



Size 20 Contacts  
High Performance  
Construction  
5 Insulator Variants  
4 through 10 Contacts

U.L. Recognized  
File #E49351



GH Series connectors are high reliability, hexagonal connectors offered with solder and straight solder terminations. Contacts have 0.040 inch [1.02 mm] diameters and are rated to 7.5 amperes per contact. Five connector variants, four through ten poles, are offered.

GH Series connectors have DAP insulators. A variety of plastic and metal hoods are available, and the locking system is achieved by a lock-ring spring mechanism. Polarization is accomplished by contact layouts or by an oversized contact.

GH Series connectors are ideal for use in industrial and instrumentation applications where light weight, miniature, high reliability interconnections are necessary.



For RoHS options  
see page 8.

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

<b>Insulator:</b>	Glass-filled DAP per ASTM-D-5948, Type SDG-F. Grey color is standard.
<b>Fixed Contacts:</b>	Copper alloy, gold flash over nickel.
<b>Hoods:</b>	Aluminum with yellow or black anodize. Glass-filled DAP.
<b>Lock Rings and Lock Springs:</b>	Copper alloy with zinc plate and chromate seal.

### MECHANICAL CHARACTERISTICS:

<b>Fixed Contacts:</b>	
<b>Male:</b>	Size 20: 0.040 inch [1.02 mm] diameter.
<b>Female:</b>	Open entry is standard. "Closed Entry" is available on solder-style contacts for high reliability applications.
<b>Contact Retention in Insulator:</b>	10 lbs. [44.5N], minimum.
<b>Contact Termination:</b>	0.046 inch [1.17 mm] internal diameter on solder style contacts for 20 AWG [0.5 mm <sup>2</sup> ] wire maximum  0.025 inch [0.64 mm] diameter straight solder, printed board mount style contact.
<b>Locking Systems:</b>	Friction, lock spring with lock ring.

### MECHANICAL CHARACTERISTICS, continued:

<b>Polarization:</b>	0.056 inch [1.42 mm] diameter male contact in position "A" on Size 4 connector. Molding configuration provides polarization on other sizes.
<b>Mechanical Operations:</b>	
<b>Open Entry Contacts:</b>	250 operations per IEC 512-5.
<b>Closed Entry Contacts:</b>	500 operations per IEC 512-5.

