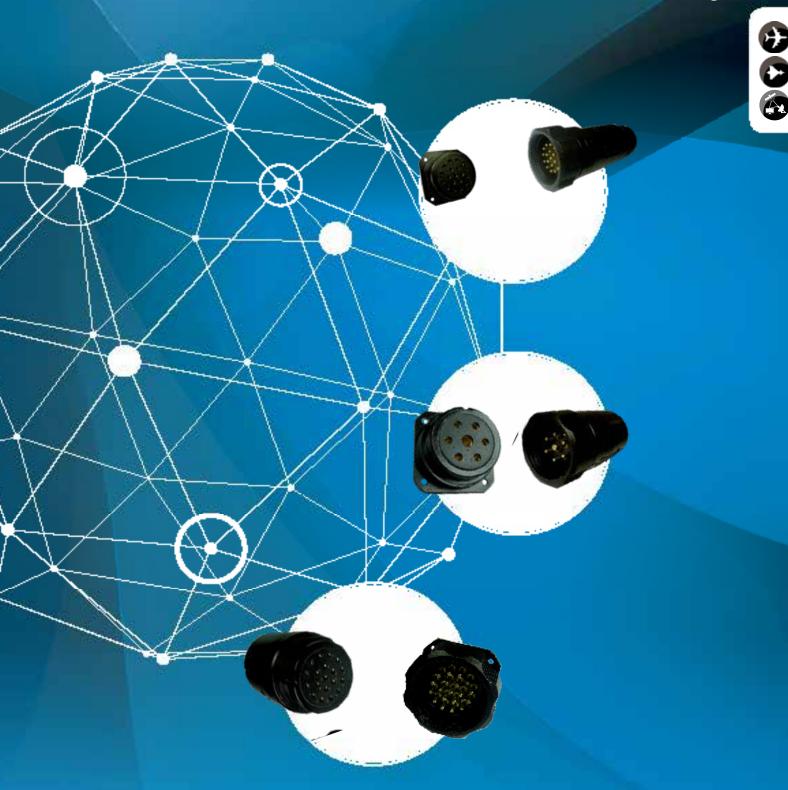
Amphenol SOCAPEX

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 2021: 92 M€ 72% Export - 28% France



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

1947

- Socapex creation in Suresnes,
- 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

INNOVATION

connectors SI Series launch

1973



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

1975



- Production of 38999 connectors

2014-2017



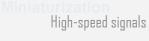




Cable Assembly

New Cable Assembly workshop - New Contact Manufacturing workshop

Today and tomorrow | New technologies



Miniaturization

Power

Rugged Ethernet

Fiber optics

ROHS solutions

Advanced Materials (composite)

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



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



Today and tomorrow | Sustainable development



Respect for nature and the environment

Recycling Goodwill

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
- RF and fiber optics expertise



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









m Certified Management S

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

Our memberships











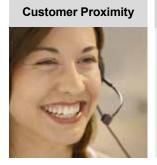
Member of CMG (Connecting Manufacturing Group) Consortium

DELIVERING GREAT CUSTOMER EXPERIENCE



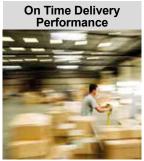
▶ We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.

A partner you can trust











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 : 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

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

Product range





mates with



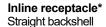
Plug*

Right angle backshell



Plug*

Straight backshell





mates with



Receptacle Locking ring



Plug*

Right angle backshell



Plug*

Straight backshell

*connector body or kit (connector body + 2 parts backshell)

SL61 & SLG419AR "SOCAPEX" SERVE VARIOUS APPLICATIONS, INCLUDING:



Entertainment



Power distribution



Automatisation



Transport



Instrumentation



Robotics

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 $V_{\rm RMS}$

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	0,75mm²
16	10	≤ 2mΩ	1,75mm²
12	25	≤ 2mΩ	5,1mm²
8	50	≤ 2mΩ	13mm²

