



### ■ Overview

Multi-purpose small-sized I/O connector for industrial machinery.  
Conforming to IEC Standard IEC PAS 61076-3-124  
Compact size, robust and high speeds.  
High EMC resistance.

### ■ Features

#### 1. Contribution to size reduction

The ix Industrial offers a reduced size of 75% compared to conventional RJ-45 modular solutions. This size reduction allows for reduced installation space. Parallel-mounting at P=10mm is possible.

#### 2. Single action lock design

The connector locks by simply inserting the plug into the receptacle. An audible click insures locking. The lock can be released by pushing a button on the plug leading to smooth removal.

#### 3. Robust design resistant to wrenching forces

The PCB-mounted receptacle shell is designed to minimize the influence of wrenching force from the plug on the mated surface. Additionally, the PCB-mounted shape is designed to protect the contacts. Unique metal hold down placement which can prevent peeling of contacts. Stainless steel material is used for metal parts to enhance the mechanical strength.

#### 4. High EMC Resistance

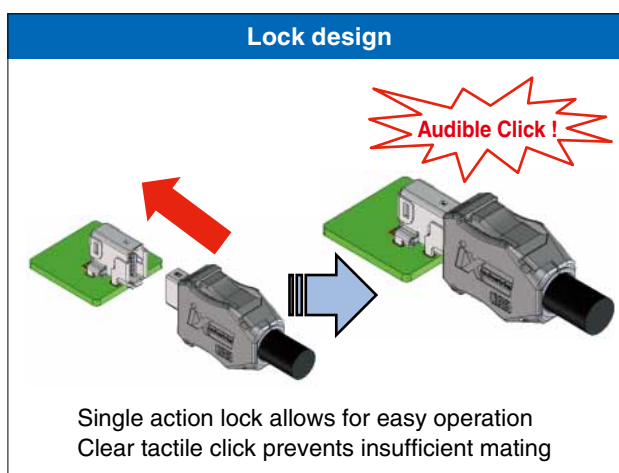
Optimized shielding design guarantees high EMC resistance to secure safe data transmission.

#### 5. High Data Rate Transmission

Cat.5e (1Gbps) and Cat.6<sub>A</sub> (10Gbps) high-speed Ethernet performance.

#### 6. PIP (Pin-In-Paste) mounting possible

The receptacle shell is mounted at the through hole section of the PCB to enhance the mounting strength of the PCB. Both signal contact SMT and PIP mounting allows for reflow-mounting and reduction of man-hours required for board processing.



## ■Product Specifications

|         |                  |                 |                                     |                             |                       |
|---------|------------------|-----------------|-------------------------------------|-----------------------------|-----------------------|
| Ratings | Voltage          | 50V AC / 60V DC |                                     | Operating temperature range | -40 to +85°C (Note 1) |
|         | Electric current | 1.5A            | All-pin signal                      | Storage temperature range   | -30°C to +60°C        |
|         |                  | 3.0A            | 4 pins of contacts No.1, 2, 6 and 7 |                             |                       |

| Items                            | Specifications                                                                     | Conditions                                                                 |
|----------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| 1. Contact resistance            | Signal : 30mΩ or less (Note 2)<br>Shield : 100mΩ or less (Note 2)                  | Measured at 100mA                                                          |
| 2. Insulation resistance         | 500MΩ or more                                                                      | Measured at 500V DC                                                        |
| 3. Withstanding voltage          | No flashover or breakdown                                                          | Apply a voltage of 500V DC for 1 minute.                                   |
| 4. Mechanical operation          | Signal : 80mΩ or less (Note 2)<br>Shield : 100mΩ or less (Note 2)                  | 5000 times                                                                 |
| 5. Vibration resistance          | ①No electrical discontinuity of 1μs or more<br>②No damage, crack or loosened parts | 10 to 500Hz, half amplitude 0.35mm, Acceleration of 50m/s <sup>2</sup> .   |
| 6. Shock resistance              |                                                                                    | 300m/s <sup>2</sup> , 11ms duration, 3 axis both directions, 3 times each. |
| 7. Fretting corrosion resistance | ①No electrical discontinuity of 1μs or more<br>②No damage, crack or loosened parts | 490m/s <sup>2</sup> , 30 times/min, 1000 times                             |

Note 1 : Includes temperature rise due to current flow.

Note 2 : Conductor resistance of the cable isn't included.

