High Current Connector

PS3 Series



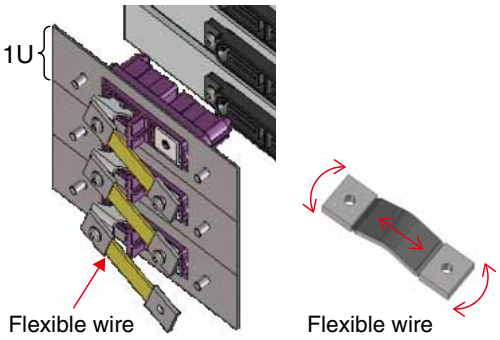


Fig.1

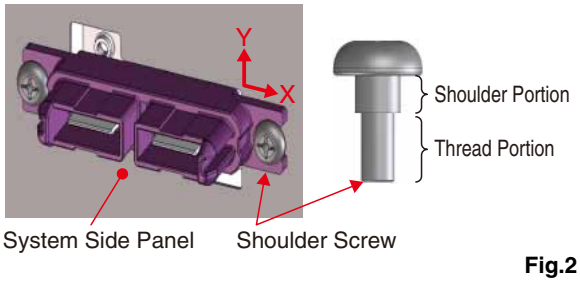


Fig.2

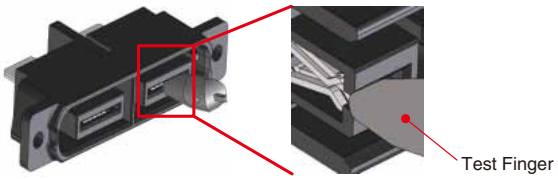


Fig.3

■Features

1. **Power contact supports up to 150 Amps (210A/1pin Derating curve, ambient temp 25˚C) with 50mm sq. O/I AWG wire.**

2. **The unique blade contacts help to create a slim design and allows it to be utilized in a standard 1U rack size (44.5mm × 482.6mm).** (Fig.1)

3. **Special screws are used in the receptacle to allow the floating (±2.0 mm) in X Y axial directions.**

   Connector floating is allowed by using flexible wire without missing flexibility in short distant wiring between 1U connection. (Fig.1, 2)

4. **The cable connection to the power contact is made by means of a screw to a JIS round crimp contact.**

5. **For added safety, the plug side (battery side) is designed to prevent shock hazard and provides for more user safety and security.** (Fig.3)

6. **A special dust cap is available and can be used with both the plug and receptacle.**

7. **The plug and receptacle have been UL, C-UL and TÜV certified.**

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■Product Specifications

Ratings	Rated Current	Power	Signal	Rated Voltage	AC、DC 1000V（∗1）
		150A/1pin（∗1） 210A/1pin (Derating curve, ambient temp 25°C)	1A/1pin		
	Applicable Cable	5 to 1/0 AWG 14 to 50sq （WL1、WL2 ∗1 ∗2）	20 to 22 AWG	Op. Temp. Range	-40 to +105°C (including temperature rise due to electric current)
				Stor. Temp. Range	−40℃～ +60℃

∗1 : UL, C-UL and TÜV certifications have been obtained while changing conditions such as rated current and voltage multiple times.
For details, see the "Conditions on Safety Standards (UL, C-UL, TÜV)" on page 6.
∗2 : Select your cables based on the current capacity needed for your application.
Flexible wires are recommended to provide flexibility to the receptacles (system side).
∗3 : Used 50sq (1/0 AWG) cable.

■Materials / Finish

●Receptacle

Parts	Materials	Color/Finish	Remarks
Insulator	PBT	Black	UL94V-0
Contact	Copper alloy	Silver plated	————
Contact Retention plate A	PBT	Black	UL94V-0
Contact Retention plate B	PBT	Black	UL94V-0
Floating screw	Steel	Nickel plated	————
Signal male contact	Copper allay	Gold plated	————
Signal Retention plate (12)	PBT	Black	UL94V-0
Signal Retention plate (16)	PBT	Black	UL94V-0

●Plug

Parts	Materials	Color/Finish	Remarks
Insulator	PBT resin	Black	UL94V-0
Contact	Copper alloy	Silver plated	————
Contact Retention plate C	PBT resin	Black	UL94V-0
Signal female contact	Copper allay	Gold plated	————
Signal Retention plate (12)	PBT	Black	UL94V-0
Signal Retention plate (16)	PBT	Black	UL94V-0

●Dust Cap

Parts	Materials	Color/Finish	Remarks
Insulator	Silicon rubber	Blue	UL94HB

■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.

