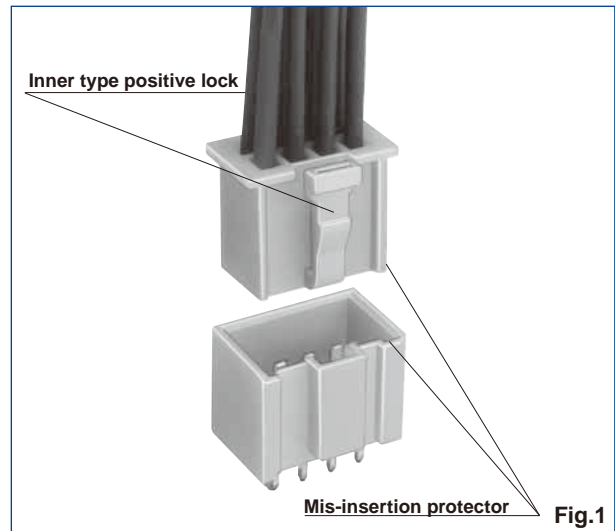
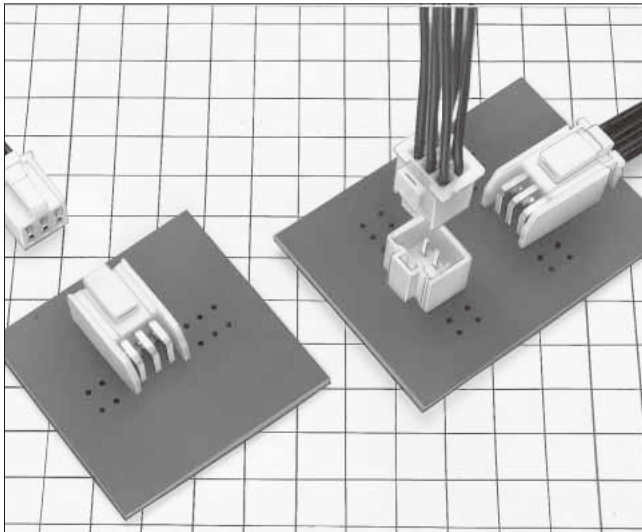


3.5mm Pitch Miniature Double Row Connector for Secondary Power (Compliant with UL/CSA Standard)

MDF6 Series



■ Features

1. Miniature type with 3.5mm pitch

A miniature, space-saving connector with a 3.5mm × 5mm pitch set in a double row alignment configuration.

2. 7A Current Capacity

Despite its small size as a power connector, the current capacity is rated at 7A when using 16 AWG wire.

3. Box Type Header

The box type header is highly resistant to twisting forces and is polarized to prevent mis-insertions.

4. Internal Latch Mechanism

The internal latch mechanism is designed to offer better protection from accidental un-matings and provides for a reliable and stable connection.

■ Applications

Secondary power units for various equipment

Product Specifications

| | | | | | |
|--------|----------------------------|------------|--|-----------------------------|----------------------|
| Rating | Current rating (Note 1) | Cable Size | 16 AWG : 7A 18 AWG : 6A 20 AWG : 5A 22 AWG : 4A | Operating Temperature Range | -30 to +85°C (Note2) |
| | Voltage rating | 300V AC | | Operating Humidity Range | 40 to 80% |
| | | | | Storage Temperature Range | -10 to +60°C (Note3) |
| | | | | Storage Humidity Range | 40 to 70% (Note3) |

| Standard Value Applicant to the UL CSA Safety Standard | | | |
|--|----------------|----------------------------|--|
| Rating | Current rating | Cable Size | 16 to 18 AWG : 6A 20 to 22 AWG : 4A |
| | Voltage rating | UL : 250V AC, CSA : 30V AC | |

