

RJ45M R1D 3.3E4G/Y RL**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com



RJ45 transmitter sockets (magnetics) for gigabit applications (1000 base-T) with integrated compensation actively counteracts inductive and capacitive couplings and saves space on the PCB.

The product range encompasses the following designs:

- 90°, lying (horizontal) and 180°, standing (vertical)
- latch up / latch down
- THT, THR or SMD soldering processes
- Wide range of different design types, also with integrated LEDs and shield contact tabs
- Transmission rates of up to 1 Gbps
- Packed either in a tray (TY) or on a roll (tape-on-reel, RL)
- Compatible with modular RJ45 connector according to ANSI / TIA-1096-A and IEC 60603
- Dielectric strength ≥ 1500 V AC RMS (2250 V AC peak value) according to IEEE 802.3
- Dielectric strength ≥ 1500 V AC (peak value) or ≥ 1500 V DC according to IEC 60603
- Compliance with IEEE 802.3 requirements (1000Base-T, 1 Gbps, IEEE 802.3ab or 100Base-Tx, 100 Mbps, IEEE 802.3u)

Properties and advantages:

- Extended temperature range of -40 °C to $+85$ °C for maximum performance
- Reinforced gold layer (30µ") for improved corrosion protection

- At least 0.3mm stand-off ensures a perfect soldering result

General ordering data

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|------------|---|
| Version | PCB plug-in connector, RJ45 jacks transformer, 10/100 MBit/s , THT/THR solder connection, 90°, Latch option: bottom, Shield tabs: 6 tabs, 30...80 µ" Ni / ≥ 30 µ" Au , LED: Yes, green, yellow, Number of poles: 8, Tape |
| Order No. | 2564410000 |
| Type | RJ45M R1D 3.3E4G/Y RL |
| GTIN (EAN) | 4050118572902 |
| Qty. | 200 pc(s). |
| Packaging | Tape |

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Technical data

Dimensions and weights

| | | | |
|--------------------------|------------|-----------------|------------|
| Depth | 21.35 mm | Depth (inches) | 0.841 inch |
| Height | 16.8 mm | Height (inches) | 0.661 inch |
| Height of lowest version | 13.5 mm | Width | 15.9 mm |
| Width (inches) | 0.626 inch | Net weight | 0.001 g |

System specifications

| | | | |
|----------------------------------|-------------------|--------------------------------|--|
| Colour of left LED | green | Colour of right LED | yellow |
| Forward current | 20 mA | Forward voltage, max. | 2.6 V |
| Forward voltage, min. | 1.8 V | LED | Yes |
| Latch option | bottom | Mounting onto the PCB | THT/THR solder connection |
| Number of poles | 8 | Number of solder pins per pole | 1 |
| Outgoing elbow | 90° | Performance-Category | 10/100 MBit/s |
| Pitch in inches (P) | 0.05 " | Pitch in mm (P) | 1.27 mm |
| Plugging cycles | 750 | Product family | OMNIMATE Data - RJ45 transformer jack |
| Protection degree | IP20 | Shield surface | nickel-plated |
| Shield tabs | 6 tabs | Shielding | Yes |
| Shielding material | Brass | Solder pin dimensions | Octagonal |
| Solder pin length (l) | 3.3 mm | Soldering process | Reflow soldering, Manual soldering, Wave soldering |
| Tolerance of solder pin position | ± 0.1 mm | Transmission rate | 10/100 MBit/s |
| Type of connection | Solder connection | | |

Electrical properties

| | | | |
|--|-----------|---------------------------------------|-----------|
| Dielectric strength, contact / contact | 1000 V DC | Dielectric strength, contact / shield | 1500 V DC |
| Rated current | 1.5 A | Rated voltage | 125 V |

Material data

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|----------------------------------|----------------------------|-----------------------------|-------------------|
| Insulating material | PA 9T | Colour | black |
| Colour chart (similar) | RAL 9011 | Insulating material group | II |
| Comparative Tracking Index (CTI) | ≥ 500 | Moisture Level (MSL) | 1 |
| UL 94 flammability rating | V-0 | Contact base material | Phosphorus bronze |
| Contact material | Cu-alloy | Contact surface | Gold over nickel |
| Layer structure of plug contact | 30...80 µ" Ni / ≥ 30 µ" Au | Storage temperature, min. | -40 °C |
| Storage temperature, max. | 85 °C | Operating temperature, min. | -40 °C |
| Operating temperature, max. | 85 °C | | |

Packing

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|--------------------------|--------|--------------------|---|
| Packaging | Tape | VPE length | 345 mm |
| VPE width | 345 mm | VPE height | 125 mm |
| Tape reel diameter Ø (A) | 330 mm | Surface resistance | Rs = 10 ⁹ - 10 ¹² Ω |

Classifications

| | | | |
|-------------|-------------|-------------|-------------|
| ETIM 6.0 | EC002637 | ETIM 7.0 | EC002637 |
| ETIM 8.0 | EC002637 | ETIM 9.0 | EC002637 |
| ECLASS 9.0 | 27-44-04-02 | ECLASS 9.1 | 27-44-04-02 |
| ECLASS 10.0 | 27-44-04-02 | ECLASS 11.0 | 27-46-02-01 |
| ECLASS 12.0 | 27-46-02-01 | ECLASS 13.0 | 27-46-02-01 |

