

# Sentrality High-Current Pin and Socket Interconnect System >



Molex's Sentrality Pin and Socket Interconnect System offers high-current board-to-board, busbar-to-board and busbar-to-busbar connectors and provides a +/- 1.00mm radial self-alignment to overcome tolerance stack-up issues.

## FEATURES AND ADVANTAGES

### Low contact resistance

Provides multiple contact beams to minimize heat generation at the contact interface, resulting in optimized electrical performance



### Compact conical socket design

Allows for tighter board-to-board stack heights with shorter socket assemblies than most market equivalents using hyperbolic sockets



*Sentrality 8.00mm socket assembly using COEUR conical socket to achieve 10.00mm overall height*



*Competitor 8.00mm socket assembly using hyperbolic socket to achieve 24.00mm overall height*

### Self-aligning sockets float between wave springs

Allow the socket to freely move radially +/- 1.00mm within the socket assembly during mating, to help ensure no contact beam deformation



*Socket in nominal position, centered relative to socket assembly outer housing*



*Socket position after self-aligning to the left 1.00mm relative to socket assembly outer housing*

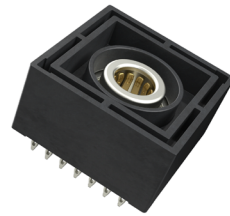
### The screw-mount pins attach to both printed circuit boards and busbars; the surface-mount pins attach to printed circuit boards; the knurled press-fit pins attach to busbars

Offer design flexibility for attaching pins to various substrates



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## FEATURES AND ADVANTAGES



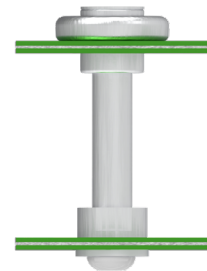
### Design Flexibility

Sentrality offers designers options for attaching sockets to different substrates. The eye-of-needle sockets and the surface mount sockets attach printed circuit boards. The screw mount sockets attach to either printed circuit boards or busbars. The knurled press fit sockets attach to busbars.



*Sentrality Top-Entry Socket Assembly*

*Sentrality Bottom-Entry Socket Assembly*



### Design Flexibility

Sentrality offers top-entry socket assemblies and bottom-entry socket assemblies, allowing designers to stack substrates in whichever orientation (up or down) is appropriate based on application specific requirements

*Example of top-entry socket application where the socket flange is on the board side facing the pin during mating*

*Example of bottom-entry socket application where the socket flange is on the board side facing away from the pin during mating*

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## FEATURES AND ADVANTAGES

### Surface-mount pins with pick-and-place caps placed in trays

Allow for manufacturing flexibility with high-speed automated placement



*Power tap pins connect three substrates (PCBs and/or busbars) transmitting power from one substrate to the other two substrates*

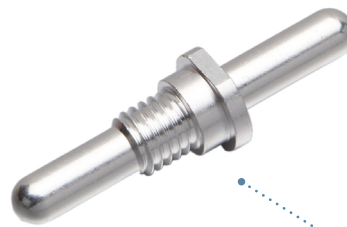


*Interposer pins connect two widely spaced substrates (PCBs or busbars)*



### Knurled press-fit pins and screw-mount pins packed in trays

Allow for manufacturing flexibility with manual placement options



### Design Flexibility

Sentrality offers designers options for attaching pins to multiple substrates. The screw mount power tap pins attach either printed circuit boards or busbars. The knurled press fit power tap pins attach to busbars



### Manufacturing Flexibility

Sentrality offers designers interposer pins for applications that require widely spaced printed circuit boards or busbars. Placing Sentrality sockets on both substrates minimizes the PCBAs effective height and reduces the opportunity of PCBA damage during handling, prior to finished good assembly

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## FEATURES AND ADVANTAGES



### Surface-mount sockets with pick-and-place caps are packed in tape-and-reel arrangements

Allow for manufacturing flexibility with high-speed automated placement

### Knurled press-fit and eye-of-needle sockets are packed in trays

Allow for manufacturing flexibility with manual placement

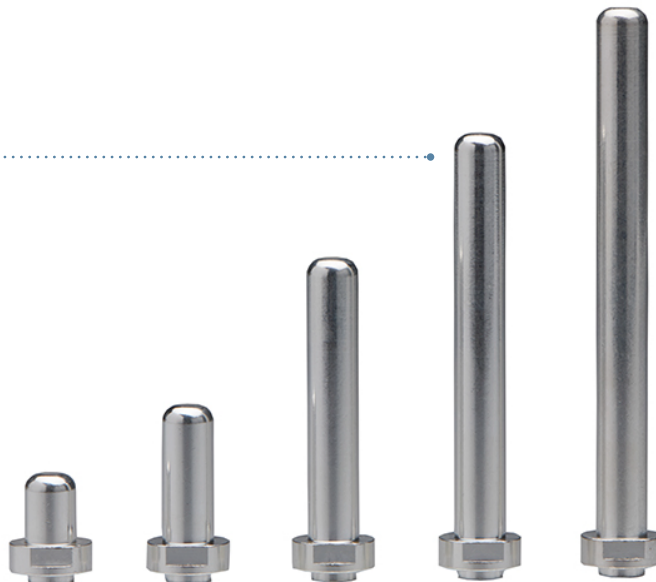
### Socket assembly's flange can be positioned anywhere along the side of the part

Allows for easy customization in achieving the optimum application-specific protrusion above and/or below the substrates



### Pin length can be set

Allows for easy customization in achieving the optimum application-specific desired board-to-board or busbar-to-board stack height



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## MARKETS AND APPLICATIONS

### Telecommunication/Networking

Servers  
Data storage units  
Power distribution units (PDUs)  
Uninterruptible power supplies  
Digital cross-connect switches  
Network routers

### Data Centers

Enterprise switches  
Servers  
Data storage units  
Power shelves  
Power distribution units (PDUs)  
Uninterruptible power supplies  
Environmental control equipment

### Industrial Automation

Battery charging stations  
DC-to-AC inverters  
AC-to-DC rectifiers  
Robotics



Uninterruptible Power Supply



Data Center Servers



DC-to-AC Inverters

## SPECIFICATIONS

### REFERENCE INFORMATION

Packaging: Tape and reel, tray or bag  
depending on part number; see packaging  
specifications for details

UL File No.: E29179

CSA File No.: 70184994

Use With: Printed circuit boards and busbars

Designed In: Millimeters

RoHS: Yes

Halogen Free: Yes

### PHYSICAL

Eye-of-Needle Socket Housing: LCP (black)

Contact: High-performance Copper (Cu) Alloy

Plating:

Socket Contact Area—Gold (Au)

Eye-of-Needle Socket Compliant Tail—Silver (Ag)

Pin—Silver (Ag)

PCB Thickness (min.): 1.58mm

Busbar Thickness (min.): 1.50mm

Operating Temperatures: -40 to +125°C

### ELECTRICAL (3.40MM SIZE)

Voltage (max.): 600V

Current (max.): 75.0A

Contact Resistance (max.): 0.25 milliohms

### MECHANICAL (3.40MM SIZE)

Mating Force (max.): 20.0N

Unmating Force (min.): 6.0N

OmniGlide Alignment Force (max.): 10.0N

Durability (min.): 200 mating cycles

### ELECTRICAL (6.00MM SIZE)

Voltage (max.): 600V

Current (max.): 120.0A

Contact Resistance (max.): 0.20 milliohms

### MECHANICAL (6.00MM SIZE)

Mating Force (max.): 30.0N

Unmating Force (min.): 7.0N

OmniGlide Alignment Force (max.): 10.0N

Durability (min.): 200 mating cycles

### ELECTRICAL (8.00MM SIZE)

Voltage (max.): 600V

Current (max.): 200.0A

Contact Resistance (max.): 0.20 milliohms

### MECHANICAL (8.00MM SIZE)

Mating Force (max.): 40.0N

Unmating Force (min.): 10.0N

OmniGlide Alignment Force (max.): 15.0N

Durability (min.): 200 mating cycles

### ELECTRICAL (11.00MM SIZE)

Voltage (max.): 600V

Current (max.): 350.0A

Contact Resistance (max.): 0.40 milliohms

### MECHANICAL (11.00MM SIZE)

Mating Force (max.): 55.0N

Unmating Force (min.): 10.0N

OmniGlide Alignment Force (max.): 70.0N

Durability (min.): 200 mating cycles

[www.molex.com/link/Sentrality.html](http://www.molex.com/link/Sentrality.html)