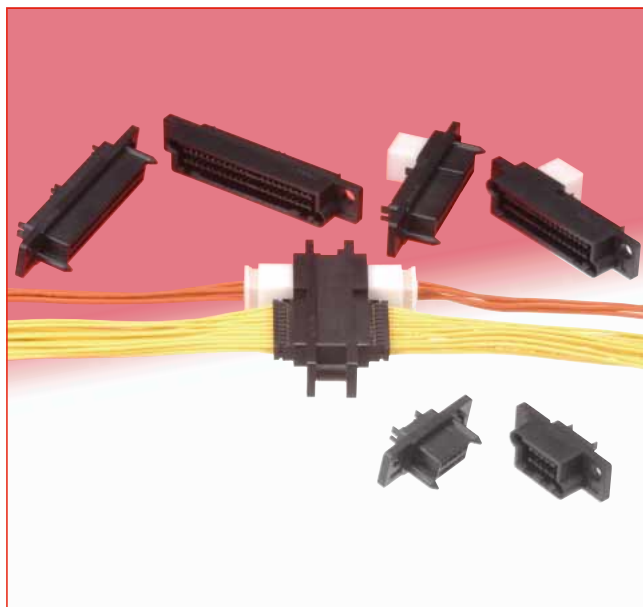


Ultra-small Rack/Panel Crimp Connectors

QR/P15 Series



● Separate connection to panel-mounted connectors

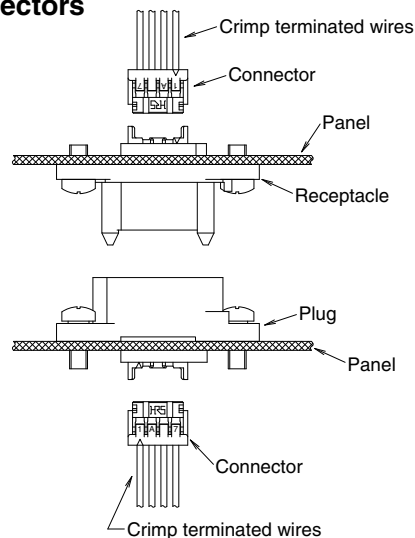


Fig.1

■ Overview

Expansion of the proven QR/P Series with a separate panel-mounted plugs / receptacles connecting with detachable crimp terminated connectors.

Plugs / receptacles can be mounted on the panels and the terminated connectors may be inserted at later time, allowing wire crimp termination to be done away from the equipment.

Available in 8 or 24 pos (with 4 positions for power contacts) and 40 pos.

■ Features

1. Two piece part structure

The main connector body is not directly terminated with individual or discrete wires, but allows for cabled, sub-assembly connector groups to be plugged and unplugged to it.

This separate structure of a main connector body and sub-assemblies allows harnesses to be pre-assembled, and simplifies the installation of both the sub-assemblies and rack and panel mounting.

2. Sequential contact mating structure

Sequential contact mating is featured on the 40-position version, with two contacts on each side of the connector. This provides better grounding and improved safety.

3. Accepts power supply connections (24-position only)

The 24-position connectors incorporate power supply contacts.

The power supply connections use an MDF6 Series 4-position connector (3.5mm pitch, UL and CSA recognized, and can handle 6A a current using 16 AWG conductors.

Wire termination can also be accomplished with an automatic crimping machine.

4. Reliable connections

Two-point contacts assure highly reliable electrical and mechanical connection.

■Product Specifications

Ratings	Current rating	Signal: 1 A Power: 6 A	Operating temperature range:-10°C to +60°C
	Voltage rating	30V AC/ DC	

