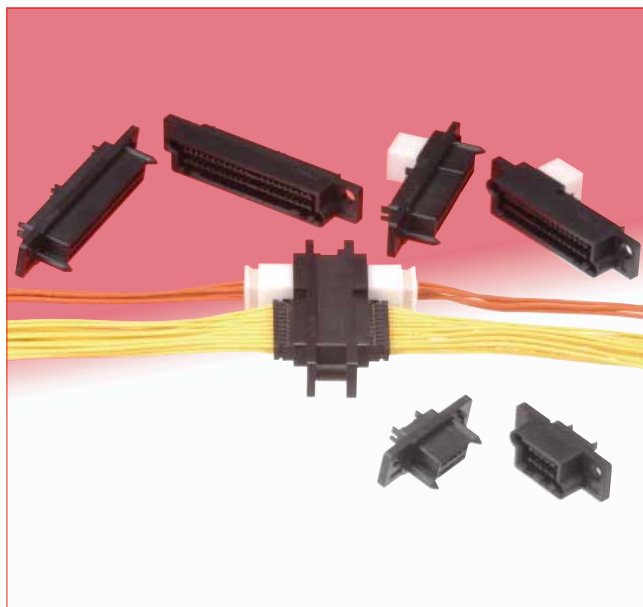


Ultra-small Rack/Panel Crimp Connectors

QR/P15 Series



● Separate connection to panel-mounted connectors

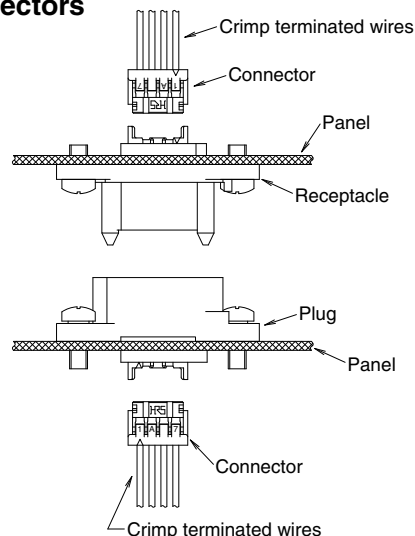


Fig.1

■ 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	1,000MΩ min.		500V DC
2. Withstanding voltage	No flashover or insulation breakdown		500V AC / 1minute
3. Contact resistance	50mΩ max.		100mA
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 : 60mΩ max.		1,000 cycles No damage, cracks or parts dislocation.
6. Vibration	No electrical discontinuity of 10μs or longer		Frequency : 10 to 55 Hz, single amplitude of 0.75mm, 3 directions for 2 hours No damage, cracks or parts dislocation.
7. Shock	No electrical discontinuity of 10μs or longer		Acceleration of 490m/s ² , 11ms duration, sine half-wave, 3 cycles in each of the 3 axis No damage, cracks or parts dislocation.
8. Temperature cycle	Contact resistance : 60mΩ max. Insulation resistance : 1,000MΩ 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 : 60mΩ max. Insulation resistance : 1,000MΩ 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

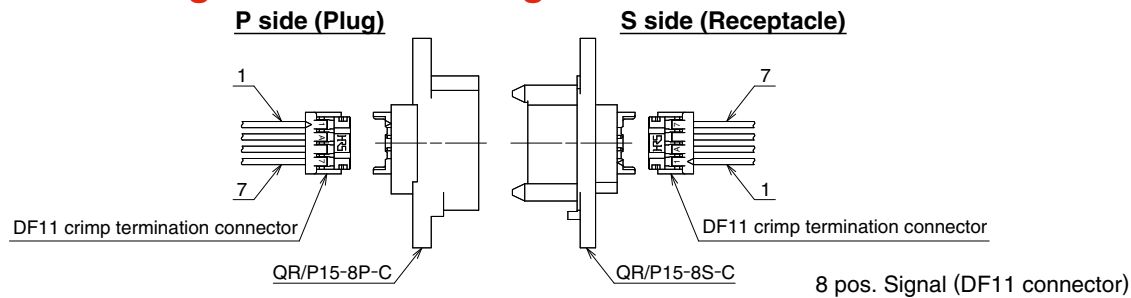
QR / P15 - 24 (4) P - C (50)

