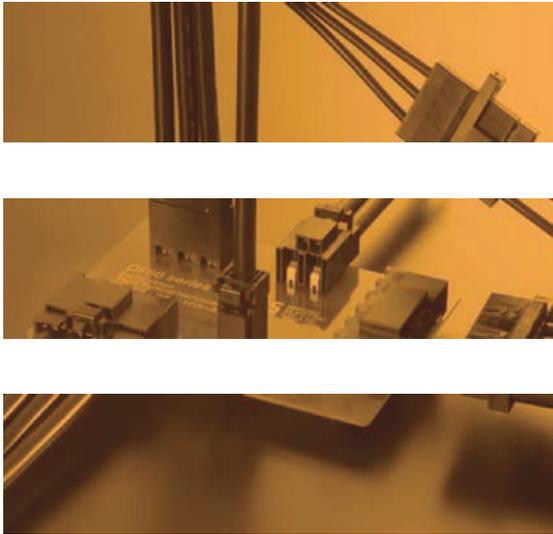


For  
**P**  
POWER



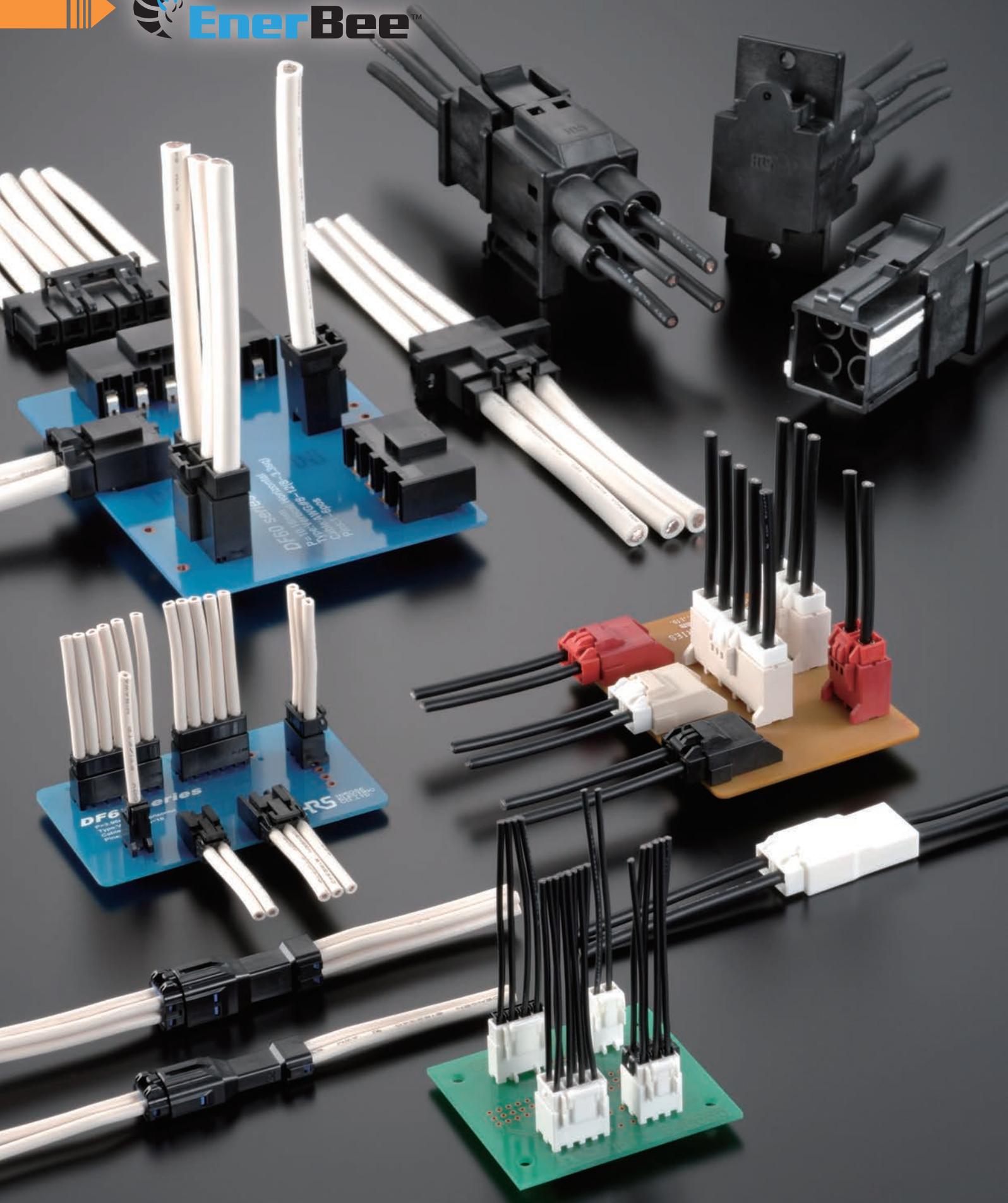
**Wire-to-Board, Wire-to-Wire  
Power Connectors**



For  
**P**  
POWER

Premium connector solutions for industrial power sources





## A legend in compact, high-end devices

EnerBee -Your best choice for power cable connectors.

Named after the tiny, yet energetic insect, the EnerBee name represents the shared concept of this product family - compact size with high-end performance.

In addition to its superior performance, small size and the ability to support high-current and high-voltage devices, EnerBee offers a positive lock mechanism to meet various requirement of industrial power supply and power sources.

Replacing bulky parts in the market with EnerBee connectors allows you to maximize space-saving and achieve superior performance. Additionally, by replacing locks with the EnerBee's built-in positive lock mechanism, assembly quality and work efficiency are improved.

If you have design problems, the EnerBee is your solution!

