Product Catalog

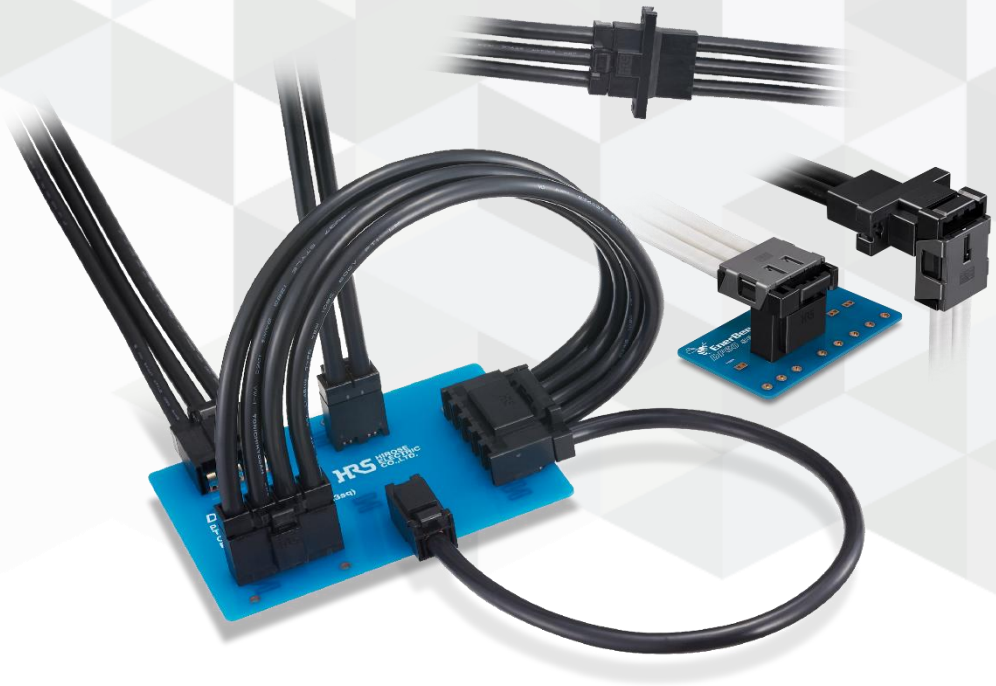
DF60 Series

HIROSE ELECTRIC CO., LTD.

65A (mitigation curve, ambient temperature at 25°C), 10.16mm pitch Board-to-cable Connectors for internal power supply (UL, C-UL, TÜV certified)

EnerBee

Miniature, board-to-cable connectors



Patented

Features

1. Maximum 65A current carrying capacity (derating curve at 25℃ ambient temperature)
2. Finger protection variants available
3. Right angle crimp socket type available
4. Sequential structure is available. Crimp Contact is available
5. Positive lock structure for preventing incomplete mating
6. Highly reliable 5-point contacts including independent spring contacts
7. Reverse insertion prevention into PCB
8. UL/C-UL, TÜV standard compliant
9. Glow wire compliant (per IEC 60695-2-11)

Click here for the web series page.
https://www.hirose.com/en/product/series/DF60

Product Specifications

Rated current (Note 1) (Note 5)		No. of Pos.	8 AWG	10 AWG	12 AWG		
		1	50A / pin	40A / pin	31A / pin		
		2	45A / pin	35A / pin	28A / pin		
		3	42A / pin	34A / pin			
		4		33A / pin	27A / pin		
Rated voltage		600V AC/DC					

Operating temperature range	-55 to +105°C (Note 2)
Storage temperature	-10 to +60°C (Note 3)
Operating Humidity Range	20 to 80%
Storage humidity range	40 to 70% (Note 3).

*C-UL: Temperature rise of 30°C or less

UL standard (reference) Rated current, rated voltage

UL standard rated current (At an ambient temp. of 25℃) (Note 1) (Note 6).	No. of Pos.	8 AWG	10 AWG	12 AWG
	1	65A / pin	55A / pin	45A / pin
	2			40A / pin
	3	55A / pin	50A / pin	
	4		45A / pin	35A / pin

UL/TÜV File No. and Certification No.:

Certificates for each standard can be obtained on the product page of our website. (The link to the product page is in the product list)

UL	E52653	
C-UL	E52653	
TÜV	R50244085	R50400864 (DF60F)

*Note

1. This is the maximum current rating while all pins are energized with the stated current rating. When isolating power lines into multiple circuits, current ratings may go above the stated current ratings. Please consult Hirose for details before doing this.
2. Includes temperature rise caused by current flow.
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.
4. Information contained in this catalog represents general requirements for this Series. Contact us for the drawings and specifications for a specific part number shown.
5. The rated current is the current with a temperature rise of 30℃ or less. [Standard value]
6. Indicates a current certified by UL at an ambient temperature of 25℃ . [Reference value]

Product Specifications

Items	Specifications	Conditions
Insulation Resistance	1,000MΩ Min.	Measured at 1,000V DC
Withstanding Voltage	No flashover or insulation breakdown	3,000V AC rms for 1 min
Contact Resistance	2mΩ Max.	Measured at 1A and 6V Max.
Vibration Resistance	No electrical discontinuity of 1μs or more.	Frequency: 10 to 500Hz, Acceleration of 98 m/s² 2 hours in each of the 3 directions
Shock Resistance	No electrical discontinuity of 1μs or more.	Acceleration of 490m/s², 11ms, Sine halfwave: 3 times each in 3 axial directions
Humidity Resistance	Contact Resistance: 2mΩ Max. Insulation Resistance: 1,000MΩ Min	96 hours at temperature of 40±2℃ and humidity of 90% to 95%
Temperature Cycles	Contact Resistance: 2mΩ Max. Insulation Resistance: 1,000MΩ Min	-55℃: 30 minutes → 85℃: 30 minutes, 25 cycles
Mating Durability	Contact Resistance: 2mΩ Max.	30 times
Solder Heat Resistance	No dissolution of the resin part affecting performance.	Flow: 260℃ , 10sec. Hand soldering: temperature of soldering iron at 350±10℃ for 5sec.

