

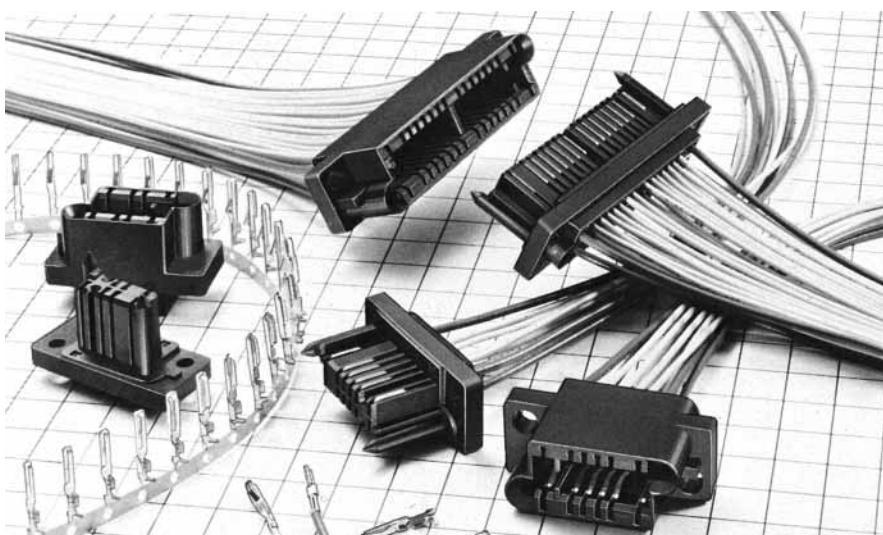
QR/P4 SERIES

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℃ | |
| 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)

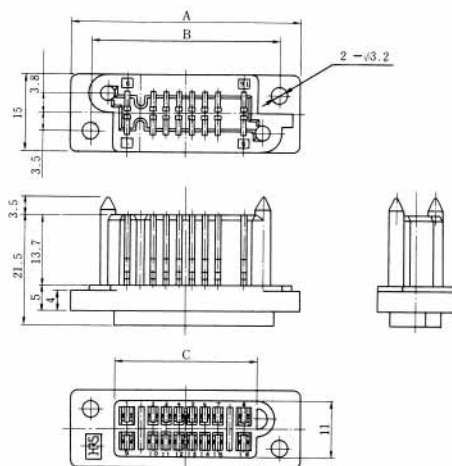
▲ Contact

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

- | | |
|--|--|
| (1) Series name | (6) Size of Barrel |
| (2) No.of contacts (8, 12, 16, 24, 32, 40) | 2A: Thin Wire (UL1007 Type) |
| (3) Type of Housing | 2B: Thin Wire (UL1007 Type) . . . For 4 contact holes at both ends |
| P: Plug Housing | (7) Contact Type |
| S: Socket Housing | 1: Loose Contact |
| (4) Type of termination | 2: Chain Contact |
| C: Crimping | (8) Applicable wire |
| (5) Type of Contact | 1: Thin Wire AWG #24 - #28 |
| PC: Pin Contact | 2: Thick Wire AWG #20 - #24 |
| SC: Socket Contact | (9) Finish |
| | 1: Selective Gold plated over Nickel |
| | (10) UL, CSA, TÜV |
| | Approved Spec |

