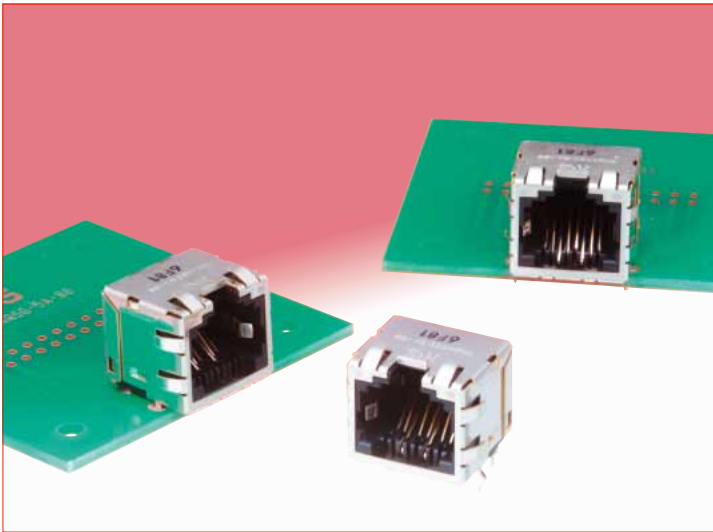


# Modular Jack Connector for High-Speed Transmission

## TM24R Series



### ■ Features

#### 1. Unique contact configuration and board-mounting pattern

The adjacent contacts have different angles of engagement thus increasing the distance between them, in effect reducing the cross talk within connector and its footprint. Contact #3 and #6, affecting the cross talk the most; have been isolated from other contacts resulting in maximum NEXT noise suppression. In addition, the board layout allows easy tracing of the differential signal lines.

#### 2. Full EMI shielding

The entire connector is covered with a metal shell. Multiple panel ground contact springs (2 on each side of the mating opening) and 4 board ground connection solder contacts placed at each corner of the connector guarantee effective suppression of noise radiation.

#### 3. Sequential mating

Separate ground springs make contact with the mating connector's ground before the signal contacts, allowing equalization of any ground differential.

#### 4. Conforms to FCC (Federal Communications Commission) standards

Meets requirements of FCC Title 47, Part 68, Subpart F.

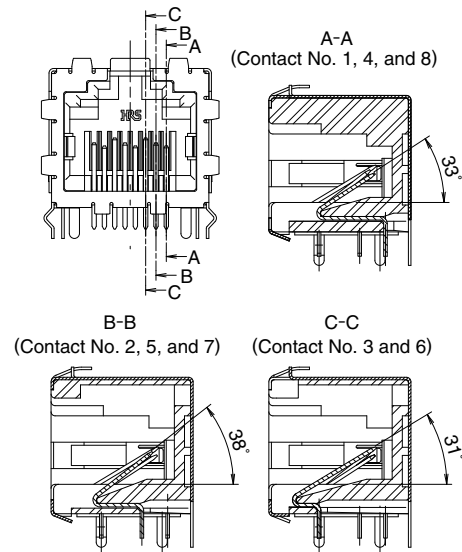
#### 5. RoHS Compliant

Considering environment compatibility, substances prohibited by RoHS are not used.

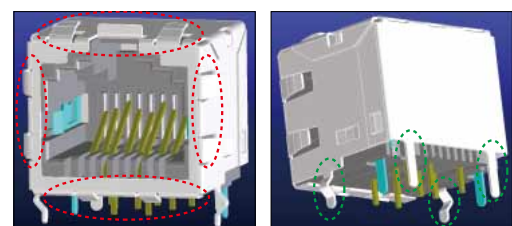
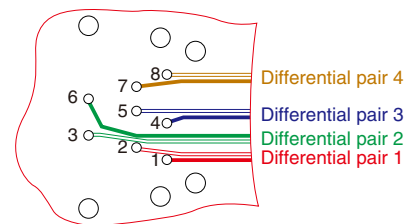
### ■ Applications

LAN related equipment, measuring instruments, office equipment and other high transmission speed applications requiring use of high performance modular jacks.

