



Bringing Your Innovations To Life

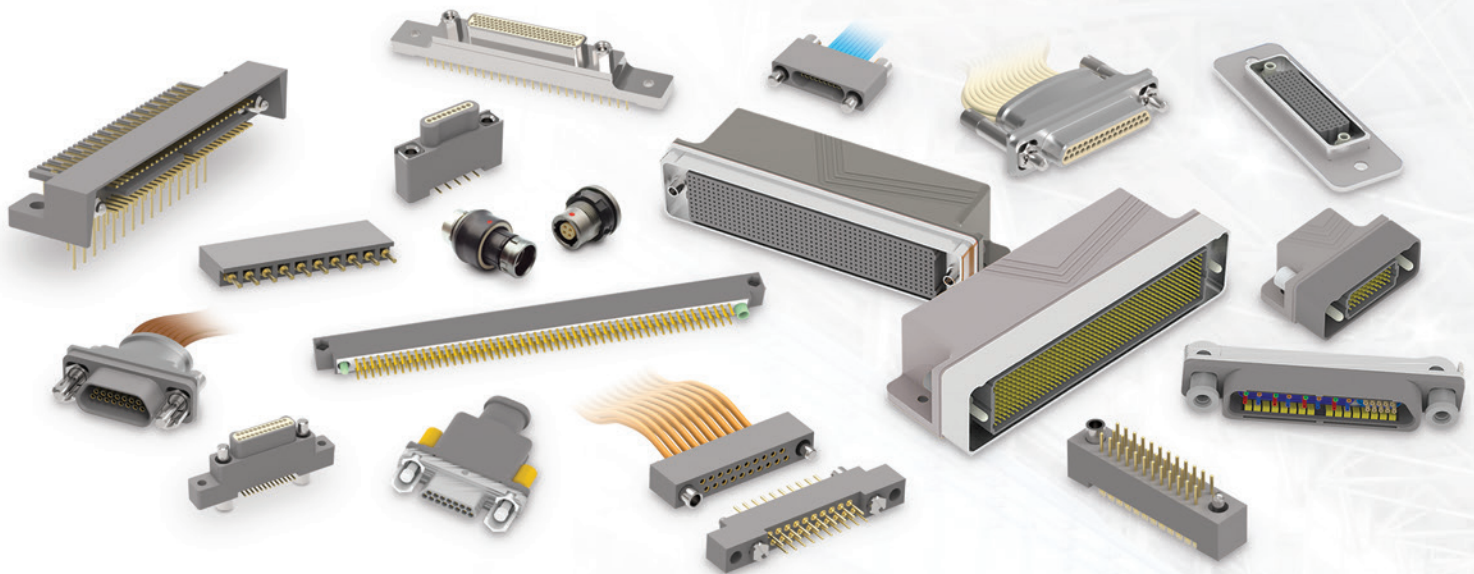


# Series 360<sup>®</sup>

## Circular Connectors



# Complete Electronic Solutions



## Engineering & Manufacturing Trusted Interconnects

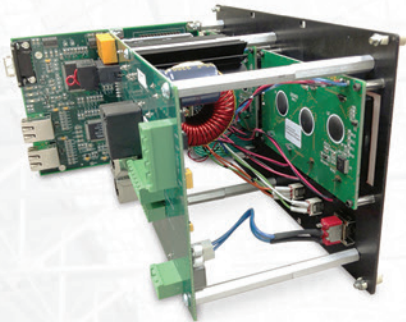
AirBorn is an employee owned company whose core business is engineering specialized connectors & electronic components for OEMs worldwide. We serve customers across many industries including: Commercial Air, Industrial, Instrumentation, Marine, Medical, Military/Defense & Space Exploration.

The culture at AirBorn embraces both Six Sigma & LEAN manufacturing principals, beginning with front office personnel and extending to the production groups within our facilities. AirBorn products are trusted to perform in extreme conditions, where mission-critical reliability is vital to success. Customers trust AirBorn products, and have for over 60 years.

Companies today are looking for **MORE THAN** a mere **SUPPLIER...**  
They're looking for a **STRATEGIC PARTNER** to collaborate & grow with.



PCB Assemblies

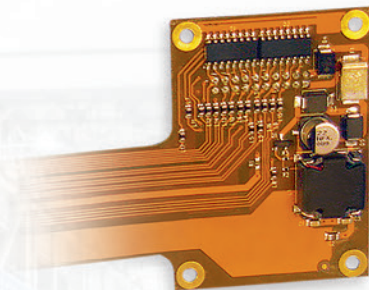


Box-Build

## Value-Added Services

AirBorn proudly offers a broad range of value-added services, extending well beyond interconnects, including: PCB assemblies, flexible-circuit assemblies, complete chassis/box builds, cable assemblies (including active-optical & fiber optics), wiring harnesses, custom-engineered power supplies, engineering and lab services.

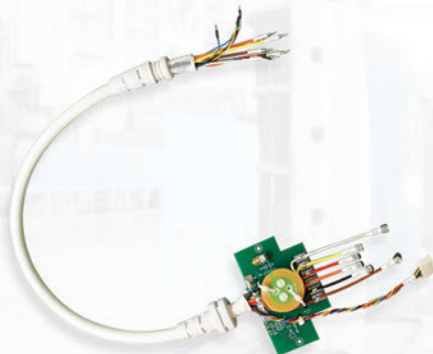
With all of our customer-centric services offered under one roof, we shorten lead-times and save customers both time and money.



Flexible Circuit Assemblies



Design &  
Lab Services



Wire & Cable Assemblies



Custom Engineered  
Power Supplies

# AirBorn In Action



Voyager I & II

## AirBorn Solutions Are "In-Action" Inside Many Important & Famous Applications

AirBorn Connectors, Inc. was founded in 1958 to manufacture electronic connectors for aviation applications, hence our company name. By 1960, our 12 employees engaged with customers including Motorola Inc., Texas Instruments (now Raytheon), Lockheed Aircraft, Boeing and Burroughs. In the time since our founding, we've managed to be a part of many famous and important projects in human history. The Voyager I & II program, launched in 1977 and still traveling interstellar space today, is emblematic of how customers view AirBorn parts: rugged, reliable and long lasting.

We're proud to be a part of America's, and our allies', vast military and defense initiatives too. AirBorn parts were designed into the Apache & Blackhawk Helicopters, F-16 & F-35 Jets, Abram's & Bradley Tanks and Ohio-Class Attack Subs just to name a few. Our solutions are also part of Patriot, Javelin, Hellfire, Tomahawk and THAAD missile programs. We excel at providing unfailing quality to mission-critical applications.

While military/defense and aviation applications are our specialty, we by no means stop there. AirBorn parts are an integral part of commercial aircraft, MRI machines, defibrillators as well as pain management systems. From deep sea to deep space, AirBorn connectors are ready for any challenge.



Mars Rovers



Commercial Airliners



Military Communications & Rifle Scope



Pain Management Systems



Space Shuttle Program

# Small, Sleek & Strong Series 360<sup>®</sup>



## Ruggedness & Reliability: The Keys To Mission Success

AirBorn's Series 360<sup>®</sup> interconnect system is a supremely rugged and reliable interconnect solution designed with our fighting men and women in mind. With its small, sleek and strong geometry, the Series 360<sup>®</sup> offers OEMs a lightweight, watertight and easy-to-clean circular connector option. The Push/Pull locking and Quick-DeMate<sup>®</sup> functionality are ideally suited for soldier communication systems, radars, avionics, embedded computers and much more.

On the battlefield, where reliability means life or death, Series 360<sup>®</sup> shines brightest. Modern military personnel prove ideal partners, applying Series 360<sup>®</sup> to: group voice and data radio, navigation modules, soldier control units, rugged computers, hand-held devices, GPS antennas, night-vision equipment, unmanned systems and land vehicles.

### Key Features & Benefits:

- -51°C to +125°C operating temperature range
- Cable/flex assembly & over-molding ready
- Designed to withstand the harshest environments
- Reliably durable through >5,000 mating cycles
- Individual contact configuration: signals, low/high voltage transmission and coax/triax are available in one connector
- Multiple standard inserts available
- Optimized mechanical and color keying
- Power solutions up to 22A
- Push/Pull locking or Quick-DeMate<sup>®</sup> functionality
- Small, sleek & easily engaged
- Superior data transmission
- Quick-Clean<sup>®</sup> model available
- Watertight in mated or unmated conditions

# Standard

Page 12

## Cable-Mount

Push/Pull Plug

Quick-DeMate™ Plug

Receptacle



## Panel-Mount Receptacles

Printed Circuit Boards

Flexible Circuit Assemblies

Solder-Cup



# Quick-Clean®

Page 34

## Cable-Mount

Quick-DeMate™ Plug

Receptacle



## Panel-Mount

Printed Circuit Boards

Flexible Circuit Assemblies

Solder-Cup



Plug

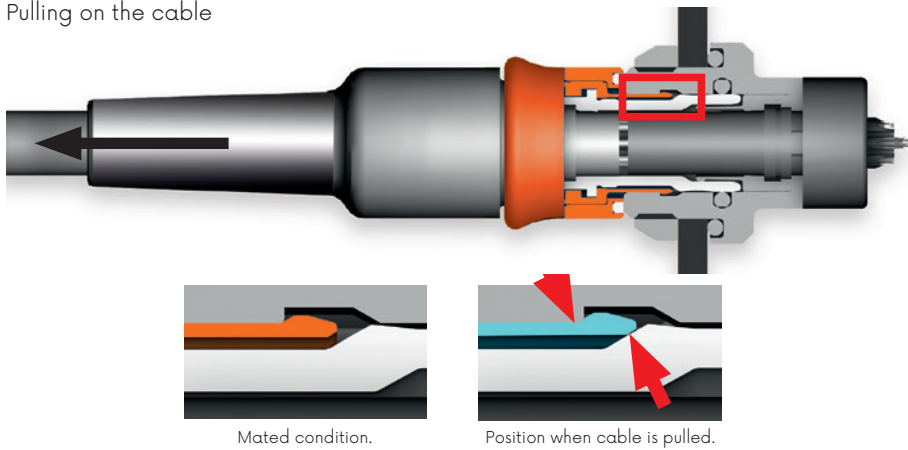
Receptacle

# Series 360<sup>®</sup> Standard Overview

						Fit for all plugs, receptacles and in-line receptacles
Size	Push/Pull Plug	Quick-DeMate <sup>™</sup> Plug	R1 Receptacle Style	R2 Receptacle Style	In-Line Receptacle	Available inserts
A	✓	✓	✓	✓	✓	03-, 04-, 07-, 09-, 10-positions
B	✓	✓	✓	✓	✓	05-, 08-, 14-, 16-positions
C	✓	✓	✓	✓	✓	10-, 19-positions
D	✓	✓	✓	✓	✓	06-, 19-, 26-positions
E	✓	✓	✓	N/A	✓	04-, 18-, 26-, 37-positions
F	✓	N/A	✓	N/A	N/A	55-positions

## Push/Pull Locking Principle

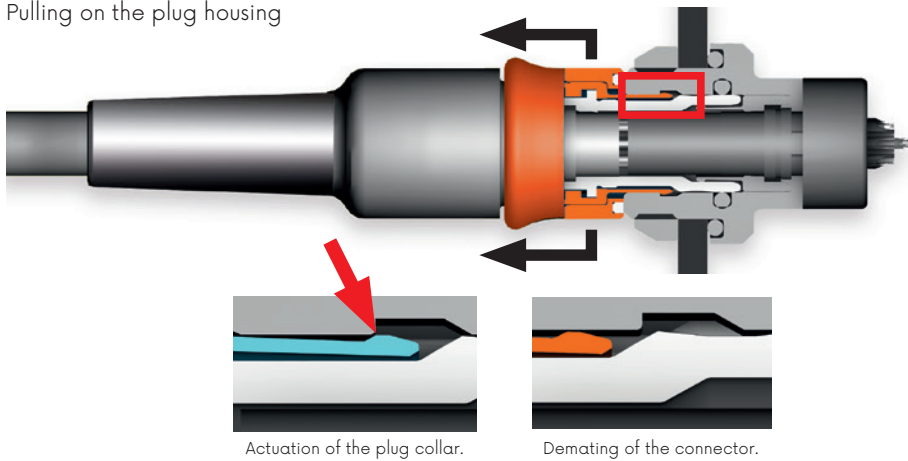
Pulling on the cable



Once mated, locking fingers in the plug engage grooves in the receptacle. Pulling on the cable only strengthens the locking mechanism, and accidental disengagement is virtually impossible.

## Push/Pull Locking Principle

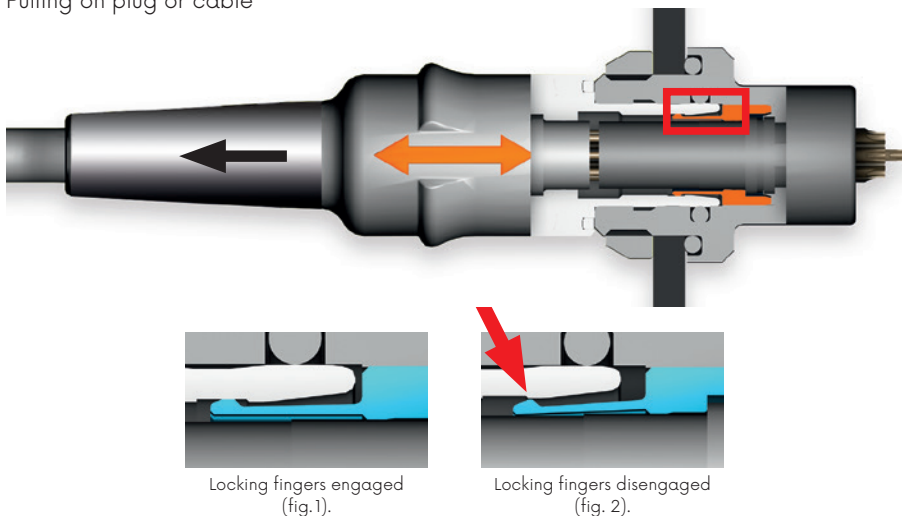
Pulling on the plug housing



Actuation of the plug collar disengages the locking fingers and allows the connectors to separate easily.

## Quick-DeMate™ Function

Pulling on plug or cable



Locking fingers inside the receptacle keep the mated pair together (fig 1).

Pulling on the connector or cable with enough force to disengage the locking fingers allows the connectors to separate (fig 2).

Quick-DeMate™ forces depend on shell size & contact configuration. Additional information available on request.

# Critical to Success Applications



**Data Radio & Group Voice**  
Superior shielding & data transmission,  
up to 10 GBit

**Navigation Module**  
Quick-Clean™ model

**Soldier Control Unit**  
Cable-to-cable connection

**Right-Angle Connector**  
Compact; gets into tight spaces

## Series 360® — Modernizing Soldiers Across the Globe

When reliability means the difference between life and death, system designers can count on Series 360® circular interconnect solutions. Series 360® connectors are designed to surpass rigorous military requirements and excel in extreme battlefield conditions — but their utility doesn't end there. If you are looking for an innovative, robust, fast and reliable circular connector solution, AirBorn is your perfect partner!

### Applications

- Custom power supplies
- Defense & security
- Dismounted soldier
- Land vehicles
- Nightvision equipment
- PTT & PRR systems
- Ruggedized computers & hand-helds
- Software defined radios
- Unmanned systems



Radar



Industrial



Energy

## High-Effective Electronics Solution for Diverse Markets

AirBorn is a system solutions provider, presenting a broad range of industry and customer specific solutions to OEMs world wide. We're supremely focussed on offering durable & dependable electronic solutions for your next design. Whether the desired application is under the sea, among the stars or in the harsh desert, AirBorn can help!



Military & Defense



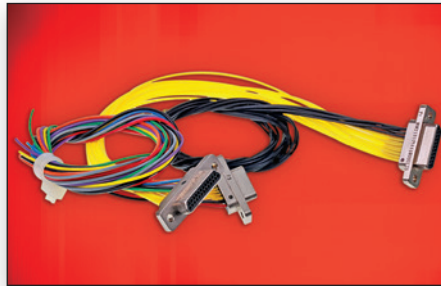
Avionics

# Cable Assemblies

## Ideal for Circular Connectors

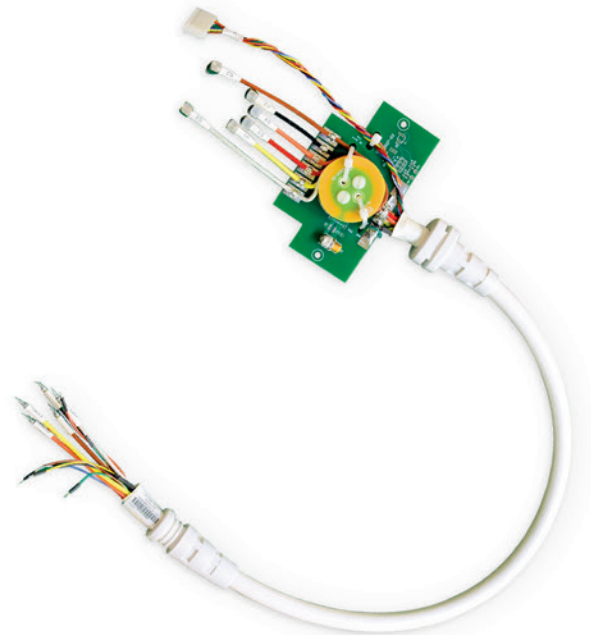
AirBorn will design and assemble cable and wiring harnesses for your custom interconnect requirement. From simple 2-wire harnesses to PCB-integration, RF to fiber optic, discrete to double-ended processing.

