

Specification available from:

Hypertac Limited
 Waterloo Road
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 England



SPEC-056

HBC Range

Manufacturer : Hypertac Limited

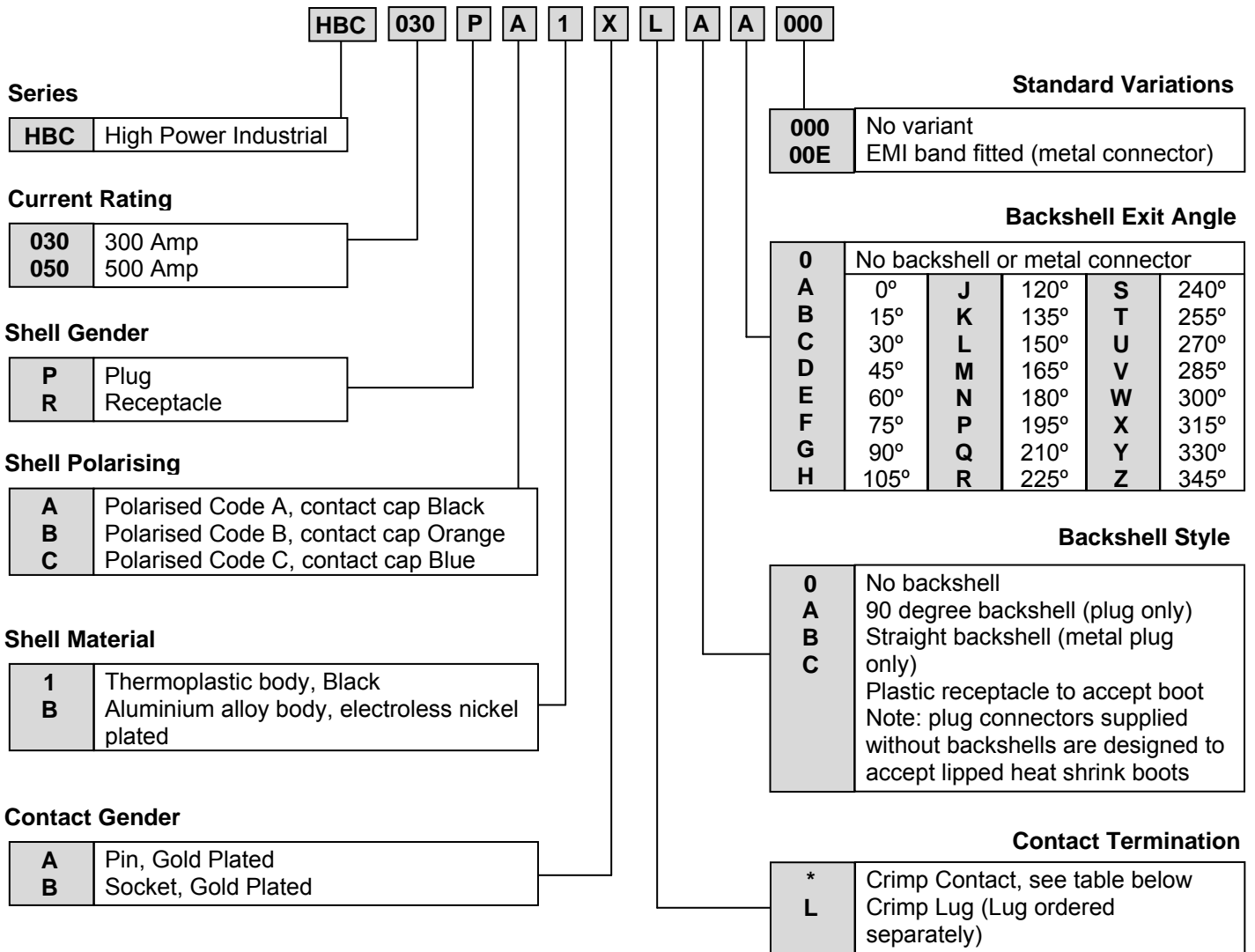
**Type Reference :
 Power Connector – Single Pole**

			Compiled by	Title	Date
			I. Parry	Principal Engineer	19.11.08
				
			Checked by	Title	Date
				
			Approved by	Title	Date
				
Draft A	19.11.08	N/A		
Revision	Date	C/N	SPEC-055 : HBB Range		

1.0 Contents

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2.0 Part Numbering



Crimp Contact Size Codes				
Code	300 Amp Connector		500 Amp Connector	
	Conductor Size (mm ²)	Crimp Barrel Bore (mm)	Conductor Size (mm ²)	Crimp Barrel Bore (mm)
B	25	7.0	50	10.0
D	25	7.9	50	11.0
G	-	-	70	12.0
H	-	-	70	13.0
J	35	8.5	-	-
K	35	9.2	-	-
P	-	-	95	13.5
Q	-	-	95	14.5
R	50	10.0	-	-
S	50	11.0	-	-
V	-	-	120	15.0

