Amphenol SOCAPEX

SL61 & "SOCA" Circular connectors for Showbiz & Industry

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.



1000+ employees



Net Sales 2020: **81,9 M€** 72% Export - 28% France



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



INTERNATIONAL EXPERTISE



Our expertise has no boundaries

Integrated Production in France & India

- **24 000 m²** manufacturing capacity on 2 sites
- Design centers in **France** and **India**
- State-of-the-art manufacturing technology



Our markets



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



Anation

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

/	1986	1995-96	2004	2005	2010's
	Amphenol Socapex	N	0		LuxBeam™ HDAS
	- 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



 Respect for nature and the environment

 Optimization of natural resources

 Recycling

 Goodwill

 Optimization of natural resources

 Optimization of natural resources

 Optimization of natural resources

 Optimization of natural resources

Waste Management

PRODUCING FASTER, SMALLER, STRONGER CONNECTORS...

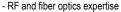


Technologies & innovation



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

- Mechanical and electrical skills





Strong expertise in high-speed signals - 3D EM simulation software & EM models

- Time Domain and frequency domain (VNA 20GHz, TDR and eye diagram)



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





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.

Tooling : Tools for our different activities : molding, machining, assembly 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 : Connector and harness assembly (electrical & optical)

Our certifications









Certified Management Svs

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

Our memberships



Member of CMG (Connecting Manufacturing Group) Consortium

Amphenol SOCAPEX

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



Buy our solutions

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

Field Sales Team :

- 4 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 : 15 people

Worldwide Distribution Network :

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



SL61 & SLG419AR "SOCAPEX"

Circular Connectors for Showbiz & Industry

Description

Connectors made of aluminum alloy, with excellent reliability and robustness for In/Out applications & power supply

Main features

ROBUSTNESS AND RELIABILITY

HIGH STRENGTH-WEIGHT RATIO

UL RECOGNIZED (419AR & 37Y)

CONNECTOR BODY VERSIONS

- Plug
- Receptacle

- Receptacle with locking ring - Inline receptacle

SPLIT BACKSHELL & MONOPIECE BACKSHELL AVAILABLE

BACKSHELL OPTIONS

- -Two-part backshells
 - Efficient cable clamp
 - Simple wiring and maintenance
 - Straight or right angle, all sizes
- IP67 monopiece backshell for 419AR
- Outdoor application

Product range



ORIGINAL MANUFACTURER OF "SOCAPEX" CONNECTORS

- STAGE LIGHTNING / ENTERTAINMENT : THE "SOCA" - 19 pins SLG 419AR for stage lightning and dimmers
 - 7 pins SL 37Y (particulary for hoist motor applications)

INDUSTRIAL ARRANGEMENTS

- 4 shell sizes (#10, #20, #30, #40) - 14 arrangements available including grounding version of 419AR (SLG 419AR)
- NON CONDUCTIVE AND CONDUCTIVE SHELLS
- ROHS versions
 - Black non conductive coating - Nickel conductive plating

- Non ROHS

- White conductive cadmium for connector body



Entertainment

Power distribution



Transport

Instrumentation



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

Amphenol SOCAPEX

TECHNICAL CHARACTERISTICS - SL

Circular Connectors for Showbiz & Industry

Material and platings

SHELL:

- Light aluminum alloy, molded

INSERTS: - Molded in thermoplastic

SOLDER CUP CONTACTS

- Standard contacts with gold plated size 08, 12, 16, 20 - Socket contact:
 - Protected by a closed entry
 - To ensure an outstanding safety in use

ACCESSORIES:

- Caps: thermoplastic - Sealing sleeve: neoprene





Technical characteristics

Working temperature: - 40°C / + 85°C

Current capability: 7,5 A, 10 A, 25 A and 50 A

Working voltage: Up to 500 V_{RMS}

UL recognition n° E160967(01) for 37Y & 419AR arrangement only

Monopiece backshell available with IP67 rating

Solder cup contacts

Contact size (AWG)	Nominal current (A)	Contact resistance	Contact cross sectional area
20	7,5	≤ 5mΩ	0,75mm ²
16	10	≤ 2mΩ	1,75mm ²
12	25	≤ 2mΩ	5,1mm²
8	50	≤ 2mΩ	13mm ²

