

SURE-SEAL® IP67
USB SERIES CATALOG



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Technical Information

Wire Gauge Conversion Chart

Conversion between American Wire Gauge (AWG), Circular Mil Area (CMA), and approximate metric millimeter squared (mm²) wire sizes.

Diameter			Area	
AWG	in.	mm	CMA	mm ^{2*}
4/0 (0000)	0.46	11.68	212000	120
3/0 (000)	0.41	10.41	168000	95
2/0 (00)	0.365	9.27	133000	70
1/0 (0)	0.325	8.26	106000	50
1	0.289	7.34	83700	-
2	0.258	6.55	66400	35
3	0.229	5.82	52600	-
4	0.204	5.18	41700	25
5	0.182	4.62	33100	-
6	0.162	4.11	26300	16
7	0.144	3.66	20800	-
8	0.128	3.25	16500	10
9	0.114	2.90	13100	-
10	0.102	2.59	10400	6
11	0.091	2.31	8230	-
12	0.081	2.06	6530	4
13	0.072	1.83	5180	-

Diameter			Area	
AWG	in.	mm	CMA	mm ^{2*}
14	0.062	1.57	4110	2.5
15	0.057	1.45	3260	-
16	0.051	1.30	2580	1.5
17	0.045	1.14	2050	1
18	0.040	1.02	1620	0.75
19	0.036	0.91	1290	-
20	0.032	0.81	1020	0.5
21	0.0285	0.72	810	-
22	0.0253	0.643	642	0.34
23	0.0226	0.574	509	-
24	0.0201	0.511	404	0.25
25	0.0179	0.45	320	-
26	0.0159	0.404	254	0.14
27	0.0142	0.361	202	-
28	0.0126	0.320	160	0.08
29	0.0113	0.29	127	-
30	0.01	0.254	101	0.05

*Nearest metric wire size
Use to Convert American Wire Gauge to Diameter and Circular Mil Area.

How to Order

USB 2.0 & 3.0 Cable Assemblies

1		2	3	4		5
USB	-	3	WPA	PA	-	1M
SERIES		USB VERSION	CONNECTOR STYLE (END A)	CONNECTOR STYLE (END B)		LENGTH

SERIES

USB = USB Composite
USBM = USB Metal*

USB VERSION

2 = USB 2.0
3 = USB 3.0

CONNECTOR STYLE (END A)

WPA = Molded Plug USB-A
WPB = Molded Plug USB-B
WJA = Molded Receptacle USB-A
WJB = Molded Receptacle USB-B

CONNECTOR STYLE (END B)

WPA = Molded Plug USB-A
WPB = Molded Plug USB-B
PA = USB-A
PB = USB-B

LENGTH**

1M = 1 meters
2M = 2 meters
3M = 3 meters

* Molded USB-B only available in composite
** Additional lengths are available upon request

USB 2.0 & 3.0 Receptacles

1		2	3
IPUSB	-	2	JAFL
SERIES		USB VERSION	STYLE

SERIES

IPUSB = USB Composite
IPUSBM = USB Metal*

USB VERSION

2 = USB 2.0
3 = USB 3.0

STYLE

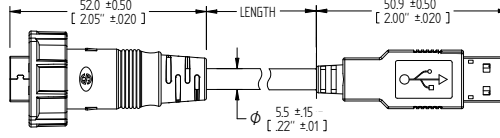
JAFL = Molded Receptacle USB-A to 500 mm Flying Leads
JBFL = Molded Receptacle USB-B to 500 mm Flying Leads
JAPC = Molded Receptacle A to PC Contacts
JBPC = Molded Receptacle B to PC Contacts
AABHD = Molded Receptacle A to A Feed Thru
BABHD = Molded Receptacle B to A Feed Thru
ASTB = Molded Receptacle A to Terminal Block

* Molded USB-B only available in composite

USB-A Circular Plug to USB-A Plug Cable Assembly

Connector series: USB
Gender: Male
Part No.: IPUSB-*WPAPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



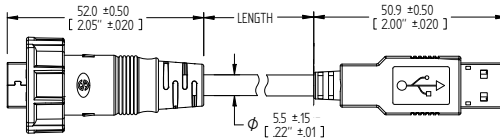
General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Plug to USB-A Plug Cable Assembly

