

LSH Series

High Power Rack & Panel Connectors



Hypertac® Hyperboloid Technology

Smiths Interconnect offers an extensive range of superior contact technologies suitable for standard and custom solutions. Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance.

The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths.



Features

Benefits

Low insertion/extraction forces

The angle of the socket wires allows tight control of the pin insertion and extraction forces. The spring wires are smoothly deflected to make line contact with the pin.

High density interconnect systems

Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and unmating forces.

Long contact life

The smooth and light wiping action minimizes wear on the contact surfaces. Contacts perform up to 100,000 insertion/extraction cycles with minimal degradation in performance.

Low cost of ownership

The Hypertac contact technology will surpass most product requirements, thus eliminating the burden and cost of having to replace the connector or the entire subsystem.

Lower contact resistance

The design provides a far greater contact area and the wiping action of the wires insures a clean and polished contact surface. Our contact technology has about half the resistance of conventional contact designs.

Low power consumption

The lower contact resistance of our technology results in a lower voltage drop across the connector reducing the power consumption and heat generation within the system.

Higher current ratings

The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.

Maximum contact performance

The lower contact resistance of the Hypertac contact reduces heat build-up; therefore Hypertac contacts are able to handle far greater current in smaller contact assemblies without the detrimental effects of high temperature.

Immunity to shock & vibration

The low mass and resultant low inertia of the wires enable them to follow the most abrupt or extreme excursions of the pin without loss of contact. The contact area extends 360° around the pin and is uniform over its entire length. The 3 dimensional symmetry of the Hypertac contact design guarantees electrical continuity in all circumstances.

Reliability under harsh environments

Harsh environmental conditions require connectors that will sustain their electrical integrity even under the most demanding conditions such as shock and vibration. The Hypertac contact provides unmatched stability in demanding environments when failure is not an option.

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The LSH rack and panel connector series from Smiths Interconnect is utilised across many different market segments including aerospace, automotive, industrial, test and measurement, and mass transit.

The foundation upon which the LSH is built is the leading-edge Hypertac® hyperboloid technology. This world class interconnect technology ensures LSH connectors are immune to shock, vibration and fretting. In addition, it features the low insertion and extraction forces that are a catalyst for easy mating. The LSH Series delivers customers a contact life cycle that can be maintained up to 100,000 mating cycles and at an extremely low cost of ownership.

Immune to
shock, vibration
and fretting

Features & Benefits

- 200 Amps per contact
- 1 to 6 contacts
- Low mating forces
- Polyphenylene sulfide (PPS) insulators
- Radial float 0.049" (1.25 mm)
- 0.241" (6.12 mm) contacts
- Threaded terminals
- Single row 0.925" (23.50 mm) pitch
- Blind mate capability

Technical Characteristics

Number of Rows	1
Pitch	0.925" (23.50 mm)
Contact Positions	1 to 6
Contact Termination	Threaded
Nominal Current	200 Amps per contact
Nominal Pin Diameter	0.241" (6.12 mm)
Resistance	< 0.10 mΩ
Contact Life Cycles	up to 100,000

Mechanical & Environmental

Contact Style/Termination	Threaded
Operating Temperature	-55°C to 125°C
Extraction Force	80 to 160 oz. max per contact

Material & Finishes

Insulator	Polyphenylene sulfide (PPS)
Contact	Beryllium copper
Contact Plating	Gold over nickel

Electrical

Current Rating	200 Amps per contact
DWV	3,000 V RMS
Breakdown Voltage	4,000 V RMS
Insulation Resistance	> 10 ⁶ MΩ at 500 VDC