Platings





Black coating

Nickel

SL61 - INSERT ARRANGEMENTS

Front face of pin insert shown

Contact size (AWG)	θ	0	•	•
Caption	20	16	12	8

Size 10





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

	13 U	
•••••	16	
	280	
	1400	

									14	4	١	1								
									•	16	3					•		•		
 	 		 					 	2	2	5								•	
								,	12	1(າຕ)								

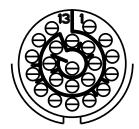
17 P
 20
 150
1050

Size 20









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

23 C	
12	
440	
1400	

25 D	
16 & 12	
380	
1400	

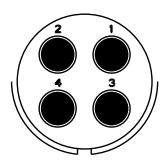
212 AF
16
280
1050

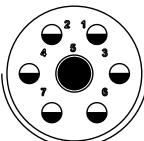
222 P	
20	
150	
1050	

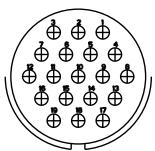
SL61 - INSERT ARRANGEMENTS

Front face of pin insert shown

Caption	20	16	12	8
Contact size (AWG)	Θ	\oplus	•	•









Size 30

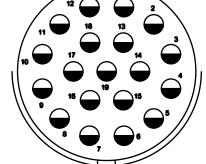
SL61
Contact size
Working voltage (Vrms)
Test voltage at sea level
(Vrms)

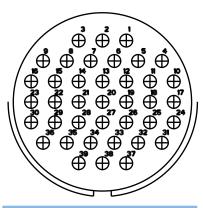
34 H
8
500
1750

37 Y
8 & 12
480
1750

319 L	-
16	
400	
1750	

		- 3	337	7 F						
 	 	 	20	0			 	 		
 		 	17	75	•••	•••	 	 •••	•••	
 	 	 	10	50			 	 		





Size 40

SLUI
Contact size
Working voltage (Vrms)
Test voltage at sea level
(Vrms)

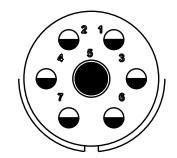
419 AR
12
400
1750

439 R
16
280
1750

SL SHOWBIZ "SOCA" - INSERT ARRANGEMENTS

Front face of pin insert shown

Contact size (AWG)	θ	0	•	•
Caption	20	16	12	8



Size 30

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

37 Y	
8 & 12	
480	
1750	

11 18 13 3 10 17 14 3 16 19 15 5 8 7 6 6

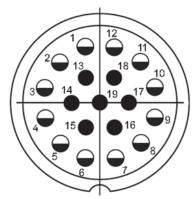
Size 40

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

SLG	419AR
Contact size	12
Working voltage (Vrms)	400
Test voltage at sea level (Vrms)	1750

First mate last break earth contacts

ts

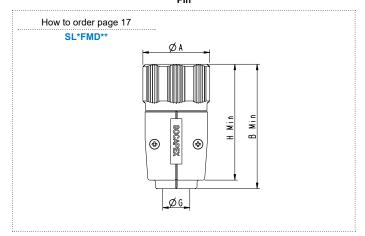


SL61 & "SOCA"

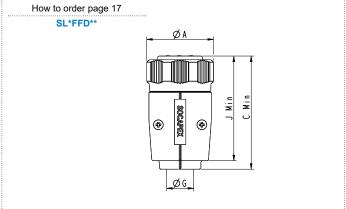
Straight plug



Pin



Socket



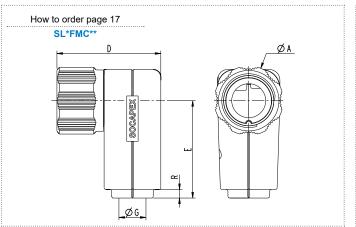
Size	B _{MIN}	C _{MIN}		ØG*		H _{MIN}	J _{MIN}	ØA -0,2
10	62,20	52,85	5-7	7-9	-	54,70	48,45	27,50
20	65,90	59,70	6-8	9-11	12-14	58,40	55,20	36,50
30	87,70	80,50	10-12	13-16	17-20	81,20	74,00	51,50
40	85,90	78,70	14-18	19-23	24-30	76,40	71,20	64,50

