

# Connector Line-up for Power Storage

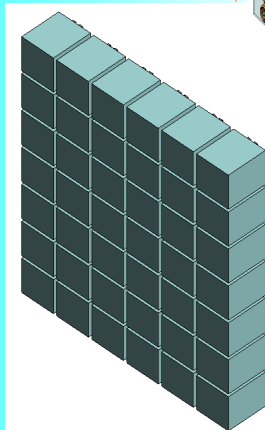
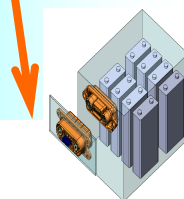


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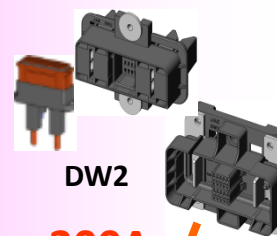
Large-scale power  
storage battery  
(>25kWh)  
Plant, Building, etc



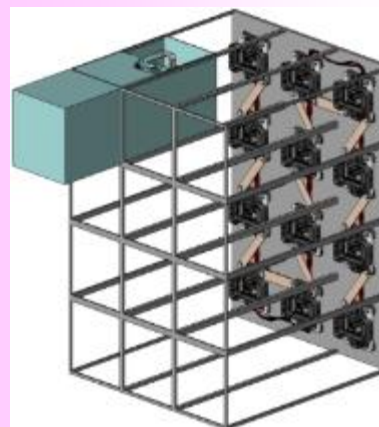
DW1  
500A



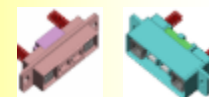
Mid-range power  
storage battery  
(10-25kWh)  
Industrial, Office, etc



DW2  
200A

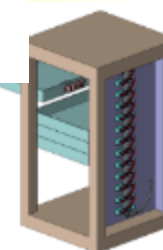
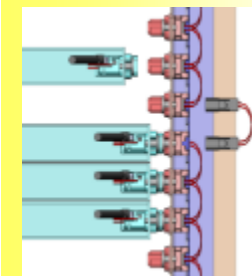


Rechargeable  
battery  
(<10kWh)  
Residential,  
Commercial, etc



DW3  
150A

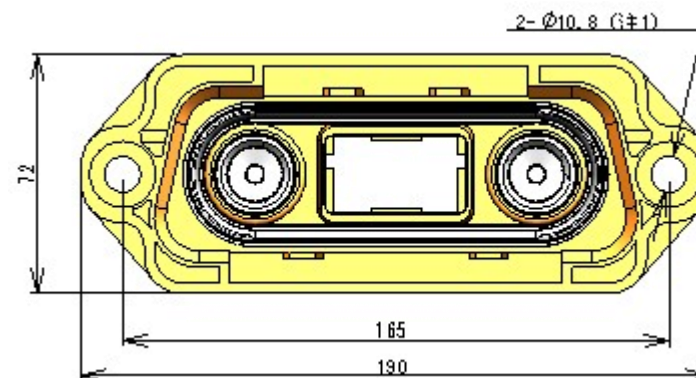
For 1U rack  
(19 inch)



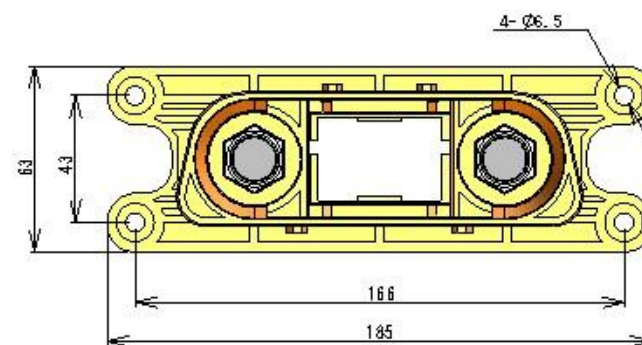
# DW1 Specifications

Power pins		2
Signal pins		20
Rated current	Power	500 A
	Signal	2 A
Rated voltage	Power	600 V
	Signal	100 V
Overvoltage category		4
Pollution grade		3
Temperature increase at power portion		45 C
Ambient temperature		-25 to +60 C
Allowable temp at power portion		105 C

## Receptacle

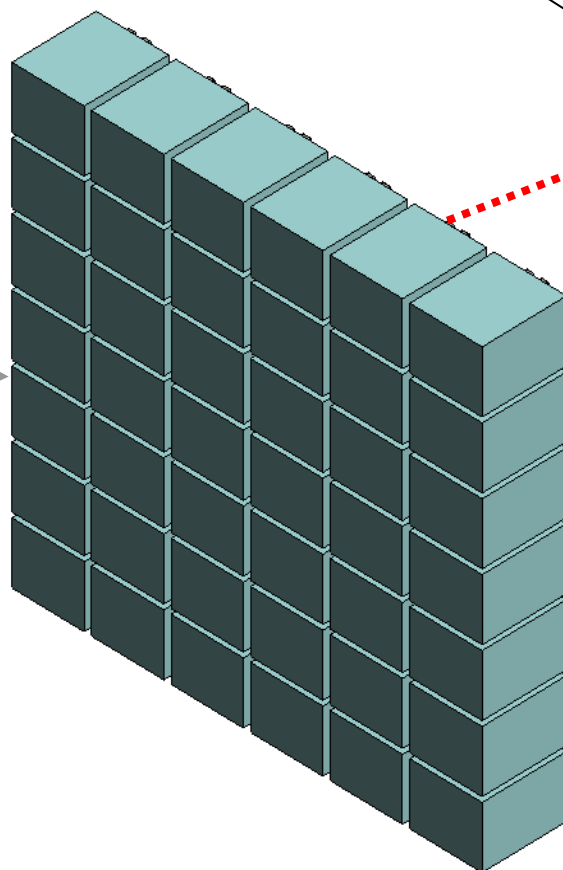
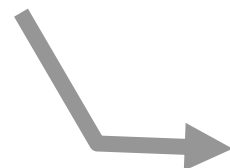


