

Amphenol LTW Innovation in Waterproof Solution



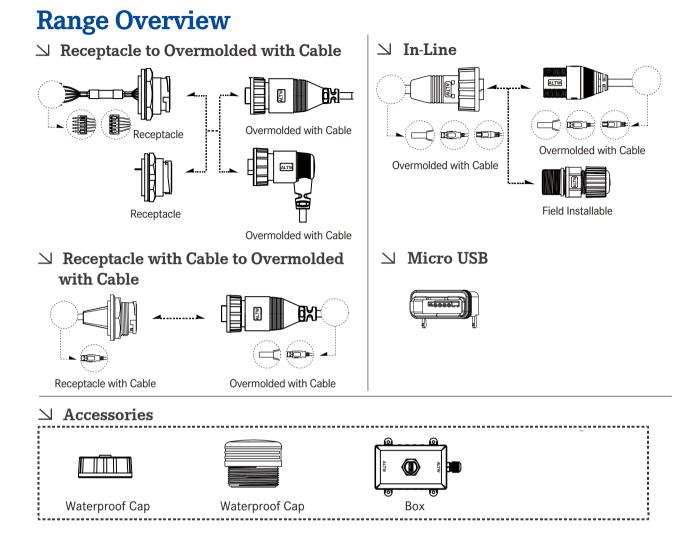
CATALOGUE

http://www.amphenolltw.com



USB/Micro USB





Specification | USB Type A/B

Identifications	USB Type A 3.0 USB Type A 2.0 USB Type B 2.0 Mini USB Type B 2.0			
Description	Receptacle Receptacle With Cable Overmolded with Cable Field Installable			
Current Rating / Data	USB 2.0: 1.5A USB 3.0: 1A			
Material	Contacts: Copper Alloy, Gold Plated Connector Body (Housing): PBT, UL94V-0			
Waterproof Rating	IP67/68			
Temperature Range	Receptacle: Nylon+GF: -40°C~105°C M-PPE: -40°C~105°C ABS: -20°C~80°C Receptacle with cable: Nylon+GF: -20°C~105°C ABS: -20°C~80°C Overmolded with Cable: -20°C~80°C Field Installable: -20°C~80°C			
Contact Resistance	≤ 30mΩ			
Insulation Resistance	≥ 1000MΩ at DC500V			
More to know	Standard Cable Length - USB 2.0: 1 ~ 5m - USB 3.0: 1 ~ 3m - Mini USB: 1 ~ 4m			

Specification | USB Type C

Identifications	USB Type C 3.1
Description	Receptacle Overmolded with Cable
Current Rating / Data	3A
Material	Contacts: Copper Alloy, Gold Plated Connector Body (Housing): PP, UL94V-0, f1 Rated
Waterproof Rating	IP68
Temperature Range	-40°C ~105°C
Contact Resistance	$\leq 50 m\Omega$
Insulation Resistance	≥ 100MΩ at DC500V
More to know	Standard Cable Length: 1 ~ 3m

IP 67.68 Unmated or Mated

Ordering Information | USB & Mini USB

	0-2	3	4	5	6-	-7	8	9
Specification (UA) USB Type A (UB) USB Type B Data Transfer Rate (20) 2.0 (30) 3.0 (31) 3.1 (Jack)	(UC) USB Type C (NUB) Mini USB Type B (G1) 3.1 Gen 1 (Plug) (G2) 3.1 Gen 2 (Plug)							
Connector Body (Style) > For Receptacle (P) Front Fastened > For Field installable (B) Without Strain Relief	 <u>For Overmolded with Cable</u> (A) With Strain Relief (B) Without Strain Relief 							
Connector (Housing) Gender (M) Male	(F) Female							
Contact Gender (M) Male (Plug)	(F) Female (Jack)							
Assemble Style > For Receptacle (P) 180° PCB Type (R) 90° PCB Type (J) Jack	 <u>For Overmolded with Cable</u> (M) Overmolded with Cable <u>For Field Installable</u> (A) Field installable (Solder) 							
Mating Style (S) Screw Thread (N) 2 Points Lock Bayonet (Nut OD: 25.4mm)	 (L) 2 Points Lock Bayonet (Nut OD: 28.5mm) (Q) Quick Lock 							
Backshell <u>> For Receptacle</u> (C) Circular (S) Square	 <u>> For Overmolded with Cable</u> (L) Straight (R) Right Angle 		o <u>r Field</u> Straigh	<u>Install</u> a nt	able			
Waterproof Rating (7) IP 67 (8) IP 68								
More Information <u>> For Receptacle</u> (001) Without Cable (2020) With 0. July (July 2000)	≥ For Overmolded with Cable (□)+(■): Cable Type + Cable Ler	gth						

