



SOLARIS, RECTANGULAR CONNECTORS

Small, lightweight, sealed, low-cost, rugged rectangular solutions.



SOLARIS

Overview

Solaris is a small, plastic, easy-to-use rectangular connector designed specifically for low and medium power applications. Solaris' spring-loaded slide lock mechanism is a snap to use - simply push to lock, and slide to unlock. The slide lock provides convenient single handed & tool-less mating, eliminating the Foreign Object Debris (FOD) found in typical screw mount D-Subs. Each housing has raised finger ridges for a sure grip, and a built-in cable tie access hole provides a "zero footprint" method to secure the connector to a bulkhead or cable bundle.

High grade Polyetherimide plastic makes SOLARIS suitable for man/machine interfaces with high mating cycles, and provides a wide operating temperature range. Ultrasonically welded components means void free joints, sealing out humidity for long lasting, crack free operation over the life of the installation. Interfacial seal and wire seal grommets provide IP67 sealing, meaning your application is free from dust, moisture and corrosion when exposed to the real world.

Features & Benefits

Low profile rectangular form factor	Less than 0.5" tall. Fits into seat arms, backs, tray tables and compartments, lower profile ceiling/side panels. Blind mate keying
Interfacial and Wire sealing	Environmental sealing to IP67. Wet, damp, and dusty applications
Testing (See Solaris Catalog for details)	Shock and Vibration Fluid Immersion / Chemical resistance Altitude Immersion Testing to 75,000 feet Flammability: UL94 Temperature range: -65°C to 150°C
Polyetherimide Housings (Ultem)	Wide operating range, chemical resistance, & high mating cycles: 500+
Reverse gender capability	Plugs & Receptacles may be configured with pins or sockets, allowing live power connector to be either plug or receptacle, depending on application requirements
Standard contacts	AS39029 MIL Spec contacts for broad application compatibility. Stamped & Formed available as lower cost option. Industry standard tools.
Slide Latch	Easy-to-use, FOD free, tool-less mating
Integrated Tie Wrap hole	Zero footprint tie down to pipes, bundles, and bulkheads
Integral boot ridge	Integrated feature for tying off protective sheathing and braids w/o adding backshells or saddle clamps
Multiple Configurations	Inline, Square Flange
Snap-on strain relief	Tool-less, FOD free accessory that helps prevent wear and tear at cable / connector ingress
Scoop-Proof	Prevents contacts from being bent or electrically shorted during mating

LUMINUS, PEGASUS & SOLARIS CONNECTOR QUICK COMPARISON

Luminus	Pegasus	Solaris
Circular	Circular	Rectangular
None	EMI/RFI shielding	None
Nylon and Ultem	Ultem	Ultem
Shock (Luminus & Pegasus: 300G, 3msec, Half-Sine)		
(Solaris: 100G sawtooth, 6msec)		
Vibration (Luminus & Pegasus: 30G Sinusoidal; 43.96G Random)		
(Solaris: 15G peak sinusoidal, 16G peak random)		

Materials & Specifications

Item	Specification	Test Method
Materials	Insulator Body Coupling Nut Grommet & Face Seal Contact Retainer Contacts	Ultem 2100 Nylon PA66 per A-A-59588 per M39029/58, /57
Temperature Range	-65°C to 175°C	Mil-Std-1322 Method 1003, Condition A
Temperature Life	500 hours @ 85C	EIA-364, Test procedure 17B
Insulation Resistance	5000 M Min. @ 500 VDC	Mil-Std-1344, Method 3003 EIA-364, Test Procedure 20D
Dielectric Withstanding	1500 VAC, 60Hz @ Sea Level, 5ma 300 VAC, 60 Hz @70,000 ft, 2ma	Mil-Stf-1344, Mthod 3001 EIA-364, test Procedure 20D
Durability	500 mating cycles minimum 1000 typical	EIA-364 Test Procedure 09C
Altitude Immersion	5% salt solution, 75K feet	Mil-Std-1344, Method 1004; M81714, paragraph 4.6.21
Temperature Cycling	Five 1 hour cycles" -65°C to 125°C	Mil-Std-1344, Method 1003, Test Condition A EIA-364, Test Procedure 32E
Vibration	30G Sinusoidal 43.96G Random	Mil-Dtl-38999L, Paragraph 4.5.23.2.2 EIA-364-38E, test Condition IV; Test Condition VI-J
Shock	300G, 3msec, Half-Sine	Per EIA-364-27B, Test Condition D
Salt Spray	5% Salt Spray @ 95°C for 48 Hours	Mil-Std1344, Method 1001, test Condition B EAI-364, test Procedure 26B
Humidity	10 days @ 25°C to 65°C 90% - 95% RH	Mil-Std-1344, Method 1002.2 EIA-364, test Procedure 31C
Seal Rating	1P67	Mated
Fluid Immersion	Lubricating Oil per Mil-Prf-7808 Cleaning compound per Mil-Prf-87937 Isopropyl Alcohol & Mineral Spirit Solution Skydrol Hydraulic Fluid Hydraulic Fluidper Mil-Prf-83282 Mil-Prf-87257 Ethylene & Propylene Glycol Avaition Jet A	EIA-364 Test Procedure 10D Mil-Std-1344A
Flammability	UL94,V0 DOTG section 26.6.2 & 26.6.3 FAR 25.853(a)	Meets FAR Part 25 Appendix F, Part 1
RoHS & REACH	Yes	-
Insertions & Removal Force	less than 10 lbs. insert (size 22) less than 10 lbs. insert (size 20) less than 15 lbs. insert (size 16)	EIA-364, Test Procedure 5B Mil-Std-1344 EIA-364, Test Procedure 37C
Contact Retention	10 lbs. minimum, size 22 20 lbs. minimum, size 20 25 lbs. minimum, size 16	EIA-364, Test Procedure 29C Mil-Std-1344, Method 2007

