



ROBUST

- Signal and power contacts in same housing
- Up to four 150 A or one 300 A high-current contacts
- Threaded coupling with self-locking mechanism for anti-vibration
- 100% scoop-proof design

RELIABLE

- Excellent contact retention under severe vibration
- Dedicated sealed backfitting and cable support grommet
- Interfacial sealing helps provide protection against aggressive fluid and dust ingress

EMI PROTECTION

- RFI/EMI shielding fingers at mating interface

EASY TO USE

- Rear removable crimp contacts
- Standard AS39029 Size 20 contacts for signals
- Space saving with integral power and signal wires

DTS-HC High-Current Connectors



38999 Series III-Style Connectors

DEUTSCH DTS-HC high-current circular connectors provide power connections in the familiar 38999 form factor. They are optimized for use in harsh high-vibration environments where space is at a premium.

With integral power and signal wires in some configurations, the connectors also help save space and give you a variety of versatile contact termination options.

Rated to 175°C, DTS-HC connectors are the rugged choice for high-temperature applications. In addition, interfacial sealing helps provide protection from dust and aggressive fluids, while shielding fingers at the mating interface provide excellent EMI and RFI protection.



Specifications

MATERIALS

- **Shell/Coupling Ring:** High-strength aluminum alloy
- **Plating:** Nickel (standard), olive drab cadmium, or zinc cobalt
- **Insulators:** High-performance thermoplastic
- **Seals:** Fluorinated silicone
- **Contacts:** Gold-plated copper alloy

ENVIRONMENTAL/MECHANICAL

- **Temperature:** -65°C to +175°C
- **Vibration:** Random, 50-2000 Hz, 5 g²/Hz (per MIL-DTL-38999)
- **Dielectric Withstand Voltage:** 1500 VAC
- **Insulation Resistance:** 5000 MΩ min., 500 VDC,
- **Durability:** 500 mating cycles
- **Altitude:** 30,000 m (100,000 ft.) max.

CURRENT RATING, CONTINUOUS

- **Size 00 Contact:** 300 A
- **Size 4 Contact:** 150 A
- **Size 20 Contact:** 7.5 A

POWER CABLE CONDUCTOR TYPE

- **Size 4:** 4 AWG, 8 mm², 16 mm² and 25 mm² conductor
- **Size 00:** 70 mm²

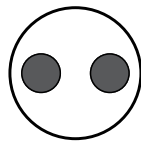
CONFIGURATIONS

- **Size 21 Shell:** 2 Size 4 power contacts
- **Size 23 Shell:** 1 Size 00 power contact
- **Size 23 Shell:** 2 Size 4 power contacts and 3 Size 20 contacts
- **Size 25 Shell:** 4 Size 4 power contacts and 4 Size 20 contacts