3.0 Materials

Item	Material detail
Metal shells	Aluminium alloy
Latch ring	Aluminium alloy
Insulators	Insulators and bodies - Glass reinforced PPS Finger proof components - Glass reinforced Nylon 66
Contacts	Copper alloy
Socket wires	Copper beryllium alloy
Crimp lugs	Copper alloy
EMI band	Copper beryllium alloy
Latch pins and springs	Stainless steel
Fasteners	Stainless steel
O rings & seals	Fluorosilicone elastomer
Transit caps	Vinyl

4.0 Protective Finishes

Item	Finish
Contacts	Gold over nickel
Stainless steel parts	Passivated
Shells	Electroless Nickel
Latch ring	Anodised and Dyed Blue
Crimp lugs	Tin
EMI band	Tin over nickel

5.0 Performance

5.1 Performance - Electrical

Parameter	Level	
	300 Amp Connector	500 Amp Connector
Voltage rating @ sea level (V dc)		Metal 750 Plastic 1000
Current rating, continuous (A)	300	500
Surge current	6kA for 1 second	10kA for 1 second
Short circuit current (A)	TBD	TBD
Contact resistance (mΩ max)	0.1	0.05
Insulation resistance (GΩ min)		
Shell to shell continuity (mΩ max)		

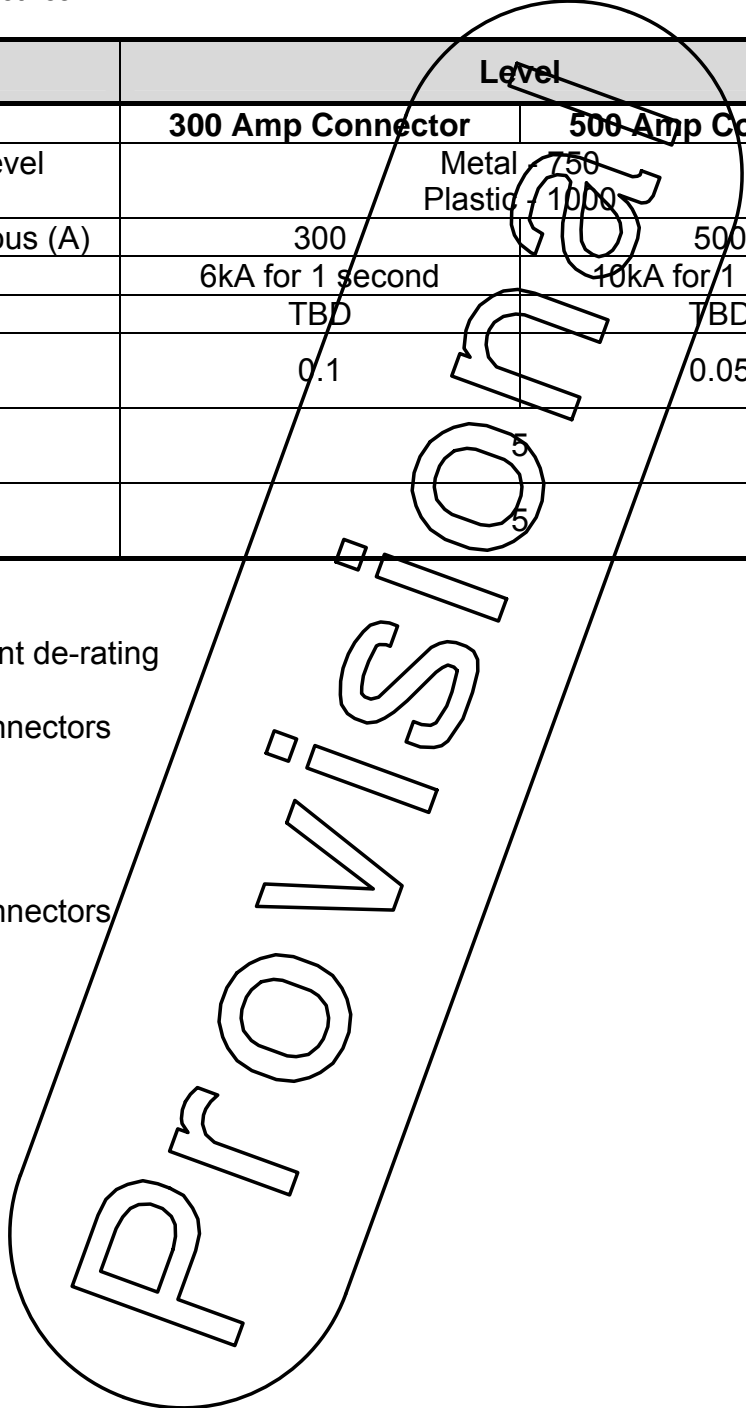
5.1.1 Connector current de-rating

5.1.1.1 300 amp connectors

TBD

5.1.1.2 500 amp connectors

TBD



5.2 Performance - Mechanical

Parameter	Level	
	300 Amp Connector	500 Amp Connector
Connector mating / un-mating force (N max)	Metal (incl EMI band) - 80 Plastic - 60	Metal (incl EMI band) - 100 Plastic - 80
Endurance (mating & un-mating cycles min)	Metal connector with EMI band - 1000 All others - 2000	

