BLACK ZINC NICKEL

SOURIAU

RoHS Black Zinc Nickel
Corrosion Free Solution

Esterline
Connection Technologies

Black Zinc Nickel

Presentation

The new SOURIAU RoHS Zinc Nickel: The first QPL qualified cadmium free plating.

Various Environmental Directives impose requirements on the electrical and electronic equipment manufacturers: the RoHS (Restriction of use of certain Hazardous Substances) directive, part of the WEEE (Waste Electrical and Electronic Equipment) directive.

SOURIAU has more than 10 years of experience in producing Zn Ni with continuous improvements to comply with MilAero harsh environment conditions. As a result, SOURIAU Zn Ni provides customers with the most cost-effective solution for a cadmium alternative finish.

SOURIAU Zinc Nickel is the first QPL qualified to the most recent release of the MIL 38999 standard (rev. L).

Contents

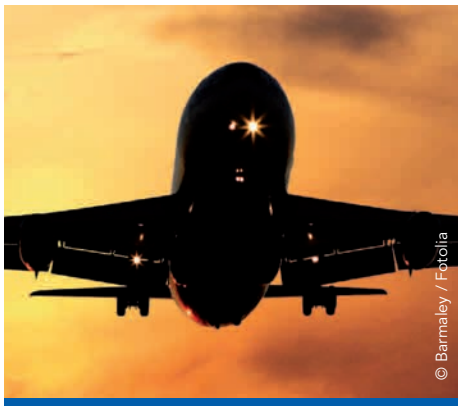
BLACK ZINC NICKEL

Black Zinc Nickel

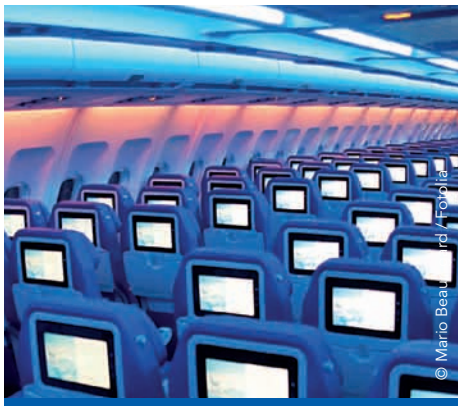
Overview

Typical applications

Aircraft Actuators



External lighting



Cabin

Turrets

Weapons bays

Military Computer

Features & Benefits

RoHS

Cadmium Free Plating

Decade of experience.
Production process in accordance with the RoHS Directives.
RoHs compliancy certified by an independent laboratory.

RELIABLE

High Performance

500 mating/unmating cycles.
Temperature range: -65°C to +175°C.
Non reflective black colored finish.

QPL

Meets MIL-DTL-38999 Requirement

SOURIAU Black Zinc Nickel plating was QPL qualified in 2010.
The best solution in terms of performance, process and cost.
The new standard for the cadmium replacement.

SALT SPRAY

500h Salt Spray Withstanding

Entire performance of 38999 Series Cadmium range preserved.
Maintain the same mechanical and electrical characteristics.
Shell to shell continuity: < 2.5 mΩ.

COMPA-TIBILITY

Fully Compatible with Other Platings

Perfectly mated to legacy cadmium plated connectors.
No significant galvanic reaction with Cadmium or Zinc Cobalt.

SOURIAU black zinc nickel

MIL-DTL-38999 Series I

8LT Series, see page 16

Application:
- Civil & Military aerospace
- Marine equipments

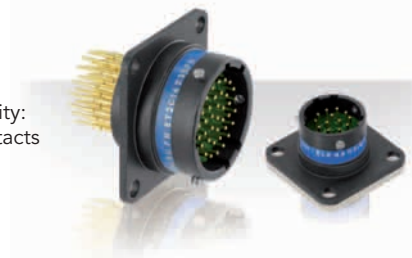
Main features:
- Scoop proof
- Bayonet coupling
- Numerous layouts

MIL-DTL-38999 Series II

8T Series, see page 18

Application:
- Civil & Military aerospace
- Box equipments

Main features:
- Low profile
- High contact density: from 1 to 128 contacts



MIL-DTL-38999 Series III

8D Series, see page 20

Application:
- Civil & Military aerospace
- Ground military

Main features:
- Quick screw coupling
- High environments: 200°C, high vibration, 500h salt spray
- Clinch nut, double flange, ...

8D Series High Power

See page 22

According to:
MIL-DTL-38999 Series III

Application:
- Civil & Military aerospace
- Ground equipments

Main features:
- Up to 850A
- 3 shell sizes: 19, 23 & 25
- Modular design

A Global RoHS Solution

In addition to its connectors, SOURIAU offers a complete RoHS interconnection solution: accessories with black zinc nickel finish and tin plated RoHS contacts.

A wide range of black zinc nickel plated caps and backshells.

Cost and time saving: only one supplier for connectors, contacts and accessories.

Full RoHS compliance with the connector and the accessories.

Backshells

See page 30

- Backshells for aeronautic and ground applications
- A wide range available:
  Backnut,
  Cable clamp,
  Crimp ring,
  Shrink boot,
  Band lock,
  Double cone, ...

products overview

micro38999

See page 24

According to:
MIL-DTL-38999 Standards

Application:
- Civil & Military aerospace
- Communication equipments

Main features:
- 3 coupling systems: bayonet, threaded, break away
- Integrated backshell

VG96912 and JN1003

8ST Series, see page 26

Application:
- Civil & Military aerospace
- Ballistic missiles and weapon systems

Main features:
- High contact density
- MIL-C-38999 Series I contact layouts
- RFI-EMI shielding and shell to shell continuity

VG96918

848 Series, see page 28

Application:
- Military ground equipment
- Heavy weapons

Main features:
- Reverse bayonet
- Power supply up to 63A
- Large variety of backshells

MIL-C 26482 G Series I

851 Series, please consult us

Application:
- Industry
- Military ground equipment

Main features:
- Wide choice of body styles and back fittings
- Solder, crimp, PC-tail and wire-wrap versions

Caps

See page 32

- Caps for plugs and receptacles
- To protect from dust, moisture, contact bending, ...
- Available with ring or eyelet

Tin Plated PCB Contacts

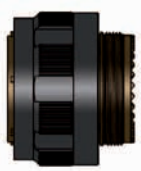
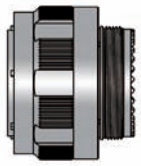
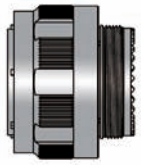
See page 34

- RoHS version available
- PC tail with or without shoulder

SOURIAU main platings comparison

SOURIAU Plating	Robustness	Weight	Conductivity	RoHS	Designed for Unpressurized Area
Composite Nickel	++		++++	RoHS	
Aluminum Black Zinc Nickel	**+++**	-30%	**+++**	RoHS	
Aluminum Olive Green Cadmium	+++		+++		
Stainless Steel Passivated	++++		+++	RoHS	
Aluminum Nickel	++++		+++	RoHS	

SOURIAU plating compatibilities with Black Zinc Nickel

Aluminum Black zinc nickel (Z)		500 H Salt Spray		Composite Cadmium (J)
Aluminum Black zinc nickel (Z)		500 H Salt Spray		Aluminum Cadmium (W)
Aluminum Black zinc nickel (Z)		250 H Salt Spray		Stainless steel Passivated (K)
Aluminum Black zinc nickel (Z)		150 H Salt Spray		Composite Nickel (M)
Aluminum Black zinc nickel (Z)		125 H Salt Spray		Aluminum Zinc cobalt (ZC)
Aluminum Black zinc nickel (Z)		48 H Salt Spray		Aluminum Nickel (F)

Notes: Same salt spray withstanding with reverse configuration (plug black zinc nickel + receptacle with other Souriau platings).
Aluminum black zinc nickel + alodine plate = 500 hours salt spray.

