smiths connectors

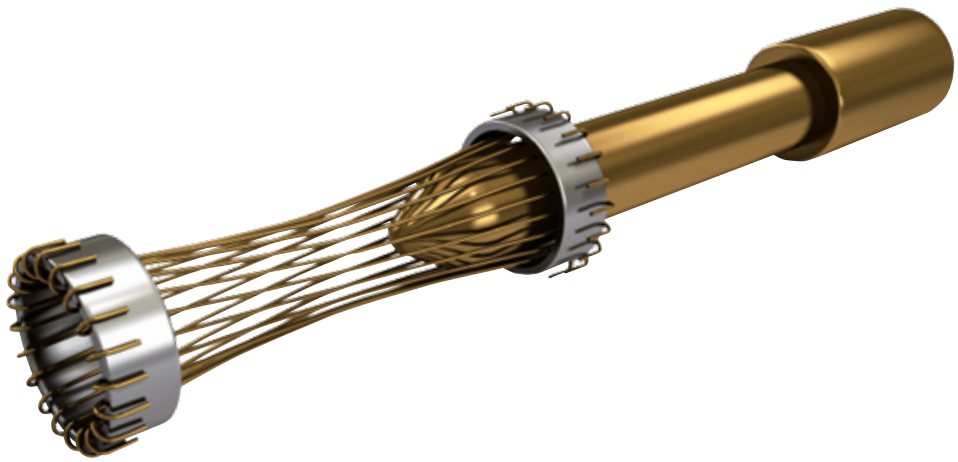
M23 STAINLESS STEEL
SERIES L/A & S

M23 Power and Signal Connectors

HYPERTAC IDI INTERCONNECT DEVICES SABRITEC

HYPERBOLOID TECHNOLOGY

Smiths Connectors offers an extensive range of superior contact technologies suitable for standard and custom solutions. Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance. The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths.



FEATURE	BENEFIT
LOW INSERTION/EXTRACTION FORCES The angle of the socket wires allows tight control of the pin insertion and extraction forces. The spring wires are smoothly deflected to make line contact with the pin.	**HIGH DENSITY INTERCONNECT SYSTEMS** Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and un-mating forces.
LONG CONTACT LIFE The smooth and light wiping action minimizes wear on the contact surfaces. Contacts perform up to 100,000 insertion/ extraction cycles with no degradation in performance.	**LOW COST OF OWNERSHIP** The Hypertac contact technology will surpass most product requirements, thus eliminating the burden and cost of having to replace the connector or the entire subsystem.
LOWER CONTACT RESISTANCE The design provides a far greater contact area and the wiping action of the wires insures a clean and polished contact surface. Our contact technology has about half the resistance of conventional contact designs.	**LOW POWER CONSUMPTION** The lower contact resistance of our technology results in a lower voltage drop across the connector reducing the power consumption and heat generation within the system.
HIGHER CURRENT RATINGS The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.	**MAXIMUM CONTACT PERFORMANCE** The lower contact resistance of the Hypertac contact reduces heat build-up; therefore Hypertac contacts are able to handle far greater current in smaller contact assemblies without the detrimental effects of high temperature.
IMMUNITY TO SHOCK & VIBRATION The low mass and resultant low inertia of the wires enable them to follow the most abrupt or extreme excursions of the pin without loss of contact. The contact area extends 360° around the pin and is uniform over its entire length. The 3 dimensional symmetry of the Hypertac contact design guarantees electrical continuity in all circumstances.	**RELIABILITY UNDER HARSH ENVIRONMENTS** Harsh environmental conditions require connectors that will sustain their electrical integrity even under the most demanding conditions such as shock and vibration. The Hypertac contact provides unmatched stability in demanding environments when failure is not an option.

TABLE OF CONTENTS

FEATURES & BENEFITS

- *Optimised Design*
- *Corrosion Resistant*
- *Reliable Contact Technology*
- *Environmentally Sealed to IP67*

CORROSION RESISTANT

The Smiths Connectors M23 Stainless Steel series have been specifically developed for applications operating in highly corrosive environments. Manufactured from high grade stainless steel and advanced polymers, these connectors are ideally suited for use in the Medical, Pharmaceutical, Maritime, Automotive and Food and Beverage Industries. Environmentally sealed to IP67 and chemically resistant to both Lye and Acids, these connectors are protected against the harshest of Industrial processing environments.

OPTIMISED DESIGN

In addition to specialist materials, these connectors feature a smooth outer body design to aid industrial wash down processes, by preventing the entrapment of dirt and contaminants. A complete range of options and accessories are available as standard, making this series suitable for a wide range of applications.

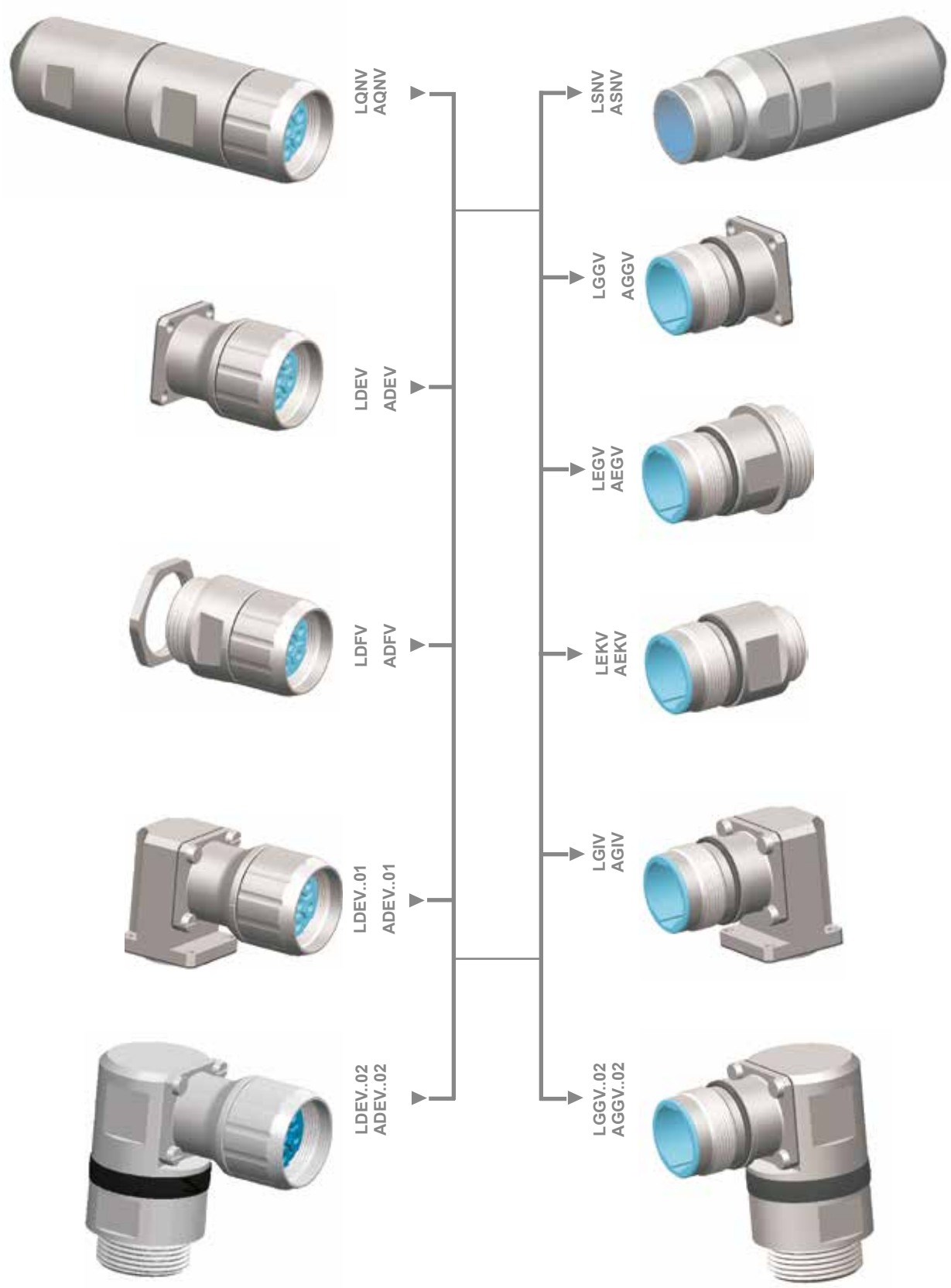
HYPERTAC HYPERBOLOID CONTACT

Hyperboloid contact technology is ideally suited for use in harsh and demanding environments where high reliability and safety are critical. The electrical and mechanical characteristics of the contact ensure unrivalled performance in terms of reliability, number of mating cycles, low contact forces and electrical stability over time. These performance characteristics provide a real commercial benefit in terms of the total installed cost of ownership.

