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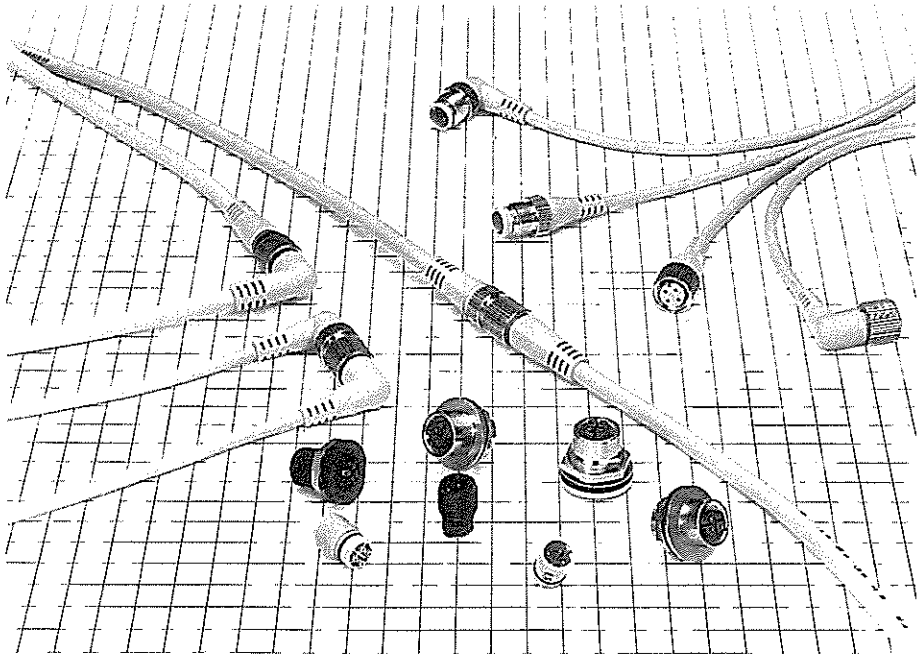
HRS HR24 SERIES

CIRCULAR WATER-PROOF CONNECTORS FOR SENSORS

Scope

The HR24 Series are 4-pin type circular connectors developed to meet the needs for cost reduction in sensor wiring and improved maintenance efficiency. They are water-proof and oil-proof and may be used in adverse environmental conditions free from deterioration in performance.



Features

1. Water-Proof
   The HR24 Series connector engaged with a receptacle meets the IP67 water-proofness standard. It is also oil-proof.
2. Insulating Walls between Terminals
   The connector receptacle has insulating walls between terminals, preventing short circuit in wire soldering caused by barbed wires, etc.
3. Wide variations
   Two types of connectors, DC and AC connectors, are available. They are not mutually compatible. The connectors with cables (i.e., plugs and jacks) are available in straight type ;and right-angle type. Also, the receptacles are mounted on panels in two ways; front mounting and back mounting.

Applications

Limit switches, proximity switches, photoelectric switches, pressure switches and a variety of sensors.

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Material and Finish

Major Performances

Item	Performances
Rated voltage	125V (DC type), 250V (AC type)
Rated current	3A
Contact resistance	10mΩ or less (Cable conductor resistance not included.)
Insulation resistance	100MΩ or more at DC500V
Withstand voltage	1 minute at AC1500V
Water-proofness	IP67

Major Materials

Parts	Materials	Finish
Outer sheath	Soft PVC & brass	Nickel plating (Gray)
Insulating material	PBT resin (*)	(Gray)
Pin	Copper alloy	Silver plating

* UL94V-0

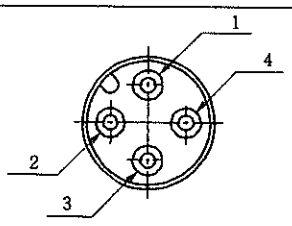
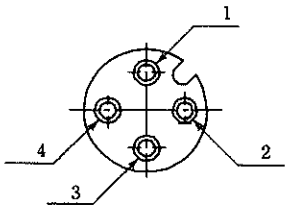
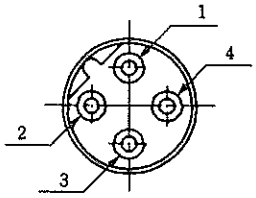
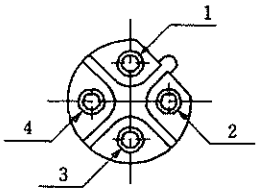
Standard Cable Specifications

Conductors	20 conductors, 0.18 dia. each	40 conductors, 0.18 dia. each
Number of wires	4 wires	4 wires
Outer dia.	φ6.8	φ4.4
Color	Gray	Gray

Standard Wires

Pin Numbers	Wire Color
1	Brown
2	White
3	Blue
4	Black

Mating Part Profiles

	Male	Female
DC type		
AC type		

Note: Figure pin No.

