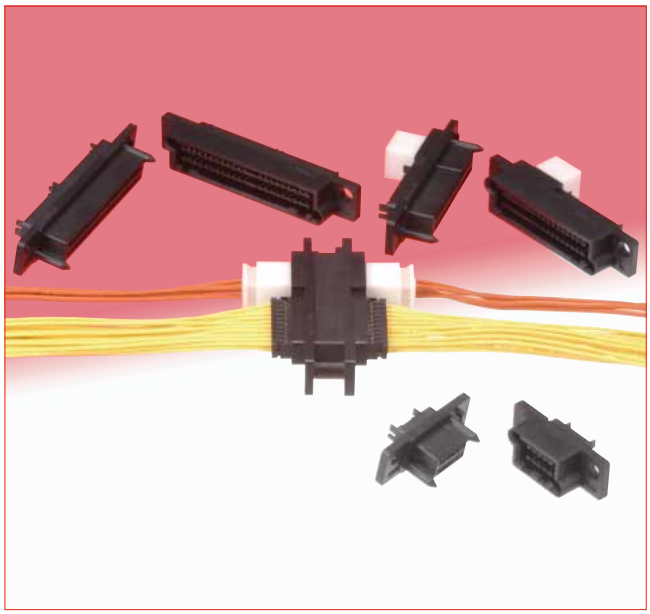
Ultra-small Rack/Panel Crimp Connectors

QR/P15 Series



●Separate connection to panel-mounted connectors

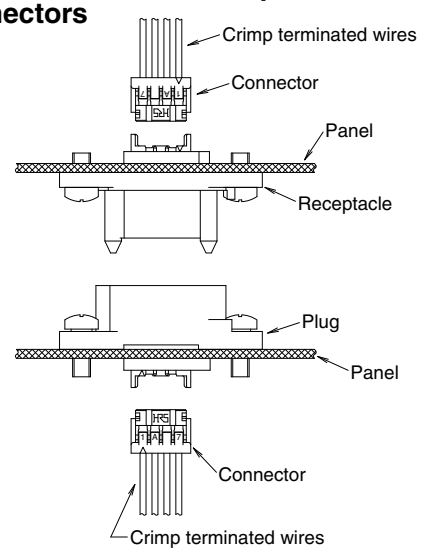


Fig.1

■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-assenblies 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.

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■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℃ 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℃, 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)

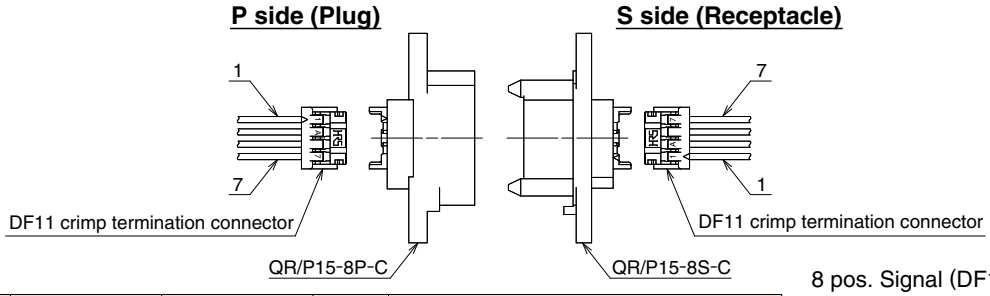
❶ ❷ ❸ ❹ ❺ ❻

❶ Series name	: QR/P15
❷ Number of contacts	: 8, 24, 40
❸ Number of power contacts	: 4 (24 position connector only)
❹ Connector type	P : Plug S : Receptacle
❺ Series number	
❻ Specification number	

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Connector Mating Charts and Wiring Termination Tables

●8-pos.