Housing

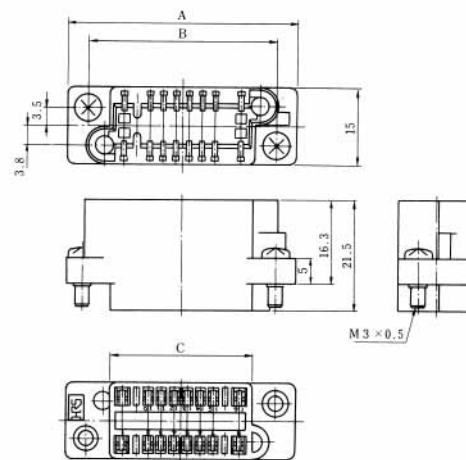
Male Housing



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



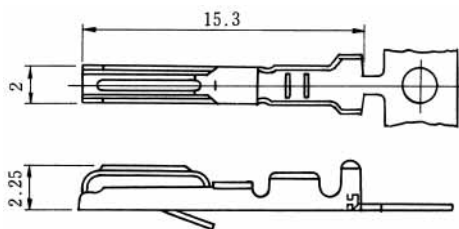
Unit: mm

| 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 | |

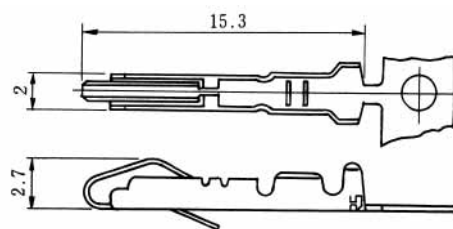
Note: Determine the combinations with the panel so that the mating clearance between the P side and S side is 1.5mm or less.

Contact

Power Male Contact



Power Female Contact



Selective gold plated with nickel under plating

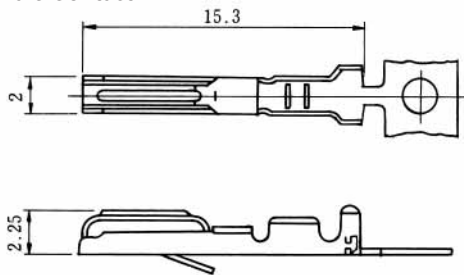
| Applicable Wire | HRS No. | Part No. | Type | Packing | RoHS |
|-----------------|-----------------|---------------------|---------------|----------|------|
| AWG#20~24 | CL221-0115-0-12 | QR/P1-PC2B-121 (12) | Loose contact | 100pin | ○ |
| | CL221-0119-0-12 | QR/P1-PC2B-221 (12) | Chain contact |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

Contact

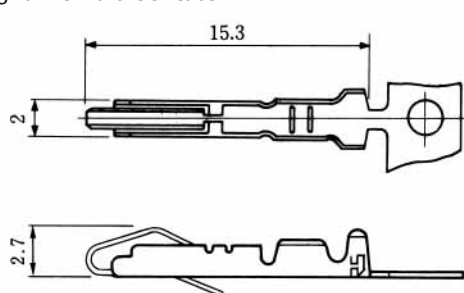
Signal Male Contact



Partly gold plated over nickel plating

| Applicable Wire | HRS No. | Part No. | Type | Packing | RoHS |
|-----------------|-----------------|---------------------|---------------|----------|------|
| AWG#20~24 | CL221-0103-0-12 | QR/P1-PC2A-111 (12) | Loose contact | 100pin | ○ |
| | CL221-0107-1-12 | QR/P1-PC2A-211 (12) | Chain contact | 5,000pin | |

Signal Female Contact

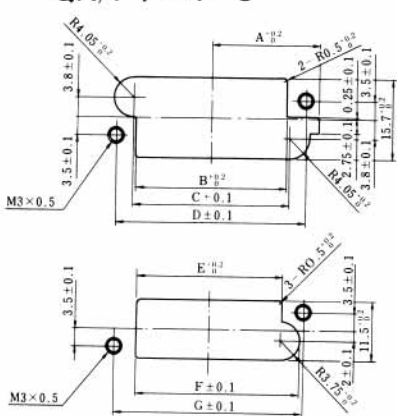


Partly gold plated over nickel plating

| Applicable Wire | HRS No. | Part No. | Type | Packing | RoHS |
|-----------------|-----------------|---------------------|---------------|----------|------|
| AWG#24~28 | CL221-0105-6-12 | QR/P1-SC2A-111 (12) | Loose contact | 100pin | ○ |
| | CL221-0109-7-12 | QR/P1-SC2A-211 (12) | Chain contact | 5,000pin | |