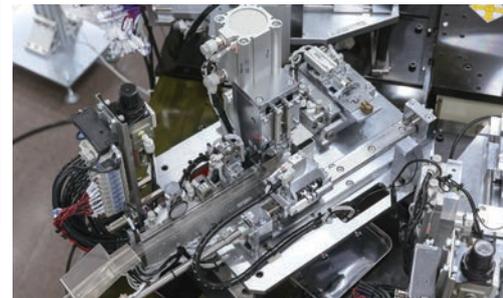
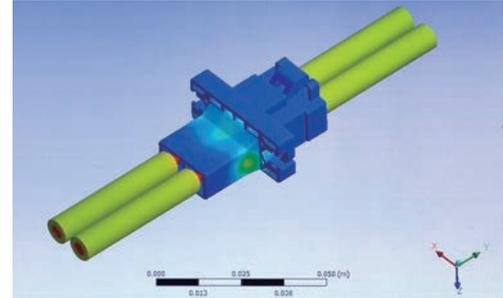
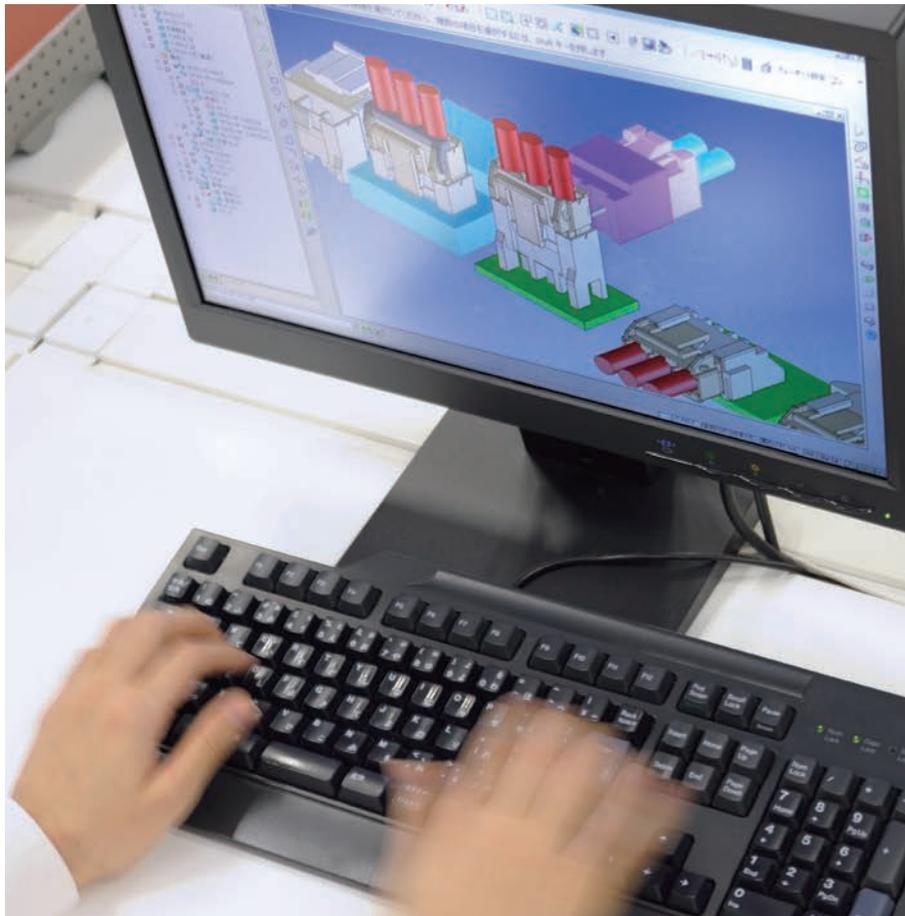


### Yokohama Center, the heart of technology and marketing

Hirose established the Yokohama Center as a multi-purpose base in Japan's historic harbor city, often considered Japan's window to the world. The center incorporates a technical network consisting of a Technical Division, a Production Technology Division, a Quality Management Division, and a sales and market network. This highly sophisticated structure ensures that we promptly meet advancing market needs.



# Advanced technology with global supply



Hirose developed Japan's first original connector in 1959, pioneering an industry of development-oriented and enterprising technology.

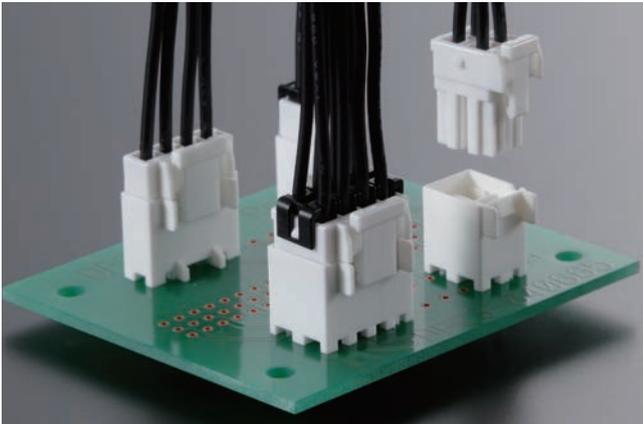
Hirose specializes in the challenging development and manufacture of connectors for industrial applications.

By applying our accumulated knowledge of emerging technologies and customer requirements, we have expanded into other markets such as consumer electronic applications.

Given such circumstances, the EnerBee family has incorporated not only high contact reliability for industrial applications, but also cutting-edge technologies for consumer electronic applications. Hirose has expanded its global sales and distribution network into four major markets around the world: Japan, Asia, United States and Europe. The company continues to expand its manufacturing bases globally as well, and has successfully established a global supply system. EnerBee products are not only technologically advanced, but possess high reliability and quality. Hirose connectors are readily available from our dependable global supply chain.

# For POWER

# DF33C Series 3.3mm Pitch, Maximum rated current 5A



Despite being the smallest sized EnerBee connector, the DF33C connectors meet the 1.5mm\* creepage distance as stipulated by the Electrical Appliance and Material Safety Act. Suitable for potting (resin sealing) up to 6.5mm in height. Widely used as a compact connector for internal power supplies.

\*After potting

Potting

Center lock

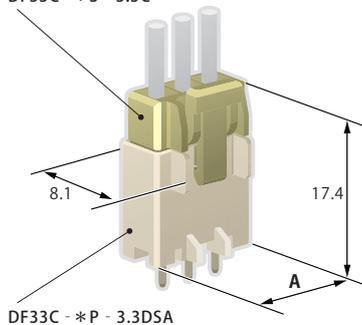
## Product Specifications

|               |            |             |        |                     |  |              |
|---------------|------------|-------------|--------|---------------------|--|--------------|
| Rated current | Row        | No. of Pos. | 20 AWG | 22 AWG              | Operating Temperature Range              | -35 to +85°C |
|               | 1          | 2 to 6      | 5A     | 5A                  | Operating Humidity Range                 | 40 to 80%    |
|               | 2          | 4 to 12     | 5A     | 4A                  | Storage Temperature Range                | -10 to +60°C |
|               |            |             |        |                     | Storage Humidity Range                   | 40 to 70%    |
| Rated voltage | 500V AC/DC |             |        | Glow Wire Compliant | Supports IEC-60695-2-11<br>GWEPT : 750°C |              |

Note: Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.