## Plug

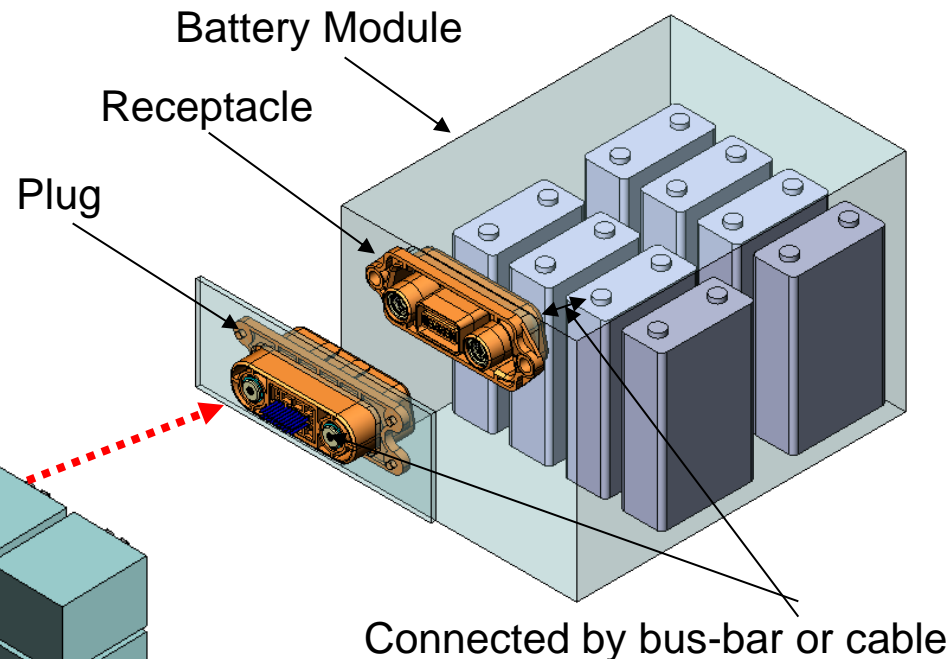


# DW1 Application Example

## Large-scale Power Storage



Rack and Panel

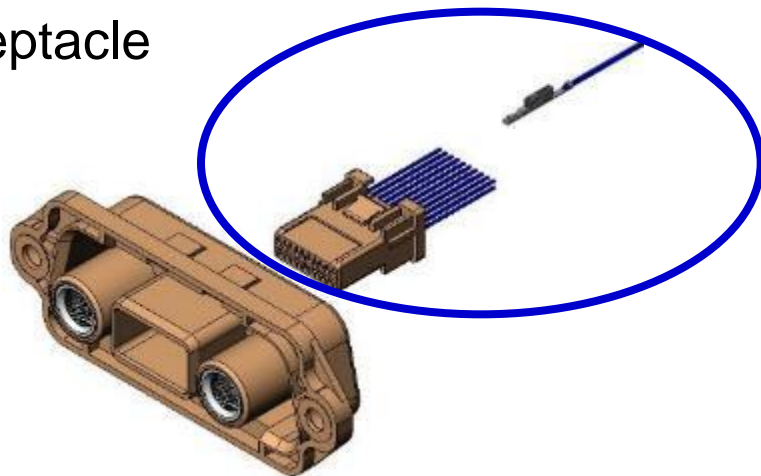


Battery Module mounting image

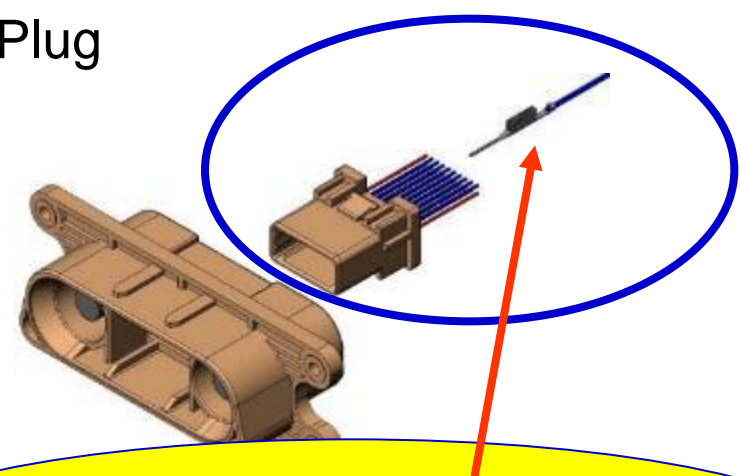
# DW1 Signal Contacts

Technology to Inspire Innovation

Receptacle

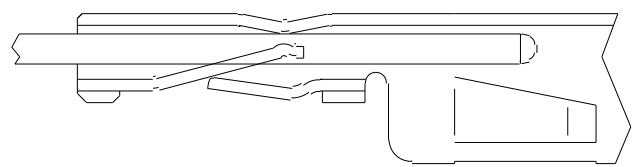


Plug



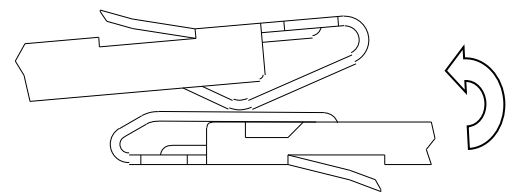
Stepped mating with a 1.5mm recessed contact line

## Box-type Contact Structure



2-point contact → Steady Connection

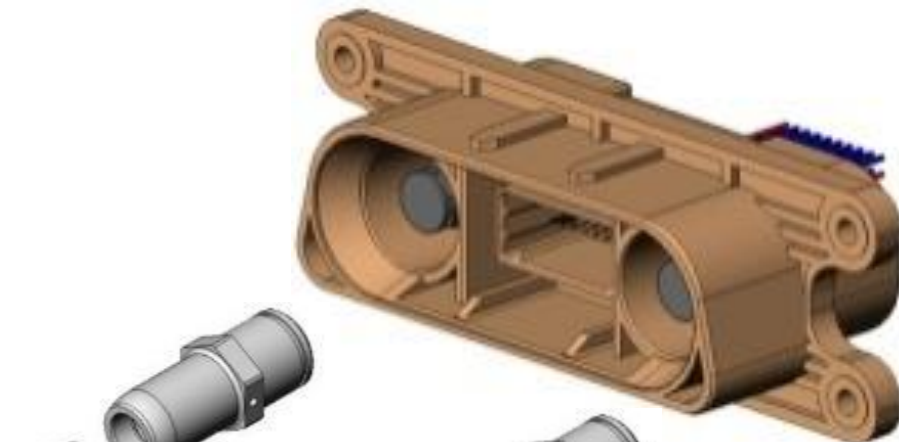
Better than inferior bellows-type  
1 point contact → weak with and dust



Same concept as high-reliability automotive contacts



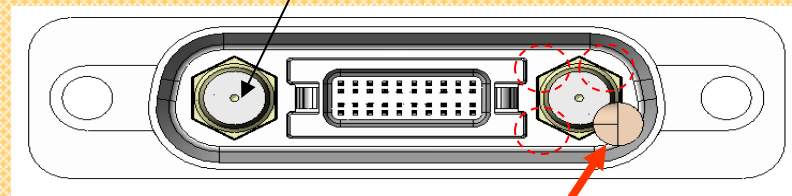
Plug



Guard Cap

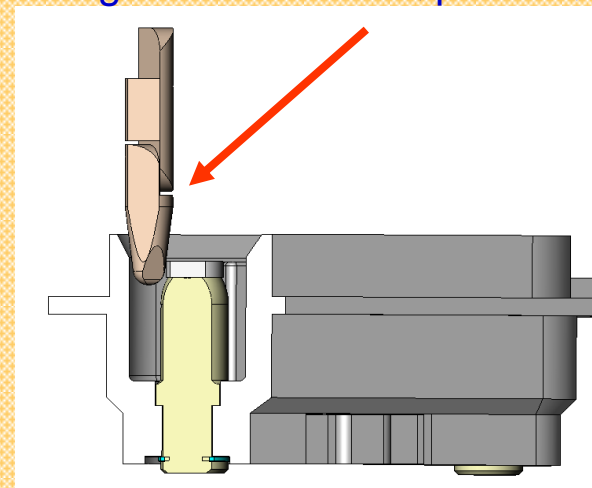
Details

Guard Cap



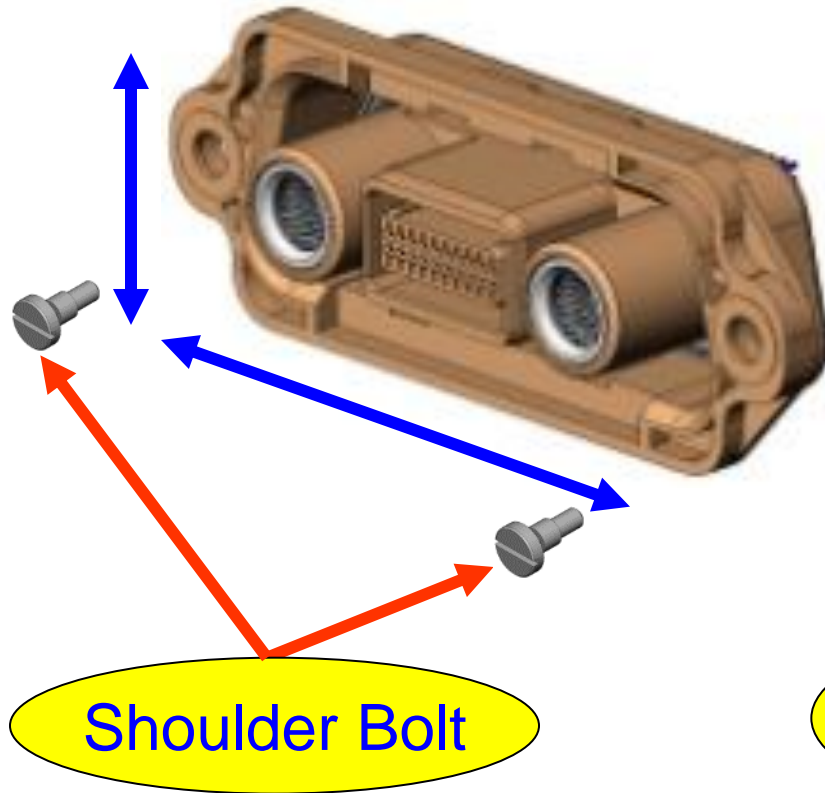
Electrical Appliance and Material Safety  
(J60950)

