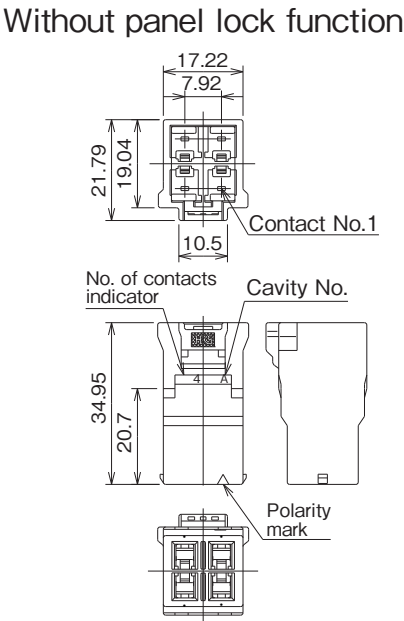
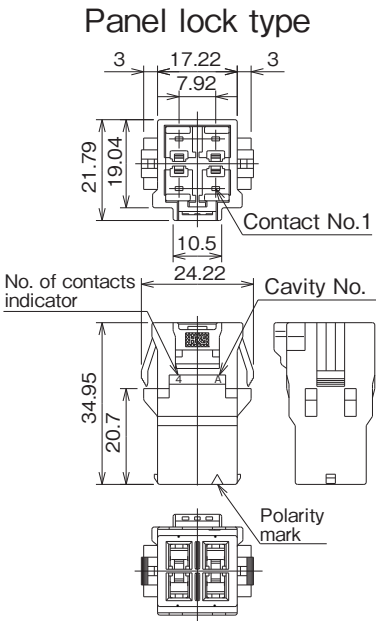
Unit : mm

| Part No.        | HRS No.          | No. of Pos. | Lock type     | Purchase Unit  |
|-----------------|------------------|-------------|---------------|----------------|
| DF22B-4DS-7.92C | CL0680-1142-8-00 | 4           | Standard lock | 100pcs per bag |

In-line Double-row Plug



Shown with terminated and contacts installed.

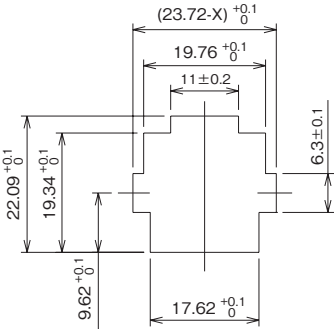


Standard Type (Guide Key : Inside, Color : White)

Unit : mm

| Part No.         | HRS No.          | No. of Pos. | Connector type              | Purchase Unit  |
|------------------|------------------|-------------|-----------------------------|----------------|
| DF22-4DEP-7.92C  | CL0680-1051-4-00 | 4           | Panel lock type             | 100pcs per bag |
| DF22A-4DEP-7.92C | CL0680-1056-8-00 | 4           | Without panel lock function |                |

■ Recommended Panel Cutout (Panel mount type)



Unit : mm

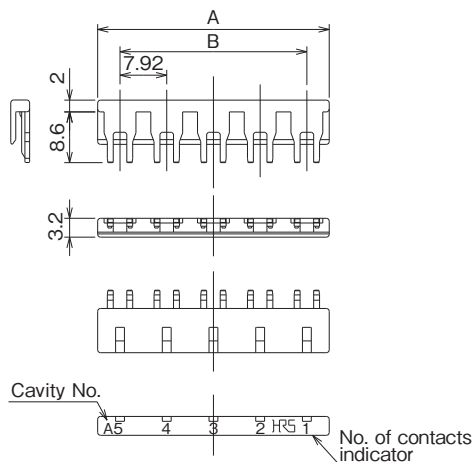
| Panel thickness | X    |
|-----------------|------|
| 2.0             | 0.48 |
| 1.6             | 0.96 |
| 1.2             | 1.44 |
| 0.8             | 1.92 |

Note : Do not use a rounded surface at the panel tab portion.