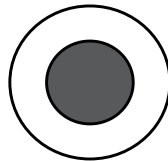
DTS-HC High-Current Connectors

38999 Series III-Style Connectors

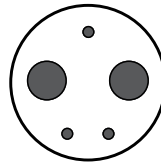
Insert Arrangements



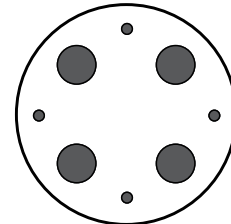
21-240
2 Size 4 Contacts



23-100
One Size 00 Contact

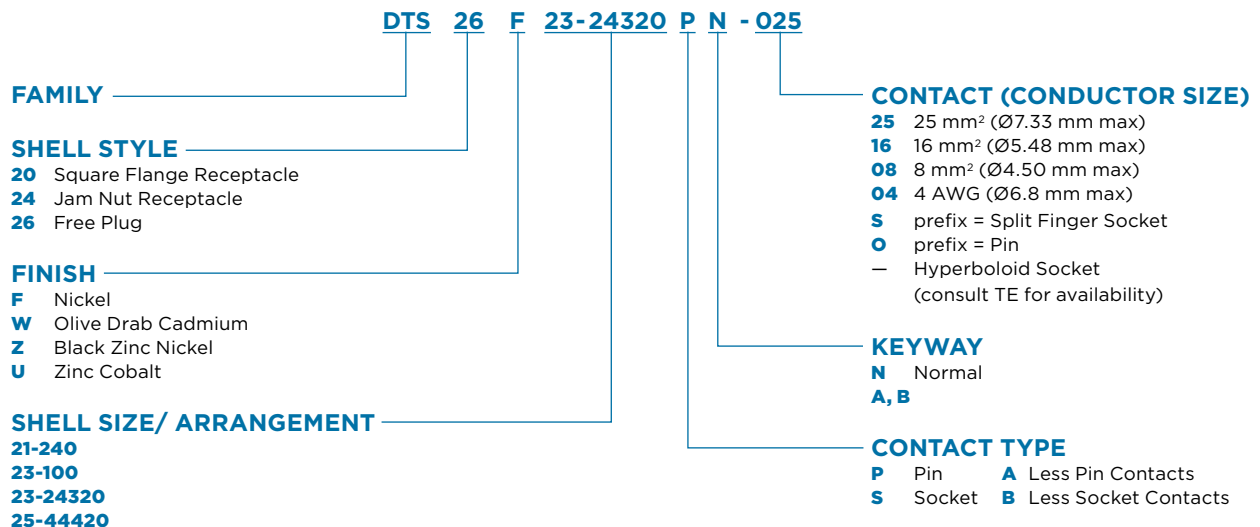


23-24320
2 Size 4 Contacts
3 Size 20 Contacts



25-44420
4 Size 4 Contacts
4 Size 20 Contacts

Part Numbering

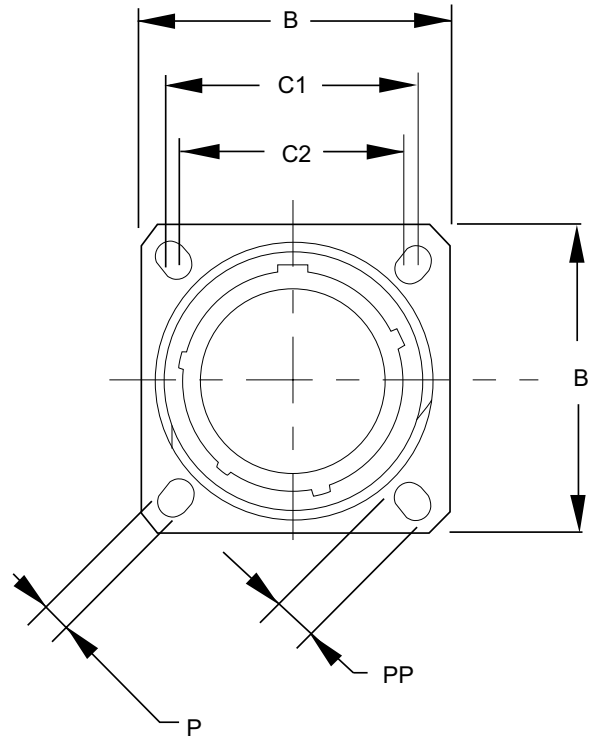
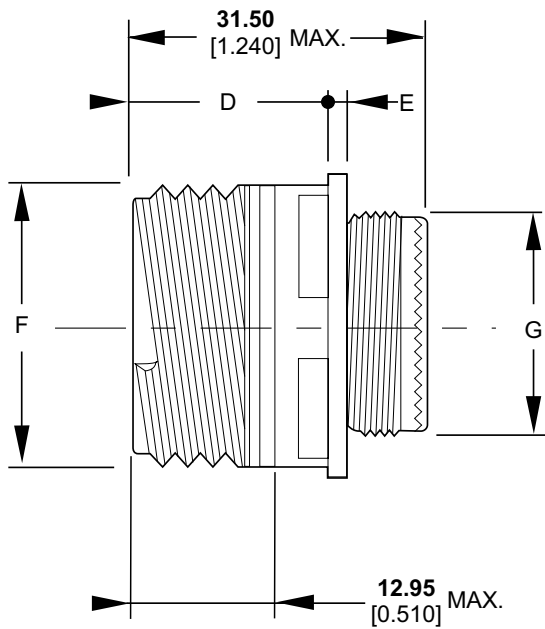




DTS-HC High-Current Connectors

38999 Series III-Style Connectors

Square Flange Receptacle Type 20



Shell Size	B	C1	C2	D Max.	E Max.	F	G	P	PP
21	39.70 1.563	31.75 1.250	29.36 1.156	20.10 0.791	3.20 0.126	34.70 1.366	30.90 1.217	3.25 0.128	4.93 0.194
23	42.90 1.689	34.93 1.375	31.75 1.250	20.10 0.791	3.20 0.126	37.90 1.492	33.90 1.335	3.91 0.154	6.15 0.242
25	46.00 1.811	38.10 1.500	34.93 1.375	20.10 0.791	3.20 0.126	41.10 1.618	36.90 1.453	3.91 0.154	6.15 0.242

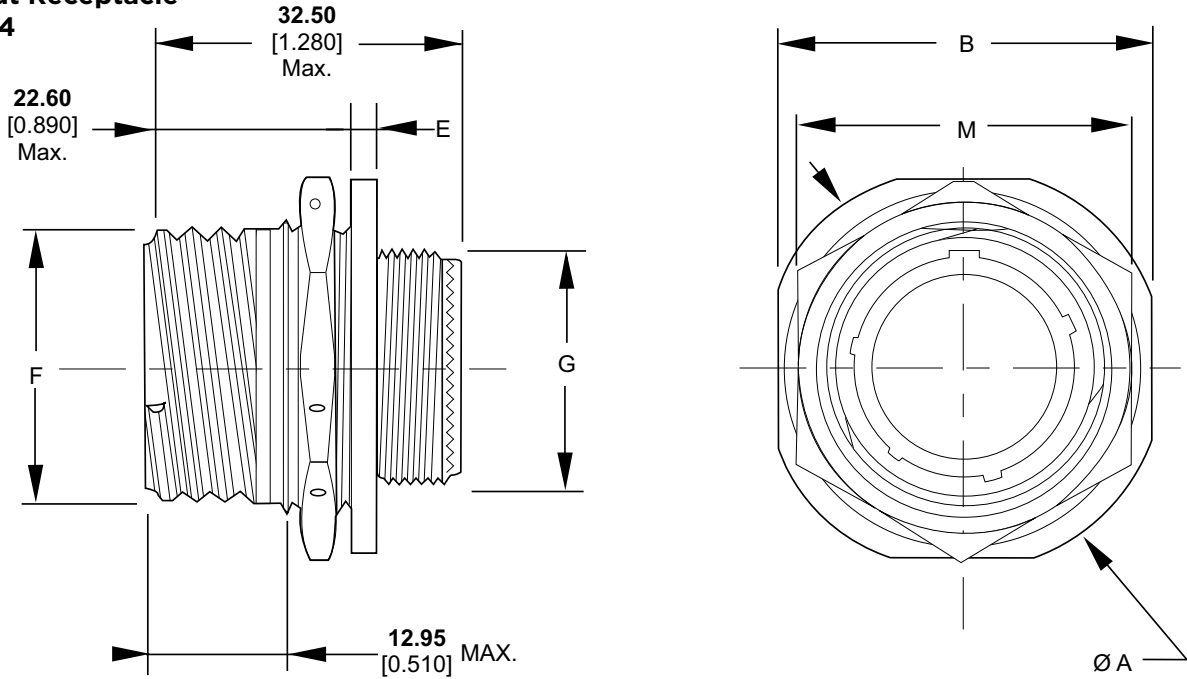
Millimeters Inches



DTS-HC High-Current Connectors

38999 Series III-Style Connectors

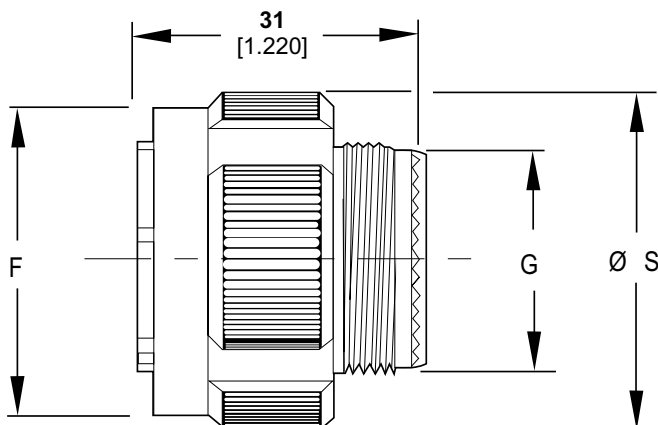
Jam Nut Receptacle Type 24



Shell Size	A	B	E Max.	F	G	M Max.
21	52.40 2.063	49.20 1.937	3.99 0.157	34.70 1.366	30.90 1.217	46.00 1.811
23	55.60 2.189	52.40 2.063	3.00 0.118	37.90 1.492	33.90 1.335	50.00 1.969
25	58.70 2.311	55.60 2.189	3.00 0.118	41.10 1.618	36.90 1.453	51.23 2.017

