

# Amphenol SOCAPEX

## PowerSafe

Derived from MIL-DTL-38999 Series III &  
VG96944 Qualified



[www.amphenol-socapex.com](http://www.amphenol-socapex.com)

# OUR COMPANY



## 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 serve customers in over 100 countries around the world.
- Amphenol Socapex is part of the leading supplier of interconnect systems **Amphenol**.



**1400+**  
employees



**175 M€**  
Net Sales 2024  
75% Export - 25% France



Thyez, **France**  
Pune, **India**



## Our expertise has no boundaries

### Integrated Production in France & India

- 24 000 m<sup>2</sup> manufacturing capacity on 2 sites
- Design and manufacturing centers in France and India
- State-of-the-art manufacturing technology

## Our markets



**Defense**



**Commercial  
Aerospace**



**Space**



**Industry**



# TECHNOLOGIES & INNOVATION

## Engineering Laboratory



**Product testing and qualification expertise in many fields:**

- Environmental, mechanical, electrical, chemical, climatic 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

## Materials Expertise



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

- Advanced technology research and development: polymers, metals, platings, resins ...
- Cutting edge characterizations of interconnects: Radio Frequency, partial discharges ...
- 3D CAD mechanical software, simulation & analysis

## 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.

**Automation & Tooling :** Tools for our different activities : molding, machining, assembly

**Molding :** Solid expertise in thermoplastic elastomer and thermoset molding

**Machining :** Manufacturing of cylindrical shells and rectangular shells

**Screw Machining :** Manufacturing of electrical contacts

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

**Assembly :** Connector and harness assembly (electrical & optical)

## Our certifications

Product certifications : MIL-DTL38999, EN3645, EN3155, VG (VG95328, VG95319, VG96944, VG95218, VG96949)



Certified Management System



Certified Management System



Certified Management System



Certified Management System

## Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium



# CUSTOMER EXPERIENCE

## Service

► 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






### Compliance management



## Buy our solutions

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

### Field Sales Team :

-  10 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 Advisement & Multilingual Customer Service :

20 people

### Worldwide Distribution Network :

Our range of circular connectors, contacts, fiber optic connectors, PCB connectors and accessories are available thru our extensive distribution network.

It includes qualified distributors (QPL approved) for assembling MIL-DTL-38999 & derivatives and PT/451 (VG95328) connectors.



[Check our product inventory](#)



[Product Selectors & 3D Files](#)



NEW



# OUR HISTORY

1947



- Socapex creation in Suresnes, France
- 1<sup>st</sup> radio connector

1956-57



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

Early 1960's



- 1<sup>st</sup> board level connectors: HE8
- 1<sup>st</sup> "licence Bendix" manufactured connectors
- SL Series

1973



- New factory in Thyez (74) France with 250 people, 13 000m<sup>2</sup>

1975



- Production of 38999 connectors

1986

**Amphenol**  
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004



- RJ Field Electronica launch, "Award"

2005



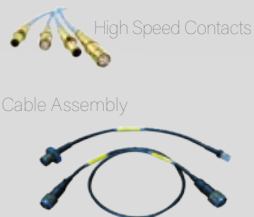
- New factory in Pune, India

2010's



- LuxBeam™ and HDAS launch

2014-2017



- New workshops :
- Cable Assembly & Contact Manufacturing workshop

2019



- Increased manufacturing capacity with 2<sup>nd</sup> building in Pune, India

2022



- Harness in the box solution launch

Today & tomorrow



- New technologies :
- Investment in automation & technical expertise



- Amphenol SOCAPEX joins the "Convention des Entreprises pour le Climat".
- Our goal: to accelerate our transition to a more sustainable operation.

## POWERSAFE / VG96944 - GENERAL CHARACTERISTICS

Power connector qualified VG96944 and designed for user safety

### Description

PowerSafe connectors are derived from MIL-DTL-38999 Series III connectors and dedicated to high power supply in harsh environments. These connectors provide the user with, the highest user safety, shielding effectiveness & environmental performances. PowerSafe connectors follow the European standard for power equipment DIN EN 61984 (former VDE 0627).



### Applications

- Power connectors deployed on the field (drums)
- Electrical power generator
- Power Supply requiring User safety
- Power Distribution Units requiring User safety
- Power supply close to electronic devices
- Heavy duty Power supply for any use
- Uninterruptible Power Supply requiring User safety
- VG qualified architecture
- Line Replaceable Unit (LRU)

LRU application  
Example on a Shelter



C5ISR



Military  
Aerospace



Ground  
Vehicle



Navy



Industrial

# POWERSAFE / VG96944 - GENERAL CHARACTERISTICS

Power connector qualified VG96944\* and designed for user safety

## Main features

### TWO INSERTS TYPES WITH DIFFERENT CHARACTERISTICS

- “E” inserts – up to 200°C & CTI (Comparative Tracking Index)  $\leq 100V$

Available in Amphenol Proprietary designations only

- “V” inserts – VG96944 compliant – up to 150°C & CTI  $\leq 400V$  (Material Group II)

Available in VG designations & Amphenol Proprietary ones

**FIRST MATE/LAST BREAK:** one earth contact directly linked to the shell, stays in place even in case of burning.

**LAST MATE/FIRST BREAK:** one pilot contact with a breaking capacity (brings the information to a relay to turn on/off the power).

These features protect the user even if the connectors are mated or unmated. Amphenol recommends to connect / disconnect connector when unloaded.

**IP2X WHEN UNMATED (SOCKET), IP68 WHEN MATED**

### HIGH ROBUSTNESS AND EXCELLENT ENVIRONMENTAL PERFORMANCES.

#### SEVERAL MATERIALS & PLATING

- Aluminum (Olive drab Cadmium, Nickel, Black Zinc Nickel, Tin Zinc platings)
- Marine Bronze
- Stainless steel (Passivated, Nickel plated)

**EMI/RFI PROTECTION :** Shell to shell bottoming and grounding fingers on the plug shell

#### ACCESSORIES:

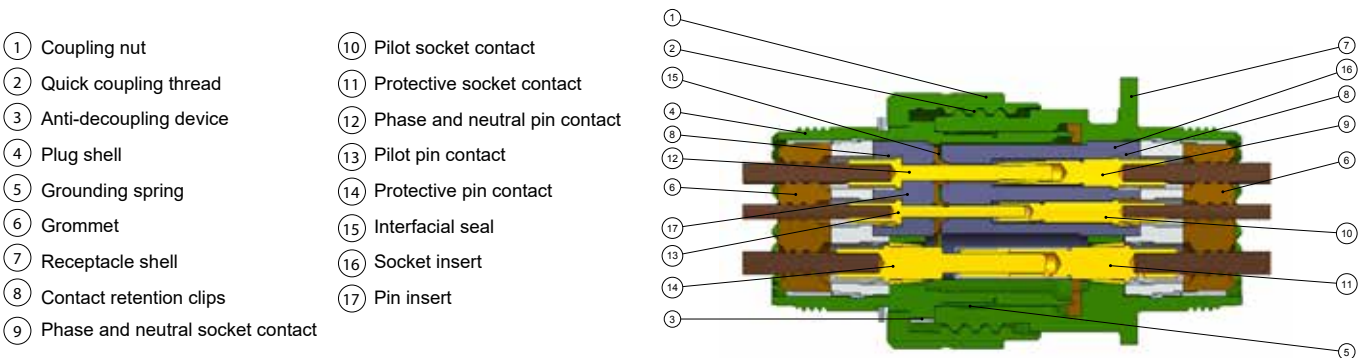
- Caps: compatible with MIL-DTL-38999 Series III caps.
- Backshells: compatible with AS85049 backshells for MIL-DTL-38999 Series III connectors, VG95319-1011G, as well as TV35 & TVNSA backshells.

Same panel drilling as standard MIL-DTL-38999 Series III receptacles.

## Added benefits

- PowerSafe is compliant with **IP2X Electrical Safety standard (socket side)**, which guarantees touch-proof protection of live parts.
- Qualified according the most stringent standard **VG96944\*** (applicable to Aluminum with Olive Drab Cadmium or Tin Zinc finish and Marine Bronze versions only).
- Safety use design following **DIN EN-61984 (former VDE 0627)**.

