

# Circular connectors for small electronic devices

## SR30 Series



### ■ Features

#### 1. Compact and light weight design

Optimally suited for use in small electronic devices such as radio equipment, the SR30 has a maximum outer shell diameter of  $\phi 15$ .

#### 2. Robustness

The metal construction provides for a small but robust connector.

#### 3. Smart design

The flexible strain relief is strong enough to maintain its shape and resist bending stresses.

#### 4. Variation

| Items                      |                                                                                  |
|----------------------------|----------------------------------------------------------------------------------|
| No. of Contacts            | 4 contacts, 6 contacts, 7 contacts                                               |
| Connector type             | Plug and jack : Straight<br>Receptacle : Straight                                |
| Termination version        | Plug and jack : Soldering<br>Receptacle : Soldering                              |
| Receptacle mounting method | Tightened with nuts on either of the front or back of the panel (6-contact only) |

### ■ Product Specifications

|         |               |                  |                             |              |
|---------|---------------|------------------|-----------------------------|--------------|
| Ratings | Rated current | 1A               | Operation temperature range | -10 to +60°C |
|         | Rated voltage | 100V AC, 140V DC | Storage temperature range   | -10 to +60°C |

| Items                    | Specifications                                                                   | Conditions                                                                                                                                |
|--------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Contact resistance    | 10mΩ max                                                                         | Measured at 1A DC                                                                                                                         |
| 2. Insulation resistance | 200MΩ min                                                                        | Measured at 100V DC                                                                                                                       |
| 3. Withstanding voltage  | No flashover or dielectric breakdown.                                            | 300V AC for 1 minute                                                                                                                      |
| 4. Vibration resistance  | No electrical discontinuity for 10μs or greater.                                 | 10 to 55Hz/cycle, amplitude : 0.75mm, 3 axis directions, 2 hours each                                                                     |
| 5. Shock resistance      | No electrical discontinuity for 10μs or greater.                                 | Acceleration : 490m/s <sup>2</sup> , duration : 11ms, 3 axis directions, 3 cycles each                                                    |
| 6. Mating cycle          | Contact resistance : 15mΩ max                                                    | 1,000 times                                                                                                                               |
| 7. Temperature cycle     | Insulation resistance : 200MΩ min                                                | -30°C : 30 minutes → Normal temperature : 10 to 15 minutes → 85°C : 30 minutes → Normal Temperature : 10 to 15 minutes, left for 5 cycles |
| 8. Humidity resistance   | Insulation resistance :<br>10MΩ min (at high humidities)<br>100MΩ min (when dry) | Temperature : 40°C, relative humidity : 90 to 95%, left for 96 hours                                                                      |

### ■ Materials / Finish

| Items      |           | Material                 | Finish                     | Remarks |
|------------|-----------|--------------------------|----------------------------|---------|
| Plug Jack  | Insulator | Polyacetal resin         | —                          | —       |
|            | Contact   | Brass or phosphor bronze | Gold plating               | —       |
|            | Shell     | Brass or zinc die-cast   | Nickel or Chromium plating | —       |
|            | Hood      | Chloroprene rubber       | —                          | —       |
|            | Clamp     | Brass                    | —                          | —       |
|            | Screw     | Steel                    | Nickel plating             | —       |
| Receptacle | Insulator | Polyacetal resin         | —                          | —       |
|            | Contact   | Phosphor bronze          | Gold plating               | —       |
|            | Shell     | Brass                    | Chromium plating           | —       |
|            | Gasket    | Polyamide resin          | —                          | —       |
|            | Nut       | Steel                    | Nickel plating             | —       |

## ■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.  
Please select from the product numbers listed in this catalog when placing orders.

