



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.

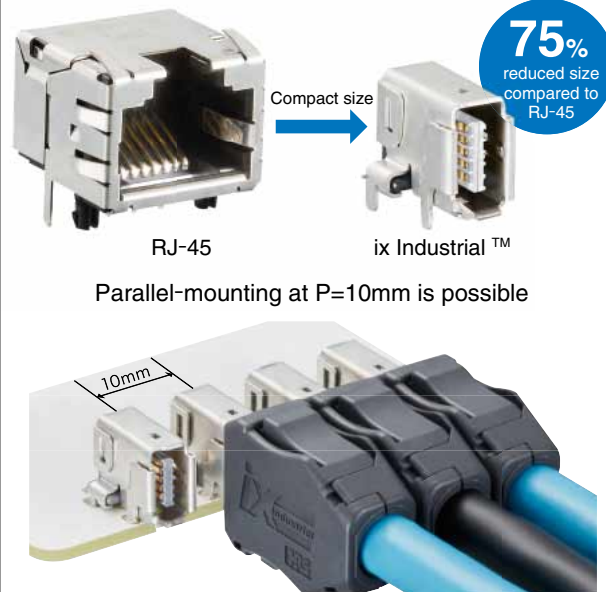
5. High Data Rate Transmission

Cat.5e (1Gbps) and Cat.6_A (10Gbps) high-speed Ethernet performance.

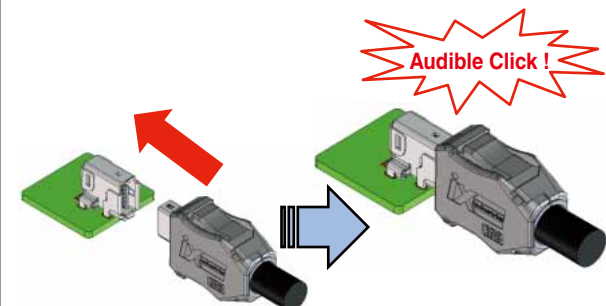
6. PIP (Pin-In-Paste) mounting possible

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.

Contribution to size reduction



Lock design



Single action lock allows for easy operation
Clear tactile click prevents insufficient mating

■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) 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) Shield : 100mΩ or less (Note 2)	5000 times
5. Vibration resistance	①No electrical discontinuity of 1μs or more ②No damage, crack or loosened parts	10 to 500Hz, half amplitude 0.35mm, Acceleration of 50m/s ² .
6. Shock resistance		300m/s ² , 11ms duration, 3 axis both directions, 3 times each.
7. Fretting corrosion resistance	①No electrical discontinuity of 1μs or more ②No damage, crack or loosened parts	490m/s ² , 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

Feb.1.2018 Copyright 2018 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

■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

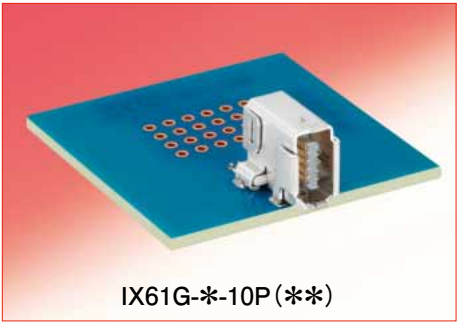
IX 40 G – A – 10 S – CV 7.0 (**)

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series name : IX IX Series	⑥ Contact polarity : P Male contact S Female contact
② Mounting/connection method : 40 Hand soldering 30 IDC (26 to 28 AWG, Cable outer dia meter φ0.95 to1.05) 31 IDC (24 to 26 AWG, Cable outer dia meter φ1.1 to 1.25) 61 Right angle SMT (vertical right angle type)	⑦ Plug cover CV Cable outlet direction : Straight
③ Correspond to Gigabit Ethernet : G	⑧ Applicable cable diameter : (7.0) Sheath outside diameter : φ6.3 to 7.2
④ Mating key : A Akey B Bkey	⑨ Plating specifications : Blank Gold plated (01) Palladium-Nickel plated + Gold plated
⑤ Number of Contacts	