Millimeters Inches

Plug Type 26



Shell Size	F Max.	G	S Max.	Mass (g)
21	38.10 1.500	30.90 1.217	41.70 1.642	55
23	41.10 1.618	33.90 1.335	44.90 1.768	67
25	44.30 1.744	36.90 1.453	48.00 1.890	71

Millimeters Inches



DTS-HC High-Current Connectors

38999 Series III-Style Connectors

Contacts

Contact Size	Conductor	Pin	Socket	Crimp Tool	Dieset or Positioner	Contact Removal Tool
20	24 - 20	38941-20	38943-20	M22520/2-01	M22520/2-10	M81969/14-10
8	6 mm ²	611091	611089	M22520/23-01	M22520/23-09	611218
	14 mm ²	605345-01-31	605344	Consult TE for Tooling		
4	4 AWG	611102	611103	D51	31040	610136-TOOL
	25 mm ²	605660	611103-025			
	16 mm ²	605734	611103-016			
	8 mm ²	611102	611103			
00	70 mm ²	610304	601365	Consult TE for Tooling		
00 Bus Bar	**	610364	610299	—	—	—

** Consult TE



HIGH PERFORMANCE

- Up to 1000 A capability
- Rugged 38999-style connector and shell systems
- Rated -65°C to +175°C

CONVENIENT

- Variety of shell sizes
- Choose from straight or 90° configurations
- Threaded coupling and screened crimp termination options

EASY ASSEMBLY

- Simple adjustment of angled backshells (no special tooling)
- Low mating force
- Conductive jam nut O-ring option available

POLAMCO High-Power Connectors



38999-Style Connectors for Harsh Military Environments

The POLAMCO high-power connector family provides a simple and effective way of terminating power cables in a harsh environment military connector system.

POLAMCO high-power connectors are optimized for cable sizes ranging from 50 mm² up to 240 mm², and are available in shell sizes 19 through 25, depending on the cable being terminated.

Rated to 175°C, these high-power MIL-DTL-38999 Series I and III-style connector systems give you a variety of versatile options including threaded termination or a screened crimp, with straight or 90° orientation.



Specifications

MATERIALS

- **Shell:** High-strength aluminum alloy, nickel aluminum bronze, or stainless steel
- **Contact Body:** Silver-plated copper alloy

- **Seals:** Silicone elastomer
- **Insulators:** Thermoplastic: PPS-GL40, UL94V-0
- **Plating Finishes:**
 - Olive drab cadmium
 - Black zinc nickel
 - Electroless nickel
 - Zinc cobalt
 - (Contact TE for additional finishes)

Plating Code	Plating Description	RoHS Compliant	Environmental Protection Conductivity
B	Olive drab cadmium (5-10 μm) QQ-P-416, Type II, Class 3 over electroless nickel	No	500 hours salt spray
C	Electroless nickel, AMS-C-26047, Class 4, Grade B	Yes	48 hours salt spray
ZB	Zinc cobalt (5-10 μm) over electroless nickel (2.5-7.5 μm) with an olive drab chromate conversion	Yes	350 hours salt spray
ZN	Passivated black zinc nickel (5-12 μm) over electroless nickel (8-12 μm), ASTM B 841 Class 1	Yes	500 hours salt spray
ZK	Zinc cobalt (5-10 μm) over electroless nickel (2.5-7.5 μm) with a black chromate conversion	Yes	500 hours salt spray

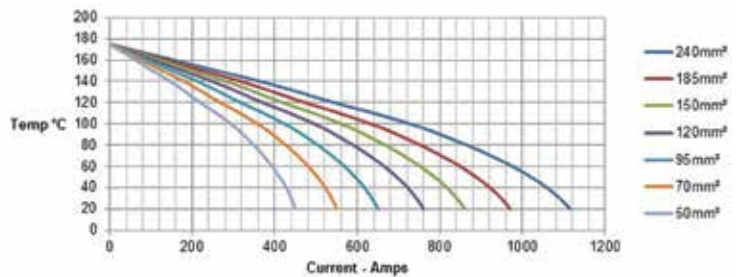
ELECTRICAL

- **Voltage:** 1800 VAC / 60 Hz (service rating 1)
- **Shell Continuity:** <5 mΩ
- **Current Rating (Approx. @ 40°C ambient):**
 - Shell Size 25:** 1000 A, <22 μΩ
 - Shell Size 23:** 800 A, <25 μΩ
 - Shell Size 21:** 600 A, <30 μΩ
 - Shell Size 19:** 400 A, <38 μΩ
- **Contact Resistance (Approx. @ 40°C ambient):**
 - Shell Size 25:** <22 μΩ
 - Shell Size 23:** <25 μΩ
 - Shell Size 21:** <30 μΩ
 - Shell Size 19:** <38 μΩ

ENVIRONMENTAL/MECHANICAL

- **Durability:** 500 mating cycles
- **Vibration:** 6 hours in 3 axis, full current load (Def-Stan 0035)
- **Shock:** 500 m/s², 11 ms half sine
- **Temperature:** -65°C to +175°C
- **Sealing:** IP68 (2 m for 0.5 hour)
- **Salt Spray:** Up to 500 hours (depending on material/finish)

