

AU1 Series

USB Type-C Connector for Automotive



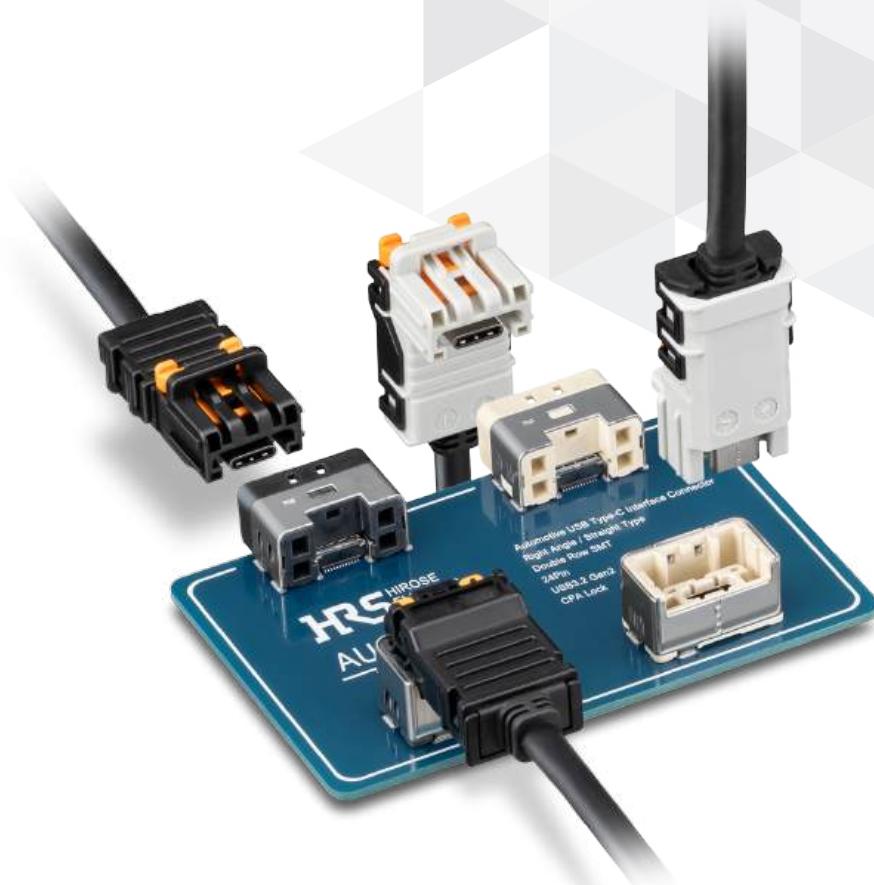
Automotive



High-Speed



Shield



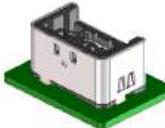
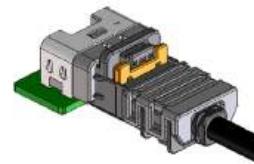
Product Page
<https://www.hirose.com/en/product/series/AU1>

Features

1. Utilizes HRS's proven CX Series (USB Type-C connector) as the core component.

Choose the best option for your application.

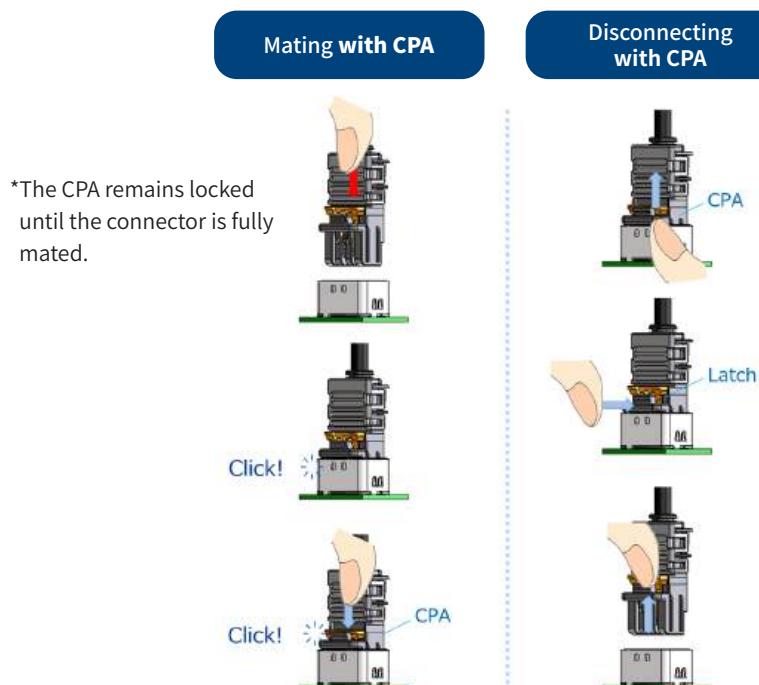
- ① Straight Connection
- ② Right Angle Connection
- ③ Right Angle Connection (Vertical mating)
- ④ Right Angle Connection (Cable direction is down)

