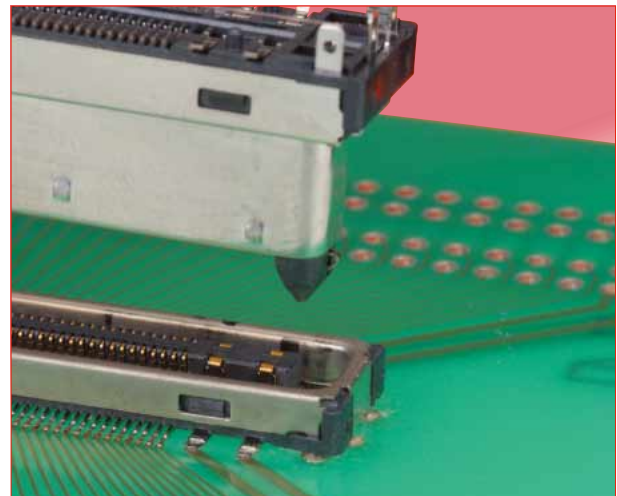


0.6mm Pitch, Docking Station Connectors

EX80 Series



■ Features

1. Secure electrical and mechanical connection

The signal contacts wipe of 1.5mm and built-in self-alignment assures reliable connection between plug and receptacle.

2. Sequential mating

Plug design assures correct contact engagement sequence: ground-signal-power.

3. Reliable ground connection

Guide tabs on the metal shell assure correct grounding sequence and high ground connection reliability with the board.

4. High-speed data transfer

Signals of 2.5 G bps can be transferred (PCI express).

5. Prevention of flux wicking

Terminations of the contacts are designed to prevent a possibility of flux wicking into the contact areas.

6. Self alignment

The connectors will self-align in X/Y axis within 1.2mm (0.7mm for receptacles with self-opening shutters)

7. Dedicated power supply contacts

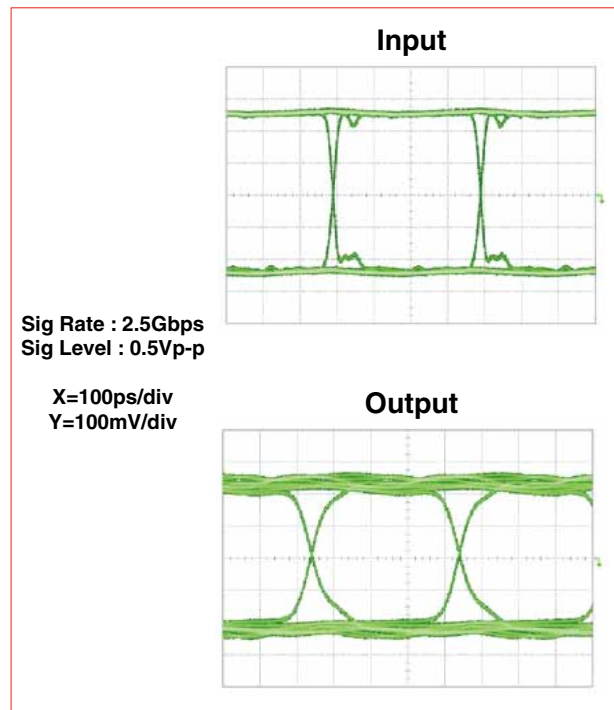
High electrical conductivity dedicated power contacts are rated 3 A.

8. High durability

Bellows contact configuration assures reliable electrical and mechanical connection for 5,000 cycles (mating/un-mating).

■ Applications

Docking stations for notebook computers and other applications requiring high reliability, high data transfer sequential mating connections.



