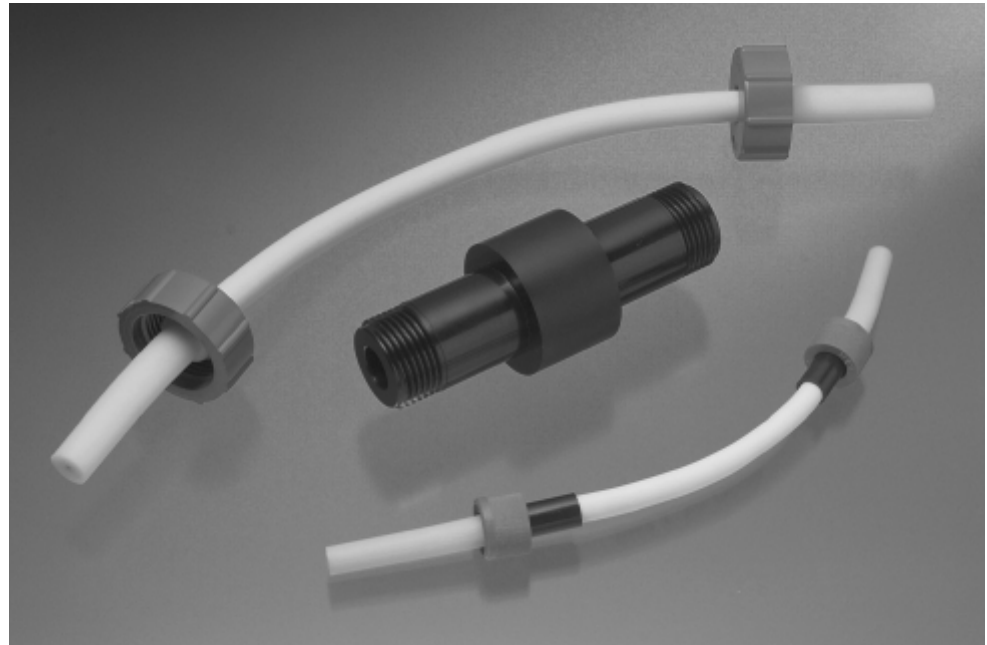


Introduction

Product Facts

- No exposed high voltage parts
- Space saving — maximum performance from small size and weight
- Fast connect and disconnect
- Wide temperature range — -67°F to +257°F [-55°C to +125°C], continuous
- Positive mating of lead into receptacle
- Hermetically sealed
- RFI shielding — optional
- Fungus, moisture, oil, and chemical resistant
- High altitude operation — at any altitude without voltage derating
- Excellent mechanical strength — resists vibration and shock
- High dielectric strength
- Preassembled — no tools required
- High reliability — operates under extreme environmental conditions
- Unaffected by ultra-violet light
- Corona resistant — virtually unaffected by ozone or corona
- Radiation resistant
- Lead wire remains flexible to -67°F [-55°C]
- Non-toxic insulation — does not give off toxic fumes when burned
- Excellent shelf life
- Meets applicable military specifications
- Color coded for easy identification
- Quick, easy installation



The development of high voltage hermetically sealed connectors and LGH High Voltage Lead Assemblies and Receptacles represented two major advances in the science of high voltage application — both pioneered by Tyco Electronics. As a result of this technological advantage, Tyco Electronics is the leading manufacturer of high voltage, high altitude, high temperature lead assemblies and connectors.

In the field of high voltage application, Tyco Electronics

has conducted extensive research, development, quality studies and reliability programs yielding numerous standard products for military and industrial high voltage applications.

LGH High Voltage Lead Assemblies and Receptacles are used in many systems' designed to meet or exceed military specifications. A sampling of specifications to which samples of these products have been tested, is listed to the right.

For more information contact Tyco Electronics.