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	

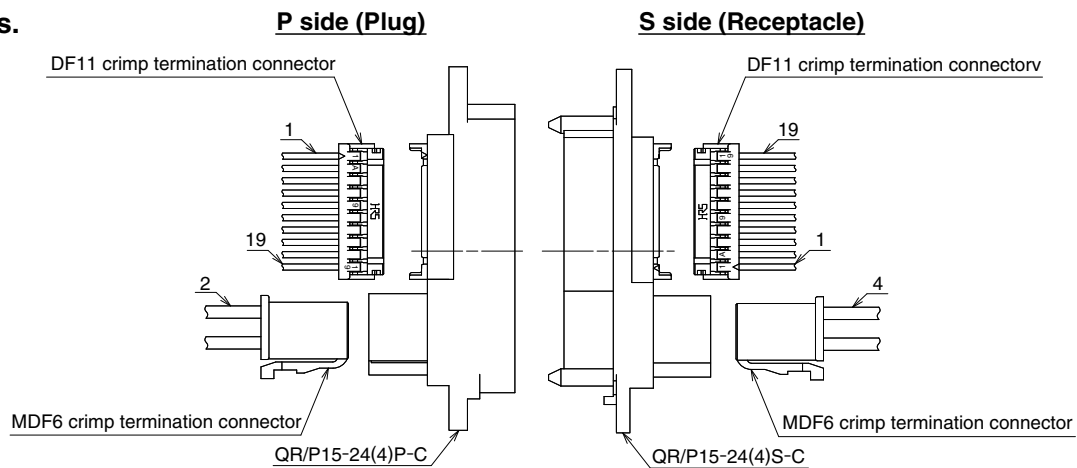
◆ Connector Mating Charts and Wiring Termination Tables

● 8-pos.



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

● 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		

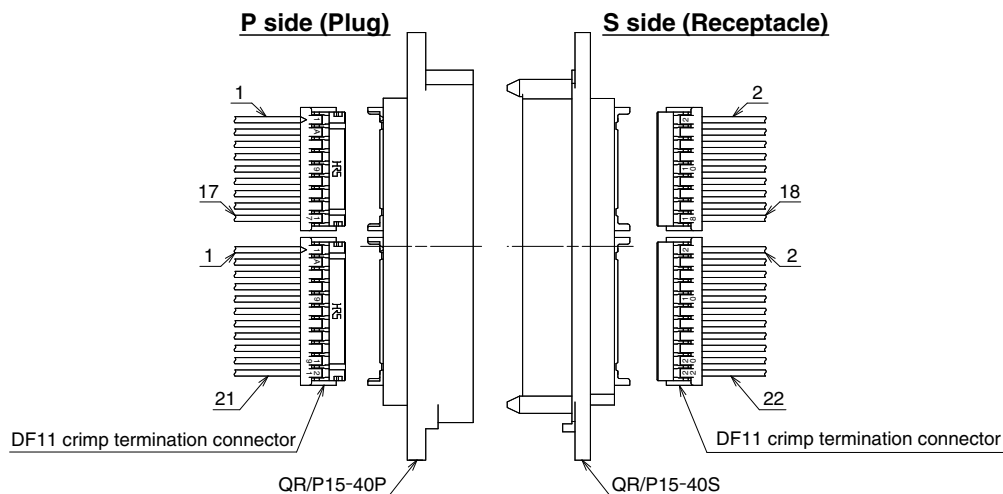
20 pos. Signal (DF11 connector)

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

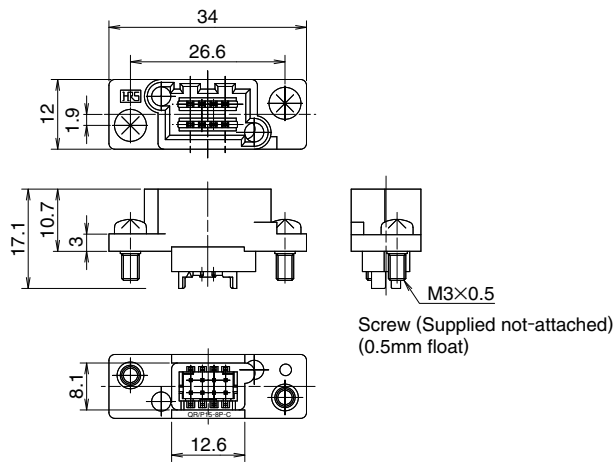
Note : Refer to the Nylon Connector Catalog for details about the wire terminations used in DF11 and MDF6 connectors.