Product specifications

| | | | |
|---------------|---------------------------|----------------|------|
| Ratings | Storage temperature range | -55°C to +85°C | |
| | Voltage rating | 125V AC | |
| | Current rating | Signal contact | 0.5A |
| Power contact | | 3A | |

| Characteristic | Specification | Conditions |
|--------------------------|---|--------------------|
| 1. Contact resistance | Signal contact : 70mΩ max. Power contact : 40mΩ max. | 100m A |
| 2. Insulation resistance | 300MΩ min. | 250V DC |
| 3. Withstanding voltage | No flashover or insulation breakdown. | 350V AC / 1 minute |

Materials / Finish

Receptacles

| Component | Material | Finish |
|-----------|-----------------|-----------------------|
| Contacts | Copper alloy | Selective gold plated |
| Insulator | LCP | — |
| Shell | Stainless steel | Nickel / Tin plated |

Plugs

| Component | Material | Finish |
|-----------|-----------------|-----------------------|
| Contacts | Copper alloy | Selective gold plated |
| Insulator | LCP | — |
| Shell | Stainless steel | Nickel / Tin plated |

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.

Receptacles

EX 80 – 54(50) S – SH (75)

① ② ③ ④ ⑤ ⑥

Plugs

EX 80 – 54(50) P (70)

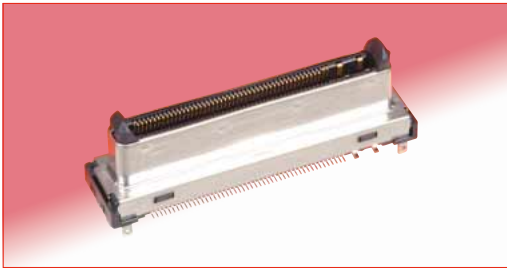
① ② ③ ④ ⑥

| | |
|-----------------------------|--|
| ① Series number | : EX |
| ② Model serial indicator 80 | : Vertical SMT type |
| ③ Number of contacts | : 54, 100 : 54(50)... 50 contacts mounted in a 54-contact size |
| ④ Connector types | S : Receptacle connectors (Shell ground tab length 0.9mm) P : Plug connectors (Shell ground tab length 0.9mm) P1 : Plug connectors (Shell ground tab length 2.2mm) |
| ⑤ Receptacle, with shutter | SH : Built-in shutters |
| ⑥ Separate specifications | : See the Specifications Sheet of each products. |

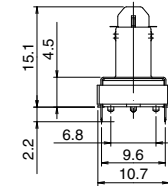
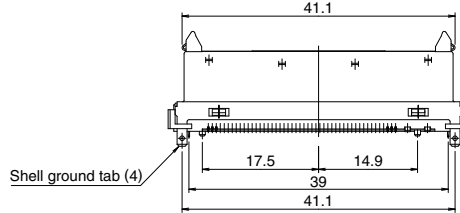
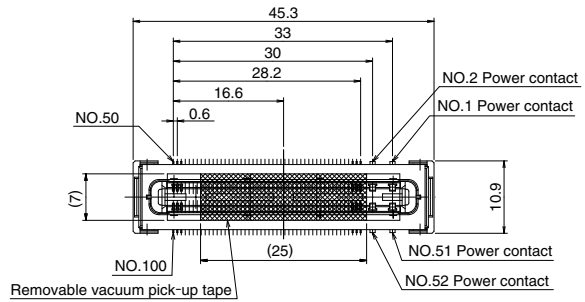
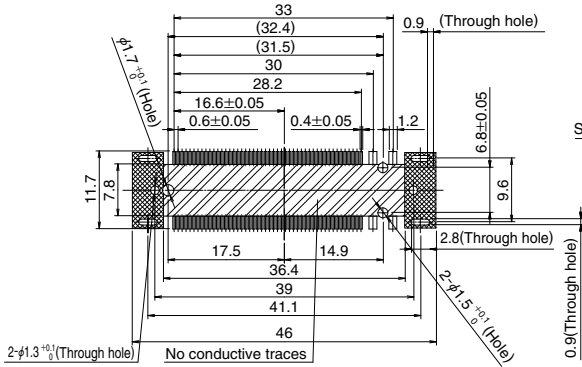
Note: All connectors in this series are designed to be placed on the PCB 1mm min. thick.

■ Plugs

● 100 pos.



◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)

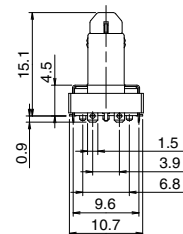
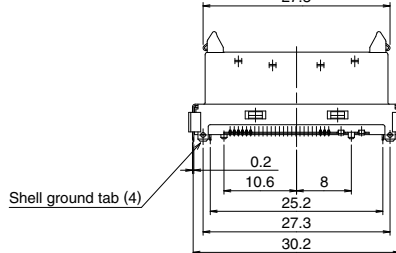
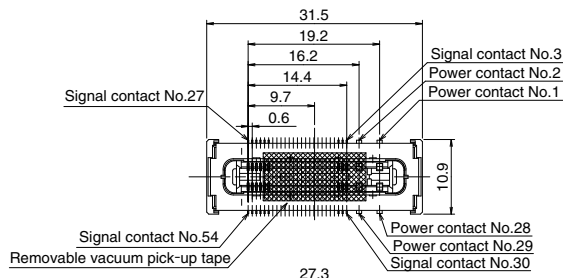
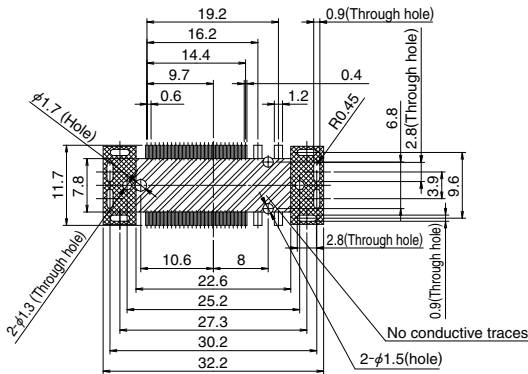


| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging | RoHS |
|----------------|---------------|--|------------------------------------|------------|------|
| EX80-100P1(70) | 232-0598-9 70 | Gold / Gold | Nickel / Tin | 1 pcs/tray | ○ |

● 54 pos.



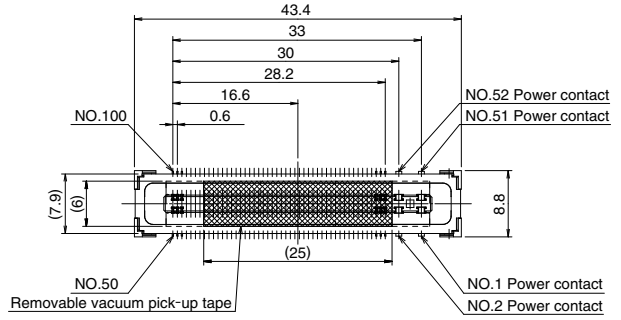
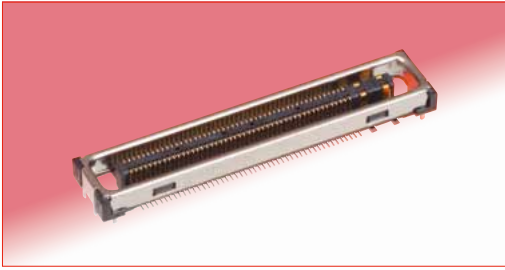
◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



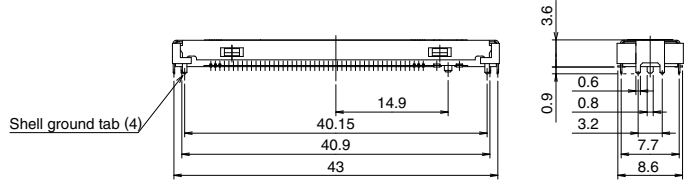
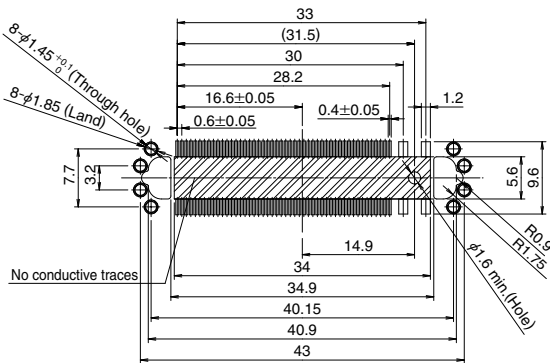
| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging | RoHS |
|---------------|---------------|--|------------------------------------|------------|------|
| EX80-54P (70) | 232-0610-2 70 | Gold / Gold | Nickel / Tin | 1 pcs/tray | ○ |

■ Receptacles (Without shutter)

● 100 pos.

