# High Current Power Connector for Internal Automotive Connection, Heat Resistant up to 125°C

## HVH-280 Series




## ■Features

### 1. Rated Current : 30A, Rated Voltage : 600V AC/DC

### 2. High Heat Resistance

Suitable for use in 125℃ environments.

### 3. High Reliability 3-Point Contact Design

High contact pressure design enables high current capacity.

### 4. High Vibration Resistance

The cable sheath is firmly secured to reduce cable runout during vibration.

### 5. Lock Designed for Easy Operation

Stroke depth and long lock arm allow workers to operate the lock with ease.

### 6. Clear Tactile Click and Stable Connection

Clear tactile click during mating and firm lock supports reliable mating operation.

### 7. Crimp Terminal Insertion Ensured

Retainer prevents incomplete insertion of crimp terminals.

### 8. Prevents Mis-Insertion

Designed to prevent reversed insertion of terminals and reversed connector insertion during mating.

**●High Current Terminal**

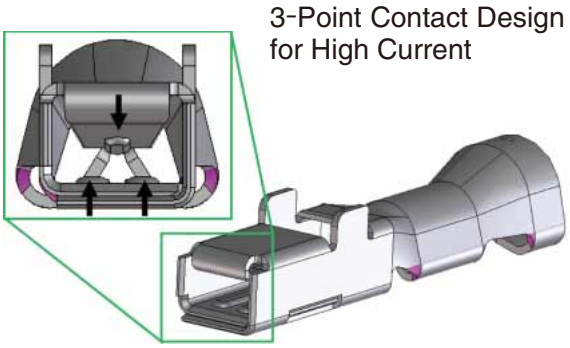



Fig.1

**●600V Rated Voltage**

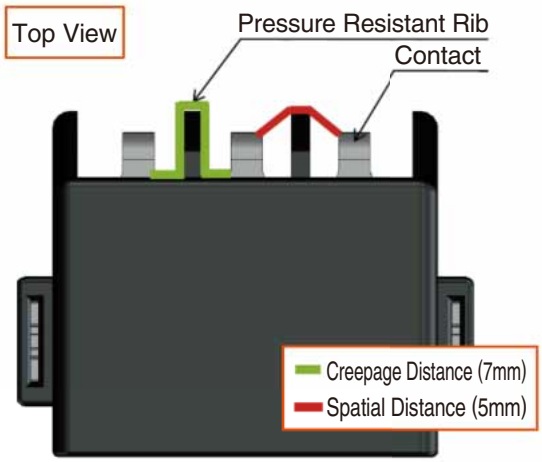



Fig.2

**●Incomplete Insertion Prevention and High Vibration Resistance**

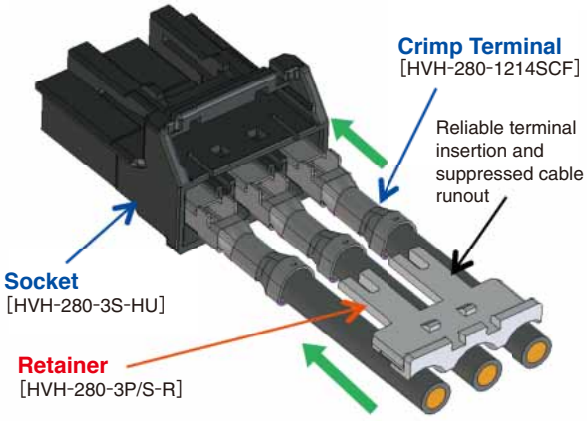



Fig.3

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## ■Product Specifications

| | | | | |
|---|---|---|---|---|
| Ratings | Rated Current | 30A (Note 1) | Operating Temperature | -40℃ to +125℃ |
| | | | Storage Temperature Range | -10℃ to +60℃ (Note 2) |
| | Rated Voltage | 600V AC/DC | Storage Humidity Range | Relative humidity 85% or less (No condensation) |