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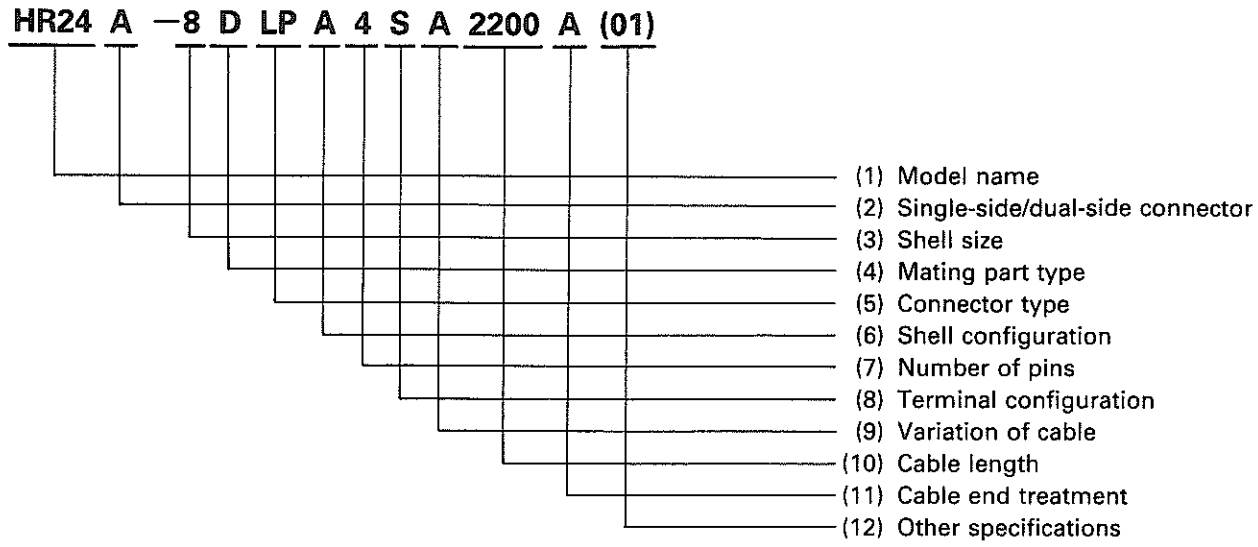
Ordering Information



(1)	Model name	: HR24 Series
(2)	Single-side/dual-side connector	: A dual-side connector has this symbol, which differs with the type of the connector. Omitted for a single-side connector.
(3)	Shell size	: This number indicates the outer dia. of the shell of the plug mating part. Size 8 : Female plug Size 9 : Male plug
(4)	Mating part type	: Available in DC type and AC type mating parts. A : AC type D : DC type
(5)	Connector type	: Indicates any of the following connector types: P : Straight plug J : Straight jack LP : Right-angle plug LJ : Right-angle jack R : Receptacle PR : Plug receptacle
(6)	Shell configuration	: If you need connectors of a model with shells of different shapes, specify the shapes of the shells under A, B,...
(7)	Number of pins	: Indicates the number of pins.
(8)	Terminal configuration	: Indicates the shape of pins as follows: P : Male pin S : Female pin
(9)	Variation of cable	: Construction and conductor number, etc.
(10)	Cable length	: Indicates the length of a cable (in units of mm)
(11)	Cable end treatment	: A, B,.....
(12)	Other specifications	: (01), (02),.....

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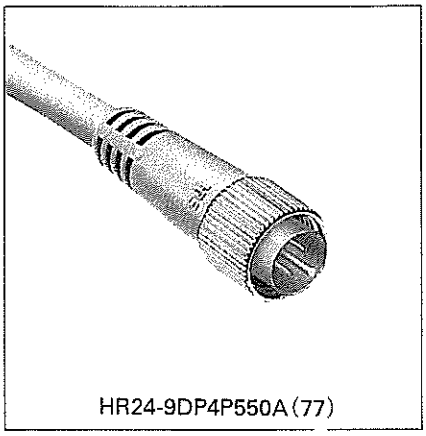
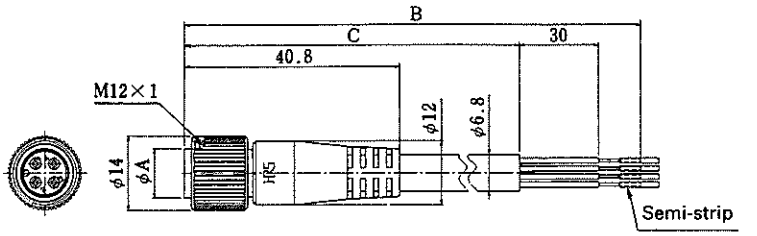
Plug