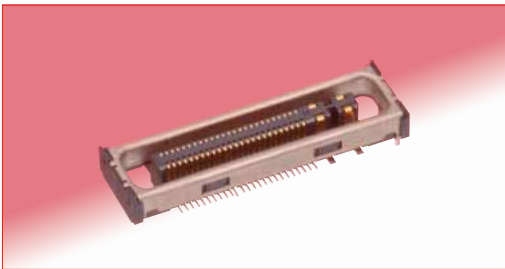


◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)

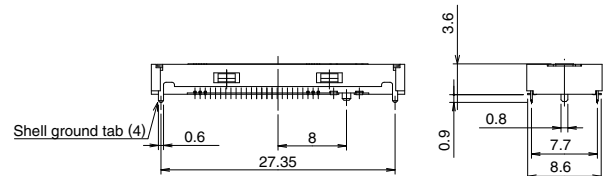
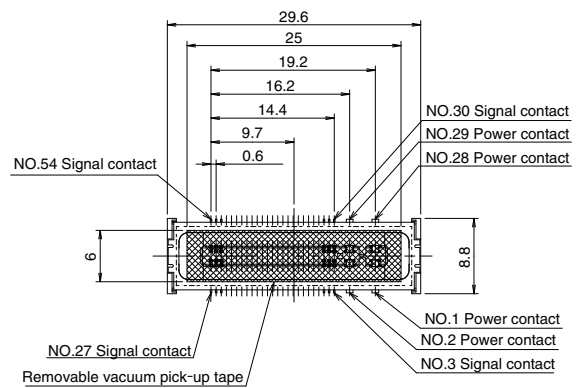
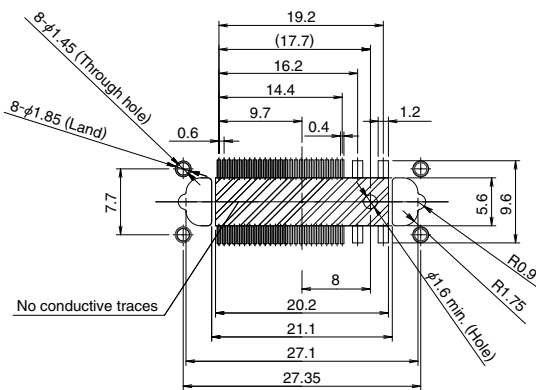


| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging | RoHS |
|---------------|---------------|--|------------------------------------|------------|------|
| EX80-100S(70) | 232-0592-2 70 | Gold / Gold | Nickel / Tin | 1 pcs/tray | ○ |

● 54 pos.



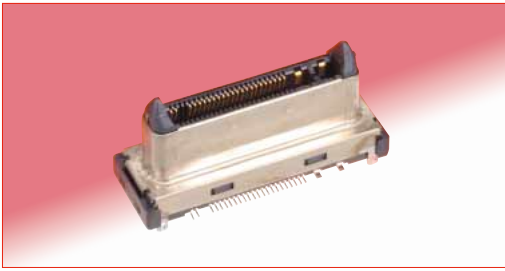
◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