FEATURES

- **Long life and low rate of wear through excellent shock and vibration resistance**
- **Electrical continuity ensuring free performance**
- **Easy assembly**
- **Corrosion resistant**
- **Environmentally sealed**
- **Vibration resistant**
- **RoHS compliant**
- **UL/CSA approval file No. 178462**

TYPE OVERVIEW



TECHNICAL CHARACTERISTICS

STAINLESS STEEL		STANDARDS
Contact diameter 6poles Contact diameter 8poles	6 x Ø 2mm 4 x Ø 1mm + 4 x Ø 2mm	- -
MATERIAL		
Shell Contacts Insert Sealing	V2A (V4A on demand) CuZn alloy PA, PBT FKM, EPDM	- - - -
FINISHES		
Shell plating Contacts plating	passivated Gold over nickel	- -
ELECTRICAL		
Current rating	9 A (contact Ø 1mm) 8 A (contact Ø 1mm) 7 A (contact Ø 1mm) 22 A (contact Ø 2mm) 20 A (contact Ø 2mm) 14 A (contact Ø 2mm)	EN 61984 USR / UL1977 CNR / UL1977 EN 61984 USR / UL1977 CNR / UL1977
Voltage rating	250 V (contact Ø 1mm) 250 V (contact Ø 1mm) 630 V (contact Ø 2mm) 600 V (contact Ø 2mm)	EN 61984 USR / CNR / UL1977 EN 61984 USR / CNR / UL1977
Withstanding voltage	2500 V (contact Ø 1mm) 6000 V (contact Ø 2mm)	EN 61984 EN 61984
Contact resistance	<5 mΩ (contact Ø 1mm) <3 mΩ (contact Ø 2mm)	EN 61984 EN 61984
Insulation resistance	10^{13} Ωcm	EN 61984
Overvoltage category	III	EN 61984
PHYSICAL AND ENVIRONMENTAL		
Operating temperature range	-40°C … 125°C -40°C ... 110°C	EN 61984 UL1977
Storage conditions	-40°C … 70°C/ min. humidity 40%	-
Environmental level	IP67 (mated)	DIN EN 60529
Contamination level	3 (mated)	EN 61984
Installation altitude	up to 2000 m	EN 61984
Fire & Smoke	Recognition file No E 178462	UL 1977

Consult factory for details

RoHS COMPLIANT

c UL us

HOW TO ORDER

L						
1	2	3	4	5	6	7

A						
1	2	3	4	5	6	7

1 CONNECTOR FAMILIES

L	M23 stainless steel circular connectors, Series L
A	M23 stainless steel circular connectors UL/CSA, Series A

2 CONNECTOR DESIGN

QN	plug with variable shield connection and variable cable clamp
SN	extension with variable shield connection and variable cable clamp
DE	panel feed through with square flange
DF	panel feed through, threaded connection M 25x1.5
GG	straight receptacke with flange
EG	straight receptacle, threaded connection M 25x1.5
EK	straight receptacle, threaded connection M 20x1.5
EE	straight receptacle, axial sealing, long version
GI	angled receptacle with flange

3 PLATING

V	passivated

4 INSERTS

06A	6 way for pins 6 x Ø 2mm
06B	6way for sockets 6 x Ø 2mm
08A	8way for pins 4 x Ø 1mm + 4 x Ø 2mm
08B	8way for sockets 4 x Ø 1mm + 4 x Ø 2mm

5 TERMINATION STYLE

NNNN	without contacts, loose contacts to be ordered separately
FRBN	including machined sockets, 6 x Ø 2mm AWG 20-16
FRDN	including machined sockets, 6 x Ø 2mm AWG 18-14
FRKB	including machined sockets, 4 x Ø 1mm AWG 24-18 + 4 x Ø 2mm, AWG 20-16
FRKD	including machined sockets, 4 x Ø 1mm AWG 24-18 + 4 x Ø 2mm, AWG 18-14
MRCN	including machined pins, 6 x Ø 2mm AWG 20-16
MRKN	including machined pins, 6 x Ø 2mm AWG 18-14
MRPN	including machined pins, 6 x Ø 2mm AWG 16-14
MREC	including machined pins, 4 x Ø 1mm AWG 24-18 + 4 x Ø 2mm, AWG 20-16
MREK	including machined pins, 4 x Ø 1mm AWG 24-18 + 4 x Ø 2mm, AWG 18-14
MREP	including machined pins, 4 x Ø 1mm AWG 24-18 + 4 x Ø 2mm, AWG 16-14

6 CABLE CLAMPING

000	without cable clamp for receptacles and panel feed through
170	variable clamp for cable Ø 7.7mm to 14.5mm can be used for all shielded and non shielded cables
305	for cable diameter 5 - 9 mm, can be used for shielded and non-shielded cables
306	for cable diameter 9 - 15 mm, can be used for shielded and non-shielded cables
307	for cable diameter 16 mm, can be used for shielded and non-shielded cables

7 VERSION NUMBER

01	depending on type and special design see detailed description of connector design LDEV / ADEV
02	depending on type and special design see detailed description of connector design LGGV / AGGV / LDEV / ADEV

RECEPTACLES

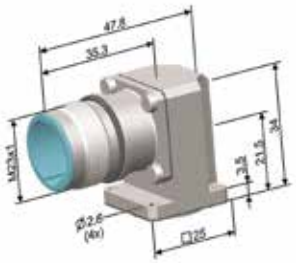
POWER RECEPTACLES SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side Layout Description Part number code	shell	insert	06A termination cross section of the pins in mm²		08A termination cross section of the pins in mm²		cable clamp
			6 x 0.5 - 1.5	6 x 0.75 - 2.5	4 x 0.24 - 1 4 x 0.5 - 1.5	4 x 0.24 - 1 4 x 0.75 - 2.5	
Straight receptacle, radial sealing to the device, mounting flange  Part number incl. O-ring against vibration on demand	**LGGV AGGV***	06A	MRCN				000
				MRKN			
		08A			MREC		
						MREK	
Straight receptacle, axial sealing to the device, connecting thread M25 x 1.5  Part number incl. O-ring against vibration on demand	**LEGV AEGV***	06A	MRCN				000
				MRKN			
		08A			MREC		
						MREK	
Straight receptacle, axial sealing to the device, connecting thread M20 x 1.5  Part number incl. O-ring against vibration on demand	**LEKV AEKV***	06A	MRCN				000
				MRKN			
		08A			MREC		
						MREK	

* UL-Version

RECEPTACLES

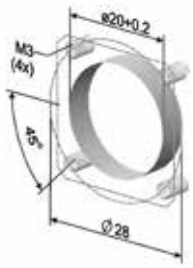
POWER RECEPTACLES SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side Layout Description Part number code	shell	insert	 06A	 08A	termination cross section of the pins in mm²				cable clamp
					6 x 0.5 - 1.5	6 x 0.75 - 2.5	4 x 0.24 - 1 4 x 0.5 - 1.5	4 x 0.24 - 1 4 x 0.75 - 2.5	
Fixed angled receptacle, radial sealing to the device, mounting flange  Part number incl. O-ring against vibration on demand	**LGIV AGIV***	06A	MRCN						000
				MRKN					
		08A					MREC		
								MREK	
Rotatable receptacle, axial sealing to the device, connecting thread M25 x 1.5  Part number incl. O-ring against vibration on demand	**LGGV AGGV***	06A	MRCN						000 02
				MRKN					
		08A					MREC		
								MREK	

* UL-Version

Drilling drawings

LGGV, LGIV
AGGV, AGIV

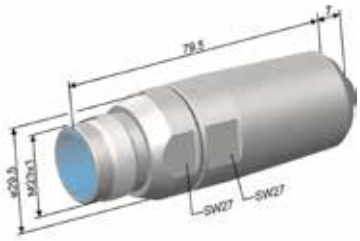


LEKV
AEKV

LEGV, LGGV..02
AEGV, AGGV..02

EXTENSIONS

POWER EXTENSIONS SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side Layout Description Part number code	Gehäuse shell	insert	 06A		 08A		cable clamp
			termination cross section of the pins in mm²				
			6 x 1.5 - 2.5		4 x 0.24 - 1 4 x 1.5 - 2.5		
Extension with earth connection, variable shield connection and variable cable clamp Ø 7.7 - 14.5 mm  Part number incl. O-ring against vibration on demand	**LSNV** **ASNV***	06A	MRPN				170
		08A			MREP		

* UL-Version

PLUGS

POWER PLUGS SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side	shell	insert	 06B	 08B			cable clamp
			termination cross section of the pins in mm²				
Layout Description Part number code			6 x 0.5 - 1.5	6 x 0.75 - 2.5	4 x 0.24 - 1 4 x 0.5 - 1.5	4 x 0.24 - 1 4 x 0.75 - 2.5	
Plug with earth connection, variable shield connection and variable cable clamps 	**LQNV AQNV***	06B	FRBN				305 306 307
				FRDN			
		08B			FRKB		
						FRKD	

* UL-Version

PANEL FEED TROUGH

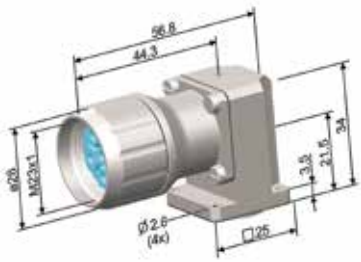
POWER PANEL FEED THROUGH SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side Layout Description Part number code	shell	insert	 06B	 08B			cable clamp
			termination cross section of the pins in mm²				
			6 x 0.5 - 1.5	6 x 0.75 - 2.5	4 x 0.24 - 1 4 x 0.5 - 1.5	4 x 0.24 - 1 4 x 0.75 - 2.5	
Straight panel feed through, radial sealing to the device, mounting flange 	**LDEV ADEV***	06B	FRBN				000
				FRDN			
		08B			FRKB		
						FRKD	
Straight panel feed through, axial sealing, connecting thread M25x1,5 	**LDFV ADFV***	06B	FRBN				000
				FRDN			
		08B			FRKB		
						FRKD	

* UL-Version

PANEL FEED TROUGH

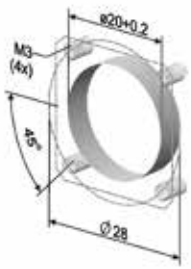
POWER PANEL FEED THROUGH SERIES L (UL VERSION SERIES A) WITH CRIMP CONTACTS

Contact arrangements view mating side	shell	insert	 06B	 08B			
			termination cross section of the pins in mm²				
Layout Description Part number code			6 x 0.5 - 1.5	6 x 0.75 - 2.5	4 x 0.24 - 1 4 x 0.5 - 1.5	4 x 0.24 - 1 4 x 0.75 - 2.5	cable clamp
Angled panel feed through, axial sealing to the device, mounting flange 	**LDEV ADEV***	06B	FRBN				000 01
				FRDN			
		08B			FRKB		
						FRKD	
Rotatable angled panel feeed through, axial sealing, connecting thread M25x1,5 	**LDEV ADEV***	06B	FRBN				000 02
				FRDN			
		08B			FRKB		
						FRKD	