(Straight type)



HR24-9DP4P550A(77)



(An example in shape)

HRS No.	Product No.	No. of pins	φA	B	C	φD	Remarks	RoHS
124-0240-2-77	HR24-8DP4SA550A(77)	4	8.1	550	500	4.4	For DC	
124-0209-2-77	HR24-8DP4S550A(77)	4	8.1	550	500	6.8	For DC	
124-0213-0-77	HR24-8DP4S1050A(77)	4	8.1	1050	1000	6.8	For DC	
124-0215-5-77	HR24-8DP4S3050A(77)	4	8.1	3050	3000	6.8	For DC	
124-0210-1-77	HR24-9DP4P550A(77)	4	9.3	550	500	6.8	For DC	
124-0217-0-77	HR24-9DP4P1050A(77)	4	9.3	1050	1000	6.8	For DC	○
124-0220-5-77	HR24-9DP4P5050A(77)	4	9.3	5050	5000	6.8	For DC	
124-0403-5-77	HR24-8AP4S550A(77)	4	8.1	550	500	6.8	For AC	
124-0405-0-77	HR24-8AP4S1050A(77)	4	8.1	1050	1000	6.8	For AC	
124-0406-3-77	HR24-8AP4S2200A(77)	4	8.1	2200	2150	6.8	For AC	
124-0408-9-77	HR24-8AP4S5050A(77)	4	8.1	5050	5000	6.8	For AC	

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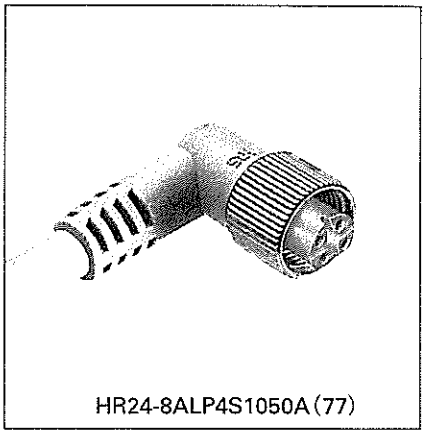
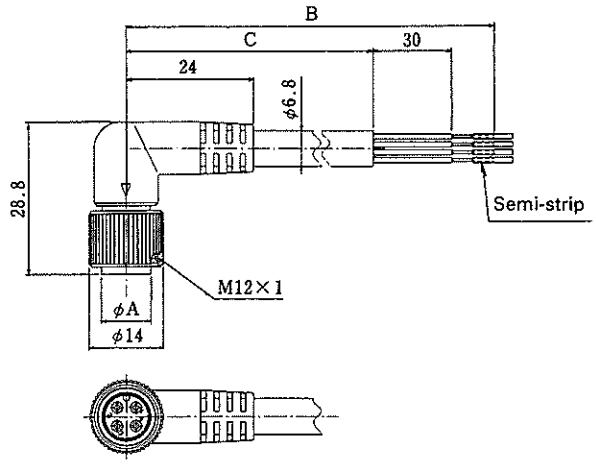
Plug

(Right-Angle Type)



HR24-8ALP4S1050A(77)



(An example in shape)

HRS No.	Product No.	No. of pins	φA	B	C	φD	Remarks	RoHS
124-0241-5-77	HR24-8DLP4SA550A(77)	4	8.1	550	500	4.4	For DC	○
124-0211-4-77	HR24-8DLP4S550A(77)	4	8.1	550	500	6.8	For DC	
124-0222-0-77	HR24-8DLP4S2200A(77)	4	8.1	2200	2150	6.8	For DC	
124-0226-1-77	HR24-9DLP4P2200A(77)	4	9.3	2200	2150	6.8	For DC	
124-0227-4-77	HR24-9DLP4P3050A(77)	4	9.3	3050	3000	6.8	For DC	
124-0409-1-77	HR24-8ALP4S1050A(77)	4	8.1	1050	1000	6.8	For AC	