We deliver built-in value; offering customers a complete vertically-integrated solution.



## Cable Assembly Options

- Discrete wire harnesses – simple 2-wire to complex with PCB integration
- Multi-connector cables
- Over-molded cables
- RF cabling (processing RG-8 through RG-178)
- Discrete wire processing (30-12 awg)
- Ribbon cables (jacketed & shielded)
- Fiber optics – SC, ST, LCF (simplex & duplex)
- Poly-tube harnesses
- Automated double-ended wire processing
- Cable braiding in nylon & tinned wire

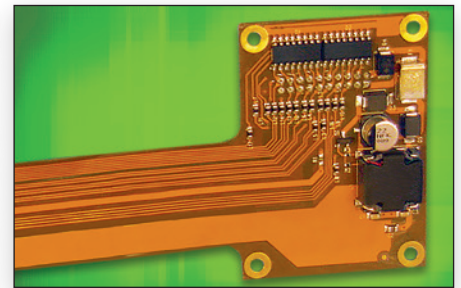
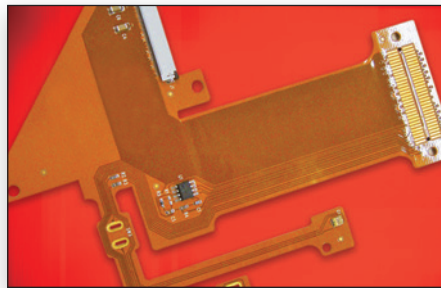


# Flexible Circuit Assemblies

## Series 360® Ready

With AirBorn, flexible circuits extend from jumpers to fully developed, rigid-flex circuit boards supporting multiple PCB components.

AirBorn's Series 360® connectors are primed and ready to be paired with not only conventional cables, but flexible circuits as well. Both options are ready for you today!



### Surface Finishes

- Bright Tin
- Electrolytic (Hard) Gold
- Electroless Nickel Immersion Gold (ENIG)
- Hot Air Solder Leveling
- Immersion Silver
- Immersion Tin
- Photo Imagible Coverlay (PIC)
- Tin / Lead
- Soldermask

### Shielding

- Cross Hatch Pattern - Copper
- Silver Ink Epoxy
- Solid Copper

### Plating

- Panel Plating
- Selective (Button) Plating

### Product Type

- Single-sided flex — 1 Layer
- Double-sided flex — 2 Layers
- Multi-layer flex — 3-10 Layers
- Multi-layer rigid flex — 2-15 Layers
- Sculptured flex — 1 Layer
- HDEC — 1 Layer
- Extended length flex (up to 60') — 1-2 Layers
- Liquid crystal polymer flex — 1-2 Layers

### Materials

- Dielectrics
  - Polyimide FR, Polyimide LF, Polyimide AP, Polyimide TK, LCP
- Copper
  - Rolled Annealed, Electro Deposited, Beryllium Alloy

# Series 360<sup>®</sup> Connectors Standard



Quick-  
DeMate<sup>™</sup>



Push/Pull

Series 360<sup>®</sup> Push/Pull connectors stay fully fixed until the plug collar is pulled, thereby releasing the lock. This makes fast disengagement and re-engagement easy on the fly. Quick-DeMate<sup>®</sup> connectors utilize an additional safety measure by disengaging when the retention force is exceeded, thus never risking failure from unwarranted yanking.

- Easily handled & blind mateable
- Effortless mating & de-mating
- Cable-to-cable connection available
- Options for signal, high-speed data, & power up to 22A
- Solder cup & PCB terminations
- Watertight in mated & unmated conditions

# Now, System Designers Have Distinct Options

Series 360® offers greater design flexibility for system engineers as the Push/Pull and Quick-DeMate® models are interoperable with the same receptacles.

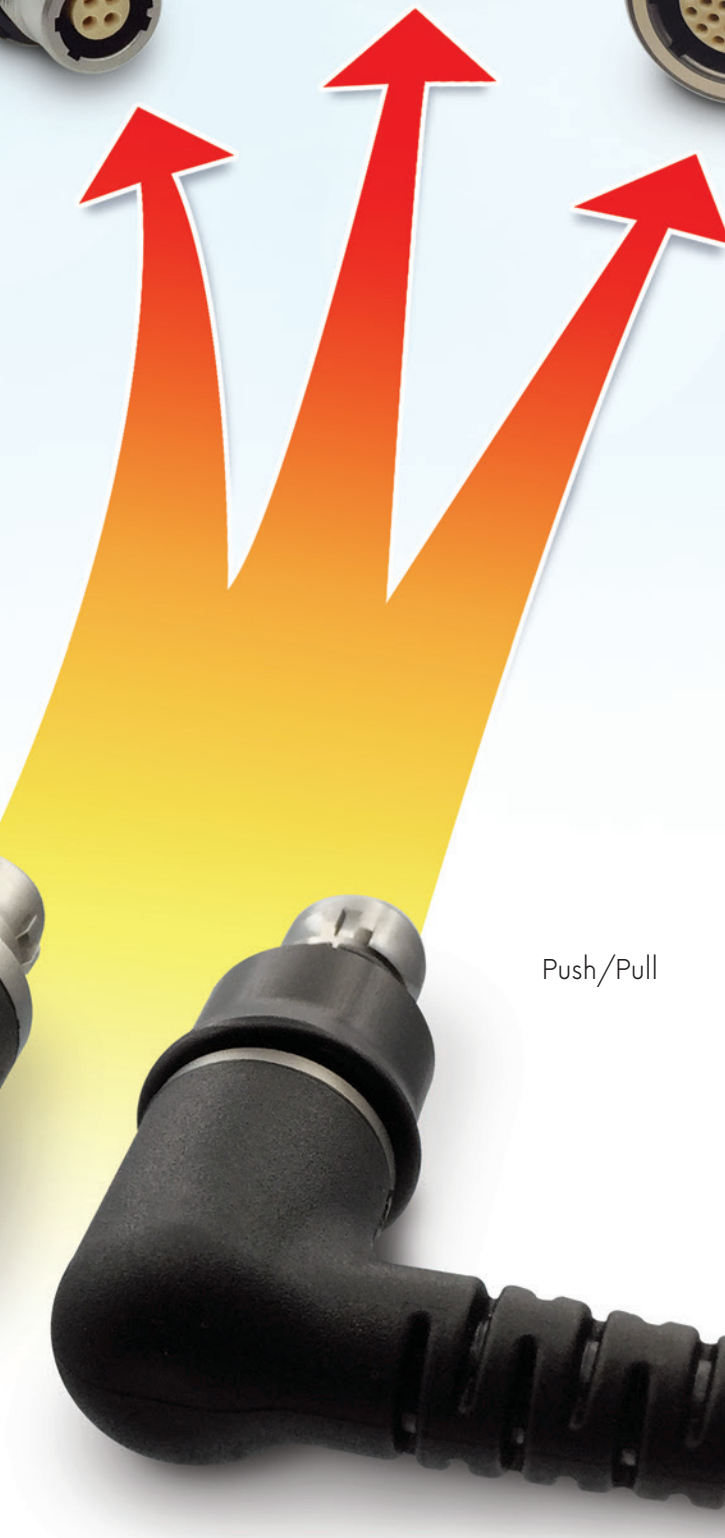
While on-the-go or in the heat of the battle, push/pull cables can be switched out to Quick-DeMate® cables without replacing the receptacle. That's freedom system designers are looking for! Count on finding the precise option you need with Series 360® circular interconnects.

Panel-Mount Receptacles

In-Line Receptacle

Quick-DeMate™

Push/Pull



## P1 — Standard, Push/Pull Plug with Solder-Cup Contacts

P1 Push/Pull plugs mate with all Series 360® standard receptacles. When mated, the connection will remain engaged until the plug collar is actuated. Pulling on the collar allows for system to be disengaged and re-engaged quickly. Pin contacts are factory pre-installed.



### Sample Part Number Format: SSP1-A003AA-X30-RP

S	S	P1	-				A	-	X	3	0	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	S – Standard	P1 – Plug Push/Pull Cable		A 003	004*†	A – Standard	A – Light Brown*		X – Pin Solder-Cup	3 – Gold	0 – No		R – Ruthenium	P – Peek
				007	009	B – High-Speed / Other	B – Red							
				010			C – Blue							
				B 004*			D – Green							
				005			*Option A is readily available; options B, C, & D may have extended lead times.							
				008*†										
				014										
				016										
				C 008*										
				010										
				019										
				D 004*										
				006										
				008*										
				019										
				026										
				E 004										
				018										
				026										
				037										
				F 055										
				*High Speed										
				†Standard										

#### Notes:

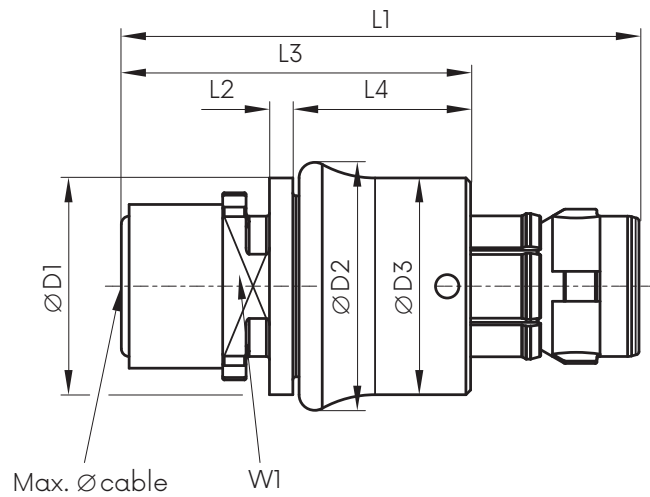
- For technical data, see page 26.
- For contact configuration, see page 28-33.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



Solder-Cup

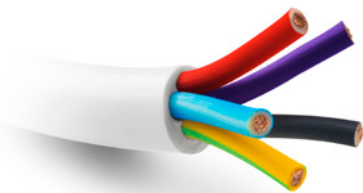
NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.



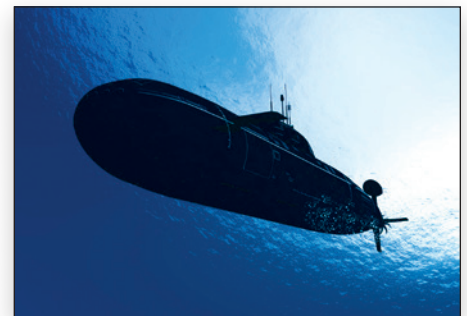


Shell Size	Dimensions in mm (inches)																	
	L1		L2		L3		L4		D1		D2		D3		W1		Max. Cable	
A	31.4	(1.24)	1.5	(0.06)	21.4	(0.84)	10.4	(0.41)	11.9	(0.47)	14	(0.55)	12	(0.47)	7	(0.28)	5.5	(0.22)
B	33.2	(1.31)	1.5	(0.06)	22.4	(0.88)	11.4	(0.45)	13.9	(0.55)	15.9	(0.63)	13.9	(0.55)	8	(0.31)	6.5	(0.26)
C	32.7	(1.29)	1.5	(0.06)	22.7	(0.89)	11.7	(0.46)	14.5	(0.57)	16.5	(0.65)	14.5	(0.57)	10	(0.39)	8	(0.31)
D	35.2	(1.39)	1.5	(0.06)	23.2	(0.91)	12.2	(0.48)	17.6	(0.69)	19.6	(0.77)	17.6	(0.69)	12	(0.47)	10	(0.39)
E	38.3	(1.51)	1.5	(0.06)	23.2	(0.91)	12.2	(0.48)	21.9	(0.86)	23.9	(0.94)	22	(0.87)	14	(0.55)	11.5	(0.45)
F	52.6	(2.07)	2.2	(0.09)	34.1	(1.34)	18.1	(0.71)	29.8	(1.17)	33	(1.3)	30	(1.18)	21	(0.83)	17.5	(0.69)

## Wire Size Recommendation



Contact Size		Wire Size
mm	Inches	
.5	.02	30-26 AWG
.7	.03	26-22 AWG
.9	.04	26-22 AWG
1.3	.05	22-20 AWG
2.0	.08	16-12 AWG



## P2 — Standard, Quick-DeMate™ Plug with Solder-Cup Contacts

P2 plugs mate with all Series 360® standard receptacles. As a safety measure, Quick-DeMate™ plugs have the unique advantage of disengaging when the retention force is exceeded. Pin contacts are factory pre-installed.



### Sample Part Number Format: SSP2-A003AA-X30-RP

S	S	P2	-				A	-	X	3	0	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	S – Standard	P2 – Plug Quick-DeMate™ Cable		A 003 004*† 007 009 010 B 004* 005 008*† 014 016 C 008* 010 019 D 004* 006 008* 019 026 E 004 018 026 037 *High Speed †Standard	A – Standard B – High-Speed / Other	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.	X – Pin Solder-Cup	3 – Gold	0 – No	R – Ruthenium	P – Peek			

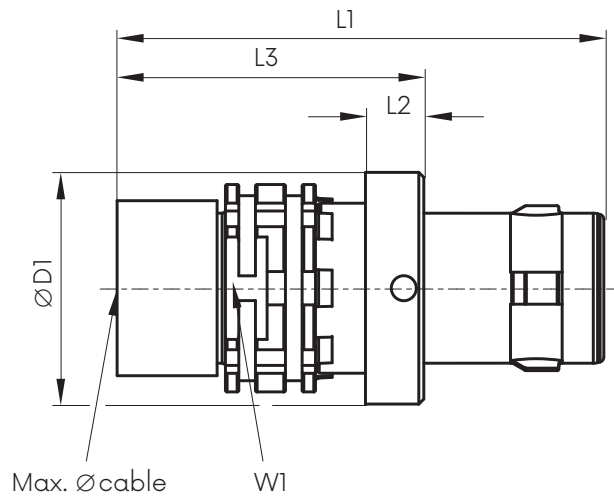
- Notes:**
- For technical data, see page 26.
  - For contact configuration, see page 28-33.
  - Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
  - For contact diameter & termination cross section, see page 57.



Solder-Cup

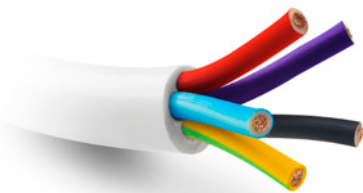
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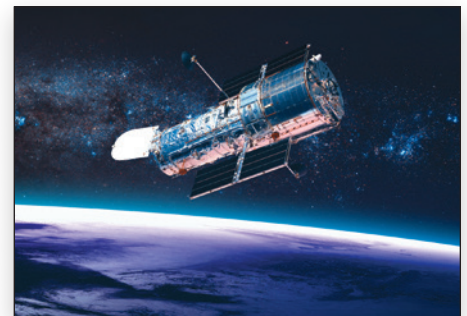


Shell Size	Dimensions in mm (inches)											
	L1		L2		L3		D1		W1		Max. Cable	
A	25.0	(0.98)	3.0	(0.12)	15.0	(0.59)	11.9	(0.47)	9.0	(0.35)	5.5	(0.22)
B	29.2	(1.15)	3.5	(0.14)	18.4	(0.72)	13.9	(0.55)	11.0	(0.43)	6.5	(0.26)
C	28.5	(1.12)	3.5	(0.14)	18.5	(0.73)	15.9	(0.63)	12.0	(0.47)	8.0	(0.31)
D	31.0	(1.22)	4.0	(0.16)	19.0	(0.75)	17.6	(0.69)	14.0	(0.55)	10.0	(0.39)
E	37.5	(1.48)	4.0	(0.16)	22.4	(0.88)	21.9	(0.86)	18.0	(0.71)	11.5	(0.45)

## Wire Size Recommendation



Contact Size		Wire Size
mm	Inches	
.5	.02	30-26 AWG
.7	.03	26-22 AWG
.9	.04	26-22 AWG
1.3	.05	22-20 AWG
2.0	.08	16-12 AWG



## R1 — Standard, Panel-Mount, Solder-Cup Receptacle

R1 panel-mount receptacles provide a rugged, wire terminated interconnect for your box or panel. Receptacles mate with either Push/Pull or Quick-DeMate™ standard plugs. Flange and jam nut are located close to the mating face, leaving minimal connector shroud exposed. Solder-cup socket contacts are factory installed.