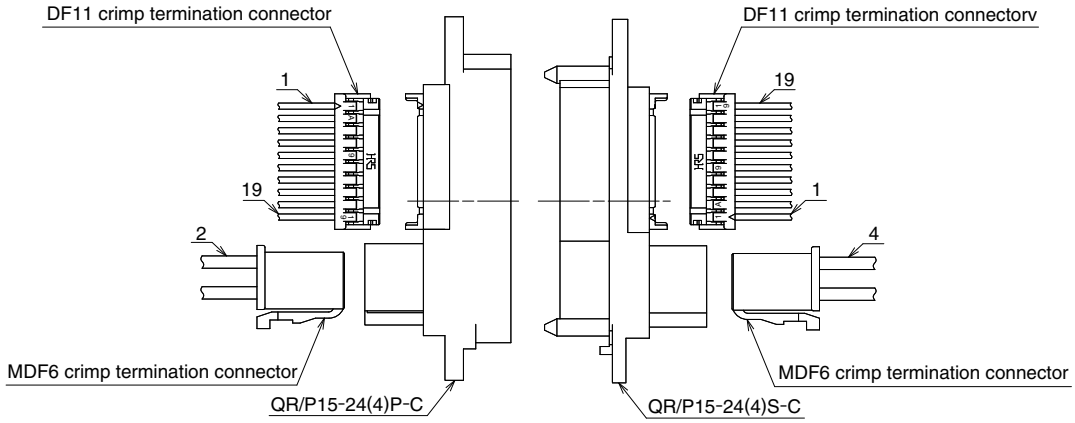


Part No.	HRS No.	No. of contacts	RoHS	Remarks
DF11-8DS-2C	543-0503-0	8	Yes	Wire connection in applicable connectors

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		

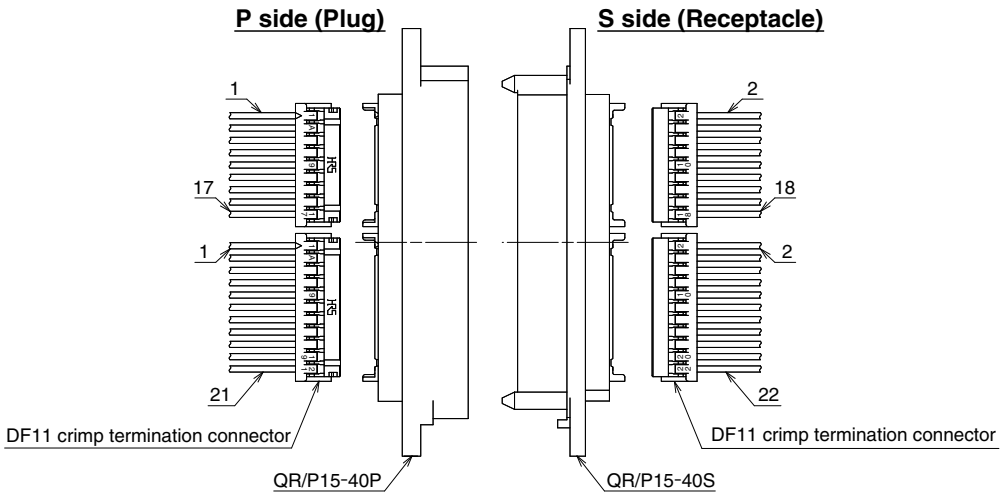
20 pos. Signal (DF11 connector)

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 DF11 and MDF6 connectors.

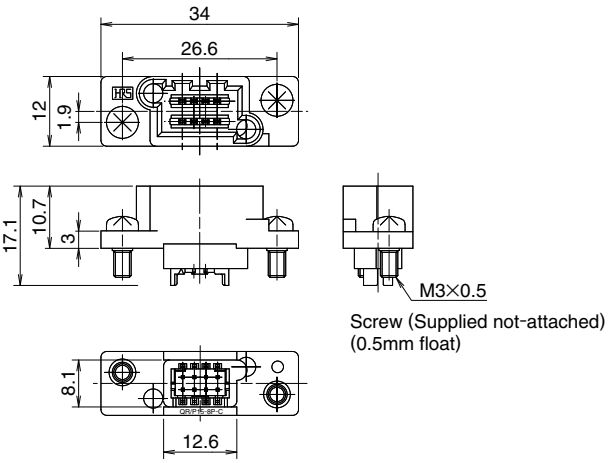
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■Plugs

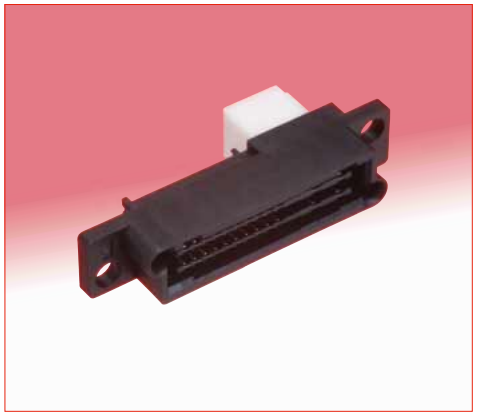
●8 pos.



