The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.
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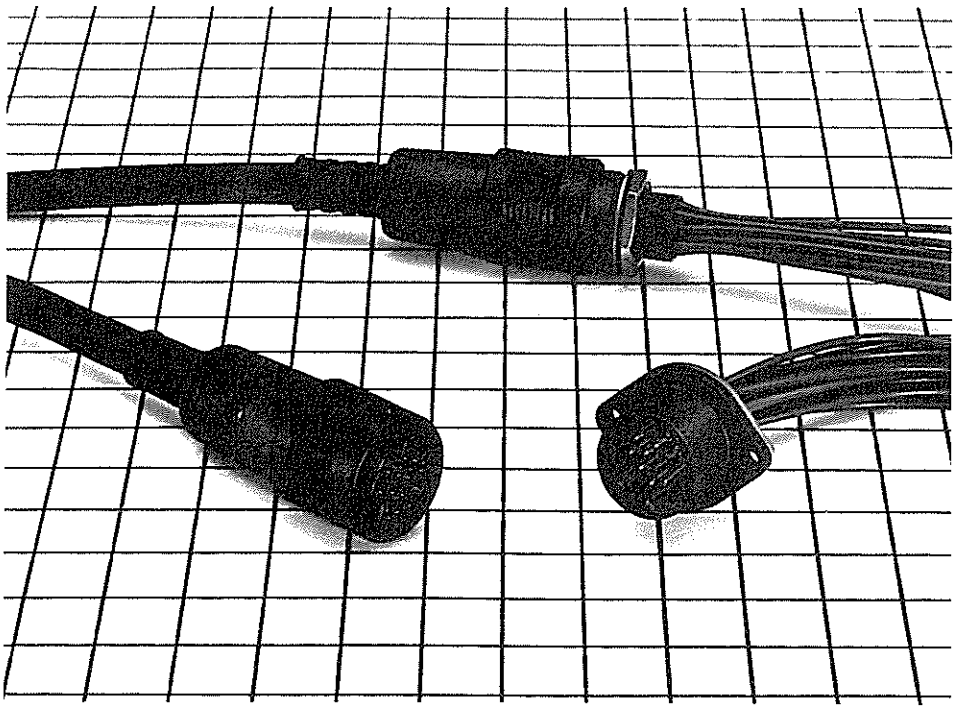
TYPE RP13A PUSH-PULL LOCK CONNECTOR

Scope

RP13A Connector is compact, lighweight, rigid, highly reliable circular connector developed in response to the increasing needs for more compact VTR equipment OA equipment.
The push-pull locking system used for RP13A connector, was designed with thorough consideration for easy handling and offers easy and quick installation/removal operation. The compact yet smart design is suitable for any type of electronic equipment, particularily small-sized electronic equipment.



Features

(1) Compact shape will always fit your equipment.
(2) Single motion push-pull locking mechanism provides improved quick inserting/extracting capability. High density packaging is also available.
(3) Multi-slot key mating guide prevents mis-insertion.
(4) Outer shell, made of strong glass fiber polycabonate resin, is lighweight yet rigid.
(5) As the cable connection method, crimping is used for plug, and crimping and PCB dip for receptacle.

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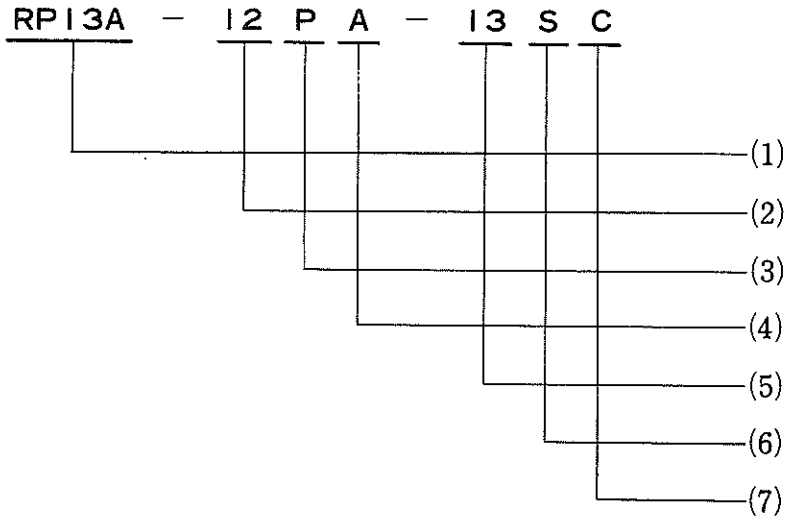
Material and Finish

Part Name	Material	Finish
Molding and connector body	UL94V–0 Glass-filled polycarbonate	(Black)
Pin contact	Phosphor bronze	Silver plating
Socket contact	Phosphor bronze	Silver plating

Ordering Information



(1) RP13A : Name of series.
(2) 12 : Indicates shell size, or outer dia. of plug mating section.
(3) P : Indicates shape of connector as follows.
P : Plug
R : Receptacle
J : Jack
(4) A : A, B, C..... are used to distinguish many model types of same shape connectors.
(5) 13 : Indicates number of terminals.
(6) S : Indicates shape terminal as follows.
P : Male terminal
S : Female terminal
(7) C : Type of connection method.