Materials / Finish

Item	Component	Material	Color / Finish	Remarks	RoHS2
Header	Insulator	PBT (Glass-reinforced)	Black	UL94V-0	○
	Contact	High Conductivity Copper Alloy	Gold Plating	–	
	Retention Tab	Brass	Tin Plating	–	
Crimp Socket	Insulator	PBT (Glass-reinforced)	Black	UL94V-0	
Cover Case	Insulator	PBT (Glass-reinforced)	Gray	UL94V-0	
In-Line Plug	Insulator	PBT (Glass-reinforced)	Black	UL94V-0	
Crimp Contact	Contact	High Conductivity Copper Alloy	Gold 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.

■ Header

DF60	F	R	-	#	P	-	10.16	DSA
1	2	3		4	5		6	7

1 Series name	DF60
2 Shape Type	Blank: Standard F: Finger Protect
3 Guide Key Shape	Blank: Standard R: Another Key Shape
4 No. of Pos.	1, 2, 3, 4
5 Connector Type	P: Pin Header
6 Contact pitch	10.16mm
7 Termination Type	DSA: Straight Pin Header DS: Right Angle Pin Header

■ Socket

DF60	F	S	R	-	#	S	-	10.16	C
1	2	3	4		5	6		7	8

■ Cover Case for Right Angle Socket

DF60	F	S	-	#	S	-	10.16	C	-	CV
1	2	3		5	6		7	8		9

1 Series name	DF60
2 Shape Type	A: Standard F: Finger-Safe
3 Connector Shape	Blank: Straight S: Right Angle
4 Guide Key Shape	Blank: Standard R: Another Key Shape
5 No. of Pos.	1, 2, 3, 4
6 Connector Type	S: Socket
7 Contact Pitch	10.16mm
8 Termination Type	C: Crimp Socket
9 Case Types	CV: Cover Case

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.

■ In-Line Plug Connector

DF60 F R - # EP - 10.16 C
1 2 3 4 5 6 7

1 Series name	DF60
2 Shape Type	Blank: Standard A: No Flange F: Finger Protect
3 Guide Key Shape	Blank: Standard R: Another Key Shape
4 No. of Pos.	1, 2, 3, 4
5 Connector Type	EP: In-Line Plug
6 Contact Pitch	10.16mm
7 Termination Type	C: Crimp Socket

■ Crimp Contact

DF60 AA - 1012 SCFA
1 2 3

1 Connection Type	Blank: Standard AA: Sequential S: Right Angle
2 Applicable Wire Size	1012: 10 to 12 AWG
3 Contact Type / Packaging Type	SCFA: Socket Contact/Reel SCA: Socket Contact/Loose Piece PCFA: In-Line Plug Contact/Reel PCA: In-Line Plug Contact/Loose Piece

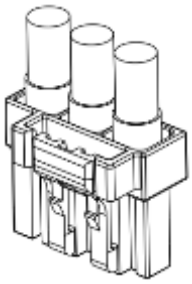
Combination diagram

Please use it to determine the specifications of the product from the product number.

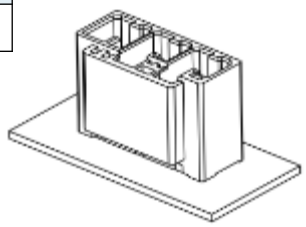
■Finger Protected Type

Crimp socket (cable side)	Socket Crimp Terminals
DF60F(R)-#S-10.16C(Note)	DF60-#SC(F)A

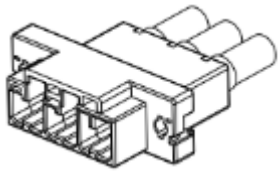
Note: R type (another key shape) socket mates with another key type of R type plug / pin header



Straight Pin Header
DF60F(R)-#P-10.16DSA

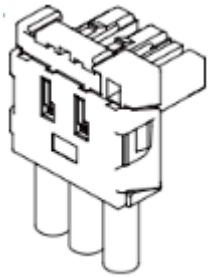


In-Line Plug (cable side)	Crimp Contact for In-Line Plug
DF60F(R)-#EP-10.16C	DF60(A, AA)-#PC(F)A



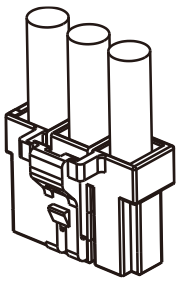
Right angle crimp socket (Cable side)	Right angle crimp socket Terminals	Cover Case
DF60FS(R)-#S-10.16C(Note)	DF60S-#SC(F)A	DF60FS-#S-10.16C-CV

Note: R type (another key shape) socket mates with another key type of R type plug / pin header. The cover case is common.

