



Positronic Industries
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Miniature Circle Hex Connectors

**Photo
Unavailable**

Featuring high performance,
lightweight, composite construction



Positronic Industries' FEDERAL SUPPLY CODE FOR MANUFACTURERS is Number 28198.

Unless otherwise specified, dimensional tolerances are:

- 1) ± 0.03 mm (0.001 inches) for male contact mating diameters.**
- 2) ± 0.08 mm (0.003 inches) for contact termination diameters.**
- 3) ± 0.13 mm (0.005 inches) for all other diameters.**
- 4) ± 0.38 mm (0.015 inches) for all other dimensions.**

**CATALOG NUMBER:
C-013 REV. A**

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TABLE OF CONTENTS

GH SERIES

General Product Information	1
Technical Characteristics	1
Exploded View	2
Solder Contacts	3
Printed Board Contact Hole Position Dimensions	3
Printed Board Contact Hole Patterns	3
Typical Connector Insulator Dimensions	4
Typical Mating Assemblies	4
Locking Devices	5
Aluminium Hoods	5
Plastic Hoods	6
Panel Mounting Information	7
Ordering Information	8

MGH SERIES

General Product Information	9
Technical Characteristics	9
Typical Assemblies	10
Panel Mounting Information	10
Ordering Information	10



GH SERIES

PROFESSIONAL QUALITY, FIXED CONTACT CIRCLE HEX CONNECTORS

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.

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass-filled DAP per ASTM-D-5948, Type SDG-F. Grey color is standard.
Fixed Contacts:	Copper alloy, gold flash over nickel or copper.
Hoods:	Aluminium with yellow or black anodize. Glass-filled diallyl phthalate.
Lock Rings and Lock Springs:	Copper alloy with zinc plate and dichromate seal.

MECHANICAL CHARACTERISTICS:

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

MECHANICAL CHARACTERISTICS, continued:

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

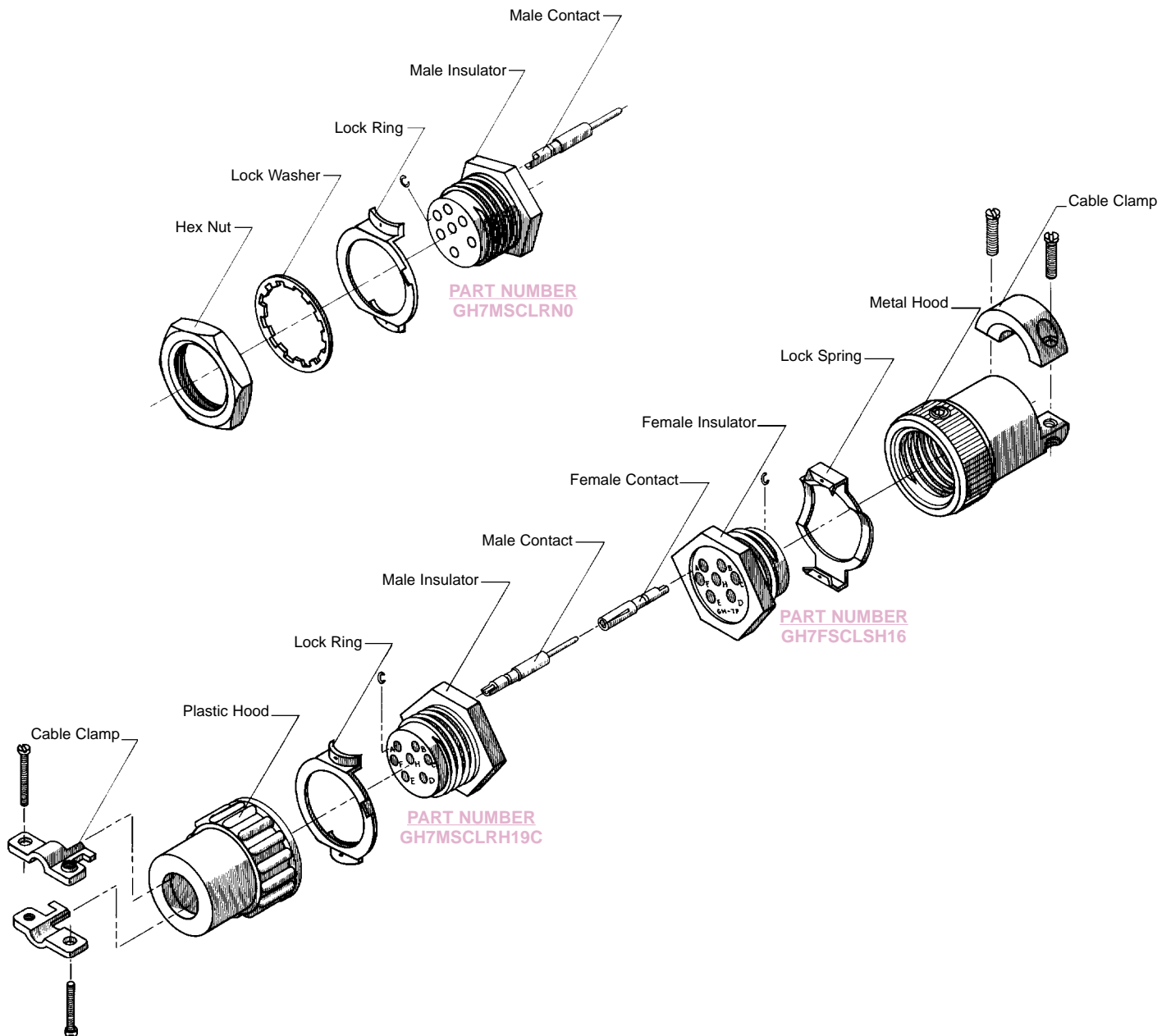
ELECTRICAL CHARACTERISTICS:

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

CLIMATIC CHARACTERISTICS:

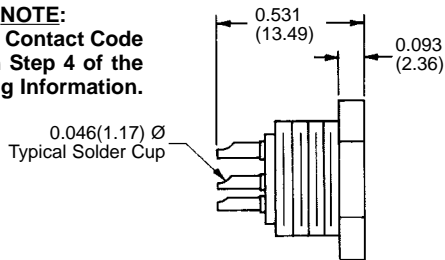
Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	21 days.

EXPLODED VIEW OF TYPICAL CONNECTOR ASSEMBLY



GH SERIES CONNECTOR WITH SOLDER CONTACTS

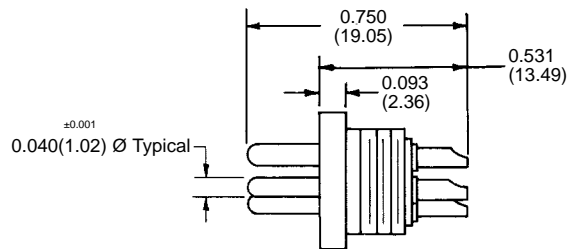
NOTE:
Specify Contact Code
"SC" in Step 4 of the
Ordering Information.



TYPICAL PART NUMBER: GH4FSC00

MATERIAL: Copper alloy.

FINISH: Gold flash over nickel or copper.



TYPICAL PART NUMBER: GH4MSC00

GH4 has 0.056 ±0.001 (1.42) Ø Pin in "A" position for polarization.

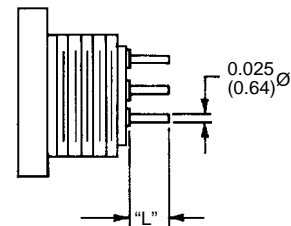
GH SERIES CONNECTOR WITH STRAIGHT SOLDER CONTACTS

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)

MATERIAL: Copper alloy.

FINISH: Gold flash over nickel or copper.

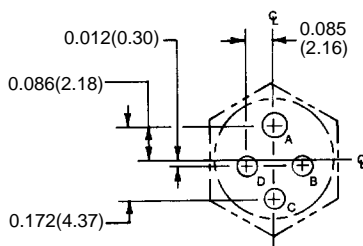


TYPICAL PART NUMBER: GH5FDS400

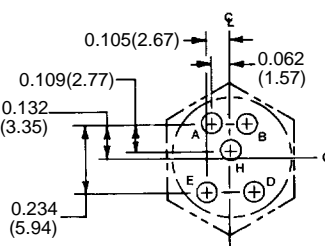
Straight solder contacts are not available in GH4 connector.

GH SERIES CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

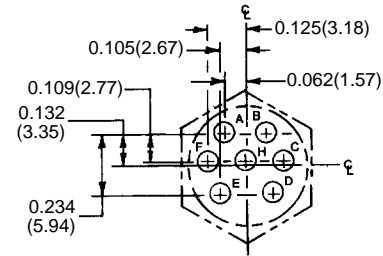
Hole Identification shown is for mating face of female connector. Use mirror image for male connector.