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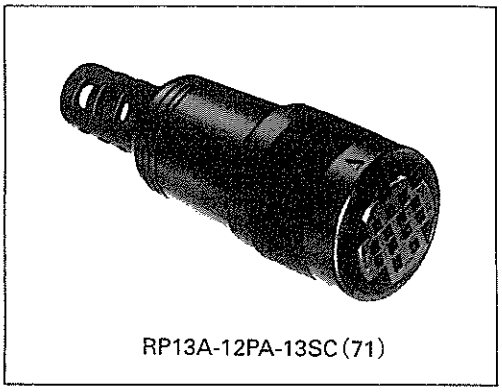
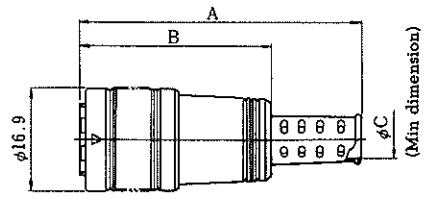
Plug



RP13A-12PA-13SC(71)

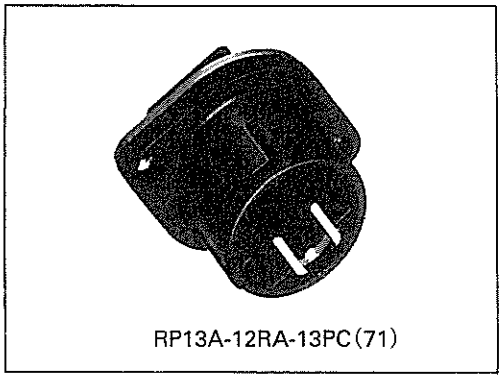


(An example in shape)

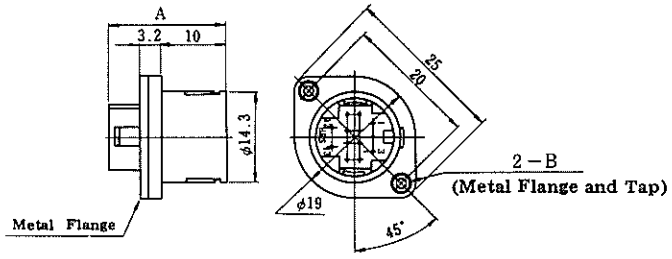
HRS No.	Part No.	No. of pin	A	B	φC	Weight	RoHS
113-0182-4-71	RP13A-12PA-13SC(71)	13	47.2	32	6.1	6.0g	
113-0184-0-71	RP13A-12PB-13SC(71)	13	47.2	32	5.7	6.0g	
113-0186-5-71	RP13A-12PD-13SC(71)	13	52.2	37	6.1	6.0g	
113-0201-7-71	RP13A-12PE-13SC(71)	13	47.2	32	6.4	6.0g	
113-1006-7-71	RP13A-12PK-13SC(71)	13	52.2	37	7.1	6.0g	
113-1026-4-71	RP13A-12PS-13SC(71)	13	52.2	37	8.1	6.0g	
113-0206-0-71	RP13A-12PD-15SC(71)	15	52.2	37	6.1	6.0g	
113-0219-2-71	RP13A-12PK-15SC(71)	15	52.2	37	7.1	6.0g	○
113-1010-4-71	RP13A-12PP-15SC(71)	15	52.2	37	7.5	6.0g	
113-0214-9-71	RP13A-12PD-20SC(71)	20	52.2	37	6.1	6.0g	
113-0210-8-71	RP13A-12PG-20SC(71)	20	52.2	37	7.5	6.0g	
113-0217-7-71	RP13A-12PH-20SC(71)	20	47.2	32	6.4	6.0g	
113-1012-0-71	RP13A-12PK-20SC(71)	20	52.2	37	7.1	6.0g	
113-1007-0-71	RP13A-12PO-20SC(71)	20	47.2	32	4.7	6.0g	
113-1022-3-71	RP13A-12PS-20SC(71)	20	52.2	37	8.1	6.0g	

Receptacle (Flange Type)

(Crimp Type)



RP13A-12RA-13PC(71)

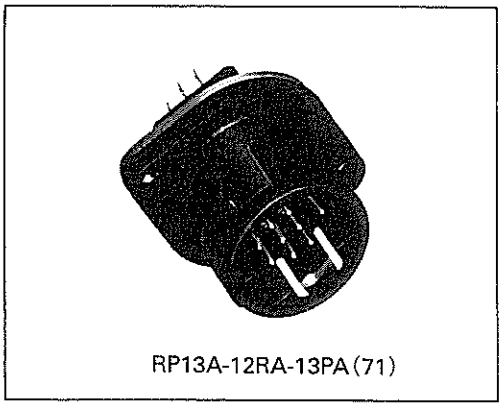


(An example in shape)

