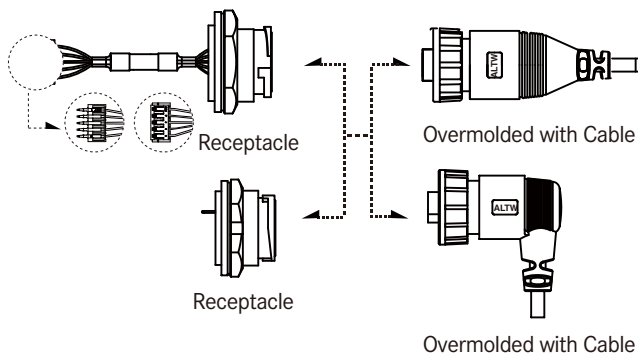


# USB Connector

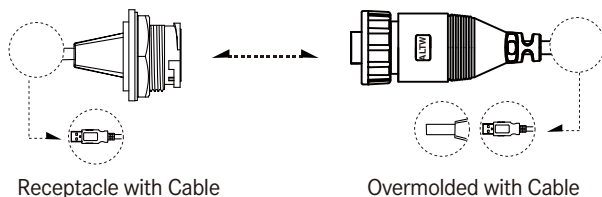


## Range Overview

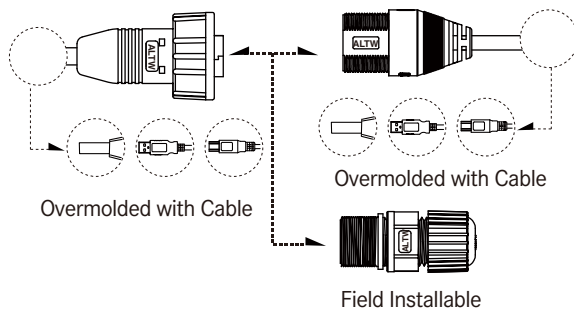
### Receptacle to Overmolded with Cable



### Receptacle with Cable to Overmolded with Cable



### In Line



### Micro USB



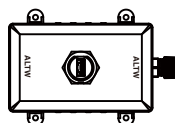
### Accessories



Waterproof Cap  
See page 21-16



Waterproof Cap  
See page 21-16



Box  
See page 21-21

# Specification

<b>Identifications</b>	USB 3.0 A Type USB 2.0 A Type, USB 2.0 B Type Mini USB 2.0 B Type Micro USB: Available soon
<b>Description</b>	Receptacle Receptacle With Cable Overmolded with Cable Field Installable
<b>Current Rating / Data</b>	1.5A
<b>Material</b>	Contacts: Copper Alloy, Gold Plated Connector Body (Housing) : PBT UL94V-0
<b>Waterproof Rating</b>	IP67~68
<b>Temperature Range</b>	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
<b>Contact Resistance</b>	≤ 30mΩ
<b>Insulation Resistance</b>	≥ 1000mΩ at DC500V
<b>Breakdown Voltage</b>	≥ AC500V / 1 minute
<b>More to know</b>	USB 2.0: Standard Cable Length: 01-05M USB 3.0: Standard Cable Length: 01-03M Mini USB: Standard Cable Length: 01-04M

\* Design and specification are subject to change without notice.

# Ordering Information

	1	2	3	4	5	6	7	8	9	10
<b>Specification</b>										
(UA) USB A Type			(NUB) Mini USB B							
(UB) USB B Type										
<b>Data Transfer Rate</b>										
(20) 2.0			(30) 3.0							
<b>Connector Body (Style)</b>										
<u>&gt; For Receptacle</u>			<u>&gt; For Overmolded with Cable</u>							
(P) Front Fastened			(A) With Strain Relief							
<u>&gt; For Field installable</u>			<u>(B) Without Strain Relief</u>							
(B) Without Strain Relief										
<b>Connector (Housing) Gender</b>										
(M) Male			(F) Female							
<b>Contact Gender</b>										
(M) Male (Plug)			(F) Female (Jack)							
<b>Assemble Style</b>										
<u>&gt; For Receptacle</u>			<u>&gt; For Overmolded with Cable</u>							
(P) 180° PCB Type			(M) Overmolded with Cable							
(R) 90° PCB Type			<u>&gt; For Field Installable</u>							
(J) Jack			(A) Field installable (Solder)							
<b>Mating Style</b>										
(S) Screw Thread			(L) 2 Points Lock Bayonet (Nut OD: 28.5mm)							
(N) 2 Points Lock Bayonet (Nut OD: 25.4mm)										
<b>Backshell</b>										
<u>&gt; For Receptacle</u>			<u>&gt; For Overmolded with Cable</u>				<u>&gt; For Field Installable</u>			
(C) Circular			(L) Straight				(L) Straight			
(S) Square			(R) Right Angle							
<b>Waterproof Rating</b>										
(7) IP 67										
(8) IP 68										