SOURIAU plating capabilities

- **Plating process masters in house:**
  - **Plating production lines dedicated to 38999 Series**
  - **Full automatic line process**
  - **Mass production capability**
- **For many years, SOURIAU has been developing and improving environmentally friendly processes in order to anticipate and then exceed environmental regulations.**
- **Production site is ISO 14001 since 2001 with Zero Cadmium emission!**

Comparison of plating codes available on the market

Requirement		Aluminum Electroless Nickel	Aluminum Cadmium	Composite Nickel	Aluminum Black Zinc Nickel	Others		
						Nickel PTFE		Pure Electro Deposited Aluminum
						Thick	Thin	
Finish code class per MIL spec.		F	W	M	Z	T		P
RoHs Compliant			No		(1)		- (8)	- (9)
Galvanic compatibility with cadmium		Poor	Very good	No	**Good** (2)	Poor (3)	Poor (3)	Good
Easy to produce in mass production and with multi sourcing						No (4) (10)	No (4) (10)	No (5)
Finish according to standard		ASTM B733	ASTM B766		ASTM B841	No standard (6) (proprietary process)	No standard (6) (proprietary process)	No standard (6) (proprietary process)
Shell-to-Shell Continuity < 2.5 mΩ		<1 mΩ						
Durability (500 mating cycles)								- (7)
Dynamic salt spray resistance		48 hours	500 hours	2000 hours	**500 hours**	500 hours	500 hours (8)	500 hours (7)
Temperature rating	according to standard 175°C							
	200°C		No					
Not Reflective		No		No				
Non-Magnetic								
Cr6+ < 0.01 % (RoHS limit = 0.1 % max)			No				- (8)	- (9)
Easy to check homogeneity / Thickness of layer						No (10)	No (10)	
Environment friendly		Poor	Poor	Poor	**Good**	Poor (11)	Poor (11)	-
Human health and safety			Poor			Poor (12)	Poor (12)	Poor (13)
Compatibility with new de-icing fluid (with potassium acetate)					(14)	- (14)	- (14)	- (14)

See next page for notes explanation.

1 SOURIAU Zinc Nickel (Z code) and RoHS

A unique SOURIAU plating process compliant with RoHS regulation for Cadmium and Cr6+ restriction.

2 Electrical compatibility of Zinc Nickel (Z code with Cadmium (W code)

Electrical potential of Zinc Nickel and Cadmium are very similar which removes the risk of galvanic corrosion and defects after 500 hours salt spray.

3 Electrical compatibility of Nickel PTFE (T code) with cadmium (W code)

PTFE is an inert polymer, therefore the galvanic potential of Nickel + PTFE will be the potential of the Nickel alone. It means that the electrical compatibility is not guaranteed between Nickel PTFE and Cadmium for long salt exposure, which is not the case for Zinc Nickel (electrical potential close to Cadmium).

4 Nickel PTFE (T code) production processes complex and expensive

Nickel PTFE requires specially manufactured high tolerance machined parts (special requirement on surface roughness) as the thicker plating is not compatible with standard machined parts.

- These special machined parts lead to a higher cost and quality risk (mixing very similar parts and special care in case of outsourcing).
- Therefore, the high thickness of nickel PTFE means a long deposit time and also a more expensive process.
- The lifetime of the chemical mixture is half than an electrolytic nickel or nickel alloy (Zinc Nickel) mixture.

5 Pure Electrodeposited Aluminum (P code) very complex and unique deposition process

Very complex and explosive process which requires a building with special containment facility and not available in standard plating shops. Main limitation are the following:

- Flammable and explosive solvent which requires inert atmosphere.
- Highly skilled worker (expertise and training)
- Specific care for handling and storage of mixture in a separate building.

6 ASTM standards

These standards are defined to allow a reliable quality level of plating process with multisourcing option. Nickel PTFE (T code) and Pure Electrodeposited Aluminum (P code) are not defined by ASTM industrial standards.

7 Cycles of durability, limitation for Pure Electrodeposited Aluminum (P code)

Performance limitation has been raised in 38999 dynamic salt spray by tests against Pure Electrodeposited Aluminum:

- Galling: abrasive wear of Ni-plated EMI band leads to generate conductive particles with a potential risk of short circuiting the contacts.
- Requires use of lubricants - limited effectiveness, risk of lower electrical continuity.

8 Thin Nickel PTFE (T code) salt spray resistance

Thin Nickel PTFE (T code) could require Cr VI to meet corrosion performance and consequently not comply with ROHS limit.
This is one way to heal pores at defect sites of the primary parts and to decrease the production cost of the thick Nickel PTFE plating (see note 4).

9 Pure Electrodeposited Aluminum (P code) and Chromium VI

Chromium VI is required to meet high corrosion performances.

10 Thickness control of Nickel PTFE layer (Thin and Thick Layer)

There is no standard in line equipment to control the homogeneity of PTFE concentration within the plating material and the only way to control the PTFE concentration is achieved with complex lab equipment such as Scanning Electron Microscope (PTFE is a non conductive material).
There is consequently a strong limitation for in line process control and ability to outsource. It means that the lack of control associated with the risk of non homogeneity of the PTFE concentration could lead to an uncontrolled dormant failure and a rapid corrosion.

11 Environment friendly, limitation for Nickel PTFE (T code)

The average bath lifetime of the chemical nickel PTFE is half that of electroless nickel and 10 times less than nickel alloy (zinc nickel) bath. This leads to a higher waste volume of nickel pollution. Furthermore, the waste toxicity of electroless nickel or nickel alloys is higher than the electrolytic process:

Toxicity level ↑

- Cadmium
- Nickel electroless
- Nickel PTFE
- Electrolytic zinc nickel

In addition, the PTFE material is toxic and indestructible.
Some PTFE suppliers might stop their PTFE production after 2013 (ie. Dupont)

12 Nickel PTFE (T code) is potentially hazardous to human health

The Nickel PTFE material is recognized as toxic and indestructible.Most of the experts are considering PFOA (used in PTFE) a «likely human carcinogen». This was also proposed by the Environmental Protection Agency (EPA).

13 Pure Electrodeposited Aluminum (P code) process is very hazardous to safety

For Pure Electrodeposited Aluminum, production is a very high risk for human safety due to:

- Flammable and explosive solvent which requires inert atmosphere.
- High skilled of workers necessary (expertise and training).
- Specific care for handling and storage of mixture in a separate building.
- Pure Electrodeposited Aluminum is considered a dangerous explosive process for people involved in the plating process.

