

**RJ45G1 R12D 3.3E4G/Y TY****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  $\geq 1500$  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
- 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**

Version	PCB plug-in connector, RJ45 jacks transformer, 1000 Mbps, THT/THR solder connection, 90°, Latch option: bottom, Shield tabs: 6 tabs, 30...80 µ" Ni / $\geq 30$ µ" Au, LED: Yes, green, yellow, Number of poles: 10, Tray (manual assembly)
Order No.	<a href="#">2544500000</a>
Type	RJ45G1 R12D 3.3E4G/Y TY
GTIN (EAN)	4050118554267
Qty.	80 pc(s).
Packaging	Tray (manual assembly)

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## Technical data

## Dimensions and weights

Depth	21.5 mm	Depth (inches)	0.846 inch
Height	16.9 mm	Height (inches)	0.665 inch
Height of lowest version	13.6 mm	Width	31.2 mm
Width (inches)	1.228 inch	Net weight	7 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	10	Number of solder pins per pole	1
Outgoing elbow	90°	Performance-Category	1000 Mbps
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	± 0.15 mm	Transmission rate	1000 Mbps
Type of connection	Solder connection		

## Electrical properties

Dielectric strength, contact / contact	1000 V DC	Dielectric strength, contact / shield	1500 V DC
Rated current	0.80 A	Rated voltage	125 V

## Material data

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

Packaging	Tray (manual assembly)	VPE length	319 mm
VPE width	192 mm	VPE height	69 mm

## 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	/
RoHS Compliance Status	Compliant without exemption

## Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
Certificate No. (cURus)	E471884

## Downloads

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

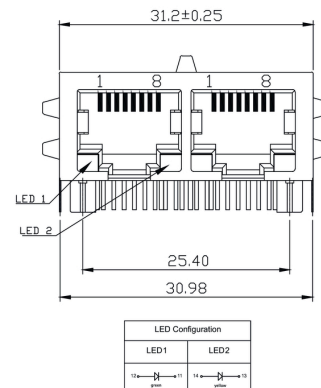
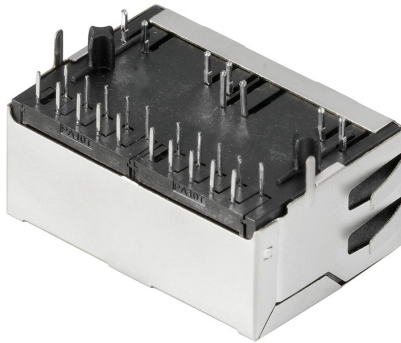
## RJ45G1 R12D 3.3E4G/Y TY

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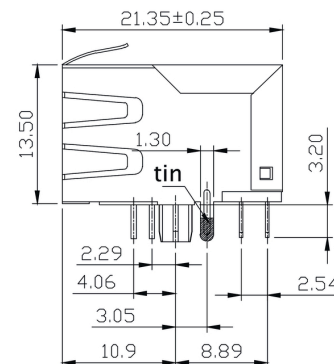
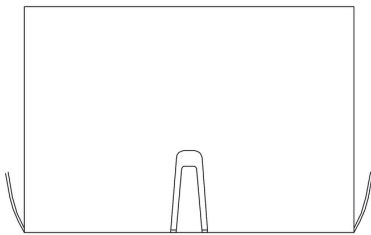
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## Drawings

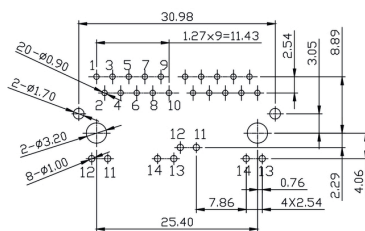
## Dimensioned drawing



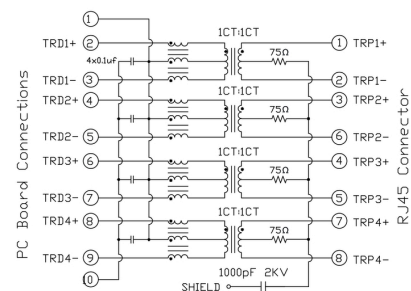
## Dimensioned drawing



## PCB design



## Wiring diagram



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**Drawings**

RJ45	G1	R	1	U	3.2	E	4	GY/GY	TY	RJ45G1 R1U 3.2E4GY/GY TY
										<b>Packaging</b>
										<b>TY</b>
										Tray in box (manual assembly)
										Tape on <b>Reel</b> (automated assembly)
										<b>LED</b>
										<b>Y/G</b>
										Yellow/Green
										<b>G/Y</b>
										Green/Yellow (standard)
										<b>GY/GY</b>
										Green-Yellow/Green-Yellow
										<b>O/G</b>
										Orange/Green
										<b>R/O</b>
										Red/Orange
										... (further combinations possible)
										<b>N</b>
										without LED
										<b>Contact surface thickness</b>
										<b>4</b>
										1 = 3µ", 2 = 6µ", 3 = 15µ", 4 = 30µ", 5 = 50µ"
										<b>EMI tabs (ground fingers)</b>
										<b>E</b>
										E = with EMI tabs
										<b>N</b>
										N = without EMI tabs
										<b>Solder Pin length</b>
										<b>3.2</b>
										3.2 mm
										<b>1.6</b>
										1.6 mm
										<b>D</b>
										SMD
										<b>Direction, latch style</b>
										<b>U</b>
										Horizontal (90°, side entry), latch up
										<b>D</b>
										Horizontal (90°, side entry), latch down
										<b>V</b>
										Vertical (180°, top entry)
										<b>Y</b>
										Diagonal (45°), latch up
										<b>Number of Ports</b>
										<b>1</b>
										1 Port
										<b>12; 14; ...</b>
										multi ports side by side, Multiport
										<b>21; 41; ...</b>
										multi ports about each other, Multilevel
										<b>Assembly on PCB</b>
										<b>R</b>
										Through Hole Reflow - THR
										Soldering process: Wave or Reflow soldering
										<b>S</b>
										Surface Mount Technology - SMT
										Soldering process: Reflow soldering
										<b>T</b>
										Through Hole Technology - THT
										Soldering process: Wave
										<b>Performance Category</b>
										<b>C5</b>
										Category 5
										<b>C6</b>
										Category 6
										<b>C6A</b>
										Category 6A
										<b>C5e</b>
										Category 5e
										<b>M</b>
										10/100 Mbit
										<b>G1</b>
										10/100/1000 Mbit
										<b>G10</b>
										10 Gbit
										<b>U</b>
										Unshielded
										<b>MP</b>
										10/100 Mbit with POE
										<b>MP+</b>
										10/100 Mbit with POE+

## Type codes

Creation date July 25, 2024 5:11:38 PM CEST

Catalogue status 13.07.2024 / We reserve the right to make technical changes.

## Recommended wave soldering profiles

**Weidmüller Interface GmbH & Co. KG**  
Klingenbergstraße 16  
D-32758 Detmold  
Germany  
Fon: +49 5231 14-0  
Fax: +49 5231 14-292083  
[www.weidmueller.com](http://www.weidmueller.com)

### 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

**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

D-32758 Detmold

Germany

Fon: +49 5231 14-0

Fax: +49 5231 14-292083

www.weidmueller.com



## 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.