## Concept



\* Contacts arrangement 13-V4 / 17-V6 / 25-V6 are VG96944 Qualified



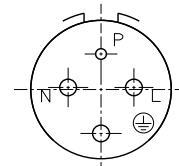
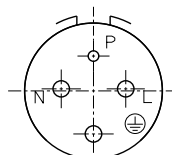
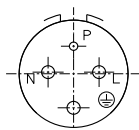
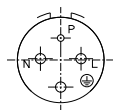
## POWERSAFE / VG96944 - LAYOUTS & ELECTRICAL CHARACTERISTICS EQUIPPED WITH POWER CONTACTS

Amphenol **PowerSafe** range offers 7 contact arrangements to fit all your power needs, with single-phase & three-phase layouts, and a choice of 2 insert materials for each layout depending on the need :

→ **E** inserts : using the same material than Amphenol Socapex 38999 series connectors and able to withstand a temperature up to 200°C, its CTI is  $\leq 100V$ . Dielectric Withstanding Voltage (DWV) limit have been tested on E inserts in accordance with test procedure **EIA-364-20F** with maximum voltage applied of 4500 VRMS.

→ **V** inserts : developed according to VG96944 standard with a material less impacted by the disconnection under load (avoid arcing when disconnecting under load). Able to withstand a maximum temperature of 150°C & have a CTI  $\leq 400V$  (Material Group II according to DIN EN60664-1 (VDE 0110-1):2008-01,4.8.1.3). V inserts have been tested according to VG96944 and DWV limit have been set up to 2500 VRMS.

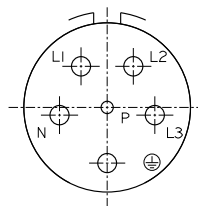
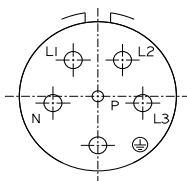
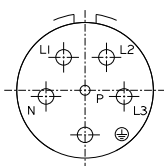
### Single-Phase Layouts



	13-E4	15-E4	21-E4	23-E4
<b>E insert</b>				
<b>V insert</b>	13-V4	15-V4	21-V4	23-V4
Pilot contact (P)	1 Size 20	1 Size 16	1 Size 16	1 Size 16
Phase & neutral (N & L)	2 Size 16	2 Size 12	2 Size 6	2 Size 4
Protective contact (PE)	1 Size 16	1 Size 12	1 Size 6	1 Size 4

Contact Arrangements	Pilot contact - P		Phase, Neutral and Protective contact - N, L & PE		DWV (VRMS) *
	Contact rating (A)	Operating Voltage (VRMS)	Contact rating (A)	Operating Voltage (VRMS)	
13-E4	0,5	60	16	1000	3300
15-E4	0,5	60	25	1000	3300
21-E4	0,5	60	63	1000	3300
23-E4	0,5	60	84	1000	3300
13-V4	0,5	60	16	250	1500
15-V4	0,5	60	25	250	1500
21-V4	0,5	60	63	500	2500
23-V4	0,5	60	84	500	2500

### Three-Phase Layouts



	17-E6	23-E6	25-E6
<b>E insert</b>			
<b>V insert</b>	17-V6	23-V6	25-V6
Pilot contact (P)	1 Size 16	1 Size 16	1 Size 16
Phase & neutral (N & L)	4 Size 12	4 Size 8	4 Size 6
Protective contact (PE)	1 Size 12	1 Size 8	1 Size 6

Contact Arrangements	Pilot contact - P		Phase, Neutral and Protective contact - N, L1, L2, L3 & PE		DWV (VRMS) *
	Contact rating (A)	Operating Voltage (VRMS)	Contact rating (A)	Operating Voltage (VRMS)	
17-E6	0,5	60	25	1000	3300
23-E6	0,5	60	47	1000	3300
25-E6	0,5	60	63	500	2500
17-V6	0,5	60	25	500	2500
23-V6	0,5	60	47	500	2500
25-V6	0,5	60	63	500	2500

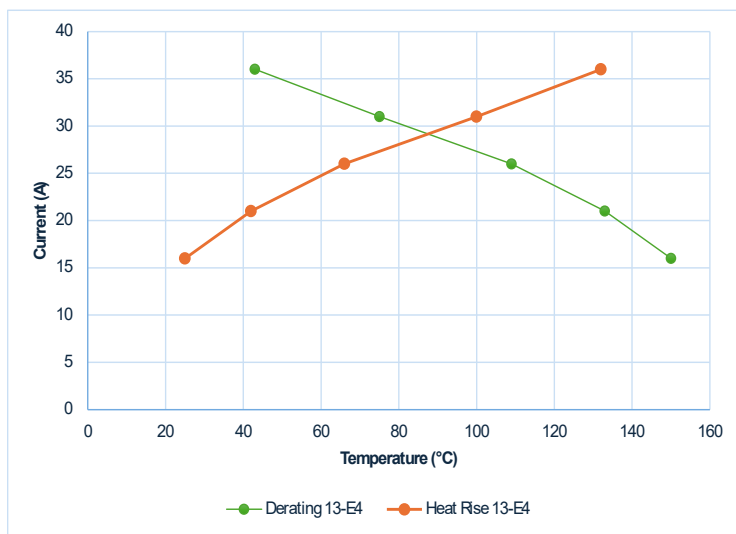
\* : Test voltage in mated condition for Phase, Protective and Neutral pin & socket contacts, and Pilot pin contacts. Test voltage in unmated condition for Pilot socket contact only.



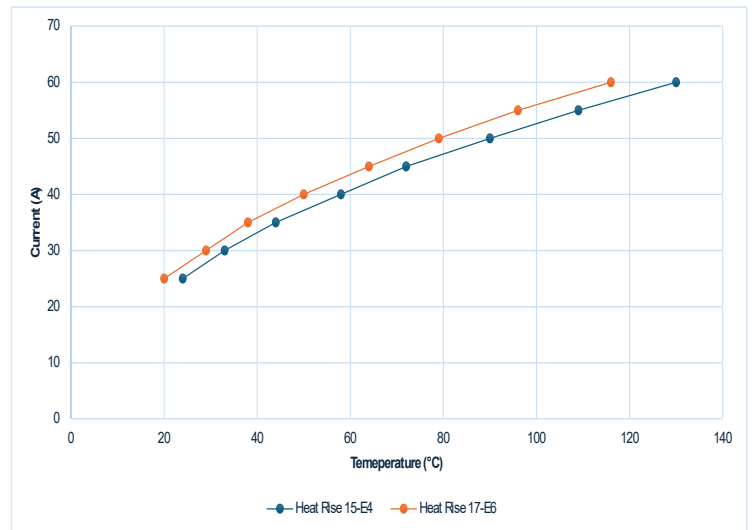
## HEAT RISE & DERATING CURVES GENERATED ACCORDING TO EIA-364-70D, METHOD 2

This procedure establishes the test procedures for determining temperature rise versus current. Heat Rise explains how the current passing through generates heat at the contact point, causing the temperature to rise while derating tests explain how the maximum current rating of the contacts decreases as the ambient temperature increases. Overall, this gives a good overview of the connector performance. The mated samples are placed in an enclosure to reduce air disturbance. The connectors are powered with a serial circuit between several contacts, according to the arrangement. The current is applied by step of 5 A, starting from the current prescribed for the contact resistance measurements. During the current application, the heating of the sample is measured with thermocouples connected to an acquisition unit.

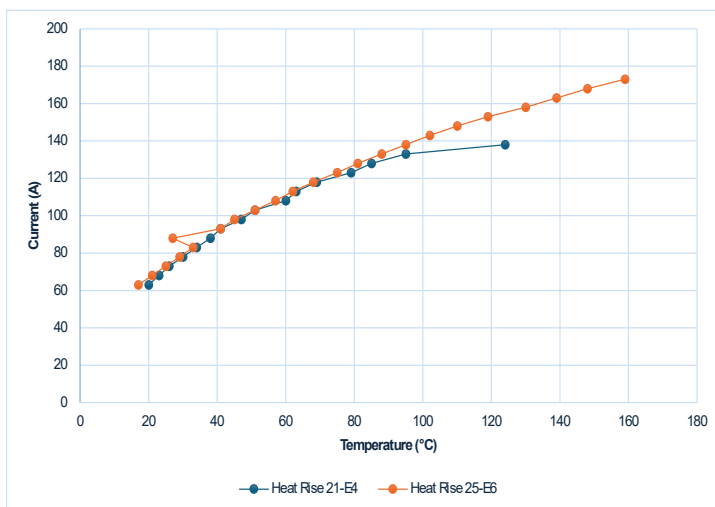
Heat Rise & Derating mated pair  
Single Phase 13-E4 equipped with  
Size 16 Power contacts