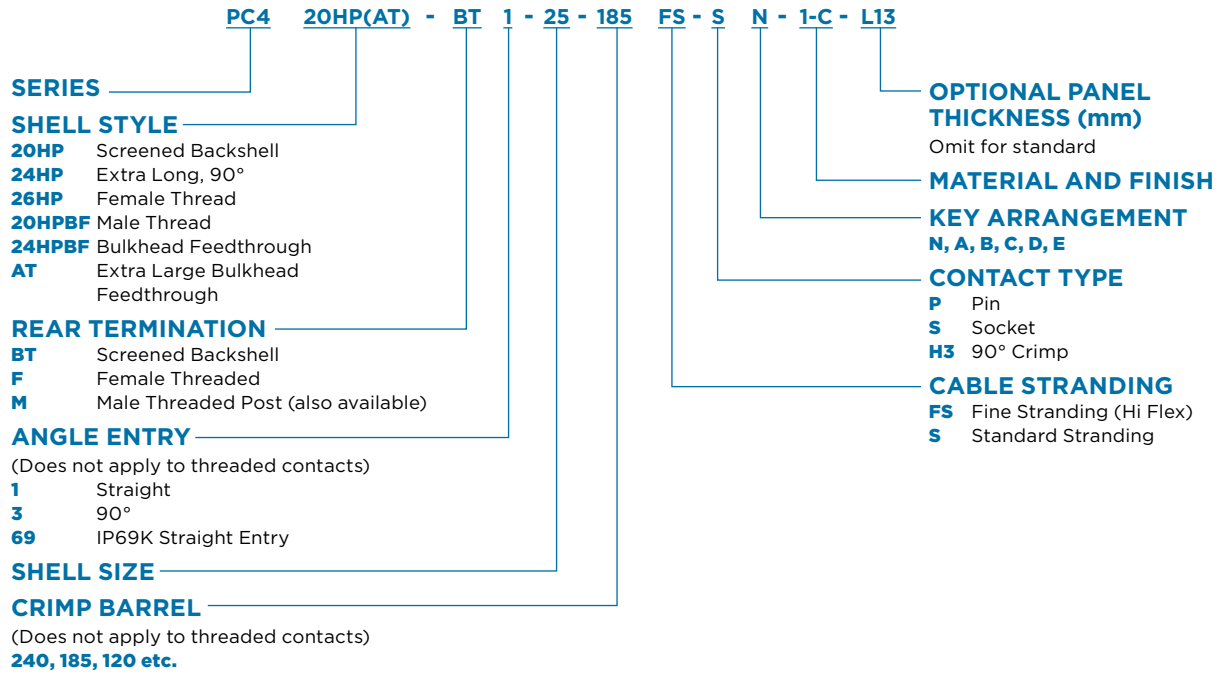
CRIMP CONTACT CURRENT DE-RATING





POLAMCO High-Power Connectors

Part Numbering



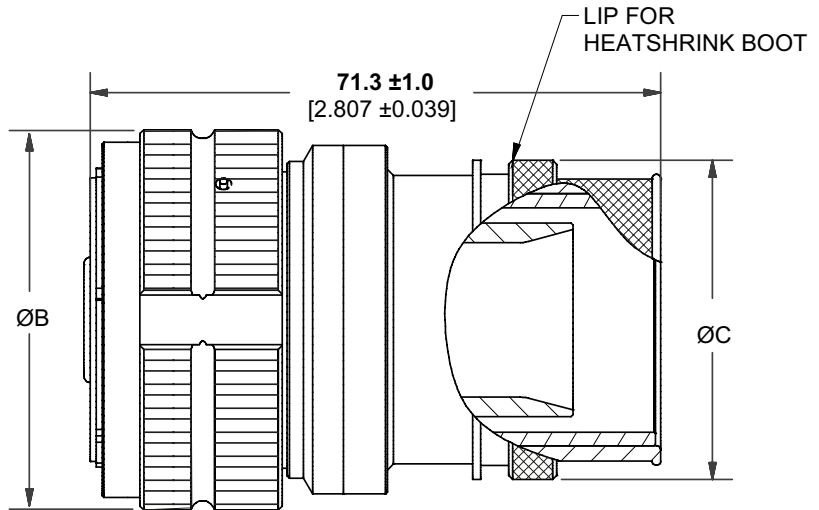
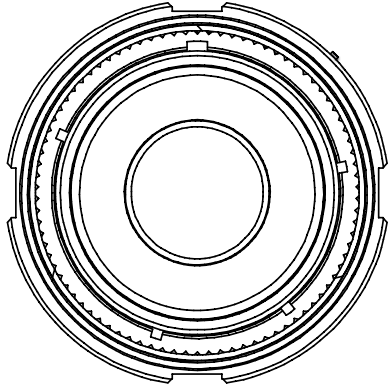
Material Description Codes

Material Code	Material Description
1	Aluminum Alloy 6262 / 6082
2	Nickel Aluminum Bronze DGS 1043 / NES 833 (Marine Applications)
4	Stainless Steel 303 S31 / 304
46	Stainless Steel 316