## ■Materials / Finish

### ●Receptacle

| Component       | Materials              | Color/Finish          | Remarks |
|-----------------|------------------------|-----------------------|---------|
| Insulator       | Liquid crystal polymer | Gray                  | UL94V-0 |
| Contact         | Copper alloy           | Partially gold plated | ——      |
| Shielding plate | Stainless steel        | ——                    | ——      |
| Shell           | Stainless steel        | Tin plated            | ——      |
| Suction cap     | Polyamide resin        | Black                 | UL94V-0 |

### ●Plug

| Component       | Materials           | Color/Finish              | Remarks |
|-----------------|---------------------|---------------------------|---------|
| Contact         | Copper alloy        | Partially gold plated     | ——      |
| Insulator       | Polyamide resin     | Black, Dark gray          | UL94V-0 |
| Shielding plate | Stainless steel     | ——                        | ——      |
| Insulated case  | Polyamide resin     | Black                     | UL94V-0 |
| Guide           | Polycarbonate resin | Transparent, Clear yellow | UL94V-0 |
| Shield case     | Stainless steel     | Nickel plated             | ——      |
| Shield shell    | Stainless steel     | Nickel plated             | ——      |
| Cover case      | Polycarbonate resin | Dark gray                 | UL94V-0 |

■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.

●Receptacle

IX 61 G - A - 10 P (\*\*) 9

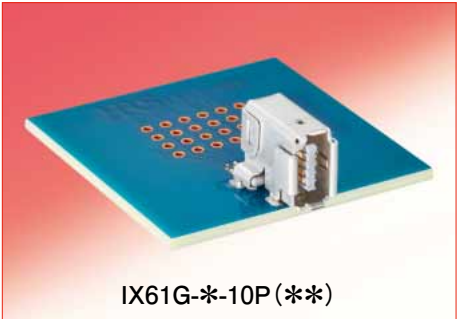
●Plug

IX 40 G - A - 10 S - CV 7.0 (\*\*) 9

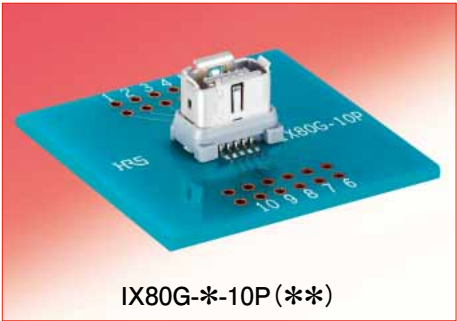
|                                                                                                                                                                                                                                 |                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| ① Series name : IX IX Series                                                                                                                                                                                                    | ⑥ Contact polarity : P Male contact<br>S Female contact                                       |
| ② Mounting/connection method :<br>40 Hand soldering<br>30 IDC (26 to 28 AWG, Cable outer dia meter φ0.95 to 1.05)<br>31 IDC (24 to 26 AWG, Cable outer dia meter φ1.1 to 1.25)<br>61 Upright right angle SMT<br>80 Vertical SMT | ⑦ Plug cover<br>CV Cable outlet direction : Straight                                          |
| ③ Correspond to Gigabit Ethernet : G                                                                                                                                                                                            | ⑧ Applicable cable diameter : (7.0)<br>Sheath outside diameter : φ6.3 to 7.2                  |
| ④ Mating key : Type A<br>Type B                                                                                                                                                                                                 | ⑨ Plating specifications :<br>Blank Gold plated<br>(01) Palladium-Nickel plated + Gold plated |
| ⑤ Number of Contacts                                                                                                                                                                                                            |                                                                                               |

■Diagram of Connector Mating Combinations

●Receptacle



IX61G-\*-10P (\*\*)



IX80G-\*-10P (\*\*)

●Plug



IX40G-\*-10S-CV(7.0) (\*\*)



