

Amphenol LTW

- IP67 / 68 Mated or Unmated
- Plastic or Metal
- Comprehensive Product Line
- Wide Assembly Style Options
- Various Mating Styles
- Flammability UL 94V-0

USB Connector

Offer you ideal solution to data/power transfer in harsh environments

NOTE: USB Type C in another brochure



Type A 2.0

2 points lock, Screw thread
Metal, Plastic



Type A 3.2 Gen 1

2 points lock, screw thread
Plastic



Type B 2.0

2 points lock, screw thread
Plastic



Mini B 2.0

Screw thread
Plastic



Micro B 2.0

Snap-in
Plastic



Micro AB 2.0

Snap-in
Metal

Unrivalled InterConnects for Harsh Environments

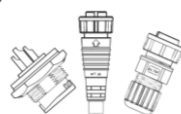
About ALTW

**3**

Production Sites
(Taiwan, China, Mexico)

**30+**

Market Applications

**90,000+**

Products

Since 1993, Amphenol LTW Technology “ALTW” lives and breathes to create, innovate, design and produce “***unrivaled interconnects for harsh environments***”. With over 300 worldwide patents, not only does ALTW offer the broadest and widest range of rugged interconnects in the industry but also customization with the mission of “Customer Satisfaction First”. Undoubtedly, ALTW is the leader in rugged interconnects, highly recognized for its uncompromising quality, short lead time, fast and tailored service and its very competitive pricing.

Regardless of the challenging environments that your products will be subject to; there is a very good chance that you will find what you are looking for with ALTW.

Unrivaled InterConnects for Harsh Environments

Type A & B, Mini B, Micro B & AB

Amphenol LTW's complete range of waterproof USB connectors offer you ideal solution to data/power transfer in harsh or demanding environments. This USB family of connectors consist of Type-A, Type-B, Mini USB, Micro USB, and meet USB 2.0, USB 3.0, 3.2 (Gen 1) standard. This wide rage of product provides the convenience to our customer evaluating their USB connectors with multiple selection of connecting interfaces.



Mini & Micro

- ❖ IP67, IP68 mated or unmated
- ❖ Metal or plastic
- ❖ Mating style: screw thread, snap-in, 2 points lock
- ❖ Wide assembly style options
- ❖ Comprehensive product line
- ❖ Flammability UL 94V-0