Item	Specification	Conditions
1. Insulation resistance	1,000 MΩ min.	500 V DC
2. Withstanding voltage	No flashover or insulation breakdown	500 V AC / 1 minute
3. Contact resistance	50 mΩ max.	100 mA
4. Mating/ Unmating forces	8 pos. 0.8 N min. 8 N max.	Measured when mated with corresponding connector
	24 pos. 2.8 N min. 28 N max.	
	40 pos. 4.0 N min. 40 N max.	
5. Durability	Contact resistance: 60 mΩ max.	1,000 cycles No damage, cracks or parts dislocation.
6. Vibration	No electrical discontinuity of 10 μs or longer	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 3 directions for 2 hours No damage, cracks or parts dislocation.
7. Shock	No electrical discontinuity of 10 μs or longer	Acceleration of 490 m/s ² , 11 ms duration, sine half-wave, 3 cycles in each of the 3 axis No damage, cracks or parts dislocation.
8. Temperature cycle	Contact resistance: 60 mΩ max. Insulation resistance: 1,000 MΩ min.	No damage, cracks or parts dislocation. Temperature: -55 → +5 to 35 → +85 → +5 to 35°C Time: 30 → 5 → 30 → 5 min. 5 cycles
9. Humidity (Steady state)	Contact resistance: 60 mΩ max. Insulation resistance: 1,000 MΩ min.	No damage, cracks or parts dislocation. 96 hours at 40°C, R.H. 90% to 95%
10. Hydrogen sulfide	Contact resistance: 60mΩ max.	96 hours at a concentration of 3 ppm

■Materials

●Plug

Part	Material	Finish	Remarks
Insulator	PBT	Color: Black	UL94V-0
Contacts	Phosphor bronze	Selective gold plated	—
Pin socket	Polyamide	Color: Black, white (Natural)*	UL94V-0
Shoulder Screw	Steel	Nickel plated	—

●Receptacle

Part	Material	Finish	Remarks
Insulator	PBT	Color: Black	UL94V-0
Contacts	Phosphor bronze	Selective gold plated	—
Pin socket	Polyamide	Color: Black, white (Natural)*	UL94V-0

*Insulator bodies for the MDF6 connectors in the 24-position power supply connector will be white.

■Product Number Structure

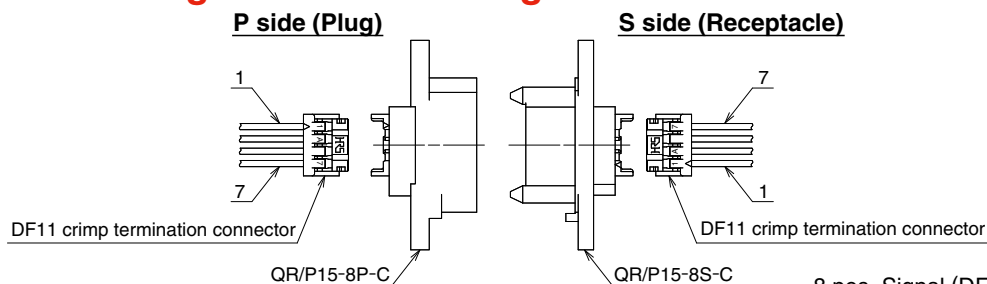
QR / P15 - 24 (4) P - C (50)

① ② ③ ④ ⑤ ⑥

① Series name	: QR/P15
② Number of contacts	: 8, 24, 40
③ Number of power contacts	: 4 (24 position connector only)
④ Connector type	P: Plug S: Receptacle
⑤ Series number	
⑥ Specification number	50: Standard

◆ Connector Mating Charts and Wiring Termination Tables

● 8-pos.

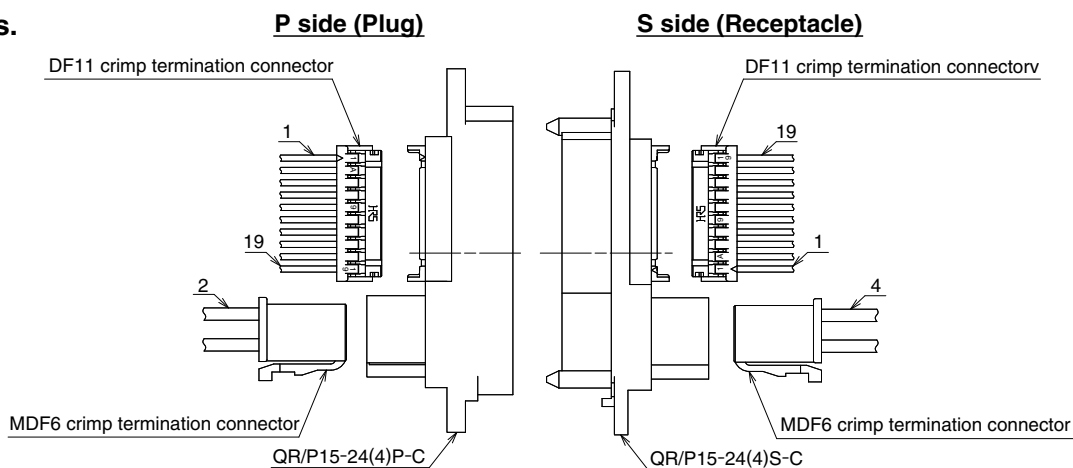


Part No.	HRS No.	No. of contacts	RoHS	Remarks
DF11-8DS-2C	543-0503-0	8	Yes	Wire connection in applicable connectors