| Items | Specifications | Conditions |
|---|---|---|
| 1. Contact Resistance | 100MΩ Min | Measured at 1000V DC |
| 2. Withstanding Voltage | There shall be no dielectric breakdown or flashover. | 2200V AC applied for 1minute. |
| 3. Voltage Drop | 5mΩ Max | Measured at A (Cable cross-sectional area×5) DC |
| 4. Connector Insertion Force | 45N Max.<br>No damage, strain or deformation to components. | Inserted at a constant speed of 50mm/min Max. |
| 5. Connector Unmating Force | 75N Max.<br>No damage, strain or deformation to components. | Removed at a constant speed of 50mm/min Max. |
| 6. Connector Retention Force | 110N Min. | Removed at a constant speed of 50mm/min Max. |
| 7. Vibration/ Mechanical Shock | Voltage Drop : 5mΩ Max.<br>Contact Resistance : 100MΩ Min.<br>No electrical discontinuity of 1μs or more.<br>No damage, strain or deformation to components. | [Vibration]<br>Random vibration frequency 5 to 1000Hz (Acceleration/1.81grms)<br>8 hour test in each of the three directions under the above conditions<br>[Shock]<br>Acceleration of 35G, 10 times in both directions of the 3 axes |
| 8. Thermal Shock | Voltage Drop : 5mΩ Max.<br>Contact Resistance : 100MΩ Min.<br>No electrical discontinuity of 1μs or more.<br>Withstanding Voltage:No dielectric breakdown or flashover.<br>No damage, strain or deformation to components. | Temperature -40°C → Room temperature → 125°C → Room temperature<br>Time : 30 → 5 → 30 → 5 minutes for 100 cycles |
| 9. Temperature Cycle | Retention force between contact and connector : 50N. Min.<br>Voltage Drop : 5mΩ Max.<br>Contact Resistance : 100MΩ Min.<br>Withstanding Voltage : No dielectric breakdown or flashover.<br>No damage, strain or deformation to components. | Left for 40 cycles at a temperature of -40 to 125°C, and relative humidity of 80 to 100% |
| 10. High Temperature Storage | Voltage Drop : 5mΩ Max.<br>Contact Resistance : 100MΩ Min.<br>Withstanding Voltage : No dielectric breakdown or flashover.<br>No damage, strain or deformation to components. | Left at a temperature of 125°C for 1008 hours. |

Note 1 : The rating current depends on operating temperature and cable used. Please contact a Hirose Sales Office for inquiries.
Note 2 : This storage temperature is for long-term storage of unused products.

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## ■Materials/Finish

| Component | Part | Material | Finish | UL Standard |
|---|---|---|---|---|
| Header | Housing | PBT Resin | Black | UL94V-0 |
| | Crimp Terminal | Copper Alloy | Tin Plating | ——— |
| | Retainer | PBT Resin | Dark Gray | UL94V-0 |
| Socket | Housing | PA Resin | Black | UL94V-0 |
| | Terminal | Copper Alloy | Tin Plating | ——— |
| | Solder Tabs | Phosphor Bronze | Tin Plating | ——— |

## ■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

HVH-280 – 3 P 6.5 DS
❶ ❷ ❸ ❹ ❺

●Terminal

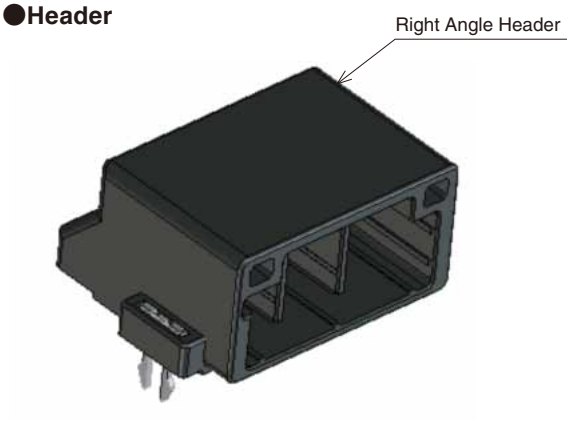
HVH-280 – 1214 SCF
❻ ❼

| |
|---|
| ❶Series Name : HVH-280 |
| ❷No. of Pos : 2, 3 |
| ❸Connector Type P : Header<br>S : Socket |
| ❹Contact Pitch : 6.5mm |
| ❺Termination Form DS : Right Angle DIP<br>HU : Housing |
| ❻Applicable Cable Size 1214 : 12 to 14 AWG |
| ❼Form Type/Packaging SCF Socket Contact/Reel |