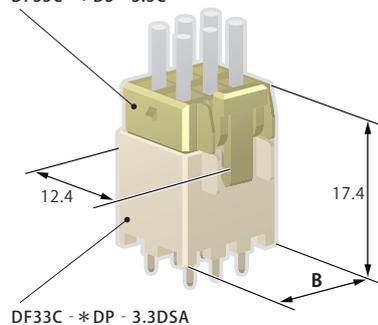
### Single-row

DF33C - \*S - 3.3C



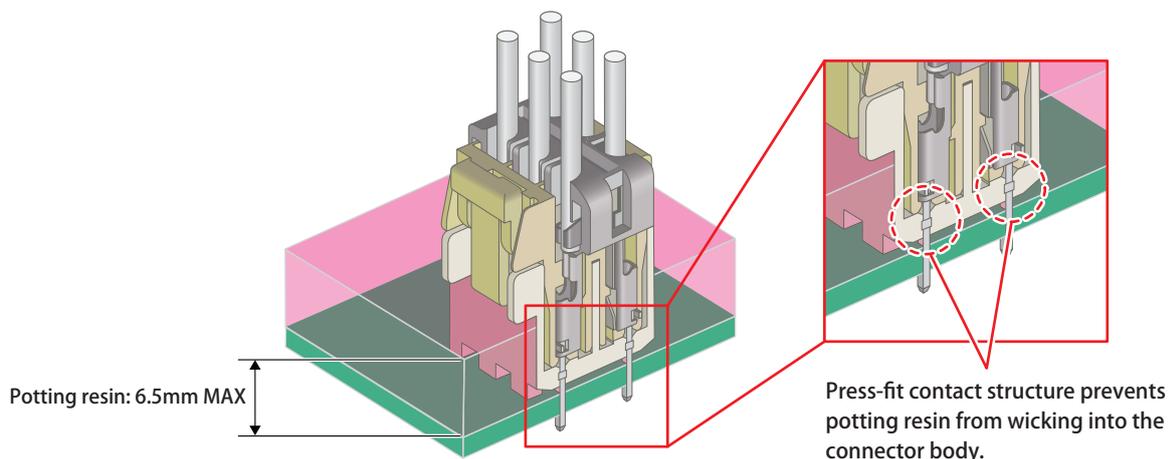
### Double-row

DF33C - \*DS - 3.3C

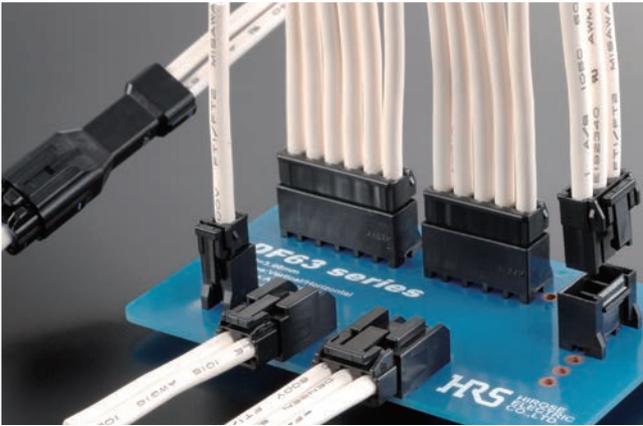


|              |       |       |       |        |        |
|--------------|-------|-------|-------|--------|--------|
|              | 2pos. | 3pos. | 4pos. | 5pos.  | 6pos.  |
| Single-row A | 8.4   | 11.7  | 15.0  | 18.3   | 21.6   |
|              | 4pos. | 6pos. | 8pos. | 10pos. | 12pos. |
| Double-row B | 8.4   | 11.7  | 15.0  | 18.3   | 21.6   |

## Resin sealing > Protects mounted components from moisture and other foreign matter such as dust and dirt.



# DF63/DF63W Series 3.96mm Pitch, Maximum rated current 15A

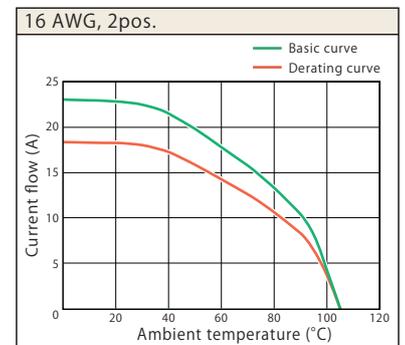


In addition to the EnerBee's core functions of "compact and high-end performance" the DF63 realizes superior usability and stability. The center locking mechanism enables high density mounting and saves valuable PCB space. Moreover, water proof type DF63W series is slim and smooth, suitable for internal connection. (IP67 water proof)

- Polarization key
- Potting
- multi-point contact
- Center lock
- Waterproof (DF63W only)
- UL C-UL TÜV

## Product Specifications

|                                   |                   |                   |                   |                  |        |  |              |
|-----------------------------------|-------------------|-------------------|-------------------|------------------|--------|--|--------------|
| Rated current                     | No. of Pos.       | 16 AWG            | 18 AWG            | 20 AWG           | 22 AWG | Operating Temperature Range  | -40 to 105°C |
|                                   | 1                 | 15A               | 13A               | 11A              | 9A     | Operating Humidity Range   | 20 to 80%    |
|                                   | 2                 | 14A               | 12A (DF63W:11A)   | 10A              | 8A     | Storage Temperature Range  | -10 to 60°C  |
|                                   | 3                 | 12A (DF63W:13A)   | 10A               | 8A               | 7A     | Storage Humidity Range   | 40 to 70%    |
|                                   | 4                 | 10A (DF63W:12A)   | 8A (DF63W:9A)     | 7A               | 6A     | UL/C-UL Certified: certificate number<br>UL : E52653<br>C-UL : E52653<br>TÜV : R50318850 |              |
|                                   | 5                 | 10A               | 8A                | 7A               | 6A     |  |              |
|                                   | 6                 | 10A               | 8A                | 7A               | 6A     |  |              |
| 2 <sup>*2</sup><br>(7.92mm Pitch) | 15A <sup>*2</sup> | 13A <sup>*2</sup> | 11A <sup>*2</sup> | 9A <sup>*2</sup> |        |  |              |
| 3 <sup>*2</sup><br>(7.92mm Pitch) | 12A <sup>*2</sup> | 11A <sup>*2</sup> | 9A <sup>*2</sup>  | 8A <sup>*2</sup> |        |  |              |
| Rated voltage                     | Safety Standard   | 630V AC/DC        |                   |                  |        |  |              |
|                                   | UL/C-UL           | 600V AC/DC        |                   |                  |        |  |              |
|                                   | TÜV               | 300V AC/DC        |                   |                  |        |  |              |



\*1 Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.  
\*2 Type without pins.

\*Derating curve is calculated with multiplying the amperage of the basic curve by derating factor 0.8.