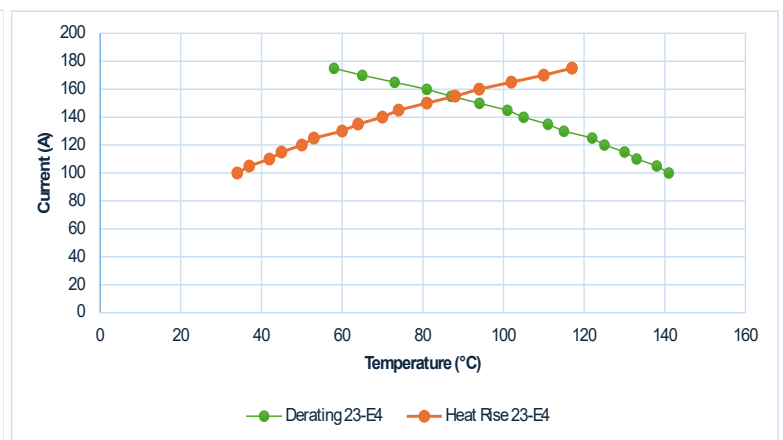
Heat Rise mated pairs Single Phase  
15-E4 & Three phase  
17-E6 equipped with Size 12 Power  
contacts



Derating mated pairs Single Phase  
21-E4 & Three phase  
25-E6 equipped with Size 6 Power  
contacts



Heat Rise & Derating mated pair  
Single Phase 23-E4 equipped with  
Size 4 Power contacts

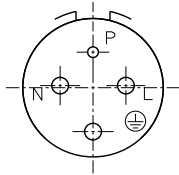


# POWERSAFE / VG96944 - LAYOUTS & ELECTRICAL CHARACTERISTICS

Layouts able to accomodate Temper Grip contacts & High current Pin\*

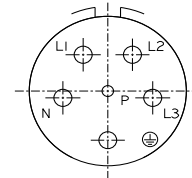


## Single-Phase Layout



E insert	23-E4T
V insert	23-V4T
Pilot contact (P)	1 Size 16
Phase & neutral (N & L)	2 Size 4
Protective contact	1 Size 4

## Three-Phase Layout

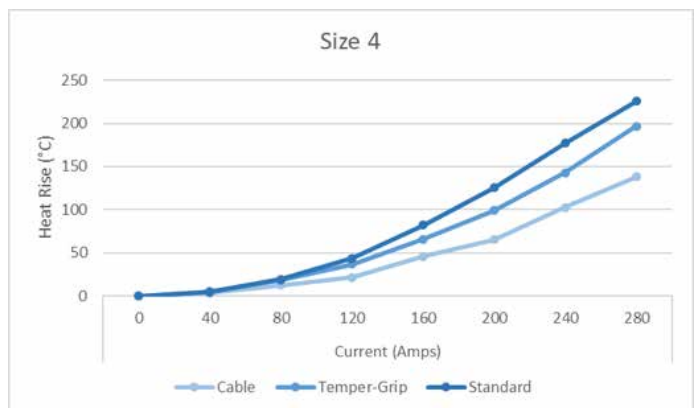
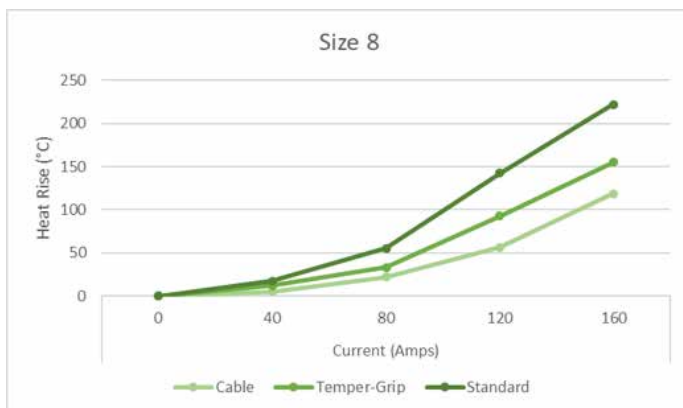


E insert	23-E6T
V insert	23-V6T
Pilot contact (P)	1 Size 16
Phase & neutral (N & L)	4 Size 8
Protective contact	1 Size 8

\* Amphenol Socapex Temper-Grip socket contact and high-current pin Size 12 are under development

Contact Arrangements	Pilot contact - P		Phase, Neutral and Protective contact - N, L &		DWV (VRMS)
	Contact rating (A)	Operating Voltage (VRMS)	Contact rating (A)	Operating Voltage (VRMS)	
23-E4T	0,5	60	120	1000	3300
23-E6T	0,5	60	70	1000	3300
23-V4T	0,5	60	120	500	2500
23-V6T	0,5	60	70	500	2500

Amphenol Socapex Temper-Grip socket contacts have a high-current technology designed for use in high-temperature applications and is available with most Amphenol connectors. Temper-Grip contacts can increase ampacity by up to 40 %, allowing the increase the value of your system or potentially downsize your cable size and the space you occupy on your panel.





## POWERSAFE / VG96944 - CHARACTERISTICS

### Environmental characteristics

	Connectors with Proprietary inserts E	Connectors with VG96944 compliant inserts V
<b>Temperature</b>	-65 to +175°C (Olive drab cadmium, Black zinc nickel plating) -65 to +200°C (Nickel plating, Marine Bronze, Stainless steel)	-65 to +150°C (all materials and platings)
<b>Salt spray exposure</b>	48h for Nickel plated Aluminum 500h for Olive drab cadmium, Black zinc nickel, Tin Zinc Marine Bronze and Stainless steel	Test level 2 : 5% NaCl. 2h salt spray exposure and 22h storage in humid air repeated during 5 cycles
<b>Sealing</b>	IP2X: Finger test for socket contacts and socket inserts IP68: Pressure water tight (48h, under 2m water)	IP2X: Finger test for socket contacts and socket inserts IP68: Pressure water tight (48h, under 2m water)

### Mechanical characteristics

	Connectors with Proprietary inserts E	Connectors with VG96944 compliant inserts V
<b>Durability</b>	500 mating cycles	500 mating cycles
<b>Shocks</b>	-	Half-sine, 500 m/s <sup>2</sup> , 11 ms
<b>Sine vibrations</b>	60g from -55 +175°C (ODC, ZnNi, SnZn) / +200°C (Ni, Bronze, Stainless Steel)	-
<b>Random vibrations</b>	Per EIA-364-28	Per VG95319-2 (Spectrum 5 Hz to 500 Hz)
<b>Insert material</b>	Thermoplastic insert Silicone rubber grommet and interfacial seal	High CTI Thermoplastic insert Silicone rubber grommet and interfacial seal
<b>Insulator material CTI</b>	<100V	<400V
<b>Contacts</b>	Crimp, removable contacts Gold plating for pilot contact and silver plating for protective, phase and neutral contacts	Crimp, removable contacts Gold plating for pilot contact and silver plating for protective, phase and neutral contacts
<b>Protective contact Resistance</b>	≤100 mΩ	≤100 mΩ

### Phase & Neutral contact retention force

Contact Size	20	16	12	8	6	4
<b>Maximum load (N)</b>	67	111	111	111	111	150

## POWERSAFE / VG96944 - HOW TO ORDER - PROPRIETARY DESIGNATIONS

1.	2.	3.	4.	5.	6.	7.	
Series	Shell type	Crimp contacts	Class	Layout	Contact gender	Keying	Deviation
TV	P00	R	W	13-E4	P		-

## 1. Shell type

	Shell type	Temperature	Associated materials and platings for E inserts	Associated materials and platings for V inserts
06	Straight plug	+175°C*	W, ZN, ZR, TZ	W, ZN, ZR, TZ, F, K, S, B
S06		+200° C	F, K, S, B	-
P00	Square flange receptacle	+175°C*	W, ZN, ZR, TZ	W, ZN, ZR, TZ, F, K, S, B
PS00		+200° C	F, K, S, B	-
07	Jam nut receptacle	+175°C*	W, ZN, ZR, TZ	W, ZN, ZR, TZ, F, K, S, B
S07		+200° C	F, K, S, B	-

## 4. Contact arrangement

Please refer to Page 8 or 10

Please note that you can order E or V inserts depending on your requirement.  
E inserts have a CTI ≤100V and can withstand a temperature up to 200°C.  
V inserts have a CTI ≤400V (Material Group II) and can withstand a temperature up to 150°C.

