AERCO

HOW CAN I HELP?

smiths interconnect

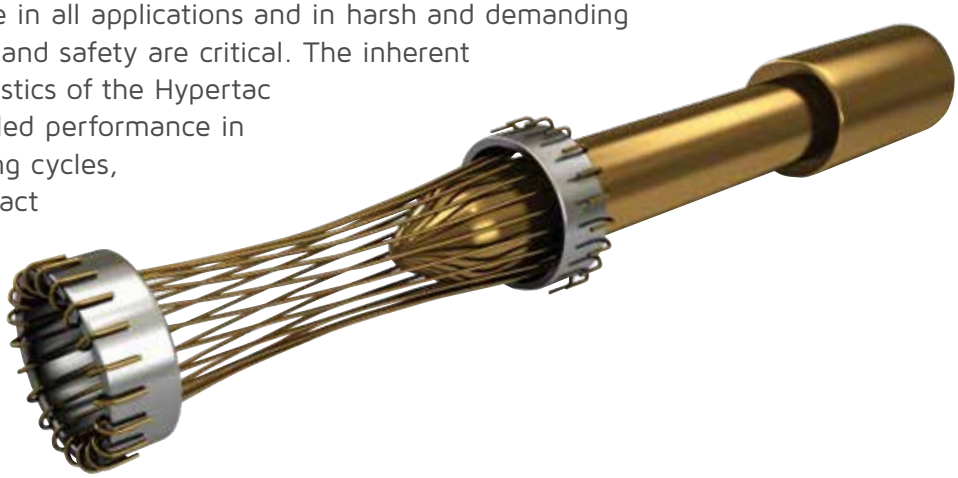
bringing technology to life

HBB Series

High Power, Quick Release Circular 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

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.

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.

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.

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.

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.

Benefits

High density interconnect systems
Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and un-mating forces.

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.

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.

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.

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.

HBB Series

High Power Circular Connectors

Designed for use in high-power applications

The Smiths Interconnect's HBB single pole, circular connectors Series combine high current handling capability with small size and exceptional performance in harsh environments.

Designed for use in all types of high-power applications, the HBB Series is particularly suitable for electric drives used in fighting vehicles, unmanned vehicles, rail transport and industrial applications.

High currents can be easily transmitted with the smallest possible size: Size 17, single-pole, attains 300A and size 21, single-pole, 500A with high reliability and excellent integrity. Using the Hyperboloid contact technology, HBB connectors produce contact resistance figures as low as 0.03mΩ, which help in reducing resistive losses. This both eases the task of thermal management and allows better power handling in a smaller space with a lower overall mass.

HBB connectors combine a simple push-on mating process with a more traditional bayonet un-mating mechanism. The connectors are designed to lock simply by pushing the plug until the user hears a click, which is combined with tactile feedback, giving confirmation that the plug is locked. To un-mate the connector, the user simply twists the sleeve of the plug and pulls. The connectors are marked with red points, making it easier for the user to visually line up the plug for mating.

Offered in a black zinc-nickel shell, the connectors are sealed to IP67 and feature 360° EMI/RFI shielding.

They have a polarized design with options that ease assembly, allowing simple maintenance and quick changeover. Configurations are available in cable or panel mount, straight or right angle back shells which allow users to simplify their cable management architecture, further increasing reliability and reducing the likelihood of interconnection failures.

Features & Benefits

High Reliability Solution

- 300A and 500A High power handling in a smaller space
- 5000 mating cycles
- Low contact resistance, less than 0.05mΩ
- Shock and vibration immunity

Easy of assembly and of use

- Gender reversible
- Polarised system
- Minimal component count
- Quick release latching mechanism
- Simple maintenance and speedy changeover

Ideal for harsh environment conditions

- 360° EMI/RFI shielding
- Sealed IPx7 and IP6K9K when mated
- Safe solution with finger protection
- Compliant to MIL-DTL-5015

Smart and flexible design

- RoHS compliant Black Zinc Nickel, zinc-cobalt plated or nickel plated shells
- Cable and panel mount variants
- Ergonomic, low weight design

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How To Order

H	B	B						H												
1			2	3			4	5			6	7			8	9		10		11

1 Series	HBB Series *[fixed]*
2 Shell gender	P Plug R Receptacle
3 Standard variations	000 Non variant 0C0 Rear mount receptacle with conductive panel o-ring 0M0 Front mount receptacle with conductive panel o-ring *(not available with backshell option B)* 0MS Front mount receptacle with short lug/busbar contact and conductive panel o-ring *(not available with backshell option B)* 0N0 Front mount receptacle with non-conductive panel o-ring *(not available with backshell option B)* 0NS Front mount receptacle with short lug/busbar contact and non-conductive panel o-ring *(not available with backshell option B)*
4 Shell material	A High strength aluminium alloy body, zinc-cobalt plated B High strength aluminium alloy body, electroless nickel plated E High strength aluminium alloy body, black zinc-nickel (1)
5 Shell size	17 Size 17 (300 Amp) 21 Size 21 (500 Amp)
6 Contact type	H Hypertac® hyperboloid
7 Nominal current rating	130 1 pole / 300 Amp 150 1 pole / 500 Amp
8 Contact termination options	* Contact to accept cable crimped directly on contact axis. *(See table "Straight exit crimp contacts" D, H, K, Q, S, V on following page)* L Contact to accept bolted termination e.g. lugged cable (lug ordered separately, see "Accessories - Crimp lug codes") or busbar. Also order this option for a plug with right angle backshell
9 Contact gender	X Pin, gold plated (ISO 27874/Au 99.9%, AMS-C-26074 Class 1) Y Socket, gold plated (ISO 27874/Au 99.9%, AMS-C-26074 Class 1)
10 Shell polarising	A Polarised code A, contact cap black B Polarised code B, contact cap orange C Polarised code C, contact cap blue
11 Backshell options	0 No backshell A Right-angle backshell (plug only) B Straight backshell, available on plugs and receptacles with crimp contact only

Note:
(1) Please consider that Black Zinc Nickel is by default the standard shell material and more readily available

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