### ELECTRICAL CHARACTERISTICS:

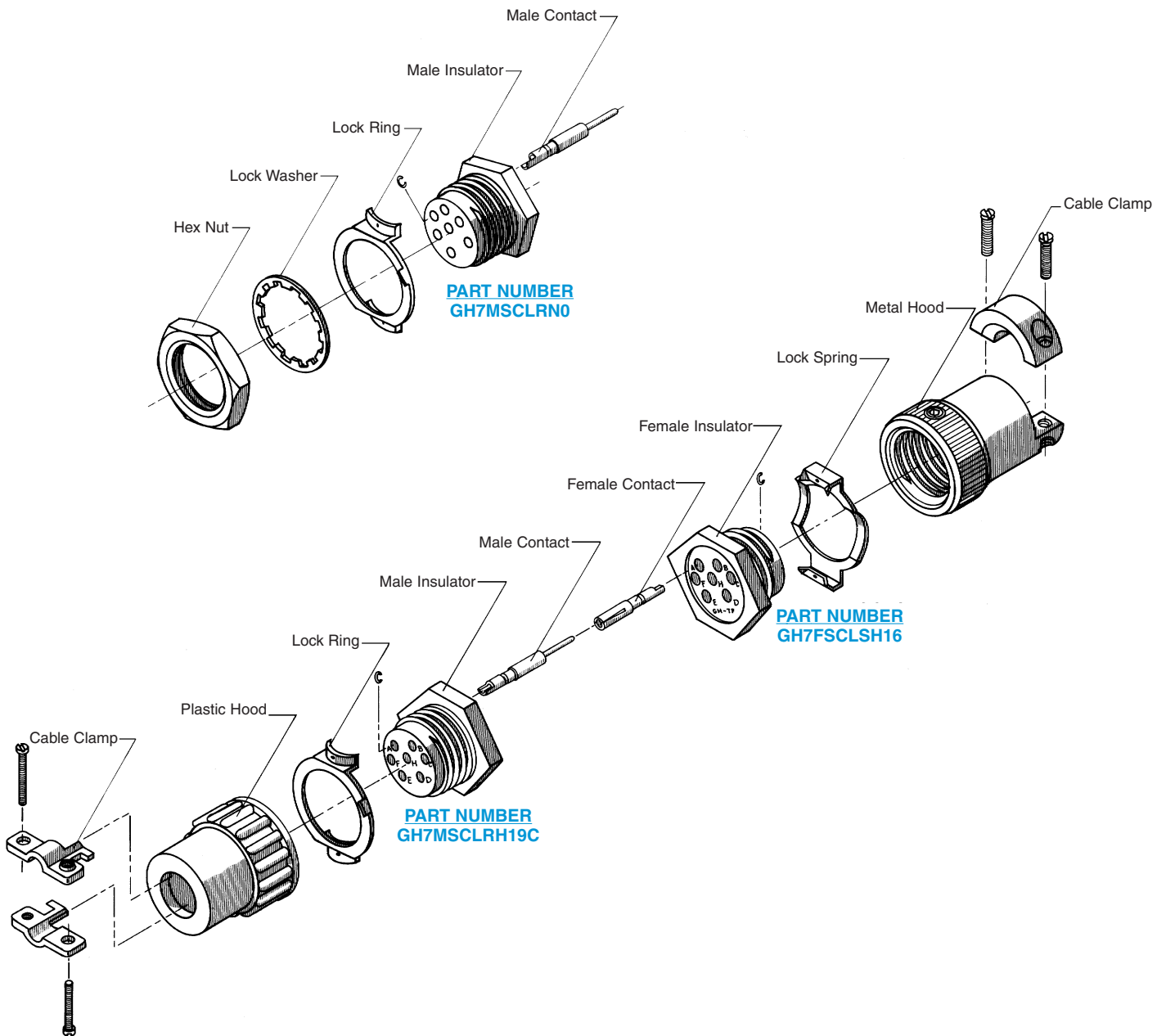
<b>Contact Current Rating:</b>	7.5 amps, maximum.
<b>Initial Contact Resistance:</b>	0.010 ohms, maximum.
<b>Flash over Voltage:</b>	1,750 VAC [rms].
<b>Test Voltage:</b>	1,200 VAC [rms].
<b>Insulation Resistance:</b>	5 G ohms.
<b>Clearance and Creepage Distance:</b>	0.025 inch [0.64 mm], minimum.
<b>Working Voltage:</b>	300 VAC [rms].

### CLIMATIC CHARACTERISTICS:

<b>Temperature Range:</b>	-55°C to +125°C.
<b>Damp Heat, Steady State:</b>	21 days.



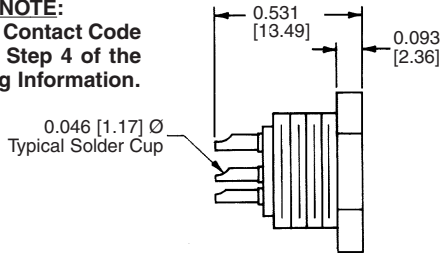
## EXPLODED VIEW OF TYPICAL CONNECTOR ASSEMBLY



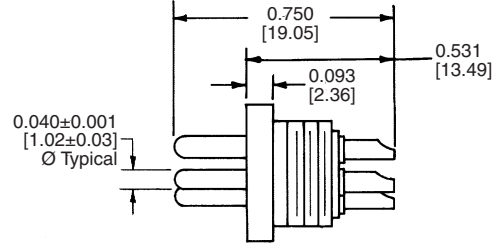
CONNECTOR WITH SOLDER CUP CONTACTS

CODE SC

**NOTE:**  
Specify Contact Code  
"SC" in Step 4 of the  
Ordering Information.



TYPICAL PART NUMBER: GH4FSC00



TYPICAL PART NUMBER: GH4MSC00

**MATERIAL:** Copper alloy.  
**FINISH:** Gold flash over nickel.

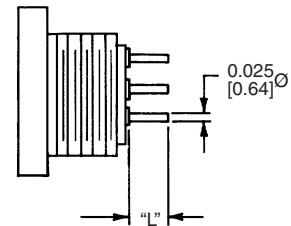
GH4 has 0.056±0.001 [1.42±0.03] Ø Pin in "A" position for polarization.