POLAMCO High-Power Connectors

Shielded Straight Plugs



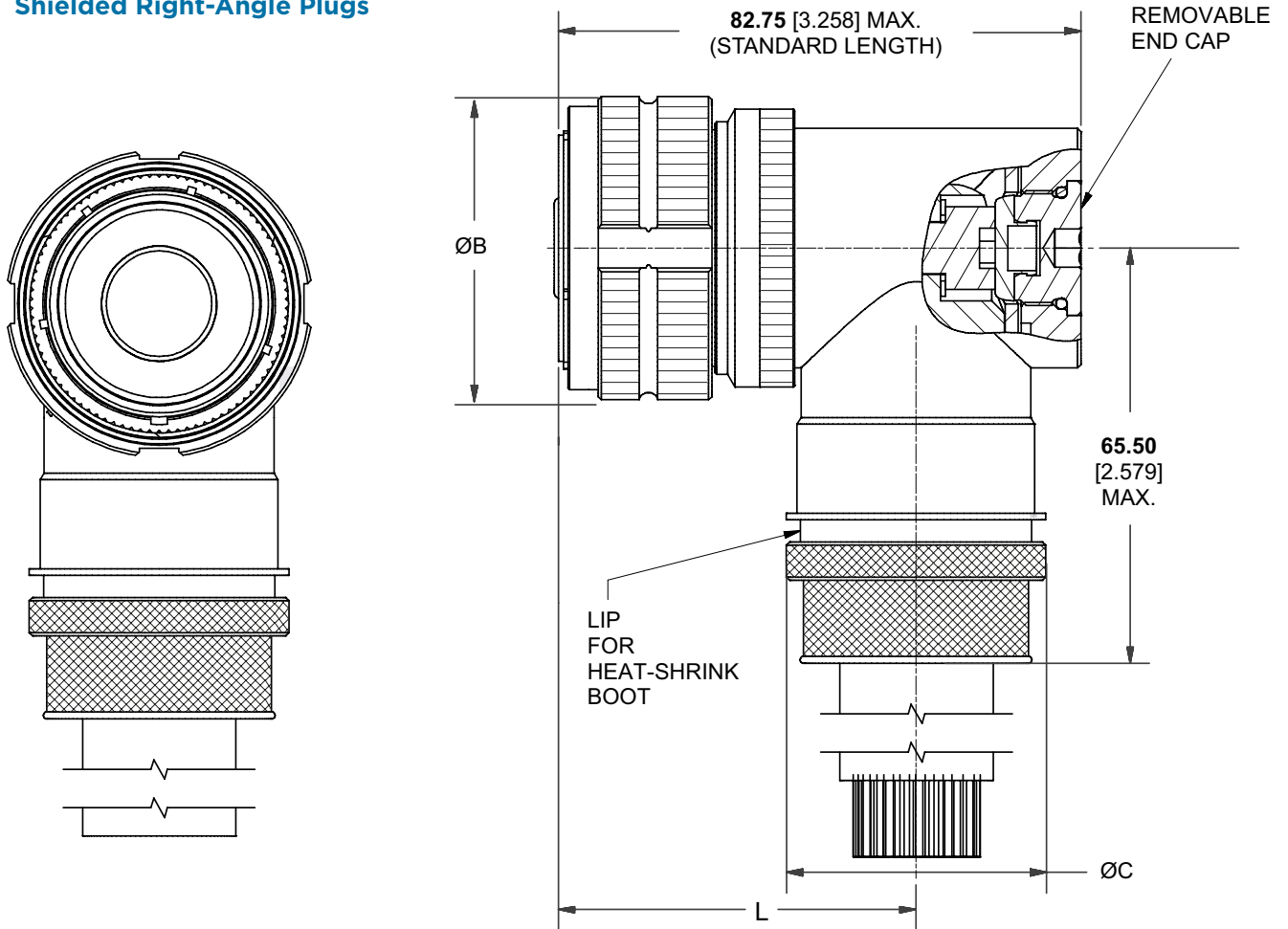
Shell Size	ØB Max.	ØC Max.
19	38.50 1.516	27.60 1.087
21	41.70 1.642	31.10 1.224
23	44.90 1.768	36.00 1.417
25	48.00 1.890	39.84 1.569

Millimeters Inches



POLAMCO High-Power Connectors

Shielded Right-Angle Plugs



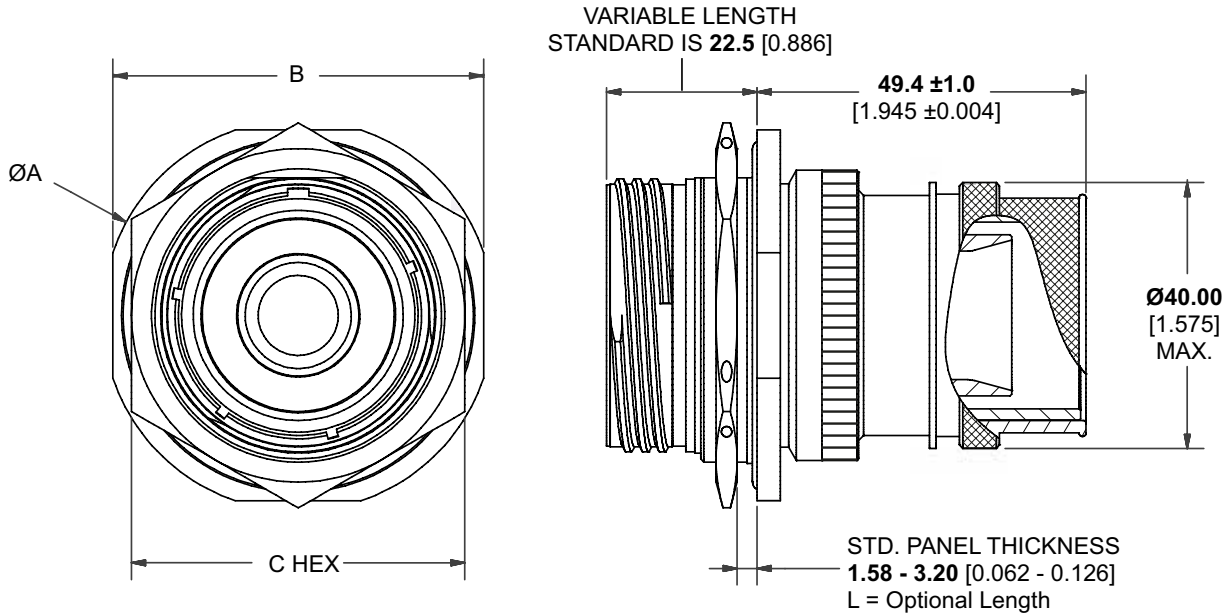
Shell Size	ØB Max.	ØC Max.	L	
			Standard	Extended
19	38.50 1.516	31.60 1.244	52.00 2.047	98.0 3.858
21	41.70 1.642	34.50 1.358	54.00 2.126	103.0 4.055
23	44.90 1.768	38.50 1.516	56.00 2.205	108.0 4.252
25	48.00 1.890	40.64 1.600	56.00 2.205	112.0 4.409

Millimeters Inches



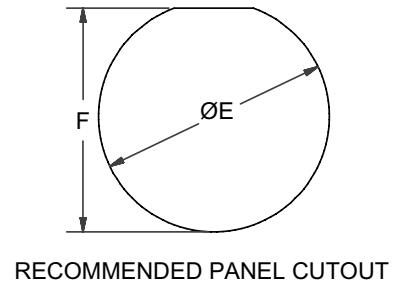
POLAMCO High-Power Connectors

Shielded Jam Nut Receptacle



Shell Size	A	B	C	E	F	G
19	49.20 1.937	46.00 1.811	40.00 1.575	35.18 1.385	33.91 1.335	27.60 1.087
21	52.40 2.063	49.20 1.937	43.00 1.693	38.35 1.510	37.08 1.460	31.10 1.224
23	55.60 2.189	52.40 2.063	46.00 1.811	41.53 1.635	40.26 1.585	36.00 1.417
25	58.70 2.311	55.60 2.189	50.00 1.969	44.70 1.760	43.43 1.710	39.84 1.569