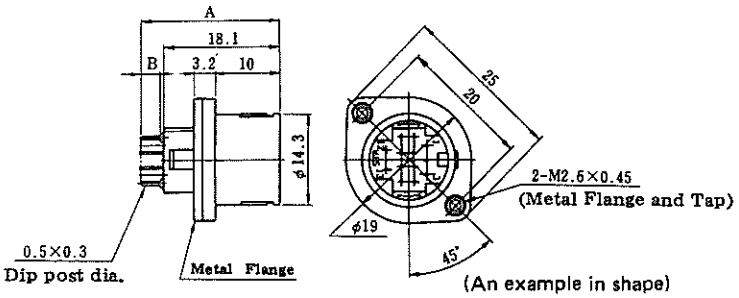
HRS No.	Part No.	No. of pin	A	B	Weight	RoHS
113-0183-7-71	RP13A-12RA-13PC(71)	13	18.1	M2.6×0.45	4.0g	
113-0207-3-71	RP13A-12RA-15PC(71)	15	18.1	M2.6×0.45	4.0g	○
113-0215-1-71	RP13A-12RA-20PC(71)	20	16	M2.6×0.45	4.0g	

Remark: For mounting hole size, refer to page 128.

(Dip Type)



RP13A-12RA-13PA(71)



(An example in shape)

HRS No.	Part No.	No. of pin	A	B	Weight	RoHS
113-0202-0-71	RP13A-12RA-13PA(71)	13	21.5	3	5.0g	
113-1002-6-71	RP13A-12RA-15PA(71)	15	21.5	3	5.0g	○

Remark: Refer to page 128 for mounting hole size, and page 131 for dip post layout size.

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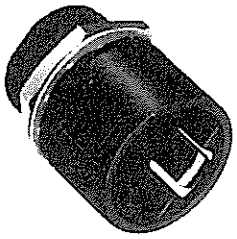
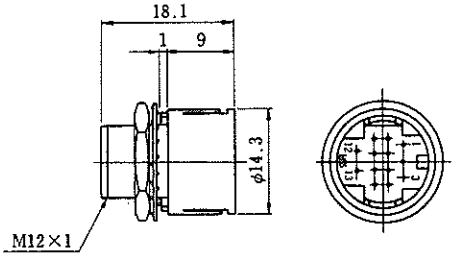
Receptacle(Jam nut fastening type)

(Crimp Type)



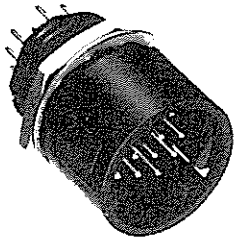
RP13A-12RB-13PC(71)



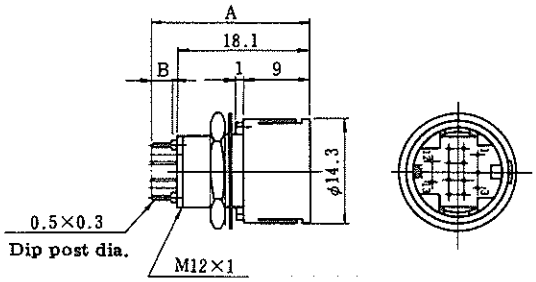
HRS No.	Part No.	No. of pin	Weight	RoHS
113-0185-2-71	RP13A-12RB-13PC(71)	13	2.5g	○

Remark: For mounting hole size, refer to page 128.

(Dip Type)



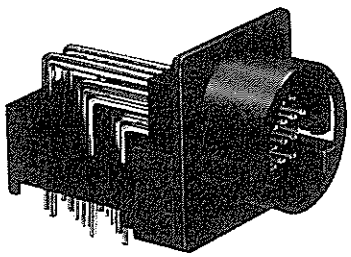
RP13A-12RB-13PA(71)



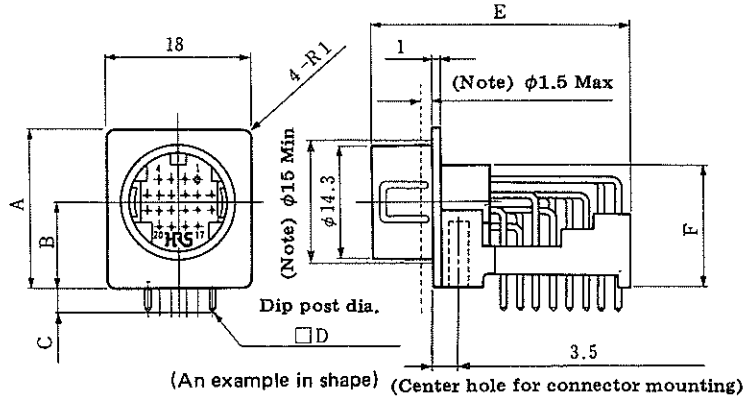
HRS No.	Part No.	A	B	No. of pin	Weight	RoHS
113-0203-2-71	RP13A-12RB-13PA(71)	21.5	3	13	3.5g	○

Remark: Refer to page 128 for mounting hole size and page 131 for dip post layout size.

