



## Plugs, Boots

## Specifications

|        |                |         |   |
|--------|----------------|---------|---|
| Rating | Current rating | 1A      | Operating temperature range -25°C to +60°C (Note) |
|        | Voltage rating | 125V AC |   |

| Item   | Specification   | Conditions   |
|--|---|--|
| 1. Insulation resistance                               | 100 M ohms min.   | 100 V DC   |
| 2. Withstanding voltage<br>(between adjacent contacts) | No flashover or insulation breakdown.   | 500 V AC / one minute  |
| 3. Contact resistance                                  | 230 m ohms max.   | 100mA  |
| 4. Vibration   | No electrical discontinuity of 5μs min.<br>Contact resistance : 250m ohms max.  | Frequency: 10 to 55 Hz, single amplitude of 0.75 mm,<br>1 octave/min. conduct, 10 cycles to each 3 directions.   |
| 5. Shock   | No electrical discontinuity of 5μs. min.<br>Contact resistance : 250m ohms max.   | Acceleration of 490 m/s <sup>2</sup> , 11 ms duration, sine half-wave<br>waveform, 3 cycles in each of the 6 axes.   |
| 6. Durability<br>(mating/un-mating)                    | Contact resistance : 250m ohms max.   | 200 cycles   |
| 7. Temperature cycle                                   | Contact resistance : 250 m ohms max.<br>Insulation resistance : 100 M ohms min.   | Temperature : -55±3°C → +15°C to +35°C → +85±2°C → +15°C to +35°C<br>Duration (Minutes): 30 <sup>+5</sup> <sub>0</sub> → 2 to 3 → 30 <sup>+5</sup> <sub>0</sub> → 2 to 3<br>5 cycles |
| 8. Humidity  | Contact resistance: 250 m ohms max.<br>Insulation resistance: 1 M ohms min. (High humidity)<br>Insulation resistance: 100 M ohms min. (Dry state) | 500 hours at temperature of 40°C and humidity of 90% to 95%.   |
| 9. Salt Spray  | Contact resistance: 250 m ohms max.   | 5% salt water/48 hours.  |

Note: Includes temperature rise caused by current flow.

## Materials and Finishes

### Plugs

| Component           | Material        | Finish                    | Remarks |
|---------------------|-----------------|---------------------------|---------|
| Insulator           | Polycarbonate   | Color: Clear              | UL94V-0 |
| Contacts            | Phosphor bronze | Contact area: Gold plated | —————   |
| Strain relief clamp | Brass           | Nickel plated             | —————   |

### Boots

| Component | Material | Finish  | Remarks |
|-----------|----------|---|---------|
| Insulator | EPTR     | White (Standard color)                                    | UL94V-0 |
|           |          | Black, red, blue, yellow, green, orange, gray, light blue | —————   |

## Ordering Information

### Plugs

**TM23 - P - 8 8P**

①      ②      ③      ④

|                     |                 |
|---------------------|-----------------|
| ① Series name       | : TM23          |
| ② Connector type    | P : Plug        |
| ③ Size              | 8 : 8 contacts  |
| ④ Inserted contacts | 8P : 8 contacts |

### Boots

**TM23 - P - 8 BT**

①      ②      ③      ④

|                  |                |
|------------------|----------------|
| ① Series name    | : TM23         |
| ② Connector type | P : Plug       |
| ③ Size           | 8 : 8 contacts |
| ④ BT             | : Boot         |

### Jacks

**TM23 R - 5A 8 8**

①      ②      ③      ④      ⑤

|                                   |                               |
|-----------------------------------|-------------------------------|
| ① Series name                     | : TM23                        |
| ② Connector type                  | R : Jack                      |
| ③ Mounting style/termination type | 5A : Right-angle/through hole |
| ④ Jack opening code               | 8 : For 8 contacts            |
| ⑤ Number of inserted contacts     | 8 : 8 contacts                |