■Plugs

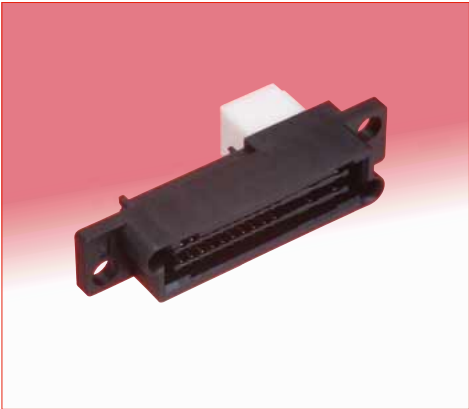
●8 pos.



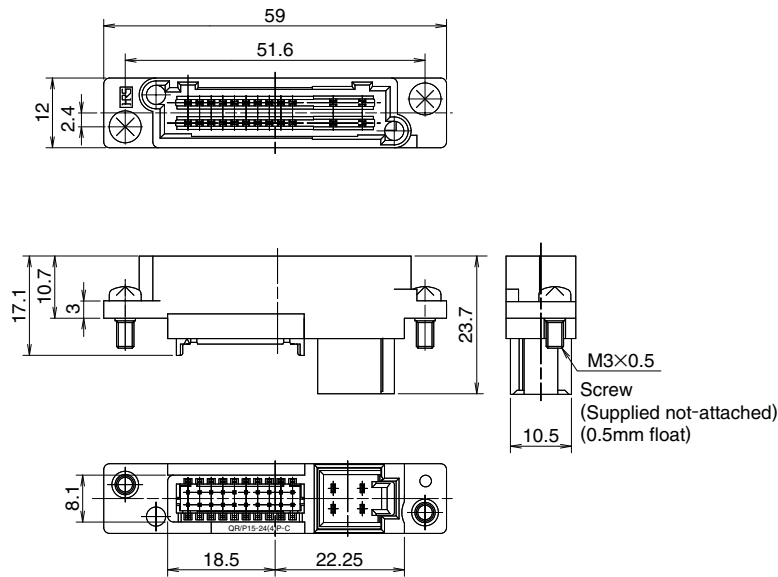
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0247-0 50	Yes



●24 pos.



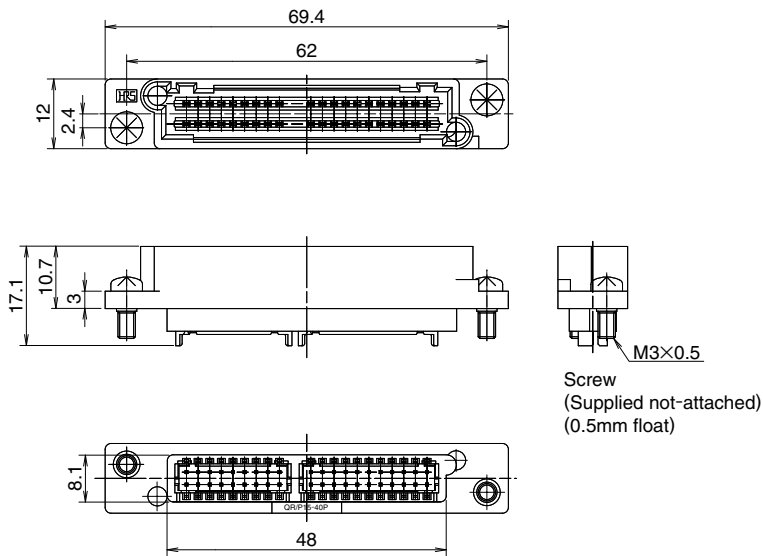
Part No.	HRS No.	RoHS
QR/P15-24(4)P-C(70)	221-0249-6 70	Yes



●40 pos.



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

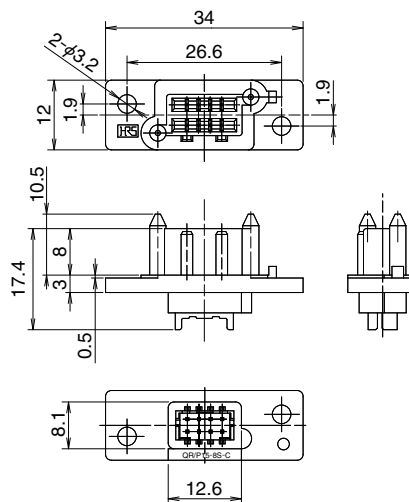


■ Receptacles

● 8 pos.