**More Information**

<u>&gt; For Receptacle</u>	<u>&gt; For Overmolded with Cable</u>
(001) Without Cable	(□)+(■) : Cable Type + Cable Length
(002) With Cable (Harness (50mm))	EX. (A01) = USB 2.0 Cable + 1M
	<u>(□) : Cable Type</u> <u>(■) : Cable Length</u>
(A) USB 2.0 Cable	USB2.0 :From 1M to 5M
(B) USB 3.0 Cable	USB3.0 :From 1M to 3M
	Mini USB2.0: From 1M to 4M
	EX. (01) = 1M

# Ordering Information I Double-ended

ALTW waterproof connector to ALTW waterproof connector

ALTW waterproof connector to Standard USB connector (None Waterproof)

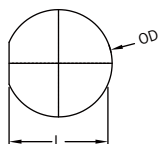
	1	2	3	4	5	6	7	8	9
<b>Specification</b>									
(UA) USB A Type									
(UB) USB B Type									
<b>Data Transfer Rate</b>									
(20) 2.0			(30) 3.0						
<b>Connector Body (Style)</b>									
<u>&gt; For Receptacle</u>			<u>&gt; For Overmolded with Cable</u>						
(P) Front Fastened			(A) With Strain Relief						
			(B) Without Strain Relief						
<b>Connector (Housing) Gender</b>									
(M) Male			(F) Female						
<b>Contact Gender</b>									
(M) Male (Plug)			(F) Female (Jack)						
<b>Mating Style</b>									
(S) Screw Thread			(L) 2 Points Lock Bayonet (Nut OD: 28.5mm)						
<b>Non-Waterproof (2ne End)</b>									
(A) USB2.0 A Type (Plug)			(D) USB3.0 A Type (Plug)						
(B) USB2.0 B Type (Plug)									
<b>Waterproof Rating</b>									
(6) IP 66									
(7) IP 67									
(8) IP 68									
<b>More Information</b>									
<u>&gt; For Receptacle with Cable</u>			<u>&gt; For Overmolded with Cable</u>						
(□)+(■) : Cable Type + Cable Length			(□)+(■) : Cable Type + Cable Length						
EX. (BX10) = USB 3.0 Cable + 100mm			EX. (A01) = USB 2.0 Cable + 1M						
(□) : Cable Type			(□) : Cable Type						
(B) USB 3.0 Cable			(A) USB 2.0 Cable						
(■) : Cable Length			(■) : Cable Length						
USB3.0 :From 100mm to 300mm			USB2.0 :From 1M to 5M						
EX. (10) = 100mm			USB3.0 :From 1M to 3M						
			Mini USB2.0: From 1M to 4M						
			EX. (01) = 1M						

\* Design and specification are subject to change without notice.

## Physical Dimension

### Receptacle

Panel Cut-Out



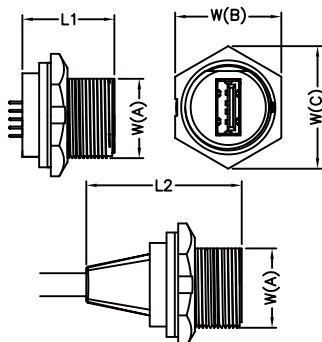
Type		Connector Gender (Housing)	L		OD	
			Male			
USB2.0	Type A	Screw Thread	19.4		20.8	
		2 Points Lock Bayonet	23.6		25.6	
	Type B	Screw Thread	19.4		20.8	
		2 Points Lock Bayonet	23.6		25.6	
USB3.0	Type A	Screw Thread	19.4		20.8	
		2 Points Lock Bayonet	23.6		25.6	
Mini USB	-	Screw Thread	14.8		15.6	

