

**RJ45C5 R1U 2.8E4N 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: bottom, Shield tabs: 6 tabs, 30...80 $\mu\text{m}$ Ni / $\geq 30$ $\mu\text{m}$ Au , LED: No, Number of poles: 8, Tape
Order No.	<a href="#">2562930000</a>
Type	RJ45C5 R1U 2.8E4N RL
GTIN (EAN)	4050118571950
Qty.	200 pc(s).
Packaging	Tape

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## Technical data

## Dimensions and weights

Depth	15.71 mm	Depth (inches)	0.619 inch
Height	15.86 mm	Height (inches)	0.624 inch
Height of lowest version	13.11 mm	Width	16.41 mm
Width (inches)	0.646 inch	Net weight	8.43 g

## System specifications

Category	Cat. 5
LED	No
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	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	6 tabs
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	+0.2 / -0.2 mm
Solder pin length tolerance	Lower tolerance with prefix (reveals minimum) -0.2
	Upper tolerance with prefix (reveals maximum) +0.2
	Tolerance, unit mm
Soldering process	Reflow soldering, Manual soldering, Wave soldering
Tolerance of solder pin position	± 0.1 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	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**

Packaging	Tape	VPE length	357 mm
VPE width	351 mm	VPE height	128 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
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**Downloads**

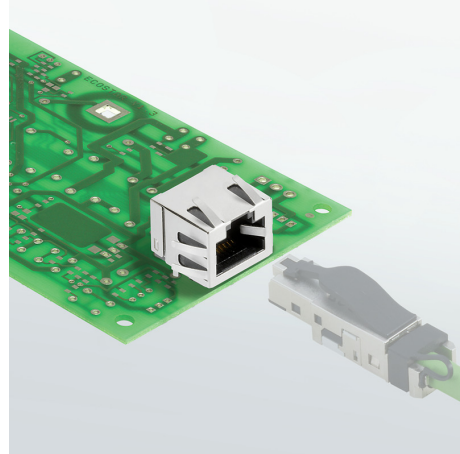
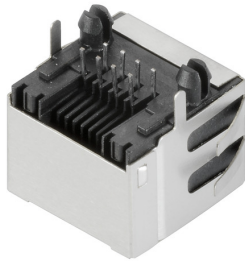
Approval/Certificate/Document of Conformity	<a href="#">Certificate of Compliance</a>
Engineering Data	<a href="#">CAD data – STEP</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>

### RJ45C5 R1U 2.8E4N RL

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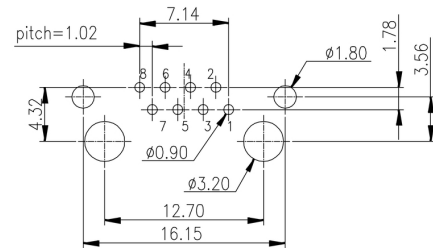
## Drawings



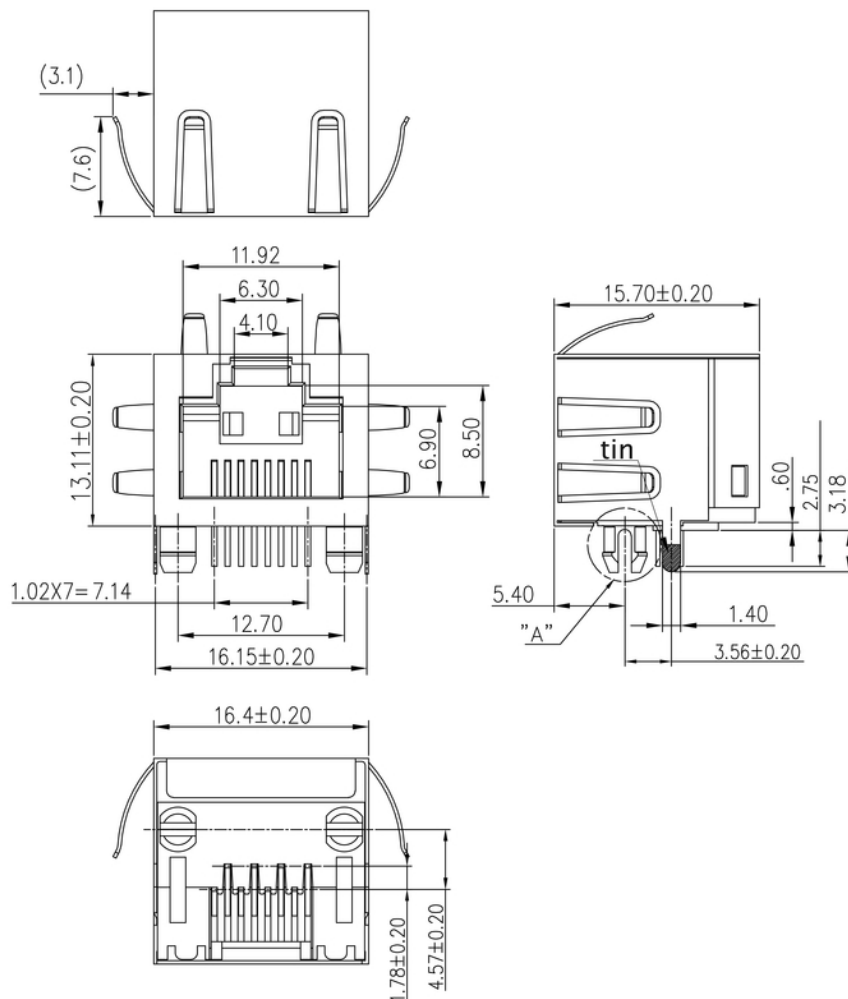
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**Drawings****PCB design**

PCB LAYOUT



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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.