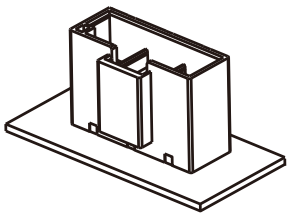


■Standard type

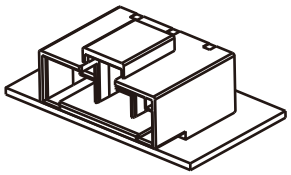
Crimp socket (cable side)	Socket Crimp Terminals
DF60A®-#S-10.16C (注)	DF60-#SC(F)A



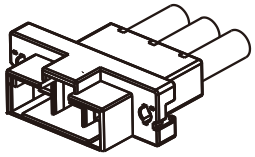
Straight Pin Header
DF60(R)-#P-10.16DSA



Right Angle Pin Header
DF60®-#P-10.16DS



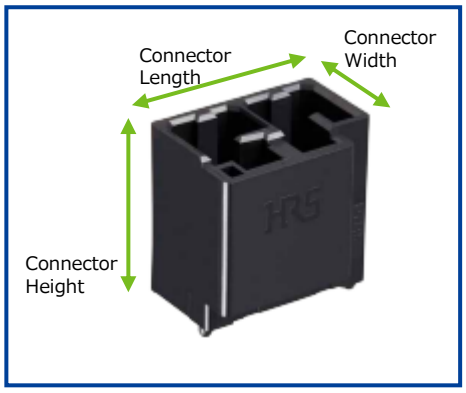
In-Line Plug (cable side)	Crimp Contact for In-Line Plug
DF60(A)(R)-#EP-10.16C	DF60(A, AA)-#PC(F)A



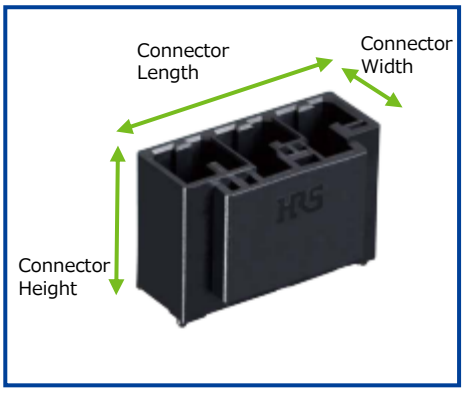
Straight Pin Header (finger protected type)

■Standard type (guide key: standard, resin: black)

Standard Key Shape(2 pos.)



Standard Key Shape(3 pos.)



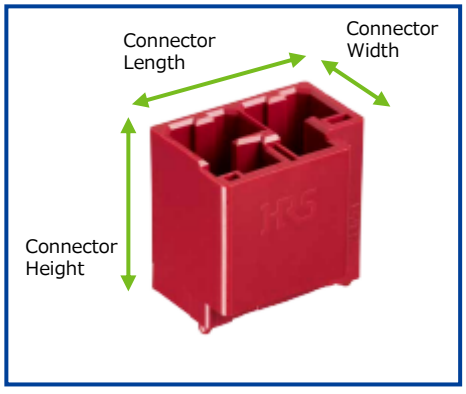
*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

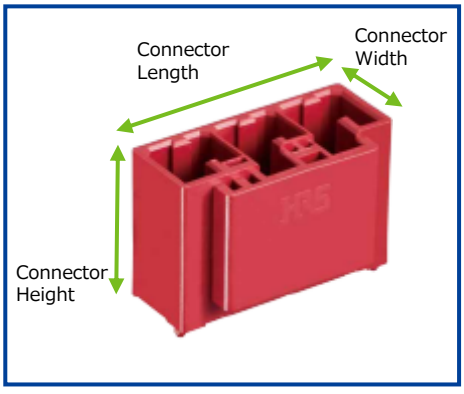
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4007-0-50	DF60F-2P-10.16DSA(50)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	15.7	21.5
CL0680-4001-0-50	DF60F-3P-10.16DSA(50)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	15.7	21.5

■R type (guide key: Another Key Shape, resin: red)

Another Key Shape (2 pos.)



Another Key Shape (3 pos.)



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

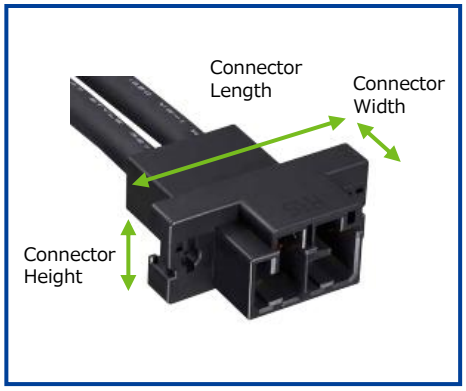
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4010-0-50	DF60FR-2P-10.16DSA(50)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	15.7	21.5
CL0680-4004-0-50	DF60FR-3P-10.16DSA(50)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	15.7	21.5

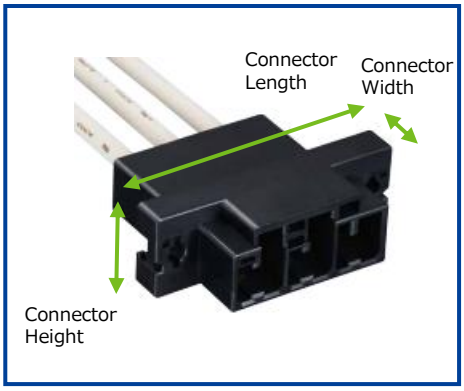
In-Line Plug (finger protected type)