Platings



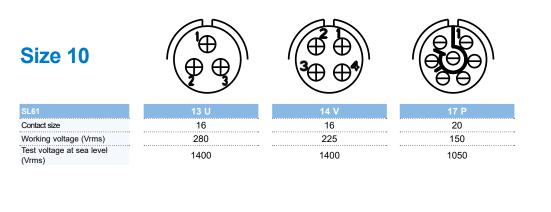
Black coating

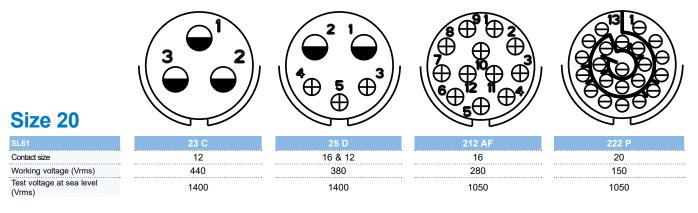


SL61 - INSERT ARRANGEMENTS

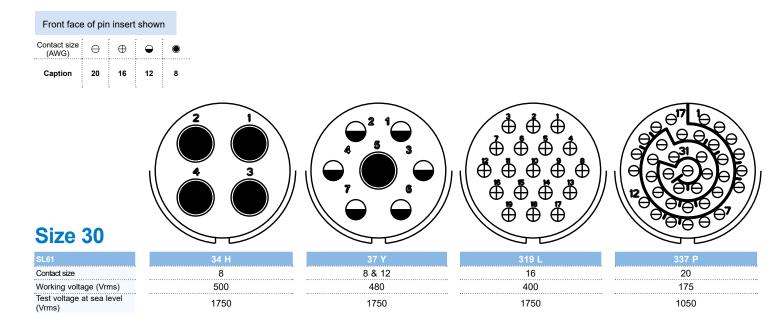
Front face of pin insert shown

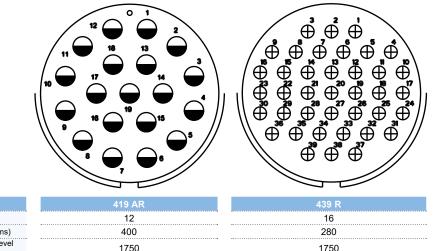
Caption	20	16	12	8
Contact size (AWG)	θ	⊕	e	۲





SL61 - INSERT ARRANGEMENTS





Size 40

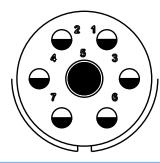
01.04

3101	413 AN	403 N
Contact size	12	16
Working voltage (Vrms)	400	280
Test voltage at sea level (Vrms)	1750	1750

SL SHOWBIZ "SOCA" - INSERT ARRANGEMENTS

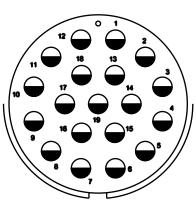
Front face of pin insert shown	
Contact size	

(AWG)	Ŭ	Ψ.		
Caption	20	16	12	8



Size 30

SL61	37 Y
Contact size	8 & 12
Working voltage (Vrms)	480
Test voltage at sea level (Vrms)	1750



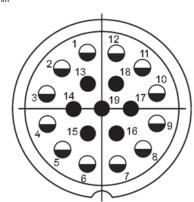
Size 40

SL61	
Contact size	
Working voltage (Vrms)	•••••
Test voltage at sea level	•••••
(Vrms)	

419 AR	
12	
400	
1750	

SLG 419AR grounding receptacle

- Derived from SL series
- Safety of the user and the equipment (ground)
- 7 socket first mate last break earth contacts (grounding function)
 - Identified by their plating
 - Improved cabling process
- Quick visual differentiation from regular SL419AR
- 2x6 sockets, nominal current 25A each (power supplies of 6 brand-lights with independent grounding)
- Mating by reinforced screwing system
- Nominal current: 25 A
- Contact resistance < 0,002 Ohm
- Solder pot internal diameter: 2,5 mm



