

DF62/DF62W Series

# 2 × 2.2mm Pitch, Wire-to-Wire Connectors for Small Spaces



Positive-Lock



Waterproof



Slim In-Line

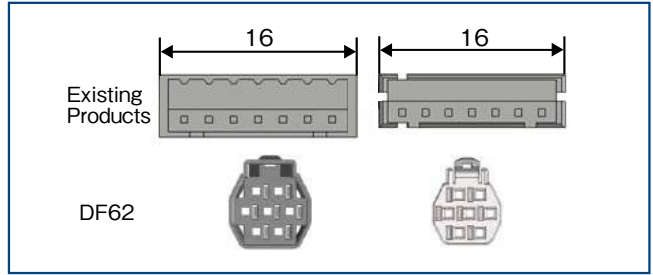


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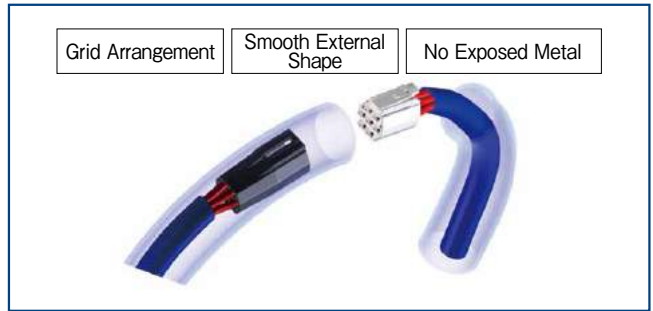
# Features

## 1. The slim, sleek design and smooth contour combine to complete connections in tight spaces.

These connectors were designed to take full advantage of small/narrow spaces. The contacts are arranged in a grid pattern which shortens the diagonal distances and the body was slimmed down by creating smooth outer surfaces. This design helps to save precious space and makes these connectors virtually tangle free. There is no visible or exposed metal which eliminates the possibility of electrical arcing between the connector and the inside of a metal conduit.

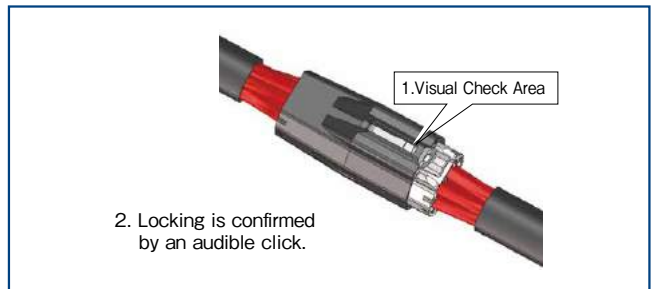


Compact shape due to 2 × 2. 2 grid layout of pins (Both are 7 contacts with 3A current rating)



## 2. Secure lock mechanism

The friction lock emits a clear tactile click upon lock completion. The design prevents incomplete mating and connector disconnection. The socket lock can be visually checked through the plug window after mating. These indicators function together to prevent incomplete mating.

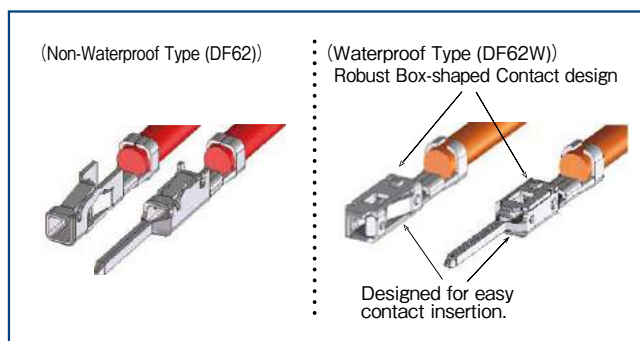


## 3. Reliable contact design

Two-point contact design that maintains contact reliability.

## 4. Robust contact design

The unique design provides protection to the contacts and lance areas and it prevents any bending or deformity that might occur during mating, assembly or transportation.



## 5. Multiple variations available

There are several different wire counts available, giving the designer a wide variety to choose from for the application. Protected lock type, panel mount type and pin header type are also available.

## 6. Applicator sharing

The applicators for the DF11 and DF59 Series (existing products) can be adapted to accommodate the DF62 Series applicators.

Note 1 : The DF11 Series applicators require part replacement in order to handle the difference in contact length. However once replaced the applicator can be used with DF11, DF59 and DF62.

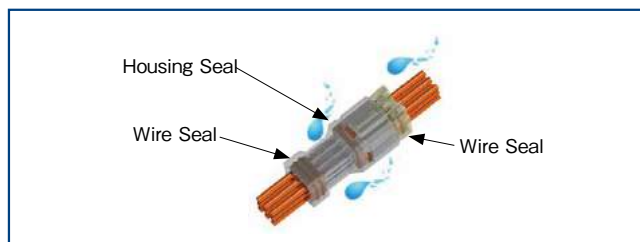
Note 2 : The die and hand tool are used only for the in designated purposes.

Note 3 : Please contact Hirose for additional details.

## 7. Condensation prevention (Waterproof Type DF62W)

IP67 level water-resistance in mated condition.

IP67 waterproof equivalent under specific conditions. Please contact a Hirose representative for detailed specifications and conditions.



## Product Specifications

### ● DF62

Rated Current (Note 1)	No of Pos.	22 AWG	24 AWG	26-30 AWG	Operating Temperature (Note 2)	-35 ~ +105°C
	2	4A	2A	1A	Storage Temperature Range (Note 4)	-10 ~ +60°C
	3	3A	2A	1A	Operating Humidity Range (Note 3)	20 ~ 80%
	4	3A	2A	1A	Storage Humidity Range (Note 4)	40 ~ 70%
	5	3A	2A	1A		
	6	3A	2A	1A		
	7	3A	2A	1A		
	13	3A	2A	1A		
	24	2.5A	2A	1A		
Rated Voltage	AC/DC 250V					

UL	Rated Voltage	AC/DC 29.9V	Operating Temperature (Note 2)	-35 ~ +75°C
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C-UL	Rated Voltage	AC/DC 29.9V	Operating Temperature (Note 2)	-35 ~ +75°C
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### ● DF62W

Rated Current (Note 1)	No of Pos.	20 AWG	22 AWG	24 AWG	26 AWG	Operating Temperature (Note 2)	-40 ~ +105°C
	2	5A	4A	3.5A	3A	Storage Temperature Range (Note 4)	-10 ~ +60°C
	3	3.5A	3A	2A	1A	Operating Humidity Range (Note 3)	20 ~ 80%
	4	3.5A	3A	2A	1A	Storage Humidity Range (Note 4)	40 ~ 70%
	6	3.5A	3A	2A	1A		
	9	3.5A	3A	2A	1A		
Rated Voltage	AC/DC 250V						