8 pos. Signal (DF11 connector)

P side	1	3	5	7	2	4	6	8
S side	7	5	3	1	8	6	4	2

● 24-pos.



Part No.	HRS No.	No. of contacts	RoHS	Remarks
DF11-20DS-2C	543-0509-7	20	Yes	Wire connection in applicable connectors
MDF6-4DS-3.5C	543-0074-1	4		

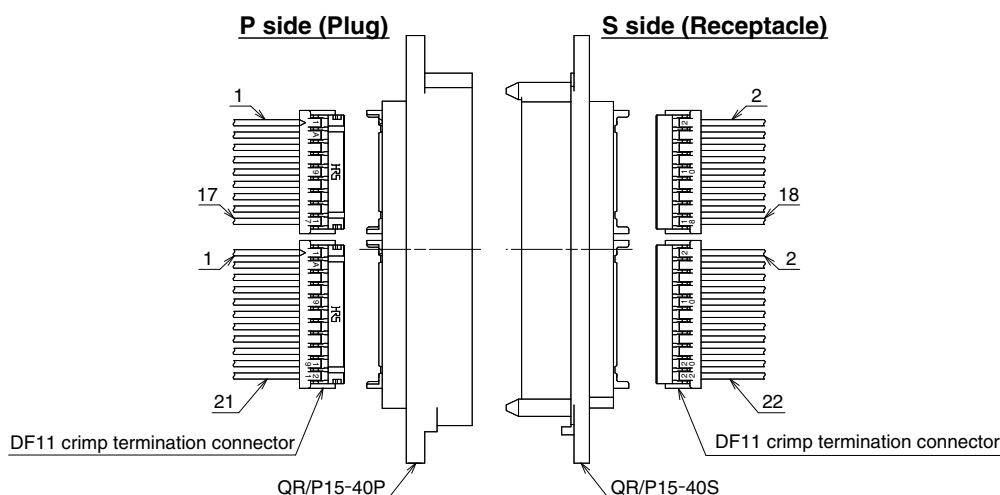
20 pos. Signal (DF11 connector)

P side	1	3	5	~	15	17	19	2	4	6	~	16	18	20
S side	19	17	15	~	5	3	1	20	18	16	~	6	4	2

4 pos. Power (MDF6 connector)

P side	1	2	3	4
S side	3	4	1	2

● 40-pos.



Part No.	HRS No.	No. of contacts	RoHS	Remarks
DF11-18DS-2C	543-0508-4	18	Yes	Wire connection in applicable connectors
DF11-22DS-2C	543-0510-6	22		

18 pos. Signal (DF11 connector)

P side	1	3	5	~	13	15	17	2	4	6	~	14	16	18
S side	2	4	6	~	14	16	18	1	3	5	~	13	15	17

22 pos. Signal (DF11 connector)

P side	1	3	5	~	17	19	21	2	4	6	~	18	20	22
S side	2	4	6	~	18	20	22	1	3	5	~	17	19	21

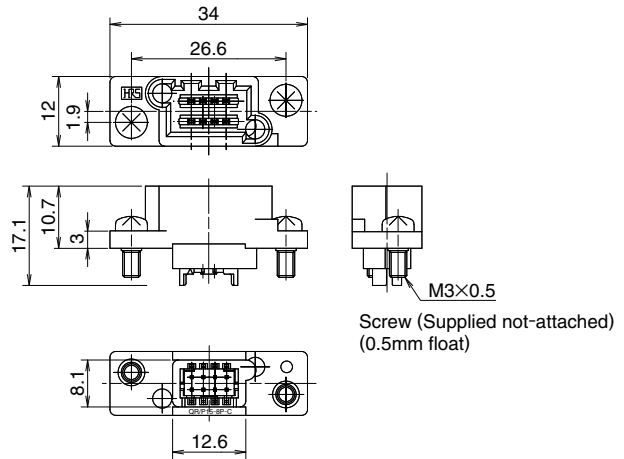
Note: Refer to the Nylon Connector Catalog for details about the wire terminations used in DF 11 and MDF6 connectors.