1. Connector product name

PS3 - 2 U S / 12 S / 16 S
❶ ❷ ❸ ❹ ❺ ❻ ❺ ❻

2. Dust cap product name

PS3 - 2 U - DC
❶ ❷ ❸ ❼

❶ Series name symbol	❺ No. of signal contacts
❷ No. of power contacts	❻ Signal contact shapes P : Male contact S : Female contact
❸ Current capacity of power contact U : 150A	
❹ Power contact shapes P : Male contact S : Female contact	❼ Dust cap

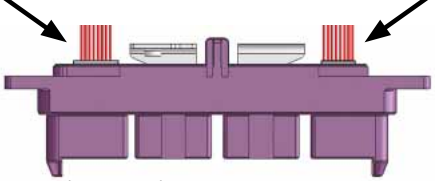
■ Combination List

Signal part for Power/signal hybrid type is GT8E series (sell separately).

PS3-2UP/12P/16P 〈 GT8E-12DS-HU + GT8E-2022SCF (Gold plated)
GT8E-16DS-HU + GT8E-2022SCF (Gold plated)

PS3-2US/12S/16S 〈 GT8E-12DS-HU + GT8E-2022SCF (Gold plated)
GT8E-16DS-HU + GT8E-2022SCF (Gold plated)

GT8E-16DS-HU + GT8E-2022SCF (Gold plated)　GT8E-12DS-HU + GT8E-2022SCF (Gold plated)



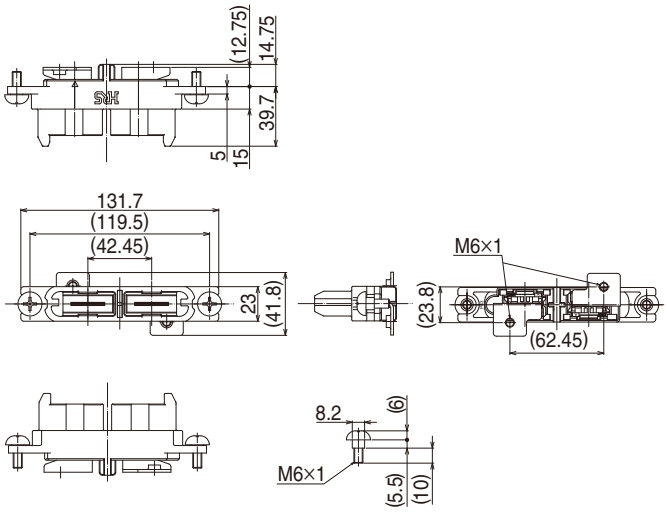
(Example) PS3-2UP/12P/16P

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■Receptacle

●PS3-2UP (Power type)

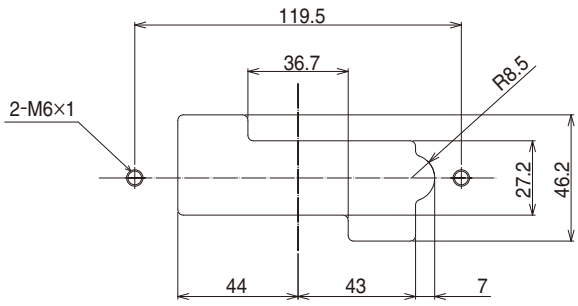




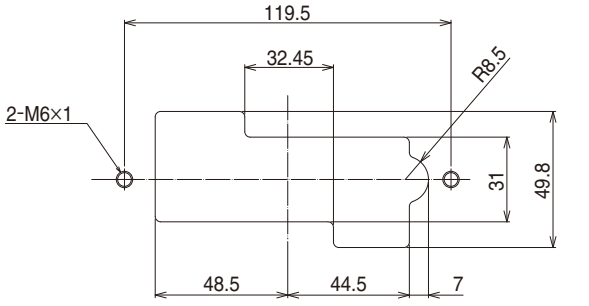
Part No.	HRS No.	Packaging
PS3-2UP	236-1042-2 00	1box (40pcs.)
PS3-2UP(01)	236-1042-2 01	1pcs.