Millimeters Inches

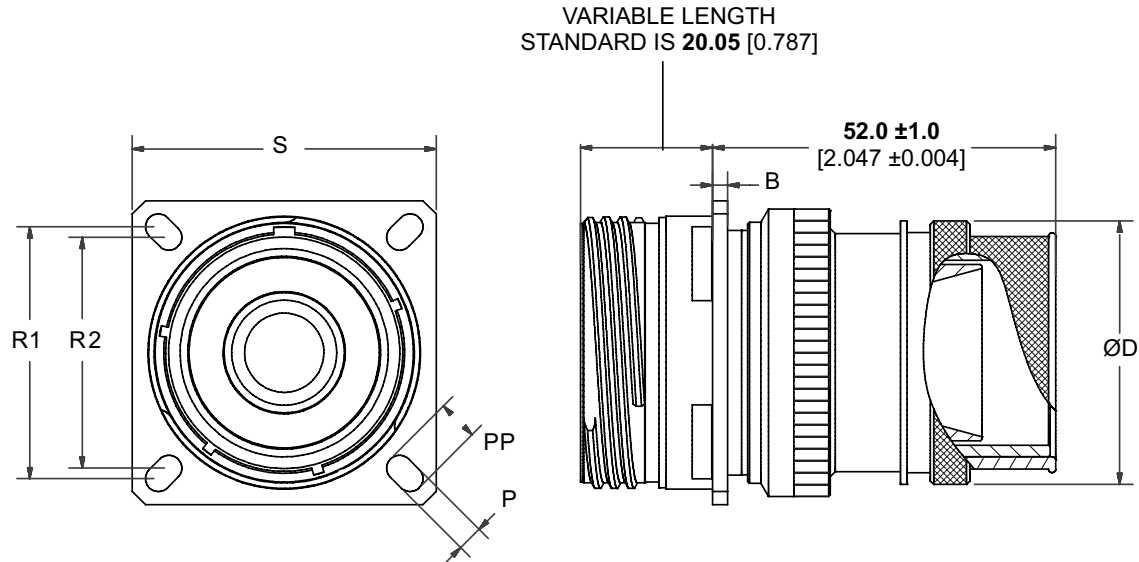


RECOMMENDED PANEL CUTOUT



POLAMCO High-Power Connectors

Shielded Square Flange Receptacle



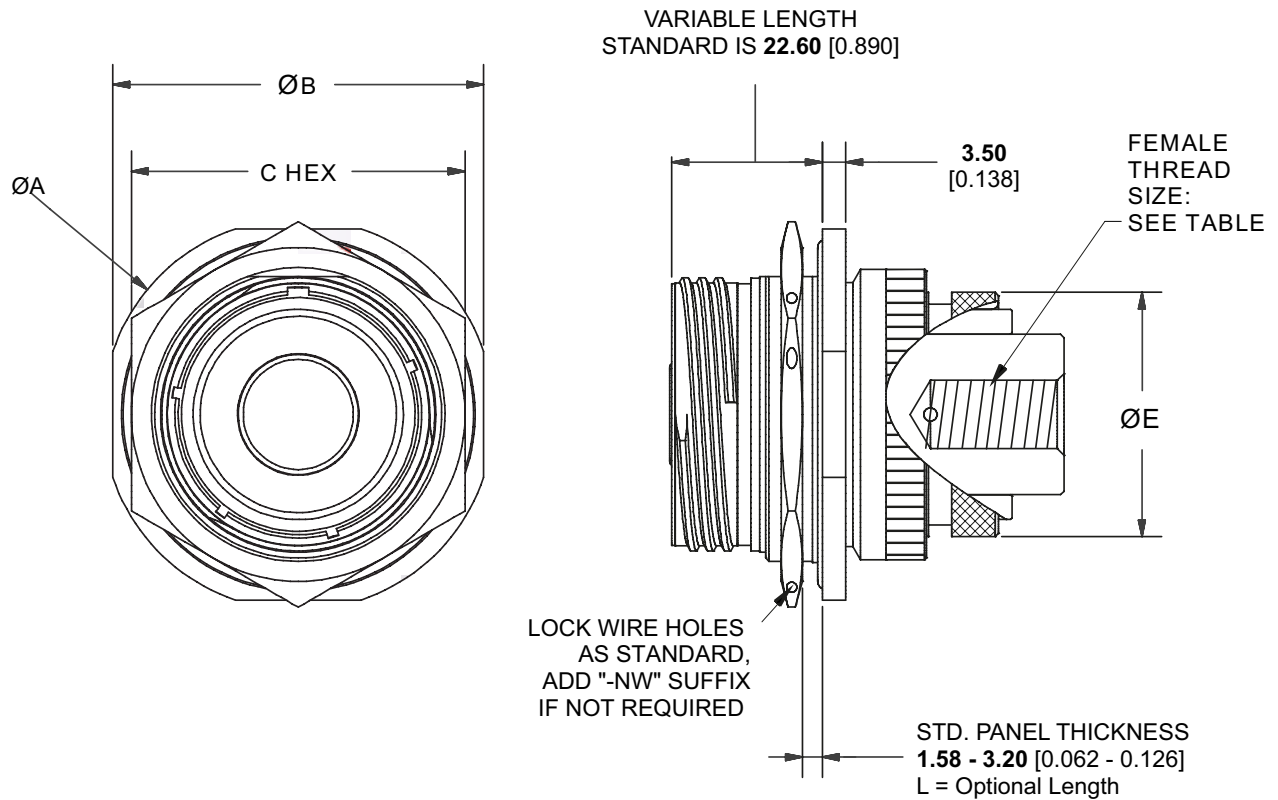
Shell Size	B	D	P	PP	R1	R2	S
19	2.30 0.091	27.60 1.087	3.25 0.128	4.93 0.194	29.36 1.156	26.97 1.062	36.50 1.437
21	3.00 0.118	31.10 1.224	3.25 0.128	4.93 0.194	31.75 1.250	29.36 1.156	39.70 1.563
23	3.00 0.118	36.00 1.417	3.91 0.154	6.15 0.242	34.93 1.375	31.75 1.250	42.90 1.689
25	3.00 0.118	39.84 1.569	3.91 0.154	6.15 0.242	38.10 1.500	34.93 1.375	46.00 1.811

