

Backshells

For LJT, RNJ, RNJ LP, TV-CTV, SC39 and SJT Connectors
For MIL-DTL-38999 Series I, II, III, EN3645 and VG96912 Connectors



For **AS85049 Backshells**,
please consult our complete
catalog "Amphenol Backshell"



ABOUT AMPHENOL SOCAPEX



Proven excellence in interconnect solutions

Since 1947, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for harsh environments, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.

Located in the Mont Blanc region of France and Pune in India, Amphenol Socapex has a presence in over 100 countries around the world.

Amphenol Socapex is part of the international Amphenol Corporation.



600+ employees



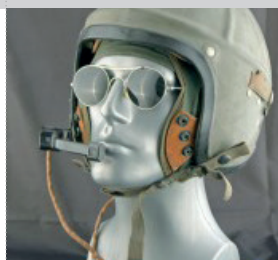
Net Sales 2017: **65.3 M€**
64% Export - 36% France



Two facilities :
Thyez (France), **Pune** (India)

Our history

1947



- Socapex creation in Suresnes, France
- 1st radio connector

1956-57



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

Early 1960's



- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series launch

1973



- New factory 13 000 m² in Thyez (74) France with 250 people

1975



- Production of 38999 connectors

Today and tomorrow ...



New technologies:

Advanced Materials (composite)

Miniaturization

Power

High-speed signals

Fiber optics

ROHS solutions

Rugged Ethernet

INTERNATIONAL EXPERTISE



Our expertise has no boundaries

Integrated Production in France & India

- 11 000 m² manufacturing capacity on 2 sites
- Design centers in France and India
- State-of-the-art manufacturing technology



Our markets



Military

Communication Systems - Radios - C4ISR / Ground vehicles - Vetronics / Marine / Missiles



Aviation

Commercial & military / Avionics / Engines / Landing gear / Actuators



Industrial

Oil & Gas / Railways / Stage lighting

1986	1995-96	2004	2005	2010's
 - Amphenol becomes primary shareholder	 - Expanded Beam connector CTOS launch - Headquarters transferred to Thyez	 - RJ Field launch, "Award Electronica"	 - Opening of manufacturing site in Pune, India	 - LuxBeam™ and HDAS launch

Today and tomorrow ...



Sustainable development:

Recycling
Waste Management

Respect for nature and the environment

Optimization of natural resources

Goodwill

PRODUCING FASTER, SMALLER, STRONGER CONNECTORS...



Technologies & innovation

Technological Center



Engineering Laboratory for product testing and qualification, product expertise and metrology

- Mechanical and electrical skills
- RF and fiber optics expertise

High-Speed Expertise



Strong expertise in high-speed signals

- 3D EM simulation software & EM models
- Time Domain and frequency domain (VNA 20GHz, TDR and eye diagram)

Materials Expertise



Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products

- 3D CAD mechanical software, simulation & analysis
- Disruptive metal alloys, additive manufacturing

Eco-responsibility



Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)

- New materials development, plating, and suitable processes
- Recycling and rational resources consumption

Our workshops

Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Molding : Solid expertise in thermoplastic elastomer and thermoset molding

Machining : Manufacturing of cylindrical shells from 10 to 90 mm in diameter and rectangular shells

Screw Machining : Cylindrical production parts up to 10 mm in diameter

Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold

Assembly : Sub-assembly, harnessing, cabling, bonding and marking for small & large volumes

Our certifications



Product certifications : MIL-DTL38999, EN3645, EN3155, VG

Our memberships



Member of CMG (Connecting Manufacturing Group) Consortium

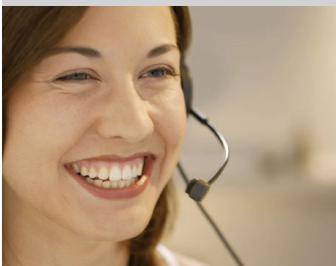
DELIVERING GREAT CUSTOMER EXPERIENCE



► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.

A partner you can trust

Customer Proximity



Design Expertise



Quality Commitment



On Time Delivery Performance



Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

Field Sales Team :

- 12 in France
- 15 in Europe
- 100+ in North America and rest of the world.
- 5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

Technical Support & Multilingual Customer Service :

- 14 people

Worldwide Distribution Network :

Including qualified distributors (QPL approved) for assembling : MIL-DTL-38999, PT/451/VG95328 & Fiber Optics connectors



TABLE OF CONTENTS

GENERAL CHARACTERISTICS..... 3

STRAIN RELIEFS 4

LJT/TV strain reliefs 4

SJT strain reliefs 5

BACKSHELLS FOR SHIELDING 6

LJT NSA and TV NSA 6

BAND BACKSHELLS FOR SHIELDING 8

HE308-35 and TV35 backshells..... 8

SBC backshells 10

M85049 band backshells 12

CONNECTORS WITH INTEGRATED BACKSHELLS 13

Integrated backshells for TV 13

Integrated backshells for LJ..... 14

ADAPTERS FOR HEAT-SHRINK MOULDED PIECES 15

NSD backshells 15

ADAPTERS FOR SEALING GLAND..... 16

Metric sealing gland straight version..... 16

Metric sealing gland 105° angled version 17

COMPOSITE BACKSHELLS 18

CTV35/ABS2216 18

HEAT-SHRINK MOULDED PIECES..... 19

TORQUE VALUE FOR REAR ACCESSORIES 20

CROSS REFERENCES..... 20

GENERAL CHARACTERISTICS

MAIN FEATURES

- **Shell material**
 - Aluminium alloy
 - Marine bronze
 - For composite, please consult us
- **Finish**
 - Olive drab cadmium plating
 - Electroless nickel plating
 - Green zinc cobalt plating
 - Black zinc nickel plating
 - For others, please consult us
- **9 shell sizes per model**
- **Straight or right angled versions**
- **Working temperature**
 - From – 65°C to + 175°C with olive drab cadmium plating, green zinc cobalt plating and black zinc nickel plating
 - From – 65°C to + 200°C with electroless nickel plating

For specific backshells for marine applications and 217 backshells, please consult us.

DESCRIPTION

You will find hereafter Amphenol Socapex backshells for LJT (MIL-DTL-38999 Series I / HE308), RNJ (HE308), RNJ LP, TV-CTV (MIL-DTL-38999 Series III), SC39 and SJT (VG96912) connectors. These rear accessories enhance the performance capabilities of the connectors for both general duty and severe environment applications.

Different technologies are used in order to ensure the following functions:

- **EMI shielding**
- **cable retention**
- **sealing**

This large choice of rear accessories provides you with the right solution for your connector/backshell interconnection.

APPLICATIONS

Military and aeronautic applications: battlefields, ground vehicles, aircrafts.

Advanced industrial applications with specific climatic, mechanical or electrical requirements.



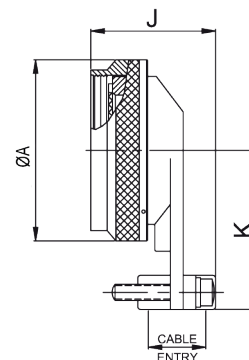
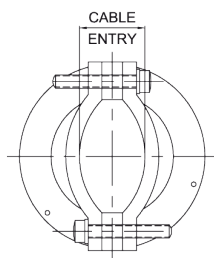
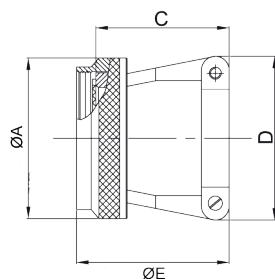
STRAIN RELIEFS

These backshells ensure a mechanical retention of the cable.

LJT/TV STRAIN RELIEFS

M85049/49-2 strain relief and M85049/47 (90° angled versions) suitable for LJT (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors.

M85049/38 strain relief and M85049/39 (90° angled versions) suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.



Size	LJT	TV	Ø A max mm (in)	C max mm (in)	D max mm (in)	E max mm (in)	Cable Entry		J mm (in)		K mm (in)
	Thread for M85049/49-2 UNEF-2B	Thread for M85049/38 Metric					mm (in)		for M85049/47	for M85049/39	
							min	max			
09	.4375-28	M12 x 1.0 - 6H	19.05 (0.75)	23.11 (0.91)	21.59 (0.85)	27.94 (1.10)	2.49 (0.10)	5.94 (0.23)	35,05 (1.38)	33,27 (1.31)	25,40 (1.00)
11	.5625-24	M15 x 1.0 - 6H	21.59 (0.85)	23.11 (0.91)	22.86 (0.90)	27.94 (1.10)	3.89 (0.15)	5.94 (0.23)	35,05 (1.38)	33,27 (1.31)	27,94 (1.10)
13	.6875-24	M18 x 1.0 - 6H	25.40 (1.00)	25.65 (1.01)	27.94 (1.10)	30.48 (1.20)	4.83 (0.19)	8.33 (0.33)	37,08 (1.46)	38,35 (1.51)	27,94 (1.10)
15	.8125-20	M22 x 1.0 - 6H	27.94 (1.10)	26.92 (1.06)	29.21 (1.15)	31.75 (1.25)	6.60 (0.26)	11.61 (0.46)	41,4 (1.63)	39,37 (1.55)	31,75 (1.25)
17	.9375-20	M25 x 1.0 - 6H	31.75 (1.25)	29.46 (1.16)	33.02 (1.30)	34.44 (1.36)	7.19 (0.28)	15.60 (0.61)	45,72 (1.80)	43,43 (1.71)	33,02 (1.30)
19	1.0625-18	M28 x 1.0 - 6H	35.56 (1.40)	35.81 (1.41)	38.10 (1.50)	40.64 (1.60)	8.26 (0.33)	16.10 (0.63)	46,23 (1.82)	45,97 (1.81)	34,29 (1.35)
21	1.1875-18	M31 x 1.0 - 6H	38.10 (1.50)	38.35 (1.51)	40.64 (1.60)	43.21 (1.70)	8.71 (0.34)	17.73 (0.70)	48,26 (1.90)	49,53 (1.95)	40,64 (1.60)
23	1.3125-18	M34 x 1.0 - 6H	41.91 (1.65)	42.16 (1.66)	43.18 (1.70)	46.99 (1.85)	9.68 (0.38)	20.90 (0.82)	51,82 (2.04)	53,34 (2.10)	44,45 (1.75)
25	1.4375-18	M37 x 1.0 - 6H	44.45 (1.75)	44.70 (1.76)	45.72 (1.80)	49.56 (1.95)	10.62 (0.42)	21.67 (0.85)	54,61 (2.15)	56,13 (2.21)	46,99 (1.85)