14 De-icing fluid (contains potassium acetate)

SOURIAU Zinc Nickel is compatible with de-icing fluids containing potassium acetate.
No datas found regarding Nickel PTFE or Pure Electrodeposited Aluminum.

BLACK ZINC NICKEL

Black Zinc Nickel

Product Ranges

Description

- High contact density
- Bayonet coupling
- Contact protection: 100% Scoop proof
- Shell size from 9 to 25
- Accessories available (protective caps, backshells, etc…)
- RFI - EMI shielding and shell to shell continuity
- Hermetic
- Aluminum alloy

Technical features

Materials

- **Shell:** aluminum alloy
- **Plating:** black zinc nickel (Z)
- **Insulator:** thermoplastic or metallic version available for specification 284 & 384
- **Grommet or seal:** liquid silicone rubber or fluorocarbone elastomer for spec. 022
- **Contact:** copper alloy
- **Plating contact:** gold over nickel
- **Endurance:**
  500 mating / unmating operations
- **Shock:** 300 g during 3 ms and as per MIL S 901 grade A
- **Vibration:**
  . Sine 10 to 2000 Hz - 30 g
  . Random 100 à 300 Hz - 5 g²/Hz
- **Contact retention (min force in N):**

Contacts size	24	22	20	16	12	8	4
Min force in N	30	44	67	111	111	111	200

Electrical

- **Test voltage (Vrms)**

Service	sea level	at 21000 m
R	400	N/A
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

- **Insulation resistance:**
  ≥ 5 000 MW (at 500 Vcc)
- **Contact resistance:**

Contacts size	26	22	20	16	12	8	4
Resistance mΩ	16	14.6	7.3	3.8	3.5	3	2

- **Contact rating:**

Contacts size	26	22	20	16	12	8	4
Rating (A)	3	5	7.5	13	23	45	80

- **Shell continuity:** 2.5 mΩ
- **Shielding:**
  90 db at 100 MHz, 50 db at 10 000 MHz
- **Electrical continuity between contact and shell for spec. 284 & 384:** 10 mΩ max

Environmental

- **Temperature range:** -65°C +175°C (Z)
- **Sealing (mated connectors):**
  Differential pressure 2 bars:
  leakage ≤ 16 cm^3/h
- **Salt spray as per MIL STD 1344 method 1001:** 500 hours (Z)
- **Resistance to fluids:**
  . As per MIL DTL 38999, hydraulic fluids, solvents
  . Specification 022 for fuel immersion (please consult us)

Dimensions, layouts, contacts, accessories & tooling

Please consult «8LT Series - MIL-DTL-38999 Series I» catalog on www.souriau.com

Ordering information

Souriau 8LT Series - Part numbers

Basic series	8LT	0	-	13	Z	35	P	N			L

Shell type
- **0:** Square flange receptacle
- **1:** In line receptacle
- **2:** Short square flange receptacle, not accepting backshell
- **3:** Square flange receptacle (rear mounting)
- **5:** Plug with RFI shielding
- **7:** Jam nut receptacle
- **15:** Plug with RFI shielding, not accepting backshell

Type
- **- :** Connector with standard crimp contacts
- **L:** Connector with long PC tail (male and female #22D)
- **M:** Connector with medium PC tail
- **C:** Connector with short spill (male and female #22D, #20, #16, #12, #8 quadrax)
- **T:** Connector with male contact size 20 for wire wrap (2 wraps)
- **W:** Connector with male contact size 22D for wire wrap (3 wraps)
- **S:** Connector with specific PC Tail (male and female #22D only)
- **Q:** Connector with quadrax crimp contacts
- **P:** Connector with solder cup (please consult us)

Shell size: 09; 11; 13; 15; 17; 19; 21; 23; 25

Plating
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8LT Series - 38999 Series I» catalog

Contact type
- **P:** Male
- **S:** Female
- **A:** Connector supplied less pin contact or with specific contacts (marking : A + orientation)
- **B:** Connector supplied less socket contact or with specific contacts (marking : B + orientation)

Orientation: N, A, B, C, D (orientations B & C not developped for shell size number 9)

Specifications
- **None:** Supplied with contact
- **046:** PC Tail contact with tinned plating
- **251:** Connector provided with power contacts (#8 layout)
- **022:** Fuel tank (please consult us)
- **620:** Quadrax grounded (cts 100Ω) (1)(2)
- **621:** Quadrax not grounded (cts 100Ω) (1)
- **384:** Quadrax grounded (cts 150Ω) (1)(2)
- **408:** Quadrax not grounded (cts 150Ω) (1)

Special custom
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)

(1) Type shell 0, 3 and 5 available only. (2) Excepted mixed layouts with quadrax and signal contacts. Please consult us.

MIL-DTL-38999 Series I - Part numbers

Basic series	MS	27466	T	13	Z	35	P			L

Shell type
- **27466:** Square flange receptacle (front mounting)
- **27656:** Square flange receptacle (rear mounting)
- **27468:** Jam nut receptacle
- **27467:** Plug with RFI shielding
- **27505:** Square flange receptacle, not accepting backshell

Class
- **E:** Without thread for back fitting, not accepting backshell for MS27505 and MS27467 only
- **T:** With thread for backfitting, supplied without backshell (excepted MS27505)

Shell size: 09; 11; 13; 15; 17; 19; 21; 23; 25

Plating
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8LT Series - 38999 Series I» catalog

Contact type
- **P:** Male
- **S:** Female
- **A:** Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- **B:** Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

Orientation
- **None:** Normal (N)
- **A, B, C, D** (orientations B & C not developped for shell size number 9)

Special custom
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)

Description

- Low profile/not scoop proof
- Bayonet locking system
- 11 shell types
- 43 layouts
- High density connector from 1 to 128 contacts
- An excellent shock vibration and fluid resistance solution
- QPL qualified

Technical features

Materials

- **Shell:** Aluminum alloy
- **Plating:** Black zinc nickel (Z)
- **Insulator:** Thermoplastic
- **Grommet and seal:** Silicone elastomer
- **Contact:** Copper alloy
- **Plating:** Gold over nickel
- **Endurance:** 500 mating cycles
- **Shock:** 300g, 3ms duration
- **Vibration:**
  Random 100 to 1000Hz - 1g2/Hz
- **Contact retention (mini force in N):**
  Size 22D: 44N Size 16: 110N
  Size 20: 67N Size 12: 110N

Electrical

- **Test voltage (Vrms):**

Service	Sea level	at 21 000 m
M	1300	800
I	1800	1000
II	2300	1000

- **Contact resistance:**
  Size 22D: 14.6mΩ
  Size 20: 7.3mΩ
  Size 16: 3.8mΩ
  Size 12: 3.5mΩ
- **Insulation resistance:**
  ≥ 5000MΩ (at 500Vdc)
- **Contact rating:**
  Size 22D: 5A Size 16: 13A
  Size 20: 7.5A Size 12: 23A
- **Shell continuity (with EMI ring):**
  Black zinc nickel plating: 2.5mΩ