■ UL CSA Safety Standard File No.
 UL : E52653
 CSA : LR95109

| Item | Specifications | Conditions |
|--------------------------------------|--|--|
| 1. Insulation Resistance | 1,000MΩ min. | 500V DC |
| 2. Withstanding voltage | No flashover or insulation breakdown. | 1,500V AC/1 minute |
| 3. Contact Resistance | 30mΩ max. | 100mA |
| 4. Single Insertion/Extraction Force | 0.4N(40gf) min., 4.9N(500gf) max. | Measured with a steel pin with dimensions of 1.52 × 0.76 +/-0.002mm |
| 5. Vibration Resistance | No electrical discontinuity of 1μs or more | Frequency : 10 to 55Hz, single amplitude of 0.75mm, 2 hours in each of the 3 axis directions. |
| 6. Humidity (Steady state) | Contact resistance : 30mΩ max. Insulation resistance : 1,000MΩ min. | 96 hours at temperature of 40±2°C and humidity of 90% to 95% |
| 7. Temperature Cycle | Contact resistance : 30mΩ max. Insulation resistance : 1,000MΩ min. | (-55°C : 30 minutes → 5 to 35°C : 10 minutes 85°C : 30 minutes → 5 to 35°C : 10 minutes) 5 cycles |
| 8. Mating Cycles | Contact resistance : 30mΩ max. | Tin/tin-copper plated 30 cycles |
| 9. Resistance to Soldering heat | No deformation of components affecting performance. | Flow : 250°C for 10 seconds Manual soldering : 300°C for 3 seconds |

Note 1 : The rated current will change depending on the cable size used. The header rating is only 7A.

Note 2 : Includes temperature rise caused by current flow.

Note 3 : The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range includes non-conducting condition of installed connectors in storage, shipment or during transportation.

Material / Finish

| Product | Part | Material | Finish | Remarks |
|-----------------------------|-----------|-----------------|--------------------|---------|
| Crimping Socket | Insulator | Polyamide resin | White (Natural) | UL94V-0 |
| Crimping Contact for Socket | Contact | Phosphor bronze | Tin plating | — |
| Pin Header | Insulator | Polyamide resin | White (Natural) | UL94V-0 |
| | Contact | Brass | Tin-copper plating | — |

Product Number Structure

Connector

MDF6 - * **DS** - **3.5** **C**

① ② ③ ④ ⑤

Contact

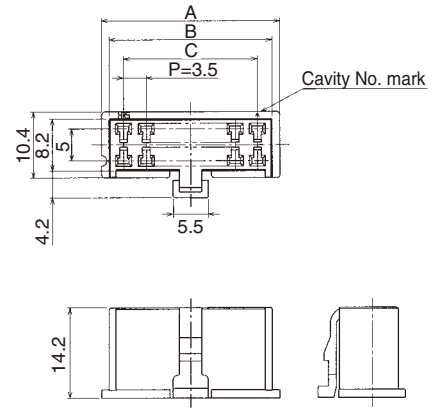
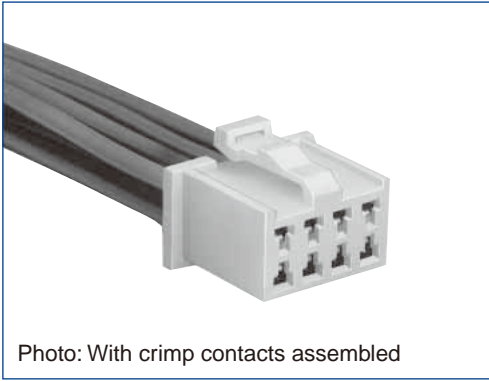
MDF6 - **1618** **SCF**

① ②

| | |
|-----------------------------|-----------------------------|
| ① Series Name : MDF 6 | ④ Contact Pitch : 3.5mm |
| ② No. of Contacts : 4 to 20 | ⑤ Contact type |
| ③ Connector Type | C : Crimping socket |
| DS : Double row socket | DSA : Straight pin header |
| DP : Double row pin header | DS : Right angle pin header |