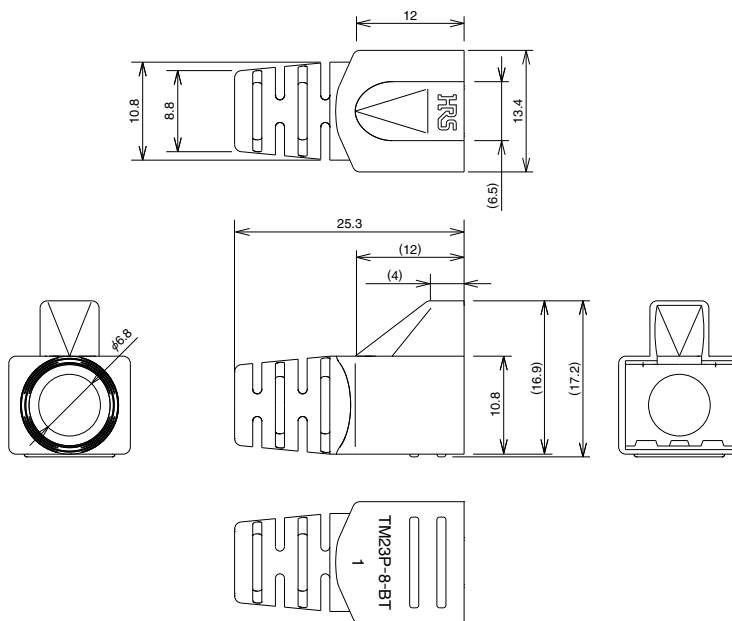


## Boots



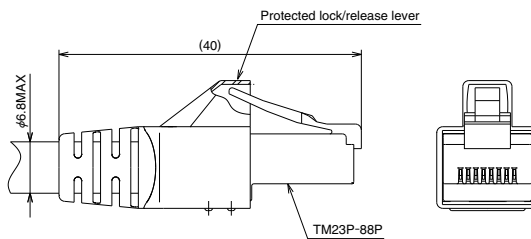
### Overview

- Dedicated boots for the TM23P-88P.
- 9 color variations.
- Halogen-free.
- Protects the plug's lock/release lever.

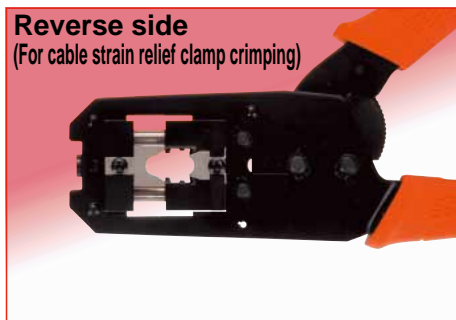


| Part Number    | CL No.        | Color      | RoHS |
|----------------|---------------|------------|------|
| TM23P-8-BT     | 222-2917-9    | White      | YES  |
| TM23P-8-BT(01) | 222-2917-9-01 | Black      |      |
| TM23P-8-BT(02) | 222-2917-9-02 | Red        |      |
| TM23P-8-BT(03) | 222-2917-9-03 | Blue       |      |
| TM23P-8-BT(04) | 222-2917-9-04 | Yellow     |      |
| TM23P-8-BT(05) | 222-2917-9-05 | Green      |      |
| TM23P-8-BT(06) | 222-2917-9-06 | Orange     |      |
| TM23P-8-BT(07) | 222-2917-9-07 | Gray       |      |
| TM23P-8-BT(08) | 222-2917-9-08 | Light Blue |      |

### Boot installed



## Manual Termination Tool



| Part No.           | CL No.     |
|--------------------|------------|
| HT601-TM23/22P-88P | 902-2128-1 |

\* Changing the "A" Assembly parts to TM22 dedicated clamp parts will allow wiring of Hirose's TM22P-88P plugs supporting CAT 5e.

## Automatic Contact Termination Machine

| Item       | Part Number     | CL No.       |
|------------|-----------------|--------------|
| Body       | CM-105          | CL901-0005-4 |
| Applicator | AP105-TM23P-88P | CL901-2588-5 |

## Cable Strain Relief Clamp Crimping Jig (Manual operated)

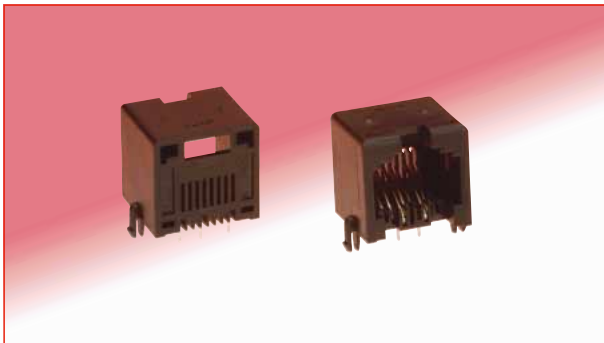
| Part Number         | CL No.           |
|---------------------|------------------|
| TM23P-88P/CK-MP(01) | CL902-2130-3(01) |

## Recommended Cable Specification

|  |                                      |   |
|--|--------------------------------------|---|
|  | Conductor                            | Solid copper conductor:<br>0.5mm dia.<br>Stranded copper conductor:<br>AWG#24 |
|  | Individual conductor insulation dia. | (0.95mm to 1.05mm)  |
|  | Overall jacket dia.                  | (5.4mm to 6.8mm)  |

Note: To achieve CAT 6 performance, refer to TM23P-88P Cable Termination Procedure Manual(ETAD-E2415).