5.3 Performance - Environmental

Parameter	Level
Temperature range (operational & storage)	-20 to +125 deg C
Humidity (days @ 90/95 % RH at 40°C)	56
Salt spray (hours)	Metal - 48 Plastic - 500
Temperature life (hrs @ °C)	1000 at 125°C
Finger proofing level	BS EN 60529 IP2X
Sealing (mated)	BS EN 60529 IP67
Panel sealing level	BS EN 60529 IP67
Vibration	MIL-STD-810D Method 514.3 Random Vibration, functional 0.04g ² /Hz – 30 minutes, endurance 0.17g ² /Hz – 60 minutes.
Shock	MIL-STD-1344 Method 2004.1 Condition A (EIA 364.27)

6.0 Crimp terminations

Crimp contacts and lugs are designed to meet the requirements of BS EN 61238-1.

6.1 Crimp tools

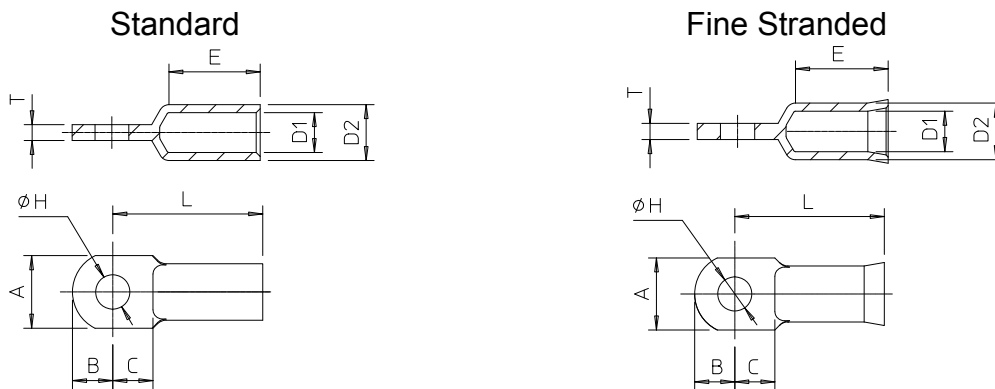
Mechanical -	Klauke® K22
Battery powered (mini) -	Klauke® EK354
Battery powered -	Klauke® EK12025
Hydraulic (hand operated) –	Klauke® HK12025

6.2 Crimp Dies

Crimp Barrel / Lug (mm ²)	Termination Codes	Crimp Barrel ID (mm)	Crimp Style	No. of Crimps	Klauke® Die Part Numbers		
					K22 Tool	EK354 Tool	EK12025 & HK12025 Tools
25	B	7.0	Hex	2	R2225	HR425	HR1325
25	D	7.9	Indent	1	F2225	HF425	HF1325
35	J	8.5	Hex	2	R2235	HR435	HR1335
35	K	9.2	Indent	1	F2235	HF435	HF1335
50	B, R	10.0	Hex	2	R2250	HR450	HR1350
50	D, S	11.0	Indent	1	F2250	HF450	HF1350
70	G	12.0	Hex	2	R2270	HR470	HR1370
70	H	13.0	Indent	1	F2270	N/A	HF1370
95	P	13.5	Hex	2	R2295	HR495	HR1395
95	Q	14.5	Indent	1	N/A	N/A	HF1395
120	V	15.0	Hex	2	R22120	HR4120	HR13120
120	W	16.2	Indent	1	N/A	N/A	HF13120

Crimp tools and dies to be sourced from Klauke®.

6.3 Crimp Lugs



Part Number	Connector Variant	Dimensions								
		A max	B nom	C nom	D1 nom	D2 nom	E nom	H nom	L nom	T ref
HBB-950-8-25-A	300 amp	18.0	10.0	10.0	7,0	10,0	15,0	8.3	32.0	3.0
HBB-950-8-25-B		18.0	10.0	10.0	7,9	11,0	17,0	8.3	34.0	3.1
HBB-950-8-35-A		18.0	10.0	10.0	8,5	12,0	17,0	8.3	34.0	3.5
HBB-950-8-35-B		18.0	10.0	10.0	9,2	12,5	19,0	8.3	37.0	3.3
HBB-950-8-50-A		18.0	10.0	10.0	10,0	14,0	19,0	8.3	37.0	4.0
HBB-950-8-50-B		18.0	10.0	10.0	11,0	15,0	21,0	8.3	41.0	4.0
HBB-950-8-70-A		18.0	10.0	10.0	12,0	16,5	21,0	8.3	43.0	4.0
HBB-950-8-70-B		18.0	10.0	10.0	13,0	17,0	25,0	8.3	49.0	4.0
HBB-950-10-50-A	500 amp	20.0	12.0	12.0	10,0	14,0	19,0	10.3	39.0	4.0
HBB-950-10-50-B		20.0	12.0	12.0	11.0	15,0	21,0	10.3	43.0	4.0
HBB-950-10-70-A		20.0	12.0	12.0	12,0	16,0	21,0	10.3	44.0	4.5
HBB-950-10-70-B		20.0	12.0	12.0	13,0	17,0	25,0	10.3	48.0	4.0
HBB-950-10-95-A		20.0	12.0	12.0	13,5	18,0	25,0	10.3	48.0	4.5
HBB-950-10-95-B		20.0	12.0	12.0	14,5	19,0	26,0	10.3	52.0	4.5
HBB-950-10-120-A		20.0	12.0	12.0	15,0	19,5	26,0	10.3	51.0	4.5
HBB-950-10-120-B		21.0	12.0	12.0	16,2	20,7	30,0	10.3	57.0	4.5

Important: The above lugs must be used on all connectors with 90° backshells; and are recommended for use on 90° plug connectors without backshells.