■Standard type (guide key: standard, resin: black)

Standard Key Shape(2-pos.)
photo is in terminal insertion condition



Standard Key Shape(3 pos.)
The photo shows the terminal insertion state



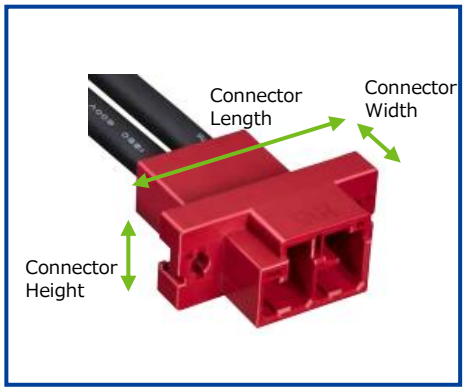
*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

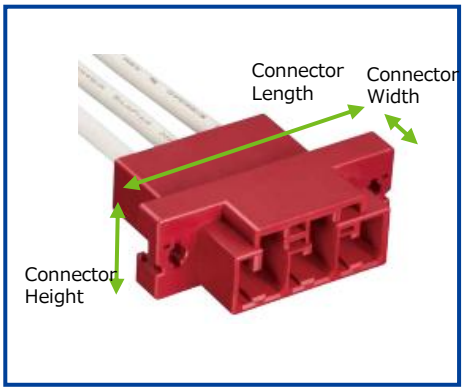
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4009-0-00	DF60F-2EP-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	39.56	39.6	16.65
CL0680-4003-0-00	DF60F-3EP-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	49.72	39.6	16.65
CL0680-4023-0-00	DF60F-4EP-10.16C	4	WEB	2D	SPEC	IGES	STEP	10.16	59.88	39.6	16.65

■R type (guide key: different key, resin: red)

Another Key Shape(2-pos.)
photo is in terminal insertion condition



Another Key Shape(3 pos.)
The photo shows the terminal insertion state



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

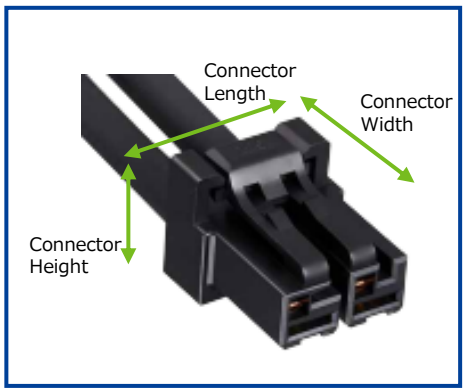
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4012-0-00	DF60FR-2EP-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	39.56	39.6	16.65
CL0680-4006-0-00	DF60FR-3EP-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	49.72	39.6	16.65

Note: To satisfy the finger protection function, heat shrink tubing must be installed on the crimp terminals for the In-Line Plug separately.
(Recommended heat shrink tubing: Sumitomo Electric F2(Z)8× 0.25)
For more information, please refer to the DF60 Harness Procedure Manual.

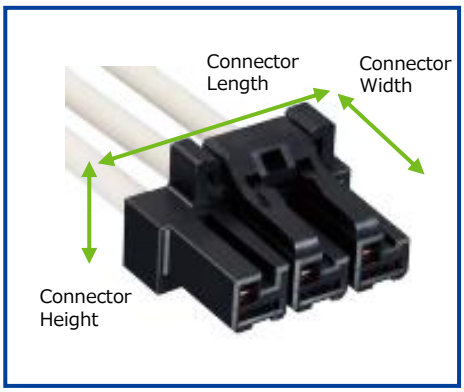
Crimp socket with finger protected type

■Standard type (guide key: standard, resin: black)

Standard Key Shape(2-pos.)
photo is in terminal insertion condition



Standard Key Shape(3 pos.)
The photo shows the terminal insertion state



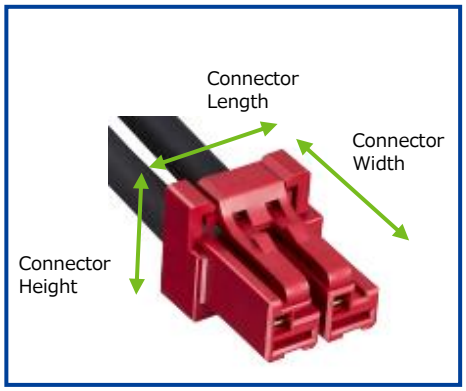
*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

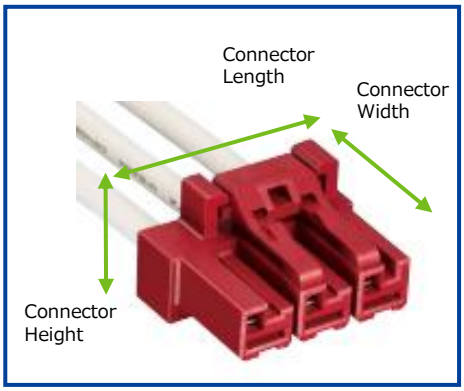
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4008-0-00	DF60F-2S-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	26.1	18.6
CL0680-4002-0-00	DF60F-3S-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	26.1	18.6

■R type (guide key: different key, resin: red)