Millimeters Inches



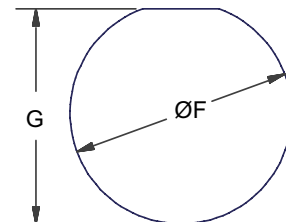
POLAMCO High-Power Connectors

Unshielded Jam Nut Receptacle



Shell Size	A	B	C	E	F	G	Female Thread Size
19	49.20 1.937	46.00 1.811	40.00 1.575	35.18 1.385	26.50 1.043	33.91 1.335	M8
21	52.40 2.063	49.20 1.937	43.00 1.693	38.35 1.510	31.00 1.220	37.08 1.460	M10
23	55.60 2.189	52.40 2.063	46.00 1.811	41.53 1.635	34.40 1.354	40.26 1.585	M10
25	58.70 2.311	55.60 2.189	50.00 1.969	44.70 1.760	36.60 1.441	43.43 1.710	M12

Millimeters Inches

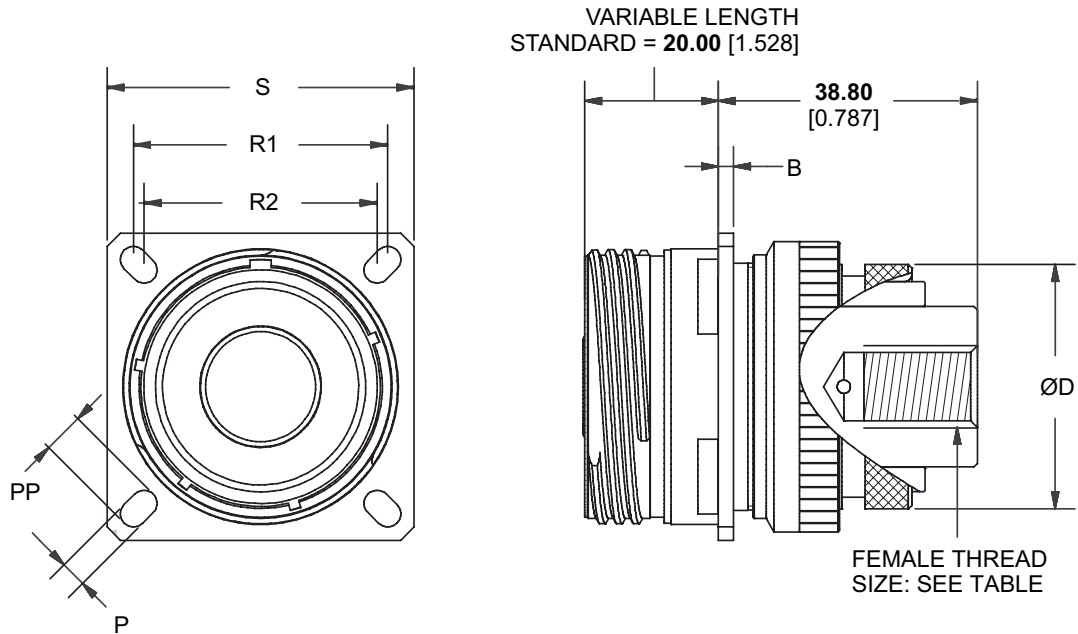


RECOMMENDED
PANEL CUTOUT



POLAMCO High-Power Connectors

Unshielded Square Flange Receptacle

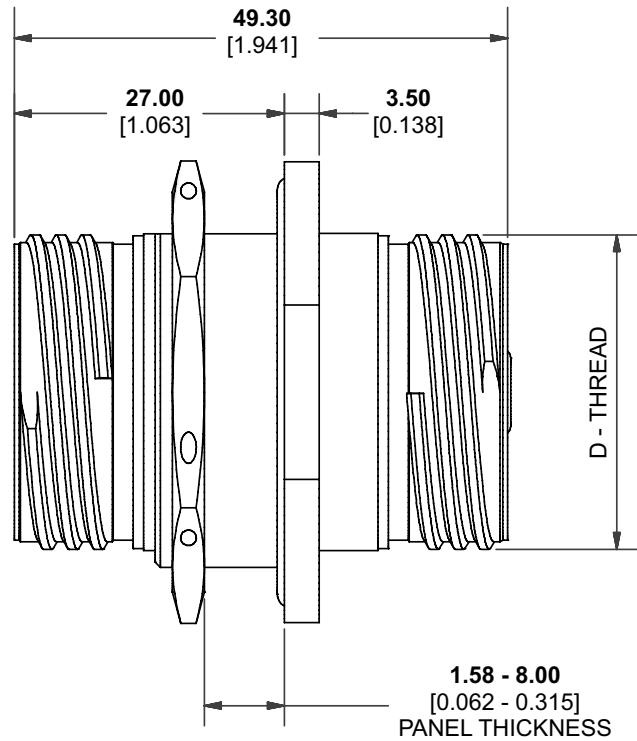
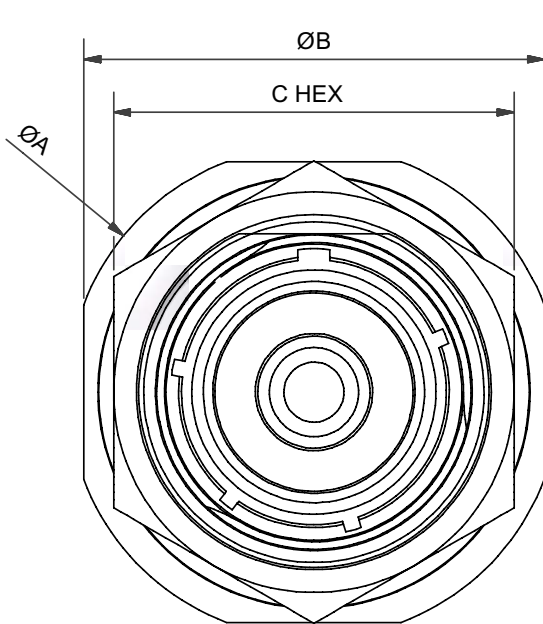


Shell Size	B	D	P	PP	R1	R2	S	Female Thread Size
19	2.30 0.091	27.50 1.043	3.25 0.128	4.93 0.194	29.36 1.156	26.97 1.062	36.50 1.437	M8
21	3.00 0.118	31.10 1.224	3.25 0.128	4.93 0.194	31.75 1.250	29.36 1.156	39.70 1.563	M10
23	3.00 0.118	34.40 1.354	3.91 0.154	6.15 0.242	34.93 1.375	31.75 1.250	42.90 1.689	M10
25	3.00 0.118	36.60 1.441	3.01 0.119	6.15 0.242	38.10 1.500	34.93 1.375	46.00 1.811	M12