 (\Box) + (\Box) : Cable Type + Cable Lenge. e.g. (A01) = USB 2.0 Cable + 1M

 (I): Cable Type
 (II): Cable Length

 (A)USB 2.0 Cable
 USB 2.0: From 1m to 5m

 (B)USB 3.0 Cable
 USB 3.0: From 1m to 3m

 (C)USB 3.1 Cable
 Mini USB 2.0: From 1m to 4m

 e.g. (01) = 1M

4-5 Amphenol LTW Technology Co., Ltd.

(002) With Cable (Harness: 50mm)

Ordering Information | USB | Double-ended

ALTW waterproof connector to ALTW waterproof connector ALTW waterproof connector to Standard USB connector (None Waterproof)

Specification (1st End) (UA) USB Type A (UB) USB Type B	(UC) USB Type C
Data Transfer Rate (20) 2.0 (30) 3.0 (31) 3.1 (Jack)	(G1) 3.1 Gen 1 (Plug) (G2) 3.1 Gen 2 (Plug)
Connector Body (Style) <u>> For Receptacle</u> (P) Front Fastened	 <u>> For Overmolded with Cable</u> (A) With Strain Relief (B) Without Strain Relief
Connector (Housing) Gender (M) Male	(F) Female
Contact Gender (M) Male (Plug)	(F) Female (Jack)
Mating Style (S) Screw Thread	(L) 2 Points Lock Bayonet (Nut OD: 28.5mm) (Q) Quick Lock
Specification (2nd End) (A) USB Type A 2.0 (Plug, Non-waterproof (B) USB Type B 2.0 (Plug, Non-waterproof (D) USB Type A 3.0 (Plug, Non-waterproof	(F) USB Type C 3.1 Gen2 (Plug, Waterproof)
Waterproof Rating (6) IP 66 (7) IP 67 (8) IP 68	
More Information ≥ For Receptacle with Cable (□)+(■) : Cable Type + Cable Length e.g. (BX15) = USB 3.0 Cable + 150mm	> For Overmolded with Cable (□)+(■): Cable Type + Cable Length e.g. (A01) = USB 2.0 Cable + 1M
((□): Cable Type (□): Cable Length 0 mm (A) USB 2.0 Cable USB 2.0: From 1m to 5m (B) USB 3.0 Cable USB 3.0: From 1m to 3m (C) USB 3.1 Cable e.g. (01) = 1M



Physical Dimension | USB

∖ Receptacle

Panel Cut-Out



Type C

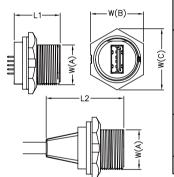
Ту	pe	Mating Style	Housing Gender	L	OD
	Type A	Screw Thread		19.4	20.8
USB2.0	Туре А	2 Points Lock Bayonet		19.4	20.8
0362.0	Туре В	Screw Thread		19.4	20.8
	туре в	2 Points Lock Bayonet	Male	23.6	25.6
USB3.0	Turno A	Screw Thread		19.4	20.8
0363.0	Туре А	2 Points Lock Bayonet		23.6	25.6
Mini USB	-	Screw Thread		14.8	15.6
USB3.1	Туре С	Quick	Female	16.7	11.3
+ M · D	1 71 1 1				11.11

* Maximum Panel Thickness: USB: 4mm I Mini USB: 2.5mm

Unit: mm

Connector Dimension

8



Receptacle with Cable

Ту	pe	Mating Style Housi Gend		W(A)	W(B)	W(C)	L1	L2
	_	Screw Thread		19.0	25.4	29.3	22.0	-
USB2.0	Туре А	2 Points Lock Bayonet		23.2	28.5	32.9	20.3	-
0362.0	_	Screw Thread		19.0	25.4	29.3	22.0	-
Ту	Туре В	2 Points Lock Bayonet	Male	23.2	28.5	32.9	20.3	-
		Screw Thread		19.0	25.4	29.3	-	37.2
USB3.0	Туре А	2 Points Lock Bayonet		23.2	28.5	32.9	-	37.5
Mini USB	-	Screw Thread		14.5	20.6	23.5	15.0	-