Another Key Shape(2-pos.)
photo is in terminal insertion condition



Another Key Shape(3 pos.)
The photo shows the terminal insertion state



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

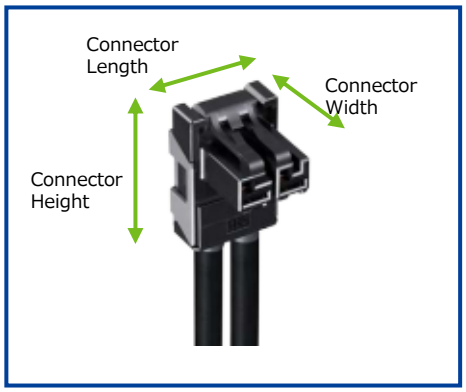
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4011-0-00	DF60FR-2S-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	26.1	18.6
CL0680-4005-0-00	DF60FR-3S-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	26.1	18.6

Note: To satisfy the finger protection function, heat shrink tubing must be installed on the socket crimp terminal separately.
(Recommended heat shrink tubing : Sumitomo Electric F2(Z)8× 0.25)
For more information, please refer to the DF60 Harness Procedure Manual.

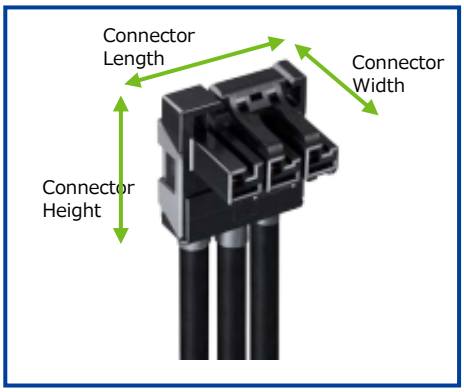
Right angle crimp socket (finger protected type)

■Standard type (guide key: standard, resin: black)

Standard Key Shape(2 pos.)
The photo shows the cover case attached and the terminals inserted.



Guide Key : Standard (3 pos.)
The photo shows the cover case attached and the terminals inserted.



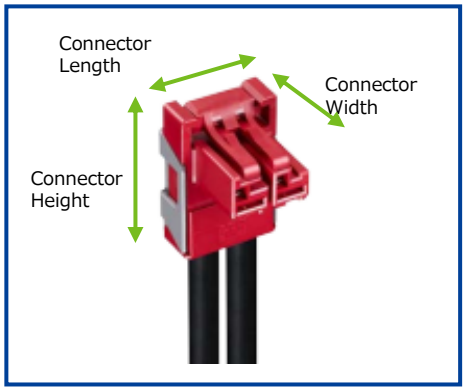
*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

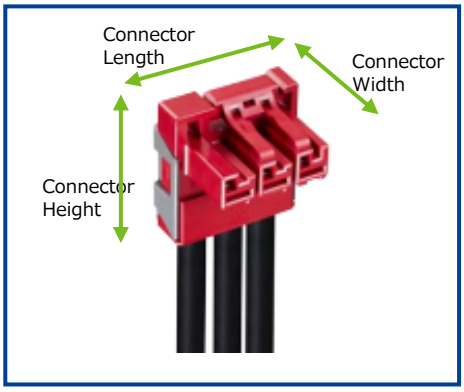
CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4013-0-00	DF60FS-2S-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	24.4	28.3	33.45
CL0680-4015-0-00	DF60FS-3S-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	34.56	28.3	33.45
CL0680-4021-0-00	DF60FS-4S-10.16C	4	WEB	2D	SPEC	IGES	STEP	10.16	44.72	28.3	33.45

■R type (guide key: different key, resin: red)

Another Key Shape(2 pos.)
The photo shows the cover case attached and the terminals inserted.



Guide Key : Standard (3 pos.)
The photo shows the cover case attached and the terminals inserted.



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

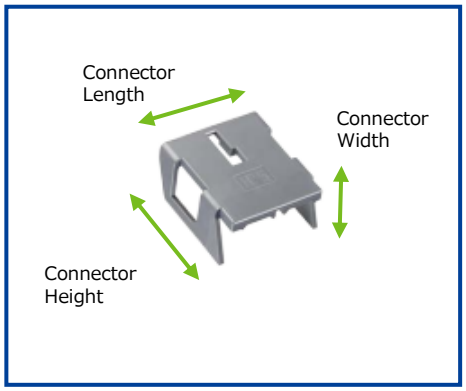
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4017-0-00	DF60FSR-2S-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	24.4	28.3	33.45
CL0680-4018-0-00	DF60FSR-3S-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	34.56	28.3	33.45

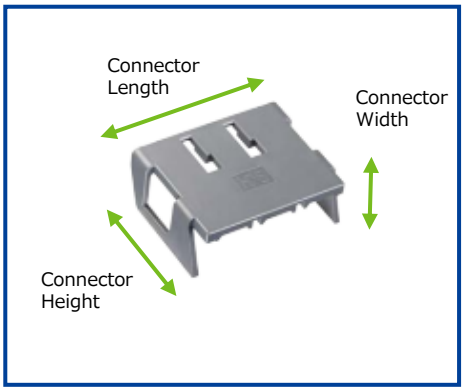
Cover case for Right angle crimp socket(finger protection type)

■Standard type and R type common

Guide Keys: Common to Standard and Another Key Shape (2 pos.)



Guide Keys: Common to standard and Another Key Shape (3 pos.)