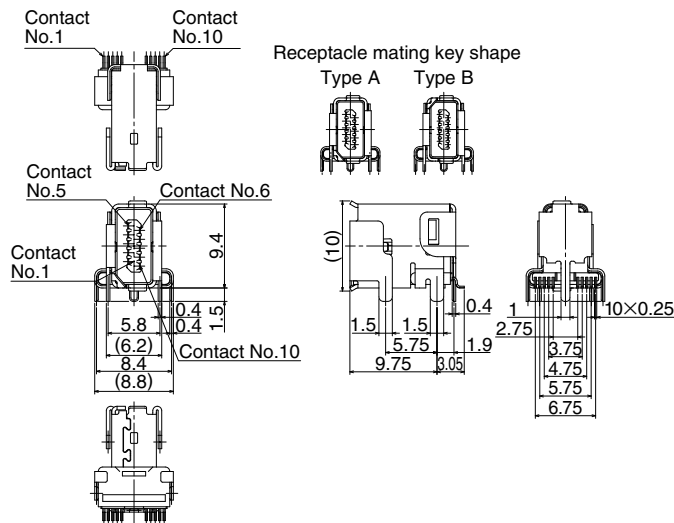
IX30G-\*-10S-CV(7.0) (\*\*)



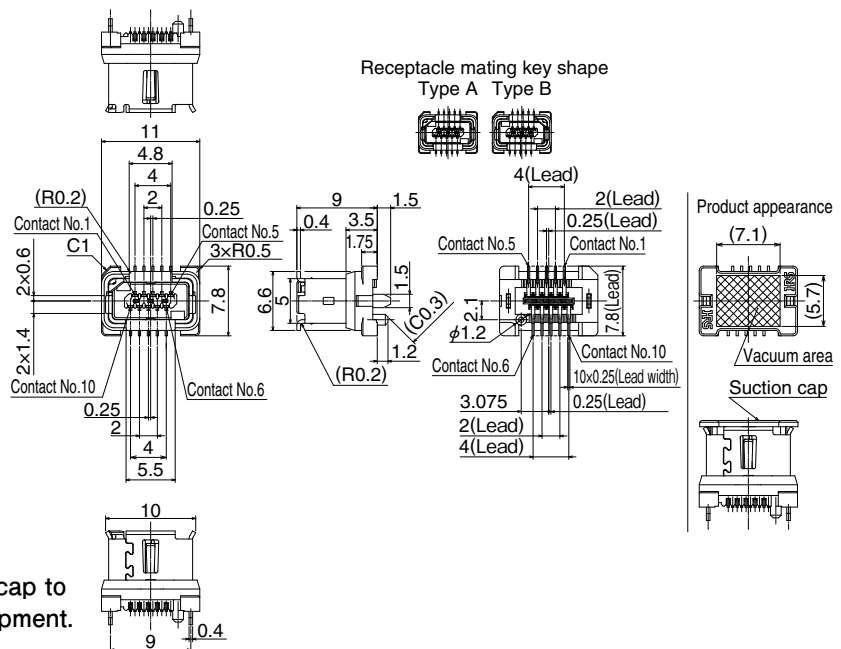
IX31G-\*-10S-CV(7.0) (\*\*)

※Mating key (Type A, B) of Plug & Receptacle must be the same for mating.

● Upright right angle type



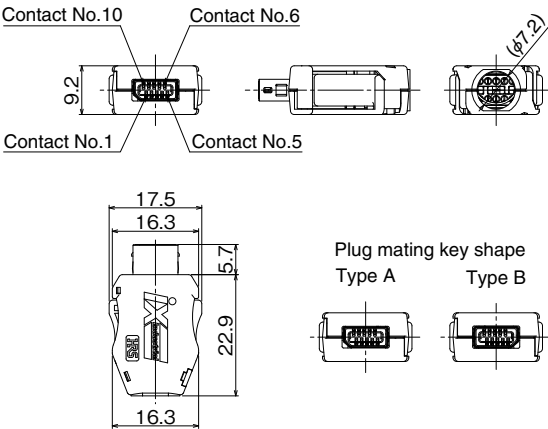
●Receptacle (Vertical type)



Technical drawing of the bottom view of the connector housing. It shows a rectangular base with a central slot and a row of pins. Dimensions are indicated: 10 (width), 9 (length), and 0.4 (pin height).