* USB: Screw I Middle Size (13/16"-28 UNS)

Unit: mm

2 Points Lock Bayonet I Large Size (1"20 UNEF) *Mini USB: Screw I Standard Size (5/8"-27 UNS)

Ту	pe	Mating Style	Housing Gender	W(A)	W(B)	W(C)	W(D)	L1
USB3.1	Туре С	Quick	Female	10.8	14.2	19.6	25.1	21.0

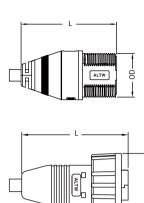
*Recommended Screw Size: M2x0.4x10mmL (min.)

Unit: mm



USB/Micro USB | Physical Dimension USB Type A/B/C | Mini USB Type B Receptacle | Overmolded with Cable | Field Installable

$\boldsymbol{\succ}$ Overmolded with Cable

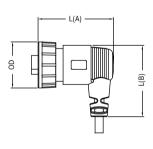


Ту	pe	Mating Style	Housing Gender	L	OD
		Screw Thread	Female	42.6	25.4
	Type A	2 Points Lock Bayonet	Male	45.0	20.6
	Туре А		Female	73.3	28.5
USB2.0		2 FOILTS LOCK BAYOTTEL	Male	-	-
0362.0		Screw Thread	Female	42.6	25.4
	Tuno P	Screw Inread	Male	45.0	20.6
	Туре В	2 Points Lock Bayonet	Female	73.3	28.5
			Male	-	-
		Screw Thread	Female	42.6	42.6
USB3.0	Turne A	Screw Inread	Male	45.0	20.6
0383.0	Туре А	2 Pointo Look Povonat	Female	75.0	28.5
		2 Points Lock Bayonet	Male	-	-

* USB: Screw I Middle Size (13/16"-28 UNS)

2 Points Lock Bayonet I Large Size (1"20 UNEF)

*Mini USB: Screw I Standard Size (5/8"-27 UNS)



Ту	vpe	Mating Style	Housing Gender	L(A)	L(B)	OD
	Type A	Screw Thread		-	-	-
USB2.0	туре А	2 Points Lock Bayonet		46.8	44.1	28.5
0302.0	Type B	Screw Thread		-	-	-
	туре в	2 Points Lock Bayonet	Female	46.8	44.1	28.5
USB3.0	Type A	Screw Thread		-	-	-
0363.0 Type A		2 Points Lock Bayonet		-	-	-
Mini USB	-	Screw Thread		_	-	-

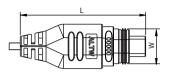
* USB: Screw I Middle Size (13/16"-28 UNS)

Unit: mm

Unit: mm

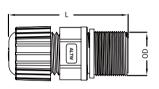
2 Points Lock Bayonet I Large Size (1"20 UNEF)





USP2 0 /2 0 Tuno C Quick Look Molo 14 2 51 1	Ту	pe	Mating Style	Housing Gender	W	L
USD2.0/3.0 Type C Quick Lock Wale 14.2 51.1	USB2.0/3.0	Туре С	Quick Lock	Male	14.2	51.1

Unit: mm



Ту	vpe	Mating Style	Housing Gender	L	OD
	Screw Thread			56.0	20.6
USB2.0	Туре А	2 Points Lock Bayonet		-	-
0362.0	Туре В	Screw Thread		56.0	20.6
	туре в	2 Points Lock Bayonet	Male	-	-
USB3.0	Type A	Screw Thread		-	-
0303.0	Туре А	2 Points Lock Bayonet		-	-
Mini USB	-	Screw Thread		45.0	15.45

* USB: Screw I Middle Size (13/16"-28 UNS)

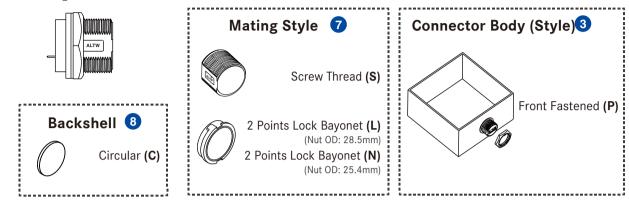
Unit: mm

2 Points Lock Bayonet I Large Size (1"20 UNEF)

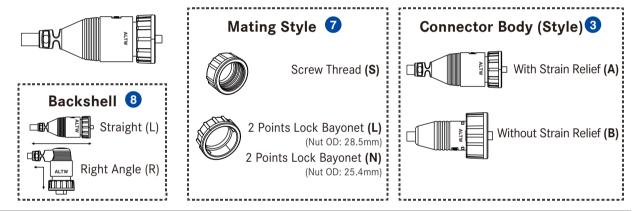
*Mini USB: Screw I Standard Size (5/8"-27 UNS)