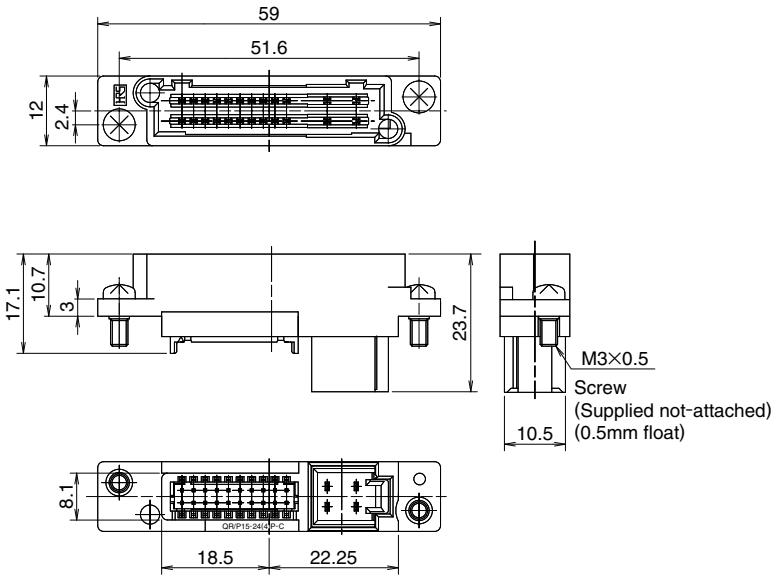
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0247-0 50	Yes



●24 pos.



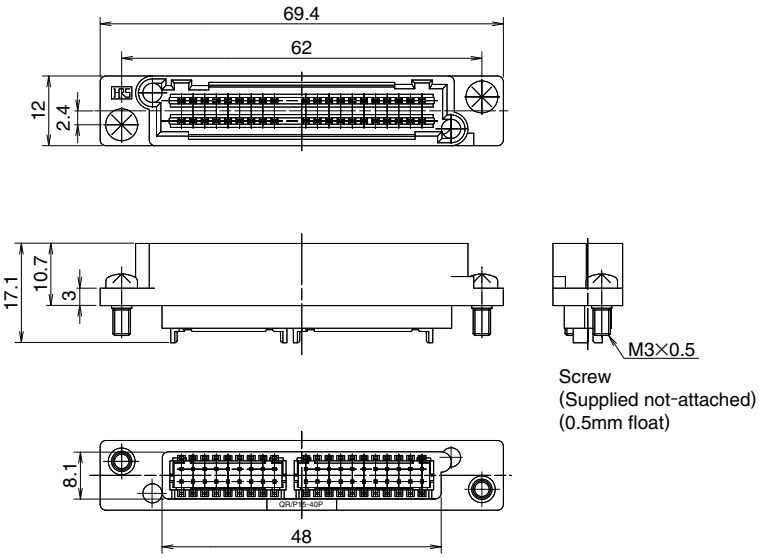
Part No.	HRS No.	RoHS
QR/P15-24(4)P-C(70)	221-0249-6 70	Yes



●40 pos.