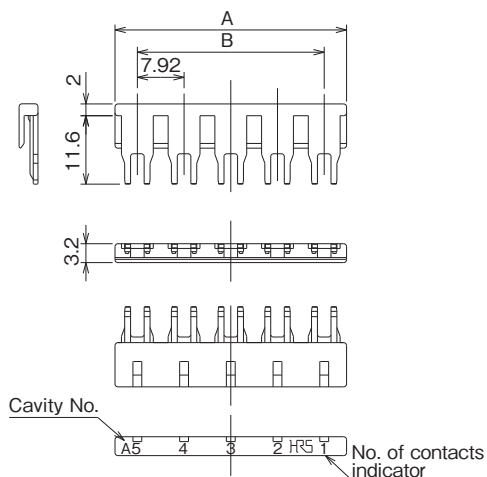
## Retainer



[For Standard height, standard lock (Type I)]



[For Long type, standard lock (Type III)  
Long type, enhanced ergonomic lock (Type IV)]



Unit : mm

| Part No.          | HRS No.                                                                                        | No. of Pos. | A     | B     | Purchase Unit  |
|-------------------|------------------------------------------------------------------------------------------------|-------------|-------|-------|----------------|
| DF22-1RS/P-7.92   | CL0680-1213-4-00                                                                               | 1           | 7.04  | -     | 100pcs per bag |
| DF22-2RS/P-7.92   | CL0680-1209-7-00                                                                               | 2           | 15.50 | 7.92  |                |
| DF22-3RS/P-7.92   | CL0680-1210-6-00                                                                               | 3           | 23.42 | 15.84 |                |
| DF22-4RS/P-7.92   | CL0680-1211-9-00                                                                               | 4           | 31.34 | 23.76 |                |
| DF22-5RS/P-7.92   | CL0680-1212-1-00                                                                               | 5           | 39.26 | 31.68 |                |
| Applicable Socket | DF22-#S-7.92C(28) For Standard height, standard lock(Type I)<br>#indicates number of contacts. |             |       |       |                |

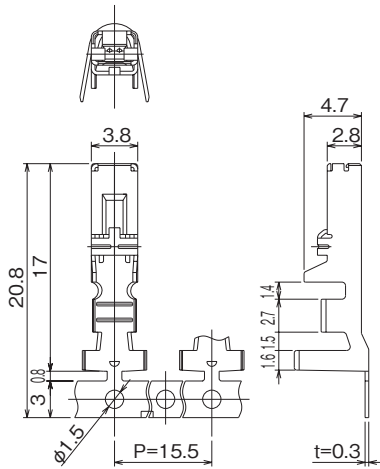
Unit : mm

| Part No.           | HRS No.                                                                                                                                                                                      | No. of Pos. | A     | B     | Purchase Unit  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|-------|----------------|
| DF22B/C-1RS/P-7.92 | CL0680-1214-0-00                                                                                                                                                                             | 1           | 7.04  | -     | 100pcs per bag |
| DF22B/C-2RS/P-7.92 | CL0680-1200-2-00                                                                                                                                                                             | 2           | 15.50 | 7.92  |                |
| DF22B/C-3RS/P-7.92 | CL0680-1201-5-00                                                                                                                                                                             | 3           | 23.42 | 15.84 |                |
| DF22B/C-4RS/P-7.92 | CL0680-1202-8-00                                                                                                                                                                             | 4           | 31.34 | 23.76 |                |
| DF22B/C-5RS/P-7.92 | CL0680-1203-0-00                                                                                                                                                                             | 5           | 39.26 | 31.68 |                |
| Applicable Socket  | DF22B-#S-7.92C For Long type, standard lock (Type III)<br>DF22C-#S-7.92C Long type, enhanced ergonomic lock (Type IV)<br>DF22-#EP-7.92C<br>DF22A-#EP-7.92C<br>#indicates number of contacts. |             |       |       |                |

Note : When connecting retainer into the plug housing, please note the cavity numbers will line up numerically,  
but the retainer cavity numbers will be upside down compared to the plug cavity numbers.

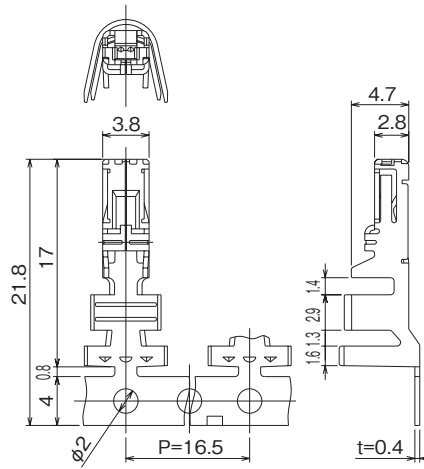
## Crimp Contact for Socket

[For 14 to 16 AWG]



● Strip length : 3.5 to 4.5mm

[For 10 to 12 AWG]



