

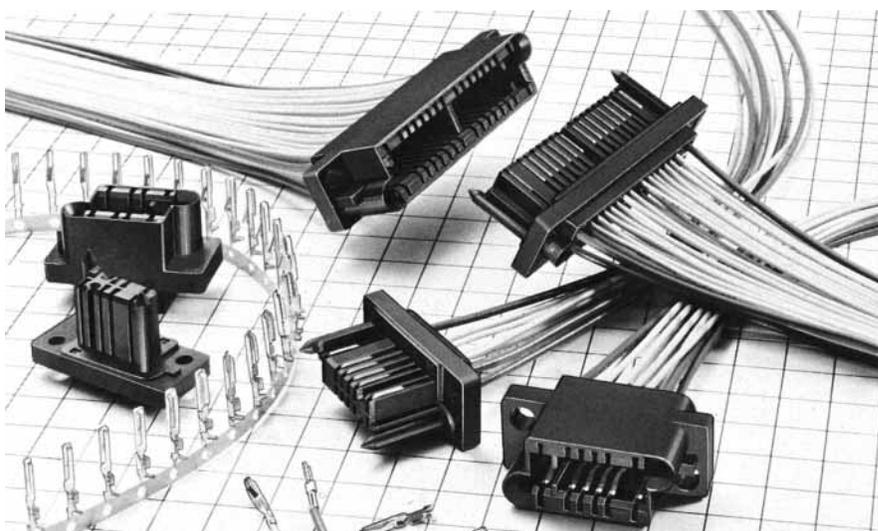
QR/P4 SERIES

Small Rectangular Multi-electrode Solderless Connectors for Racks and Panels

General

QR/P4 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.

Six models with different numbers of contacts are available: 8, 12, 16, 24, 32 and 40. Wires are connected to the connectors without solder for easier connection and higher reliability.



Features

- (1) The pins can be smoothly inserted into the receptacle, and give stable contact pressure because of their point contact with the receptacle blades. Furthermore, they have a larger allowance for the variation of connection length - a characteristic of plug-in connections.
- (2) The connector size has been made smaller by separating the terminals for signals from those for voltage supply.
- (3) The pitch of the signal terminals inside the housing is 2.54mm. Two pairs of diametrically opposed electrodes (four electrodes in total) on the two sides are arranged with a pitch of 5.08mm so that they can withstand high voltage, and can be used for power supply. In addition, a nonflammable material (UL94V-0) is used as the insulating housing of the connectors.
- (4) Guide pins and the housing body are molded as one piece to achieve a smaller connector size.
- (5) Since the connectors are mounted on racks or panels with stepped screws, connection and disconnection can be done easily.
- (6) The contact for female terminals in the housing is deeper than the fitting surface of the housing which conforms to the finger test (UL Standard 1950).
- (7) The connectors of this series have passed UL, CSA and TÜV standard.

Application

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

Specification

| Item | Specifications | |
|-------------------------------------|-----------------------|-------------------|
| Contact Resistance | Power | Max. 15mΩ at DC1A |
| | Signal | Max. 15mΩ at DC1A |
| Insulation Resistance | Min. 5000MΩ at DC500V | |
| Withstand Voltage (for 1 minute) | Power | AC 2000V |
| | Signal | AC 500V |
| Rated Current | Power | 3A |
| | Signal | 1A |
| Rated Voltage | Power | AC 300V |
| | Signal | AC 250V |

| Item | Material | Finish |
|-----------|---------------------|------------------------------------|
| Insulator | PBT resin *:UL94V-0 | Black |
| Contact | Phosphor Bronze | Selective Gold plating over Nickel |

| Ratings authorized by QR/P4 safety standards | | | |
|--|--------------|---------------|----------------|
| Safety standard | | UL CSA. TÜV | |
| Operating temperature | | - 10 ~ + 60°C | |
| Rated Voltage | Power supply | AC 30V | AC380V, DC450V |
| | Signal unit | AC 250V | AC120V, DC150V |
| Rated current | AWG#20 | 3A | 2.5A |
| | AWG#22 | | 1A |
| | AWG#24 | 2A | |
| | AWG#26 | 1A | |
| | AWG#28 | | |

Ordering Information

▲ Connector Unit

QR / P4 — 12 P — C — (01)
 (1) (2)(3) (4) (10)

▲ Contact

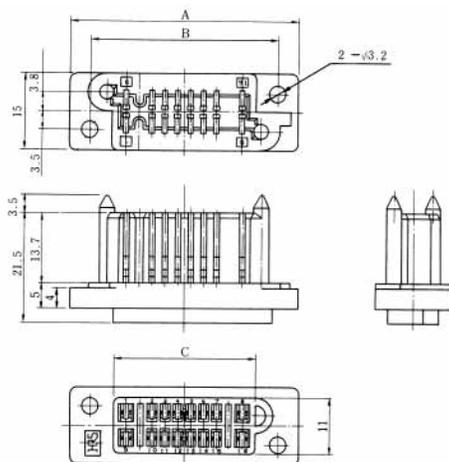
QR / P1 — PC 2 A — 1 1 1
 (1) (5) (6) (7)(8)(9)

- (1) Series name
- (2) No. of contacts (8, 12, 16, 24, 32, 40)
- (3) Type of Housing
P: Plug Housing
S: Socket Housing
- (4) Type of termination
C: Crimping
- (5) Type of Contact
PC: Pin Contact
SC: Socket Contact