UL	Rated Voltage	AC/DC 29.9V	Operating Temperature (Note 2)	-40 ~ +75°C
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C-UL	Rated Voltage	AC/DC 29.9V	Operating Temperature (Note 2)	-40 ~ +75°C
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UL File Name  
UL : E52653  
C-UL : E52653

Items	Specifications	Conditions
Insulation Resistance	Minimum of 1,000M $\Omega$	Measured with 500V DC
Withstanding Voltage	No flashover or breakdown	Apply 650V AC for 1 min.
Contact Resistance	Maximum of 30m $\Omega$	Measured at a maximum of 20mV and 100mA (DC or 1000Hz)
Vibration Resistance	No electrical discontinuity of 1 $\mu$ s or longer	10 cycles in each of three directions at frequency 10-55Hz, half amplitude 0.75mm
Shock Resistance	No electrical discontinuity of 1 $\mu$ s or longer	Acceleration : 490m/s <sup>2</sup> , 11ms, Semi-sinusoidal 3 axle direction 3 times each.
Humidity Resistance	Contact Resistance : Maximum of 30m $\Omega$ Insulation Resistance : Minimum of 1,000M $\Omega$	Left at temperature 40 $\pm$ 2 $^{\circ}$ C , humidity 90 to 95%, 96 hours
Temperature Cycles	Contact Resistance : Maximum of 30m $\Omega$ Insulation Resistance : Minimum of 1,000M $\Omega$	-55 $^{\circ}$ C : 30 minutes $\rightarrow$ 5 to 35 $^{\circ}$ C : 2 to 3 minutes $\rightarrow$ 85 $^{\circ}$ C : 30 minutes $\rightarrow$ 5 to 35 $^{\circ}$ C : 2 to 3 minutes, 5 cycles
Mating Durability	Contact Resistance : Maximum of 30m $\Omega$	Mating/unmating : 30 mating cycles
Solder Heat Resistance	There should be no melting of the resin part affecting performance.	Flow : 260 $^{\circ}$ C , 10sec Hand soldering : temperature of soldering iron at 300 $^{\circ}$ C for 3sec.

Note 1 : This is the maximum current rating while all pins are powered or used as all power lines. When isolating power lines into multiple circuits, current ratings may go above the stated current ratings. Please consult Hirose for details before doing this.

Note 2 : Includes the temperature rise of power lines.

Note 3 : The connector should be completely dry (no condensation present)

Note 4 : The term "storage" refers to the long-term storage condition of unused products before PCB mounting. The operating temperature and humidity ranges are applied while in a non-energized state, while in transport or after PCB mounting.

## Materials / Finish

Item	Component	Material		Finish	UL Flammability Rating
Socket Crimping Contact	Contact	Phosphorous Bronze		Gold Plating or Tin Plating	-
Plug Crimping Contact					-
Crimping Socket	Insulator	PBT		White	UL94V-0
Crimping Plug				Black	
Crimping Socket (Note 1)	Seal	Silicone Rubber		Bengala	-
Crimping Plug (Note 1)					
Header	Insulator	DF62	Straight : Polyamide	Black	UL94V-0
			Right Angle : PBT		
		DF62W	PBT		
	Contact	Copper Alloy		Gold Plating or Tin Plating	-
	Retention Tab	Brass		Tin Plating	-
Seal (Note 1)	Silicone Rubber		Bengala	-	

Note 1 : Waterproof type (DF62W) only

## 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.

Note : The waterproof type and non-waterproof type are not intermateable.

### ■ Non-Waterproof Type

#### ● Connector

### **DF62B - # S - 2.2 C (##)**

①      ② ③      ④      ⑤      ⑥

① Series Name	DF62B (Regular Type) DF62C (Protected Lock Type) DF62P (Panel Mount Type)	④ Contact Pitch	2.2mm
② No. of Pos.	2, 3, 4, 5, 6, 7, 13, 24	⑤ Connection Part	C : Crimping Housing
③ Connector Type	S : Socket EP : In-line Plug	⑥ Color	Socket (None : White, 11 : Black, 18 : Red)  In-line Plug (None : Black, 10 : White, 18 : Red)

#### ● Contact

### **DF62 - EP 2428 PCF A**

①      ②      ③      ④      ⑤

① Series Name	DF62	④ Contact Type / Packaging Type	SCF : Socket crimping contact, reel SC : Socket crimping contact, pieces PCF : Plug crimping contact, reel PC : Plug crimping contact, pieces
② Terminal Type	EP : In-line Plug		
③ Applicable Wire Size	22 : 22 AWG 2428 : 24 to 28 AWG 30 : 30 AWG	⑤ Plating Type	A : Gold plating None : Tin plating

#### ● Connector

### **DF62 - # P - 2.2 DSA (##)**

①      ② ③      ④      ⑤      ⑥

① Series Name	DF62	⑤ Connection Part Shape	DSA : Straight Pin Header DS : Right Angle Pin Header
② No. of Pos.	13, 24		
③ Connector Type	P : Pin Header	⑥ Plating Type	None : Tin Plating O1 : Gold Plating
④ Contact Pitch	2.2mm		

## Waterproof Type

### Connector

#### DF62W - # S - 2.2 C

①                      ②   ③                      ④                      ⑤

① Series Name	DF62W	③ Connector Type	S : Socket EP : In-line Plug
② No. of Pos.	2, 3, 4, 6, 9	④ Contact Pitch	2.2mm
		⑤ Connection Part Shape	C : Crimping Housing

### Contact

#### DF62W - EP 2226 PCF A

①                      ②                      ③                      ④                      ⑤

① Series Name	DF62W	④ Contact Type / Packaging Type	SCF : Socket Crimping Contact, Reel SC : Socket Crimping Contact, Pieces PCF : Plug Crimping Contact, Reel PC : Plug Crimping Contact, Pieces
② Terminal Type	EP : In-line Plug		
③ Applicable Wire Size	2022 : 20 to 22 AWG 2226 : 22 to 26 AWG	⑤ Plating Type	A : Gold Plating None : Tin Plating

### Waterproof Pin

#### DF62W - WP

①                      ②

① Series Name	DF62W	② For Each Use Type	WP : Waterproof Pin
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### Connector

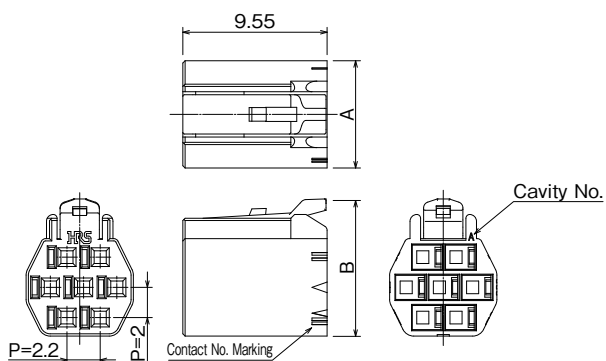
#### DF62WZ - # P - 2.2 DSA (##)

①                      ②   ③                      ④                      ⑤                      ⑥

① Series Name	DF62WZ	④ Contact Pitch	2.2mm
② No. of Pos.	9	⑤ Connection Part Shape	DSA : Straight Pin Header
③ Connector Type	P : Pin Header	⑥ Plating Type	20 : Tin Plating 50 : Gold Plating



## Socket (Standard Type)



7pos. shown as an example.

Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62B-2S-2.2C(##)	CL0544-0551-0-##	2	4.9	5.08	100pcs per bag
DF62B-3S-2.2C(##)	CL0544-0552-2-##	3			
DF62B-4S-2.2C(##)	CL0544-0553-5-##	4			
DF62B-5S-2.2C(##)	CL0544-0554-8-##	5	7.1	7.08	
DF62B-6S-2.2C(##)	CL0544-0555-0-##	6			
DF62B-7S-2.2C(##)	CL0544-0556-3-##	7			
DF62B-13S-2.2C(##)	CL0544-0557-6-##	13	9.3	11.08	
DF62B-24S-2.2C(##)	CL0544-0539-4-##	24	12.3	13.08	

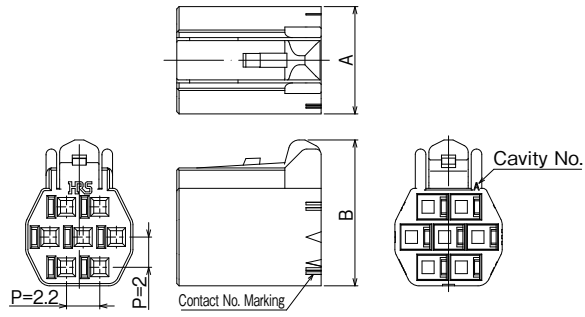
[Specification No. ] -##,(##)

None : White

(11) : Black

(18) : Red

## Socket (Protected Lock Type)



7pos. shown as an example.

Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62C-2S-2.2C(##)	CL0544-0565-4-##	2	4.9	5.65	100pcs per bag
DF62C-3S-2.2C(##)	CL0544-0566-7-##	3			
DF62C-4S-2.2C(##)	CL0544-0567-0-##	4			
DF62C-5S-2.2C(##)	CL0544-0568-2-##	5	7.1	7.65	
DF62C-6S-2.2C(##)	CL0544-0569-5-##	6			
DF62C-7S-2.2C(##)	CL0544-0570-4-##	7			
DF62C-13S-2.2C(##)	CL0544-0571-7-##	13	9.3	11.65	
DF62C-24S-2.2C(##)	CL0544-0541-6-##	24	12.3	13.65	

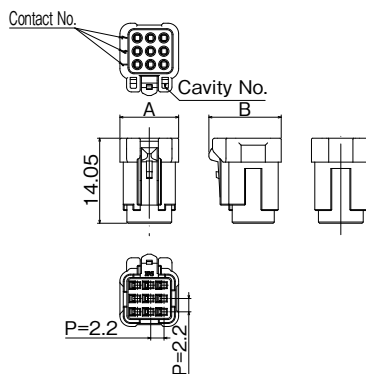
[Specification No. ] -##,(##)

None : White

(11) : Black

(18) : Red

## Socket (Waterproof Type)



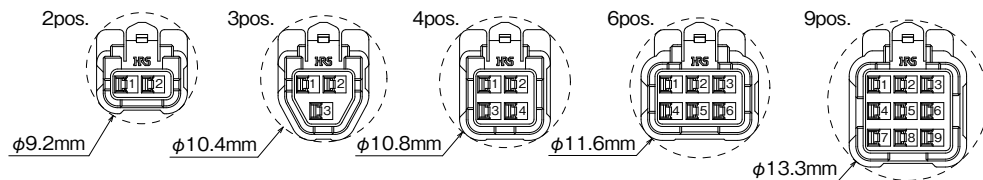
9pos. shown as an example.

Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62W-2S-2.2C	CL0544-1002-7-00	2	7.5	7.55	100pcs per bag
DF62W-3S-2.2C	CL0544-1004-2-00	3			
DF62W-4S-2.2C	CL0544-1006-8-00	4			
DF62W-6S-2.2C	CL0544-1008-3-00	6	9.7	9.75	
DF62W-9S-2.2C	CL0544-1010-5-00	9	9.7	11.95	

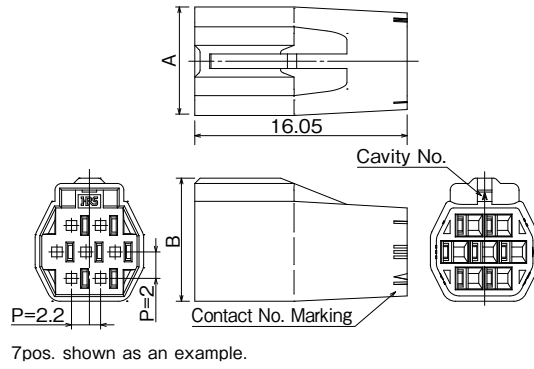
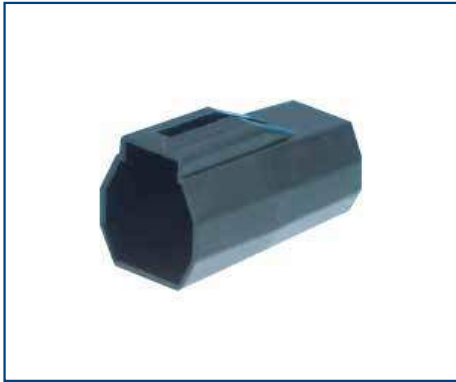
Note : The waterproof type and non-waterproof type are not intermateable.