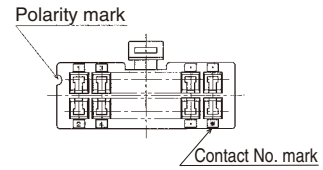
| | |
|-------------------------|----------------------------|
| ① Applicable Cable Size | ② Packaging Type |
| 1618 : 16 to 18 AWG | SCF : Socket Contact, Reel |
| 2022 : 20 to 22 AWG | SC : Socket Contact, Pack |

Double Row Socket

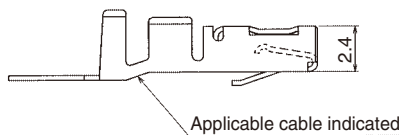
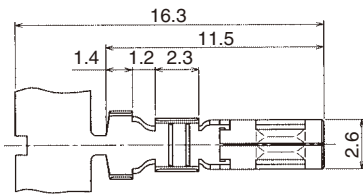


Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | C | RoHS |
|----------------|------------|-----------------|-------------|------|------|------|------|
| MDF6-4DS-3.5C | 547-0074-1 | 4 | 100pcs/pack | 10.5 | 8.1 | 3.5 | Yes |
| MDF6-6DS-3.5C | 547-0075-4 | 6 | | 14.0 | 11.6 | 7.0 | |
| MDF6-8DS-3.5C | 547-0076-7 | 8 | | 17.5 | 15.1 | 10.5 | |
| MDF6-10DS-3.5C | 547-0077-0 | 10 | | 21.0 | 18.6 | 14.0 | |
| MDF6-12DS-3.5C | 547-0078-2 | 12 | | 24.5 | 22.1 | 17.5 | |
| MDF6-14DS-3.5C | 547-0079-5 | 14 | | 28.0 | 25.6 | 21.0 | |
| MDF6-16DS-3.5C | 547-0080-4 | 16 | | 31.5 | 29.1 | 24.5 | |
| MDF6-18DS-3.5C | 547-0081-7 | 18 | | 35.0 | 32.6 | 28.0 | |
| MDF6-20DS-3.5C | 547-0082-0 | 20 | | 38.5 | 36.1 | 31.5 | |



Crimp Contact



Applicable Cable (Tin plating Annealed Copper Wire)

| Conductor Size (Wire construction) | Jacket Diameter |
|------------------------------------|-----------------|
| 16 AWG (26/0.254mm) | φ2.5 to φ2.0mm |
| 18 AWG (34/0.18mm) | |
| 20 AWG (21/0.18mm) | |
| 22 AWG (17/0.16mm) | φ1.9 to φ1.5mm |

Note : If other cables are used instead of the applicable cable, please contact Hirose sales department.

Recommended Cable

UL1061, UL1007

Strip Length

2.7 to 4.4mm

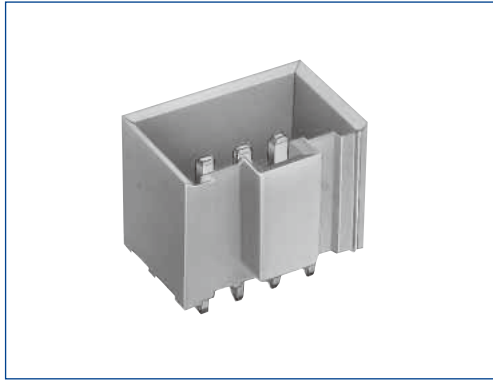
| Part No. | HRS No. | Applicable Cable | | Packaging Type | RoHS |
|--------------|------------|------------------|-----------------|----------------|------|
| | | AWG Size | Jacket Diameter | | |
| MDF6-1618SCF | 547-0070-0 | 16 to 18 | 2.5 to 2.0 | 5,000pcs/reel | Yes |
| MDF6-1618SC | 547-0071-3 | | | 100pcs/pack | |
| MDF6-2022SCF | 547-0072-6 | 20 to 22 | 1.9 to 1.5 | 5,000pcs/reel | |
| MDF6-2022SC | 547-0073-9 | | | 100pcs/pack | |