Right Angle Dip



RP13A–12RC–20PB



Note: Set up the mounting panel thickness less than 1.5mm, mounting whole more than φ15mm.

HRS No.	Part No.	No. of pin	A	B	C	D	E	F	Weight	RoHS
113-1020-8	RP13A-12RC-13PB	13	17.5	8.5	3.5	0.64	23.5	13	4.0g	○
113-0211-0	RP13A-12RC-20PB	20	19.5	10.5	3	0.6	31.5	15	5.0g	

Remark: For dip post layout size, refer to page 131

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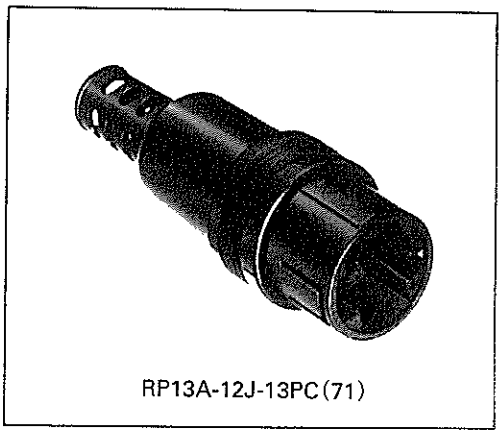
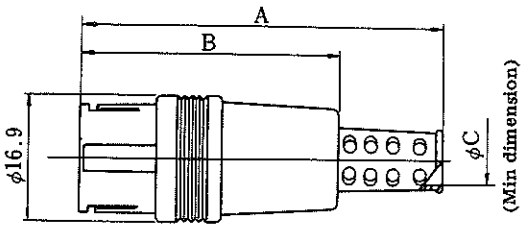
Jack



RP13A-12J-13PC(71)



(An example in shape)

HRS No.	Part No.	No. of pin	A	B	φC	Weight	RoHS
113-0166-8-71	RP13A-12J-13PC(71)	13	49.1	34.6	6.1	4.5g	○
113-1005-4-71	RP13A-12JD-15PC(71)	15	54.1	39.6	6.1	4.5g	
113-0218-0-71	RP13A-12JK-15PC(71)	15	54.1	39.6	7.1	4.5g	
113-1004-1-71	RP13A-12JG-20PC(71)	20	52.6	37.4	7.4	4.5g	

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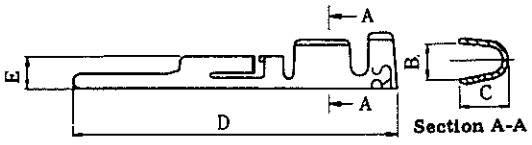
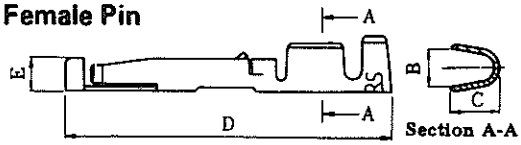
Contact

Male Pin



(An example in shape)

Female Pin



(An example in shape)

For 13 and 15 contacts

Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0179-0	RP13-PC-122	Silver	1.2	1.35	13.9	1.4	AWG#24~#28	○
Chain contact	113-0360-0	RP13-PC-221	Part gold	1.2	1.35	13.9	1.4	AWG#24~#28	
	113-0141-7	RP13-PC-222	Silver	1.2	1.35	13.9	1.4	AWG#24~#28	

Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0363-9	RP13A-SC-121	Part gold	1.2	1.35	13.9	1.4	AWG#24~#28	○
	113-0181-1	RP13A-SC-122	Silver	1.2	1.35	13.9	1.4	AWG#24~#28	
Chain contact	113-0362-6	RP13A-SC-221	Part gold	1.2	1.35	13.9	1.4	AWG#24~#28	
	113-0151-0	RP13A-SC-222	Silver	1.2	1.35	13.9	1.4	AWG#24~#28	

13 for superthick wires(can be used for terminal nos.12 and 13 only)

Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0178-7	RP13-PC-112	Silver	1.6	2.1	13.9	1.4	AWG#18~#22	○
Chain contact	113-0140-4	RP13-PC-212	Silver	1.6	2.1	13.9	1.4	AWG#18~#22	

Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0180-9	RP13A-SC-112	Silver	1.6	2.1	13.9	1.4	AWG#18~#22	○
Chain contact	113-0150-8	RP13A-SC-212	Silver	1.6	2.1	13.9	1.4	AWG#18~#22	