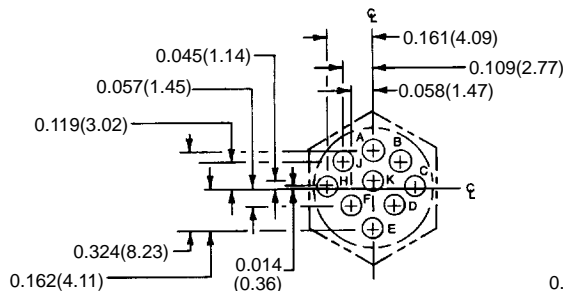
GH4



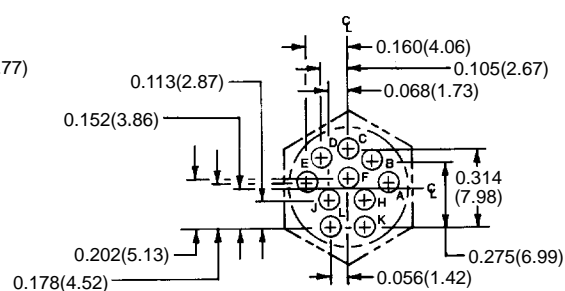
GH5



GH7



GH9



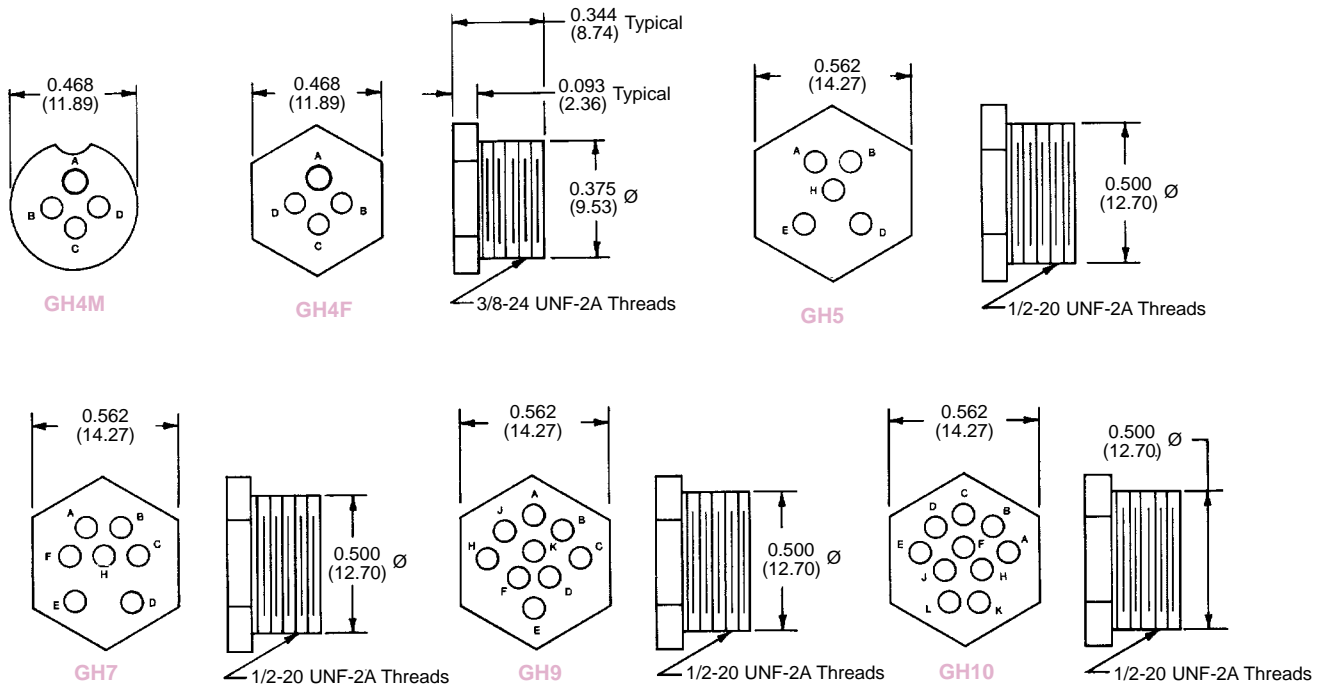
GH10

Suggest 0.040 (1.01) Ø holes in printed board for contact terminations.

