

851 SERIES



SOURIAU

Metal Connectors - Rugged - Industry Proven



Introduction

- Sealing options
- Black Zinc Nickel, Nickel plated and Black anodized
- Solder and PC tail versions
- Thermocouple crimp contacts available
- The 851 versions with solder contacts and Zinc Nickel plating (RoHS compliant) is on US QPL
- 851 connectors are also widely available from distributors.

SOURIAU 851 circular connectors were originally developed to ensure reliable electrical connections in aircraft. Due to the lightweight compact size and general characteristics, the 851-series has been utilized in numerous civil and military aviation applications and also in a multitude of light and heavy industrial applications (Robotics, Geophysics, Off-Road, Instrumentation, Factory Automation, etc.).

851 connectors conform to the following international standards: MIL-DTL-26482H series 1, NFC 93422, HE 301B, VG 95328, GAM/T1 list.

851 connectors feature a positive bayonet coupling mechanism which ensures reliable mechanical and electrical connection between mating halves. The plug features a helical locking ring which couples with the three dowel pegs on the receptacle ensuring rapid locking. Orientation and location is achieved with a system of five raised keys on the plugs which couple with corresponding slots on the receptacles. Connectors with different angular positioning of the insulator relative to the shell can be provided to prevent undesired accidental mating of adjacent connectors with the same contact arrangements.

The connector shells are manufactured from aluminum alloy with several finish options. The insulators are molded from elastomer and are bonded into the shells. Grommets are also made from elastomer and are supplied with appropriate accessories in the solder version. Copper alloy contacts have gold or tin over nickel plating. To facilitate cabling, we offer solder and PC tail contacts size 20 with a gold plated active part and tin plated terminations.

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851 SERIES

851 Series

Overview

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Typical Applications



Pavers - GPS Systems



Robotics - Machine Tools



Land Acquisition Systems



Traffic Control Hardware



Off-Road - Railway



Fracturing Monitoring

Features & Benefits

ENDURANCE

500 Mating Cycles

Equipped with a coupling ring made from high strength aluminum. The plug provides a minimum of 500 mating unmating cycles. The receptacle is equipped with rugged stainless steel bayonet pins.

QUALIFIED

MIL-DTL-26482H

Fully in accordance with the MIL spec requirements.

CORROSION RESISTANT

Salt Spray 500 Hours

Designed to withstand climate ingress and exposure to salt spray or corrosive atmospheres while still maintaining mechanical and electrical functionality.

QUICK MATING

1/3 Bayonet Coupling

With only 1/3 twist of the bayonet coupling system, connectors are mated with audible "click" and tactile feel to confirm proper mating. This mating features eliminates connection uncertainty and reduces time and labor during installation.

FLEXIBILITY

Arrangements from 2 to 61 contacts

Power supply and signal transmission can be combined in a unique interconnect solution to reduce system complexity and minimize component/installation costs.

PLUG

Plug with Backnut

06S

Plug with Short Metallic Adaptor and Plastic Cable Gland



Plug with Straight Cable Clamp

06L

Plug with Long Metallic Adaptor and Plastic Cable Gland



Plug with Adaptor Backnut

06NS

Plug with Short Metallic Adaptor and Plastic Cable Gland with Spiral Protector



Plug with Right Angle Cable Clamp

06NL

Plug with Long Metallic Adaptor and Plastic Cable Gland with Spiral Protector



Plug with Straight Sealing Gland Backshell

Overmolded

Plug with Straight Sealing Gland and Cable Clamp Backshell



Overview

06E



06EC



06A



08EC



06J



06JC



02E



Square Flange

RECEPTACLE

07A



Jam Nut

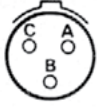
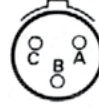
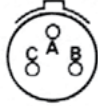
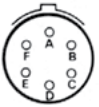
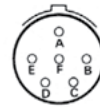
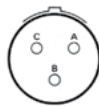
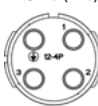
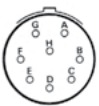
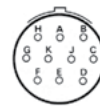
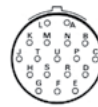
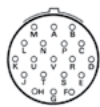
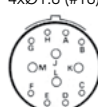
Ordering information