### Position Number Pin Configuration (Shown from the Mating Side)



Note : Applicable jacket outer diameter : φ 1.4 to 1.6mm

## Plug (Standard Type)

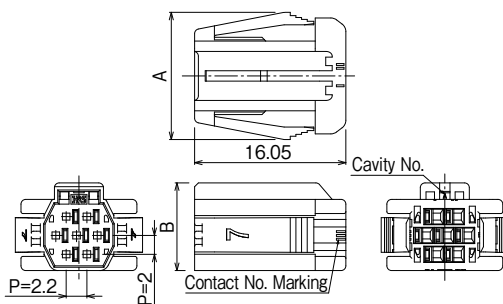


Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62B-2EP-2.2C(##)	CL0544-0558-9-##	2	6.0	5.3	100pcs per bag
DF62B-3EP-2.2C(##)	CL0544-0559-1-##	3			
DF62B-4EP-2.2C(##)	CL0544-0560-0-##	4			
DF62B-5EP-2.2C(##)	CL0544-0561-3-##	5	8.2	7.3	
DF62B-6EP-2.2C(##)	CL0544-0562-6-##	6			
DF62B-7EP-2.2C(##)	CL0544-0563-9-##	7			
DF62B-13EP-2.2C(##)	CL0544-0564-1-##	13	10.4	11.3	
DF62B-24EP-2.2C(##)	CL0544-0540-3-##	24	13.4	13.3	

[Specification No. ] -##,(##)  
 None : Black  
 (10) : White  
 (18) : Red

## Plug (Panel Mount Type)



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62P-2EP-2.2C(##)	CL0544-0543-1-##	2	11.3	5.3	100pcs per bag
DF62P-3EP-2.2C(##)	CL0544-0544-4-##	3		7.3	
DF62P-4EP-2.2C(##)	CL0544-0545-7-##	4			
DF62P-5EP-2.2C(##)	CL0544-0546-0-##	5	13.5	9.3	
DF62P-6EP-2.2C(##)	CL0544-0547-2-##	6			
DF62P-7EP-2.2C(##)	CL0544-0548-5-##	7			
DF62P-13EP-2.2C(##)	CL0544-0549-8-##	13	15.7	11.3	
DF62P-24EP-2.2C(##)	CL0544-0550-7-##	24	18.7	13.3	

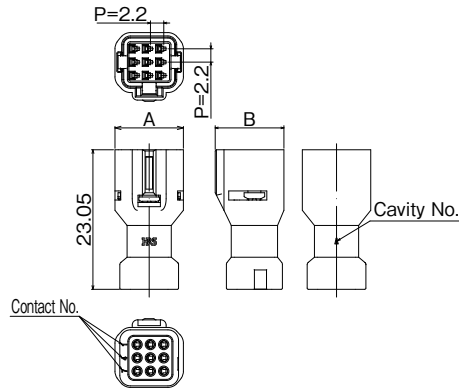
[Specification No. ] -##,(##)

None : Black

(10) : White

(18) : Red

## Plug (Waterproof Type)



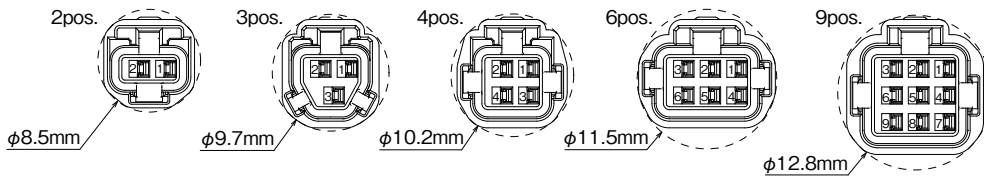
9pos. shown as an example.

Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Purchase Unit
DF62W-2EP-2.2C	CL0544-1003-0-00	2	7.5	6.7	100pcs per bag
DF62W-3EP-2.2C	CL0544-1005-5-00	3	8.0	9.15	
DF62W-4EP-2.2C	CL0544-1007-0-00	4	9.1		
DF62W-6EP-2.2C	CL0544-1009-6-00	6	11.3	11.35	
DF62W-9EP-2.2C	CL0544-1011-8-00	9			

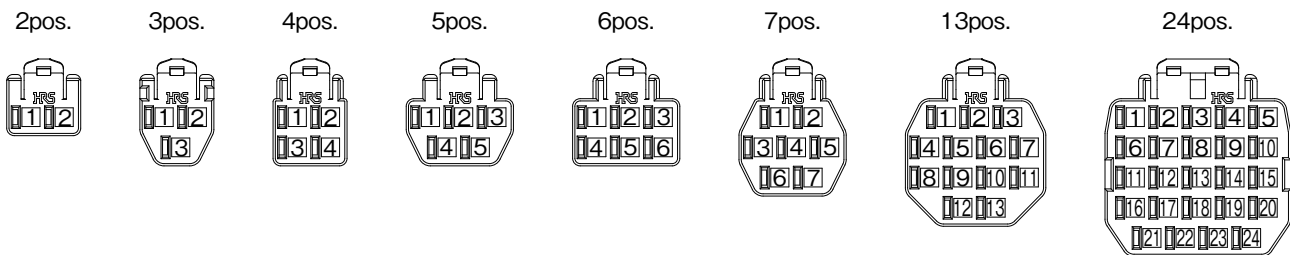
Note : The waterproof type and non-waterproof type are not intermateable.