4 HRS

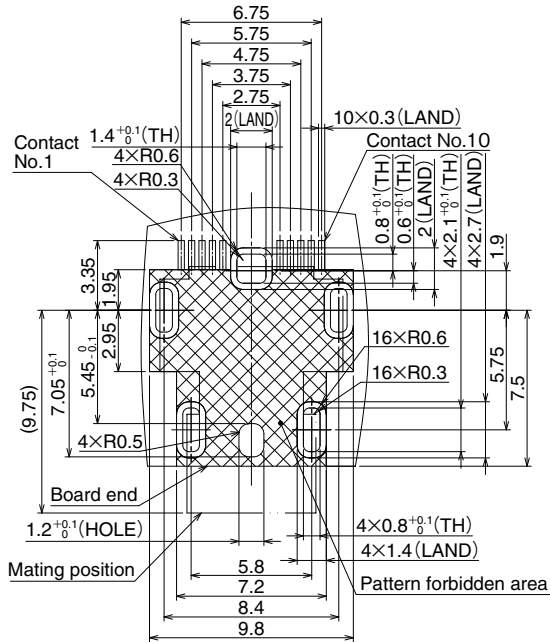
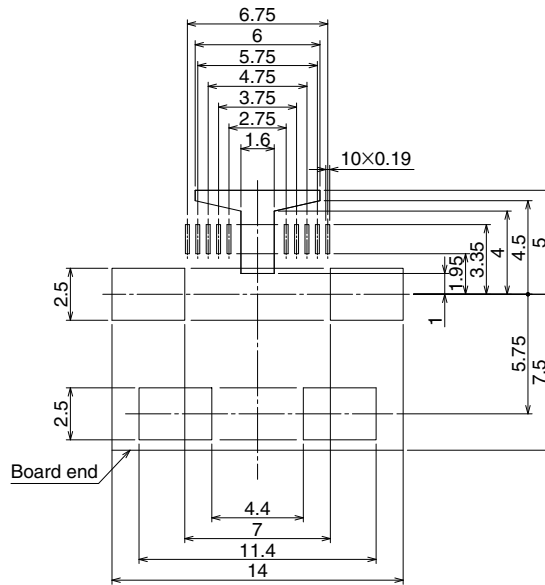
■Plug



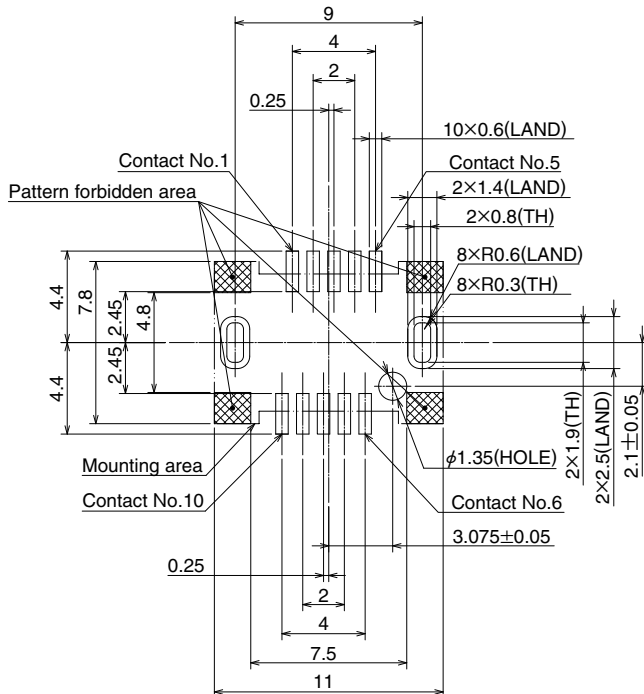
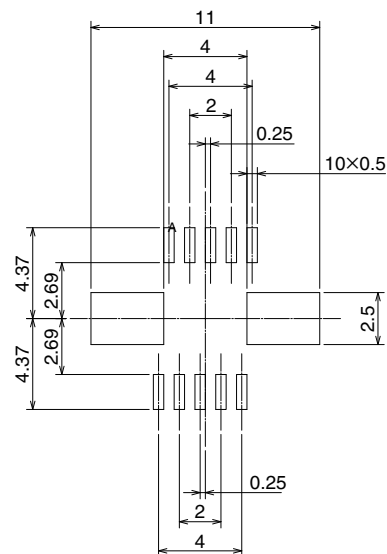
| Part No.                | HRS No.       | Plating of the contact area                                               |
|-------------------------|---------------|---------------------------------------------------------------------------|
| IX40G-A-10S-CV(7.0)     | 251-0022-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX40G-A-10S-CV(7.0)(01) | 251-0022-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |
| IX40G-B-10S-CV(7.0)     | 251-0032-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX40G-B-10S-CV(7.0)(01) | 251-0032-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |
| IX30G-A-10S-CV(7.0)     | 251-0020-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX30G-A-10S-CV(7.0)(01) | 251-0020-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |
| IX30G-B-10S-CV(7.0)     | 251-0025-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX30G-B-10S-CV(7.0)(01) | 251-0025-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |
| IX31G-A-10S-CV(7.0)     | 251-0023-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX31G-A-10S-CV(7.0)(01) | 251-0023-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |
| IX31G-B-10S-CV(7.0)     | 251-0024-0    | Gold plated $0.2\mu\text{m}$                                              |
| IX31G-B-10S-CV(7.0)(01) | 251-0024-0 01 | Palladium-Nickel plated $0.75\mu\text{m}$ + Gold plated $0.05\mu\text{m}$ |