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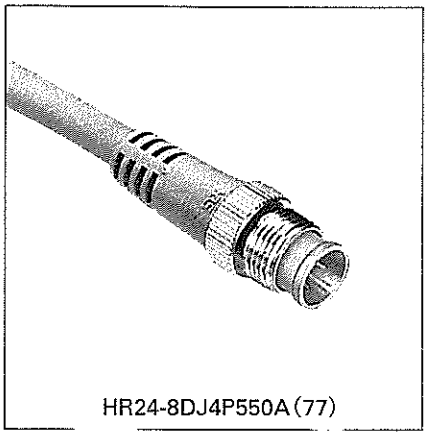
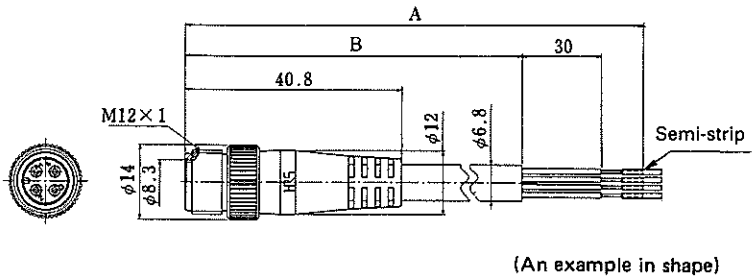
JACK (HR24, available in 8 sizes)

(Straight Type)



HR24-8DJ4P550A(77)



(An example in shape)

HRS No.	Product No.	No. of pins	A	B	φC	Remarks	RoHS
124-0637-6-77	HR24-8DJ4PA550A(77)	4	550	500	4.4	For DC	○
124-0607-5-77	HR24-8DJ4P550A(77)	4	550	500	6.8	For DC	
124-0611-2-77	HR24-8DJ4P1050A(77)	4	1050	1000	6.8	For DC	
124-0612-5-77	HR24-8DJ4P2200A(77)	4	2200	2150	6.8	For DC	
124-0803-3-77	HR24-8AJ4P550A(77)	4	550	500	6.8	For AC	
124-0805-9-77	HR24-8AJ4P1050A(77)	4	1050	1000	6.8	For AC	

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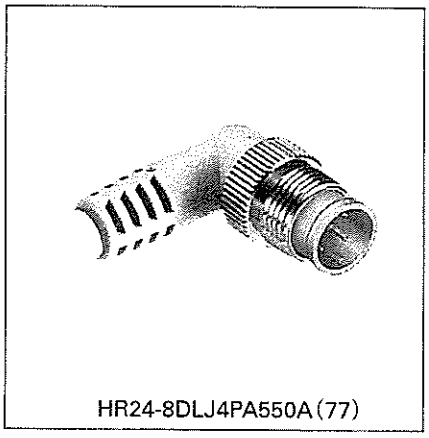
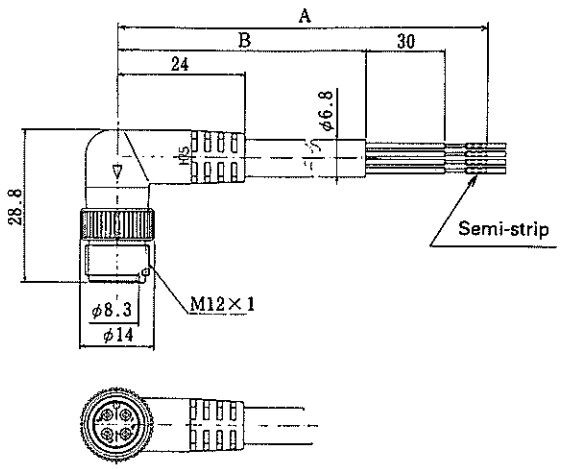
JACK (HR24, available in 8 sizes)

(Right-Angle Type)



HR24-8DLJ4PA550A(77)



(An example in shape)

HRS No.	Product No.	No. of pins	A	B	φC	Remarks	RoHS
124-0638-9-77	HR24-8DLJ4PA550A(77)	4	550	500	4.4	For DC	○

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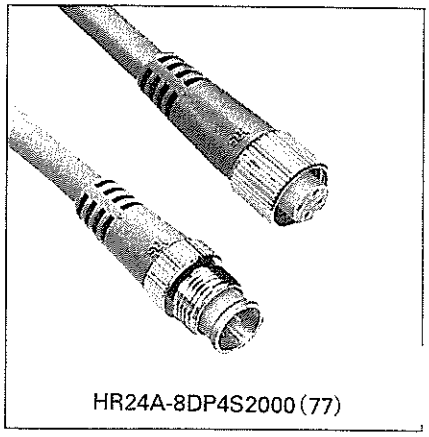
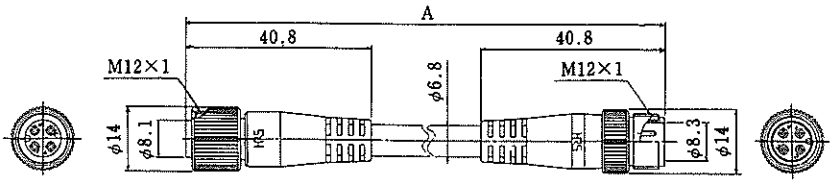
Junction Connector (HR24, available in 8 sizes)