Straight Receptacle Product Name : AU1FS-24P 	Straight Plug AU1 Cable Assembly 	Right Angle Plug (*Under Development) AU1 Cable Assembly 
Right Angle Receptacle Product Name : AU1FR-24P 	① 	③ 
	② 	④ 

2. Highly reliable connector meeting automotive requirements for vibration and heat resistance.

- Compliant with USCAR-2 and USCAR-30 standards.

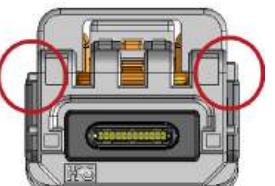
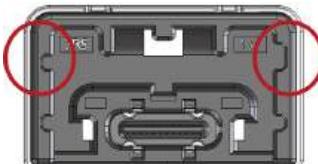
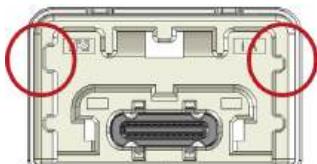
3. CPA (Connector position assurance) unit ensures secure mating.



4. Supports Two Types of Key Code

- Standard and A key

Prevents mis-mating across multiple connectors.

<u>Standard (Black)</u>	<u>A Key (Gray, Natural)</u>
Plug : Female Contact 	Plug : Female Contact 
Receptacle : Male Contact 	Receptacle : Male Contact 

5. Support various transmission standards.

- USB 3.2 Gen2, Display Port 1.4, HDMI, etc.

Product Specifications

Rated Current	5A	1.25A Max. for each power pin (i.e. A1, A4, A9, A12, B1, B4, B9, B12) 0.25A for the other pins	Operating Temperature (Note 1)	-40 to +105°C
Rated Voltage	20V AC/DC			

Items	Specifications	Conditions
Low Level Contact Resistance (L.L.C.R.)	Initial : 40mΩ Max. After test : 50mΩ Max.	Measured at 20mV Max., 100mA (DC or 1,000Hz)
Insulation Resistance	100MΩ Min.	Measured at 500V DC
Withstanding Voltage	No insulation breakdown.	100V AC for 1 min.
Mating Durability	No physical damage.	10 times
Thermal Shock	L.L.C.R. 50mΩ Max. Discontinuity ≤ 1μs	100 cycle at -40 to +100°C, 1 hour/cycle

Note 1 : Includes the temperature rise due to current flow.

Note 2 : Please refer to the specification sheet for details.

Materials / Finish

Product	Component	Material	Color / Finish
Receptacle	Insulator	Thermoplastic (Note)	Black, Natural / UL94V-0
	Contact	Copper Alloy	Contact : Gold Plating Lead : Gold Plating
	Shell	Stainless Steel	Nickel Plating
Plug (Parts for the cable assembly)	Housing	PA (Note)	Black, Gray / UL94V-0
	Retainer	PA (Note)	Black / UL94V-0
	Shield Case	Stainless Steel	Nickel Plating

Note : This product satisfies halogen free requirements defined as 900ppm maximum chlorine, 900ppm maximum bromine, and 1500ppm maximum total of chlorine and bromine.

Product Number Structure

Refer to the chart below when determining the product specifications from the product number. Please select from the product numbers listed in this catalog when placing orders.