Environmental

- **Temperature range:**
  Zinc nickel plating (Z): -65°C +175°C
- **Sealing (mated connectors):**
  Differential pressure 1 bar
  Leakage ≤ 8cm³/h
- **Salt spray to:**
  MIL-STD 1344 method 1001: 500 hours
- **Damp heat:**
  MIL-C 38999: 10 cycles (24 hours)
  NFC 93422: 56 days
- **Resistance to fluids:**
  To MIL-L 38999:
  MIL-L 7808, MIL-L 23699, MIL-H 5606, MIL-A 8243, MIL-L 25769, MIL-G 3056, MIL-T 5624 (JP5); hydraulic fluids; solvents

  To NFC 93422:
  F 46, F 54, 0/180, H 515, H 542, XH 45

Dimensions, layouts, contacts, accessories & tooling

Please consult «8T Series - MIL-DTL-38999 Series II» catalog on www.souriau.com

Ordering information

Souriau 8T Series - Part numbers

Basic Series	8T	0	-	14	Z	35	P	N

Shell type:
- **0:** Square flange receptacle (front mount with accessory threads)
- **1:** In line receptacle (with accessory threads)
- **2:** Square flange receptacle (rear mount without accessory threads)
- **3:** Square flange receptacle (rear mount with accessory threads)
- **4:** Square flange receptacle (front mount without accessory threads)
- **5:** Plug with RFI shielding
- **6:** Plug without RFI shielding
- **7:** Jam nut receptacle (with accessory threads)
- **10:** Square flange receptacle (front mount, rear knurling)
- **15:** Plug with RFI shielding (rear knurling)
- **16:** Plug without RFI shielding (rear knurling)

Contact style:
- **- :** Connectors with standard crimp contacts
- **L:** Receptacle with long PC tail
- **C:** Receptacle with short PC tail
- **P:** Receptacle with solder cup

Shell size: 08; 10; 12; 14; 16; 18; 20; 22; 24

Plating:
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8T Series - 38999 Series II» catalog

Contact type:
- **P:** Male — **A:** Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- **S:** Female — **B:** Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

Orientation: N, A, B, C & D

Special custom:
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

L: For P and S contact type only, connector delivered without contacts, connector marking P or S (without L)

MIL-DTL-38999 Series II - Part numbers

Basic Series	MS	27497T	14	Z	35	P	N

Shell type & Class:
- **27472T:** Square flange receptacle (front mount with accessory threads)
- **27508E:** Square flange receptacle (rear mount without accessory threads)
- **27497T:** Square flange receptacle (rear mount with accessory threads)
- **27499E:** Square flange receptacle (front mount without accessory threads)
- **27484T:** Plug with RFI shielding
- **27473T:** Plug without RFI shielding
- **27474T:** Jam nut receptacle (with accessory threads)
- **27472E:** Square flange receptacle (front mount, rear knurling)
- **27484E:** Plug with RFI shielding (rear knurling)
- **27473E:** Plug without RFI shielding (rear knurling)

Shell size: 08; 10; 12; 14; 16; 18; 20; 22; 24

Plating:
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8T Series - 38999 Series II» catalog

Contact type:
- **P:** Male — **A:** Connector supplied less pin contact or with specific contacts (Connector marking : A + orientation)
- **S:** Female — **B:** Connector supplied less socket contact or with specific contacts (Connector marking : B + orientation)

Orientation: N, A, B, C & D

L: For P and S contact type only, connector delivered without contacts, connector marking P or S (without L)

Description

- For pressurized & unpressurized application
- Indoor/outdoor
- High contact density #22:
  - The only connnector series with #22 qualified contact
  - Up to 128 #22 contacts
- Contact protection: 100% Scoop proof
- Robustness:
  - Robust coupling system (scoop proof)
  - 500 mating/unmating operation
  - Up to 500 hours saltspray withstanding
  - Vibration: 44g @ 175°C

Technical features

Materials

- **Shell:** Aluminum
- **Shell plating:** Black zinc nickel (Z)
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:** Silicone elastomer
- **Contacts:** Copper alloy
- **Contacts plating:** Gold over nickel plated
- **Endurance:**
  . 500 mating cycles all materials
  . 1500 mating cycles for composite connectors with specifics contacts
- **Shock:**
  300g, 3 ms according EN 2591-D2 method A
- **Vibration:**
  . Sinus:
  . . 10 à 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
  . Random:
  . . 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
  . . 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at ambiant T°
  Test with accessories in acc with EN2591-D3
- **Contact retention:**

Contacts size	24	22	20	16	12	8	4
Min force in N	30	44	67	111	111	111	200

Electrical

- **Test voltage rating (Vrms):**

Service	sea level	at 21000 m
R	400	N/A
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

- **Contact resistance:**

Contacts size	26	22	20	16	12	8	4
Resistance mΩ	16	14.6	7.3	3.8	3.5	3	2

- **Insulation resistance:**
  ≥ 5 000 MΩ (under 500 Vdc)
- **Contact rating:**

Contacts size	26	22	20	16	12	8	4
Rating (A)	3	5	7.5	13	23	45	80

- **Shell continuity:** 2.5 mΩ (Z)
- **Shielding:**
  . 85 db at 1 GHz (Z)
  . 50 db at 10 GHz (Z)

Environmental

- **Temperature range:** -65°C +200°C (Z)
- **Sealing:**
  Mated connectors meet altitude immersion requirements of MIL-DTL-38999.
- **Salt spray:** 500 Hrs (Z)

Resistance to fluids

- **According to MIL-DTL-38999 standard**
  . Gasoline: JP5 (OTAN F44)
  . Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  . Synthetic hydraulic fluid: Skydrol 500 B4
- **LD4 (SAE AS 1241)**
  . Mineral lubricating: MIL-L-7870A (OTAN 0142)
  . Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
  . Cleaning fluid: MIL-DTL-25769 diluted
  . De-icing fluid: MIL-A-8243
  . Extinguishing fluid: Bromochloromethane
  . Cooling fluid: Coolanol

Ordering information

Souriau 8D Series - Part numbers

Basic Series	8D	0	-	11	Z	35	P	N			L

Shell style
- **0:** Square flange receptacle
- **1:** In line receptacle
- **7:** Jam nut receptacle
- **5:** Plug with RFI shielding

Square flange receptacle with clinch nuts available (please consult us)
Jam nut receptacle with double flange available (please consult us)

Type
- **- :** Connectors with standard crimp contacts.
- **L:** Receptacle with long PC tail (male and female size #22D, #20).
- **C:** Receptacle with short PC tail (male and female #22D, #20, #16).
- **S:** Receptacle with specific PC tail (male et female #22D)
- **W:** Receptacle with male contacts #22D for wire wrap (3 wraps)
- **T:** Receptacle with male contacts #20 for wire wrap (2 wraps)
- **P:** Receptacle with solder cup contacts - please consult us

PC tail contacts without shoulder available (please consult us)

Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25

Plating
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8D Series - 38999 Series III» catalog

Contact type
- **P:** Male — **A:** Connector supplied less pin contact or with specific contacts (marking : A + orientation)
- **S:** Female — **B:** Connector supplied less socket contact or with specific contacts (marking : B + orientation)

Orientation: N, A, B, C, D, E

Specification
- **046:** Tinned straight PC tail
- **251:** Connector provided with power contacts (layouts with contact #8)
- **022:** Fuel tank

Special custom
- **None:** Standard plastic cap
- **M:** Antistatic plastic cap

L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation

MIL-DTL-38999 Series III - Part numbers

Basic Series	D38999/	20	Z	B	35	P	N	L

Shell style
- **20:** Square flange receptacle
- **24:** Jam nut receptacle
- **26:** Plug with RFI shielding.