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

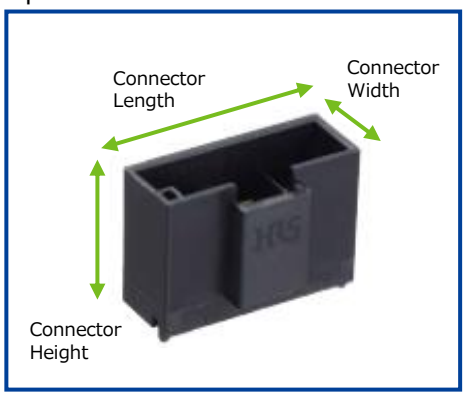
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-4014-0-00	DF60FS-2S-10.16C-CV	2	WEB	2D	SPEC	IGES	STEP	10.16	24.4	11.9	26.35
CL0680-4016-0-00	DF60FS-3S-10.16C-CV	3	WEB	2D	SPEC	IGES	STEP	10.16	34.56	11.9	26.35
CL0680-4022-0-00	DF60FS-4S-10.16C-CV	4	WEB	2D	SPEC	IGES	STEP	10.16	44.72	11.9	26.35

Straight Pin Header(Standard type)

■Standard type (guide key: standard, resin: black)

3 pos.



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3004-5-27	DF60-1P-10.16DSA(27)	1	WEB	2D	SPEC	IGES	STEP	10.16	15.2	15.7	21.5
CL0680-3005-8-27	DF60-2P-10.16DSA(27)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	15.7	21.5
CL0680-3001-7-27	DF60-3P-10.16DSA(27)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	15.7	21.5
CL0680-3006-0-27	DF60-4P-10.16DSA(27)	4	WEB	2D	SPEC	IGES	STEP	10.16	42.68	15.7	21.5

■R type (guide key: different key, resin: red)

*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3005-8-45	DF60-2P-10.16DSA(45)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	15.7	21.5

■R type (guide key: different key, resin: red)

*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

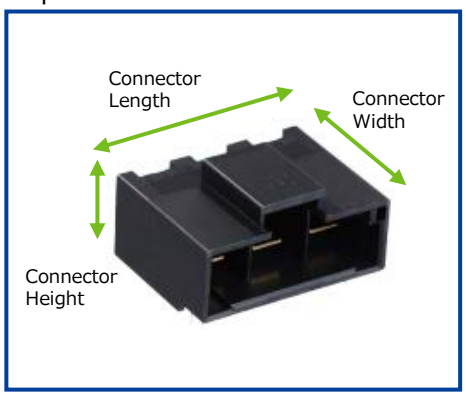
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3038-7-37	DF60R-3P-10.16DSA(37)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	15.7	21.5

Right Angle Pin Header(Standard type)

■Standard type (guide key: standard, resin: black)

3 pos.



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3015-1-27	DF60-1P-10.16DS(27)	1	WEB	2D	SPEC	IGES	STEP	10.16	15.2	25	17.35
CL0680-3016-4-27	DF60-2P-10.16DS(27)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	25	17.35
CL0680-3017-7-27	DF60-3P-10.16DS(27)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	25	17.35
CL0680-3018-0-27	DF60-4P-10.16DS(27)	4	WEB	2D	SPEC	IGES	STEP	10.16	42.68	25	17.35

■Standard type [color specification] (guide key: standard, resin: red)

*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3016-4-45	DF60-2P-10.16DS(45)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	25	17.35

■R type (guide key: different key, resin: gray)

*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

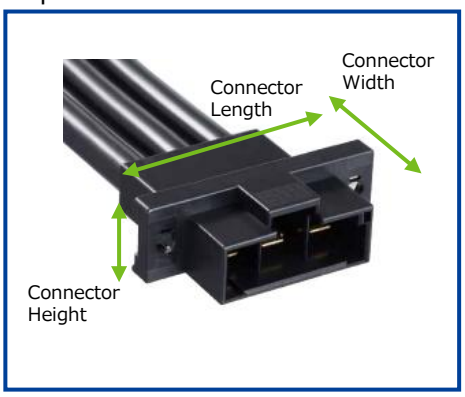
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3043-7-37	DF60R-2P-10.16DS(37)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	25	17.35
CL0680-3044-0-37	DF60R-3P-10.16DS(37)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	25	17.35

In-Line Plug(Standard type)

■Standard type (guide key: standard, resin: black)

3 pos.



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3050-2-00	DF60-1EP-10.16C	1	WEB	2D	SPEC	IGES	STEP	10.16	29.2	38.6	15.9
CL0680-3025-5-00	DF60-2EP-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	39.36	38.6	15.9
CL0680-3026-8-00	DF60-3EP-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	49.52	38.6	15.9
CL0680-3027-0-00	DF60-4EP-10.16C	4	WEB	2D	SPEC	IGES	STEP	10.16	59.68	38.6	15.9

■Standard type [color specification] (guide key: standard, resin: red)

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3025-5-15	DF60-2EP-10.16C(15)	2	WEB	2D	SPEC	IGES	STEP	10.16	39.36	38.6	15.9

■R type (guide key: different key, resin: gray)

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3053-0-17	DF60R-2EP-10.16C(17)	2	WEB	2D	SPEC	IGES	STEP	10.16	39.36	38.6	15.9

■Flangeless type (guide key: standard, resin: black)

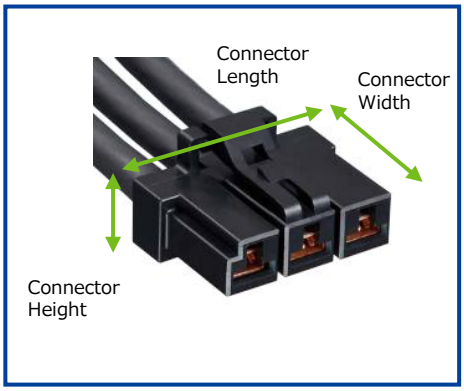
(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3069-0-00	DF60A-4EP-10.16C	4	WEB	2D	SPEC	IGES	STEP	10.16	42.68	38.6	15.9

Crimp socket(Standard type)

■Standard type (guide key: standard, resin: black)

3 pos.