Receptacle

AU1 FS # - 24 P (805)

① ② ③ ④ ⑤ ⑥

Plug (Parts for the cable assembly)

AU1 MS # - 24 S - HU/C (805)

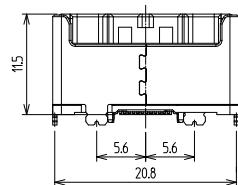
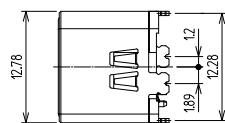
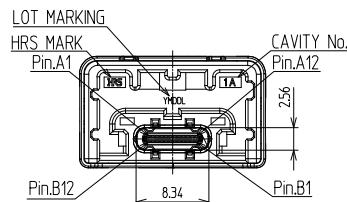
① ⑦ ⑧ ④ ⑨ ⑩ ⑥

① Series Name	AU1	⑥ Specification	(805) : Standard
② Mounting Style	FS : Straight FR : Right Angle	⑦ Housing Form (Note)	MS : Straight MR : Right Angle
③ Key Code	Blank : Standard Key, Black A : A Key, Natural	⑧ Key Code	Blank : Standard Key, Black A : A Key, Gray
④ No. of Pos.	24 pos.	⑨ Product Type	S : Socket RS : Retainer
⑤ Contact Type	P : Male contact	⑩ Component Type	HU/C : Housing SLDA, SLDB : Shield Case

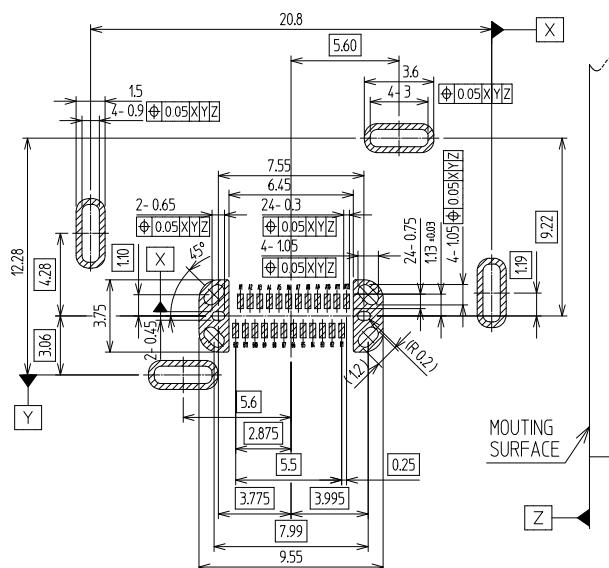
Note : The right angle plug is currently under development. Please contact a Hirose representative regarding questions on product Variations.

Straight Receptacle

24 pos. (Double-row)



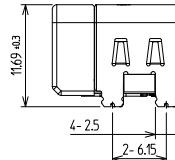
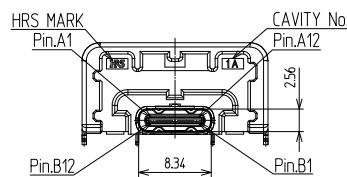
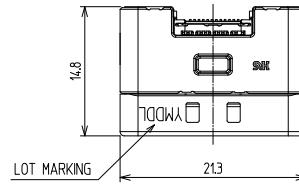
RECOMMENDED PCB LAYOUT (TOP-VIEW)
(GENERAL TOLERANCE : ± 0.05)



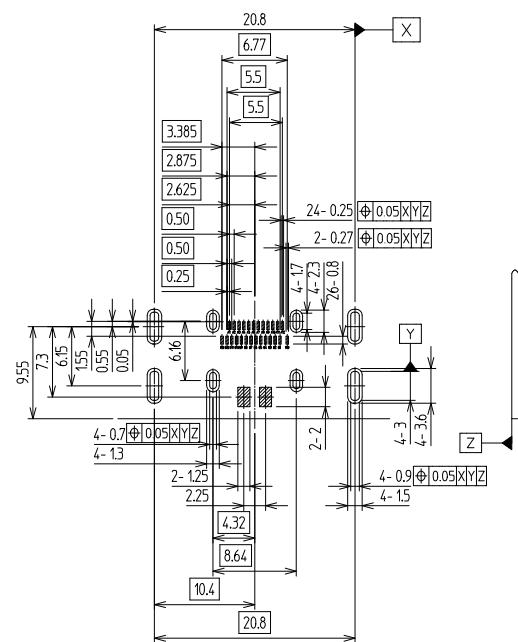
Part No.	HRS No.	Color	Key Code	No. of Pos.	Purchase Unit
AU1FS-24P(805)	CL0480-0960-0-05	Black	Standard	24	200pcs per reel
AU1FSA-24P(805)	CL0480-1216-0-05	Natural	A key		

Right Angle Receptacle

24 pos. (Double-row)



