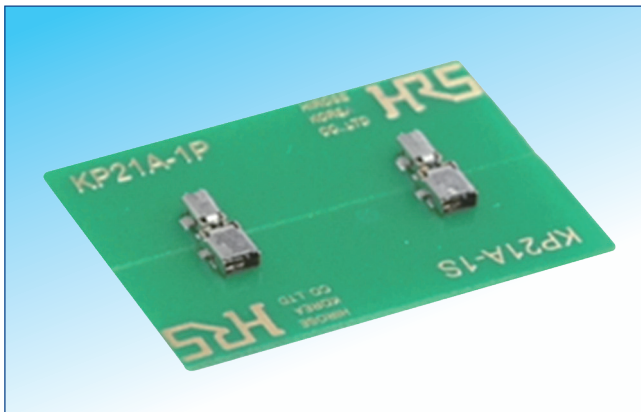


Horizontal Type, Monopole Floating Board-to-Board Connector

KP21A Series



Features

1. Slim & low profile

Slim and low-profile monopole connector ideal for horizontal board-to-board connection inside LED lighting applications.

2. Long Effective Mating Length

Improved contact reliability with 1.3mm effective mating length.

3. Floating design

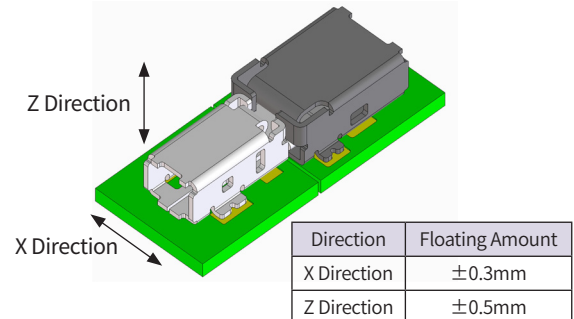
Absorbs displacement in both the X and Z axis. Secure connection and high contact reliability.(Fig.1)

4. Clear tactile click

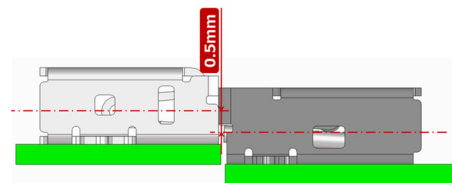
Tactile click prevents incomplete mating and enhances mating operation.(Fig.2)

5. High current capacity : 3A

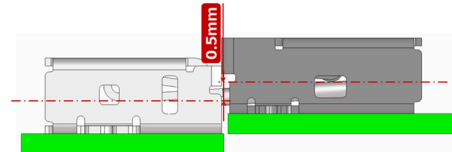
Floating Design (X and Z Directions)



• Upper (+Z Direction)



• Lower (-Z Direction)

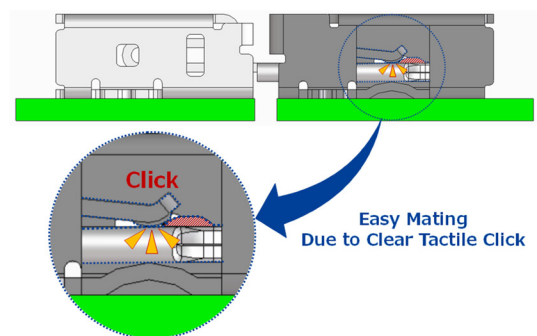


Misalignment Absorbing Design Ensures Contact Reliability

Fig.1

Clear Tactile Click

Insertion →



Insertion Force Load Curve

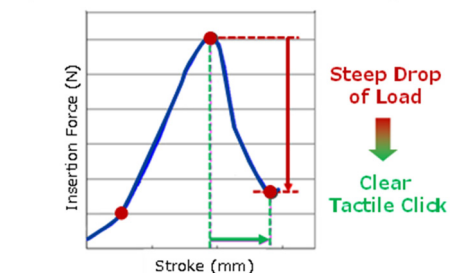


Fig.2

Product Specifications

| | | | | |
|---------|---------------|---------|--------------------------|----------------------|
| Ratings | Rated Current | 3A | Operating Temperature | -55 to +85°C (Note1) |
| | | | Operating Humidity Range | 25 to 85% (Note2) |
| | Rated Voltage | 125V AC | Storage Temperature | -10 to +50°C (Note3) |
| | | | Storage Humidity Range | 85% or less (Note2) |