Receptacle connectors where no boot is fitted can accept any other suitable lug.

Crimp lugs are tin plated.

7.0 Heat shrink boots and tube

Connectors are designed to accept the following moulded lipped heat shrink boots:

	Straight Boot	90° Boot	Heat Shrink Tube
300A Plastic Plug	VG 95343 T06 B005A	VG 95343 T06 E004A	VG 95343 T05 D006A
300A Plastic Rec.	VG 95343 T06 B004A	VG 95343 T06 E003A * or VG 95343 T06 E004A *	VG 95343 T05 D006A
300A Metal Plug	VG 95343 T06 B005A	VG 95343 T06 E004A	VG 95343 T05 D006A
300A Metal Rec.	N/A	N/A	VG 95343 T05 D006A
500A Plastic Plug	VG 95343 T06 C001A	VG 95343 T06 E005A	VG 95343 T05 D007A
500A Plastic Rec.	VG 95343 T06 B005A	VG 95343 T06 E004A* or VG 95343 T06 E005A*	VG 95343 T05 D007A
500A Metal Plug	VG 95343 T06 C001A	VG 95343 T06 E005A	VG 95343 T05 D007A
500A Metal Rec.	N/A	N/A	VG 95343 T05 D007A

* If Hypertac lug is used, then use smaller boot.

Crimp lugs to be sleeved using the above thick walled adhesive / epoxy lined heat shrink tube prior to fitting one of the above heat shrink boots. Tubing needs to cover entire crimp barrel and seal to cable outer jacket.

It is the user's responsibility to ensure that boot / tube material and adhesive / epoxy meets the requirements of their application.

8.0 Torque settings

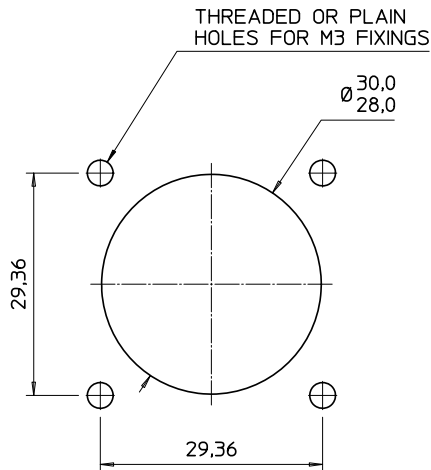
	Termination Screw	Backshell Fixing	Backshell Cap M3	Panel Fixing
300A Plastic Connector	M8 thread 8.0Nm \pm 0.5Nm	N/A	0.4Nm*	M3 screws ??Nm max
300A Metal Connector	M8 thread 8.0Nm \pm 0.5Nm	13Nm \pm 0.6Nm	0.4Nm*	M3 screws ??Nm max
500A Plastic Connector	M10 thread 15.0Nm \pm 0.5Nm	N/A	0.4Nm*	M4 screws ??Nm max
500A Metal Connector	M10 thread 15.0Nm \pm 0.5Nm	15Nm \pm 0.6Nm	0.4Nm*	M4 screws ??Nm max

* use Loctite® 221, 222 or equivalent.