(Straight-Plug ~ Straight Jack)



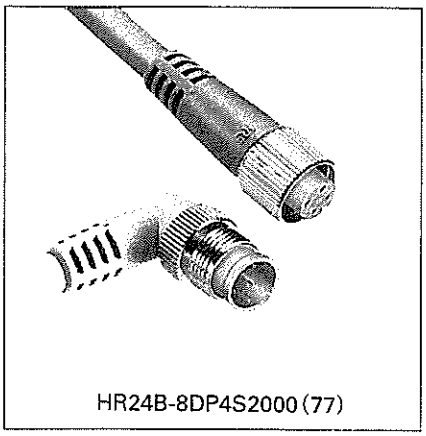
HR24A-8DP4S2000(77)



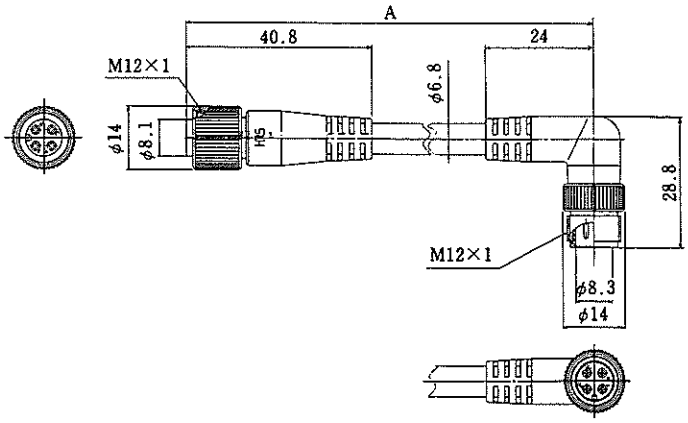
(An example in shape)

HRS No.	Product No.	No. of pins	A	Remarks	RoHS
124-1201-6-77	HR24A-8DP4S2000(77)	4	2000	For DC	○
124-1202-9-77	HR24A-8DP4S3000(77)	4	3000	For DC	
124-1203-1-77	HR24A-8DP4S5000(77)	4	5000	For DC	

(Straight Plug ~ Right-Angle Jack)



HR24B-8DP4S2000(77)



(An example in shape)

HRS No.	Product No.	No. of pins	A	Remarks	RoHS
124-1209-8-77	HR24B-8DP4S2000(77)	4	2000	For DC	○

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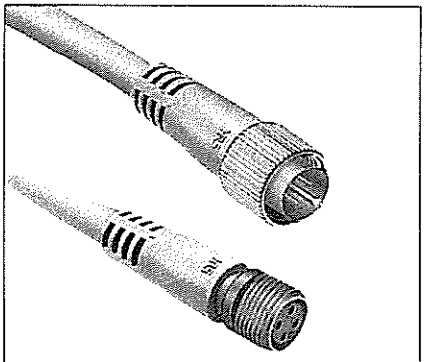
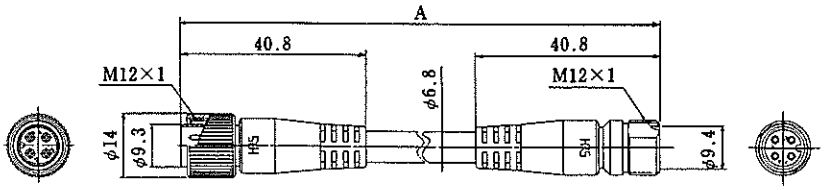
Junction Connector (HR24, available in 9 sizes)

(Straight Plug ~ Straight Jack)



HR24A-9DP4P5000(77)



(An example in shape)

HRS No.	Product No.	No. of pins	A	Remarks	RoHS
124-1207-2-77	HR24A-9DP4P5000(77)	4	5000	For DC	○