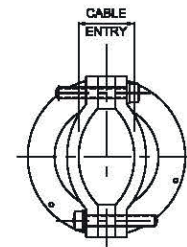
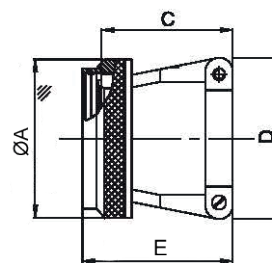
HOW TO ORDER

SAE-85049 designation - Backshells for LJT (MIL-DTL-38999 Series I/HE308) and TV/CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	M85049/	49-2	12	W
Type of strain relief				
49-2: for LJT (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors				
47: 90° right angled for LJT (MIL-DTL-38999 Series I / HE308) connectors				
38: for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors				
39: 90° right angled for TV (MIL-DTL-38999 Series III) connectors				
Size of backshell				
08-10-12-14-16-18-20-22-24 (remove 1 from your connector size) for LJT (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors				
09-11-13-15-17-19-21-23-25 (same as connector size) for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors				
Finish				
W: olive-drab cadmium plating				
N: electroless nickel plating				

SJT STRAIN RELIEFS

SJT strain reliefs suitable for SJT (VG 96912) connectors.



Size*	ØA max mm (in)	C max mm (in)	D max mm (in)	E max mm (in)	Cable entry mm (in)		Thread for SJT00 & SJT06	Thread for SJT07
					min	max		
08	19.05 (0.750)	23.11 (0.910)	21.59 (0.850)	27.94 (1.100)	2.49 (0.098)	5.94 (0.234)	.4375-28	.5625-24
10	21.59 (0.850)	23.11 (0.910)	22.86 (0.900)	27.94 (1.100)	3.89 (0.153)	5.94 (0.234)	.5625-24	.6875-24
12	25.40 (1.000)	25.65 (1.010)	27.94 (1.100)	30.48 (1.200)	4.83 (0.190)	8.33 (0.328)	.6875-24	.8125-20
14	27.94 (1.100)	26.92 (1.060)	29.21 (1.150)	31.75 (1.250)	6.60 (0.260)	11.61 (0.457)	.8125-20	.9375-20
16	31.75 (1.250)	29.46 (1.160)	33.02 (1.300)	34.44 (1.356)	7.19 (0.283)	15.60 (0.614)	.9375-20	1.0625-18
18	35.56 (1.400)	35.81 (1.410)	38.10 (1.500)	40.64 (1.600)	8.26 (0.325)	16.10 (0.634)	1.0625-18	1.1875-18
20	38.10 (1.500)	38.35 (1.510)	40.64 (1.600)	43.21 (1.701)	8.71 (0.343)	17.73 (0.698)	1.1875-18	1.3125-18
22	41.91 (1.650)	42.16 (1.660)	43.18 (1.700)	46.99 (1.850)	9.68 (0.381)	20.90 (0.823)	1.3125-18	1.4375-18
24	44.45 (1.750)	44.70 (1.760)	45.72 (1.800)	49.56 (1.951)	10.62 (0.418)	21.67 (0.853)	1.4375-18	1.4375-18

*For SJT00 & SJT06, 08-10-12-14-16-18-20-22-24

For SJT07, add 2 to your connectors size i.e. for 8 size connector use size 10 backshell

HOW TO ORDER

Amphenol designation - Backshells for SJT (VG96912)

Series	BS1	SR	M	12	99	9	X	W
Type of backshell								
SR: straight cable clamp with spin coupling								
Connector group								
M: SJT								
Size of backshell 08-10-12-14-16-18-20-22-24 (same as connector size)								
Entry size								
99: standard								
Length								
9: standard								
Constant								
X								
Finish								
W: olive-drab cadmium plating								
N: electroless nickel plating								

BACKSHELLS FOR SHIELDING

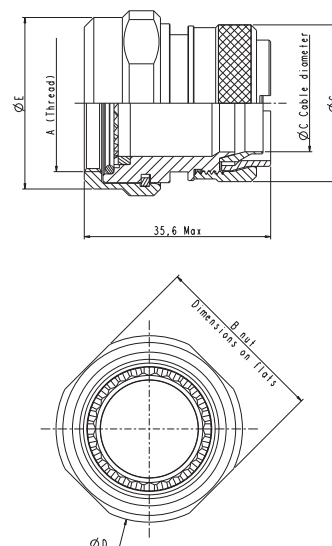
NSA and SA backsells ensure the shielding by clamping the braid with a screwing system. The free inner ring avoids twisting of the braid during screwing.

LJT NSA & TV NSA

LJT NSA (HE308-13) suitable for LJT (MIL-DTL-38999 Series I / HE308), RNJ (HE308) and SJT (VG96912) connectors.

TV NSA suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.

Size	LJT	TV	B max mm (in)	Ø C max mm (in)	Ø D max mm (in)	Ø E max mm (in)	Ø G max mm (in)
	A Thread UNE-F-2B	A Thread Metric					
09	.4375-28	M12 x 1.0 - 6H	17 (0.669)	6.9 (0.272)	19.1 (0.752)	15.2 (0.598)	16.5 (0.650)
11	.5625-24	M15 x 1.0 - 6H	21 (0.827)	9.6 (0.378)	23.1 (0.909)	18.2 (0.717)	19.4 (0.764)
13	.6875-24	M18 x 1.0 - 6H	26 (1.024)	12.7 (0.500)	28.1 (1.106)	21.2 (0.835)	22.6 (0.890)
15	.8125-20	M22 x 1.0 - 6H	29 (1.142)	14.8 (0.583)	31.1 (1.224)	25.1 (0.988)	25.8 (1.016)
17	.9375-20	M25 x 1.0 - 6H	32 (1.260)	17.9 (0.705)	34.1 (1.343)	28.1 (1.106)	29.0 (1.142)
19	1.0625-18	M28 x 1.0 - 6H	36 (1.417)	19.9 (0.784)	38.1 (1.500)	31.1 (1.224)	32.0 (1.260)
21	1.1875-18	M31 x 1.0 - 6H	39 (1.535)	23.1 (0.909)	41.1 (1.618)	34.1 (1.343)	35.2 (1.386)
23	1.3125-18	M34 x 1.0 - 6H	42 (1.654)	26.2 (1.032)	44.1 (1.736)	36.9 (1.453)	38.4 (1.512)
25	1.4375-18	M37 x 1.0 - 6H	45 (1.772)	28.8 (1.134)	49.1 (1.933)	39.9 (1.571)	41.5 (1.634)



HOW TO ORDER

Amphenol designation - Backshells for LJT (MIL-DTL-38999 Series I / HE308), RNJ (HE308)

Series	LJT	NSA	11	014
Type of backshell				
NSA: screened clamping braid backshell accepting heat shrink moulded piece				
Size of backshell 09-11-13-15-17-19-21-23-25 for LJT connectors: same as connector size				
Finish				
014: olive-drab cadmium plating				
023: electroless nickel plating				
024: green zinc cobalt plating				
033K: black zinc nickel plating				

HE 308 military designation - Backshells for HE308 (LJT / MIL-DTL-38999 Series I / RNJ) connectors

Series	HE308	13	15	7	M
Type of backshell					
13: screened clamping braid backshell heat shrink moulded piece					
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)					
Finish					
07: olive-drab cadmium plating					
06: electroless nickel plating					
Military standard					

Amphenol designation - Backshells for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	TV	NSA	11	014
Type of backshell				
NSA: screened clamping braid backshell accepting heat shrink moulded piece				
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)				
Finish				
014: olive-drab cadmium plating				
023: electroless nickel plating				
024: green zinc cobalt plating				
033K: black zinc nickel plating				

ASSEMBLY INSTRUCTIONS FOR NSA AND SA BACKSHELLS

1. Prepare the cable for termination process and slide onto the cable the items in the order shown on figure 1.
2. Screw the backshell at the rear of the connector. The best performance in time of the system « connector + rear accessory » consists in applying the torque value to screw then to unscrew, to apply the torque value to screw a second time, then to unscrew and finally to screw the torque value a third time.
3. Fold back the braid on the outer jacket and fix it (figure 2)
4. Install the braid as shown on figures 3 and 4: Release the braid and cover the backshell (a) and the connector's shell. Slide the first ring (b) over the braid. Fold back the braid on the ring (b) and slide the second ring (c) over the braid and the first ring (b). Screw the last ring (d) at the rear of the backshell. If necessary, fix the extra braid on the outer jacket of the cable. If this installation (double folding of the braid) is not possible, refer to figure 5: Slide the first ring (b). Release the braid and cover the backshell (a) and the connector's shell. Cut the braid as shown. Slide the second ring (c) over the braid and the first ring (b). Screw the last ring at the rear of the backshell.
5. Install the heat-shrink moulded piece.