Type A & B

Product Range Overview

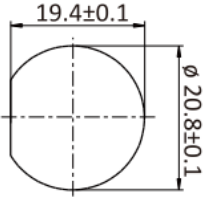
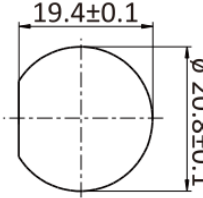
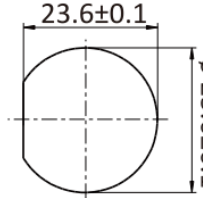
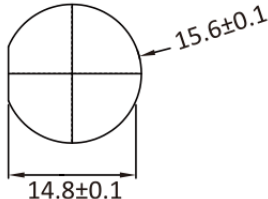
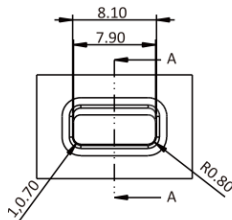
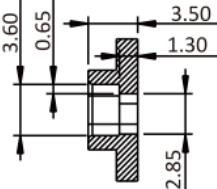
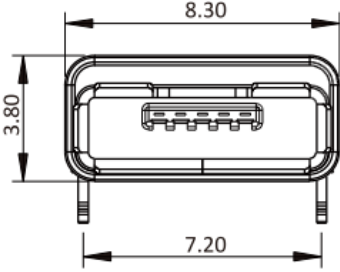
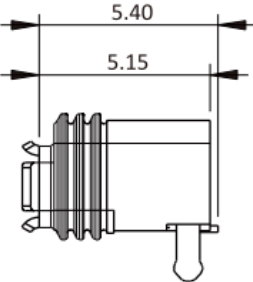
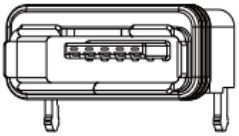
SUB SERIES	Type A	Type B	Mini B	Micro B	Micro AB
Mating Style	Screw Thread, 2 Points Lock	Screw Thread, 2 Points Lock	Screw Thread	Snap-in	Snap-in
Plastic Version	✓	✓	✓	✓	-
Metal Version	✓	-	-	-	✓
Transmission Rate	USB 2.0, USB 3.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0
Plating of Contacts	Gold Plating	Gold Plating	Gold Plating	Gold Plating	Gold Plating
Operating Voltage (AC/DC)	30V	30V	30V	30V AC / 5V DC	30V AC / 5V DC
Nominal Current	1A, 1.5A	1.5A	1.5A	1.8A+1A	1.8A+1A
Operating Temperature	Receptacle: -40°C ~ 105°C Receptacle With Wires (Type A): -20°C ~ 85°C Receptacle With Wires (Type B): -40°C ~ 105°C Overmolded With Cable: -20°C ~ 80°C Field Serviceable/Installable: -20°C ~ 80°C			-40°C ~ +80°C	-30°C ~ +80°C
Fasten Style of Nut	Front	Front	Front	-	-
Receptacle	✓	✓	✓	-	✓
Receptacle with Cable/Wire	✓	✓	✓	-	-
Field Serviceable/Installable	✓	✓	✓	-	-
Overmolded with Cable	✓	✓	✓	✓	-
Accessory	✓	✓	✓	-	-
Mating Cycles (Pin Contact)	1500	1500	5000	10000	10000
IP Rating	IP67, IP68	IP67, IP68	IP67	IP67	IP67, IP68
Salt Spray (Connector, Mated)	48h	48h	48h	48h	48h
UV Resistant	✓	✓	✓	✓	✓
Flammability Rating	UL94V-0	UL94V-0	UL 94VHB	UL94V-0	UL94V-0
Vibration Resistant	Frequency Range 10 ~ 55Hz / Amplitude 1.52mm				
EMI Option	✓	✓	✓	✓	✓
ROSH Compliant	✓	✓	✓	✓	✓
REACH Compliant	✓	✓	✓	✓	✓
Applicable Wire Gauge	28AWG*1P + 24AWG*2C		24, 28 AWG	28 AWG	-
Self-closing Cap	✓	✓	-	-	-