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

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 diallyl phthalate per ASTM-D-5948, Type SDG-F.

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

TYPICAL MATING ASSEMBLIES

GH4MSCLSH10C



GH4FSCLRN0

GH5FSCLRH19S



GH5MSCLSH19

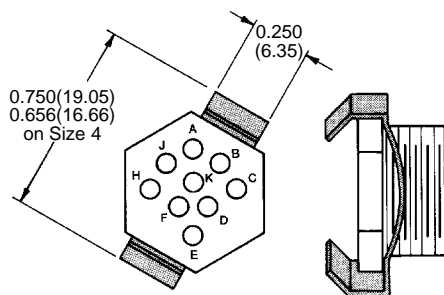
GH10FSCLSH16



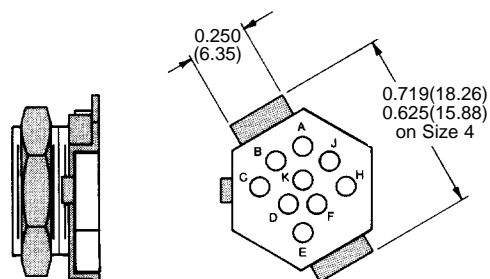
GH10MDS4LRN0

GH SERIES LOCKING DEVICES

LOCK SPRING

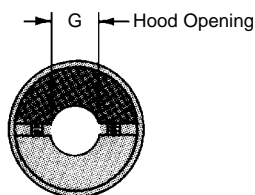
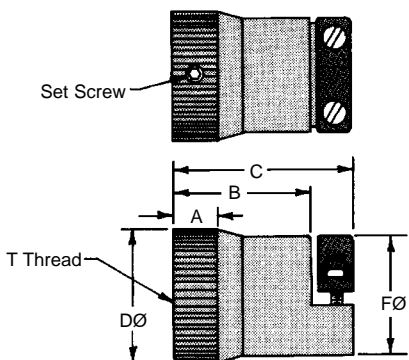


LOCK RING AND NUT



MATERIAL: Copper alloy.
FINISH: Zinc plate with dichromate seal.

GH SERIES ALUMINUM HOODS



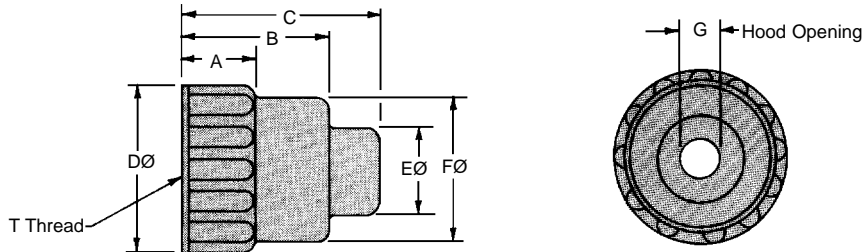
HOOD CODE	CONNECTOR SIZE	A	B	C	D	F	G	T THREAD
H14	GH-4	0.25 (6.4)	0.80 (20.3)	1.06 (26.9)	0.59 (15.0)	0.56 (14.2)	0.22 (5.6)	3/8-24 UNF-2B
H16	GH-5, 7, 9, 10	0.25 (6.4)	0.71 (18.0)	0.94 (23.9)	0.67 (17.0)	0.58 (14.7)	0.25 (6.4)	1/2-20 UNF-2B