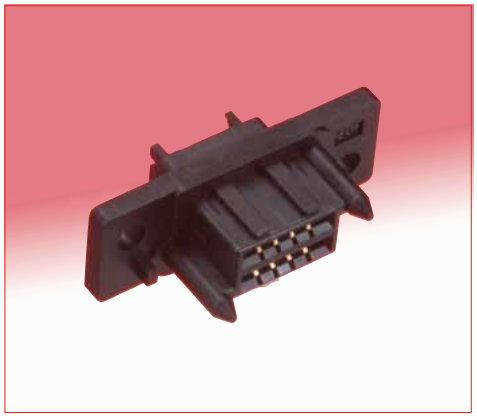
Part No.	HRS No.	RoHS
QR/P15-40P(50)	221-0252-0 50	Yes



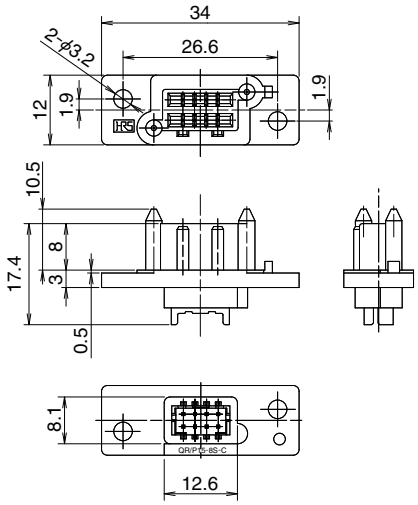
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■Receptacles

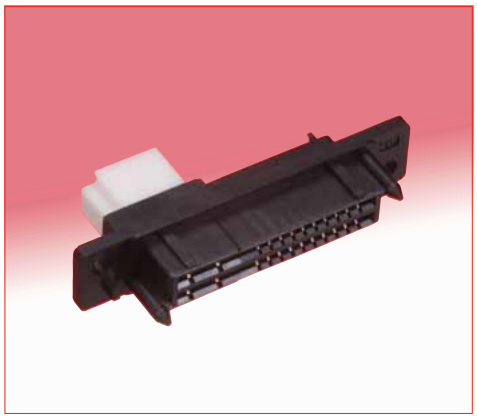
●8 pos.



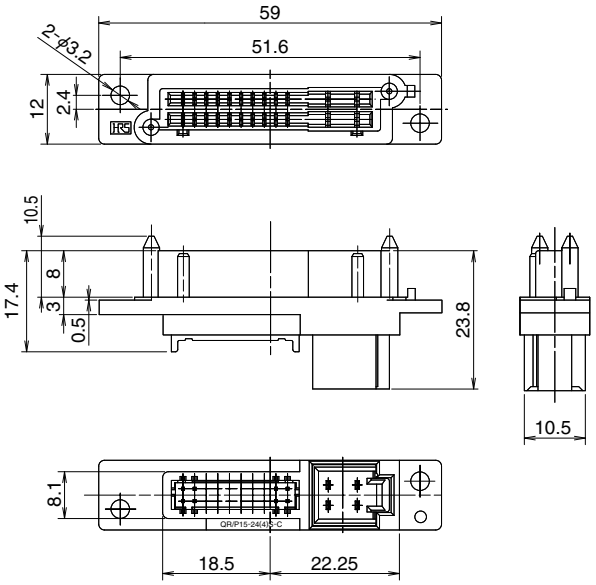
Part No.	HRS No.	RoHS
QR/P15-8P-C(50)	221-0248-3 50	Yes



●24 pos.



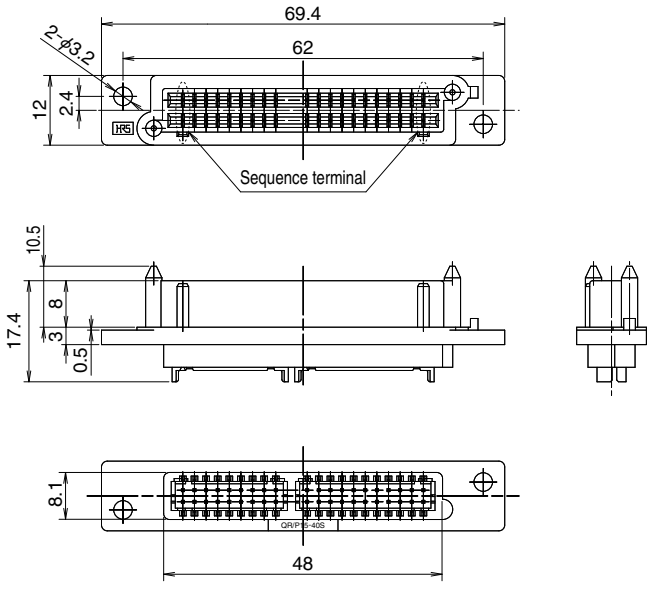
Part No.	HRS No.	RoHS
QR/P15-24(4)S-C(70)	221-0250-5 70	Yes



●40 pos.