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Technical data

Environmental Product Compliance

REACH SVHC /

Approvals

ROHS Conform

Downloads

Approval/Certificate/Document of Con-
formity [Certificate of Compliance](#)
Catalogues [Catalogues in PDF-format](#)

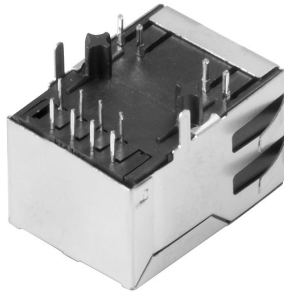
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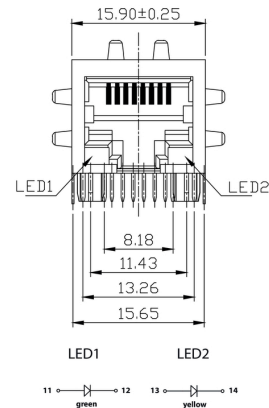
www.weidmueller.com

Drawings

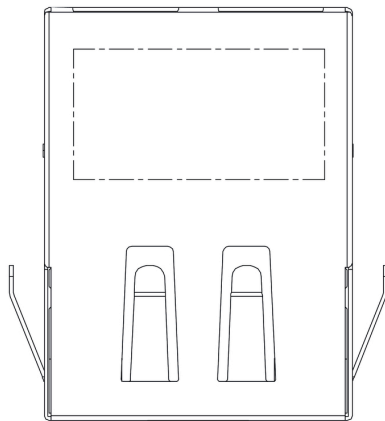
Dimensioned drawing



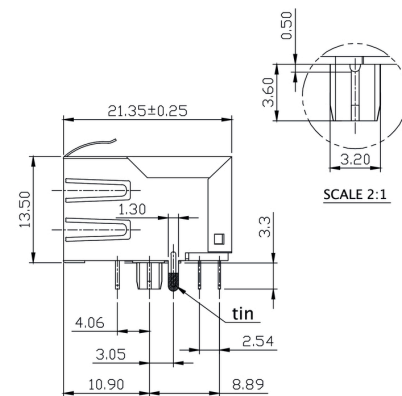
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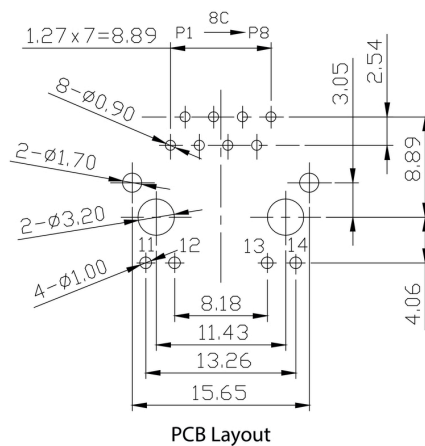
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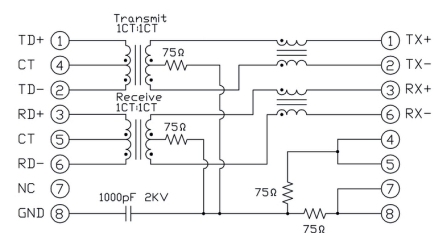
Dimensioned drawing



PCB design



Wiring diagram



RJ45M R1D 3.3E4G/Y RL**Weidmüller Interface GmbH & Co. KG**

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Recommended wave soldering profiles

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Fon: +49 5231 14-0
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Single Wave:



Double Wave:



Wave soldering profiles

Wired connection elements should be processed in accordance with the DIN EN 61760-1 standard. We have included two recommendations for practical wave soldering profiles, with which Weidmüller PCB terminals and connectors are qualified.

When choosing a suitable profile for your application, the following factors also need to be considered:

- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

The single and double wave profiles each indicate the recommended operating range, including the maximum soldering temperature of 260°C. In practice, the maximum soldering temperature is quite often well below the above maximum profile.

We reserve the right to make technical changes.

Recommended reflow soldering profile

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Reflow soldering profile

The perfect soldering profile for SMT Surface Mount Technology is one the most exiting question in SMT production. But there are more than one correct answer: The diagram of temperature-on-time is related to processing features of solder paste and to maximum load of components.

We have to consider the following parameters:

- Time for pre heating
- Maximum temperature
- Time above melting point
- Time for cooling
- Maximum heating rate
- Maximum cooling rate

We recommend a typical solder profile with associated process limits. With preheating components and board are prepared smoothly for the solder phase. Heating rate is typically $\leq +3\text{K/s}$. In parallel the solder paste is 'activated'. The time above melting point of 217°C the paste gets liquid and components and boards begin to connect. The maximum temperature of 245°C to 254°C should stay between 10 and 40 seconds. In the cooling phase at $\geq -6\text{K/s}$ solder is cured. Board and components cool down while avoiding cold cracks.