

RJ45C5 R1D 3.3E4N 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 ≥ 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

Properties and advantages:

- Extended temperature range of -40°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 μm Ni / ≥ 30 μm Au , LED: No, Number of poles: 8, Tape
Order No.	2562910000
Type	RJ45C5 R1D 3.3E4N RL
GTIN (EAN)	4050118571936
Qty.	200 pc(s).
Packaging	Tape

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www.weidmueller.com**Technical data****Dimensions and weights**

Depth	21.3 mm	Depth (inches)	0.839 inch
Height	17.06 mm	Height (inches)	0.672 inch
Height of lowest version	13.76 mm	Width	15.7 mm
Width (inches)	0.618 inch	Net weight	4.575 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)	3.3 mm	
Solder pin length tolerance	Lower tolerance with prefix (reveals minimum)	-0.5
	Upper tolerance with prefix (reveals maximum)	+0.5
	Tolerance, unit	mm
Solder pin length tolerance	+0.5 / -0.5 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	330 mm
VPE width	330 mm	VPE height	58 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

Approvals

ROHS	Conform
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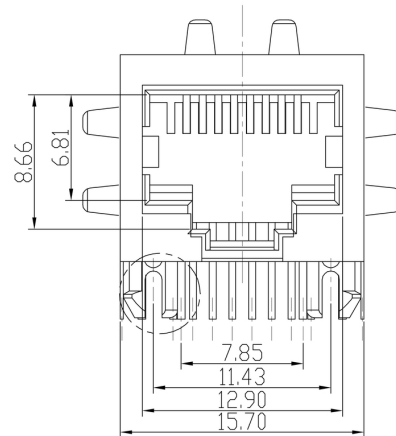
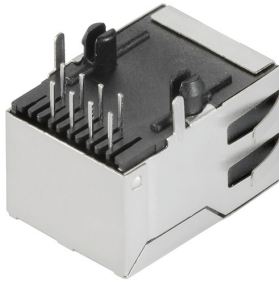
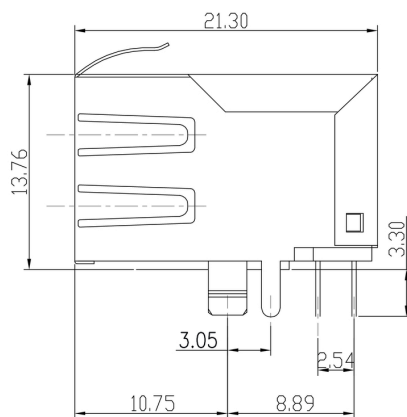
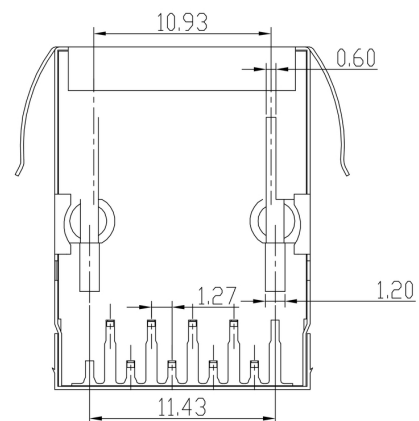
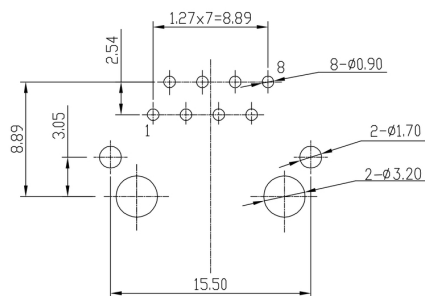
Downloads

Approval/Certificate/Document of Conformity	Certificate of Compliance
Engineering Data	CAD data – STEP
Catalogues	Catalogues in PDF-format

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Drawings
Dimensioned drawing

Dimensioned drawing

Dimensioned drawing

PCB design


PCB LAYOUT

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RJ45	G1	R1	U1	U2	E1	E4	GY/GY	TY	RJ45G R1U 3.2E4GY/GY TY
							Packaging	TY RL	Ty in box (manual assembly) Tape on Reel (automated assembly)
							LED	Y/G G/Y GY/GY O/G R/O ... N	Yellow/Green Green/Yellow (standard) Green-Yellow/Green-Yellow Orange-Green Red/Orange ...(further combinations possible) without LED
							Contact surface thickness	4	1 = 3µ", 2 = 6µ", 3 = 15µ", 4 = 30µ", 5 = 50µ"
							EMI tabs (ground fingers)	N	E = with EMI tabs N = without EMI tabs
							Solder Pin length	3.2 D	3.2 mm SMD
							Direction, latch style	U D V Y	Horizontal (90°, side entry), latch up Horizontal (90°, side entry), latch down Vertical (180°, top entry) Diagonal (45°), latch up
							Number of Ports	1 12; 14; ... 21; 41; ...	1 Port multi ports side by side, Multiport multi ports about each other, Multilevel
							Assembly on PCB	R S T	Through Hole Reflow - THR Soldering process: Wave or Reflow soldering Surface Mount Technology - SMT Soldering process: Reflow soldering Through Hole Technology - THT Soldering process: Wave
							Performance Category	C5 C6 C6A C5e M G1 G10 U MP MP+	Category 5 Category 6 Category 6A Category 5e 10/100 Mbit 10/100/1000 Mbit 10 Gbit Unshielded 10/100 Mbit with POE 10/100 Mbit with POE+

5

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.