■ Straight

DF63 - \*S - 3.96C

DF63(M) - \*P - 3.96DSA

■ Right angle

DF63(M) - \*P - 3.96DS

DF63 - \*S - 3.96C

■ In-line

DF63A - \*EP - 3.96C

DF63 - \*S - 3.96C

■ In-line (Waterproof) : DF63W Series

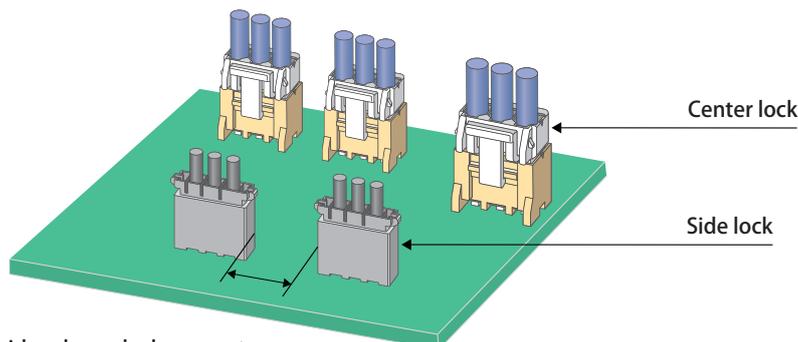
DF63W - \*S - 3.96C

DF63W - \*EP - 3.96C

|   |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|
|   | 1pos. | 2pos. | 3pos. | 4pos. | 5pos. | 6pos. |
| A | 6.2   | 8.66  | 12.62 | 16.58 | 20.54 | 24.5  |

## Center-lock system > Saves on PCB mounting space.

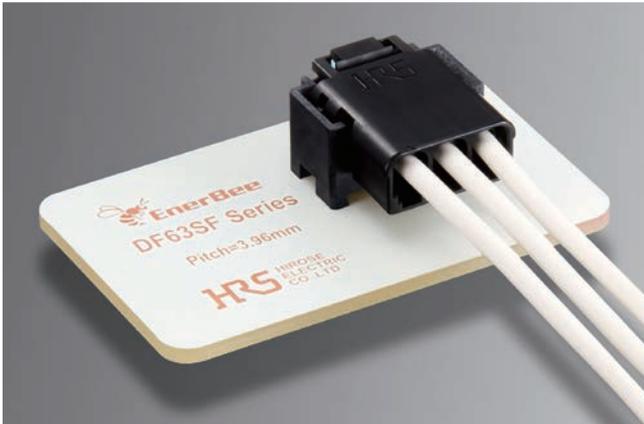
Enables high density mounting by center lock saves space for fingers to unlock the connector which is necessary for side lock, contributing to high density mounting and saves valuable PCB space.



Extra space needed for typical side release lock connectors.

This structure is commonly used on all product series.

# DF63SF Series 3.96mm Pitch, Maximum rated current 12A



In addition to the EnerBee's core design concepts of "compact and high current", the DF63SF creates space-saving due to the vertical mating with lateral cable design.

Also, it is possible to attach parts under the cable, which enables design flexibility.

Additionally, It supports through-hole reflow (THR) mounting to improve work efficiency.

multi-point contact

Center lock

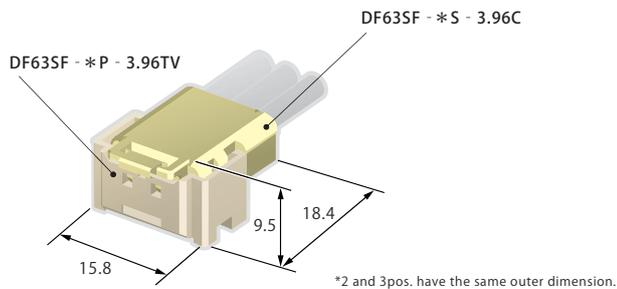
UL C-UL TÜV

## Product Specifications

|               |                       |            |        |  |              |
|---------------|-----------------------|------------|--------|--|--------------|
| Rated current | No. of Pos.           | 16 AWG     | 18 AWG | Operating Temperature Range  | -55 to 105°C |
|               | 3                     | 12A        | 10A    | Operating Humidity Range   | 20 to 80%    |
|               | 2*2<br>(7.92mm Pitch) | 15A*2      | 13A*2  | Storage Temperature Range  | -10 to 60°C  |
|               |                       |            |        | Storage Humidity Range   | 40 to 70%    |
| Rated voltage | Safety Standard       | 630V AC/DC |        | UL/C-UL/TÜV Certified: certificate number<br>UL : E52653<br>C-UL : E52653<br>TÜV : R50372836 |              |
|               | UL/C-UL               | 600V AC/DC |        |  |              |
|               | TÜV                   | 300V AC/DC |        |  |              |

\*1 Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.

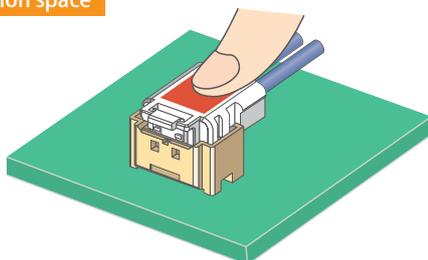
\*2 Type without pins.



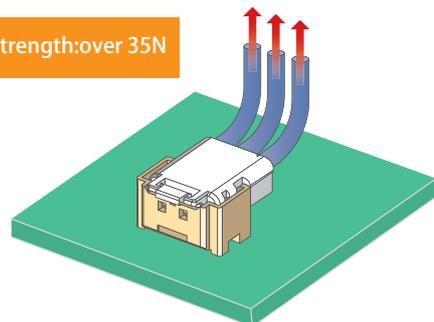
## Vertical-mating with lateral cable design > Clear tactile click and superior operational reliability.

Clear tactile click and wide operation space improve work efficiency.

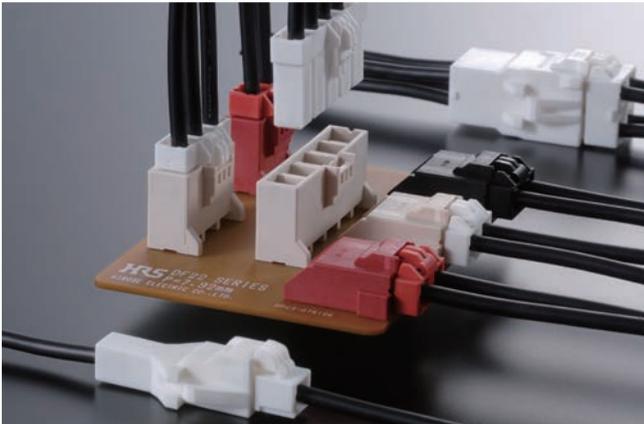
Clear tactile click and wide operation space



Lock strength: over 35N



# DF22 Series 7.92mm Pitch, Maximum rated current 43A



The DF22 series is compact on size, but big on current capacity.