## 2. Crimp contacts

R	For Class W, F, K and B platings
Blank	For Class ZN and TZ plating

## 5. Contact gender

P	Pin (500 mating cycles)
S	Socket (500 mating cycles)

## 3. Class: Material &amp; Finish

	Shell material	Shell finish
W	Aluminum	Olive drab cadmium
F		Nickel ✓
ZN		Black zinc nickel ✓
ZR		Black zinc nickel without Cr6+ in the passivation ✓
TZ		Tin Zinc ✓
B	Marine bronze ✓	-
K	Stainless steel	Passivated ✓
S		Nickel ✓

For more environmental data on material and platings, please consult our MIL-DTL-38999 catalogue

## 6. Keying

(Blank) (for normal)	A	B	C	D
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## 7. Deviation

Deviation	Description	Shell type compatibility
F312	Reduced flange receptacle	07/S07

For other deviations availability, please consult us

## POWERSAFE / VG96944 - HOW TO ORDER - VG96944 DESIGNATIONS

1.		2.		3.		4.		5.			
Series		Shell type		Contact arrangement		Contact gender		Keying		Material and platings	
VG96944-04		A		13-V4		P		N		A	

## 1. Shell type

A	Receptacle	Square flange receptacle
B		Jam nut receptacle
C	Straight plug	

## 3. Contact gender

P	Pin (500 mating cycles)
S	Socket (500 mating cycles)

## 4. Keying

N (for normal)	A	B	C	D
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## 2. Contact arrangement

13-V4	Size 13 – 4 contacts / N, L, Pr Size 16
17-V6	Size 17 – 6 contacts / N, L, Pr Size 12
25-V6	Size 25 – 6 contacts / N, L, Pr Size 6

Please note that VG inserts have a CTI ≤400V (Material Group II) and can withstand a temperature up to 150°C.

## 5. Material and platings

	Shell material	Shell finish
A	Aluminum	Olive drab cadmium
J		Tin Zinc ✓
B	Marine bronze ✓	-

✓ : RoHS compliant



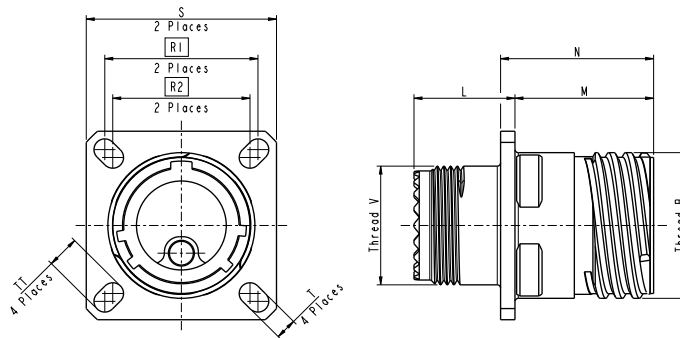
## POWERSAFE / VG96944 - OVERALL DIMENSIONS - RECEPTACLES

## Square flange receptacle



See part how to order page 12

AMPHENOL	VG
TVP00RW..	VG96944-04A..A
TVP00ZN..	
TVP00TZ..	VG96944-04A..J
TVPS00RF..	
TVPS00RB..	VG96944-04A..B
TVPS00RS..	
TVPS00RK..	



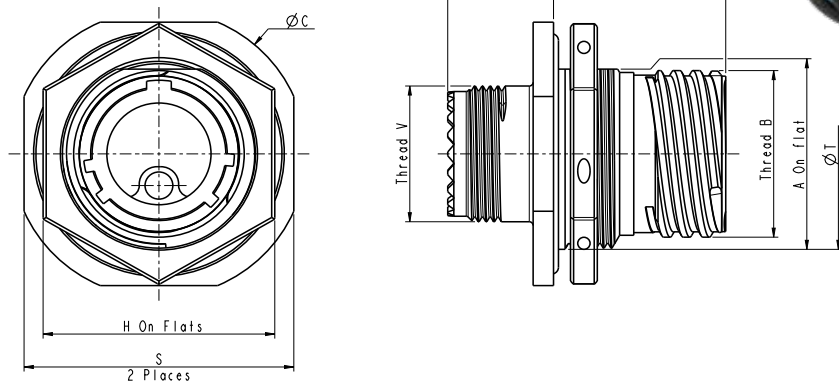
Shell size	B thread Class 2A (inches)	L Max (mm)	M Max (mm)	N +0.13 0 (mm)	R1 (mm)	R2 (mm)	S ±0.3 (mm)	T ±0.2 (mm)	TT ±0.2 (mm)	V thread (metric)
13	.875	15.5	20.9	22.99	23.01	20.62	28.6	3.25	4.93	M18x1-6g
15	1.0000	15.5	23.3	25.49	24.61	23.01	31.0	3.25	4.39	M22x1-6g
17	1.1875	15.6	23.4	25.49	26.97	24.61	33.3	3.25	4.93	M25x1-6g
21	1.3750	17.5	24.6	27.49	31.75	29.36	39.7	3.25	4.93	M31x1-6g
23	1.5000	20.7	24.6	27.49	34.93	31.75	42.9	3.91	4.93	M34x1-6g
25	1.625	20.7	24.6	27.49	38.10	34.93	46.0	3.91	6.15	M37x1-6g

## Jam nut receptacle



See part how to order page 12

AMPHENOL	VG
TV07RW..	VG96944-04B..A
TV07ZN..	
TV07TZ..	VG96944-04B..J
TVS07RF..	
TVS07RB..	VG96944-04B..B
TVS07RS..	
TVS07RK..	



Shell size	B thread Class 2A (inches)	A +0.1 -0.15 (mm)	C Max (mm)	K Max (mm)	P Max (mm)	H Hex 0 -0.1 (mm)	S +/-0.4 (mm)	T (mm)	V thread (metric)	Hex nut max torque N.m MIN/MAX
13	.875	23.82	38.4	22.5	13.7	30	34.9	25.20 - 25.50	M18x1-6g	6.2/6.8
15	1.0000	26.97	41.6	25.0	14.1	34	38.1	28.30 - 28.60	M22x1-6g	7.9/8.5
17	1.1875	30.15	44.8	25.0	14.1	36	41.3	31.80 - 31.95	M25x1-6g	9/9.6
21	1.3750	36.50	25.7	27.0	18.5	46	49.2	37.97 - 37.80	M31x1-6g	11.3/12.4
23	1.5000	39.67	55.9	27.0	18.5	46	52.4	41.00 - 41.30	M34x1-6g	12.4/13.6
25	1.625	42.85	59.0	27.0	18.5	50	55.6	44.20 - 44.5	M37x1-6g	13.6/14.7

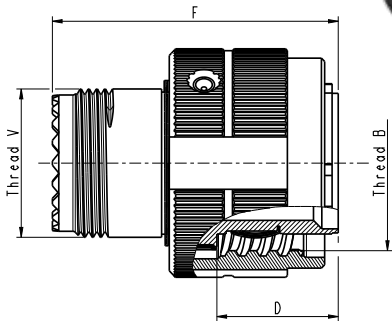
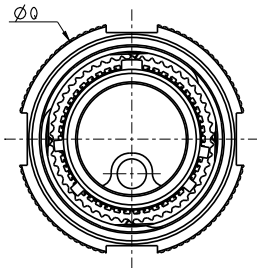
All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

POWERSAFE / VG96944 - OVERALL DIMENSIONS - PLUG

Straight plug

See part how to order page 12

AMPHENOL	MILITARY
TV06RW..	VG96944-04C..A
TV06ZN..	
TV06TZ..	VG96944-04C..J
TVS06RF..	
TVS06RB..	VG96944-04C..B
TVS06RS..	
TVS06RK..	



Shell size	B thread Class 2B (inches)	Q Max (mm)	F Max (mm)	D (mm)	V thread (metric)
13	.875	29.4	35.5	15.01	M18x1-6g
15	1.0000	32.5	38.0	17.51	M22x1-6g
17	1.1875	35.7	38.0	17.51	M25x1-6g
21	1.3750	38.5	44.4	19.51	M31x1-6g
23	1.5000	44.9	46.0	19.51	M34x1-6g
25	1.625	48.0	46.0	19.51	M37x1-6g

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

Due to technical modifications, all information provided is subject to change without prior notice  
Designed by Amphenol Socapex



## POWERSAFE / VG96944 - JAM NUT REDUCED FLANGE RECEPTACLE

Reduced flange receptacles are derived from 38999 series III Jam nut receptacles and dedicated for applications where size & weight are critical, offering un smaller footprint and higher contact density

### Main features

- For Jam nut receptacle (TV07/TVS07).
- Higher density on panel: **41% average footprint surface less.**
- Lighter: **20% average lighter than standard 38999**
- Mates with standard **PowerSafe** plug and caps.
- Matches the **PowerSafe** performances.
- Improved design of the o'ring groove allowing the o'ring to stay in place.