■Diagram of Connector Mating Combinations

●Receptacle

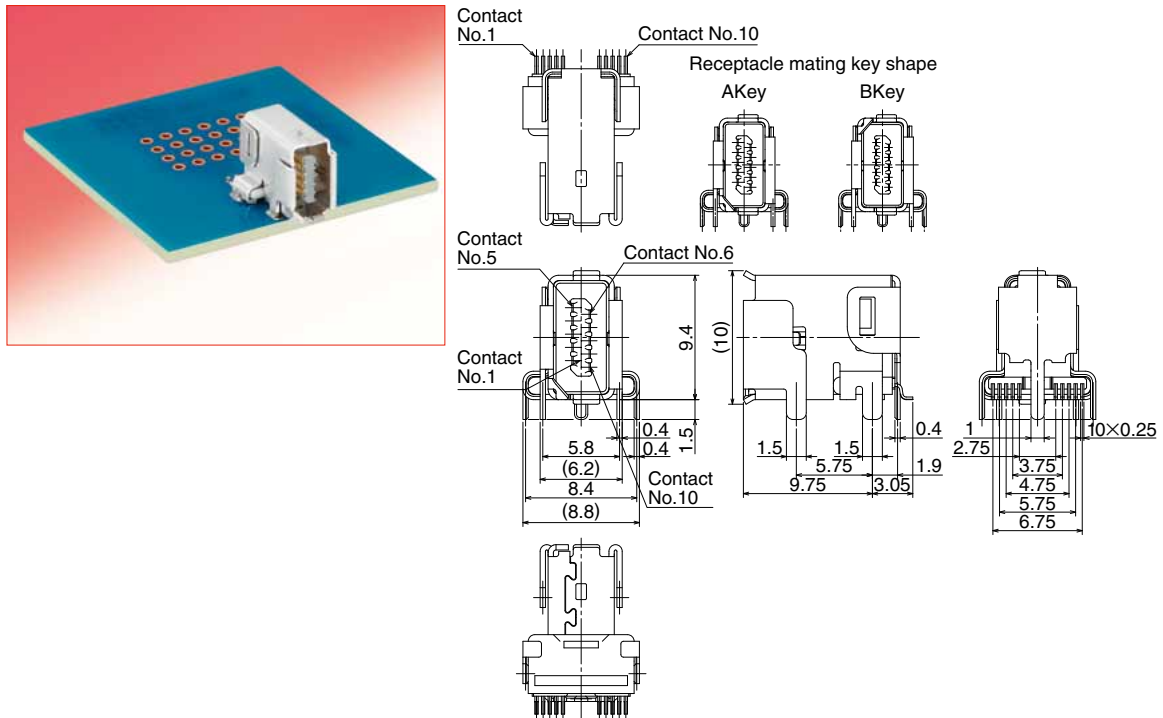


●Plug



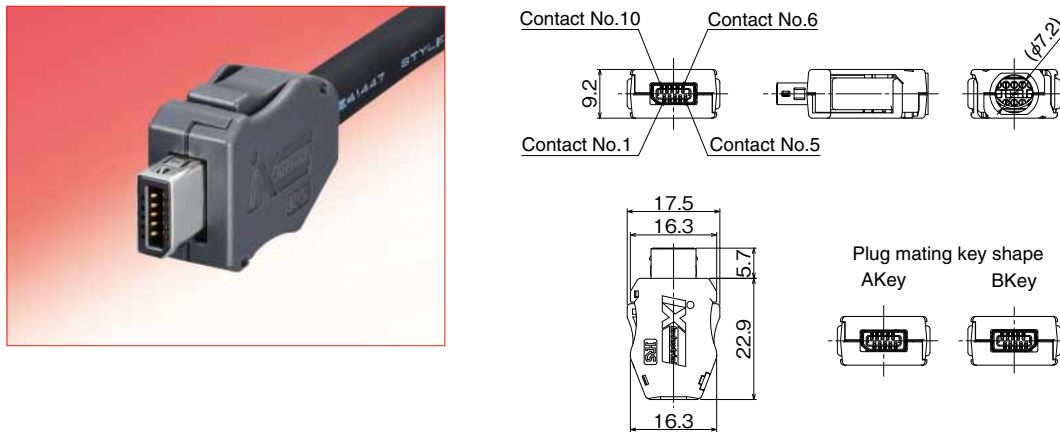
※Mating key (A, B type) of Plug & Receptacle must be the same for mating.

