

# ABCIRP

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## Connectors

Modular bayonet lock connector series



ABCIRP

# Company Profile

TT Electronics' brand AB Connectors specialises in the design, test and manufacture of high performance electronic connectors and interconnect solutions, supplying a range of global customers in aerospace, defence, rail and industrial markets.

Our broad product portfolio which includes miniature connectors, high power connectors, soldier systems, harness assemblies and box systems typically serve within key applications such as signalling, communication and power distribution.



Operating from the principle site in Abercynon, South Wales, our research and development teams have an excellent track record for developing innovative industry solutions and our engineers have extensive experience in designing a range of product configurations to meet customer specific requirements for the most demanding environments.

From plant layout to production line set-up and quick changeover processes, we offer the ideal service, with a flexible manufacturing environment and accredited facilities.

Quality systems and approvals include ISO9001 along with various product and market sector approvals including the military Mil-std 790 and mass transit IRIS certifications and environmental approval to ISO14001. As a result of these qualifications AB Connectors has been awarded several major customer approvals and accreditations.

AB Connectors total commitment to providing customers with high levels of service, cost effectiveness, quality and innovative solutions in interconnection products make it the ideal first choice supply partner.



ABCIRP

# Modular Bayonet Lock Connector

The ABCIRP connector series is derived from the American Mil-C-5015 & VG95234 specifications and is approved to the French rail specification NF F 61 030.

The connectors are intermateable and interchangeable with corresponding types, but feature a low fire hazard thermoplastic insulator which is removeable for repositioning at an alternative orientation.

Contacts are retained in the insulator by means of a unique beryllium copper spring clip.

Connector sealing features a stepped wire seal grommet which removes the need to populate unused cavities with filler plugs.

Crimp tooling is industry standard and contacts are inserted and removed using simple hand tools.

## Benefits include:

- ABCIRP connectors qualified to NF F 61 030 norm.
- Approved for use on railway equipment by SNCF, RATP, Alstom Transport, Bombardier and LUL.
- Compatible with existing MS 5015 reverse bayonet types.
- Low fire hazard / low halogen insulator material tested to French NF F 16-101 norm and BS 6853.
- Cadmium free surface plating. Black Zinc Cobalt, RoHS Compliant.
- Removable insulator.
- Positive location of insulator shell.
- Pin insulators feature with or without bonded resilient rubber face seal.
- Rear individual wire seal grommet with webbed holes.
- Mated connector assemblies sealed to IP67.
- Part populated insulators achieve sealing without the fitting of grommet fillers.
- Contacts retained by high performance metal spring clip.
- Comprehensive range of screened / unscreened, sealed / unsealed backshells & accessories.
- 3D Models available to download from our website.

Conforms to EN45545 HL3 R22/R23 & meets the specifications of the Fire Barrier Testing: EN1363. BS476



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# technical information

## Materials

Shell:	Aluminium Alloy
Insulator:	Low fire hazard thermoplastic qualified to NFF 16101 and to meet BS 6853 Conforms to EN45545 HL3 R22/R23
Grommet & bushing:	Low fire hazard rubber tested to NFF 16101 norm and to meet BS 6853 Conforms to EN45545 HL3 R22/R23
Contacts:	Copper alloy
Contact retaining clip:	Beryllium copper
Accessory hardware:	Aluminium alloy

## Standard Plating Finishes

Aluminium parts:	Black chromate over zinc cobalt, RoHS compliant
Contacts:	Gold over silver #16 and #12 Silver #8

\* Consult factory for alternative finishes

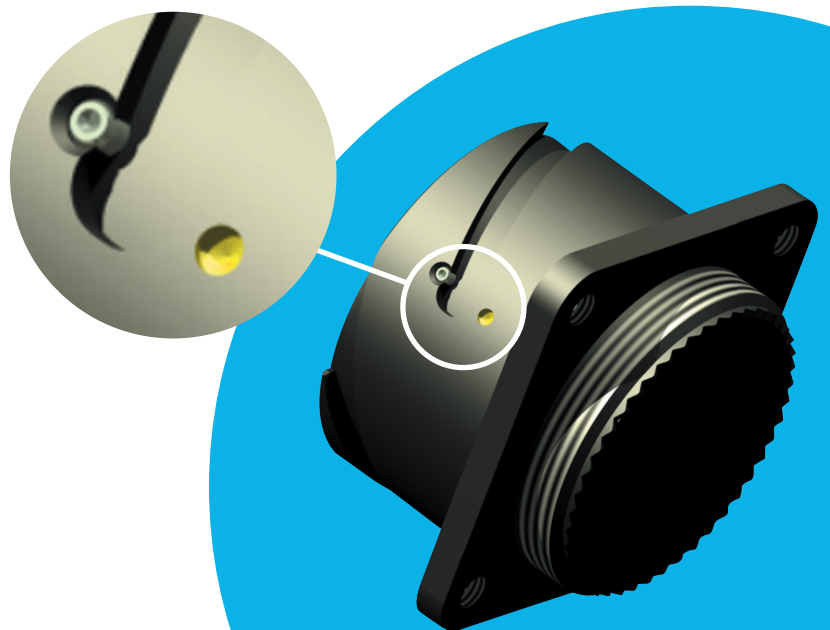
## Environmental Ratings

Operating temperature range:	-55°C to +125°C
Shock severity:	75g
Vibration:	5-500Hz long endurance. 30 hours at 10g
Acceleration:	50g

## Mechanical Features

Coupling:	3 pin reverse bayonet. 120° coupling nut rotation
Number of contacts:	7 to 60
Contact termination:	Crimp & PCB
Minimum retention force of the contact in the insulator:	Beryllium copper spring clip 70N for contacts #16 (1.6 mm) 90N for contacts #12 (2.4 mm) 110N for contacts #8 (3.6 mm)
Sealing:	IP67 rated when connectors are mated and used with appropriate sealed backshell
Matings:	2000 minimum mating and unmating
Max Coupling Torque:	8NM

**ABCIRP** receptacle connectors feature stainless steel pins at critical wear points of the cam tracks. This feature is incorporated to protect against excessive wear inflicted by continuous mating / de-mating and heavy vibration.



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## Technical information

Contact Size AWG	*Maximum Current @ 20°C	* Rated Current @ 85°C	** De-rated Current @ 85°C
16	22A	13A	10A
12	41A	23A	20A
8	73A	46A	42A

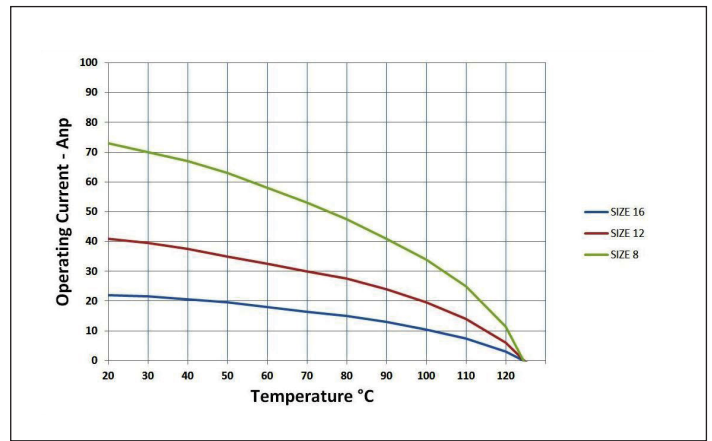
\* Single contact in isolation

\*\* Grouped contacts

### Contact Arrangement Service Rating

Service Rating	Sea Level	
	A	D
Working voltage DC or AC Peak	700 V	1,250 V
Voltage Proof AC RMS	2,000 V	2,800 V
Minimum Flashover AC RMS	2,800 V	3,600 V

### Contact Arrangement Service Rating



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# ABCIRP

## Part number explanation

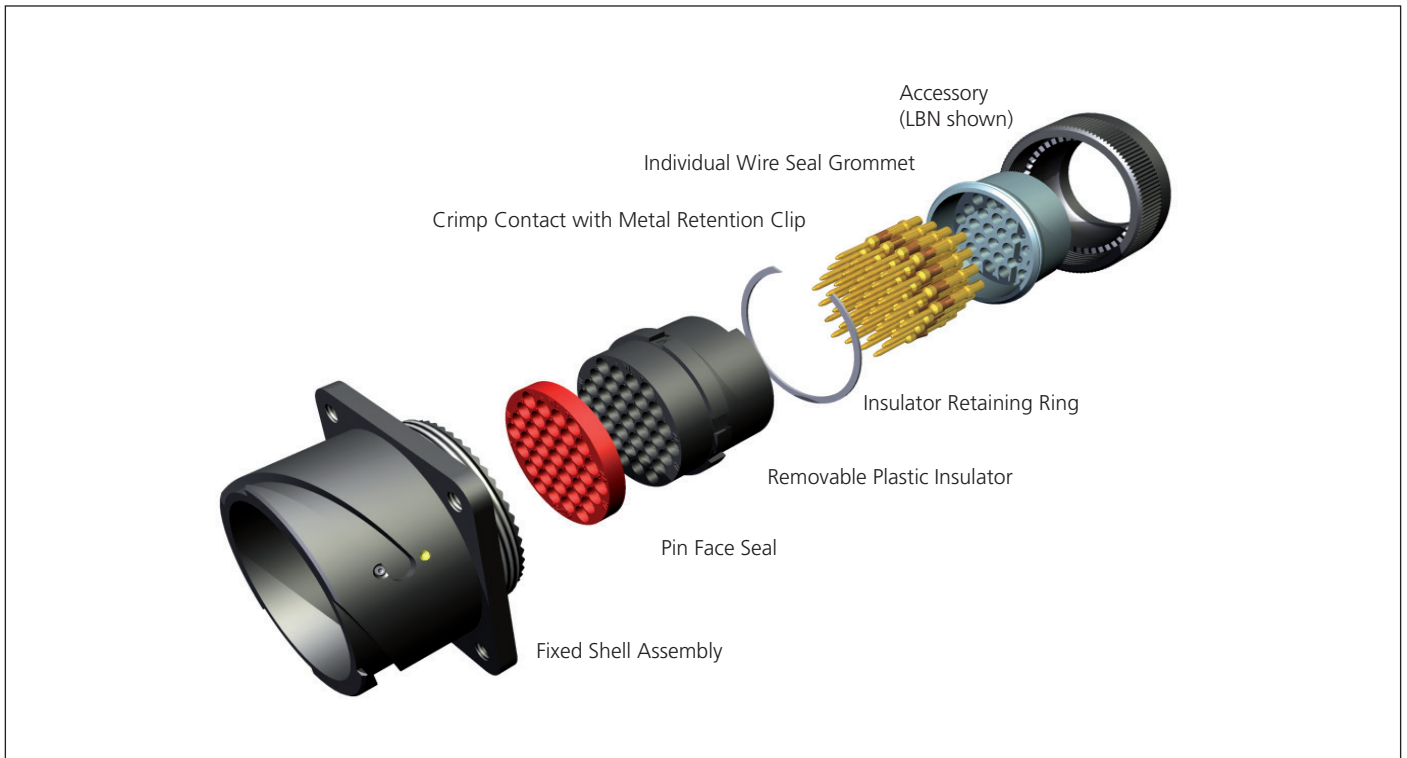
AB-CIRP	03	LBN	22	14	GPS	P	FS	****	VO	N
Series Prefix	Shell Style	Accessory Type	Shell Size	Contact Arrangement	Grommet Type	Contact Type P=Pin S=Socket	Face Seal	Modification Code	Contact Supply	Insulator Orientation

<b>Series Prefix:</b>	<b>ABCIRP</b>	
<b>Shell Style:</b>	<b>03</b>	4 Hole Square flange receptacle, rear panel mounted.
	<b>SE06</b>	Plug with RFI grounding
	<b>09</b>	Single hole mounted receptacle
	<b>PSE06T</b>	Plug with RFI grounding and rubber covered coupling nut
<b>Accessory Type:</b>	<b>A</b>	No rear threads and no accommodation for accessories Shell styles 03
	<b>T</b>	Rear threads for accessory accommodation
	<b>LBN</b>	Locking Back Nut
	<b>SCHSA</b>	Straight Conduit Heatshrink Adaptor
	<b>ECHSA</b>	90° Conduit Heatshrink Adaptor
	<b>SHE#</b>	Shell Extender M - Metric thread P - PG thread
	<b>SUA#</b>	Step up adapter M - Metric thread P - PG thread
	<b>SDA#</b>	Step down adapter M - Metric thread P - PG thread
	<b>Shell Size:</b>	<b>18 - 40</b>
<b>Contact Arrangement:</b>	See page 12	
<b>Grommet Type:</b>	As there is a choice of Wire Seal Grommet to suit varying cable diameters, this component may be omitted from the part number and ordered as a separate item if required. Refer to page 9 for details.	
<b>Contact Type:</b>	P = Pin S = Socket	
<b>Face Seal:</b>	Pin insulator only. When face seal is required, add 'FS' to part number.	
<b>Modification Code:</b>	Issued for connector with non-standard feature. Consult factory for detail. M6 - Tapped mounting holes.	
<b>Contact Supply:</b>	Leave blank for connectors supplied with silver contacts Add 'P3' for gold contacts. Add 'V0' for connectors supplied without contacts.	
<b>Insulator Orientation:</b>	Leave blank for connectors supplied in sub-assembly form. Add applicable orientation letter (see page 14) if connectors are to be supplied factory assembled.	

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## basic assembly

### Rear Panel Mounted Connector - Basic Assembly



### Plug Connector - Basic Assembly





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## shell assemblies

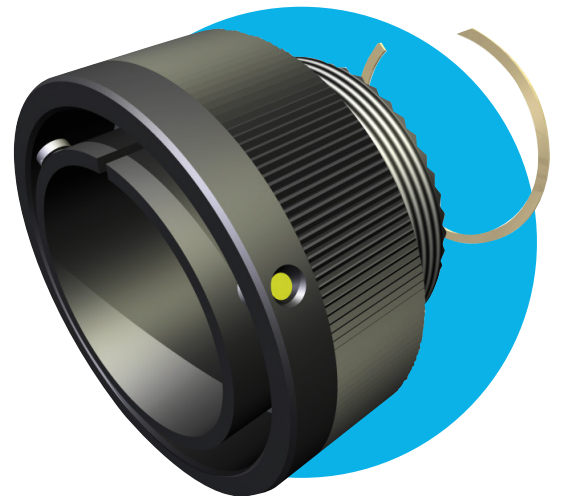
### Rear Mounting Fixed Receptacle

Shell Size	Part Number Rear Mount
18	ABCIRP18XR
20	ABCIRP20XR
22	ABCIRP22XR
24	ABCIRP24XR
28	ABCIRP28XR
32	ABCIRP32XR
36	ABCIRP36XR
40	ABCIRP40XR



### Plug Connector - Basic Assembly

Shell Size	Part Number
18	ABCIRPSE18FS
20	ABCIRPSE20FS
22	ABCIRPSE22FS
24	ABCIRPSE24FS
28	ABCIRPSE28FS
32	ABCIRPSE32FS
36	ABCIRPSE36FS
40	ABCIRPSE40FS



Free plug assembly with EMI/RFI Grounding

Note: Both the fixed and free shell assembly is supplied with an insulator retaining circlip.

# ABCIRP

## insulators

### Pin Insulator with Face Seal

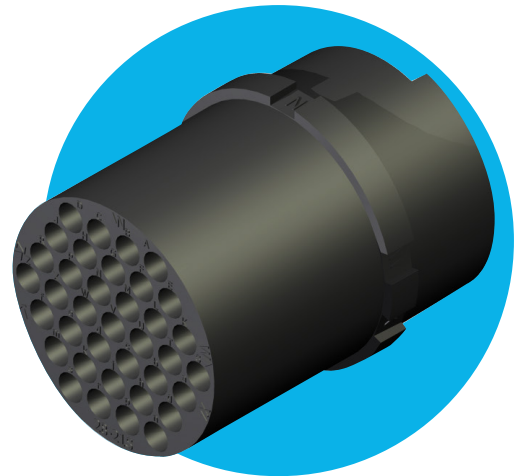
Delete 'FS' if seal is not required

Shell Size	Contact Arrangement	Part Number
18	18-19	ABCIRP18-19PFS
20	20-15	ABCIRP20-15PFS
22	22-14	ABCIRP22-14PFS
24	24-10	ABCIRP24-10PFS
28	28-21	ABCIRP28-21PFS
32	32-A13	ABCIRP32-A13PFS
36	36-A22	ABCIRP36-A22PFS
40	40-A35	ABCIRP40-A35PFS
40	40-A60	ABCIRP40-A60PFS



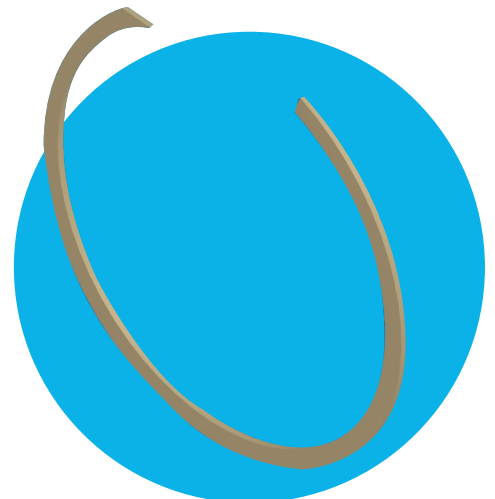
### Socket Insulator

Shell Size	Contact Arrangement	Part Number
18	18-19	ABCIRP18-19S
20	20-15	ABCIRP20-15S
22	22-14	ABCIRP22-14S
24	24-10	ABCIRP24-10S
28	28-21	ABCIRP28-21S
32	32-A13	ABCIRP32-A13S
36	36-A22	ABCIRP36-A22S
40	40-A35	ABCIRP40-A35S
40	40-A60	ABCIRP40-A60S



### Insulator Retaining Ring

Shell Size	Part Number
18	ABCIRP18IC
20	ABCIRP20IC
22	ABCIRP22IC
24	ABCIRP24IC
28	ABCIRP28IC
32	ABCIRP32IC
36	ABCIRP36IC
40	ABCIRP40IC



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## individual wire seal grommet



### Individual Wire Seal Grommets - Size 16

Grommet Type	Contact Arrangement	Wire Insulation Min O/D mm	Wire Insulation Max O/D mm	Part Number
Pin, Small Bore	18-19	0.8	2.30	ABCIRP18-19GPS
	22-14			ABCIRP22-14GPS
	28-21			ABCIRP28-21GPS
	40-A60			ABCIRP40-A60GPS
Socket, Small Bore	18-19	0.8	2.30	ABCIRP18-19GSS
	22-14			ABCIRP22-14GSS
	28-21			ABCIRP28-21GSS
	40-A60			ABCIRP40-A60GSS
Pin, Large Bore	18-19	1.5	3.30	ABCIRP18-19GPL
	22-14			ABCIRP22-14GPL
	28-21			ABCIRP28-21GPL
	40-A60			ABCIRP40-A60GPL
Socket, Large Bore	18-19	1.5	3.30	ABCIRP18-19GSL
	22-14			ABCIRP22-14GSL
	28-21			ABCIRP28-21GSL
	40-A60			ABCIRP40-A60GSL

### Individual Wire Seal Grommets - Size 12 Contacts

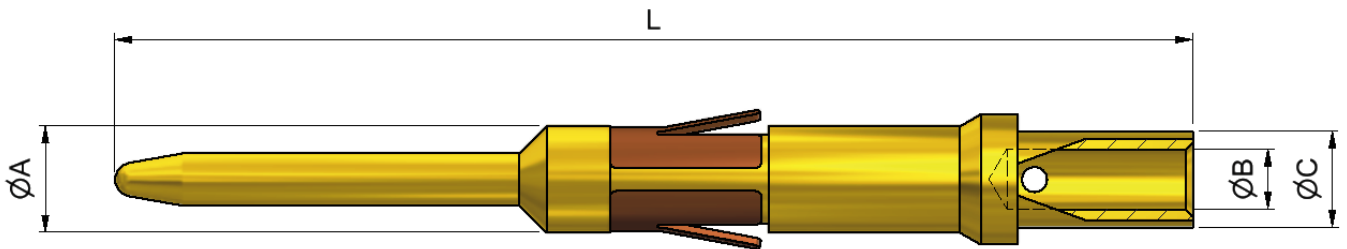
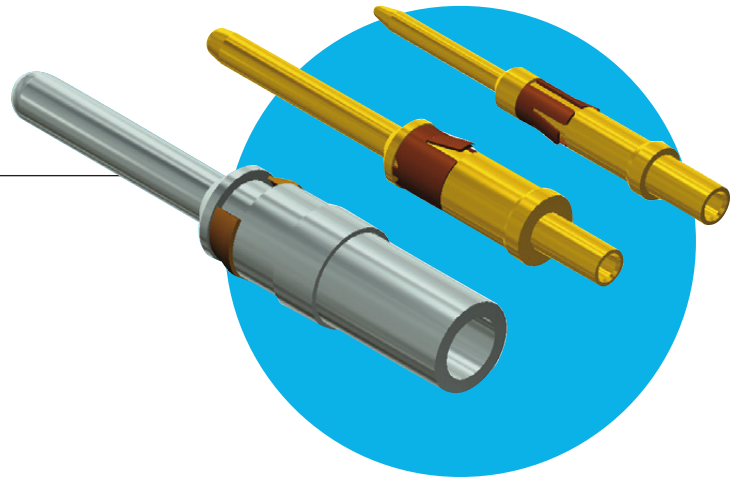
Grommet Type	Contact Arrangement	Wire Insulation Min O/D mm	Wire Insulation Max O/D mm	Part Number
Pin, Small Bore	20-15	0.8	2.30	ABCIRP20-15GPS
	32-A13			ABCIRP32-A13GPS
	36-A22			ABCIRP36-A22GPS
	40-A35			ABCIRP40-A35GPS
Socket, Small Bore	20-15	0.8	2.30	ABCIRP20-15GSS
	32-A13			ABCIRP32-A13GSS
	36-A22			ABCIRP36-A22GSS
	40-A35			ABCIRP40-A35GSS
Pin, Large Bore	20-15	2.35	5.20	ABCIRP20-15GPL
	32-A13			ABCIRP32-A13GPL
	36-A22			ABCIRP36-A22GPL
	40-A35			ABCIRP40-A35GPL
Socket, Large Bore	20-15	2.35	5.20	ABCIRP20-15GSL
	32-A13			ABCIRP32-A13GSL
	36-A22			ABCIRP36-A22GSL
	40-A35			ABCIRP40-A35GSL

### Individual Wire Seal Grommets - Size 8 Contacts

Grommet Type	Contact Arrangement	Wire Insulation Min O/D mm	Wire Insulation Max O/D mm	Part Number
Pin, Small Bore	24-10	1.86	4.90	ABCIRP24-10GPS
Socket, Small Bore				ABCIRP24-10GSS
Pin, Large Bore		3.00	7.20	ABCIRP24-10GPL
Socket, Large Bore				ABCIRP24-10GSL

# ABCIRP

## pin crimp contacts



Contact Size AWG	Part Number	A	B	C	Conductor CSA mm <sup>2</sup>	L
<b>ABCIRP**/**KPKP3</b>						
16/22	16/22	3.20	0.90	2.30	0.25/0.34	31.75
16/20	16/20		1.10	2.65	0.50/0.60	
16/18	16/18		1.25	2.30	0.75/0.93	
16	16		1.75	2.75	0.93/1.50	
16/14	16/14		1.80	2.90	1.68	
<b>ABCIRP**/**KPKP3</b>						
12/20	12/20	4.80	1.10	2.65	0.50/0.60	37.50
12/18	12/18		1.25	2.30	0.75/0.93	
12/16	12/16		1.75	2.75	0.93/1.50	
12/14	12/14		1.80	2.90	1.68	
12	12		2.50	3.80	2.50/3.00	
12/10	12/10		3.00	4.00	5.53	
12/(40)	12/40		2.70	4.00	4.00	
<b>ABBP**/**KPKP80</b>						
8/16	8/16	7.80	1.75	2.75	0.93/1.50	42.40
8/(40)	8/40		2.90	5.20	4.00	
8/12	8/12		2.50	3.80	2.50	
8	8		4.55	6.80	9.00	
(100)	100		4.40	7.00	10.00	
(100/60)	100/60		3.40	5.50	6.00	

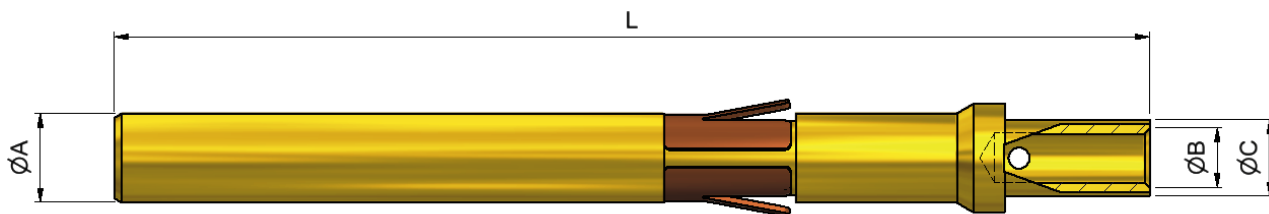
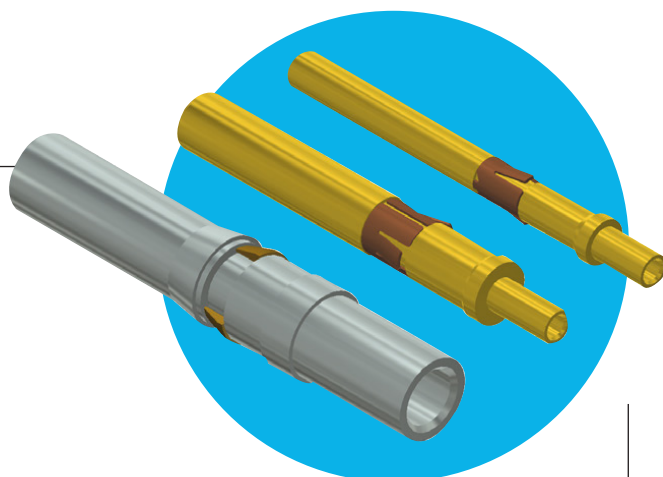
( ) = metric

**Notes:** Standard plating for size 16 & 12 contacts is gold.  
 Remove P3 from part numbers above for silver plated contacts.  
 Standard plating for size 8 & 100 contacts is silver.  
 Add P3 to part numbers above for gold plated contacts.

ABCIRP

# ABCIRP

socket crimp contacts






Contact Size AWG	Part Number	A	B	C	Conductor CSA mm <sup>2</sup>	L
<b>ABCIRP**/**KLKP3</b>						
16/22	16/22	3.20	0.90	2.30	0.25/0.34	36.50
16/20	16/20		1.10	2.65	0.50/0.60	
16/18	16/18		1.25	2.30	0.75/0.93	
16	16		1.75	2.75	0.93/1.50	
16/14	16/14		1.80	2.90	1.68	
<b>ABCIRP**/**KLKP3</b>						
12/20	12/20	4.80	1.10	2.65	0.50/0.60	37.50
12/18	12/18		1.25	2.30	0.75/0.93	
12/16	12/16		1.75	2.75	0.93/1.50	
12/14	12/14		1.80	2.90	1.68	
12	12		2.50	3.80	2.50/3.00	
12/10	12/10		3.00	4.00	5.53	
12/(40)	12/40		2.70	4.00	4.00	
<b>ABBP**/**KSKP80</b>						
8/16	8/16	7.80	1.75	2.75	0.93/1.50	41.20
8/(40)	8/40		2.90	5.20	4.00	
8/12	8/12		2.50	3.80	2.50	
8	8		4.55	6.80	9.00	
(100)	100		4.40	7.00	10.00	
(100/60)	100/60		3.40	5.50	6.00	

( ) = metric

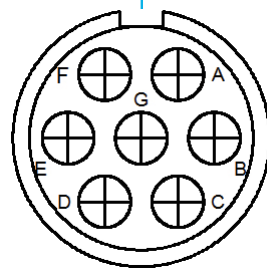
**Notes:** Standard plating for size 16 & 12 contacts is gold.  
 Remove P3 from part numbers above for silver plated contacts.  
 Standard plating for size 8 & 100 contacts is silver.  
 Add P3 to part numbers above for gold plated contacts.

# ABCIRP

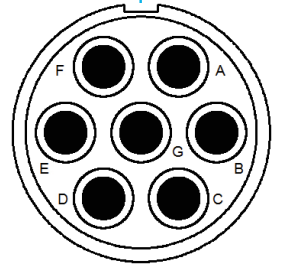
## insert arrangements

-  Size 16
-  Size 12 Contact
-  Size 8 Contact

7 Contacts

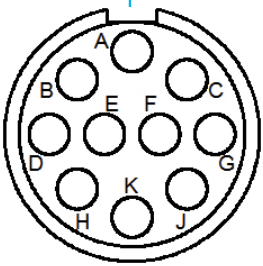


20-15  
Service A  
7 Contacts,  
Size #12 (25)



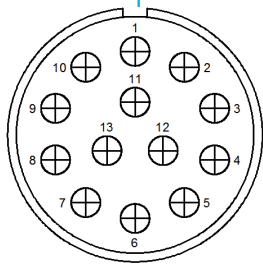
24-10  
Service A  
7 Contacts,  
Size #8 (100)

10 Contacts



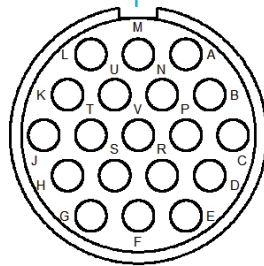
18-19  
Service A  
10 Contacts,  
Size #16 (15)

13 Contacts



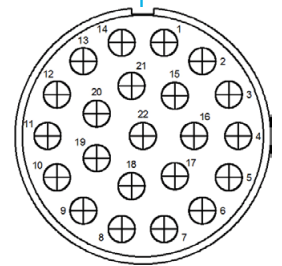
32-A13  
Service D  
13 Contacts,  
Size #12 (25)

19 Contacts



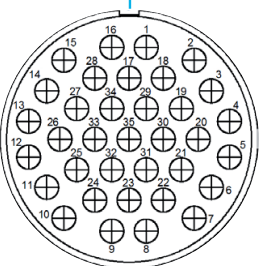
22-14  
Service A  
19 Contacts,  
Size #16 (15)

22 Contacts



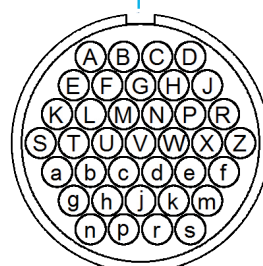
36-A22  
Service D  
22 Contacts,  
Size #12 (25)

35 Contacts



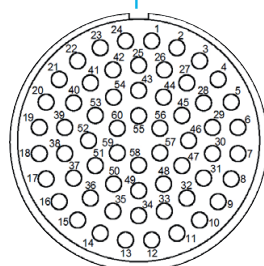
40-A35  
Service D  
35 Contacts,  
Size #12 (25)

37 Contacts



28-21  
Service A  
37 Contacts,  
Size #16 (15)

60 Contacts



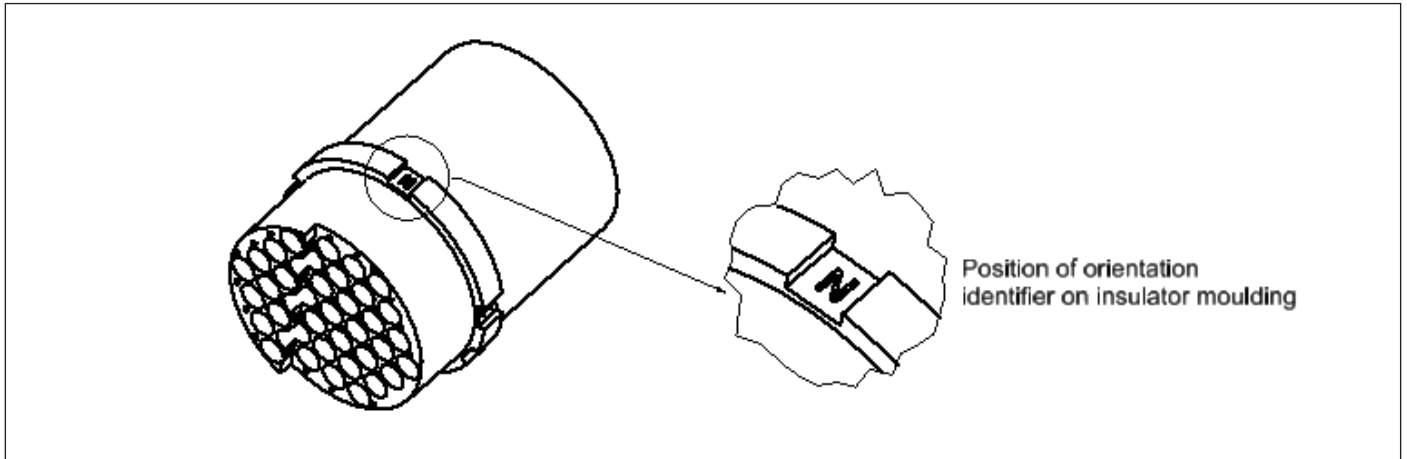
40-A60  
Service A  
60 Contacts,  
Size #16 (15)



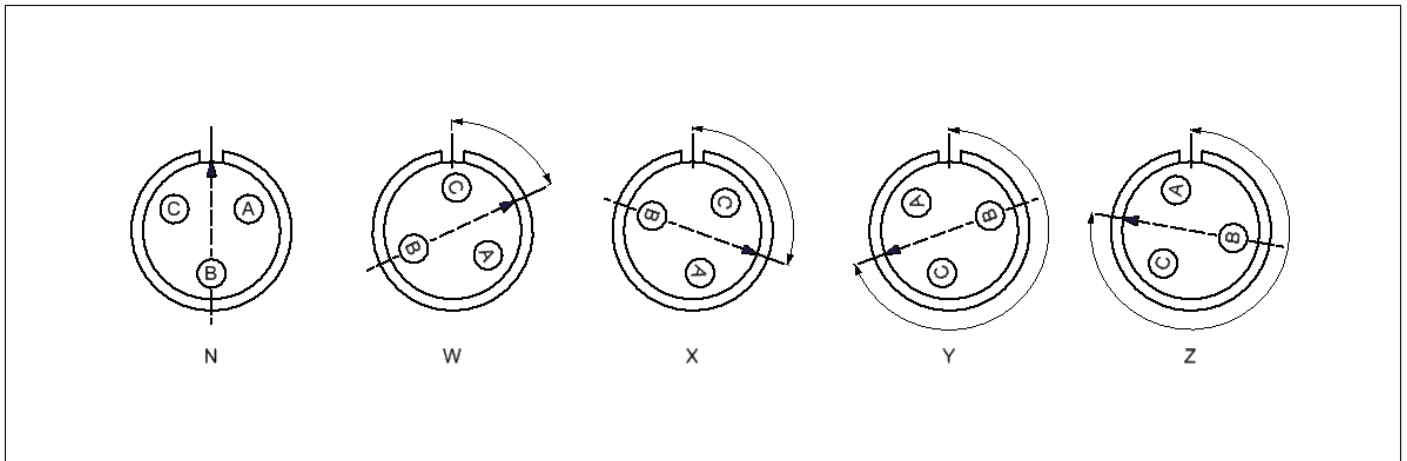
# ABCIRP

## insulator orientations

### Position of orientation identifier on insulator moulding



### Position of orientation identifier on insulator moulding



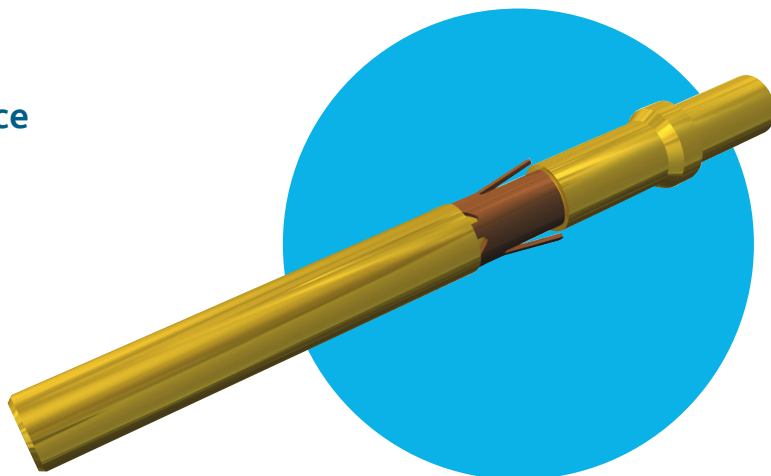
Contact Arrangement	Angular Displacement of Inserts				
	N YELLOW	W BLUE	X GREEN	Y PURPLE	Z WHITE
18-19	0	-	120	240	-
20-15		80	-	-	280
22-14			110	250	
24-10			-	-	
28-21		110	250		
32-A13		65	130	230	295
36-A22		80	110	250	280
40-A35		70	130	230	290
40-A60		80	110	250	280



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# ABCIRP

additional alignment / polarising device



Contact Arrangement	Insulator Orientation	Alignment / Polarising Pin Position
18-19	ALL	Any one hole
20-15		Any one hole apart from G
22-14		Holes K & R
24-10		Any one hole apart from G
28-21		Holes E & e
32-A13		Hole 10
36-A22		Holes 14 & 17
40-A35		Holes 1 & 24
40-A60		N
	W, X, Y & Z	Holes 26 & 59

## How to Order:

ABCIRP \*\* FAP

\*\* Contact Size

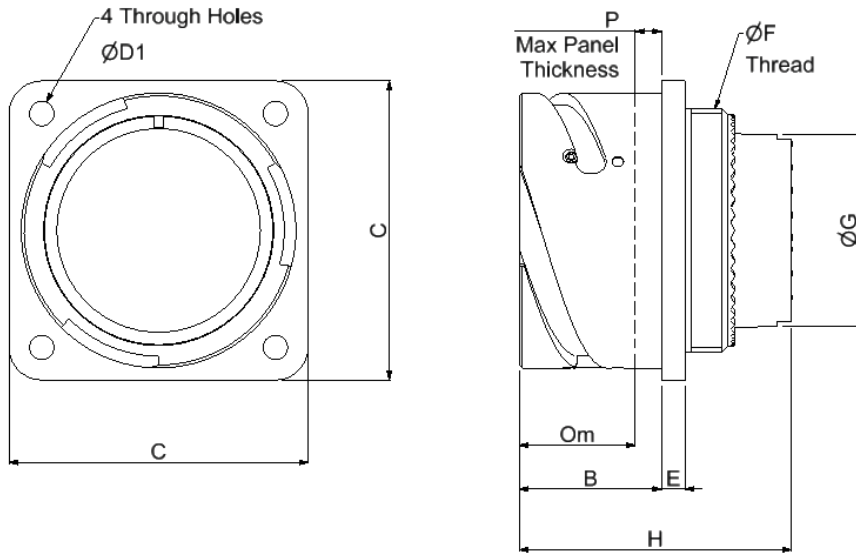
**Note:** Consult factory for all other positions.

# ABCIRP

## rear panel mounted receptacle



ABCIRP03T



Shell Size	ØF Thread Class 2A	B Max	C Max	Ød1 +0,2-0	Threaded Holes (MOD CODE M6)	E Max	ØG	H	P see note	Om Min Overlap Mated
18	1'' x 20 UNEF	23.45	35.30	3.20	M4	4.20	18.30	46.25	3.30	15.85
20	1½'' x 18 UNEF		38.30				20.50			
22	1¾'' x 18 UNEF		41.30				24.60			
24	1¾'' x 18 UNEF	24.45	44.80	3.70	M5	4.20	27.00	46.25	3.30	15.75
28	1¾'' x 18 UNEF		51.10				32.50			
32	1¾'' x 16 UN		57.30	35.80						
36	2¼'' x 16 UNS		63.80	42.50						
40	2¼'' x 16 UN		70.20	48.50						

**Note:** Maximum panel thickness when using cap head screws.  
When using countersunk screws, maximum panel thickness = 7.5mm.

See page 34 for panel mounting details

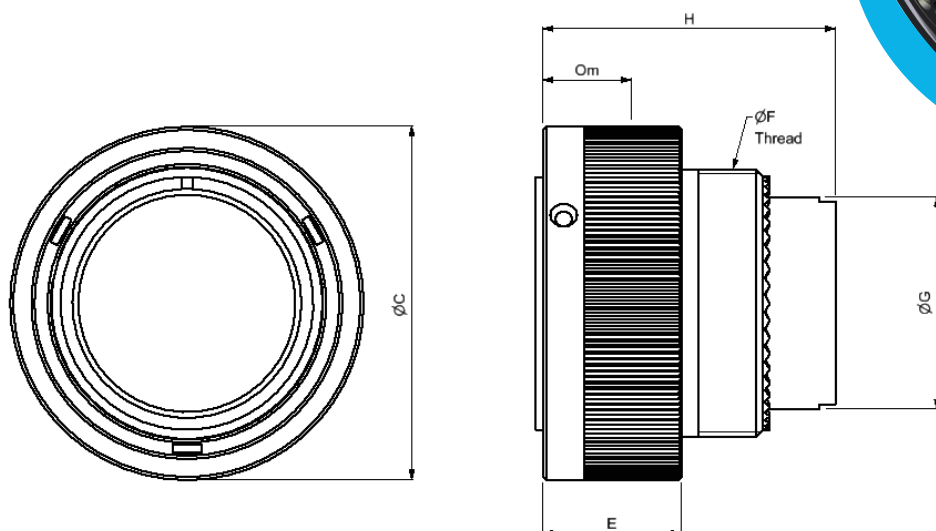
ABCIRP

# ABCIRP

plug connector (style 'T' less accessories)



ABCIRPSE06T

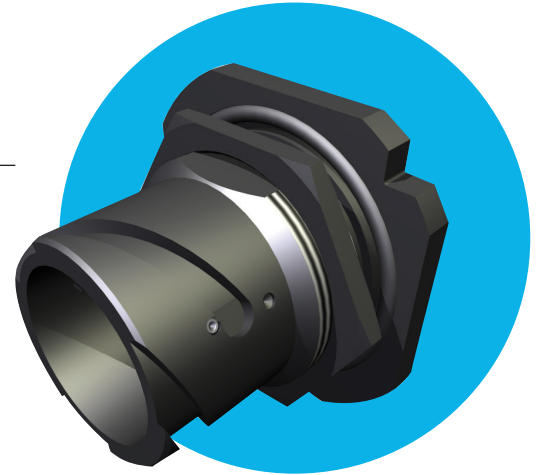


Shell Size	C Max	E Max	$\varnothing F$ Thread Class 2A	$\varnothing G$	H	$Om$ Min Over- lap Mated
18	37.30	24.00	1'' x 20 UNEF	18.30	46.25	15.85
20	40.70		1 $\frac{1}{8}$ '' x 18 UNEF	20.50		
22	44.20		1 $\frac{1}{4}$ '' x 18 UNEF	24.60		
24	47.70		1 $\frac{3}{8}$ '' x 18 UNEF	27.00		
28	54.50	27.00	1 $\frac{1}{2}$ '' x 18 UNEF	32.50		15.75
32	61.40		1 $\frac{5}{8}$ '' x 16 UN	35.80		
36	68.00		2 $\frac{1}{16}$ '' x 16 UNS	42.50		
40	74.00		2 $\frac{5}{16}$ '' x 16 UN	48.50		

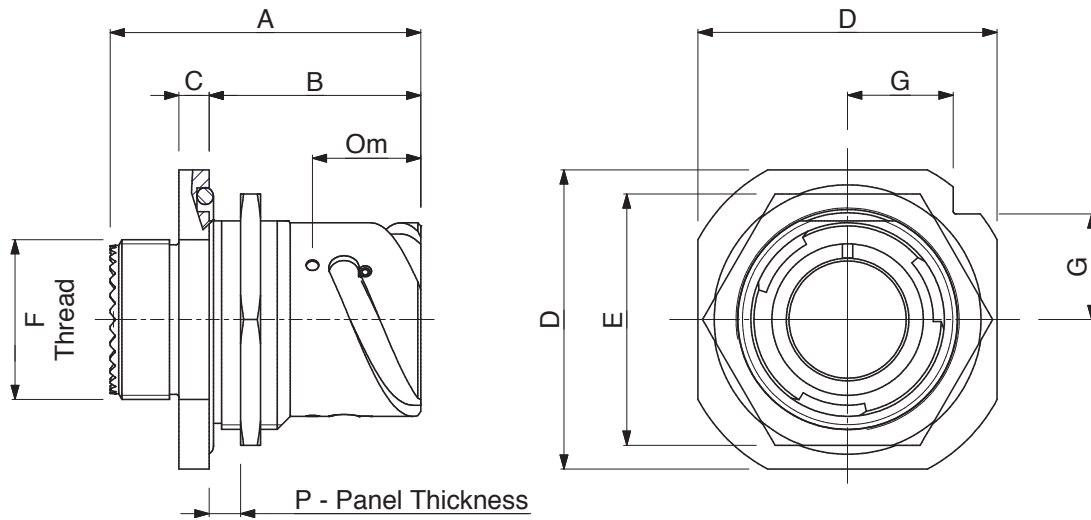
**Note:** All plug connectors are EMI/RFI versions.

# ABCIRP

## single hole mounting receptacle



ABCIRP09T

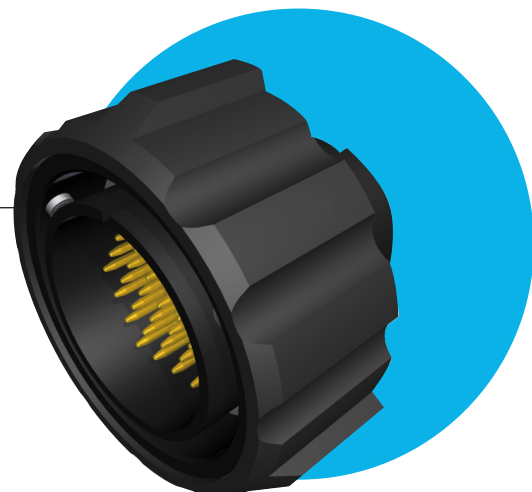


Shell Size	A Max	B	C	D Max	E	ØF Thread Class 2A	ØG	P		Om Min Overlap Mated
								Min	Max	
18	49.55	33.70	4.80	47.85	39.70	1'' x 20 UNEF	16.80	2.40	9.00	15.85
20				51.05	44.00	1 <sup>1</sup> / <sub>8</sub> '' x 18 UNEF	18.00			
22				54.45	46.00	1 <sup>1</sup> / <sub>4</sub> '' x 18 UNEF	20.20		9.10	
24				57.45	50.80	1 <sup>3</sup> / <sub>8</sub> '' x 18 UNEF	20.20			
28	52.15	35.20	5.60	63.75	55.00	1 <sup>5</sup> / <sub>8</sub> '' x 18 UNEF	22.50		8.50	15.75
32				70.05	62.00	1 <sup>7</sup> / <sub>8</sub> '' x 18 UNEF	24.70			
36				76.45	71.00	2 <sup>1</sup> / <sub>16</sub> '' x 18 UNS	26.90		8.30	
40				83.75	75.00	2 <sup>5</sup> / <sub>16</sub> '' x 18 UN	29.60			

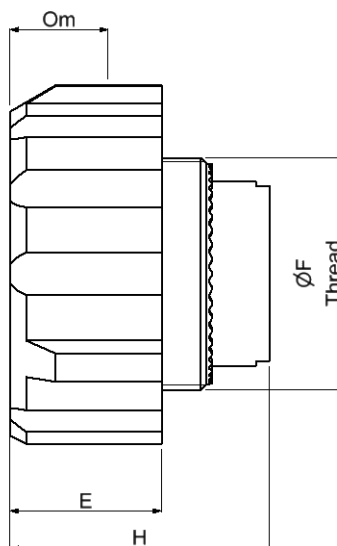
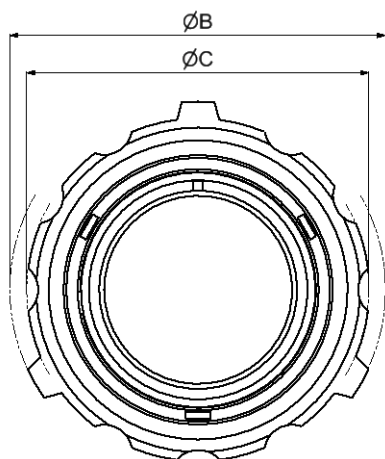
ABCIRP

# ABCIRP

plug connector with protective rubber ring  
(style 'T' less accessories)



ABCIRPPSE06T

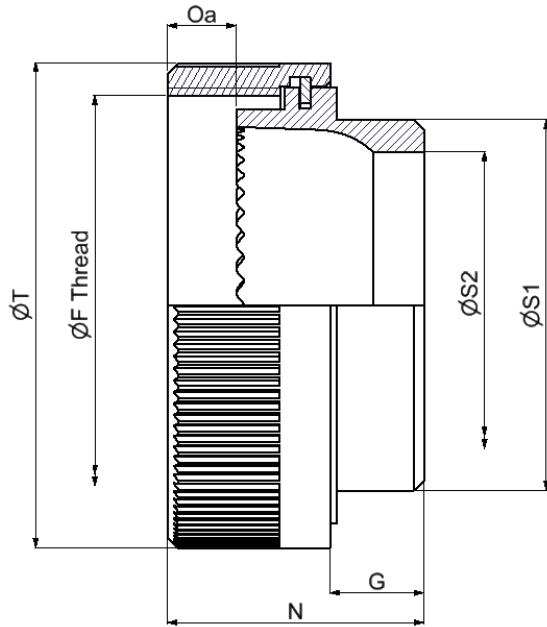
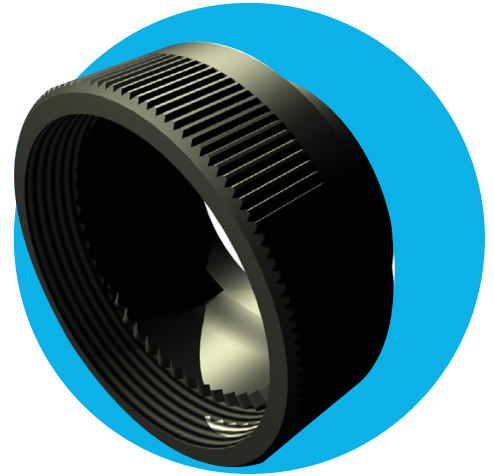


Shell Size	B Max	C Max	E Max	ØF Thread Class 2A	H Max	Om Min Overlap Mated
18	49.00	43.50	27.10	1'' x 20 UNEF	46.82	17.85
20	51.50	46.00		1½'' x 18 UNEF		
22	56.00	50.50		1¼'' x 18 UNEF		
24	60.00	54.00		1⅝'' x 18 UNEF		
28	67.00	61.00		1⅝'' x 18 UNEF		17.75
32	76.00	67.60		1⅝'' x 16 UN		
36	82.30	74.30		2¼'' x 16 UNS		
40	88.00	80.00		2⅝'' x 16 UN		

Note: All plug connectors are EMI/RFI versions.

# ABCIRP

locking backnut for grommet sealing only  
LBN (locking)



Shell Size	ØF Thread Class 2B	G Max	N Max	ØS1 Max	ØS2 Min	ØT Max	Oa Min Overlap Accessory	
18	1" x 20 UNEF	8.70	25.65	25.50	16.70	31.00	7.00	
20	1 1/8" x 18 UNEF			30.20	19.80	35.00		
22	1 1/4" x 18 UNEF					38.00		
24	1 3/8" x 18 UNEF			24.65	36.60	25.40		41.00
28	1 5/8" x 18 UNEF				27.00	48.00		
32	1 7/8" x 16 UN				44.50	32.50		54.00
36	2 1/16" x 16 UNS				50.90	35.70		61.00
40	2 5/16" x 16 UN				57.20	45.00		67.00

### How to Order:

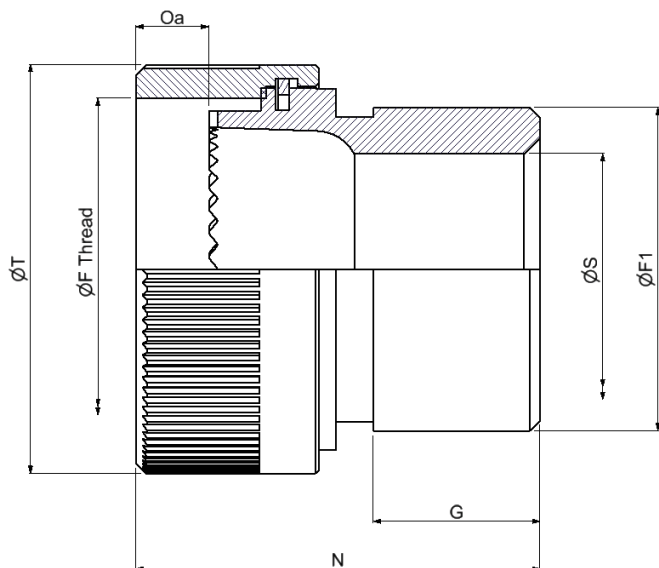
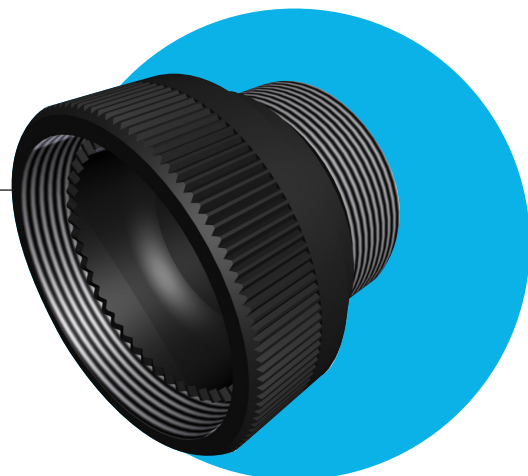
ABBP \*\* LBN

\*\* Shell Size

ABCIRP

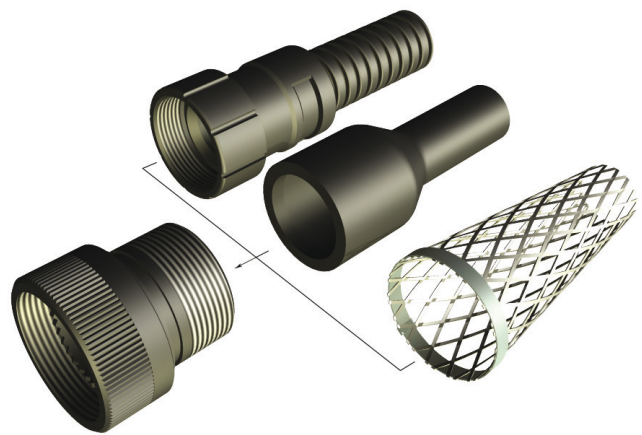
# ABCIRP

straight conduit heatshrink screen adapter  
SCHSA (locking)



Shell Size	ØF Thread Class 2B	ØF1 Thread Class 2A	G Max	N Max	ØS Min	ØT Max	Oa Min Overlap Accessory
18	1'' x 20 UNEF	1'' x 20 UNEF	12.40	36.06	16.70	31.00	7.00
20	1 1/8'' x 18 UNEF	1 3/16'' x 18 UNEF		38.60	19.80	35.00	
22	1 1/4'' UNEF				21.34	38.00	
24	1 3/8'' x 18 UNEF	1 1/2'' x 18 UNEF		38.56	25.40	41.00	
28	1 5/8'' x 18 UNEF				30.13	48.00	
32	1 7/8'' x 16 UN	1 3/4'' x 18 UNS	12.10	38.26	36.73	54.00	
36	2 1/16'' x 16 UNS	2'' x 18 UNS		39.26	41.00	61.00	
40	2 3/16'' x 16 UN	2 1/4'' x 16 UN		38.30	48.10	67.00	

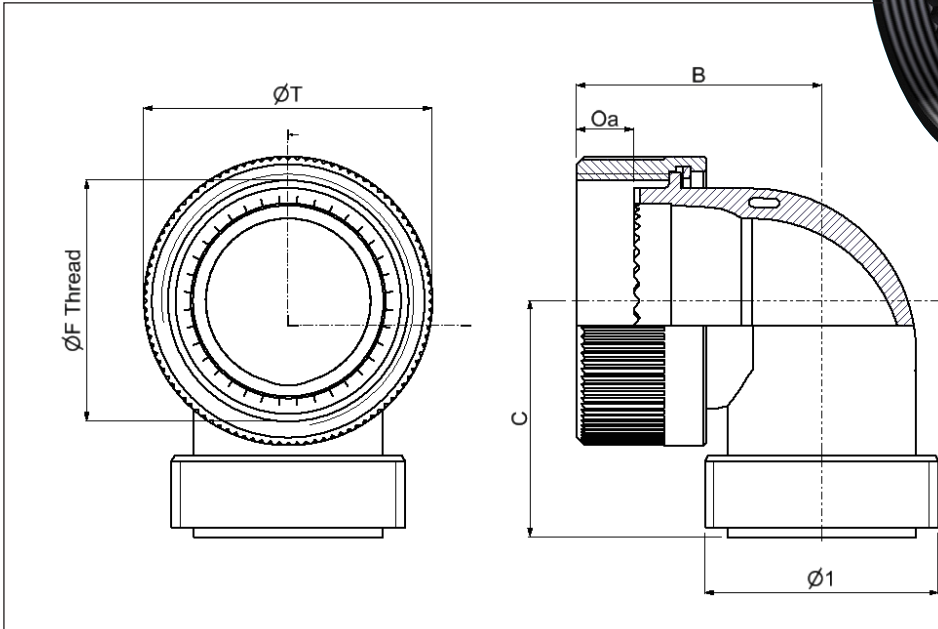
**How to Order:**  
 ABBP \*\* SCHSA  
 \*\* Shell Size



Thread measurement is imperial, all other measurements in mm.

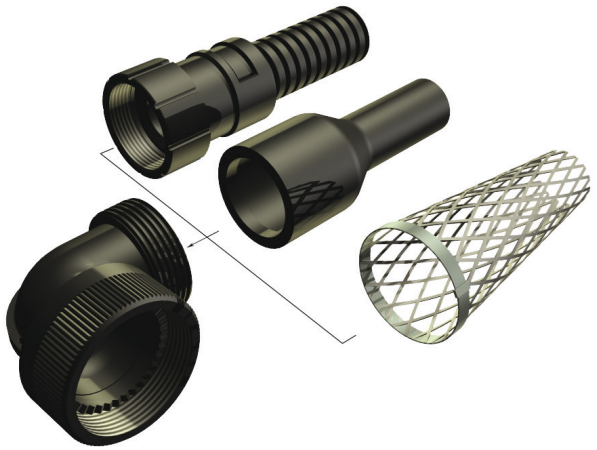
# ABCIRP

## 90° elbow conduit heatshrink screen adapter ECHSA (locking)



Shell Size	ØF Thread Class 2B	Ø1 Original Thread Class 2B	B Max	C Max	ØT Max	Oa Min Overlap Accessory
18	1" x 20 UNEF	1" x 20 UNEF	31.10	35.00	31.00	7.00
20	1 1/8" x 18 UNEF	1 3/16" x 18 UNEF	33.00		35.00	
22	1 1/4" x 18 UNEF		33.10		38.00	
24	1 3/8" x 18 UNEF	1 1/2" x 18 UNEF	37.90	40.00	41.00	
28	1 5/8" x 18 UNEF		37.10		48.00	
32	1 7/8" x 16 UN	1 3/4" x 18 UNS	43.10	45.00	54.00	
36	2 1/16" x 16 UNS	2" x 18 UNS	45.90	50.00	61.00	
40	2 3/16" x 16 UN	2 1/4" x 16 UN	49.00	54.60	67.00	

**How to Order:**  
 ABBP \*\* ECHSA  
 \*\* Shell Size



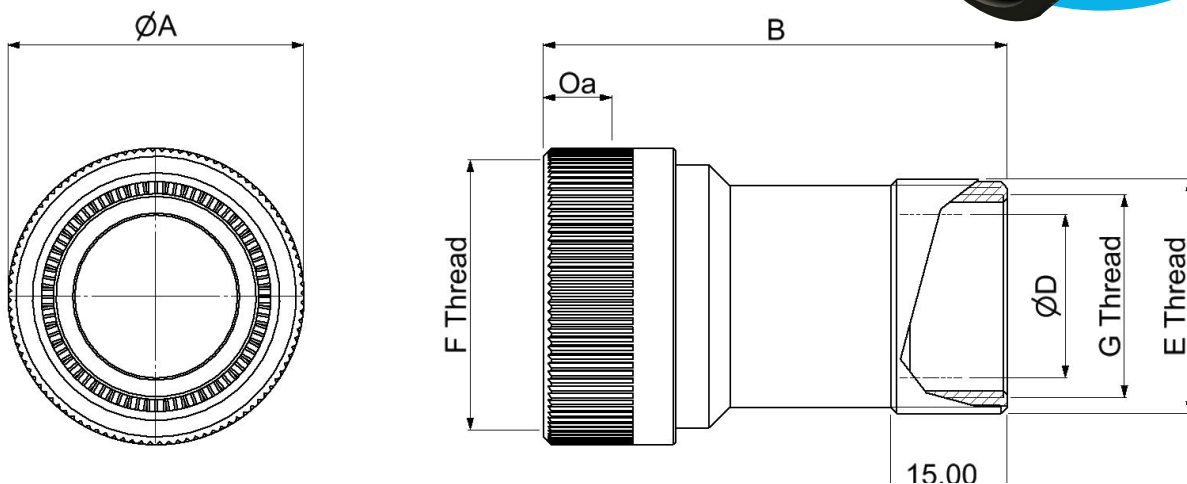
Thread measurement is imperial, all other measurements in mm.



ABCIRP

# ABCIRP

shell heatshrink extender  
SHE# (locking)



Shell Size	F Thread Class 2B	E Thread Class 2A	G Thread PG/METRIC	ØA Max	B	Overlap Oa Min
18	1'' x 20 UNEF	1'' x 20 UNEF	PG 13.5 M20x1.5	31.00	58.8	7.00
20	1 1/8'' x 18 UNEF	1 3/16'' x 18 UNEF	PG 16 M25x1.5	35.00		
22	1 1/4'' x 18 UNEF			38.00		
24	1 3/8'' x 18 UNEF	1 7/16'' x 18 UNEF	PG 21 M32x1.5	41.00	65.8	
28	1 5/8'' x 18 UNEF			48.00		
32	1 7/8'' x 16 UN	1 3/4'' x 18 UNS	PG 29 M40x1.5	54.00		
36	1 1/2'' x 16 UNS	2'' x 18 UNS		61.00		
40	2 1/4'' x 16 UN	2 1/4'' x 16 UN	PG 36 M50x1.5	67.00		

**How to Order:**

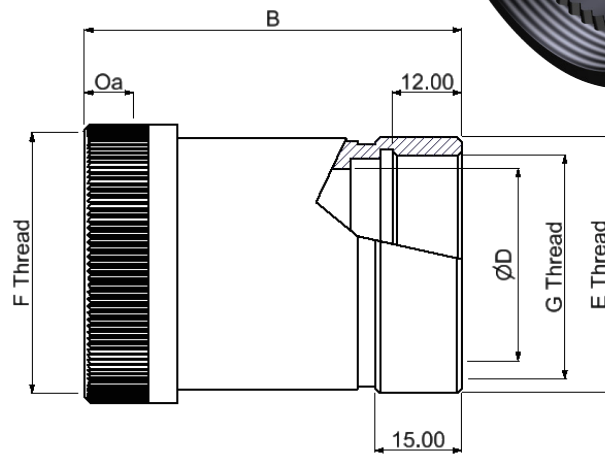
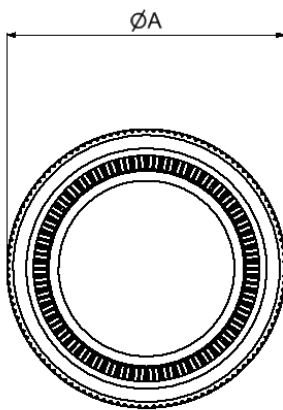
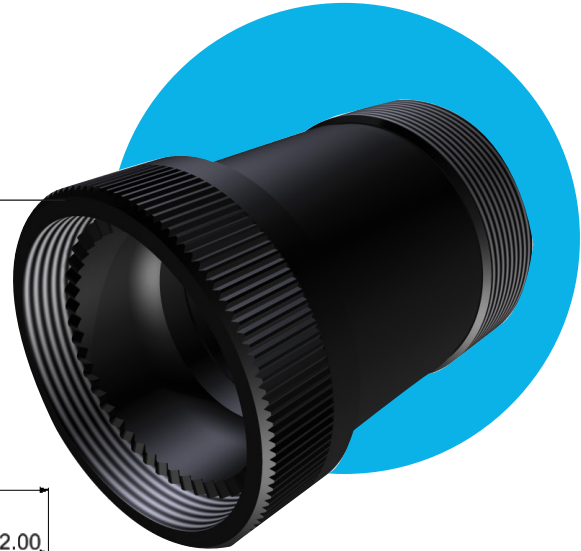
ABBP \*\* SHE #

\*\* Shell Size

# M = Metric, P = PG

# ABCIRP

step-up adapters  
SUA# (locking)



Shell Size	F Thread Class 2B	E Thread Class 2A	G Thread PG/METRIC	ØA Max	B	ØD Bore	Overlap Oa Min
18	1" x 20 UNEF	1 3/16" x 18 UNEF	PG 16 M25x1.5	31.00	58.8	16.7	7.00
20	1 1/8" x 18 UNEF	1 1/16" x 18 UNEF	PG 21 M32x1.5	35.00		19.8	
22	1 1/4" x 18 UNEF			38.00			
24	1 3/8" x 18 UNEF	1 3/4" x 18 UNS	PG 29 M40x1.5	41.00	65.8	25.4	
28	1 5/8" x 18 UNEF			48.00		27.0	
32	1 7/8" x 16 UN			54.00		32.5	
36	2 1/16" x 16 UNS	2" x 18 UNS	PG 36 M50x1.5	61.00	65.8	35.7	
40	2 5/16" x 16 UN	2 1/4" x 16 UN	PG 42 M50x1.5	67.00		45.0	

**How to Order:**

ABBP \*\* SUA #

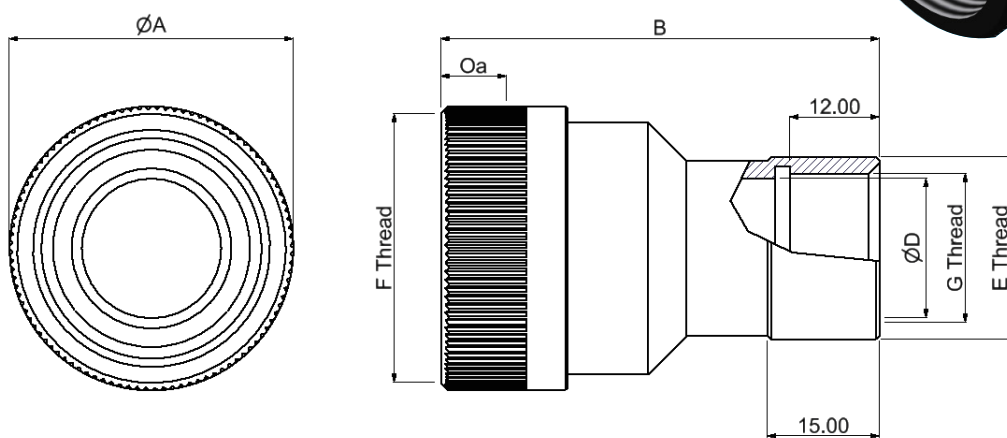
\*\* Shell Size

# M = Metric, P = PG

ABCIRP

# ABCIRP

step-down adapters  
SDA (locking)



Shell Size	F Thread Class 2B	E Thread Class 2A	G Thread PG/METRIC	ØA Max	B	Overlap Oa Min
18	1'' x 20 UNEF	7/8'' x 18 UNEF	PG 11 M18x1.5	31.00	58.8	7.00
20	1 1/8'' x 18 UNEF	1'' x 20 UNEF	PG 13.5 M20x1.5	35.00		
22	1 1/4'' x 18 UNEF			38.00		
24	1 3/8'' x 18 UNEF	1 3/16'' x 18 UNEF	PG 16 M25x1.5	41.00	65.8	
28	1 5/8'' x 18 UNEF			48.00		
32	1 7/8'' x 16 UN	1 7/16'' x 18 UNEF	PG 21 M32x1.5	54.00		
36	2 1/16'' x 16 UNS	1 3/4'' x 18 UNEF	PG 29 M40x1.5	61.00		
40	2 3/16'' x 16 UN	1'' x 18 UNS		67.00		

**How to Order:**

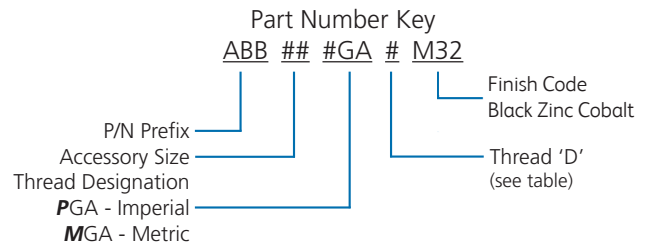
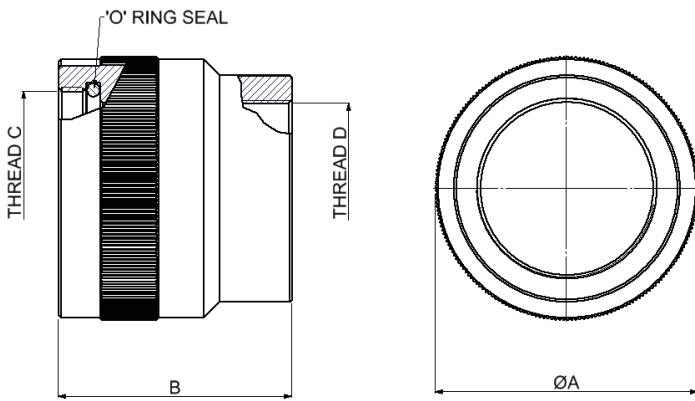
ABBP \*\* SDA #

\*\* Shell Size

# M = Metric, P = PG

# ABCIRP

**cable gland adapters**  
 (fitting on SCHSA & ECHSA accessory with  
 PG / METRIC thread)



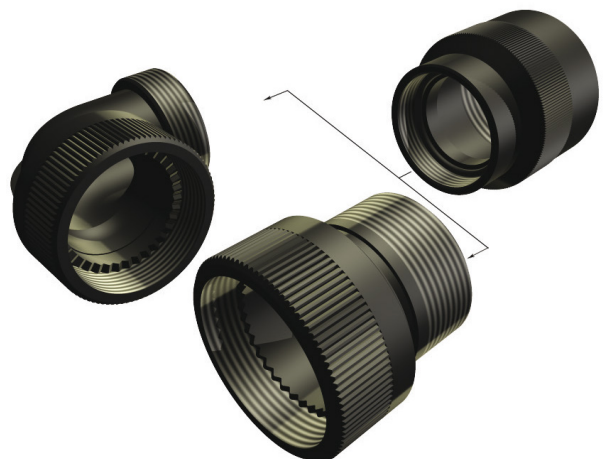
P/N Example to fit shell size 20 with a rear metric thread size M25

**ABB 20 MGA DM32**

Shell Size	Part Number	ØA	B	Thread C
18	ABB-18-#GA-#M32	34.00	40.00	1" x 20 UNEF
20-22	ABB-20-#GA-#M32	37.00	40.00	1 1/16" x 18 UNEF
24-28	ABB-24-#GA-#M32	43.00	40.00	1 1/8" x 18 UNEF
32	ABB-32-#GA-#M32	54.00	48.00	1 1/4" x 18 UNS
36	ABB-36-#GA-#M32	57.20	50.00	2" x 18 UNS
40	ABB-40-#GA-#M32	65.00		2 1/4" x 16 UN

**Thread Table (D)**

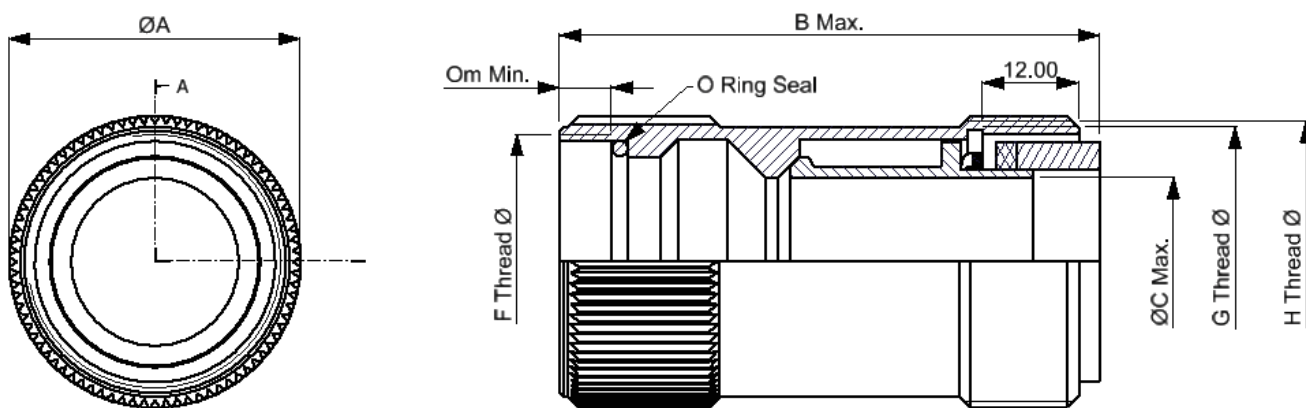
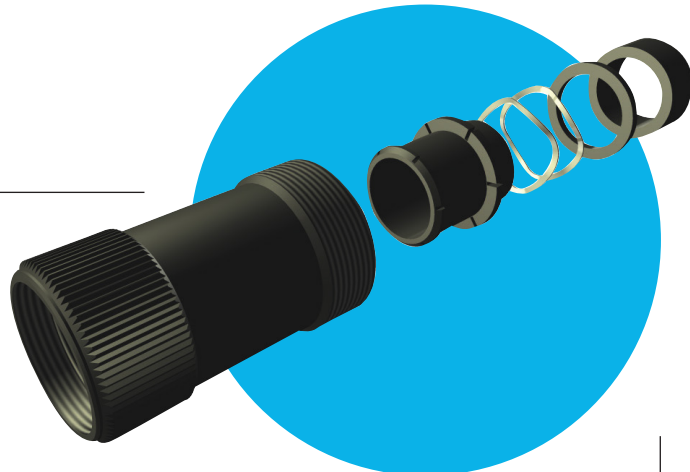
Imperial (PGA)	Thread Size	Metric (MGA)	Thread Size
A	PG7	A	M12 x 1.5
B	PG9	B	M16 x 1.5
C	PG11	C	M20 x 1.5
D	PG13.5	D	M25 x 1.5
E	PG16	E	M32 x 1.5
F	PG21	F	M40 x 1.5
G	PG29	G	M50 x 1.5
H	PG36	H	M63 x 1.5
J	PG42		
K	PG48		



ABCIRP

# ABCIRP

shell extender with screening  
SPTAS (non locking)

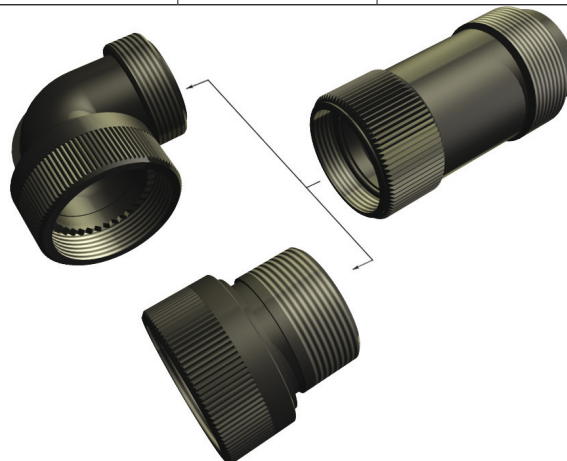


Shell Size	ØA	B Max	ØC Max	ØF Thread Class 2B	G Thread	ØH Thread Class 2A
18	29.50	68.00	11.30	1" x 20 UNEF	M25x1.5-6H	1 3/16" x 18 UNEF
20*	-	-	-	-	-	-
22	36.50	68.00	21.00	1 3/16" x 18 UNEF	M32x1.5-6H	1 1/16" x 18 UNEF
24*	-	-	-	-	-	-
28	43.00	70.00	27.50	1 1/16" x 18 UNEF	M40x1.5-6H	1 3/4" x 18 UN
32*	-	-	-	-	-	-
36*	-	-	-	-	-	-
40	64.00	70.00	39.00	2 1/4" x 16 UN	M50x1.5-6H	2 1/4" x 16 UN

### How to Order:

ABBP \*\* SPTAS

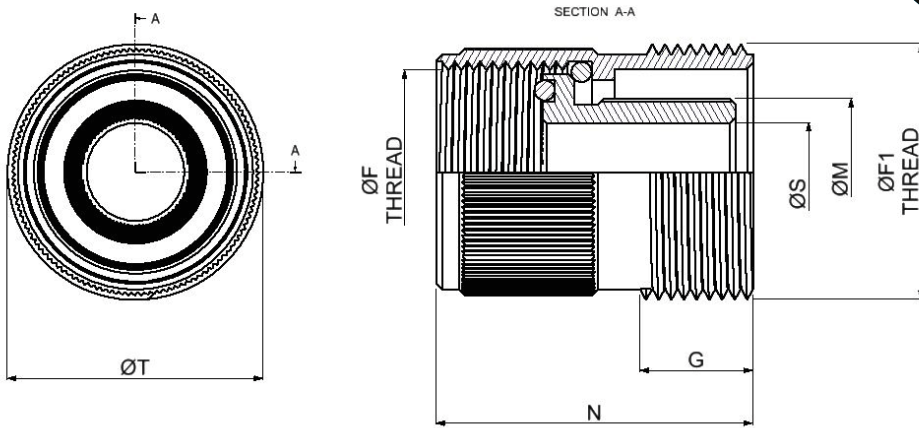
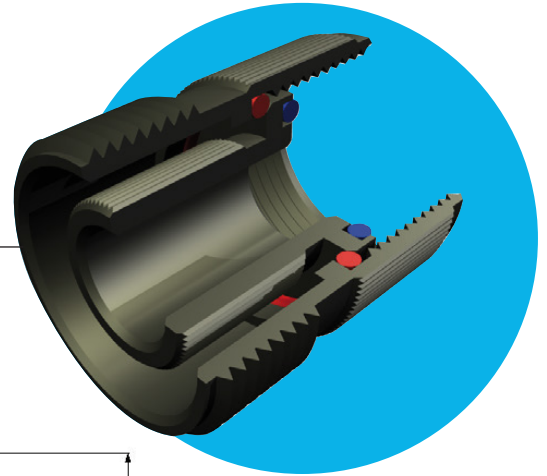
\*\* Shell Size



Note: \* Please consult factory for these sizes

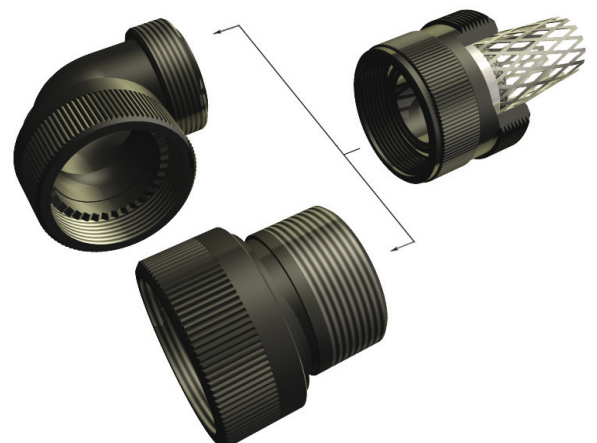
# ABCIRP

adapters  
 CRA (2 piece adaptor to terminate cable screen braid to connector with conduit outer)



Shell Size	ØF Thread Class 2B	ØF1 Thread Class 2A	G Max	N Max	S Min	T Max	M Max
16S	7/8" x 20 UNEF	1" x 20 UNEF	10.00	27.60	9.74	25.50	13.10
18	1" x 20 UNEF	1 1/16" x 18 UNEF	11.00	30.60	12.90	29.10	16.26
20	1 3/16" x 18 UNEF	1 1/16" x 18 UNEF			18.23	35.45	21.51
22					1 7/16" x 18 UNEF	1 3/4" x 18 UNS	25.93
24	1 3/4" x 18 UNS	2" x 18 UNS					32.00
28			2 1/4" x 16 UN	2 1/4" x 16 UN	32.33	63.10	35.60
32							
36			13.00				
40							

**How to Order:**  
 ABBP \*\* SPTAS #  
 \*\* Shell Size  
 # M = Metric, P = PG

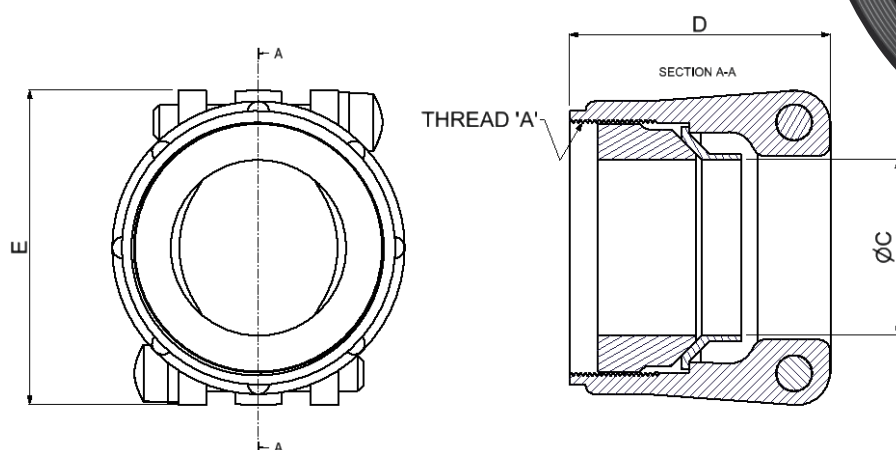
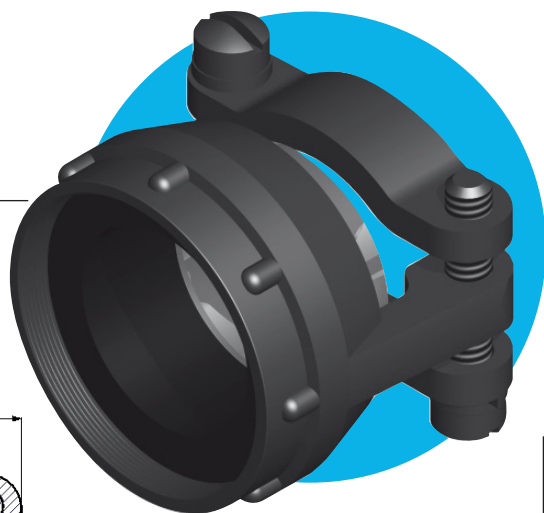


**Note:** with style SCHSA or ECHSA adaptors.  
 This accessory can only be used in conjunction

ABCIRP

# ABCIRP

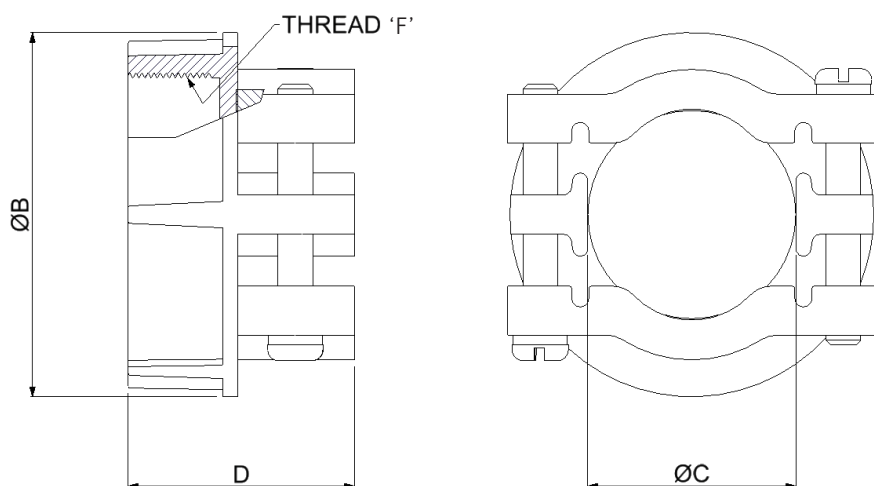
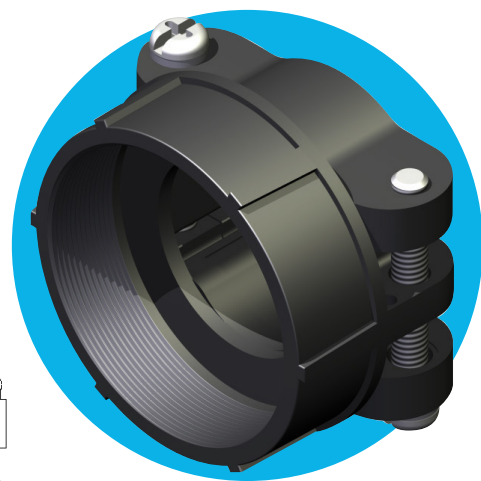
waterproof clamp for jacketed cable  
CMSP3057C



Shell Size	Part Number CMSP3057C**M32	ØA Thread Class 2A	ØC		D Max	E Max	
			Min	Max			
16 / 16S	16 / 16S	3/8" x 20 UNEF	7.92	13.48	34.93	30.18	
18	18	1" x 20 UNEF	9.53	15.87	36.50	33.32	
20	20	1 1/16" x 18 UNEF	12.70	19.00		39.21	
22	22		1 1/8" x 18 UNEF	15.09	23.80	39.67	44.45
24	24	1 3/4" x 18 UNS		23.83	31.75	46.02	57.15
28	28			2" x 18 UNS	24.61	35.00	52.37
32	32	2 1/4" x 16 UN	30.18		41.25	66.68	
36	36						
40	40						

# ABCIRP

cable clamp  
CMSP3057A



Shell Size	Part Number CMSP3057A**M32	ØF Thread Class 2A	B Max	C Max	D Max
16 / 16S	16 / 16S	$\frac{7}{8}$ " x 20 UNEF	28.58	14.30	24.61
18	18	1" x 20 UNEF	30.96	15.88	
20	20	$1\frac{3}{16}$ " x 18 UNEF	35.71	19.05	
22	22				
24	24	$1\frac{7}{16}$ " x 18 UNEF	42.85	23.83	26.97
28	28				
32	32	$1\frac{3}{4}$ " x 18 UNS	52.37	31.75	28.58
36	36	2" x 18 UNS	57.15	34.93	30.15
40	40	$2\frac{1}{4}$ " x 16 UN	64.29	41.28	43.66

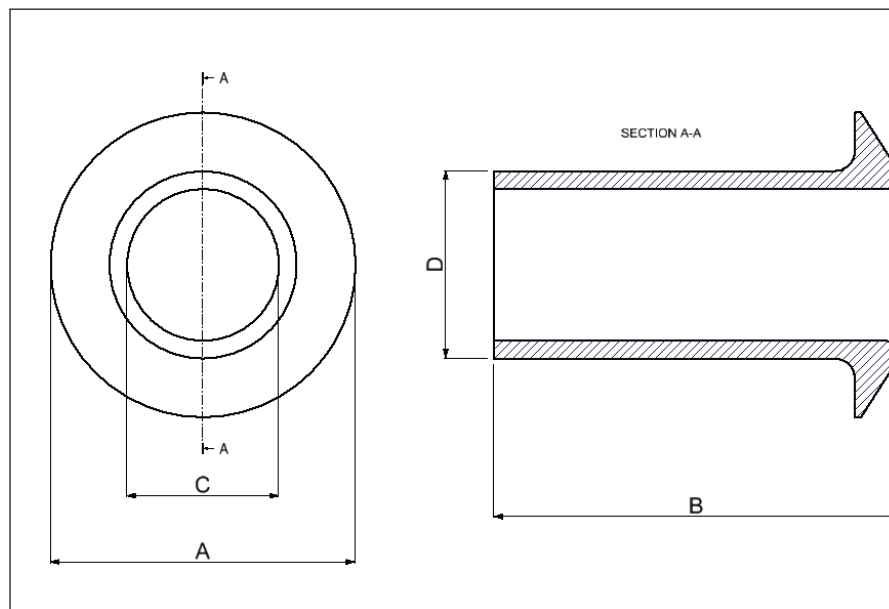
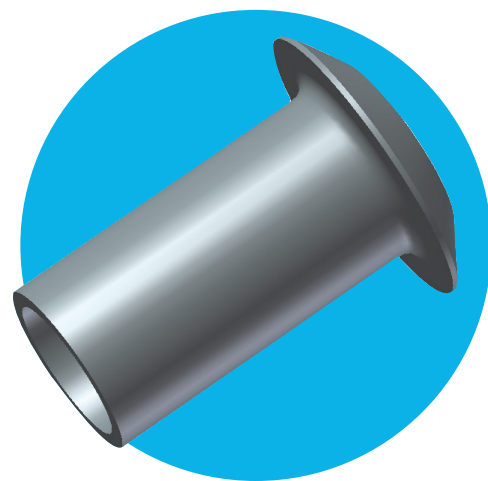


ABCIRP

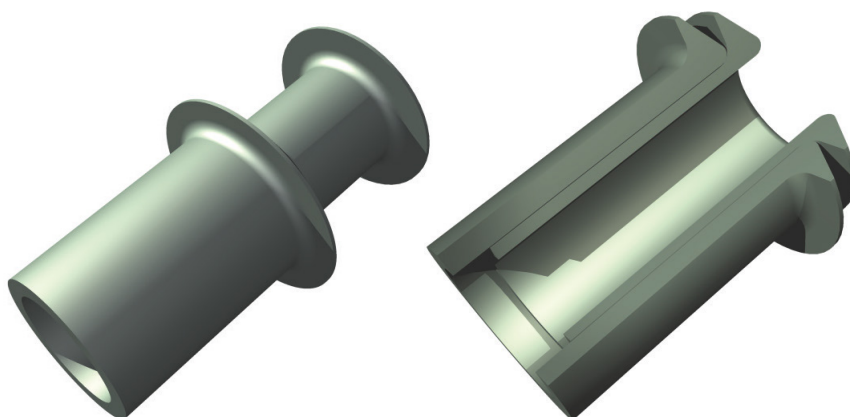
# ABCIRP

telescopic bushing  
SBMSH554

(use with CMSP3057A clamp)



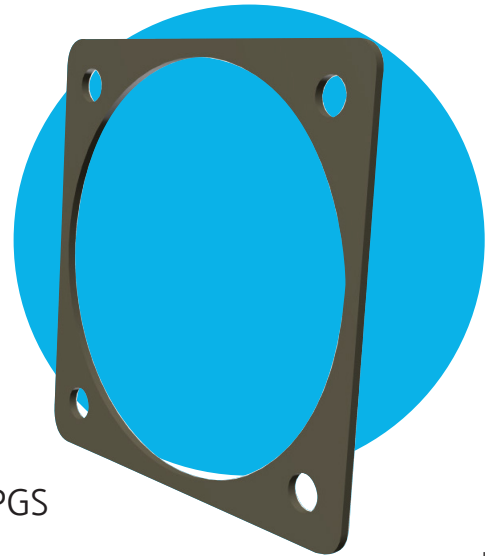
Shell Size	Part Number SBMSH554**	ØA	B	ØC	ØD
16 / 16S	3	19.05	63.50	11.10	13.97
18	4	22.23	60.33	14.27	15.57
20	5	25.40	57.15	15.88	18.75
22	6	28.58			
24	7	31.75	53.98	19.05	23.50
28	8	38.23			
32	9	44.45	50.80	23.80	31.45
36	10	47.88	47.63	31.75	34.62
40	11	52.90	44.40	34.92	40.99



**Note:** Through bore reduction possible by telescoping bushings

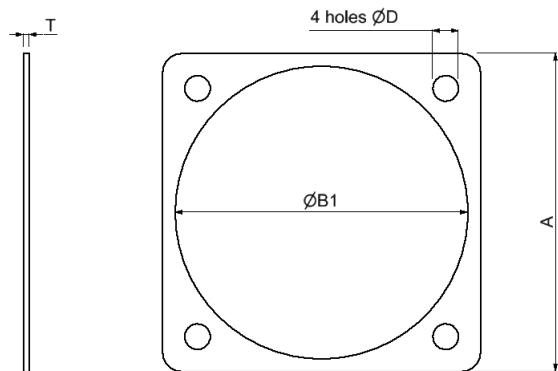
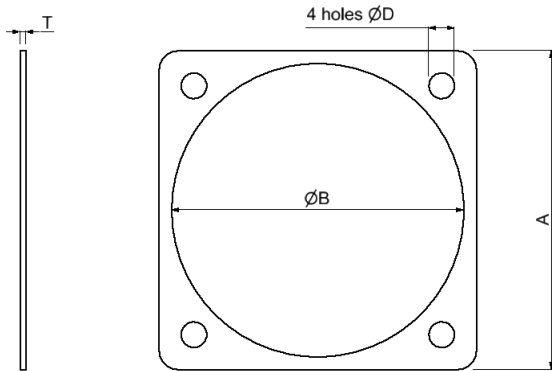
# ABCIRP

panel gasket, non-conductive / conductive  
front & rear mounted connectors  
RPG/S & FPG/S



SB\*\*RPG / RPGS

SB\*\*FPG / FPGS



Shell Size	A Min	ØB Nominal	ØB1 Nominal	Ød Min	T Nominal
18	34.90	25.40	30.90	3.43	1.00
20	38.10	28.60	34.30		
22	41.30	31.70	37.50		
24	44.50	34.90	41.00	4.12	
28	50.80	41.30	46.80		
32	57.20	47.60	53.50	4.78	
36	63.50	52.60	59.70		
40	69.90	61.90	65.50	5.10	

## How to Order:

Part Numbers:

	Non-conductive	Conductive
Front Mounted	SB ** RPG	SB ** RPGS
Rear Mounted	SB ** FPG	SB ** FPGS

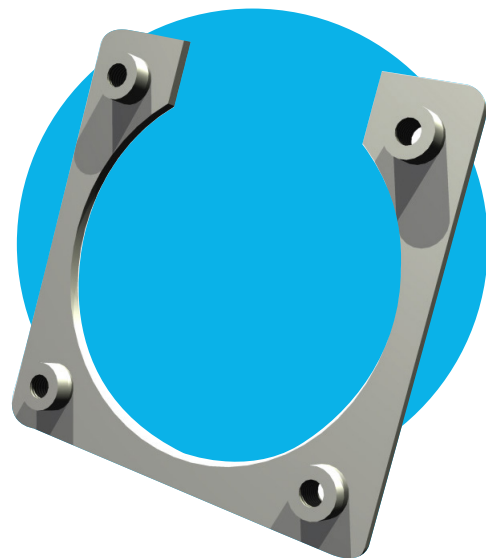
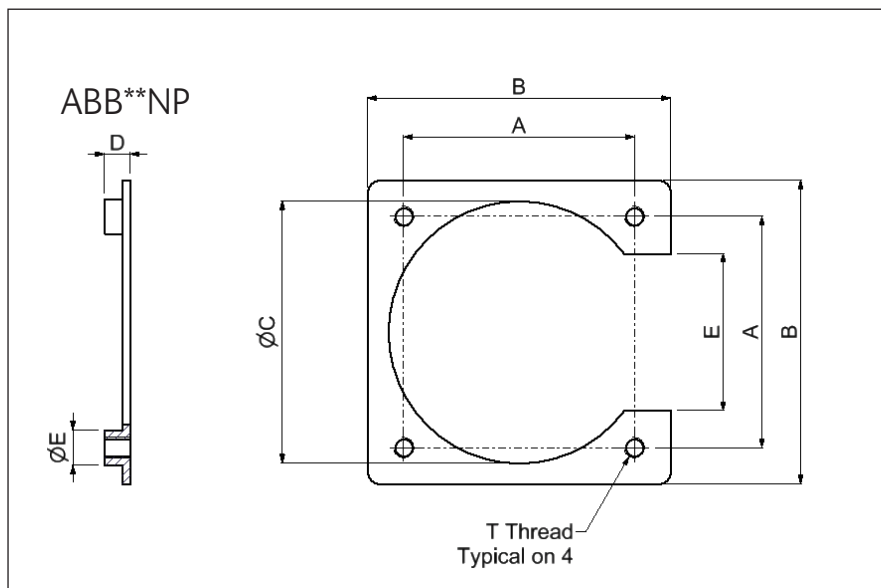
\*\* Shell Size

**Note:** Conductive gaskets have a conductivity of 5m Ohms, temp range of -50 to +200°C.

ABCIRP

# ABCIRP

## connector fixing nut plates



Shell Size	A	B Max	CØ Max	D	E Max	FØ Max	T Thread (Metric)	Part Number ABB**NP (Metric)	T Thread (Imperial)	Part Number ABB**NPA (Imperial)	
18	26.97	34.62	30.48	2.69/4.22	20.21	6.00	M3x0.5	18	4-40 UNC	18	
20	29.36	38.48	33.53		22.47			7.50		20	20
22	31.75	40.84	36.65		23.54					22	22
24	34.93	44.83	40.00		25.90	24		24			
28	39.67	51.18	46.61		29.08	28		28			
32	44.45	59.10	52.75	3.50/5.00	30.68	8.00	M4x0.7	8-32 UNC	32	32	
36	49.23	63.86	59.10		35.43		36		36		
40	55.58	74.68	68.33		38.60		40		40		

