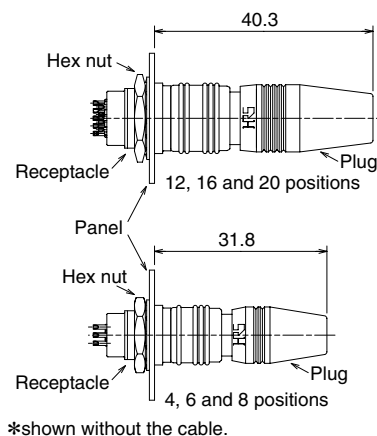


# Miniature Push-Pull Circular Connectors

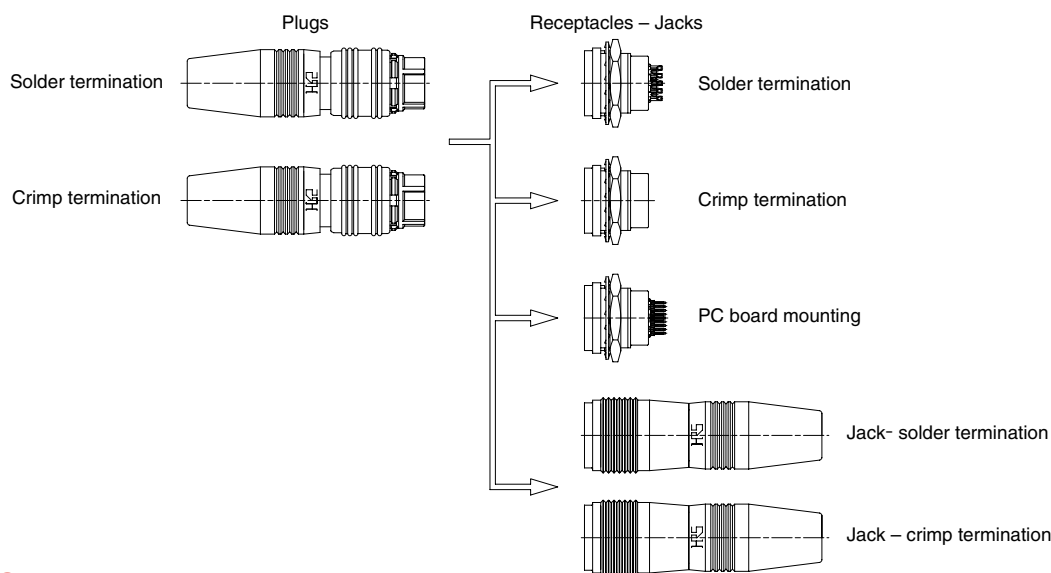
## HR25A Series



### Mated dimensions



### Connecting combinations



### Features

#### 1. Small size – high density

Outside diameters - plugs (max): 11 mm : 4,6 and 8 positions  
13 mm : 12,16 and 20 positions

#### 2. Simple push-in/ pull-out mating / un-mating

Polarized for correct insertion by a straight push-in movement.  
Built-in lock release mechanism securely locks mated connectors while allowing quick disconnection by simply pulling on the plug release collar.

#### 3. Several mounting number of positions, styles and terminations

Number of positions : 4, 6, 8, 12, 16 and 20  
Connectors : Plugs, jacks, receptacles  
Terminations : Solder, crimp or PC board through-hole (receptacles only)  
Choice of socket or pin contacts for plugs and receptacles.

#### 4. Metal shells

Secure lock between the metal shells provides excellent ground connection required in applications requiring EMI protection.

### Applications

CCD cameras, measuring instruments, entertainment centers, medical equipment and other applications requiring use of reliable small circular connectors.

## HR25A Series • Miniature Push-Pull Circular Connectors

### Specifications

|         |                |                  |                             |                         |
|---------|----------------|------------------|-----------------------------|-------------------------|
| Ratings | Current rating | 1 A              | Operating temperature range | -25°C to +85°C          |
|         | Voltage rating | 30 V AC, 42 V DC | Storage temperature range   | -25°C to +85°C (Note 1) |

| Item                     | Specification                                                                                                                                  | Conditions                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1. Insulation resistance | 1,000 MΩ min.                                                                                                                                  | 100 V DC                                                                                                              |
| 2. Withstanding voltage  | No flashover or insulation breakdown                                                                                                           | 100 V AC / one minute (test voltage)                                                                                  |
| 3. Contact resistance    | 30 mΩ max.                                                                                                                                     | 1 A DC                                                                                                                |
| 4. Durability            | Contact resistance: 50 mΩ max.                                                                                                                 | No damage, cracks or parts dislocation 1,000 cycles                                                                   |
| 5. Vibration             | No electrical discontinuity of 10 μs or longer<br>No damage, cracks or parts dislocation.                                                      | Frequency: 10 to 55 Hz, single amplitude of 0.75 mm 5 minute cycle,<br>10 cycles in each of the 3 axis                |
| 6. Humidity              | Insulation resistance: 5 MΩ min. (at high humidity)<br>Insulation resistance: 50 MΩ min. (when dry)<br>No damage, cracks or parts dislocation. | 96 hours at 40°C, and humidity of 90 to 95%                                                                           |
| 7. Temperature cycle     | Insulation resistance: 1,000 MΩ min.                                                                                                           | Temperature :-55°C → +15°C to +35°C → +85°C → +15°C to +35°C<br>Time :30min. →2to 3 min. →30min. →2to 3 min. 5 cycles |

Note: The term "storage" refers to connectors stored for long period of time prior to termination or mounting.

### Material

| Item           | Material      | Finish                    | Remarks       |
|----------------|---------------|---------------------------|---------------|
| Plugs<br>Jacks | Outer shell   | Zinc alloy                | Nickel plated |
|                | Insulator     | PPS                       | UL94V-0       |
|                | Gasket, boots | Ethylene propylene rubber | —             |
|                | Contacts      | Phosphor bronze           | Gold plated   |
| Receptacles    | Outer shell   | Zinc alloy                | Nickel plated |
|                | Insulator     | PPS                       | UL94V-0       |
|                | Contacts      | Phosphor bronze           | Gold plated   |

### Ordering information

**HR 2 5 A - 7 P - 6 S C (※※)**

①                      ②   ③                      ④   ⑤   ⑥                      ⑦

|                                                          |                                                                                                                                      |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| ① Series name: HR25A Series                              | ⑤ Contact type: S : Female contacts<br>P : Male contacts                                                                             |
| ② Shell size: Outside diameter of plug mating portion    | ⑥ Termination type: Blank : Solder<br>C : Crimp<br>D : DIP                                                                           |
| ③ Connector type: P : Plug<br>R : Receptacle<br>J : Jack | ⑦ Other specifications: 2 numerical digits will be added when there is a specifications change other than shown in positions ① to ⑥. |
| ④ Number of contacts: 4, 6, 8, 12, 16, 20                |                                                                                                                                      |

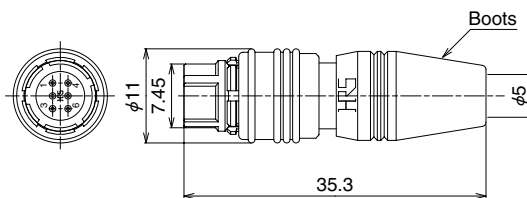
## ■ Plugs

### ● Solder termination (contacts inserted)

Shell size: 7



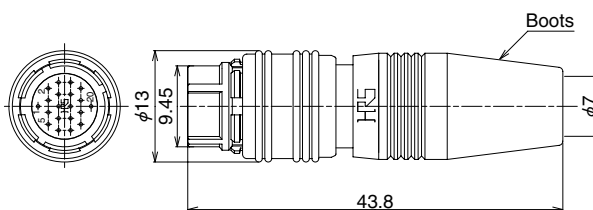
HR25A-7P-6P



Shell size: 9



HR25A-9P-20P



All dimensions: mm

| Shell size | Number of contacts | Male contact |            | Female contact |            | RoHS |
|------------|--------------------|--------------|------------|----------------|------------|------|
|            |                    | Part Number  | CL No.     | Part Number    | CL No.     |      |
| 7          | 4                  | HR25A-7P-4P  | 125-0612-1 | HR25A-7P-4S    | 125-0613-4 | YES  |
|            | 6                  | HR25A-7P-6P  | 125-0602-8 | HR25A-7P-6S    | 125-0611-9 |      |
|            | 8                  | HR25A-7P-8P  | 125-0609-7 | HR25A-7P-8S    | 125-0610-6 |      |
| 9          | 12                 | HR25A-9P-12P | 125-0607-1 | HR25A-9P-12S   | 125-0608-4 |      |
|            | 16                 | HR25A-9P-16P | 125-0605-6 | HR25A-9P-16S   | 125-0606-9 |      |
|            | 20                 | HR25A-9P-20P | 125-0600-2 | HR25A-9P-20S   | 125-0604-3 |      |

### ● Crimp termination (separate contacts required)

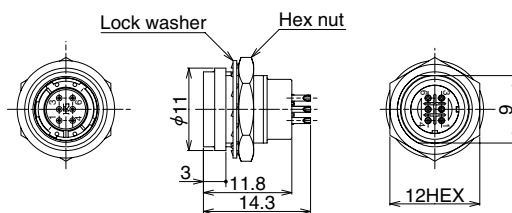
| Shell size | Number of contacts | Male contact  |            | Female contact |            | RoHS |
|------------|--------------------|---------------|------------|----------------|------------|------|
|            |                    | Part Number   | CL No.     | Part Number    | CL No.     |      |
| 9          | 12                 | HR25A-9P-12PC | 125-0652-6 | HR25A-9P-12SC  | 125-0653-9 | YES  |
|            | 16                 | HR25A-9P-16PC | 125-0650-0 | HR25A-9P-16SC  | 125-0651-3 |      |
|            | 20                 | HR25A-9P-20PC | 125-0648-9 | HR25A-9P-20SC  | 125-0649-1 |      |

## HR25A Series • Miniature Push-Pull Circular Connectors

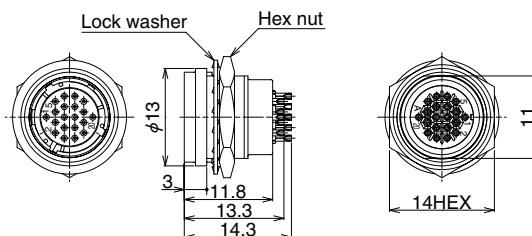
### ■ Receptacles

#### ● Solder termination (contacts inserted)

Shell size: 7



Shell size: 9

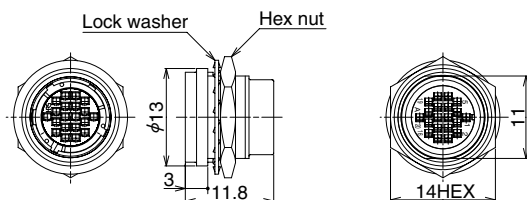


All dimensions: mm

| Shell size | Number of contacts | Male contact |            | Female contact |            | RoHS |
|------------|--------------------|--------------|------------|----------------|------------|------|
|            |                    | Part Number  | CL No.     | Part Number    | CL No.     |      |
| 7          | 4                  | HR25A-7R-4P  | 125-0623-8 | HR25A-7R-4S    | 125-0622-5 | YES  |
|            | 6                  | HR25A-7R-6P  | 125-0621-2 | HR25A-7R-6S    | 125-0603-0 |      |
|            | 8                  | HR25A-7R-8P  | 125-0620-0 | HR25A-7R-8S    | 125-0619-0 |      |
| 9          | 12                 | HR25A-9R-12P | 125-0618-8 | HR25A-9R-12S   | 125-0617-5 |      |
|            | 16                 | HR25A-9R-16P | 125-0616-2 | HR25A-9R-16S   | 125-0615-0 |      |
|            | 20                 | HR25A-9R-20P | 125-0614-7 | HR25A-9R-20S   | 125-0601-5 |      |

#### ● Crimp termination (separate contacts required)

HR25A-9R-20SC



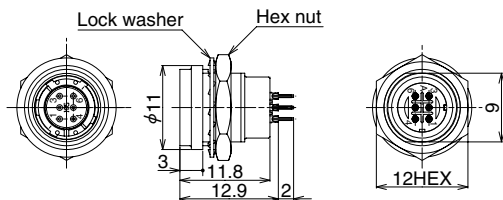
All dimensions: mm

| Shell size | Number of contacts | Pin contact   |            | Female contact |            | RoHS |
|------------|--------------------|---------------|------------|----------------|------------|------|
|            |                    | Part Number   | CL No.     | Part Number    | CL No.     |      |
| 9          | 12                 | HR25A-9R-12PC | 125-0659-5 | HR25A-9R-12SC  | 125-0658-2 | YES  |
|            | 16                 | HR25A-9R-16PC | 125-0657-0 | HR25A-9R-16SC  | 125-0656-7 |      |
|            | 20                 | HR25A-9R-20PC | 125-0654-1 | HR25A-9R-20SC  | 125-0655-4 |      |

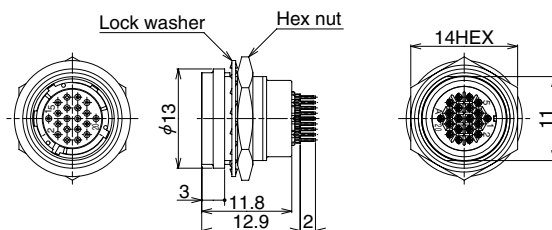
## Receptacles

### Through hole (for PC board mounting)

Shell size: 7  
HR25A-7R-6SA



Shell size: 9  
HR25A-9R-20SA



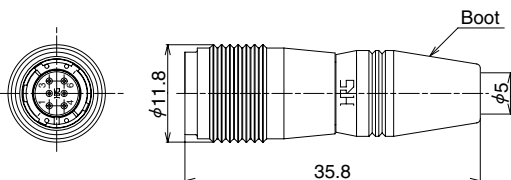
All dimensions: mm

| Shell size | Number of contacts | Male contact  |            | Female contact |            | RoHS |
|------------|--------------------|---------------|------------|----------------|------------|------|
|            |                    | Part Number   | CL No.     | Part Number    | CL No.     |      |
| 7          | 4                  | HR25A-7R-4PA  | 125-0647-6 | HR25A-7R-4SA   | 125-0646-3 | YES  |
|            | 6                  | HR25A-7R-6PA  | 125-0645-0 | HR25A-7R-6SA   | 125-0644-8 |      |
|            | 8                  | HR25A-7R-8PA  | 125-0643-5 | HR25A-7R-8SA   | 125-0642-2 |      |
| 9          | 12                 | HR25A-9R-12PA | 125-0641-0 | HR25A-9R-12SA  | 125-0640-7 |      |
|            | 16                 | HR25A-9R-16PA | 125-0639-8 | HR25A-9R-16SA  | 125-0638-5 |      |
|            | 20                 | HR25A-9R-20PA | 125-0637-2 | HR25A-9R-20SA  | 125-0636-0 |      |

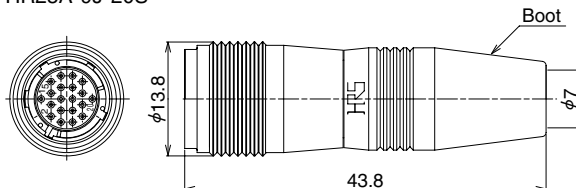
## Jacks

### Solder termination (contact inserted)

Shell size: 7  
HR25A-7J-6S



Shell size: 9  
HR25A-9J-20S



All dimensions: mm

| Shell size | Number of contacts | Male contact |            | Female contact |            | RoHS |
|------------|--------------------|--------------|------------|----------------|------------|------|
|            |                    | Part Number  | CL No.     | Part Number    | CL No.     |      |
| 7          | 4                  | HR25A-7J-4P  | 125-0635-7 | HR25A-7J-4S    | 125-0634-4 | YES  |
|            | 6                  | HR25A-7J-6P  | 125-0633-1 | HR25A-7J-6S    | 125-0632-9 |      |
|            | 8                  | HR25A-7J-8P  | 125-0631-6 | HR25A-7J-8S    | 125-0630-3 |      |
| 9          | 12                 | HR25A-9J-12P | 125-0629-4 | HR25A-9J-12S   | 125-0628-1 |      |
|            | 16                 | HR25A-9J-16P | 125-0627-9 | HR25A-9J-16S   | 125-0626-6 |      |
|            | 20                 | HR25A-9J-20P | 125-0625-3 | HR25A-9J-20S   | 125-0624-0 |      |

### Crimp termination (separate contacts required)

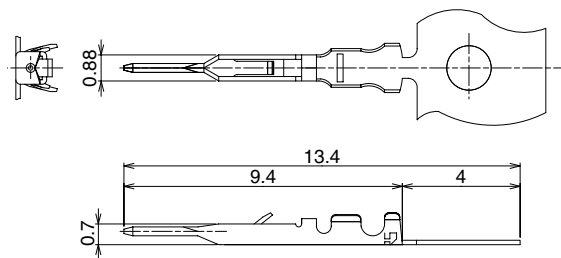
All dimensions: mm

| Shell size | Number of contacts | Male contact  |            | Female contact |            | RoHS |
|------------|--------------------|---------------|------------|----------------|------------|------|
|            |                    | Part Number   | CL No.     | Part Number    | CL No.     |      |
| 9          | 12                 | HR25A-9J-12PC | 125-0665-8 | HR25A-9J-12SC  | 125-0664-5 | YES  |
|            | 16                 | HR25A-9J-16PC | 125-0663-2 | HR25A-9J-16SC  | 125-0662-0 |      |
|            | 20                 | HR25A-9J-20PC | 125-0661-7 | HR25A-9J-20SC  | 125-0660-4 |      |

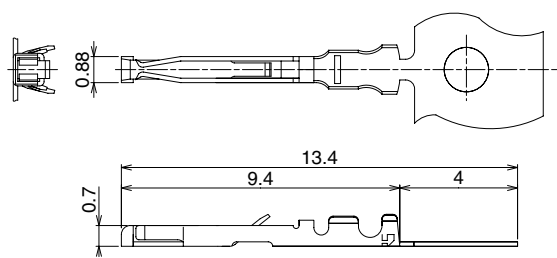
## HR25A Series • Miniature Push-Pull Circular Connectors

### ■ Crimp contacts

**Male contact**



**Female contact**



All dimensions: mm

| Part Number | CL No.     | Packaging            | Conductor size / construction | RoHS |
|-------------|------------|----------------------|-------------------------------|------|
| HR25-PC-111 | 125-0419-1 | 100 pcs. per bag     | AWG#30                        | YES  |
| HR25-PC-211 | 125-0420-0 | 10,000 pcs. per reel |                               |      |

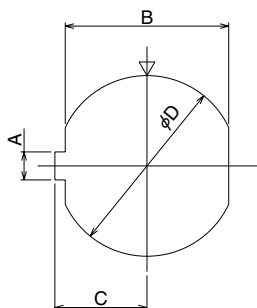
| Part Number | CL No.     | Packaging            | Conductor size / construction | RoHS |
|-------------|------------|----------------------|-------------------------------|------|
| HR25-SC-111 | 125-0421-3 | 100 pcs. per bag     | AWG#30                        | YES  |
| HR25-SC-211 | 125-0422-6 | 10,000 pcs. per reel |                               |      |

Note: Wire jacket outer diameter 0.71 mm max.

### ◆ Applicable tools

| Type                                                        | Part Number   | CL No.     | Used on                    |                |
|-------------------------------------------------------------|---------------|------------|----------------------------|----------------|
| Manual contact crimping tool                                | HR25-TA3032HC | 150-0207-3 | HR25-PC-111 or HR25-SC-111 |                |
| Automatic crimping machine                                  | CM-105        | 901-0005-4 | —                          |                |
| Applicator                                                  | AP105-HR25-1  | 901-2040-6 | HR25-PC-211 or HR25-SC-211 |                |
| Cable clamp crimp tool                                      | HR10A-TC-02   | 150-0041-2 |                            |                |
| Solder termination fixture<br>Plug shell tightening fixture | HR25A-7P-T02  | 150-0243-7 | HR25A-7P                   | For tightening |
|                                                             | HR25A-7P-T03  | 150-0248-0 | HR25A-7P                   | For wiring     |
|                                                             | HR25A-9P-T02  | 150-0242-4 | HR25A-9P                   | For tightening |
|                                                             | HR25A-9P-T03  | 150-0247-8 | HR25A-9P                   | For wiring     |
| Contact extraction tool                                     | HR25-TP       | 150-0091-0 | HR25-PC-111 or HR25-SC-111 |                |
| Hex set screw driver                                        | PB205/1.27    | 150-0066-3 |                            |                |

## ◆ Panel cutouts

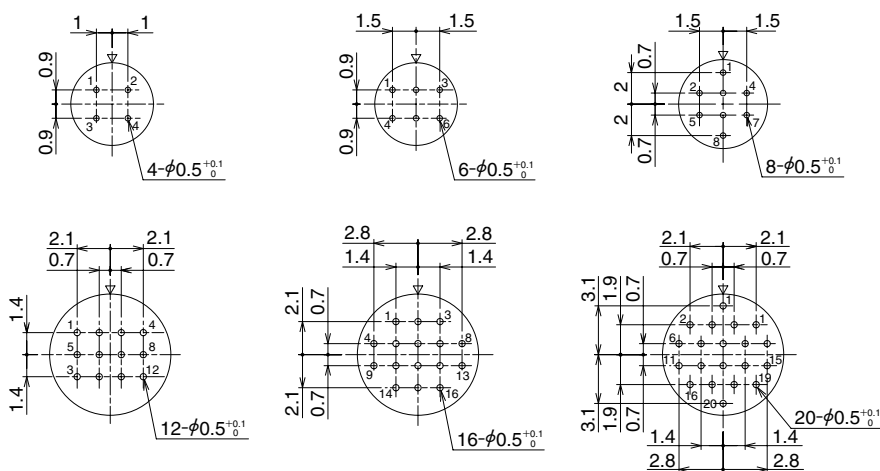


All dimensions: mm

| Dimensions                 | HR25A-7R          | HR25A-9R           |
|----------------------------|-------------------|--------------------|
| A                          | 1.55 +0.05/ -0    |                    |
| B                          | 9.05 +0.03/ -0.02 | 11.05 +0.03/ -0.02 |
| C                          | 5.1 +0.1/ -0      | 6.1 +0.1/ -0       |
| D                          | 10 +0.05/ -0      | 12 +0.05/ -0       |
| Applicable panel thickness | 0.7 to 2          |                    |

Notes 1: The receptacle panel cutout is a view from the mating side.

## ◆ PCB mounting pattern (for through-hole PC board mounting)

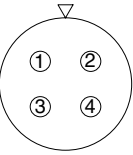
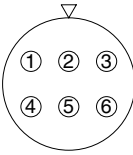
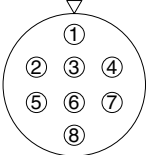


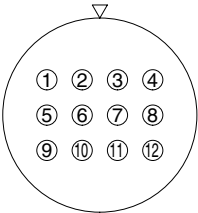
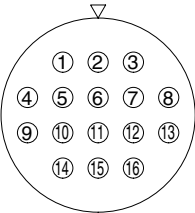
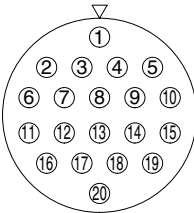
Note 1: The contact configuration is a view from the mating side.

Note 2: Plated through hole location and diameter tolerance:  $\pm 0.05$ .

## HR25A Series Miniature Push-Pull Circular Connectors

### ◆ Contact Position Arrangement

| Shell size               | 7                                                                                 |                                                                                    |                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Contact configuration    |  |  |  |
| Number of contacts       | 4                                                                                 | 6                                                                                  | 8                                                                                   |
| Solderpot inner diameter | 0.5mm                                                                             |                                                                                    |                                                                                     |

| Shell size               | 9                                                                                 |                                                                                    |                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Contact configuration    |  |  |  |
| Number of contacts       | 12                                                                                | 16                                                                                 | 20                                                                                  |
| Solderpot inner diameter | 0.5mm                                                                             |                                                                                    |                                                                                     |

Note 1: The contact configuration as viewed from the mating side.

Note 2: The ▽ symbol in the above illustrations indicates the mating side guide position of the receptacle.

### ■ Precautions

1. Make sure that turn off the power to the circuit before mating / un-mating the connector.
2. Make sure that use the connector of female contacts on the power side to the circuit.
3. Make sure that use the connector with the screw lock activated (thoroughly tightened).



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