● Strip length 3.5 to 4.5mm

### Reel Contact, Applicable Tool : Applicator

| Part No.       | HRS No.          | Applicable cable |     |                   |                     |                 | Finish      | Purchase Unit    |
|----------------|------------------|------------------|-----|-------------------|---------------------|-----------------|-------------|------------------|
|                |                  | UL style         | AWG | Wire Construction | Sectional area      | Jacket diameter |             |                  |
| DF22-1416SCFA  | CL0680-1085-6-00 | 1430             | 16  | 26/0.254mm        | 1.32mm <sup>2</sup> | 2.4 to 3.0mm    | Gold Plated | 2500pcs per reel |
| DF22A-1416SCFA | CL0680-1087-1-00 | 1015             | 14  | 41/0.26mm         | 2.18mm <sup>2</sup> | 3.0 to 3.8mm    |             | 2000pcs per reel |
|                |                  |                  | 16  | 26/0.254mm        | 1.32mm <sup>2</sup> |                 |             |                  |
| DF22A-1012SCFA | CL0680-1106-4-00 | 1015             | 10  | 104/0.26mm        | 5.52mm <sup>2</sup> | 3.6 to 4.9mm    |             |                  |
|                |                  |                  | 12  | 65/0.26mm         | 3.45mm <sup>2</sup> |                 |             |                  |

Note 1 : The conductor of applicable wire is tin plated annealed copper.

Note 2 : When using other than the applicable wire, contact your nearest Hirose representative.

### Bulk Contact, Applicable Tool : Manual Crimping Tool

| Part No.      | HRS No.          | Applicable cable |     |                   |                     |                 | Finish      | Purchase Unit  |
|---------------|------------------|------------------|-----|-------------------|---------------------|-----------------|-------------|----------------|
|               |                  | UL style         | AWG | Wire Construction | Sectional area      | Jacket diameter |             |                |
| DF22-1416SCA  | CL0680-1190-0-00 | 1430             | 16  | 26/0.254mm        | 1.32mm <sup>2</sup> | 2.6mm           | Gold Plated | 100pcs per bag |
| DF22A-1416SCA | CL0680-1191-0-00 | 1015             | 14  | 41/0.26mm         | 2.18mm <sup>2</sup> | 3.7mm           |             |                |
|               |                  |                  | 16  | 26/0.254mm        | 1.32mm <sup>2</sup> | 3.2mm           |             |                |
| DF22A-1012SCA | CL0680-1107-7-00 | 1015             | 10  | 104/0.26mm        | 5.52mm <sup>2</sup> | 4.69mm          |             |                |
|               |                  |                  | 12  | 65/0.26mm         | 3.45mm <sup>2</sup> | 4.04mm          |             |                |

Note 1 : The conductor of applicable wire is tin plated annealed copper.

Note 2 : When using other than the applicable wire, contact your nearest Hirose representative.

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Note 1 : The conductor of applicable wire is tin plated annealed copper.  
Note 2 : When using other than the applicable wire, contact your nearest Hirose representative.

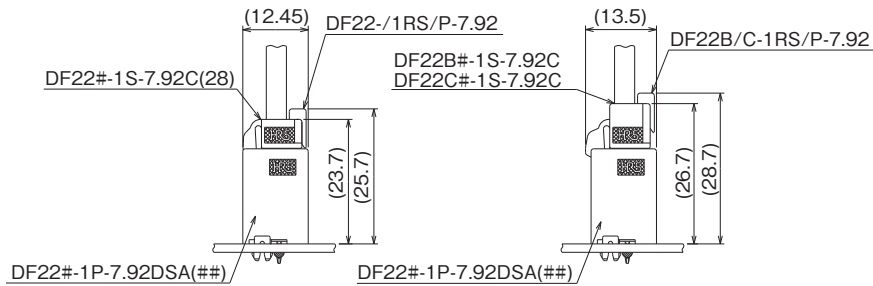
Note 1 : The conductor of applicable wire is tin plated annealed copper.  
Note 2 : When using other than the applicable wire, contact your nearest Hirose representative.