Basic Series	851	02E	8	3A	P	-	5716
Shell type: 02E: square flange receptacle not accepting backshells 07A: jam nut receptacle not accepting backshell 06E: plug with backnut 06EC: plug with straight cable clamp 06A: plug with adaptor backnut 08EC: plug with right angle cable clamp 06J: plug with straight sealing gland backshell 06JC: plug with straight sealing gland and cable clamp backshell 06S: plug with short metallic adaptor and plastic cable gland 06L: plug with long metallic adaptor and plastic cable gland 06NS: plug with short metallic adaptor and plastic cable gland with spiral protector 06NL: plug with long metallic adaptor and plastic cable gland with spiral protector							
Shell size: 8 - 10 - 12 - 14 - 16							
Contact layouts: See page 11							
Contact type: P: male S: female							
Orientation: Normal (not included in part number). For others note: w, x, y, z - see table page 24							
Obligatory suffix:							
Shell plating	Suffix solder type contact*	See table below	Suffix PC tail contact with shoulder*	See table below	Suffix PC tail contact without shoulder*	See table below	
Black Zinc Nickel	54	1	5416	1	54A7	3	
Black Zinc Nickel	57	2	5716	2	-	-	
Black Anodized	5029	1	50F9	1	50B3	3	
Black Anodized	5129	2	51F9	2	-	-	
Nickel	5044	1	5045	1	50G9	3	
Nickel	5144	2	5145	2	-	-	

	Description	Plating
1	#20 contact layouts except 8-2, 8-3, 8-4 and 12-4	Gold plated on active part and tin lead plated on termination area
	#16 contact layouts, mix #20, #16 contact layouts and contacts for 8-2, 8-3, 8-4 and 12-4	
2	#20 contact layouts except 8-2, 8-3, 8-4 and 12-4	Gold plated overall
3	All contact sizes and layouts	Gold plated overall

* All contacts are machined

Layouts

Shell size	Contact #16 (Ø 1.6 mm)	Contact #20 (Ø 1.0 mm)	Mixed Power
8		8-2 2 contacts 2xØ1.0 (#20)  8-3 3 contacts 3xØ1.0 (#20)  8-3A/8-98 3 contacts 3xØ1.0 (#20)  8-33 3 contacts 3xØ1.0 (#20)  8-4 4 contacts 4xØ1.0 (#20) 	
10		10-6 6 contacts 6xØ1.0 (#20)  10-98 6 contacts 6xØ1.0 (#20)  10-7 7 contacts 7xØ1.0 (#20) 	
12	12-2 2 contacts 2xØ1.6 (#16)  12-3 3 contacts 3xØ1.6 (#16)  12-4 3 contacts +ground 4xØ1.6 (#16) 	12-8 8 contacts 8xØ1.0 (#20)  12-10 10 contacts 10xØ1.0 (#20)  12-14 14 contacts 14xØ1.0 (#20) 	
14	14-5 5 contacts 5xØ1.6 (#16)  14-7 6 contacts +ground 7xØ1.6 (#16) 	14-18 18 contacts 18xØ1.0 (#20)  14-19 19 contacts 19xØ1.0 (#20) 	14-12 12 contacts 8xØ1.0 (#20) 4xØ1.6 (#16)  14-15 15 contacts 14xØ1.0 (#20) 1xØ1.6 (#16) 
16	16-8 8 contacts 8xØ1.6 (#16) 	16-26 26 contacts 26xØ1.0 (#20) 	16-23 23 contacts 22xØ1.0 (#20) 1xØ1.6 (#16) 

General Technical Characteristics



Materials

- **Shell:** Aluminum alloy
- **Backshells:** Aluminum alloy
- **Cable glands:** Thermoplastic
- **Coupling ring:** Aluminum alloy
- **Coupling spring:** Spring stainless steel
- **Insert:** Elastomeric soft neoprene
- **RoHS compliant & conforms to the Chinese standard SJ/T1166-2006 (Chinese RoHS equivalent)**



Environmental

- **Operating temperature:**
from -55°C to +125°C
- **Flammability rating:**
UL94 HB

- **Dynamic salt spray:**
per EIA-364-26
 - 48 h Nickel version
 - 500 h Black Anodized version
 - 500 h Black Zinc Nickel version
- **Sealing:**
 - Globally IP65 (unmated conditions)
 - With J or JC backshell IP67 (mated conditions)
 - With cable gland IP68 (mated conditions)
 - Under 10 meter of water during 48 hours
- **Fluid resistance:**
 - Hydraulic fluids
 - Lubricating oil
- **Insulation resistance**
≥ 5000 MΩ under 500 Vcc
- **Current rating per contact**
Size 20 = 7.5 A / Size 16 = 13 A
- **Contact resistance**
 - Environmental version:
Size 20 ≤ 4 mΩ / Size 16 ≤ 3 mΩ
- **Shielding effectiveness:**
70 dB to 5 MHz - 40 dB to 100 MHz

Electrical

- **Dielectric withstanding voltage:**
 - At standard pressure: mated and unmated connectors
 - 1500 Vrms between size 20 contacts (service 1)
 - 2300 Vrms between size 16 contacts (service 2)
 - 1500 Vrms between mixed size 20 and 16 contacts (service 1)
 - At reduced pressure 10 mbar: connectors mated and unmated
 - 200 Vrms between size 20 contacts (service 1)
 - 300 Vrms between size 16 contacts (service 2)