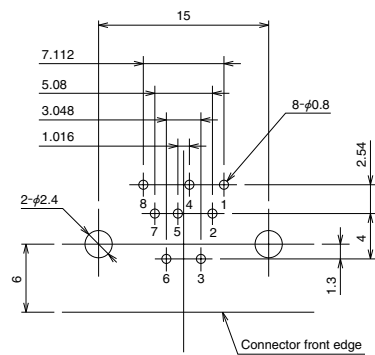
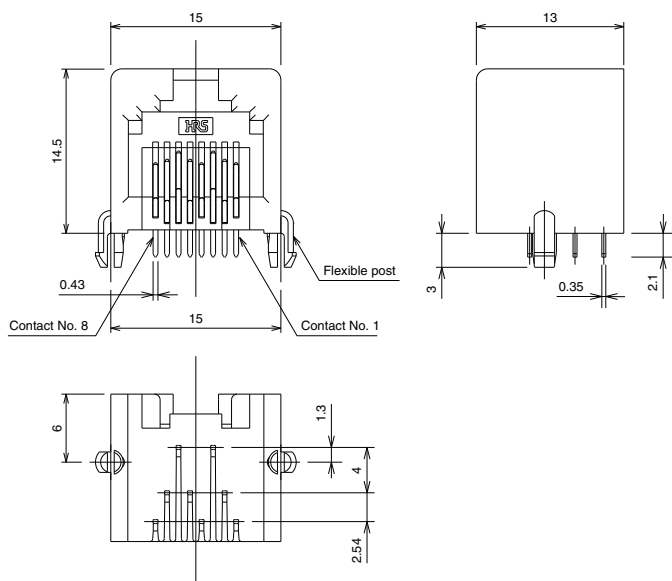
## Jacks



### Overview

- Unique contact structure designed for crosstalk reduction. (Through hole : 3 rows)
- Temporary retention to board with integral flexible posts.

### PCB mounting pattern



Recommended board thickness: 1.6mm

| Part Number     | CL No.        | Color | RoHS |
|-----------------|---------------|-------|------|
| TM23R-5A-88(50) | 222-2918-1-50 | Black | YES  |

Note: The jack by itself does not clear CAT 6 performance requirements. Compensation on the board is required to secure CAT 6 performance.

## ■ Precautions in System Construction

The TM23 Series connector and components were designed for CAT 6 data transfer. However, it is highly recommended that the entire connected system be checked for this performance level.

### ● Cable termination procedures

| Cable termination procedure manual No. | Part Number |
|--|-------------|
| ETAD-E2415                             | TM23P-88P   |

### ● Recommended Cable Manufacturers

Hirose Electric closely examines the transfer performance of these connectors with the CAT 6 cable that is manufactured and sold by the various cable manufacturers. Please use the cable from among those indicated in Table 1 for system construction with the TM23 Series.

Table1 Recommended Cable Manufacturers

| Manufacturer's Name                   | Web Site  |
|---------------------------------------|---|
| Hitachi Cable, Ltd.                   | <a href="http://www.hitachi-cable.co.jp/index-e.html">http://www.hitachi-cable.co.jp/index-e.html</a>         |
| Tonichi Kyosan Cable, Ltd.            | <a href="http://www.tonichi-kyosan.co.jp/">http://www.tonichi-kyosan.co.jp/</a>                               |
| NipponSeisen Co. Ltd.                 | <a href="http://www.nscable.co.jp/">http://www.nscable.co.jp/</a>   |
| Okano Electric Wire Co., Ltd.         | <a href="http://www.okano-cable.co.jp/english/index.html">http://www.okano-cable.co.jp/english/index.html</a> |
| Tsushin Kogyo K.K.                    | <a href="http://www.tsuko.co.jp/">http://www.tsuko.co.jp/</a>   |
| Showa Electric Wire & Cable Co., Ltd. | <a href="http://www.swcc.co.jp/eng/index.html">http://www.swcc.co.jp/eng/index.html</a>                       |
| Fuji Electric Cable Co, Ltd.          | <a href="http://www.tokyo-fuji.co.jp/index-f.htm">http://www.tokyo-fuji.co.jp/index-f.htm</a>                 |

Note: Please see the web sites of the various manufacturers for cable specifications.  
Contact HRS for recommendations when using cables from other suppliers.

### ● Use of Different Manufacturers' Components

Use of different manufacturers' components in one system could cause the deterioration of transfer performance.

### ● Check of the System Performance Verification

All measures have been taken to assure the transfer performance of the TM23 series. However, it is highly recommended to verify transfer performance of complete system using commercially available measuring instruments.

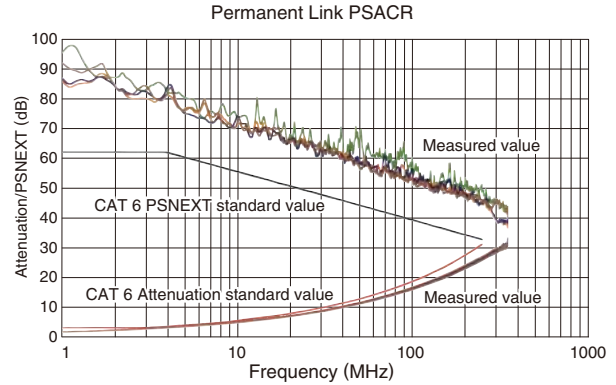
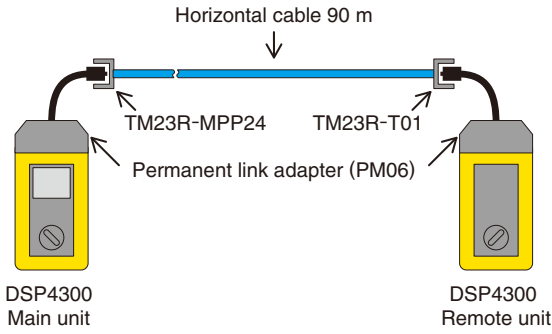
Hirose Electric does not build wiring systems. Please contact Hirose Electric sales representative for system construction contractor information.

## Technical Documentation

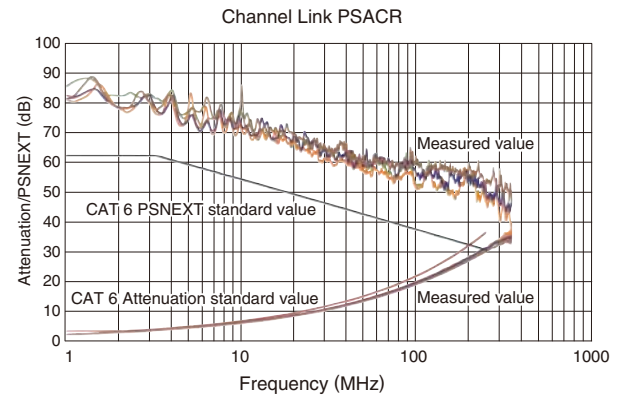
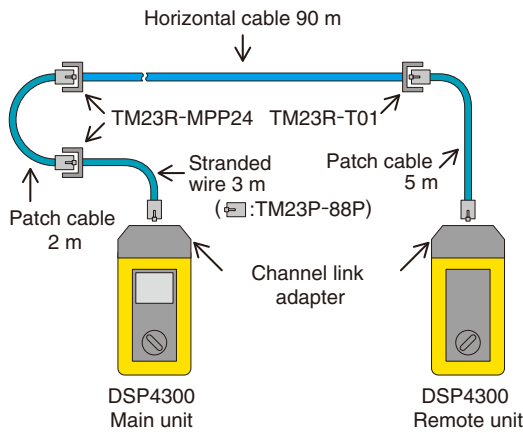
### CAT 6 Transmission Characteristics Data

This is representative transfer performance for the TM23 Series. A high margin is used for CAT 6 standard values.

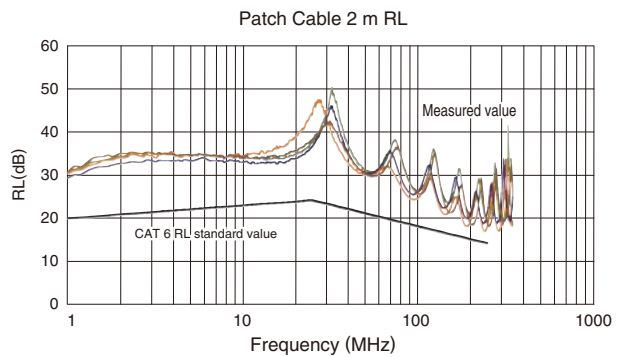
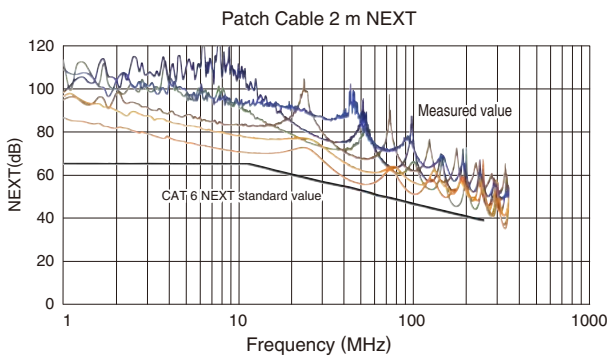
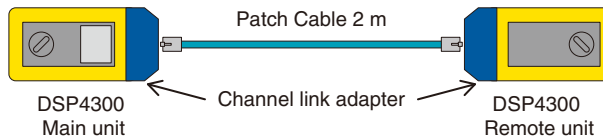
#### Permanent Links



#### Channel Links



#### Patch Cable



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