### Position Number Pin Configuration (Shown from the Mating Side)

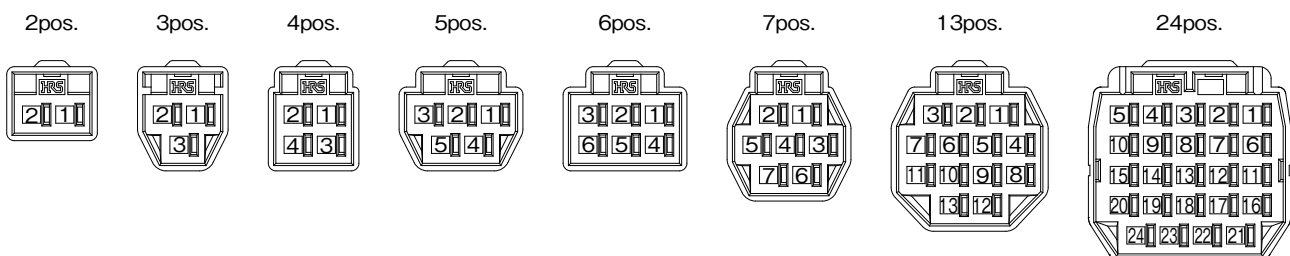


Note : Applicable jacket outer diameter : φ 1.4 to 1.6mm

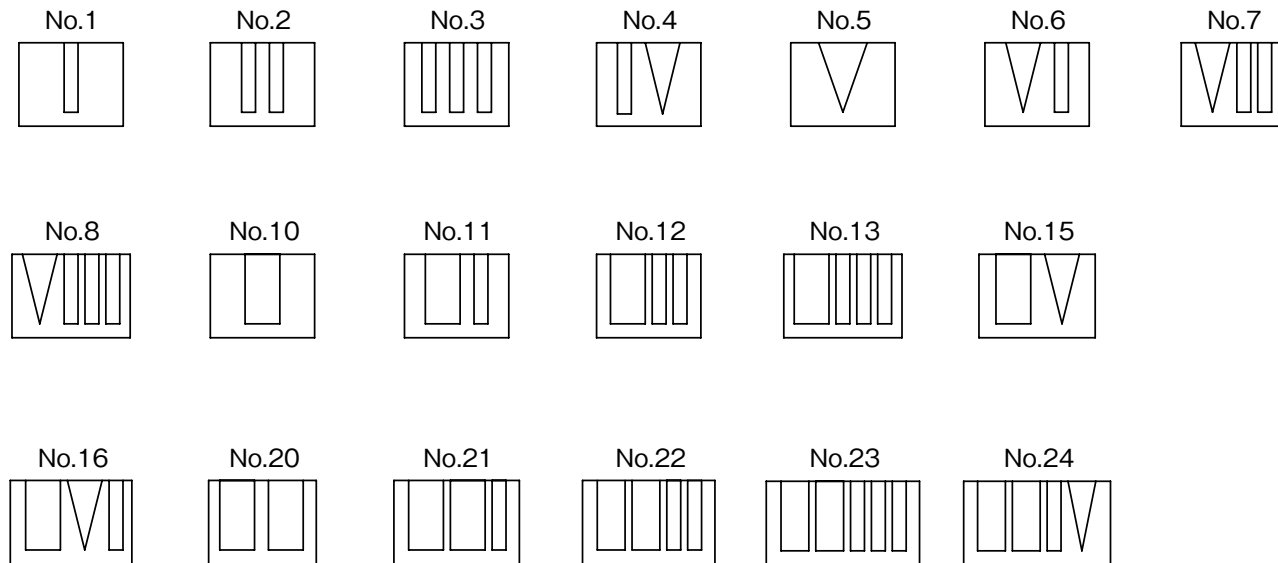
### Socket Position Number Pin Configuration (Shown from the Mating Side)



### Plug Position Number Pin Configuration (Shown from the Mating Side)

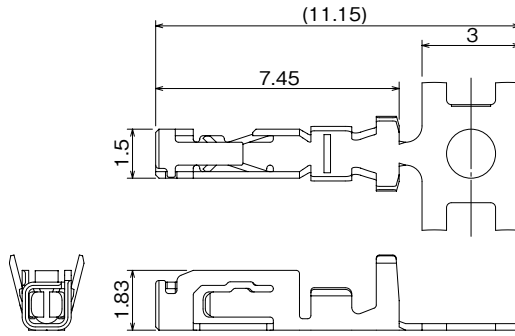


■ Position No. Diagram



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## Socket Crimping Contact



### ● Reel Contact, Applicable Tool : Applicator

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 1)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62-22SCF DF62-22SCFA	CL0544-0520-6-00 CL0544-0506-5-00	Tin Plated Gold Plated	1061	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.2 to φ 1.45mm	15,000pcs per reel
DF62-2428SCF DF62-2428SCFA	CL0544-0521-9-00 CL0544-0500-9-00	Tin Plated Gold Plated	1007	24 26 28	11/0.16mm 7/0.16mm 7/0.127mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup> 0.089mm <sup>2</sup>	φ 0.9 to φ 1.45mm	
DF62-30SCF DF62-30SCFA	CL0544-0522-1-00 CL0544-0508-0-00	Tin Plated Gold Plated	1007	30	7/0.1mm	0.055mm <sup>2</sup>	φ 0.75 to φ 1.2mm	

Note 1 : When using cables not specified by Hirose, please contact a Hirose sales representative.

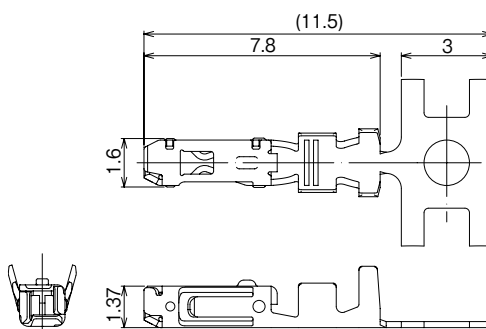
### ● Loose Piece, Applicable Tool : Hand Crimping Tool

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 2)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62-22SC DF62-22SCA	CL0544-0572-0-00 CL0544-0526-2-00	Tin Plated Gold Plated	1061	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.26mm	100pcs per bag
DF62-2428SC DF62-2428SCA	CL0544-0573-2-00 CL0544-0527-5-00	Tin Plated Gold Plated	1007	24 26 28	11/0.16mm 7/0.16mm 7/0.127mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup> 0.089mm <sup>2</sup>	φ 1.42mm φ 1.28mm φ 1.18mm	
DF62-30SC DF62-30SCA	CL0544-0574-5-00 CL0544-0528-8-00	Tin Plated Gold Plated	1007	30	7/0.1mm	0.055mm <sup>2</sup>	φ 0.82mm	

Note 2 : The applicable cables include only those listed above.



## Socket Crimp Contact (For Waterproof Version)



### ● Reel Contact, Applicable Tool : Applicator

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 1)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62W-2022SCF DF62W-2022SCFA	CL0544-1015-9-00 CL0544-1027-0-00	Tin Plated Gold Plated	3443	20	7/0.32mm	0.563mm <sup>2</sup>	φ 1.4 to φ 1.6mm	15,000pcs per reel
			1007	22	17/0.16mm	0.342mm <sup>2</sup>		
DF62W-2226SCF DF62W-2226SCFA	CL0544-1000-1-00 CL0544-1025-0-00	Tin Plated Gold Plated	1007	22 24	17/0.16mm 11/0.16mm	0.342mm <sup>2</sup> 0.221mm <sup>2</sup>		
			1430	24 26	11/0.16mm 7/0.16mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup>		

Note 1 : When using cables not specified by Hirose, please contact a Hirose sales representative.

Note 2 : There are cases in which use of a flexible wire (thin, stranded conductor or soft jacket material) may make insertion to socket difficult. Please contact a Hirose representative for more information.

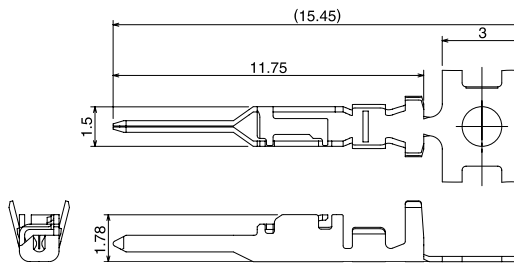
Note 3 : The waterproof type and non-waterproof type are a not intermateable.