Connector series: USB
Gender: Male
Part No.: IPUSBM-*WPAPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

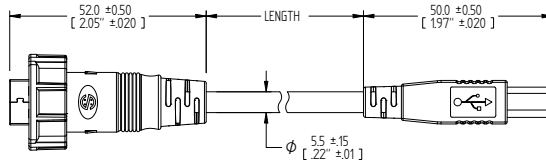
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Plug to USB-B Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPAPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



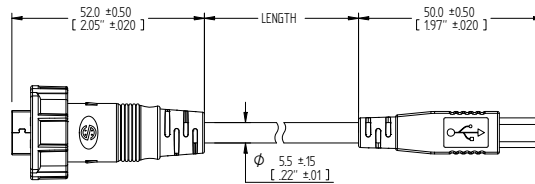
General Information

Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Plug to USB-B Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSBM-*WPAPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (mated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

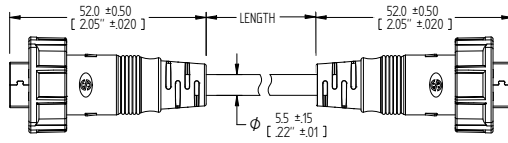
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Plug to Circular USB-A Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPAWPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



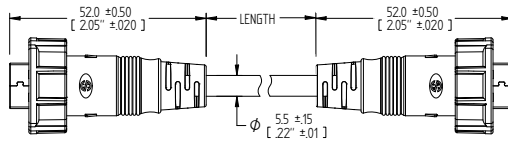
General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Plug to Metal Circular USB-A Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSBM-*WPAWPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

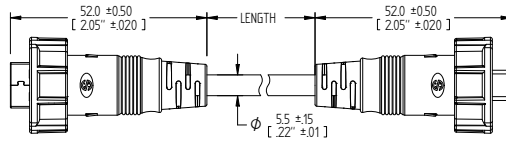
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Plug to Circular USB-B Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPAWPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



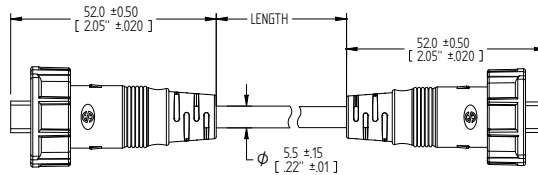
General Information

Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-B Circular Plug to Circular USB-B Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPBWPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-B to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (mated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

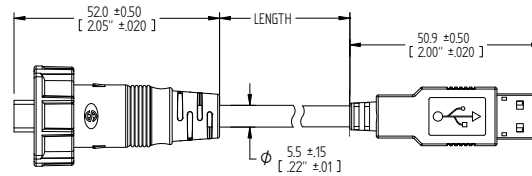
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-B Circular Plug to USB-A Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPBPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



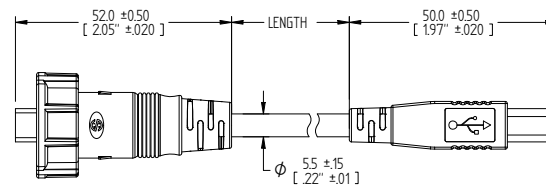
General Information

Connector Type:	USB-B to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-B Circular Plug To USB-B Plug Cable Assembly

Connector series: USB
Gender: Male to Male
Part No.: IPUSB-*WPBPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

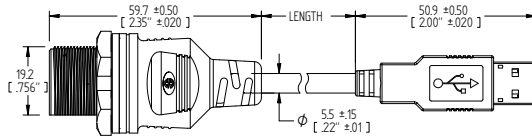
Connector Type:	USB-B to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Cable Mounted Receptacle to USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJAPA-#M
*refers to use version (2.0 or 3.0)
refers to cable length

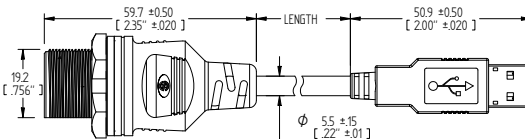


General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Cable Mounted Receptacle to USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSBM-*WJAPA-#M
*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

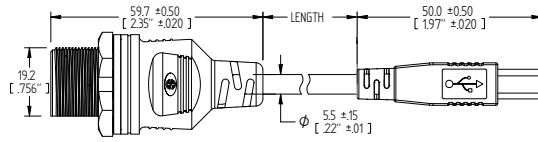
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Cable Mounted Receptacle to USB-B Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJAPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



