

ZEUS

POWER CONNECTORS

ZEUS POWER CONNECTOR TECHNOLOGY

ZEUS power connectors are available in various contact configurations and layouts. Using IEH Hyperboloid contact technology and MIL-DTL-38999 III architecture the connectors can also withstand high vibration with no loss of continuity. Zeus Power Connectors can also be supplied with filtered power contacts.

Other layouts can be designed to customer specification with applications up to 260 Amps DC possible.

These connectors have been developed to fill the gap where a standard catalogue item is not able to meet high power and high vibration requirements. NYKCS have designed a range of connectors to meet these specific needs.

ZEUS POWER PART NUMBERS

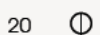
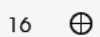
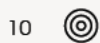
PART NUMBER	ZP	00	F	21	72	P	N
SHELL STYLE		00 07 06					
		Wall Mount Jam Nut Plug					
MATERIAL & FINISH							
	F	Aluminium, Electroless Nickel					
	W	Aluminium, Cadmium Olive Drab					
	Z	Aluminium, Zinc Nickel					
	K	Stainless Steel, Passivated					
	BN	Aluminium, Black Nickel					
	BZ	Aluminium Bronze					
SHELL SIZE							
		11 17 21 23 25					
INSERT LAYOUTS		See table below					
CONTACT STYLE	P	Pin					
	S	Socket	(Hyperboloid Contact)				
SHELL KEYRING		N, A, B, C, D OR E					



	11-01	17-52	21-75	21-42
Service rating	M	M	I	I
No. of contacts	1	2	4	2
Contact size	8	8	8	4



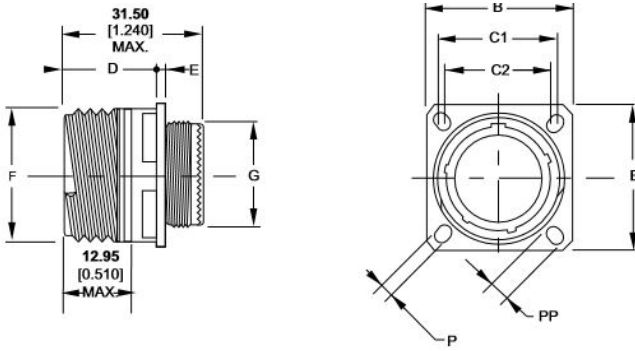
	21-72	21-48	23-06
Service rating	I	M	M
No. of contacts	2 6	4	6
Contact size	4 16	8	8



	25-08	25-11	25-1A
Service rating	M	N	M
No. of contacts	8	9 2	4 4
Contact size	8	10 20	4 16

ZP SHELL STYLES

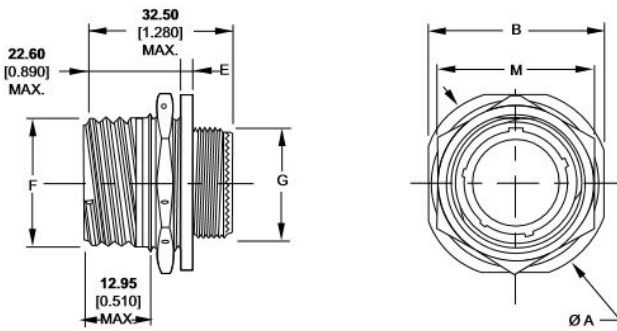
Shell Style ZP00



Shell Size	B	C1	C2	D Max.	E Max.	F	G	P	PP
09	23.80	18.26	15.09	20.90	2.50	15.75	11.90	3.25	5.49
	0.937	0.719	0.594	0.823	0.098	0.620	0.469	0.128	0.216
11	26.20	20.62	18.26	20.90	2.50	18.90	14.90	3.25	4.93
	1.031	0.812	0.719	0.823	0.098	0.744	0.587	0.128	0.194
13	28.60	23.01	20.62	20.90	2.50	22.10	17.90	3.25	4.93
	1.126	0.906	0.812	0.823	0.098	0.870	0.705	0.128	0.194
15	31.00	24.61	23.01	20.90	2.50	25.25	21.90	3.25	4.93
	1.220	0.969	0.906	0.823	0.098	0.994	0.862	0.128	0.194
17	33.30	26.97	24.61	20.90	2.50	29.95	24.90	3.25	4.93
	1.311	1.062	0.969	0.823	0.098	1.179	0.980	0.128	0.194
19	36.50	29.36	26.97	20.90	2.50	31.55	27.90	3.25	4.93
	1.437	1.156	1.062	0.823	0.098	1.242	1.098	0.128	0.194
21	39.70	31.75	29.36	20.10	3.20	34.70	30.90	3.25	4.93
	1.563	1.250	1.156	0.791	0.126	1.366	1.217	0.128	0.194
23	42.90	34.93	31.75	20.10	3.20	37.90	33.90	3.91	6.15
	1.689	1.375	1.250	0.791	0.126	1.492	1.335	0.154	0.242
25	46.00	38.10	34.93	20.10	3.20	41.10	36.90	3.91	6.15
	1.811	1.500	1.375	0.791	0.126	1.618	1.453	0.154	0.242

