

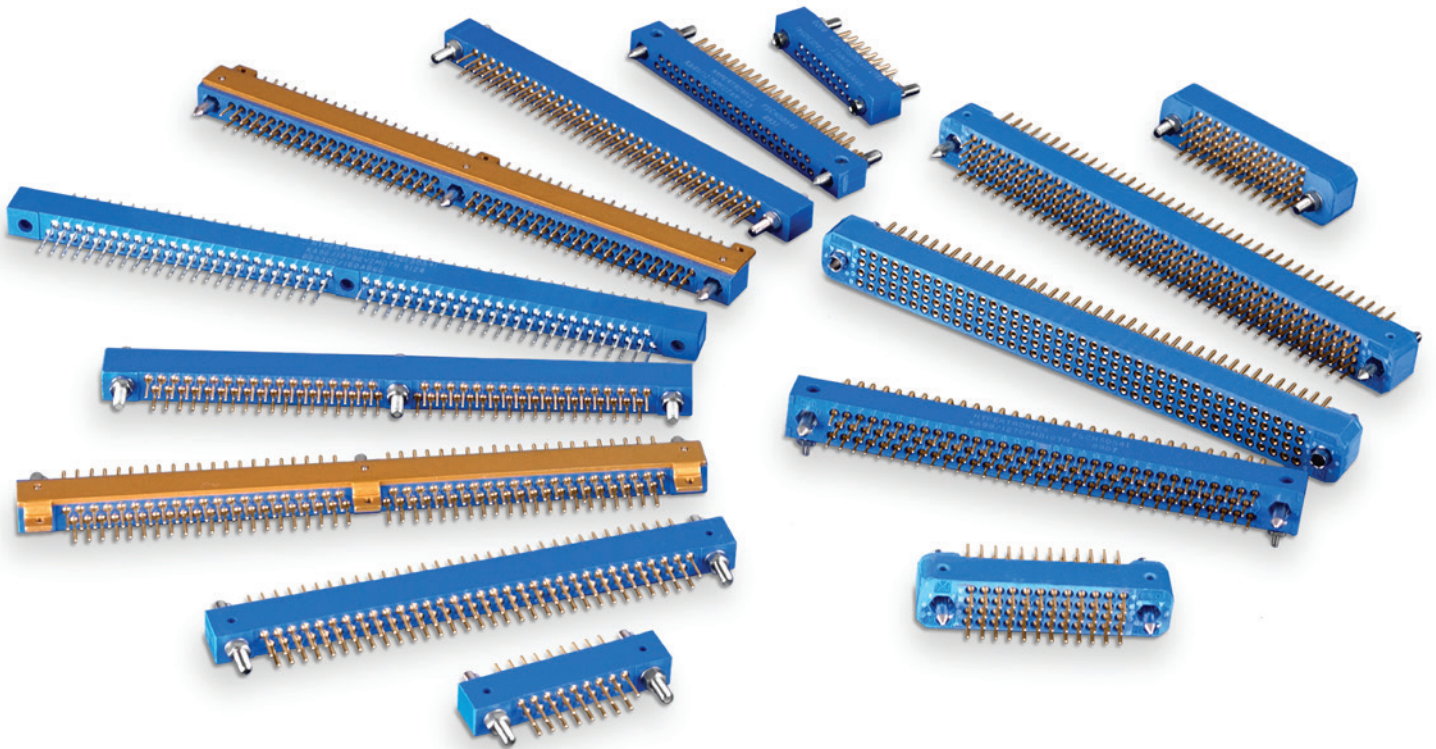


HOW CAN I HELP?

smiths interconnect

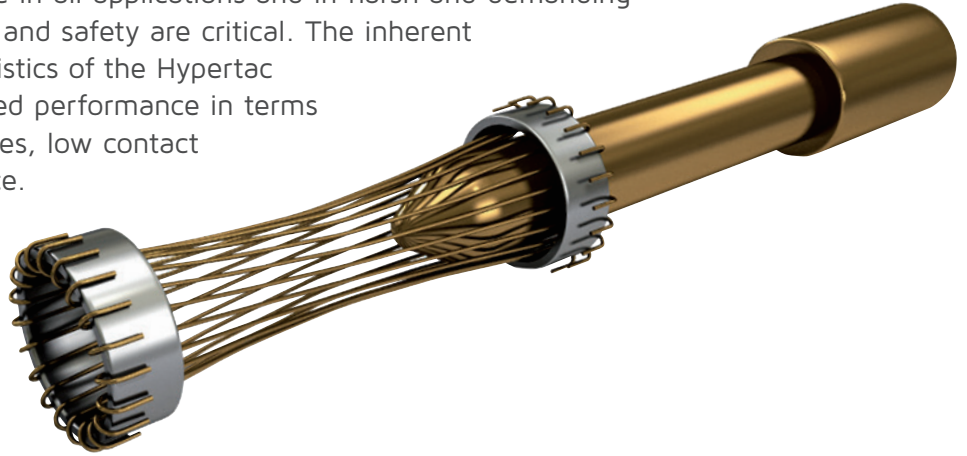
# KA Series

MIL-DTL-55302 Compliant PCB 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 ensure 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. These 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 un-mating 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.

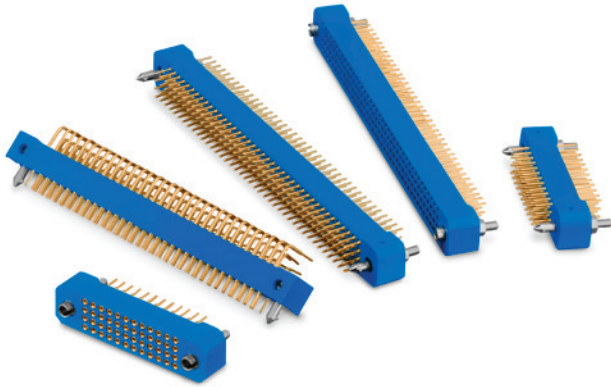
### Immunity to shock & vibration

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.

# KA Series



The KA Series connector family is part of Smiths Interconnect's portfolio of interconnect solutions designed and developed for rugged applications in the military, aerospace and commercial aviation markets. The KA Series is a highly engineered connector family that has gained a reputation for reliability under all varieties of extreme environmental conditions.

Utilizing the field-proven capabilities of the Hypertac® hyperboloid contact technology, the KA Series provides immunity to detrimental fretting due to shock and vibration, industry leading mating cycles and durability in a connector that meets the performance requirements of MIL-DTL-55302. With more than 2,500 configurations, the KA Series provides design flexibility not available with other MIL-DTL-55302 connectors. Additionally, the KA Series supports a current rating of up to 9 Amps per contact, low contact resistance and minimal insertion and extraction forces.

The technological innovation that Smiths Interconnect has designed into the KA Series enables it to provide a significant edge in demanding military, aerospace and commercial aviation operating environments where performance and reliability is essential.



HOW CAN I HELP?

[www.aerco.co.uk](http://www.aerco.co.uk)  
[sales@aerco.co.uk](mailto:sales@aerco.co.uk)  
 +44 (0) 1403 260206

**High reliability  
PCB connectors  
for demanding  
applications**

## Features & Benefits

**Meets performance requirements of MIL-DTL-55302**

### Design flexibility

- Ruggedized connector with straight through-hole solder, right angle PCB solder, crimp, solder cup, and Wire-Wrap® termination options
- Offered in 2 to 5 row configurations with pin counts from 17 to 490 contacts
- End guides provide alignment and 36 user-changeable keying combinations
- Male and female contacts and guides available in either plug or receptacle

**0.024 [0.60mm] diameter contacts rated at 4 Amps nominal, individual contacts are rated at up to 9 Amps (see technical characteristics).**

### Pitch of 0.100 [2.54] on center

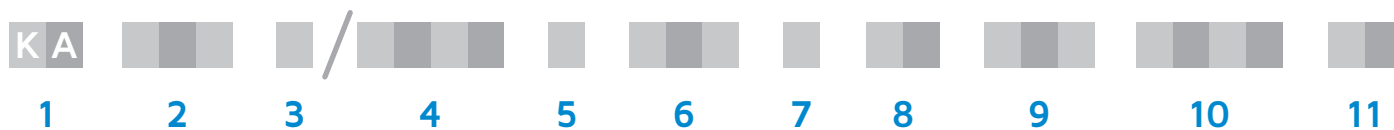
- Adjacent rows offset by 0.05 [1.27] to allow straight printed circuit traces in 2 & 3 row connectors only

**Average insertion/extraction force of 1 oz. per contact**

### Contacts removable from wiring side

- Front release, rear removable
- Front removable option available only on select contact configurations

# How To Order



<b>1 KA Series</b>	[Fixed]
<b>2 Number contacts</b> 2 & 3 Row connectors	17 29 33 41 53 62 65 72 80 84 96 98 120 126 160 Contacts
4 & 5 Row connectors	48 68 96 120 125 128 136 140 160 184 196 200 208 228 230 240 264 300 320 330 352 390 392 490 Contacts <sup>(1)</sup>
<b>3 Contact variants</b> <i>(Omit for standard versions)</i>	.1 For 3 row 80.1 contact version only .4 For 3 row 160.4 contact front removable receptacle only
<b>4 Number rows</b>	/ 1 2 7 B 2 Rows / 1 2 7 C 3 Rows / 2 5 4 D 4 Rows / 2 5 4 E 5 Rows
<b>5 Insulator</b>	P Plug E Receptacle
<b>6 Locking mounting hardware</b> <i>(Omit for non-locking hardware)</i> <i>(Reference pags. 24-28 for intermatibility)</i>	V1 V2 V3 V4 V6 V7 V8 V9 V15 V30 V31 V32 V33 Locking mounting styles
<b>7 Contact gender</b>	M Male F Female
<b>8 Terminal styles</b>	B 90° 0.125 [3.18] PCB C 90° 0.063 [1.59] PCB D Straight PCB DD Short Straight PCB FD Front removable D contacts H2 Double crimp <sup>(2)</sup> R Crimp S Solder W Wire wrap [2 wraps] Y Wire wrap [3 wraps]
<b>9 Mounting hardware</b> No hardware Mounting styles	00 10 11 12 13 14 21 23 24 101 111 131
<b>10 Termination plating</b>	T 10µin. [0.25 µm.] Gold (min) over Nickel [ <i>male only</i> ] TH 50µin. [1.27 µm.] Gold (min) over Nickel [ <i>male only</i> ] TAH 50µin. [1.27 µm.] Gold (min) over Nickel on mating surface [ <i>female only</i> ] TB or TBH Tin lead option for PC style contacts <sup>(3)</sup> [ <i>male only</i> ] TABH Tin lead option for PC style contacts [ <i>female only</i> ]
<b>11 Keying orientation</b>	A1 [ <i>Omit for default keying positions: C&amp;3 for 2&amp;3 row connectors, F&amp;3 for 4&amp;5 row connectors</i> ]

## Notes:

1) Special sizes from 48 to 392 (4 row) and from 60 to 490 (5 row) are available. Please consult factory.

2) Crimp contacts will be shipped unloaded. When inserting contacts into the insulator, be sure the two flats at the rear of the contact body are aligned with the flats in the insulator.

3) "TB" is "T" with tinned tails, "TBH" is "TH" with tinned tails.