Plugs

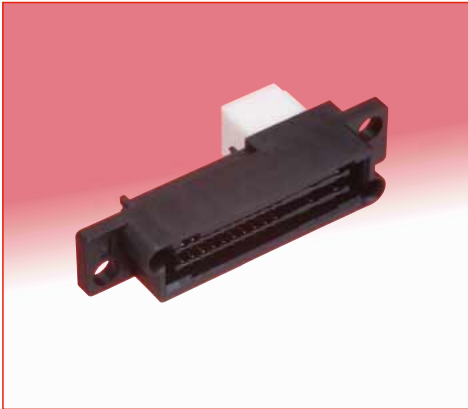
●8 pos.



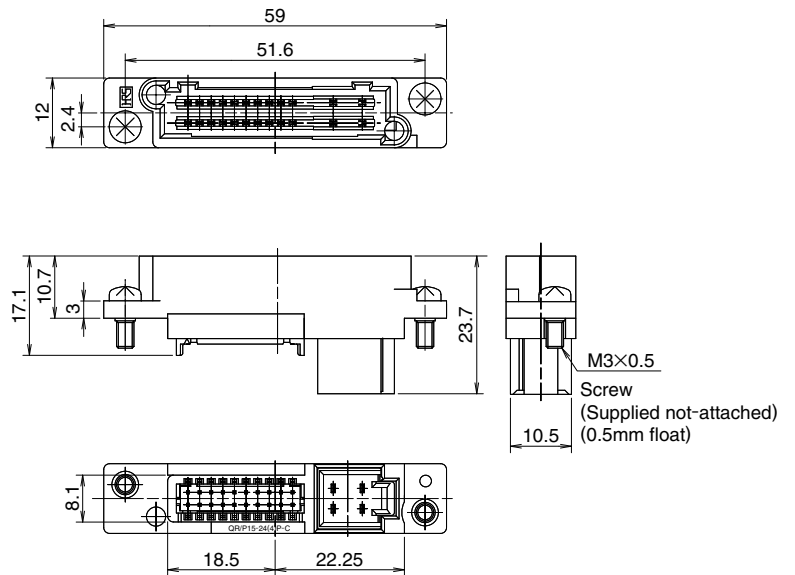
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0247-0 50	Yes



●24 pos.



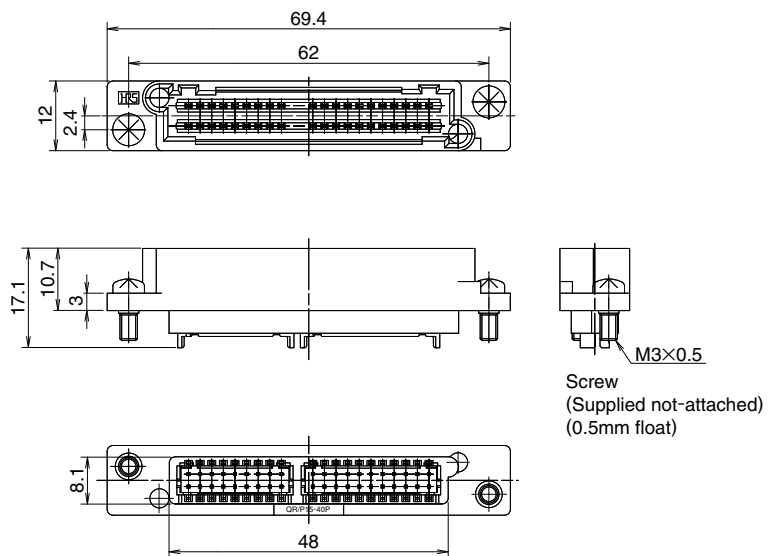
Part No.	HRS No.	RoHS
QR/P15-24(4)P-C(50)	221-0249-6 50	Yes



●40 pos.