Mechanical

- **Durability:**
500 matings and unmatings per MIL-DTL-26482H
- **Vibration resistance:**
10-2000 Hz, acceleration 15 g test procedure per EIA-364-28
- **Thermal shock:**
5 cycles, 30 min. from -55°C to 125°C per EIA-364-32
- **Mechanical shock:**
50 g, 11 ms period per EIA-364-27

Notes

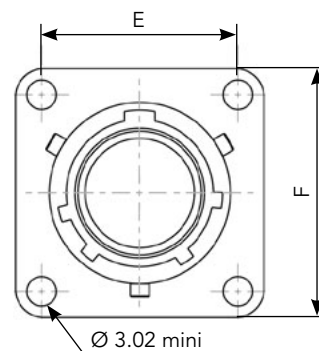
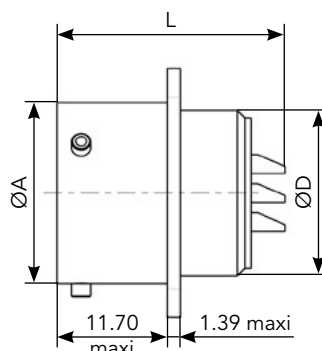
851 SERIES

Connector

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Receptacles

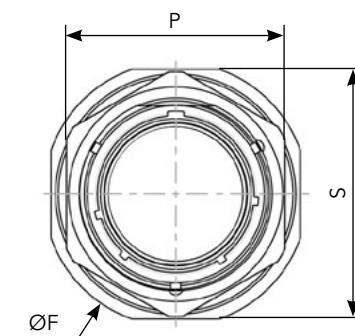
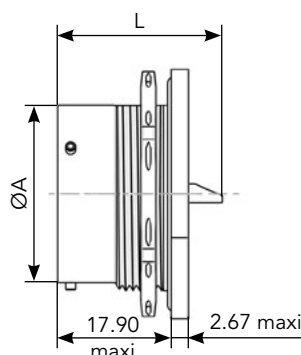
Square Flange Receptacle not Accepting Backshell, Solder Contact - 02E



Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØD maxi	E	F maxi
8	851 02E 8 ^P _S *	25.10	12.05	10.87	15.09	21.02
10	851 02E 10 ^P _S *	25.10	15.01	14.02	18.26	24.22
12	851 02E 12 ^P _S *	25.10	19.09	17.40	20.62	26.57
14	851 02E 14 ^P _S *	25.10	22.27	20.60	23.00	28.92
16	851 02E 16 ^P _S *	25.10	25.42	23.75	24.61	31.32

Black anodized* See page 10 "obligatory specification". Example: 85102E123P54

Jam Nut Receptacle not Accepting Backshell, Solder Contact - 07A

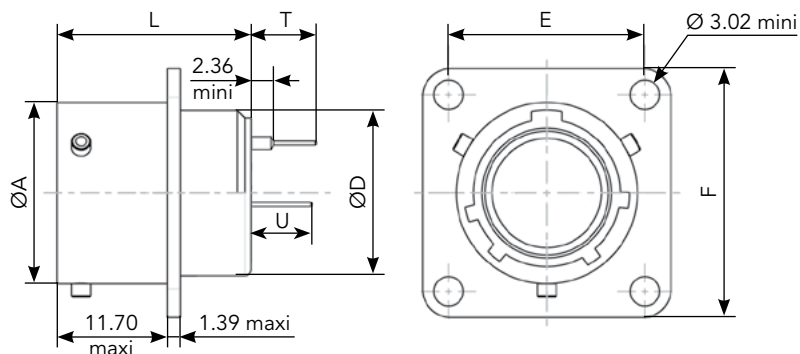


Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØF maxi	P maxi	S maxi
8	851 07A 8 ^P _S *	25.10	12.05	26.97	19.29	23.97
10	851 07A 10 ^P _S *	25.10	15.01	30.17	22.38	26.97
12	851 07A 12 ^P _S *	25.10	19.09	34.97	27.13	31.77
14	851 07A 14 ^P _S *	25.10	22.27	38.07	30.33	34.97
16	851 07A 16 ^P _S *	25.10	25.42	41.27	33.48	38.27