*Connector dimensions, recommended board dimensions, and other precautions can be found from the "2D" drawing link below

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3058-0-00	DF60A-1S-10.16C	1	WEB	2D	SPEC	IGES	STEP	10.16	15.8	24.4	18
CL0680-3059-0-00	DF60A-2S-10.16C	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	24.4	18
CL0680-3060-0-00	DF60A-3S-10.16C	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	24.4	18
CL0680-3061-0-00	DF60A-4S-10.16C	4	WEB	2D	SPEC	IGES	STEP	10.16	42.68	24.4	18

■Standard type [color specification] (guide key: standard, resin: red)

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3058-0-15	DF60A-1S-10.16C(15)	1	WEB	2D	SPEC	IGES	STEP	10.16	15.8	24.4	18
CL0680-3059-0-15	DF60A-2S-10.16C(15)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	24.4	18

■R type (guide key: different key, resin: gray)

(mm)

CL Code	Product Name	No. of Pos.	WEB Links	2D	SPEC	3D		Contact Pitch	Connector Length	Connector Width	Connector Height
CL0680-3063-0-17	DF60AR-2S-10.16C(17)	2	WEB	2D	SPEC	IGES	STEP	10.16	22.36	24.4	18
CL0680-3064-0-17	DF60AR-3S-10.16C(17)	3	WEB	2D	SPEC	IGES	STEP	10.16	32.52	24.4	18

Crimp terminals for In-Line Plugs (for both finger protect type and standard tyepe)

HRS No.	Product Name	WEB Links	2D	Applicable Wire (Tin Plated Copper Wire) (Note)					Purchase Unit
				UL	Jacket Diameter	AWG	Core Structure	Packing Type	
CL0680-3023-0-07	DF60-8PCFA(07)	WEB	2D	1283	4.9 to 7.8	8	7/24/0.26	Reel	700pcs per reel
CL0680-3048-0-07	DF60-8PCA(07)	WEB	2D		7.54			Loose Piece	100pcs per bag
CL0680-3024-2-07	DF60-1012PCFA(07)	WEB	2D	1015	4～5.2	10	104/0.26	Reel	900pcs per reel
CL0680-0099-0-00	DF60AA-1012PCFA	WEB	2D			12	65/0.26		
CL0680-3049-3-07	DF60-1012PCA(07)	WEB	2D	1015	4.69	10	104/0.26	Loose Piece	100pcs per bag
					4.04	12	65/0.26		

(Note 1) For compatible wires other than the above, please refer to the crimping condition table. The crimping condition table can be found at the link in the product number. (If you are using wires that are not listed in the crimping condition table, please consult with our sales representative.))
Note 2: It is not compatible with use as a finger protect.

Socket crimping terminals(for both finger protect type and standard type)

L Code	Product Name	WEB Links	2D	Applicable Wire (Tin Plated Copper Wire) (Note)					Purchase Unit
				UL	Jacket Diameter	AWG	Core Structure	Packing Type	
CL0680-3003-2-00	DF60-8SCFA	WEB	2D	1283	4.9～7.8	8	7/24/0.26	Reel	700pcs per reel
CL0680-3021-4-00	DF60-8SCA	WEB	2D		7.54			Loose Piece	
CL0680-3014-9-00	DF60-1012SCFA	WEB	2D	1015	4～5.2	10	104/0.26	Reel	100pcs per bag
						12	65/0.26		
CL0680-3022-7-00	DF60-1012SCA	WEB	2D	1015	4.69	10	104/0.26	Loose Piece	100pcs per bag
					4.04	12	65/0.26		

Crimp terminals for Right angle crimp sockets(for finger protect type)

HRS No.	Product Name	WEB Links	2D	Applicable Wire					Purchase Unit
				UL	Jacket Diameter	AWG	Core Structure	Packing Type	
CL0680-3081-0-00	DF60S-8SCFA	WEB↗	2D	1283	4.9 ～ 7.8	8	7/24/0.26	Reel	700pcs per reel
CL0680-3082-0-00	DF60S-1012SCFA	WEB↗	2D	1015	4 ～ 5.2	10	104/0.26	Reel	800pcs per reel
						12	65/0.26		800pcs per reel

Note: For compatible wires other than the above, please refer to the crimping condition table. The crimping condition table can be found at the link in the product number.
(If you are using wires that are not listed in the crimping condition table, please consult with our sales representative.)

