

👉 All UAVs are drones, but not all drones are UAVs



*Welcome to the DRONES and
Unmanned Aerial Vehicle future world*

What AMAO can offer



for UAV
and



Drone Market

.....first overview

Amphenol Aerospace

Circular & Mil-Spec Connectors



2M Micro Miniature

Designed for interconnect applications requiring high performance and reduced size and weight.



Series Five

Combines all the capabilities of the traditional 38999 style connector in a lighter, smaller compact package.



EMI/EMP Filters

Versatility of a standard connector, with transient protection for sensitive circuits.



High Density

Features 30% more contact density than standard MIL-DTL-38999 inserts while utilizing the same connector dimensions and shell sizes.



Dualok High Vibration

An enhanced anti-decoupling mechanism designed to perform under severe vibration environments exceeding the performance of MIL-DTL-38999 Series III plugs.



Integrated Back Shells

Includes features that eliminate the need for additional accessories.

High Voltage



High Voltage 38999

An expansion of the MIL-DTL-38999 series to provide solutions for next-generation power requirements.



ETV38999 Composites

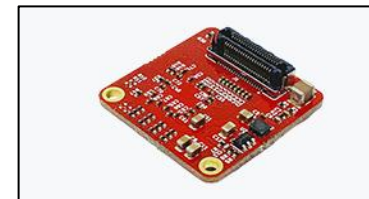
High-performance circular connector developed for next-generation Aeromotive applications where performance must be met with affordability.

High Speed Data Transmission



38999 + PCB Contacts

MIL-DTL-38999 Series III-type connectors with PC tail contacts.



Mini Switches

GigaBlox Nano, 1-inch square, 4-port Ethernet switch, 10/100/1000M.



T-Line

A push-pull mating connector that incorporates a retention spring in the receptacle and a full-mating indicator band on the plug.



High Speed Copper

Wide variety of high-speed copper contacts for HDMI, USB 3.0, Gigabit Ethernet and other high-speed applications

CONNECTING UAV INNOVATION



Amphenol Proprietary

MICRO-D & NANO-D CONNECTORS ENGINEERED FOR DRONES & UAV SYSTEMS

High-performance, lightweight and space-saving interconnect solutions built to keep your drones & UAV systems connected in every mission



NANO SOLUTIONS

MICRO SOLUTIONS

<p>RECTANGULAR NANO-D N9A SERIES</p>  <ul style="list-style-type: none"> » 0.025" contact spacing » 50% smaller than Micro-D » MIL-DTL-32139 compliant » Lightweight aluminum/titanium shells » High-density board-level I/O 	<p>CIRCULAR NANO NC SERIES</p>  <ul style="list-style-type: none"> » 0.025" contact spacing » MIL-DTL-32139 compliant » Threaded, bayonet & breakaway options » Lightweight aluminum/titanium shells » Designed for space-constrained UAV systems 	<p>CIRCULAR MICRO C SERIES</p>  <ul style="list-style-type: none"> » MIL-DTL-83513 compliant » Wide range of termination & mounting styles » Threaded, bayonet & breakaway options » Reliable performance in harsh environments » Multiple shell sizes & contact arrangements 	<p>STANDARD MICRO-D 100 / 102 / 104 SERIES</p>  <p>MIL-DTL-83513 QUALIFIED</p> <ul style="list-style-type: none"> » Harnessed & PCB terminations » Wide range of plating options » 9 to 100 contacts » Proven aerospace standard for mission-critical applications » Multiple shell sizes & contact arrangements 	<p>SEALED MICRO-D 107 SERIES</p>  <ul style="list-style-type: none"> » Hermetic sealing performance » Conductive O-ring available » Ground spring for EM/RFI protection » Harnessed & PCB versions » Built for harsh UAV environments 	<p>STRIPLINE MICRO-D 105 SERIES</p>  <ul style="list-style-type: none"> » One-piece Ryton insulator » Copper alloy, gold plated contacts (1-30 positions) » Single or multiple row configurations » Guide pin options (one or both ends) » Compatible with MB9513 pin & socket standards
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BUILT FOR TODAY'S UAV MISSIONS



