

**RJ45C5 R1U 2.8N4G/Y RL****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com



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
- Performance category Cat. 3 to Cat. 6
- 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  $\geq 1500$  V AC RMS (2250 V AC peak value) according to IEEE 802.3
- Dielectric strength  $\geq 1500$  V AC (peak value) or  $\geq 1500$  V DC according to IEC 60603

Properties and advantages:

- Extended temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  for maximum performance
- Reinforced gold layer ( $30\mu\text{m}$ ) for improved corrosion protection
- At least 0.3mm stand-off ensures a perfect soldering result

**General ordering data**

|            |                                                                                                                                                                                                                            |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Version    | PCB plug-in connector, RJ45 jacks, Cat. 5 , THT/THR solder connection, 90°, Latch option: top, Shield tabs: none, 30...80 $\mu\text{m}$ Ni / $\geq 30 \mu\text{m}$ Au , LED: Yes, green, yellow, Number of poles: 12, Tape |
| Order No.  | <a href="#">2562950000</a>                                                                                                                                                                                                 |
| Type       | RJ45C5 R1U 2.8N4G/Y RL                                                                                                                                                                                                     |
| GTIN (EAN) | 4050118571974                                                                                                                                                                                                              |
| Qty.       | 200 pc(s).                                                                                                                                                                                                                 |
| Packaging  | Tape                                                                                                                                                                                                                       |

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## Technical data

## Dimensions and weights

|                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| Depth                    | 15.7 mm    | Depth (inches)  | 0.618 inch |
| Height                   | 16.74 mm   | Height (inches) | 0.659 inch |
| Height of lowest version | 13.44 mm   | Width           | 16.4 mm    |
| Width (inches)           | 0.646 inch | Net weight      | 4.075 g    |

## System specifications

|                                           |                                                    |      |
|-------------------------------------------|----------------------------------------------------|------|
| Category                                  | Cat. 5                                             |      |
| 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                              | top                                                |      |
| Mounting onto the PCB                     | THT/THR solder connection                          |      |
| Number of poles                           | 12                                                 |      |
| Number of solder pins per pole            | 1                                                  |      |
| Outgoing elbow                            | 90°                                                |      |
| Performance-Category                      | Cat. 5                                             |      |
| Pitch in inches (P)                       | 0.05 "                                             |      |
| Pitch in mm (P)                           | 1.27 mm                                            |      |
| Plugging cycles                           | 750                                                |      |
| Product family                            | OMNIMATE Data - RJ45 modular jack                  |      |
| Protection degree                         | IP20                                               |      |
| Shield surface                            | nickel-plated                                      |      |
| Shield tabs                               | none                                               |      |
| Shielding                                 | Yes                                                |      |
| Shielding material                        | Brass                                              |      |
| Solder eyelet hole diameter (D)           | 0.9 mm                                             |      |
| Solder eyelet hole diameter tolerance (D) | ± 0.1 mm                                           |      |
| Solder pin dimensions                     | Octagonal                                          |      |
| Solder pin length (l)                     | 2.75 mm                                            |      |
| Solder pin length tolerance               | Lower tolerance with prefix (reveals minimum)      | -0.2 |
|                                           | Upper tolerance with prefix (reveals maximum)      | +0.2 |
|                                           | Tolerance, unit                                    | mm   |
| Solder pin length tolerance               | +0.2 / -0.2 mm                                     |      |
| Soldering process                         | Reflow soldering, Manual soldering, Wave soldering |      |
| Tolerance of solder pin position          | ± 0.15 mm                                          |      |
| Type of connection                        | Solder connection                                  |      |
| Wiring                                    | 8-core                                             |      |

## Electrical properties

|                                        |           |                                       |                            |
|----------------------------------------|-----------|---------------------------------------|----------------------------|
| Dielectric strength, contact / contact | 1000 V DC | Dielectric strength, contact / shield | 1500 V DC                  |
| Insulation strength                    | ≥ 500 MΩ  | PoE / PoE+                            | conforming to IEEE 802.3at |
| Rated current                          | 1.5 A     | Rated voltage                         | 125 V                      |