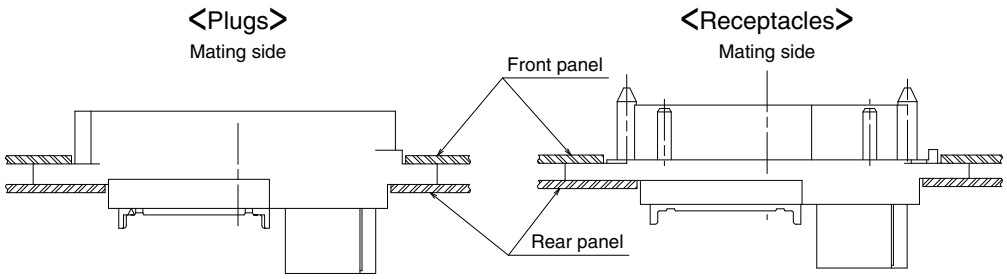
Part No.	HRS No.	RoHS
QR/P15-40S(50)	221-0253-3 50	Yes



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Panel cutouts

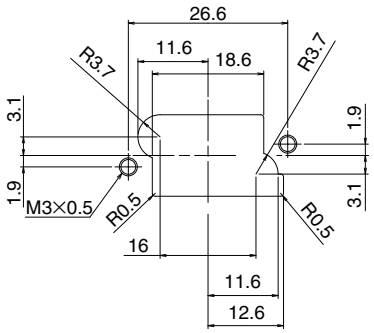
Applicable panel thickness : 1.5mm to 3.0mm



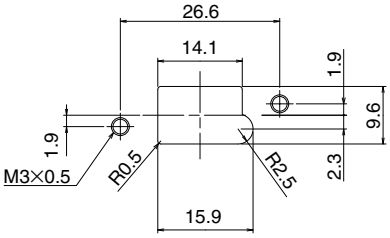
8 pos

QR/P15-8P-C(50)

Front panel

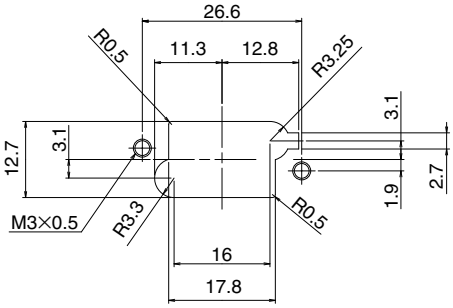


Rear panel

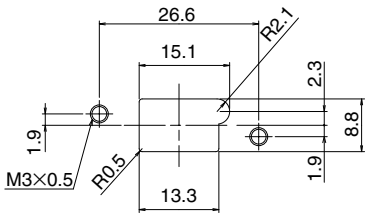


QR/P15-8S-C(50)