CONNECTOR WITH STRAIGHT SOLDER CONTACTS

CODE DS3, DS4, DS5 and DS6

**NOTE:**  
Specify Contact Code for  
desired length of contact  
termination in Step 4 of  
the Ordering Information.

CONTACT CODE	"L"
DS3	0.093 [2.36]
DS4	0.125 [3.18]
DS5	0.156 [3.96]
DS6	0.187 [4.75]



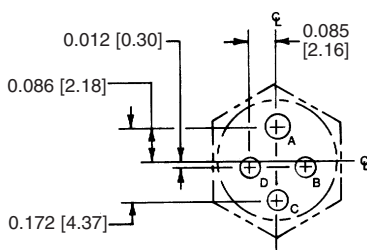
TYPICAL PART NUMBER: GH5FDS400

**MATERIAL:** Copper alloy.  
**FINISH:** Gold flash over nickel.

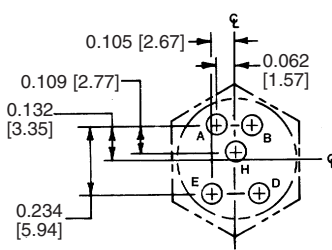
Straight solder contacts are not available in GH4 connector.

CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

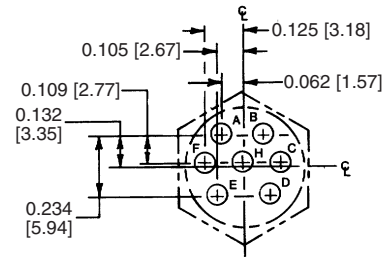
HOLE IDENTIFICATION SHOWN IS FOR MATING FACE OF FEMALE CONNECTOR.  
USE MIRROR IMAGE FOR MALE CONNECTOR.



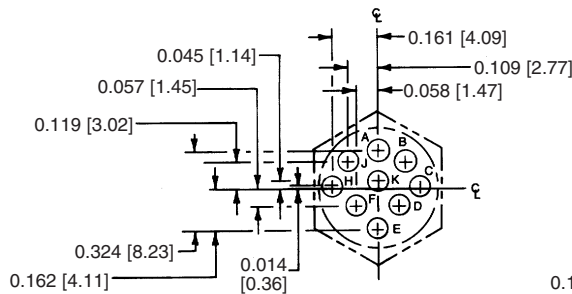
GH4



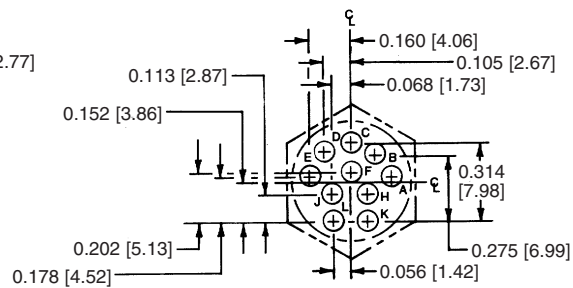
GH5



GH7



GH9



GH10

Suggest 0.040 [1.01] Ø holes in printed board for contact terminations.



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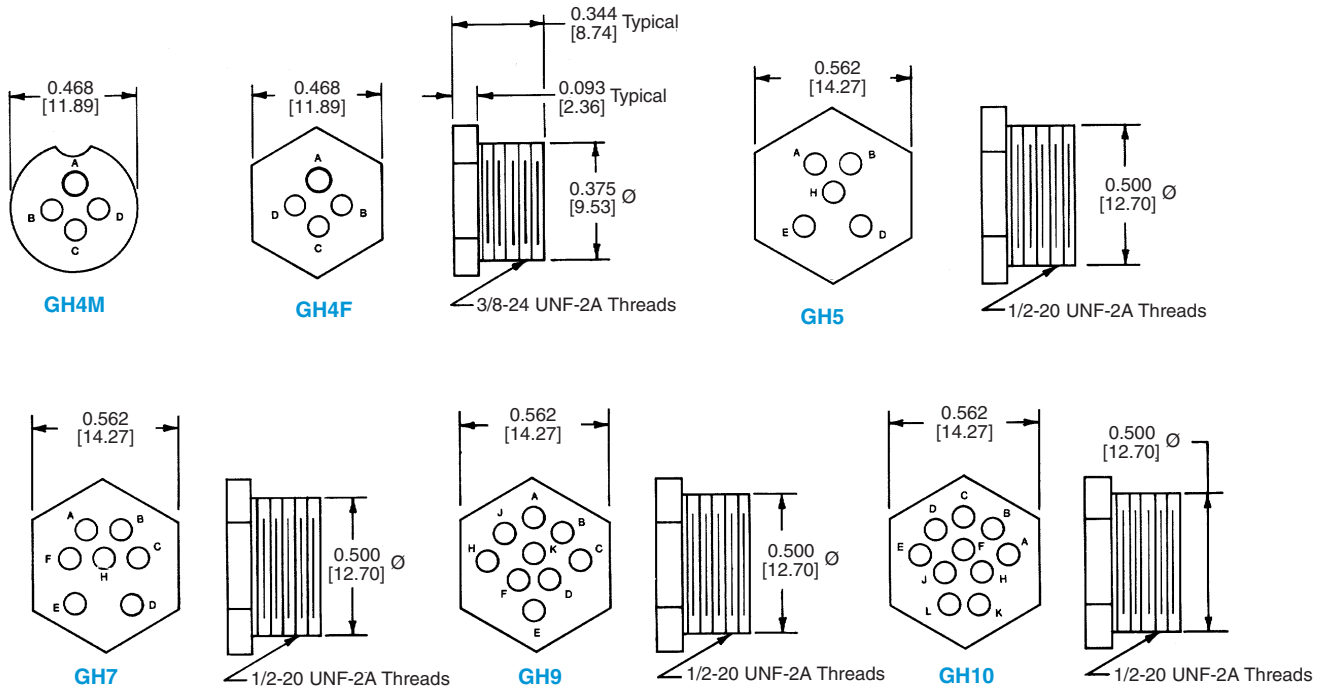
# PROFESSIONAL QUALITY, FIXED CONTACT MINIATURE CIRCLE-HEX CONNECTORS