With Castle nut\*

\*Please consult us if you need a safety castle nut with lock (wiring possibility)

MATED PAIR

RECEPTACLE FRONT FACE

Jam nut Receptacle  
TV\*07\*\*\*

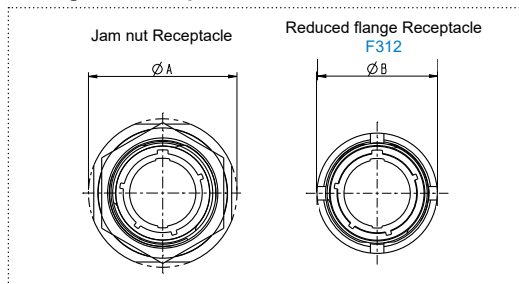


Reduced flange Receptacle  
TV\*07\*\*\*F312



### Footprint savings

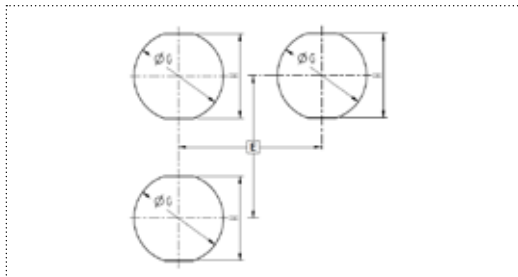
Average 41% footprint reduction:



Size	Standard PowerSafe ØA <sub>MAX</sub> (mm)	PowerSafe Reduced flange (F312) ØB <sub>MAX</sub> (mm)	Ø Reduction
13	38.4	28.1	46%
15	41.6	32.1	40%
17	44.8	36.1	35%
21	52.7	41.1	39%
23	55.9	44.1	38%
25	59	48.1	34%

All others dimensions remain the same in jam nut or reduced flange receptacles (lengths, threads, etc.).  
See page 13 for all other receptacle dimensions

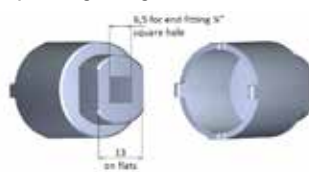
### Panel hole dimensions



Size	E recommended	ØG +0.1 0	H +0.1 0
13	31.4	23	22.3
15	34.5	27	25.5
17	37.7	31	30.3
21	43.7	36	35.1
23	46.9	39	38.3
25	51.0	43	41.5

### Tooling

Specific tightening tool for castle nut



Size	Tool reference
13	809683
15	809684
17	809685
21	809687
23	809688
25	809689

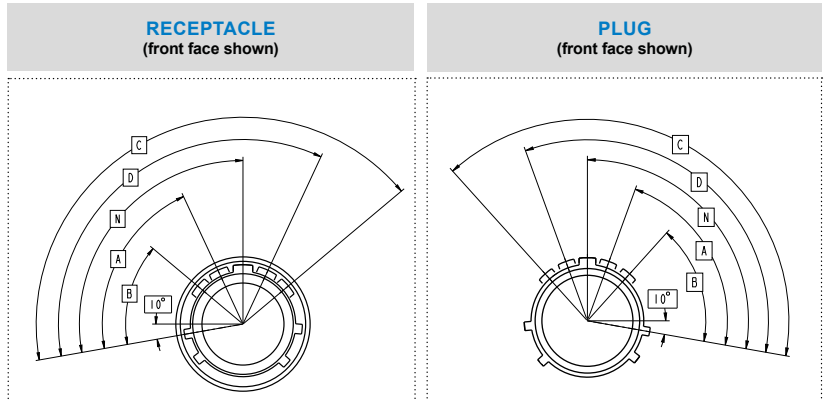
All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

# POWERSAFE / VG96944 - KEYWAY & PANEL HOLE DIMENSIONS

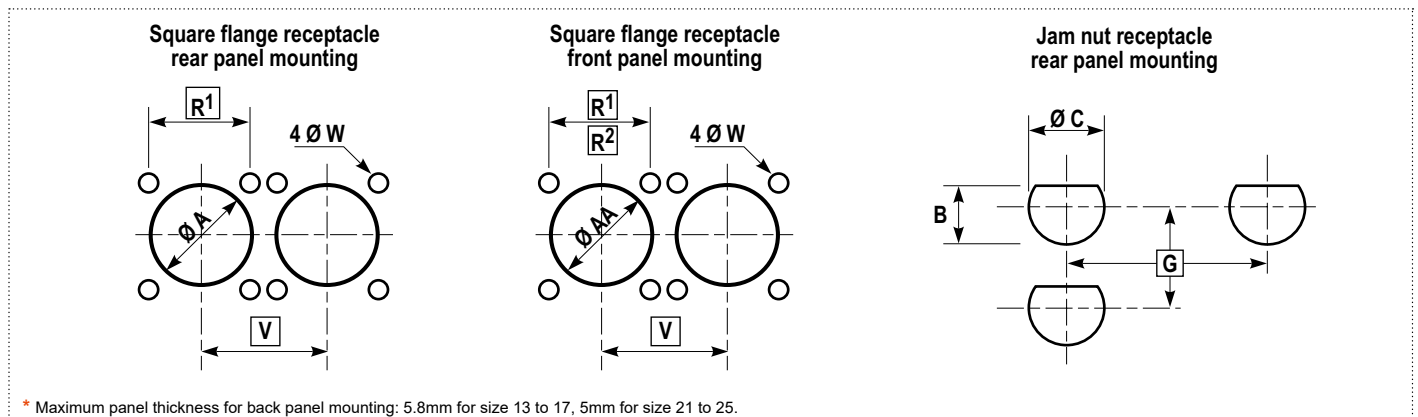
## Keyway polarization

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Minor keys stay fixed, master key rotates. Keyway identification letter is (Blank) for Normal, A, B, C or D.

Size	Position of the major key				
	NORMAL BLANK	A	B	C	D
13	100	80	68	132	120
15	100	79	66	134	121
17	100	82	70	130	118
21	100	82	70	130	118
23	100	85	74	126	115
25	100	85	74	126	115



## Panel hole dimensions



Shell size	R <sup>1</sup> (mm)	R <sup>2</sup> (mm)	V Mini (mm)	ØA Min (mm)	ØAA Min (mm)	ØW ±0.13 (mm)	G Mini (mm)	ØC +0.25 0 (mm)	B 0 -0.25 (mm)
13	23.01	20.62	30.20	23.42	19.05	3.25	36.00	25.65	24.26
15	24.61	23.01	33.30	26.59	23.01	3.25	39.60	28.83	27.56
17	26.97	24.61	36.50	30.96	25.81	3.25	43.30	32.01	30.73
21	31.75	29.36	42.50	36.12	32.16	3.25	50.60	38.35	37.08
23	34.93	31.75	45.70	39.29	34.93	3.81	54.20	41.53	40.26
25	38.10	34.93	48.80	42.47	37.69	3.81	59.70	44.70	43.43

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

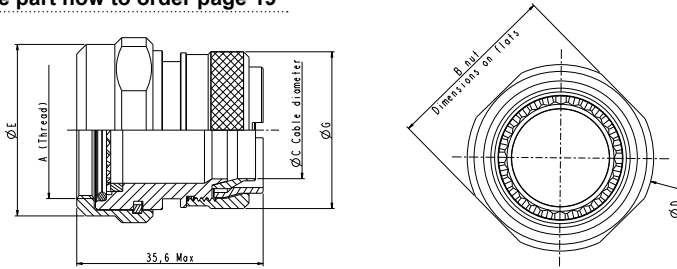
## POWERSAFE / VG96944 - BACKSHELLS

### TV NSA Backshells

These backshells ensure the shielding by clamping the braid with a screwing system. The free inner ring avoids twisting of the braid during screwing (double conus style).



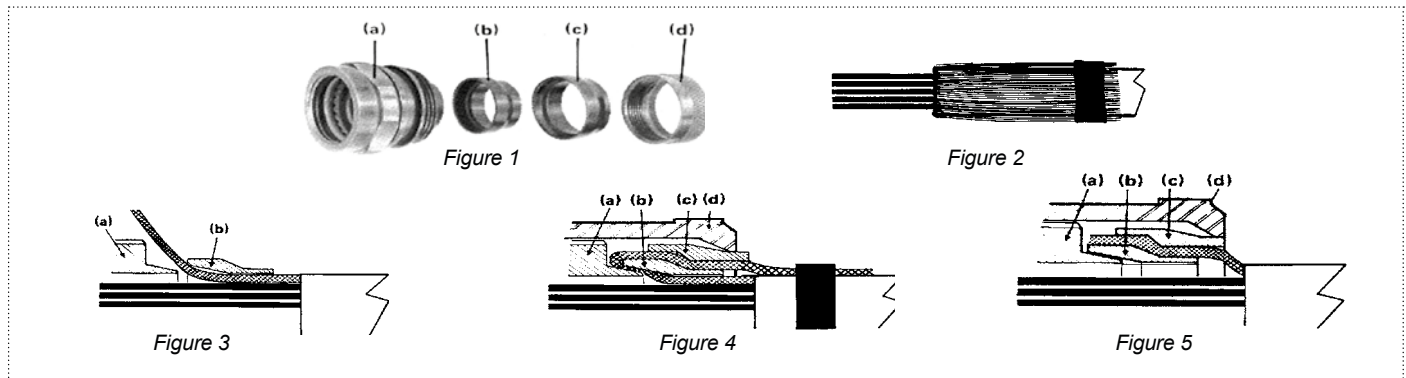
See part how to order page 19



Shell size	A Thread Metric	B max	Ø C max	Ø D max	Ø E max	Ø G max
13	M18 x 1.0-6H	26	12.7	28.1	21.2	22.6
15	M22 x 1.0-6H	29	14.8	31.1	25.1	25.8
17	M25 x 1.0-6H	32	17.9	34.1	28.1	29.0
21	M31 x 1.0-6H	39	23.1	41.1	34.1	35.2
23	M34 x 1.0-6H	42	26.2	44.1	36.9	38.4
25	M37 x 1.0-6H	45	28.8	49.1	39.9	41.5

Use Straight Shrink Boots 202K121-12 (size 13), 202K132-12 (size 15 and 17), 202K153-12 (size 21, 23 and 25) and S1255 Adhesive

#### TV NSA Installation instructions



1. Prepare the cable for termination process and slide the items onto the cable 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 unscrew, to apply the torque value & screw a second time, then to unscrew and finally 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. Then, Install the heat-shrink moulded piece.