| Items | Specifications | Conditions |
|---------------------------------|--|--|
| 1. Contact Resistance | 20mΩ Max. (Note4) | Open voltage 20 mV AC or less Test current 10mA |
| 2. Vibration | No electrical discontinuity of 1μs or more Contact resistance : 30mΩ or less after initial testing No mechanical damage on the parts | Frequency 10 to 55 to 10 Hz/min, Single amplitude 1.52 mm, 5 minutes in 3 directions |
| 3. Shock | No electrical discontinuity of 1μs or more Contact resistance : 30mΩ or less after initial testing No mechanical damage on the parts | Acceleration 490m/s ² , duration 11ms, half-sine wave, 3 times in 3 directions, for a total 18 times. |
| 4. Humidity | Contact resistance : 30mΩ or less after initial testing No mechanical damage on the parts | Exposed at 85°C, 85%RH, 240 Hours |
| 5. Temperature Cycle | Contact resistance : 30mΩ or less after initial testing No mechanical damage on the parts | 25 Cycles (1 Cycle = 1 Hour) Temperature : -55 to +85°C |
| 6. Mating Durability | Contact resistance : 30mΩ or less after initial testing No mechanical damage on the parts | 10 times insertion/withdrawal |
| 7. Resistance to Soldering Heat | No deformation in appearance or significant damage to contacts | Reflow: Peak temperature between 250 to 220°C for 60 sec. Max. Hand Solder: Solder iron temperature of 245°C for 3 sec. |

Note 1 : Includes the temperature rise due to current flow.

Note 2 : Use without condensation on parts.

Note 3 : The storage condition refers to long-term storage of the product before assembly.

The operating temperature and humidity range apply after board mounting in the non-energized state.

Note 4 : Contact resistance includes conductor resistance unless otherwise specified.

Testing should be conducted under a temperature of 15 to 35°C with air pressure of 86 to 106kpa and relative humidity 25 to 85%.

Material / Finish

| Item | Material | Finish |
|--------|-----------------|-------------|
| Plug | Phosphor Bronze | Tin Plating |
| Socket | Phosphor Bronze | Tin Plating |

Product Number Structure

Refer to the chart below when determining the product specifications from the product number.

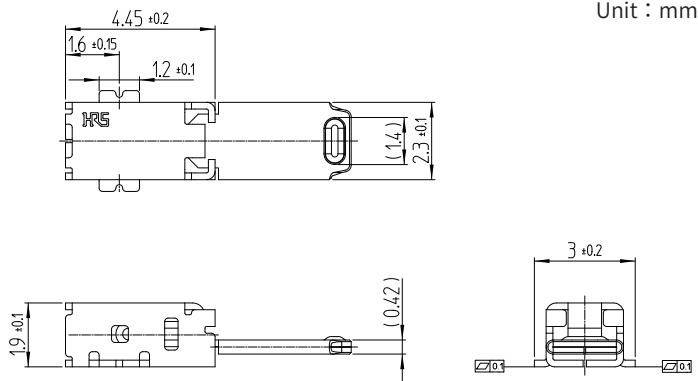
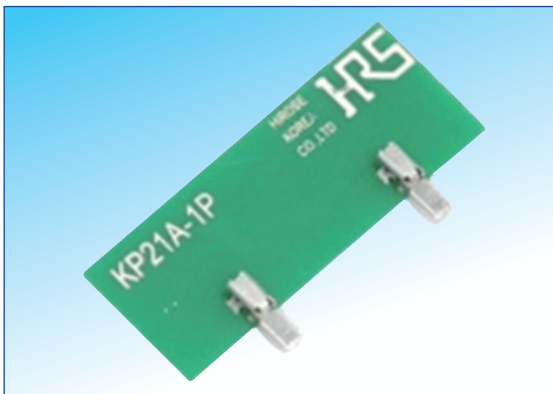
Please select from the product numbers listed in this catalogue when placing orders.