Part No.	HRS No.	RoHS
QR/P15-40P(50)	221-0252-0 50	Yes

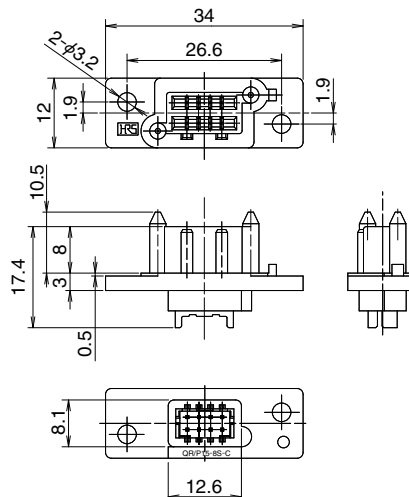


■ Receptacles

● 8 pos.



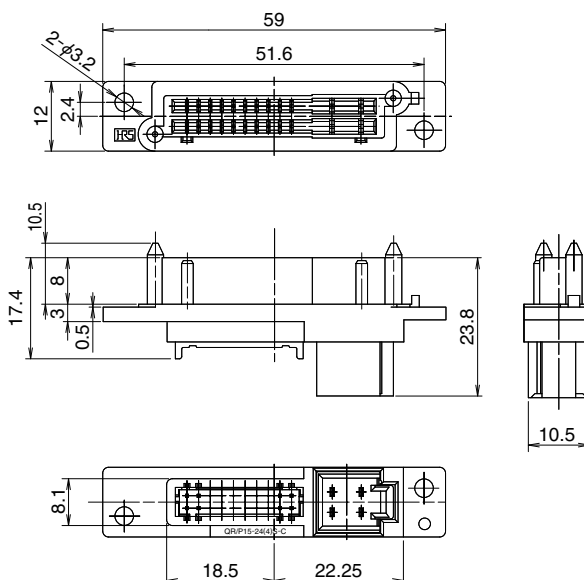
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0248-3 50	Yes



● 24 pos.



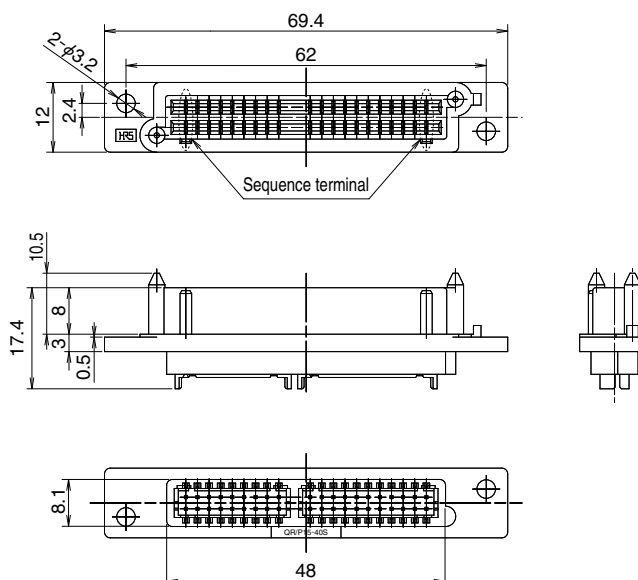
Part No.	HRS No.	RoHS
QR/P15-24(4)S-C(50)	221-0250-5 50	Yes



● 40 pos.