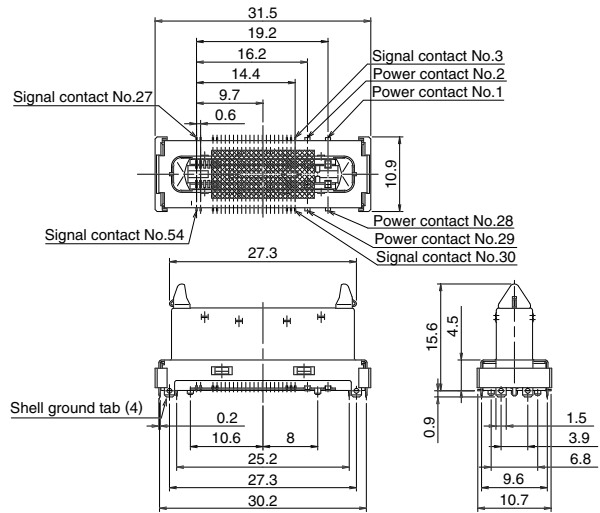
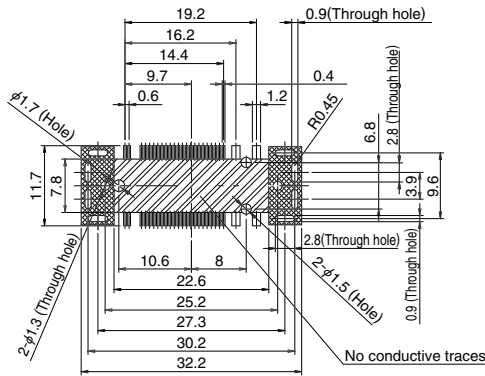
| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging | RoHS |
|--------------|---------------|--|------------------------------------|----------------|------|
| EX80-54S(70) | 232-0609-3 70 | Gold / Gold | Nickel / Tin | 1,000 pcs/reel | ○ |

■ Plug (For the Receptacle with shutter)

● 54 pos.



◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Packaging | RoHS |
|------------------|---------------|--|------------------------------------|------------|------|
| EX80-54(50)P(70) | 232-0607-8 70 | Gold / Gold | Nickel / Tin | 1 pcs/tray | ○ |

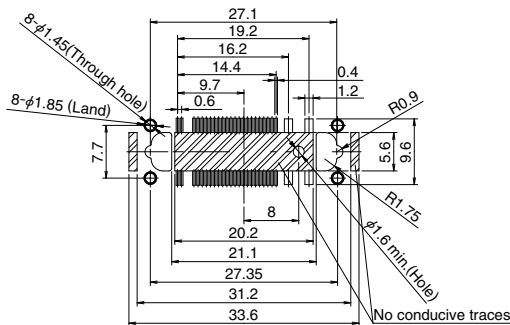
Note : The design of the EX80-54(50)P does not have a detection signal contact.

■ Receptacle (With shutter)

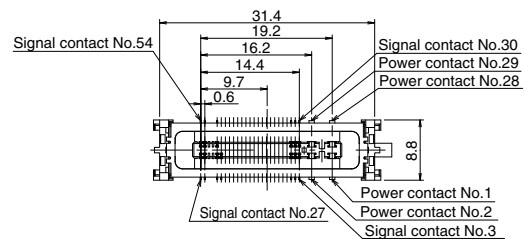
● 54 pos.



◆ Recommended PCB mounting pattern (PCB thickness : 1mm min.)



◆ Shown without shutter

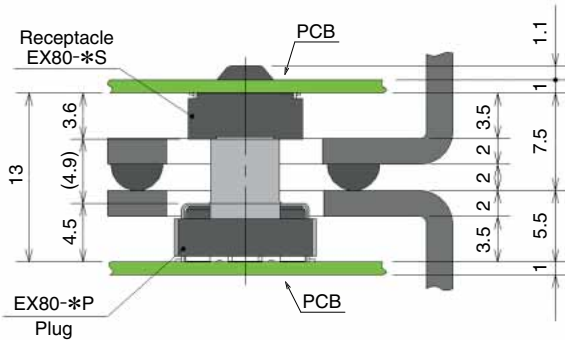


| Part No. | HRS No. | Contact plating (contact area/termination) | Shell plating (Body / termination) | Shutter color | Packaging | RoHS |
|---------------------|---------------|--|------------------------------------|---------------|--------------|------|
| EX80-54(50)S-SH(71) | 232-0606-5 71 | Gold / Gold | Nickel / Tin | Silver | 500 pcs/reel | ○ |
| EX80-54(50)S-SH(75) | 232-0606-5 75 | | | Black | | |