KP21 A - 1 P (800)

① ② ③ ④ ⑤

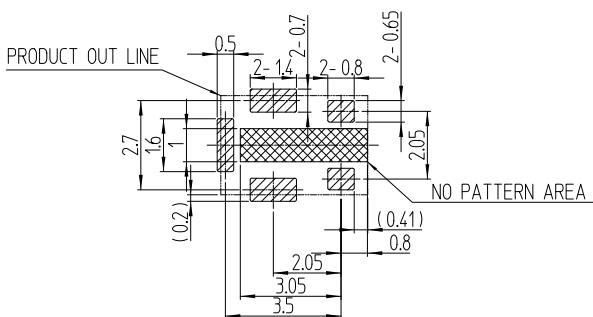
| | | | |
|----------------------|-----------------------------|---------------------|------------------------------------|
| ① Series Name | KP21 | ④ Type of Connector | P : Plug S : Socket |
| ② Connector Type | A : Floating Board-to-Board | ⑤ Specification | (800): Tin Plating, Emboss Package |
| ③ Number of contacts | 1Pos. | | |

■ Plug(SMT)

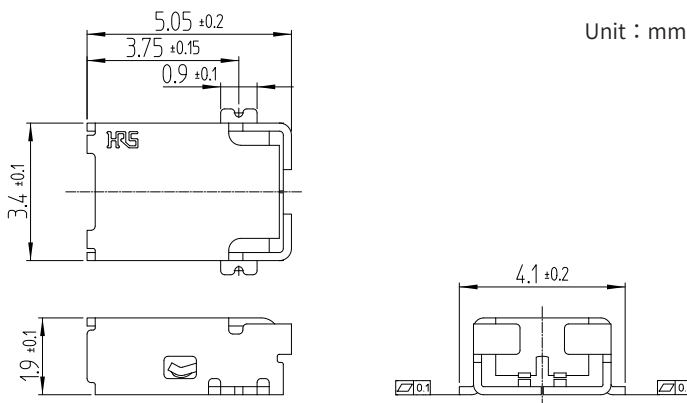


| Part No. | HRS No. | Purchase Unit |
|---------------|---------------|---------------|
| KP21A-1P(800) | 480-0633-0 00 | 4,500pcs/Reel |

● Recommended PCB Dimensions (t=1.6mm)

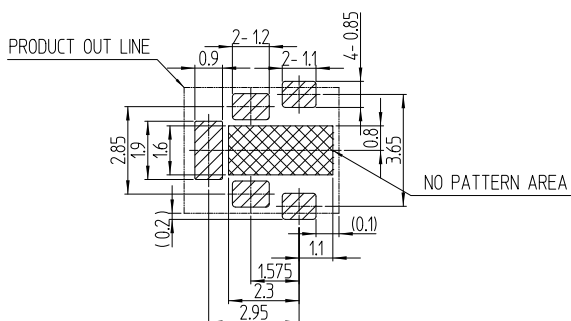


■ Socket (SMT)



| Part No. | HRS No. | Purchase Unit |
|---------------|---------------|---------------|
| KP21A-1S(800) | 480-0632-0 00 | 4,500pcs/Reel |