Millimeters Inches

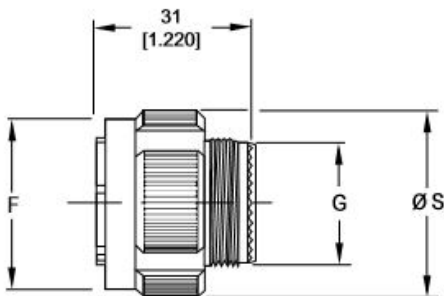
Shell Style ZP07



Shell Size	A	B	E	F	G	M Max.
09	30.20	27.00	2.20	15.75	11.90	24.00
	1.189	1.063	0.087	0.620	0.469	0.945
11	34.90	31.80	2.20	18.90	14.90	27.00
	1.374	1.252	0.087	0.744	0.587	1.063
13	38.10	34.90	2.20	22.10	17.90	32.00
	1.500	1.374	0.087	0.870	0.705	1.260
15	41.30	38.10	2.20	25.25	21.90	36.00
	1.626	1.500	0.087	0.994	0.862	1.417
17	44.50	41.30	2.20	29.95	24.90	37.00
	1.752	1.626	0.087	1.179	0.980	1.457
19	49.20	46.00	3.00	31.55	27.90	41.00
	1.937	1.811	0.118	1.242	1.098	1.614
21	52.40	49.20	3.00	34.70	30.90	46.00
	2.063	1.937	0.118	1.366	1.217	1.811
23	55.60	52.40	3.00	37.90	33.90	50.00
	2.189	2.063	0.118	1.492	1.335	1.969
25	58.70	55.60	3.00	41.10	36.90	51.23
	2.311	2.189	0.118	1.618	1.453	2.017

Millimeters Inches

Shell Style ZP06



Shell Size	F Max.	G	S Max.	Mass (g) by Shell Type		
				Al	SS	Composite
09	18.40	11.90	21.80	15	36	9
	0.724	0.469	0.858			
11	21.10	14.90	25.00	20	50	13
	0.831	0.587	0.984			
13	25.40	17.90	29.40	27	64	18
	1.000	0.705	1.157			
15	28.70	21.90	32.50	34	80	23
	1.130	0.862	1.280			
17	32.20	24.90	35.70	37	88	25
	1.268	0.980	1.406			
19	34.90	27.90	38.50	48	102	32
	1.374	1.098	1.516			
21	38.10	30.90	41.70	55	117	35
	1.500	1.217	1.642			
23	41.10	33.90	44.90	67	131	41
	1.618	1.335	1.768			
25	44.30	36.90	48.00	71	145	48
	1.744	1.453	1.890			

Millimeters Inches

CONTACT TECHNOLOGY

ZEUS power connectors use Hyperboloid contact technology with MIL-DTL-D38999 III architecture to allow currents of up to 280 Amps DC to be passed.

The Hyperboloid contact is an advanced design that satisfies performance requirements previously considered impossible. The distinguishing feature of the socket is the hyperboloid shaped sleeve formed by straight wires strung at an angle to the longitudinal axis. When the pin is inserted into this sleeve, the wires stretch, well within elastic limits, to accommodate it. In so doing, the wires wrap themselves around the pin providing several continuous line contact paths.



The contact design provides:

Very Low Insertion Force: Common sizes #22 and on average under one ounce per contact.

- Extraordinary Resistance to Shock & Vibration: Tests exceeding 300 g's without discontinuity.
- Duty Cycle Exceeding 100,000 Mate/De-mate: The burnishing action of the wires on the pin surface is non-destructive.
- Low, Low Contact Resistance: Excellent interface exhibiting low contact resistance (often less than 1/2 of MIL Spec. allowances).
- Improved Current Carrying Capacity: The low contact resistance gives a lower °C rise from ambient under load. This feature often allows the user to operate the same size contact under higher load.
- Highest Reliability: The contact design has proven itself to be the leading design for integrity and reliability.

Finishes

Pin Contacts:

Gold per ASTM B488 Type II, Class 0.25, 0.50, or 1.27, Code C, over Nickel, 0.000050 min., per SAE AMS QQ-N-290 over Copper per SAE AMS 2418 or ASTM B734

Socket Contacts:

Contact Wires: Gold per ASTM B488 Type II, Class 1.27, Code C, over Nickel, 0.000050 min., per SAE AMS QQ-N-290 over Copper per SAE AMS 2418 or ASTM 734

Materials

Pin Contacts:

PhBr per ASTM B139, BeCu per ASTM B196 or B197, or Cu alloy

Socket Contacts:

Contact Wires: BeCu per ASTM B196, or B197
Termination: PhBr per ASTM B139 or Cu alloy Support Elements: Cu alloy

Termination:

Gold per ASTM B488 Type II, Class 0.25, or 0.50, Code C, over Nickel, 0.000050 min., per SAE AMS QQ-N-290 over Copper per SAE AMS 2418 or ASTM B734 Support Elements: Nickel, 0.000050 min., over Copper

PERFORMANCE

Contact Resistance:

See Chart - EIA-364-06 & MIL-DTL-55302 (par. 4.5.5)

Temperature:

-65°C to +125°C (-86°F to +257°F)

Mating Force:

See Chart - MIL-DTL-55302 (par. 4.5.4)

De-mating Force:

See Chart - MIL-DTL-55302 (par. 4.5.4)

Solderability:

(Where Applicable) IPC/EIA J-STD-002, Category 3

Humidity:

IAW EIA-364-31, Method IV, except 7A & 7B (not required)

Vibration:

IAW EIA-364-28 & MIL-DTL-55302 (par. 4.5.10)

Shock:

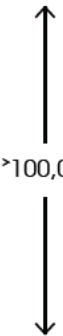
IAW EIA-364-27 & MIL-DTL-55302 (par. 4.5.14)

Salt Spray:

IAW EIA-364-26 & MIL-DTL-55302 (par. 4.5.11)

Temperature Cycling:

IAW EIA-364-32 & MIL-DTL-55302 (par. 4.5.13)

CONTACT SIZES*				CURRENT RATING		CONTACT RESISTANCE	INSERTION FORCE (AVG)	LIFE CYCLES
Series	Inch	mm	Gauge (MIL-C-39029)	@30°C Rise Amps DC	@120°C Rise Amps DC	Milliohms	Ounces	 >100,000
3000	0.030	0.76	22 AWG	8	N/A	<5.0	1.0	
4000	0.040	1.00	20 AWG	13	N/A	<2.5	1.0	
6200	0.062	1.57	16 AWG	15.5	29	<2.5	2.5	
7800	0.078	2.00	14 AWG	18.5	37	<1.5	2.5	
9300	0.093	2.36	12 AWG	27	40	<1.0	9.0	
1250	0.125	3.18	10 AWG	41	76	<0.75	18.0	
1420	0.142	3.61	8 AWG	57	116	<0.5	19.0	
3570	0.357	9.07	0 AWG	180	260	<0.25	122.0	

* Contact size equivalent to mating pin diameter
Other contact sizes available for custom arrangements

All information contained herein is believed to be reliable as of the date of publication and is subject to change without notice.

FLEXIBLE POWER CABLES FROM HABIA

These flexible Hi-Flex power cables are ideal for use with ZEUS connectors and the range supports both military and commercial applications. All our solutions come with insulated power cores for flexible use and are built using high-temperature insulation materials to provide an increased current rating.

The Hi-Flex cables are also mechanically robust and ensure a long flex-life by reducing strain on cable terminations and the Mean Time Before Failure (MTBF) of each cable. The Hi-Flex range was initially designed for use in military Hybrid Electric Drive (HED) vehicles to meet an increasing demand for higher power ratings without the usual increase in copper size and weight. As a military product, our flexible power cables combine several key characteristics for this market, including:



With the growing demand for hybrid and fully electric vehicles, Habia has developed a cost efficient, high performance cable variant: The Hi-Flex ZH. Aimed at the commercial sector, cables offer the same power levels with the added benefits of a fully low smoke, zero-halogen, and flame-retardant solution.

Hi-Flex

TPS 125 XL insulated power cores for flexible use
Standard range from: 1mm² to 4mm² (300V) - 6mm² to 400mm² (600V) - 6mm² to 95mm² (1000V), 30 to 1554 Amps DC in free air @ 30°C



Hi-Flex ZH

HFI 121 XL insulated power cores for flexible use, LSZH Standard range from: -1mm² to 4mm² (300V) - 6mm² to 400mm² (600V), 30 to 1554 Amps DC in free air @ 30°C



Hi-Flex ZH - STJ 1

HFI 121 XL insulated & sheathed, shielded single cores for flexible use, LSZH Standard range from: - 6mm² to 120mm² - 1 Core - Screened - Sheathed, 98 to 599 Amps DC in free air @ 30°C



FURTHER DETAILS ON THE CONTACTS CAN BE REQUESTED FROM NYKCS

NYK offers the answer for clients seeking fast turnaround and non-biased product selection.

- Ad hoc requirement to full consolidation agreements
- QPL listed assembling distributor
- Prototypes / Specials connectors and backshells
- Short lead times
- Alternative supply of special products (non-biased)
- Product design
- Consignment inventory Sub-tier supplier management
- Fast quote turnaround on our complete electrical / electro-mechanical portfolio
- Fully approved to AS9100 Rev D & AS9120 Rev B

Franchises and Associates

Ametek
Amphenol
Caplugs
Cinch
Conesys
Corsair
Deutsch
DMC
EMCA
Glenair
Habia Cable
Hellermann Tyton
Hermetic Seal
IEH

ITT
Cannon
Martec
Polamco
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aerospace
sector
certification
scheme