◆Diagram of recommended PCB layout dimensions

Corner radius : 2mm max.
Panel thickness : 3mm max.



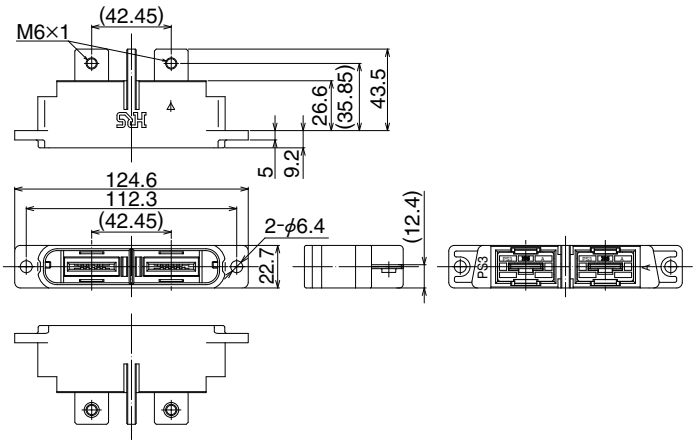
Corner radius : 2mm max.
Panel thickness : 3mm max.



■Plug

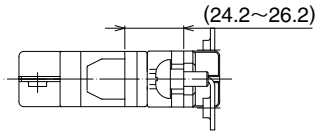
●PS3-2US (Power type)





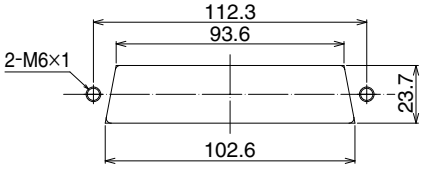
Part No.	HRS No.	Packaging
PS3-2US	236-1041-0 00	1box (40pcs.)
PS3-2US(01)	236-1041-0 01	1pcs.

◆Distance between panels



◆Recommended panel

Corner radius : 2mm max.
Panel thickness : 3mm max.

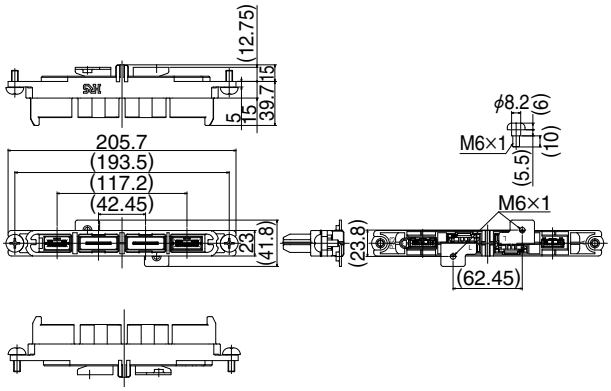


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■Receptacle

●PS3-2UP/12P/16P (Signal hybrid type)