* UL-Version

Drilling drawings

LDEV, LDEV..01
ADEV, ADEV..01



LDFV, LDEV..02
ADFV, ADEV..02

CONTACTS

MACHINED PINS SERIES L (UL VERSION SERIES A)				
Type	E	C	K	P
Contact diameter [mm]	1	2	2	2
Part number and layout	021.129.1020 	021.101.2000 	021.147.2000 	021.279.1020 
Termination cross section* [mm²] AWG	0.24 - 1 (24 - 18)	0.5 - 1.5 (20 - 16)	0.75 - 2.5 (18 - 14)	1.5 - 2.5 (16 - 14)
Maximum conductor diameter [mm]	1.3	1.8	2.3	2.3
Maximum insulation diameter [mm]	-	-	-	3.5
For following number of contacts	8	6/8	6/8	6/8

TOOLING				
Crimping tool	B151	B151	B151	B151
Positioner	B156	B157	B157	B165
Insertion tool	B118	B117	B117	-
Extraction tool	B038/A	B037/A	B037/A	-

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

CONTACTS

MACHINED SOCKETS SERIES L (UL VERSION SERIES A)				
Type	K	B	D	H
Contact diameter [mm]	1	2	2	2
Part number and layout	020.232.2000 	020.090.1020 	020.105.1020 	020.123.1020 
Termination cross section* [mm²] AWG	0.24 - 1 (24 - 18)	0.5 - 1.5 (20 - 16)	0.75 - 2.5 (18 - 14)	0.75 - 2.5 (18 - 14)
Maximum conductor diameter [mm]	1.3	1.9	2.3	2.3
Maximum insulation diameter [mm]	2.1	-	-	4.5
For following number of contacts	8	6/8	6/8	6

TOOLING				
Crimping tool	B151** B150	B151	B151	B151 B152 B179
Positioner	B252** B055/A	B157	B157	B154
Insertion tool	B118	-	-	-
Extraction tool	B056/A	-	-	-

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

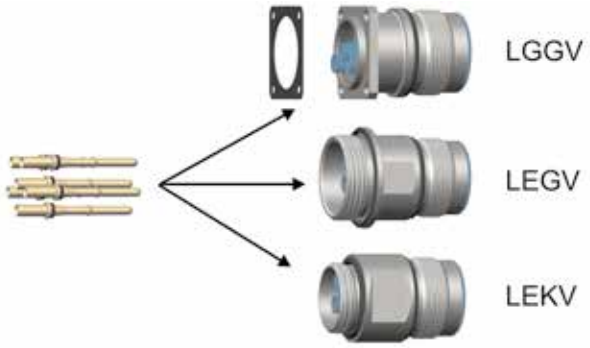
**prefered crimping tool

ASSEMBLY INSTRUCTIONS

POWER RECEPTACLE LGGV... LEGV... LEKV... LGIV... LGGV..02

Page 1 of 2

	Stripping Length
	Machined Contacts
A	7 mm

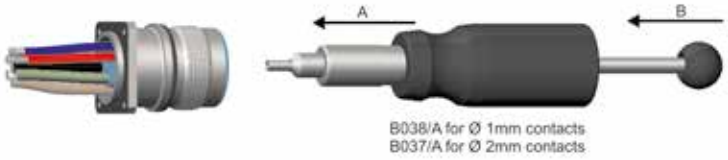


Assembly

1

2

Dismantling



After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

POWER RECEPTACLE LGGV... LEGV... LEKV... LGIV... LGGV..02

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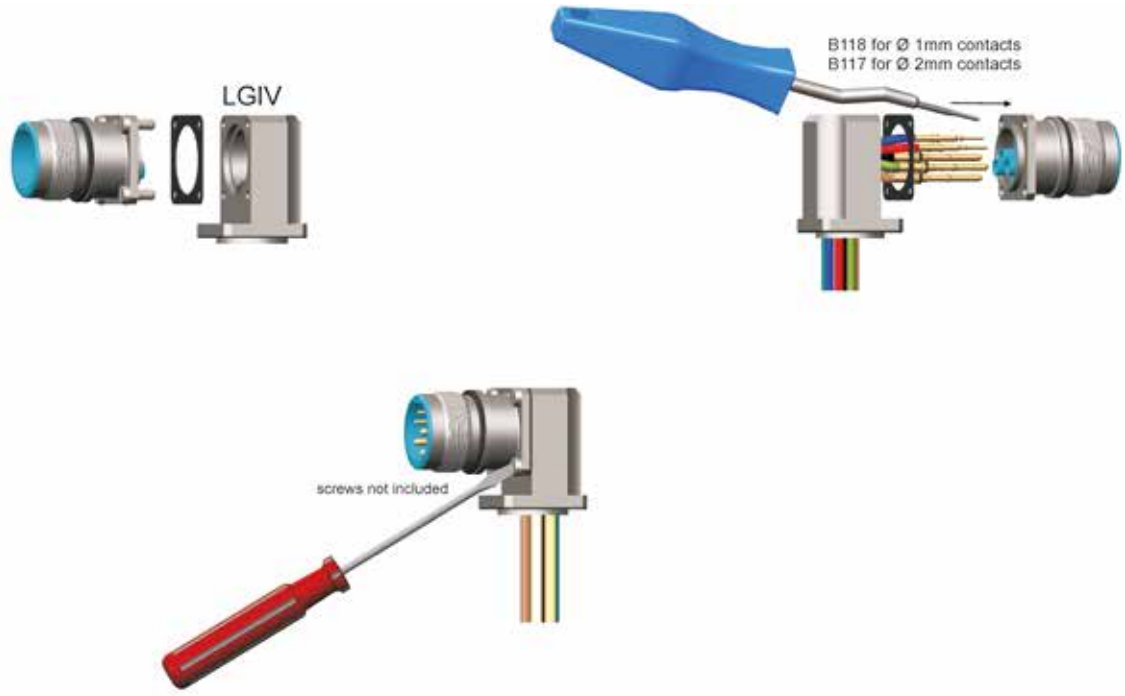
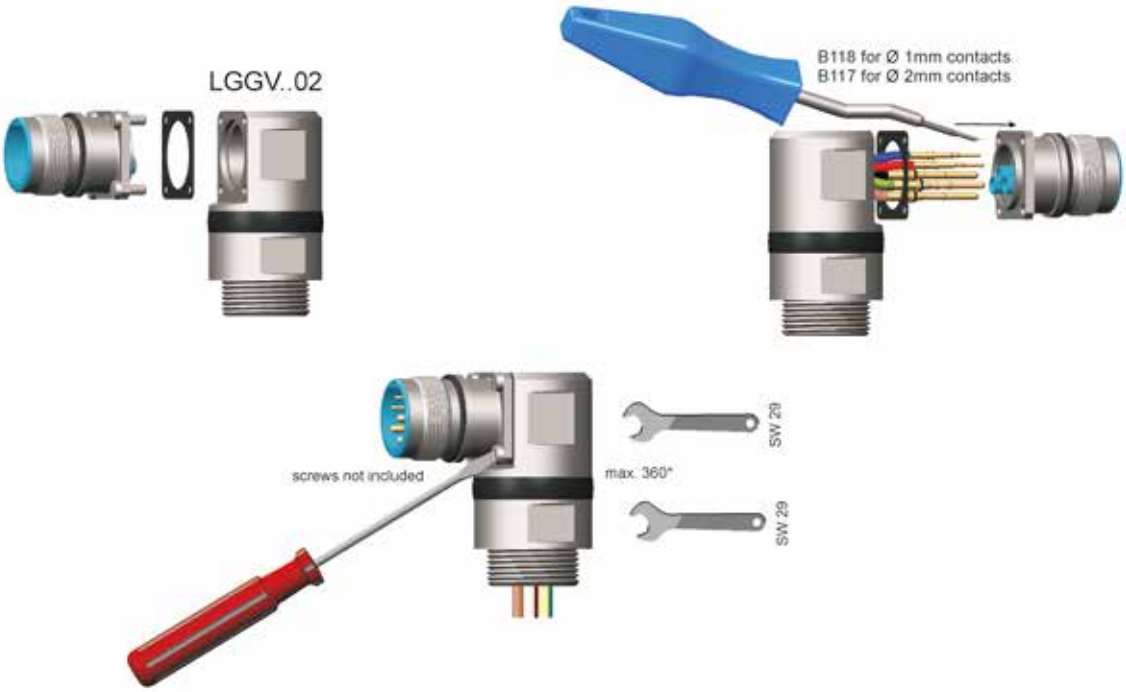




After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

POWER EXTENSION LSNV...