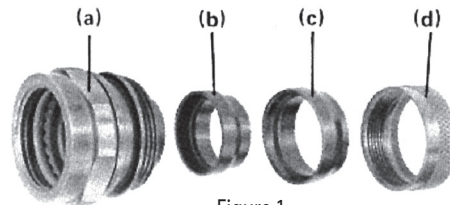


Figure 1



Figure 2

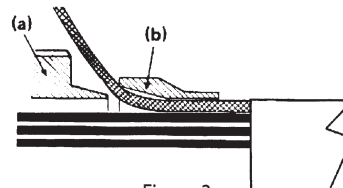


Figure 3

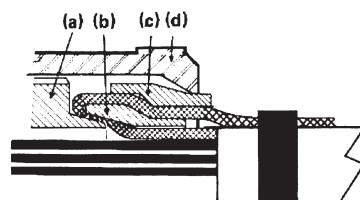


Figure 4

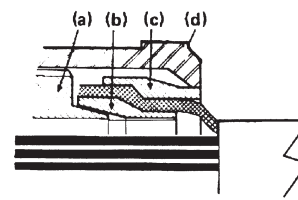


Figure 5

BAND BACKSHELLS FOR SHIELDING

These band backsells provide a full 360° shield termination. They are available with different cabling chamber lengths and exit diameters. The use of replaceable bands facilitates future maintenance or reparability. Sealing is ensured by straight or right angled heat shrink moulded piece at the rear of backshell.

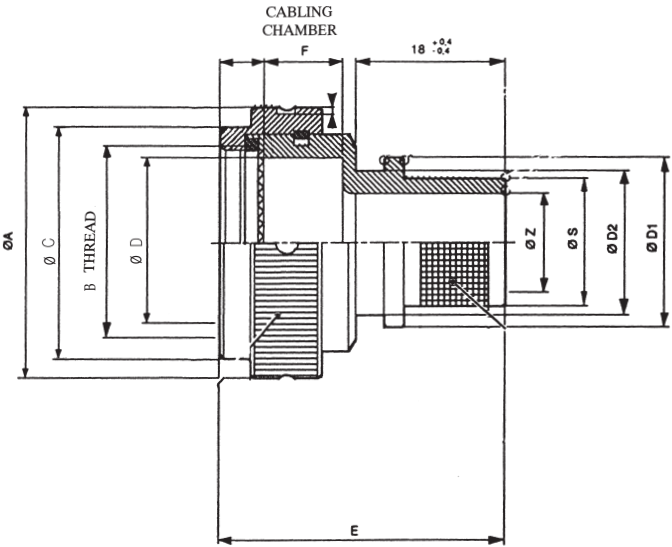
HE308-35 AND TV35 BACKSHELLS

HE308-35 suitable for LJT (MIL-DTL-38999 Series I / HE308), RNJ (HE308) connectors.

TV35 suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.

TVB35 suitable for TV bronze connectors.

These straight band backsells provide a full 360° shield termination with a quick, easy and cost effective cabling process. For straight or right angled heat shrink moulded pieces, please refer to page 22.



Size	HE308-35				TV35/TVB35			
	Ø A max mm (in)	B Thread UNEF-2B	Ø C mm (in)	Ø D mm (in)	Ø A max mm (in)	B Thread Metric	Ø C mm (in)	Ø D mm (in)
09	21.40 (0.843)	0.4375-28	15.20 (0.598)	7.80 (0.307)	24.30 (0.957)	M12 x 1.0-6H	18.00 (0.709)	7.80 (0.307)
11	24.30 (0.957)	0.5625-24	18.40 (0.724)	10.80 (0.425)	27.40 (1.079)	M15 x 1.0-6H	21.00 (0.827)	10.99 (0.433)
13	27.40 (1.079)	0.6875-24	21.60 (0.850)	13.10 (0.516)	31.80 (1.252)	M18 x 1.0-6H	25.00 (0.984)	13.80 (0.543)
15	31.80 (1.252)	0.8125-20	24.80 (0.976)	16.30 (0.642)	35.00 (1.378)	M22 x 1.0-6H	28.00 (1.102)	16.30 (0.642)
17	35.00 (1.378)	0.9375-20	28.00 (1.102)	19.50 (0.768)	38.10 (1.500)	M25 x 1.0-6H	30.80 (1.213)	20.10 (0.791)
19	38.10 (1.500)	1.0625-18	31.00 (1.220)	21.70 (0.854)	41.20 (1.622)	M28 x 1.0-6H	34.10 (1.343)	22.93 (0.903)
21	41.20 (1.622)	1.1875-18	34.20 (1.347)	24.90 (0.980)	44.30 (1.744)	M31 x 1.0-6H	36.90 (1.453)	26.00 (1.024)
23	44.30 (1.744)	1.3125-18	37.40 (1.472)	28.10 (1.106)	47.20 (1.858)	M34 x 1.0-6H	39.80 (1.567)	29.28 (1.153)
25	47.20 (1.858)	1.4375-18	40.60 (1.599)	31.20 (1.228)	50.00 (1.969)	M37 x 1.0-6H	43.00 (1.693)	32.45 (1.278)

Size	E max mm	Cabling chamber length F ^{±0.1} mm	Z rear side diameter coding										
			06	08	10	12	14	16	20	24	28	32	36
09	36	10		o	x	o	x	x					
11	36	10		x	x	o	o	x	x				
	41	15	x	x	x	x							
	46	20				x							
	56	30						x	x				
13	36	10		x	x	o	x	o	x				
	56	30				△		o					
15	36	10		x	x	o	o	x	o	x			
	41	15		x	x	x	x	x					
	56	30							o				
17	36	10				o	o	o	x	o			
	41	20					x	x					
	51	25				o	x						
	56	30						x		o			
19	36	10		x				o		o	x		
	56	30						x		o			
21	36	10					x	x	o	x	o	x	
	46	20					x		△	x			
	51	25					x						
	56	30							△		o		
23	36	10						x		o	x	o	
	56	30								o		o	
25	36	10						x			o		o
	56	30									o		o

x
HE308-35

o
HE308-35 &
TV35/TVB35

△
TV35/TVB35

Z rear side diameter	06	08	10	12	14	16	20	24	28	32	36
Ø Z	4.8 (0.189)	6.30 (0.248)	7.90 (0.313)	9.40 (0.370)	11.00 (0.433)	12.60 (0.496)	15.80 (0.622)	19.00 (0.748)	22.10 (0.870)	25.30 (0.996)	28.60 (1.126)
Ø S min/max	7.80/7.9 (0.307/0.311)	9.40/9.50 (0.370/0.374)	11.1/11.2 (0.437/0.440)	12.60/12.70 (0.496/0.500)	14.10/14.30 (0.555/0.563)	15.70/15.90 (0.618/0.626)	18.90/19.10 (0.744/0.752)	22.00/22.20 (0.866/0.874)	25.20/25.40 (0.992/1)	28.40/28.60 (1.118/1.126)	31.50/31.80 (1.240/1.252)
Ø D1 ^{±0.1}	12.40 (0.488)	14.00 (0.551)	17.10 (0.673)	17.10 (0.673)	18.70 (0.736)	20.30 (0.799)	23.50 (0.925)	26.70 (1.051)	29.80 (1.173)	33.00 (1.299)	36.20 (1.425)
Ø D2 ^{±0.1}	9.80 (0.386)	11.40 (0.449)	14.50 (0.571)	14.50 (0.571)	16.10 (0.634)	17.70 (0.697)	20.90 (0.823)	23.10 (0.909)	26.20 (1.032)	29.40 (1.158)	32.60 (1.284)

HOW TO ORDER

HE 308 military designation - Backshells for HE 308 (LJT/ MIL-DTL-38999 Series I / RNJ) connectors

Series	HE308	-35	-11	-10	-12	-7	M
Type of backshell							
35: band backshell accepting heat shrink moulded piece							
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)							
Cabling chamber length 10-15-20-25-30-40							
Refer above - dimension F							
Rear side diameter 06-08-10-12-14-16-20-24-28-32-36							
Refer above - dimension Z							
Finish							
7: olive-drab cadmium plating							
6: electroless nickel plating							
033K: black zinc nickel plating							
Military standard (only for olive-drab cadmium and electroless nickel versions)							

Amphenol designation – Backshells for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

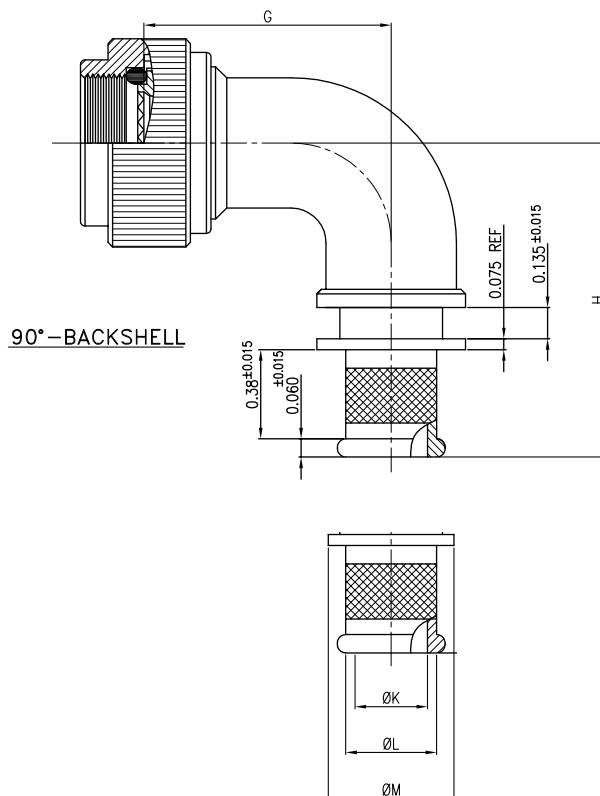
Series	TV	35	11	10	12	014
Type of backshell						
35: aluminium straight band backshell accepting heat shrink moulded piece						
B35: bronze straight band backshell accepting heat shrink moulded piece						
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)						
Cabling chamber length 10-20-25-30						
Refer above - dimension F						
Rear side diameter 06-08-10-12-14-16-20-24-28-32-36						
Refer above - dimension Z						
Finish						
014: olive-drab cadmium plating						
023: electroless nickel plating						
024: green zinc cobalt plating						
033K: black zinc nickel plating						
Blank for bronze version						

SBC BACKSHELLS

LJT SBC suitable for LJ (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors.

TV SBC suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.

These right angled band backshells provide a full 360° shield termination with a quick, easy and cost effective cabling process. For right angled heat shrink moulded pieces, please refer to page 22.



Size	LJT SBC only		TV SBC only	
	Ø A max mm (in)	B Thread UNEF-2B	Ø A max mm (in)	B Thread Metric
09	19.10 (0.752)	0.4375-28	19.10 (0.752)	M12 x 1.0-6H
11	21.59 (0.850)	0.5625-24	21.59 (0.850)	M15 x 1.0-6H
13	25.40 (1.000)	0.6875-24	25.40 (1.000)	M18 x 1.0-6H
15	29.18 (1.149)	0.8125-20	29.18 (1.149)	M22 x 1.0-6H
17	31.78 (1.251)	0.9375-20	31.78 (1.251)	M25 x 1.0-6H
19	35.59 (1.401)	1.0625-18	35.59 (1.401)	M28 x 1.0-6H
21	39.29 (1.547)	1.1875-18	39.29 (1.547)	M31 x 1.0-6H
23	41.88 (1.649)	1.3125-18	41.88 (1.649)	M34 x 1.0-6H
25	44.48 (1.751)	1.4375-18	44.48 (1.751)	M37 x 1.0-6H

Size	G max mm (in)	K rear side diameter		H max mm (in)	Ø L ± 0.015" mm (in)	Ø M ± 0.015" mm (in)
		Coding 1/32 of Inch	Dimension mm (in)			
09	28.58 (1.125)	10	7.92 (0.312)	33.91 (1.335)	11.13 (0.438)	12.70 (0.500)
11	31.75 (1.250)	14	11.13 (0.438)	37.08 (1.460)	14.27 (0.562)	15.85 (0.624)
13	34.93 (1.375)	16	12.70 (0.500)	40.26 (1.585)	15.88 (0.625)	17.45 (0.687)
15	38.10 (1.500)	20	15.88 (0.625)	43.43 (1.710)	19.05 (0.75)	20.62 (0.812)
17	41.28 (1.625)	24	19.05 (0.750)	46.61 (1.835)	22.23 (0.875)	23.80 (0.937)
19	44.45 (1.750)	24	19.05 (0.750)	49.78 (1.960)	22.23 (0.875)	23.80 (0.937)
21	47.63 (1.875)	28	22.23 (0.875)	42.96 (1.691)	25.40 (1.000)	26.97 (1.062)
23	50.80 (2.000)	32	25.40 (1.000)	56.13 (2.210)	28.58 (1.125)	30.15 (1.187)
25	53.98 (2.125)	36	28.58 (1.125)	59.31 (2.335)	31.75 (1.250)	33.32 (1.312)

HOW TO ORDER

Amphenol designation – Backshells for LJ (LJT/ MIL-DTL-38999 Series I / HE308/ RNJ) connectors

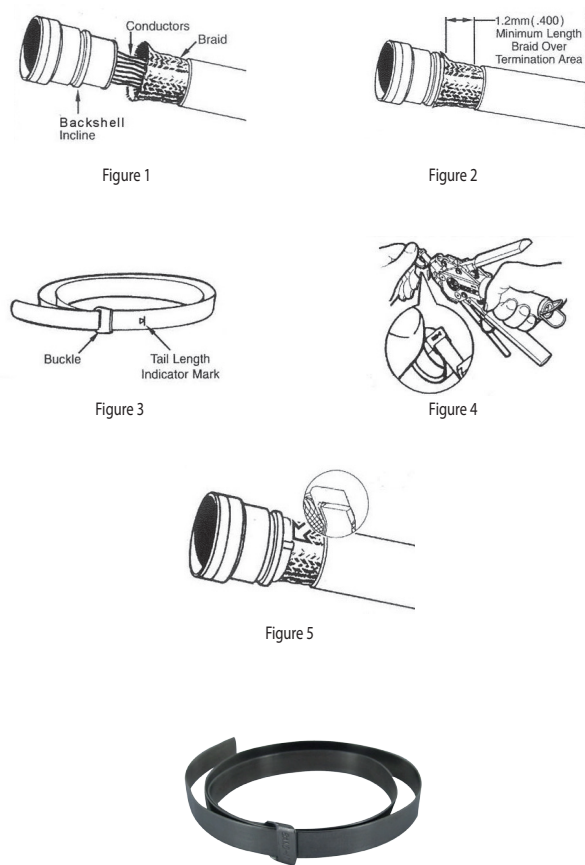
Series	LJT	SBC	11	14	014
Type of backshell					
SBC: aluminium right angled band backshell accepting heat shrink moulded piece					
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)					
Rear side diameter 10-14-16-20-24-28-32-36					
Refer above - dimension Z					
Finish					
014: olive-drab cadmium plating					
023: electroless nickel plating					

Amphenol designation – Backshells for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	TV	SBC	11	14	014
Type of backshell					
SBC: aluminium right angled band backshell accepting heat shrink moulded piece					
Size of backshell	09-11-13-15-17-19-21-23-25 (same as connector size)				
Rear side diameter	10-14-16-20-24-28-32-36				
Refer p12 - dimension Z					
Finish					
014: olive-drab cadmium plating					
023: electroless nickel plating					

ASSEMBLY INSTRUCTIONS FOR HE308-35, TV35 AND SBC BACKSHELLS

1. Prepare the cable for termination process (figure 1).
2. Screw the backshell at the rear of the connector.
3. Push the braid over the backshell to the incline point. Milk the braid as required to remove the slack and insure a snug fit around the shield termination area (figure 2).
4. Prepare the band: Roll the band through the buckle slot twice (the band must be double-coiled). Pull on the band until the mark is within approximately 6.4 mm (.250 in) of the buckle slot (figure 3). The band may be tightened further if desired.
5. Squeeze the gripper release lever of the banding tool and insert the band into the front end opening of the tool as shown on figure 4 (the circular portion of looped band must always face downward).
6. Aligning the band and the tool with the shield termination area, squeeze the black pull-up handle repeatedly using short strokes until it locks against the tool body (this indicates the band is compressed to the tool precalibrated tension).
7. Complete the clamping process by squeezing the grey cut-off handle.
8. Remove the excess band from the tool.
9. Inspect shield termination (figure 5). If the alignment of the band and the shield is unsatisfactory, tension on the band can be relaxed by pushing on the slotted release lever on the top of the tool. Make adjustments as necessary and squeeze again the black pull-up handle.



TOOLING AND ACCESSORIES

Coupling tool

Coupling wrench for HE308-35 and TV(B) 35 backshells: **116.50** (Facom p/n)

Clamping bands

Standard band: **072952**

Micro band (precoiled): **895693**

Hand banding tools

Banding tool for standard band: **809952**

Caution: Tools and bands should never be lubricated

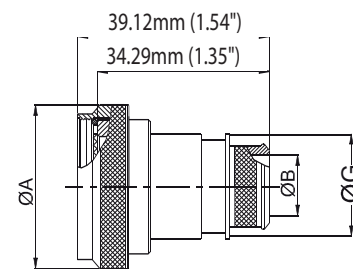
Banding tool for micro band: **809985**

M85049 BAND BACKSHELLS

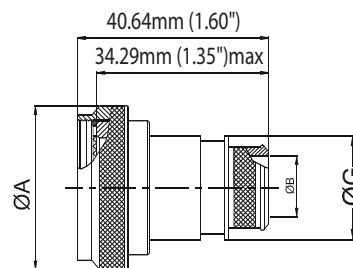
M85049/85 and M85049/87 suitable for LJT (MIL-DTL-38999 Series I / HE308), RNJ (HE308) connectors.

M85049/88 and M85049/90 suitable for TV/CTV (MIL-DTL-38999 Series III), SC39 and RNJLP connectors.

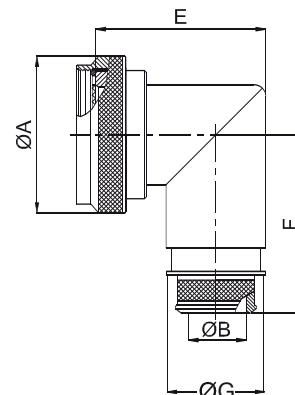
These straight band backsells provide a full 360° shield termination with a quick, easy and cost effective cabling process. For straight or right angled heat shrink moulded pieces, please refer to page 22.



M85049/85



M85049/88



M85049/87 & M85049/90

Size	Entry Size			Ø A max mm (in)	E max mm (in)	F max mm (in)		Ø G max mm (in)
	Coding		Ø B ⁰ _{-0.5} mm (in)			LJT	TV	
	for /85 only	for /88/87/90						
09	01	02	N/A	21.82 (0.859)	34.93 (1.375)	35.99 (1.417)	35.99 (1.417)	N/A
	02	03	6.60 (0.260)					14.22 (0.560)
11	01	02	N/A	25.04 (0.986)	36.50 (1.437)	37.59 (1.480)	37.59 (1.480)	N/A
	02	03	8.13 (0.320)					16.00 (0.630)
13	01	02	8.13 (0.320)	29.36 (1.156)	39.67 (1.562)	39.45 (1.553)	39.45 (1.553)	16.00 (0.630)
	02	03	11.43 (0.450)					19.05 (0.750)
15	01	02	11.43 (0.450)	32.54 (1.281)	42.85 (1.687)	41.00 (1.614)	41.00 (1.614)	19.05 (0.750)
	02	03	14.48 (0.570)					22.61 (0.890)
17	01	02	12.95 (0.510)	35.71 (1.406)	44.45 (1.750)	42.62 (1.678)	42.62 (1.678)	20.83 (0.820)
	02	03	16.26 (0.640)					24.13 (0.950)
19	01	02	16.26 (0.640)	38.51 (1.516)	47.63 (1.875)	44.02 (1.733)	45.03 (1.773)	24.13 (0.950)
	02	03	19.30 (0.760)					27.18 (1.070)
21	01	02	16.26 (0.640)	41.68 (1.641)	49.23 (1.938)	45.62 (1.796)	45.62 (1.796)	24.13 (0.950)
	02	03	20.83 (0.820)					28.07 (1.105)
23	01	02	17.78 (0.700)	44.86 (1.766)	52.37 (2.062)	47.22 (1.859)	47.22 (1.859)	25.99 (1.023)
	02	03	24.13 (0.950)					32.00 (1.260)
25	01	02	19.30 (0.760)	48.03 (1.891)	53.98 (2.125)	48.74 (1.919)	48.74 (1.919)	27.18 (1.070)
	02	03	25.65 (1.010)					33.53 (1.320)

HOW TO ORDER

SAE-85049 designation - Backshell for LJT (MIL-DTL-38999 Series I / HE308) or TV/CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	M85049/	85	09	W	02
Type of backshell					
<u>LJT/HE308:</u>					
85: straight					
87: 90° right angle					
<u>TV:</u>					
88: straight					
90: 90° right angle					
Size of backshell					
08-10-12-14-16-18-20-22-24 for LJT (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors: remove 1 to your connector size					
09-11-13-15-17-19-21-23-25 (same as connector size) for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors					
Finish					
W: olive-drab cadmium plating					
N: electroless nickel plating					
Entry size 01-02-03					

CONNECTORS WITH INTEGRATED BACKSHELLS

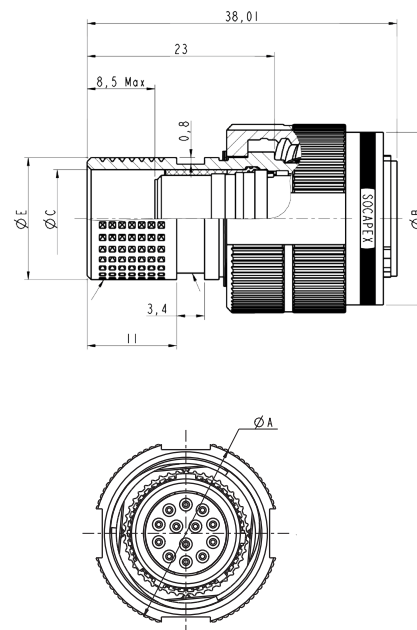
Available on plugs and receptacles, these 2 in 1 connectors/band backsells provide a high EMI protection with a quick, easy and cost effective cabling process. They are low profile, with enhance sealing level and allow the use of macro and micro bands, as well as straight or right angled heat shrink moulded pieces. The design of the shells make them compatible with over moulding process.



INTEGRATED BACKSHELLS FOR TV

Suitable for TV (MIL-DTL-38999 Series III) connectors.

Size	Ø A max mm (in)	Ø B max ^{+0.2} mm (in)	Ø C mm (in)	Ø E max ^{-0.2} mm (in)
09	21.8 (0.858)	18.4 (0.724)	8.74 (0.344)	12 (0.472)
11	25.0 (0.984)	21.1 (0.831)	11.99 (0.472)	15 (0.591)
13	29.4 (1.157)	25.4 (1.000)	14.88 (0.586)	18 (0.709)
15	32.5 (1.280)	28.7 (1.130)	18.06 (0.711)	22 (0.866)
17	35.7 (1.406)	32.2 (1.268)	21.23 (0.836)	25 (0.984)
19	38.5 (1.516)	34.9 (1.374)	23.93 (0.942)	28 (1.102)
21	41.7 (1.642)	38.1 (1.500)	27.10 (1.067)	31 (1.220)
23	44.9 (1.768)	41.1 (1.618)	30.28 (1.192)	34 (1.339)
25	48.0 (1.890)	44.3 (1.744)	33.45 (1.317)	37 (1.457)



HOW TO ORDER

Amphenol designation - Integrated backshell for TV (MIL-DTL-38999 Series III)

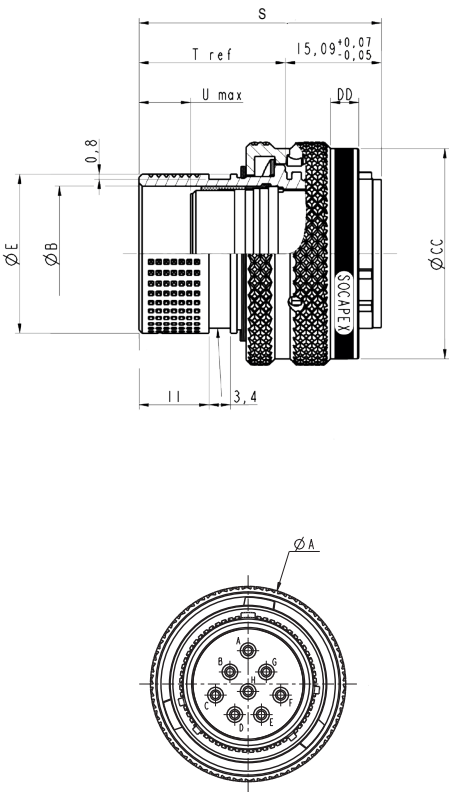
Series	TV	06	RW	11-35	P	A	F472
Shell type straight plug: 175°C: 06 straight plug: 200°C: S06 Shell material and finish <u>Aluminium</u> RW: olive drab cadmium plated 175°C RF: electroless nickel plated 200°C ZN: black zinc nickel plated 175°C RZ: green zinc cobalt plated 175°C <i>Please consult for bronze and stainless steel versions</i> Shell size and contact arrangement See MIL-DTL 38999 Series III catalogue pages 8 to 11 Contact type P: pin S: socket Polarisation blank for normal or A, B, C, D, E Deviation F472: connectors with integrated backshell							

Please consult us for receptacles with integrated backshell

INTEGRATED BACKSHELLS FOR LJT

Suitable for LJT (MIL-DTL-38999 Series I / HE308).

Size	Ø A max mm (in)	Ø B mm (in)	Ø CC ^{+0.28 0} mm (in)	DD ^{+1.14 -0.91} mm (in)	Ø E ^{0 -0.2} mm (in)	S mm (in)	T ref mm (in)	U max mm (in)
09	21.82 (0.859)	8.74 (0.344)	19.81 (0.780)	4.06 (0.160)	12 (0.472)	38.09 (1.500)	23 (0.906)	8.5 (0.335)
11	24.99 (0.984)	11.99 (0.472)	22.99 (0.905)		15 (0.591)			
13	29.36 (1.156)	14.88 (0.586)	26.95 (1.061)		18 (0.709)			
15	32.54 (1.281)	18.06 (0.711)	30.12 (1.186)		22 (0.866)			
17	35.71 (1.406)	21.23 (0.836)	33.05 (1.301)		25 (0.984)			
19	38.51 (1.516)	23.93 (0.942)	36.12 (1.422)		26.95 (1.061)			
21	41.68 (1.651)	27.10 (1.067)	39.22 (1.544)		30.12 (1.186)			
23	43.86 (1.727)	30.28 (1.192)	42.34 (1.667)		33.30 (1.311)			
25	48.03 (1.891)	33.45 (1.317)	45.54 (1.793)		36.47 (1.436)	40.09 (1.578)	25 (0.984)	10.50 (0.413)



HOW TO ORDER

Amphenol designation - Integrated backshell for LJT (MIL-DTL-38999 Series I/HE308)

Series	LJT	06	RT	11-35	P	A	014	F472
Shell type 06: straight plug								
Service class and contact style RT: envrionmental, crimp contacts								
Shell size and contact arrangement see MIL-DTL 38999 Series I catalogue pages 7 to 9								
Contact type P: pin S: socket								
Polarisation blank for normal or A, B, C, D								
Shell finish 014: olive drab cadmium plating 023: electroless nickel plating 033K: black zinc nickel plating								
Deviation F472: connectors with integrated backshell								

Please consult for receptacles with integrated backshell

ADAPTERS FOR HEAT SHRINK MOULDED PIECES

NSD BACKSHELLS

LJT NSD (HE308-14) suitable for LJ (MIL-DTL-38999 Series I / HE308) and RNJ (HE308) connectors.

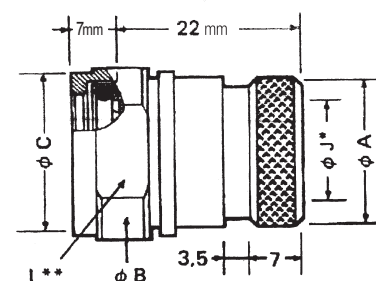
TV NSD suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors. These backshells ensure the sealing and the mechanical retention of the cable. For straight and right angled heat shrink moulded pieces, please refer to page 22.



Size	Ø A mm (in)	Ø B ±0.2 mm (in)	Ø C max mm (in)	Ø J* min mm (in)	L** max mm (in)
9	12.60 (0.496)	20.00 (0.787)	16.00 (0.630)	7.80 (0.307)	16.80 (0.661)
11	16.40 (0.646)	23.00 (0.906)	19.00 (0.748)	10.80 (0.425)	20.80 (0.819)
13	20.00 (0.787)	26.00 (1.024)	22.00 (0.866)	13.10 (0.516)	22.80 (0.898)
15	22.00 (0.866)	29.00 (1.142)	25.10 (0.988)	16.30 (0.642)	25.80 (1.016)
17	24.60 (0.969)	32.00 (1.260)	28.30 (1.114)	19.00 (0.748)	28.80 (1.134)
19	27.50 (1.083)	35.00 (1.378)	31.30 (1.232)	21.70 (0.854)	31.80 (1.252)
21	31.90 (1.256)	39.00 (1.536)	34.50 (1.358)	24.90 (0.980)	35.80 (1.409)
23	35.00 (1.378)	42.00 (1.654)	37.70 (1.484)	28.10 (1.106)	38.80 (1.528)
25	38.80 (1.528)	45.00 (1.772)	40.80 (1.606)	31.20 (1.228)	41.80 (1.646)

* max permissible cable outside diameter

** dimension over the flats (4 flats)



HOW TO ORDER

Amphenol designation - Backshell for LJ (MIL-DTL-38999 Series I/HE308), RNJ (HE308) connectors

HE 308 military designation - Backshells for HE308 (LJT / MIL-DTL-38999 Series I / RNJ) connectors

Series	LJT	NSD	11	014
Type of backshell	NSD: backshell for heat shrink moulded piece			
Size of backshell	09-11-13-15-17-19-21-23-25 (same as connector size)			
Finish	014: olive-drab cadmium plating 023: electroless nickel plating 033K: black zinc nickel plating			

Series	HE308	14	15	7	M
Type of backshell	NSD: backshell for heat shrink moulded piece				
Size of backshell	09-11-13-15-17-19-21-23-25 (same as connector size)				
Finish	07: olive-drab cadmium plating 06: electroless nickel plating				
Military standard					

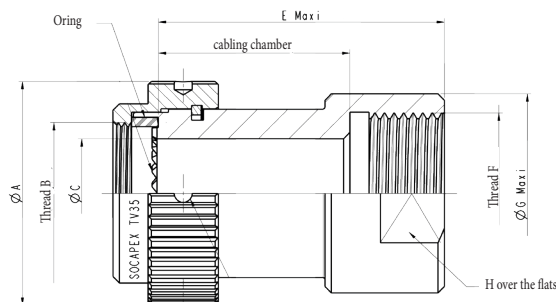
Amphenol designation - Backshell for TV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	TV	NSD	11	014
Type of backshell	NSD: backshell for heat shrink moulded piece			
Size of backshell	09-11-13-15-17-19-21-23-25 (same as connector size)			
Finish	014: olive-drab cadmium plating 023: electroless nickel plating 033K: black zinc nickel plating			

ADAPTERS FOR SEALING GLAND

METRIC SEALING GLAND STRAIGHT VERSION

TV35M suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.
These backshells ensure the adaptation on metric sealing gland.



Rear side	M16	M20	M25	M32	M40	M50
F Thread metric	M16x1.5	M20x1.5	M25x1.5	M32x1.5	M40x1.5	M50x1.5
Ø G mm (in)	19.6 (0.772)	25.3 (0.996)	31.1 (1.224)	39.1 (1.539)	49.5 (1.949)	63.3 (2.492)
H mm (in)	18 (0.709)	22 (0.866)	27 (1.063)	34 (1.339)	43 (1.693)	55 (2.165)

				Cabling chamber					Rear side (Thread)					
				30	40	50	60	80						
Size	Ø A mm (in)	B Thread metric	Ø C mm (in)	E mm (in)					M16	M20	M25	M32	M40	M50
09	24.3 (0.957)	M12x1	7.71 (0.304)	45 (1.772)	55 (2.165)	65 (2.56)	75 (2.953)	95 (3.740)						
11	27.4 (1.079)	M15x1	10.96 (0.431)											
13	31.8 (1.252)	M18x1	13.85 (0.545)											
15	35 (1.378)	M22x1	17.03 (0.670)											
17	38.1 (1.500)	M25x1	20.20 (0.795)											
19	41.2 (1.622)	M28x1	22.90 (0.902)											
21	44.3 (1.744)	M31x1	26.07 (1.026)											
23	47.2 (1.858)	M34x1	29.25 (1.152)											
25	50 (1.969)	M37x1	32.42 (1.276)											

For other configurations, please consult us

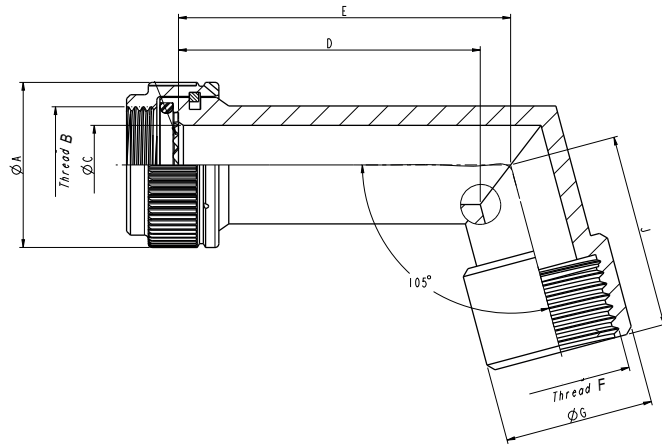
HOW TO ORDER

Amphenol designation - Backshell for TV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors

Series	TV	35	15	30	M20	023
35: aluminum B35: bronze						
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)						
Cabling chamber 30-40-50-60-80 Refer above						
Rear side M16-M20-M25-M32-M40-M50 Refer above						
Finish 014: olive-drab cadmium plating 023: electroless nickel plating 033K: black zinc nickel plating Blank for bronze version						

METRIC SEALING GLAND 105° ANGLED VERSION

TV105M suitable for TV-CTV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors. These backshells ensure the adaptation on metric sealing gland.



Rear side	M16	M20	M25	M32	M40	M50	M63
F Thread metric	M16x1.5-6H	M20x1.5-6H	M25x1.5-6H	M32x1.5-6H	M40x1.5-6H	M50x1.5-6H	M63x1.5-6H
Ø G mm (in)	20 (0.787)	24 (0.945)	29 (1.142)	36 (1.417)	44 (1.732)	54 (2.126)	67 (2.638)

							Rear side (Thread)						
Size	Ø A max mm (in)	B Thread metric	Ø C min mm (in)	Cabling chamber D mm (in)	E max mm (in)	J max mm (in)	M16	M20	M25	M32	M40	M50	M63
11	25.04 (0.986)	M15x1-6H	9.90 (0.390)	35	42.5 (1.673)	35 (1.378)							
13	29.36 (1.156)	M18x1-6H	12.80 (0.504)	40	48.25 (1.900)	35 (1.378)							
15	32.54 (1.281)	M22x1-6H	16.00 (0.630)	50	60.50 (2.382)	35 (1.378)							
17	35.71 (1.406)	M25x1-6H	19.20 (0.756)	55	66.60 (2.622)	36.50 (1.437)							
19	38.51 (1.516)	M28x1-6H	21.40 (0.843)	55	67.80 (2.669)	37 (1.457)							
21	41.68 (1.641)	M31x1-6H	24.60 (0.969)	40	54 (2.126)	38.50 (1.516)							
				60	74 (2.913)								
23	44.86 (1.766)	M34x1-6H	27.70 (1.091)	60	74.75 (2.943)	40 (1.575)							
25	48.03 (1.891)	M37x1-6H	30.90 (1.217)	75	91.50 (3.602)	40 (1.575)							