The most popular EnerBee connector with a long sales history and wide customer appeal. Variations such as keying, pin count and latch styles, are available to allow the connector to be matched to the application at hand.

Handling Precautions: Please confirm with the product specification before use

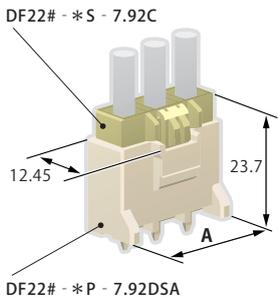


## Product Specifications

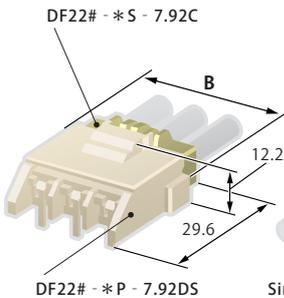
|               |                 |             |        |   |        |                             |  |   |             |        |        |        |        |
|---------------|-----------------|-------------|--------|---|--------|-----------------------------|--|---|-------------|--------|--------|--------|--------|
| Rated current | No. of Pos.     | 10 AWG      | 12 AWG | 14 AWG                                    | 16 AWG | Operating Temperature Range | -55 to +85°C                             | UL listed<br>Rated current<br>(Ambient Temperature:25°) | No. of Pos. | 10 AWG | 12 AWG | 14 AWG | 16 AWG |
|               | 1               | 30A         | 25A    | 20A                                       | 15A    | Operating Humidity Range    | 20 to 80%                                |   | 1           | 43A    | 38A    | 26A    | 21A    |
|               | 2               | 25A         | 20A    | 18A                                       | 15A    | Storage Temperature Range   | -10 to +60°C                             |   | 2           | 38A    | 32A    | 23A    | 21A    |
|               | 3               | 25A         | 20A    | 18A                                       | 15A    | Storage Humidity Range      | 40 to 70%                                |   | 3           | 38A    | 32A    | 23A    | 21A    |
|               | 4               | 22A         | 18A    | 15A                                       | 13A    | Glow Wire Compliant         | Supports IEC-60695-2-11<br>GWEPT : 750°C |   | 4           | 33A    | 26A    | 22A    | 19A    |
| 5             | 22A             | 18A         | 15A    | 13A                                       | 5      |                             |  | 33A   | 26A         | 22A    | 19A    |        |        |
| Rated voltage | Safety Standard | 1000V AC/DC |        | UL/C-UL/TÜV Certified: certificate number |        |                             |  |   |             |        |        |        |        |
|               | UL/C-UL         | 600V AC/DC  |        | UL : E52653                               |        |                             |  |   |             |        |        |        |        |
|               | TÜV             | 600V AC/DC  |        | C-UL : E52653                             |        |                             |  |   |             |        |        |        |        |
|               |                 |             |        | TÜV : R9950703                            |        |                             |  |   |             |        |        |        |        |

Note: Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.

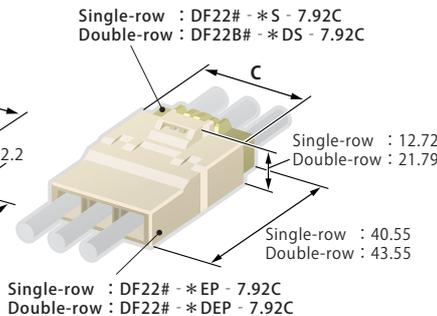
### ■Straight



### ■Right angle



### ■In-line



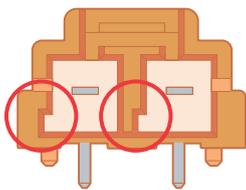
|                      | 1pos. | 2pos. | 3pos. | 4pos. | 5pos. |
|----------------------|-------|-------|-------|-------|-------|
| Straight A           | 10.8  | 17.22 | 25.14 | 33.06 | 40.98 |
| Right angle B        | —     | 19.80 | 27.72 | 35.64 | 43.56 |
| In-line Single-row C | 9.3   | 18.0  | 26.0  | —     | —     |
| In-line Double-row C | —     | —     | —     | 17.22 | —     |

## Keying Variations > Safe design

Three keying and color options are available for the DF22 series.

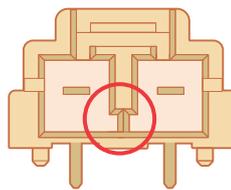
This prevents incorrect mating of the connectors when using multiple DF22's with the same pin count on the same design.

Ex. 2pos., right-angle pin header



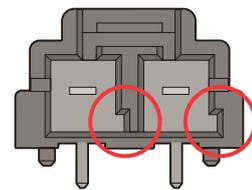
L-type

- Guide key : left side
- Plastic : red



Standard type

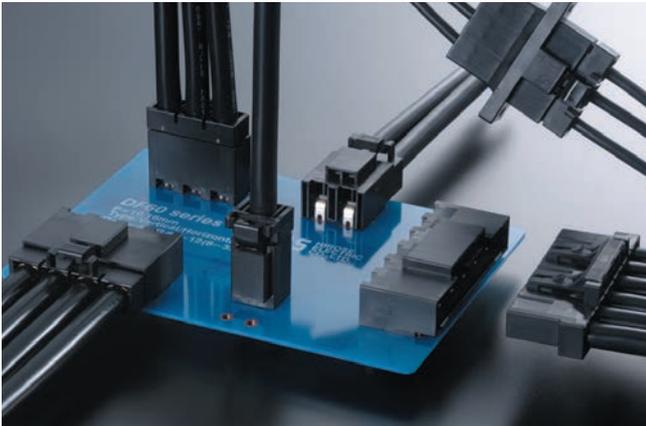
- Guide key : center part
- Plastic : natural (beige)



R-type

- Guide key : right side
- Plastic : black

# DF60 Series 10.16mm Pitch, Maximum rated current 65A



With its high power and large current capability, the DF60 Series is the most compact connector we offer for this level of current.

It features a multi-point contact structure with a center lock mechanism and offers increased operability with high reliability when connecting to main power sources.

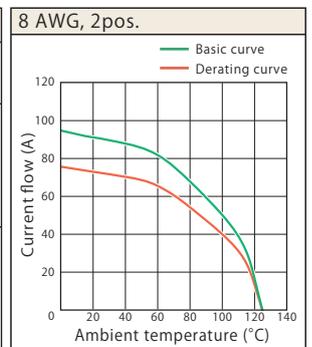
A finger protection type is also available.