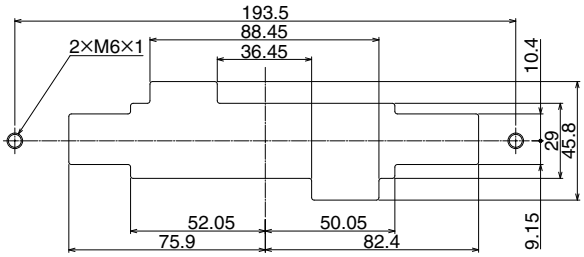




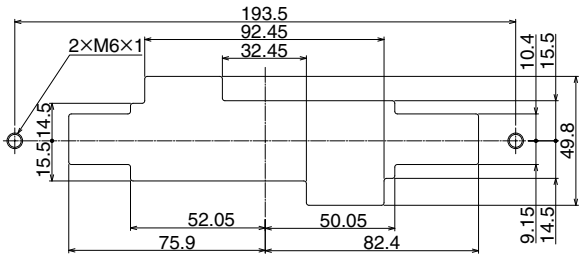
Part No.	HRS No.	Packaging
PS3-2UP/12P/16P	236-1044-8 00	1box (40pcs.)
PS3-2UP/12P/16P(01)	236-1044-8 01	1pcs.

◆Diagram of recommended PCB layout dimensions

Corner radius : 1mm max.
Panel thickness : 3mm max.



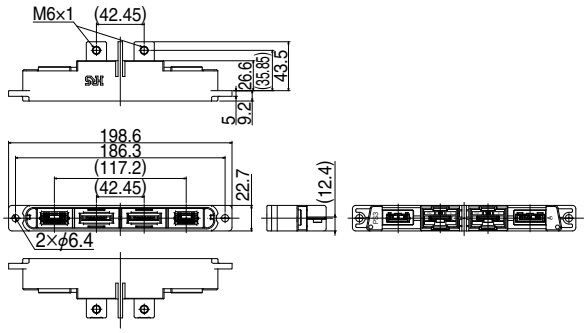
Corner radius : 1mm max.
Panel thickness : 3mm max.



■Plug

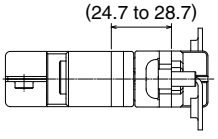
●PS3-2UP/12P/16P (Signal hybrid type)





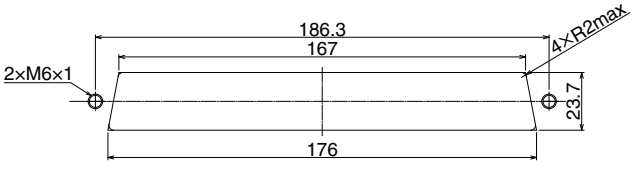
Part No.	HRS No.	Packaging
PS3-2US/12S/16S	236-1043-5 00	1box (40pcs.)
PS3-2US/12S/16S(01)	236-1043-5 01	1pcs.

◆Distance between panels



◆Recommended panel

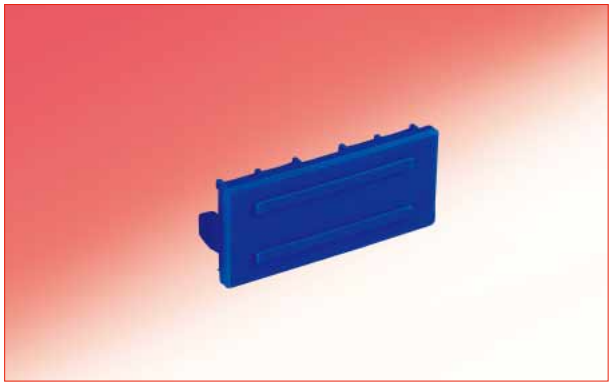
Corner radius : 1mm max.
Panel thickness : 3mm max.