How To Order



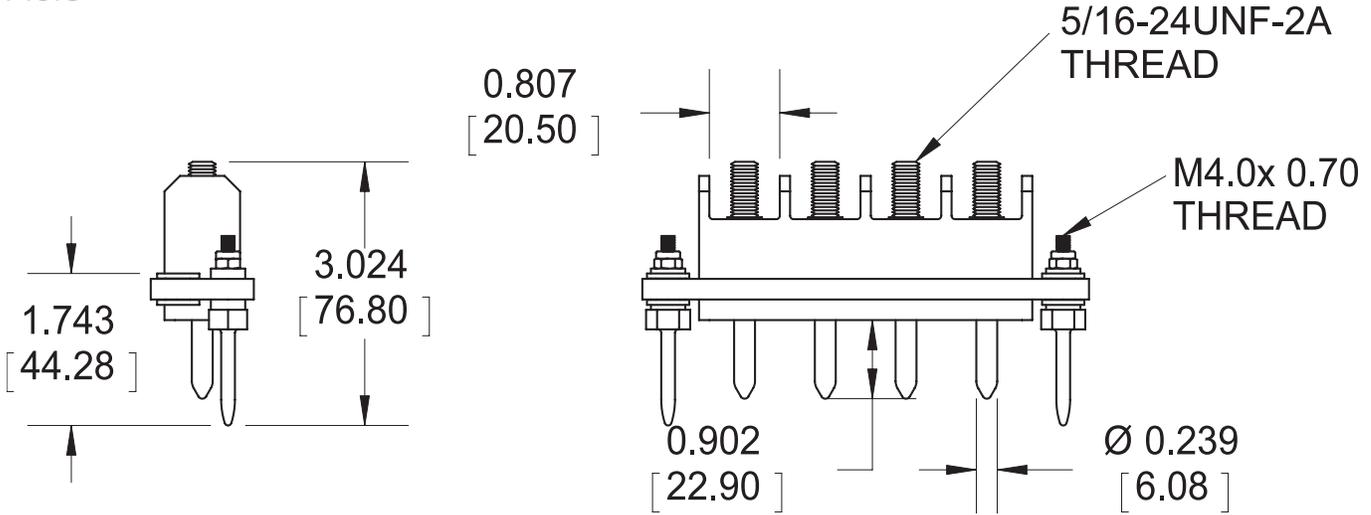
1 Series	LSH <i>[Fixed]</i>
2 Number of contacts	01 02 03 04 05 06 Contacts
3 Contact Gender	M Male F Female
4 Plating	<p>TG 10 µin gold (min) over nickel (male contacts only)</p> <p>TH 50 µin gold (min) over nickel (male contacts only)</p> <p>TAH 50 µin gold (min) over nickel on mating surface, gold flash over nickel on termination (female contacts only)</p>