## Standards

|                    |                |
|--------------------|----------------|
| Connector standard | IEC 60603-7-51 |
|--------------------|----------------|

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## Technical data

## Material data

|                                  |                       |                                 |                            |
|----------------------------------|-----------------------|---------------------------------|----------------------------|
| Insulating material              | PA 9T                 | Colour                          | black                      |
| Colour chart (similar)           | RAL 9011              | Insulating material group       | II                         |
| Comparative Tracking Index (CTI) | ≥ 500                 | Insulation strength             | ≥ 500 MΩ                   |
| Moisture Level (MSL)             | 1                     | UL 94 flammability rating       | V-0                        |
| Contact base material            | Phosphor bronze alloy | 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

|                          |        |                    |                                           |
|--------------------------|--------|--------------------|-------------------------------------------|
| Packaging                | Tape   | VPE length         | 356 mm                                    |
| VPE width                | 344 mm | VPE height         | 126 mm                                    |
| Tape reel diameter Ø (A) | 330 mm | Surface resistance | Rs = 10 <sup>9</sup> - 10 <sup>12</sup> 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 |

## Approvals

|      |         |
|------|---------|
| ROHS | Conform |
|------|---------|

## Downloads

|                                             |                                           |
|---------------------------------------------|-------------------------------------------|
| Approval/Certificate/Document of Conformity | <a href="#">Certificate of Compliance</a> |
| Engineering Data                            | <a href="#">CAD data – STEP</a>           |
| Catalogues                                  | <a href="#">Catalogues in PDF-format</a>  |

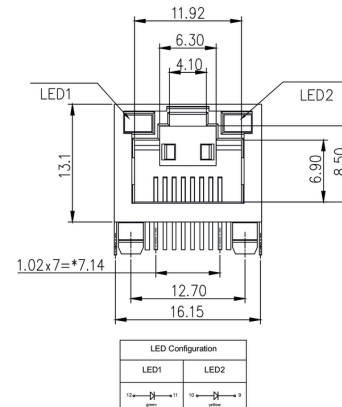
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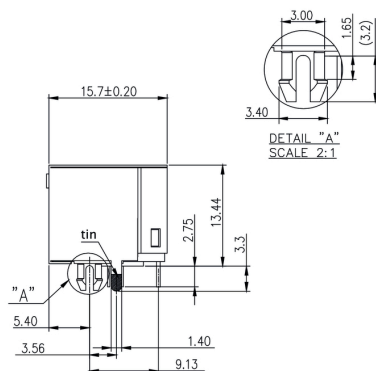
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## Drawings

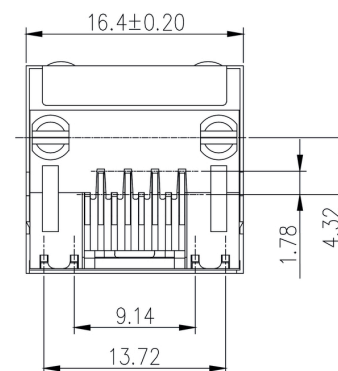
## Dimensioned drawing



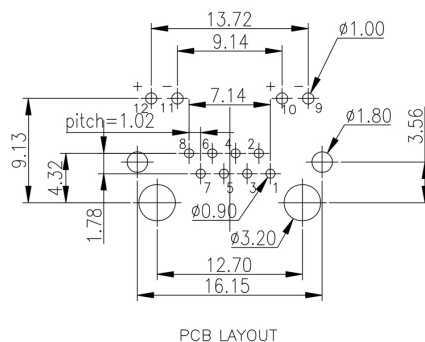
## Dimensioned drawing



## Dimensioned drawing



## PCB design



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## Drawings

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## Recommended wave soldering profiles

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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.