### Sample Part Number Format: SSR1-A003AA-W31-RP

S	S	R1	-				A	-	W	3	1	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	S – Standard	R1 – Receptacle, Panel-Mount		A 003	004*†	A – Standard	A – Light Brown*		W – Socket Solder-Cup	3 – Gold	1 – Yes		R – Ruthenium	P – Peek
				007	009	B – High-Speed / Other	B – Red							
				010			C – Blue							
				B 004*			D – Green							
				005			*Option A is readily available; options B, C, & D may have extended lead times.							
				008*†										
				014										
				016										
				C 008*										
				010										
				019										
				D 004*										
				006										
				008*										
				019										
				026										
				E 004										
				018										
				026										
				037										
				F 055										
				*High Speed										
				†Standard										

### Notes:

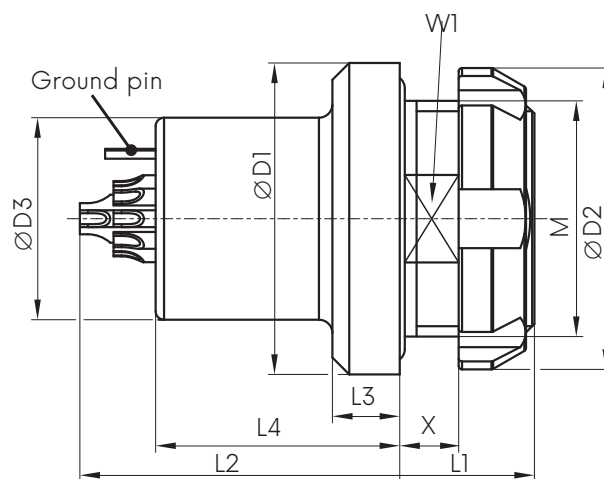
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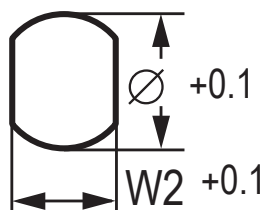
Solder-Cup

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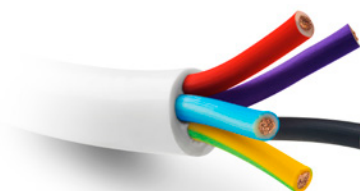




Shell Size	Dimensions in mm (inches)																		
	L1	L2 MAX	L3	L4	X MAX	D1	D2	D3	W1	M Thread									
A	6.5	(0.26)	15.5	(0.61)	3.0	(0.12)	11.5	(0.45)	3.0	(0.12)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	10	(0.39)	11 X 0.75
B	8.0	(0.31)	19.0	(0.75)	4.0	(0.16)	14.5	(0.57)	3.5	(0.14)	18.5	(0.73)	17.9	(0.7)	12.0	(0.47)	13	(0.51)	14 X 1
C	7.0	(0.28)	17.7	(0.7)	2.5	(0.1)	12.5	(0.49)	3.0	(0.12)	18.9	(0.74)	17.9	(0.7)	14.0	(0.55)	13	(0.51)	14 X 1
D	8.0	(0.31)	21.5	(0.85)	4.0	(0.16)	15.0	(0.59)	3.0	(0.12)	20.8	(0.82)	21.9	(0.86)	14.5	(0.57)	15	(0.59)	16 X 1
E	11.0	(0.43)	22.5	(0.89)	4.0	(0.16)	15.5	(0.61)	5.5	(0.22)	26.0	(1.02)	25.0	(0.98)	18.0	(0.71)	18	(0.71)	20 X 1
F	13.0	(0.51)	19.0	(0.75)	5.0	(0.2)	13.0	(0.51)	6.5	(0.26)	39.0	(1.54)	37.5	(1.48)	27	(1.06)	27	(1.06)	30 X 1.5



Panel cut out



## Wire Size Recommendation

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)
D	15.1	(0.59)	16.1	(0.63)
E	18.1	(0.71)	20.1	(0.79)
F	27.1	(1.06)	30.1	(1.19)

Contact Size		Wire Size
mm	Inches	
.5	.02	30-26 AWG
.7	.03	26-22 AWG
.9	.04	26-22 AWG
1.3	.05	22-20 AWG
2.0	.08	16-12 AWG





# R3 — Standard, In-Line Cable Receptacle with Solder-Cup Contacts

The R3 cable receptacle is rugged yet sleek & light weight, seamlessly mating with all standard Series 360® plugs. Socket contacts come factory installed.



## Sample Part Number Format: SSR3-A003AA-W30-RP

S	S	R3	-				A	-	W	3	0	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	S – Standard	R3 – Receptacle, In-Line Cable		A 003 004*† 007 009 010 B 004* 005 008*† 014 016 C 008* 010 019 D 004* 006 008* 019 026 E 004 018 026 037 *High Speed †Standard	A – Standard B – High-Speed / Other	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.	W – Socket Solder- Cup	3 – Gold	0 – No	R – Ruthenium	P – Peek			

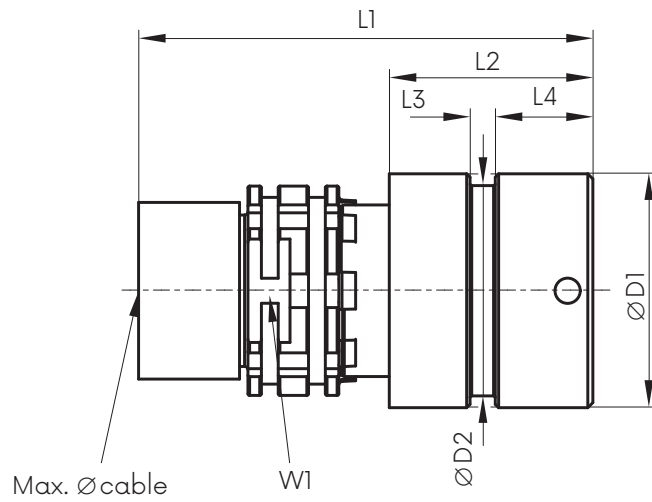
- Notes:**
- For technical data, see page 26.
  - For contact configuration, see page 28-33.
  - Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
  - For contact diameter & termination cross section, see page 57.



Solder-Cup

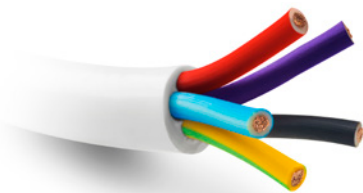
NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)															
	L1		L2		L3		L4		D1		D2		W1		Max. Cable	
A	25.0	(0.98)	13.0	(0.51)	1.5	(0.06)	5.8	(0.23)	11.9	(0.47)	10.5	(0.41)	9.0	(0.35)	5.5	(0.22)
B	27.0	(1.06)	12.1	(0.48)	1.5	(0.06)	5.8	(0.23)	13.9	(0.55)	12.5	(0.49)	11.0	(0.43)	6.5	(0.26)
C	27.0	(1.06)	12.0	(0.47)	1.5	(0.06)	5.8	(0.23)	15.9	(0.63)	14.5	(0.57)	12.0	(0.47)	8.0	(0.31)
D	30.0	(1.18)	15.0	(0.59)	1.5	(0.06)	5.8	(0.23)	17.6	(0.69)	16.2	(0.64)	14.0	(0.55)	10.0	(0.39)
E	38.0	(1.5)	19.5	(0.77)	1.5	(0.06)	5.8	(0.23)	21.9	(0.86)	20.8	(0.82)	18.0	(0.71)	11.5	(0.45)

## Wire Size Recommendation



Contact Size		Wire Size
mm	Inches	
.5	.02	30-26 AWG
.7	.03	26-22 AWG
.9	.04	26-22 AWG
1.3	.05	22-20 AWG
2.0	.08	16-12 AWG





## R1 — Standard, Panel-Mount, Socket/PCB Receptacle

R1 panel-mount connectors provide a rugged, PCB terminated interconnect for your box or panel. Receptacles mate with either Push/Pull or Quick-DeMate™ plugs. Flange and jam nut are located close to the mating face, leaving minimal connector shroud exposed. Socket contacts for PCB termination are factory installed.



### Sample Part Number Format: SSR1-A003AA-U31-RP

S	S	R1	-				A	-	U	3	1	-	R	P
SERIES	FAMILY	BODY	SHELL SIZE	CONTACT #	LAYOUT	KEYING	CONTACT TYPE	TERMINATION FINISH	GROUND PIN	SHELL FINISH	INSULATOR MATERIAL			
S – Series 360 Circulars	S – Standard	R1 – Receptacle, Panel-Mount	A 003 004*† 007 009 010 B 004* 005 008*† 014 016 C 008* 010 019 D 004* 006 008* 019 026 E 004 018 026 037 F 055	A – Standard B – High-Speed / Other	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.	U – Socket PTH	3 – Gold	1 – Yes	R – Ruthenium	P – Peek				

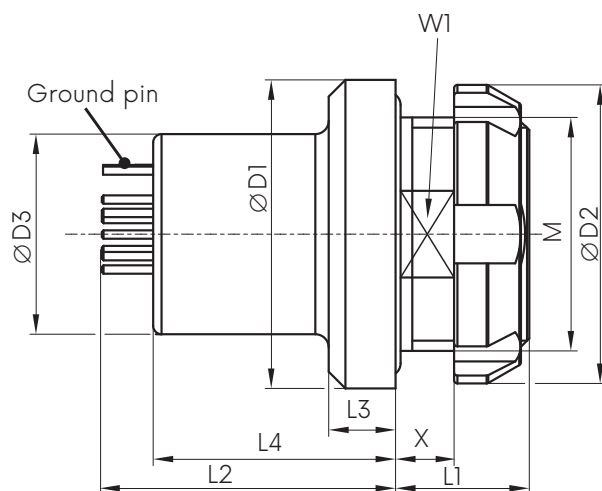
- Notes:**
- For technical data, see page 26.
  - For contact configuration, see page 28-33.
  - For contact diameter & termination cross section, see page 57.



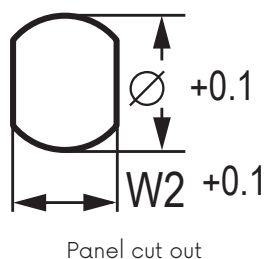
Plated Thru Hole

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.

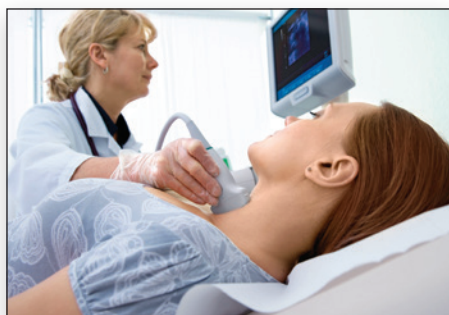




Shell Size	Dimensions in mm (inches)										W1	M Thread
	L1	L2	L3	L4	X MAX	D1	D2	D3				
A	6.5 (0.26)	15 (0.59)	3.0 (0.12)	11.5 (0.45)	3.0 (0.12)	15.5 (0.61)	15.0 (0.59)	10.0 (0.39)			10 (0.39)	11 X 0.75
B	8.0 (0.31)	18 (0.71)	4.0 (0.16)	14.5 (0.57)	3.5 (0.14)	18.5 (0.73)	17.9 (0.70)	12.0 (0.47)			13 (0.51)	14 X 1
C	7.0 (0.28)	15.7 (0.62)	2.5 (0.10)	12.5 (0.49)	3.0 (0.12)	18.9 (0.74)	17.9 (0.70)	14.0 (0.55)			13 (0.51)	14 X 1
D	8.0 (0.31)	20.5 (0.81)	4.0 (0.16)	15.0 (0.59)	3.0 (0.12)	20.8 (0.82)	21.9 (0.86)	14.5 (0.57)			15 (0.59)	16 X 1
E	11.0 (0.43)	20.5 (0.81)	4.0 (0.16)	15.5 (0.61)	5.5 (0.22)	26.0 (1.02)	25.0 (0.98)	18.0 (0.71)			18 (0.71)	20 X 1
F	13.0 (0.51)	19 (0.75)	5.0 (0.20)	13.0 (0.51)	6.5 (0.26)	39.0 (1.54)	37.5 (1.48)	27 (1.06)			27 (1.06)	30 X 1.5



Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)
D	15.1	(0.59)	16.1	(0.63)
E	18.1	(0.71)	20.1	(0.79)
F	27.1	(1.07)	30.1	(1.19)





## R2 — Standard, Panel-Mount, Socket/PCB Receptacle

R2 panel-mount receptacles provide a rugged, PCB terminated interconnect for your box or panel. Receptacles mate with either Push/Pull or Quick-DeMate™ plugs. Flange and jam nuts are located far from the mating face, leaving a very small footprint behind the panel or inside the enclosure. Socket contacts for PCB termination are factory installed.



### Sample Part Number Format: SSR2-A003AA-U31-RP

S	S	R2	-				A	-	U	3	1	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	S – Standard	R2 – Receptacle, Panel-Mount Offset		A 003 004*† 007 009 010 B 004* 005 008*† 014 016 C 008* 010 019 D 004* 006 008* 019 026 *High Speed †Standard	A – Standard B – High-Speed / Other	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.	U – Socket PTH	3 – Gold	1 – Yes	R – Ruthenium	P – Peek			

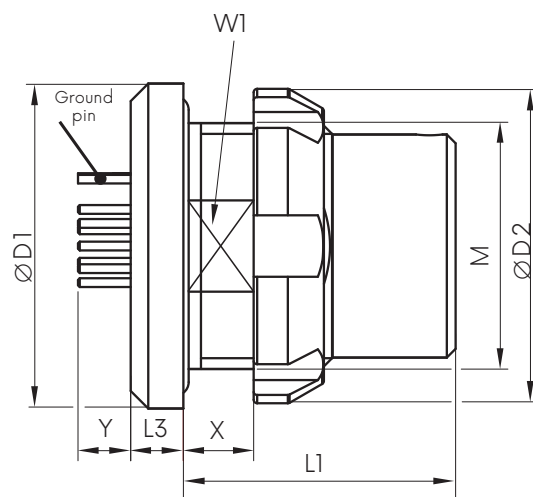
- Notes:**
- For technical data, see page 26.
  - For contact configuration, see page 28-33.
  - For contact diameter & termination cross section, see page 57.



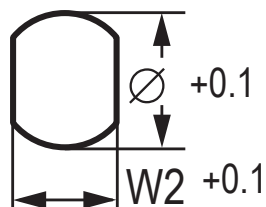
Plated Thru Hole

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.