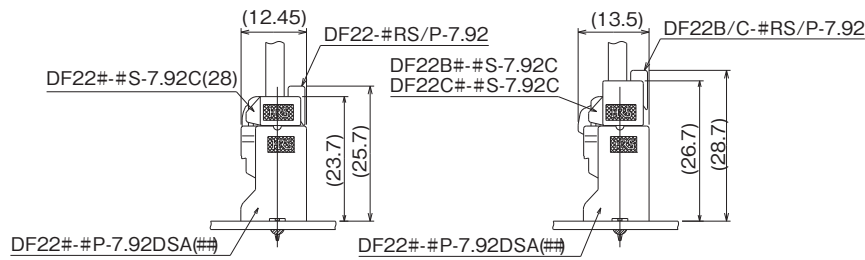
## Mated Dimensions

### ● Socket to Straight Header Connection

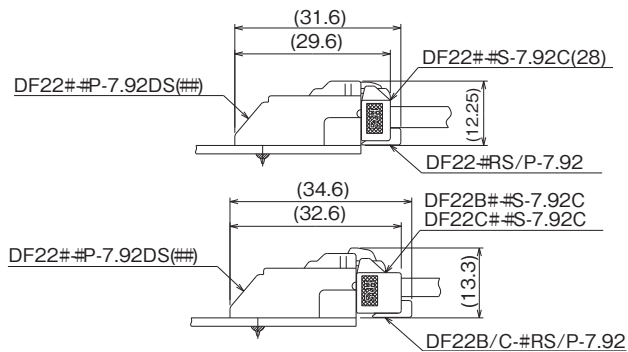
1 Pos.



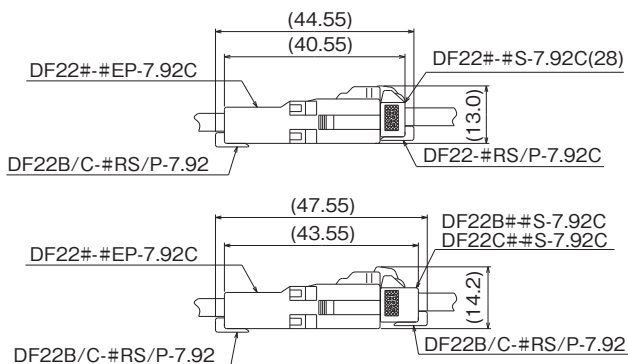
2 to 5 Pos.



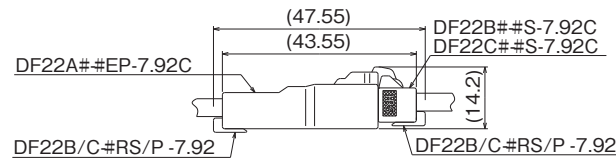
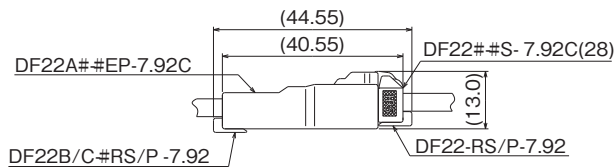
### ● Socket to Right Angle Header Connection



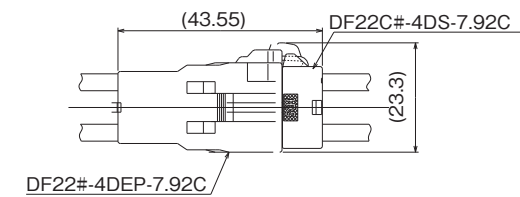
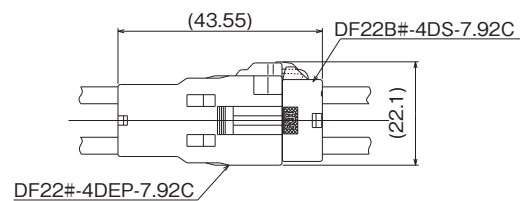
### ● Socket to In-line Plug (Panel lock type) Connection



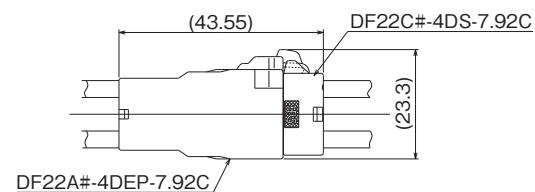
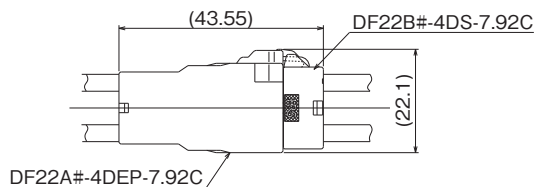
## ● Socket to In-line Plug Connection