For 20 contacts

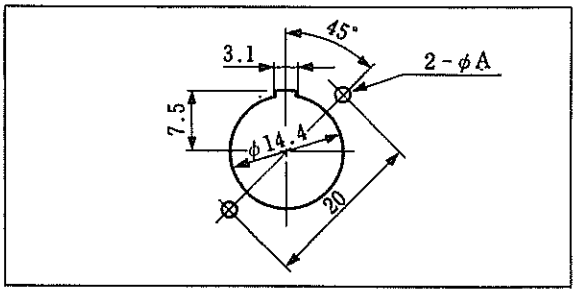
Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0268-8	RP19-PC-122	Silver	1.2	1.35	12	1.18	AWG#24~#30	○
Chain contact	113-0264-7	RP19-PC-222	Silver	1.2	1.35	12	1.18	AWG#24~#30	

Type	HRS No.	Part No.	Plating	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0270-0	RP19-SC-122	Silver	1.2	1.35	11	1.18	AWG#24~#30	○
Chain contact	113-0266-2	RP19-SC-222	Silver	1.2	1.35	11	1.18	AWG#24~#30	

Notes
1: Use connectors with gold-plated terminals if the connectors will be subjected to constant vibration.
2: Loose terminals are available in packs of 100 pieces. Chain terminals are available in reels of 10,000 pieces.

Mounting Cutout

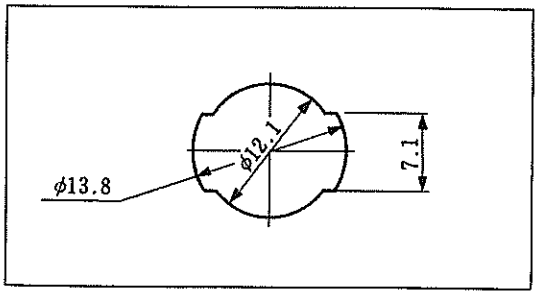
Flange Type



- Applicable Connector

HRS No.	Part No.	Mounting hole dimension φA	RoHS
113-0183-7-71	RP13A-12RA-13PC(71)	3	○
113-0202-0-71	RP13A-12RA-13PA(71)	3	
113-0207-3-71	RP13A-12RA-15PC(71)	3	
113-1002-6-71	RP13A-12RA-15PA(71)	3	
113-0215-1-71	RP13A-12RA-20PC(71)	3	

Jam Nut Type



- Applicable Connector

HRS No.	Part No.	RoHS
113-0185-2-71	RP13A-12RB-13PC(71)	○
113-0203-2-71	RP13A-12RB-13PA(71)	

Note
1. Above appearance shows the panel surface and the mating key is located on top position.
2. The applicable panel thickness for a flange type receptacle is maximum 2.7 mm because this type is mounted on the back surface of panel.
3. The applicable panel thickness for a hexagon nut fastening type is maximum 5 mm and minimum 1 mm.

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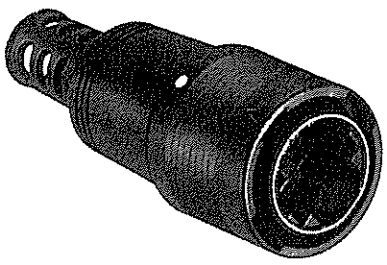
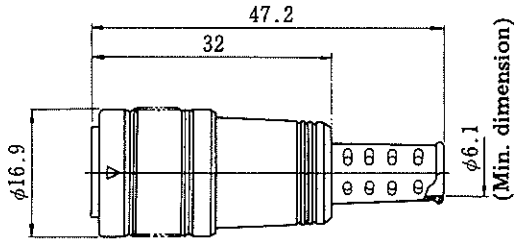
RP13A ELECTROSTATIC PROTECTION TYPE

RP13A Electrostatic Protection Type Connector uses male contacts for plug and female connects for receptacle. Please note that there is NO INTERCHANGEABILITY with standard type RP13A connectors previously introduced. (Crimping terminals also differ from those of the standard connector.)
While using the electrostatic protection type and the standard type in parallel, any error shall be occurred due to different terminal connectors, so assorted usage with standard type are widely extended.