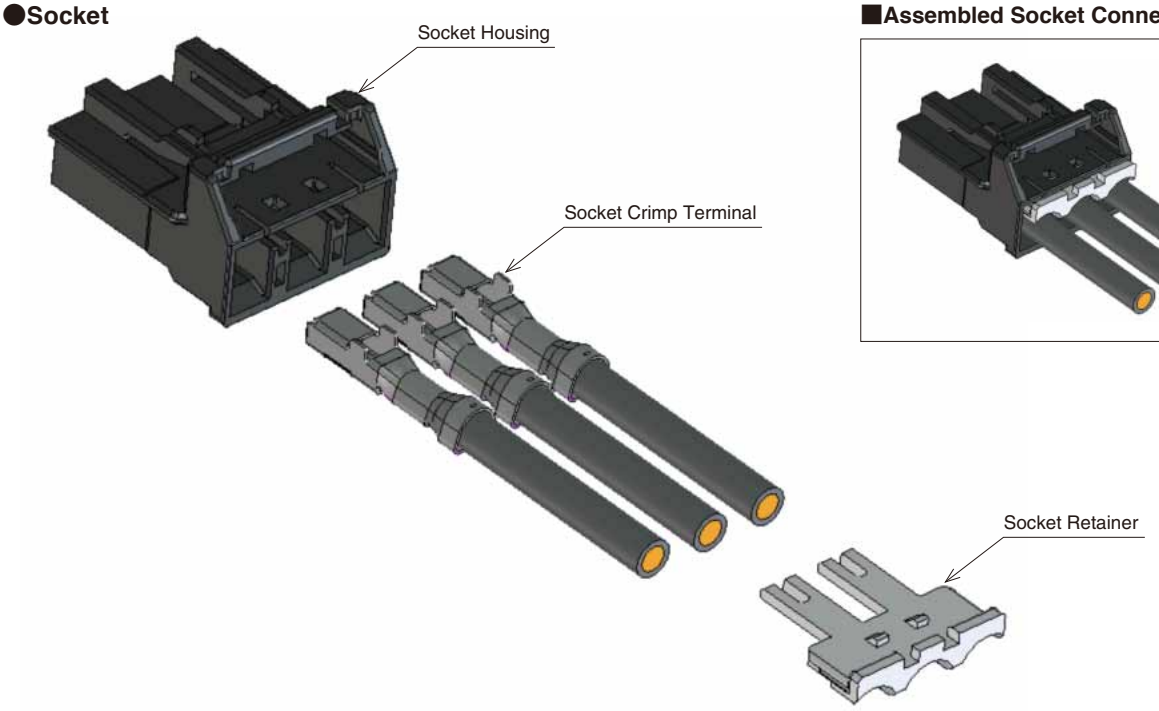
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## ■Product Configurations