LGH Test Methods and Conditions

LGH Leads and Receptacles, LGH 1/4 through LGH 4

Product Spec. — 108-36033
EIA RS-364

Electrical

Dielectric Withstanding Voltage — EIA-364-20 Condition I (MS202, Method 301)

Insulation Resistance — EIA-364-21, (MS202, Method 302)

Mechanical

Vibration, Sinusoidal — EIA-364-28, Test Condition I, (MS202, Method 201)

Shock — EIA-364-27, Method H

Environmental

Barometric Pressure — Sea Level to 70,000 feet, MIL-Std-202, Method 105, Condition C

Thermal Shock — EIA-364-32, 5 cycles -67°F to +257°F [-55°C to +125°C]

Lead Assemblies and Receptacles

Voltage Ratings

The voltage ratings tabulated here and noted elsewhere apply to LGH molded-end lead assemblies properly mated with appropriate LGH receptacles, which are properly potted or otherwise protected on the back end.

LGH Lead Assemblies are manufactured with a silicone rubber end having a specified mating length (see above table) molded onto a 16 AWG white silicone rubber wire. These assemblies provide extreme reliability and safety for high voltage applications in severe environments.

Minimum Bend Radii, nominal, for cables without additional covering over silicone insulation and for shielded cable.

LGH Series	Insulation Type	
	Standard	Shielded
1/4, 1/2, 1/2 L	.25 6.4	.75 19.0
1, 1L, 3	.50 12.7	1.00 25.4
2, 4	1.00 25.4	1.50 38.1

Maximum Conductor Resistance

All Series	4.75 ohms/1000 ft. 15.6 ohms/1000m.
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TEFLON is a trademark of E. I. DuPont de Nemours and Company.

Introduction (Continued)

LGH leads and receptacles find wide application where high voltage is used in harsh environments. LGH leads and receptacles are lightweight, miniature, extremely reliable and they maintain peak performance under high temperature, high altitude applications. They are equally applicable to low temperature, low altitude devices.

Leads and receptacles shown on the following pages are commonly used items. Hundreds of variations of these products are available, as well as custom-made units. Consult Tyco Electronics for information on high voltage connectors for applications not satisfied by components listed here.

When ordering LGH items: identify item, list Tyco Electronics part number, and specify quantity. Note: Special packaging, special marking and/or special testing of LGH leads and receptacles are available on request, as well as custom-made assemblies. Consult Tyco Electronics for details.

LGH Series	Mating Length/Depth	Normal Capacitance		Wire Size	Operating Voltage* Kilovolts DC	3 Min. Hipot** Kilovolts DC
		pF/ft.	pF/m			
LGH 1/4	.25 [6.35]	***	—	22 AWG	5	7.5
LGH 1/2	.53 [13.46]	55	180	16 AWG	10	15
LGH 1/2 L	.89 [22.61]	55	180	16 AWG	15	23
LGH 1	.88 [22.35]	35	115	16 AWG	20	30
LGH 1L	1.69 [42.93]	35	115	16 AWG	25	38
LGH 2	1.44 [36.58]	28	144	16 AWG	30	45
LGH 3	1.81 [45.97]	35	115	16 AWG	40	55
LGH 4	2.00 [50.80]	28	144	16 AWG	50	60

*Sea level to 70,000 ft. [21,336 m], -55°C to +125°C [-67°F to +257°F].

**Sea level at 25°C (77°F).

***LGH 1/4 is not shielded

Specifications

Lead Length Tolerance (including pigtail) — Lengths to 24 [609.6], ±.125 [3.28]; 24 [609.6] and longer, ±1% of length.

Lead Insulation — Silicone rubber, durometer reading 60 to 70 (reference MIL-W-16878/8, Type FF); color, white. Lead assemblies with other colors and insulation materials such as PVC and Teflon can be manufactured on request.

Conductors (per MIL-W-16878/8) — LGH 1/2, LGH 1/2 L, LGH 1, LGH 1L and

LGH 3 lead assemblies contain 41 strands minimum of 32 AWG [0.03 mm²] wire, silver plated, to compose a 16 AWG [1.25 mm²] stranded conductor .06 nominal O.D. [1.5]; LGH 2 and LGH 4 lead assemblies contain 19 strands minimum of 29 AWG [0.07 mm²] wire, silver plated, to compose a 16 AWG [1.25 mm²] stranded conductor .06 nominal O.D. [1.5]. Silver plating is per ASTM-B298-58T.

Pigtail — Solder dipped

Socket — Bronze per ASTM-140, alloy B, gold plated per MIL-G-45204,

Type II, (0.000030 [0.00076] gold over 0.000030 [0.00076] nickel per QQ-N-290). Socket is crimped to lead wire.