■Receptacle (Vertical right angle type)



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

■Plug

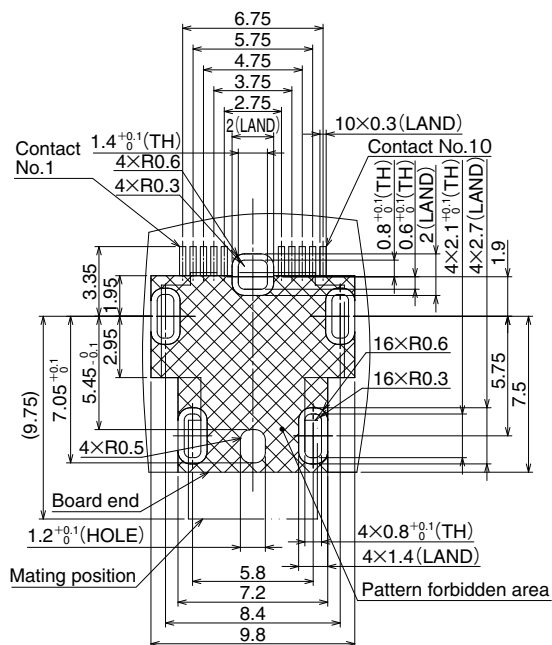


Part No.	HRS No.	Plating of the contact area
IX40G-A-10S-CV(7.0)	251-0022-0 00	Gold plated 0.2 μ m
IX40G-A-10S-CV(7.0)(01)	251-0022-0 01	Palladium-Nickel plated 0.75 μ m + Gold plated 0.05 μ m
IX40G-B-10S-CV(7.0)	251-0032-0 00	Gold plated 0.2 μ m
IX40G-B-10S-CV(7.0)(01)	251-0032-0 01	Palladium-Nickel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

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

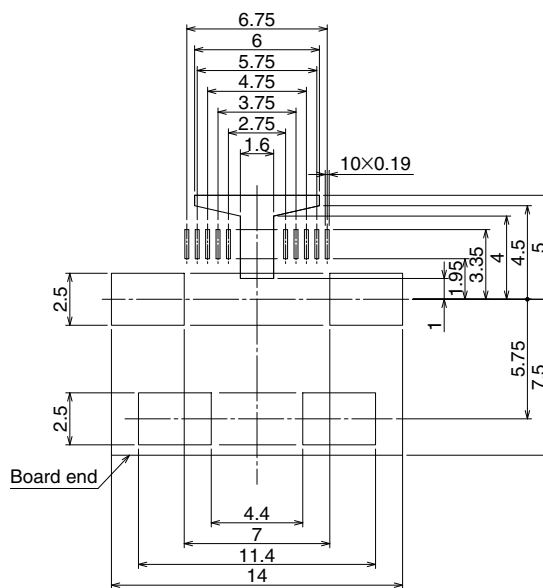
●IX61G-※-10P

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



General tolerance unless specified ± 0.05 .

Recommended Metal Mask Pattern (t=0.15)

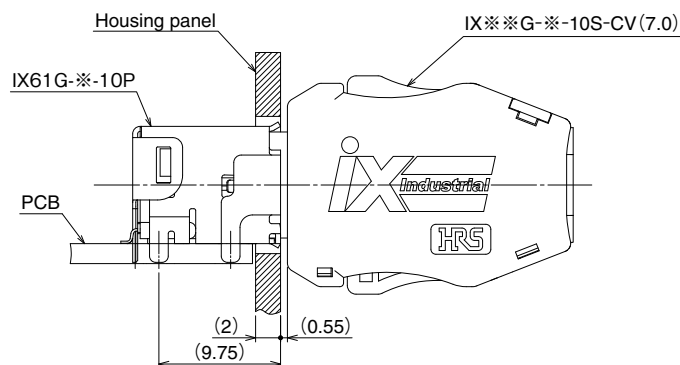


General tolerance unless specified ± 0.02 .

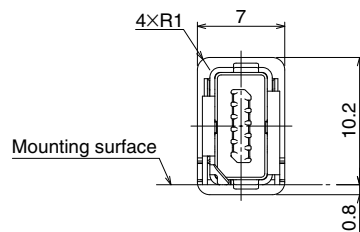
◆Recommended Panel Thickness

●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)

USA:

HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS CHICAGO OFFICE
2300 Warrenville Road, Suite 150,
Downers Grove, IL 60515
Phone : +1-630-282-6700
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. BOSTON OFFICE
300 Brickstone Square Suite 201,
Andover, MA 01810
Phone : +1-978-662-5255

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Neumeyerstrasse 22-26, 90411 Nurnberg
Phone : +49-911 32 68 89 63
Fax : +49-911 32 68 89 69
<http://www.hirose.com/eu/>

UNITED KINGDOM:

HIROSE ELECTRIC EUROPE BV (UK BRANCH)
4 Newton Court, Kelvin Drive, Knowlhill,
Milton Keynes, MK5 8NH
Phone : +44-1908 202050
Fax : +44-1908 202058
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC TECHNOLOGIES (SHENZHEN) CO., LTD.
Room 09-13, 19/F, Office Tower Shun Hing Square, Di Wang Commercial Centre,
5002 Shen Nan Dong Road, Shenzhen City, Guangdong Province, 518008
Phone : +86-755-8207-0851
Fax : +86-755-8207-0873
<http://www.hirose.com/cn/>