FLIGHT CONTROL



PAYLOADS & EO/IR CAMERAS



DATA LINKS & COMMUNICATIONS



POWER DISTRIBUTION SYSTEMS

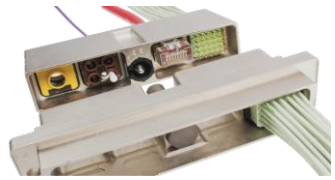


NAVIGATION & AVIONICS

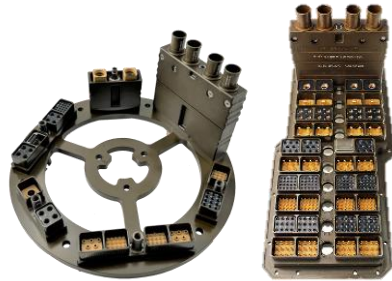


RECONNAISSANCE & SURVEILLANCE

AMPHENOL AIRLB France



SIM/EN4165 series 2 connector



SIM/EN4165 metallic plate



1900SIM connectors



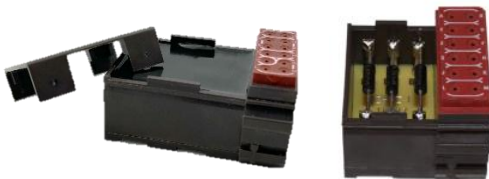
TSN Connectors



H-PAC connectors



1750 modules



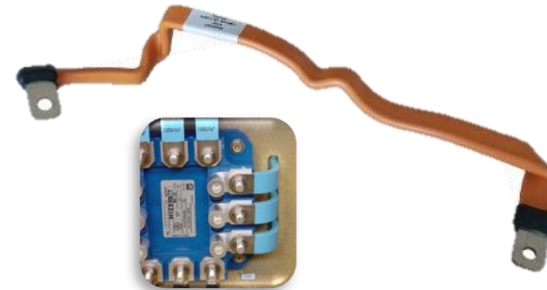
1765 component carrier module



Grounded modules



1119 splices



Busbars



Cord manufacturing

AMPHENOL AIRLB France



ABS2195 / CC5516



ABS1339 / CC1339 Light



Clampblock ABS serie



CC5516Light



Attachment systems



Modular brackets

Powering the Unmanned Future

Amphenol PCD: High-Performance Lightweight Solutions for UAVs



Pegasus & Nano Pegasus Circulars



Pegasus Series

Ruggedized, EMI-shielded composite connectors. Features a 1/4 turn bayonet lock for high-vibration applications (300G Shock).



Nano Pegasus

Ultra-compact 0.325" OD for high-density data. Scoop-proof design protects 28 AWG contacts capable of 1.5 Amps.

Pegasus solutions deliver up to 3.5x weight reduction compared to aluminum circular standards, drastically improving payload headroom.

Solaris & Velok Rectangulars



Solaris Series

Ultra low-profile connectors with FOD free latching, no tools required. Interfacial and wire seal grommets ensure moisture and dust security. IP67 rated.



Velok Series

Single-handed Quick Mate and Release with tool-less operation. High Pressured sealing: Qualified to IP69K
Ultrasonic Welding: Ensures void-free joints, sealing out high-humidity sea air.

Rapid Part Development (RPD)

From Concept to Flight in 4 Weeks

- > **Speed Advantage:** 75% faster than traditional steel tooling processes.
- > **Short-Run Ready:** Economical for productions of 50–200 flight-ready units.
- > **Flight-Certified Materials:** Mold Ultem, PEEK, and PA66GF using additive-manufactured cavities.
- > **Zero NRE:** Minimal capital risk during early-stage hardware iterations.



AMPHENOL SOCAPEX OFFER FOR UAV for medium drones

2M



TVUcom

Size 7



Fiber optic (promi, luxbeam, MPO field etc)

Rugged ethernet USB



AMPHENOL SOCAPEX C6I – UAV remote control For ground station



Drone Ground control or Launcher



CCS (Command Control System)



RJSMLAC-8UG-CAPS
Rugged Ethernet switch
8 gigabit ports



cable assemblies
for power and LAN links



RJSMLAC-8UG-CAPS
Rugged Ethernet switch
8 gigabit ports

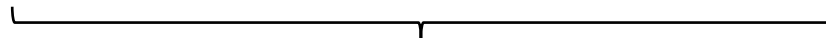
RESGMC
Rugged Ethernet Fiber Optic
converter with TVOP
Singlemode fiber



Tactical Fiber Optic cable
assembly
With CTOS, TACBeam or TVOP



RESGMC
Rugged Ethernet Fiber Optic
converter with TVOP
Singlemode fiber



Distance = 150m

RJSBKN-2UG-CAPS-RJ45-TVOP-SM

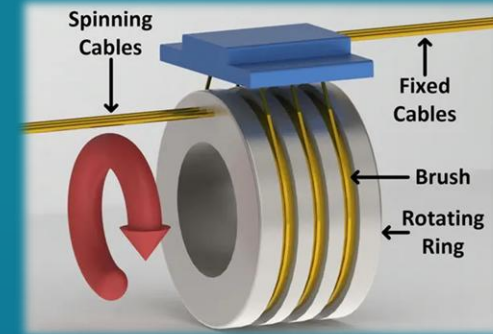
- Ethernet Media converter
- TVOP fiber optic
- RJFTV connectors
- Singlemode
- Power converter



Vehicles	UAV SUCCESS STORY
Customer	French army
Application	Deployment of tactical fiber between 2 containers for remote control of UAV
Specific requirement	Copper to fiber optic conversion
Network configuration	Singlemode link for long distance

What is SPIN TACT?

Definitions: A slip ring enables continuous rotation by transmitting electrical power and analog/digital signals from a stationary system to a rotating one without cable tangling. Rotary joints transfer RF, fiber optic, or media signals across rotating interfaces while maintaining signal integrity and reducing wear under high speed or high interference conditions. **All develops, produces and sell market leading rotary solutions of sliprings, rotary joints and any hybrid variants thereof.**



Why distribution?

- Our distribution partners already sell everything else around the rotary connection, why not step up in the food chain?
- ***Our distributors identify customers, inquire and send us the specification and then we do most of the work for them!***
- ***Use the network! Our distributors have the perfect coverage and connections to customers***



SPIN TACT™ for drones and UAV



SPECTRO™ XR
Multi-Spectral Electro-Optical Payload



Customer needs:

- *Low weight*
- *Compact design*
- *Very low temperatures*

Potential applications:

- *EO turrets*
- *SATCOM*
- *Flying radars*



Product

Why?