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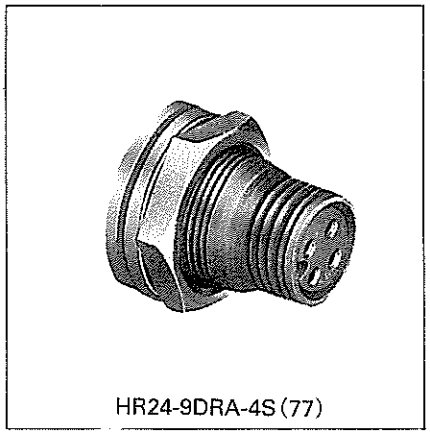
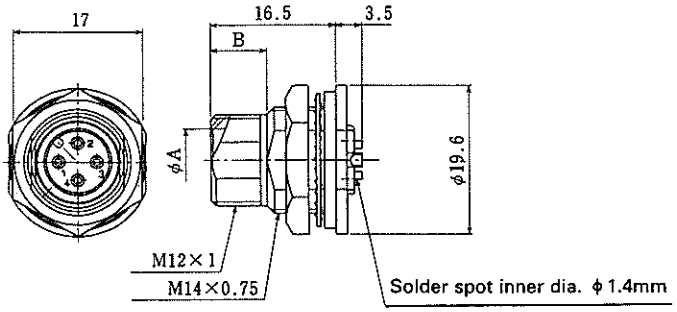
(Front panel mount type)



HR24-9DRA-4S(77)



(An example in shape)

HRS No.	Product No.	No. of pins	φA	B	Remarks	RoHS
124-0101-6-77	HR24-8DRA-4P(77)	4	8.3	8.5	For DC	
124-0101-6-78	HR24-8DRA-4P(78)	4	8.3	8.5	For DC,Terminal gold plating	
124-0102-9-77	HR24-9DRA-4S(77)	4	9.4	8	For DC	○
124-0152-7-77	HR24-8ARA-4P(77)	4	8.3	8.5	For AC	
124-0152-7-78	HR24-8ARA-4P(78)	4	8.3	8.5	For AC,Terminal gold plating	

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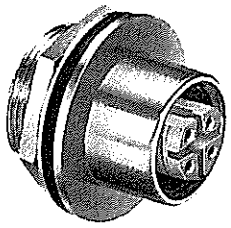
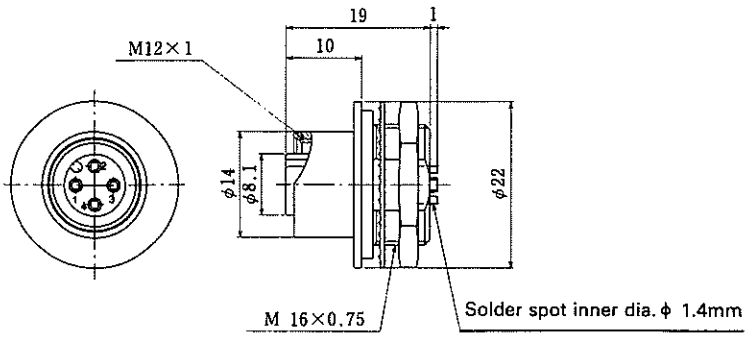
Plug Receptacle (Solder type)

(Back panel mounting type)



HR24-8APR-4S (78)

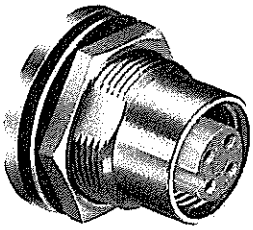


(An example in shape)

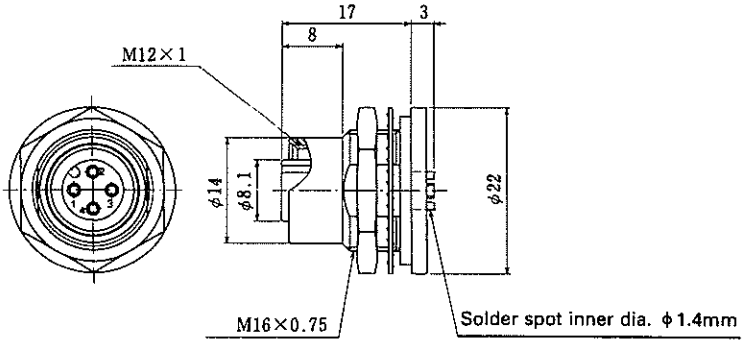
HRS No.	Product No.	No. of pins	Remarks	RoHS
124-0003-7-77	HR24-8DPR-4S (77)	4	For DC	○
124-0003-7-78	HR24-8DPR-4S (78)	4	For DC,Terminal gold plating	
124-0051-0-78	HR24-8APR-4S (78)	4	For AC,Terminal gold plating	

Note: For the mounting hole dimensions, see page 214.

(Front panel mounting type)



HR24-8DPRA-4S (77)



(An example in shape)

HRS No.	Product No.	No. of pins	Remarks	RoHS
124-0004-0-77	HR24-8DPRA-4S (77)	4	For DC	○
124-0004-0-78	HR24-8DPRA-4S (78)	4	For DC,Terminal gold plating	
124-0052-2-78	HR24-8APRA-4S (78)	4	For AC,Terminal gold plating	

Note: For the mounting hole dimensions, see page 214.