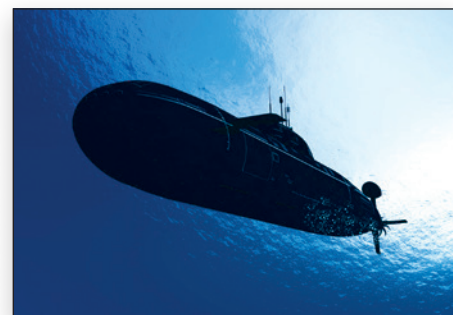


Shell Size	Dimensions in mm (inches)													
	L1		L3		Y	X Max		D1		D2		W1		M Thread
A	13.0	(0.51)	2.5	(0.1)	See page 28	5.0	(0.2)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	11 X 0.75
B	15.5	(0.61)	3.0	(0.12)	See page 29	4.0	(0.16)	18.5	(0.73)	17.9	(0.7)	13.0	(0.51)	14 X 1
C	14.2	(0.56)	3.0	(0.12)	See page 30	4.0	(0.16)	18.9	(0.74)	17.9	(0.7)	13.0	(0.51)	14 X 1
D	17.5	(0.69)	3.0	(0.12)	See page 31	4.0	(0.16)	20.8	(0.82)	21.9	(0.86)	15.0	(0.59)	16 X 1



Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)
D	15.1	(0.59)	16.1	(0.63)



## Technical Data — Standard Circular Connectors

### Environmental & Testing

Type	Performance	Standard
Tightness	IP 68 / 1m, IP 69K	IEC 60529 / MIL-STD-810F 512.4/5, DIN 40050-9
Sand & dust	Blowing sand and dust, settling dust	MIL-STD-810F 510.4/5 Procedure I / II, DIN 40050-9 / IP6kx
Operating temperature	-51°C up to +125°C	IEC 60512-6-11 i+j
Thermal shock	-65°C up to +150°C	EIA 364-32-E, IEC 60068-2-14
Humidity cyclic	85% up to 95%, 28 up to 71°C	MIL-STD-1344A Method 1002.2 Type III IEC 60068-2-38
Low pressure (rapid decompression)	59.1 kPa to 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low pressure	57.2 kPa -55°C	MIL-STD-810F 500.4/5, IEC 60068-2-40
Icing	Rime ice 6 mm	MIL-STD-810F 521.2/3
Corrosion resistance	96 h salt mist, 5% salt solution, 35°C	EIA-364-26B, STANAG 4370, AECTP 300-309, MIL-STD-810F 509.4/5
Mold growth	European fungus	IEC 60068-2-10
Solar radiation		60068-2-5
Chemical endurance	Several substances, please refer to the list at <a href="http://airborn.com">airborn.com</a>	ISO 16750-5

### Mechanical data

Type	Performance	Standard
Mechanical endurance	5,000 mating cycles	IEC 60512-5-9-a, EIA-364-09
Vibration		MIL-STD 1344 Method 2005, EIA-364-28
Shock	100 g amplitude, half sine pulse of 3 ms, no discontinuity > 1µs	MIL-STD 1344 Method 2004, EIA-364-27

### Electrical data

Type	Performance	Standard
Contact resistance (fig. 1) over 5,000 mating cycles	Contact diameter/ resistance Ø 0.5 mm < 5 mOhm Ø 0.7 mm < 4 mOhm Ø 0.9 mm < 4 mOhm Ø 1.3 mm < 3 mOhm Ø 2.0 mm < 3 mOhm	IEC 60512-2-1
Shell resistance (fig. 2)	< 5 mOhm	IEC 60512-2-1
Insulation resistance	> 100 MOhm	IEC 60512-3-1
Shielding effectiveness (2)	> 65 dB	VG 95214-11

<sup>2</sup> P2, R2 connector pair

Fig. 1  
Measurement  
points

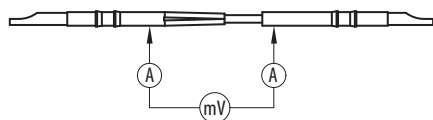
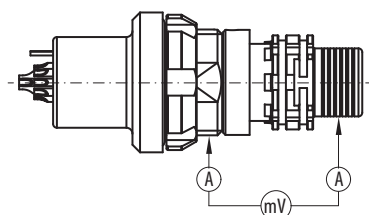


Fig. 2  
Measurement  
points















Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Material & Surface Treatments — Standard Circular Connectors

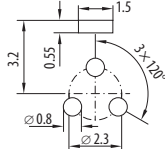
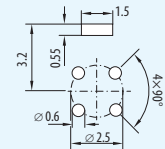
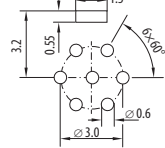
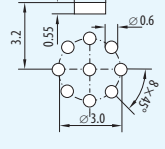
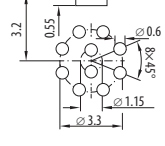
	Material	Standard EU	US	Surface	Standard	Flammability
Housing (conductive parts)	Aluminum AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Housing/nut (non conductive parts)	Aluminum AlMgSiSn1Bi	EN-AW 6023		Black anodized		
Backshell (Push/Pull plug)	Aluminum AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Backshell (Quick-DeMate™ plug and in-line receptacle)	Aluminum AlMgSiSn1Bi	EN-AW 6023		Electroless nickel	SAE-AMS2404	
EMI-locking ring	CuBe2	CW102C (2.1248)		Electrodeposited nickel		
Crimp sleeve	CuZn38Pb1.5	CW608N (2.0371)	C35300	Electrodeposited nickel		
Color ring	PSU					UL94 (V0)
Insulator	PEEK					UL94 (V0)
Pin contact	Copper alloy	CW614N (2.0401)	C38500	1.25µm gold over electrodeposited nickel	MIL-G-45204D	
Socket contact	Copper alloy	CW614N (2.0401)	C38500	1.25µm gold over electrodeposited nickel	MIL-G-45204D	
O-rings	FVMQ (fluorosilicone)					
Potting	Potting compound					UL94 (V0)
Over-molding material	TPU					UL94 (HB)
Shrink boots	Polyester-elastomer					acc to. VG95343

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size A

Positions	Contact diameter		Nominal current load per contact A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage kV	View on the termination side	
	MM	Inches				Male contact side	Female contact side
3 pos.	0.9	.04	10	1.200	0.400		
Standard & high-speed 4 pos.	 USB 2.0*		 Ethernet CAT 5 up to 100 Mbit*				
	0.7	.03	7	0.900	0.300		
7 pos.	0.5	.02	5	0.900	0.300		
9 pos.	0.5	.02	5	0.600	0.200		
10 pos.	0.5	.02	5	0.600	0.200		

## Standard: Size A

PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin Y	
	MM	Inches	MM	Inches
	3.5	.14	3.5	.14
	3.5	.14	3.5	.14
	3.5	.14	3.3	.14
	3.5	.14	3.1	.14
	3.5	.14	3.1	.14

\*These AirBorn specific connectors can transmit common data transmission protocols such as Ethernet CAT5 standard connectors, but they are not Ethernet-standard connectors.

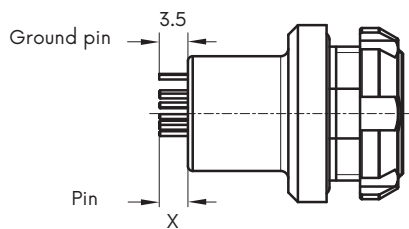


Fig. 1: Length earth tag and pin R1

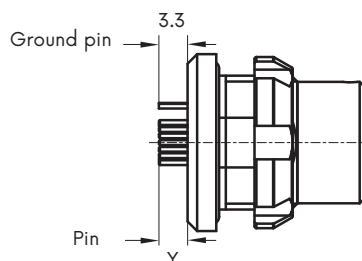


Fig. 2: Length earth tag and pin R2

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size B

Positions	Contact diameter		Nominal current load per contact A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage kV	View on the termination side		PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin Y	
	MM	Inches				Male contact side	Female contact side		MM	Inches	MM	Inches
5 pos.	0.9	.04	10	1.350	0.450				3.5	.14	3.0	.12
8 pos.	0.7	.03	7	1.000	0.333				3.5	.14	3.0	.12
14 pos.	0.5	.02	5	0.900	0.300				3.0	.12	3.0	.12
16 pos.	0.5	.02	5	0.900	0.300				3.0	.12	3.0	.12
High-speed 4 pos.	Ethernet CAT 5 up to 100 Mbit*								3.5	.14	3.0	.12
	0.9	.04	10	1.500	0.500							
High-speed 8 pos.	Ethernet CAT 5 up to 1 Gbit*								3.5	.14	3.0	.12
	0.5	.02	5	1.000	0.333							

\*These AirBorn specific connectors can transmit common data transmission protocols such as Ethernet CAT5 standard connectors, but they are not Ethernet-standard connectors.

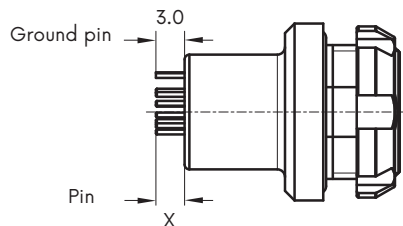


Fig. 1: Length earth tag and pin R1

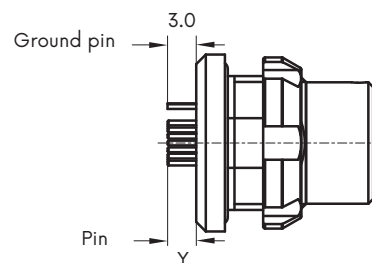


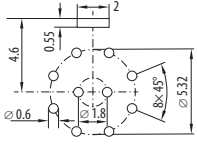


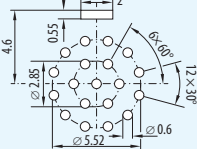



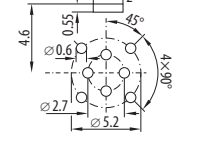


Fig. 2: Length earth tag and pin R2

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size C

Positions	Contact diameter		Nominal current load per contact A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage kV	View on the termination side		PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin Y	
	MM	Inches				Male contact side	Female contact side		MM	Inches	MM	Inches
10 pos.	0.7	.03	7	1.200	0.400				3.2	.13	3.0	.12
19 pos.	0.5	.02	5	1.000	0.333				3.2	.13	3.0	.12
High-speed 8 pos.	 Ethernet CAT 5 up to 1 Gbit*								3.2	.13	3.0	.12
	0.7	.03	7	1.200	0.400							

\*These AirBorn specific connectors can transmit common data transmission protocols such as Ethernet CAT5 standard connectors, but they are not Ethernet-standard connectors.

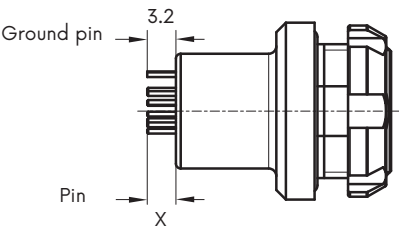


Fig.1: Length earth tag and pin R1

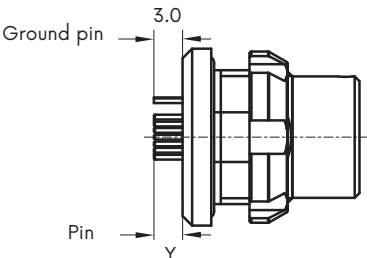


Fig.2: Length earth tag and pin R2

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size D

Positions	Contact diameter		Nominal current load per contact	Test voltage acc. SAE 13441	Rated voltage	View on the termination side		PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin Y	
	MM	Inches				Male contact side	Female contact side		MM	Inches	MM	Inches
6 pos.	1.3	.05	14	1.500	0.500				4.5	.18	3.0	.12
19 pos.	0.7	.03	7	1.000	0.333				5.5	.22	3.0	.12
26 pos.	0.5	.02	5	0.900	0.300				5.5	.22	3.0	.12
High-speed 4 pos.	Ethernet CAT 5 up to 100 Mbit*								4.5	.18	3.0	.12
	1.3	.05	14	2.400	0.800							
High-speed 8 pos.	Ethernet CAT 5 up to 1 Gbit*								5.0	.20	3.5	.14
	0.9	.04	10	1.500	0.500							

\*These AirBorn specific connectors can transmit common data transmission protocols such as Ethernet CAT5 standard connectors, but they are not Ethernet-standard connectors.

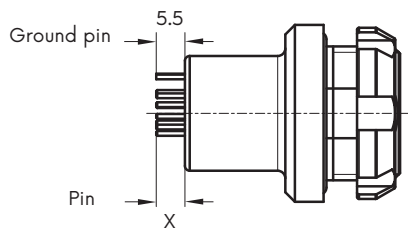


Fig. 1: Length earth tag and pin R1

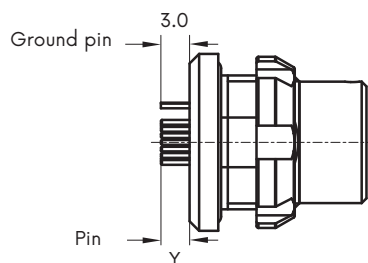


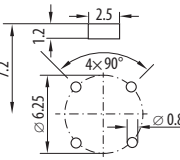


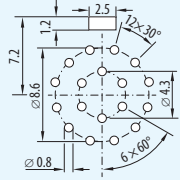


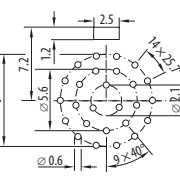


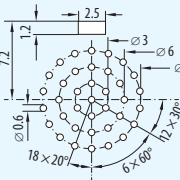


Fig. 2: Length earth tag and pin R2

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size E

### Standard: Size E

Positions	Contact diameter		Nominal current load per contact A	Test voltage acc. SAE 13441 Contact to contact kV	Rated voltage kV	View on the termination side		PCB Layout	Fig. 1: R1 Pin X	
	MM	Inches				Male contact side	Female contact side		MM	Inches
4 pos.	2.0	.08	22	1.650	0.550				5.0	.20
18 pos.	0.9	.04	10	1.350	0.450				4.5	1.8
26 pos.	0.7	.03	7	1.000	0.333				4.5	1.8
37 pos.	0.5	.02	5	0.900	0.300				4.5	1.8

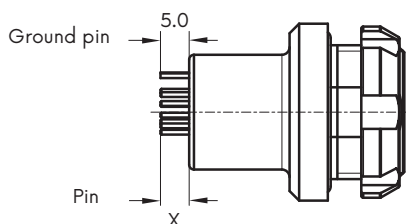




Fig.1: Length earth tag and pin R1

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Standard — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size F

Positions	Contact diameter		Nominal current load per contact	Test voltage acc. SAE 13441	Rated voltage	View on the termination side	
	MM	Inches	A	Contact to contact kV		Male contact side	Female contact side
55 pos.	0.7	.03	7	1.000	0.333		

Standard: Size F

PCB Layout	Fig. 1: R1 Pin X	
	MM	Inches
	6.0	.24

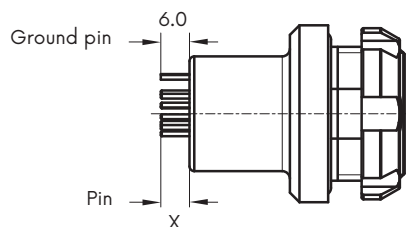


Fig.1: Length earth tag and pin R1

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

# Series 360<sup>®</sup> Connectors

# Quick-Clean<sup>®</sup>



AirBorn's Series 360<sup>®</sup> offers a Quick-Clean<sup>®</sup> variety of interconnects. Their "on-the-fly" cleaning capability is ideal for applications where sand, dirt and water operational factors and lightning-fast engagement/disengagement is required.

- All solder & print terminations
- Cable-to-cable connection available
- Easily handled & blind mateable
- Fast & easy cleaning of the connection in the field
- Intermateable with receptacle & in-line receptacle
- Watertight in mated & unmated conditions

# Quick-Clean's Complete Versatility

The Quick-Clean® line of connectors are not only intermateable with receptacle and in-line receptacles but also have cable-to-cable options available too.

Series 360® Quick-Clean interconnects are a perfect option for applications in harsh environments where keeping the connection clean and intact is vital to mission success.



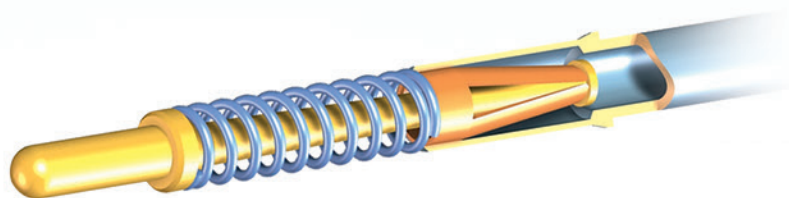
## Spring-Loaded Contacts

### Mechanical

Min. diameter . . . . .	0.8 mm
Min. initial height . . . . .	9 mm
Travel / height ratio . . . . .	max. 0.15
Max. travel (stroke). . . . .	1.5 mm
Min. initial spring force. . . . .	0.2 N
Mechanical life <sup>(1)</sup> . . . . .	40,000 cycles

### Electrical

Contact resistance <sup>(2)</sup> . . . . .	max. 20 mOhm
Max. operating current <sup>(3)</sup> . . . . .	2 A cont. / 4 A peak



### Environmental

Operating temperature range:	
– stainless steel . . . . .	– 51° C to +125° C

### Materials (RoHS 2011/65/EC)

Piston . . . . .	Gold plated machined brass
Barrel . . . . .	Tin plated machined brass
Spring . . . . .	Stainless steel
Clip . . . . .	Gold plated BeCu C17200

<sup>1</sup> Tested at nominal stroke with perpendicular pad connector area.

<sup>2</sup> Static measurement in halfway position of piston travel.

<sup>3</sup> Above max. current values are for single contacts in free air and for 10° C temperature rise. Values are indicative and may be affected by contact force, static or dynamic applications, shocks or vibrations.

## P2 — Quick-Clean®, Quick-DeMate® Plug with Solder-Cup Contacts

P2 plugs mate with all Series 360® Quick-Clean® receptacles. Pads on the connector face are rugged and easily cleaned. As a safety measure, Quick-DeMate® plugs disengage when the retention force is exceeded. Pad contacts are factory pre-installed.