◆ Connector mounting condition

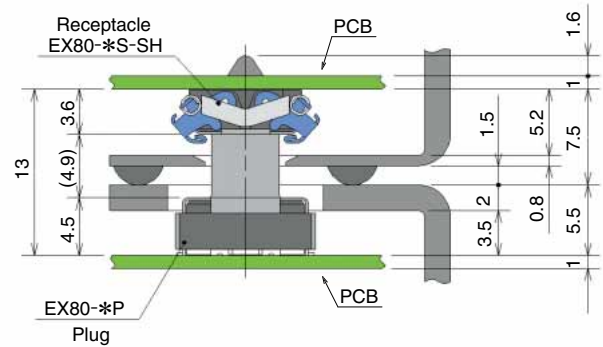
● Type without shutters

Housing mounting condition
(Shown for reference only)



● Type with shutters

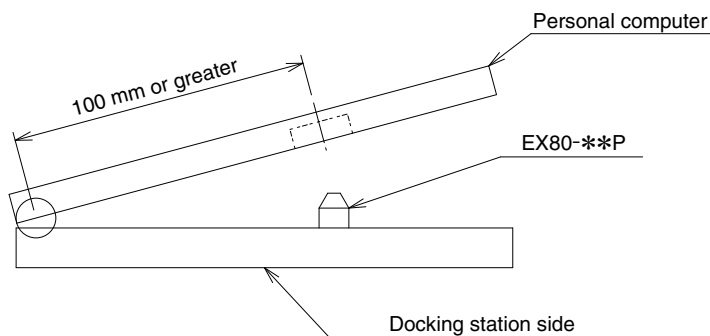
Housing mounting condition
(Shown for reference only)



Note : The stacking length between boards of this connector is 13mm.

◆ Precautions

- Make the stacking height design value of the set 13.0 to 13.7mm. Establish the setting so that the stacking height is 14.5mm or less including the accumulative tolerance of the set.
- Use a floating structure (of 1.2mm or less) to mount this product. (Within 0.7mm for the type with shutters)
- Be sure to also establish a guide structure on the set side.
- For set designs in which the connector rotates and mates, make the radius of the rotation axis 100mm or greater.



MEMO :

A series of horizontal dashed lines for writing a memo.

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
40 Shattuck Road, Suite 215,
Andover, MA 01810
Phone : +1-978-655-9850

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 : +49-711-456002-221
Fax : +49-711-456002-299
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUREMBERG OFFICE
Nordostpark 25, 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 36
<http://www.hirose.com/eu/>

FRANCE:

HIROSE ELECTRIC EUROPE B.V. PARIS OFFICE
130-136 Avenue Joseph Kessel, Bâtiment A,
78960 Voisins le Bretonneux, France
Phone : +33-1-77048712
<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
<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
A2006, Ocean International Center, Building 56# East 4th
Ring Middle Road, ChaoYang District, Beijing, 100025
Phone : +86-10-8576-9855
Fax : +86-10-8576-6033
<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.
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
<http://www.hirose.com/sg/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI OFFICE
Regus Level-2, Elegance Tower, Jasola District
Centre, New Delhi 110025, India
Phone : +91-11-66351030/1037/1167
<http://www.hirose.com/sg/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. BANGALORE OFFICE
WeWork Galaxy, No 43, Residency Road, Shanthala
Nagar, Ashok Nagar, Bengaluru, Karnataka 560025, India
Phone : +91-80-4120 1907
<http://www.hirose.com/sg/>

MALAYSIA:

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

THAILAND:

BANGKOK LIAISON OFFICE
No.8, T-One Building, Level 15 unit 103, Sukhumvit, 40 Alley,
Khet Khlong Toei, Phra Khanong Bangkok 10110, Thailand
Phone : +66-98-886-6746
<http://www.hirose.com/sg/>

**HIROSE ELECTRIC CO., LTD.**

2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN
TEL: +81-45-620-7410 Fax: +81-45-591-3754
<http://www.hirose.com>