Page 1 of 1

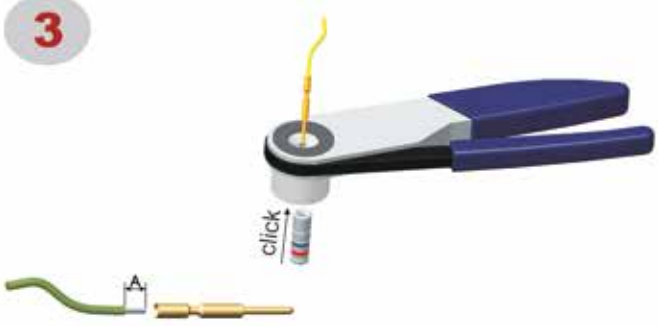
	Stripping Length
	Machined Contacts
A	7 mm

Assembly

1

2

3



4

5

Dismantling

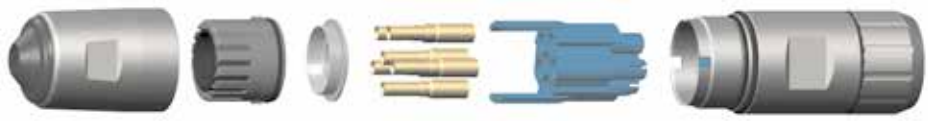
After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

POWER PLUG

Page 1 of 1

	Stripping Length
	Machined Contacts
A	7 mm



Assembly

1

2

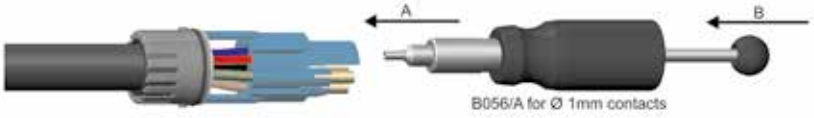
3

4

5

6

Dismantling



After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

POWER BUSHING LDEV... LDFV... LDEV... 01 LDEV...02

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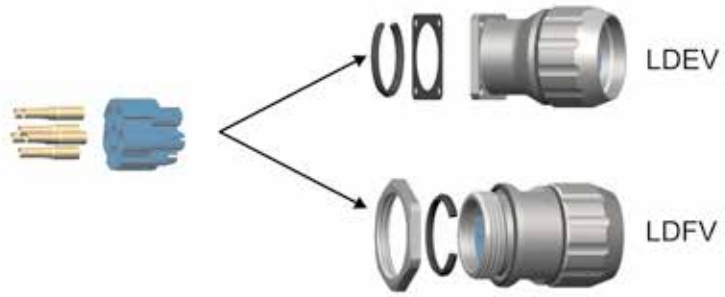
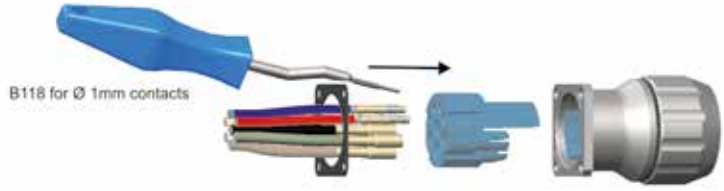
	Stripping Length
	Machined Contacts
A	7 mm



Assembly

1

2



3

Dismantling

After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

POWER BUSHING LDEV... LDFV... LDEV... 01 LDEV...02

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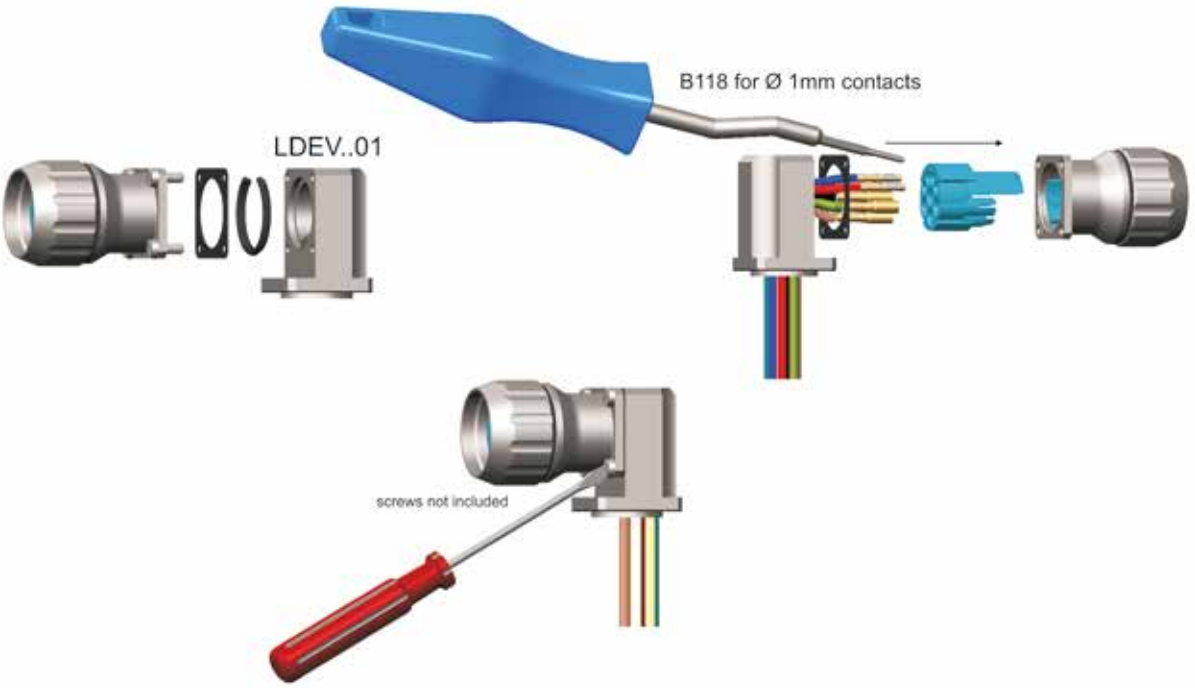
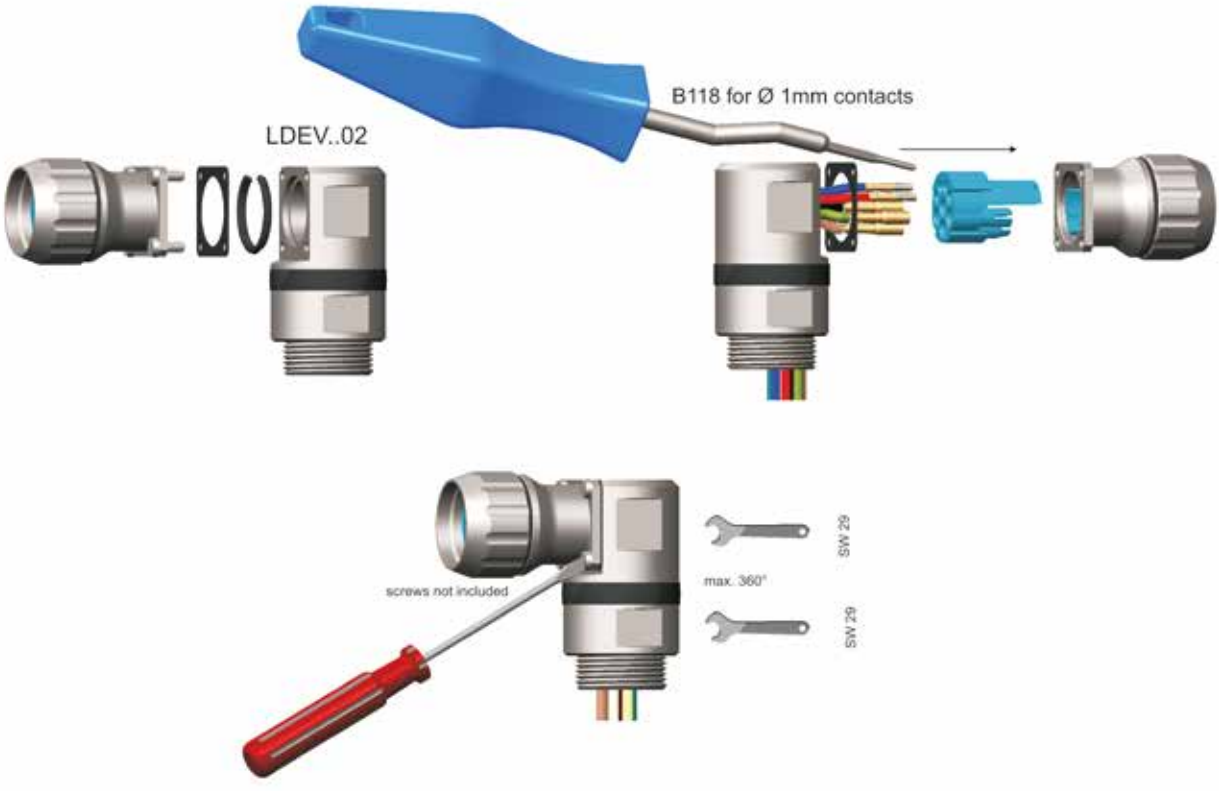




After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

NOTES

TYPE OVERVIEW

SQNV

SSNV

SGGV..03

SGIV

SGGV

SGHV

TECHNICAL CHARACTERISTICS

STAINLESS STEEL		STANDARDS
Contact diameter 6, 7 and 8poles Contact diameter 9, 12, 16, 17poles	Ø 2mm Ø 1mm	- -
MATERIAL		
Shell Contacts Insert Sealing	V2A (V4A on demand) CuZn alloy PA, PBT FKM, EPDM	- - - -
FINISHES		
Shell plating Machined contacts plating Stamped contacts plating	passivated Gold over nickel Partly gold plated	- -
ELECTRICAL		
Current rating	9 A (contact Ø 1mm) 8 A (contact Ø 1mm) 20 A (contact Ø 2mm) 20 A (contact Ø 2mm)	EN 61984 USR / UL1977 EN 61984 USR / UL1977
Voltage rating	50 V AC / 120 V DC 125 V	EN 61140 USR / UL1977
Withstanding voltage	2500 V	EN 61984
Contact resistance	<5 mΩ (contact Ø 1mm) <3 mΩ (contact Ø 2mm)	EN 61984 EN 61984
Insulation resistance	10^{13} Ωcm (contact Ø 1mm) 10^{16} Ωcm (contact Ø 2mm)	EN 61984 EN 61984
Overvoltage category	III	EN 61984
PHYSICAL AND ENVIRONMENTAL		
Operating temperature range	-40°C … 125°C -40°C ... 110°C	EN 61984 UL1977
Storage conditions	-40°C … 70°C/ min. humidity 40%	-
Environmental level	IP67 (mated)	DIN EN 60529
Contamination level	3 (mated)	EN 61984
Installation altitude	up to 2000 m	EN 61984
Fire & Smoke	Recognition file No E 178462	UL 1977