### VG95319 Backshells

These backshells are suitable for **PowerSafe** connectors and ensure the shielding by clamping the braid with a screwing system (single conus style).

Shell size	Backshell VG Standard	Shrink boot	Adhesive	Micro Clamping Band	or	Standard Clamping Band	Tool for Micro Band	Tool for Standard Band
13	VG95319-1011G012A	VG95343T06B001A	VG95343T15A001	895693		072952	809985	809952
15	VG95319-1011G004A	VG95343T06B003A						
17	VG95319-1011G005A							
21	VG95319-1011G008A	VG95343T06B004A		895700				
23	VG95319-1011G009A	VG95343T06B005A						
25	VG95319-1011G010A	VG95343T06C010A						

Use Straight Shrink Boots 202K121-12 (size 13), 202K132-12 (size 15 and 17), 202K153-12 (size 21, 23 and 25) and S1255 Adhesive

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch



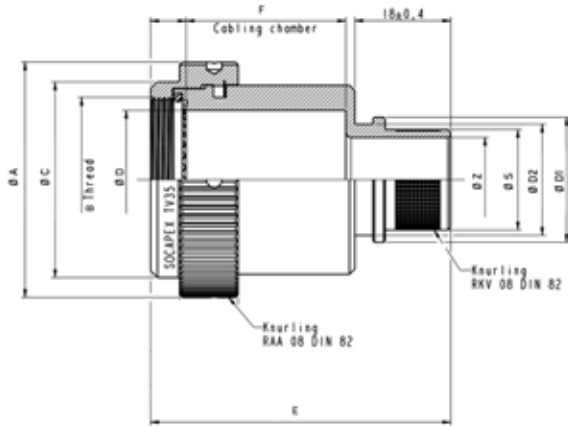
## POWERSAFE / VG96944 - BACKSHELLS



## TV35 Backshells

TV35 and TVB35 band backshells provide a full 360° shield termination with a quick, easy and cost effective cabling process. 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.

See part how to order page 19



Shell size	B Thread Metric	Ø A max	Ø C	Ø D
13	M18 x 1.0-6H	31.80	25.00	13.80
15	M22 x 1.0-6H	35.00	28.00	16.30
17	M25 x 1.0-6H	38.10	30.80	20.10
21	M31 x 1.0-6H	44.30	36.90	26.00
23	M34 x 1.0-6H	47.20	39.80	29.28
25	M37 x 1.0-6H	50.00	43.00	32.45

Shell size	E max mm	Cabling chamber length F <sup>±0.1</sup> mm	Z rear side diameter coding									
			08	10	12	14	16	20	24	28	32	36
13	36	10	■	■	■	■	■	■	■			
	46	20			■							
	56	30			■		■					
15	36	10		■	■	■	■	■	■			
	46	20				■						
	56	30				■		■				
17	36	10			■	■	■	■	■			
	46	20			■	■	■					
	51	25			■							
21	56	30							■			
	36	10					■	■	■	■		
	46	20				■		■				
23	56	30						■		■		
	36	10							■		■	
	46	20							■			
25	56	30							■		■	
	36	10								■		■
	46	20								■		
56	30								■		■	
Z Coding			08	10	12	14	16	20	24	28	32	36
ØZ			6.30	7.90	9.40	11	12.60	15.80	19	22.10	25.30	28.80
ØS MIN			9.40	11.10	14.10	14.10	15.70	18.90	22	25.20	28.40	31.50
MAX			9.50	11.2	14.30 0	14.30	15.90	19.10	22.20	25.40	28.60	31.80
ØD1 ±0,1			14.00	17.10	17.10	18.70	20.30	23.50	26.70	29.80	33	36.20
ØD2 ±0,1			11.40	14.50	14.50	16.10	17.70	20.90	23.10	26.20	29.40	32.60

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

Due to technical modifications, all information provided is subject to change without prior notice  
Designed by Amphenol Socapex

Amphenol SOCAPEX

## POWERSAFE / VG96944 - HOW TO ORDER - TV35 BACKSHELLS



	1.	2.	3.	4.	5.
Series	Backshell style	Backshell size	Cabling chamber length	Rear side diameter	Material and platings
TV	35	11	10	11	014

## 1. Backshell style

35	Aluminum straight band backshell accepting heatshrink moulded piece
B35	Marine bronze straight band backshell accepting heatshrink moulded piece

## 2. Backshell size (same as connector size)

13	15	17	21	23	25
----	----	----	----	----	----

## 3. Cabling chamber length

Please refer to Page 18

For stainless steel backshells, please refer to AS85049

## 4. Rear side diameter

Please refer to Page 18

06	08	10	12	14	16	20	24	28	32	36
----	----	----	----	----	----	----	----	----	----	----

## 5. Material and platings

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black zinc nickel ✓
Blank	Marine Bronze ✓	-

## POWERSAFE / VG96944 - HOW TO ORDER - TV BACKSHELLS



	1.	2.	3.
Series	Backshell style	Backshell size	Material and platings
TV	NSA	13	014

## 1. Backshell style

NSA	Screened clamping braid backshell accepting heatshrink moulded piece
-----	--

## 2. Backshell size (same as connector size)

13	15	17	21	23	25
----	----	----	----	----	----

For other platings and materials, please consult us

## 3. Material and platings

	Shell material	Shell finish
014	Aluminum	Olive drab cadmium
023		Nickel ✓
033K		Black zinc nickel ✓