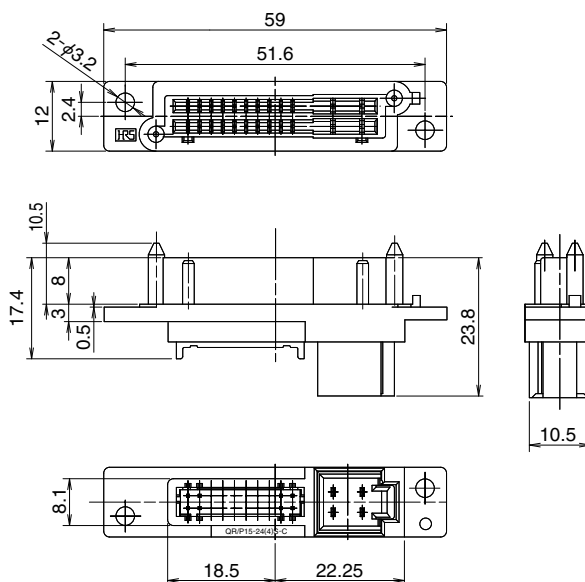
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0248-3 50	Yes



● 24 pos.



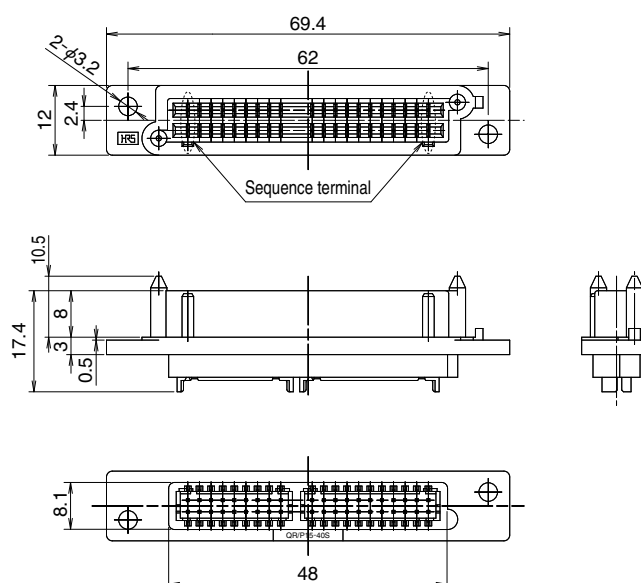
Part No.	HRS No.	RoHS
QR/P15-24(4)S-C(70)	221-0250-5 70	Yes



● 40 pos.