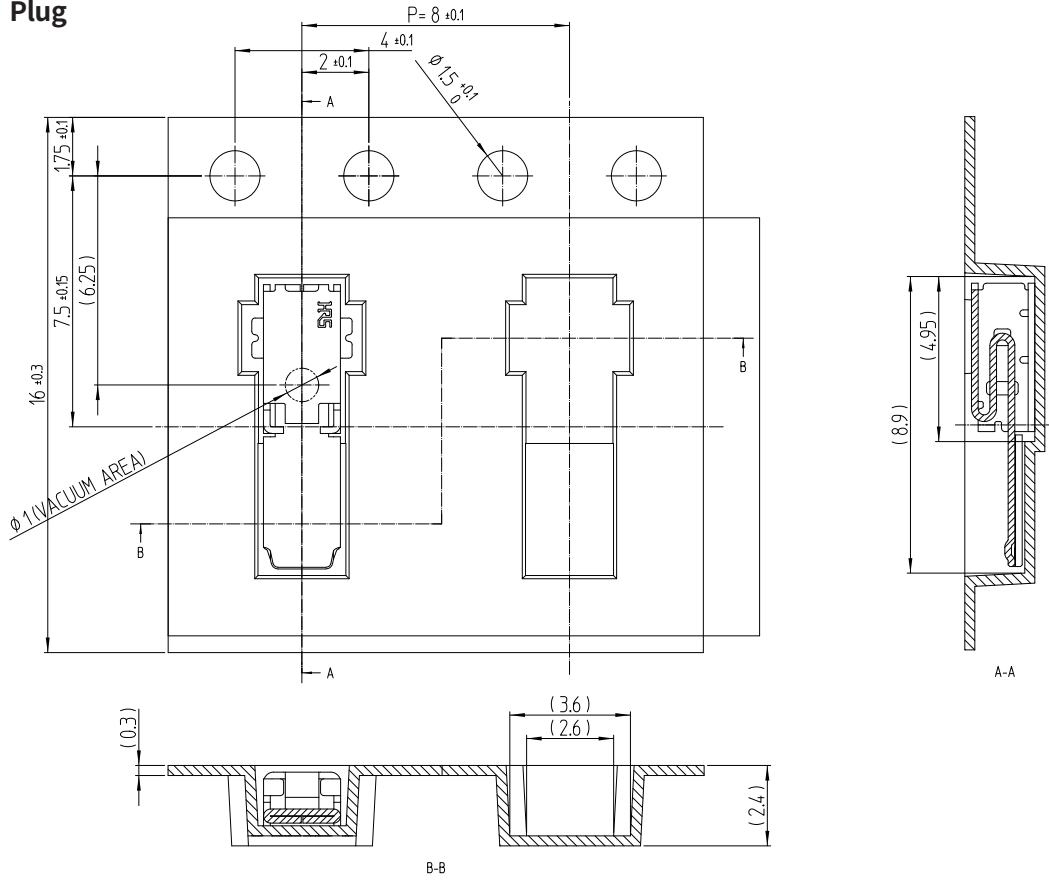
● Recommended PCB Dimensions (t=1.6mm)