Black anodized* See page 10 "obligatory specification". Example: 85107A123P54

Note: all dimensions are in mm

Square Flange Receptacle not Accepting Backshell, PC Tail - 02E

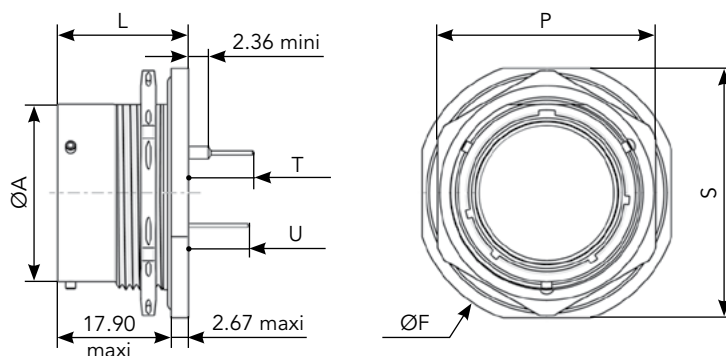


Shell size	Part numbers PC tail contacts	L maxi	ØA maxi	ØD maxi	E	F maxi	T ⁽¹⁾ mini	U ⁽²⁾ mini
8	851 02E 8 ^P _S *	20.57	12.05	10.87	15.09	21.02	9.46	8.68
10	851 02E 10 ^P _S *	20.57	15.01	14.02	18.26	24.22		
12	851 02E 12 ^P _S *	20.57	19.09	17.40	20.62	26.57		
14	851 02E 14 ^P _S *	20.57	22.27	20.60	23.00	28.92		
16	851 02E 16 ^P _S *	20.57	25.42	23.75	24.61	31.32		

Black anodized* See page 10 "obligatory specification". Example: 85102E123P54A7

(1) PC tail contact with shoulder
(2) PC tail contact without shoulder

Jam Nut Receptacle not Accepting Backshell, PC Tail - 07A



Shell size	Part numbers PC tail contacts	L maxi	ØA maxi	ØF maxi	P maxi	S maxi	T ⁽¹⁾ mini	U ⁽²⁾ mini
8	851 07A 8 ^P _S *	20.57	12.05	26.97	19.29	23.97	9.46	8.68
10	851 07A 10 ^P _S *	20.57	15.01	30.17	22.38	26.97		
12	851 07A 12 ^P _S *	20.57	19.09	34.97	27.13	31.77		
14	851 07A 14 ^P _S *	20.57	22.27	38.07	30.33	34.97		
16	851 07A 16 ^P _S *	20.57	25.42	41.27	33.48	38.27		

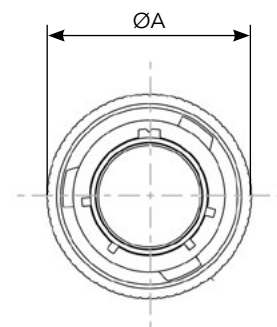
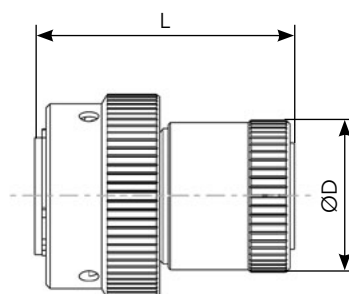
Black anodized* See page 10 "obligatory specification". Example: 85107A123P54A7

(1) PC tail contact with shoulder
(2) PC tail contact without shoulder

Note: all dimensions are in mm

Plugs

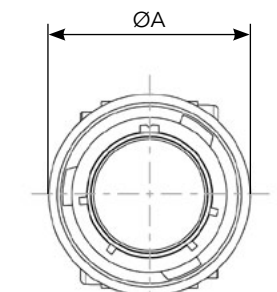
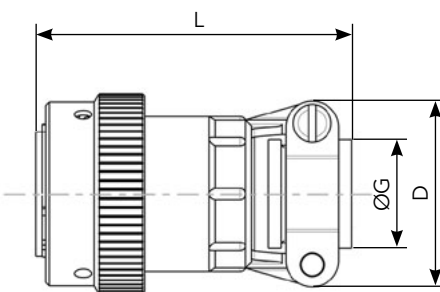
Plug with Backnut - 06E



Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØD maxi
8	851 06E 8 ^P _S *	32.54	19.05	13.50
10	851 06E 10 ^P _S *		21.80	16.70
12	851 06E 12 ^P _S *		26.15	19.90
14	851 06E 14 ^P _S *		29.35	23.40
16	851 06E 16 ^P _S *		32.50	26.60