●Header




●Socket




■Assembled Socket Connector



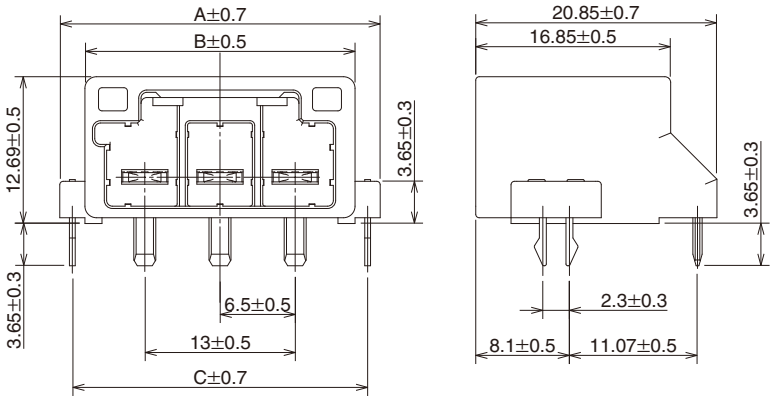
## ■HVH-280 Series Mating Table

| Header | | Socket | |
|---|---|---|---|
| HVH-280 ∗pos. Header (Board Side) | Configuration Product Name | HVH-280 ∗pos. Socket | Configuration Product Name |
| | HVH-280-∗P-6.5DS | | HVH-280-∗S-HU |
| | | | HVH-280-∗P/S-R |
| | | | HVH-280-1214SCF |

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## ■Right Angle Header



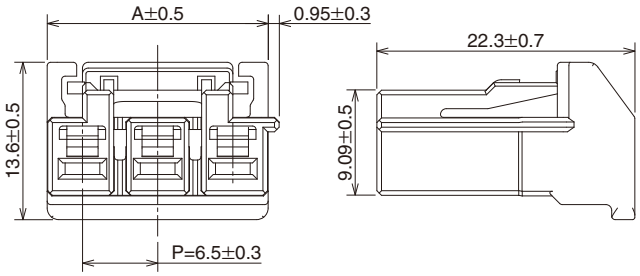



| Part No. | HRS No. | No. of Pos. | Number of tray packages | Finish | A | B | C |
|---|---|---|---|---|---|---|---|
| HVH-280-2P-6.5DS | 778-0703-0 | 2 | 700 | Tin Plating | 21.2 | 16.85 | 19.03 |
| HVH-280-3P-6.5DS | 778-0700-0 | 3 | 560 | Tin Plating | 27.7 | 23.35 | 25.53 |

Note : Tray packages must be ordered in multiples of 560.

## ■Socket Housing





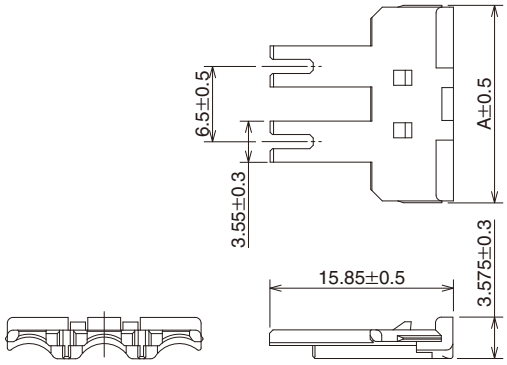

| Part No. | HRS No. | No. of Pos. | A |
|---|---|---|---|
| HVH-280-2S-HU | 778-0704-0 | 2 | 12.6 |
| HVH-280-3S-HU | 778-0701-0 | 3 | 19.1 |

Note : The product is sold in packs (100 pieces per pack) so please order based on number of packs.