Size 40

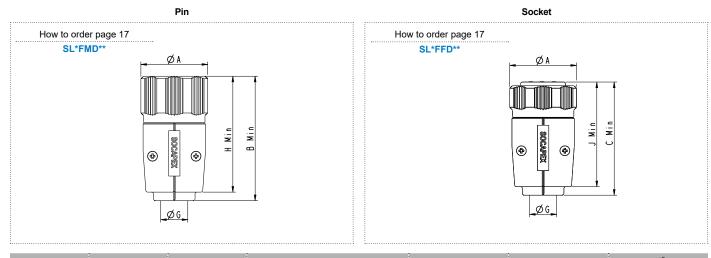
Front face of socket insert shown

12	
400	
1750	

SL61 & "SOCA"



Straight plug

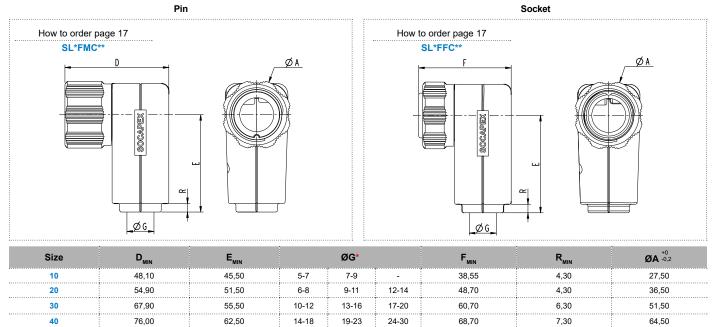


	MIN		20		п _{міn}	J _{MIN}	ØA -0,2
10 62,20	52,85	5-7	7-9	-	54,70	48,45	27,50
20 65,90	59,70	6-8	9-11	12-14	58,40	55,20	36,50
30 87,70	80,50	10-12	13-16	17-20	81,20	74,00	51,50
40 85,90	78,70	14-18	19-23	24-30	76,40	71,20	64,50

*G: flanges equipped with different clamping pads delivered with the backshell.



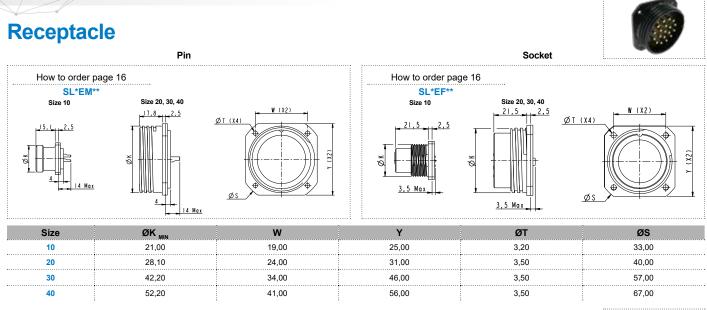
Right angle plug



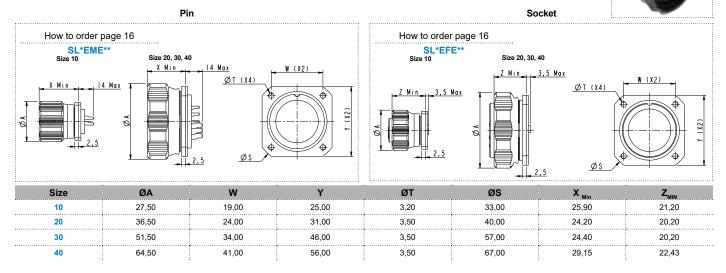
*G: flanges equipped with different clamping pads delivered with the backshell.