Raptor High Voltage at Altitude Connector



High power connectors and feedthroughs in a Mil-DTL-38999 style shell, ideal for power distribution in UAVs, Drones & Unmanned aircraft.

Terrapin SCE2 Miniature Connectors



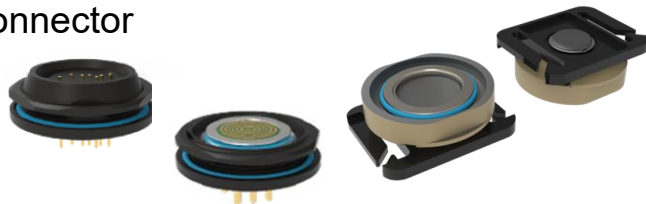
Lightweight, rugged connectors suitable for high-speed data transmission up to 1Gb/s, used in space-constrained UAV applications or in range finders to remove threat.

WaSP

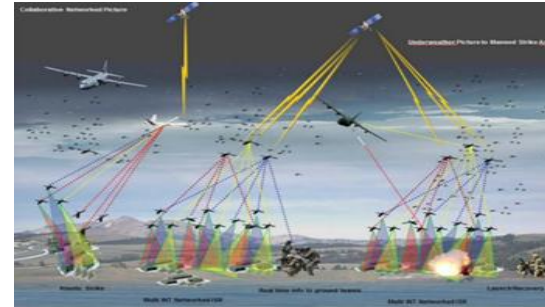
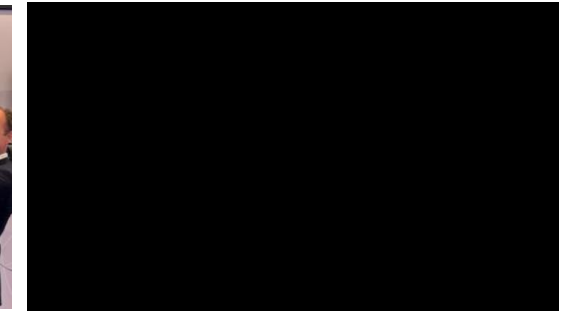


Based on Terrapin, compact, rugged and lightweight optimised for high-volume, low-cost applications such as UAVs, UGVs, Communications and Industrial applications.

Stingray 7-Magnetic blind mating connector



USB 2.0 data transmission
5A power transmission
First mate last break contact
IP68 used for drone docking



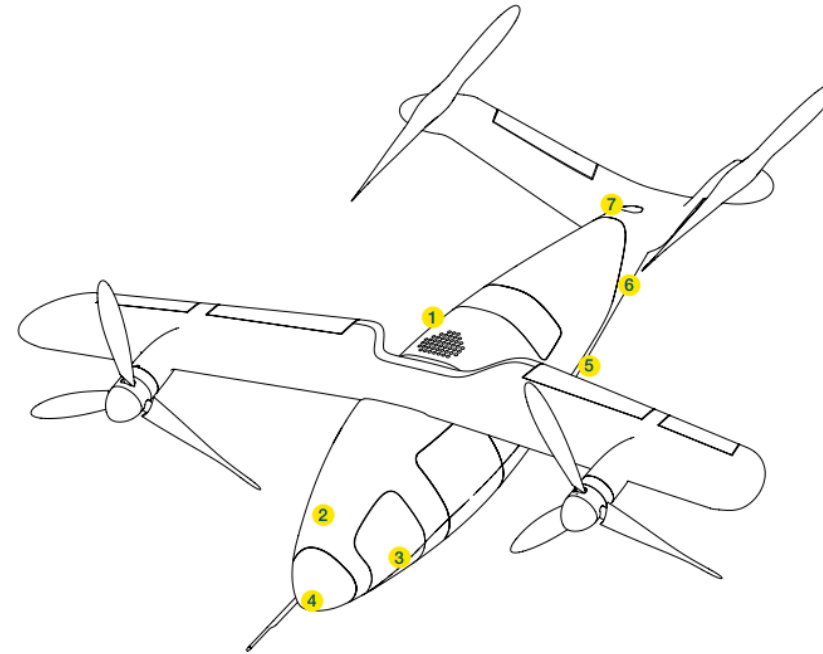
WaSP Applications

- Drones Group 1, 2 and 3 - up to 600kg and 5000m
- Actuators/ Servos
- Drone Tracking – CAA compliance
- Drone motor management
- C6ISR – careful!
- Satellite broadband – e.g. Amazon Kuipers
- Industrial