## ● In-line Double-row socket to In-line Double-row Plug (Panel lock type) Connection



## ● In-line Double-row socket to In-line Double-row Plug Connection



## Tools

| Type                                                                 | Part No.          | HRS N o.         | Applicable Wire (Note 7) | Applicable Contact (Note 6) |
|----------------------------------------------------------------------|-------------------|------------------|--------------------------|-----------------------------|
| Hirose Press Unit                                                    | CM-105C           | CL0901-0001-0-00 | -                        | DF22/DF22A-1416SCFA/PCFA    |
| Applicators Used in Hirose Press Unit                                | AP105-DF22-1416   | CL0901-4576-7-00 | UL1430                   | DF22-1416SCFA/PCFA          |
|                                                                      | AP105-DF22A-1416  | CL0901-4578-2-00 | UL1015                   | DF22A-1416SCFA/PCFA         |
| Applicators Used in Press Units of Other Japanese Companies (Note 2) | AP109A-DF22-1416  | CL0901-4579-5-00 | UL1430                   | DF22-1416SCFA/PCFA          |
|                                                                      | AP109A-DF22A-1416 | CL0901-4580-4-00 | UL1015                   | DF22A-1416SCFA/PCFA         |
|                                                                      | AP109A-DF22A-1012 | CL0901-4582-0-00 | UL1015                   | DF22A-1012SCFA (Note 1)     |
| Applicator Manufactured by Japan Automatic Machine (Note 3)          | CHS893800H-UP     | -                | UL1430                   | DF22-1416SCFA/PCFA          |
|                                                                      | CHS893900H-UP     | -                | UL1015                   | DF22A-1416SCFA/PCFA         |
|                                                                      | QHS895800H-UP     | -                | UL1015                   | DF22A-1012SCFA (Note 1)     |
| Crimping Tools                                                       | HT104/DF22-1416   | CL0550-0285-0-00 | 16 AWG : UL1430          | DF22-1416SCA/PCA            |
|                                                                      | HT104/DF22A-1416  | CL0550-0286-2-00 | 16, 14 AWG : UL1015      | DF22A-1416SCA/PCA           |
|                                                                      | HT103/DF22A-1012  | CL0550-0288-8-00 | 10, 12 AWG : UL1015      | DF22A-1012SCA               |

Note 1 : When crimping DF22A-1012SCFA use a press of at least 3.5 tons.

Note 2 : Applicators compatible with other Japanese companies (AP109A Applicator) cannot be used with the Hirose Press Unit CM-105C.

An attachment is required when using the applicator. Please contact the press unit manufacturer for inquiries on attachments.

Note 3 : Please contact Japan Automatic Machine (J.A.M.) via their homepage regarding inquiries on the applicator or crimping defects. (URL: <http://www.jam-net.co.jp>)

Note 4 : Problems caused by tools other than those specified are not covered by the warranty.

Note 5 : Crimping should be carried out based on the "Crimping Quality Standards" and "Crimping Conditions Table."

Note 6 : Applicable contacts are limited to those listed in the table.

Note 7 : Applicable cables are limited to those listed in the table.

## Contact Extraction

### ● Contact extraction tool

Flat-bladed screwdriver, 1.4mm blade width

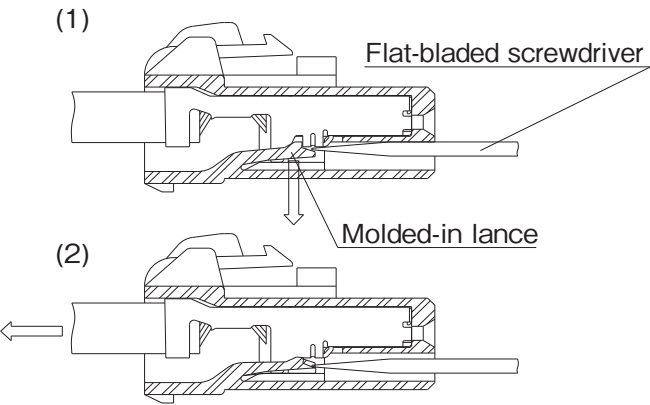
### ● Intended crimp Contacts

DF22-1416SC(F)A, DF22A-1416SC(F)A, DF22A-1012SC(F)A, DF22-1416PC(F)A, DF22A-1416PC(F)A

### ● Work Method

1. Refer to the drawing No. 1. Insert correct size screwdriver in the housing against the molded-in lance.  
Push down the lance as shown.
2. Assure that the lance is deflected to release the contact and pull out wire with the crimped contact.