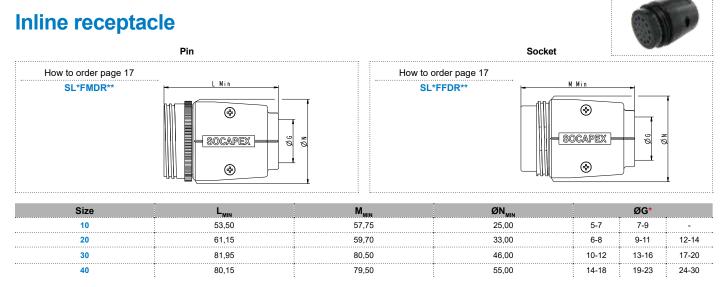
All the dimensions are in mm except as otherwise specified

SL61 & "SOCA"



Receptacle with locking ring





*G: flanges equipped with different clamping pads delivered with the backshell. All the dimensions are in mm except as otherwise specified

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SL61 & "SOCA" - ACCESSORIES



Two-Parts backshell

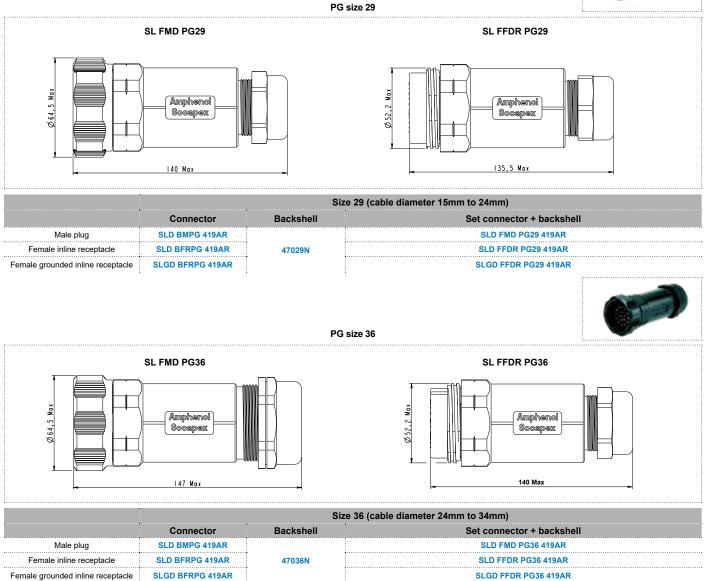
	Straight b	ackshell	Right angle backshell		
Size	Non conductive	Conductive	Non conductive	Conductive	
	Black 🗸	Nickel 🗸	Black 🗸	Nickel 🗸	
10	47377N	47377NI	47381N	47381NI	
20	47378N	47378NI	47382N	47382NI	
30	47379N	47379NI	47383N	47383NI	
40	47380N	47380NI	47384N	47384NI	

 \checkmark : RoHS compliant - Straight or right-angle backshells are delivered with different clamping pads

419AR monopiece backshell

- IP67, compatible with 419AR receptacle
- Exclusive gland design
 - to ensure a high mechanical retention of the cable
 - available in size 29 or 36 according to the outside diameter of the cable
- Exclusive thread design
- to avoid accidental unscrewing of the backshell while mating / unmating
- Built-in double insulation and black non conductive plating for safety
- Contacts size 12 (AWG14-12, conductor diameter up to 2,45 mm) - Socapex split backshell (47380N) can be used with the new plug





All the dimensions are in mm except as otherwise specified

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SL61 & "SOCA" - ACCESSORIES

All the protection caps are RoHS compliant (plastic material). Protection cap for receptacle and inline receptacle Pin Socket ØВ ØB Inline receptacle Receptacle Inline receptacle Size A_{MAX} ØB_{MAX} Receptacle Size A_{MAX} ØB_{MAX} SLBEM1B SLBFMR1B 10 18.40 27.10 SLBEF1B 10 26.90 27,10 SLBEM2B SLBFMR2B 20 20,20 38,00 SLBEF2B SLBFFR2B 20 29,20 38,00 SLBEM3B SLBFMR3B 30 20,20 52,00 SLBEF3B SLBFFR3B 30 29,20 52,00