Black anodized* See page 10 "obligatory specification". Example: 85106E123P54

Plug with Straight Cable Clamp - 06EC

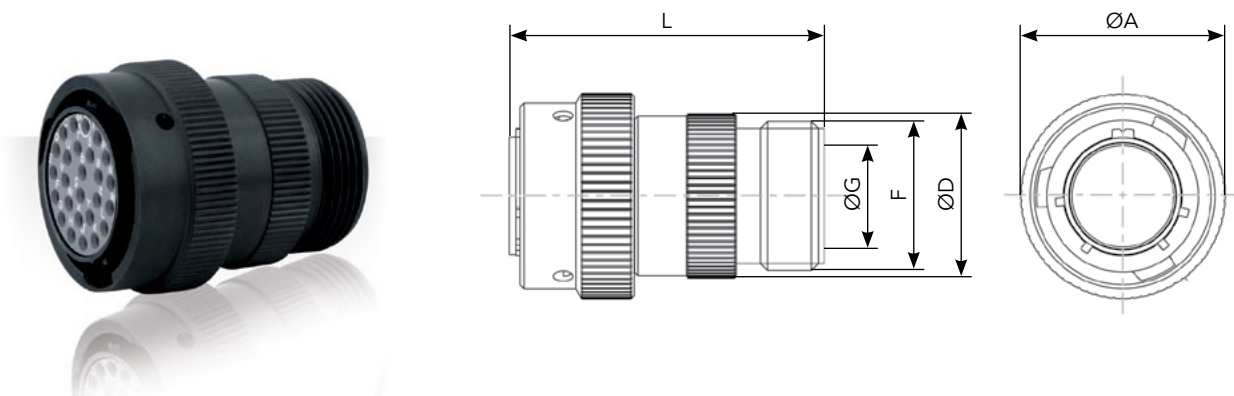


Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	D maxi	ØG maxi
8	851 06EC 8 ^P _S *	48.00	19.05	19.90	3.50
10	851 06EC 10 ^P _S *	48.00	21.80	21.50	5.00
12	851 06EC 12 ^P _S *	48.00	26.15	25.00	8.20
14	851 06EC 14 ^P _S *	48.00	29.35	27.80	10.00
16	851 06EC 16 ^P _S *	51.00	32.50	29.40	13.00

Black anodized* See page 10 "obligatory specification". Example: 85106EC123P54

Note: all dimensions are in mm

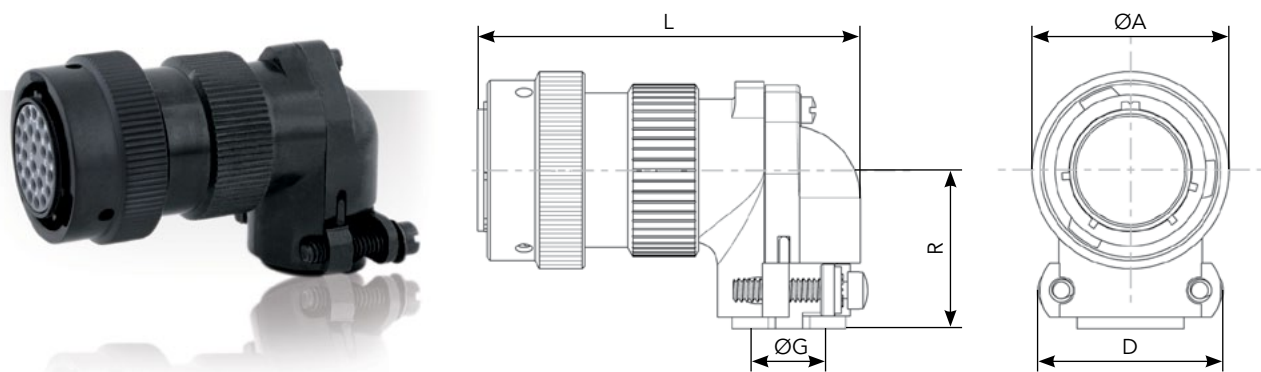
Plug with Adaptor Backnut - 06A



Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØD maxi	ØG maxi	F threading UNEF 2A
8	851 06A 8 ^P _S *	41.00	19.05	14.50	9.10	1/2 28
10	851 06A 10 ^P _S *	41.00	21.80	18.70	12.08	5/8 24
12	851 06A 12 ^P _S *	41.00	26.15	21.70	15.25	3/4 20
14	851 06A 14 ^P _S *	41.00	29.35	25.10	18.15	7/8 20
16	851 06A 16 ^P _S *	41.00	32.50	28.13	21.32	1 20

Black anodized* See page 10 "obligatory specification". Example: 85106A123P54

Plug with Right Angle Cable Clamp - 08EC



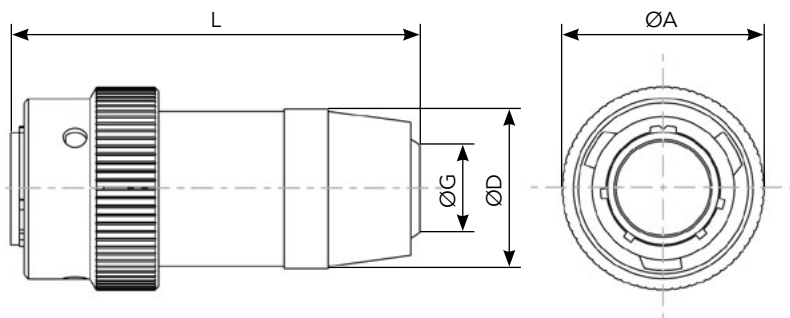
Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	D maxi	R maxi	ØG maxi
8	851 08EC 8 ^P _S *	50.10	19.05	19.70	16.00	3.50
10	851 08EC 10 ^P _S *	52.60	21.80	21.20	18.00	5.00
12	851 08EC 12 ^P _S *	54.90	26.15	24.20	19.50	8.20
14	851 08EC 14 ^P _S *	58.50	29.35	27.50	22.00	10.00
16	851 08EC 16 ^P _S *	60.80	32.50	29.10	23.50	13.00

