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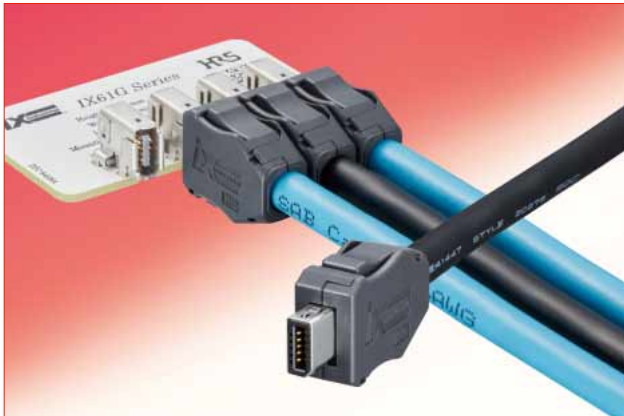
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**NEW**

# Conforming to IEC Standard The Next-Generation Ethernet Connector for Industrial Equipment

## IX Series



### 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

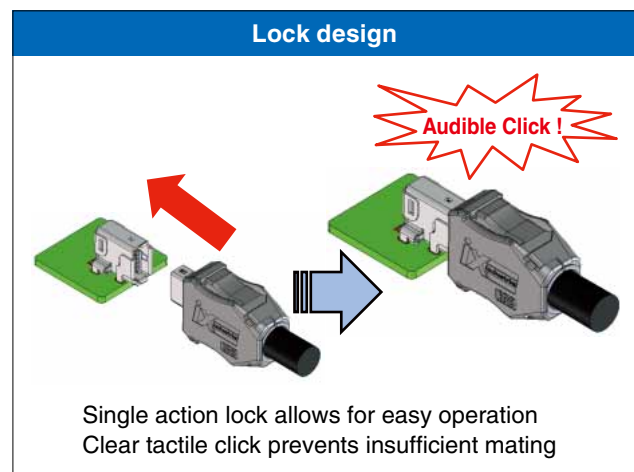
Optimized shielding design guarantees high EMC resistance to secure safe data transmission.

#### 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          | AC 50V / DC 60V |                                     | Operating temperature range | -40°C 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 DC 500V   |
| 3. Withstanding voltage          | No flashover or breakdown  | Apply a voltage of DC 500V 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,<br>Acceleration of 50m/s <sup>2</sup> .   |
| 6. Shock resistance              |  | 300m/s <sup>2</sup> , 11ms duration, 3 axis both directions,<br>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            | ——      |

### ●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 (\*\*)**

① ② ③ ④ ⑤ ⑥ ⑨

### ● Plug

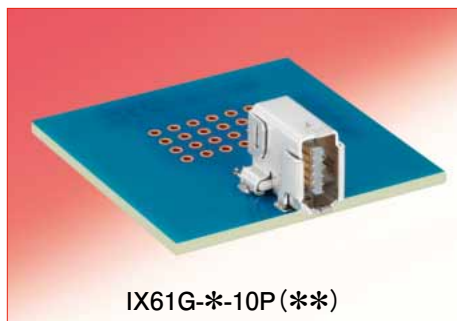
**IX 40 G - A - 10 S - CV 7.0 (\*\*)**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ 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 Right angle SMT (vertical right angle type) | 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 : A Akey<br>B Bkey  | ⑨ Plating specifications :<br>Blank Gold plated<br>(01) Palladium-Nickel plated + Gold plated |
| ⑤ Number of Contacts   |   |