Applications

- Aerospace Lighting
- In-Flight Entertainment
- Power & Signal Distribution
- Cabin Service Systems
- Military Aerospace- Rotocraft
- UAV's



Standard Configurations*

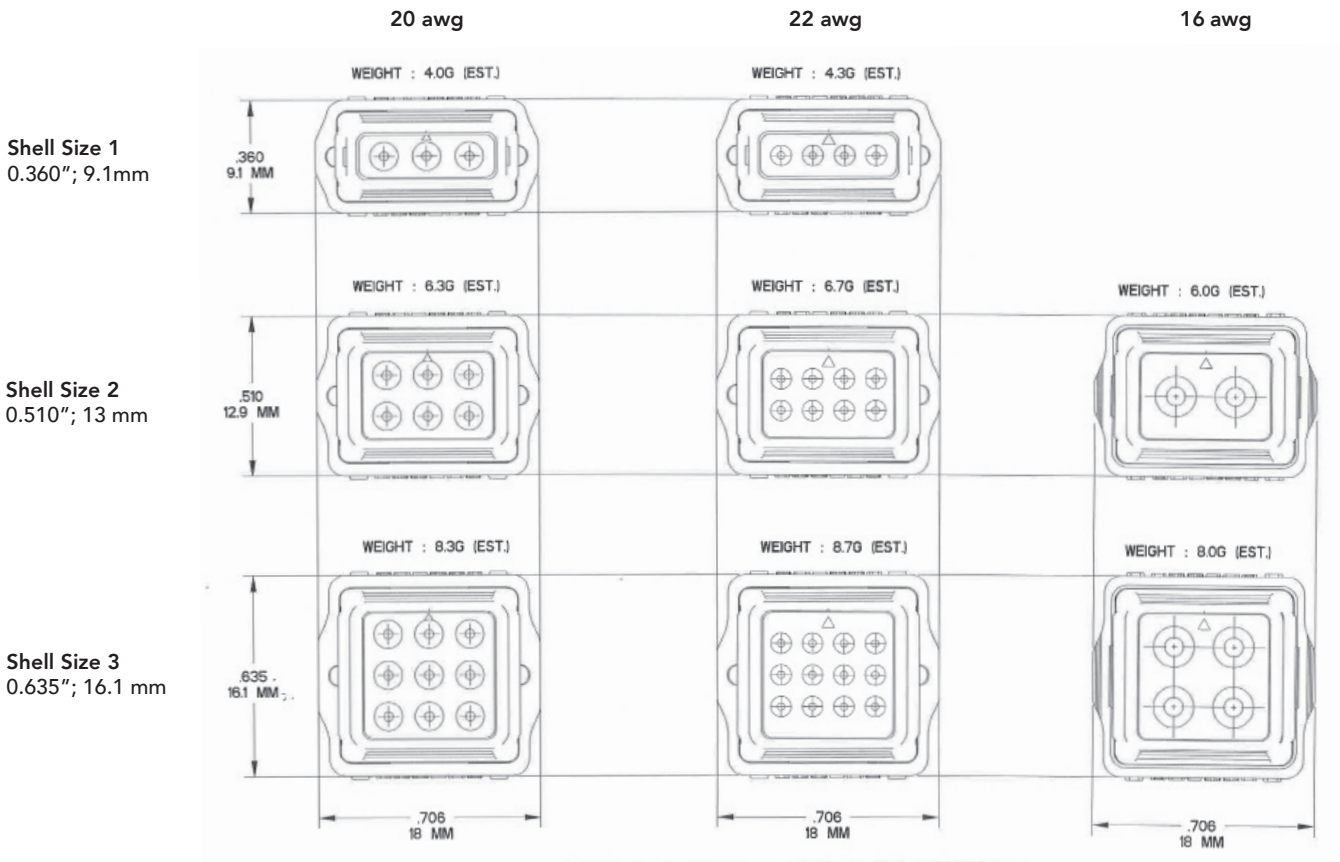
	SQR	X	XX	X	X	X
Series Prefix						
Number of Contacts						
2						
3						
4						
6						
8						
9						
C=12						
Contact Size (AWG)						
16: Size 16						
20: Size 20						
22: Size 22						
Shell Type						
1: Plug						
2: Receptacle						
5: Front Mount Flange Receptacle						
7: Rear Mount Flange Receptacle						
Keying						
0: A Keying Pins (Black)						
1: B Keying Pins (Green)						
2: C Keying Pins (White)						
5: A Keying Sockets (Black)						
6: B Keying Sockets (Green)						
7: C Keying Sockets (White)						
With / Without Contacts						
0: Without contacts						
1: With crimp contacts						
2: With straight PCB contacts						
3: With R/A PCB contacts						