Applied crimping tools

Item	Part No.	HRS No.	Applicable Contact	Remarks
Applicator	AP105-DF60-8	CL0901-4623-5-00	DF60-8SCFA DF60-8PCFA(07)	
	QHS895700H-UP	–		(Note 3)Manufactured by Japan Automatic Machine Co., Ltd.
	AP105-DF60-1012	CL0901-4624-8-00	DF60-1012SCFA DF60-1012PCFA(07) DF60AA-1012PCFA	
	QHS888000K-UP	–		(Note 3)Manufactured by Japan Automatic Machine Co., Ltd.
	AP105-DF60S-8S	CL0901-4041-0-00	DF60S-8SCFA	
	AP105-DF60S-1012S	CL0901-4042-0-00	DF60S-1012SCFA	
Press Body	-	-	-	The Hirose Press Unit CM-105C (HRS No.901-0001-0) has a capacity of 1.5 tons and cannot be used. Please use a press unit which can mount official Hirose's applicators and has a capacity of 3 tons or more.
Hand tool	HT306/DF60-8	CL0550-0301-4-00	DF60-8SCA DF60-8PCA(07) *Exclusive for UL1283, 8 AWG	
	HT306/DF60-1012	CL0550-0307-0-00	DF60-1012SCA DF60-1012PCA(07) *Exclusive for UL1015 10 and 12 AWG	

Note 1: Please contact our Sales Department when you are using crimp tools made by other manufacturers.
Note 2: Please do the crimping operations according to the "Crimping work standards" and "Crimping condition table".
Note 3: Please contact Japan Automatic Machine Co., Ltd. (hereinafter J.A.M.) through their website regarding crimping issues when using applicators manufactured by J.A.M. URL http://www.jam-net.co.jp

Fits wires

We have compiled a list of materials that can be used as a reference when using connectors, so please be sure to refer to them before designing and using them. You can refer to each document from the links in the table below.

Data name	Overview
Crimping Quality Standards	This document describes the quality standards for crimping connectors. Please also check here for the test standards after the wire is connected.
Product Guidelines	This document summarizes the necessary considerations when designing a product. Please be sure to check the precautions and handling methods when implementing the information.
Termination Procedure	This is a document that describes the procedure for harnessing and wiring. Please check the procedure before working.

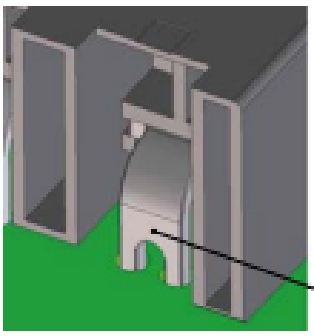
Precautions

1. Recommended Soldering Conditions
   - Soldering profile when using an automatic soldering device
     Soldering temperature: 260℃, Soldering time: within 10 seconds
   - Hand Soldering Conditions
     Temperature of soldering iron: 350±10℃, Soldering time: within 3 seconds
2. Cleaning Conditions
   Please refer to the "Product Guidelines (Board-to-Wire Connector Guidelines)". Cleaning with IPA is allowed. (Other cleaning agents are not recommended due to may have caused changing the push pull feeling. Please contact us when you use other cleaning agents.)
3. Important Notes
   1. Caution is required for mating and un-mating the connector without it being mounting on a PCB. It can damage or deform the contacts.
   2. During hand soldering, do not apply flux which can cause creeping-up flux to the connector.
   3. This product may have a slight difference in color depending on the production lot. This difference does not have any influence on the performance.
   4. Black spots may appear on the mold resin but this does not affect the product quality.
   5. The connector could be damaged if it is pulled out forcibly. When it is hard to pull out, push it in slightly first and then depress the lock and unmate. Please refer to “DF60 Series Product Guidelines (Mating/Unmating Operation Instruction Manual)” for points in handling regarding mating operations.
   6. When thick and short wire are used, the connector could be deformed due to the force of the wire's position. Route cables in such a way that they do not twist when being installed.
   7. Make sure to turn off the power when mating or unmating the connector.
   8. Please do not touch any area around the contact part during energizing. It could be very dangerous.
   9. Please refer to “Cable Assembly Instruction” for points in harness operations.

4. Precautions for use

Please refer to the ”Product Guidelines (Board-to-Wire Connector Guidelines)”

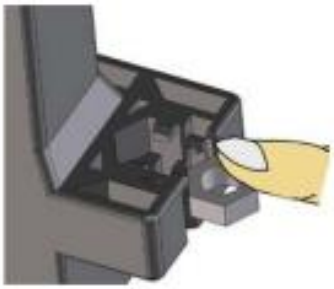
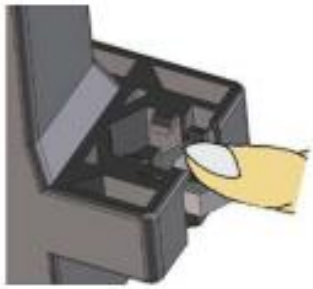
5. Right Angle Pin Header Handling Precautions

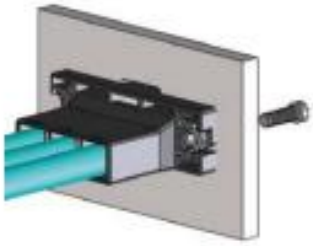


The lead mounting part has an exposed part, so when mounting other parts near the connector, please ensure sufficient space distance.

6. Right Angle Pin Header Handling Precautions

1. Insert a M3 nut from the lateral direction.
2. Push the nut in the direction of the arrow.
3. Nut insertion is then complete.
4. Panel mounting is completed by installing a connector on the panel cutout hole and tightening with a M3 screw.



7. Operating Environment

Please contact us if you are designing this connector into environmental conditions where high and low temperatures are repeated.

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.

HIROSE

HIROSE ELECTRIC CO.,LTD.

Sales Headquarters: Kanagawa Prefecture Yokohama City
Tsuzuki-ku Nakagawa Chuo 2-6-3
https: //www.hirose.com