Black anodized* See page 10 "obligatory specification". Example: 85108EC123P54

Note: all dimensions are in mm

Plugs (Continued)

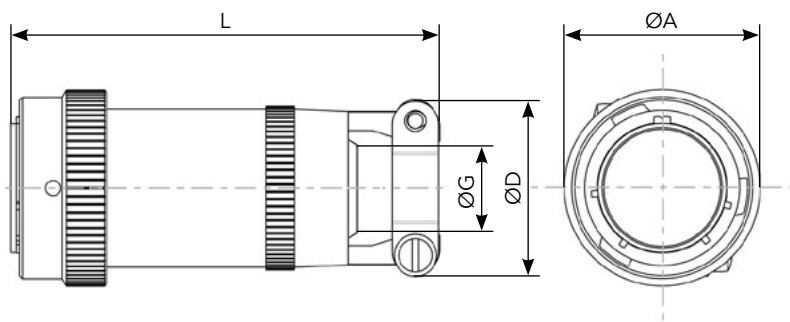
Plug with Straight Sealing Gland Backshell - 06J



Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØD maxi	ØG	
					mini	maxi
8	851 06J 8 ^P _S *	47.60	19.05	14.40	5.02	5.84
10	851 06J 10 ^P _S *	47.60	21.80	17.60	5.94	6.76
12	851 06J 12 ^P _S *	49.20	26.15	21.10	9.34	10.16
14	851 06J 14 ^P _S *	54.00	29.35	24.40	11.32	12.14
16	851 06J 16 ^P _S *	59.60	32.50	27.60	14.73	15.55

Black anodized* See page 10 "obligatory specification". Example: 85106J123P54

Plug with Straight Sealing Gland and Cable Clamp Backshell - 06JC



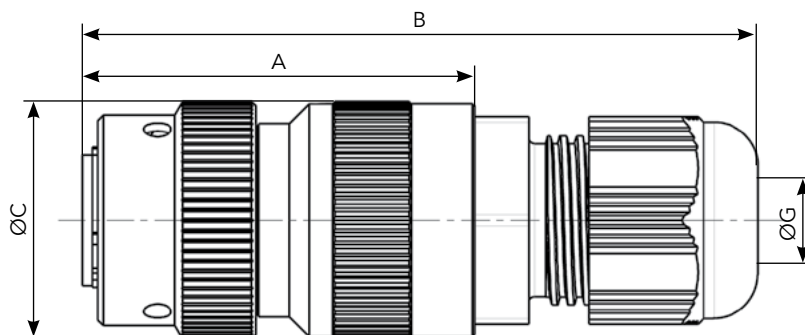
Shell size	Part numbers solder contacts	L maxi solder	ØA maxi	ØD maxi	ØG	
					mini	maxi
8	851 06JC 8 ^P _S *	57.68	19.05	19.90	5.02	5.84
10	851 06JC 10 ^P _S *	57.68	21.80	21.50	5.94	6.76
12	851 06JC 12 ^P _S *	61.24	26.15	25.00	9.34	10.16
14	851 06JC 14 ^P _S *	66.01	29.35	27.80	11.32	12.14
16	851 06JC 16 ^P _S *	74.75	32.50	29.40	14.73	15.50

Black anodized* See page 10 "obligatory specification". Example: 85106JC123P54

Note: all dimensions are in mm

Plugs with Metallic Adaptor and Plastic Cable Gland

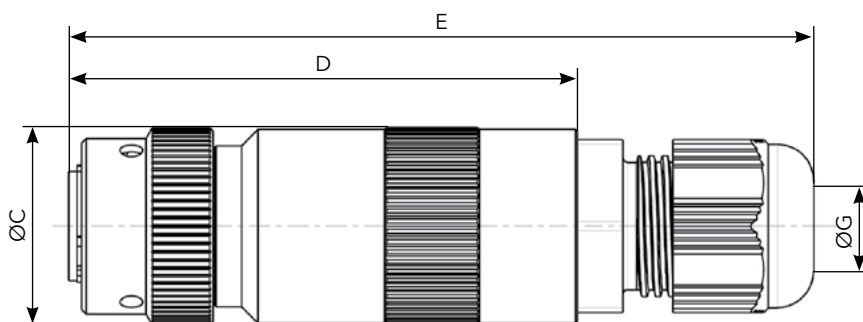
Plug with Short Metallic Adaptor and Plastic Cable Gland - 06S



Shell size	Part numbers solder contacts	A maxi	B maxi	ØC maxi	ØG	
					mini	maxi
8	851 06S 8 ^P _S *	37.00	61.00	19.30	4.00	5.00
10	851 06S 10 ^P _S *	37.00	64.00	22.00	4.00	6.00
12	851 06S 12 ^P _S *	37.00	66.00	26.30	4.00	7.00
14	851 06S 14 ^P _S *	37.00	67.00	29.50	4.00	9.00
16	851 06S 16 ^P _S *	42.00	75.00	32.70	6.00	12.00