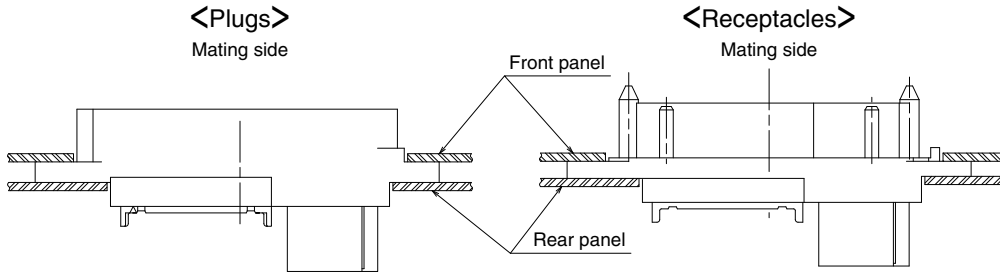


Part No.	HRS No.	RoHS
QR/P15-40S(50)	221-0253-3 50	Yes



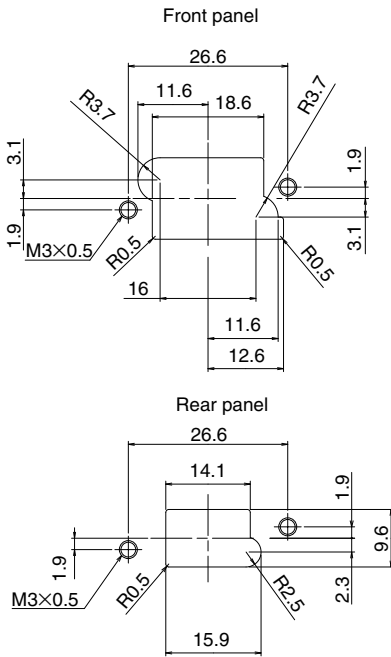
◆ Panel cutouts

Applicable panel thickness: 1.5mm to 3.0mm

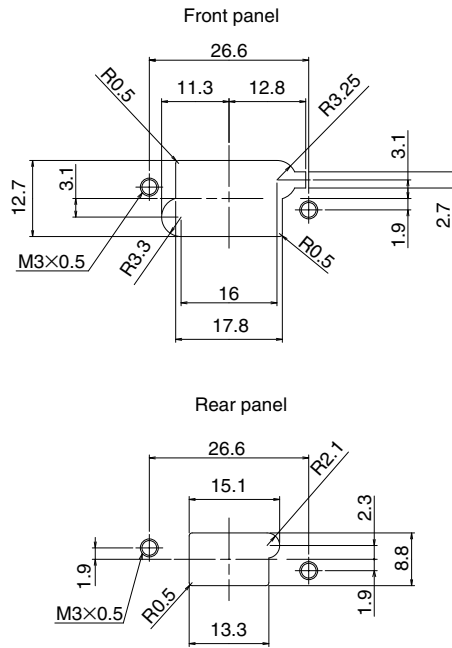


8 pos

QR/P15-8P-C(50)

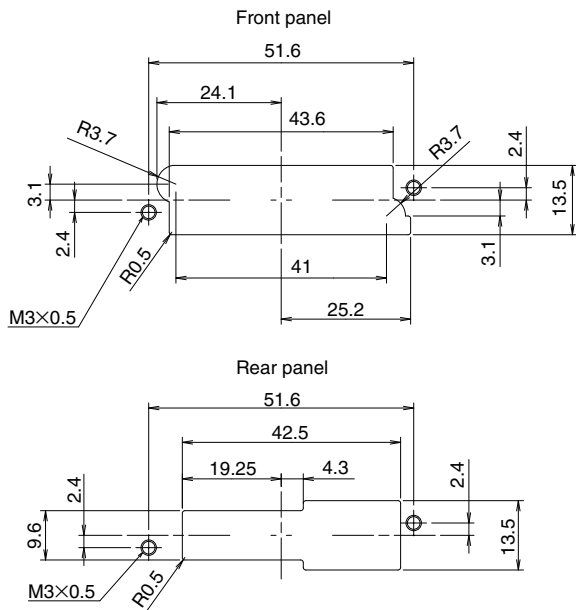


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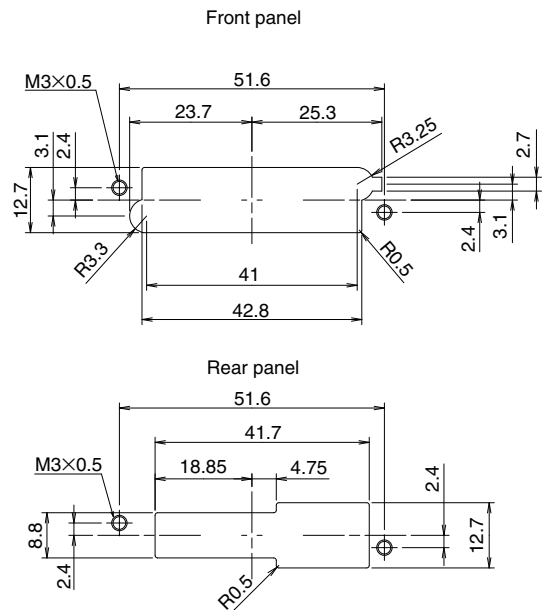