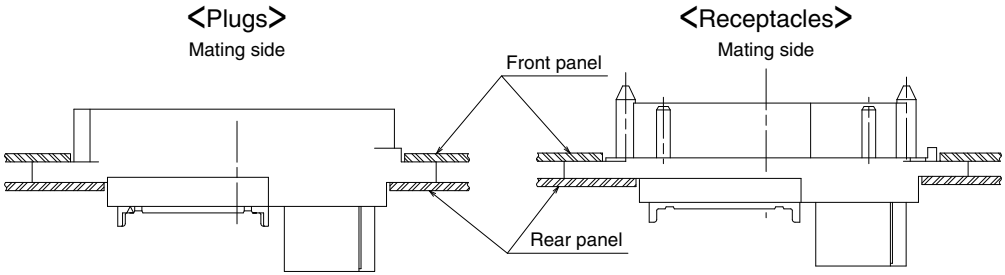


Part No.	HRS No.	RoHS
QR/P15-40S(50)	221-0253-3 50	Yes



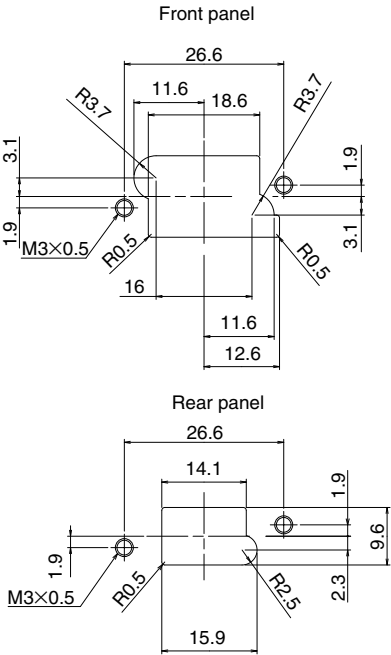
◆Panel cutouts

Applicable panel thickness : 1.5mm to 3.0mm

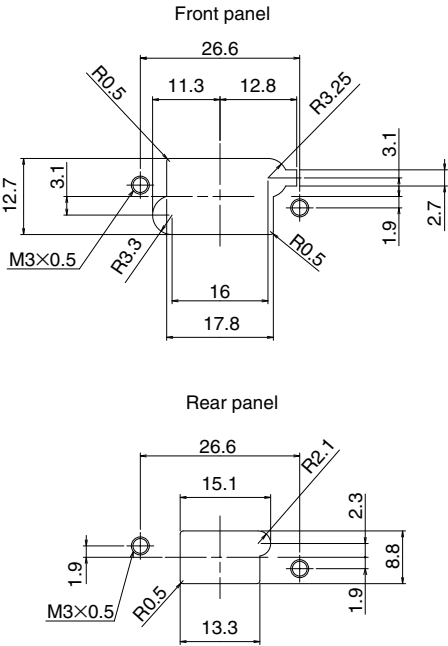


8 pos

QR/P15-8P-C(50)

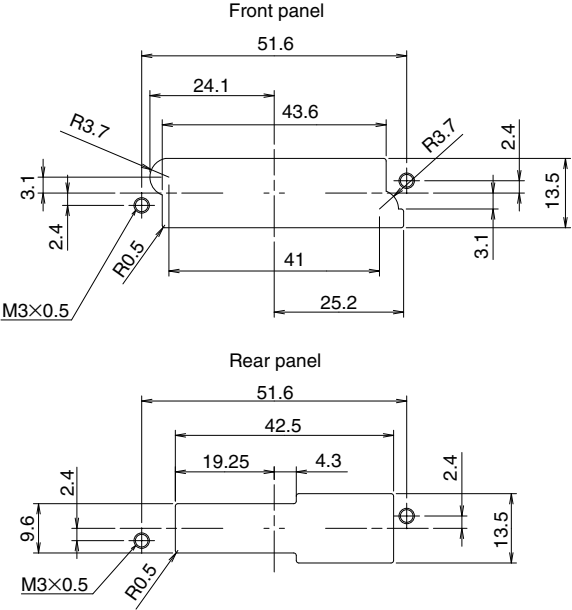


QR/P15-8S-C(50)

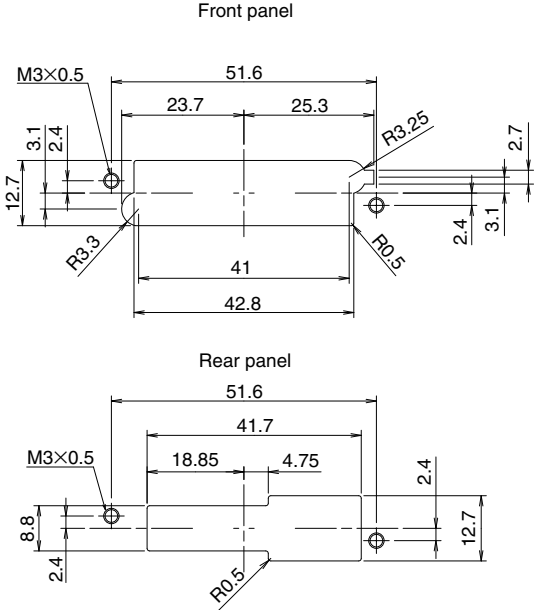


24 pos

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



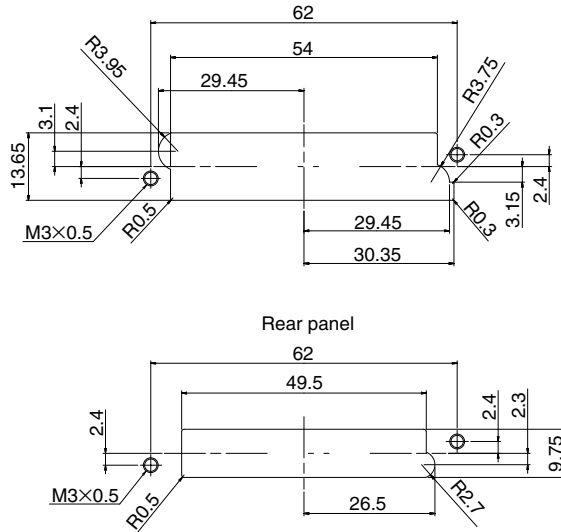
QR/P15-24(4)S-C(50)



40 pos.