## Product Specifications

|               |                 |             |             |               |                             |                     |  |
|---------------|-----------------|-------------|-------------|---------------|-----------------------------|---------------------|--|
| Rated current | No. of Pos.     | 8 AWG       | 10 AWG      | 12 AWG        | Operating Temperature Range | -55 to +105°C       |  |
|               | 1               | 50A         | 40A         | 31A           | Operating Humidity Range    | 20 to 80%           |  |
|               | 2               | 45A         | 35A         | 28A           | Storage Temperature Range   | -10 to +60°C        |  |
|               | 3               | 42A         | 34A         | 27A           | Storage Humidity Range      | 40 to 70%           |  |
|               | 4               |             | 33A         |               | 27A                         | Glow Wire Compliant | Supports IEC-60695-2-11<br>GWEPT : 750°C |
|               | 5               |             |             |               |                             | 600V AC/DC          | 600V AC/DC                               |
| 6             | Safety Standard | 1000V AC/DC | UL : E52653 | C-UL : E52653 | TÜV : R50244085             |                     |  |

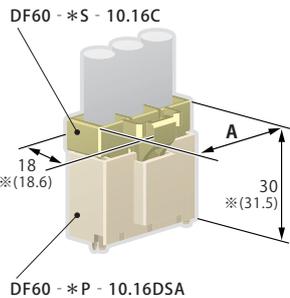
|   |             |       |        |        |
|---|-------------|-------|--------|--------|
| UL listed<br>Rated current<br>(Ambient Temperature:25°) | No. of Pos. | 8 AWG | 10 AWG | 12 AWG |
|   | 1           |       |        | 45A    |
|   | 2           | 65A   | 55A    | 40A    |
|   | 3           | 55A   | 50A    |        |
|   | 4           |       | 45A    | 35A    |
| 5   |             |       |        |        |



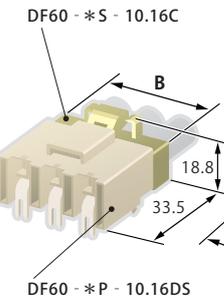
Note: Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.

\*Derating curve is calculated with multiplying the amperage of the basic curve by derating factor 0.8.

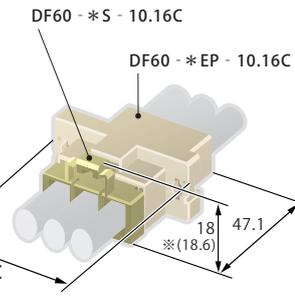
## Straight



## Right angle



## In-line

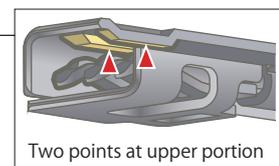
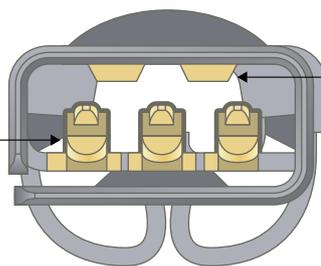
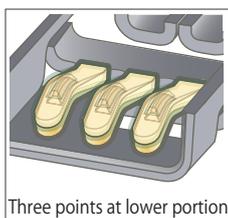


|               | 1pos. | 2pos. | 3pos.             | 4pos. | 5pos. | 6pos. |
|---------------|-------|-------|-------------------|-------|-------|-------|
| Straight A    | 15.8  | 22.36 | 32.52             | 42.68 | 52.84 | 63.0  |
| Right angle B | 15.8  | 22.36 | 32.52             | 42.68 | 52.84 | 63.0  |
| In-line C     | 32.2  | 39.36 | 49.52<br>*(49.72) | 59.68 | 69.84 | —     |

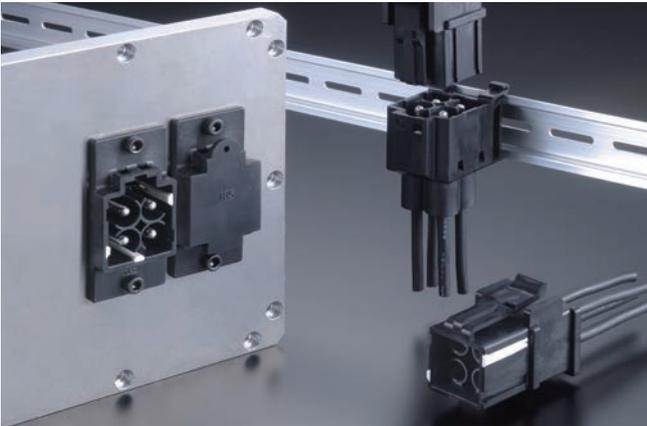
\*The dimension in the parenthesis is for DF60F (Finger protection type)  
\*Attach heat shrinkable tube to crimp terminal of socket/plug for satisfying the Finger protect function(DF60F).

## Multi-point contact structure > Secure contact and superior vibration resistance

Three contact points in the lower portion have an independent spring action and allow for each contact point to position itself when mating.



# EM35M Series Maximum rated current 50A, Plastic Connector for Power Supplies.



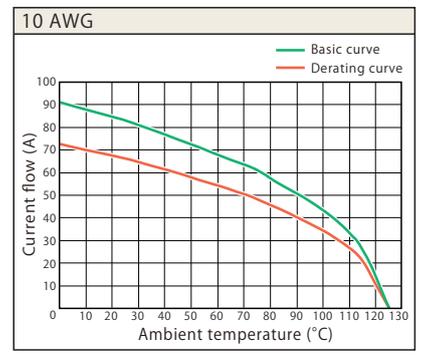
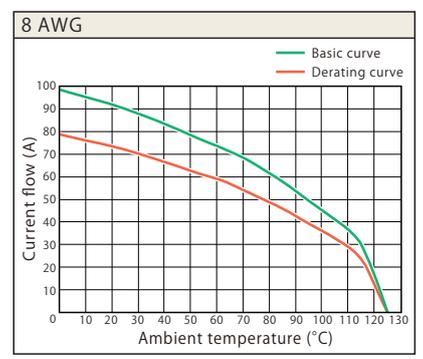
A relay type connector with the largest current capacity in the EnerBee family, the EM35M series is commonly used for wiring on larger devices. The EM35M series are good choices when replacing terminal blocks, since they can eliminate screw tightening process and drastically improve assembly efficiency. Applicable for use in both DIN rail and panel mounting.