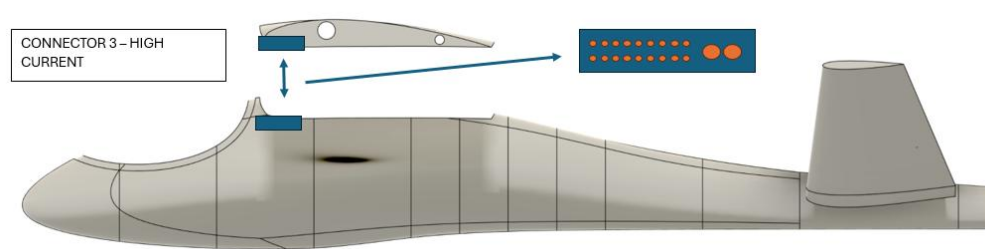
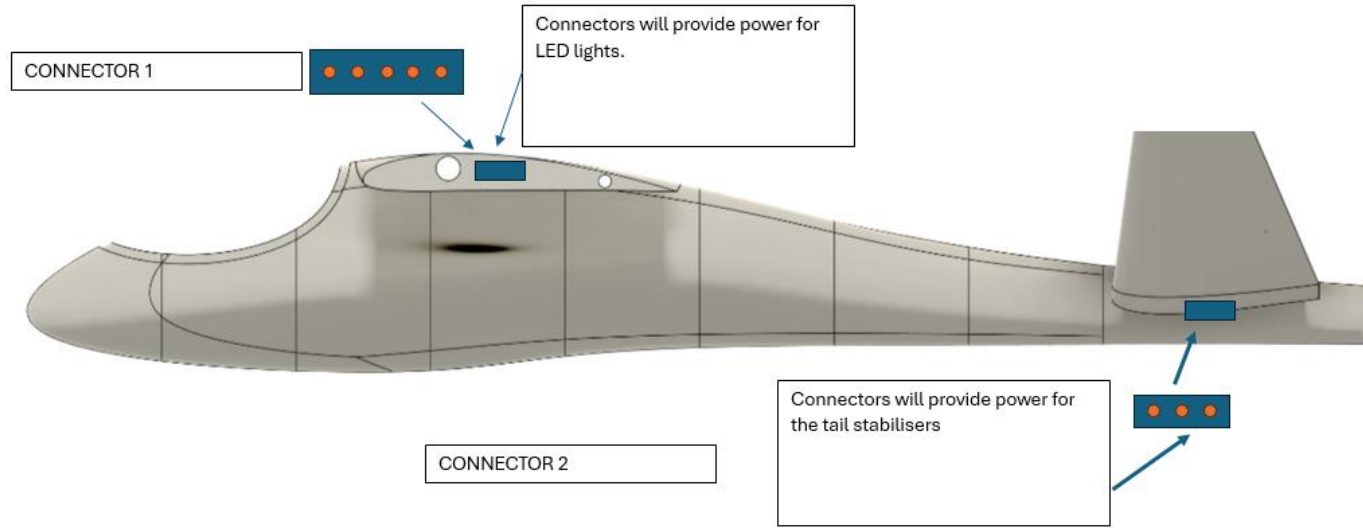
DRONE / UAVS APPLICATIONS



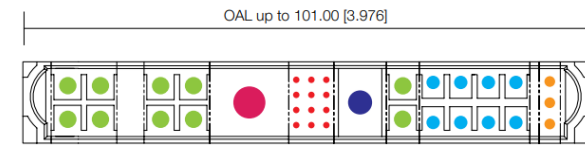
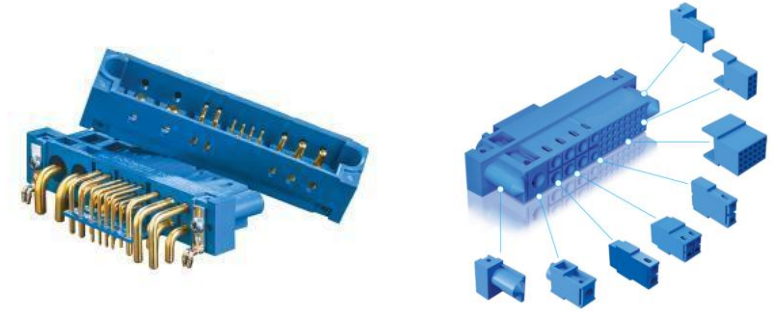
	1	2	3	4	5	6	7
	Power Distribution Systems	Navigation Systems	Cabin & Passenger Systems	Flight Control Systems	Battery Management Systems	Charging Systems	Ground Support Equipment
Combo-D			•		•	•	•
Compact Power							•
Environmental-D	•	•		•			•
Goldfish		•	•				•
Great Golden						•	•
Low-Profile Scorpion	•		•	•	•		•
Power Connection						•	•
Scorpion	•		•	•	•	•	•



SUCCESS STORY

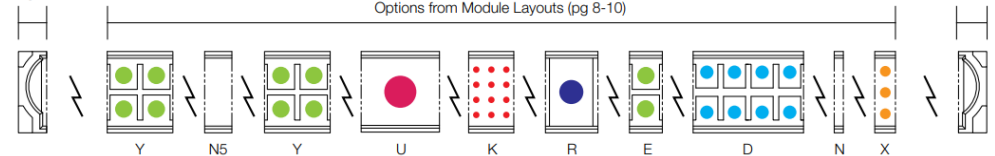


SCORPION



Option from Body Style (pg 6)

Options from Module Layouts (pg 8-10)



AMPHENOL MARTEC

NIMBUS

Lightweight Hermetic Pin and Socket Connectors

Key features

- Up to 30% lighter than Stainless Steel
- Proprietary pin and socket contact receptacles derived from MIL-DTL-38999 Series III (NON-QPL)
- Solder cup contacts available
- Coupling method – Anti vibration Tri Start Thread
- Box mount and bulkhead mount available
- Operating Temperature -55°C to 125°C
- Hermetically sealed receptacle ensures complete component protection