\* Maximum Panel Thickness: USB: 4mm I Mini USB: 2.5mm Dimensions are shown in millimeters

\* 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)

Connector Dimension



Receptacle with Cable

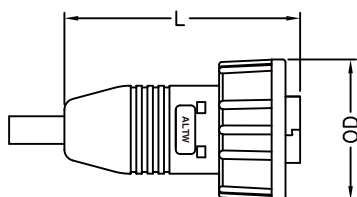
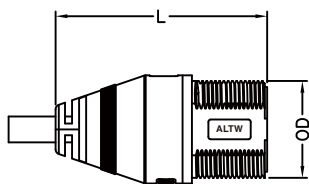
Type		Connector Gender (Housing)	W(A)	W(B)	W(C)	L1	L2
			Male				
USB2.0	Type A	Screw Thread	19.0	25.4	29.3	22.0	-
		2 Points Lock Bayonet	23.2	28.5	32.9	20.3	-
	Type B	Screw Thread	19.0	25.4	29.3	22.0	-
		2 Points Lock Bayonet	23.2	28.5	32.9	20.3	-
USB3.0	Type A	Screw Thread	19.0	25.4	29.3	-	37.2
		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) Dimensions are shown in millimeters

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

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

### Overmolded with Cable



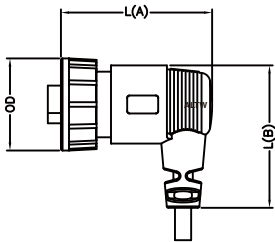
Type		Connector Gender (Housing)	L		OD	
			Female	Male	Female	Male
USB2.0	Type A	Screw Thread	42.6	45.0	25.4	20.6
		2 Points Lock Bayonet	73.3	-	28.5	-
	Type B	Screw Thread	42.6	45.0	25.4	20.6
		2 Points Lock Bayonet	73.3	-	28.5	-
USB3.0	Type A	Screw Thread	42.6	45.0	42.6	20.6
		2 Points Lock Bayonet	75.0	-	28.5	-
Mini USB	-	Screw Thread	42.6	45.0	20.0	15.45

\* USB: Screw I Middle Size (13/16"-28 UNS) Dimensions are shown in millimeters

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

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

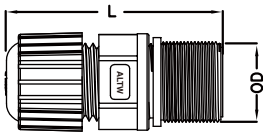
↳ **Overmolded with Cable**



Type	Connector Gender (Housing)	L(A)		L(B)		OD		
		Female	Male	Female	Male	Female	Male	
USB 2.0	Type A	Screw Thread	-	-	-	-	-	-
		2 Points Lock Bayonet	46.8	-	44.1	-	28.5	-
	Type B	Screw Thread	-	-	-	-	-	-
		2 Points Lock Bayonet	46.8	-	44.1	-	28.5	-

\* USB: Screw I Middle Size (13/16"-28 UNS) Dimensions are shown in millimeters  
 2 Points Lock Bayonet I Large Size (1"20 UNEF)

↳ **Field Installable**



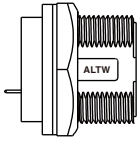
Type	Connector Gender (Housing)	L		OD		
		Female	Male	Female	Male	
USB 2.0	Type A	Screw Thread	-	56.0	-	20.6
		2 Points Lock Bayonet	-	-	-	-
	Type B	Screw Thread	-	56.0	-	20.6
		2 Points Lock Bayonet	-	-	-	-
Mini USB	-	Screw Thread	-	45.0	-	15.45

\* USB: Screw I Middle Size (13/16"-28 UNS) Dimensions are shown in millimeters  
 2 Points Lock Bayonet I Large Size (1"20 UNEF)  
 \*Mini USB: Screw I Standard Size (5/8"-27 UNS)

\* Design and specification are subject to change without notice.

# Product Features

## Receptacle



### Backshell 8



Circular (C)

### Mating Style 7



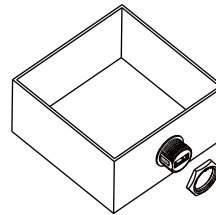
Screw Thread (S)



2 Points Lock Bayonet (L)  
(Nut OD: 28.5mm)

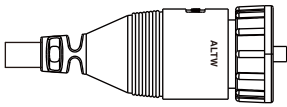
2 Points Lock Bayonet (N)  
(Nut OD: 25.4mm)

### Connector Body (Style) 3



Front Fastened (P)

## Overmolded with Cable



### Backshell 8

Straight (L)

Right Angle (R)

### Mating Style 7



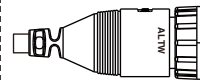
Screw Thread (S)



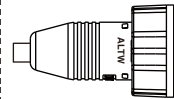
2 Points Lock Bayonet (L)  
(Nut OD: 28.5mm)

2 Points Lock Bayonet (N)  
(Nut OD: 25.4mm)

### Connector Body (Style) 3

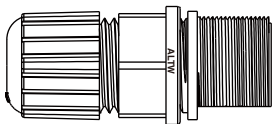


With Strain Relief (A)



Without Strain Relief (B)

## Field Installable



### Backshell 8

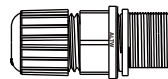
Straight (L)

### Mating Style 7



Screw Thread (S)


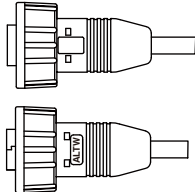
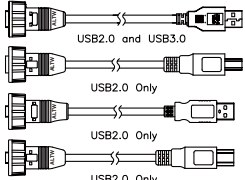
### Connector Body (Style) 3



Without Strain Relief (B)


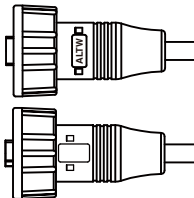
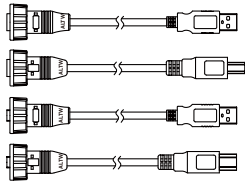
# Find Our Standard Products

## USB > In-line

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Middle Size (13/16"-28 UNS)</li> </ul>	<p>Overmolded with Cable-----&gt;</p> 	<p>Overmolded with Cable-----&gt;</p> 	<p>Overmolded with Cable (Double-Ended)</p>  <p>Non-Waterproof</p>
	<p>** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m</p>	<p>** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m</p>	<p>** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m</p>
Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB 2.0 Type A	UA-20AMFM-SL7A**	UA-20BFMM-SL7A**	UA-20BFM-SA7A** UA-20BFM-SB7A**
USB 2.0 Type B	UB-20AMFM-SL7A**	UB-20BFMM-SL7A**	UB-20BFM-SA7A** UB-20BFM-SB7A**
USB 3.0 Type A	UA-30AMFM-SL7B**	UA-30BFMM-SL7B**	UA-30BFM-SD7B**

\* Refer to P4-4 for ordering information.

## USB > In-line

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Middle Size (13/16"-28 UNS)</li> </ul>	<p>Field Installable -----&gt;</p> 	<p>Overmolded with Cable-----&gt;</p> 	<p>Overmolded with Cable (Double-Ended)</p>  <p>Non-Waterproof</p>
	<p>** USB 2.0: Choose the cable length from 01~05m</p>	<p>** USB 2.0: Choose the cable length from 01~05m</p>	<p>** USB 2.0: Choose the cable length from 01~05m</p>
Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB 2.0 Type A	UA-20BMFA-SL8001	UA-20BFMM-SL7A**	UA-20BFM-SA7A** UA-20BFM-SB7A**
USB 2.0 Type B	UB-20BMFA-SL8001	UB-20BFMM-SL7A**	UB-20BFM-SA7A** UB-20BFM-SB7A**

\* Refer to P4-4 for ordering information.

\* Design and specification are subject to change without notice.



USB > In-line

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Middle Size (13/16"-28 UNS)</li> </ul>	<p><b>Overmolded with Cable (Double-Ended)</b></p> <p>USB2.0 and USB3.0</p>	<p><b>Overmolded with Cable (Double-Ended)</b></p> <p>USB2.0 and USB3.0</p>	<p><b>Field Installable</b></p>
	<p>** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m</p>	<p>** USB 2.0: Choose the cable length from 01~05m ** USB 3.0: Choose the cable length from 01~03m</p>	
Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB 2.0 Type A	UA-20AMF-SA7A**	UA-20BFM-SA7A**	-
USB 3.0 Type A	UA-30AMF-SD7B**	UA-30BFM-SD7B**	-
USB 2.0 Type B	UB-20AMFM-SL7A**	-	-

\* Refer to P4-4 for ordering information.

\* Refer to P4-4 for ordering information.

USB > Receptacle and Mating Pair

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Middle Size (13/16"-28 UNS)</li> </ul>	<p><b>Receptacle</b></p> <p>Type 1 Type 2</p>	<p><b>Overmolded with Cable</b></p>	<p><b>Overmolded with Cable (Double-Ended)</b></p> <p>Non-Waterproof</p>
	<p>** Choose the cable length from 01~05m</p>	<p>** Choose the cable length from 01~05m</p>	
Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)
USB 2.0 Type A	UA-20PMFP-SC8001 UA-20PMFP-SC8002 Type1 UA-20PMFP-SC8003 Type2	UA-20BFMM-SL7A**	UA-20BFM-SA7A** UA-20BFM-SB7A**
USB 2.0 Type B	UB-20PMFP-SC8001 UB-20PMFP-SC8002 UB-20PMFP-SC8003	UB-20BFMM-SL7A**	UB-20BFM-SA7A** UB-20BFM-SB7A**

\* Refer to P4-4 for ordering information.

↳ USB > Receptacle and Mating Pair

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• 2 Points Lock Bayonet (Nut OD: 28.5mm)</li> <li>• Large Size (1" 20 UNEF)</li> </ul>	<p>Receptacle</p> <p>Type 1    Type 2</p>	<p>Overmolded with Cable</p> <p>** Choose the cable length from 01~05m</p>	<p>Field Installable</p>
	<p>Speed (Code)</p> <p>Male Connector (M) Female Contacts (F)</p>	<p>Female Connector (F) Male Contacts (M)</p>	<p>Female Connector (F) Male Contacts (M)</p>
<p>USB 2.0 Type A</p>	<p>UA-20PMFP-LC7001 UA-20PMFP-LC7002 <small>Type1</small> UA-20PMFP-LC7003 <small>Type2</small></p>	<p>UA-20AFMM-LL7A** UA-20AFMM-LR7A**</p>	<p>-</p>
<p>USB 2.0 Type B</p>	<p>UB-20PMFP-LC7001 UB-20PMFP-LC7002 UB-20PMFP-LC7003</p>	<p>UB-20AFMM-LL7A** UB-20AFMM-LR7A**</p>	<p>-</p>

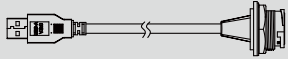
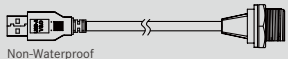

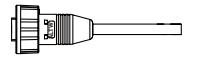
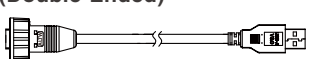
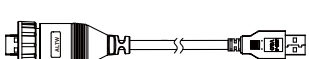
↳ USB > Receptacle and Mating Pair

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• 2 Points Lock Bayonet (Nut OD: 25.4mm)</li> <li>• Large Size (13/16-28 UN)</li> </ul>	<p>Receptacle</p>	<p>Overmolded with Cable</p> <p>** Choose the cable length from 01~05m</p>	<p>Field Installable</p>
	<p>Speed (Code)</p> <p>Male Connector (M) Female Contacts (F)</p>	<p>Female Connector (F) Male Contacts (M)</p>	<p>Female Connector (F) Male Contacts (M)</p>
<p>USB 2.0 Type A</p>	<p>UA-20PMFJ-NC7001</p>	<p>UA-20BFMM-NL7A**</p>	<p>-</p>

**USB**

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

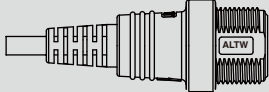
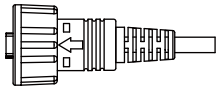
➤ **USB > Receptacle with Overmolded Cable and Mating Pair**