Finger test cleared ( $\phi 12\text{mm}$ )

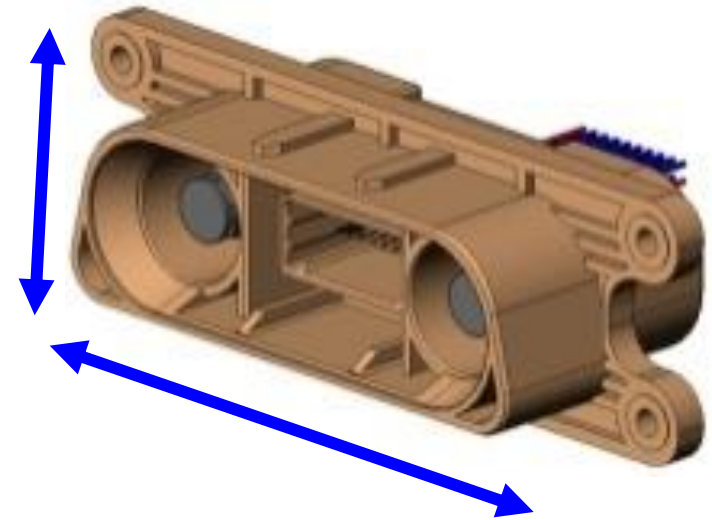


# DW1 Floating Range

Receptacle



Plug



Floating Range  
2.75mm, two-axis

Single robust insulator

# DW2 Mid-Range Power Series



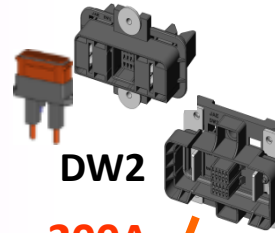
Technology to Inspire Innovation

Large-scale power  
storage battery  
(>25kWh)  
Plant, Building, etc



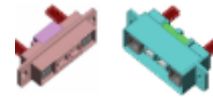
DW1  
500A

Mid-range power  
storage battery  
(10-25kWh)  
Industrial, Office, etc

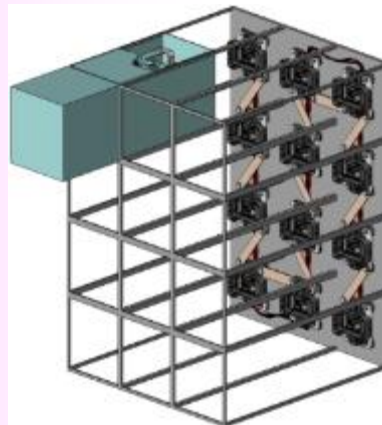


DW2  
200A

Rechargeable  
battery  
(<10kWh)  
Residential,  
Commercial, etc



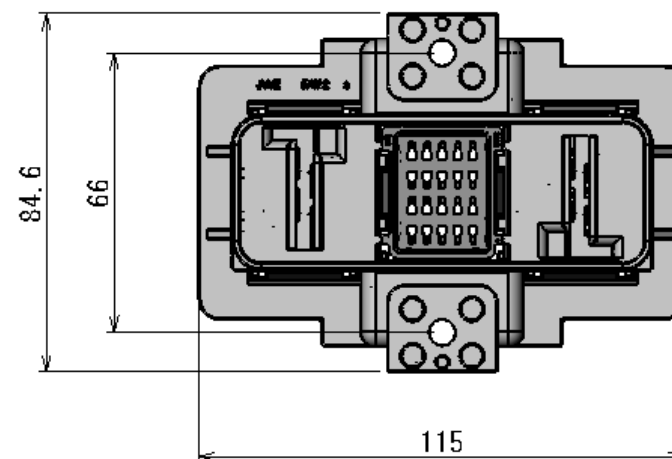
DW3  
150A



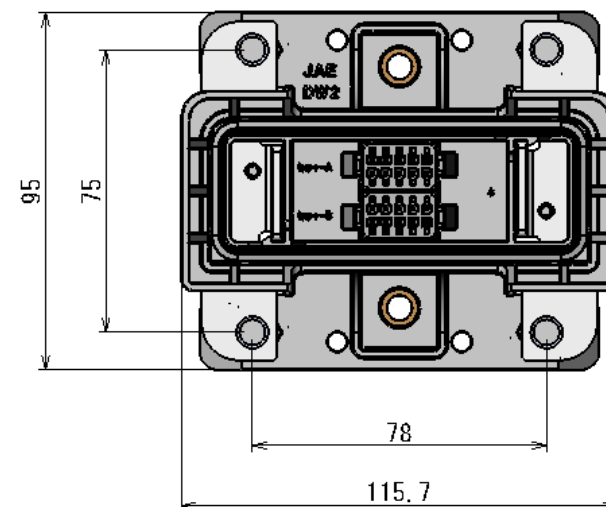
# DW2 Specifications

Power pins		2
Signal pins		20
Rated current	Power	200 A
	Signal	2 A
Rated voltage	Power	1000 V
	Signal	100 V
Overvoltage category		4
Pollution grade		3
Temperature increase at power portion		45 C
Ambient temperature		-25 to +60 C
Allowable temperature at power portion		105 C

Movable side (battery side)



Fixed side (panel side)