### Sample Part Number Format: SQP2-A007AA-T30-RP

<b>S</b>	<b>Q</b>	<b>P2</b>	-			<b>A</b>	<b>A</b>	-	<b>T</b>	<b>3</b>	<b>0</b>	-	<b>R</b>	<b>P</b>
<b>SERIES</b> S – Series 360 Circulars	<b>FAMILY</b> Q – Quick- Clean™	<b>BODY</b> P2 – Plug, Quick-DeMate™ Cable		<b>SHELL SIZE</b> A 007 B 010 016 C 019	<b>CONTACT #</b>	<b>LAYOUT</b> A – Standard	<b>KEYING</b> A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.	<b>CONTACT TYPE</b> T – Flat Solder- Cup	<b>TERMINA- TION FINISH</b> 3 – Gold	<b>GROUND PIN</b> 0 – No	<b>SHELL FINISH</b> R – Ruthenium	<b>INSULATOR MATERIAL</b> P – Peek		

#### Notes:

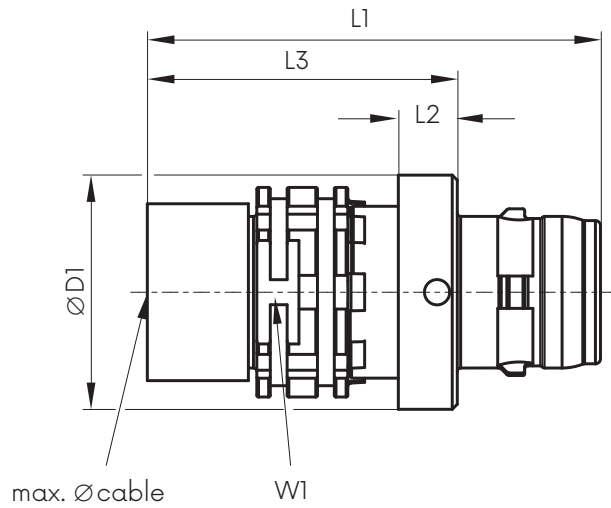
- For technical data, see page 52.
- For contact configuration, see page 54-56.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



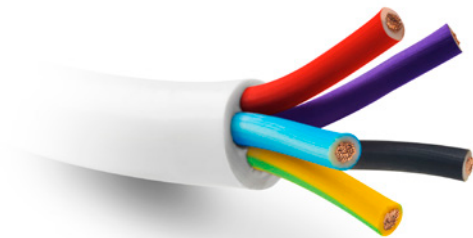
Solder-Cup

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)											
	L1		L2		L3		D1		W1		Max Cable	
A	23.5	(0.93)	3.0	(0.12)	15.0	(0.59)	11.9	(0.47)	9.0	(0.35)	5.5	(0.22)
B	26.9	(1.06)	3.5	(0.14)	18.4	(0.72)	13.9	(0.55)	11.0	(0.43)	6.5	(0.26)
C	27.5	(1.08)	3.5	(0.14)	18.5	(0.73)	15.9	(0.63)	12.0	(0.47)	8.0	(0.31)



## Wire Size Recommendation

Contact Size		Wire Size
mm	Inches	
.6	.02	30-26 AWG



## P3 — Quick-Clean®, Panel-Mount Docking Plug with Solder-Cup Contacts

P3 panel-mount connectors provide a rugged, wire-terminated connection for your box or panel. Plugs mate with all Series 360® Quick-Clean® receptacles. Factory installed pads on the face of the connector are rugged and easy to clean. As a safety measure, Quick-DeMate® plugs disengage when the retention force is exceeded.



### Sample Part Number Format: SQP3-A007AA-T31-RP

S	Q	P3	-			A	A	-	T	3	1	-	R	P
<b>SERIES</b> S – Series 360 Circulars	<b>FAMILY</b> Q – Quick-Clean™	<b>BODY</b> P3 – Plug, Quick-Clean™ Panel-Mount		<b>SHELL SIZE</b> A 007 B 010 016 C 019	<b>CONTACT #</b>	<b>LAYOUT</b> A – Standard	<b>KEYING</b> A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		<b>CONTACT TYPE</b> T – Flat Solder-Cup	<b>TERMINATION FINISH</b> 3 – Gold	<b>GROUND PIN</b> 1 – Yes		<b>SHELL FINISH</b> R – Ruthenium	<b>INSULATOR MATERIAL</b> P – Peek

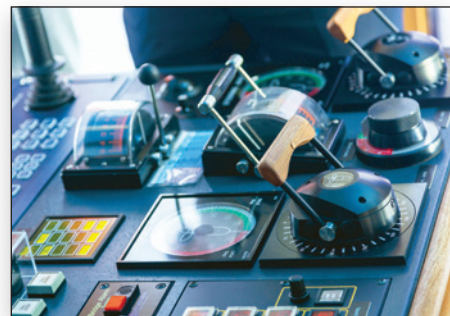
#### Notes:

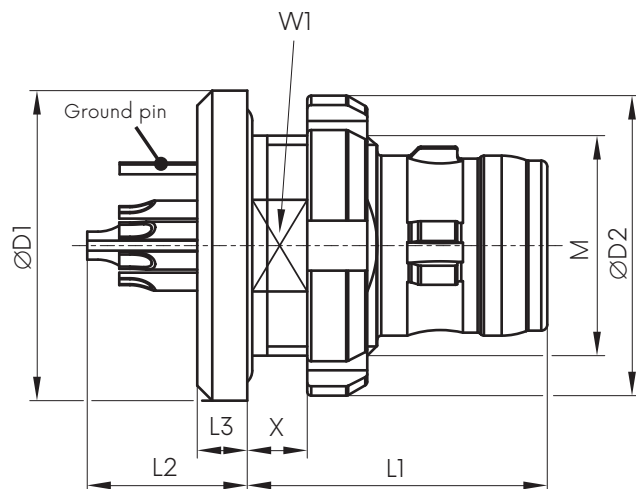
- For technical data, see page 52.
- For contact configuration, see page 54-56.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



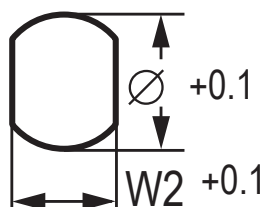
Solder-Cup

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)														
	L1		L2		L3		X MAX		D1		D2		W1		M Thread
A	15.0	(0.59)	6.4	(0.25)	2.5	(0.10)	3.0	(0.12)	13.2	(0.52)	12.8	(0.50)	9.2	(0.36)	10 X 0.5
B	15.0	(0.59)	8.0	(0.31)	2.5	(0.10)	3.5	(0.14)	15.5	(0.61)	15.0	(0.59)	10	(0.39)	11 X 0.75
C	16.5	(0.65)	9.7	(0.38)	4.0	(0.16)	3.5	(0.14)	17.5	(0.69)	17.9	(0.70)	13	(0.51)	14 X 0.75



Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	9.3	(0.37)	10.1	(0.40)
B	10.1	(0.40)	11.1	(0.44)
C	13.1	(0.52)	14.1	(0.56)

## Wire Size Recommendation

Contact Size		Wire Size
mm	Inches	
.6	.02	30-26 AWG



## R1 — Quick-Clean®, Panel-Mount, Solder-Cup Receptacle

R1 panel-mount connectors provide a rugged, wire-terminated interconnection for your box or panel. Receptacles mate with all Series 360® Quick-Clean® plugs. Factory-installed spring probe contacts make reliable connection every time. Flange and jam nut are located close to the mating face, leaving minimal connector shroud exposed.



### Sample Part Number Format: SQR1-A007AA-Y31-RP

S	Q	R1	-			A	A	-	Y	3	1	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	Q – Quick-Clean™	R1 – Receptacle, Panel-Mount		A 007 B 010 C 019		A – Standard	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		Y – Spring Solder-Cup	3 – Gold	1 – Yes		R – Ruthenium	P – Peek

#### Notes:

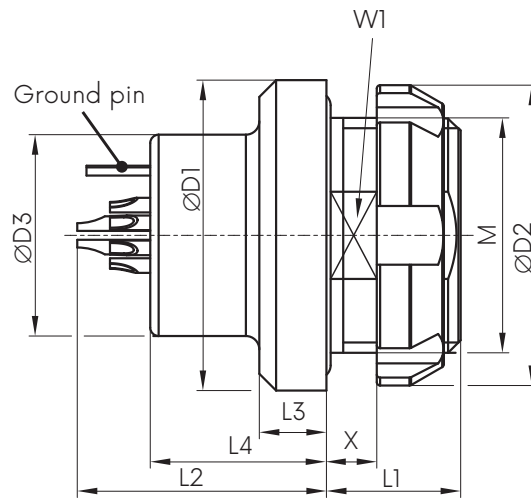
- For technical data, see page 52.
- For contact configuration, see page 54-56.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



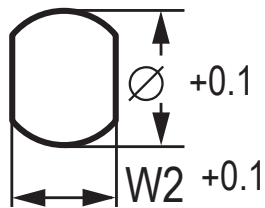
Solder-Cup

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)																		
	L1		L2		L3		L4		X MAX		D1		D2		D3		W1		M Thread
A	6.5	(0.26)	16.3	(0.64)	3.0	(0.12)	11.5	(0.45)	3.0	(0.12)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	10	(0.39)	11 X 0.75
B	8.0	(0.31)	14.9	(0.57)	4.0	(0.16)	10.5	(0.41)	3.5	(0.14)	18.5	(0.73)	17.9	(0.70)	12.0	(0.47)	13	(0.51)	14 X 1
C	7.0	(0.28)	17.7	(0.70)	2.5	(0.10)	12.5	(0.49)	3.0	(0.12)	18.9	(0.74)	17.9	(0.70)	14.0	(0.55)	13	(0.51)	14 X 0.75

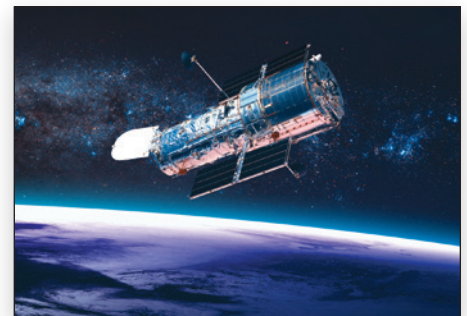


Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)

## Wire Size Recommendation

Contact Size		Wire Size
mm	Inches	
.6	.02	30-26 AWG





## R2 — Quick-Clean®, Panel-Mount, Solder-Cup Receptacle

R2 panel-mount connectors provide a rugged, wire-terminated interconnection for your box or panel. Receptacles mate with all Series 360® Quick-Clean® plugs. Factory-installed, spring-loaded pin contacts make reliable connections every time. Flange and jam nut are located far from the mating face, leaving a small footprint behind the panel or inside the enclosure.



### Sample Part Number Format: SQR2-A007AA-Y31-RP

S	Q	R2	-			A	A	-	Y	3	1	-	R	P
<b>SERIES</b> S – Series 360 Circulars	<b>FAMILY</b> Q – Quick-Clean™	<b>BODY</b> R2 – Receptacle, Panel-Mount Offset		<b>SHELL SIZE</b> A 007 B 010 C 019	<b>CONTACT #</b>	<b>LAYOUT</b> A – Standard	<b>KEYING</b> A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		<b>CONTACT TYPE</b> Y – Spring Solder-Cup	<b>TERMINATION FINISH</b> 3 – Gold	<b>GROUND PIN</b> 1 – Yes		<b>SHELL FINISH</b> R – Ruthenium	<b>INSULATOR MATERIAL</b> P – Peek

#### Notes:

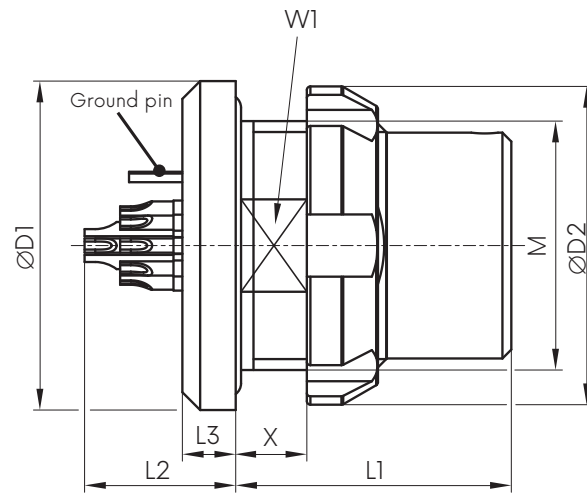
- For technical data, see page 52.
- For contact configuration, see page 54-56.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



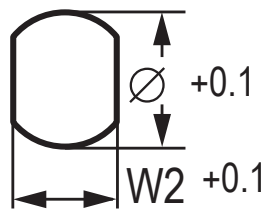
Solder-Cup

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)															
	L1		L2 MAX		L3		X MAX		D1		D2		W1		M Thread	
A	15.5	(0.61)	7.3	(0.29)	2.5	(0.10)	7.0	(0.28)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	11 X 0.75	
B	15.5	(0.61)	7.4	(0.29)	3.0	(0.12)	4.0	(0.16)	18.5	(0.73)	17.9	(0.70)	13.0	(0.51)	14 X 1	
C	16.5	(0.65)	8.2	(0.32)	3.0	(0.12)	5.5	(0.22)	18.9	(0.74)	17.9	(0.70)	13.0	(0.51)	14 X 0.75	

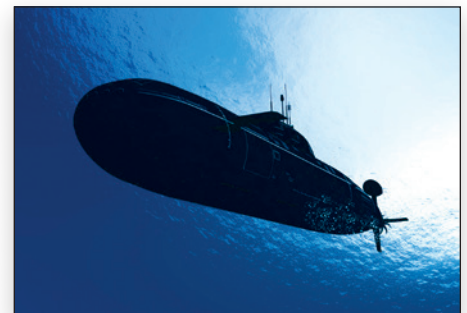


Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)

## Wire Size Recommendation

Contact Size		Wire Size
mm	Inches	
.6	.02	30-26 AWG



## R3 — Quick-Clean®, Cable Receptacle with Solder-Cup Contacts

R3 cable receptacles mate with all Series 360® plugs. Factory-installed spring probe contacts within the connector create a reliable connection every time. Spring-loaded pin contacts are pre-installed. Shell body is sleek, light-weight yet rugged.



### Sample Part Number Format: SQR3-A007AA-Y30-RP

S	Q	R3	-			A	A	-	Y	3	0	-	R	P
<b>SERIES</b> S – Series 360 Circulars	<b>FAMILY</b> Q – Quick-Clean™	<b>BODY</b> R3 – Receptacle, In-Line Cable		<b>SHELL SIZE</b> A 007 B 010 016 C 019	<b>CONTACT #</b>	<b>LAYOUT</b> A – Standard	<b>KEYING</b> A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		<b>CONTACT TYPE</b> Y – Spring Solder-Cup	<b>TERMINATION FINISH</b> 3 – Gold	<b>GROUND PIN</b> 0 – No		<b>SHELL FINISH</b> R – Ruthenium	<b>INSULATOR MATERIAL</b> P – Peek

#### Notes:

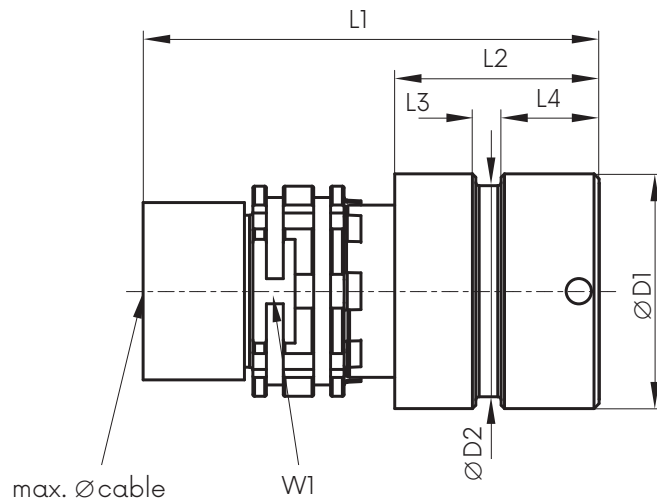
- For technical data, see page 52.
- For contact configuration, see page 54-56.
- Shield termination is achieved using a crimp tool & accompanying crimp ring. For more information, see pages 64-68.
- For contact diameter & termination cross section, see page 57.



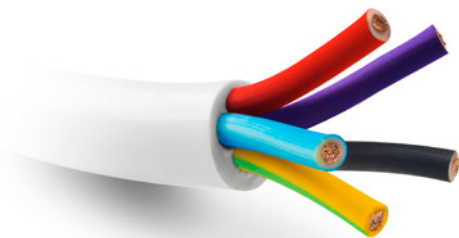
Solder-Cup

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)															
	L1		L2		L3		L4		D1		D2		W1		Max Cable	
A	25.0	(0.98)	13.0	(0.51)	1.5	(0.06)	5.8	(0.23)	11.9	(0.47)	10.5	(0.41)	9.0	(0.35)	5.5	(0.22)
B	27.0	(1.06)	12.1	(0.48)	1.5	(0.06)	5.8	(0.23)	13.9	(0.55)	12.5	(0.49)	11.0	(0.43)	6.5	(0.26)
C	27.0	(1.06)	12.0	(0.47)	1.5	(0.06)	5.8	(0.23)	15.9	(0.63)	14.5	(0.57)	12.0	(0.47)	8.0	(0.31)



## Wire Size Recommendation

Contact Size		Wire Size
mm	Inches	
.6	.02	30-26 AWG



## P3 — Quick-Clean®, Panel-Mount, PCB Docking Plug

P3 panel-mount connectors provide a rugged, PCB-terminated interconnection for your box or panel. Plugs mate with all Series 360® Quick-Clean® receptacles. Factory installed pads on the face of the connector are rugged and easy to clean. As a safety measure, Quick-DeMate® plugs disengage when the retention force is exceeded.



