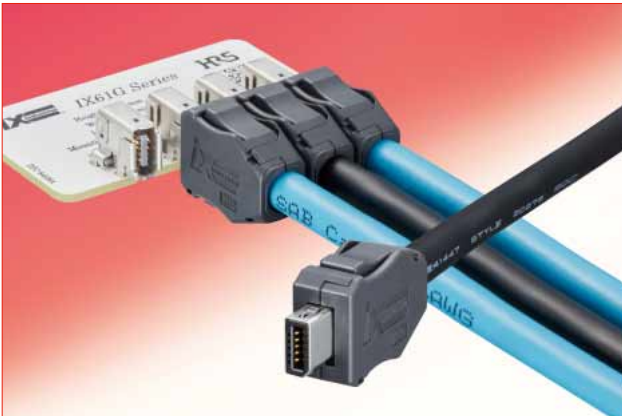


## IX Series



### ■ Overview

Multi-purpose small-sized I/O connector for industrial machinery.  
Conforming to IEC Standard IEC 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 prying forces

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

#### 4. High EMC Resistance

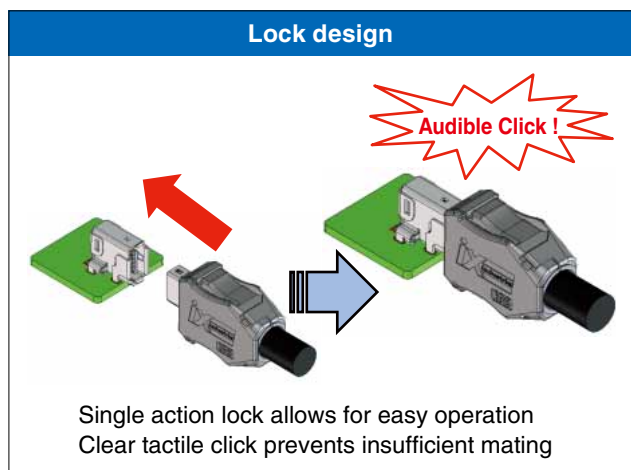
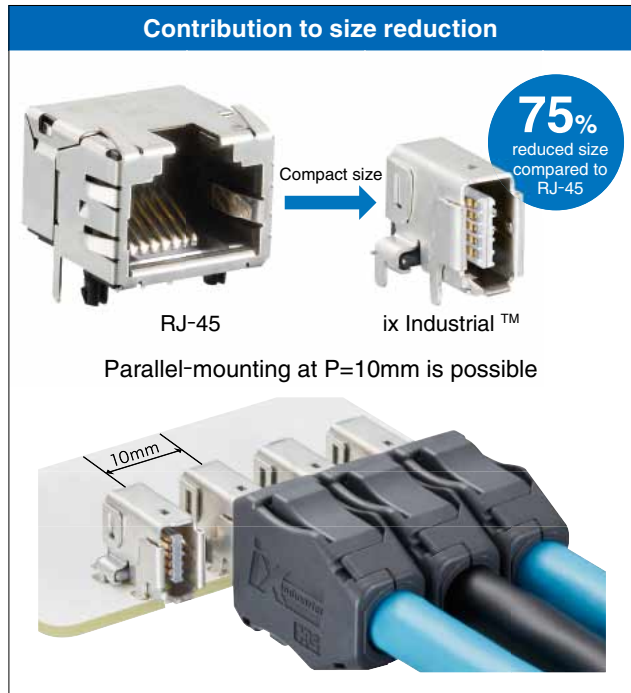
Optimized shielding design guarantees high EMC resistance to secure safe data transmission.

#### 5. High Data Rate Transmission

Cat.5e (1Gbps) and Cat.6<sup>A</sup> (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) 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) 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 <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 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, Clear blue	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 (\*\*)**