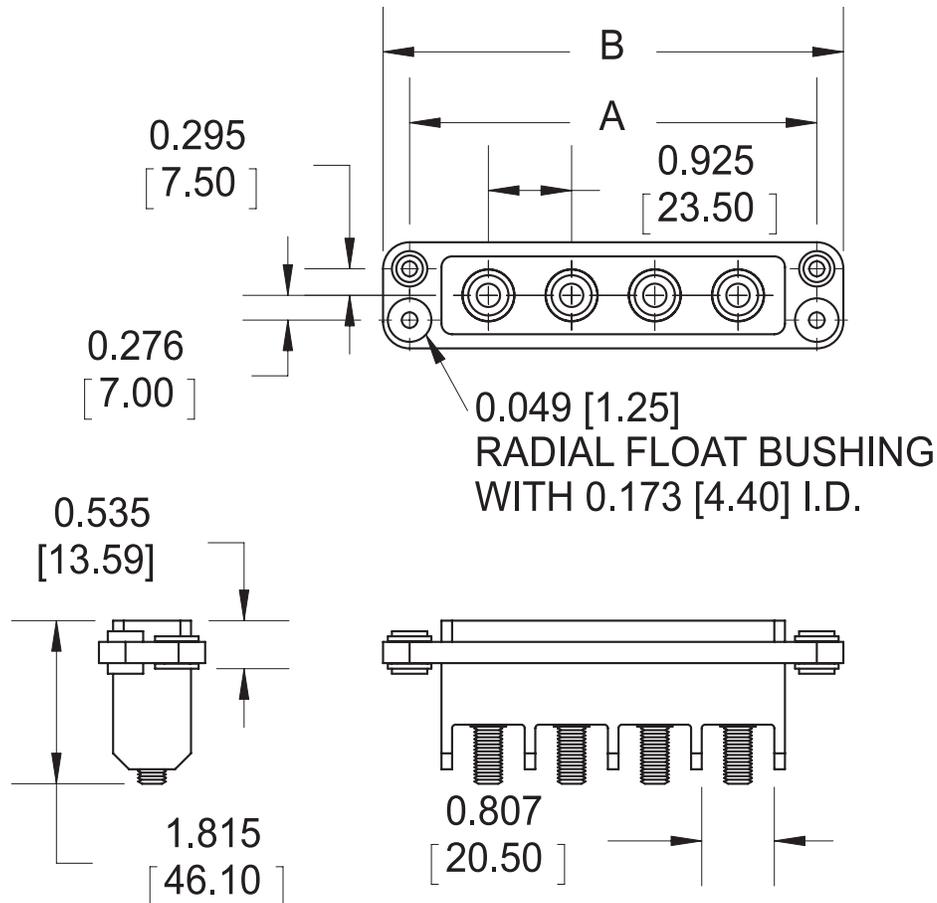
Dimensions

Connector Dimensions

Male

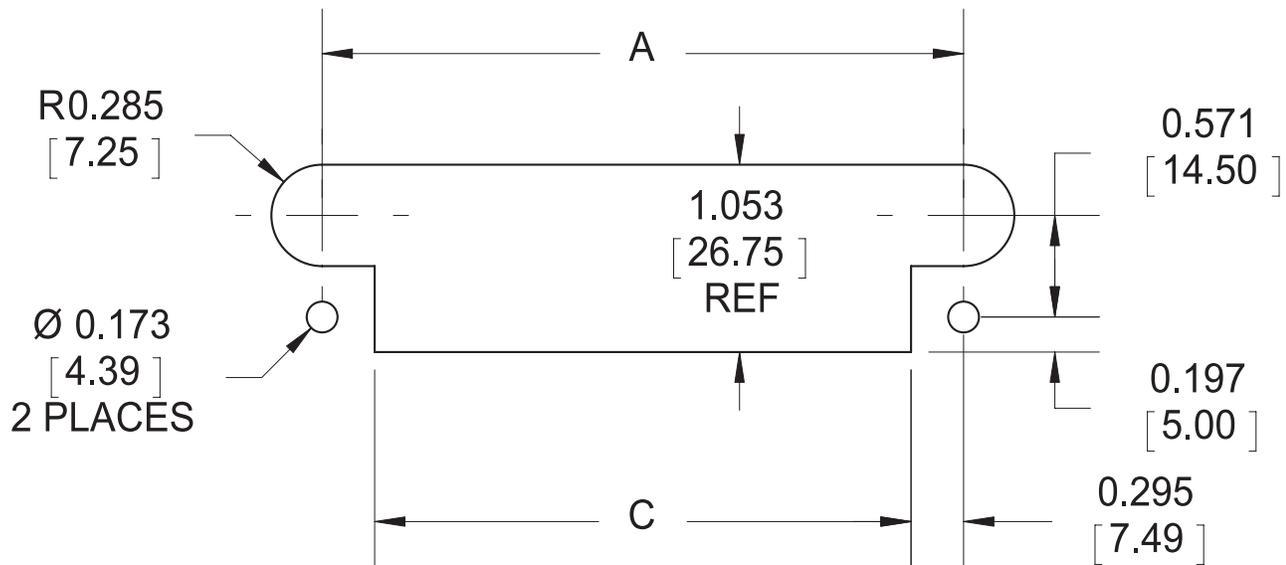


Female



Mounting Dimensions

As seen from wiring side of plug and mating side of receptacle



Number of Contacts	A	B	C
1	1.752 [44.50]	2.342 [59.50]	1.161 [29.50]
2	2.677 [68.00]	3.268 [83.00]	2.087 [53.00]
3	3.602 [91.50]	4.193 [106.50]	3.012 [76.50]
4	4.528 [115.00]	5.118 [130.00]	3.937 [100.00]
5	5.453 [138.50]	6.043 [153.50]	4.862 [123.50]
6	6.378 [162.00]	6.969 [177.00]	5.787 [147.00]

Disclaimer

All of the information included in this catalog is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application and be sure that each product is properly installed, used and maintained to achieve desired results.

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