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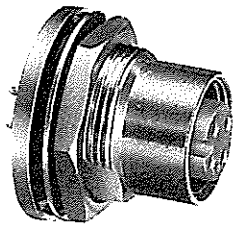
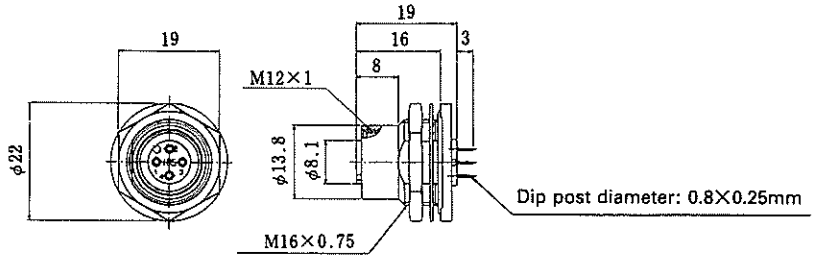
Plug Receptacle (PCB dip type)

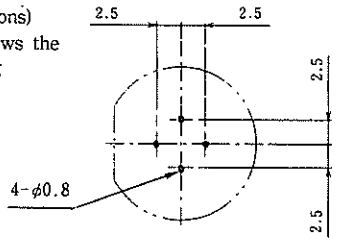
(Front panel mount type)



HR24-8DPRB-4SA(77)



(Dip post dimensions)
(The diagram shows the view from mating surface.)



(An example in shape)

HRS No.	Product No.	No. of pins	Remarks	RoHS
124-0001-1-77	HR24-8DPRB-4SA(77)	4	For DC	○

Note: 1. For the mounting hole dimensions, see page 214.
2. Applicable dip post dimensions processing allowance is ±0.05.

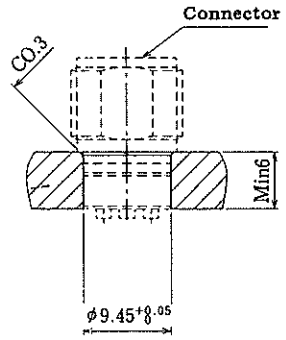
The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.
All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

Mounting Hole Dimensions

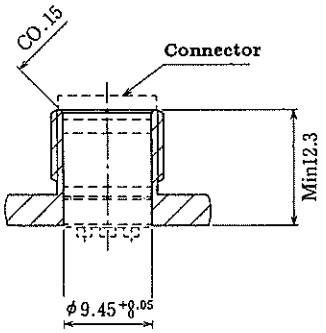
● Mounting sensor direct mount type connectors

1. Connect wires to the connector.
2. Apply adhesive to the side of the connector to be embedded in a sensor.
3. After embedding the connector in the sensor, fix the connector by loading resin into the connection part.

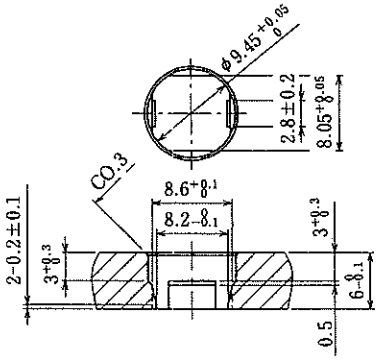
For HR24-8*RC (sensor direct-mounted type)

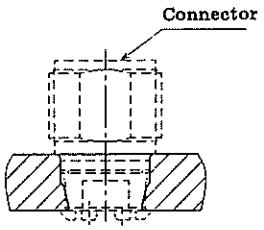


For HR24-8*RD (sensor direct-mounted type)



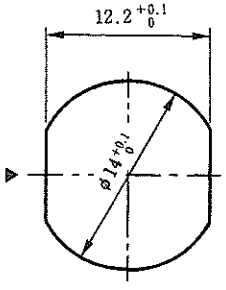
For HR24-8DRB (sensor direct-mounted type)



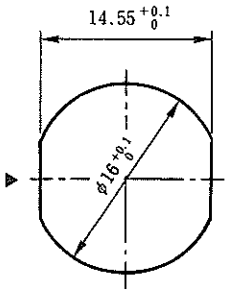


View of mounted connector

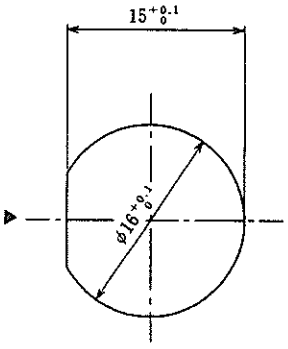
For HR24-8DRA
For HR24-9DRA



For HR24-8*PR
For HR24-8*PRA



For HR24-8DPRB



Note 1. ▲ shows the direction of the No. 1 terminal when the connector is mounted on a panel.
2. * will be replaced by D or A denoting DC or AC.