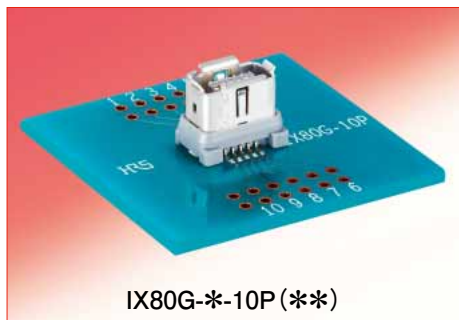
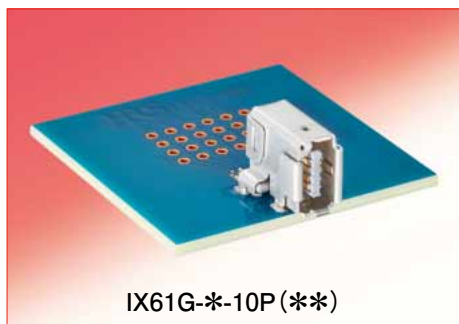
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Series name : IX IX Series	⑤ Maximum number of usable contacts : 10 10 contacts 8(Note) 8 contacts
② Mounting/connection method : 40 Hand soldering 30 IDC (26 to 28 AWG, Cable outer dia meter φ0.95 to 1.05) 31 IDC (24 to 25 AWG, Cable outer dia meter φ1.1 to 1.25) 32 IDC (22 AWG, Cable outer dia meter φ1.4 to 1.6) 61 Upright right angle SMT 80 Vertical SMT	⑥ Contact polarity : P Male contact S Female contact
③ Correspond to Gigabit Ethernet : G	⑦ Plug cover CV Cable outlet direction : Straight
④ Mating key : Type A Type B	⑧ Applicable cable diameter : (7.0) Sheath outside diameter : φ6.3 to 7.2
	⑨ Plating specifications : Blank Gold plated (01) Palladium-Nickel plated + Gold plated

Note : Contacts No.3 and 8 do not have a hole to pass the cable through the IDC guide.

## Diagram of Connector Mating Combinations

### ● Receptacle



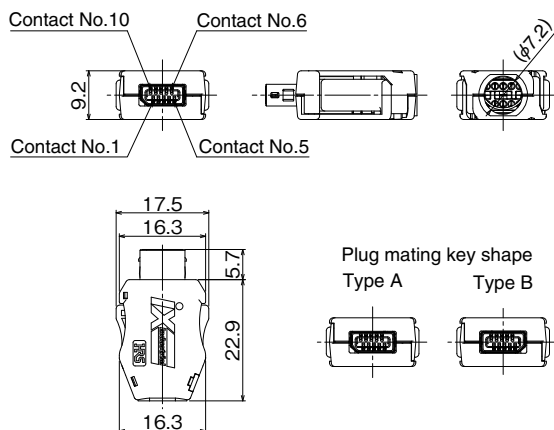
### ● Plug



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



## ■ Plug



Part No.	HRS No.	Plating of the contact area
IX40G-A-10S-CV(7.0)	251-0022-0	Gold plated 0.2 $\mu$ m
IX40G-A-10S-CV(7.0)(01)	251-0022-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX40G-B-10S-CV(7.0)	251-0032-0	Gold plated 0.2 $\mu$ m
IX40G-B-10S-CV(7.0)(01)	251-0032-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX30G-A-10S-CV(7.0)	251-0020-0	Gold plated 0.2 $\mu$ m
IX30G-A-10S-CV(7.0)(01)	251-0020-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX30G-B-10S-CV(7.0)	251-0025-0	Gold plated 0.2 $\mu$ m
IX30G-B-10S-CV(7.0)(01)	251-0025-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX31G-A-10S-CV(7.0)	251-0023-0	Gold plated 0.2 $\mu$ m
IX31G-A-10S-CV(7.0)(01)	251-0023-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX31G-B-10S-CV(7.0)	251-0024-0	Gold plated 0.2 $\mu$ m
IX31G-B-10S-CV(7.0)(01)	251-0024-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX32G-A-8S-CV(7.0)(Note)	251-0042-0	Gold plated 0.2 $\mu$ m
IX32G-A-8S-CV(7.0)(01)(Note)	251-0042-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m
IX32G-B-8S-CV(7.0)(Note)	251-0043-0	Gold plated 0.2 $\mu$ m
IX32G-B-8S-CV(7.0)(01)(Note)	251-0043-0 01	Palladium-Nickel plated 0.75 $\mu$ m + Gold plated 0.05 $\mu$ m