### ● Loose Piece, Applicable Tool : Hand Crimping Tool

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 4)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62W-2022SC DF62W-2022SCA	CL0544-1017-4-00 CL0544-1045-0-00	Tin Plated Gold Plated	3443	20	7/0.32mm	0.563mm <sup>2</sup>	φ 1.53mm	100pcs per bag
			1007	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.58mm	
DF62W-2226SC DF62W-2226SCA	CL0544-1012-0-00 CL0544-1044-0-00	Tin Plated Gold Plated	1007	22 24	17/0.16mm 11/0.16mm	0.342mm <sup>2</sup> 0.221mm <sup>2</sup>	φ 1.58mm φ 1.42mm	
			1430	26	7/0.16mm	0.141mm <sup>2</sup>	φ 1.48mm	

Note 4 : The applicable cables include only those listed above.

## Plug Crimping Contact



### ● Reel Contact, Applicable Tool : Applicator

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 1)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62-EP22PCF DF62-EP22PCFA	CL0544-0523-4-00 CL0544-0507-8-00	Tin Plated Gold Plated	1061	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.2 to φ 1.45mm	15,000pcs per reel
DF62-EP2428PCF DF62-EP2428PCFA	CL0544-0524-7-00 CL0544-0501-1-00	Tin Plated Gold Plated	1007	24 26 28	11/0.16mm 7/0.16mm 7/0.127mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup> 0.089mm <sup>2</sup>	φ 0.9 to φ 1.45mm	
DF62-EP30PCF DF62-EP30PCFA	CL0544-0525-0-00 CL0544-0509-3-00	Tin Plated Gold Plated	1007	30	7/0.1mm	0.055mm <sup>2</sup>	φ 0.75 to φ 1.2mm	

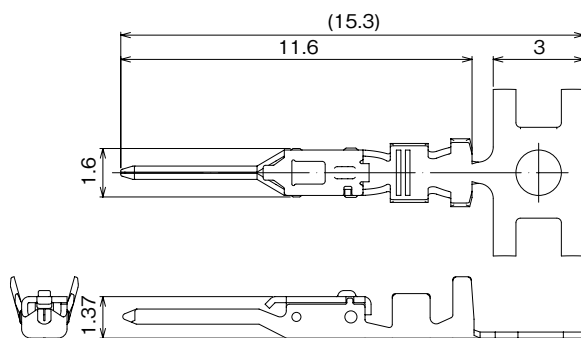
Note 1 : When using cables not specified by Hirose, please contact a Hirose sales representative.

### ● Loose Piece, Applicable Tool : Hand Crimping Tool

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 2)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62-EP22PC DF62-EP22PCA	CL0544-0575-8-00 CL0544-0529-0-00	Tin Plated Gold Plated	1061	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.26mm	100pcs per bag
DF62-EP2428PC DF62-EP2428PCA	CL0544-0576-0-00 CL0544-0530-0-00	Tin Plated Gold Plated	1007	24 26 28	11/0.16mm 7/0.16mm 7/0.127mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup> 0.089mm <sup>2</sup>	φ 1.42mm φ 1.28mm φ 1.18mm	
DF62-EP30PC DF62-EP30PCA	CL0544-0577-3-00 CL0544-0529-0-00	Tin Plated Gold Plated	1007	30	7/0.1mm	0.055mm <sup>2</sup>	φ 0.82mm	

Note 2 : The applicable cables include only those listed above.

## Plug Crimping Contact (For Waterproof Version)



### ● Reel Contact, Applicable Tool : Applicator

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 1)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62W-EP2022PCF DF62W-EP2022PCFA	CL0544-1016-1-00 CL0544-1028-0-00	Tin Plated Gold Plated	3443	20	7/0.32mm	0.563mm <sup>2</sup>	φ 1.4 to φ 1.6mm	15,000pcs per reel
			1007	22	17/0.16mm	0.342mm <sup>2</sup>		
DF62W-EP2226PCF DF62W-EP2226PCFA	CL0544-1001-4-00 CL0544-1026-0-00	Tin Plated Gold Plated	1007	22 24	17/0.16mm 11/0.16mm	0.342mm <sup>2</sup> 0.221mm <sup>2</sup>		
			1430	24 26	11/0.16mm 7/0.16mm	0.221mm <sup>2</sup> 0.141mm <sup>2</sup>		

Note 1 : When using cables not specified by Hirose, please contact a Hirose sales representative.

Note 2 : There are cases in which use of a flexible wire (thin, stranded conductor or soft jacket material) may make insertion to socket difficult. Please contact a Hirose representative for more information.

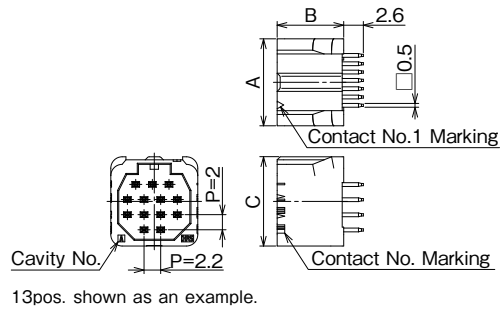
Note 3 : The waterproof type and non-waterproof type are not intermateable.

### ● Loose Piece, Applicable Tool : Hand Crimping Tool

Part No.	HRS No.	Finish	Applicable Wire (Tin Plated Annealed Copper) (Note 4)					Purchase Unit
			UL	AWG	Stranded Wire Structure	Calculated Cross-section	Jacket Diameter	
DF62W-EP2022PC DF62W-EP2022PCA	CL0544-1018-7-00 CL0544-1043-0-00	Tin Plated Gold Plated	3443	20	7/0.32mm	0.563mm <sup>2</sup>	φ 1.53mm	100pcs per bag
			1007	22	17/0.16mm	0.342mm <sup>2</sup>	φ 1.58mm	
DF62W-EP2226PC DF62W-EP2226PCA	CL0544-1013-3-00 CL0544-1042-0-00	Tin Plated Gold Plated	1007	22 24	17/0.16mm 11/0.16mm	0.342mm <sup>2</sup> 0.221mm <sup>2</sup>	φ 1.58mm φ 1.42mm	
			1430	26	7/0.16mm	0.141mm <sup>2</sup>	φ 1.48mm	

Note 4 : The applicable cables include only those listed above.