# POWERSAFE / VG96944 - PROTECTIVE CAPS

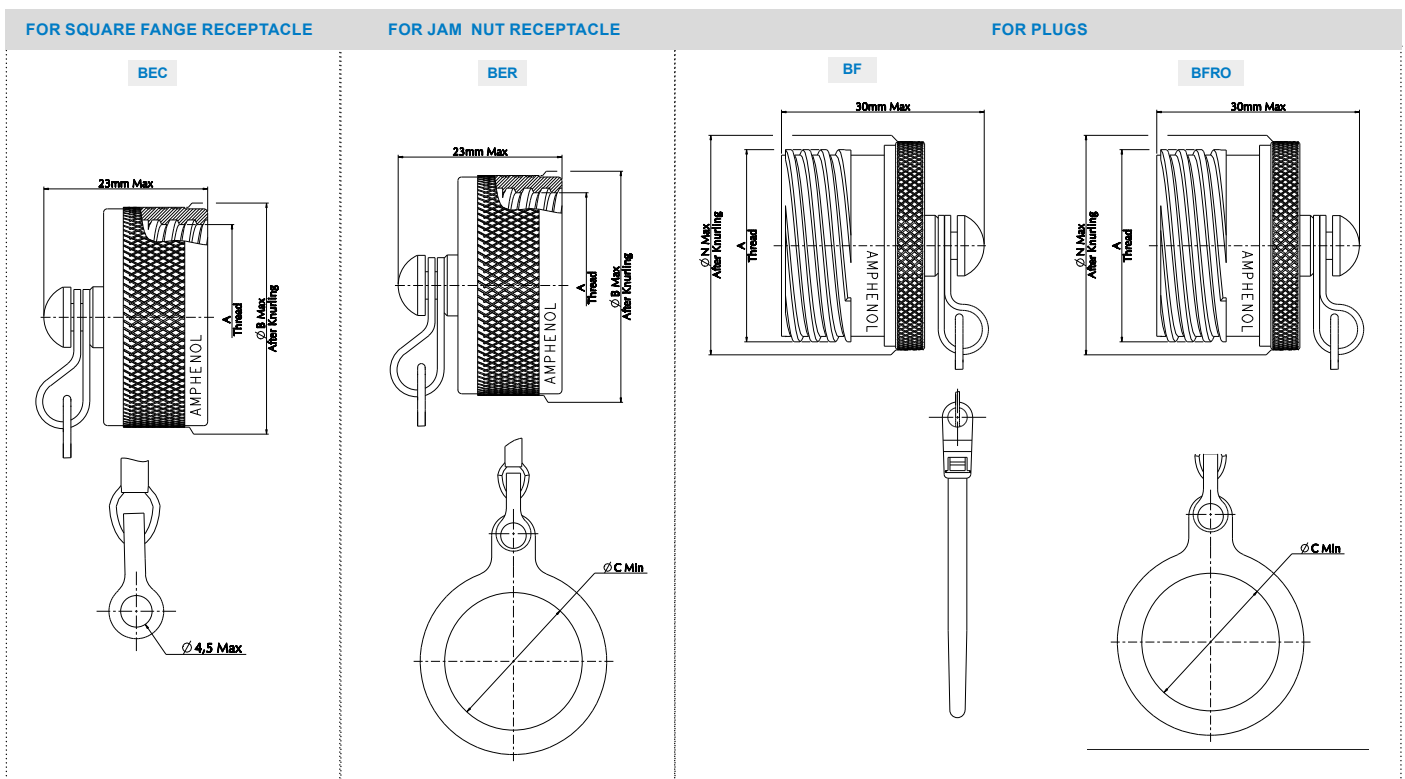
## Main features

- Available for Plugs, Jam nut and Square receptacles
- IP 68 (permanent sealing)
- Protection against dust, water and moisture
- EMI function
- Nylon cord, stainless steel rope or metallic chain



## Overall dimensions

See part how to order page 22



Shell size	A thread .1P-.3L-TS Class 2A (External) Class 2B (Internal) (inches)	ØB Max (After Knurling)	ØC Min	ØN Max
13	.875	25.75	25.15	24.30
15	1.0000	28.90	29.92	27.40
17	1.1875	33.80	32.00	30.60
21	1.3750	38.60	38.25	36.40
23	1.5000	41.70	42.62	39.70
25	1.625	44.90	44.45	42.80

## Nylon cord, Chain and Stainless Steel Rope length

Cap type	Attachement length
BEC/BER for receptacle	127 (+13 / -7)
BF/BFRO for plug	160±5

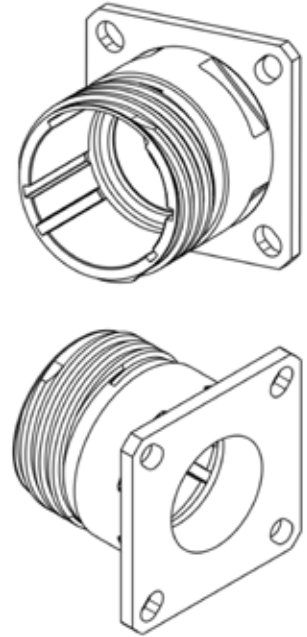
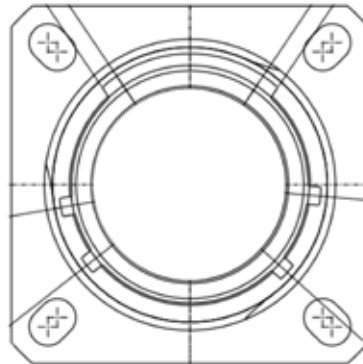
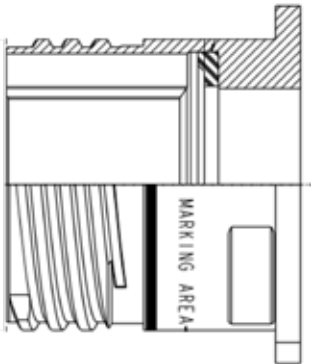
All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch



## POWERSAFE / VG96944 - DUMMY RECEPTACLES

- Dedicated to **PowerSafe**
- Universal coding : Compatible with all Keyway polarizations
- Can be used to tight the backshell on the plug
- Same dimensions and Panel holes than a standard Square Flange Receptacle (see page 13).

See part how to order page 22



## CRIMPING TOOLS

MANUAL CRIMPING PLIERS  
TO BE USED WITH POSITIONERS  
PAGE 23  
**M22520/1-01**



HYDRAULIC PLIERS  
TO BE USED WITH CRIMPING  
TOOL PAGE 23  
**809947**



PNEUMATIC PLIERS  
TO BE USED WITH CRIMPING  
TOOL PAGE 23  
**M22520/23-01**



All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

Due to technical modifications, all information provided is subject to change without prior notice  
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## POWERSAFE / VG96944 - HOW TO ORDER - PROTECTIVE CAPS

1.	2.	3.	4.	5.	6.
Cap type	Cap style	Wire type	Material and platings	Cap size	Deviation
B	EC	N	TV	W	15

### 1. Cap style

EC	For Square flange receptacle
ER	For Jam nut receptacle
F	For Plug

### 2. Wire type

-	Metal chain
N	Nylon cord
R	Jacketed stainless steel rope
RO	Jacketed stainless steel rope with washer end (for plugs)

### 3. Series

TV	For PowerSafe
----	---------------

For other material and platings, please refer to D38999/32 & 33

### 4. Material and platings

	Shell material	Shell finish
W	Aluminum	Olive drab cadmium
F		Nickel ✓
ZN		Black zinc nickel ✓
A		Black Anodized ✓
B	Marine Bronze ✓	-

### 5. Cap size (same as connector size)

13	15	17	21	23	25
----	----	----	----	----	----

### 6. Deviation

F579	For Reduced flange receptacle
------	-------------------------------

## POWERSAFE / VG96944 - HOW TO ORDER - DUMMY RECEPTACLES

1.	2.	3.	4.
Dummy receptacle	Style	Series	Material and platings
SE	00	TVE	W

### 1. Style

00	Square flange
----	---------------

### 2. Series

TVE	For PowerSafe
-----	---------------

### 3. Material and platings

	Shell material	Shell finish
W	Aluminum	Olive drab cadmium
F		Nickel ✓
ZN		Black zinc nickel ✓
TZ		Tin Zinc ✓

For other material, please consult us

### 4. Shell size

13	15	17	21	23	25
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# POWERSAFE / VG96944 - CONTACTS & TOOLING

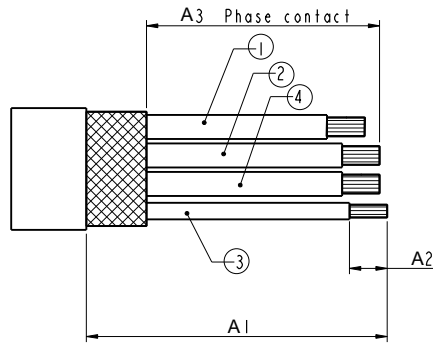
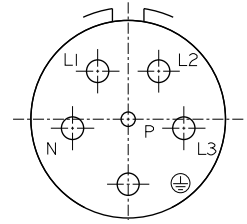
	Contact type	Size	Contacts		AWG	Section mm²	dia over insulator		Crimping tools			Insertion tools			Removal tools		
			Proprietary Part Number				Tools	Positioner	Selector position	Plastic (Color)	Metallic		Plastic (Color)	Metallic			
			Pin	Socket							Straight type	Angle type		Straight type	Angle type		
13-E4	Pilot	20	600665	600892	20 22 24	0,61 0,38 0,24	1,02	2,11			3 2 1	M81969/14-10 (red / orange)	809817	M81969/8-05	M81969/14-10 (red / orange)	809847	M81969/8-06
13-V4	Phase Neutral	16	600666	600676	14 16 18	1,94 1,23 0,96	1,65	2,77	M22520/1-01	M22520/1-04	6 6 5	M81969/14-03 (blue / white)	809816	M81969/8-07	M81969/14-03 (blue / white)	809846	M81969/8-08
	Protective		600667	600677	20	0,61					4	/			/		
15-E4	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77			6 5 4	M81969/14-03 (blue / white)	809816	M81969/8-07	M81969/14-03 (blue / white)	809846	M81969/8-08
15-V4	Phase Neutral	12	600661	600671	12 14	2,98 1,94	2,46	3,61	M22520/1-01	M22520/1-04	8 7	M81969/14-04 (yellow / white)	/	M81969/8-09	M81969/14-04 (yellow / white)	/	M81969/8-10
	Protective		600662	600672							/	/					
17-E6	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77			6 5 4	M81969/14-03 (blue / white)	809816	M81969/8-07	M81969/14-03 (blue / white)	809846	M81969/8-08
17-V6	Phase Neutral	12	600661	600671	12 14	2,98 1,94	2,46	3,61	M22520/1-01	M22520/1-04	8 7	M81969/14-04 (yellow / white)	/	M81969/8-09	M81969/14-04 (yellow / white)	/	M81969/8-10
	Protective		600662	600672							/	/					
21-E4	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-04	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
21-V4	Phase Neutral	6	600663	600673	6	13,61	7,3	8,1	809947 + 809908 (hex crimp) or		/	/	/	/	/	/	809696
	Protective		600664	600674					M22520/23-01 + M22520/23-03	809697 (pin) 809690 (socket)							
23-E4	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-04	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
23-V4	Phase Neutra	4	612514	612516	4	21,2			M22520/23-01	M22520/23-04	/	/	/	/	/	809943	/
	Protective		612513	612515													
23-E4T	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-0	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
23-V4T	Phase Neutral	4	612840	612841	4	21,2			D31	809948	/	/	/	/	/	809943	/
	Protective		612838	612839													
23-E6	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-04	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
23-V6	Phase Neutral	8	612764	612765	8	8,98 10	4,50	5,20	M22520/23-01 + M22520/23-02	WA23-447L	/	/	/	/	809961		809845
	Protective		612762	612763													
23-E6T	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-04	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
23-V6T	Phase Neutral	8	612644	612642	8	8,98 10	4,50	5,20	809872 (M300BT)	809873 (SP593)	/	/	/	/	809961	/	809845
	Protective		612643	612641													
25-E6	Pilot	16	600660	600894	16 18 20	1,23 0,96 0,61	1,65	2,77	M22520/1-01	M22520/1-04	6 5 4	M81969/14-03 (blue / white)	/	/	M81969/14-03 (blue / white)	/	/
25-E6	Phase Neutral	6	600663	600673	6	13,61	7,3	8,1	809947 + 809908 (hex crimp) or		/	/	/	/	/	/	809696
25-V6	Protective		600664	600674					M22520/23-01 + M22520/23-03	809697 (pin) 809690 (socket)							