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

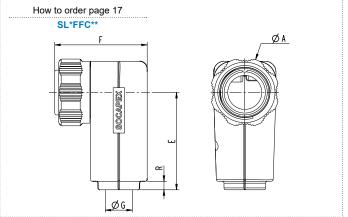


Right angle plug





Socket



Size	D _{MIN}	E _{MIN}	ØG*			F _{MIN}	R _{MIN}	ØA ⁺⁰
10	48,10	45,50	5-7	7-9	-	38,55	4,30	27,50
20	54,90	51,50	6-8	9-11	12-14	48,70	4,30	36,50
30	67,90	55,50	10-12	13-16	17-20	60,70	6,30	51,50
40	76,00	62,50	14-18	19-23	24-30	68,70	7,30	64,50

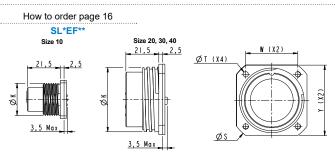
*G: flanges equipped with different clamping pads delivered with the backshell.

SL61 & "SOCA"

Receptacle



How to order page 16 SL*EM** Size 10 Size 20, 30, 40 17.8 2.5 4 14 Mox

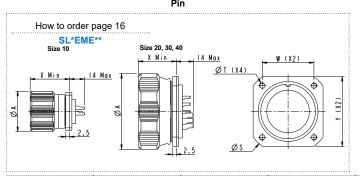


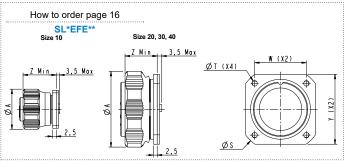
Socket

Size	ØK _{MIN}	W	Y	ØT	ØS
10	21,00	19,00	25,00	3,20	33,00
20	28,10	24,00	31,00	3,50	40,00
30	42,20	34,00	46,00	3,50	57,00
40	52,20	41,00	56,00	3,50	67,00

Receptacle with locking ring





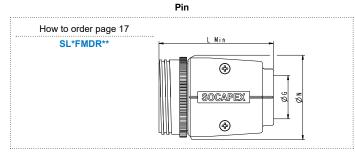


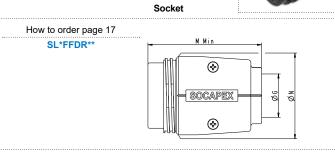
Socket

Size	ØA	W	Y	ØT	øs	X _{Min}	Z _{MIN}
10	27,50	19,00	25,00	3,20	33,00	25,90	21,20
20	36,50	24,00	31,00	3,50	40,00	24,20	20,20
30	51,50	34,00	46,00	3,50	57,00	24,40	20,20
40	64,50	41,00	56,00	3,50	67,00	29,15	22,43

Inline receptacle







Size	L _{MIN}	M _{MIN}	ØN _{MIN}		ØG*	
10	53,50	57,75	25,00	5-7	7-9	-
20	61,15	59,70	33,00	6-8	9-11	12-14
30	81,95	80,50	46,00	10-12	13-16	17-20
40	80,15	79,50	55,00	14-18	19-23	24-30

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

SL61 & "SOCA" - ACCESSORIES





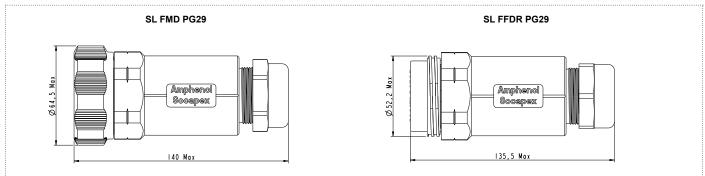
	Straight	backshell	Right angle backshell		
Size	Non conductive	Conductive	Non conductive	Conductive Nickel ✓	
	Black √	Nickel √	Black √		
10	47377N	47377NI	47381N	47381NI	
20	47378N	47378NI	47382N	47382NI	
30	47379N	47379NI	47383N	47383NI	
40	47380N	47380NI	47384N	47384NI	