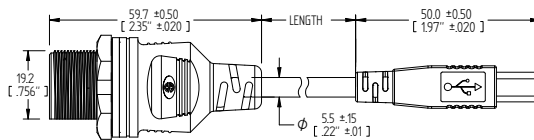
General Information

Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Cable Mounted Receptacle to USB-B Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSBM-*WJAPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

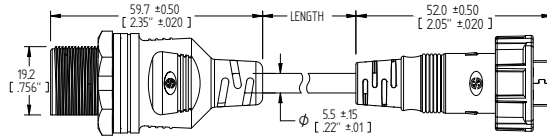
Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Cable Mounted Receptacle to Circular Cable Mounted USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJAWPA-#M
*refers to use version (2.0 or 3.0)
refers to cable length

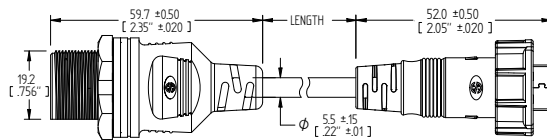


General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Cable Mounted Receptacle to Metal Circular USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSBM-*WJAWPA-#M
*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

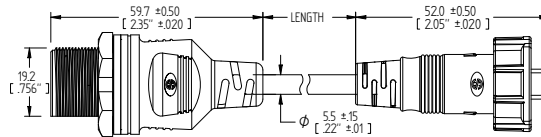
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Cable Mounted Receptacle to Circular Cable Mounted USB-B Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJAWPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



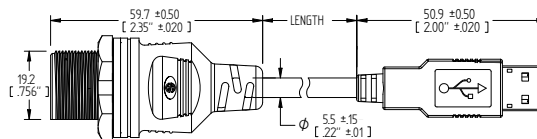
General Information

Connector Type:	USB-A to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-B Circular Cable Mounted Receptacle to USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJBPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-B to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

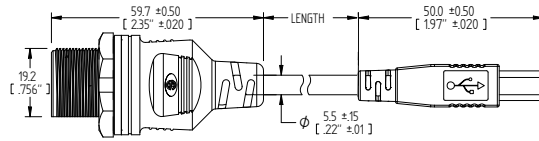
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-B Circular Cable Mounted Receptacle to USB-B Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJBPB-#M

*refers to use version (2.0 or 3.0)
refers to cable length



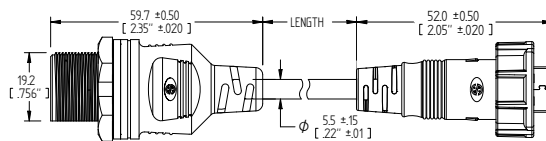
General Information

Connector Type:	USB-B to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-B Circular Cable Mounted Receptacle to Circular Cable Mounted USB-A Plug Cable Assembly

Connector series: USB
Gender: Female to Male
Part No.: IPUSB-*WJBWPA-#M

*refers to use version (2.0 or 3.0)
refers to cable length



General Information

Connector Type:	USB-B to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

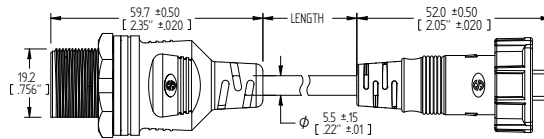
Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-B Circular Cable Mounted Receptacle to Circular Cable Mounted USB-B Plug Cable Assembly

Connector series: USB
 Gender: Female to Male
 Part No.: IPUSB-*WJBWPB-#M

*refers to use version (2.0 or 3.0)
 # refers to cable length



General Information

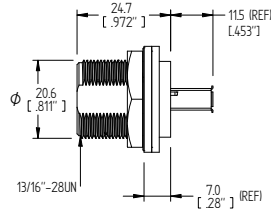
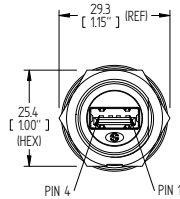
Connector Type:	USB-B to USB-B	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	$\leq 30M\Omega$	Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Receptacle Feed Thru

Connector series: USB
Gender: Female
Part No.: IPUSB-*AABHD
*refers to use version (2.0 or 3.0)