For other configurations, please consult us

HOW TO ORDER

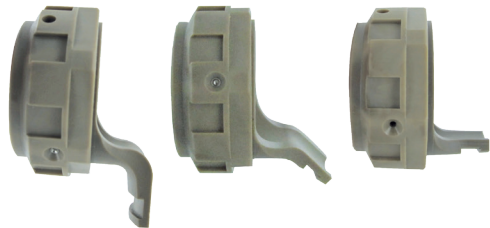
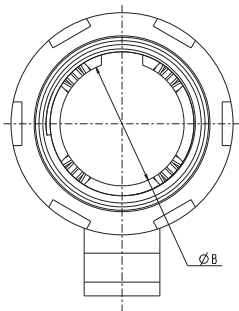
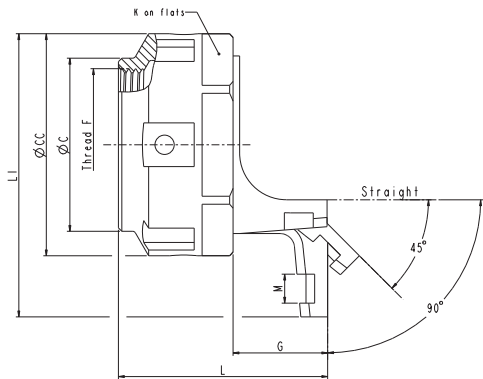
Amphenol designation - Backshell for TV (MIL-DTL-38999 Series III), SC39 and RNJ LP connectors.

Series	TV	105	15	50	M20	023
105: aluminum						
B105: bronze						
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)						
Cabling chamber 35-40-50-55-60-75 Refer above - dimension D						
Rear side M16-M20-M25-M32-M40-M50-M63 Refer above						
Finish						
014: olive-drab cadmium plating						
023: electroless nickel plating						
033K: black zinc nickel plating						
Blank for bronze version						

COMPOSITE BACKSHELLS

CTV35/ABS2216

- CTV35/ABS2216** suitable for TV/CTV (MIL-DTL-38999 Series III/EN3645) connectors:
- Light weight solution
 - Quick and easy installation
 - Handling temperature from -65°C to 200°C
 - Anti-decoupling system to withstand shocks and vibrations in harsh environment



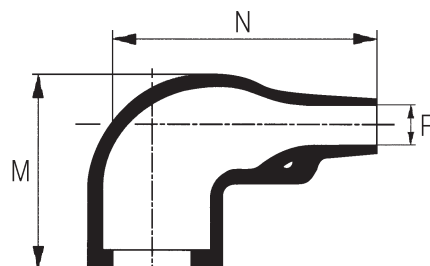
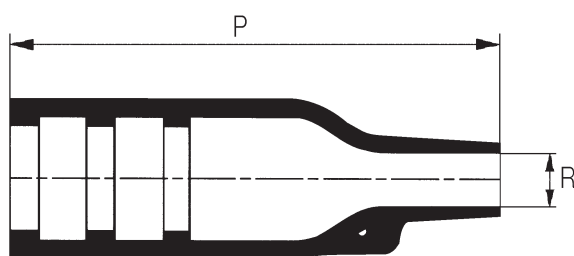
Size	ØB ⁰ _{-0.1} mm (in)	ØC Max mm (in)	ØCC max mm (in)	Thread F	G max mm (in)			K ⁰ _{-0.2} mm (in)	L max mm (in)			L1 Max mm (in)			M ^{+0.2} ₀ mm (in)
					droit	45°	90°		droit	45°	90°	droit	45°	90°	
09	8.47 (0.333)	15.24 (0.600)	21.79 (0.858)	M12x1.0-6H R0.100	16 (0.630)	21 (0.827)	17 (0.669)	19.05 (0.750)	40 (1.575)	37 (1.457)	32.5 (1.280)	21.76 (0.858)	26 (1.024)	/	3.2 (0.126)
11	12.07 (0.475)	18.21 (0.717)	24.99 (0.984)	M15x1.0-6H R0.100			15 (0.591)	22.23 (0.875)				24.99 (0.984)	30 (1.181)	40 (1.575)	3.2 (0.126)
13	14.96 (0.714)	21.18 (0.834)	29.39 (1.157)	M18x1.0-6H R0.100			15 (0.591)	25.4 (1.000)				29.39 (1.157)	33 (1.299)	40 (1.575)	4.2 (0.165)
15	18.14 (0.714)	25.14 (0.990)	32.46 (1.279)	M22x1.0-6H R0.100			15 (0.591)	28.58 (1.125)				32.49 (1.279)	36 (1.417)	50 (1.969)	4.2 (0.165)
17	21.21 (0.835)	28.12 (1.107)	35.71 (1.406)	M25x1.0-6H R0.100			15 (0.591)	31.75 (1.250)				35.71 (1.406)	39 (1.535)	50 (1.969)	4.2 (0.165)
19	24 (0.945)	31.09 (1.224)	38.5 (1.516)	M28x1.0-6H R0.100			15 (0.591)	34.93 (1.375)				38.5 (1.516)	42 (1.654)	50 (1.969)	4.2 (0.165)
21	27.08 (1.066)	34.06 (1.341)	41.7 (1.642)	M31x1.0-6H R0.100			15 (0.591)	38.1 (1.500)				41.7 (1.642)	45 (1.772)	60 (2.362)	4.2 (0.165)
23	30.35 (1.195)	36.9 (1.453)	44.91 (1.768)	M34x1.0-6H R0.100			15 (0.591)	41.28 (1.625)				44.91 (1.768)	48 (1.890)	60 (2.362)	5.4 (0.213)

HOW TO ORDER

Amphenol and ABS designation - Backshells for TV/CTV (MIL-DTL-38999 Series III / EN3645) connectors

Series	ABS2216 or CTV35	A	11	W
Type of backshell				
A: straight backshell				
B: 45° backshell				
C: 90° backshell				
Size of backshell 09-11-13-15-17-19-21-23-25 (same as connector size)				
EMI protection				
W: EMI shielding backshell (delivered with 200 mm metallic braid)				
P: non-EMI shielding backshell				

HEAT-SHRINK MOULDED PIECES



Heat-shrink moulded piece p/n		M max mm (in)	N ±10% mm (in)	P ±10% mm (in)	Ø R mm (in)	
Straight	Right angled	After total heating			Before heating (max)	After heating (min cable Ø)
804221	804231	25.40 (1.000)	25.00 (0.984)	38.40 (1.512)	24.00 (0.945)	6.00 (0.236)
804222	804232	27.20 (1.071)	32.00 (1.260)	54.90 (2.161)	30.00 (1.181)	6.00 (0.236)
804223	804233	30.50 (1.201)	39.40 (1.551)	66.80 (2.630)	31.00 (1.220)	7.10 (0.280)
804225	804235	38.00 (1.496)	46.00 (1.811)	80.00 (3.150)	36.00 (1.417)	8.50 (0.335)
804227	804237	45.00 (1.772)	55.00 (2.165)	99.10 (3.902)	43.00 (1.693)	10.00 (0.394)
804229	804239	54.00 (2.126)	80.00 (3.150)	130.00 (5.118)	60.00 (2.362)	16.00 (0.630)

Standard heat-shrink moulded pieces (semi-rigid polyolefin – without any adhesive)

Size	Backshell type	Rear size coding	Straight			Right angled		
			Amphenol Socapex p/n	Raychem p/n	Hellerman p/n	Amphenol Socapex p/n	Raychem p/n	Hellerman p/n
9	NSA, NSD	-	804221	202K121-3	152-42-G	804231	222K121-3	1152-4-G
	HE308-35, TV35, TVB35, SBC	08	804221	202K121-3	152-42-G	804231	222K121-3	1152-4-G
11	NSA, NSD	-	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
	HE308-35, TV35, TVB35, SBC	12	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
13	NSA, NSD	-	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
	HE308-35, TV35, TVB35, SBC	12	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
		16	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
		16	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
15	NSA	-	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
	NSD	-	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
	HE308-35, TV35, TVB35, SBC	14	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
		20	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
17	NSA	-	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
	NSD	-	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
	HE308-35, TV35, TVB35, SBC	12	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
		16	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
19	NSA	-	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
	NSD	-	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
	HE308-35, TV35, TVB35, SBC	16	804223	202K142-3	155-42-G	804233	222K142-3	1155-4-G
		24	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
21	NSA, NSD	-	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
	HE308-35, TV35, TVB35, SBC	14	804222	202K132-3	154-42-G	804232	222K132-3	1154-4-G
		20	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
		28	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
23	NSA, NSD	-	804229	202K174-3	158-43-G	804239	222K174-3	1158-4-G
	HE308-35, TV35, TVB35, SBC	24	804225	202K153-3	156-42-G	804235	222K152-3	1156-4-G
		32	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
25	NSA, NSD	-	804229	202K174-3	158-43-G	804239	222K174-3	1158-4-G
	HE308-35, TV35, TVB35, SBC	28	804227	202K163-3	157-43-G	804237	222K163-3	1157-4-G
		36	804229	202K174-3	158-43-G	804239	222K174-3	1158-4-G

TORQUES VALUES FOR REAR ACCESSORIES

According to the SAE-85049 standard

For LJT / RNJ / HE308 / MIL-DTL-38999 I connectors		For TV-CTV / MIL-DTL-38999 III / EN3645 connectors			For SJT / VG96912 connectors	
Shell size	Torque value (N.m) ± 0.5	Shell size	Metal torque value (N.m) ± 0.5	Composite torque value (N.m) ± 0.5	Shell size	Torque value (N.m) ± 0.5
09	4.5	09	6.8	4.5	08	4.5
11	4.5	11	9.0	4.5	10	4.5
13	4.5	13	12.6	4.5	12	4.5
15	4.5	15	13.6	4.5	14	4.5
17	4.5	17	13.6	4.5	16	4.5
19	4.5	19	13.6	4.5	18	4.5
21	9.0	21	15.8	9.0	20	9.0
23	9.0	23	15.8	9.0	22	9.0
25	9.0	25	15.8	9.0	24	9.0

According to the ABS2216 standard

For TV-CTV / MIL-DTL-38999 III / EN3645 connectors	
Shell size	Torque value (N.m)
09	2.75 (± 0.25)
11	2.75 (± 0.25)
13	3 (± 0.5)
15	5 (± 0.5)
17	5 (± 0.5)
19	5 (± 0.5)
21	7 (± 0.5)
23	7 (± 0.5)
25	7 (± 0.5)

The rear accessory installation procedure may change from one equipment manufacturer to another in terms of coupling torques to apply.

The use of Loctite shall be required or excluded.

For Aluminum alloy rear accessory, if the use of Loctite is excluded, the best performance in time of the system « connector + rear accessory » consists in applying the torque value to screw then to unscrew, to apply the torque value to screw a second time, then to unscrew and finally to screw the torque value a third time.

CROSS REFERENCES

The cross references below are given as information only.

The designs of the backshells are not strictly equivalent.

Amphenol P/N	NFC UTE 93422 / HE308 P/N	SAE-85049 P/N
LJT NSA xx 014	HE308 13 xx 7M	
LJT NSA xx 023	HE308 13 xx 6M	
LJT NSD xx 014	HE308 14 xx 7M	M85049/62-xx W
LJT NSD xx 023	HE308 14 xx 6M	M85049/62-XX N
LJTSBC xx xx 014		M85049/87-xx W xx
LJTSBC xx xx 023		M85049/87-xx N xx
HE308-35-xx-xx-xx-7M	HE308-35-xx-xx-xx-7M	M85049/85-xx W xx
HE308-35-xx-xx-xx-6M	HE308-35-xx-xx-xx-6M	M85049/85-xx N xx
TV 35 xx xx xx 014		M85049/88-xx W xx
TV 35 xx xx xx 023		M85049/88-xx N xx
TVSBC xx xx 014		M85049/90-xx W xx
TVSBC xx xx 023		M85049/90-xx N xx

NOTES

NOTES

Notes section with horizontal lines for writing.

ABOUT AMPHENOL

Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

Amphenol has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

More info on www.amphenol.com



Amphenol Military & Aerospace Operations (AMAO) has the largest and broadest selection of interconnect products in the military and aerospace markets.

More info on www.amphenolmao.com



Europe

FRANCE	Amphenol AIR LB	2 rue Clément Ader, ZAC de Wé - 08110 Carignan	+33 3 24 22 78 49
FRANCE	Amphenol SEFEE	Z.I. des Cazes – BP243 - 12402 Saint-Affrique Cedex	+33 5 65 98 11 00
GERMANY	Amphenol AIR LB GMBH	Am Kleinbahnhof 4 - 66740 Saarlouis	+49 6831 981 00
ITALY	Amphenol EUROPEAN SALES OPERATIONS	Via Barbaiana n.5 - 20020 Lainate - Milano	+39 293 254 214
UNITED KINGDOM	Amphenol INVOTEC	Unit 1-3, Hedging Lane Industrial Estate, Dosthill - Tamworth, B77 5HH	+44 1827 263 000
UNITED KINGDOM	Amphenol IONIX SYSTEMS	Prospect House, Taylor Business Park, Risley, Warrington, WA3 6HP	+44 1 942 685 200
UNITED KINGDOM	Amphenol LTD	Thanet Way, Whitstable - KENT, CT53JF	+44 1227 773 200
UNITED KINGDOM	Amphenol MARTEC	St Augustines Business Park, Swalecliffe Whitstable - Kent CT5 2QJ	+44 1227 793 733

North America

CANADA	Amphenol CANADA	605 Milner avenue - Toronto, Ontario	+1 416 291 0647
USA	Amphenol AEROSPACE OPERATIONS	40-60 Delaware street - Sidney, NY 13838	+1 800 678 0141
USA	Amphenol BORISH TECHNOLOGIES	4511 East Paris AVE - Grand Rapids, MI 49512	+1 616 554 9820
USA	Amphenol FSI	1300 Central Expwy N, Suite 100 - Allen, TX 75013	+1 214 547 2400
USA	Amphenol GRIFFITH ENTERPRISES	6000 East Coury Drive - Cottonwood, AZ 86326	+1 928 634 3685
USA	Amphenol NEXUS TECHNOLOGIES	50 Sunnyside Avenue - Stamford, CT 06902	+1 203 327 7300
USA	Amphenol PCD	72 Cherry Hill Drive - Beverly, MA, 01915	+1 978 624 3400
USA	Amphenol PRINTED CIRCUIT	Board Technology, 91 Northeastern Boulevard - Nashua, NH 03062	+1 603 324 4500
USA	Amphenol SV MICROWAVE	2400 Centrepark West Drive - West Palm Beach, FL	+1 561 840 1800
USA	Amphenol TIMES MICROWAVE	358 Hall Avenue - Wallingford, CT 06492	+1 800 867 2629

Asia

CHINA	Amphenol PCD CO.	Building 21, 1 st Liao Keng Industrial Zone, Shi Yan Street - Bao An District - Shenzhen 518108	+86 755 8173 8000/8286
INDIA	Amphenol INTERCONNECT INDIA	105 Bhosari Industrial Area - Pune 411 026	+91 20 27120363
JAPAN	Amphenol JAPAN	471-1, Deba, Ritto-City - Shiga 520 3041	+81 77 553 8501
KOREA	Amphenol DAESHIN	558 SongNae-Dong SoSa-Gu, Bucheon-city, Kyunggi-Do - 420-130	+81 32 610 3830/3845
SINGAPORE	Amphenol EAST ASIA	26/F, Railway Plaza, 39 Chatham Road South, Tsim Sha Tsui, Kowloon, Hong Kong	+65 6294 2128

Other Areas

AFRICA	Amphenol AFRICA	30 Impala Rd - Sandton 2146	+27 82 410 5179
ARGENTINA	Amphenol ARGENTINA	Av. Callao 930 2do piso Oficina B "Plaza" C1023 - AAP Buenos Aires	+54 11 4815 6886
AUSTRALIA	Amphenol AUSTRALIA PTY	2 Fiveways Blvd., Keysborough - Melbourne - Victoria 3173	+61 3 8796 8888
BRAZIL	Amphenol DO BRAZIL	Rua Diogo Moreira, 132, 20 andar, rooms 2001-2-3	+55 11 3815 1003
ISRAEL	Amphenol BAR-TEC	3 Hagavish Street, K fir-Barkan Bldg. East Industrial Zone - Kfar-Sava, 44102	+972 9 764 4100
MEXICO	Amphenol OPTIMIZE	Carretera Internacional Km 6.5, Col. Parque Industrial, Nogales, Sonora, C.P. 84094	+52 631 311 160
NEW ZEALAND	Amphenol PHITEK	Level 4, 2 Kingdon Street, Newmarket, Auckland 1023	+64 9 524 2984
RUSSIA	Amphenol RUSSIA	Yaroslavskaja Street 8 - 129164 Moscow	+7 495 937 6341
TURKEY	Amphenol TURKEY	Sun Plaza 15 Kat: 15 Maslak Hah. Bilim Sok. No.5 - Sisli/Istanbul, 34398	+90 212 367 92 19

Amphenol SOCAPEX



Amphenol Socapex

948, promenade de l'Arve BP29
74311 Thyez Cedex - France
Phone: +33 (0)4 50 89 28 00
contact@amphenol-socapex.fr
www.amphenol-socapex.com



For Technical Support

+33 (0)4 50 89 28 49
technicalsupport@amphenol-socapex.fr
www.amphenol-socapex.com/technical_support



To buy our products

+33 (0)4 50 90 28 00
contact@amphenol-socapex.fr
www.amphenol-socapex.com/amphenol/sales
Request a quote online at www.amphenol-socapex.com/quotation_request



Documentation

www.amphenol-socapex.com/documentation
To order a paper version of our catalogs, send an e-mail to communication@amphenol-socapex.fr



www.amphenol-socapex.com

Follow Amphenol Socapex on social media :



This catalog uses paper from managed forests, PEFC & FSC labels, and is printed by a printer certified "Imprim'Vert®"

*We reserve the right to modify our products in any way we deem necessary.
Any duplication is prohibited, unless approved in writing.*

Designed by **Amphenol Socapex**
DOC-000022-ANG - February 2018

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Amphenol:](#)

[HE308B07097M](#) [HE308-06T13-98SN7M08-03](#)