Plating
- **Z:** Black zinc nickel

Shell size: A, B, C, D, E, F, G, H, J

Contact layout: See SOURIAU «8D Series - 38999 Series III» catalog

Contact type
- **P:** Male — **A:** Connector supplied less pin contact or with specific contacts (marking : A + orientation)
- **S:** Female — **B:** Connector supplied less socket contact or with specific contacts (marking : B + orientation)

Orientation: N, A, B, C, D, E

L: For P or S contact type only, connector delevired without contacts, connector marking P or S (without L)

Dimensions, layouts, contacts, accessories, tooling & derived series

Please consult «8D Series - MIL-DTL-38999 Series III» catalog on www.souriau.com

Description

- Threaded coupling connector with single power contact.
- Aluminum shell.
- 3 shell sizes available:
  - size 19: Up to 450 A at 40°C
  - size 23: Up to 650 A at 40°C
  - size 25: Up to 850 A at 40°C
- Silver plated contact.
- Pin contact is equipped with a plastic cap to prevent electrical shock.
- Modular design:
  . Removable backshell: straight, right angle or threaded contact.
  . Backshell termination: shrink boot.

Technical features

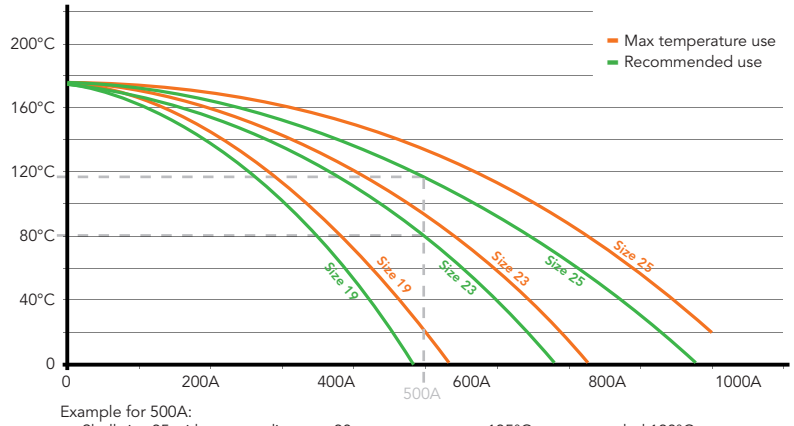
Materials

- **Shell:** Aluminum alloy
- **Shell plating:**
  Black zinc nickel (Z)
  Cadmium olive drab (W)
- **Insulator:** Thermoplastic
- **Grommet and interfacial seal:**
  Silicone elastomer
- **Contact body:** Copper alloy
- **Endurance:**
  500 mating/unmating operations
- **Vibration:**
  According Def Stan 00-35
  4.2 g rms vert - 6h/3 axes

Electrical

- **Test voltage**
  > 1500 V
- **Shell to shell continuity** (no backshell)
  < 2.5 mΩ
- **EMI**
  85 dB @ 1GHz (F)

- **Connector rating**



Example for 500A:
Shell size 25 with contact diameter 20: max temperature 135°C; recommended 120°C
Shell size 23 with contact diameter 18: max temperature 90°C; recommended 80 °C
Shell size 19 with contact diameter 14: not recommended
Wire must be compatible with current and temperature used for the connector.

Environmental

- **Temperature range:**
  -65°C +175°C
- **Sealing:**
  IP67 on mated connector (1 meter/30 min)
- **Salt spray:**
  500 hours

Resistance to fluids

- **According to MIL-DTL-38999 standard**
  . Gasoline: JP5 (OTAN F44)
  . Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  . Synthetic hydraulic fluid: Skydrol 500 B4
- **LD4 (SAE AS 1241)**
  . Mineral lubricating: MIL-L-7870A (OTAN 0142)
  . Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
  . Cleaning fluid: MIL-DTL-25769 diluted
  . De-icing fluid: MIL-A-8243
  . Extinguishing fluid: Bromochloromethane
  . Cooling fluid: Coolanol

Ordering information

Basic Series	8D	0	25	Z	H1	P	N	R1	A

Style:
0: Square flange receptacle
5: Plug (available with backshell D1, R1 & G0 Types)
7: Jam nut receptacle

Shell size: 19, 23, 25

Plating:
Z: Zinc Nickel

H1: Single power

Contact style:
P: Pin contact
S: Socket contact

Orientation: N, A, B, C, D, E

Backshell type:
D1: Straight backshell shrink boot & EMI (crimp version)
R1: Right angle backshell shrink boot & EMI (crimp version)
G0: Backshell low profile (threaded termination)
W0: Without backshell (threaded termination)

Specification for backshells D1 & R1 Types (crimp version):

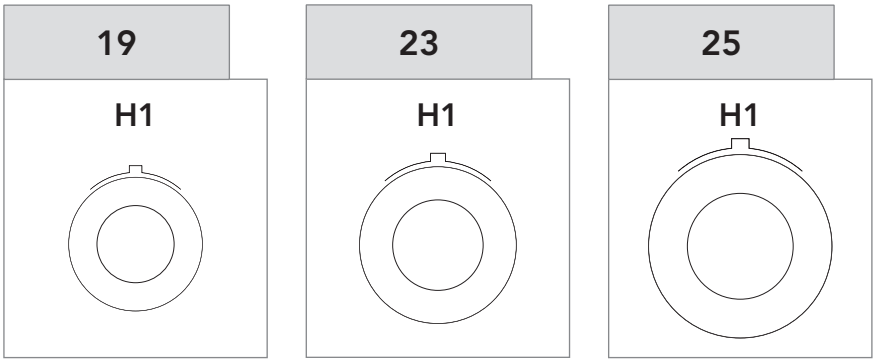
Specification	Shell size	Admissible cable (mm)		Barrel diameter ($mm^{\pm 0.05}$)	Wire section (mm^2)
		Outer Ø max	Nominal core Ø		
A	19	17	10.15	10.8	50
B	19	17	11.1	11.8	60
C	19	17	12	12.5	70
D	23	22	14.05	15	95
E	23	22	16.3	17	120
	25	26.5			
F	25	26.5	19	20.5	185

Specification for backshells G0 & W0 Types (only threaded termination):

Specification	Shell size	Thread
C	19, 23 & 25	M12

Note: Plug not available with backshell W0 Type. Other thread, please consult us.