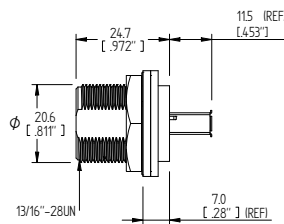
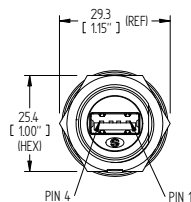
General Information

Connector Type:	USB-A to USB-A
Temperature range:	-20°C ~ +80°C
Terminal:	Copper alloy, gold plated
Screw nut:	Nylon + GF
Mating style:	Screw thread
Contact resistance:	≤ 30MΩ

Withstanding voltage:	AC 500V/1 minute
Salt spray:	48 hr.
Protection class:	IP67 (unmated)
Durability:	1000 times
Current rating:	1.5A
Voltage rating:	30V

USB-A Metal Circular Receptacle Feed Thru

Connector series: USB
Gender: Female
Part No.: IPUSBM-*AABHD
*refers to use version (2.0 or 3.0)



General Information

Connector Type:	USB-A to USB-A
Temperature range:	-20°C ~ +80°C
Terminal:	Copper alloy, gold plated
Screw nut:	Zinc alloy, nickel plated
Mating style:	Screw thread
Contact resistance:	≤ 30MΩ

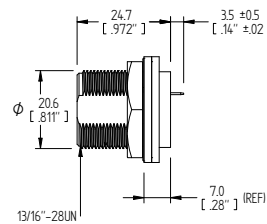
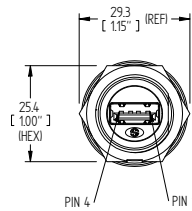
Withstanding voltage:	AC 500V/1 minute
Salt spray:	48 hr.
Protection class:	IP67 (unmated)
Durability:	1000 times
Current rating:	1.5A
Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Receptacle to PCB Contacts

Connector series: USB
 Gender: Female
 Part No.: IPUSB-*JAPC
 *refers to use version (2.0 or 3.0)

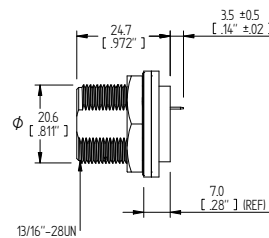
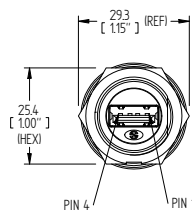


General Information

Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-A Metal Circular Receptacle to PCB Contacts

Connector series: USB
 Gender: Female
 Part No.: IPUSBM-*JAPC
 *refers to use version (2.0 or 3.0)



General Information

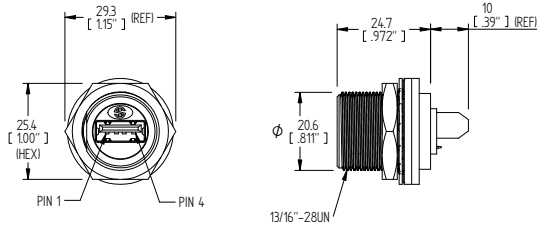
Connector Type:	USB-A to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Receptacle to Screw Terminals

Connector series: USB
Gender: Female
Part No.: IPUSB-*ASTB
*refers to use version (2.0 or 3.0)



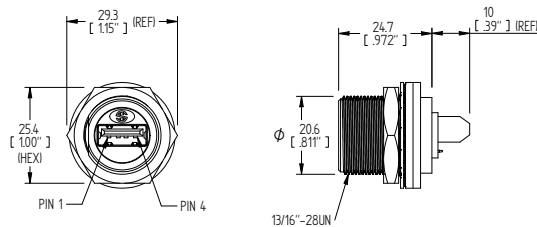
General Information

Connector Type:	USB-A type
Temperature range:	-20°C ~ +80°C
Terminal:	Copper alloy, gold plated
Screw nut:	Nylon + GF
Mating style:	Screw thread
Contact resistance:	≤ 30MΩ

Withstanding voltage:	AC 500V/1 minute
Salt spray:	48 hr.
Protection class:	IP67 (unmated)
Durability:	1000 times
Current rating:	1.5A
Voltage rating:	30V

USB-A Metal Circular Receptacle to Screw Terminals

Connector series: USB
Gender: Female
Part No.: IPUSBM-*ASTB
*refers to use version (2.0 or 3.0)