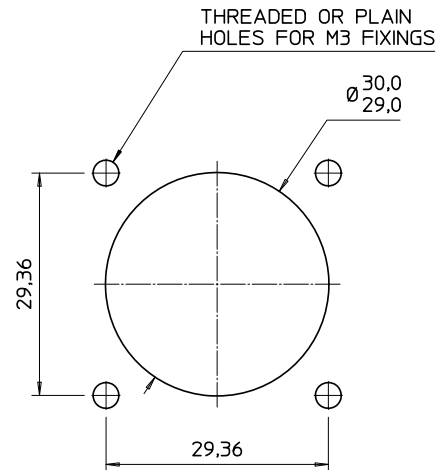
9.0 Panel cut-outs

9.1 Rear mount (Connector mounted behind panel / inside box)

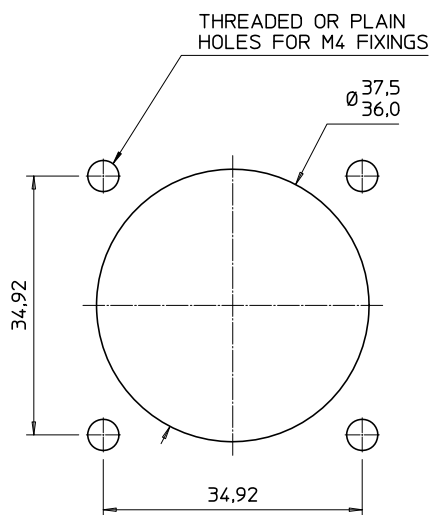
300 amp metal



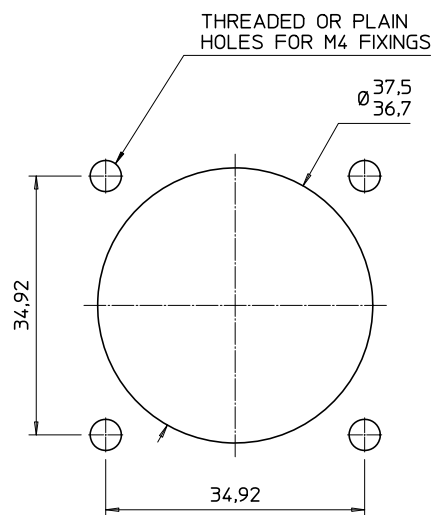
300 amp plastic



500 amp metal



500 amp plastic

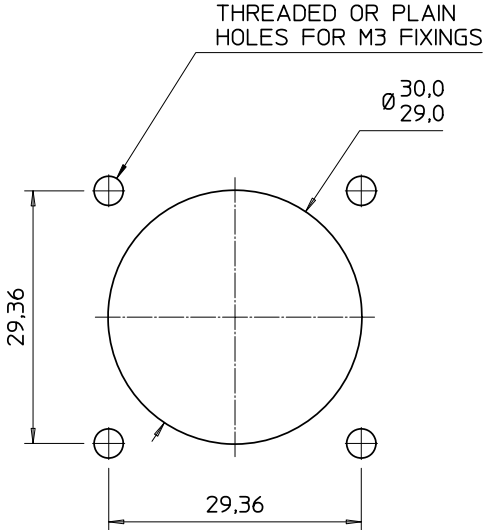


Maximum panel thickness 5.0mm.

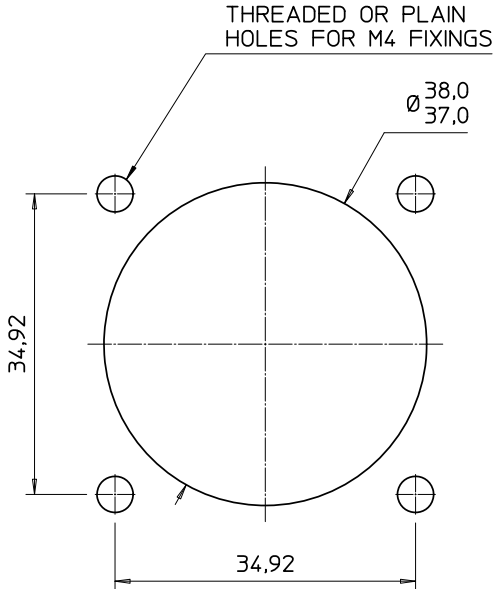
If panel is more than 3.0mm thick then fixing screws will need to be recessed to give clearance for mating connector.