Front panel



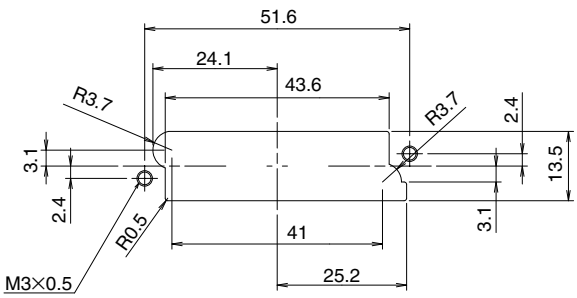
Rear panel



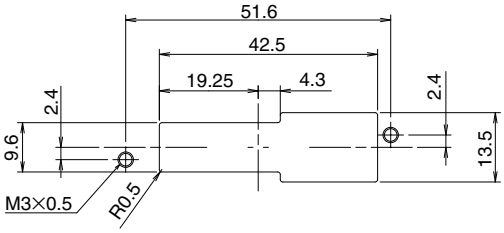
24 pos

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

Front panel

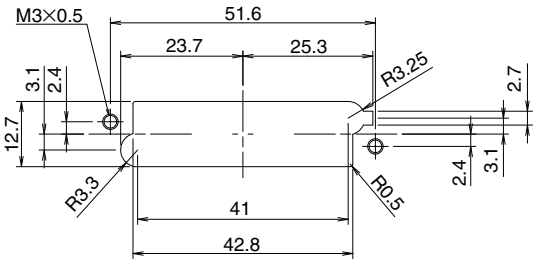


Rear panel

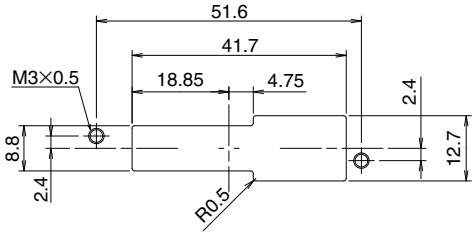


QR/P15-24(4)S-C(50)

Front panel



Rear panel

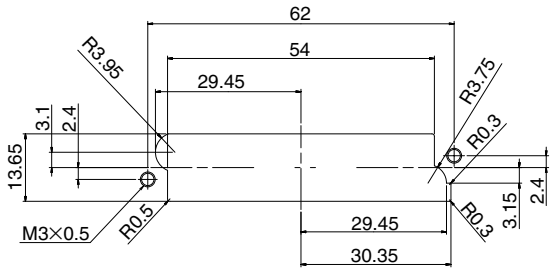


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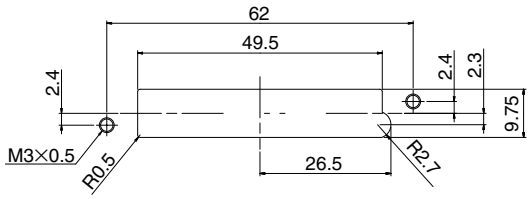
40 pos.

QR/P15-40P(50)

Front panel

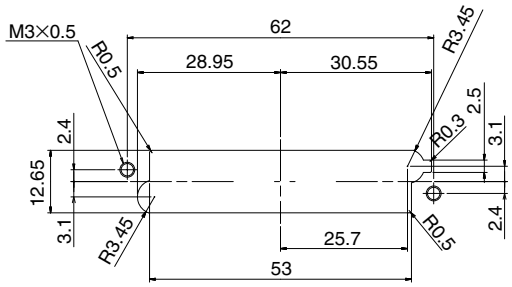


Rear panel

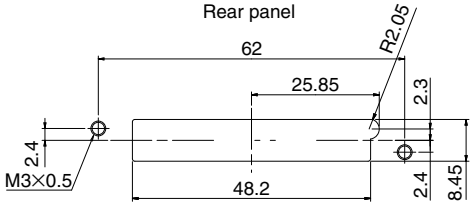


QR/P15-40S(50)

Front panel

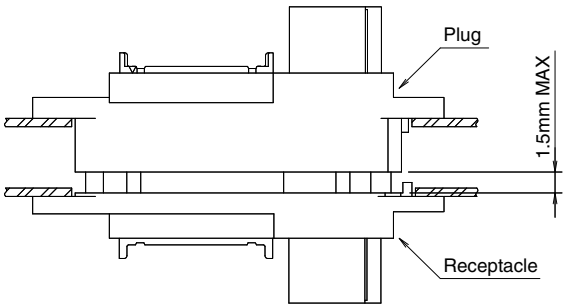


Rear panel



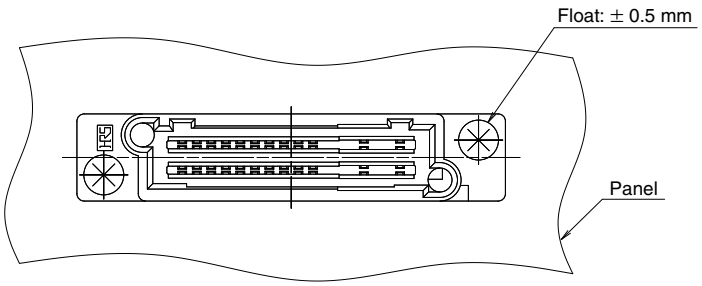
Mated condition (Shown for reference)

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



Float – Plug (Shown for reference)

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



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The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
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