- (6) Size of Barrel
2A: Thin Wire (UL1007 Type)
2B: Thin Wire (UL1007 Type) . . . For 4 contact holes at both ends
- (7) Contact Type
1: Loose Contact
2: Chain Contact
- (8) Applicable wire
1: Thin Wire AWG #24 - #28
2: Thick Wire AWG #20 - #24
- (9) Finish
1: Selective Gold plated over Nickel
- (10) UL, CSA, TÜV
Approved Spec

Housing

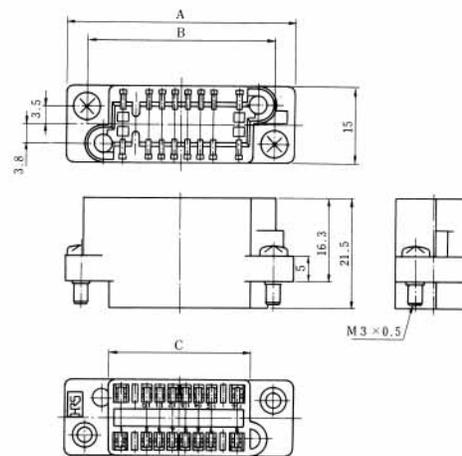
Male Housing



Unit: mm

| HRS No. | No. of Pin | Part No. | A | B | C | RoHS |
|-----------------|------------|-----------------|-------|-------|-------|------|
| CL221-0159-5-01 | 8 | QR/P4-8P-C(01) | 34.68 | 26.68 | 17.68 | ○ |
| CL221-0139-8-01 | 12 | QR/P4-12P-C(01) | 39.8 | 31.8 | 22.8 | |
| CL221-0155-4-01 | 16 | QR/P4-16P-C(01) | 44.84 | 36.84 | 27.84 | |
| CL221-0141-0-01 | 24 | QR/P4-24P-C(01) | 55 | 47 | 38 | |
| CL221-0153-9-01 | 32 | QR/P4-32P-C(01) | 67.7 | 59.7 | 50.7 | |
| CL221-0211-3-01 | 40 | QR/P4-40P-C(01) | 77.86 | 69.86 | 60.86 | |

Female Housing



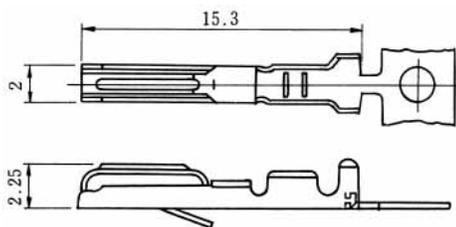
Unit: mm

| HRS No. | No. of Pin | Part No. | A | B | C | RoHS |
|-----------------|------------|-----------------|-------|-------|-------|------|
| CL221-0160-4-01 | 8 | QR/P4-8S-C(01) | 34.68 | 26.68 | 17.68 | ○ |
| CL221-0140-7-01 | 12 | QR/P4-12S-C(01) | 39.8 | 31.8 | 22.8 | |
| CL221-0156-7-01 | 16 | QR/P4-16S-C(01) | 44.84 | 36.84 | 27.84 | |
| CL221-0142-2-01 | 24 | QR/P4-24S-C(01) | 55 | 47 | 38 | |
| CL221-0154-1-01 | 32 | QR/P4-32S-C(01) | 67.7 | 59.7 | 50.7 | |
| CL221-0212-6-01 | 40 | QR/P4-40S-C(01) | 77.86 | 69.86 | 60.86 | |

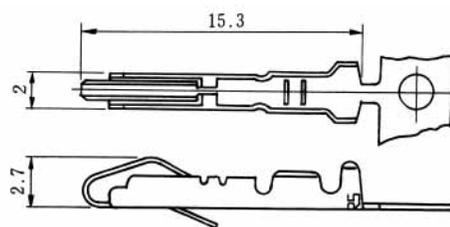
Note: Determine the combinations with the panel so that the mating clearance between the P side and S side is 1.5mm or less.

Contact

Power Male Contact



Power Female Contact



Selective gold plated with nickel under plating

| Applicable Wire | HRS No. | Part No. | Type | Packing | RoHS |
|-----------------|-----------------|--------------------|---------------|----------|------|
| AWG#20~24 | CL221-0115-0-12 | QR/P1-PC2B-121(12) | Loose contact | 100pin | ○ |
| | CL221-0119-0-12 | QR/P1-PC2B-221(12) | Chain contact | 5,000pin | |

Selective gold plated with nickel under plating

| Applicable Wire | HRS No. | Part No. | Type | Packing | RoHS |
|-----------------|-----------------|--------------------|---------------|----------|------|
| AWG#20~24 | CL221-0117-2-12 | QR/P1-SC2B-121(12) | Loose contact | 100pin | ○ |
| | CL221-0121-2-12 | QR/P1-SC2B-221(12) | Chain contact | 5,000pin | |

Contacts for thick wire Contact Configuration

Male Housing (Viewed from Wiring Side)

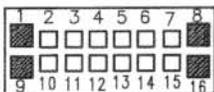
■: indicates a contact hole for thick wire



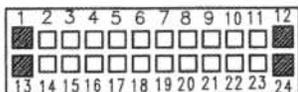
QR/P4-8P-C (01)



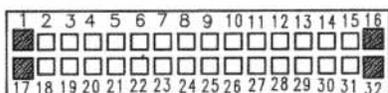
QR/P4-12P-C (01)



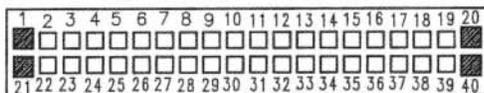
QR/P4-16P-C (01)



QR/P4-24P-C (01)



QR/P4-32P-C (01)



QR/P4-40P-C (01)