Consult factory for details

RoHS COMPLIANT

HOW TO ORDER

1	2	3	4	5	6	7

1 CONNECTOR FAMILIES

S	M23 stainless steel circular connectors, Series S

2 CONNECTOR DESIGN

QN	plug with variable shield connection and variable cable clamp
SN	extension with variable shield connection and variable cable clamp
GG	straight receptacle with flange
GI	angled receptacle with flange
GH	straight receptacle, threaded connection M 20x1.5

3 PLATING

V	passivated

4 INSERTS

06G	6 x Ø 2mm for extensions and receptacles
07C	7 x Ø 2mm for extensions and receptacle
09E	8 x Ø 1mm + 1 x Ø 2mm for extensions and receptacle
09G	6 x Ø 1mm + 3 x Ø 2mm for extensions and receptacle
09J	9 x Ø 1mm for extensions and receptacle
12T	12 x Ø 1mm for extensions and receptacle
12V	12 x Ø 1mm (Code 20°) for extensions and receptacle
16A	16 x Ø 1mm for extensions and receptacle
17G	17 x Ø 1mm for extensions and receptacle
06H	6 x Ø 2mm for plugs
07D	7 x Ø 2mm for plugs
09F	8 x Ø 1mm + 1 x Ø 2mm for plugs
09H	6 x Ø 1mm + 3 x Ø 2mm for plugs
09K	9 x Ø 1mm for plugs
12S	12 x Ø 1mm for plugs
12U	12 x Ø 1mm (Code 20°) for plugs
16B	16 x Ø 1mm for plugs
17H	17 x Ø 1mm for plugs

5 TERMINATION STYLE

NNNN	without contacts, loose machined contacts and stamped HCS contacts on reels to be ordered separately
MRRN	including machined pins, 6/7 x Ø 2mm AWG 18-14
MRVN	including machined pins, 6/7 x Ø 2mm AWG 24-16
MRSR	including machined pins, 8/6 x Ø 1mm AWG 24-18 + 1/3 x Ø 2mm, AWG 18-14
MRSV	including machined pins, 8/6 x Ø 1mm AWG 24-18 + 1/3 x Ø 2mm, AWG 24-16
MRWR	including machined pins, 8/6 x Ø 1mm AWG 30-22 + 1/3 x Ø 2mm, AWG 18-14
MRWV	including machined pins, 8/6 x Ø 1mm AWG 30-22 + 1/3 x Ø 2mm, AWG 24-16
MRSN	including machined pins, 9/12/16/17 x Ø 1mm AWG 24-16
MRWN	including machined pins, 9/12/16/17 x Ø 1mm AWG 30-22
FRRN	including machined sockets, 6/7 x Ø 2mm AWG 20-16
FRMN	including machined sockets, 6/7 x Ø 2mm AWG 18-14
FROR	including machined sockets, 8/6 x Ø 1mm AWG 24-18 + 1/3 x Ø 2mm, AWG 20-16
FROM	including machined sockets, 8/6 x Ø 1mm AWG 24-18 + 1/3 x Ø 2mm, AWG 18-14
FRPR	including machined sockets, 8/6 x Ø 1mm AWG 20-16 + 1/3 x Ø 2mm, AWG 20-16
FRPM	including machined sockets, 8/6 x Ø 1mm AWG 20-16 + 1/3 x Ø 2mm, AWG 18-14
FRBR	including machined sockets, 8/6 x Ø 1mm AWG 30-22 + 1/3 x Ø 2mm, AWG 20-16
FRBM	including machined sockets, 8/6 x Ø 1mm AWG 30-22 + 1/3 x Ø 2mm, AWG 18-14
FRON	including machined sockets, 9/12/16/17 x Ø 1mm AWG 24-18
FRPN	including machined sockets, 9/12/16/17 x Ø 1mm AWG 20-16
FRBN	including machined sockets, 9/12/16/17 x Ø 1mm AWG 30-22

6 CABLE CLAMPING

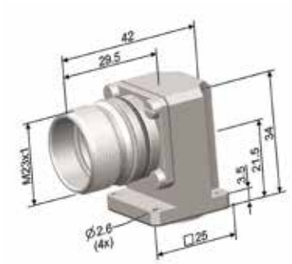
000	without cable clamp for receptacles
169	variable clamp for cable Ø 5.5mm to 12mm can be used for all shielded and non shielded cables

7 VERSION NUMBER

03	depending on type and special design see detailed description of connector design SGGV

RECEPTACLES

SIGNAL RECEPTACLES SERIES S WITH CRIMP CONTACTS

Layout Description Part number code	shell type	contact style	termination cross section
Straight receptacle, radial sealing to the device, mounting flange 	SGGV SGGV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2,5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	
Fixed angled receptacle, radial sealing to the device, mounting flange 	SGIV SGIV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2.5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	

* UL-Version

RECEPTACLES

CONTACT ARRANGEMENTS: VIEW MATING SIDE

 06G (6 x 2)		 07C (7 x 2)		 09E (8 x 1 / 1 x 2)		 09G (6 x 1 / 3 x 2)		 09J (9 x 1)		 12T (12 x 1)		 12V (12 x 1 Code 20°)		 16A (16 x 1)		 17G (17 x 1)		cable clamp
06G 06G	MRRN MRVN	07C 07C	MRRN MRVN	09E 09E 09E 09E	MRSR MRSV MRWR MRWV	09G 09G 09G 09G	MRSR MRSV MRWR MRWV	09J 09J	MRSN MRWN	12T 12T	MRSN MRWN	12V 12V	MRSN MRWN	16A 16A	MRSN MRWN	17G 17G	MRSN MRWN	
06G 06G	FRRN FRMN	07C 07C	FRRN FRMN	09E 09E 09E 09E 09E 09E	FROR FROM FRPR FRPM FRBR FRBM	09G 09G 09G 09G 09G 09G	FROR FROM FRPR FRPM FRBR FRBM	09J 09J 09J	FRON FRPN FRBN	12T 12T 12T	FRON FRPN FRBN	12V 12V 12V	FRON FRPN FRBN	16A 16A 16A	FRON FRPN FRBN	17G 17G 17G	FRON FRPN FRBN	000
06G	NNNN	07C	NNNN	09E	NNNN	09G	NNNN	09J	NNNN	12T	NNNN	09G	NNNN	09J	NNNN	17G	NNNN	
06G 06G	MRRN MRVN	07C 07C	MRRN MRVN	09E 09E 09E 09E	MRSR MRSV MRWR MRWV	09G 09G 09G 09G	MRSR MRSV MRWR MRWV	09J 09J	MRSN MRWN	12T 12T	MRSN MRWN	12V 12V	MRSN MRWN	16A 16A	MRSN MRWN	17G 17G	MRSN MRWN	
06G 06G	FRRN FRMN	07C 07C	FRRN FRMN	09E 09E 09E 09E 09E 09E	FROR FROM FRPR FRPM FRBR FRBM	09G 09G 09G 09G 09G 09G	FROR FROM FRPR FRPM FRBR FRBM	09J 09J 09J	FRON FRPN FRBN	12T 12T 12T	FRON FRPN FRBN	12V 12V 12V	FRON FRPN FRBN	16A 16A 16A	FRON FRPN FRBN	17G 17G 17G	FRON FRPN FRBN	000
								09J	NNNN	12T	NNNN	12V	NNNN	16A	NNNN	17G	NNNN	

Drilling drawings SGGV, SGIV

RECEPTACLES

SIGNAL RECEPTACLES SERIES S WITH CRIMP CONTACTS

Layout Description Part number code	shell type	contact style	termination cross section
Straight receptacle, radial sealing to the device, mounting flange 	SGGV SGGV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2,5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	
Fixed angled receptacle, radial sealing to the device, mounting flange 	SGHV SGHV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2.5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	