9.2 Front mount (Connector mounted in front of panel / outside box)

300 amp metal & plastic

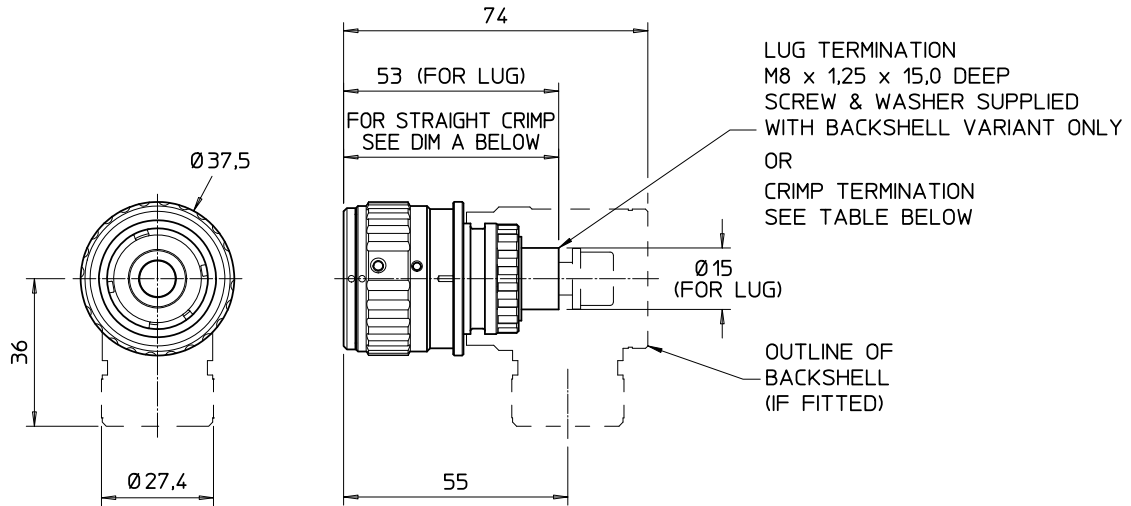


500 amp metal & plastic



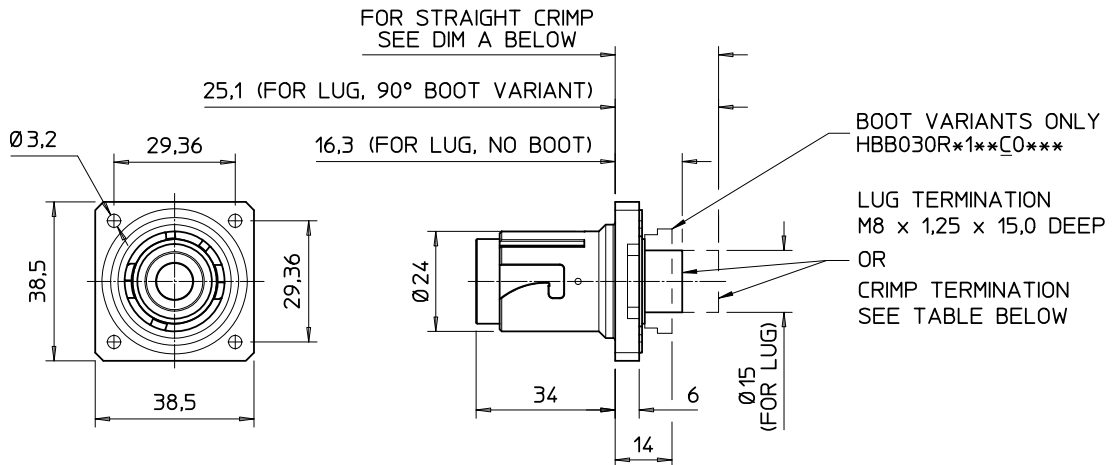
10.0 Outline drawings

10.1 300 amp plastic plug – HBC030P*1*****



Crimp contact size code	B	D	J	K	R	S
Dim A	68	70	70	72	73	74

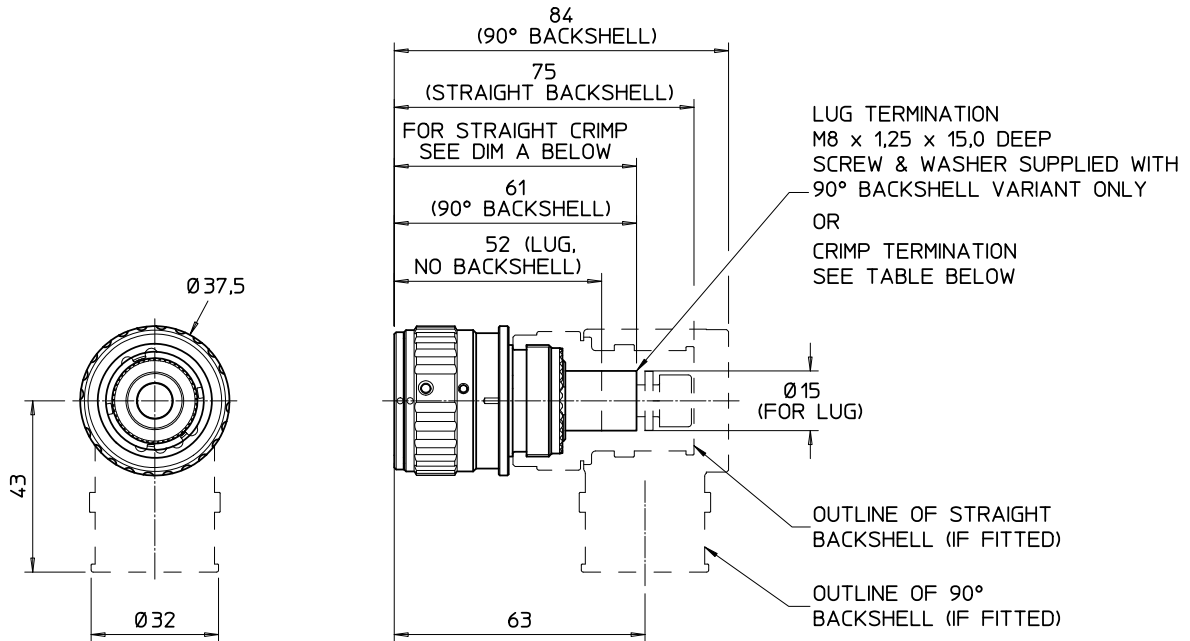
10.2 300 amp plastic receptacle – HBC030R*1*****