24 pos

QR/P15-24(4)P-C(50)



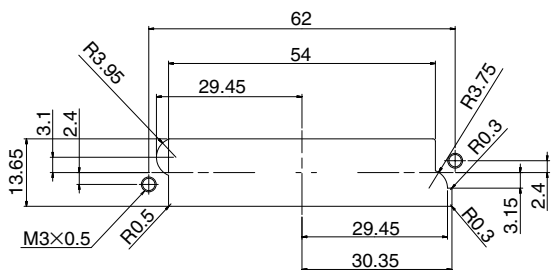
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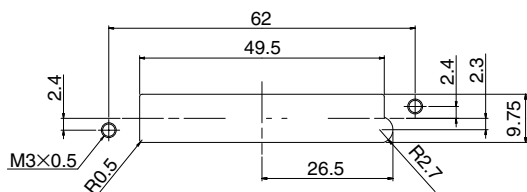
40 pos.

QR/P15-40P(50)

Front panel

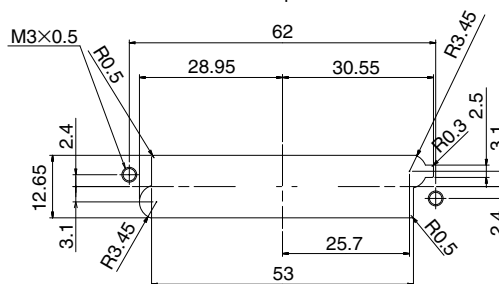


Rear panel

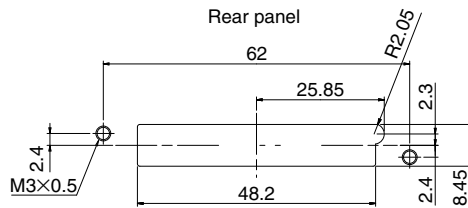


QR/P15-40S(50)

Front panel

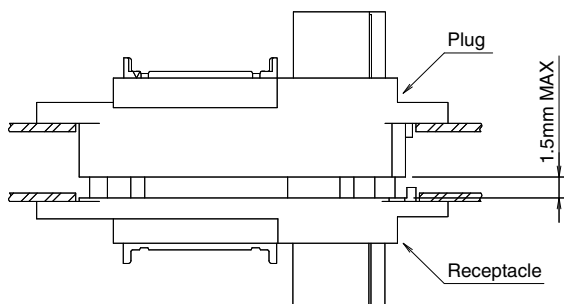


Rear panel



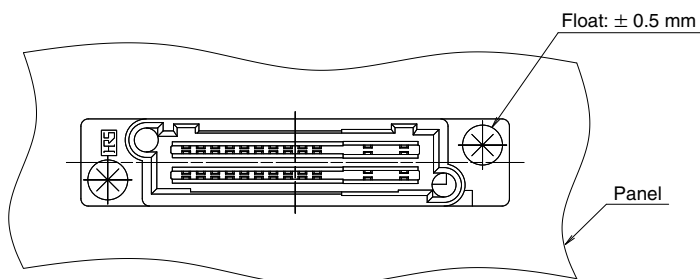
◆ Mated condition (Shown for reference)

Note: The distance between the plug and receptacle when fully mated must be 1.5 mm max. as shown below.



◆ Float – Plug (Shown for reference)

Note: Floating distance for shoulder screw is ± 0.5 mm.



USA:

HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS
 2688 Westhills Court, Simi Valley, CA 93065-6235
 Phone : +1-805-522-7958
 Fax : +1-805-522-3217
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
 3255 Scott Boulevard, Building 7, Suite 101
 Santa Clara, CA 95054
 Phone : +1-408-253-9640
 Fax : +1-408-253-9641
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. CHICAGO OFFICE
 580 Waters Edge Lane, Suite 205 Lombard IL
 60148
 Phone : +1-630-282-6701
 Mail : inquiries@hirose.com
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)
 17197 N. Laurel Park Drive, Suite 253, Livonia,
 MI 48152
 Phone : +1-734-542-9963
 Fax : +1-734-542-9964
<http://www.hirose.com/us/>