Plug



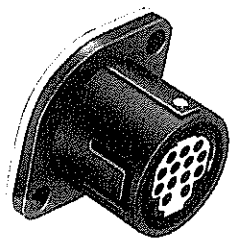
RP13A-12PA-13PC(71)



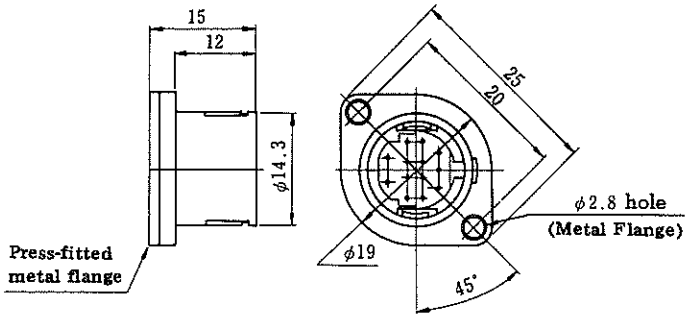
(An example in shape)

HRS No.	Part No.	No. of pin	Weight	RoHS
113-4003-5-71	RP13A-12PA-13PC(71)	13	6.0g	○

Receptacle Flange Type (Crimp Type)



RP13A-12R-13SC(71)



(An example in shape)

HRS No.	Part No.	No. of pin	Weight	RoHS
113-4002-2-71	RP13A-12R-13SC(71)	13	4.0g	○

Remark: For the mounting holes, see page 130.

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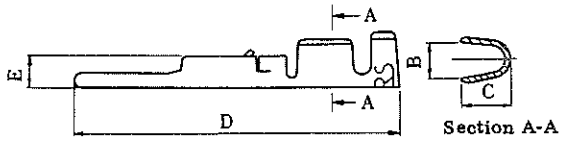
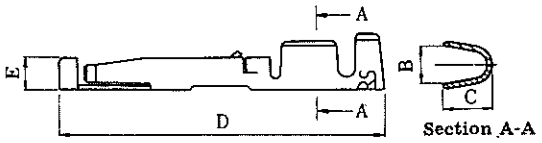
Contact

(Male Pin)



Type	HRS No.	Part No.	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0268-8	RP19-PC-122	1.2	1.35	12	1.18	AWG # 24~30	○
Chain contact	113-0263-4	RP19-PC-212	1.6	2.1	12	1.18	AWG # 18~22	
	113-0264-7	RP19-PC-222	1.2	1.35	12	1.18	AWG # 24~30	

(Female Pin)

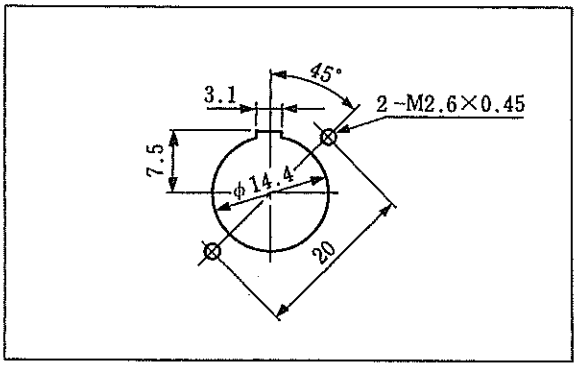


Type	HRS No.	Part No.	B	C	D	E	Applicable wire	RoHS
Loose piece	113-0270-0	RP19-SC-122	1.2	1.35	11	1.18	AWG # 24~30	○
Chain contact	113-0265-0	RP19-SC-212	1.6	2.1	11	1.18	AWG # 18~22	
	113-0266-2	RP19-SC-222	1.2	1.35	11	1.18	AWG # 24~30	

(Note 1) Loose piece terminals are offered in a package containing 100 pieces, and strip terminal by reel containing 10,000 pieces. Contacts of applicable cables AWG#18 to #22 can be used only for terminals 12 and 13. Cannot be used for other terminal numbers.

(Note 2) Use applicable cables AWG#18 to #22 having outer dia. of insulator ϕ1.79 and under, and AWG#24 to #30 cables ϕ1.15 and under.

Receptacle Mounting Hole Dimensions (Electrostatic Protection Type)



(Flange Type)

(Note 1) Above figure shows arrangement viewed from panel face. Mating guide of flanged type is positioned above.

(Note 2) For receptacle of flanged type, connector is inserted from back side of panel. Up to 4.7mm thick panel can be used.

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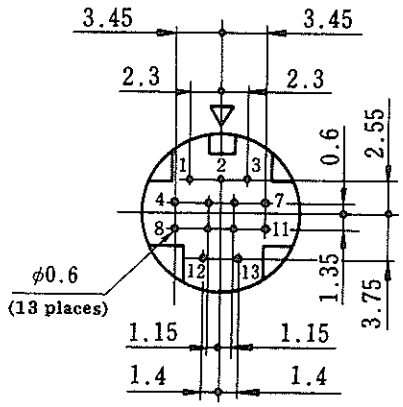
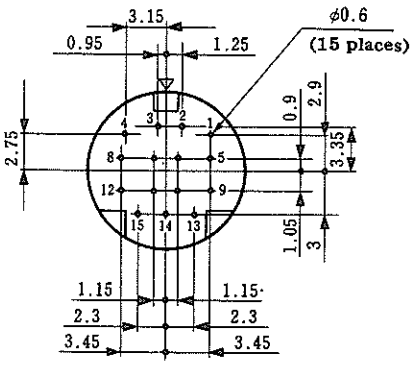
Receptacle Dip Post Layout