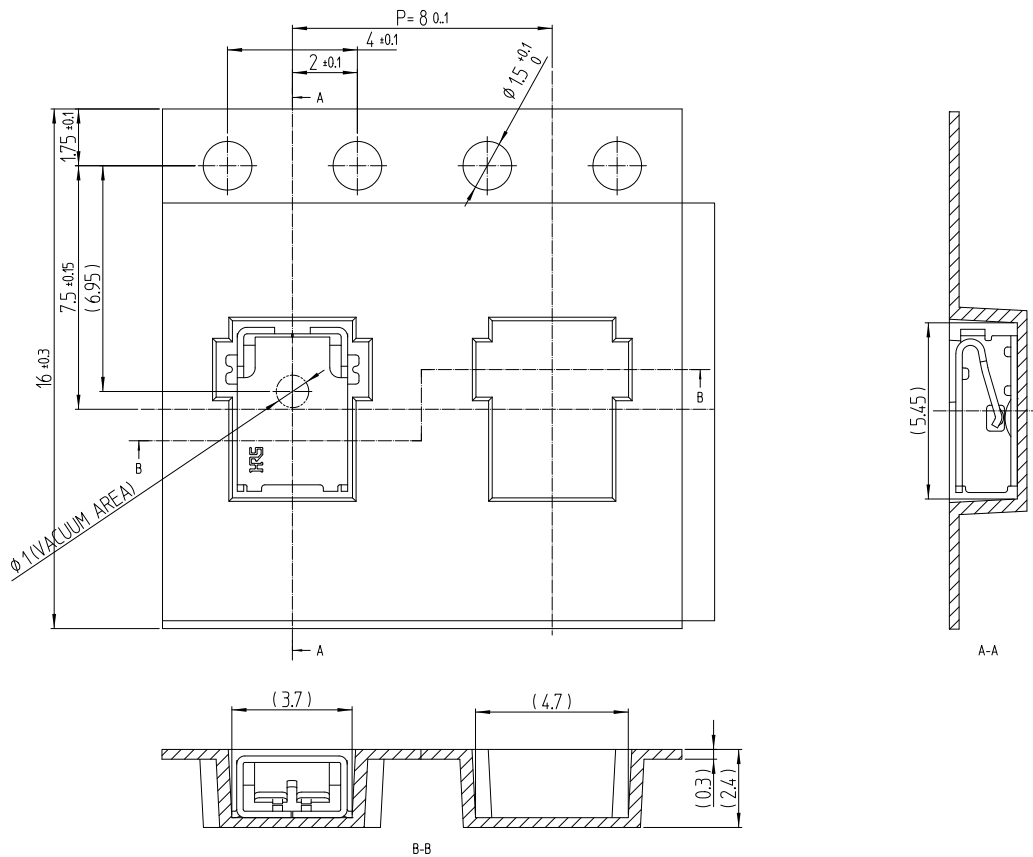
■ Packaging Specification

● Embossed Carrier Tape Dimensions

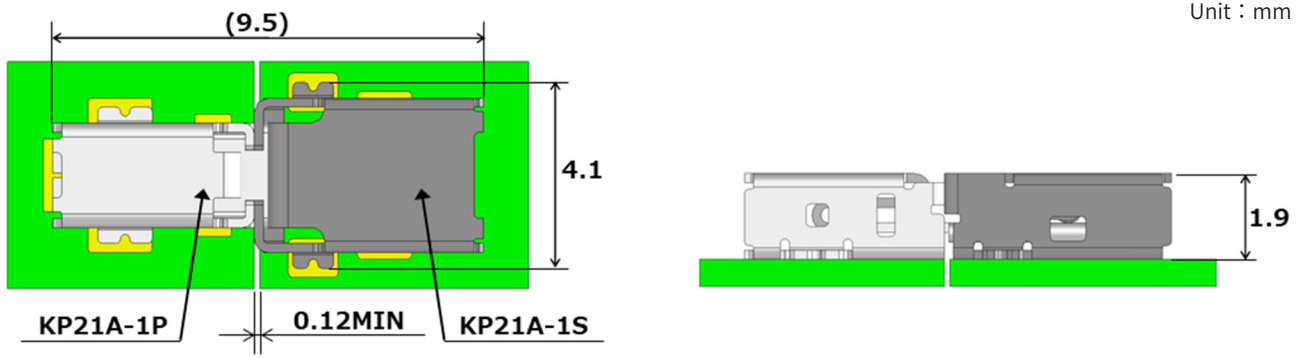
Plug



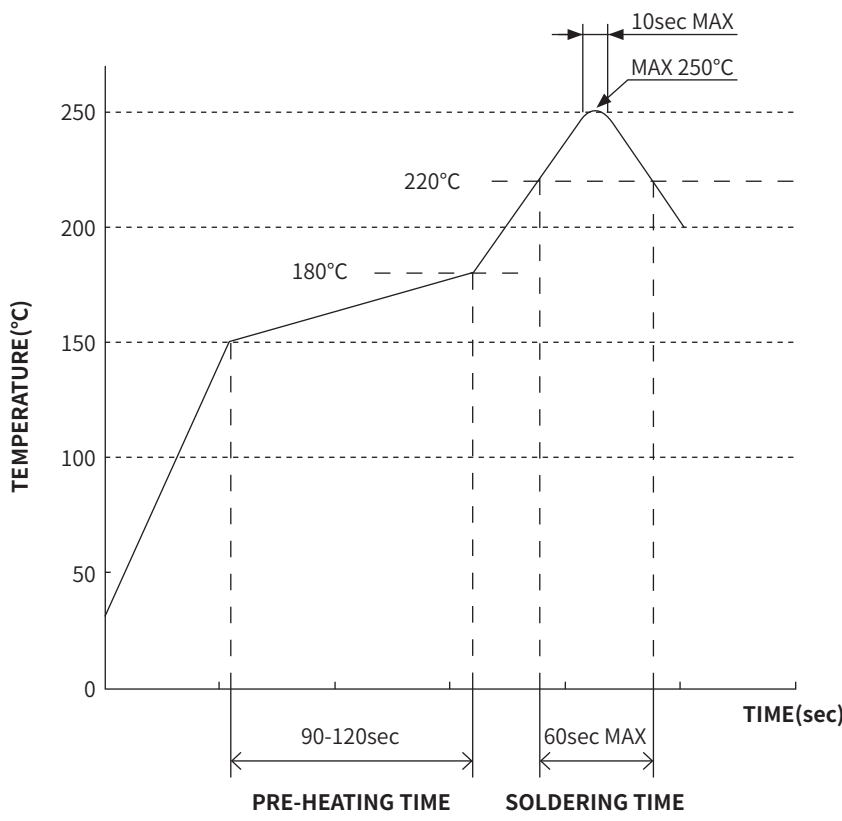
Socket



◆ Mated Dimensions



◆ Operating Precautions

| | |
|---|---|
| <p>1. Recommended Temperature Profile (Lead-free Soldering)</p> |  <p>[Applicable Conditions]</p> <ol style="list-style-type: none"> 1. Peak Temperature : 250°C Max. 2. Heated Area : 220°C Min., within 60 sec. 3. Pre-heating Area : 150 to 180°C, 90 to 120 sec. 4. Number of Times : Max 1 time 5. Recommended air condition is 1000PPM to 2000PPM of Nitrogen |
| <p>2. Recommended Screen Thickness, Open Ratio (Pattern Area Ratio)</p> | <p>Thickness 0.12mm, Open ratio : 100%</p> |
| <p>3. Board Warpage</p> | <p>Maximum of 0.02mm at the connector center with respect to both ends of the connector.</p> |
| <p>4. Precautions</p> | <ul style="list-style-type: none"> • Please check the mounting condition (reflow soldering condition) on your own devices beforehand. The mounting conditions may change due to the soldering temperature, soldering paste, air reflow machine, nitrogen reflow machine, and the type of printed circuit board. The different mounting conditions may have an influence on the product's performance. • Check the usage conditions of your device and optimize the PWB pattern size, position, and amount of the solder applied accordingly. Product performance may be influenced by the usage conditions. • Depending on the reflow conditions, there may be the possibility of a color change in the plating. However, this color change does not have any effect on the product's performance. • If there is accidental contact with the connector while it is going through the reflow machine, there may be deformation or damage caused to the connector. Please check to prevent this. • Please use after confirming the appearance and solderability when the packaging has a storage period limit. • The product performance was tested using rigid printed circuit board. In case the product needs to be reflowed on flexible circuit board, please conduct a reflow test on the flexible circuit board in advance. |

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◆ While taking in consideration

Specifications mentioned in this catalog are reference values.

When considering to order or use this product, please confirm the "Drawing" and "Product Specifications" sheets.

Use an appropriate cable when using the connector in combination with cables.

If considering usage of a non-specified cable, please contact your sales representative.

If assembly process is done by jigs & tools which are not identified by Hirose assurance will not be given.

If considering usage for below mentioned applications, please contact your sales representative.

In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.