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

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

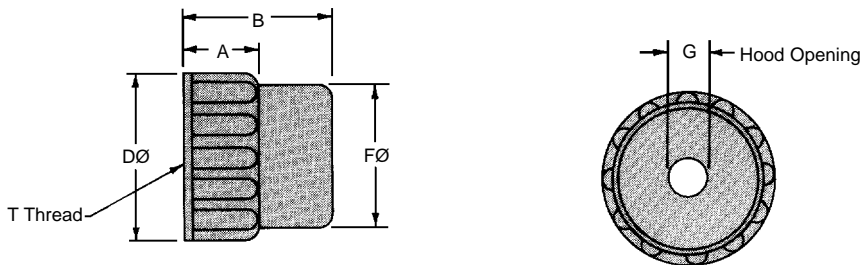
GH SERIES PLASTIC HOODS

STANDARD HOOD



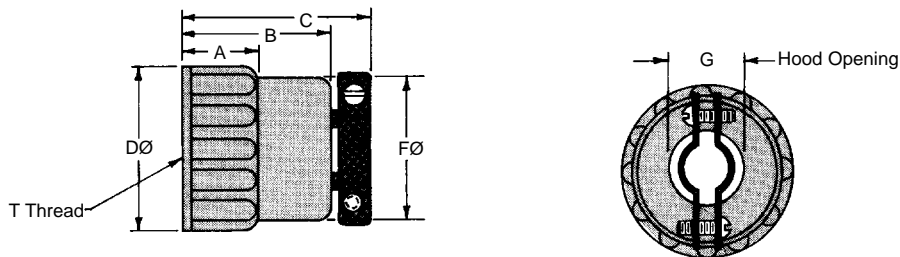
HOOD CODE	CONNECTOR SIZE	A	B	C	D	E	F	G	T THREAD
H10	GH4	0.31 (7.9)	0.69 (17.5)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	0.44 (11.2)	0.16 (4.1)	3/8-24 UNF-2B
H19	GH 5, 7, 9, 10	0.28 (7.1)	0.66 (16.8)	0.88 (22.4)	0.66 (16.8)	0.42 (10.7)	0.54 (13.7)	0.30 (7.6)	1/2-20 UNF-2B

SHORT HOOD



HOOD CODE	CONNECTOR SIZE	A	B	D	F	G	T THREAD
H10S	GH4	0.31 (7.9)	0.69 (17.5)	0.56 (14.2)	0.44 (11.2)	0.16 (4.1)	3/8-24 UNF-2B
H19S	GH 5, 7, 9, 10	0.28 (7.1)	0.66 (16.8)	0.66 (16.8)	0.54 (13.7)	0.30 (7.6)	1/2-20 UNF-2B

HOODS WITH CABLE CLAMPS

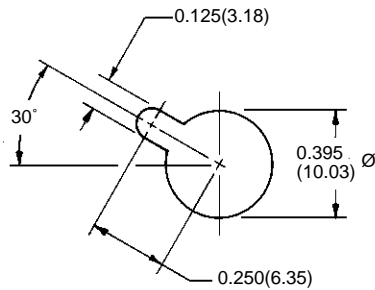


HOOD CODE	CONNECTOR SIZE	A	B	C	D	F	G	T THREAD
H10C	GH4	0.31 (7.9)	0.69 (17.5)	0.83 (21.1)	0.56 (14.2)	0.44 (11.2)	0.21 (5.3)	3/8-24 UNF-2B
H19C	GH 5, 7, 9, 10	0.28 (7.1)	0.66 (16.8)	0.86 (21.8)	0.66 (16.8)	0.54 (13.7)	0.30 (7.6)	1/2-20 UNF-2B

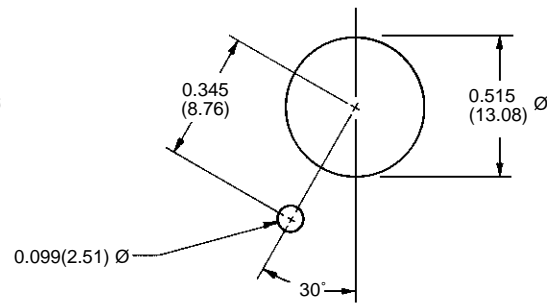
MATERIAL: Glass-filled diallyl phthalate per ASTM-D-5948,
Type SDG-F.
CABLE CLAMPS: Aluminum, yellow anodize finish.

DIMENSIONS ARE IN
INCHES (MILLIMETERS).
ALL DIMENSIONS ARE
SUBJECT TO CHANGE.

PANEL CUT-OUT DIMENSIONS FOR GH SERIES

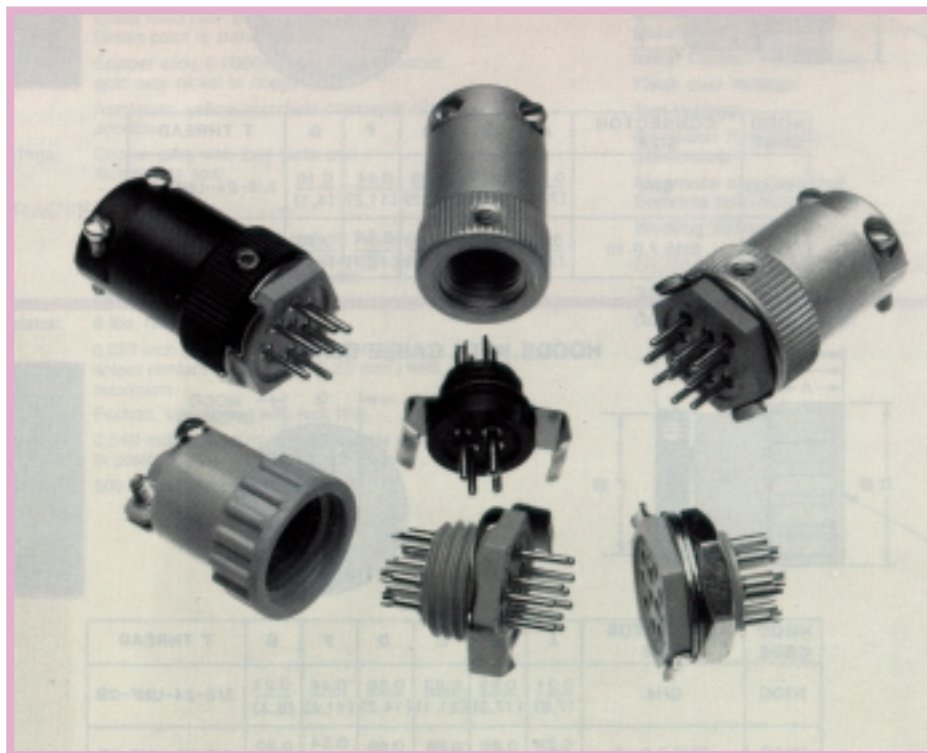


SIZE 4



SIZES 5, 7, 9, & 10

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.



ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify the complete connector by following Steps 1 through 7.
Insert "0" when a step is not used.

STEP	1	2	3	4	5	6	7
	GH	10	M	SC	LRN	0	
STEP 1 - Basic Series GH Series				STEP 7 - Special Customer Requirements * 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.			
STEP 2 - GH Series Connector Variants 4, 5, 7, 9, 10				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.			
STEP 3 - Connector Gender M - Male Insulator F - Female Insulator							
STEP 4 - Contact Termination Type SC - Solder. 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.							

*** NOTE:**
Yellow anodize finish is standard for aluminium parts.

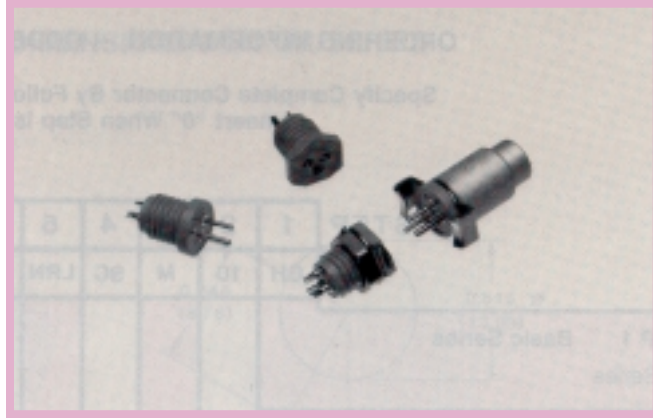
DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

MGH SERIES

PROFESSIONAL QUALITY, MICROMINIATURE, FIXED CONTACT CIRCLE HEX CONNECTORS

Size 22 Contacts
High Performance
Construction
Polarization and
Locking Accessories

U.L. Recognized
File #E49351



MGH Series connectors are microminiature, high reliability connectors. They are available with three contacts for providing polarization: two contacts at 0.030 inch (0.76 mm) diameter, and one contact at 0.040 inch (1.02 mm) diameter. The MGH Series is rated to three amperes per contact. Spacing between contacts is 0.102 inch (2.59 mm), and the face diameter of the connector is 0.312 inch (7.92 mm).

MGH Series connectors are ideally applied where limited space is a concern. MGH Series connectors can be used as cable connectors, panel-mounted connectors, or probes. Constructed of high performance materials, MGH Series connectors are widely used in medical, industrial, military, and automotive applications.

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass-filled DAP per ASTM-D-5948, Type SDG-F. Green color is standard.
Fixed Contacts:	Copper alloy, gold flash over nickel or copper.
Hoods:	Aluminium with yellow or black anodize.
Lock Rings and Lock Springs:	Copper alloy with zinc plate and dichromate seal.