Contact layouts



Dimensions

Please consult «8D Series - MIL-DTL-38999 Series III» catalog on www.souriau.com

Note: For other configuration or shell size, please consult us.

Description

- A compact solution
  - The smallest connector available on the market (shell size 3)
  - Miniaturization of MIL-DTL-38999 Series III
  - Integrated backshell

- A versatile solution
  - 3 coupling system:
    . Threaded (8DA Series)
    . Break away (8BA Series)
    . Bayonet (8LTA Series)
  - 3 shells sizes: 3, 5, 7
  - Crimp & PC tails
  - Removable contacts #22D & #26
  - 6 keyings

- Harsh environment-resistant solution
  - Scoop Proof
  - Cavity to cavity sealed with interfacial seal and grommet
  - Fluid resistant

Technical features

Materials

- **Shell:**
  Aluminum alloy
  Passivated stainless steel (8DA only)

- **Shell plating:**
  Zinc nickel (RoHS) for Aluminum alloy shell

- **Insulator:** Thermoplastic

- **Contact body:** Copper alloy

- **Contacts plating:** Gold over nickel plated

- **Shell endurance:**
  Aluminum:
  500 mating/unmating cycles
  Passivated stainless steel:
  1000 mating/unmating cycles

- **Vibration:**
  8DA: 44 grms, 2 axes during 8 hours
  8BA & 8LTA: 30 grms, 2 axes during 8 hours

- **Shock:** 300g, 3 ms

Electrical

- **Wire size**

Layout	Wire (AWG)
03-05	24-30
03-35	22-28
05-06	24-30
05-35	22-28
07-09	24-30
07-35	22-28

- **Test voltage (at sea level):**
  Size 22D: 1000 Vrms
  Size 26: 400 Vrms

- **Contact resistance:**
  Size 22D: <14.6 mΩ Size 26: <16 mΩ

- **Contact rating:**
  Size 22D: 5A Size 26: 3A

- **Contact retention:**
  Size 22D: 45N Size 26: 30N

- **Shell to shell continuity (typical value)**

Series	Shell size	Aluminum	Stainless steel
8DA & 8BA	3	NA	NA
	5, 7	10 mΩ	60 mΩ
8LTA	3, 5, 7	250 mΩ	250 mΩ

- **EMI:**
  8DA & 8BA: -70 dB @ 1GHz
  8LTA: -55 dB @ 1Ghz

Environmental

- **Temperature range:**
  -55°C to +175°C

- **Water immersion:**
  IP 67 on mated connector
  1 meter for 30 min minimum
  > IP68 with appropriate cable termination

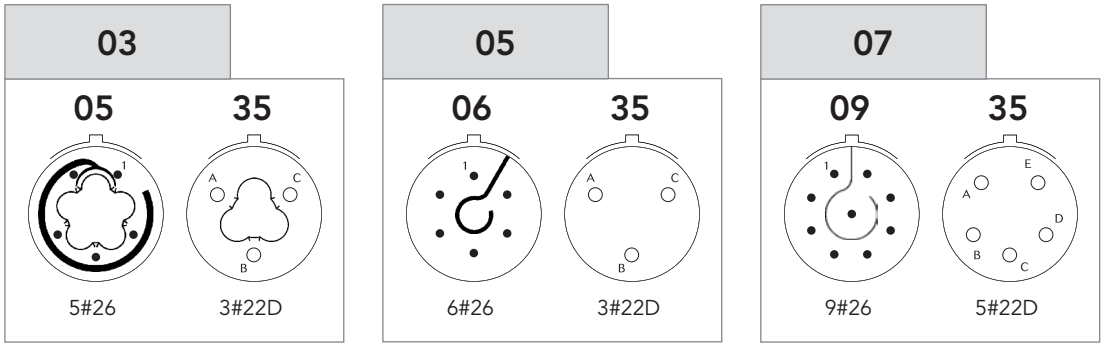
- **Salt spray:**
  Zinc nickel: 500 hours

Resistance to fluids

- **According to MIL-DTL-38999 standard**
  Gasoline: JP5 (OTAN F44)
  Mineral hydraulic fluid: MIL-H-5606 (OTAN H515)
  Synthetic hydraulic fluid: Skydrol 500 B4

- **Compatible with de-icing fluids containing potassium acetate**

Contact layouts



Note: For information only.

Ordering information

Basic Series **8DA:** Threaded coupling **8BA:** Break away **8LTA:** Bayonet coupling	**8DA**	**0**	**03**	**Z**	**05**	**P**	**N**
Shell type **0:** Square flange receptacle (8DA & 8LTA only) **1:** In line receptacle **2:** Oval flange receptacle (8LTA only) **5:** Plug with EMI ring (8DA only - size 5 & size 7) **6:** Plug **7:** Jam nut receptacle							
Shell size: 03 - 05 - 07							
Plating **Z:** Black zinc nickel							
Contact layouts: See above							
Contact type **P:** Pin (8DA shell size 3 scoop proof only when pin contacts mounted in Type 6) **S:** Socket (8DA shell size 3 scoop proof only when socket contacts mounted in Type 1 & Type 7. 8BA scoop proof only when socket contacts mounted in Type 1 & Type 7)							
Orientation: N, A, B, C, D, E							

Dimensions, PC tail version, accessories & tooling

Please consult «micro38999, A Complete Miniature Range» catalog on www.souriau.com

Description

- A high density connector from 1 to 128 contacts for all military and aeronautical purposes.
- Sizes #22D, #20, #16, #12, #16 coax and #8 triax
- Bayonet locking system
- MIL-C-38999 Series I contact layouts
- 100% scoop proof
- EMI/RFI shielding and shell-to-shell continuity

Technical features

Materials

- **Shell:** aluminum alloy
- **Plating:** black zinc nickel (Z)
- **Insulator:** thermoplastic or metallic version available for spec. 284 & 384
- **Grommet or seal:** liquid silicone rubber or fluorocarbone elastomer for spec. 022
- **Contact:** copper alloy
- **Plating contact:** gold over nickel
- **Endurance:** 500 mating/unmating operations
- **Shock:** 300 g during 3 ms and as per MIL S 901 grade A
- **Vibration:** 147 m/s², 10 to 2000 Hz
- **Contact retention (min force in N):**

Contacts size	24	22	20	16	12	8	4
Min force in N	30	44	67	111	111	111	200

Electrical

- **Test voltage (Vrms):**

Service	sea level	at 21000 m
R	400	N/A
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

- **Insulation resistance:** ≥ 5 000 MW (at 500 Vcc)
- **Contact resistance:**

Contacts size	26	22	20	16	12	8	4
Resistance mΩ	16	14.6	7.3	3.8	3.5	3	2

- **Contact rating:**

Contacts size	26	22	20	16	12	8	4
Rating (A)	3	5	7.5	13	23	45	80

- **Shell continuity:** 2.5 mΩ (Z)
- **Shielding:** 70 db at 0.01 to 100 MHz
- **Electrical continuity between contact and shell for specification 284 & 384:** 10 mΩ max