## Straight Pin Header



Unit : mm

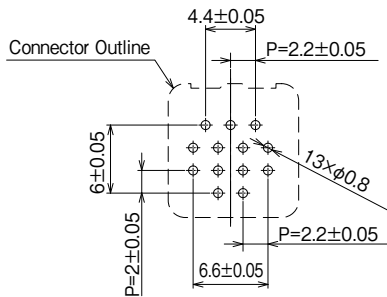
Part No.	HRS No.	No. of Pos.	A	B	C	Tin Plating	Gold Plating	Purchase Unit
DF62-13P-2.2DSA(##)	CL0544-0582-0-##	13	11.5	8.8	11.8	○	—	100pcs per tray
DF62-24P-2.2DSA(##)	CL0544-0584-0-##	24	14.5	10.8	13.8	○	—	80pcs per tray

[Specification No. ] -##.(##)  
 None : Tin Plating  
 (01) : Gold Plating

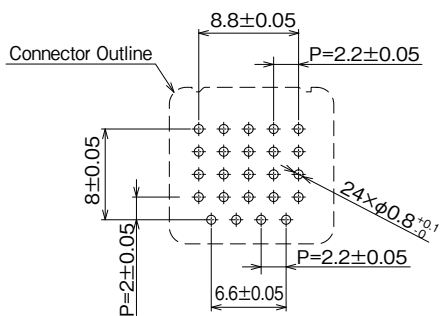
Note : Please contact a Hirose representative for requests on gold plating pin count variations that have not been released.

### ■ Recommended PCB Layout (Recommended Thickness $t=1.6\text{mm}$ )

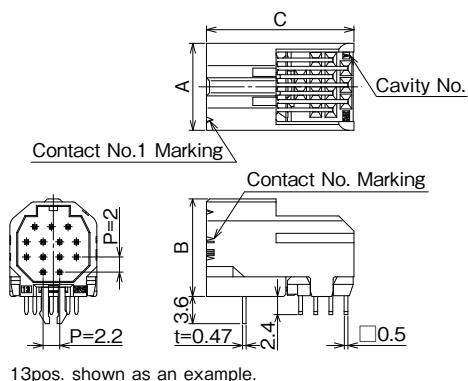
#### [13pos.]



#### [24pos.]



## Right Angle Pin Header



Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	C	Tin Plating	Gold Plating	Purchase Unit
DF62-13P-2.2DS(##)	CL0544-0581-0-##	13	11.5	12.9	19.5	○	—	100pcs
DF62-24P-2.2DS(##)	CL0544-0583-0-##	24	15.4	14.9	23.5	○	○	per tray

[Specification No. ] -##,(##)

None : Tin Plating

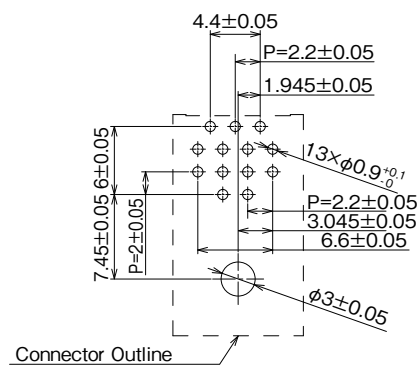
(01) : Gold Plating

Note : Please contact a Hirose representative for requests on gold plating pin count variations that have not been released.

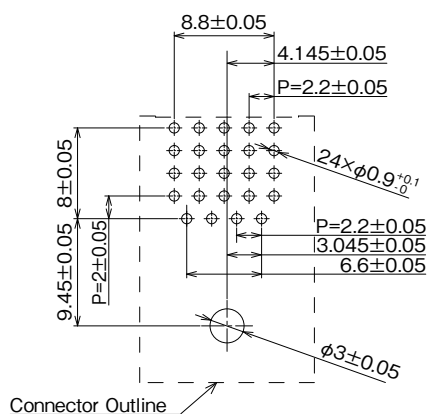
### ■ Recommended PCB Layout

(Recommended Thickness  $t=1.6\text{mm}$ )

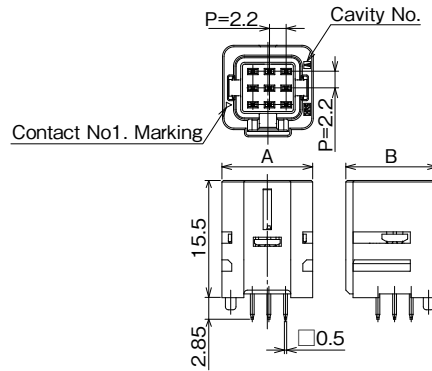
#### [13pos.]



#### [24pos.]



## Straight Pin Header (Waterproof Type)



9pos. shown as an example.

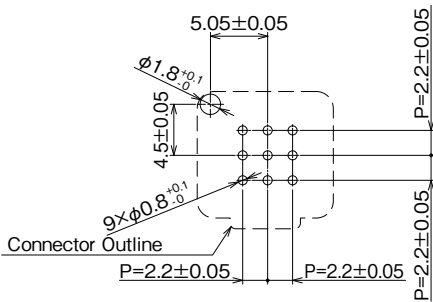
Unit : mm

Part No.	HRS No.	No. of Pos.	A	B	Tin Plating	Gold Plating	Purchase Unit
DF62WZ-9P-2.2DSA(##)	CL0544-1050-0-##	9	12	12.1	○	○	200pcs per tray

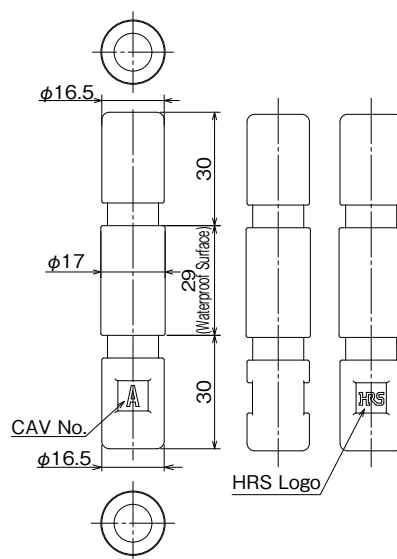
[Specification No. ] -##,(##)  
 (20) : Tin Plating  
 (50) : Gold Plating

### Recommended PCB Layout (Recommended Thickness t=1.6mm)

[9pos.]



## Waterproof Pin



Part No.	HRS No.	Purchase Unit
DF62W-WP	CL0544-1014-6-00	100pcs per bag

Note : When using without the crimp contact inserted, fill the contact hole of socket and plug with a waterproof pin.