MECHANICAL CHARACTERISTICS:

Fixed Contacts:	
Male:	Two (2) Size 22: 0.030 inch (0.76 mm) diameter contacts, and one (1) Size 20: 0.040 inch (1.02mm) diameter contact.
Female:	Open entry.
Contact Retention in Insulator:	6 lbs. (26.5 N), minimum.
Contact Termination:	0.027 inch (0.69 mm) internal diameter on solder style contact for 24 AWG (0.25 mm ²) wire maximum
Locking Systems:	Friction, lock spring with lock ring.
Polarization:	0.040 inch (1.02 mm) diameter male contact in position "A".
Mechanical Operations:	250 operations per IEC 512-5.

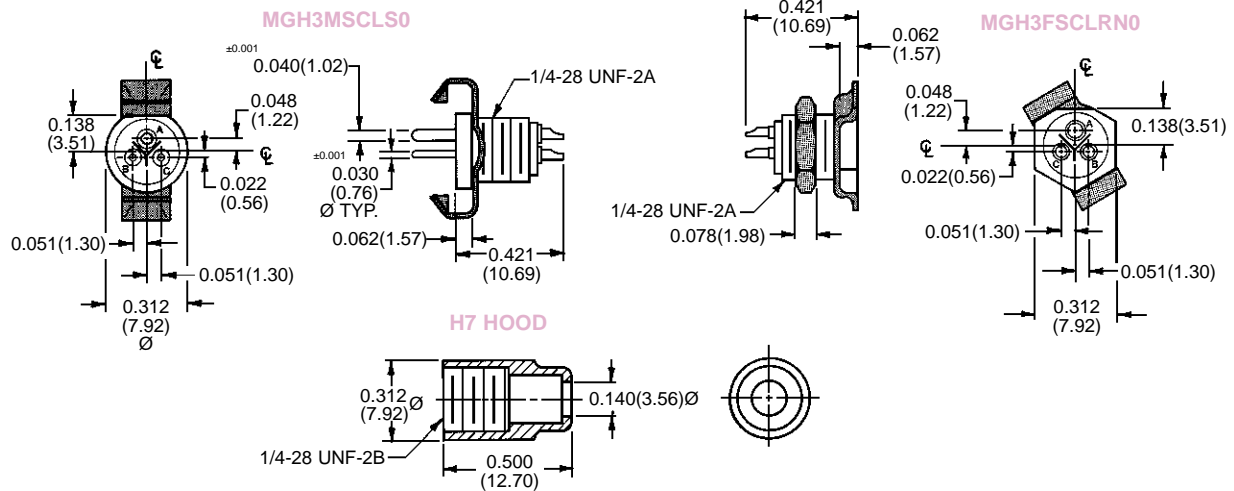
ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	3 amps, maximum.
Initial Contact Resistance:	0.012 ohms, maximum.
Flash over Voltage:	1,500 VAC (rms).
Test Voltage:	1,000 VAC (rms).
Insulation Resistance:	5 G ohms, minimum.
Clearance and Creepage Distance:	0.021 inch (0.53 mm), minimum.
Working Voltage:	250 VAC (rms).

CLIMATIC CHARACTERISTICS:

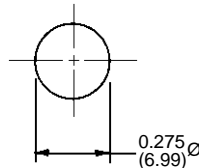
Temperature Range:	-55°C to +125°C.
Damp Heat, Steady State:	21 days.

TYPICAL ASSEMBLIES



PANEL CUTOUTS

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.



ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify the complete connector by following Steps 1 through 7.
Insert "0" when a step is not used.

STEP	1	2	3	4	5	6	7
	MGH	3	M	SC	LRN	0	
STEP 1 - Basic Series MGH Series							STEP 7 - Special Customer Requirements
STEP 2 - MGH Series Connector Variants 3 - Contact Connector Variant							STEP 6 - Cable Adapters (Hoods) H7 - Aluminium hood, yellow anodize. H7B - Aluminium hood, black anodize. 0 - If no hoods are required.
STEP 3 - Connector Gender M - Male Insulator F - Female Insulator							STEP 5 - Mounting and Locking Accessories LR - Lock Ring. LS - Lock Spring. LRN - Lock Ring and Nut. 0 - If no mounting or locking accessories are required.
STEP 4 - Contact Termination Type SC - Solder.							

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