### Sample Part Number Format: SQP3-A007AA-Z30-1-RP

S	Q	P3	-			A	A	-	Z	3	1	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	Q – Quick-Clean™	P3 – Plug, Quick-Clean™ Panel-Mount		A 007 B 010 C 019		A – Standard	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		Z – Flat PTH	3 – Gold	1 – Yes		R – Ruthenium	P – Peek

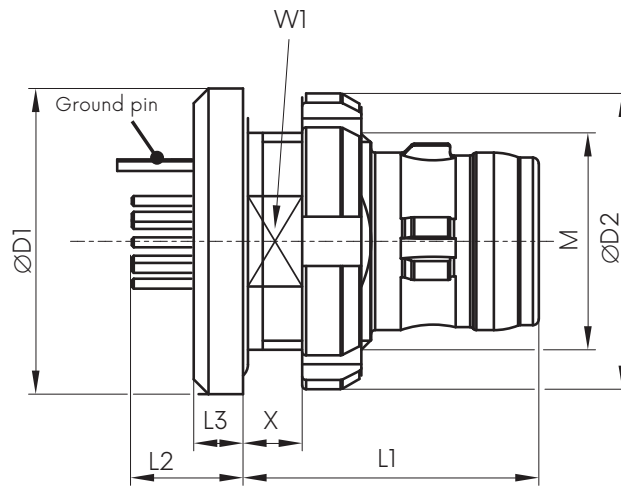
- Notes:**
- For technical data, see page 52.
  - For contact configuration, see page 54-56.
  - For contact diameter & termination cross section, see page 57.



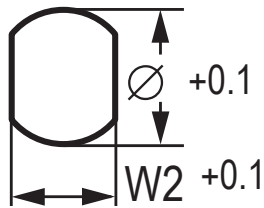
Plated Thru Hole

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)															
	L1		L2		L3		X MAX		D1		D2		W1		M Thread	
A	15.0	(0.59)	5.5	(0.22)	2.5	(0.10)	3.0	(0.12)	13.2	(0.52)	12.8	(0.50)	9.2	(0.36)	10 X 0.5	
B	15.0	(0.59)	5.5	(0.22)	2.5	(0.10)	3.5	(0.14)	15.5	(0.61)	15.0	(0.59)	10	(0.39)	11 X 0.75	
C	16.5	(0.65)	5.5	(0.22)	4.0	(0.16)	3.5	(0.14)	17.5	(0.69)	17.9	(0.70)	13	(0.51)	14 X 0.75	



Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	9.3	(0.37)	10.1	(0.40)
B	10.1	(0.40)	11.1	(0.44)
C	13.1	(0.52)	14.1	(0.55)



## R1 — Quick-Clean®, Panel-Mount, Spring Pin/PCB Receptacle

R1 panel-mount connectors provide a rugged, PCB terminated connection for your box or panel. Receptacles mate with all Series 360® Quick-Clean® plugs. Factory-installed spring probe contacts make reliable connection every time. Flange and jam nut are located close to the mating face, leaving minimal connector shroud exposed.



### Sample Part Number Format: SQR1-A007AA-V31-RP

S	Q	R1	-			A	A	-	V	3	1	-	R	P
<b>SERIES</b> S – Series 360 Circulars	<b>FAMILY</b> Q – Quick-Clean™	<b>BODY</b> R1 – Receptacle, Panel-Mount		<b>SHELL SIZE</b> A 007 B 010 C 016 C 019	<b>CONTACT #</b>	<b>LAYOUT</b> A – Standard	<b>KEYING</b> A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		<b>CONTACT TYPE</b> V – Spring PTH	<b>TERMINATION FINISH</b> 3 – Gold	<b>GROUND PIN</b> 1 – Yes		<b>SHELL FINISH</b> R – Ruthenium	<b>INSULATOR MATERIAL</b> P – Peek

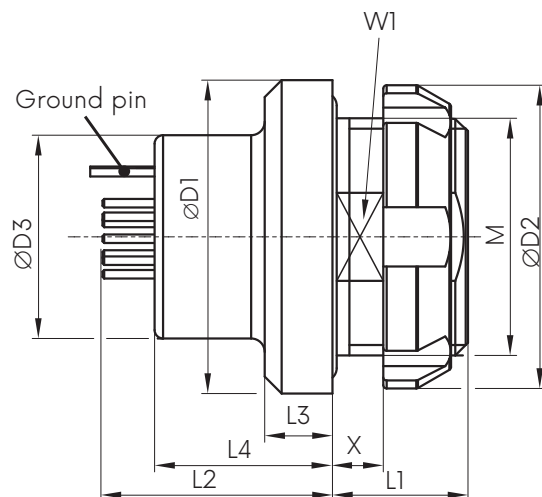
- Notes:**
- For technical data, see page 52.
  - For contact configuration, see page 54-56.
  - For contact diameter & termination cross section, see page 57.



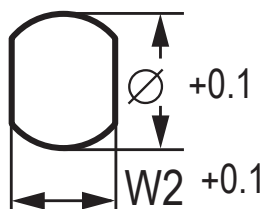
Plated Thru Hole

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.



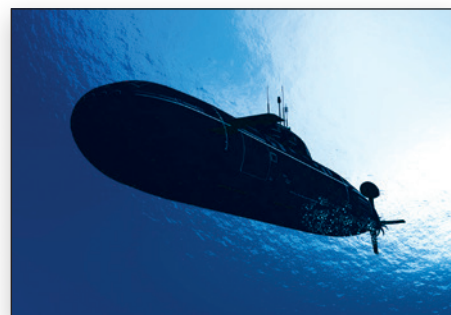


Shell Size	Dimensions in mm (inches)																		
	L1		L2		L3		L4		X MAX		D1		D2		D3		W1		M Thread
A	6.5	(0.26)	15.8	(0.62)	3.0	(0.12)	11.5	(0.45)	3.0	(0.12)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	10	(0.39)	11 X 0.75
B	8.0	(0.31)	14.3	(0.56)	4.0	(0.16)	10.5	(0.41)	3.5	(0.14)	18.5	(0.73)	17.9	(0.70)	12.0	(0.47)	13	(0.51)	14 X 1
C	7.0	(0.28)	16.0	(0.63)	2.5	(0.10)	12.5	(0.49)	3.0	(0.12)	18.9	(0.74)	17.9	(0.70)	14.0	(0.55)	13	(0.51)	14 X 0.75



Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)





## R2 — Quick-Clean®, Panel-Mount, Spring Pin/PCB Receptacle

R2 panel-mount connectors provide a rugged, PCB-terminated interconnection for your box or panel. Receptacles mate with all Series 360® Quick-Clean® plugs. Factory installed spring probe contacts ensure a reliable connection every time. Flange and jam nut are located far from the mating face, leaving a very small footprint behind panel or inside enclosure.



### Sample Part Number Format: SQR2-A007AA-V31-RP

S	Q	R2	-			A	A	-	V	3	1	-	R	P
SERIES	FAMILY	BODY		SHELL SIZE	CONTACT #	LAYOUT	KEYING		CONTACT TYPE	TERMINATION FINISH	GROUND PIN		SHELL FINISH	INSULATOR MATERIAL
S – Series 360 Circulars	Q – Quick-Clean™	R2 – Receptacle, Panel-Mount Offset		A 007 B 010 C 019		A – Standard	A – Light Brown* B – Red C – Blue D – Green *Option A is readily available; options B, C, & D may have extended lead times.		V – Spring PTH	3 – Gold	1 – Yes		R – Ruthenium	P – Peek

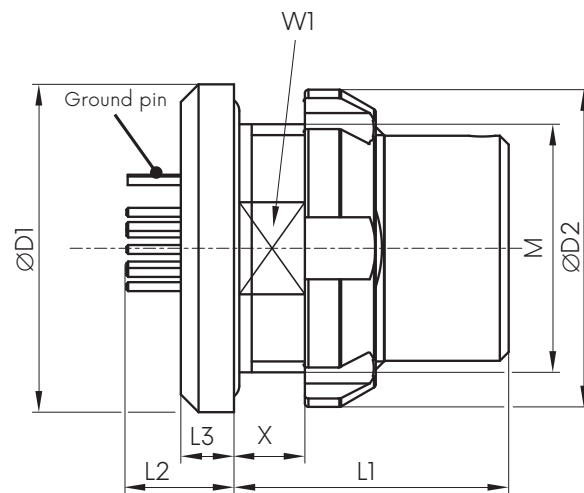
- Notes:**
- For technical data, see page 52.
  - For contact configuration, see page 54-56.
  - For contact diameter & termination cross section, see page 57.



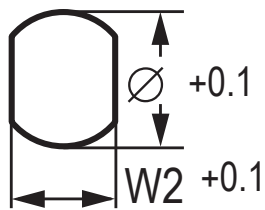
Plated Thru Hole

NOTE: Please consult [airborn.com](http://airborn.com) to configure your part number and for the latest revision controlled drawing and technical data.





Shell Size	Dimensions in mm (inches)														
	L1		L2		L3		X MAX		D1		D2		W1		M Thread
A	15.5	(0.61)	6.8	(0.27)	2.5	(0.10)	7.0	(0.28)	15.5	(0.61)	15.0	(0.59)	10.0	(0.39)	11 X 0.75
B	15.5	(0.61)	6.8	(0.27)	3.0	(0.12)	4.0	(0.16)	18.5	(0.73)	17.9	(0.70)	13.0	(0.51)	14 X 1
C	16.5	(0.65)	6.5	(0.20)	3.0	(0.12)	5.5	(0.22)	18.9	(0.74)	17.9	(0.70)	13.0	(0.51)	14 X 0.75



Panel cut out

Size	Dimensions in mm (inches)			
	W2		Ø	
A	10.1	(0.40)	11.1	(0.44)
B	13.1	(0.52)	14.1	(0.56)
C	13.1	(0.52)	14.1	(0.56)



## Technical Data — Quick-Clean® Circular Connectors

### Environmental & Testing

Type	Performance	Standard
Tightness	IP 68 at 1m, IP 69 K	IEC 60529 / MIL-STD-810F 512.4/5, DIN 40050-9
Sand and dust	Blowing sand and dust, settling dust	MIL-STD-810F 510.4/5 Procedure I / II, DIN 40050-9 / IP 6kx
Operating temperature	-51° C up to +125° C	IEC 60512-6-11 i+j
Thermal shock	-65° C up to +150° C	EIA 364-32-E, IEC 60068-2-14
Humidity cyclic	85% up to 95%, 28 up to 71° C	MIL-STD-1344A Method 1002.2 Type III, IEC 60068-2-38
Low pressure (rapid decompression)	59.1 kPa to 18.8 kPa	AECTP 300, 312 Procedure III (STANAG 4370)
Low pressure	57.2 kPa, -55° C	MIL-STD-810F 500.4/5, IEC 60068-2-40
Icing	Rime ice 6 mm	MIL-STD-810F 521.2/3
Corrosion resistance	96 h salt mist, 5 % salt solution, 35° C	EIA-364-26B, STANAG 4370, AECTP 300-309, MIL-STD-810F 509.4/5
Mould growth	European fungus	IEC 60068-2-10
Solar radiation		60068-2-5
Chemical endurance	Several substances, please refer to the list at <a href="http://airborn.com">airborn.com</a>	ISO 16750-5

### Mechanical data

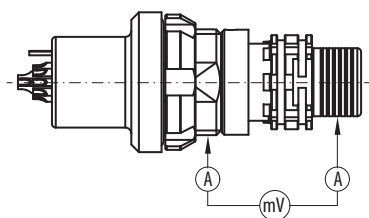
Type	Performance	Standard
Mechanical endurance	5,000 mating cycles <sup>2</sup>	IEC 60512-5-9-a, EIA-364-09
Vibration		MIL-STD 1344 Method 2005, EIA-364-28
Shock	100 g amplitude, half sine pulse of 3 ms, no discontinuity > 1µ	MIL-STD 1344 Method 2004, EIA-364-27

### Electrical data

Type	Performance	Standard
Contact resistance, over 5,000 mating cycles (2)	Contact diameter/ resistance, ø 0.6 mm pogo pin < 20 mOhm"	IEC 60512-2-1
Shell resistance (fig. 1)	< 10 mOhm	IEC 60512-2-1
Insulation resistance	> 100 MOhm	IEC 60512-3-1

<sup>2</sup>5,000 mating cycles, dependent on the specific application.

Fig. 1  
Measurement  
points





Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Material & Surface Treatments — Quick-Clean® Circular Connectors

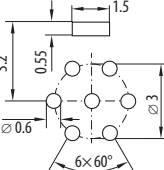
	Material	Standard EU	US	Surface	Standard	Flammability
Housing (conductive parts)	Aluminum AlMgSiSn1Bi	EN-AW 6023		Ruthenium over electroless nickel		
Nut	Aluminum AlMgSiSn1Bi	EN-AW 6023		Black anodized		
Backshell	Aluminum AlMgSiSn1Bi	EN-AW 6023		Electroless nickel	SAE-AMS2404	
EMI-locking ring	Stainless steel	CW102C (2.1248)		Electrodeposited gold		
Crimp sleeve	CuZn38Pb1.5	CW608N (2.0371)	C35300	Electrodeposited nickel		
Color ring	PSU					UL94 (V0)
Insulator	PEEK/PBT/PCT					UL94 (V0)
Pin contact (pogo-pin)	Copper alloy, CuBe, steel			1.25 µm gold over electrodeposited nickel (on piston)	MIL-G-45204D	
Socket contact	Copper alloy	CW614N (2.0401)	C38500	1.25 µm gold over electrodeposited nickel	MIL-G-45204D	
O-rings	FVMQ (fluorosilicone)					
Potting	Potting compound					UL94 (V0)
Over-molding material	TPU					UL94 (HB)
Shrink boots	Polyester-elastomer					Acc. to VG95343

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Quick-Clean® — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size A

Positions	Contact diameter		Nominal current load per contact	Test voltage acc. SAE 13441	Rated voltage	View on the termination side	
	MM	Inches				Pogo-pin contact side	Flat contact side
7 pos.	0.6	.02	2	0.600	0.200		

Quick-Clean®: Size A

PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin X		Fig. 3: P3 Pin X	
	MM	In.	MM	In.	MM	In.
	4.3	.17	4.3	.17	3.0	.12

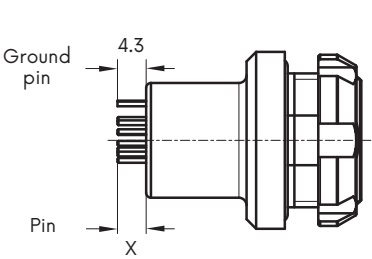


Fig. 1: Length earth tag and pin R1

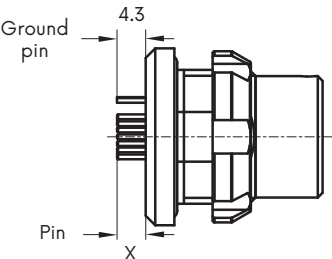


Fig. 2: Length earth tag and pin R2

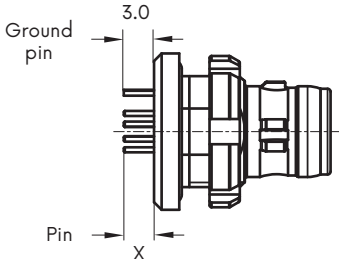




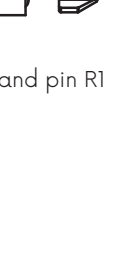
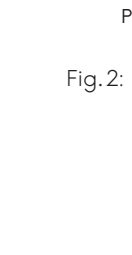


Fig. 3: Length earth tag and pin P3

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

### Quick-Clean®: Size B

Positions	Contact diameter		Nominal current load per contact	Test voltage acc. SAE 13441	Rated voltage	View on the termination side	
	MM	Inches				Pogo-pin contact side	Flat contact side
10 pos.	0.6	.02	2	0.600	0.200		
16 pos.	0.6	.02	2	0.600	0.200		

PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin X		Fig. 3: P3 Pin X	
	MM	In.	MM	In.	MM	In.
	3.8	.15	3.8	.15	3.0	.12
	3.8	.15	3.8	.15	3.0	.12

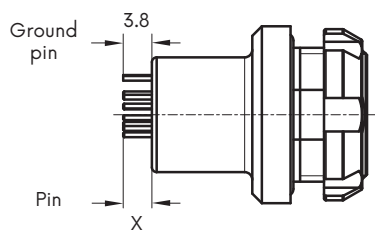


Fig.1: Length earth tag and pin R1

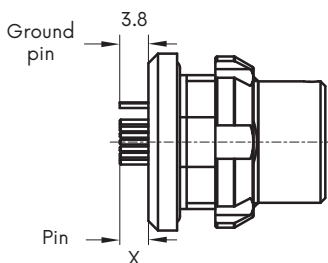


Fig.2: Length earth tag and pin R2

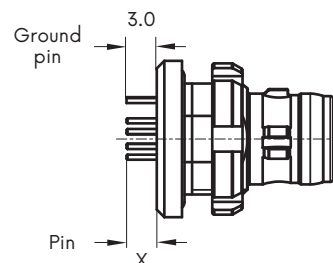




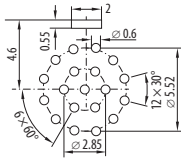
Fig.3: Length earth tag and pin P3

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

Quick-Clean® — Contact Configurations & PCB Layout for PCB-Mounted Connectors: Size C