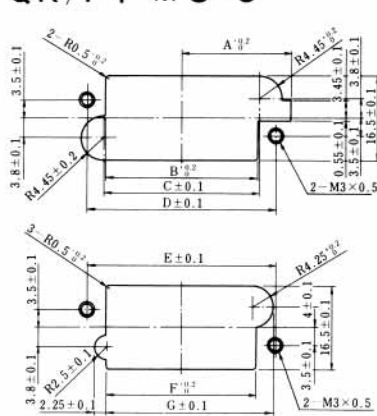
Panel Cutout

QR/P4-※P-C



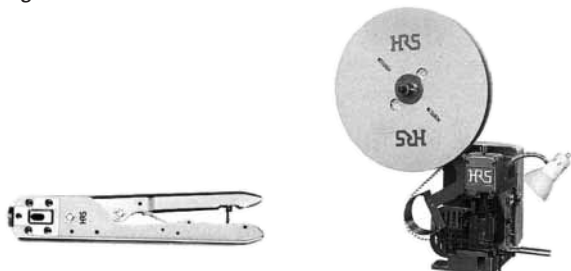
| No. of pin | | 8pin | 12pin | 16pin | 24pin | 32pin | 40pin |
|----------------|---|-------|-------|-------|-------|-------|-------|
| Rear Mounting | A | 15.87 | 18.45 | 20.97 | 26.05 | 32.4 | 37.48 |
| | B | 19.18 | 24.3 | 29.34 | 39.5 | 52.2 | 62.36 |
| | C | 20.18 | 25.3 | 30.34 | 40.5 | 53.2 | 63.36 |
| | D | 26.68 | 31.8 | 36.84 | 47 | 59.7 | 69.86 |
| Front Mounting | E | 18.18 | 23.3 | 28.34 | 38.5 | 51.2 | 61.36 |
| | F | 21.68 | 26.8 | 31.84 | 42 | 54.7 | 64.86 |
| | G | 26.68 | 31.8 | 36.84 | 47 | 59.7 | 69.86 |

QR/P4-※S-C



| No. of pin | | 8pin | 12pin | 16pin | 24pin | 32pin | 40pin |
|----------------|---|-------|-------|-------|-------|-------|-------|
| Rear Mounting | A | 16.87 | 18.95 | 21.49 | 26.57 | 32.9 | 37.98 |
| | B | 19.68 | 24.8 | 29.84 | 40 | 52.7 | 62.86 |
| | C | 20.18 | 25.3 | 30.34 | 40.5 | 53.2 | 63.36 |
| | D | 26.68 | 31.8 | 36.84 | 47 | 59.7 | 69.86 |
| Front Mounting | E | 26.68 | 31.8 | 38.84 | 47 | 59.7 | 69.86 |
| | F | 19.18 | 24.3 | 29.34 | 39.5 | 52.2 | 62.36 |
| | G | 22.68 | 27.8 | 32.84 | 43 | 55.7 | 65.68 |

Tooling



Hand Crimp Tool

Auto Crimp Machine
CM-105
CL901-0005-4

| Kind | HRS No. | Part No. | Applicator Contact |
|-------------------------------|--------------|------------------|--------------------|
| Hand Crimp Tool | CL250-0021-3 | TC-QR/P1-PC2B | QR/P1-PC2B-121 |
| | CL250-0016-3 | TC-QR/P1-PC2A | QR/P1-PC2A-111 |
| | CL250-0023-9 | TC-QR/P1-SC2B | QR/P1-SC2B-121 |
| | CL250-0018-9 | TC-QR/P1-SC2A | QR/P1-SC2A-111 |
| Auto Crimp Machine Applicator | CL901-2530-5 | AP105-QR/P1-2B-2 | QR/P1-PC2B-221 |
| | | | QR/P1-SC2B-221 |
| | CL901-2528-3 | AP105-QR/P1-2A-1 | QR/P1-PC2A-211 |
| Extraction Tool | CL250-0029-5 | TC-QR/P4-21 | QR/P1-SC2, PC2 |

Contacts for thick wire Contact Configuration

Male Housing (Viewed from Wiring Side)

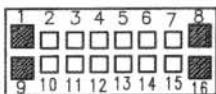
■: indicates a contact hole for thick wire



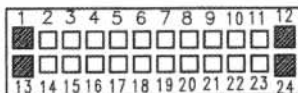
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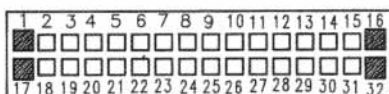
QR/P4-12P-C (01)



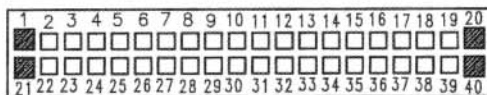
QR/P4-16P-C (01)



QR/P4-24P-C (01)



QR/P4-32P-C (01)



QR/P4-40P-C (01)

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