## Diagram of Connector Mating Combinations

### ● Receptacle

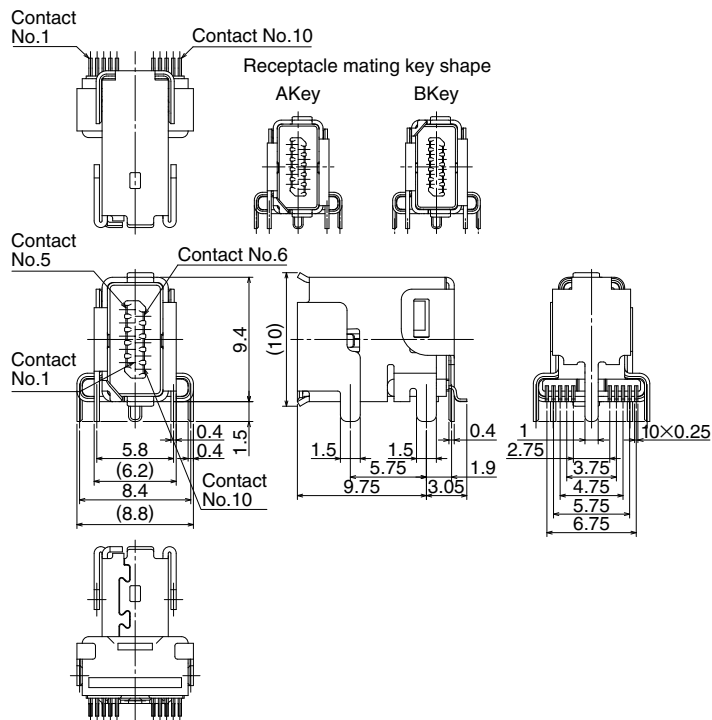
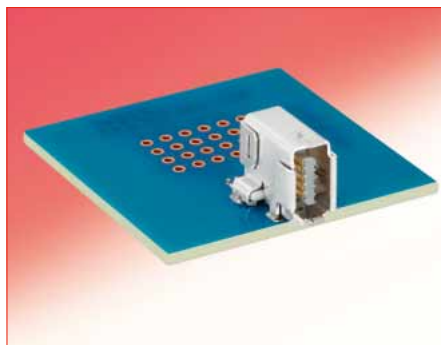


### ● Plug



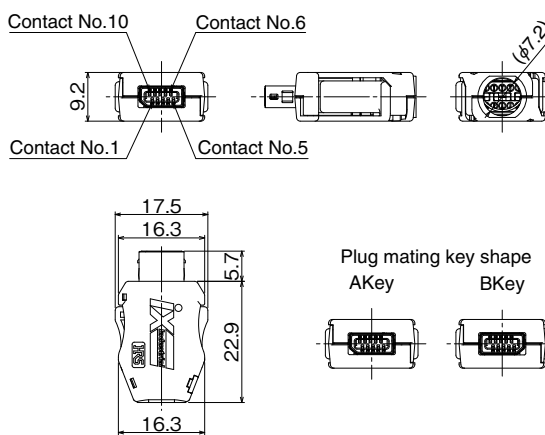
※ Mating key (A, B type) of Plug & Receptacle must be the same for mating.

## ■Receptacle (Vertical right angle type)



| Part No.        | HRS No.       | Plating of the contact area                         |
|-----------------|---------------|---|
| IX61G-A-10P     | 251-0021-0 00 | Gold plated 0.2μm                                   |
| IX61G-A-10P(01) | 251-0021-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX61G-B-10P     | 251-0026-0 00 | Gold plated 0.2μm                                   |
| IX61G-B-10P(01) | 251-0026-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |

## ■Plug

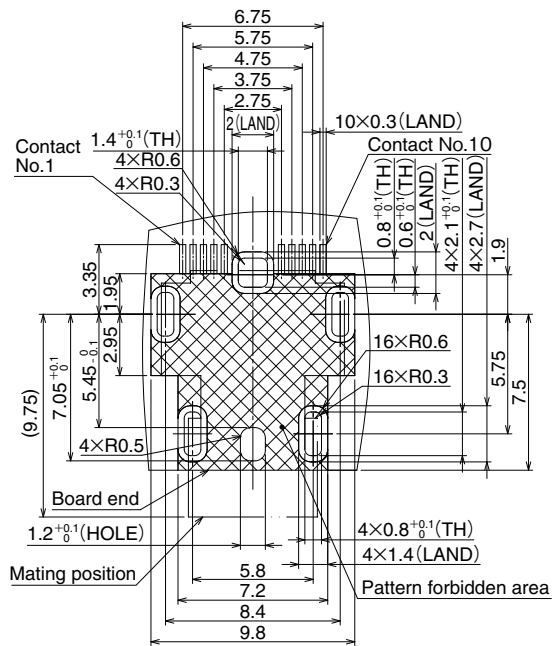


| Part No.                | HRS No.       | Plating of the contact area                         |
|-------------------------|---------------|---|
| IX40G-A-10S-CV(7.0)     | 251-0022-0 00 | Gold plated 0.2μm                                   |
| IX40G-A-10S-CV(7.0)(01) | 251-0022-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX40G-B-10S-CV(7.0)     | 251-0032-0 00 | Gold plated 0.2μm                                   |
| IX40G-B-10S-CV(7.0)(01) | 251-0032-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX30G-A-10S-CV(7.0)     | 251-0020-0 00 | Gold plated 0.2μm                                   |
| IX30G-A-10S-CV(7.0)(01) | 251-0020-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX30G-B-10S-CV(7.0)     | 251-0025-0 00 | Gold plated 0.2μm                                   |
| IX30G-B-10S-CV(7.0)(01) | 251-0025-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX31G-A-10S-CV(7.0)     | 251-0023-0 00 | Gold plated 0.2μm                                   |
| IX31G-A-10S-CV(7.0)(01) | 251-0023-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |
| IX31G-B-10S-CV(7.0)     | 251-0024-0 00 | Gold plated 0.2μm                                   |
| IX31G-B-10S-CV(7.0)(01) | 251-0024-0 01 | Palladium-Nickel plated 0.75μm + Gold plated 0.05μm |

◆ Recommended Land Pattern Dimensions (Board thickness : t=1.6mm)

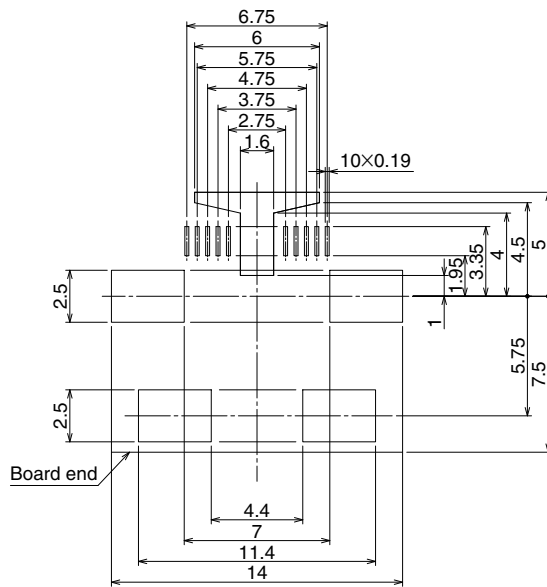
● IX61G-※-10P

Recommended Land Pattern (Mounting side) (t=1.6)



General tolerance unless specified ±0.05.

Recommended Metal Mask Pattern (t=0.15)

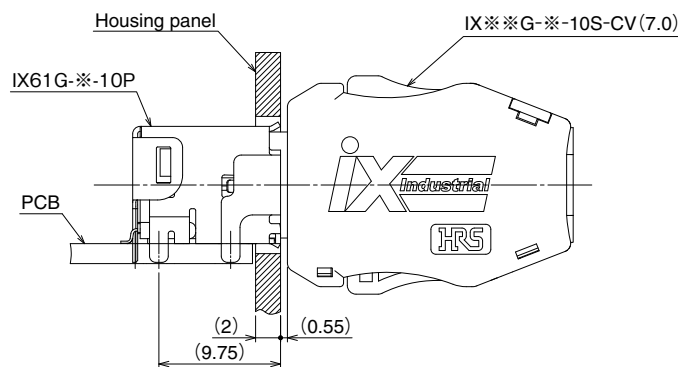


General tolerance unless specified ±0.02.

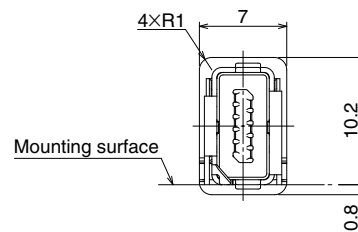
◆ Recommended Panel Thickness

● IX61G-※-10P

Mated Condition Diagram (FREE)



Reference Housing Panel cut-out Dimension (FREE)



Reference dimensions.

◆ Cable Clamp Jig Tools

| Part No.           | HRS No.       | Remark              |
|--------------------|---------------|---------------------|
| HT803/IX30G-10S-70 | 902-2213-0 00 | IX**G-※-10S-CV(7.0) |

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