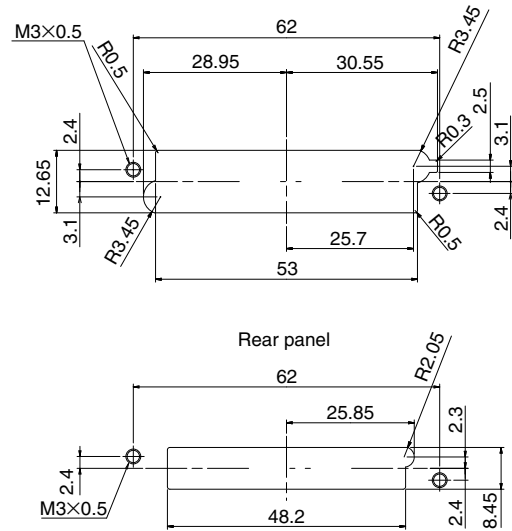
QR/P15-40P(50)

Front panel



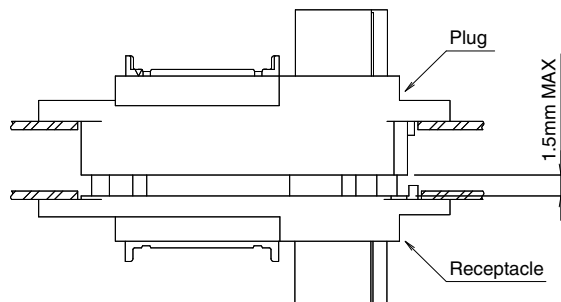
QR/P15-40S(50)

Front pane



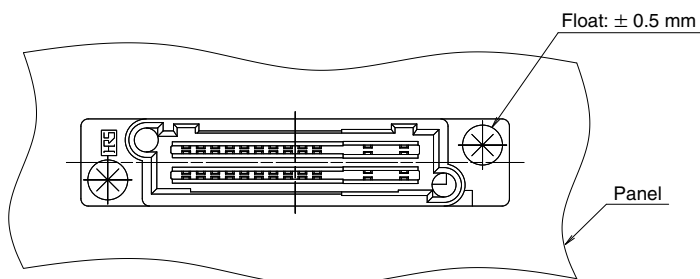
◆ Mated condition (Shown for reference)

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



◆ Float – Plug (Shown for reference)

Note : Floating distance for shoulder screw is $\pm 0.5\text{mm}$.



USA:

HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE
2300 Warrenville Road, Suite 150,
Downers Grove, IL 60515
Phone : +1-630-282-6700
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE
300 Brickstone Square Suite 201,
Andover, MA 01810
Phone : +1-978-662-5255

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Neumeyerstrasse 22-26, 90411 Nurnberg
Phone : +49-911 32 68 89 63
Fax : +49-911 32 68 89 69
<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 (CHINA) CO., LTD. SHENZHEN BRANCH
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/>

KOREA:

HIROSE KOREA CO.,LTD.
143, Gongdan 1-daero, Siheung-si,
Gyeonggi-do, 15084, Korea
Phone : +82-31-496-7000
Fax : +82-31-496-7100
<http://www.hirose.co.kr/>

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/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
2841 Junction Ave, Suite 200
San Jose, CA. 95134
Phone : +1-408-253-9640
Fax : +1-408-253-9641
<http://www.hirose.com/us/>

THE NETHERLANDS:

HIROSE ELECTRIC EUROPE B.V.
Hogehillweg #8 1101 CC Amsterdam Z-O
Phone : +31-20-6557460
Fax : +31-20-6557469
<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/>

CHINA:

HIROSE ELECTRIC (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)
18, Enterprise Center Tower 2, 209# Gong He
Road, Jing'an District, Shanghai, CHINA 200070
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
<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/>

SINGAPORE:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
03, Anson Road, #20-01, Springleaf Tower,
Singapore 079909
Phone : +65-6324-6113
Fax : +65-6324-6123
<http://www.hirose.com/sg/>

MALAYSIA:

PENANG REPRESENTATIVE OFFICE
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan
Lepas Penang, 11950, Malaysia
Phone : +604-648-5536
<http://www.hirose.com/sg/>

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/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Schoenbergstr. 20, 73760 ostfildern
Phone : +49-711-456002-1
Fax : +49-711-456002-299
<http://www.hirose.com/eu/>

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
130 Avenue Joseph Kessel, Bat E, 78960
Voisins le Bretonneux, France
Phone : +33-1-85764886
Fax : +33-1-85764823
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (CHINA) 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/>

TAIWAN:

HIROSE ELECTRIC TAIWAN CO., LTD.
103 8F, No.87, Zhengzhou Rd., Taipei
Phone : +886-2-2555-7377
Fax : +886-2-2555-7355
<http://www.hirose.com/tw/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.552, 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/>

THAILAND:

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>
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