Crimp contact size code	B	D	J	K	R	S
Dim A	32	34	34	36	37	38

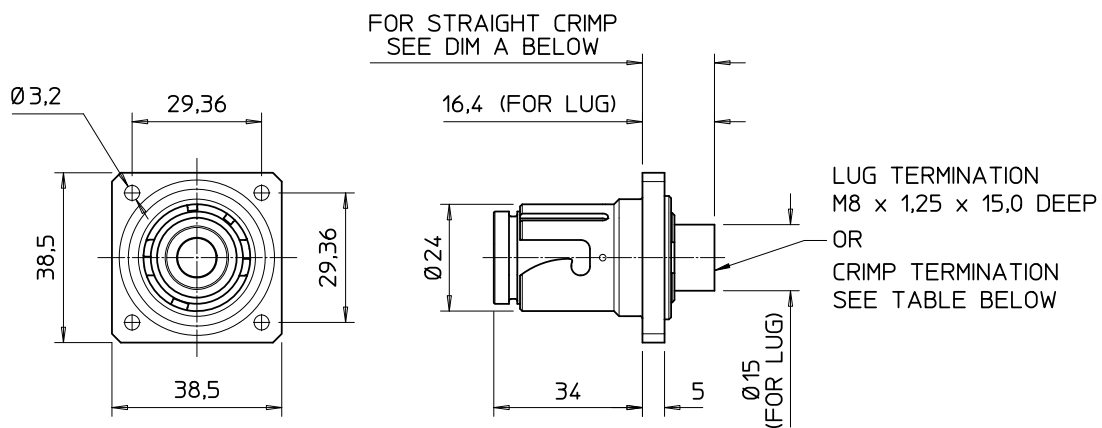
Dimensions in mm
 Transit caps not shown

10.3 300 amp metal plug – HBC030P*B*****



Crimp contact size code	B	D	J	K	R	S
Dim A	68	70	70	72	73	74

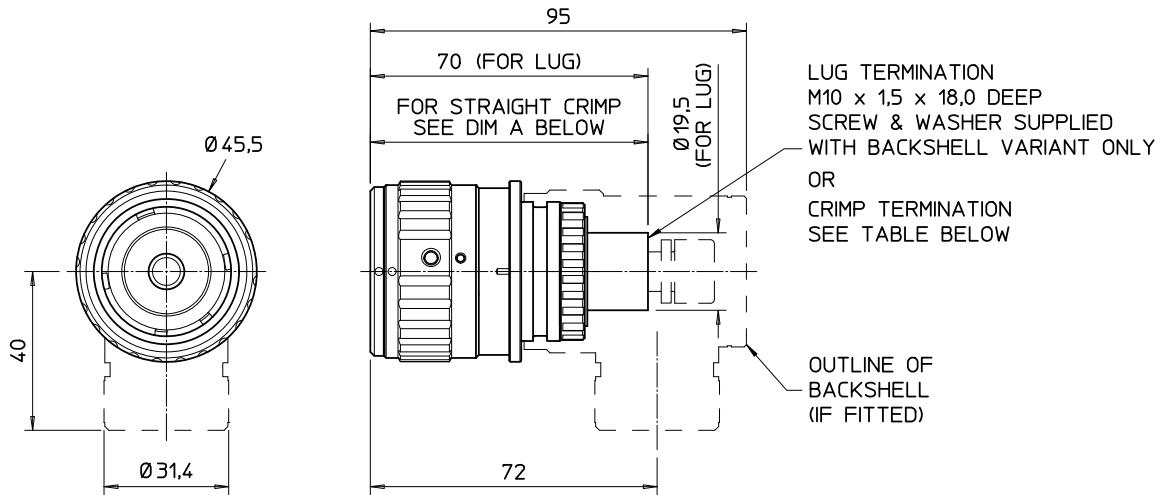
10.4 300 amp metal receptacle – HBC030R*B*****