Technical specification

- Design standard: MIL-DTL-38999 Series III (NON-QPL)
- Planform arrangement derived from MIL-DTL-38999: 09-35, 11-35, 13-35, 15-35
- Contact sizes: MIL-DTL-D38999 (Size 22)
- Shell Material: Aluminium Alloy
- Insulation: Glass
- Contact material: Beryllium Copper
- Contact Plating: Hard gold plate 1.25 – 5.0µm with semi-bright nickel underplate 5.0 – 10.0µm
- Shell Material: Aluminium 6061 T6
- Shell Finish: Electroplated nickel 5.0 – 10.0 µm
- Leak rate: $< 1 \times 10^{-7}$ cc/sec (He)
- Maximum temperature: 125°C
- Insulation resistance: > 5000 M Ohm @ 500 Vdc @ambient (reduced @ temperature)

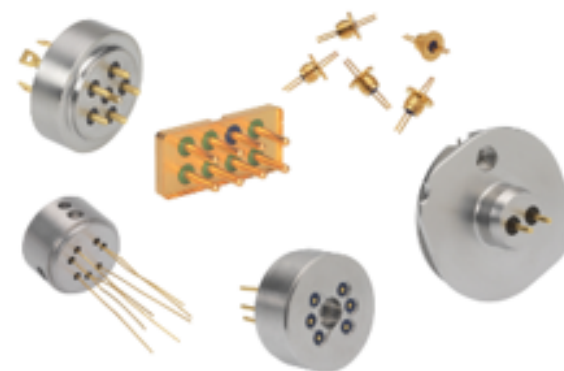


Hermetic Interconnect for Sensors

- **Hermetic M12** miniature threaded, hermetically sealed connectors, with fixed pin contacts, fused into a glass dielectric insert.
- Receptacle types available: Square flange, Jam Nut, Round flange, Through flange, bespoke design flange
- Contact terminations available: Eyelet, Solder bucket, Round, PCB contacts, socket contacts.



- **Bespoke Hermetic Sensor Headers** Full design support from prototype to production.
- Fully custom solution or integration of trusted standard interface to non - standard mounting style.
- Design optimisation for combined pressure and temperature applications
- Low MOQs, custom solution available in 16-18 weeks



Amphenol Times microwave systems - Levitate product

LVT-047 & 086



LVT-141



LVT-157



LVT-196



New Levitate™ Cable Assemblies

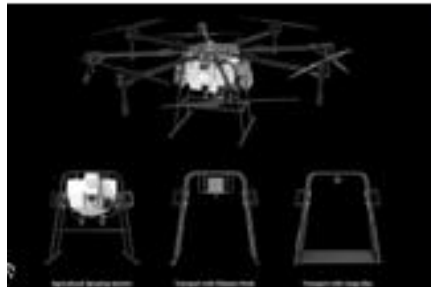
Levitate™ cable assemblies from Times Microwave Systems deliver industry-leading weight savings and RF performance for UAV and avionics platforms

Key Highlights:

- **Ultra-Lightweight Design:** Engineered to provide the lightest weight per unit of loss available on the market, helping reduce overall system mass.
- **Optimized for UAVs:** Supports avionics applications across UAV Groups 1–5, including flight control, communications, and surveillance.
- **High RF Performance:** Minimal signal loss ensures reliable operation in demanding airborne environments.
- **Flexible Deployment:**
 - **LVT047, LVT086, LVT141** – highly flexible for **in-the-box** applications.
 - **LVT157 and LVT196** – ultra-lightweight options for **antenna-to-LRU RF runs**.
- **Dual-Use Capability:** Designed for both **military and commercial RF systems**.
- **Cost-Effective & Scalable:** Budget-friendly with availability through **authorized global distribution partners**.
- **Industry Showcases in 2026:** The Levitate line will be showcased at global tradeshows throughout the year including [AUSA Global Force](#), March 24 – 26.



Drone Solutions



High Density Ranger

- Number of contacts: 9, 12, 16, 27,
- Keying: Brown, Green, Red and Blue
- Data transmission: USB 2.0 (480 Mbit/s) + Power, USB 3.2 Gen 1x1 (5 Gbit/s), HDMI 1.3 (8.13 Gbit/s), USB 2.0 (480 Mbit/s) + Power
- Operating temperature: -51°C – 125°C
- Shell finish: Cu-alloy with Ruthenium finish
- Contact finish: Cu-alloy with gold finish
- Current rate: 1A, 5A
- Termination type: Solder or PC Tail
- Degree of protection: IP6K8 / IP6K9K
- Mating cycles: 5000
- Size: 0, 1



Breakaway self wiping contact system

SPRING LOADED CONTACTS

For Board to Board Mating





Market:	Military
Application:	AUTONOMY FOR PRECISION TARGETING AND ENGAGEMENT
Length:	5yrs
Forecast Qty:	1K systems per year



OPS:	NEXUS
Product:	RANGER HD
Strengths:	Light weight, High Speed Data
Competition:	ODU AMC
Potential:	\$100K/pa



AMAO DIRECTORY for Drone market

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AND more from the other Amphenol group