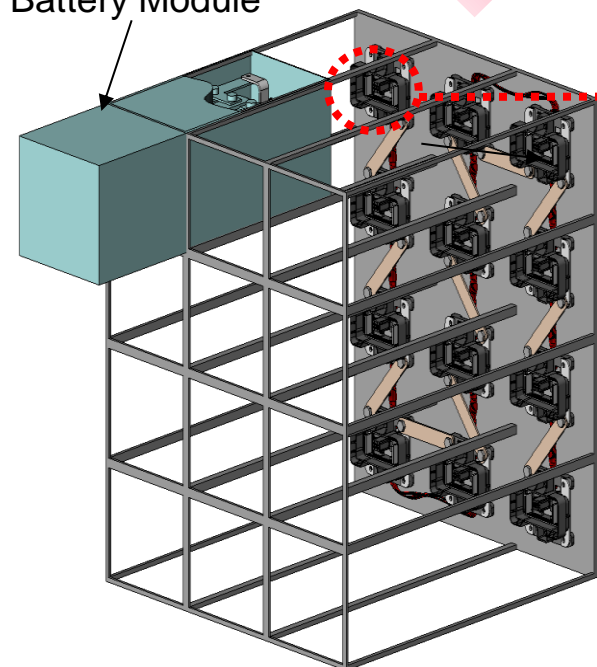


# DW2 Application Example

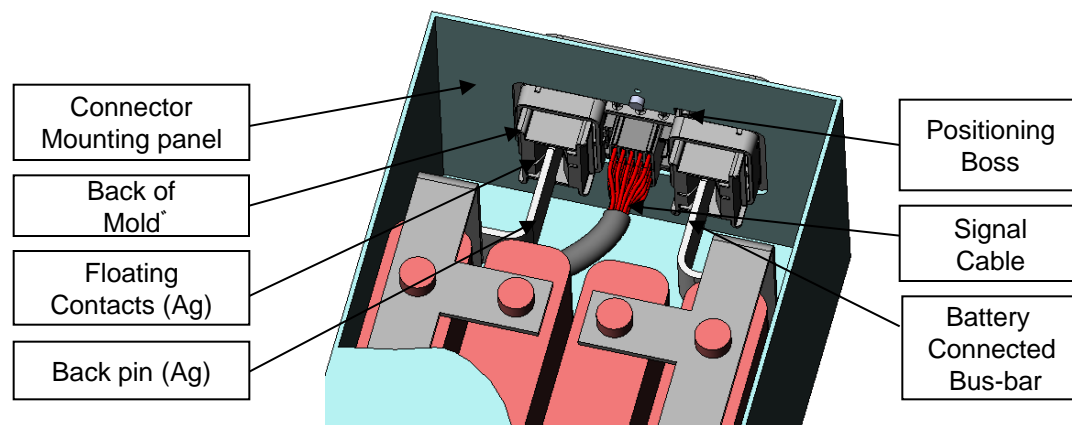
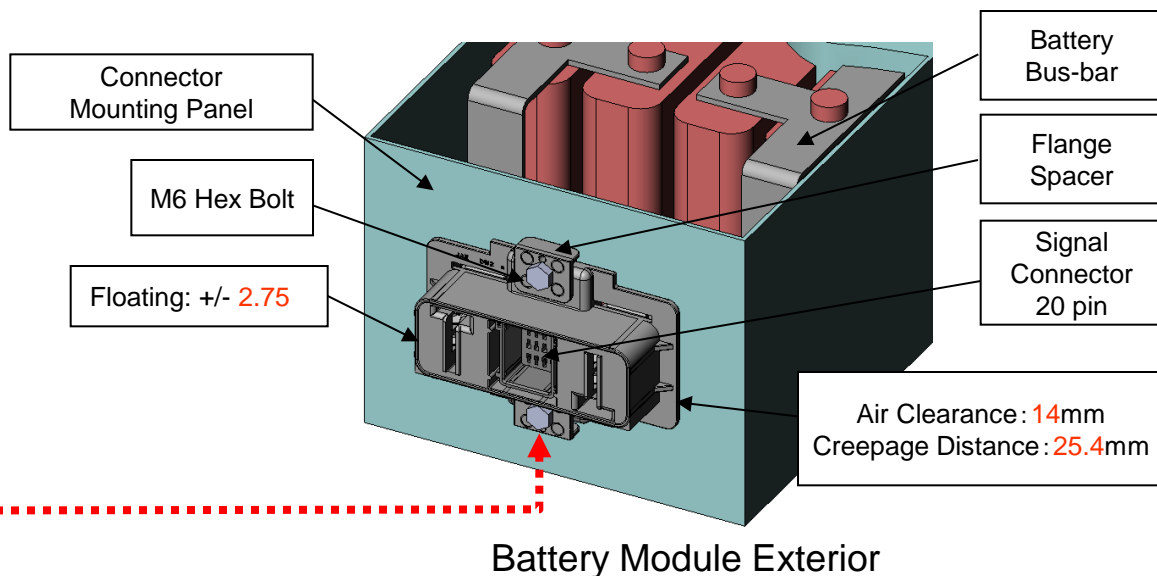
## Mid-range Power Storage



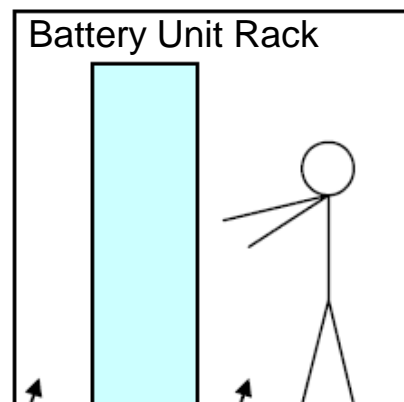
Battery Module



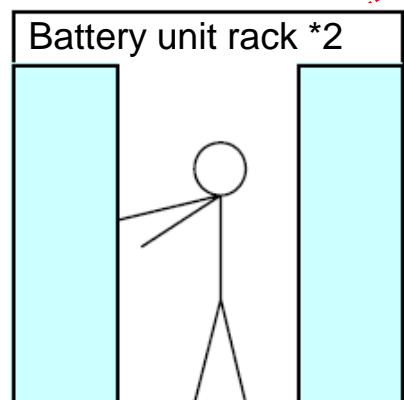
Rack and Panel



# DW2 Mounting Features

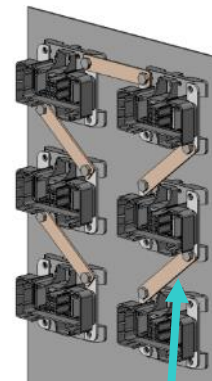


Conserves Space:  
Maintenance possible from the front side



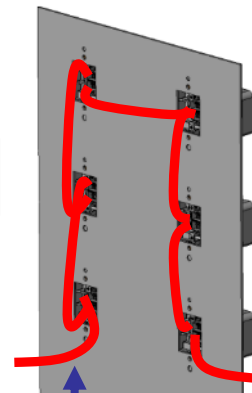
2 racks possible by placing the racks flat against the walls

Connector side



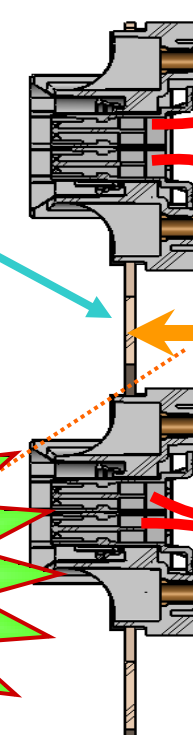
Power Line Bus-bar

Back of Panel



Signal Cable

Panel



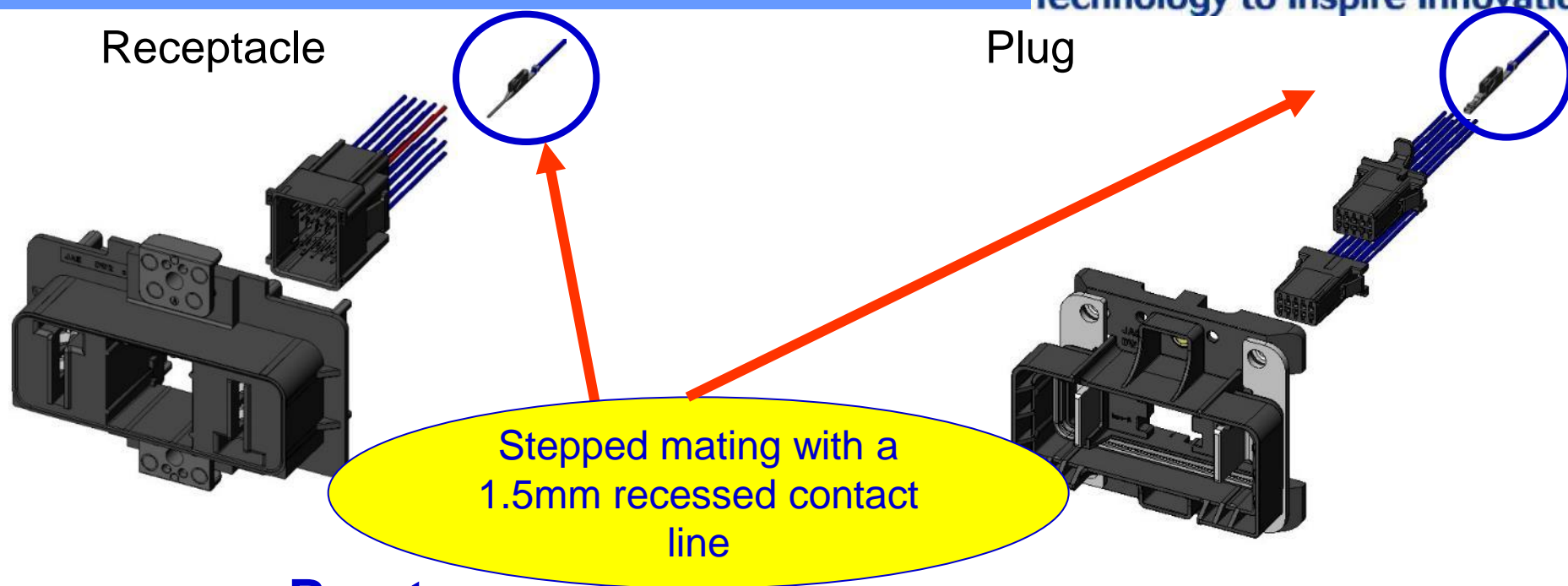
Bypasses Circuit Trouble:  
High-voltage and signal parts separate