Product Features | USB

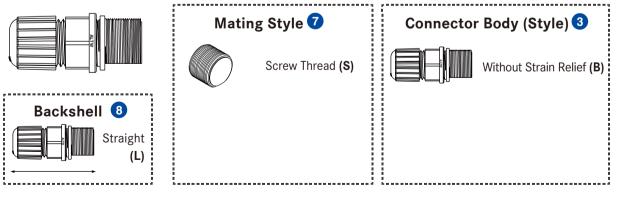
∖ Receptacle



rightarrow Overmolded with Cable



□ Field Installable



Find Our Standard Products | USB

∠ USB > In-line

• Male Connector	Overmolded with Cable>	Overmolded with Cable	Overmolded with Cable (Double-Ended)	
(Housing) • Female Contacts • Screw Thread • Middle Size (13/16"-28 UNS)				
	** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m	** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m	Non-Waterproof ** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m	
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)	
USB Type A 2.0	UA-20AMFM-SL7A <u>XX</u> * *	UA-20BFMM-SL7A <u>XX</u> **	UA-20BFM-SA7A <u>XX</u> ** UA-20BFM-SB7A <u>XX</u> **	
USB Type B 2.0	UB-20AMFM-SL7A <u>XX</u> **	UB-20BFMM-SL7A <u>XX</u> **	UB-20BFM-SA7A <u>XX</u> ** UB-20BFM-SB7A <u>XX</u> **	
USB Type A 3.0	UA-30AMFM-SL7B <u>XX</u> **	UA-30BFMM-SL7B <u>XX</u> * *	UA-30BFM-SD7B <u>XX</u> **	

□ USB > In-line

Male Connector (Housing) Female Contacts Screw Thread Middle Size (13/16"-28 UNS)	Field Installable	Overmolded with Cable	Overmolded with Cable (Double-Ended)
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB Type A 2.0	UA-20BMFA-SL8001	UA-20BFMM-SL7A <u>XX</u> **	UA-20BFM-SA7A <u>XX</u> ** UA-20BFM-SB7A <u>XX</u> **
USB Type B 2.0	UB-20BMFA-SL8001	UB-20BFMM-SL7A <u>XX</u> **	UB-20BFM-SA7A <u>XX</u> ** UB-20BFM-SB7A <u>XX</u> **

∠ USB > In-line

• Male Connector (Housing)	Overmolded with Cable> (Double-Ended)	Overmolded with Cable (Double-Ended)	Field Installable
Female Contacts Screw Thread Middle Size (13/16"-28 UNS)		USB2.0 and USB3.0	
	** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m	** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m	
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB Type A 2.0	UA-20AMF-SA7A <u>XX</u> ** UA-20AMF-SB7A <u>XX</u> **	UA-20BFM-SA7A <u>XX</u> ** UA-20BFM-SA7A <u>XX</u> **	-
USB Type A 3.0	UA-30AMF-SD7B <u>XX</u> **	UA-30BFM-SD7B <u>XX</u> **	-
USB Type B 2.0	UB-20AMFM-SA7A <u>XX</u> ** UB-20AMFM-SB7A <u>XX</u> **	UB-20BFM-SA7A <u>XX</u> ** UB-20BFM-SB7A <u>XX</u> **	-

↘ USB > Receptacle and Mating Pair

Male Connector	Receptacle>	Overmolded with Cable	Overmolded with Cable (Double-Ended)
(Housing) • Female Contacts • Screw Thread			
• Middle Size (13/16"-28 UNS)	Type 1 Type 2	** Choose the cable length from 01~05m	Non-Waterproof ** Choose the cable length from 01~05m
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB Type A 2.0	UA-20PMFP-SC8001 UA-20PMFP-SC8002 _{Type1} UA-20PMFP-SC8003 _{Type2}	UA-20BFMM-SL7A <u>XX</u> **	UA-20BFM-SA7A <u>XX</u> ** UA-20BFM-SB7A <u>XX</u> **
USB Type B 2.0	UB-20PMFP-SC8001 UB-20PMFP-SC8002 UB-20PMFP-SC8003	UB-20BFMM-SL7A <u>XX</u> **	UB-20BFM-SA7A <u>XX</u> ** UB-20BFM-SB7A <u>XX</u> **