Cap Materials — Polycarbonate glass-filled polyester or glass-filled epoxy.

Molded End — Silicone rubber per ZZ-R-765, Class IIa and IIb, grade 60.

Positive Stop Ferrule — Glass-filled polyester

Marking — Per MIL-STD-130

Washer — TFE, electrical grade

LGH 1/4 — 22 AWG (19/34)



Single End Lead Assembly



Single End Lead Assembly with Positive Stop Ferrule



Shielded Lead Assembly



RFI Shielded Lead Assembly

Introduction (Continued)

LGH Receptacles are manufactured in molded glass epoxy having a specified mating depth (see table on previous page). When used with LGH lead assemblies they offer the ultimate in dependability, even under harsh environmental conditions. Typical receptacles are shown here. Specific units, with part numbers, are shown by series in the following pages.

LGH Receptacles for Canned Units

These receptacles are for hermetically sealed, gas- or oil-filled units, and they are recommended for canned units filled with potting compound.**

**CAUTION: Follow manufacturer's instructions on preparing and handling potting. LGH voltage ratings apply only when a proper bond is achieved between the back end of the receptacle and the compound.

LGH Receptacles for Cast or Encapsulated Units

These units are for use where no metal can is required.

Specifications (All units)

Pin Assembly — Brass per ASTM-B-16 and QQ-B-626; tin plated per MIL-T-10727, Type I or II, .00010" min. thickness.*

Body — Molded glass-filled epoxy

Marking — Per MIL-STD-130

(Canned units only)

Solder Flange — Brass per ASTM-B-16 and QQ-B-626; tin plated per MIL-T-10727, Type I or II, .00010" min. thickness

Hermeticity — Leak rate less than 1×10^{-8} cc He/sec. per MIL-STD-202, Method 112B, Cond. C.

*Hermetically sealed receptacles are plated after molding therefore we cannot guarantee the minimum thickness of copper under plating .000100 [0.00254] on the mating end of the pin contact.



Glass-epoxy receptacle for encapsulated units



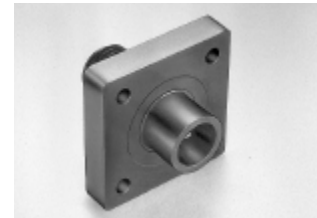
Glass-epoxy receptacle for splice application



Hermetically sealed, glass-epoxy receptacle for canned units



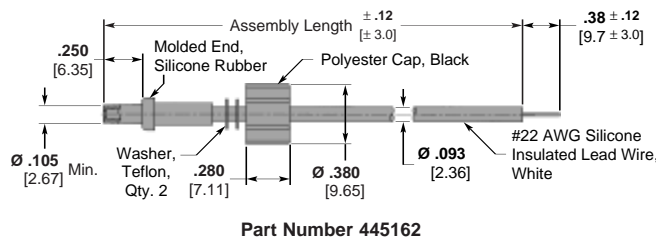
Glass-epoxy, flanged receptacle for bulkhead splice applications



Glass-epoxy, flanged receptacle for bulkhead applications

LGH Lead Assemblies and Receptacles, 5 KVDC, LGH 1/4

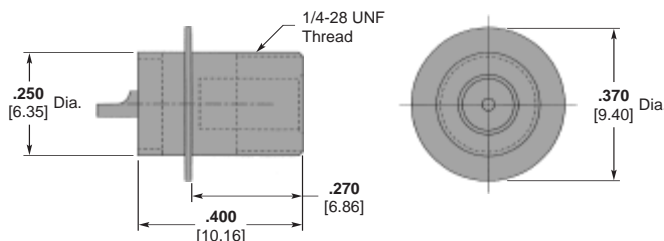
Single End Lead Assemblies



Assembly Length	Part Number
6.0	445162-1
152.4	445162-2
12.0	445162-2
304.8	5-445162-2*
18.0	445162-3
457.2	445162-3
24.0	445162-4
609.6	445162-4

*RoHS compliant Part Number.

Receptacle, Metal Flange



Part Number 445159-1 and Part Number 5-445159-1 (RoHS)