13 Conductor

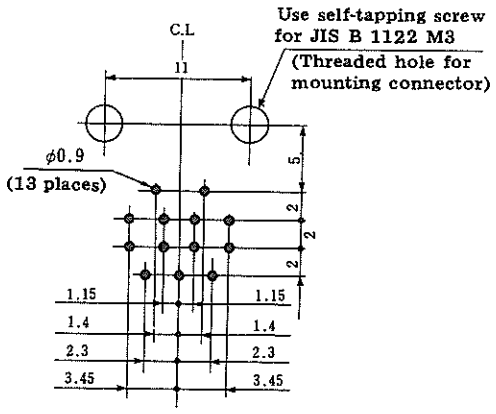


15 Conductor

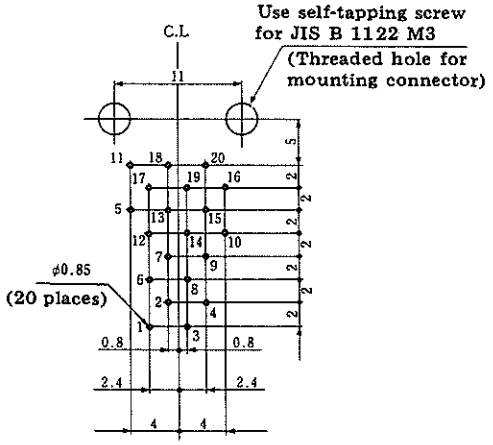


Note: 1. Figures of 13 and 15-conductor connectors are viewing from the mating side of receptacle.
2. Applicable allowance of panel layout: ±0.05 mm.

13 Conductor (Right-angle Type)



20 Conductor (Right-angle Type)



Note: 1. Above figure shows PCB face viewing from the mating face of receptacle.
2. Applicable allowance of panel layout: ±0.05 mm.

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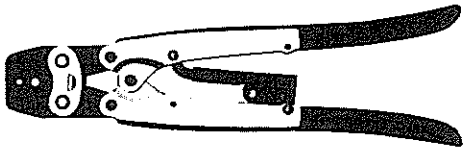
Tools

Type	Item	HRS No.	Part No.	Applicable terminal	Applicable wire
Manual	Manual crimping tool	150-0024-3	RP13-TC-11	RP13-PC-112	AWG#18~#22
		150-0025-6	RP13-TC-12	RP13-PC-$^{121}_{122}$	AWG#24~#28
		150-0026-9	RP13A-TC-11	RP13A-SC-112	AWG#18~#22
		150-0027-1	RP13A-TC-12	RP13A-SC-$^{121}_{122}$	AWG#24~#28
		150-0048-1	RP19-TC-11	RP19-PC-122 RP19-SC-122	AWG#24~#28
		150-0049-4	RP-19-TC-12	RP19-PC-122 RP19-SC-122	AWG#24~#28
Automatic	Automatic crimping body	901-0005-4	CM-105	—	—
	Applicator	901-2024-0	AP105-RP13-2	RP13-PC-221, 222 RP13A-SC-221, 222	AWG#24~#28
		901-2013-3	AP105-RP19-1	RP19-PC-212 RP19A-SC-212	AWG#18~#22
		901-2014-6	AP105-RP19-2	RP19-PC-222 RP19-SC-222	AWG#24~#28
Cable crimping tool		150-0070-0	RP13A-TC-01	—	ϕ7.3, ϕ8.3
		150-0071-3	RP13A-TC-02	—	ϕ7.5, ϕ8.6
Extractor		150-0021-5	RP13-PC-TP	Male terminal	—
		150-0022-8	RP13A-SC-TP	Female terminal	—
		150-0039-0	RP6-SC-TP	Male/female terminal for RP19	—