Circle  
Hex

GH SERIES

## INSULATOR DIMENSIONS

MATING FACE OF FEMALE CONNECTOR FOR SIZES GH 5, 7, 9, AND 10.



See GH Series Printed Board Hole Patterns, page 3 of this catalog, for contact variant hole positions.

For Sizes 5 through 10, male and female connector dimensions are typical.

Size GH4 uses 0.056 [1.42] Ø pin in position "A" for polarization. For all other sizes, the body design provides polarization.

**MATERIAL:** Glass-filled DAP per ASTM-D-5948, Type SDG-F.

## TYPICAL MATING ASSEMBLIES

GH4MSCLSH10C



GH4FSCLRNO

GH5FSCLRHH19S



GH5MSCLSH19

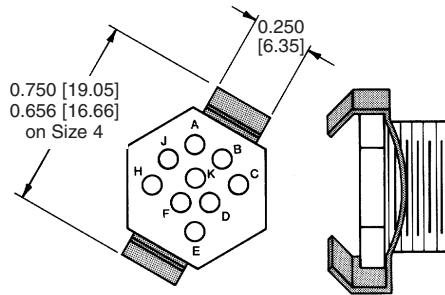
GH10FSCLSH16



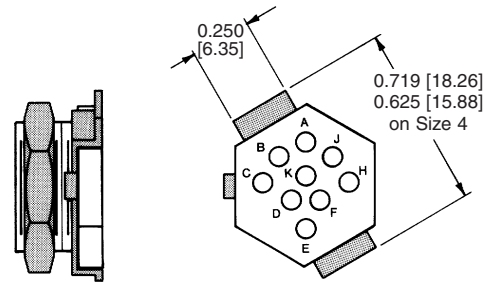
GH10MDS4LRNO

LOCKING DEVICES

LOCK SPRING  
CODE LS

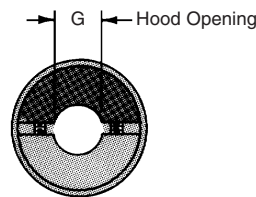
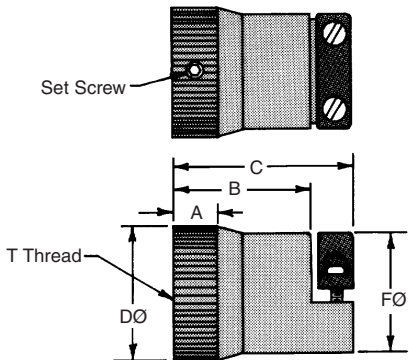