Environmental

- **Temperature range:** - 65°C +175°C (Z)
- **Sealing, mated connectors:** Differential pressure 2 bars leakage ≤16 cm^3/h
- **Salt spray as per MIL STD 1344 method 1001:** 500 hours (Z)

Resistance to fluids

- **As per MIL-DTL-38999:** MIL-L-7808, MIL-L-23699, MIL-H-5606, MIL-A-8243, MIL-C-25769, MIL-T-5624 (JP5), hydraulic fluids, solvents
- **Specification 022 for fuel immersion:** Please consult us

Ordering information

Basic series	**8ST**	**0**	**-**	**10**	**Z**	**35**	**P**	**N**

Shell style
- **0:** Square flange receptacle
- **1:** In line receptacle
- **2:** Square flange receptacle, not accepting backshell
- **3:** Square flange receptacle, rear mounting
- **5:** Plug with RFI/EMI shielding
- **6:** Plug without RFI/EMI shielding
- **7:** Jam nut receptacle

Type
- **-:** Connector with standard crimp contacts
- **L:** Connector with long PC tail contacts
- **M:** Connector with medium PC tail contacts
- **C:** Connector with short PC tail contacts

Shell size: 08; 10; 12; 14; 16; 18; 20; 22; 24

Plating
- **Z:** Black zinc nickel

Contact layout: See SOURIAU «8ST Series - VG96912 & JN1003» catalog

Contact type
- **P:** Pin - 500 mating/unmating
- **H:** Pin - 1500 mating/unmating
- **A:** Connector supplied without pin contact
- **S:** Socket - 500 mating/unmating
- **J:** Socket - 1500 mating/unmating
- **B:** Connector supplied without socket contact

Orientation: N, A, B, C, D (orientations B & C not developped for shell size number 9)

Specifications
- **None:** Supplied with contact
- **034:** As per JN1003 Standard - B type plating only
- **046:** PC Tail contact with tinned plating
- **251:** Connector provided with power contacts - layouts with cavities #8 only
- **022:** Fuel tank - Please consult us

Dimensions, layouts, contacts, accessories & tooling

Please consult «8ST Series - VG96912 & JN1003» catalog on www.souriau.com

Description

- Bayonet coupling connector with crimp contacts.
- Qualified as per VG96918
- Power supply (up to 63A)
- Pilot and ground contacts available.
- Contact layouts for:
  . Mono 220 V
  . Tri 220/380 + N + Pilot

Technical features

Materials

- **Shell & Backshell material:**
  Aluminum
- **Shell & Backshell plating:**
  Black Zinc Nickel
- **Insulator:**
  Neoprene
- **Contact:**
  Crimp, machined, from brass
- **Contact plating:**
  Silver
- **Endurance:**
  500 mating/unmating operations

Electrical

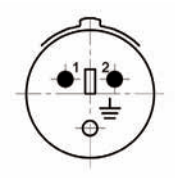
- **Operating voltage:**
  . Contact layout 25: 250 Vrms
  . Contact layouts 48: 400 Vrms
  . Contact layouts 58: 380 Vrms
- **Current rating:**
  . Contact layout 25: 16 A
  . Contact layout 48: 25 A
  . Contact layout 58: 63 A
- **Withstanding voltage:**
  . 2000 Veff for shell sizes 2 and 4
  . 2500 Veff for shell size 5
- **Shielding effectiveness:**
  . 10kHz - 3MHz 70dB min.
  . 100MHz - 1000MHz 40dB min.

Environmental

- **Temperature range:**
  - 55°C to + 85°C (125°C peak)
- **Sealing (immersion):**
  1 bar - 24 hours
- **Salt spray resistance:**
  500 hours
- **Pollution degree 3:**
  according to DIN EN60664-1

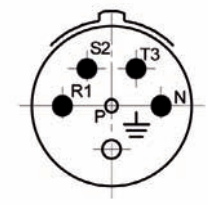
Contact layouts

25



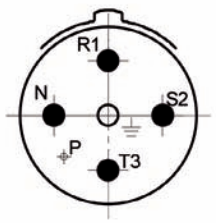
MONO 250 V + ⏚

48



TRI 220/380 V
+ N + Pilot + ⏚

58



TRI 220/380 V
+ N + Pilot + ⏚

Ordering information

SOURIAU 848 Series - Part numbers (with contacts and backshells)

Basic Series	84	8	48	F	5	47	N	3	08

Shell material and plating
- **8:** Aluminum shell with black zinc nickel plating

Contact layout: 25, 48, 58 (see previous page)

Shell type
- **A:** Square flange receptacle, smooth holes, without thread for backfitting
- **B:** Square flange receptacle, smooth holes, with thread for backfitting
- **L:** Square flange receptacle, threaded holes, without thread for backfitting
- **M:** Square flange receptacle, threaded holes, with thread for backfitting
- **F:** Plug
- **P:** Cable connecting receptacle
- **D:** Jam nut receptacle with thread for backfitting
- **R:** Jam nut receptacle without thread for backfitting

Contact type
- **1:** Crimp male contact
- **5:** Crimp female contact

Backshell type
- **00:** Receptacles (A, L, R types), without thread for backfitting receptacles (B, M, D)
  Plugs and cable connecting receptacles supplied without backshell
- **21:** Straight cable clamp and sealing gland backshell
- **23:** Elbow cable clamp and sealing gland backshell
- **47:** Straight backshell for shield termination and heatshrink sleeving
- **48:** Straight backshell for shield termination and heatshrink sleeving and tightening shield ring (for contact layout 48 & 58 only)

Orientation: N, W, X, Y

Insert type
- **0:** Without grommet, without pilot contact. Only for contact layout 25 and 48
- **1:** With grommet, without pilot contact. Contact layout 58: insert is only with grommet
- **2:** Without grommet, with pilot contact. Only for contact layout 48
- **3:** With grommet, with pilot contact. Filler plug supplied. Only for contact layout 48 and 58

Specification:
- **08:** Aluminum shell with black zinc nickel plating

VG96918 - Part numbers

Basic Series	VG96918	A1	25	P	N	C

Shell type
- **A1:** Fixed connector with mounting flange
- **B1:** Fixed connector with mounting flange and adapter for shielding braid
- **C:** Fixed connector for single hole mounting
- **D:** Fixed connector for single hole mounting and adapter for shielding braid
- **E:** Cable connecting receptacle with adapter for shielding braid
- **F:** Free plug with adapter for shielding braid

Contact layout: 25, 48, 58 (see previous page)

Contact type
- **P:** Male contact
- **S:** Female contact

Orientation: N, W, X, Y

Plating
- **C:** Aluminium shell with black zinc nickel plating

Dimensions, caps, contacts & tooling

Please consult «847/848 Series, Power Supply up to 63A» Product News on www.souriau.com

Description

- Souriau offers a full range of aluminum caps and backshells. The best choice for a global solution provider.
- Cost & time saving: one supplier for connector and accessories.
- A global RoHS solution:
  . With Zinc-Nickel accessories, Souriau offers a complete RoHS solution.
  . Nickel, Cadmium and Black anodize finishes also available.
- A wide range:
  . 6 backshell types and 2 angles.
  . Available for 38999 Series I, II, III & IV.
- High reliability: conforming to AS85049 standards.