### ●Connector

#### **SR30 - 10 W P A - 6 P A (\*\*)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

|                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------|
| ① Model name : SR30 Series                                                                                                       |
| ② Shell size : Shell size is the outer diameter of the mating end of the plug.                                                   |
| ③ Particularity :<br>No indication : Standard<br>W : Waterproof                                                                  |
| ④ Shell type<br>P : Plug<br>R : Receptacle<br>J : Jack                                                                           |
| ⑤ Shell variation : Connectors are distinguished by A, B, or C if another variation is applied in the same form.                 |
| ⑥ Number of contacts : Indicates the number of contacts.                                                                         |
| ⑦ Contact form<br>P : Male contact<br>S : Female contact                                                                         |
| ⑧ Variation of insulator<br>A : Insulator material : Fluorinated synthetic resin                                                 |
| ⑨ Other specifications : 2 numerical digits will be added when there is a specification change other than shown in positions ①~⑧ |

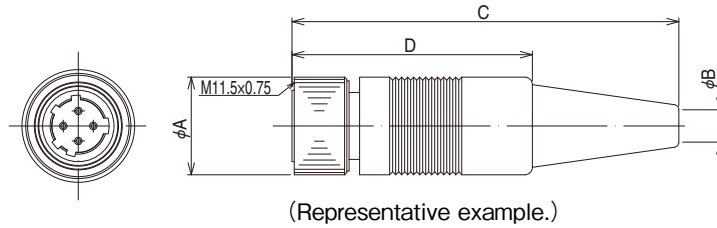
### ●Accessory

#### **SR30 - 10 RC 1 (\*\*)**

① ② ③ ④ ⑤

|                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------|
| ① Model name : SR30 Series                                                                                                       |
| ② Shell size : Shell size is the outer diameter of the mating end of the plug.                                                   |
| ③ Accessory name : RC : Receptacle cap                                                                                           |
| ④ Form type : A number is added if there are some variations.                                                                    |
| ⑤ Other specifications : 2 numerical digits will be added when there is a specification change other than shown in positions ①~④ |

## ■ Plug



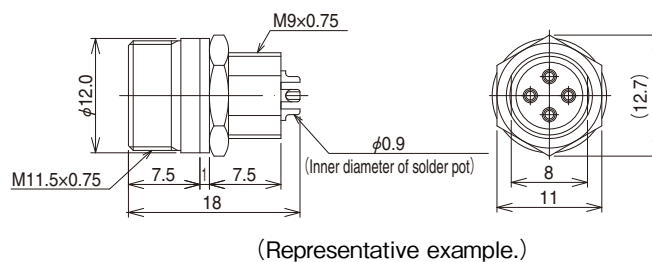
| Part No.          | HRS No.       | No. of contacts            | φA   | φB               | C             | D          | Remarks                     |
|-------------------|---------------|----------------------------|------|------------------|---------------|------------|-----------------------------|
| SR30-10PE-4P(71)  | 103-0265-2 71 | 4                          | 13   | 4.3              | 51.5          | 32         | ————                        |
| SR30-10PE-6P(74)  | 103-0258-7 74 | 6                          |      | 5.2              | 49.0          | 31         | See Note 1                  |
| SR30-10PG-6P(31)  | 103-0273-0 31 |                            |      | 5.7              |               | ————       |                             |
| SR30-10PX-6P(31)  | 103-0336-9 31 |                            |      | SR30-10PF-6P(71) | 103-0319-0 71 | 15         | 5.5                         |
| SR30-10PF-7P(71)  | 103-0316-1 71 | 7                          | 5.7  | 49.0             | ————          |            | Silver plated contacts only |
| SR30-10PM-4P(31)  | 103-0341-9 31 | 4                          |      |                  | ————          |            | ————                        |
| SR30-10PM-6P(31)  | 103-0288-8 31 | 6                          |      |                  | 4.3           |            | 57.5                        |
| SR30-10PQ-6P(71)  | 103-0313-3 71 |                            | 51.5 | 32               |               | Waterproof |                             |
| SR30-10WP-6PA(71) | 103-0350-0 71 |                            |      |                  |               |            |                             |
| SR30-P            | 103-0266-5    | Metal fitting for clamping |      |                  |               |            | ————                        |

Note 1 : When ordering the SR30-10PE-6P or SR30-10PX-6P, order SR30-P cable clamps separately, because such plugs have no cable clamps.

Note 2 : The inner diameter of solder pot for male contact is  $\phi 0.8$ .

Note 3 : Cable clamping force, cable rotation force, and other aspects may differ depending on the cable construction. We recommend that you verify the suitability of the cable assembly before use or production.