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



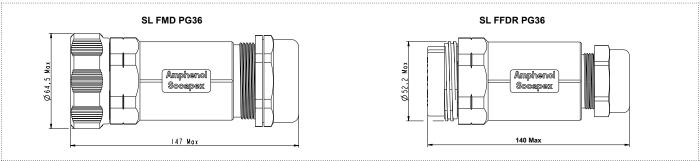
PG size 29



	Size 29 (cable diameter 15mm to 24mm)					
	Connector	Backshell	Set connector + backshell			
Male plug	SLD BMPG 419AR	47029N		SLD FMD PG29 419AR		
Female inline receptacle	SLD BFRPG 419AR		SLD FFDR PG29 419AR			
Female grounded inline receptacle	SLGD BFRPG 419AR		SLGD FFDR PG29 419AR			



PG size 36



	Size 36 (cable diameter 24mm to 34mm)					
	Connector	Backshell	Set connector + backshell			
Male plug	SLD BMPG 419AR	47036N	SLD FMD PG36 419AR			
Female inline receptacle	SLD BFRPG 419AR		SLD FFDR PG36 419AR			
Female grounded inline receptacle	SLGD BFRPG 419AR		SLGD FFDR PG36 419AR			

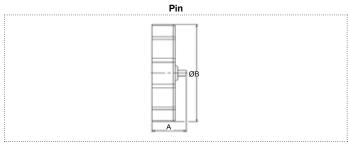
 ^{✓:} RoHS compliant
 Straight or right-angle backshells are delivered with different clamping pads

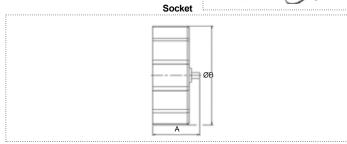
SL61 & "SOCA" - ACCESSORIES

All the protection caps are RoHS compliant (plastic material).

Protection cap for receptacle and inline receptacle





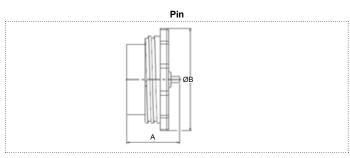


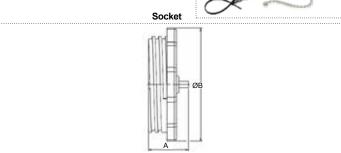
Receptacle	Inline receptacle	Size	A _{MAX}	ØB _{MAX}
SLBEM1B	SLBFMR1B	10	18,40	27,10
SLBEM2B	SLBFMR2B	20	20,20	38,00
SLBEM3B	SLBFMR3B	30	20,20	52,00
SLBEM4B	SLBFMR4B	40	20,20	63,00

Receptacle	Inline receptacle	Size	A _{MAX}	ØB _{MAX}
SLBEF1B	-	10	26,90	27,10
SLBEF2B	SLBFFR2B	20	29,20	38,00
SLBEF3B	SLBFFR3B	30	29,20	52,00
SLBEF4B	SLBFFR4B	40	29,20	63,00

Protection cap for plug and locking ring receptacle







Plug	Locking ring receptacle	Size	A _{MAX}	ØB _{MAX}
SLBFM1B	-	10	30,90	21,10
SLBFM2B	-	20	31,70	38,00
SLBFM3B	BFM3B	30	31,70	52,00
SLBFM4B	BFM4B	40	31,70	63,00