*Note: Use this part builder with the Configuration & Pin Count table on pg. 5

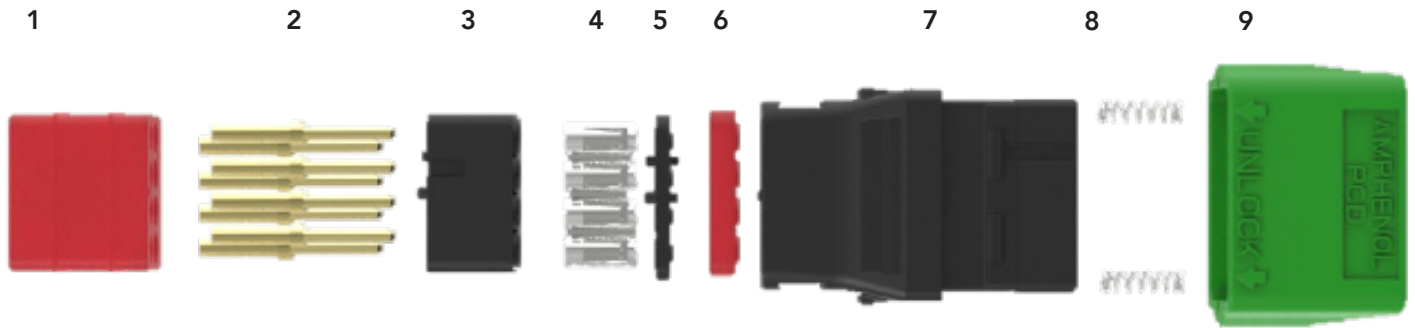
Example Configurations

- SQR620100:** 6 contacts., 20 awg., Plug, A Keying Sockets (Black), without contacts
- SQR620202:** 6 contacts., 20 awg., Receptacle, A Keying Sockets (Black), with straight PCB contacts
- SQR620150:** 6 contacts., 20 awg., Plug, A Keying Sockets (Black), without contacts (reverse Gender)
- SQRC22503:** 12 contacts., 22 awg., Front Mount Flange, A Keying Sockets (Black), without contacts

Configuration & Pin Count



Construction & Materials



Items 3, 5, and 7 ultrasonically welded, ensure no gaps or voids.

Items 1 and 6 are bonded with heat cured epoxy for long-lasting, peel-free operation.

Plug shown.

1	Wire Seal Grommet Silicone Rubber, Red, per A-A-59588
2	M39029 style Pins or Sockets
3	Clip Housing, Polyetherimide, ULTEM
4	Retainer Clip, Stainless Steel 301
5	Cap Housing, Polyetherimide, ULTEM
6	Face Seal, Silicone Rubber, Red, per A-A-59588
7	Housing, Polyetherimide, ULTEM
8	Stainless Steel springs
9	Coupling Nut, PA66 Nylon

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