RP13A–TC–02
Cable Crimping Tool

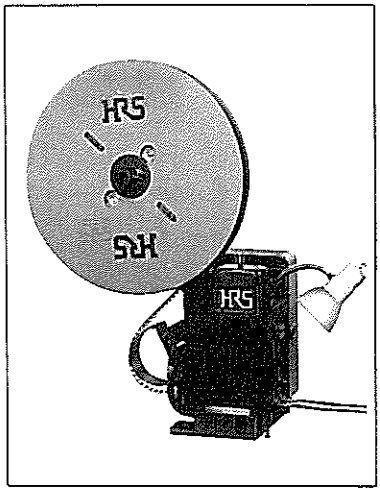
RP13–TC–11
Hand Crimping Tool

RP6–SC–TP

RP13–PC–TP

RP13A–SC–TP

Extraction Tools



Auto Crimp Tool
CM-105

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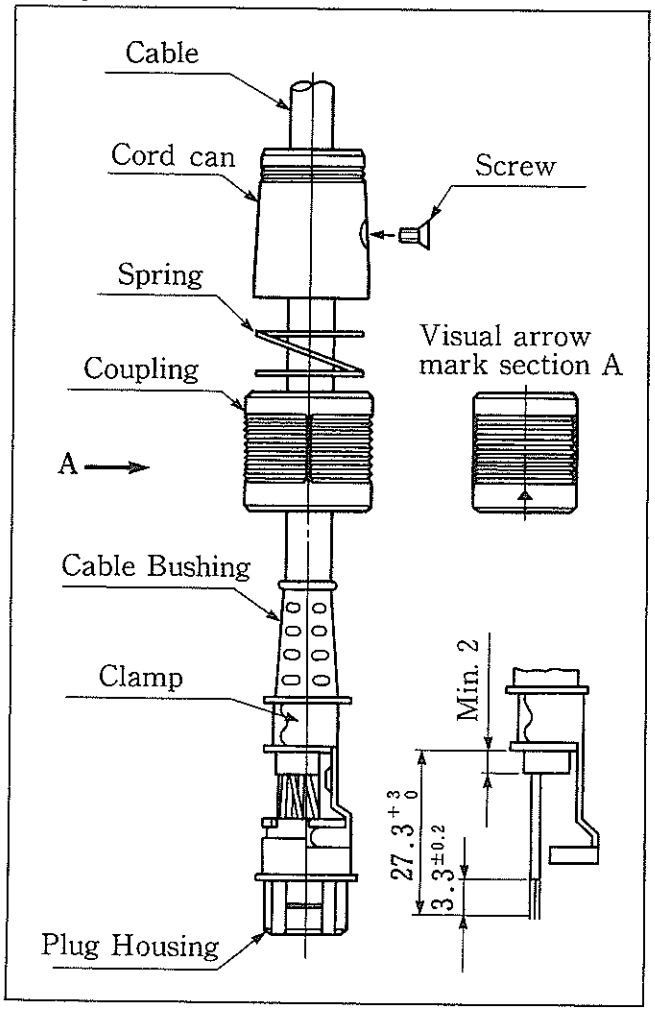
Assembling Procedure

Plug



1. Fit the body, spring, coupling and bushing respectively in advance on wires having ends suitably treated, and then connect wires to terminals by crimp.
2. Then mount crimped contacts into the plug housing. After mounting, pull the wire slightly and make sure the contact is mounted.
3. Fix a cable clamper to the bushing, insert it into the plug housing, and then crimp cable clamper with Hand Clamping Tool.
4. Assemble coupling, spring and body respectively to plug housing, and mount it with the attached screw by means of torque wrench (2 kg-cm), and the work is completed.
5. Put the cable bushing over the clamp body to complete the job.

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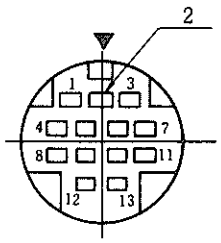
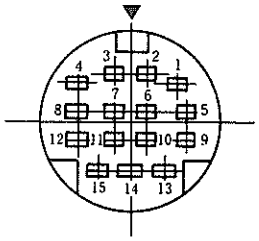
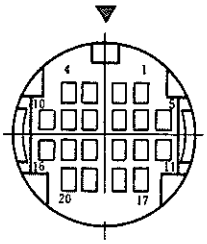
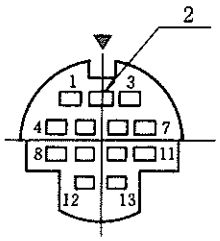
Terminal Arrangement and Performance

(Standard Type)

Pinout			
No of pin	13	15	20
Withstanding voltage	AC 300 a minute	AC 300 a minute	AC 300 a minute
Current rating	2A (AWG #24)	2A (AWG #24)	2A (AWG #24)
Insulation	1000 MΩ max (DC 250V)	1000 MΩ min (DC 250V)	1000 MΩ min (DC 250V)
Contact	15 mΩ min (DC 1A)	15 mΩ max (DC 1A)	30 mΩ max (DC 1A)
Applicable wire	AWG #18 ~ #22 (insulation φ1.9) Conformity terminal No.12, 13 AWG #24 ~ #28 (insulation φ 1.4) Conformity terminal No.1~11	AWG #24 ~ #28 (insulation φ 1.4)	AWG #24 ~ #20 (insulation φ 1.15)

(Electrostatic Protection Type)

Pinout	
Positions	13
Withstanding voltage	AC 300 a minute
Current	2A (AWG #22)
Insulation	1000 MΩ min (DC 250V)
Contact	15 mΩ max (DC 1A)
Wire	AWG #18 ~ #22 (insulation φ 1.79) Conformity terminal No. 12, 13 AWG #24 ~ #30 (insulation φ 1.15) Conformity terminal No. 1 ~ 11

(Remarks) 1. Above figure shows arrangement viewed from the mating face (cable connection side) of receptacle and jack.

2. Withstanding voltage is shown by testing voltage.