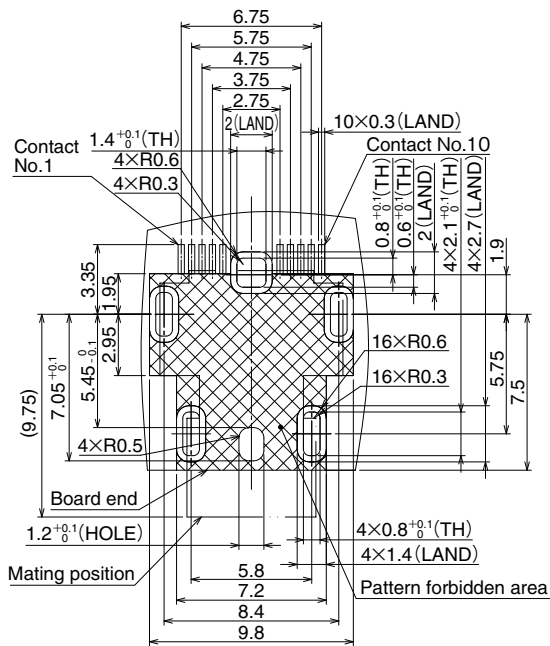
Note : Cable assembly is possible up to 8pos.

Contacts No.3 and 8 do not have a hole to pass the cable through the IDC guide.

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

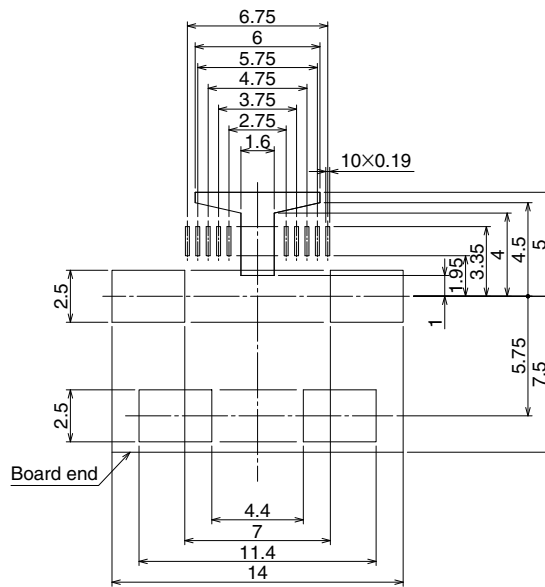
● IX61G-\*-10P

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



General tolerance unless specified  $\pm 0.05$ .

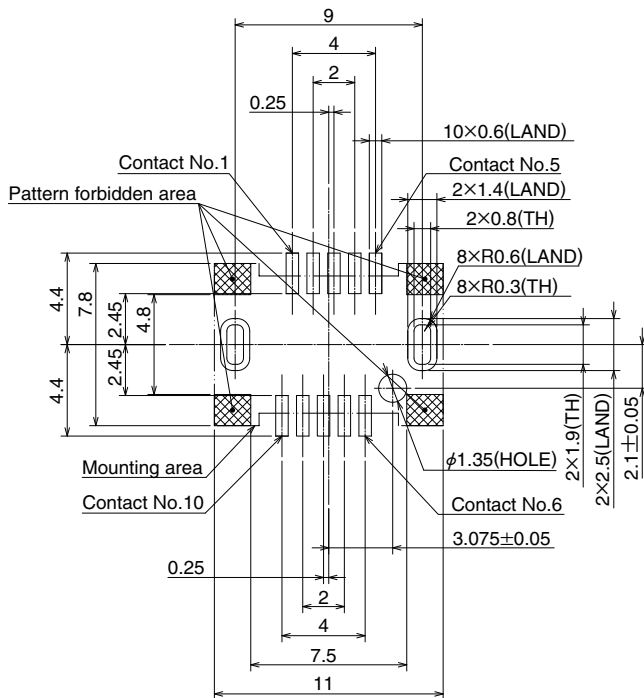
Recommended Metal Mask Pattern (t=0.15)



General tolerance unless specified  $\pm 0.02$ .