## Applicable Crimping Tool

### ● DF62

Type	Part No.	HRS No.	Applicable Contact
Applicator	AP105-DF62-22	CL0901-4626-3-00	DF62-22SCFA/SCF DF62-EP22PCFA/PCF
	AP105-DF62-2428	CL0901-4625-0-00	DF62-2428SCFA/SCF DF62-EP2428PCFA/PCF
	AP105-DF62-30	CL0901-4627-6-00	DF62-30SCFA/SCF DF62-EP30PCFA/PCF
Press Body	CM-105C	CL0901-0001-0-00	-
Hand Tool	HT801/DF62-22(10) (Note 3)	CL0550-0401-9-10	DF62-22SCA/SC DF62-EP22PCA/PC
	HT801/DF62-2428(10) (Note 4)	CL0550-0400-6-10	DF62-2428SCA/SC DF62-EP2428PCA/PC
	HT801/DF62-30(10) (Note 5)	CL0550-0402-1-10	DF62-30SCA/SC DF62-EP30PCA/PC
Extraction Tool	DF62/RE-MD	CL0902-4645-4-00	DF62-##SCFA/SCF/SCA/SC DF62-EP##PCFA/PCF/PCA/PC

Note 1 : Issues with non-Hirose specified tools are outside the scope of warranty.

Note 2 : Please conduct crimping work according to the "Crimping Quality Standard" (ETAD-H0642,ETAD-H0643)" and "Crimping Condition Table".

Note 3 : The compatible wire is limited to UL1061 (22 AWG).

Note 4 : The compatible wire is limited to UL1007 (24 to 28 AWG).

Note 5 : The compatible wire is limited to UL1061 (30 AWG).

### ● DF62W

Type	Part No.	HRS No.	Applicable Contact
Applicator	AP105-DF62W-2022	CL0901-4500-0-00	DF62W-2022SCF(A) DF62W-EP2022PCF(A)
	EHS899800H-UP (Note 2)	-	
	AP105-DF62W-2226	CL0901-4637-0-00	DF62W-2226SCF(A) DF62W-EP2226PCF(A)
	EHS888400H-UP (Note 2)	-	
Press Body	CM-105C	CL0901-0001-0-00	-
Hand Tool	HT802/DF62W-2022 (Note 4)	CL0550-0431-0-00	DF62W-2022SC(A) DF62W-EP2022PC(A)
	HT802/DF62W-2226 (Note 5)	CL0550-0416-6-00	DF62W-2226SC(A) DF62W-EP2226PC(A)
Extraction Tool	DF62W/RE-MD	CL0902-4666-4-00	DF62W-2022SC(F)(A) DF62W-EP2022PC(F)(A) DF62W-2226SC(F)(A) DF62W-EP2226PC(F)(A)

Note 1 : Issues with non-Hirose specified tools are outside the scope of warranty.

Note 2 : Applicator manufactured by JAPAN AUTOMATIC MACHINE(J.A.M.).

Please contact J.A.M. via the URL below regarding inquiries on the applicator or crimp defects.  
(URL : <http://www.jam-net.co.jp>)

Note 3 : Please conduct crimping work according to the "Crimping Quality Standard" (ETAD-H0762-00, ETAD-H0763-00)" and "Crimping Condition Table".

Note 4 : The compatible wire is limited to UL3443 (20 AWG) or UL1007 (22 AWG).

Note 5 : The compatible wire is limited to UL1007 (22 to 24 AWG) or UL1430 (24 to 26 AWG).



## Crimping

### ■ Items Required Prior to Starting

The work-related documents listed below are required before starting harness assembly.

(The ● mark indicates a required document.)

When the documents shown below are not available, ask a Hirose sales personnel to provide them.

Document Title	Description	Automatic Crimping Machine	Hand Crimping Tool	Remarks
(1) Main unit of crimping machine instruction manual	Explanation of main press machine unit	●	—	Bundled with the purchase of the main press machine unit.
(2) Applicator Spare Parts Identification	Explanation for Applicator installation	●	—	Bundled with the purchase of applicator.
(3) Crimp Conditions	Standard values of : Crimp height Tensile strength	●	—	
(4) Crimp Quality Standards	Various standards for crimping conditions	●	—	
(5) Operating Instructions for Hand Tool	Inspection items of : Crimp height Tensile strength and others	—	●	Bundled with the purchase of hand tool.
(6) Harness Procedure Manual DF62 Series : ETAD-H0593 DF62W Series : ETAD-H0760	Harness procedure	●	●	Ask a HRS sales representative.

### ■ Tools

The tools specified by Hirose should be used for crimping work.

Crimping work by tools other than those specified must not be done because it may result in contact failure, disconnection of cable, etc.

The operating instructions manual is available for the crimping machine and the applicator. Be sure to carefully read the operating instructions manual before implementing the work.

### ■ Applicable Electric Wires

Check that the electric wire to be used is within the applicable range.

If you intend to use an electric wire other than those recommended, ask a HRS sales personnel.

[Precautions]

- Electric wires that are suitable for crimping connectors are tin-plated stranded softcopper wire.
- Avoid crimping solid wires, wires with polyester threads or tin-coated wires.
- Avoid crimping two electric wires together.
- The crimp height setting value (Note) may vary between tin-plated and gold-plated contacts even if the same electric wires are used.
- The crimp height setting value (Note) may vary depending on the difference in the core wire configuration even if the computed cross-sectional area is the same.

Note : The crimp height is an important item that determines crimping quality. We execute crimping tests for each electric wire to ensure the optimal value for the crimp height with high precision, thereby ensuring optimal setup values.

## Precautions

1. Recommended Soldering Conditions	<ul style="list-style-type: none"> <li>■ Soldering profile when using an automatic soldering device Soldering temperature : 260°C ; Soldering time: no more than 10 seconds</li> <li>■ Hand soldering conditions Temperature of soldering iron : 300°C , soldering time : no more than 3 seconds</li> </ul>
2. Cleaning Conditions	Please refer to the "Wire-to-Board Connector Guide". Cleaning with IPA is allowed. (Other cleaning agents are not recommended due to the fact that it may change the push/pull feeling. Please contact us when you use other cleaning agents.)
3. Important Notes	<ol style="list-style-type: none"> <li>1. Caution is required for mating and un-mating the connector without it being mounting on a PCB. Doing so can damage or deform the contacts.</li> <li>2. During hand soldering, do not apply excess amounts of flux which can migrate onto the connector.</li> <li>3. This product may have a slight differences in color depending on the production lot. This difference does not have any influence on the performance.</li> <li>4. Please refer to "DF62 Series Mating and Unmating Procedure Document" (ETAD-H0599) and "DF62W Series Mating / Unmating Operation Instruction Manual" (ETAD-H0761) for points on handling during mating operations.</li> </ol>
4. Handling Instructions	Please refer to the "Wire-to-Board Connector Guide".

## While taking in consideration

Specifications mentioned in this catalog are reference values.

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

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

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

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

Please consult with your Hirose sales representative if you are planning to use the product for any of the following applications. (Automotive, medical, public infrastructure, aerospace/defense, etc.)

Hirose will consider the validity of the warranty depending on the conditions.

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