## ■ Receptacle (Jam nut to be fastened)

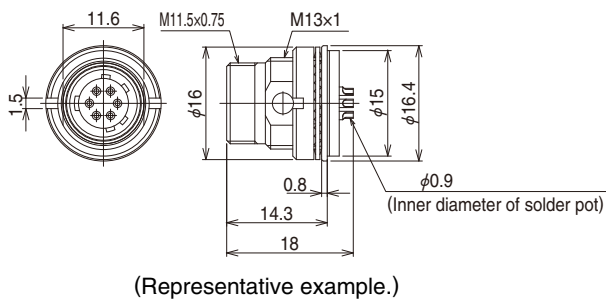


| Part No.          | HRS No.       | No. of contacts | Remarks                |
|-------------------|---------------|-----------------|------------------------|
| SR30-10R-4S(71)   | 103-0264-0 71 | 4               | —                      |
| SR30-10R-6S(71)   | 103-0239-2 71 | 6               | —                      |
| SR30-10R-7S(71)   | 103-0317-4 71 | 7               | Silver plated contacts |
| SR30-10WR-6SA(71) | 103-0349-0 71 | 6               | Waterproof             |

(Remarks) The mounting panel thickness should be 5mm or less.

Note 1 : Some dimensions on the waterproof types differ from those given below.

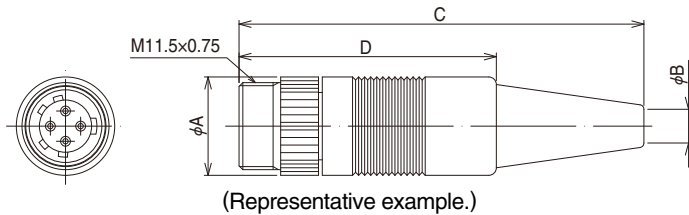
■Receptacle (Jam nut to be fastened from front panel)



| Part No.         | HRS No.       | No. of contacts |
|------------------|---------------|-----------------|
| SR30-10RD-6S(71) | 103-0302-7 71 | 6               |

(Remarks) The mounting panel thickness should be 3 mm or less.

■Jack



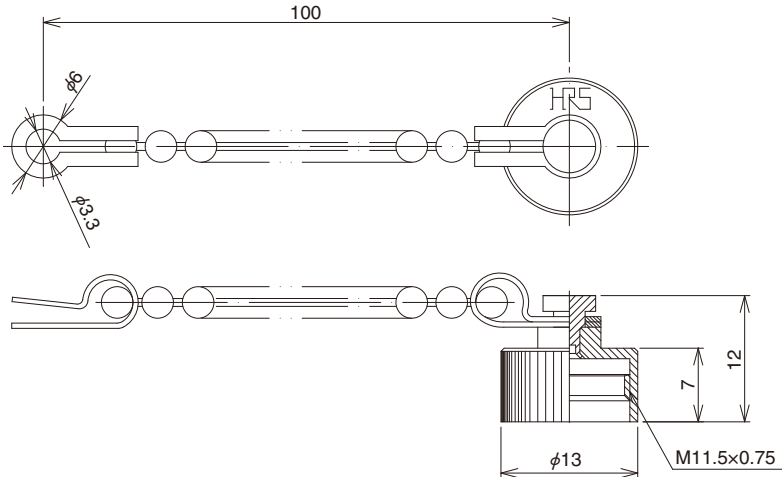
| Part No.         | HRS No.       | No. of contacts | φA | φB  | C    | D  | Remarks                |
|------------------|---------------|-----------------|----|-----|------|----|------------------------|
| SR30-10JE-4S(71) | 103-0301-4 71 | 4               | 13 | 4.3 | 53.5 | 34 | ——                     |
| SR30-10JE-6S(72) | 103-0259-0 72 | 6               |    | 5.7 | 51   | —  | Note 1)                |
| SR30-10JM-6S(71) | 103-0292-5 71 |                 |    | 5.5 | 57   | —  | Silver plated contacts |
| SR30-10JF-7S(71) | 103-0330-2 71 | 7               |    |     |      |    |                        |

Note 1 : When ordering the SR30-10JE-6S receptacles, order SR30-P (103-0266-5) cable clamps separately, because they have no cable clamps.