- Polarization key
- Center lock
- Sequential mating
- UL TÜV

## Product Specifications

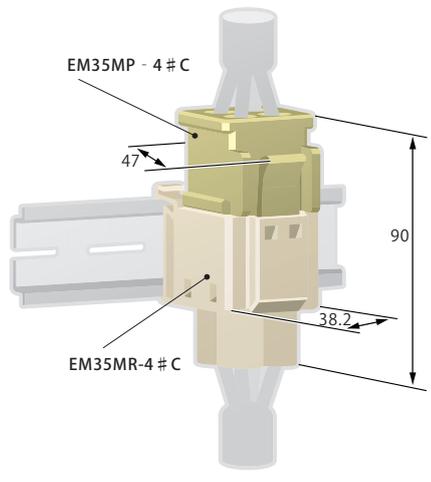
|               |            |        |  |                 |
|---------------|------------|--------|--|-----------------|
| Rated current | 8 AWG      | 10 AWG | Operating Temperature Range  | -40°C to +125°C |
|               | 50A        | 30A    | Storage Temperature Range  | -10°C to +60°C  |
| Rated voltage | 500V AC/DC |        | UL/TÜV Certified: certificate number<br>UL : E52653<br>TÜV : R50204909 |                 |

Note: Specifications shown here are for the standard items. Please consult our sales representatives in case of application requirements outside the standard range.

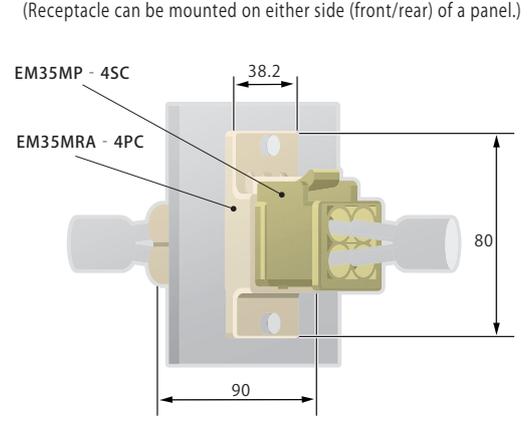


\*Derating curve is calculated with multiplying the amperage of the basic curve by derating factor 0.8.

### DIN rail mount type



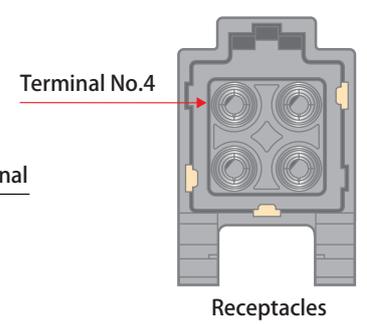
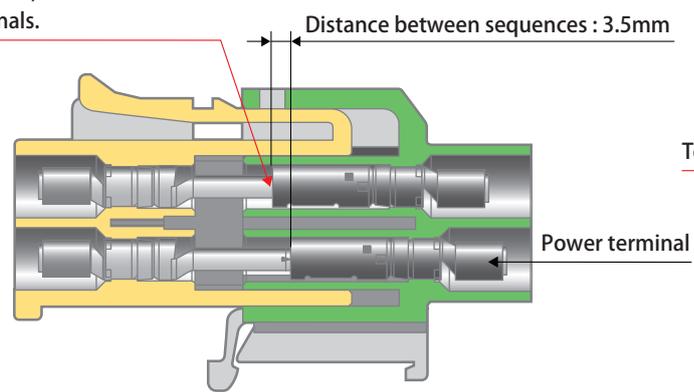
### Panel mount type



## Sequential contact structure > Ground terminal touches first when mating

In a sequential structure, terminal No.4 is designed to act as a ground terminal and makes contact before the other three terminals when mating.

This (terminal No.4) first connects then the other terminals.





# EnerBee™ Applicable Cable Assembly Tools

Note: Wire is tin-plated annealed copper.