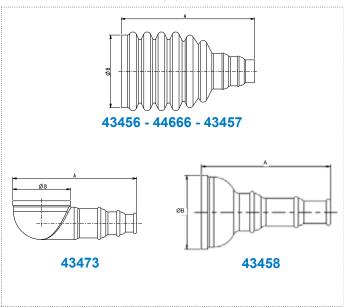
Plug	Locking ring receptacle	Size	A _{MAX}	ØB _{MAX}
SLBFF1B	-	10	18,90	27,10
SLBFF2B	-	20	21,20	38,00
SLBFF3B	BFF3B	30	21,20	52,00
SLBFF4B	BFF4B	40	21,70	63,00

SL61 & "SOCA" - ACCESSORIES

Sealing sleeve

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

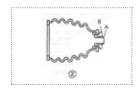
SL61



Connector	Size	A _{MAX}	ØB _{MAX}	Designation
Straight				
	10	32,00	18,20	43458
Right angle	10	39,00	18,20	43473
Straight or right angle	20	56,00	26,00	43456
alle.	30	71,00	37,90	44666
	40	86,00	47,30	43457

Sealing sleeve assembly instructions				
Straight	Right angled			

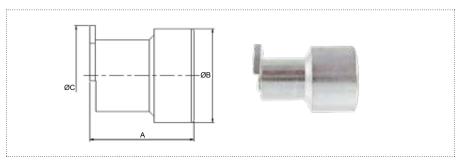
If necessary, adjust the end of the sleeve to the diameter of the cable in use. Size 10 connectors: cut off part A for cables using the large diameter cable clamp. Size 20-30-40: cut off part A for cables using the middle sized clamp, and parts A and B for cables using the largest diameter cable clamp. 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)
4 4 4	
Not available for SLG 419AR series	

Adaptator for flexible conduit and PG thread



Connector size	PG size	A _{MAX}	ØB _{MAX}	ØC _{MAX}	Designation
00	9	33,50	22,20	24,00	SL RF 2 09N
20	11	33,50	22,20	24,00	SL RF 2 11N
	13	38,70	30,70	32,00	SL RF 3 13N
30	16	38,70	30,70	32,00	SL RF 3 16N
	21	38,70	39,50	32,00	SL RF 3 21N
	16	44,00	39,50	42,00	SL RF 4 16N
40	21	44,00	39,50	42,00	SL RF 4 21N
Ī	29	43,00	39,70	39,70	SL RF 4 29N



SL61 - HOW TO ORDER

Connector (without backshell)

1.	2.	3.	4.	5.
SL	D	ЕМ	37Y	

1. Conr	nector type		
		SL	
2. Shell	plating		
D	Black coating	~	
Blank	Nickel √ Clear cadmium		
	•		
3. Shell	style & con	tact gender	
		Pin (M)	Socket (F)
Re	ceptacle	EM	EF

EME

BMR

вм

4. Insert arrangement

Clear cadmium

√ : RoHS compliant

Locking ring receptacle

Inline receptacle Plug

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

EFE

BFR *

BF

Grounding version

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

1. Connector type SLG 7 first mate last break earth contacts 2. Shell plating D Black coating Clear cadmium

EF	Socket panel mount receptacle
FFDR	Socket inline receptacle
ert arrang	ement

See part "Insert arrangement" page 8-10

5. Shell plating

NI Nickel

Black coating

Black coating

Black black coating

Black coating

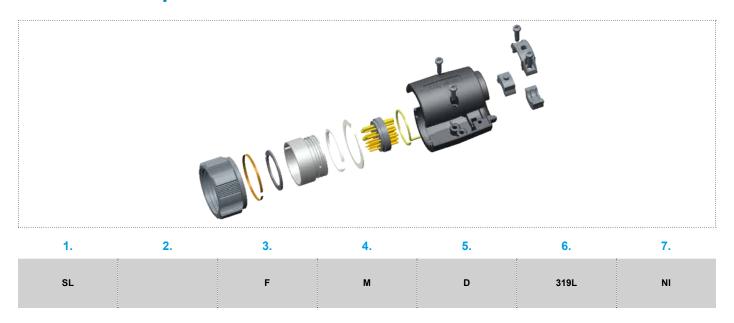
Black black coating

Black coat

^{*} not available for 13U, 14V & 17P : RoHS compliant

SL61 - HOW TO ORDER

Connector + 2-parts backshell



1. Connector type		
	CI	

2. Shell plating							
D	Black coating						
Blank	Nickel Clear cadmium**						

3. Kit, mandatory digit

. Contact gender							
M	Pin						
F	Socket						

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

5. Kit composition							
D	Plug + straight backshell						
DR	Inline receptacle + straight backshell *						
C	Plug + right angle backshell						