Amphenol Sensors



Amphenol LTW

Amphenol Communications Solutions

Amphenol
Sensors

PIHER
sensing
systems

**Aerospace and Drone
Innovations**

Meeting the unique and demanding requirements of Commercial, Medical, Military and Consumer drone applications



**Innovate
the
Skies**

Leach, Philip (Amphenol-AS)
<Philip.Leach@amphenol-sensors.com>

Drones

UAV

EVTOL

Subsea Drones

Internet Satellite

NPA Series

Differential pressure for Air Speed
Barometric pressure for Altitude



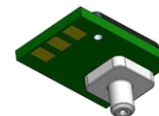
NovaSensor Differentiation

- Existing 20M Piece High volume Production
- Affordable solution - Ideal for High volume Swarm and Security Deployment
- Established Military, Space, Industrial and Commercial use
- Established on Satellite Internet systems – Propulsion and Fuel Monitoring
- Absolute(Altitude), Differential (Airspeed) and Media Protected Offering (Depth) (NPI and LCMC)
- Miniature size Surface Mount: Tape and Reel
- High Speed Accuracy and Stability, High Altitude Use
- Analog or Digital (I2C/SPI/SENT) or unamplified sensor
- Dual Pressure and Temperature Sensing

NPI / IPT Series
Fuel Control



NPI and LCMC Series
Depth, Speed



Drones

UAV

EVTOL

Subsea Drones

Internet Satellite

Type 95 interchangeable NTC thermistors: to $\pm 0.1^\circ\text{C}$, -80 to 150°C range



NTC Diode thermistors: $R_{25^\circ\text{C}}$ to $\pm 2\%$, -40 to 250°C range

NKA series NTC thermistors: $R_{25^\circ\text{C}}$ to $\pm 1\%$, -40 to 190°C range



UAVs face thermal issues due to weight, battery limits, ambient temperature swings, and self-heating electronics.

NTC, PTC thermistors and infrared sensors enable precise, non-contact temperature measurements improving safety and reliability.

Application-ready sensor assemblies reduce integration time and risk, offering robust, repeatable solutions for customers.

ZTP series non-contact IR surface temperature sensors



JS series harsh environment temperature sensor assembly



THERMOMETRICS
A COMMITMENT TO EXCELLENCE

An Amphenol Company

Amphenol

COMMUNICATIONS SOLUTIONS

Drone – ACS Product Range

Regards,

Vicy PULAYATH
Global Distribution Manager &
INDIA Business Development Manager
ACPA | Cochin, INDIA

Amphenol
COMMUNICATIONS SOLUTIONS

- Drones have become vital tools for aerial imaging, warehouse delivery, agriculture, and emergency response. These compact, lightweight systems depend on advanced power management, precise flight control, and real-time sensing to operate effectively. Amphenol provides high-reliability connectors and cable assemblies that support efficient power delivery and high-speed data transfer, enabling drones to achieve longer flight durations, accurate control, and dependable object detection—even in harsh and rapidly changing environments.



<https://www.amphenol-cs.com/applications/robotics.html>

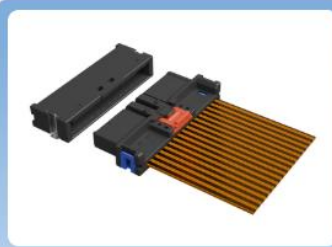
Battery And Charger



DuraSwap™ Connectors



DURASWAP™ Concentric Connectors



FlexFast™ Mini Flex-to-Board



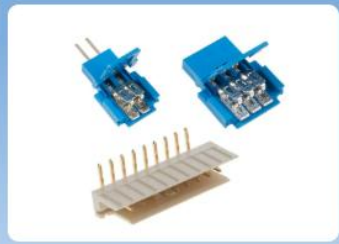
Waterproof USB Type C



HVLock® High Voltage Platform



PwrBlade® Mini Cable-to-Board Connector



Clincher™ 2.54mm Flex Connector System



0.30mm FPC Connectors - F14D/F13S Series



FloatCombo™ 0.50mm Floating Board-to-Board...



Spring Contacts



D-Sub Standard Board Mount Connectors



Rugged D-Sub



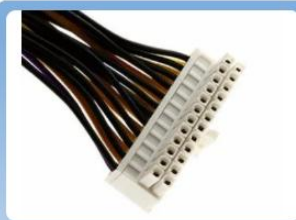
PwrBlade+® Connector



Minitek® Pwr 5.7 Connector System



Minitek® Pwr 3.0 BMI Connector System



Minitek® Pwr 4.2 Connector System

Control and Communication



Slim Cool Edge 0.65mm Hybrid Power & Signal Gen 6...



FitMate™ 0.80mm Wire-to-Board



Automotive USB Connectors and Cables - Mini HSBridge+



PCIe® M.2 Gen 5 Card Edge Connectors



0.35mm Micro Board-to-Board 1.00mm Stack Height - 101...



BergStak® 0.40mm Self-Alignment Board-to-Board...