Black anodized* See page 10 "obligatory specification". Example: 85106S123P54

Plug with Long Metallic Adaptor and Plastic Cable Gland - 06L



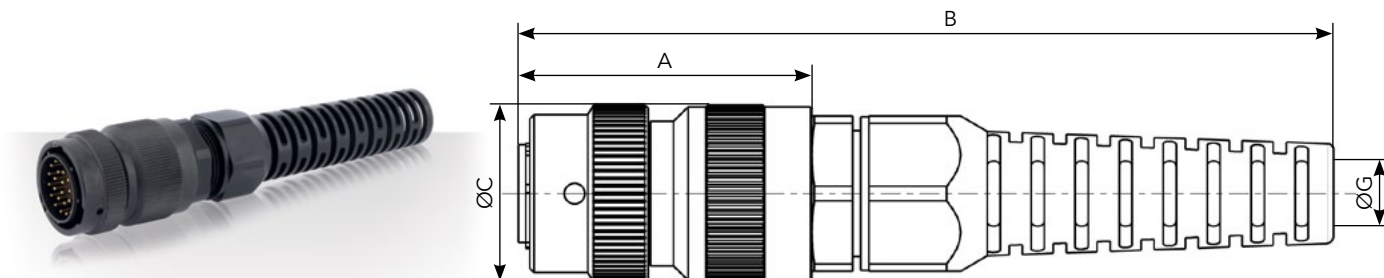
Shell size	Part numbers solder contacts	D maxi	E maxi	ØC maxi	ØG	
					mini	maxi
8	851 06L 8 ^P _S *	57.00	81.00	19.30	4.00	5.00
10	851 06L 10 ^P _S *	57.00	84.00	22.00	4.00	6.00
12	851 06L 12 ^P _S *	57.00	86.00	26.30	4.00	7.00
14	851 06L 14 ^P _S *	57.00	87.00	29.50	4.00	9.00
16	851 06L 16 ^P _S *	57.00	90.00	32.70	6.00	12.00

Black anodized* See page 10 "obligatory specification". Example: 85106L123P54

Note: all dimensions are in mm

Plugs with Metallic Adaptor and Plastic Cable Glamp (Continued)

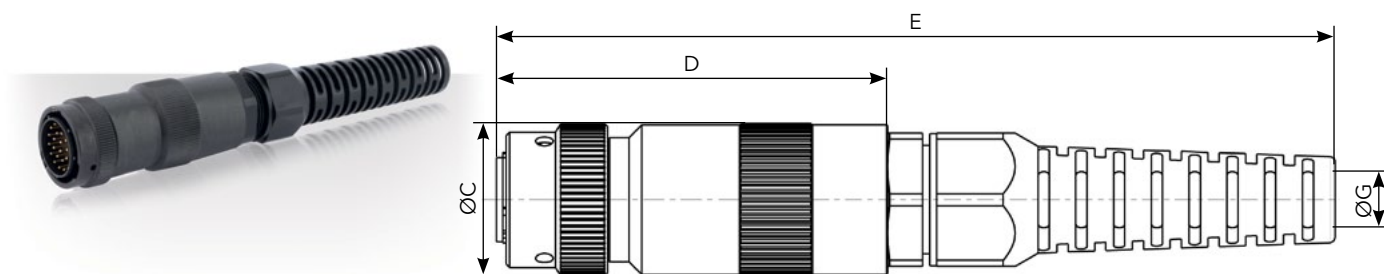
Plug with Short Metallic Adaptor and Plastic Cable Gland with Spiral Protector - 06NS



Shell size	Part numbers solder contacts	A maxi	B maxi	ØC maxi	ØG	
					mini	maxi
8	851 06NS 8 ^P _S *	37.00	91.00	19.30	4.00	6.50
10	851 06NS 10 ^P _S *	37.00	101.00	22.00	4.00	7.00
12	851 06NS 12 ^P _S *	37.00	114.00	26.30	4.00	7.00
14	851 06NS 14 ^P _S *	37.00	125.00	29.50	4.00	7.00
16	851 06NS 16 ^P _S *	42.00	144.00	32.70	6.00	11.0

Black anodized* See page 10 "obligatory specification". Example: 85106NS123P54

Plug with Long Metallic Adaptor and Plastic Cable Gland with Spiral Protector - 06NL



Shell size	Part numbers solder contacts	D maxi	E maxi	ØC maxi	ØG	
					mini	maxi
8	851 06NL 8 ^P _S *	57.00	111.00	19.30	4.00	6.50
10	851 06NL 10 ^P _S *	57.00	121.00	22.00	4.00	7.00
12	851 06NL 12 ^P _S *	57.00	134.00	26.30	4.00	7.00
14	851 06NL 14 ^P _S *	57.00	145.00	29.50	4.00	7.00
16	851 06NL 16 ^P _S *	57.00	159.00	32.70	6.00	11.0