[JAPAN]

Headquarters
HIROSE ELECTRIC CO., LTD.
Phone : +81-45-620-7410
<http://www.hirose.com>

[U.S.A]

US Headquarters / CHICAGO Office
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-630-282-6700
<http://www.hirose.com/us/>

SAN JOSE Office
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-408-253-9640
<http://www.hirose.com/us/>

DETROIT Office (AUTOMOTIVE)
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-734-542-9963
<http://www.hirose.com/us/>

BOSTON Office
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-978-655-9850
<http://www.hirose.com/us/>

DALLAS Office
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-972-324-3370
<http://www.hirose.com/us/>

IRVINE Office
HIROSE ELECTRIC (U.S.A.), INC.
Phone : +1-949-930-3750
<http://www.hirose.com/us/>

[THE NETHERLANDS]

EU Headquarters / AMSTERDAM OFFICE
HIROSE ELECTRIC EUROPE B.V.
Phone : +31-20-6557460
<http://www.hirose.com/eu/>

[UNITED KINGDOM]

UK Branch
HIROSE ELECTRIC EUROPE B.V.
Phone : +44-1908-202050
<http://www.hirose.com/eu/>

[GERMANY]

GERMAN Branch / STUTTGART Office
HIROSE ELECTRIC EUROPE B.V.
Phone : +49-711-456002-1
<http://www.hirose.com/eu/>

NUREMBERG Office
HIROSE ELECTRIC EUROPE B.V.
Phone : +49-911-326889-63
<http://www.hirose.com/eu/>

HANOVER Office
HIROSE ELECTRIC EUROPE B.V.
Phone : +49-511-978261-30
<http://www.hirose.com/eu/>

[FRANCE]

PARIS Office
HIROSE ELECTRIC EUROPE B.V.
Phone : +33-1-85764886
<http://www.hirose.com/eu/>

[ITALY]

MILAN Office
HIROSE ELECTRIC EUROPE B.V.
Phone : +39-02-36636350
<http://www.hirose.com/eu/>

[CHINA]

CHINA Headquarters / SHANGHAI Branch
HIROSE ELECTRIC (CHINA) CO., LTD.
Phone : +86-21-6391-3355
<http://www.hirose.com/cn/>

SHENZHEN Branch
HIROSE ELECTRIC (CHINA) CO., LTD.
Phone : +86-755-8207-0851
<http://www.hirose.com/cn/>

BEIJING Branch
HIROSE ELECTRIC (CHINA) CO.,LTD.
Phone : +86-10-5165-9332
<http://www.hirose.com/cn/>

GUANGZHOU Branch
HIROSE ELECTRIC (CHINA) CO.,LTD.
Phone : +86-180-9895-1861
<http://www.hirose.com/cn/>

[HONG KONG]

HONG KONG Office
**HIROSE ELECTRIC
HONGKONG TRADING CO., LTD.**
Phone : +852-2803-5338
<http://www.hirose.com/hk/>

[TAIWAN]

TAIWAN Office
HIROSE ELECTRIC (TAIWAN) CO., LTD.
Phone : +886-2-2555-7377
<http://www.hirose.com/tw/>

[KOREA]

KOREA Office
HIROSE KOREA CO.,LTD.
Phone : +82-31-496-7000
<http://www.hirose.co.kr/>

[SINGAPORE]

SINGAPORE Office
HIROSE ELECTRIC SINGAPORE PTE. LTD.
Phone : +65-6324-6113
<http://www.hirose.com/sg/>

[THAILAND]

BANGKOK Liaison Office
HIROSE ELECTRIC SINGAPORE PTE. LTD.
Phone : +66-2-686-1255
<http://www.hirose.com/sg/>

[MALAYSIA]

PENANG Representative Office
HIROSE ELECTRIC SINGAPORE PTE. LTD.
Phone : +60-4-648-5536
<http://www.hirose.com/sg/>

[INDIA]

BANGALORE Office
HIROSE ELECTRIC INDIA PVT. LTD.
Phone : +91-80-4120-1907
<http://www.hirose.com/sg/>

DELHI Office
HIROSE ELECTRIC INDIA PVT. LTD.
Phone : +91-120-660-8018
<http://www.hirose.com/sg/>

HIROSE ELECTRIC CO.,LTD.
2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN