

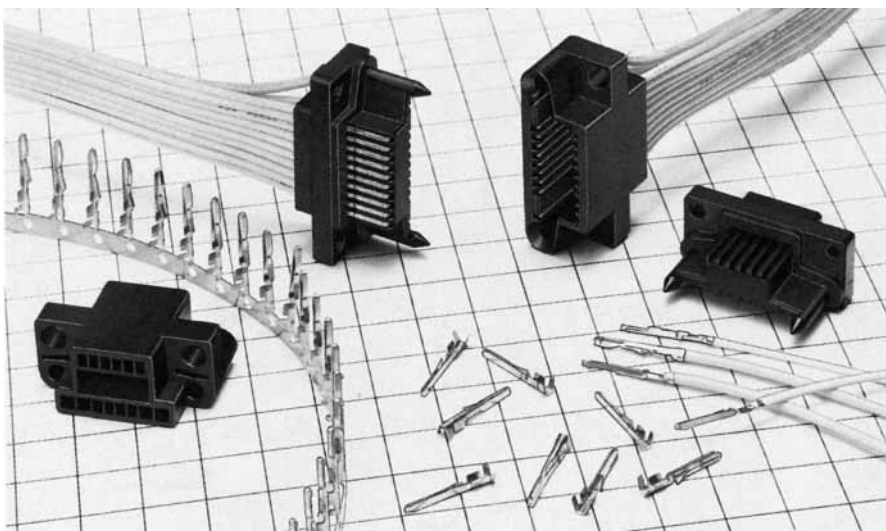
# QR/P8 SERIES

## Ultra-small Rectangular Multi-electrode solderless Connectors for Rack and Panel Applications

### General

QR/P8 Series is a series of small connectors for rack and panel application. This is a smaller-size version of the QR/P and QR/P1 Series, whose rectangular multi-electrode plug in connectors for racks and panels have

been well received in the market. Three different electrode numbers are available: 8, 12 and 20. Wires are connected to the connectors without solder for easier connection and higher reliability.



### Features

- (1) The connector of this series is about 20% smaller in length than of the QR/P4 Series with the same number of electrodes.
- (2) Two pairs of electrodes on two sides have a pitch of 5.3 mm at the reinforcement of the housing guide pins, making the connector size smaller and enabling the connector to withstand high voltages. These electrodes therefore can be used for power supply. The terminals for signals have a pitch of 2 mm
- (3) Wires of AWG #20 - 28 can be connected with the two pairs of terminals on the two sides, while wires of AWG #24 - 28 can be connectord with the terminals for signals.
- (4) The pins give stable contact pressure because of their point contact with the receptacle blades, and have a larger allowance for the variation of connection length - a characteristic of plug-in connectors.
- (5) The guide pins and the housing body are moulded as one piece to achieve a smaller connector size.
- (6) Since the connectors are mounted on racks or panels with stepped screws, connection and disconnection can be done easily.
- (7) The connectors of this series have passed UL, CSA and TÜV standards.

### Application

PPC, Transmission and reception equipment, Data Communication, Vending Machine, Measuring Instruments, Automatic Equipment, Switchboards, etc.

## Specification

| Main Specifications            |                           |          |
|--------------------------------|---------------------------|----------|
| Contact resistance             | 30mΩ or less at DC 1A     |          |
| Insulation resistance          | 1000MΩ or less at DC 500V |          |
| Withstand voltage (for 1 min.) | Power supply              | AC 2000V |
|                                | Signal unit               | AC 500V  |

| Item      | Material                       | Finish                               |
|-----------|--------------------------------|--------------------------------------|
| Insulator | Polycarbonate resin<br>UL94V-0 | Black                                |
| Contact   | Phosphor Bronze                | Selective Gold<br>plated over Nickel |

## Material and Finish

| QR/P8 ratings approved by safety standards |              |              |         |
|--------------------------------------------|--------------|--------------|---------|
| Safety standard                            |              | UL, CSA      | TÜV     |
| Operating temperature range                |              | - 10 ~ + 60℃ |         |
| Voltage rating                             | Power supply | AC 300V      | AC 380V |
|                                            | Signal unit  | AC 30V       | AC 30V  |
| Rated current                              | AWG#20       | 3A           | 2.5A    |
|                                            | AWG#22       | 3A           | 2.5A    |
|                                            | AWG#24       | Power unit   | 2A      |
|                                            |              | Signal unit  | 2A      |
|                                            | AWG#26       | 1A           | 1A      |
|                                            | AWG#28       | 1A           | 1A      |

## Ordering Information

### ▲ Connector Unit

QR / P8 — 12 P — C (01)  
 (1) (2)(3) (4) (5)

### ▲ Contact

QR / P8 — PC — 1 1 1  
 (1) (6) (7)(8)(9)

(1) Series Name

(2) No. of Pins (8, 12, 20)

(3) Type of Housing

P: Plug Housing

S: Socket Housing

(4) Type of Termination

C: Crimping

(5) UL, CSA Approved Spec.

(6) Type of Contact

PC: Pin Contact

SC: Socket Contact

(7) Contact Type

1: Loose Contact

2: Chain Contact

(8) Applicable wire

1: Thick Wire AWG #20 - #24 . . . For two holes at both ends

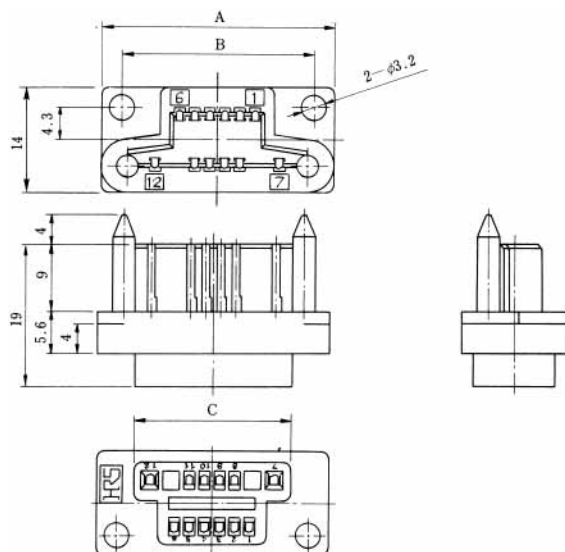
2: Thin Wire AWG #24 - #28

(9) Finish

1: Selective Gold plated over Nickel

## Housing

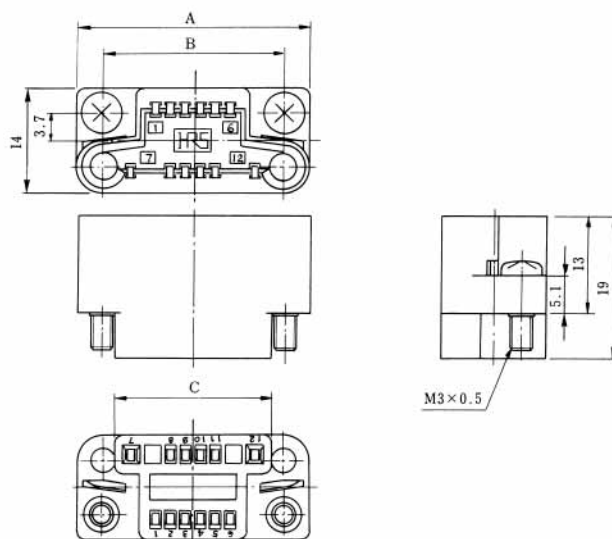
Male Housing



Unit: mm

| HRS No.         | No. of pin | Part No.         | A  | B    | C  | RoHS |
|-----------------|------------|------------------|----|------|----|------|
| CL221-0167-3-01 | 8          | QR/P8-8P-C (01)  | 27 | 21.6 | 17 | YES  |
| CL221-0169-9-01 | 12         | QR/P8-12P-C (01) | 31 | 25.6 | 21 |      |
| CL221-0171-0-01 | 20         | QR/P8-20P-C (01) | 39 | 33.6 | 29 |      |

Female Housing



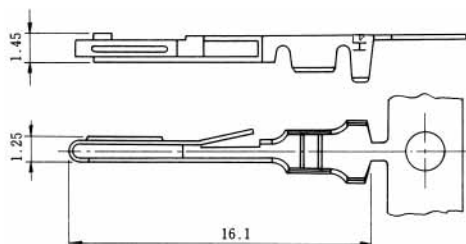
Unit: mm

| HRS No.         | No. of pin | Part No.         | A  | B    | C  | RoHS |
|-----------------|------------|------------------|----|------|----|------|
| CL221-0168-6-01 | 8          | QR/P8-8S-C (01)  | 27 | 20.4 | 17 | YES  |
| CL221-0170-8-01 | 12         | QR/P8-12S-C (01) | 31 | 24.4 | 21 |      |
| CL221-0172-3-01 | 20         | QR/P8-20S-C (01) | 39 | 32.4 | 29 |      |

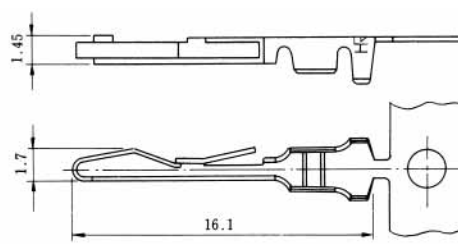
Note: Determine the combinations with the panel so that the mating clearance between the P side and S side is 1mm or less.

## Contact

Thick Wire (For Two Contact Holes at Male Contact Both Ends)



Thick Wire (For Two Contact Holes at Female Contact Both Ends)



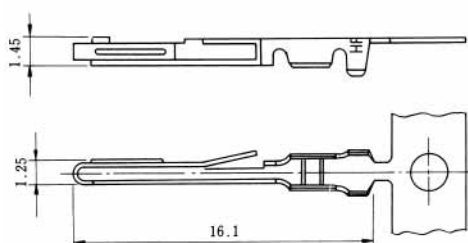
Selective gold plated with nickel under plating

| Applicable Wire | HRS No.      | Part No.     | Type  | Packing | RoHS |
|-----------------|--------------|--------------|-------|---------|------|
| AWG#20-24       | CL221-0182-7 | QR/P8-PC-111 | Loose | 100pin  | YES  |
|                 | CL221-0175-1 | QR/P8-PC-211 | Chain | 8000pin |      |

| Applicable Wire | HRS No.      | Part No.     | Type  | Packing | RoHS |
|-----------------|--------------|--------------|-------|---------|------|
| AWG#20-24       | CL221-0183-0 | QR/P8-SC-111 | Loose | 100pin  | YES  |
|                 | CL221-0173-6 | QR/P8-SC-211 | Chain | 8000pin |      |

## Contact

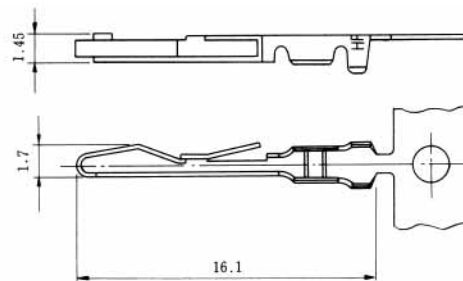
### Signal Male Contact



Partly gold plated over nickel plating

| Applicable Wire | HRS No.      | Part No.     | Type  | Packing | RoHS |
|-----------------|--------------|--------------|-------|---------|------|
| AWG#24-28       | CL221-0184-2 | QR/P8-PC-121 | Loose | 100pin  | YES  |
|                 | CL221-0176-4 | QR/P8-PC-221 | Chain | 8000pin |      |

### Signal Female Contact

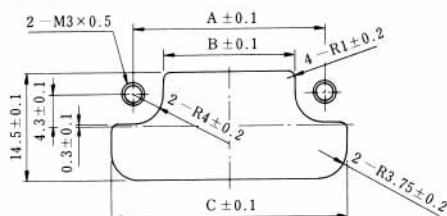


Partly gold plated over nickel plating

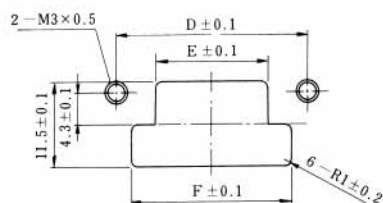
| Applicable Wire | HRS No.      | Part No.     | Type  | Packing | RoHS |
|-----------------|--------------|--------------|-------|---------|------|
| AWG#24-28       | CL221-0185-5 | QR/P8-SC-121 | Loose | 100pin  | YES  |
|                 | CL221-0174-9 | QR/P8-SC-221 | Chain | 8000pin |      |

## Panel Cutout

### QR/P8-※P-C



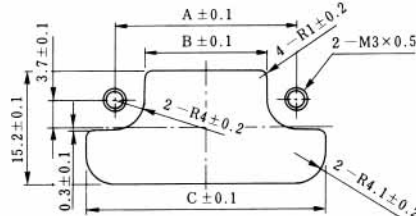
Mounting from rear surface of panel



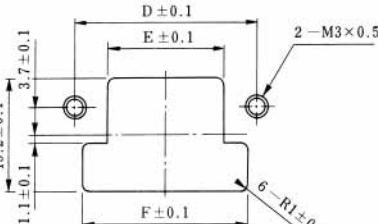
Mounting from front surface of panel

| No. of pins    |   | 8pin | 12pin | 20pin |
|----------------|---|------|-------|-------|
| Rear Mounting  | A | 21.6 | 25.6  | 33.6  |
|                | B | 13.6 | 17.6  | 25.6  |
|                | C | 27.5 | 31.5  | 39.5  |
| Front Mounting | D | 21.6 | 25.6  | 33.6  |
|                | E | 11.1 | 15.1  | 23.1  |
|                | F | 17.5 | 21.5  | 29.5  |

### QR/P8-※S-C



Mounting from rear surface of panel



Mounting from front surface of panel

| No. of pins    |   | 8pin | 12pin | 20pin |
|----------------|---|------|-------|-------|
| Rear Mounting  | A | 20.4 | 24.4  | 32.4  |
|                | B | 12.4 | 16.4  | 24.4  |
|                | C | 28.2 | 32.2  | 40.2  |
| Front Mounting | D | 20.4 | 24.4  | 32.4  |
|                | E | 11.6 | 15.6  | 23.6  |
|                | F | 18.2 | 22.2  | 30.2  |

## Tooling



Hand Crimp Tool



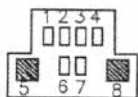
Auto Crimp Machine CM-105  
CL901-0005-4

| Kind                          | HRS No.      | Part No.      | Applicable Contact |
|-------------------------------|--------------|---------------|--------------------|
| Hand Crimp Tool               | CL250-0030-4 | TC-QR/P8-111  | QR/P8-PC-111       |
|                               | CL250-0031-7 | TC-QR/P8-121  | QR/P8-SC-111       |
| Auto Crimp Machine Applicator | CL901-2533-3 | AP105-QR/P8-1 | QR/P8-PC-121       |
|                               |              |               | QR/P8-SC-121       |
|                               | CL901-2534-6 | AP105-QR/P8-2 | QR/P8-PC-211       |
|                               |              |               | QR/P8-SC-211       |
| Contact Extractor             | CL250-0033-2 | TC-QR/P8-21   |                    |

## Contacts for thick wire Contact Configuration

Male Housing (Viewed from Wiring Side)

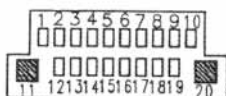
■: indicates a contact hole for thick wire



QR/P8-8P-C (01)



QR/P8-12P-C (01)



QR/P8-20P-C (01)