6. Insert arrangement

See part "insert arrangement" page 8-10

7. Shell plating								
NI	Nickel							
	Black coating ✓ Clear cadmium**							

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		Plu body + b	U		Pli bo	ug: ody	Rece	ptacle		ceptacle : backshell	Inline red bo	ceptacle:	Lockir recep	ng ring otacle
Insert	SL F FD	SL F MD	SL F FC	SLFMC	SL B F	SL B M	SLEF	SLEM	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 Military & Aerospace Operations (AMAO) has the largest and broadest selection of interconnect products in the military and aerospace markets.

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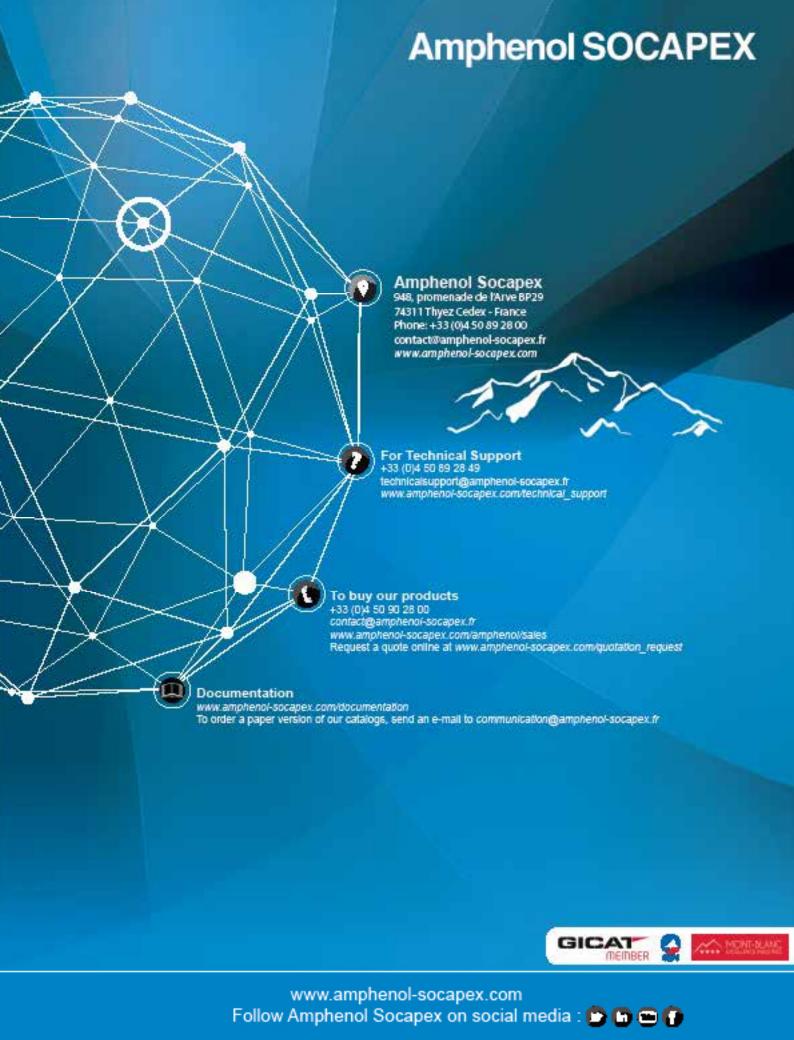
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