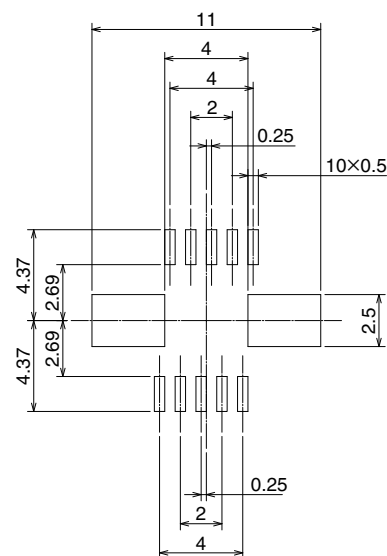
● IX80G-\*-10P

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



General tolerance unless specified  $\pm 0.05$ .

Recommended Metal Mask Pattern (t=0.15)

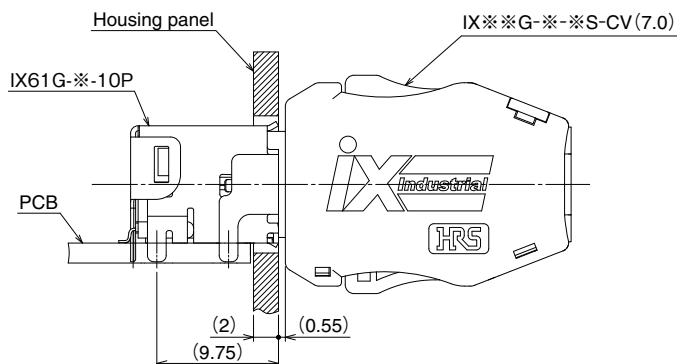


General tolerance unless specified  $\pm 0.02$ .

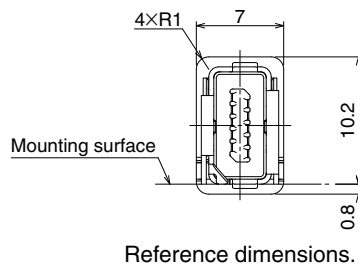
◆ Recommended Panel Thickness

● IX61G-\*\*-10P

Mated Condition Diagram

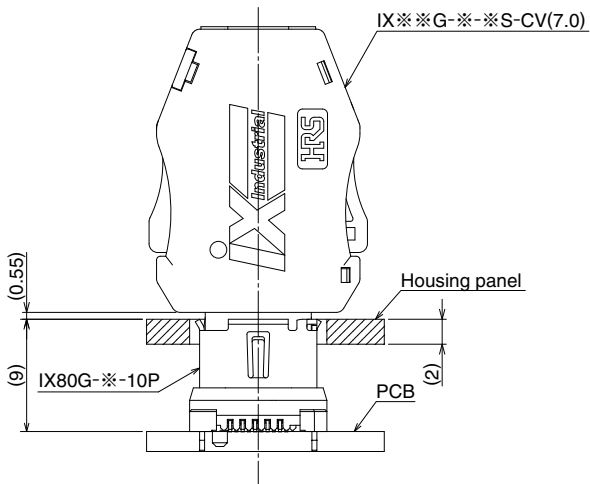


Reference Housing Panel cut-out Dimension

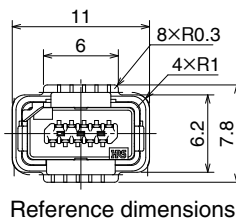


● IX80G-\*\*-10P

Mated Condition Diagram



Reference Housing Panel cut-out Dimension



◆ Cable Clamp Jig Tools

Part No.	HRS No.	Remark
HT803/IXG-8/10S-63-72	902-2218-0	IX**G-**-**S-CV(7.0)

Oct.1.2020 Copyright 2020 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

**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. 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/>

**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/>

**USA:**

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

**THE NETHERLANDS:**

**HIROSE ELECTRIC EUROPE B.V.**  
Hogehillweg #8 1101 CC Amsterdam Z-0  
Phone : +31-20-6557460  
Fax : +31-20-6557469  
<http://www.hirose.com/eu/>

**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/>

**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/>

**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/>

**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/>

**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 (CHINA) CO., LTD. (SHANGHAI, HEADQUARTERS)**  
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/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) 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/>

**CHINA:**

**HIROSE ELECTRIC (CHINA) CO., LTD. SHENZHEN BRANCH**  
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/>

**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/>

**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/>

**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/>

**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/>

**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/>

**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/>

**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/>

**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>