* UL-Version

RECEPTACLES

CONTACT ARRANGEMENTS: VIEW MATING SIDE

06G (6 x 2)		07C (7 x 2)		09E (8 x 1 / 1 x 2)		09G (6 x 1 / 3 x 2)		09J (9 x 1)		12T (12 x 1)		12V (12 x 1 Code 20°)		16A (16 x 1)		17G (17 x 1)		cable clamp
06G	MRRN	07C	MRRN															
06G	MRVN	07C	MRVN															
				09E	MRSR	09G	MRSR											
				09E	MRSV	09G	MRSV											
				09E	MRWR	09G	MRWR											
				09E	MRWV	09G	MRWV											
								09J	MRSN	12T	MRSN	12V	MRSN	16A	MRSN	17G	MRSN	
								09J	MRWN	12T	MRWN	12V	MRWN	16A	MRWN	17G	MRWN	
06G	FRRN	07C	FRRN															
06G	FRMN	07C	FRMN															000 03
				09E	FROR	09G	FROR											
				09E	FROM	09G	FROM											
				09E	FRPR	09G	FRPR											
				09E	FRPM	09G	FRPM											
				09E	FRBR	09G	FRBR											
				09E	FRBM	09G	FRBM											
								09J	FRON	12T	FRON	12V	FRON	16A	FRON	17G	FRON	
								09J	FRPN	12T	FRPN	12V	FRPN	16A	FRPN	17G	FRPN	
								09J	FRBN	12T	FRBN	12V	FRBN	16A	FRBN	17G	FRBN	
06G	NNNN	07C	NNNN	09E	NNNN	09G	NNNN	09J	NNNN	12T	NNNN	09G	NNNN	09J	NNNN	17G	NNNN	
06G	MRRN	07C	MRRN															
06G	MRVN	07C	MRVN															
				09E	MRSR	09G	MRSR											
				09E	MRSV	09G	MRSV											
				09E	MRWR	09G	MRWR											
				09E	MRWV	09G	MRWV											
								09J	MRSN	12T	MRSN	12V	MRSN	16A	MRSN	17G	MRSN	
								09J	MRWN	12T	MRWN	12V	MRWN	16A	MRWN	17G	MRWN	
06G	FRRN	07C	FRRN															
06G	FRMN	07C	FRMN															000
				09E	FROR	09G	FROR											
				09E	FROM	09G	FROM											
				09E	FRPR	09G	FRPR											
				09E	FRPM	09G	FRPM											
				09E	FRBR	09G	FRBR											
				09E	FRBM	09G	FRBM											
								09J	FRON	12T	FRON	12V	FRON	16A	FRON	17G	FRON	
								09J	FRPN	12T	FRPN	12V	FRPN	16A	FRPN	17G	FRPN	
								09J	FRBN	12T	FRBN	12V	FRBN	16A	FRBN	17G	FRBN	
								09J	NNNN	12T	NNNN	12V	NNNN	16A	NNNN	17G	NNNN	

Drilling drawings

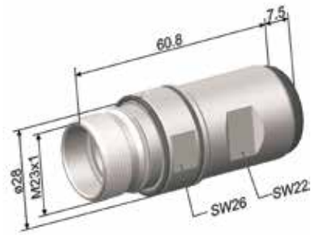
SGGV..03

SGHV

EXTENSIONS

SIGNAL EXTENSION SERIES S WITH CRIMP CONTACTS

Layout Description Part number code	shell type	contact style	termination cross section
Extension with variable shield connection and variable cable clamp.	SSNV SSNV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2,5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	



* UL-Version

EXTENSIONS

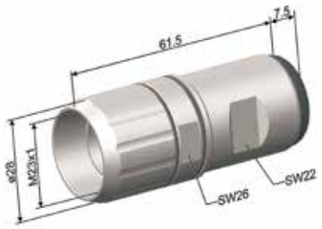
CONTACT ARRANGEMENTS: VIEW MATING SIDE

06G (6 x 2)		07C (7 x 2)		09E (8 x 1 / 1 x 2)		09G (6 x 1 / 3 x 2)		09J (9 x 1)		12T (12 x 1)		12V (12 x 1 Code 20°)		16A (16 x 1)		17G (17 x 1)		cable clamp
06G	MRRN	07C	MRRN															
06G	MRVN	07C	MRVN															
				09E	MRSR	09G	MRSR											
				09E	MRSV	09G	MRSV											
				09E	MRWR	09G	MRWR											
				09E	MRWV	09G	MRWV											
								09J	MRSN	12T	MRSN	12V	MRSN	16A	MRSN	17G	MRSN	
								09J	MRWN	12T	MRWN	12V	MRWN	16A	MRWN	17G	MRWN	
06G	FRRN	07C	FRRN															
06G	FRMN	07C	FRMN															
				09E	FROR	09G	FROR											
				09E	FROM	09G	FROM											
				09E	FRPR	09G	FRPR											
				09E	FRPM	09G	FRPM											
				09E	FRBR	09G	FRBR											
				09E	FRBM	09G	FRBM											
								09J	FRON	12T	FRON	12V	FRON	16A	FRON	17G	FRON	
								09J	FRPN	12T	FRPN	12V	FRPN	16A	FRPN	17G	FRPN	
								09J	FRBN	12T	FRBN	12V	FRBN	16A	FRBN	17G	FRBN	
								09J	NNNN	12T	NNNN	12V	NNNN	16A	NNNN	17G	NNNN	

PLUGS

SIGNAL PLUGS SERIES S WITH CRIMP CONTACTS

Layout Description Part number code	shell type	contact style	termination cross section
Plug with variable shield connection and variable cable clamp.	SQNV SQNV*	machined pins	0.75 - 2.5 0.24 - 1.5 0.24 - 1 / 0.75 - 2.5 0.24 - 1 / 0.24 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.05 - 0.34 / 0.24 - 1.5 0.24 - 1 0.05 - 0.34
		machined sockets	0.5 - 1.5 0.75 - 2,5 0.24 - 1 / 0.5 - 1.5 0.24 - 1 / 0.75 - 2.5 0.34 - 1.5 / 0.5 - 1.5 0.34 - 1.5 / 0.75 - 2.5 0.05 - 0.34 / 0.5 - 1.5 0.05 - 0.34 / 0.75 - 2.5 0.24 - 1 0.24 - 1.5 0.05 - 0.34
		without contacts	



* UL-Version

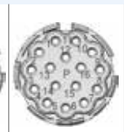
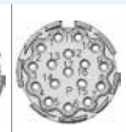
PLUGS

CONTACT ARRANGEMENTS: VIEW MATING SIDE



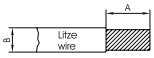




06H (6 x 2)		07D (7 x 2)		09F (8 x 1 / 1 x 2)		09H (6 x 1 / 3 x 2)		09K (9 x 1)		12S (12 x 1)		12U (12 x 1 Code 20°)		16B (16 x 1)		17H (17 x 1)		cable clamp
06H	MRRN	07D	MRRN															
06H	MRVN	07D	MRVN															
				09F	MRSR	09H	MRSR											
				09F	MRSV	09H	MRSV											
				09F	MRWR	09H	MRWR											
				09F	MRWV	09H	MRWV											
								09K	MRSN	12S	MRSN	12U	MRSN	16B	MRSN	17H	MRSN	
								09K	MRWN	12S	MRWN	12U	MRWN	16B	MRWN	17H	MRWN	
06H	FRRN	07D	FRRN															169
06H	FRMN	07D	FRMN															
				09F	FROR	09H	FROR											
				09F	FROM	09H	FROM											
				09F	FRPR	09H	FRPR											
				09F	FRPM	09H	FRPM											
				09F	FRBR	09H	FRBR											
				09F	FRBM	09H	FRBM											
								09K	FRON	12S	FRON	12U	FRON	16B	FRON	17H	FRON	
								09K	FRPN	12S	FRPN	12U	FRPN	16B	FRPN	17H	FRPN	
								09K	FRBN	12S	FRBN	12U	FRBN	16B	FRBN	17H	FRBN	
								09K	NNNN	12S	NNNN	12U	NNNN	16B	NNNN	17H	NNNN	

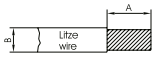
CONTACTS

MACHINED PINS SERIES S						
Type	R	V	S	T	W	
Contact diameter [mm]	2	2	1	1	1	
Part number and layout	021.310.1020 	021.356.1020 	021.311.1020 	021.373.1020 	021.402.1020 	
Termination cross section* [mm²] AWG	0.75 - 2.5 (18 - 14)	0.34 - 1.5 (24 - 16)	0.24 - 1.0 (24 - 18)	0.24 - 1.0 (24 - 18)	0.05 - 0.34 (30 - 22)	
Max. nominal current [A] (20°C) at max. cross section	20	20	9	9	9	
Strip length (A) [mm]	~ 5.5	~ 5.5	(B = <Ø 2.1) ~ 4 (B = >Ø 2.1) ~ 6	(B = <Ø 2.1) ~ 4 (B = >Ø 2.1) ~ 6	~ 5	
Contact resistance [mΩ]	<3	<3	<5	<5	<5	
Max. conductor diameter [mm]	2.2	1.8	1.2	1.2	0.8	
Max. insulation diameter [mm] for insulation crimp	-	-	2.1	2.1	-	

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

TOOLING						
Part Number						
Hand crimping tool	B151	B151	B150	B150	B150	
Positioner	B201	B201	B055/A	B055/A	B055/A	
Insertion tool	-	-	-	-	-	
Extraction tool	-	-	-	-	-	

CONTACTS

MACHINED SOCKETS SERIES S						
Type	R	M	O	P	B	
Contact diameter [mm]	2	2	1	1	1	
Part number and layout	020.315.1020 	020.263.1020 	020.256.1020 	020.328.1020 	020.353.1020 	
Termination cross section* [mm²] AWG	0.5 - 1.5 (20 - 16)	0.75 - 2.5 (18 - 14)	0.24 - 1.0 (24 - 18)	0.5 - 1.5 (20 - 16)	0.05 - 0.34 (30 - 22)	
Max. nominal current [A] (20°C) at max. cross section	20	20	9	9	9	
Strip length (A) [mm]	~ 5.5	~ 5.5	(B = <Ø 2.1) ~ 4 (B = >Ø 2.1) ~ 6	~ 5	~ 5	
Contact resistance [mΩ]	<3	<3	<5	<5	<5	
Max. conductor diameter [mm]	1.7	2.2	1.2	-	-	
Max. insulation diameter [mm] for insulation crimp	-	-	2.1	-	-	

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

TOOLING						
Part Number						
Hand crimping tool	B151	B151	B150	B151	B150	
Positioner	B201	B201	B055/A	B257	B055/A	
Insertion tool	-	-	-	-	-	
Extraction tool	-	-	-	-	-	