Micro SD and SD Card Sockets



USB 4 Gen 3 Type C



USB 3.2 GEN 1 Type A Standard / Reverse Receptacle



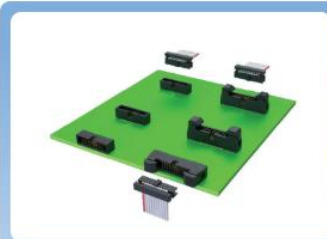
Micro USB 2.0 Connector



Rugged USB Type C



USB Type C Connector and Cable Assembly



Minitek127® 1.27mm Cable-to-Board Connector System



MicroSpace™ Crimp-To-Wire Connector Platform



0.30mm FPC Connectors - F14D/F13S Series



0.50mm FFC/FPC Connectors



0.50mm Pitch FFC/FPC Autolock Connectors



BergStak® 0.80mm Pitch

Motor Drives and Controllers



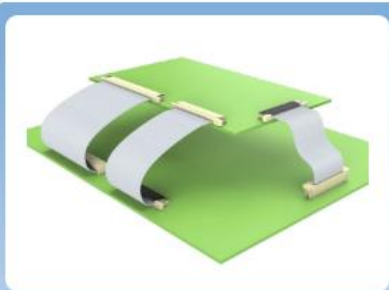
Automotive USB Connectors and Cables - Mini HSBridge+



0.50mm FFC/FPC Connectors



0.50mm Pitch FFC/FPC Autolock Connectors



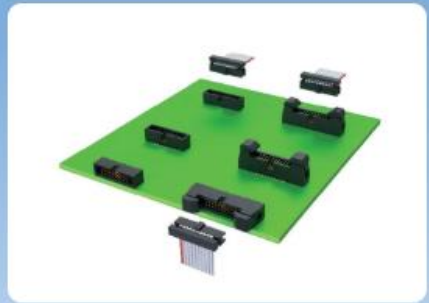
FFC Jumper



Spring Contacts



Minitek® 0.80mm Wire-to-Board Connector System



Minitek127® 1.27mm Cable-to-Board Connector System



Minitek® 1.00mm Wire-to-Board Connector System



USB 3.2 Type C



USB 4 Gen 3 Type C

Vision and Sensing



FitMate™ 0.80mm Wire-to-Board



Automotive USB Connectors and Cables - Mini HSBridge+



Ve-NET™ Automotive Multi-Gigabit Differential Connectors



0.35mm Micro Board-to-Board 1.00mm Stack Height - 101 Series



MicroSpace™ Crimp-To-Wire Connector Platform



MicroSpaceXS™ 1.27mm Waterproof Crimp-to-Wire...



FloatCombo™ 0.50mm Floating Board-to-Board...



BergStak® 0.40mm Self-Alignment Board-to-Board...



Conan® 1.00mm Connector



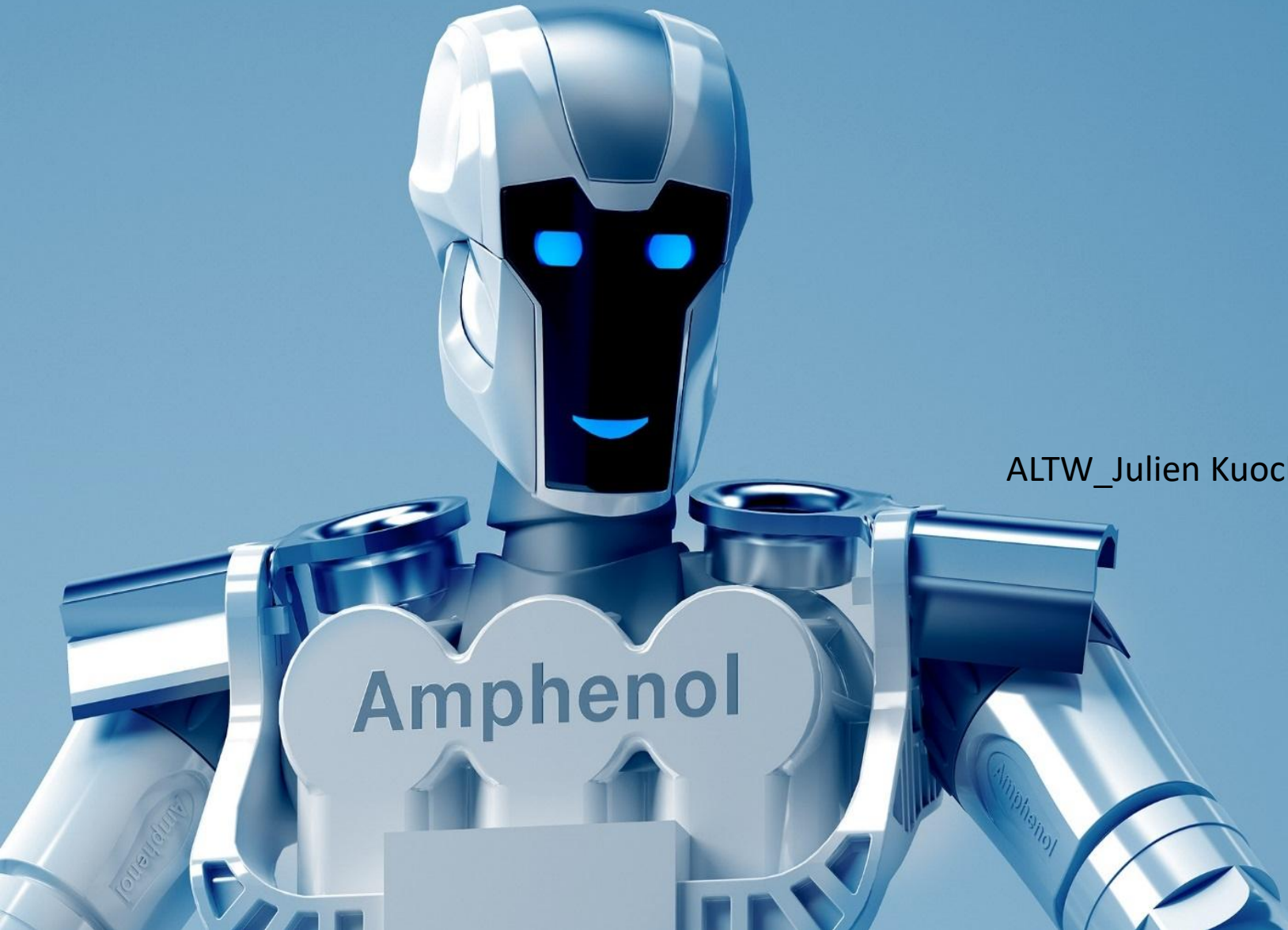
Minitek® 0.80mm Wire-to-Board Connector System



Minitek® 1.00mm Wire-to-Board Connector System



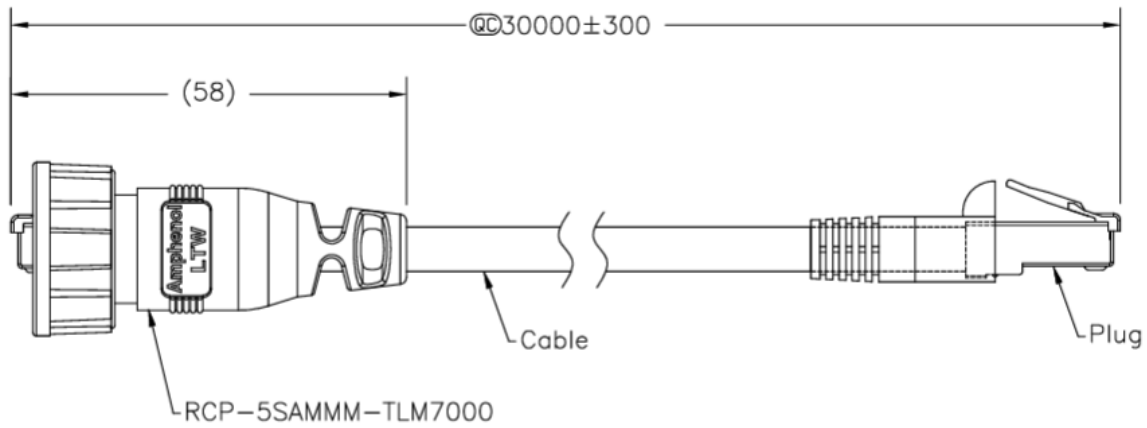
0.30mm FPC Connectors - F14D/F13S Series



AMPHENOL LTW

Drones/eVTOL

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<https://origin-robotics.com/>

Pressure relief vents & over-pressure relief vents



Integration Concept for eVTOL Battery Packs

01

Normal Operation: Pressure Relief Vents

Handle altitude and temperature cycling, maintain sealing integrity, and prevent condensation buildup during routine flight profiles.

02

Emergency Outlet: Over-Pressure Relief Vents

Set opening pressure below the housing's unintended failure pressure—ensuring that gas exits through the designed weak point, not through seams or cable glands.

03

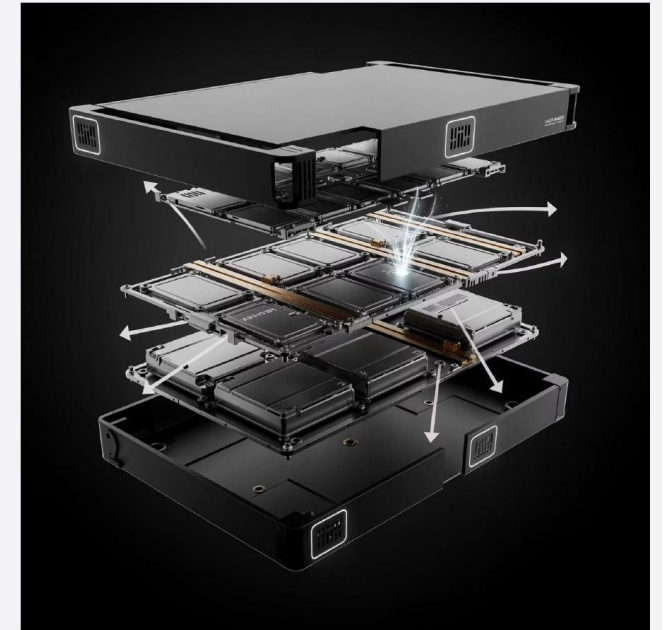
Route to Safe Zone

Direct vent outlet away from occupants, flight-critical wiring, and composite structures. Pair with ducting or flame arrestors as needed.

04

Validate with Abuse Testing

Confirm through cell → module → pack testing that gas release occurs only through designed vents under all worst-case propagation scenarios.



IP67+ rated I/O connectors & harnesses



D-SUB



RJ45



SMA (can customized core or thread size)



M-series: screw threaded or push-pull



USB



Fiber optic (SC/LC)