Cross-section

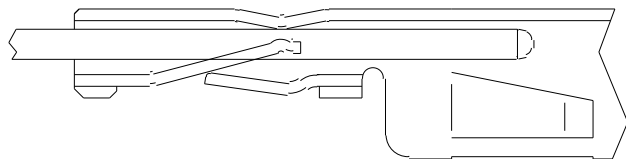
# DW2 Signal Contacts



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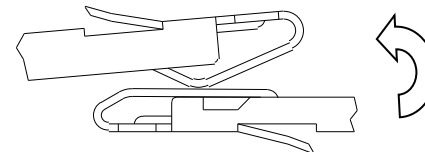


## Box-type Socket Contact Structure



2-point contact → Steady Connection

Better than inferior bellows-type  
1-point contact → weak with and dust

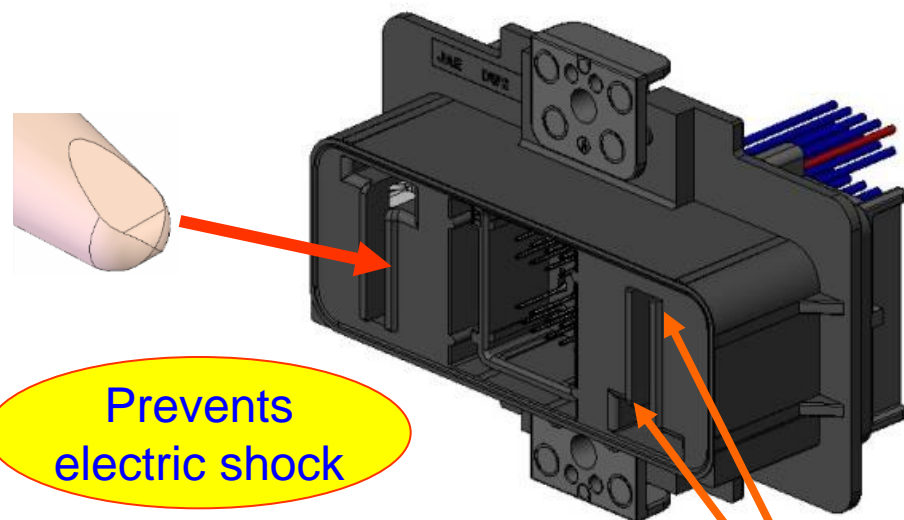


Same concept as high-reliability automotive contacts

Power contact: rated at 200A

Flame retardant 94-V0

Receptacle



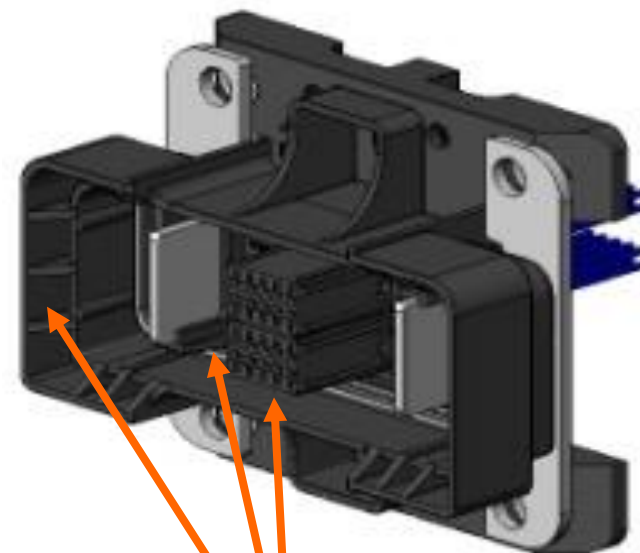
Prevents  
electric shock

Electrical Appliance and  
Material Safety (J60950)

Finger test cleared ( $\phi 12\text{mm}$ )