CONTACTS

STAMPED HCS™ PINS SERIES S						
Type	A	B	C	D		
Contact diameter [mm]	1	1	1	1		
Part number and layout	021.001005.1025 	021.001006.1025 	021.001007.1025 	021.001008.1025 		
Termination cross section* [mm²] AWG	0.03 - 0.08 (32 - 28)	0.08 - 0.2 (28 - 24)	0.2 - 0.5 (24 - 20)	0.75 - 1.0 (18)		
Max. nominal current [A] (20°C) at max. cross section	4	6	8	8		
Strip length (A) [mm]	~ 3	~ 3	~ 3	~ 3		
Contact resistance [mΩ]	<5	<5	<5	<5		
9000 pcs. big reel part number	021.001005.1025	021.001006.1025	021.001007.1025	021.001008.1025		
3000 pcs. big reel part number	021.001005.1025.A2	021.001006.1025.A2	021.001007.1025.A2	021.001008.1025.A2		

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

TOOLING						
Part Number						
Hand crimping tool for small reels	B287/32-28	B287/28-24	B287/24-20	B287/0.75-1		
Hand crimping tool for discrete contacts	B326	B326	B326	B326		
Positioner for discrete contacts	B326/1	B326/1	B326/2	B326/2		
Applicator for crimping machine	B288/32-28 B286/32-28	B288/28-24 B286/28-24	B288/24-20 B286/24-20	B288/0.75-1 B286/0.75-1	Schäfer ** Kirsten PP3	

**acc. to AMP standard

CONTACTS

STAMPED HCS™ SOCKETS SERIES S						
Type	A	B	C	D		
Contact diameter [mm]	1	1	1	1		
Part number and layout	020.000376.2000 	020.000377.2000 	020.000378.2000 	020.000379.2000 		
Termination cross section* [mm²] AWG	0.03 - 0.08 (32 - 28)	0.08 - 0.2 (28 - 24)	0.2 - 0.5 (24 - 20)	0.75 - 1.0 (18)		
Max. nominal current [A] (20°C) at max. cross section	4	6	8	8		
Strip length (A) [mm]	~ 3	~ 3	~ 3	~ 3		
Contact resistance [mΩ]	<5	<5	<5	<5		
9000 pcs. big reel part number	020.000376.2000	020.000377.2000	020.000378.2000	020.000379.2000		
3000 pcs. big reel part number	020.000376.2000.A2	020.000377.2000.A2	020.000378.2000.A2	020.000379.2000.A2		

*Mentioned crimp ranges are recommendations and only valid with flexible wires H05(07)V-K [mm²] acc. to DIN VDE 0281/0282 pp and with non compressed standard cables and wires acc. to DIN VDE 0295. It is possible that due to another structure of wires further cross sections and currents can be processed.

TOOLING						
Part Number						
Hand crimping tool for small reels	B287/32-28	B287/28-24	B287/24-20	B287/0.75-1		
Hand crimping tool for discrete contacts	B326	B326	B326	B326		
Positioner for discrete contacts	B326/1	B326/1	B326/2	B326/2		
Applicator for crimping machine	B288/32-28 B286/32-28	B288/28-24 B286/28-24	B288/24-20 B286/24-20	B288/0.75-1 B286/0.75-1	Schäfer ** Kirsten PP3	

**acc. to AMP standard

ASSEMBLY INSTRUCTIONS

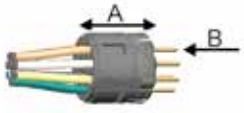
SIGNAL EXTENSION SSNV...

Page 1 of 1

	Stripping Length	
	Machined Contacts	Stamped Contacts
A	see catalogue page 32 - 33	~3 mm

Assembly

Dismantling



After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

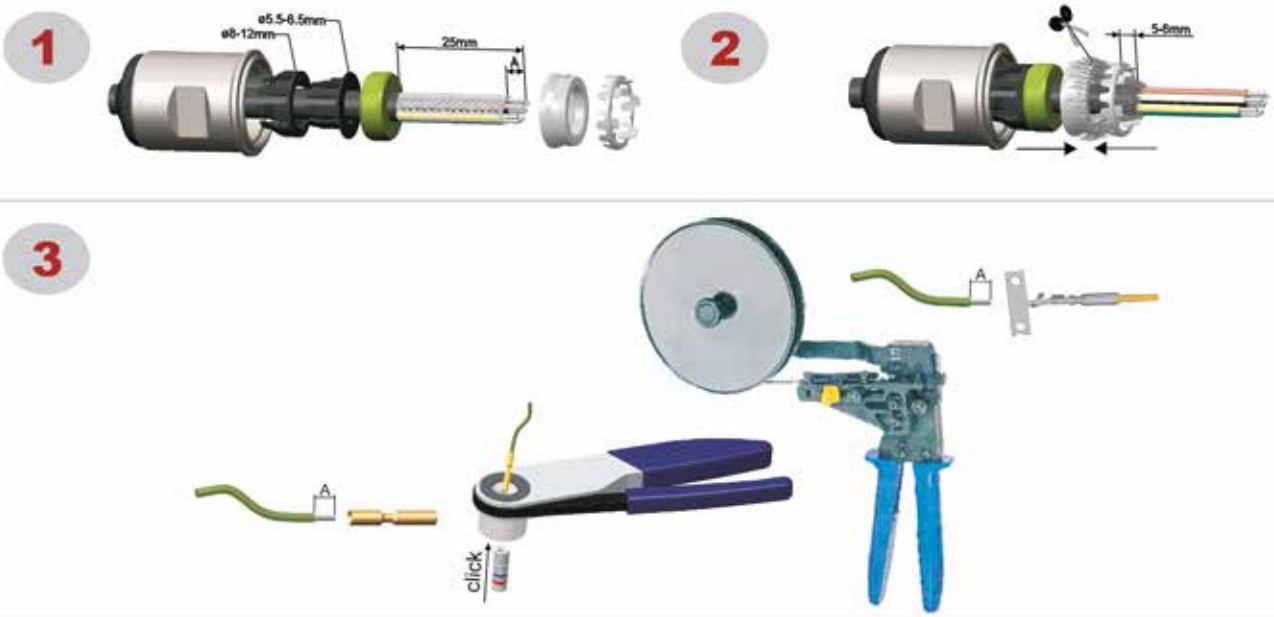
ASSEMBLY INSTRUCTIONS

SIGNAL PLUG SQNV...

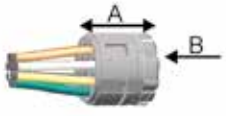
Page 1 of 1

	Stripping Length	
	Machined Contacts	Stamped Contacts
A	see catalogue page 32 - 33	~3 mm

Assembly



Dismantling



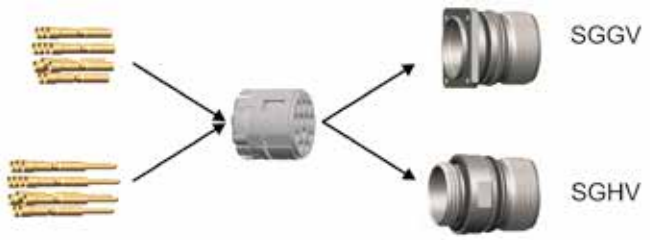
After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

ASSEMBLY INSTRUCTIONS

SIGNAL RECEPTACLE SGGV...SGHV...SGIV...SGGV..03

Page 1 of 2

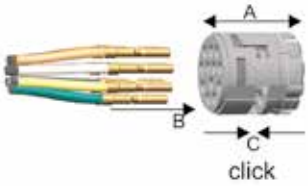
	Stripping Length	
	Machined Contacts	Stamped Contacts
A	see catalogue page 32 - 33	~3 mm



Assembly

1

2



3

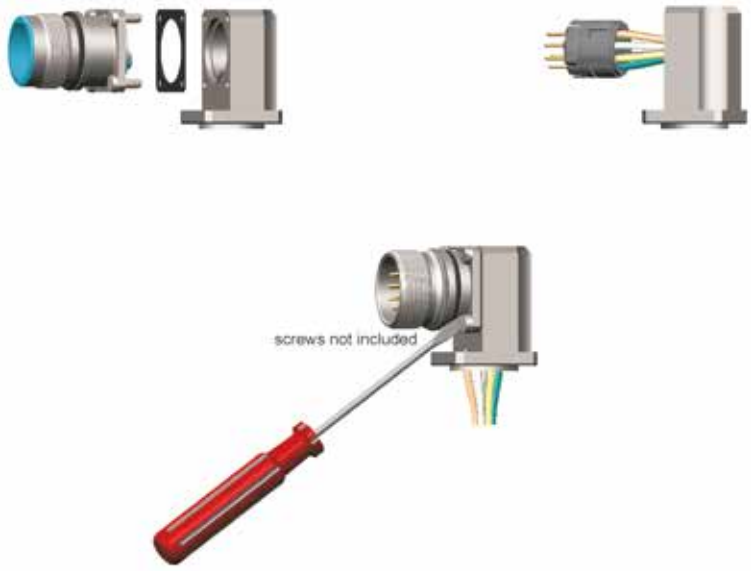
Dismantling

After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

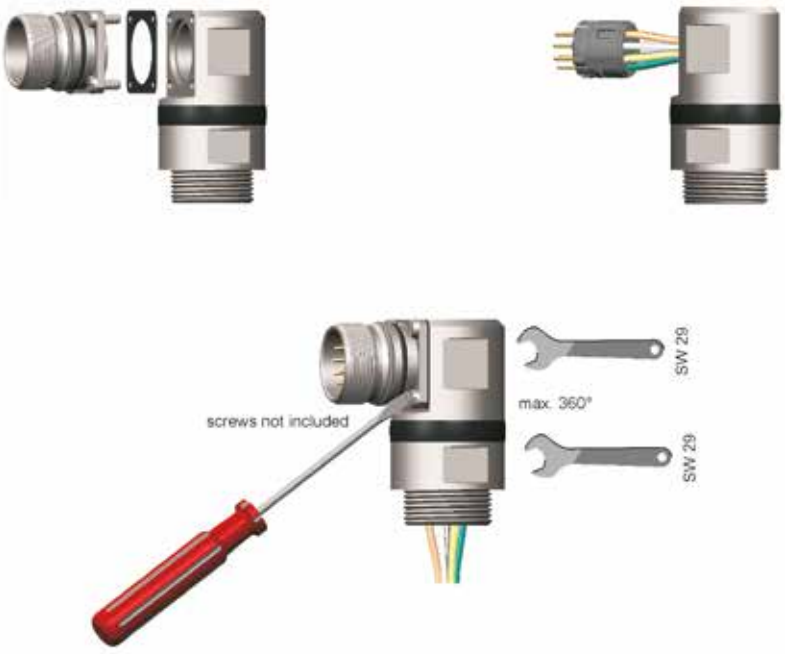
ASSEMBLY INSTRUCTIONS

SIGNAL RECEPTACLE SGGV...SGHV...SGIV...SGGV..03

SGIV



SGGV..03



After assembly the connector has to be checked for the functions of the safety precautions (according to EN 60204-1, VDE 0113 Teil 1)