↘ USB > Receptacle and Mating Pair

 Male Connector (Housing) Female Contacts 2 Points Lock Bayonet (Nut OD: 28.5mm) Large Size (1"20 UNEF) 	Receptacle	Overmolded with Cable	Field Installable
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB Type A 2.0	UA-20PMFP-LC7001 UA-20PMFP-LC7002 _{Type1} UA-20PMFP-LC7003 _{Type2}	UA-20AFMM-LL7A <u>XX</u> ** UA-20AFMM-LR7A <u>XX</u> **	-
USB Type B 2.0	UB-20PMFP-LC7001 UB-20PMFP-LC7002 UB-20PMFP-LC7003	UB-20AFMM-LL7A <u>XX</u> ** UB-20AFMM-LR7A <u>XX</u> **	-

∠ USB > Receptacle and Mating Pair

 Male Connector (Housing) Female Contacts 2 Points Lock Bayonet (Nut OD: 25.4mm) Large Size (13/16-28 UN) 	Receptacle>	Overmolded with Cable	Field Installable
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB Type A 2.0	UA-20PMFJ-NC7001	UA-20BFMM-NL7A <u>XX</u> **	-

USB/Micro USB I Find Our Standard Products USB Type A I Type C Receptacle and Mating Pair I Receptacle with Cable and Mating Pair

Receptacle and Mating Pair I Receptacle with Cable and Mating Pair 2 Points Lock Bayonet I Quick Lock Large Size

↘ USB > Receptacle with Cable and Mating Pair

• Male Connector (Housing) • Female Contacts • Screw Thread	Receptacle with Cable> (Double-Ended)	Overmolded with Cable	Overmolded with Cable (Double-Ended) □□□□□================================
• 2 Points Lock Bayonet (Nut OD: 28.5mm) • Large Size (1"20 UNEF)	Vor-Waterproof VSB 3.0: Choose the cable length from 150~300mm	** USB 3.0: Choose the cable length from 01~03m	** USB 3.0: Choose the cable length from 01~03m
Speed	Male Connector (M)	Female Connector (F)	Female Connector (F)
	Female Contacts (F)	Male Contacts (M)	Male Contacts (M)
USB Type A 3.0	UA-30PMF-LD7B <u>XX</u> *	UA-30AFMM-LL7B <u>XX</u> **	UA-30BFM-SD7B <u>XX</u> **
	UA-30PMF-SD7B <u>XX</u> *	UA-30BFMM-SL7B <u>XX</u> **	UA-30AFM-LD7B <u>XX</u> **

↘ USB > Receptacle and Mating Pair

• •Female Connector (Housing)	Receptacle>	Overmolded with Cable (Double-Ended)	Field Installable
 Female Contacts Quick Lock Speed of Jack: USB Type C 3.1 		Choose the data transfer rate (G1) 3.1 Gen 1 or (G2) 3.1 Gen 2 *XX: Choose the cable length from 01~03m	
Speed of Plug	Female Connector (F) Female Contacts (F)	Male Connector (M) Male Contacts (M)	Male Connector (M) Male Contacts (M)
1st End: USB Type C 3.1 Gen 1/Gen 2 2nd End: USB Type C 3.1 Gen 1/Gen 2	UC-31PFFP-QS8001	UC- 2 AMM-QE8C <u>XX</u> * UC- 2 AMM-QF8C <u>XX</u> *	-
1st End: USB Type C 2.0 2nd End: USB Type A 2.0	-	UC-20AMM-QA8A <u>XX</u> *	-
1st End: USB Type C 3.0 2nd End: USB Type B 2.0	-	UC-30AMM-QD8B <u>XX</u> *	-

↘ Mini USB > In-line

• Male Connector (Housing) • Female Contacts • Screw Thread • Standard Size (5/8"-27 UNS)	Overmolded with Cable>	Overmolded with Cable	Field Installable
	** Choose the cable length from 01~04m	** Choose the cable length from 01~04m	
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
Mini USB Type B 2.0	NUB-20AMFM-SL7A <u>XX</u> **	NUB-20AFMM-SL7A <u>XX</u> **	-