LOCK RING AND NUT  
CODE LRN



**MATERIAL:** Copper alloy.  
**FINISH:** Zinc plate with chromate seal.

ALUMINUM HOODS  
CODE H14 and H16



HOOD CODE	CONNECTOR SIZE	A	B	C	D	F	G	T THREAD
H14	GH-4	0.250 [6.35]	0.799 [20.29]	1.062 [26.97]	0.594 [15.09]	0.563 [14.30]	0.218 [5.54]	3/8-24 UNF-2B
H16	GH-5, 7, 9, 10	0.260 [6.60]	0.708 [17.98]	0.938 [23.82]	0.656 [16.66]	0.578 [14.68]	0.250 [6.35]	1/2-20 UNF-2B

**MATERIAL:** Aluminum.  
**FINISH:** Yellow anodize is standard.  
Black anodize also available.



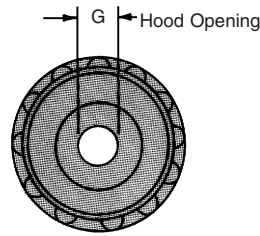
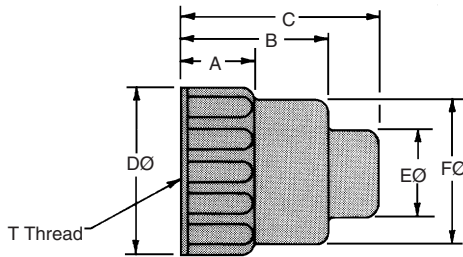
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Circle  
Hex

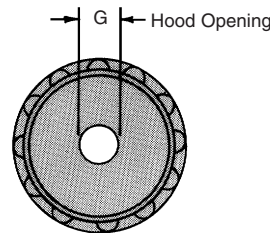
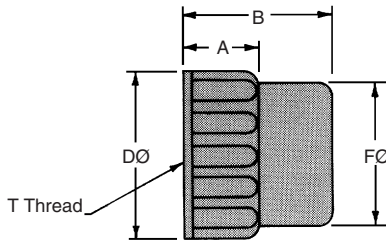
GH SERIES

## STANDARD PLASTIC HOOD CODE H10 and H19



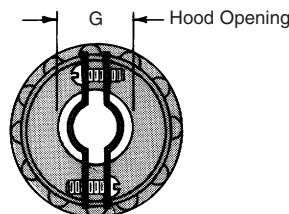
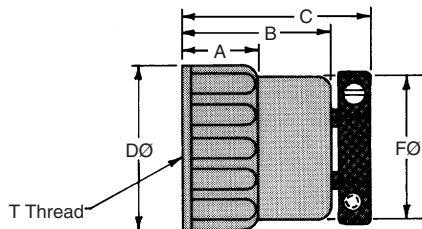
HOOD CODE	CONNECTOR SIZE	A	B	C	D	E	F	G	T THREAD
H10	GH4	0.312 [7.92]	0.687 [17.45]	0.750 [19.05]	0.562 [14.27]	0.250 [6.35]	0.437 [11.10]	0.157 [3.99]	3/8-24 UNF-2B
H19	GH 5, 7, 9, 10	0.281 [7.14]	0.656 [16.66]	0.875 [22.23]	0.655 [16.64]	0.422 [10.72]	0.540 [13.72]	0.297 [7.54]	1/2-20 UNF-2B

## SHORT PLASTIC HOOD CODE H10S and H19S



HOOD CODE	CONNECTOR SIZE	A	B	D	F	G	T THREAD
H10S	GH4	0.312 [7.92]	0.687 [17.45]	0.562 [14.27]	0.437 [11.10]	0.157 [3.99]	3/8-24 UNF-2B
H19S	GH 5, 7, 9, 10	0.281 [7.14]	0.656 [16.66]	0.655 [16.64]	0.540 [13.72]	0.297 [7.54]	1/2-20 UNF-2B

## PLASTIC HOODS WITH CABLE CLAMPS CODE H10C and H19C

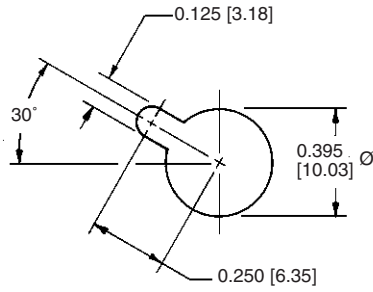


HOOD CODE	CONNECTOR SIZE	A	B	C	D	F	G	T THREAD
H10C	GH4	0.312 [7.92]	0.687 [17.45]	0.851 [21.61]	0.562 [14.27]	0.437 [11.10]	0.209 [5.31]	3/8-24 UNF-2B
H19C	GH 5, 7, 9, 10	0.281 [7.14]	0.656 [16.66]	0.820 [20.83]	0.655 [16.64]	0.540 [13.72]	0.297 [7.54]	1/2-20 UNF-2B