KOREA:

HIROSE KOREA CO.,LTD.
143, Gongdan 1-daero, Siheung-si,
Gyeonggi-do, 15084, Korea
Phone : +82-31-496-7000
Fax : +82-31-496-7100
<http://www.hirose.co.kr/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE LIAISON OFFICE
Unit No-403, 4th Floor, No-84, Barton Centre, Mahatma
Gandhi (MG) Road, Bangalore 560 001, Karnataka, India
Phone : +91-80-4120 1907
Fax : +91-80-4120 9908
<http://www.hirose.com/sg/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
2841 Junction Ave, Suite 200
San Jose, CA. 95134
Phone : +1-408-253-9640
Fax : +1-408-253-9641
<http://www.hirose.com/us/>

THE NETHERLANDS:

HIROSE ELECTRIC EUROPE B.V.
Hogehillweg #8 1101 CC Amsterdam Z-O
Phone : +31-20-6557460
Fax : +31-20-6557469
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. HANOVER OFFICE
Bayernstr. 3, Haus C 30855 Langenhagen, Germany
Phone : +49-511 97 82 61 30
Fax : +49-511 97 82 61 35
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO., LTD.
18, Enterprise Center Tower 2, 209# Gong He
Road, Jing'an District, Shanghai, CHINA 200070
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
<http://www.hirose.com/cn/>

HONG KONG:

HIROSE ELECTRIC HONGKONG TRADING CO., LTD.
Room 1001, West Wing, Tsim Sha Tsui Centre, 66
Mody Road, Tsim Sha Tsui East, Kowloon, Hong Kong
Phone : +852-2803-5338
Fax : +852-2591-6560
<http://www.hirose.com/hk/>

SINGAPORE:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
03, Anson Road, #20-01, Springleaf Tower,
Singapore 079909
Phone : +65-6324-6113
Fax : +65-6324-6123
<http://www.hirose.com/sg/>

MALAYSIA:

PENANG REPRESENTATIVE OFFICE
73-3-1, Ideal@The One, Jalan Mahsuri, Bayan
Lepas Penang, 11950, Malaysia
Phone : +604-648-5536
<http://www.hirose.com/sg/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. DETROIT OFFICE (AUTOMOTIVE)
17197 N. Laurel Park Drive, Suite 253,
Livonia, MI 48152
Phone : +1-734-542-9963
Fax : +1-734-542-9964
<http://www.hirose.com/us/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. GERMAN BRANCH
Schoenbergstr. 20, 73760 ostfildern
Phone : +49-711-456002-1
Fax : +49-711-456002-299
<http://www.hirose.com/eu/>

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
130 Avenue Joseph Kessel, Bat E, 78960
Voisins le Bretonneux, France
Phone : +33-1-85764886
Fax : +33-1-85764823
<http://www.hirose.com/eu/>

CHINA:

HIROSE ELECTRIC (SHANGHAI) CO.,LTD. BEIJING BRANCH
A1001, Ocean International Center, Building 56# East 4th
Ring Middle Road, ChaoYang District, Beijing, 100025
Phone : +86-10-5165-9332
Fax : +86-10-5908-1381
<http://www.hirose.com/cn/>

TAIWAN:

HIROSE ELECTRIC TAIWAN CO., LTD.
103 8F, No.87, Zhengzhou Rd., Taipei
Phone : +886-2-2555-7377
Fax : +886-2-2555-7355
<http://www.hirose.com/tw/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.552, Regus-Green Boulevard, Level5, Tower C,
Sec62, Plot B-9A, Block B, Noida, 201301, Uttar Pradesh, India
Phone : +91-12-660-8018
Fax : +91-120-4804949
<http://www.hirose.com/sg/>

THAILAND:

BANGKOK OFFICE (REPRESENTATIVE OFFICE)
Unit 4703, 47th FL., 1 Empire Tower, South Sathorn
Road, Yannawa, Sathorn, Bangkok 10120 Thailand
Phone : +66-2-686-1255
Fax : +66-2-686-3433
<http://www.hirose.com/sg/>

**HIROSE ELECTRIC CO.,LTD.**

2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
TEL: +81-45-620-3526 Fax: +81-45-591-3726
<http://www.hirose.com>
<http://www.hirose-connectors.com>