Millimeters Inches



POLAMCO High-Power Connectors
Bulkhead Feedthrough Jam Nut Receptacle



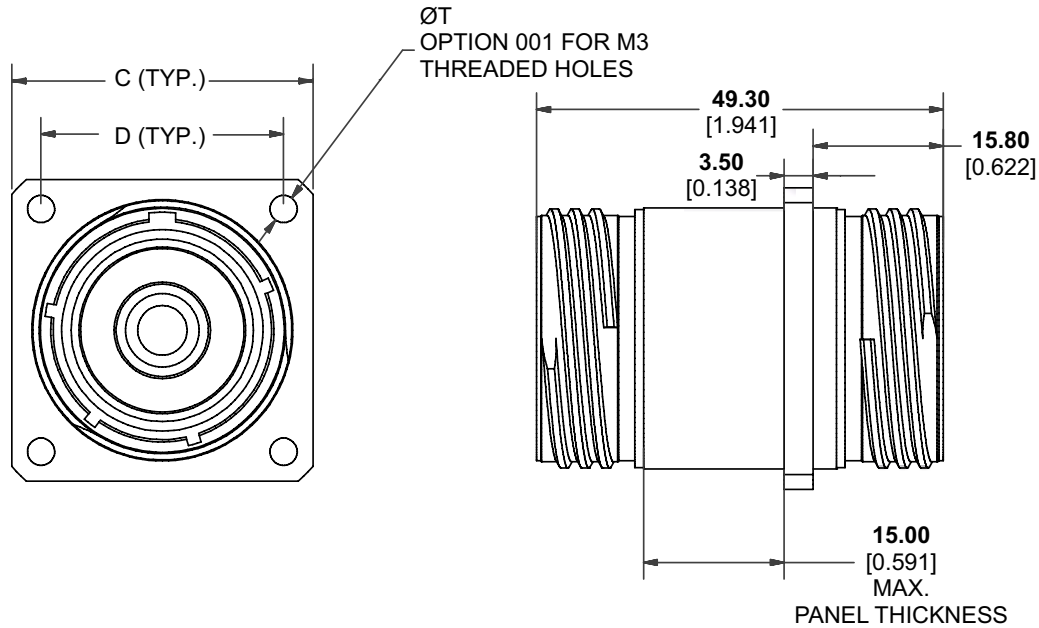
Shell Size	A	B	C	E	F
19	49.20 1.937	46.00 1.811	40.00 1.575	35.18 1.385	33.91 1.335
21	52.40 2.063	49.20 1.937	43.00 1.693	38.35 1.510	37.08 1.460
23	55.60 2.189	52.40 2.063	46.00 1.811	41.53 1.635	40.26 1.585
25	58.70 2.311	55.60 2.189	50.00 1.969	44.70 1.760	43.43 1.710

Millimeters Inches



POLAMCO High-Power Connectors

Bulkhead Feedthrough Square Flange Receptacle



Shell Size	C	D	H	T
19	36.50 1.437	29.40 1.157	32.94 1.297	3.30 0.130
21	39.70 1.563	31.80 1.252	36.29 1.429	
23	42.90 1.689	34.90 1.374	39.29 1.547	
25	46.00 1.811	38.10 1.500	42.47 1.672	

Millimeters Inches



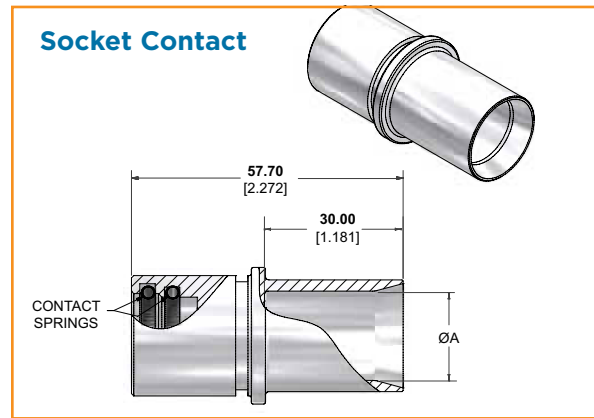
POLAMCO High-Power Connectors

Power Crimp Contacts

Dimensions

Crimp Size (CSA, mm ²)	øA Max.	
	Standard Cable	Fine Stranded Cable
50	10.00 0.394	10.30 0.406
70	11.30 0.445	12.10 0.476
95	13.50 0.531	14.20 0.559
120	15.20 0.598	16.50 0.650
150	16.70 0.657	17.60 0.693
185	19.20 0.756	19.20 0.756
240	21.10 0.831	N/A

Millimeters Inches



MATERIALS

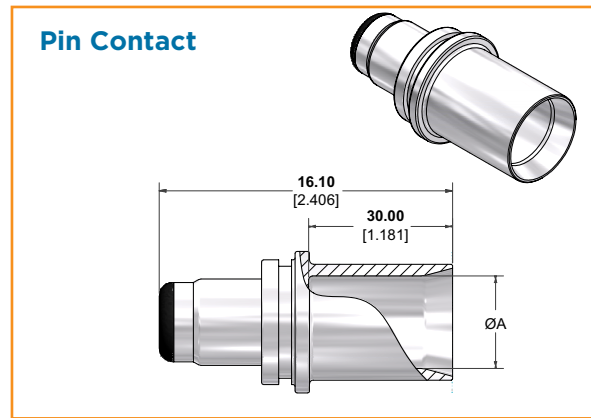
- **Contact:** Silver-plated copper
- **Insulator:** PPS-GL40, UL94V-0

PERFORMANCE

- **Voltage Rating:** 1000 VAC / 1410 VDC
- **Current Rating:**
 - Shell Size 25: 1000A
 - Shell Size 23: 800A
 - Shell Size 21: 600A
 - Shell Size 19: 400A

Maximum Contact Size by Shell Size

Shell Size	Max. Crimp (CSA, mm ²)	
	Standard Cable	Fine Stranded Cable
19	70	70
21	120	95
23	185	150
25	240	185



SERIES ————— PC04HP

SHELL SIZE ————— 25

CRIMP SIZE (CSA) ————— 185

CABLE TYPE ————— FS

CONTACT TYPE ————— P

MATERIAL ————— 5

FINISH ————— V

Legend:

- S** Standard
- FS** Fine Strand
- S** Socket
- P** Pin
- H3** 90°

MATERIAL — Copper

FINISH — Silver Plate