4-point contact

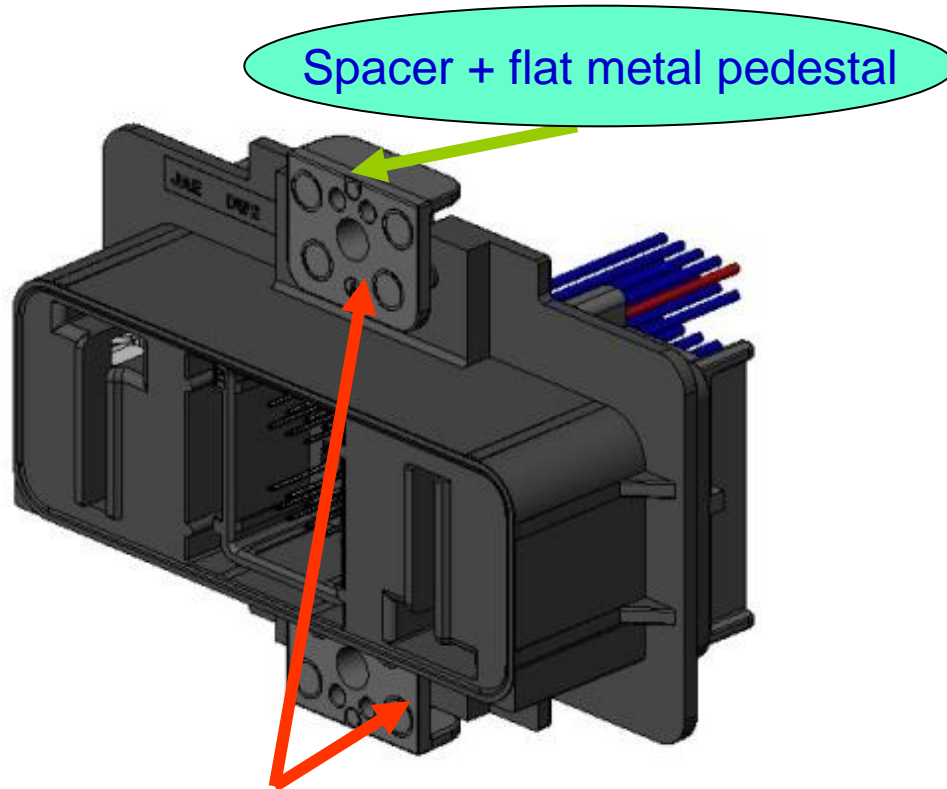
Plug



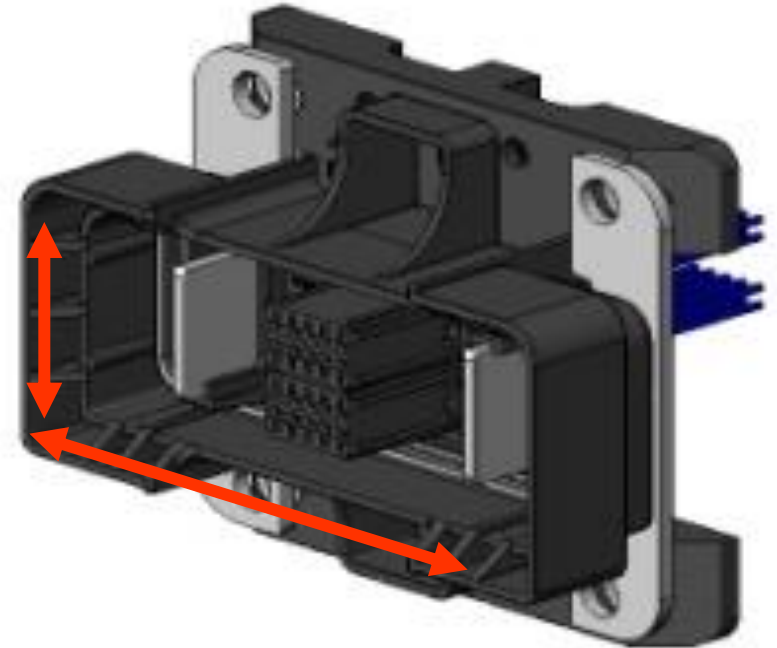
Mold and rubber: 94-V0

Receptacle

Plug



Floating range: +/- 2.75mm



Mating guide: 6.30mm

Single robust insulator, easy mating guide



# DW3 Rechargeable Battery Series



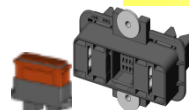
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Large-scale power  
storage battery  
(>25kWh)  
Plant, Building, etc



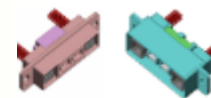
DW1  
500A

Mid-range power  
storage battery  
(10-25kWh)  
Industrial, Office, etc



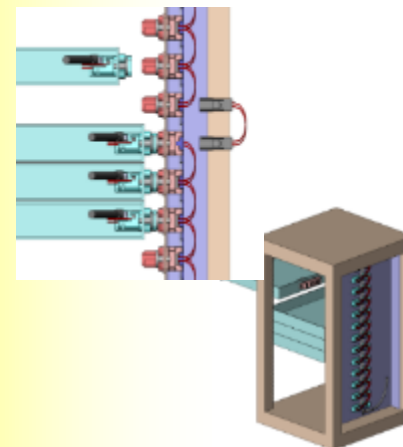
DW2  
200A

Rechargeable  
battery  
(<10kWh)  
Residential,  
Commercial, etc



DW3  
150A

For 1U rack  
(19 inch)



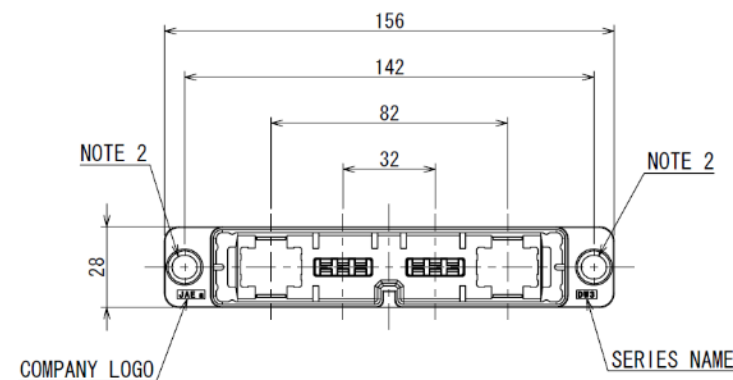
# DW3 Specifications



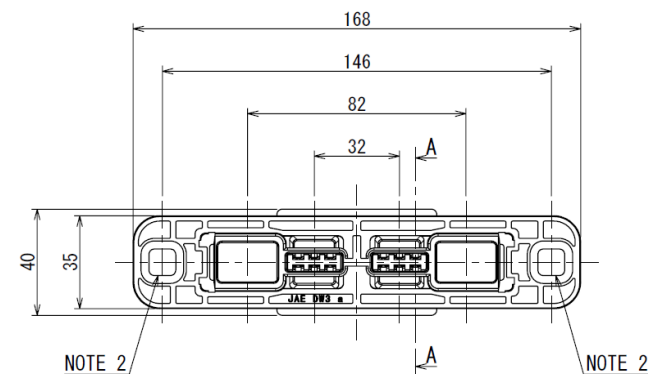
Technology to Inspire Innovation

Item	Power	Signal
Pin count	2 pins	24 pins
Rated current	150 A	2 A
Rated voltage	1,000 V	100 V
Contact resistance	Initial: Max. 0.2	Initial: Max. 20 After evaluation: Max. 30
Cable	Bus bar: Width 15 +/- 1mm Thickness 3 +/- 0.1mm	AWG22 (0.3mm <sup>2</sup> ) Outer diameter of coated cable: 1.5mm
Durability	100 times	
Overvoltage category	4	
Pollution grade	3	
Ambient temperature	-25 to 60 C	
Temperature increase at power contact	Max. 45 C	
Allowable temperature at power contact	Max. 105 C	

## Receptacle



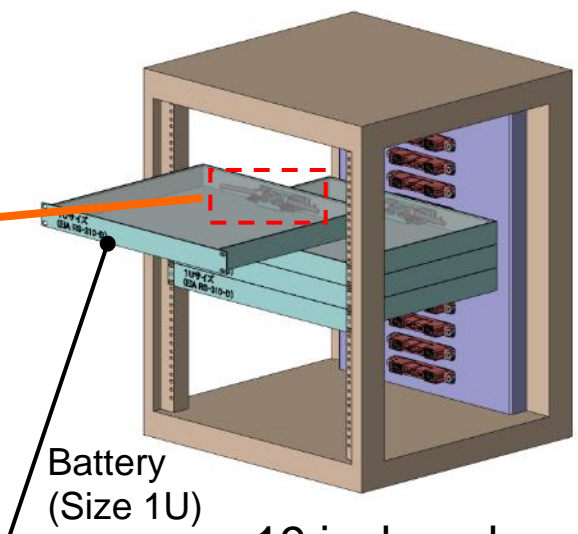
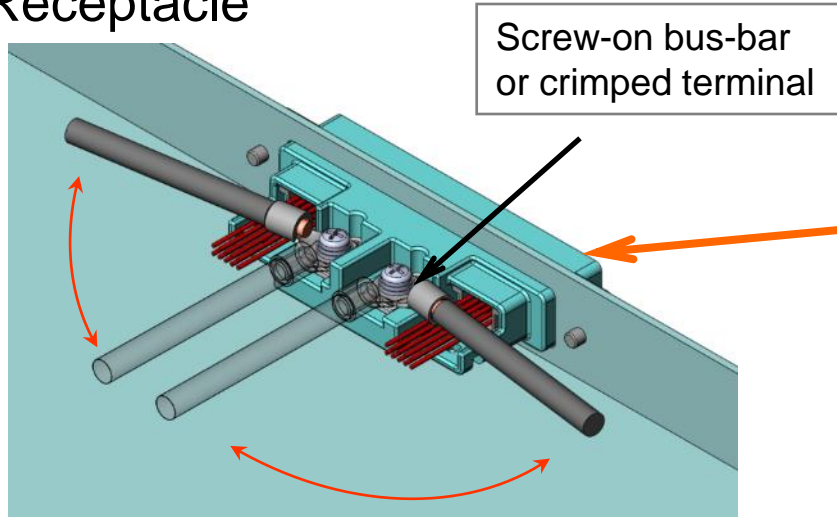
## Plug