General Information

Connector Type:	USB-A type
Temperature range:	-20°C ~ +80°C
Terminal:	Copper alloy, gold plated
Screw nut:	Zinc alloy, nickel plated
Mating style:	Screw thread
Contact resistance:	≤ 30MΩ

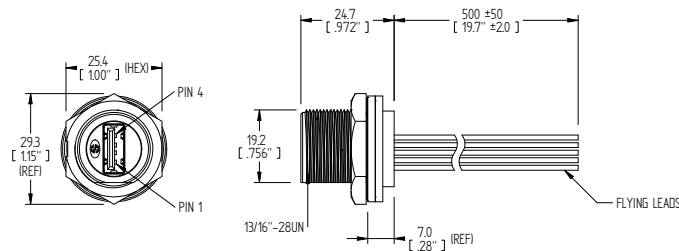
Withstanding voltage:	AC 500V/1 minute
Salt spray:	48 hr.
Protection class:	IP67 (unmated)
Durability:	1000 times
Current rating:	1.5A
Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-A Circular Receptacle to Flying Leads

Connector series: USB
 Gender: Female
 Part No.: IPUSB-*JAFL
 *refers to use version (2.0 or 3.0)

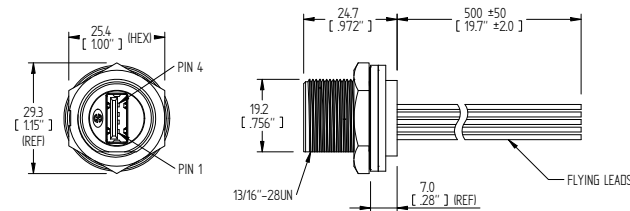


General Information

Connector Type:	USB-A type	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V
		Cable length:	500 mm

USB-A Metal Circular Receptacle to Flying Leads

Connector series: USB
 Gender: Female
 Part No.: IPUSBM-*JAFL
 *refers to use version (2.0 or 3.0)



General Information

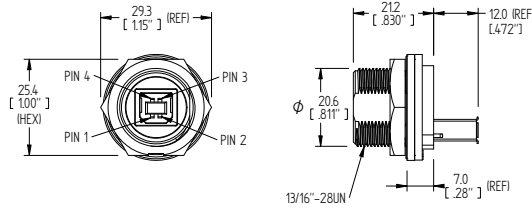
Connector Type:	USB-A type	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Zinc alloy, nickel plated	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V
		Cable length:	500 mm

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-B Circular Receptacle Feed Thru

Connector series: USB
Gender: Female
Part No.: IPUSB-*BABHD
*refers to use version (2.0 or 3.0)

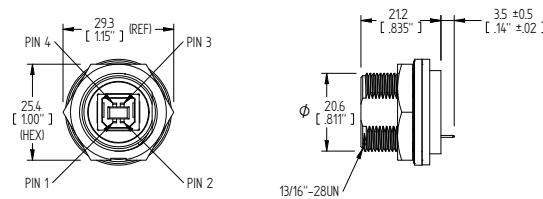


General Information

Connector Type:	USB-B to USB-A	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

USB-B Circular Receptacle to PCB Contacts

Connector series: USB
Gender: Female
Part No.: IPUSB-*JBPC
*refers to use version (2.0 or 3.0)



General Information

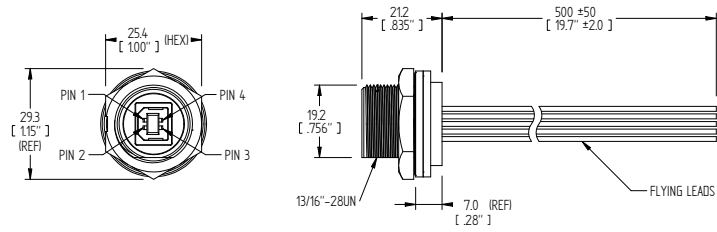
Connector Type:	USB-B type	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB-B Circular Receptacle to Flying Leads

Connector series: USB
 Gender: Female
 Part No.: IPUSB-*JBFL
 *refers to use version (2.0 or 3.0)