Served Markets & Applications

Market	Application	
Marine	<ul style="list-style-type: none"> Navigation System: Radar, GPS, Sonar, Fish-finder, Auto-pilot, Sailing Instruments, Chartplotter Communication: Antenna, radio, AIS, SCS 	<ul style="list-style-type: none"> Instrumentation & Monitoring: MFD, CCTV, Sensors Entertainment: Video, Audio, Decorative
Broadband Wireless Access	<ul style="list-style-type: none"> Access Point: LTE, 5G Cellular, Subscriber, and Mobile Station 	<ul style="list-style-type: none"> Wireless Router and Mobile Backhaul Other Communication Equipment
Industrial Automation	<ul style="list-style-type: none"> Data Communication: Router, Switches Motors: Servo, Step, Encoder, Actuator 	<ul style="list-style-type: none"> Controller: Machine Vision, AVI, Sensors Industrial PC, Counters, and Display
Renewable Energy	<ul style="list-style-type: none"> Device Communication and Tracker 	
Heavy Equipment	<ul style="list-style-type: none"> Navigation System: GPS, Lidar, Radar, Ultrasonic Instrumentation, Control, and Diagnostic Systems Monitoring: Display, Camera, Imaging 	<ul style="list-style-type: none"> Safety System: Sensor, ADAS, Telematics & Tracking Communication and Electronic Toll systems
Autometer	<ul style="list-style-type: none"> Metering: Water, Electric, & Gas Meter Power and Control: Drone, Security Alarm 	<ul style="list-style-type: none"> Monitoring: Sewage, Telemetry, and Vehicle tracking
Test Equipment	<ul style="list-style-type: none"> Measuring Device: Air, Humidity, Light, sound, Water, Image, Weight, Height Detectors: Gas, Fire, Leak, Motion, Heat 	<ul style="list-style-type: none"> Monitoring: Seismic (earthquake), Climatic Weighing: Weigh, in-motion Geodetic System: Surveying, Laser marking, Borrescope
Hybrid Electric Vehicles	<ul style="list-style-type: none"> Safety System: Speed, Brake, Throttle, Gear Power System: Charging, Controller, Battery, Plug & Inlet/Outlet (Low Power) 	<ul style="list-style-type: none"> Sensors: Speedometer, Fuel, Cleaning Lighting: Interior and Exterior LED
Railway Mass Transit	<ul style="list-style-type: none"> Navigation: GPS, Radar, Lidar, Ultrasonic Infotainment: Display, sound, Broadcasting, monitor Sensors: Speedometer, Fuel, Cleaning 	<ul style="list-style-type: none"> Communication: Main Controller, In-vehicle Info Lighting: Interior and Exterior
Mobile Devices	<ul style="list-style-type: none"> Drone Remote Controller Measurement: Altimeter, Gesture, Piezoelectric 	<ul style="list-style-type: none"> Handheld: Barcode, Scanner, Portable lamp, GPS
Transportation	<ul style="list-style-type: none"> Monitoring: Display, CCTV, Lidar, Surveillance Cam Navigation: GPS, Radar 	<ul style="list-style-type: none"> Power: Charger, Outlet, Inlet (Low Power)
Medical Equipment	<ul style="list-style-type: none"> Visualization: Display and monitors Monitoring: ECG, Holter, Blood Pressure, Sugar 	
Automotive Diagnostics	<ul style="list-style-type: none"> Auto-crash detection & notification system Vehicle Tracking and Roadside Assistance System 	<ul style="list-style-type: none"> Remote Diagnostics
UAV	<ul style="list-style-type: none"> Drone: Commercial, Consumer, & Military 	
Lifts & Materials Handling	<ul style="list-style-type: none"> Forklift, Industrial Lift, Material Handling 	
Remote Video Response Center	<ul style="list-style-type: none"> Monitoring: Display, CCTV, Dome, IP Camera Detection: Auto-License Plate Recognition, Alarm Identification: Fingerprint, Face detection, encoders 	<ul style="list-style-type: none"> Remote Control Devices and Sensors Peripherals: Junction boxes and cabling system Lighting: Interior and Exterior
Autonomous	<ul style="list-style-type: none"> Navigation & Sensor: GPS, Lidar, Radar, Ultrasonic Imaging: Cameras, Monitors, Infotainment Display 	<ul style="list-style-type: none"> Controller: Inertial Measurement System, Central Computer
Communication	<ul style="list-style-type: none"> Transmitter and Receiver Equipment 	
Rugged IT	<ul style="list-style-type: none"> Telemetry Military Notebook & Tablet and VR & AR 	<ul style="list-style-type: none"> Night Vision Goggles and Camera Communication Equipment

Panel Cut-Out

(unit: mm)

Type A & B	<div><div>Screw Threaded (13/16"28 UNS)</div><div></div></div> <div><div>Lock Bayonet (2 points) (Nut OD: 25.4mm)</div><div></div></div> <div><div>Lock Bayonet (2 points) (Nut OD: 28.5mm)</div><div></div></div>
Mini B	<div><div>Screw Threaded</div><div></div></div>
Micro B	<div><div></div><div></div><div>TOLERANCE .XX±0.05 Recommended Case Cut Out SCALE 2 : 1 SECTION A - A</div></div>
Micro AB	<div><div></div><div></div><div></div></div>



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