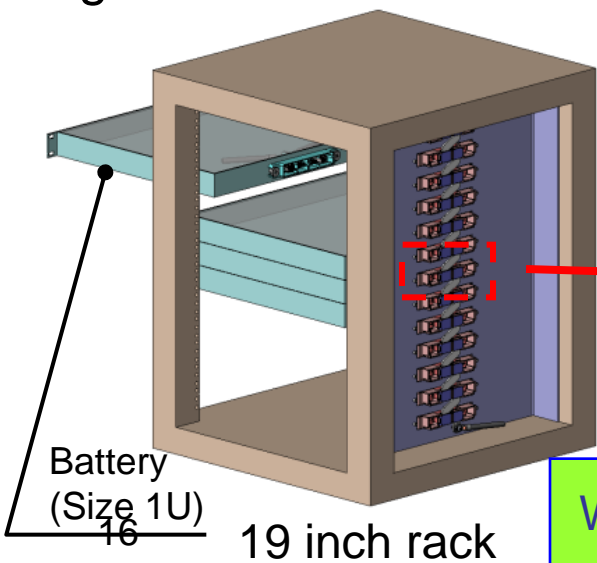
# DW3 Application Example

Technology to Inspire Innovation

## Receptacle

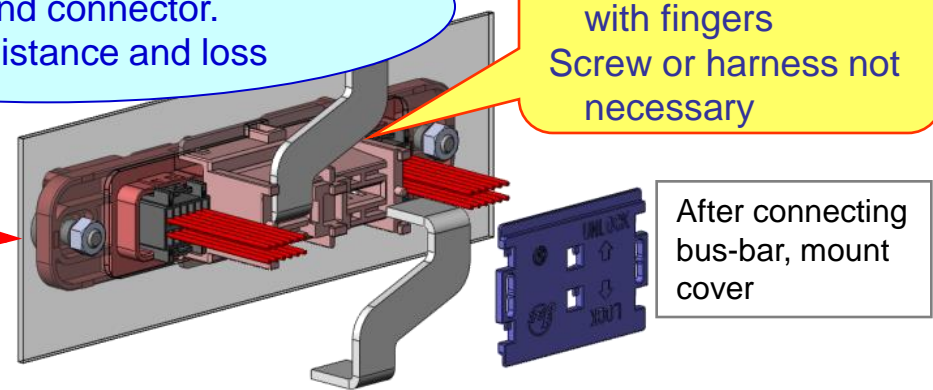


## Plug



Omits connection between cable, bus-bar and connector. Free from resistance and loss

Can connect bus-bar with fingers  
Screw or harness not necessary



Workability made easy by direct connect to bus-bar (plug)

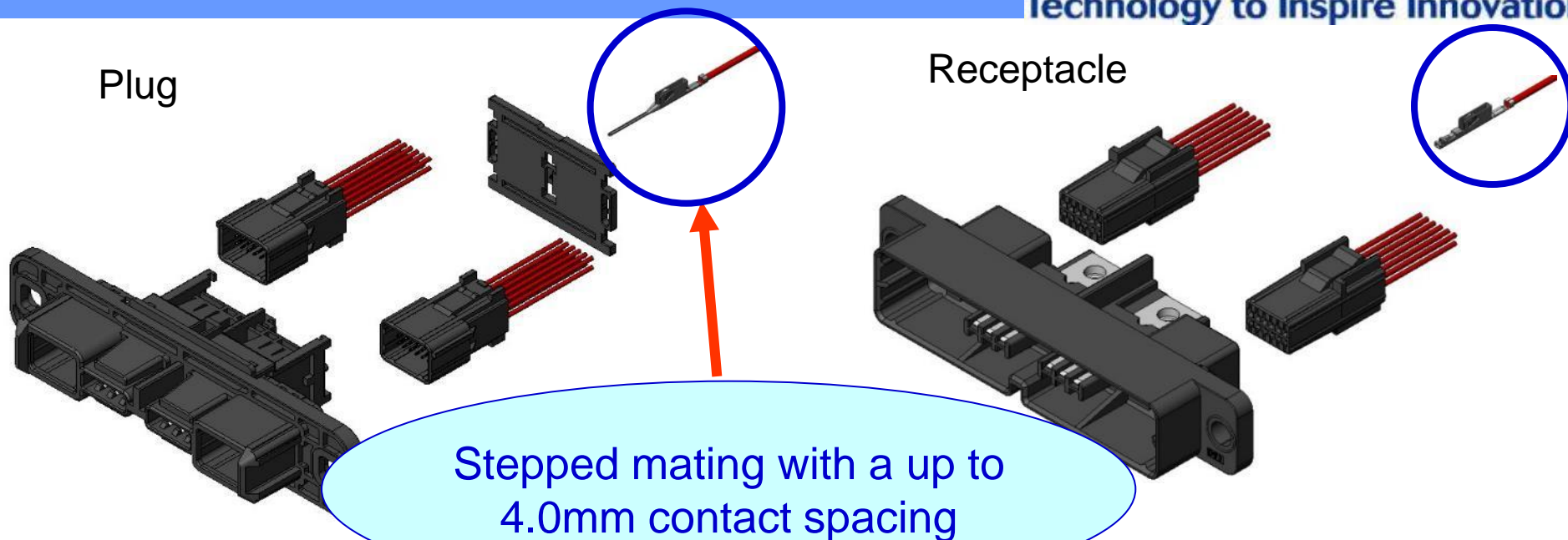
# DW3 Signal Contacts



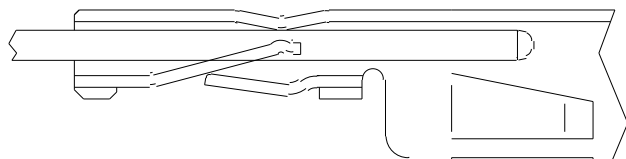
Technology to Inspire Innovation

Plug

Receptacle

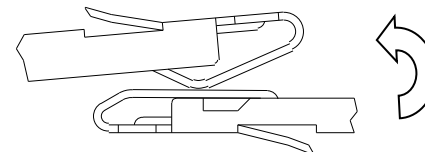


**Box-type**  
Socket Contact Structure



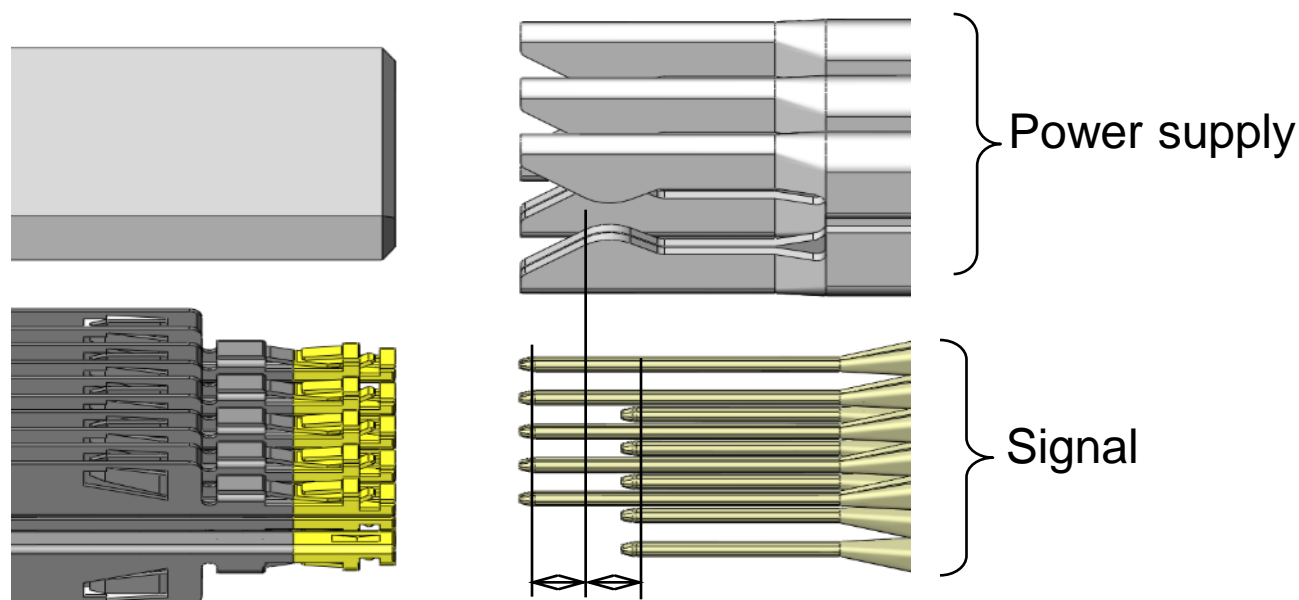
2-point contact → Steady Connection

Better than inferior bellows-type  
1-point contact → weak with and dust



**Same concept as high-reliability automotive contacts**

# DW3 3-Step Mating Sequence



Staggered spacing 2mm each

3-step sequence available by using different pin lengths

- 1) Start connecting → Power connect → Complete connection
- 2) Start unplug → Power unplug → Complete unplug

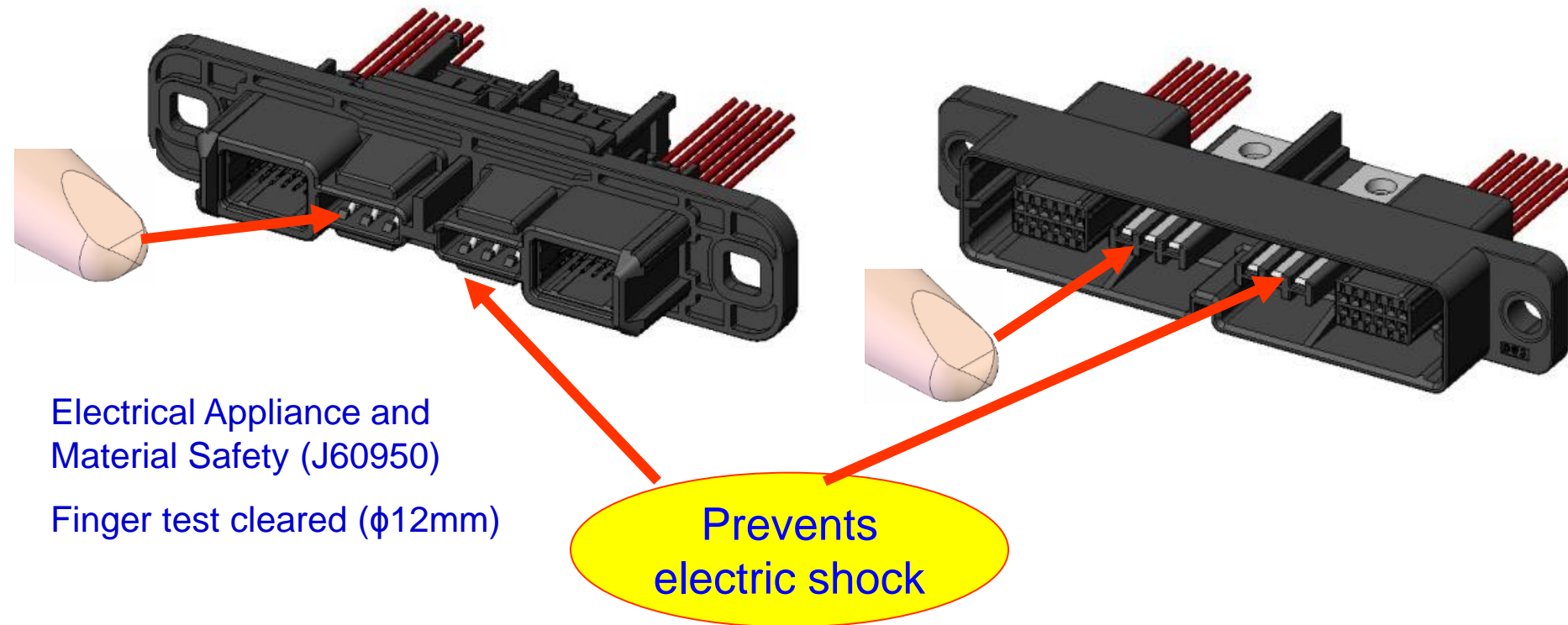
**3-steps sequential signal pin**



# DW3 Electric Shock Prevention

Plug

Receptacle



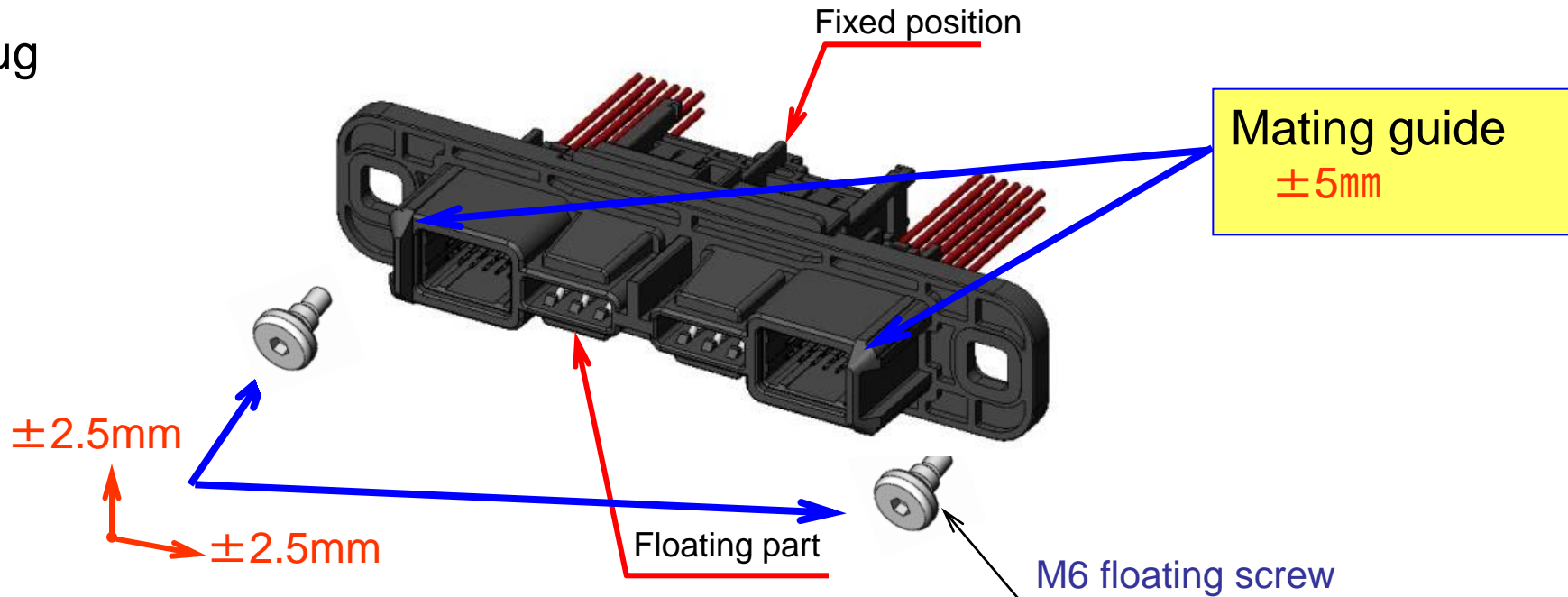
Both plug and receptacle have shock prevention design

# DW3 Floating Range, Connection Guide



Technology to Inspire Innovation

Plug



Floating range  
 $\pm 2.5\text{mm}$

Acceptable position gap  $\pm 2.0\text{mm}$  between fixed position and center of mounted panel

No need to use expensive high-accuracy racks