General Information

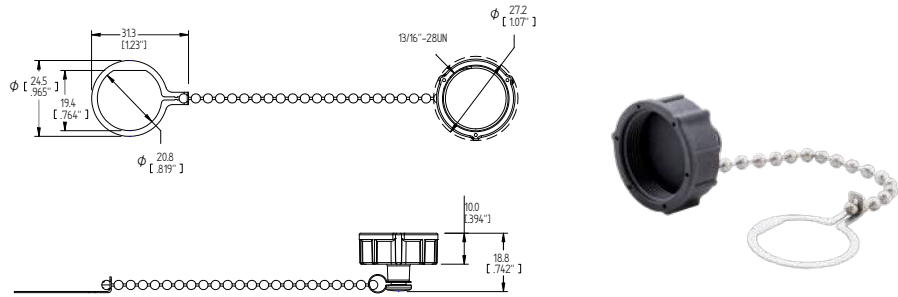
Connector Type:	USB-B type	Withstanding voltage:	AC 500V/1 minute
Temperature range:	-20°C ~ +80°C	Salt spray:	48 hr.
Terminal:	Copper alloy, gold plated	Protection class:	IP67 (unmated)
Screw nut:	Nylon + GF	Durability:	1000 times
Mating style:	Screw thread	Current rating:	1.5A
Contact resistance:	≤ 30MΩ	Voltage rating:	30V
		Cable length:	500 mm

Notes

- Please refer to Page 4 for the Conversion between American Wire Gauge AWG and Wire Cross-section mm².
- Please refer to Page 5 for part number breakdown.

USB Receptacle Cap

Connector series: USB
Part No.: IPCAP-1316



General Information

Temperature range: -40°C ~ +105°C

Material, cap: Nylon, black

Material, holder: Nylon, black

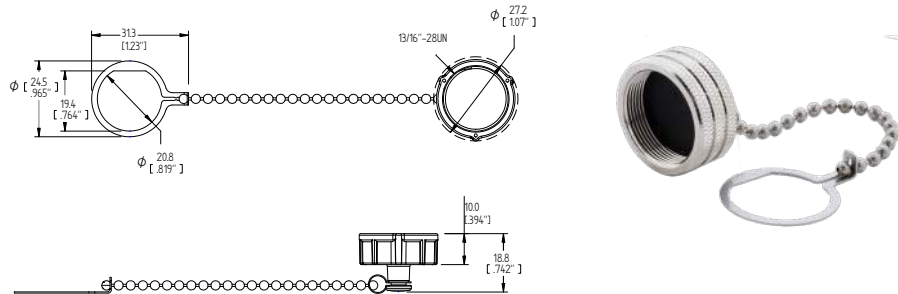
Protection class: IP67

Material, gasket: EPDM, black

Material, chain: Stainless steel

USB Receptacle Metal Cap

Connector series: USB
Part No.: IPCAPM-1316



General Information

Temperature range: -40°C ~ +105°C

Material, cap: Copper alloy, nickel plated

Material, holder: Nylon, black

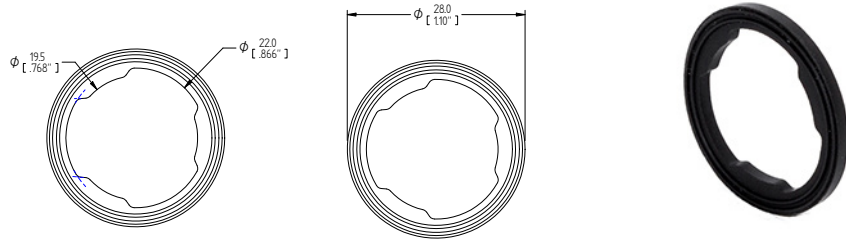
Protection class: IP67

Material, gasket: EPDM, black

Material, chain: Stainless steel

Gasket

Connector series: USB
Part No.: IPGSK-1316



General Information

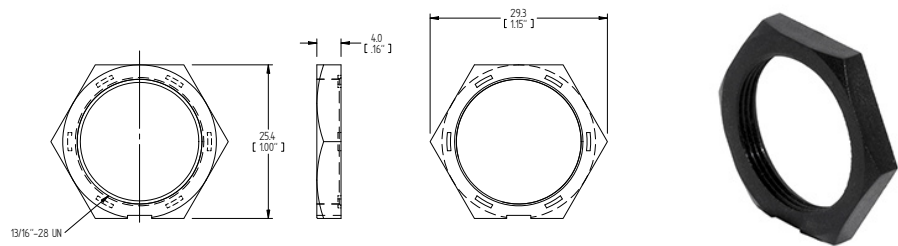
Material: Silicone (UL94V-0)