Applicable Crimping Tool

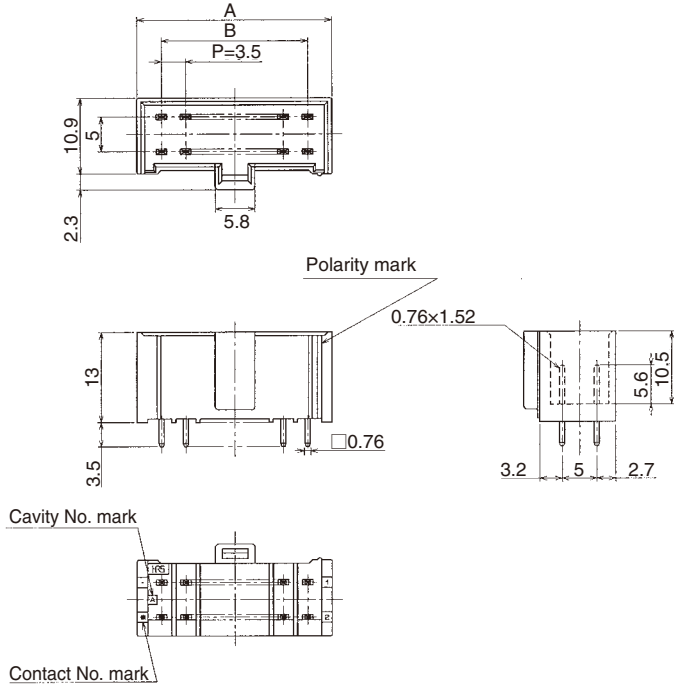
| Type | Part No. | HRS No. | Applicable Contact |
|----------------------|------------------|------------|--------------------|
| Main press unit | CM105 | 901-0005-4 | _____ |
| Applicator | AP105-MDF6-1618S | 901-4512-4 | MDF6-1618SCF |
| | AP105-MDF6-2022S | 901-4513-7 | MDF6-2022SCF |
| Manual Crimping Tool | MDF6-TA1618HC | 550-0203-5 | MDF6-1618SC |
| | MDF6-TA2022HC | 550-0204-8 | MDF6-2022SC |
| Extraction Tool | DF-C-PO(A) | 550-0170-8 | MDF6-***SC(F) |

Note : Hirose does not guarantee products if tools other than the ones designed or recommended by Hirose are used.

Double Row Pin Header: Straight Type



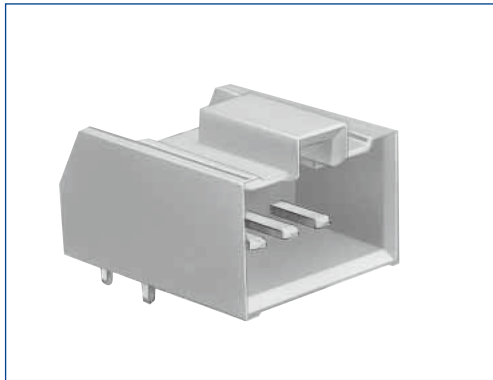
- Applicable Through Hole Diameter of PCB : $\phi 1.3^{+0.1}_{0}$
- Applicable Thickness of PCB : 1.6 ± 0.2