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch



## POWERSAFE / VG96944 - WIRE STRIP LENGTH

- ① Conductor L (L1, L2 & L3)  
 ② Conductor N  
 ③ Pilot conductor P  
 ④ Protective conductor

Layout example  
17-V6 / 17-E6

Size	Contact type	A1	A2	A3 (for shielding braid)
13	Protective contact			
	Phase contacts (N, L1, L2 & L3)	53 - 63	6 - 6.5	
	Pilot contact (P)			
15	Protective contact			
	Phase contacts (N, L1, L2 & L3)	53 - 63	6 - 6.5	
	Pilot contact (P)			
17	Protective contact			
	Phase contacts (N, L1, L2 & L3)	53 - 63	6 - 6.5	
	Pilot contact (P)			
21	Protective contact			
	Phase contacts (N, L1, L2 & L3)	55 - 65	14 - 15.5	
	Pilot contact (P)	60 - 70	6 - 6.5	
23	Protective contact			
	Phase contacts (N, L1, L2 & L3)	55 - 65	14 - 15.5	
	Pilot contact (P)	60 - 70	6 - 6.5	
25	Protective contact			
	Phase contacts (N, L1, L2 & L3)	55 - 65	14 - 15.5	
	Pilot contact (P)	60 - 70	6 - 6.5	

42 MAX

All dimensions are given for information only and are in mm, except as otherwise specified | \*in mm: 1mm=0.03937 inch

## POWERSAFE VG96944 - QUALIFIED AND/OR SUGGESTED CABLES

Size 13 - Insert 13-V4	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG14 white	M81044/12-14-9	Tinned copper, jacket PVDF
WIRE AWG14 blue	M81044/12-14-6	Tinned copper, jacket PVDF
WIRE AWG14 green yellow	M81044/12-14-45	Tinned copper, jacket PVDF
Fillers	-	PTFE
Braid	TB13-T-63	Tinned copper
Heatshrink	DR25 3/8-0M (VG95343 Part 5 Type D)	Elastomer

# POWERSAFE VG96944 - QUALIFIED AND/OR SUGGESTED CABLES

Size 15 - Insert 15-V4	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG12 white	VG95218T020A017	Tinned copper, jacket PVF modified
WIRE AWG12 blue	M81044/12-12-6	M81044/12-12-6
WIRE AWG12 green yellow	M81044/12-12-45	M81044/12-12-45
Fillers	-	PTFE
Braid	TB13-T-695	Tinned copper
Heatshrink	DR25 1/2-0M (VG95343 Part 5 Type D)	Elastomer
Size 17 - Insert 17-V6	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG12 white	VG95218T020A017	Tinned copper, jacket PVF modified
WIRE AWG12 blue	M81044/12-12-6	M81044/12-12-6
WIRE AWG12 green yellow	M81044/12-12-45	M81044/12-12-45
Fillers	-	PTFE
Braid	TB13-T-695	Tinned copper
Heatshrink	DR25 1/2-0M (VG95343 Part 5 Type D)	Elastomer
Size 21 - Insert 21-V4	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG6 white	M22759/16 6-9	Tinned copper, jacket PVDF
WIRE AWG6 blue	M22759/16 6-6	Tinned copper, jacket PVDF
WIRE AWG6 green yellow	M22759/16 6-4/5	Tinned copper, jacket PVDF
Fillers	-	PTFE
Braid	TB13-T-200	TINNED copper
Heatshrink	DR25 1-0M (VG95343 Part 5 Type D)	Elastomer
Size 23 - Insert 23-V4	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG4 white	M22759/16 4-9	Tinned copper, jacket ETFE
WIRE AWG4 blue	M22759/16 4-6	Tinned copper, jacket ETFE
WIRE AWG4 green yellow	M22759/16 4-4/5	Tinned copper, jacket PVDF
Fillers	-	PTFE
Braid	TB13-T-200	Tinned copper
Heatshrink	DR25 1-0M (VG95343 Part 5 Type D)	Elastomer
Size 23 - Insert 23-V6	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG8 white	VG95218T020A011	Tinned copper, jacket PVF modified
WIRE AWG8 blue	M22759/16 8-6	Tinned copper, jacket PVDF
WIRE AWG8 green yellow	M22759/16 8-4/5	Tinned copper, jacket PVDF
Fillers	-	PTFE
Braid	TB13-T-200	Tinned copper
Heatshrink	DR25 1-0M (VG95343 Part 5 Type D)	Elastomer
Size 25 - Insert 25-V6	PN	Raw material
WIRE AWG16 white	VG95218T020A003	Tinned copper, jacket PVF modified
WIRE AWG6 white	M22759/16 6-9	Tinned copper, jacket PVDF
WIRE AWG6 blue	M22759/16 6-6	Tinned copper, jacket PVDF
WIRE AWG6 green yellow	M22759/16 6-4/5	Tinned copper, jacket PVDF
Fillers	-	PTFE
Braid	TB13-T-200	Tinned copper
Heatshrink	DR25 1-0M (VG95343 Part 5 Type D)	Elastomer

## POWERSAFE - SUGGESTED QUALIFIED CABLES ABLE TO WHISTAND 260°C

Size 13 - Insert 13-E4	PN	Raw material
WIRE AWG20	EN2267-010A006S	Nickel Plated Copper, jacket PTFE
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D045558	Nickel copper
Heatshrink	RW200E-1/2-0 or HLR33001270	Fluoroelastomeric or Viton
Size 15 - Insert 15-E4	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG12	EN2267-010A030S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D047547	Nickel copper
Heatshrink	RW200E-3/4-0 or HLR33001900	Fluoroelastomeric or Viton
Size 17 - Insert 17-E6	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG12	EN2267-010A030S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D047547	Nickel copper
Heatshrink	RW200E-3/4-0 or HLR33001900	Fluoroelastomeric or Viton
Size 21 - Insert 21-E4	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG6	EN2267-010A140S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D045591	Nickel copper
Heatshrink	RW200E-1 1/2-0 or HLR33003810	Fluoroelastomeric or Viton
Size 23 - Insert 23-E4 / 23-E4T	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG4	EN2267-010A220S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D045591	Nickel copper
Heatshrink	RW200E-1 1/2-0 or HLR33003810	Fluoroelastomeric or Viton
Size 23 - Insert 23-E6 / 23-E6T	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG8	EN 2267-010A090S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D045591	Nickel copper
Heatshrink	RW200E-1 1/2-0 or HLR33003810	Fluoroelastomeric or Viton
Size 25 - Insert 25-E6	PN	Raw material
WIRE AWG16	EN2267-010A012S	Nickel Plated Copper, jacket PTFE
WIRE AWG6	EN2267-010A140S	Nickel Plated Copper, jacket PTFE
Fillers	/	PTFE
Braid	4D045591	Nickel copper
Heatshrink	RW200E-1 1/2-0 or HLR33003810	Fluoroelastomeric or Viton

Note that High performance Silver plated wires can also be used for harsh environment applications, to withstand higher temperatures.



# 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.

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