Backshell types

Backnut

The backnut compress the connector sealing grommet. It's the cost efficient solution to avoid grommet deformations and leakage infiltrations.

Shrink boot

Backshell ideal for environmental protection of connector wire terminations in most harsh environments including ground military equipments.

Cable clamp

Cable clamp is used to prevent wires and cables from pulling on the contacts and damaging the termination. It is available in straight or 90° angle.

Band lock

This backshell type offers a complete grounded backshell, shield termination, and environmental sealing.

Crimp ring

Eliminates EMI leakage paths, providing reliable and repairable shield terminations.

Double cone

Ensures the shielding by clamping the braid with a screwing system, developed according to HE308 standard.

Ordering information

Aluminum backshells for 8LT & 8T Series

Basic Series	8T	AB	05	A	16	Z	S	01	-

Accessories type

Type:
- **01:** Backnut
- **02:** Cable clamp
- **03:** Shrink boot
- **04:** Crimp ring
- **05:** Band lock
- **06:** Double cone

Angle:
- **A:** Straight
- **B:** 90° (Type 02 only)

Shell size:
08, 10, 12, 14, 16, 18, 20, 22, 24

Shell size 8T	08	10	12	14	16	18	20	22	24
= Shell size 8LT	09	11	13	15	17	19	21	23	25

Finish:
- **Z:** Black zinc nickel

Self locking option:
- **None**
- **S:** Self locking (available for Types 01 & 02 - mandatory for Type 05)

Cable entry (Type 05 only):
01, 02 (02 mandatory for shell size 08 & 10)

Drain hole option:
- **None**
- **D:** Drain hole (Type 03 only)

Aluminum backshells for 8D Series

Basic Series	8D	AB	05	A	17	Z	S	02	-

Accessories type

Type:
- **01:** Backnut
- **02:** Cable clamp
- **03:** Shrink boot
- **04:** Crimp ring
- **05:** Band lock

Angle:
- **A:** Straight
- **B:** 90° (Type 02 only)

Shell size:
09, 11, 13, 15, 17, 19, 21, 23, 25

Finish:
- **Z:** Black zinc nickel

Self locking option:
- **None**
- **S:** Self locking (available for Types 01 & 02 - mandatory for Type 05)

Cable entry (Type 05 only):
02, 03 (03 mandatory for shell size 09 & 11)

Drain hole option:
- **None**
- **D:** Drain hole (Type 03 only)

Dimensions, accessories & assembly instructions

Please consult «Backshell & Accessories» catalog on www.souriau.com

Description

- Metallic aluminum caps to protect plugs and receptacles from dust, moisture, contact bending, ...
- Developed conforming to D38999 standards.
- Caps for receptacles and plugs.
- Teflon coated stainless steel rope.
- Available with ring or eyelet.

Ordering information

Souriau 8D Series caps - Part numbers

Basic Series	8D	AC	5	R	09	Z
Aluminum caps						
Caps style **5:** Plug caps **0:** Receptacle caps						
Accessories **N:** With stainless steel rope and ring **R:** With stainless steel rope and eyelet						
Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25						
Z: Black zinc nickel plating						

MIL-DTL-38999 caps - Part numbers

Basic Series	D38999/	32	Z	09	R
Caps style **32:** Plug caps **33:** Receptacle caps					
Z: Black zinc nickel plating					
Shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25					
Accessories **N:** With stainless steel rope and ring **R:** With stainless steel rope and eyelet					

Souriau micro38999 caps - Part numbers

Basic Series **8DAC:** Cap for 8DA Series **8LTAC:** Cap for 8LTA Series	**8DAC**	**32**	**Z**	**03**	**N**
Cap type **32:** Cap for plug **33:** Cap for receptacle					
Z: Black zinc nickel plating					
Shell size: 03, 05, 07					
Style **N:** Ring **R:** Eyelet					

Souriau 851 Series caps - Part numbers

Basic Series	**851**	**AC**	**P**	**12**	**N**	**K**	**L**
Aluminum caps							
Cap style **P:** Plug cap **R:** Receptacle cap							
Shell size: 8, 10, 12, 14, 16, 18, 20, 22, 24							
Attachment option **C:** With stainless steel chain & eyelet **N:** With stainless steel chain & ring (only for receptacle cap) **R:** With PTFE coated stainless steel rope & eyelet **S:** With PTFE coated stainless steel rope & ring (only for receptacle cap) **B:** With green nylon rope & eyelet **D:** With green nylon rope & ring (only for receptacle cap) **E:** With black nylon rope & eyelet **F:** With black nylon rope & ring (only for receptacle cap) **G:** Without attachments							
K: Black zinc nickel plating							
Length of attachment **L:** 130 $^{\pm 9}$ mm (leave blank for standard length)							

Dimensions

Please consult «Backshells & Accessories» and «micro38999, A Complete Miniature Range» catalogs on www.souriau.com

Description

- All 38999 pin & socket PCB contacts are now available with various tin plating, including RoHS version.
- 3 types of tin plating:
  . Tin lead (Snpb).
  . Tin silver copper (SAC 305 - RoHS).
  . Pure tin (Sn - RoHS).
- A complete & versatile offer:
  . Tin plating available for all PC tail contacts already developed.
  . PC tail contacts with or without shoulder.

Ordering information

Basic Series:	8LT	3	C	11	Z	35	P	N	901S
	8T	3	C	10	Z	35	P	N	901S
	8D	0	C	11	Z	35	P	N	901S

8LT & 8T shell type:
3: Square flange wall mounting receptacle
7: Jam nut receptacle
8D shell type:
0: Square flange wall mounting receptacle
7: Jam nut receptacle
35: Square flange receptacle with M3 helicoils
37: Square flange receptacle with UNC 4-40 helicoils

C: Short PC tail contact (other lengths please consult us)

8LT & 8D shell size: 09, 11, 13, 15, 17, 19, 21, 23, 25
8T shell size: 08, 10, 12, 14, 15, 17, 20, 22, 24

Z: Black zinc nickel plating

Contact layout: See 8LT, 8T & 8D Series catalogs

Contact type:
P: Male
S: Female

Orientation:
N, A, B, C, D, E (orientations B & C not developed for 8LT Series shell size 9; orientation E not developed for 8LT Series)

Contact plating:
046: Tin plated PCB contact SnPb
046S: Tin plated PCB contact SAC305
046E: Tin plated PCB contact Sn pur
901: Tin plated PCB contact without shoulder SnPb
901S: Tin plated PCB contact without shoulder SAC305
901E: Tin plated PCB contact without shoulder Sn pur
550: Tin plated Quadrax PCB contact SnPb (not available for 8T Series)
550S: Tin plated Quadrax PCB contact SAC305 (not available for 8T Series)
550E: Tin plated Quadrax PCB contact Sn pur (not available for 8T Series)

Special custom:
None: Standard plastic cap
M: Antistatic plastic cap

Dimensions

Please consult Souriau 8LT, 8T & 8D catalogs on www.souriau.com.

Your local contact

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