RECOMMENDED PCB LAYOUT (TOP-VIEW)
(GENERAL TOLERANCE : ± 0.05)



Part No.	HRS No.	Color	Key Code	No. of Pos.	Purchase Unit
AU1FR-24P(805)	CL0480-0961-0-05	Black	Standard	24	200pcs per reel
AU1FRA-24P(805)	CL0480-0962-0-05	Natural	A key		

Straight Plug

24 pos. (Double-row)



The product consists of five parts.
(Housing, Retainer, Shield Case (A/B) and Plug Unit)

● Housing

Part No.	HRS No.	Color	Key Code	Purchase Unit
AU1MS-24S-HU/C(805)	CL0480-1218-0-05	Black	Standard	200pcs per bag
AU1MSA-24S-HU/C(805)	CL0480-1219-0-05	Gray	A key	

● Retainer

Part No.	HRS No.	Purchase Unit
AU1MS-24RS(805)	CL0480-1220-0-05	50pcs per bag

● Shield Case (A/B)

Part No.	HRS No.	Purchase Unit
AU1MS-24S-SLDA(805)	CL0480-1221-0-05	2,000pcs per reel
AU1MS-24S-SLDB(805)	CL0480-1222-0-05	600pcs per reel

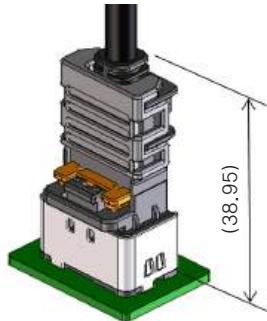
● Plug Unit

Part No.	HRS No.	No. of Pos.	Purchase Unit
CX60-24S1-UNIT	CL0480-1217-0-00	24	150pcs per tray

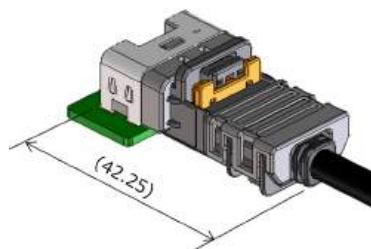
Note : For more information on cable assemblies, please contact a Hirose representative.

Mated Dimensions Diagram

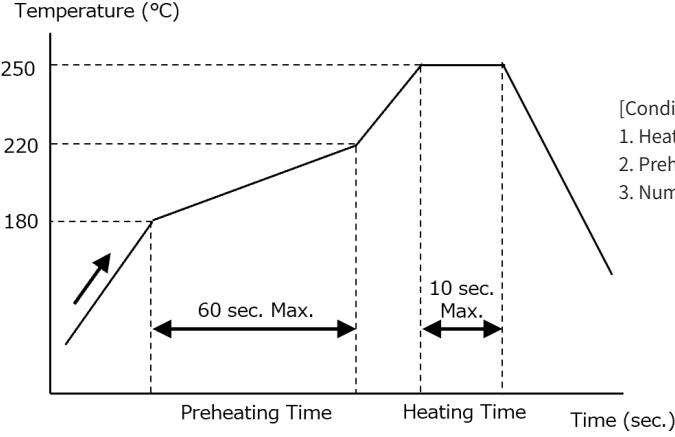
Straight Receptacle to
Straight Plug Connection



Right Angle Receptacle to
Straight Plug Connection



Usage Precautions

<p>Recommended Temperature Profile</p>	 <p>[Conditions]</p> <ol style="list-style-type: none"> 1. Heating: $250^{\circ}\text{C} \pm 5^{\circ}\text{C}$, 10 sec. Max. 2. Preheating: 180 to 220°C, 60 sec. Max. 3. Number of Reflow Cycles: 3 cycles Max. <p>*Measurement is conducted at the contact lead part. Soldering results may change depending on conditions such as solder paste type, manufacturer, PCB size, and other soldering materials. Please determine all mounting conditions before use.</p> <p>*This temperature profile is a recommended value.</p>
<p>Cautions</p>	<ol style="list-style-type: none"> 1. Forcing the connector out might cause damage. If it's difficult to remove, press down gently on the lock before releasing. 2. Always disconnect the power before reseating the connector. 3. Avoid touching the terminal area while the power is active to prevent hazards. 4. For harnessing guidelines, please consult a Hirose representative.

While Taking into Consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please review the Drawing and Product Specifications sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

If assembly process is done by jigs & tools which are not identified by Hirose, the warranty of the product may be affected.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.