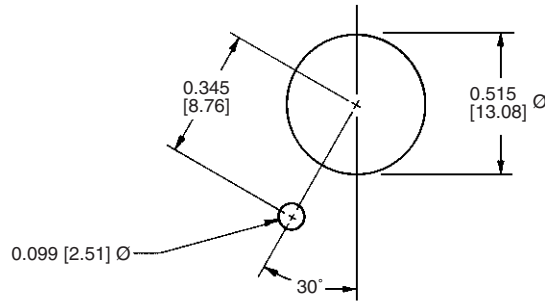
**MATERIAL:** Glass-filled DAPper ASTM-D-5948, Type SDG-F.

**CABLE CLAMPS:** Aluminum, yellow anodize finish.

PANEL CUT-OUT DIMENSIONS



SIZE 4



SIZES 5, 7, 9, & 10







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# PROFESSIONAL QUALITY, FIXED CONTACT MINIATURE CIRCLE-HEX CONNECTORS

Circle  
Hex

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 6

STEP	1	2	3	4	5	6	7	8	9
EXAMPLE	GH	10	M	SC	LRN	0	CE	/AA	

### STEP 1 - BASIC SERIES

GH Series

### STEP 2 - CONNECTOR VARIANTS

4, 5, 7, 9, 10

### STEP 3 - CONNECTOR GENDER

M - Male Insulator  
F - Female Insulator

### STEP 4 - CONTACT TERMINATION TYPE

SC - Solder Cup. For "Closed Entry" design, add "CE" in Step 7.  
DS3 - Straight Solder, 0.093 [2.36].  
DS4 - Straight Solder, 0.125 [3.18].  
DS5 - Straight Solder, 0.156 [3.96].  
DS6 - Straight Solder, 0.187 [4.75].  
NOTE: DS contacts are not available on GH4 connector.

### STEP 5 - MOUNTING AND LOCKING ACCESSORIES

LR - Lock Ring.  
LS - Lock Spring.  
N - Mounting Nut.  
W - Lockwasher.  
0 - If no mounting or locking accessories are required.  
NOTE: When the Lock Ring (LR) or Lock Spring (LS) are ordered with the Mounting Nut (N), a Lockwasher (W) is furnished.

### STEP 9 - SPECIAL OPTIONS

CONTACT TECHNICAL SALES  
FOR SPECIAL OPTIONS

### STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

NOTE: If compliance to environmental legislation is not required, this step will not be used.  
Example: GH10MSCLRN0



### STEP 7 - ADDITIONAL FEATURES

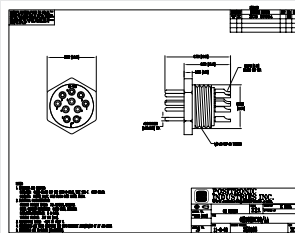
\* B - For black anodized aluminum parts.  
CE - "Closed Entry" contacts on female solder contact.  
NOTE: Position "A" of GH4 connector is available as "Open Entry" only.

SKIP STEP 7 - IF NO ADDITIONAL FEATURES ARE REQUIRED

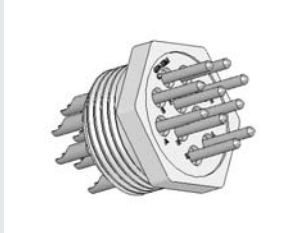
### STEP 6 - CABLE ADAPTERS (HOODS)

H10 - Standard plastic hood offered on 4 variant.  
H19 - Standard plastic hood offered on 5, 7, 9, and 10 variants.  
H10S - Short plastic hood offered on 4 variant.  
H19S - Short plastic hood offered on 5, 7, 9, and 10 variants.  
H10C - Plastic hood with cable clamps offered on 4 variant.  
H19C - Plastic hood with cable clamps offered on 5, 7, 9, and 10 variants.  
\* H14 - Aluminum hood offered on 4 variant.  
\* H16 - Aluminum hood offered on 5, 7, 9, and 10 variants.  
0 - If no hoods are required.

NOTE: Once you have made a connector selection, contact Technical Sales if you would like to receive a drawing in DXF, PDF format or a 3-dimensional IGES, STEP, or SOLIDWORKS file.



SK Drawing



3-dimensional model

### \* NOTE:

Yellow anodize finish is standard for Aluminum parts.