\square Mini USB > In-line

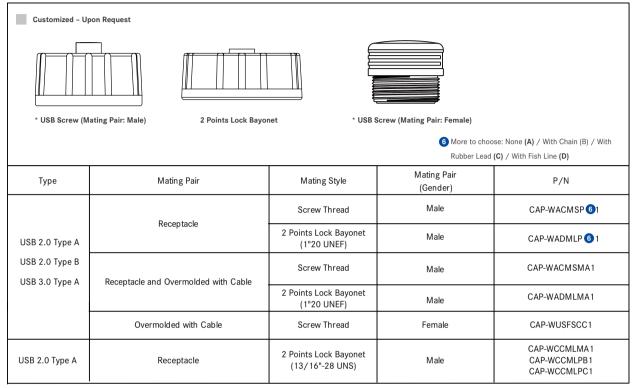
• Male Connector (Housing) • Female Contacts • Screw Thread • Standard Size (5/8"-27 UNS)	Field Installable		Field Installable
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
Mini USB Type B 2.0	NUB-20BMFA-SL7001	NUB-20AFMM-SL7A <u>XX</u> **	-

↘ Mini USB > Receptacle and Mating Pair

Male Connector	Receptacle>	Overmolded with Cable	Field Installable
(Housing) • Female Contacts • Screw Thread • Standard Size (5/8"-27 UNS)		** Choose the cable length from 01~04m	
Speed	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
Mini USB Type B 2.0	NUB-20PMFP-SC7001 NUB-20PMFR-SC7001	NUB-20AFMM-SL7A <u>XX</u> **	-

Accessories

↘ USB A/B Type > Waterproof Cap



↘ USB A/B Type > Box

Customized – Upon Request	USB Type B 2.0	USB Type A 2.0
Туре	Ports	P/N
	1	BOX-USA11
USB Type A 2.0	2	BOX-USA22
	4	BOX-USA44
	1	BOX-USB11
USB Type B 2.0	2	BOX-USB22
	4	BOX-USB44

4-17 Amphenol LTW Technology Co., Ltd.

Specification | Micro USB

Identifications	Micro USB: AB Type
Description	Receptacle
Current Rating	1pin & 5pin: 1.8A 2pin, 3pin & 4pin: 1A
Materials	Contacts: Copper Alloy, Gold Plated Connector Body (Housing): Nylon, Black Shell: Stainless, Gold Plated Inner Gascket: Silicone, Transparent Outside Gasket: Silicone, Transparent
Waterproof Rating	IP67/68
Temperature Range	-30°C ~ 85°C
Contact Resistance	≤30mΩ
Insulatuib Resistance	≥ 1000MΩ at 100Vdc
Durability	10,000 Cycles
More to Know	SMT Temperature & Time: 260°C/5Sec

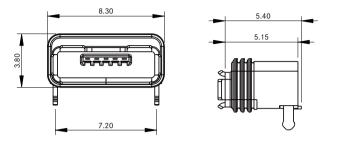


Ordering Information | Micro USB

	1-2	3	4	5	6-	-7	8	9	10
Specification									
(MUC) Micro USB									
Data Transfer Rate									
(20) 2.0									
Connector Body (Style)									
> For Receptacle									
(P) Front Fastened									
Connector (Housing) Gender									
(F) Female									
Contact Gender									
(F) Female (Jack)									
Assemble Style									
<u>> For Receptacle</u>									
(R) 90° PCB Type									
Mating Style									
(J) For Joint									
Backshell									
> For Receptacle									
(S) Square									
Waterproof Rating									
(70) IP67 (1M depth of water in 30min)									
(8A) IP68 (1M depth of water in 24hrs)									
(8B) IP68 (5M depth of water in 24hrs)									
(8C) IP68 (10M depth of water in 3hrs)									
Moreinformation									

(01), (02).... Without Cable: Different Versions

Physical Dimension | Micro USB



Unit: mm

Find Our Standard Products | Micro USB

Waterproof Rating	Part Number
IP67 (1M, 30mins)	MUC-20PFFR-JS7002
IP68 (1M, 24hrs)	MUC-20PFFR-JS8A02
IP68 (5M, 24hrs)	MUC-20PFFR-JS8B02
IP68 (10M, 3hrs)	MUC-20PFFR-JS8C02

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