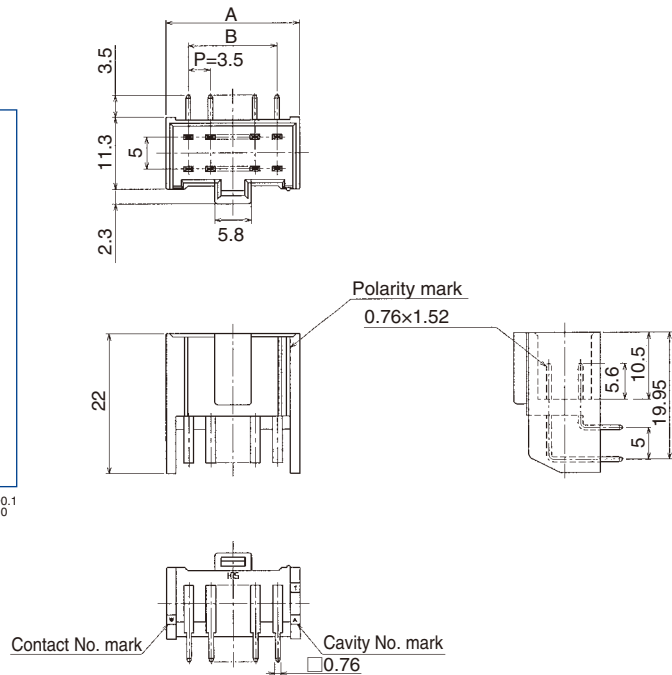
Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | RoHS |
|----------------------|---------------|-----------------|-------------|------|------|------|
| MDF6-4DP-3.5DSA(05) | 547-0083-2 05 | 4 | 100pcs/pack | 10.5 | 3.5 | Yes |
| MDF6-6DP-3.5DSA(05) | 547-0084-5 05 | 6 | | 14.0 | 7.0 | |
| MDF6-8DP-3.5DSA(05) | 547-0085-8 05 | 8 | | 17.5 | 10.5 | |
| MDF6-10DP-3.5DSA(05) | 547-0086-0 05 | 10 | | 21.0 | 14.0 | |
| MDF6-12DP-3.5DSA(05) | 547-0087-3 05 | 12 | | 24.5 | 17.5 | |
| MDF6-14DP-3.5DSA(05) | 547-0088-6 05 | 14 | | 28.0 | 21.0 | |
| MDF6-16DP-3.5DSA(05) | 547-0089-9 05 | 16 | | 31.5 | 24.5 | |
| MDF6-18DP-3.5DSA(05) | 547-0090-8 05 | 18 | | 35.0 | 28.0 | |
| MDF6-20DP-3.5DSA(05) | 547-0091-0 05 | 20 | | 38.5 | 31.5 | |

Double Row Pin Header: Right Angle Type



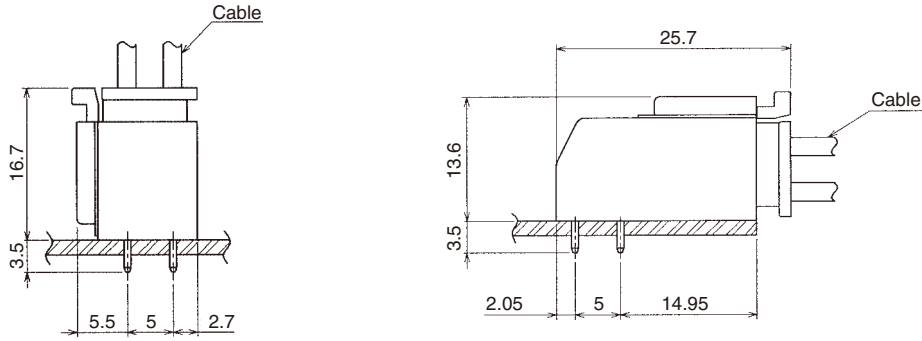
- Applicable Board Hole Diameter of PCB : $\phi 1.3^{+0.1}_{0}$
- Applicable Thickness of PCB : 1.6 ± 0.2



Unit : mm

| Part No. | HRS No. | No. of Contacts | Packing | A | B | RoHS |
|---------------------|---------------|-----------------|-------------|------|------|------|
| MDF6-4DP-3.5DS(05) | 547-0270-0 05 | 4 | 100pcs/pack | 10.5 | 3.5 | Yes |
| MDF6-6DP-3.5DS(05) | 547-0271-2 05 | 6 | | 14.0 | 7.0 | |
| MDF6-8DP-3.5DS(05) | 547-0272-5 05 | 8 | | 17.5 | 10.5 | |
| MDF6-10DP-3.5DS(05) | 547-0273-8 05 | 10 | | 21.0 | 14.0 | |