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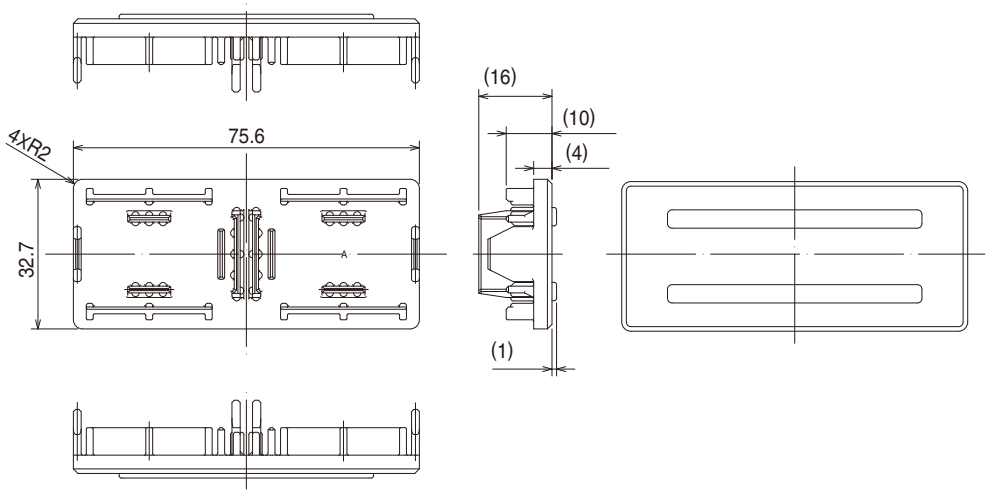
■Dust cap

●PS3-2U-DC



Part No.	HRS No.	Packaging
PS3-2U-DC	236-1054-1	1box (40pcs.)

This dust cap can be used on both the receptacle and plug.



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◆Usage Precautions

・M6 screws are used to attach to the panels. The recommended amount of torque used to tighten the screws should be 2.5 to 5.2 Nm.
・The recommended amount of torque used to tighten the screws to the power contacts should be 2.5 to 5.2 Nm.
・Power contacts are silver plated and may react with the sulfide in the atmosphere.
This might cause the color to change to a dark brown.
The power contacts do not support hot-pluggable, so it cannot be used to shut off the power.

◆Safety Standards Certifications (UL, C-UL, TÜV)

The PS3 series has received safety certifications from the UL, C-UL, and TÜV under the conditions provided in Table 1 and Table 2.
Conditions for safety standards vary depending on submitted applications of current and voltage ratings. See Table 1 and Table 2.

Table 1. Conditions for UL and C-UL

	Condition ①	Condition ②
Rated Voltage (AC/DC)	600V	
Rated Current	100A	150A
Cable	14 to 22sq (∗1) 5 to 3 AWG	38 to 50sq (∗1) 1 to 1/0 AWG
Creepage Distance (∗2)	MIN : 3.2mm	
Clearance (∗2)	MIN : 3.2mm	

Table 2. Conditions for TÜV

	Condition I	Condition II	Condition III
Rated Voltage (AC/DC)	800V	600V	1000V
Rated Current	100 A (cable 14 to 22sq, 5 to 3 AWG ∗1) 125 A (cable 38sq, 1 AWG ∗1) 150 A (cable 50sq, 1/0 AWG ∗1)		
Overvoltage Category	II	III	
Contamination Level	3		
Creepage Distance (∗2)	MIN : 12.6mm	MIN : 12.6mm	MIN : 16mm
Clearance (∗2)	MIN : 6mm	MIN : 6mm	MIN : 8mm
Insulation System	Basic insulation (Panel should be grounded)		
Recommended Panel for PS3-2UP Side	Recommended Panel 1	Recommended Panel 1	Recommended Panel 2 (∗3)
Recommended Panel for PS3-2US Side	Recommended Panel 3		

∗1 : Use the screw and crimp contact combination recommended below. The use of other screws and crimp contacts can affect clearance and creepage distance.
If you choose to use a different screw/contact combination, be sure to check the measurements for clearance and creepage. Make sure that these conditions will meet the UL, C-UL and TÜV.
・Recommended screw: JIS B 1188 spring lock washer + cross recessed head screw with captive flat washer M6×12
・Recommended crimp contacts
Cable 14 sq: JIS C 2805 R14-6
Cable 22 sq: JIS C 2805 R22-6
Cable 38 sq: NICHIFU R38-6S
Cable 50 sq: NICHIFU R60-6S
∗2 : Subjects of clearance and creepage distance are as follows.
・Between crimp contacts
・Between power contact and panel
・Between crimp contact and panel
・Between screw (attached to power contact) and panel
∗3 : In case of recommended panel 2, reverse attachment of receptacle is possible. Please be careful in panel attachment.

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The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
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