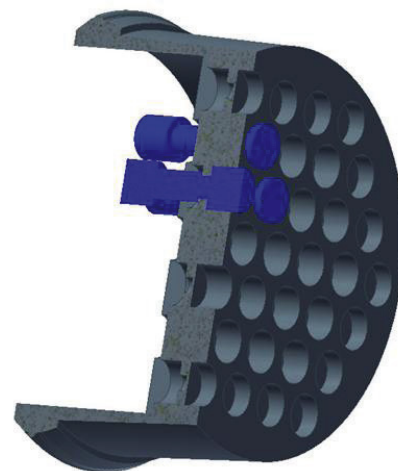
## grommet filler plug



Damage to grommet



Grommet filler plug



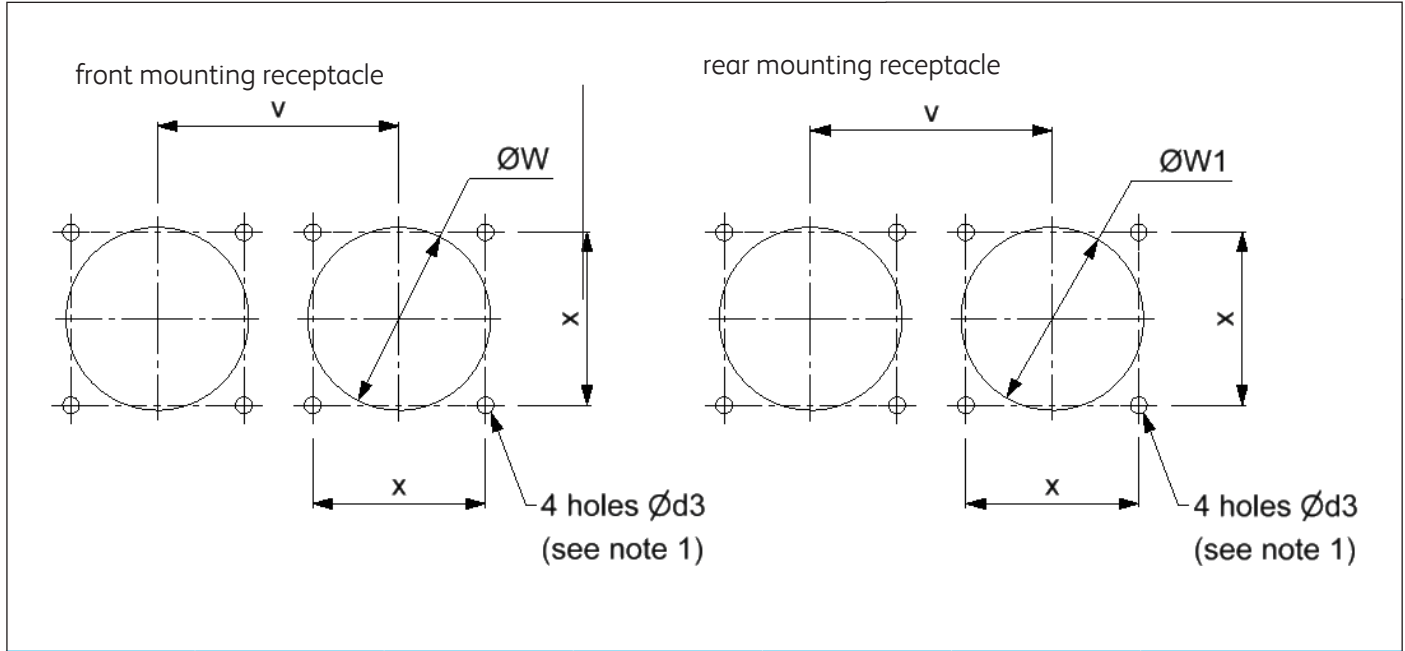
Sealed using filler plugs

ABB16KFP -  
 ABB12KFPF80 -  
 ABB8KFPF80 -

To be used if grommet is pierced incorrectly

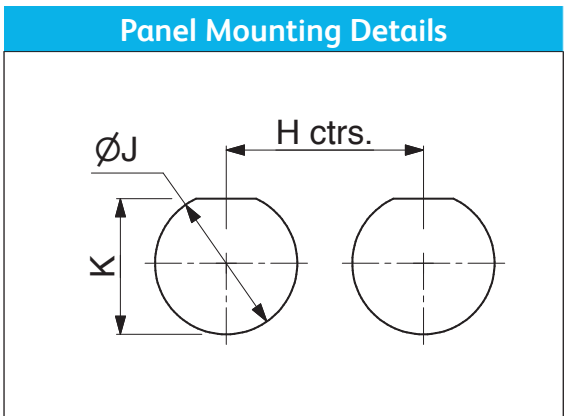
# ABCIRP

## receptacle mounting detail



Shell Size	Ød3	Ød4	V	ØW	ØW1	X
18	3.40	4.50	38.30	26.00	31.18	27.00
20			41.70	30.00	34.58	29.40
22			45.20	33.00	37.78	31.80
24	3.90		48.70	36.00	41.28	34.90
28			55.50	42.00	47.08	39.70
32	4.50	5.50	62.40	48.50	53.78	44.50
36			69.00	55.00	59.98	49.20
40			75.00	59.10	66.40	55.50

Shell Size	Hole centres	ØJ	K	H
18	48.85	35.23	33.58	48.85
20	52.05	38.43	36.68	52.05
22	55.45	41.56	39.88	55.45
24	58.45	44.78	43.18	58.45
28	65.25	51.13	49.37	65.25
32	71.55	57.48	55.78	71.55
36	77.95	63.83	62.18	77.95
40	85.25	70.18	68.38	85.25



**Note:** When fixed connectors are used with plugs having rubber coupling nuts, please consult factory for panel cut-out dimensions.

When fixed connectors are used with threaded mounting holes, refer to hole sizes in column Ød4.

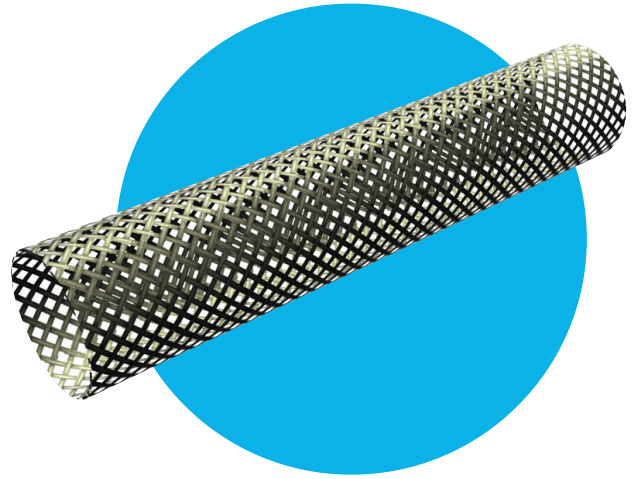


# ABCIRP

## RFI braid sock, band strap & knit mesh braid

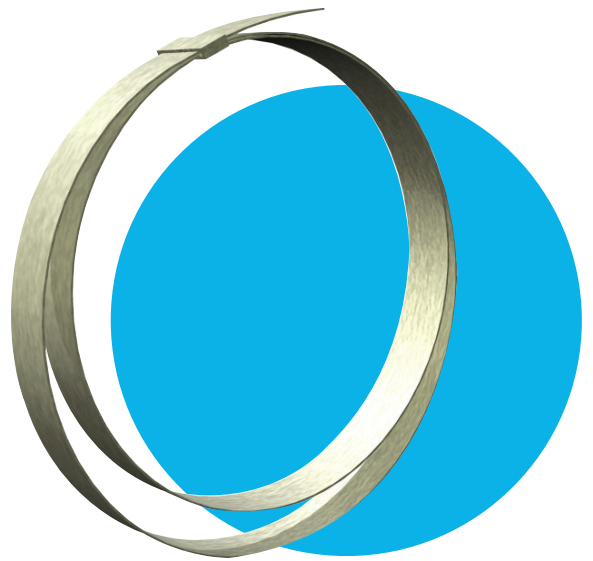
### RFI Braid Sock

AB Connectors Part Number	Diameter	Length	Max Shell Size
ABBMBS020010	ø 20 mm	100 mm	22
ABBMBS025015	ø 25 mm	150 mm	22
ABBMBS035015	ø 35 mm	150 mm	32
ABBMBS050015	ø 50 mm	150 mm	36 & 40



### Bandit Strap

AB Connectors Part Number	Length	Width	Max Shell Size
ABB600052	520 mm	6.1 mm	32
ABB600090	900 mm	6.1 mm	36 & 40
ABB608109	362 mm	4 mm	22
ABB600057	207 mm	3 mm	22

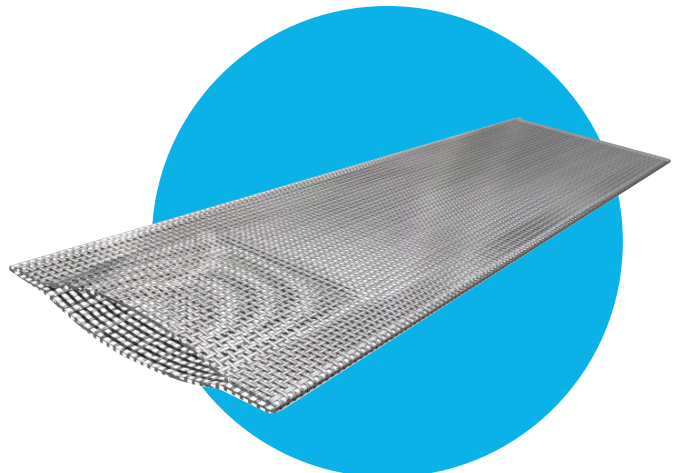


### Bandit Tools

AB Connectors Part Number	Tool Description
ABB600058	Standard Bandit Tool
ABB600061	Micro Bandit Tool (3mm Band Straps)
ABB601200	Calibration Kit

### Knitmesh Braid

AB Connectors Part Number	Length	Width
ABBMKM1050	500 mm	25 mm



ABCIRP

# ABCIRP

## crimp contacts - tooling

### Pneumatic Crimp Tool

Contact sizes 12 and 16



**AB Part No: ABBFT8**  
Supplier DMC part no: FT8

### Pneumatic Crimp Tool

Contact sizes 12 and 16



**AB Part No: ABWA27F**  
Supplier DMC part no: WA27F

### Turret Locator

Contact sizes 12 and 16  
(to locate contacts within a crimp tool)



**AB Part No: ABBTH592**  
Supplier DMC part no: TH592

### Hand Crimp Tool

Contact size 100



**AB Part No: ABBD51**  
Supplier Dubuis part no: D51

### Electric Crimp Tool

Contact size 100



**AB Part No: ABBPL0550A1130**

### Die Sets

crimping contact size 8 & 100



**AB Part No: ABMRP0925**

### Insertion Tool

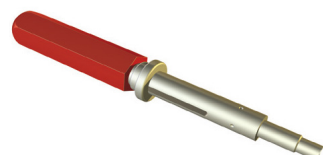
Contact sizes 12 and 16  
(to insert contact into plastic insert)



**AB Part No: P80 12 ITL (size 12)**  
**AB Part No: P80 16 ITL (size 16)**  
Supplier Astro Tools part no: AT 1110

### Extraction Tool

Contact size 8  
(to extract from plastic insert)



**AB Part No. P80 8 ETA**

### Extraction Tool

Contact sizes 12 & 16  
(to extract from plastic insert)



**AB part no. P80 12 ETA (size 12) / P80 16 ETA (size 16)**

### Grommet Extraction Tool

Contact sizes 12 & 16  
(to extract contact through grommet)



**AB part no. P80 12 GET (size 12) / P80 16 GET (size 16)**

# ABCIRP

## crimp contacts - supplementary tooling

### Contact Retention Tester

(applies a load to test contact is seated correctly)



**AB Part No: 6M3800644**

Supplier DMC part no: HT250-3

### Contact Socket Retention Test Probe

Contact sizes 12 & 16

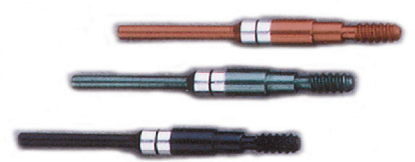


**AB Part No: 6M3800731 (size 12) / 6M3800646 (size 16)**

Supplier DMC part no: 67-012-01 / 67-016-01

### Contact Pin Retention Test Probe

Contact sizes 12 & 16



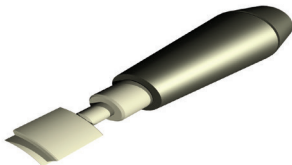
**AB Part No: 6M3800730 (size 12) / 6M3800645 (size 16)**

Supplier DMC part no: 68-012-01 / 68-016-01

### Grommet Assembly Aid

shell size 18-24 / 28-40

(to tuck grommet shoulder into connector)



**AB Part No. P8018GAT (size 18 - 24)**

**AB Part No. P8028GAT (size 28 - 40)**



ABCIRP

# ABCIRP

## safety information

This information is to be used in conjunction with the Product Catalogue and Product Specification. Products may be safely used in the applications for which they have been designed and within the specified ratings and environments. If products are exposed to conditions outside the performance ratings or specified environments they may constitute a hazard. In particular it should be noted that:-

### 1. Material Content of Products.

Circular Connectors generally use metalwork parts made of copper, copper alloy, aluminium alloy, aluminium-bronze, phosphor-bronze or steel, which, dependant on the particular application, may be passivated and protected with cadmium or zinc plate – in conjunction with chromated or anodised surface finishes. The insulating materials can be either natural or synthetic rubber, together with plastic or glass filled plastic moulded parts. Contact materials vary with product type but are usually made of copper, copper alloy, nickel, phosphor-bronze, alumel, chromel or steel.

### 2. Electric Shock, Burns and Fire.

Hazard can occur if the product is used outside the specified parameters or if the product is damaged, wrongly wired or poorly assembled, or poorly integrated into larger equipment, or contaminated with conductive fluids. Live circuit terminations must be protected and live circuits never broken by demating products.

Hotspots may be created when resistance is increased due to damage or incorrect integration particularly soldering, crimping or loose terminations. Overheating can cause breakdown of insulation, electric shot, burns or, ultimately, fire. In the event of fire noxious and/or toxic fumes may be released and, in these circumstances, any fire involving the product should be dealt with by personnel properly equipped.

Connector products with exposed terminators or contacts should not be used on the current supply side of a circuit with exposed contacts on an unmated product. Before making a circuit live, the product and wiring should be checked to ensure that there is no damage and no electrically conducting debris present. Circuit resistance checks should also be conducted before making the circuit live. Always ensure that the correct tools, (specified by AB Connectors Ltd.) are employed for crimping and assembly and that connectors are assembled and wired by properly trained personnel.

### 3. Disposal of Products.

Products should not be burnt.

### 4. Use Transport and Storage of Products.

Care must be exercised to avoid damage to any part of the products during transporting, storage or use. The products, as manufactured, are free of sharp edges. Abnormal transit or storage conditions and abuse during installation can give rise to damage. Products should not be used in a damaged condition. Improper storage (particularly of damaged products) can give rise to additional hazards particularly corrosion. Your attention is specifically drawn to the need of proper storage of products containing cadmium and you are advised to see the Guidance Note from the Health and Safety Executive on Cadmium - Health and Safety Precautions.

### Safety Rules

1. Ensure all conductor wires are capable of withstanding the electrical and environmental conditions of the application.
2. Always use the correct assembly tools for cables, contacts and connectors.
3. Make circuit resistance checks before making a circuit live.
4. Always protect live circuits and never demate a live connector.
5. Never use a damaged connector.
6. Never burn discarded connectors or cable.
7. IF IN DOUBT, ASK.

**N. B.** Additional information on the products and the materials used in them may be obtained from the Sales Department of AB Connectors Ltd.

### Shelf life for rubber components

AB Connectors incorporate a number of rubber components within their connectors. Most rubbers change in physical properties during storage e.g. excessive hardening, softening, cracking or other surface degradation. These changes may be the result of particular factors or a combination of factors such as light, heat, humidity, oils or solvents.

With a few simple precautions the shelf life may be considerably lengthened.

The storage temperature should be between +5 and +25 degrees C. Direct contact with sources of heat such as boilers, radiators and direct sunlight should be avoided. It is advisable to cover any windows of storage rooms with a red or orange coating or screen. The relative humidity in the storeroom should be below 70%. Very moist or very dry conditions should be avoided. Condensation should not occur.

If the above recommendations are adhered to, then AB Connectors would warrant a shelf life of four years for its products.

**N. B.** The company reserves the right and may change or vary specification without prior written notice.

# Global Presence

The world's demand for electronics is increasing as new technologies, with a higher dependence on complex components, are being adopted by a broader customer base. This growth provides TT electronics an assured future as we focus on efforts to deliver excellence in customer service and quality products to these markets. From our strong UK base, the company has achieved truly global reach. We have established technical and manufacturing facilities in strategic countries maintaining the successful formula of close liaison with our customers in all major overseas markets.

In addition, through strategic relationships with Original Equipment Manufacturers around the world, we are now in the enviable position where we gain double benefit - from growth in their markets and from the increase in the electronic content of end products.

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## AB Connectors



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**General Note** TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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