Application Pattern



Precautions

| | |
|------------------------------------|---|
| 1. Recommended Soldering Condition | <ul style="list-style-type: none"> ■Flow : 250°C for 10 seconds max. ■Manual soldering : 300°C for 3 seconds max. |
| 2. Cleaning Condition | Please Refer to the "Nylon Connector Use Hand book". |
| 3. Connection Condition | Please Refer to the "Nylon Connector Use Hand book". |
| 4. Cautions | <ul style="list-style-type: none"> ■The color phase of this product is slightly different from that of the formed product according to the manufacturing lot and future storage conditions, but the difference doesn't affect the performance. |
| 5. Precautions | <ul style="list-style-type: none"> ■Please Refer to the "Nylon Connector Use Hand book". ■Please Refer to the documents "Crimp Condition" and "Crimp Quality Standards" for the cable assembly procedures. |

USA:

HIROSE ELECTRIC (U.S.A.), INC. HEADQUARTERS
2688 Westhills Court, Simi Valley, CA 93065-6235
Phone : +1-805-522-7958
Fax : +1-805-522-3217
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. SAN JOSE OFFICE
3255 Scott Boulevard, Building 7, Suite 101
Santa Clara, CA 95054
Phone : +1-408-253-9640
Fax : +1-408-253-9641
<http://www.hirose.com/us/>

USA:

HIROSE ELECTRIC (U.S.A.), INC. CHICAGO OFFICE
580 Waters Edge Lane, Suite 205 Lombard IL
60148
Phone : +1-630-282-6701
Mail : inquiries@hirose.com
<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/>

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
Herzog-Carl-Strasse 4 D-73760 Ostfildern
(Scharnhäuser Park)
Phone : +49-711-4560-02-1
Fax : +49-711-4560-02-299
<http://www.hirose.com/eu/>

GERMANY:

HIROSE ELECTRIC EUROPE B.V. NUERNBERG OFFICE
Muggenhofer Str. 136 90429 Nuernberg
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
Regus La Garenne Colombes, Place de La Belgique,
71 Boulevard National La Garenne Colombes, 92250, France
Phone : +33 (0) 1 7082 3170
Fax : +33 (1) 7082 3101
<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 (SHANGHAI) CO., LTD.
1601, Henderson Metropolitan, NO.300, East Nanjing
Road, Huangpu District, Shanghai, China 200001
Phone : +86-21-6391-3355
Fax : +86-21-6391-3335
<http://www.hirose.com/cn/>

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/>

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/>

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 : +886-2-2555-7350
<http://www.hirose.com/tw/>

KOREA:

HIROSE KOREA CO., LTD.
250, Huimanggongwon-ro, Siheung-si,
Gyeonggi-do, Korea, 429-849
Phone : +82-31-496-7000,7124
Fax : +82-31-496-7100
<http://www.hirose.co.kr/>

SINGAPORE:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
10 Anson Road #26-16, International Plaza
079903, Singapore
Phone : +65-6324-6113
Fax : +65-6324-6123
<http://www.hirose.com/sg/>

INDIA:

HIROSE ELECTRIC SINGAPORE PTE. LTD. DELHI LIAISON OFFICE
Office NO.519, 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:

HIROSE ELECTRIC SINGAPORE PTE. LTD.
1-10-07, Suntech @ Penang Cybercity (1164),Lintang
Mayang Pasir 3,11950, Bayan Baru, Penang, Malaysia.
Phone : +604-619-2564
Fax : +604-619-2574
<http://www.hirose.com/sg/>

THAILAND:

HIROSE ELECTRIC SINGAPORE PTE. LTD. 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>