Black anodized* See page 10 "obligatory specification". Example: 85106NL123P54

Note: all dimensions are in mm

Harnesses



- Connector**
- Shielded metal connector
 - Sealing: IP68 mated
 - 4 layouts: (8-4/10-6/12-10/14-19)
 - Other layouts on request, consult us
 - Rapid 1/3 turn coupling
 - Conforms to the international standard MIL-DTL-26482H series 1

- Cable**
- TPE outer sheath (black color)
 - Multi-conductor 10, 12 or 14
 - 300V
 - Shielded
 - Flammability rating UL 1581 Sec.1080 (VW-1)
 - Resistant to a wide range of chemical fluids

- Applications**
- Instrumentation & measurement
 - Industrial robots
 - Machine tools
 - Off-Road
 - Mining

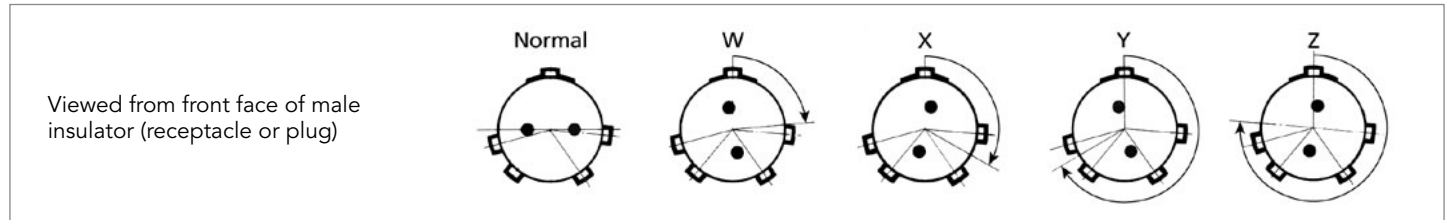
Plating	Salt spray	Temperature	Sealing Mated	Mechanical	Shielding
Black Zinc Nickel	500 H	-55° C up to + 125° C	IP68	500 matings unmatings	70 dB
Black Anodized	500 H	-55° C up to + 125° C	IP68	500 matings unmatings	
Nickel	48 H	-55° C up to + 125° C	IP68	500 matings unmatings	

With appropriate cable and overmold



Orientation

Insulator Rotated Inside Metal Body



Shells	Layouts	Angle in degrees				#16 1500 Vrms	#20 2300 Vrms
		W	X	Y	Z		
8	2	58	122	-	-	X	-
	3	60	210	-	-	X	-
	3A (98)*	60	210	-	-	X	-
	4	45	-	-	-	X	-
	33	90	-	-	-	X	-
10	6	90	-	-	-	X	-
	7*	90	-	-	-	X	-
	98	90	180	240	270	X	-
12	2	-	-	-	-	-	X
	3	-	-	180	-	-	X
	4	-	-	-	-	X	-
	8	90	112	203	292	X	-
	10	60	155	270	295	X	-
	14*	45	-	-	-	X	-
14	5	40	92	184	273	-	X
	7	-	-	-	-	X	-
	12	43	90	-	-	X	-
	15	17	110	155	234	X	-
	18	15	90	180	270	X	-
	19	30	165	315	-	X	-
16	8	54	152	180	331	-	X
	23	158	270	-	-	X	-
	26	60	-	275	338	X	-

* 8-98 layout, W and X non standard orientations
 10-7 & 12-14 layouts, W non standard orientation

Cross Reference List

851 Version with Solder Contacts (Black Zinc Nickel)

SOURIAU	MIL-DTL-26482H Series 1
851 00 E 54/57	MS 3110 EK
851 00 EC 54/57	MS 3110 FK
851 00 AC 54/57	-
851 00 P 54/57	MS 3110 PK
851 00 A 54/57	-
851 00 J 54/57	-
851 00 JC 54/57	MS 3110 JK
851 01 E 54/57	MS 3111 EK
851 01 EC 54/57	MS 3111 FK
851 01 AC 54/57	-
851 01 P 54/57	MS 3111 PK
851 01 A 54/57	-
851 01 J 54/57	-
851 01 JC 54/57	MS 3111 JK
851 02 E 54/57	MS 3112 EK
851 06 E 54/57	MS 3116 EK
851 06 EC 54/57	MS 3116 FK
851 06 AC 54/57	-
851 06 P 54/57	MS 3116 PK
851 06 A 54/57	-
851 06 J 54/57	-
851 06 JC 54/57	MS 3116 JK
851 08 EC 54/57	-
851 08 P 54/57	-
851 07 E 54/57	MS 3114 EK
851 07 EC 54/57	MS 3114 FK
851 07 AC 54/57	-
851 07 P 54/57	MS 3114 PK
851 07 A 54/57	-

Notes

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