(Housing Cross- Sectional Diagram)



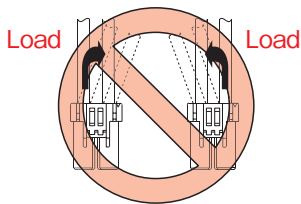
Note : Please do not reuse the repaired housing. Replace it to new one.

 **Caution** There are parts on the crimp contact that can cause injuries, please use caution when unmating the contacts.

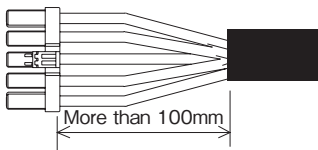
| Precautions            |                                                                                                                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.Cleaning Condition   | Refer to the "Wire-to-Board Connector Use Handbook"                                                                                                                                                                                                     |
| 2.Connection Condition | Refer to the "Wire-to-Board Connector Use Handbook"                                                                                                                                                                                                     |
| 3.Cautions             | The color of the plastic molding may differ slightly depending on product lot and future storage conditions but this does not affect the product performance.<br>Black spots may appear on the mold resin but this does not affect the product quality. |
| 4.Precaution           | Please refer to the following documents.<br>■ Crimp Quality Standards (ETAD-H095-00, ETAD-H0952-00)<br>■ Harness Procedure Manual (ETAD-H0798-00)<br>■ Board-to-Wire Connector Guidelines (ETAD-H1023-00)                                               |

## Precautions When Using High-Current Connectors

1. If this product is used outside the specifications, evaluate it in the final set to confirm that there are no problems in use.
2. No outdoor use.
3. Notification for harness assembly
  - 1) When inserting the crimping terminal to the crimping socket, please do not tilt the crimping terminal or twist the cable. Insertion at tilted angles or twisting the cable may cause deformation of the crimping terminal or crimping socket.
  - 2) After inserting the crimping terminal to the crimping socket, please make sure that the lance has been hooked with pulling the cable lightly. When checking the hook, please avoid bending the cable for preventing terminal drop-off.



- 3) Bundle cables/Cabletyre Cables  
 Recommend bundle and strip position of cables are 100mm or more.  
 Bundling close to the connectors may cause terminal drop-off, breaking cables and unstable connection.

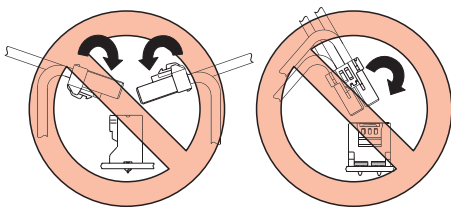


### 4. Notification for Insertion Extraction

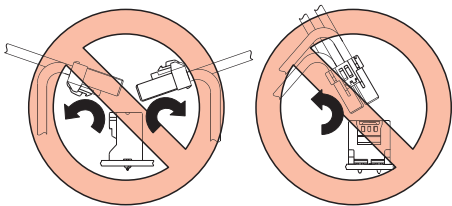
#### ⚠ Caution

- 1) Please insert/extract the crimping socket straight to the mating connector. Insertion/extraction at tilted angles applies load concentration to the connector end and may cause deformation (at connection area, socket and header case, etc.). There is firing risk using this kind of deformed connector.

Insertion



Extraction

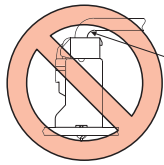


- 2) When it is hard to extract, please lightly insert the connector beforehand and then pull it with releasing the lock. Forced extraction has a risk of connector breakage.

## 5. Notification of wiring

### ⚠ Caution

- 1) When using a thick cable, short cable length and bending close to the connector end, these load concentration may cause deformation. Please note that there is firing risk using deformed connector. When installing, please refrain from stress concentration such as cable bending close to the connector end or cable twisting.



Stress concentration;  
Cable bending close  
to connector

## Current Ratings

The current rating listed in the catalog indicates the allowable current per contact. However, in applications requiring current transmission through all the contacts, about one-third of the listed rating should be applied. When the current rating for the connector is 3A, and the allowable current of the conductor being used is 1A, then rating of 1A will be used for the entire assembly.

The connectors should not be mating / unmating when the electrical current is being applied.  
Hot swap should not be performed.

## While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please review 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, the warranty of the product may be affected.

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.

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