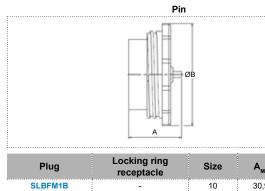
SLBEF4B

SLBFFR4B

63,00

Protection cap for plug and locking ring receptacle

20,20

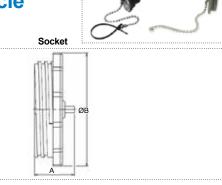


SLBFMR4B

40

SLBEM4B

SLBFM2B SLBFM3B SLBFM4B



40

29,20

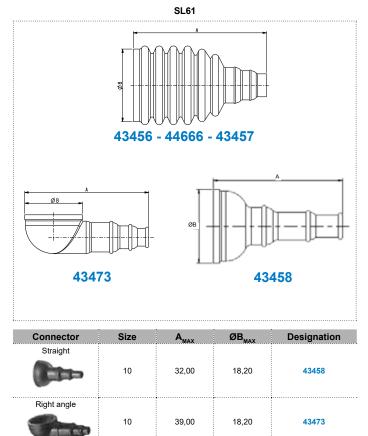
63,00

ocking ring. receptacle	Size	A _{max}	ØB _{MAX}	Plug	Locking ring receptacle	Size	A _{max}	ØB _{MAX}
-	10	30,90	21,10	SLBFF1B	-	10	18,90	27,10
-	20	31,70	38,00	SLBFF2B	-	20	21,20	38,00
BFM3B	30	31,70	52,00	SLBFF3B	BFF3B	30	21,20	52,00
BFM4B	40	31,70	63,00	SLBFF4B	BFF4B	40	21,70	63,00

SL61 & "SOCA" - ACCESSORIES

Sealing sleeve

Spray proofing sleeves, made of neoprene, are mounted on the rear of the plug body.



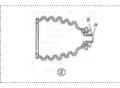
56,00

71,00

86,00

Sealing sleeve assembly instructions			
Straight	Right angled		

If necessary, adjust the end of the sleeve to the diameter of the cable in use. Size 10 connectors: cut off part A for cables using the large diameter cable clamp. Size 20-30-40: cut off part A for cables using the middle sized clamp, and parts A and B for cables using the largest diameter cable clamp. The sleeve must not be gripped by the cable clamp. For small diameter cables, parts A and B should be folded back, as shown:



Grounding discs for 419 AR arrangement

Pin insert: 140654-91 (front mounting)	Socket insert: 140653-00 (rear mounting)
14 20 . 14 14 14 14 14	\bigcirc
Not available for SLG 419AR series	

Adaptator for flexible conduit and PG thread

26,00

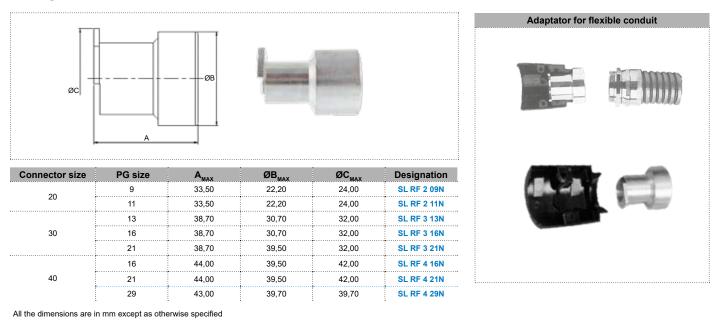
37,90

47,30

43456

44666

43457



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Straight or right angle

20

30

40

SL61 - HOW TO ORDER

1.		2.	3.	4.	5.	
SL		D	EM	37Y		
Connector type			4. Ins	ert arrangement		
	SL			See part "Insert arrangen	nent" page 8-10	
Shell plating			5. Sh	ell plating		
D Black coating			NI	NI Nickel 🗸		
Blank Nickel ✓ Clear cadmiur	n		Blan	k Black coating 🗸		
	Pin (M)	Socket (F)				
Receptacle	EM	EF				
Locking ring receptacle	EME	EFE				
Inline receptacle	BMR	BFR *				
Plug	BM	BF				