Positions	Contact diameter		Nominal current load per contact	Test voltage acc. SAE 13441	Rated voltage	View on the termination side	
	MM	Inches				Pogo-pin contact side	Flat contact side
19 pos.	0.6	.02	2	0.600	0.200		

Quick-Clean™: Size C

PCB Layout	Fig. 1: R1 Pin X		Fig. 2: R2 Pin X		Fig. 3: P3 Pin X	
	MM	In.	MM	In.	MM	In.
	3.5	.14	3.5	.14	1.5	.06

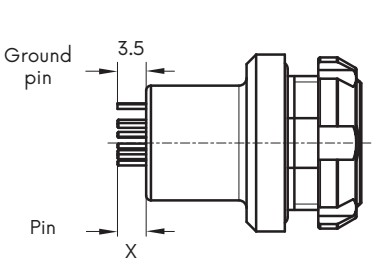


Fig. 1: Length earth tag and pin R1

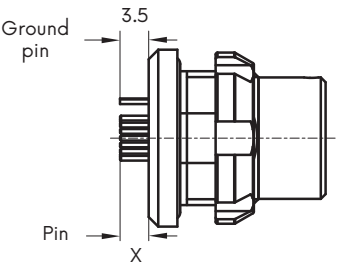


Fig. 2: Length earth tag and pin R2

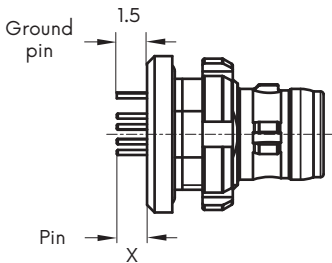


Fig. 3: Length earth tag and pin P3

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Contact Diameters & Termination Cross Sections

### Series 360® Standard

Contact diameter		Soldercup termination cross section			Plated thru hole termination diameter		Connector shell sizes					
mm	inches	AWG	mm <sup>2</sup>	inches <sup>2</sup>	mm	inches	A	B	C	D	E	F
0.5	.02	26	0.15	0.0002	0.5	0.02	✓	✓	✓	✓	✓	
0.7	.03	22	0.38	0.0006	0.5	0.02	✓	✓	✓	✓	✓	✓
0.9	.04	22	0.38	0.0006	0.7	0.03	✓	✓		✓	✓	
1.3	.05	20	0.5	0.0008	0.7	0.03				✓		
2.0	.08	12	2.5	0.0039	0.7	0.03					✓	

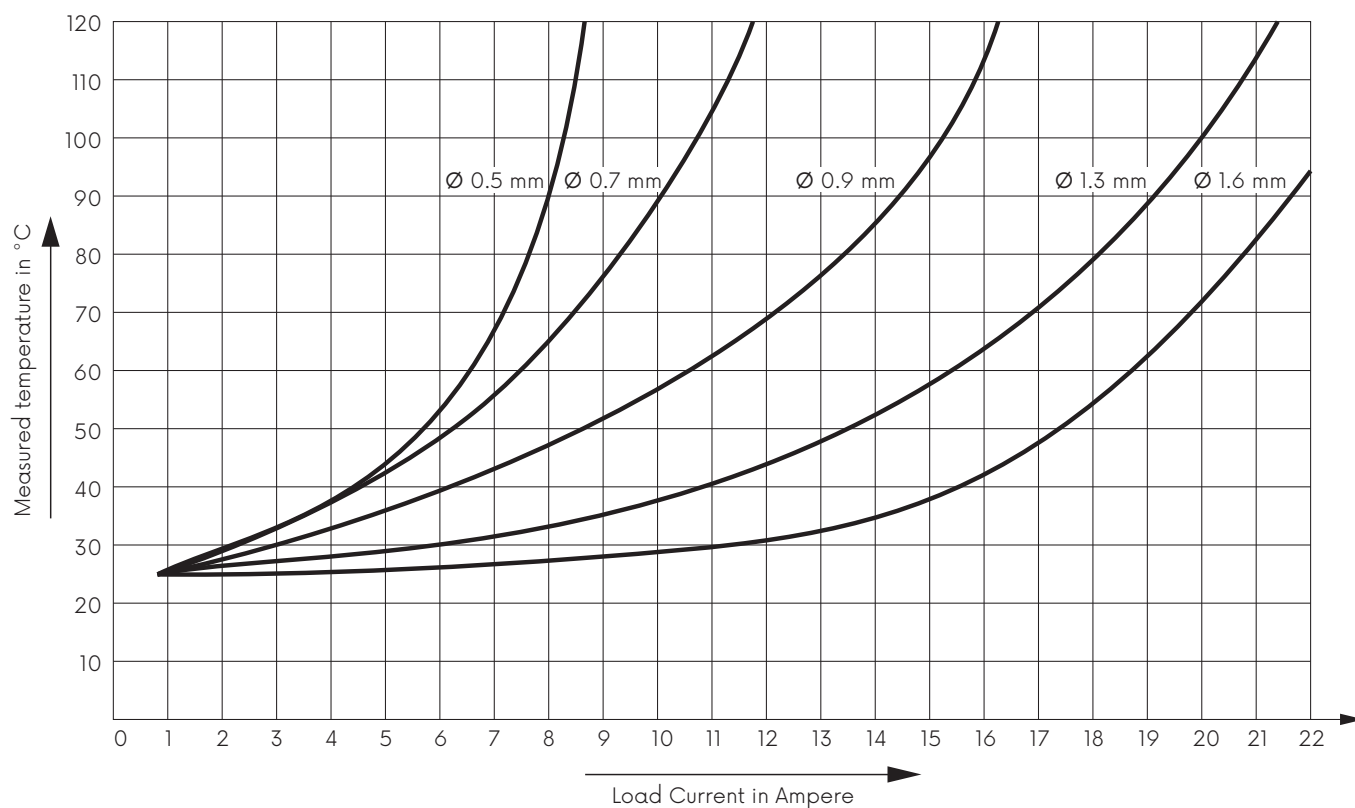
### Series 360® Quick Clean®

Contact diameter		Soldercup termination cross section			Plated thru hole termination diameter		Connector shell sizes		
mm	inches	AWG	mm <sup>2</sup>	inches <sup>2</sup>	mm	inches	A	B	C
0.6	0.02	26	0.15	0.0002	0.5	0.02	✓	✓	✓

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Current Load — Contacts

Nominal single contact current load for pin/slotted socket  
(nominal diameter 0.5mm-1.6mm)



- Upper maximum temperature for contacts: +125° C.
- Test contact was terminated to largest possible conductor
- Connectors or cables with more than one contact or conductor generate a higher heat than a single contact; thus a derating factor must be applied
- For connectors, the derating factor is applied according to DIN IEC 60512-3 / VDE 0276-1000. The derating factor is used starting with 5 loaded wires.

### Derating Factor

Number of loaded wires	Derating factor
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Operating Voltage

### Operating Voltage acc. to SAE AS 13441-Method 3001.1

The values acc. to SAE AS 13441-method 3001.1 comply with MIL-Std. 1344 – method 3001. The chart values results are acc. to IEC 60512-2. The inserts have been tested in mated condition and the test voltage was applied to the pin insert.

75% of the measured break-down voltage is the basic for the further calculation. 1/3 of this value is the corresponding operating voltage.

All tests were performed at standard environment conditions (room temperature) and can be applied up to an altitude of 2,000 m. For any deviations one has to consider the reduction factor acc. to the relevant standards.

**Test voltage:** Break-down voltage x 0.75

**Operating voltage:** Break-down voltage x 0.75 x 0.33

### Caution

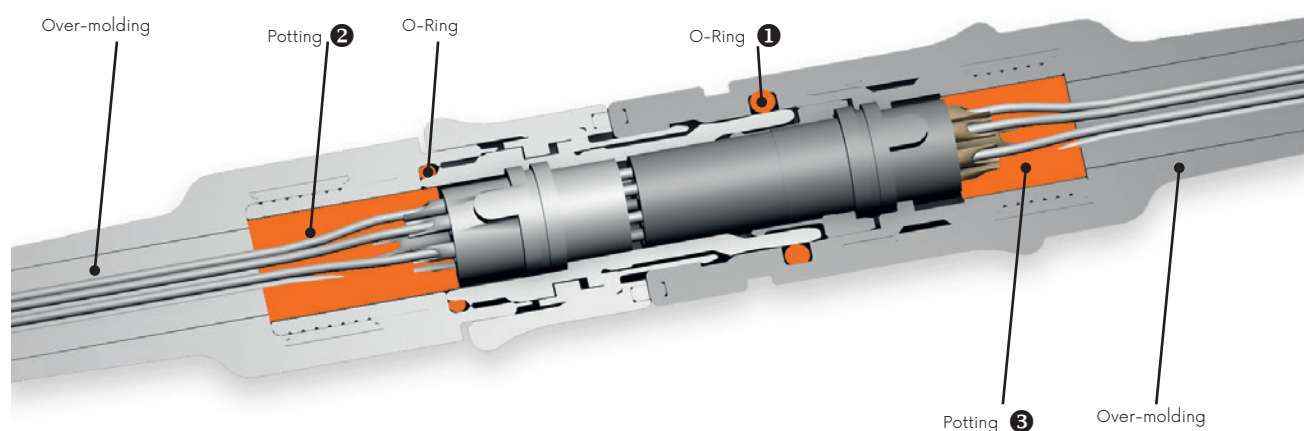
Electrical appliances: for various applications the safety requirements regarding the operating voltage is even more severe! The relevant datas in such cases for the operating voltage are the creepage and clearance distances. For any advise how to chose the proper connector please consult us and indicate the safty standard which your product has to meet.

Suitable safety precautions must be taken in order to ensure that personnel do not come into contact with live conductors during installation and operation. All entries were reviewed with maximum care before this catalog was printed. AirBorn reserves the right to make changes in accordance with the current state of the art without advance notice, and without being obligated to provide replacement deliveries or to continue production of older designs.

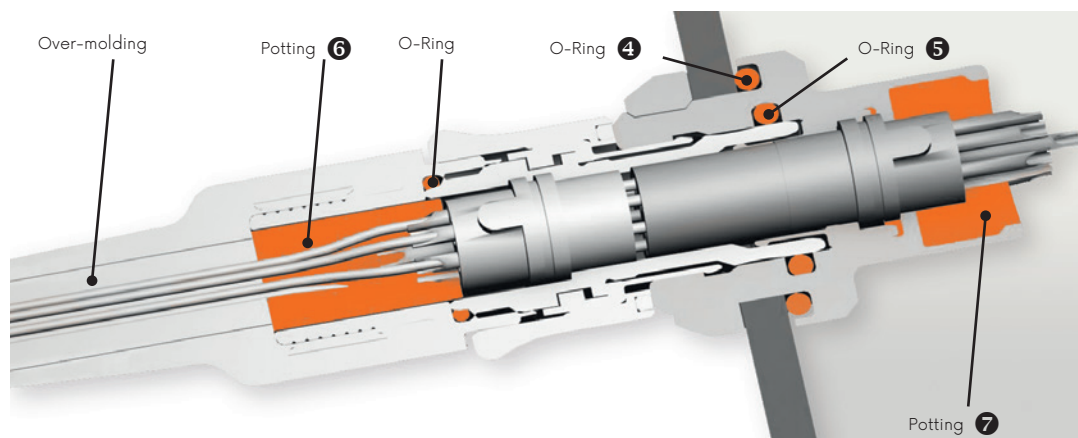
Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Watertightness

### Plug and in-line receptacle connection (case 1)



### Plug and receptacle connection (case 2)



## Watertight Design

Series 360® connectors are watertight in mated & unmated conditions.

- In mated condition the contacts are protected (in cases 1 and 2)
- In un-mated condition the contacts can be protected using a protective cover (see page 63)
- The cover must be removed before mating the plug with the receptacle

### Protection against water through following seals

Termination area	Mated		Un-mated	
		Position		Position
Cable – Cable (Case 1)	Yes	1 2 3	No	
Device – Cable (Case 2)	Yes	4 5 6 7	Yes	4 7

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

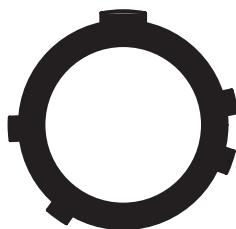
## Keying Possibilities

Keying option

Standard

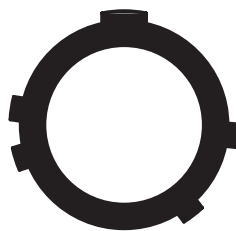
Quick-Clean®

A\*  
Light Brown

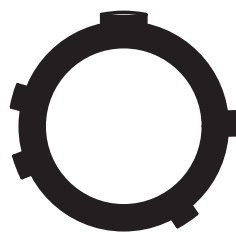


\*Keying option A is the most common of the 4 options and therefore is the best choice for availability and lead time.

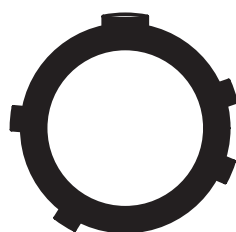
B  
Red



C  
Blue



D  
Green



Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

# Accessories



## Protective Caps

Series 360® connectors have protective caps available that ensure fast, clean & trouble-free protection.

- Available for all Series 360® models
- EMC protection up to 55 dB



### Material

Part	Material	Flammability
Cap	Conductive silicone	UL94 (V1)
Lanyard	Aramid	UL94 (V0)
Crimp ferrule, lug	Brass, copper	
Shrinktube	FPO (RNF-100)	ASTM D 876 (30 sec)

### Environmental & Electrical Characteristics

Type	Performance	Standard
Tightness	IP67	IEC 60529
Operating temp.	-51° C to +125° C	IEC 60512-6-11 i+j
Shielding effectiveness	> 55 dB	VG 95214-11

### For R1 receptacles

Size	Part number	Dimensions in mm (inches)				
		A	B	C	D	L
A	SCR1-A	15.5 (.610)	12 (.472)	20 (.787)	5.5 (.216)	200 (7.87)
B	SCR1-B	16 (.629)	14 (.551)	22 (.866)	5.5 (.216)	200 (7.87)
C	SCR1-C	15.3 (.602)	15 (.590)	23 (.905)	5.5 (.216)	200 (7.87)
D	SCR1-D	17.5 (.688)	17 (.669)	25 (.984)	5.5 (.216)	200 (7.87)
E	SCR1-E	20.5 (.807)	20 (.787)	28 (1.10)	5.5 (.216)	200 (7.87)
F	SCR1-F	24 (.944)	30 (1.18)	40 (1.57)	5.5 (.216)	200 (7.87)

Crimp ferrule and lug are included.

### For R2 receptacles

Size	Part number	Dimensions in mm (inches)			
		A	B	C	L
A	SCR2-A	8 (.314)	14 (.551)	21 (.826)	200 (7.87)
B	SCR2-B	8.5 (.334)	16 (.629)	23 (.905)	200 (7.87)
C	SCR2-C	8.5 (.334)	16 (.629)	23 (.905)	200 (7.87)
D	SCR2-D	11.5 (.452)	19.5 (.767)	25.8 (1.01)	200 (7.87)

Crimp ferrule and lug are included.

### For R3 in-line receptacles

Size	Part number	Dimensions in mm (inches)				
		A	B	C	D	L
A	SCR3-A	15.5 (.610)	12 (.472)	20 (.787)	5.5 (.216)	200 (7.87)
B	SCR3-B	16 (.629)	14 (.551)	22 (.866)	5.5 (.216)	200 (7.87)
E	SCR3-E	20.5 (.807)	20 (.787)	28 (1.10)	5.5 (.216)	200 (7.87)

Crimp ferrule and lug are included.