<ul style="list-style-type: none"> <li>• <b>Male Connector (Housing)</b></li> <li>• <b>Female Contacts</b></li> <li>• <b>Screw Thread</b></li> <li>• <b>2 Points Lock Bayonet</b> (Nut OD: 28.5mm)</li> <li>• <b>Large Size</b> (1"20 UNEF)</li> </ul>	<p><b>Receptacle with Cable (Double-Ended)</b></p>   <p>Non-Waterproof</p> <p>** USB 3.0: Choose the cable length from 100~300mm</p>	<p><b>Overmolded with Cable</b></p>  	<p><b>Overmolded with Cable (Double-Ended)</b></p>   <p>** USB 3.0: Choose the cable length from 01~03m</p>								
	<table border="1"> <tr> <td>Speed (Code)</td> <td>Male Connector (M) Female Contacts (F)</td> <td>Female Connector (F) Male Contacts (M)</td> <td>Female Connector (F) Male Contacts (M)</td> </tr> <tr> <td>USB 3.0 Type A</td> <td>UA-30PMF-LD7B** UA-30PMF-SD7B**</td> <td>UA-30AFMM-LL7BXX UA-30BFMM-SL7BXX</td> <td>UA-30BFM-SD7B** UA-30AFM-LD7B**</td> </tr> </table>	Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)	USB 3.0 Type A	UA-30PMF-LD7B** UA-30PMF-SD7B**	UA-30AFMM-LL7BXX UA-30BFMM-SL7BXX	UA-30BFM-SD7B** UA-30AFM-LD7B**		
Speed (Code)	Male Connector (M) Female Contacts (F)	Female Connector (F) Male Contacts (M)	Female Connector (F) Male Contacts (M)								
USB 3.0 Type A	UA-30PMF-LD7B** UA-30PMF-SD7B**	UA-30AFMM-LL7BXX UA-30BFMM-SL7BXX	UA-30BFM-SD7B** UA-30AFM-LD7B**								

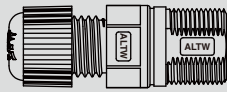
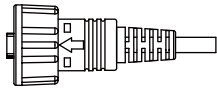
\* Refer to P4-4 for ordering information.

\* Refer to P4-4 for ordering information.

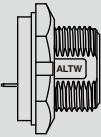
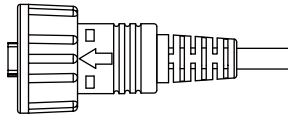
↳ **Mini USB > In-line**

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Standard Size (5/8"-27 UNS)</li> </ul>	<p><b>Overmolded with Cable</b> -----&gt;</p>  <p>** Choose the cable length from 01~04m</p>	<p><b>Overmolded with Cable</b> -----&gt;</p>  <p>** Choose the cable length from 01~04m</p>	<p><b>Field Installable</b></p>
	<p>Speed (Code)</p> <p>Male Connector (M) Female Contacts (F)</p>	<p>Female Connector (F) Male Contacts (M)</p>	<p>Female Connector (F) Male Contacts (M)</p>
<p>Mini USB 2.0 Type B</p>	<p>NUB-20AMFM-SL7A**</p>	<p>NUB-20AFMM-SL7A**</p>	<p>-</p>

↳ **Mini USB > In-line**

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Standard Size (5/8"-27 UNS)</li> </ul>	<p><b>Field Installable</b> -----&gt;</p>  <p>** Choose the cable length from 01~04m</p>	<p><b>Overmolded with Cable</b> -----&gt;</p>  <p>** Choose the cable length from 01~04m</p>	<p><b>Field Installable</b></p>
	<p>Speed (Code)</p> <p>Male Connector (M) Female Contacts (F)</p>	<p>Female Connector (F) Male Contacts (M)</p>	<p>Female Connector (F) Male Contacts (M)</p>
<p>Mini USB 2.0 Type B</p>	<p>NUB-20AMFM-SL7A**</p>	<p>NUB-20AFMM-SL7A**</p>	<p>-</p>

↳ **Mini USB > Receptacle and Mating Pair**

<ul style="list-style-type: none"> <li>• Male Connector (Housing)</li> <li>• Female Contacts</li> <li>• Screw Thread</li> <li>• Standard Size (5/8"-27 UNS)</li> </ul>	<p><b>Receptacle</b> -----&gt;</p> 	<p><b>Overmolded with Cable</b> -----&gt;</p>  <p>** Choose the cable length from 01~04m</p>	<p><b>Field Installable</b></p>
	<p>Speed (Code)</p> <p>Male Connector (M) Female Contacts (F)</p>	<p>Female Connector (F) Male Contacts (M)</p>	<p>Female Connector (F) Male Contacts (M)</p>
<p>Mini USB 2.0 Type B</p>	<p>NUB-20PMFP-SC7001 NUB-20PMFR-SC7001</p>	<p>NUB-20AFMM-SL7A**</p>	<p>-</p>