"SOCA" SLG 419AR - SHOWBIZ - HOW TO ORDER

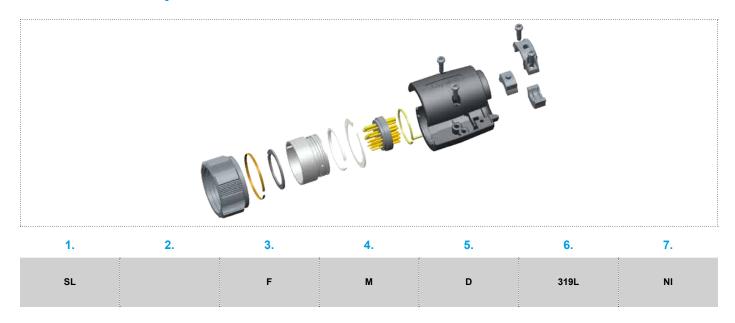
Grounding version

1.	2.	3.	4.
SLG	D	EF	419AR

. Conn	ector type	3. Shell style & contact gender			
	SLG	EF	Socket panel mount receptacle Socket inline receptacle		
	7 first mate last break earth contacts	FFDR			
2. Shell	plating	4. Insert arrang	ement		
D	Black coating 🗸		419AR		
	Clear cadmium				

SL61 - HOW TO ORDER

Connector + 2-parts backshell



F			SL	
Blank Nickel Clear cadmium** • Kit, mandatory digit	Shell	plating		
Clear cadmium** Kit, mandatory digit F	D	Black coating 🗸		
F	Blank			
	Kit, m	andatory digit	:	
Contact gender			F	
• Contact genger	Conto	ot condor		
· · · · · · · · · · · · · · · · · · ·	Conta	ct gender		

Socket

D	Plug + straight backshell
DR	Inline receptacle + straight backshell *
	Plug + right angle backshell

 Insert arrangement See part "insert arrangement" page 8-10

7. Shell plating				
NI	Nickel 🗸			
Blank	Black coating Clear cadmium**			

F

not available in female version for 13U, 14V and 17P arrangement delivered with black backshell **

: RoHS compliant

Kit details



A kit is made of :

- SL connector
 - 2-parts backshell (upper backshell & lower backshell) + 2 fixing screws
 - 2 or 3 plastic cable clamps (2 for size 10, 3 for sizes 20, 30, 40)
 - 1 cable fixing bridge + 2 bridge fixing screws

SL61 & "SOCA" - WEIGHTS

In grams			ug: backshell		Pl bo	ug: ody	Rece	ptacle		ceptacle : backshell	Inline red bo		Lockir recep	ng ring otacle
Insert	SL F FD	SL F MD	SL F FC	SL F MC	SL B F	SL B M	SL E F	SL E M	SL FF DR	SL FM DR	SL BF R	SL BM R	SL E FE	SL E ME
13U	30	33	42	45	15	23	15	12	-	28	12	12	22	22
14V	30	34	42	46	16	24	15	12	-	29	12	12	22	22
17P	32	35	44	47	18	25	17	13	31	30	14	13	24	23
23C	62	65	80	83	35	41	26	24	57	58	24	15	37	36
25D	32	35	80	83	35	41	26	24	57	58	24	15	37	36
212AF	62	65	80	83	36	42	27	24	57	58	24	16	38	36
222P	67	68	85	86	41	46	32	27	62	61	29	20	43	39
34H	136	145	165	174	74	87	67	63	122	125	56	41	81	78
37Y	135	142	164	171	72	82	65	58	121	122	54	36	79	73
319L	133	135	162	164	69	77	64	53	119	115	52	31	78	68
337P	143	143	172	172	78	84	74	60	129	123	61	38	88	75
419AR	209	212	238	241	113	133	101	85	191	194	92	87	124	116
439R	202	203	231	232	106	123	96	77	183	185	85	78	119	108
G419AR							99		186		88			

In grams	Protection cap						
Size	SLB FF B FF *	SLB FM B FM *	SLB EF SLB FFR	SLB EM SLB FMR			
10	11	12	14	11			
20	14	18	22	15			
30	19	27	31	21			
40	23	34	39	26			

* B FF & B FM caps in size 10 & 20 are not available

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

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



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?

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