#### Unique Contact Configuration



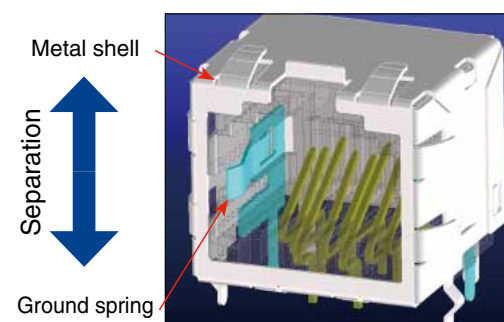
#### Recommended board layout for differential routing



Panel ground contact springs

Board ground connection solder contacts

#### Separate ground springs



■Product Specifications

Ratings	Current rating 1A	Operating temperature range : -55 to +85℃ (Note)
	Voltage rating 125V AC	Storage temperature range : -25 to +60℃

Item	Specification	Conditions
1. Insulation resistance	100MΩ min.	100V DC
2. Withstanding voltage (Basic terminal between 123-456-78)	No flashover or insulation breakdown.	500V AC / 1 minute
3. Withstanding voltage (Terminal to shield)	No flashover or insulation breakdown.	1500V AC / 1 minute
4. Contact resistance	50mΩ max.	100mA
5. Vibration	No electrical discontinuity of 5μs or more. No damage, cracks, or parts dislocation.	Frequency : 10 to 55Hz, single amplitude of 0.75mm, 3 axis, 10 cycles
6. Shock	No electrical discontinuity of 5μs or more. Contact resistance : 60m ohms max.	Acceleration of 490 m/s <sup>2</sup> , 11ms duration, sine half-wave waveform, 3 cycles / each of 6 axis
7. Durability (insertion/withdrawal)	Contact resistance : 60mΩ max.	700 cycles
8. Temperature cycle	Insulation resistance : 100MΩ min. Contact resistance : 60mΩ max.	(Temperature : -55℃ →+15℃ to +35℃ →+85 →+15℃ to +35℃ Duration : 30 → 2 to 3 → 30 →2 to 3 (Minutes) 5 cycles
9. Humidity	Insulation resistance : 1MΩ min. (High humidity) Insulation resistance : 10MΩ min. (Dry state)	500 hours at 40℃, HR 90% to 95%
10. Salt spray	Contact resistance : 60mΩ max.	5% water solution for 48 hours

Note : Includes temperature rise caused by current flow.  
Temperature range for mechanical operation : -25℃ to +60℃

■Materials / Finish

Part	Material	Finish	Remarks
Insulator	PBT	Color: Black	UL94V-0
Contact	Phosphor bronze	Contact area : Gold plated 1.27 μm Termination area : Gold plated 0.03 μm Under plate : Nickel plated 1μm	—
Shield	Brass	Tin reflow plated 1μm	—
Ground spring	Phosphor bronze	Tin reflow plated 1μm	—

■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.

TM24 R SG — 5A 8 8  
① ② ③ ④ ⑤ ⑥

①Series name	: TM24
②Connector type	: R...Jack
③Shell type	: SG...Separate ground spring —outer shell
④Jack type	: 5A...Right-angle dip
⑤Jack opening code	: 8...8 contacts
⑥Number of inserted contact	: 8...8 contacts

Technical drawings of the 7745-54-88 connector showing top, front, and side views with dimensions.

**Top View:**

- Overall width: 16
- Internal width: 15.5
- Outer width: (17.5)
- Part number: 7745-54-88

**Front View:**

- Overall width: 15.25
- Internal width: 13.25
- Bottom width: (17)
- Pin spacing: 0.43
- Pin height: 2.1
- Labels: Contact No. 8, Contact No. 1

**Side View:**

- Overall height: 14
- Pin height: 13.75
- Pin diameter: 0.6
- Pin length: 3
- Pin spacing: 1
- Pin length: 6
- Pin length: 8.925
- Pin length: 1

**Bottom View:**

- Overall width: 11
- Pin spacing: 0.25
- Pin height: 4
- Pin length: 2.54
- Pin length: 4
- Pin length: 4.95

Figure 1: Dimensions of the connector. The figure includes three views: a top view, a side view, and a cross-sectional view. The top view shows a rectangular connector with dimensions 15.25, 13.25, 11, 7.112, 5.08, 3.048, 1.016, 12.25 MAX, 18.25 MIN, 2.54, 4, 2.4, 2.6, 6, 8.925, 15.9, 14.1, 0.6 MIN, 4.5 MIN, 0.15, and 2. The side view shows the connector with dimensions 2, 2.4, and 2.6. The cross-sectional view shows the connector with dimensions 2, 2.4, and 2.6. The connector is labeled with '8-φ0.8(Signal line through hole)', '2-φ1.63(Separate ground spring through hole)', '4-φ1.63(Outer shell through hole)', 'Board edge', 'No conductive traces', 'TM21P-88P Plug', 'Lock lever', 'Board surface', 'Panel cutout bottom edge', and 'Panel thickness : 2mm max.'.

5. Connector can be cleaned with isopropyl alcohol (IPA) at room temperature.

[illegible]

2-6-3, Nakagawa Chuoh, Tsuzuki-Ku, Yokohama-Shi 224-8540, JAPAN  
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