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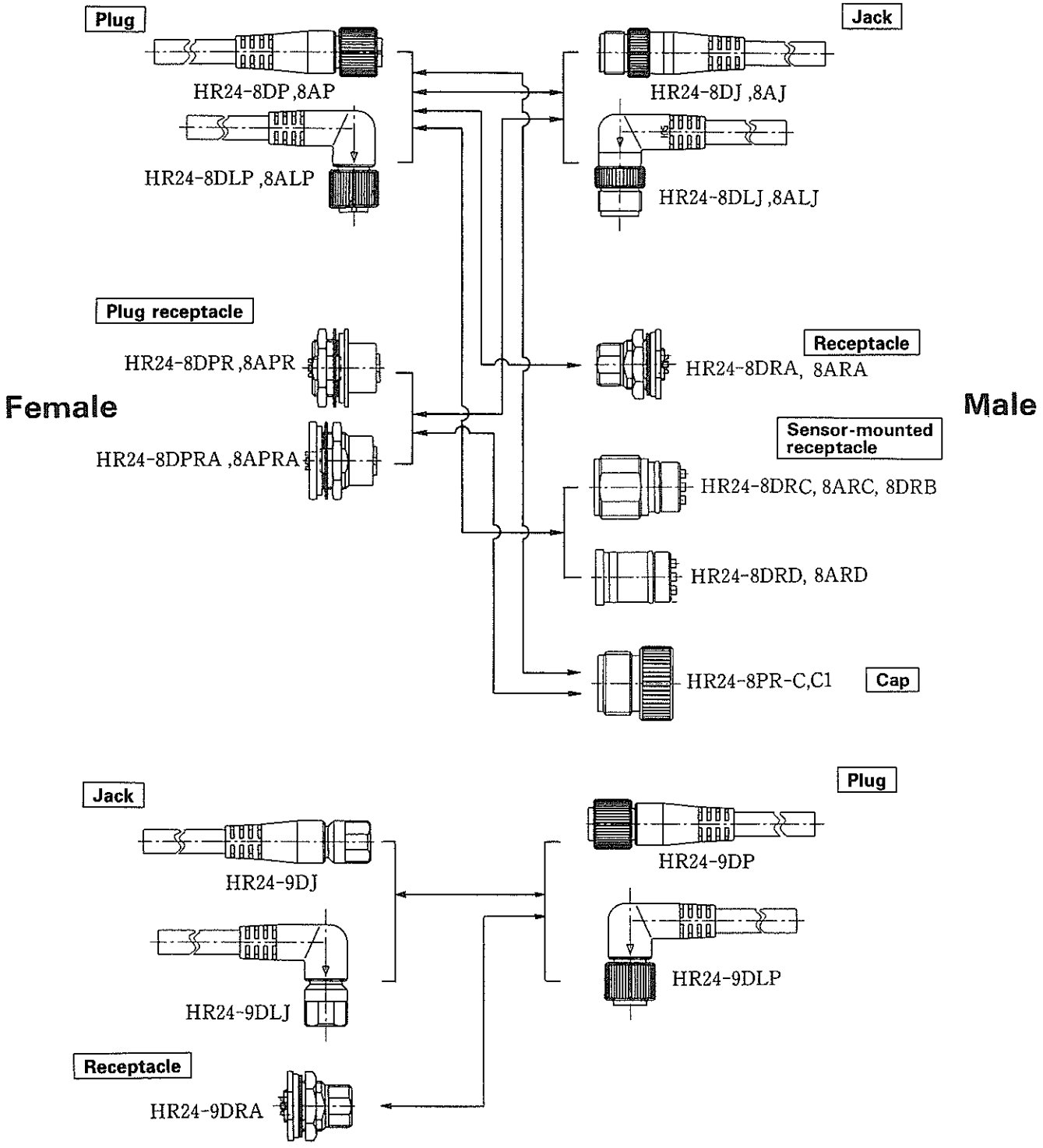
Connection

The following figure shows possible connection of the connectors. The connectors and receptacles linked with the arrow lines are applicable to each other.



Note: Note that the HR24-8D* (DC type) is not applicable to the HR24-8A* (AC type).
For example, the HR24-8DP is not applicable to the HR24-8AJ.