TOOLS

CRIMPING TOOLS FOR MACHINED CONTACTS

Hand crimping tool	Positioner	Part number
 Part number B150		B055/A B201 B245 B257 B297 B305 B306

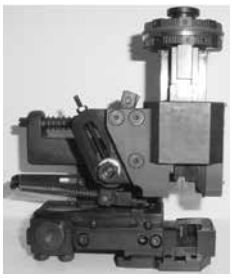
Hand crimping tool	Master Gauge	Part number
 Part number B151		B190 B230

INSERTION AND EXTRACTION TOOLS

Insertion tool	Extraction tool	Part number
 Part number B117		B132
 Part number B118		B037/10a
		B038/10

TOOLS

CRIMPING TOOLS FOR STAMPED HCS™ CONTACTS

Hand crimping tools with feeder line for HCS™ Ø 1mm	Termination Cross Section	Part number
 Part number B287/..	0.032 - 0.08mm² (AWG 32-28) 0.08 - 0.20mm² (AWG 28-24) 0.20 - 0.52mm² (AWG 24-20) 0.75 - 1.00mm²	B287/32-28 B287/28-24 B287/24-20 B287/0.75-1.00
Hand crimping tools for discrete HCS™ Ø 1mm contacts	**Positioner**	**Part number**
 Part number B326		B326/1 B326/2 B326/3
Crimping tool set incl. 3 positioners (A, B, C)	**Positioner separately**	**Part number**
 27	**Positioner A** (AWG 32-24) **Positioner B** 0.50 - 1.00mm² (AWG 24-20) **Positioner C** 1.50 - 4.00mm²	B326/1 B326/2 B326/3
Applicators for crimping machines with feeder line	**HCS™ Ø 1mm termination cross section**	**Part number**
 AMP / Schäfer ESP1000	0.032 - 0.08mm² (AWG 32-28) 0.08 - 0.20mm² (AWG 28-24) 0.20 - 0.52mm² (AWG 24-20) 0.75 - 1.00mm²	B288/32 - 28 B288/28 - 24 B288/24 - 20 B288/0.75 - 1.00
Applicators for crimping machines with feeder line	**HCS™ Ø 1mm termination cross section**	**Part number**
 Kirsten PP3	0.032 - 0.08mm² (AWG 32-28) 0.08 - 0.20mm² (AWG 28-24) 0.20 - 0.52mm² (AWG 24-20) 0.75 - 1.00mm²	B286/32 - 28 B286/28 - 24 B286/24 - 20 B286/0.75 - 1.00

CABLE CLAMPS

CABLE CLAMPS

Cable clamp No. 169 for SSNV/SQNV	Clamp range
	with reducing sleeve from 5.5 - 8.5mm without reducing sleeve from 8-12mm can be used for shielded and non shielded cables
Cable clamp No. 170 for LSNV	**Clamp range**
	with reducing sleeve from 7.7 - 12mm without reducing sleeve from 11-14.5mm can be used for shielded and non shielded cables
Cable clamps No. 305/306/307 for LQNV	**Clamp range**
	.305 cable diameter 5 - 9 mm .306 cable diameter 9 -15 mm .307 cable diameter 16 mm can be used for shielded and non shielded cables

ACCESSOIRES

Thread Protection Caps	Part number
	031.287.1000 (short) 031.405.1000 (long)

Dust Shield Caps	Part number	Description
	C/BEL/1	dust shield cap for extension and receptacle
	C/BEL/2	identical to C/BEL/1 with chain 75mm
	C/BEL/7	identical to C/BEL/1 with chain 120mm
	C/BEL/5	dust shield cap for power plug and panel feed through with chain 120mm
	C/BEL/6	dust shield cap for signal plug with chain 120mm

CuZn alloy dust shield caps, nickel plated. Stainless steel quality on demand

Disclaimer 2015

All of the information included in this catalogue is believed to be accurate at the time of printing. It is recommended, however, that users should independently evaluate the suitability of each product for their intended application and be sure that each product is properly installed, used and maintained to achieve desired results.
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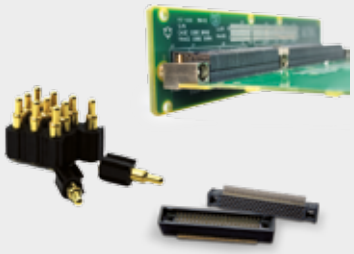
SMITHS CONNECTORS
PRODUCT LINES

PCB

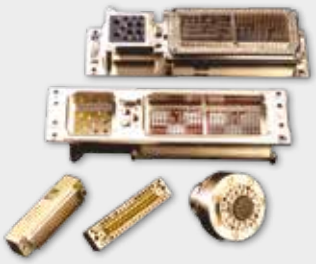


- Low, medium and high density board-to-board, cable to board and stacking
- Rugged standard
- Low profile
- Signal, power, coaxial & high speed configurations
- Self configurable board-to-board
- Spring probe connectors
- Mixed signal, power and coaxial contact connectors
- Different termination styles: solder cup, crimp, SMT and SMT flex, press fit, solder dip.

POWER

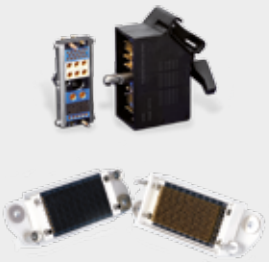
- Circular
- Configurable rectangular
- Ruggedized
- Single and Multi-Way Connectors
- Power contact up to 1,200 Amps
- Excellent performance in harsh environment conditions
- Cable assembling

EMI/EMP FILTER



- EMI/RFI filtering and transient protection
- RoHS compliant solderless filter connectors available
- Circular, ARINC, D-Subminiature Micro-D
- Filtered adapters for “bolt on” EMI /EMP solutions
- Filter hybrid capability

MODULAR/RECTANGULAR



- Configurable with modules for signal, power, coax, fiber optics and/or pneumatics
- Easy configuration in a single frame
- For rack & panel, and cable applications
- Guided hardware for blind
- D-sub connectors
- Micro-D style
- Signal connectors for hand held and docking stations

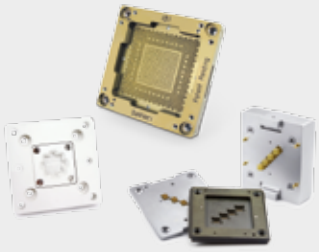
CIRCULAR

- Metal and Plastic
- Industrial M12, M23, M40, M58
- Crimp and solder terminations
- Various types of cable clamps
- Push Pull/ latch mechanism
- Color coding

HEAVY DUTY

- Ultra reliable hyperboloid contact
- Modular solution: signal, power, data contacts, and fiber optics
- High resistance in harsh environment
- EMC shielding
- Easy cable mounting
- High pressure up to 35K PSI, 250° C
- High temperature up to 440°C

SPRING PROBES

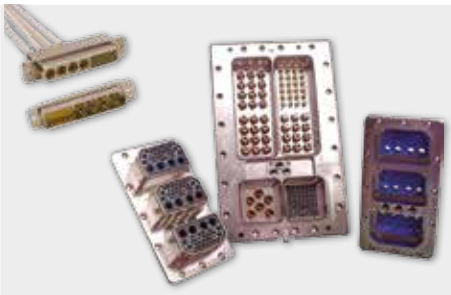


- Z-axis compliant
- Blind mate engagement
- Long cycle life
- High density
- Extreme miniaturization
- Printed circuit board test
- Bare board test
- Coaxial contacts

MIL/AERO STANDARD

- Standard military interface
- ARINC interface
- ARINC 801
- Custom inserts

HIGH SPEED COPPER/FIBER



- Quadrax and Twinax Connectors
- Rugged D-Sub Connectors
- ARINC and MIL-STD Contacts
- Micro Twinax/Quadrax
- Butt-Joint and Expanded Beam Contacts
- ARINC 801 Termini
- Floating Fiber Termini

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GLOBAL SUPPORT

AMERICAS

info.us@smithsconnectors.com

Costa Mesa, CA
1.714.371.1100

Hudson, MA
1.978.568.0451

Kansas City, KS
1.913.342.5544

EUROPE

France
33.2.32969176
info.fr@smithsconnectors.com

Germany
49.991.250.120
info.de@smithsconnectors.com

Italy
39.010.60361
info.it@smithsconnectors.com

United Kingdom
44.208.236.2400
info.uk@smithsconnectors.com

ASIA

asiainfo@smithsconnectors.com

Shanghai, China
86.21.3318.4650

Suzhou, China
86.512.6273.1188

Singapore
65.6846.1655

visit us at | **smithsconnectors.com** |