### For R3 in-line receptacles

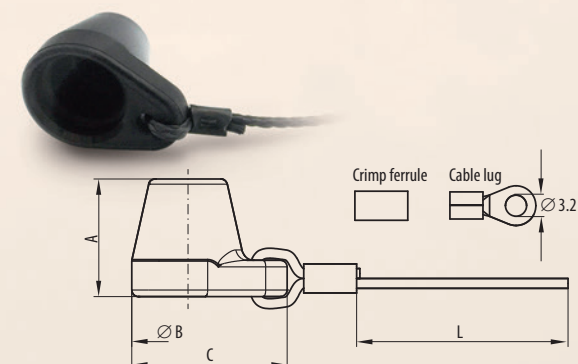
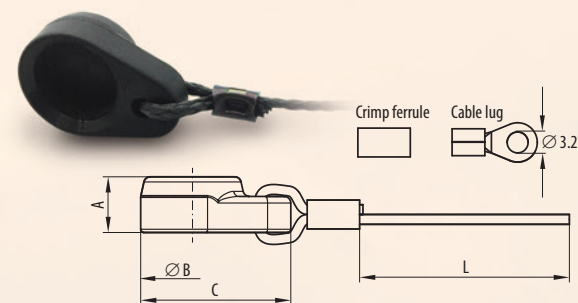
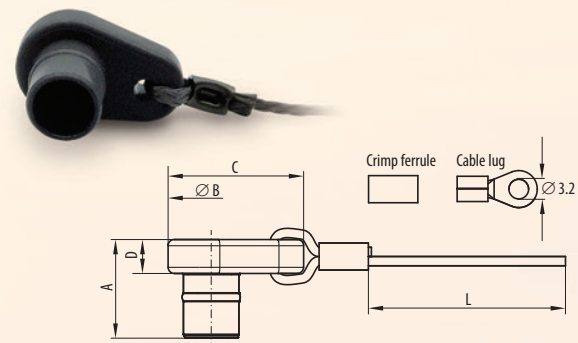
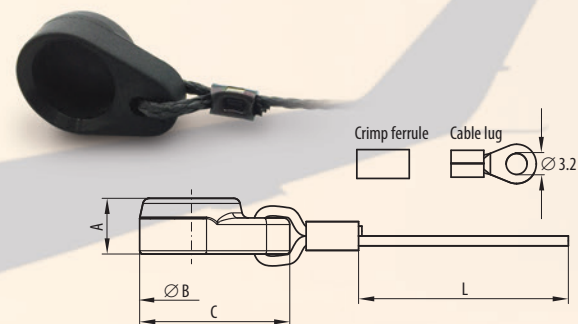
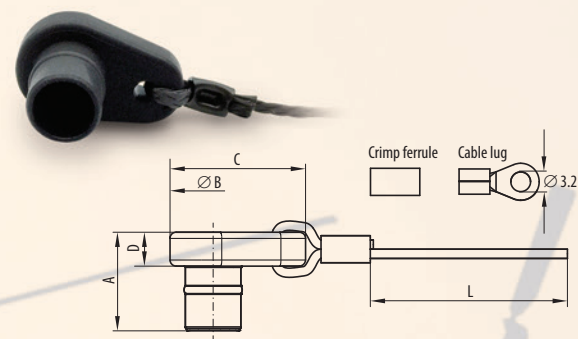
Size	Part number	Dimensions in mm (inches)			
		A	B	C	L
C	SCR3-C	11.5 (.452)	19.5 (.767)	25.8 (1.01)	200 (7.87)
D	SCR3-D	12 (.472)	20.6 (.811)	29.3 (1.15)	200 (7.87)

Crimp ferrule and lug are included.

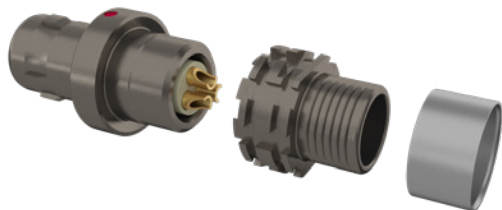
### For P1, P2 & P3 plugs

Size	Part number	Dimensions in mm (inches)			
		A	B	C	L
A	SCPX-A	16.5 (.649)	15 (.590)	21.5 (.846)	200 (7.87)
B	SCPX-B	17.8 (.700)	17 (.669)	23.5 (.925)	200 (7.87)
C	SCPX-C	17 (.669)	18 (.708)	24 (.944)	200 (7.87)
D	SCPX-D	19.5 (.767)	21 (.826)	28 (1.10)	200 (7.87)
E	SCPX-E	22.6 (.889)	25 (.984)	32.5 (1.27)	200 (7.87)
F	SCPX-F	27.5 (1.08)	33.5 (1.31)	42 (1.65)	200 (7.87)

Crimp ferrule and lug are included.



## Crimp Instructions — Quick-DeMate® & Quick-Clean® Plug



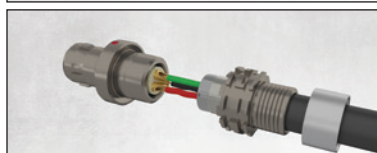
Size	Max cable ø	
	mm	Inches
A	5.5	.22
B	6.5	.26
C	8.0	.31
D	10.0	.39
E	11.5	.45



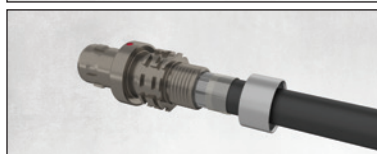
- Slide crimp sleeve and crimp adapter over the cable. The crimp sleeve is not needed if a metal band is used for fastening the shield to the crimp adapter.



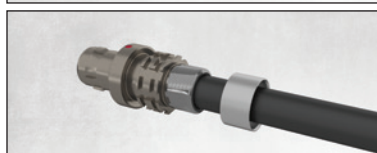
- Strip the cable and conductors. Fold back the shield and use fastening tape to fasten it to the cable jacket. Tin-plate this wires if needed.



- Solder the wires, noting the placement of each wire according to your wiring chart.



- Screw the crimp adapter on so that it is flush, observing torque values. Secure the screw thread with adhesive. Encapsulate the interior of the crimp adapter to secure the soldered points.



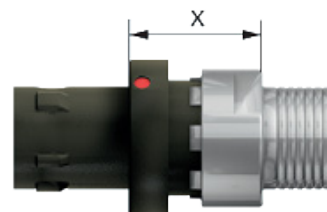
- Remove the fastening tape and lay the shield braid on to the crimp adapter. Fasten the shield braid to the crimp adapter by means of crimping or by using a metal band.



- Bend relief: This can be implemented by means of over-molding or by using shrink tube.

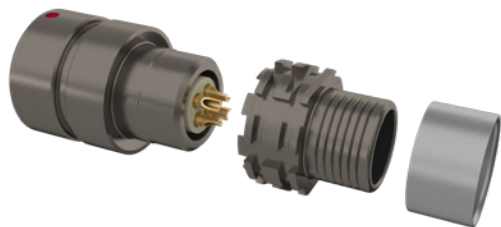
### Assembly crimp adapter

Size	Torque		Reference Dimension X	
	Nm	In lbf	mm	Inches
A	0.5	4.43	8.7	.34
B	1.0	8.85	12.2	.48
C	1.5	13.28	12.2	.48
D	2.0	17.7	12.6	.50
E	2.5	22.13	13.3	.52



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## Crimp Instructions — In-Line Receptacle



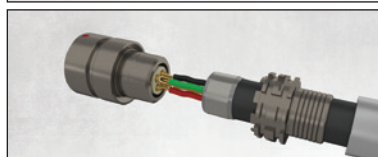
Size	Max cable ø	
	mm	Inches
A	5.5	.22
B	6.5	.26
C	8.0	.31
D	10.0	.39
E	11.5	.45



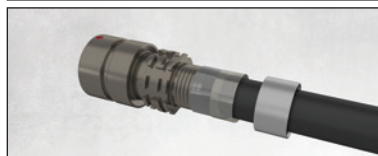
- Slide crimp sleeve and crimp adapter over the cable. The crimp sleeve is not needed if a metal band is used for fastening the shield to the crimp adapter.



- Strip the cable and conductors. Fold back the shield and use fastening tape to fasten it to the cable jacket. Tin-plate this wires if needed.



- Solder the wires, noting the placement of each wire according to your wiring chart.



- Screw the crimp adapter on so that it is flush, observing torque values. Secure the screw thread with adhesive. Encapsulate the interior of the crimp adapter to secure the soldered points.



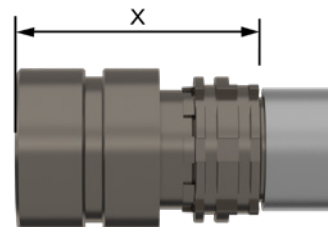
- Remove the fastening tape and lay the shield braid on to the crimp adapter. Fasten the shield braid to the crimp adapter by means of crimping or by using a metal band.



- Bend relief: This can be implemented by means of over-molding or by using shrink tube.

### Assembly crimp adapter

Size	Torque		Reference Dimension X	
	Nm	In lbf	mm	Inches
A	0.5	4.43	18.7	.74
B	1.0	8.85	20.7	.81
C	1.5	13.28	20.7	.81
D	2.0	17.7	23.7	.93
E	2.5	22.13	29.0	1.14



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## Crimp Instructions — Push/Pull Plug



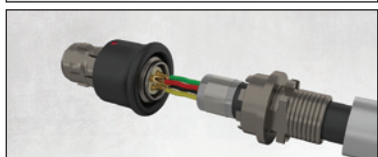
Size	Max cable ø	
	mm	Inches
A	5.5	.22
B	6.5	.26
C	8.0	.31
D	10.0	.39
E	11.5	.45
F	17.5	.69



- Slide crimp sleeve and crimp adapter over the cable. The crimp sleeve is not needed if a metal band is used for fastening the shield to the crimp adapter.



- Strip the cable and conductors. Fold back the shield and use fastening tape to fasten it to the cable jacket. Tin-plate this wires if needed.



- Solder the wires, noting the placement of each wire according to your wiring chart.



- Screw the crimp adapter on so that it is flush, observing torque values. Secure the screw thread with adhesive. Encapsulate the interior of the crimp adapter to secure the soldered points.



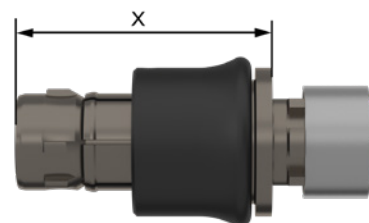
- Remove the fastening tape and lay the shield braid on to the crimp adapter. Fasten the shield braid to the crimp adapter by means of crimping or by using a metal band.



- Bend relief: This can be implemented by means of over-molding or by using shrink tube.

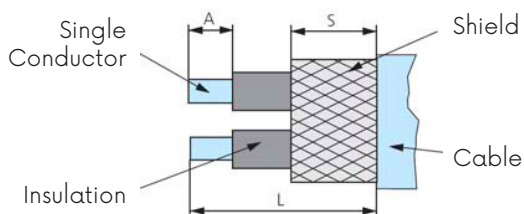
### Assembly crimp adapter

Size	Torque		Reference Dimension X	
	Nm	in lbf	mm	Inches
A	0.5	4.43	22.0	.87
B	1.0	8.85	23.9	.94
C	1.5	13.28	23.5	.93
D	2.0	17.7	25.9	1.02
E	2.5	22.13	29.1	1.15
F	3.0	26.55	38.7	1.52



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## Cable Preparation & Support Accessories



A = Stripping length single conductor  
L = Stripping length cable jacket

S = Stripping length braided shield



### Span wrench — Quick DeMate, Quick Clean & In-Line receptacle

Size	Part Number	Wrench Size
A	STW1-090	9
B	STW1-110	11
C	STW1-120	12
D	STW1-140	14
E	STW1-180	18

### Span wrench — Push/Pull plug

Size	Part Number	Wrench Size
A	STW1-070	7
B	STW1-080	8
C	STW1-100	10
D	STW1-120	12
E	STW1-140	14
F	STW1-210	21



### Span wrench — panel mount nut

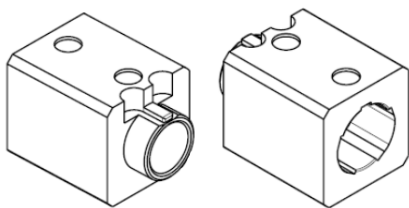
Thread Size	Thread Pitch	Part Number
10	0.50	STW2-10-050
11	0.75	STW2-11-075
14	1.00	STW2-14-075
14	1.00	STW2-14-100
16	1.00	STW2-16-100
20	1.00	STW2-20-100
30	1.50	STW2-30-150

Size	Contact Ø	L		A		S		Quick-DeMate, Quick-Clean & In-Line Rcpt.	Push/Pull Plug
		mm	in	mm	in	mm	in		
A	0.5	8	.31	2	.08	8	.31	✓	✓
	0.6	8	.31	2	.08	8	.31	✓	✓
	0.7	8	.31	2	.08	8	.31	✓	✓
	0.9	8	.31	2	.08	8	.31	✓	✓
B	0.5	9	.35	2	.08	8	.31	✓	✓
	0.6	9	.35	2	.08	8	.31	✓	✓
	0.7	9	.35	2	.08	8	.31	✓	✓
	0.9	9	.35	2	.08	8	.31	✓	✓
C	0.5	11	.43	2	.08	8	.31	✓	✓
	0.6	11	.43	2	.08	8	.31	✓	✓
	0.7	11	.43	2	.08	8	.31	✓	✓
D	0.5	11	.43	2	.08	8	.31	✓	✓
	0.7	11	.43	2	.08	8	.31	✓	✓
	1.3	11	.43	2	.08	8	.31	✓	✓
E	0.5	13	.51	2	.08	8	.31	✓	✓
	0.7	13	.51	2	.08	8	.31	✓	✓
	0.9	13	.51	2	.08	8	.31	✓	✓
	2.0	13	.51	2	.08	8	.31	✓	✓
F	0.7	15	.59	2	.08	10	.39	N/A	✓

All dimensions in mm; Tolerance: +10 %

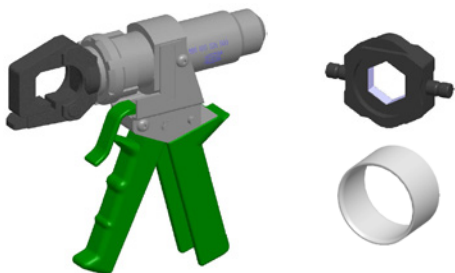
Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

## Cable Preparation & Support Accessories



### Assembly tool

Size	Part Number	Quick-DeMate, Quick-Clean & In-Line Receptacle	Push/Pull Plug
A	STA1-A	✓	✓
B	STA1-B	✓	✓
C	STA1-C	✓	✓
D	STA1-D	✓	✓
E	STA1-E	✓	✓
F	STA1-F	N/A	✓



### Hand crimp tool

Size	Part Number
All	STC1

### Crimp dies

Size	Part Number
A	STC1-A
B	STC1-B
C	STC1-C
D	STC1-D
E	STC1-E
F	Use band-it bands



### Hand crimp tool

Size	Part Number
All	STB1

### Band-it bands

Size	Part Number
A-E	STB1-AE
F	STB1-F



### Overmolding

Per your request, we will provide straight or right-angle overmolding.



### Straight heatshrink

Size	Part Number	Quick-DeMate, Quick-Clean & In-Line Receptacle	Push/Pull Plug
All	SHS1-1	✓	
All	SHS1-2		✓



### Right-angle heatshrink

Size	Part Number	Quick-DeMate, Quick-Clean & In-Line Receptacle	Push/Pull Plug
A	SHR1-1	✓	
B-E	SHR1-2	✓	
A-B	SHR1-1		✓
C-F	SHR1-2		✓

Please consult the AirBorn website for the latest revision of this document prior to beginning any design work.

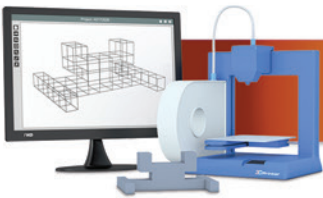
# In-House Engineering Services



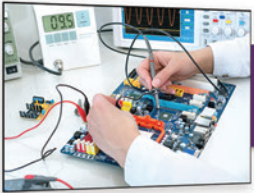
Concept  
Development



Detailed Design  
& Engineering



Quick-Turn Prototyping



Lab Testing,  
Qualification & Quality



Manufacturing  
Low- to High-Volumes



Global Packaging & Distribution

## Engineering Expertise

AirBorn's engineering group specializes in new product design & development for OEMs across the globe. Our team of 50+ degreed engineers are the most innovative and committed working in the electronics manufacturing industry today.

Customers can leverage our design & manufacturing expertise throughout the entire product development process. From conceptual design, prototyping, pilot-runs through to mass production, our team will work to get your project completed fast, elegantly and ahead of the competition.

Our global sales presence coupled with our choice of strategic global distribution partners means greater responsiveness when procuring AirBorn's products, no matter where you do business.



# The AirBorn Advantage

Model-To-Market  
Solutions



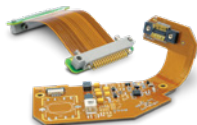
Custom  
Power  
Systems



COTS VPX  
Power Supply  
Power Blade



Flexible  
Circuit  
Assemblies



Cable  
Assemblies



FUZE  
Assemblies



Active  
Optical  
Assemblies



Rectangular  
W Series



Rectangular  
R Series



Micro D  
M Series



Nano D  
N Series



High-Speed  
Rectangular  
verSI



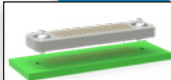
Modular Hybrid  
SInergy



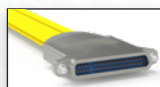
Macro D  
Rockt



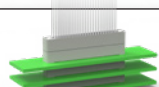
Z Axis Interposer  
Z Series



High-Speed  
Micro D  
microSI



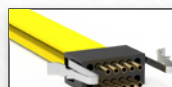
Stackable  
RC Series



Circulars  
Series 360



Strip Connector  
AirStrip



PowerAmp  
13A or 23A



Rugged Circulars  
TriMate



S360C-2.24

## AirBorn

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www.airborn.com