THE NETHERLANDS:

HIROSE ELECTRIC EUROPE B.V.
 Hogehillweg #8 1101 CC Amsterdam Z-0
 Phone : +31-20-6557460
 Fax : +31-20-6557469
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
 Herzog-Carl-Strasse 4 D-73760 Ostfildern
 (Scharnhäuser Park)
 Phone : +49-711-4560-02-1
 Fax : +49-711-4560-02-299
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUERNBERG OFFICE
 Muggenhofer Str. 136 90429 Nuernberg
 Phone : +49-911 32 68 89 63
 Fax : +49-911 32 68 89 69
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE
 Bayernstr. 3, Haus C 30855 Langenhagen, Germany
 Phone : +49-511 97 82 61 30
 Fax : +49-511 97 82 61 35
<http://www.hirose.com/eu/>

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
 Regus La Garenne Colombes, Place de La Belgique,
 71 Boulevard National La Garenne Colombes, 92250, France
 Phone : +33 (0) 1 7082 3170
 Fax : +33 (1) 7082 3101
<http://www.hirose.com/eu/>

UNITED KINGDOM:

HIROSE ELECTRIC EUROPE BV (UK BRANCH)
 4 Newton Court, Kelvin Drive, Knowlhill,
 Milton Keynes, MK5 8NH
 Phone : +44-1908 202050
 Fax : +44-1908 202058
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO., LTD.
 1601, Henderson Metropolitan, NO.300, East Nanjing
 Road, Huangpu District, Shanghai, China 200001
 Phone : +86-21-6391-3355
 Fax : +86-21-6391-3335
<http://www.hirose.com/cn/>

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH
 A1001, Ocean International Center, Building 56# East 4th
 Ring Middle Road, ChaoYang District, Beijing, 100025
 Phone : +86-10-5165-9332
 Fax : +86-10-5908-1381
<http://www.hirose.com/cn/>

CHINA:

HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.
 Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,
 5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008
 Phone : +86-755-8207-0851
 Fax : +86-755-8207-0873
<http://www.hirose.com/cn/>

HONG KONG:

HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
 Room 1001, West Wing, Tsim Sha Tsui Centre, 66
 Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong
 Phone : +852-2803-5338
 Fax : +852-2591-6560
<http://www.hirose.com/hk/>

TAIWAN:

HIROSE ELECTRIC TAIWAN CO., LTD.
 103 8F, No.87, Zhengzhou Rd., Taipei
 Phone : +886-2-2555-7377
 Fax : +886-2-2555-7350
<http://www.hirose.com/tw/>

KOREA:

HIROSE KOREA CO., LTD.
 250, Huimanggongwon-ro, Siheung-si,
 Gyeonggi-do, Korea, 429-849
 Phone : +82-31-496-7000,7124
 Fax : +82-31-496-7100
<http://www.hirose.co.kr/>

SINGAPORE:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
 10 Anson Road #26-16, International Plaza
 079903, Singapore
 Phone : +65-6324-6113
 Fax : +65-6324-6123
<http://www.hirose.com/sg/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
 Office NO.519, Regus-Green Boulevard, Level5, Tower C,
 Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India
 Phone : +91-12-660-8018
 Fax : +91-120-4804949
<http://www.hirose.com/sg/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE
 Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma
 Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
 Phone : +91-80-4120 1907
 Fax : +91-80-4120 9908
<http://www.hirose.com/sg/>

MALAYSIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
 1-10-07, Suntech @ Penang Cybercity (1164), Lintang
 Mayang Pasir 3, 11950, Bayan Baru, Penang, Malaysia.
 Phone : +604-619-2564
 Fax : +604-619-2574
<http://www.hirose.com/sg/>

THAILAND:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGKOK OFFICE (REPRESENTATIVE OFFICE)
 Unit 4703, 47th FL., 1 Empire Tower, South Sathorn
 Road, Yannawa, Sathorn, Bangkok 10120 Thailand
 Phone : +66-2-686-1255
 Fax : +66-2-686-3433
<http://www.hirose.com/sg/>



HIROSE ELECTRIC CO.,LTD.

2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN
 TEL: +81-45-620-3526 Fax: +81-45-591-3726
<http://www.hirose.com>
<http://www.hirose-connectors.com>