## ◆Recommended Land Pattern Dimensions (Board thickness : $t=1.6\text{mm}$ )

### ●IX61G-\*-10P

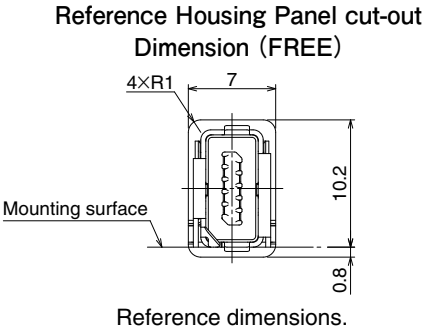
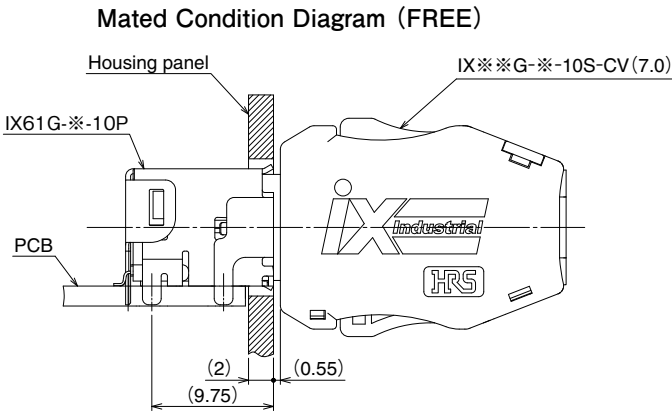
Recommended Land Pattern (Mounting side) ( $t=1.6$ )General tolerance unless specified  $\pm 0.05$ .Recommended Metal Mask Pattern ( $t=0.15$ )General tolerance unless specified  $\pm 0.02$ .

### ●IX80G-\*-10P

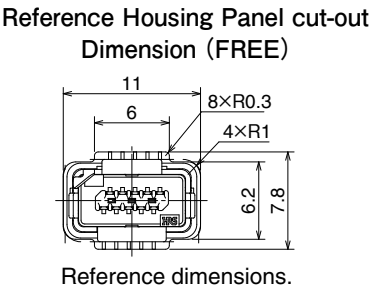
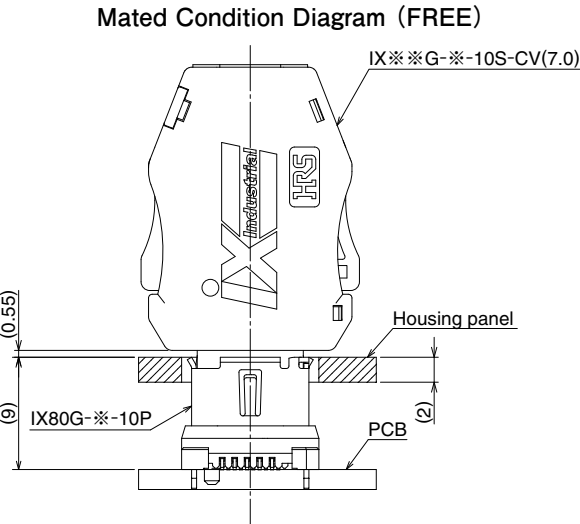
Recommended Land Pattern (Mounting side) ( $t=1.6$ )General tolerance unless specified  $\pm 0.05$ .Recommended Metal Mask Pattern ( $t=0.15$ )General tolerance unless specified  $\pm 0.02$ .

◆Recommended Panel Thickness

●IX61G-※-10P



●IX80G-※-10P



◆Cable Clamp Jig Tools

| Part No.           | HRS No.    | Remark              |
|--------------------|------------|---------------------|
| HT803/IX30G-10S-70 | 902-2213-0 | IX※※G-※-10S-CV(7.0) |

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