Crimp contact size code	B	D	J	K	R	S
Dim A	32	34	34	36	37	38

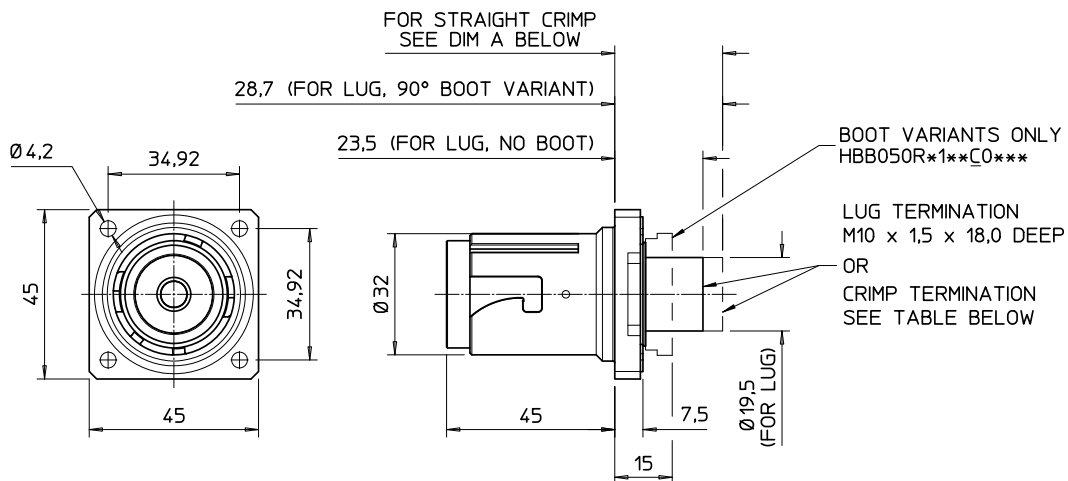
Dimensions in mm
Transit caps not shown

10.5 500 amp plastic plug – HBC050P*1*****



Crimp contact size code	B	D	G	H	P	Q	V
Dim A	85	87	87	91	91	92	92

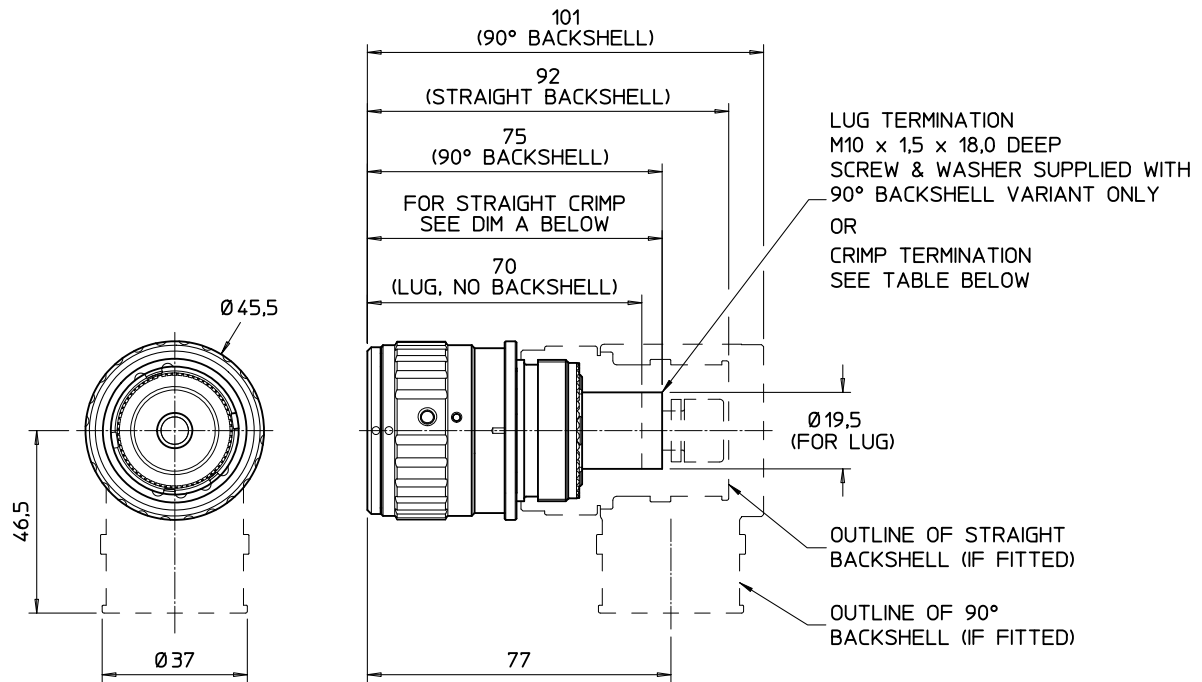
10.6 500 amp plastic receptacle – HBC050R*1*****



Crimp contact size code	B	D	G	H	P	Q	V
Dim A	38.5	40.5	40.5	44.5	44.5	45.5	45.5

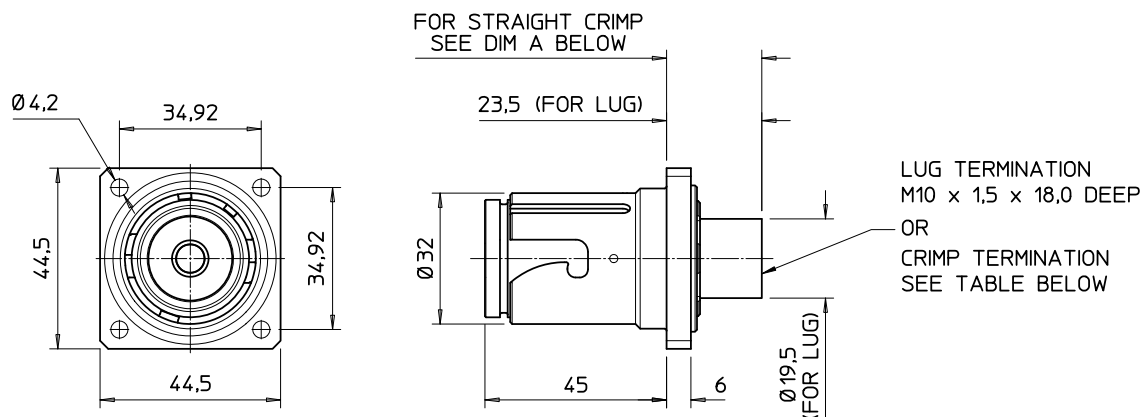
Dimensions in mm
 Transit caps not shown

10.7 500 amp metal plug – HBC050P*B*****



Crimp contact size code	B	D	G	H	P	Q	V
Dim A	85	87	87	91	91	92	92

10.8 500 amp metal receptacle – HBC050R*B*****



Crimp contact size code	B	D	G	H	P	Q	V
Dim A	38.5	40.5	40.5	44.5	44.5	45.5	45.5

Dimensions in mm
Transit caps not shown