Color: Gray

Packaging: Pack of 10

Lock Nut

Connector series: USB
Part No.: IPNT-1316



General Information

Material: Nylon

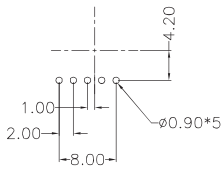
Color: Black

Packaging: Pack of 10

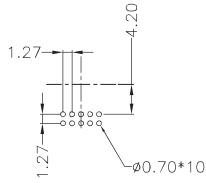
USB PCB Layout

USB-A Type, PCB

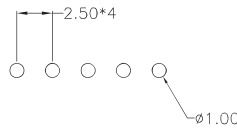
USB 2.0



USB 3.0

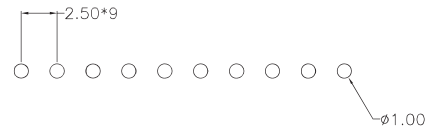


USB 2.0



Board In Conn.

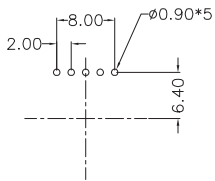
USB 3.0



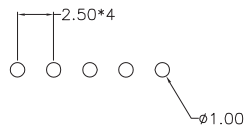
Board In Conn.

USB-B Type, PCB

USB 2.0



USB 2.0



Board In Conn.

Part Numbers

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IPUSB-2WPAPA-3M	6
IPUSB-3WPAPA-1M	6
IPUSB-3WPAPA-2M	6
IPUSB-3WPAPA-3M	6
IPUSBM-2WPAPA-1M	6
IPUSBM-2WPAPA-2M	6
IPUSBM-2WPAPA-3M	6
IPUSBM-3WPAPA-1M	6
IPUSBM-3WPAPA-2M	6
IPUSBM-3WPAPA-3M	6
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IPUSB-2WPAPB-3M	7
IPUSB-3WPAPB-1M	7
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IPUSB-3WPAPB-3M	7
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IPUSBM-2WPAPB-3M	7
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IPUSBM-3WPAPB-2M	7
IPUSBM-3WPAPB-3M	7
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IPUSB-2WPAWPA-2M	8
IPUSB-2WPAWPA-3M	8
IPUSB-3WPAWPA-1M	8
IPUSB-3WPAWPA-2M	8
IPUSB-3WPAWPA-3M	8

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IPUSBM-2WPAWPA-2M	8
IPUSBM-2WPAWPA-3M	8
IPUSBM-3WPAWPA-1M	8
IPUSBM-3WPAWPA-2M	8
IPUSBM-3WPAWPA-3M	8
IPUSB-2WPAWPB-1M	9
IPUSB-2WPAWPB-2M	9
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IPUSBM-3WPBPB-3M	10

All HDMI Series P/Ns	Catalog Page
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IPUSB-2WJAPA-2M	11
IPUSB-2WJAPA-3M	11
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IPUSB-3WJAPA-3M	11
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IPUSB-2WJAWPA-3M	13
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IPUSB-3WJAWPA-2M	13
IPUSB-3WJAWPA-3M	13

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IPUSBM-2WJAWPA-2M	13
IPUSBM-2WJAWPA-3M	13
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IPUSBM-3WJBWPA-3M	15
IPUSBM-2WJBWPB-1M	16
IPUSBM-2WJBWPB-2M	16

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IPUSBM-3WJBWPB-2M	16
IPUSBM-3WJBWPB-3M	16
IPUSB-2AABHD	17
IPUSB-3AABHD	17
IPUSBM-2AABHD	17
IPUSBM-3AABHD	17
IPUSB-2JAPC	18
IPUSB-3JAPC	18
IPUSBM-2JAPC	18
IPUSBM-3JAPC	18
IPUSB-2ASTB	19
IPUSB-3ASTB	19
IPUSBM-2ASTB	19
IPUSBM-3ASTB	19
IPUSB-2JAFL	20
IPUSB-3JAFL	20
IPUSBM-2JAFL	20
IPUSBM-3JAFL	20
IPUSB-2BABHD	21
IPUSB-3BABHD	21
IPUSB-2JBPC	21
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