| Series                 | Type   | Jig and Part No.   | Applicable terminal   |                              | Applicable cable   |                                |                 |       |
|------------------------|--|--|---|------------------------------|--|--------------------------------|-----------------|-------|
|                        |  |  | Terminal No.  | Plating                      | AWG NO.  | Core Configuration [pcs. / mm] | Jacket O/D [mm] | UL    |
| DF33C                  | Applicator   | AP105-DF33-2022S   | DF33A-2022SCF(40)   | Tin                          | 20 – 22  | 17 / 0.16<br>21 / 0.18         | φ 1.5 – 1.9     | 1007  |
|                        | Hand tool  | HT304 / DF33-2022S   | DF33A-2022SC  | Tin                          | 20<br>22   | 21 / 0.18<br>17 / 0.16         | φ 1.8<br>φ 1.7  | 1007  |
| DF63 / DF63W           | Applicator   | AP105-DF63-1618-3  | DF63-1618PCF(A)(*2)<br>DF63W-1618SCF  | Tin<br>Gold                  | 16 – 18  | 34 / 0.18<br>26 / 0.254        | φ 2.1 – 2.4     | 1007  |
|                        |  | AP105-DF63-1618-4 / CHS893500H-UP(*3)  | DF63-1618PCF(A)(*2)<br>DF63W-1618SCF  |                              | 16 – 18  | 34 / 0.18<br>26 / 0.254        | φ 2.9 – 3.2     | 1015  |
|                        |  | AP105-DF63-1618S-1   | DF63A-1618SCF(A)(*2)  | Tin<br>Gold                  | 16 – 18  | 26 / 0.254<br>34 / 0.18        | φ 2.1 – 2.4     | 1007  |
|                        |  | AP105-DF63-1618S-2 / CHS893400H-UP(*3)   |   |                              | 16 – 18  | 26 / 0.254<br>34 / 0.18        | φ 2.9 – 3.2     | 1015  |
|                        |  | AP105-DF63-2022-1  | DF63A-2022SCF(A)(*2)<br>DF63-2022PCF(A)(*2)   | Tin<br>Gold                  | 20 – 22  | 26 / 0.16<br>17 / 0.16         | φ 1.5 – 1.7     | 1007  |
|                        |  | AP105-DF63-2022-3  | DF63-2022PCF<br>DF63W-2022SCF   | Tin                          | 20 – 22  | 21 / 0.18<br>17 / 0.16         | φ 1.5 – 1.7     | 1007  |
|                        | 20   |  |   |                              | 21 / 0.18  | φ 1.8                          | 1007            |       |
|                        | 22   |  |   |                              | 17 / 0.16  | φ 1.66                         | 1430            |       |
|                        | Hand tool  | HT802 / DF63-1618S-1   | DF63A-1618SC(A)(*2)   | Tin<br>Gold                  | 16   | 26 / 0.254                     | φ 2.4           | 1007  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.1           |       |
|                        |  | HT802 / DF63-1618S-2   | DF63-1618PC(A)(*2)  | Tin<br>Gold                  | 16   | 26 / 0.254                     | φ 3.2           | 1015  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.9           |       |
|                        |  | HT802 / DF63-1618P-1   | DF63-1618PC(A)(*2)  | Tin<br>Gold                  | 16   | 26 / 0.254                     | φ 2.4           | 1007  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.1           |       |
|                        |  | HT802 / DF63-1618P-2   | DF63-1618PC(A)(*2)  | Tin<br>Gold                  | 16   | 26 / 0.254                     | φ 3.2           | 1015  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.9           |       |
|                        |  | HT802 / DF63-2022S-1   | DF63A-2022SC(A)(*2)   | Tin                          | 20   | 21 / 0.18                      | φ 1.7           | 1007  |
|                        |  | HT802 / DF63-2022P-1   | DF63-2022PC(A)(*2)  | Tin                          | 22   | 17 / 0.16                      | φ 1.5           |       |
|                        | HT802 / DF63W-1618S-1                                      | DF63W-1618SC   | Tin   | 16                           | 26 / 0.254   | φ 2.4                          | 1007            |       |
|                        |  |  |   | 18                           | 34 / 0.18  | φ 2.1                          |                 |       |
| 16                     |  |  |   | 26 / 0.254                   | φ 3.2  | 1015                           |                 |       |
| 18                     |  |  |   | 34 / 0.18                    | φ 2.9  |                                |                 |       |
| HT802 / DF63W-1618S-2  | DF63W-2022SC   | Tin  | 20  | 21 / 0.18                    | φ 1.8  | 1007                           |                 |       |
|                        |  |  | 22  | 17 / 0.16                    | φ 1.66   | 1430                           |                 |       |
| HT802 / DF63W-2022S-1A | DF63W-2022SC   | Tin  | 16  | 26 / 0.254                   | φ 2.4  | 1007                           |                 |       |
|                        |  |  | 18  | 34 / 0.18                    | φ 2.1  |                                |                 |       |
|                        |  |  | 16  | 26 / 0.254                   | φ 3.2  | 1015                           |                 |       |
|                        |  |  | 18  | 34 / 0.18                    | φ 2.9  |                                |                 |       |
| DF63SF                 | Applicator   | AP105-DF63SF-1618S / CHXOZ2400H-UP(*3)   | DF63SF-1618SCFA   | Gold                         | 16   | 26 / 0.254                     | φ 2.4           | 1007  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.1           | 1007  |
|                        | Hand tool  | HT802 / DF63SF-1618SCFA  | DF63SF-1618SCA  | Gold                         | 16   | 26 / 0.254                     | φ 2.4           | 1007  |
|                        |  |  |   |                              | 18   | 34 / 0.18                      | φ 2.1           | 1007  |
| DF22                   | Applicator   | AP105-DF22-1416  | DF22-1416SCFA<br>DF22-1416PCFA  | Gold                         | 14 – 16  | 26 / 0.254<br>41 / 0.26        | φ 2.4 – 3.0     | 1430  |
|                        |  | AP105-DF22A-1416   | DF22A-1416SCFA<br>DF22A-1416PCFA  |                              | 14 – 16  | 26 / 0.254<br>41 / 0.26        | φ 3.0 – 3.8     | 1015  |
|                        | Applicator for other supplier's auto crimping machine (*1) | AP109A-DF22-1416 / CHS893800H-UP(*3)   | DF22-1416SCFA<br>DF22-1416PCFA  | Gold                         | 14 – 16  | 26 / 0.254<br>41 / 0.26        | φ 2.4 – 3.0     | 1430  |
|                        |  | AP109A-DF22A-1416 / CHS893900H-UP(*3)  | DF22A-1416SCFA<br>DF22A-1416PCFA  |                              | 14 – 16  | 26 / 0.254<br>41 / 0.26        | φ 3.0 – 3.8     | 1015  |
|                        |  | AP109A-DF22A-1012 / QHS895800H-UP(*3)  | DF22A-1012SCFA  | Tin                          | 10 – 12  | 65 / 0.26<br>104 / 0.26        | φ 3.6 – 4.9     | 1015  |
|                        |  | Hand tool  | HT104 / DF22-1416   | DF22-1416SCA<br>DF22-1416PCA | Gold   | 16                             | 26 / 0.254      | φ 2.6 |
|                        | HT104 / DF22A-1416   |  | DF22A-1416SCA<br>DF22A-1416PCA  | 14                           |  | 41 / 0.26                      | φ 3.7           | 1015  |
|                        |  |  |   | 16                           |  | 54 / 0.18                      | φ 3.2           |       |
| HT103 / DF22A-1012     | DF22A-1012SCA  |  | Tin   | 10                           |  | 104 / 0.26                     | φ 4.04          | 1015  |
| 12                     | 65 / 0.26  | φ 4.69   |   |                              |  |                                |                 |       |
| DF60                   | Applicator   | AP105-DF60-1012 / QHS888000K-UP(*3)  | DF60-1012SCFA<br>DF60-1012PCFA(07)  | Gold                         | 10 – 12  | 65 / 0.26<br>104 / 0.26        | φ 4.0 – 5.2     | 1015  |
|                        |  | AP105-DF60-8 / QHS895700H-UP(*3)   | DF60-8SCFA<br>DF60-8PCFA(07)<br>DF60A-8PCFA   |                              | 8  | 7 / 24 / 0.26                  | φ 4.9 – 7.8     | 1283  |
|                        | Hand tool  | HT306 / DF60-1012  | DF60-1012SCA<br>DF60-1012PCA(07)  | Gold                         | 10   | 104 / 0.26                     | φ 4.69          | 1015  |
|                        |  | HT306 / DF60-8   | DF60-8SCA<br>DF60-8PCA(07)  |                              | 12   | 65 / 0.26                      | φ 4.04          |       |
| EM35M                  | Hand tool  | JIS C 9711   | EM-SC-113(01)<br>EM-PC-113(01)  | Tin                          | Conductor cross : 5.26mm <sup>2</sup> to 5.57mm <sup>2</sup> section (10 AWG equivalent) | φ 8.7 or below                 | —               |       |
|                        |  | — Recommended tools —<br>Hozan : P-75<br>LOBTEX : AK15A<br>NICHIFU Terminal Industries : HN1 | EM-SC-133<br>EM-PC-133  |                              | Conductor cross : 8mm <sup>2</sup> section   | φ 8.7 or below                 | —               |       |
|                        |  | EM-SC-143(01)<br>EM-PC-143(01)   | Conductor cross : 8.44mm <sup>2</sup> to 8.92mm <sup>2</sup> section (8 AWG equivalent) |                              | φ 11.5 or below  | —                              |                 |       |
|                        |  |  |   |                              | Conductor O/D : φ 4.4 or below   |                                |                 |       |

\*1 AP109A type applicators cannot be used on CM-105 press units.

\*2 Gold plated products are indicated by A at the end of the product name.

\*3 Applicator manufactured by JAPAN AUTOMATIC MACHINE(J.A.M.). Please access the J.A.M. Website for inquires on the applicator or crimp defects. URL <https://www.jam-net.co.jp/eng/>

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