Note 2 : The inner diameter of solder pot for male contact is  $\phi 0.9$ .

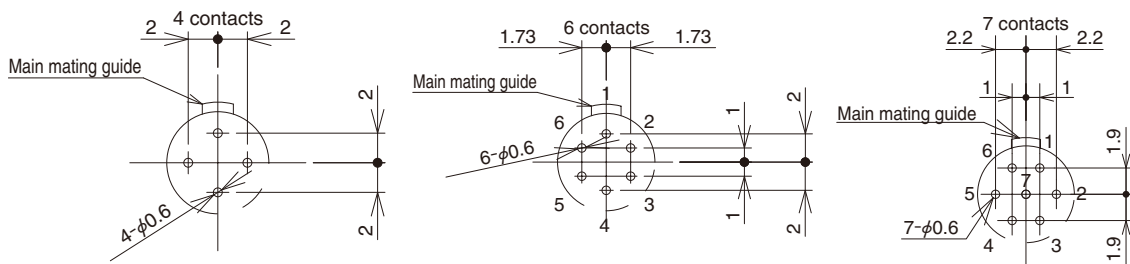
Note 3 : Cable clamping force, cable rotation force, and other aspects may differ depending on the cable construction. We recommend that you verify the suitability of the cable assembly before use or production.

■Cap



| Part No.       | HRS No.       | Remarks |
|----------------|---------------|---------|
| SR30-10RC1(71) | 103-0344-7 71 | —       |

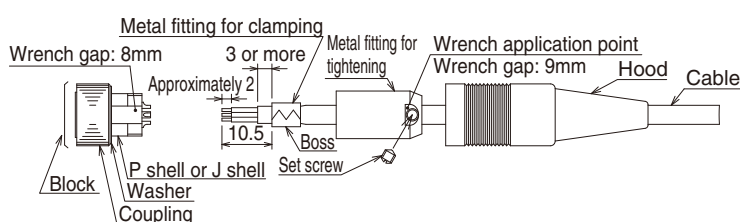
## ◆ Dip post arrangement sizes for receptacles



(Remarks) 1. Figures are views from the mating side of the receptacle.

2. A machining tolerance of  $\pm 0.05\text{mm}$  is recommended for the PCB layout dimensions.

## ◆ Reference termination procedure (plug and jack sides)



For details on usage, please contact our Engineering Dept. or Sales Dept.



150-0004-6 SR30-10P-T04

### Jig for termination

### Crimping Tool

(for use with cable diameters between  $\phi 4.2\text{mm}$  and  $4.8\text{mm}$ )



150-0001-8

SR30-10PE-T

(handle shape is shown as an example.)

### ○ Assembly procedure

1. Please use the cables with a finished outer diameter of between  $\phi 4.2$  and  $4.8$  and the nominal conductor cross section of  $0.3\text{mm}^2$ .
2. Pass the cable through the hood and metal fitting for tightening in order. Cut the cable end at an approximate length as shown in the figure on the left.
3. Insert the block into the jig for termination and terminate the cable by soldering.
4. Crimp the cable onto the metal fitting for clamping (SR30-P) several times with using the crimping tool (SR30-10PE-T), in such a way that the outer diameter becomes approximately  $\phi 5.2$ .
5. After termination, tighten the metal fitting for tightening into the threaded section on the block (P shell, J shell) to a torque of approximately  $2\text{ N}\cdot\text{m}$  ( $20\text{ kg}\cdot\text{cm}$ ), using a single-acting torque wrench. When performing tightening on the jack side, be sure to fix the wrench application point on the J shell.
6. Secure the metal fitting for clamping by tightening a set screw on either side of the two bosses on the metal fitting for clamping to a torque of approximately  $0.1\text{ N}\cdot\text{m}$  ( $1\text{ kg}\cdot\text{cm}$ ) in such a way that the tip of the set screw slightly sinks.
7. Place the hood over the metal fitting for tightening. The procedure has been completed. Please be sure to apply a small amount of thread adhesive to prevent loosening.

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