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## ■Socket Retainer

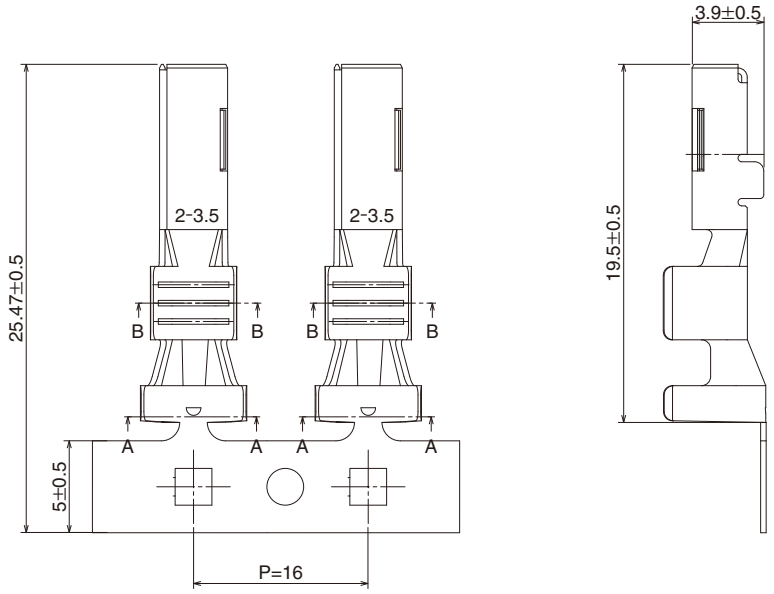





| Part No. | HRS No. | No. of Pos. | A |
|---|---|---|---|
| HVH-280-2P/S-R | 778-0705-0 | 2 | 10.565 |
| HVH-280-3P/S-R | 778-0702-0 | 3 | 17.065 |

Note : The product is sold in packs (100 pieces per pack) so please order based on number of sets.

## ■Socket Crimp Terminal




| Part No. | HRS No. | Type | Amount | Finish |
|---|---|---|---|---|
| HVH-280-1214SCF | 778-0502-0 | Reel Terminal | 1,700 pcs/reel | Tin Plating |

Note 1 : The applicable cable's conductor is a tin plated soft copper wire.
Note 2 : Any problems that occur from using tools other than those specified by Hirose are not covered by warranty.
Note 3 : The applicable cable size is 12 to 14 AWG (2 to 3.5mm$^2$).

## ■Applicable Crimp Tool

| Type | Part No. | HRS No. | Applicable Contact |
|---|---|---|---|
| Applicator | AP105-HVH-280-1214S | 901-5244-0 | HVH-280-1214SCF |

Note 1 : Any problems that occur from using tools other than those specified by Hirose are not covered by warranty.
Note 2 : Crimping work shall be conducted in accordance with the "Crimping Standard" and "Crimping Conditions Table".

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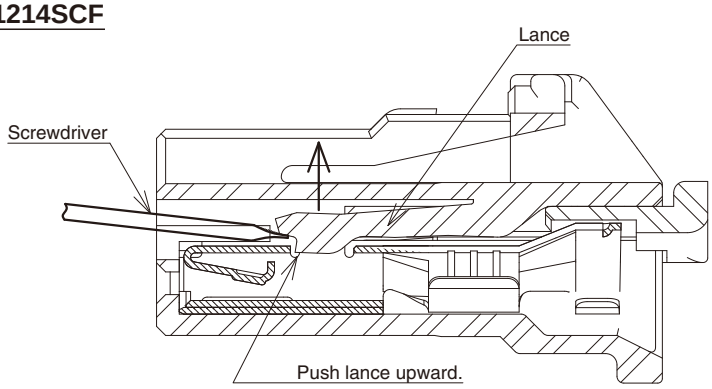
## ◆How to Extract the Terminal

●**Terminal Extraction Tools : Precise screwdriver (flathead screwdriver)**
●**Applicable crimp terminals : HVH-280-1214SCF**
●**Operation Method**

● **Repair Method**
To repair, press the mold lance with the terminal extraction tool in the direction shown in the diagram below. While pressing extract the terminal. Make sure not to deform the terminal lock or contact part.

Caution : Do not push the terminal locking feature or contact. It may lead to deformation or damage to the housing and other parts. When damaged, please replace it with a new one.

**HVH-280-1214SCF**




## ◆Usage Precautions

1. Pulling out the connector with force may result in damage. If it is difficult to pull out, lightly push it once and then operate the lock to pull it out.
2. When inserting or extracting the terminal, always disconnect from the power source first.
3. Do not touch the terminals while the power is on since it is very dangerous.
4. Contact a sales representative for harness instructions and handling manuals.
5. Do not perform insertion or extraction with a live wire. (Live wire insertion/extraction refers to inserting/extracting while electricity is running)

## ◆Usage Environment

Please consult with your Hirose Electric sales representative if your system environmental conditions repeat high and low temperatures.

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## MEMO :

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