

## RJ45M R1D 3.3N4Y/G TY

Weidmüller Interfaces GmbH & Co. KG

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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 ( $30\mu$ ) 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, 10/100 MBit/s , THT/THR solder connection, 90°, Latch option: bottom, Shield tabs: none, 30...80 $\mu$ " Ni / $\geq 30$ $\mu$ " Au , LED: Yes, yellow, green, Number of poles: 8, Tray (manual assembly)
Order No.	<a href="#">2461060000</a>
Type	RJ45M R1D 3.3N4Y/G TY
GTIN (EAN)	4050118476439
Qty.	120 pc(s).
Packaging	Tray (manual assembly)

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## Technical data

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## 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	3.45 g

## System specifications

Colour of left LED	yellow	Colour of right LED	green
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 inch
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	none
Shielding	Yes	Shielding material	Brass
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

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	Phosphorus bronze	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	315 mm
VPE width	193 mm	VPE height	70 mm

## Classifications

ETIM 6.0	EC002637	ETIM 7.0	EC002637
ETIM 8.0	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

**Data sheet****RJ45M R1D 3.3N4Y/G TY****Weidmüller Interfaces GmbH & Co. KG**

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Approvals



ROHS	Conform
Certificate No. (UL)	E471884
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>
User Documentation	<a href="#">MAN IE GUIDE DE</a> <a href="#">MAN IE GUIDE EN</a>
Catalogues	<a href="#">Catalogues in PDF-format</a>

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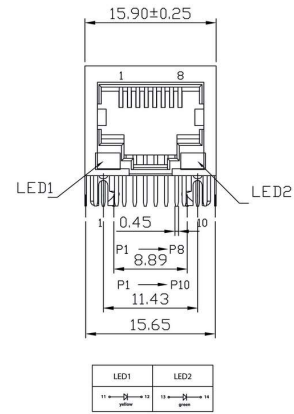
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Drawings

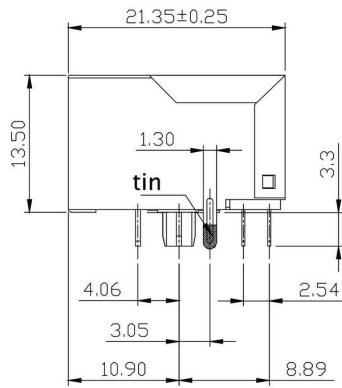
Dimensioned drawing



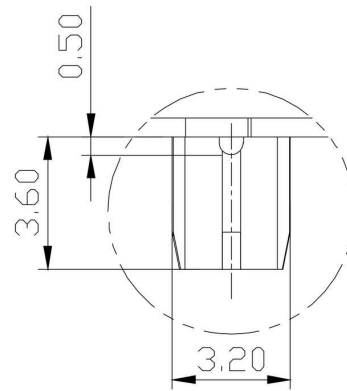
Dimensioned drawing [info@weidmueller.com](mailto:info@weidmueller.com)



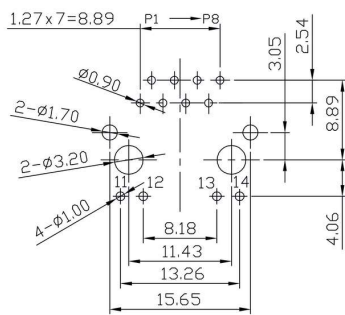
Dimensioned drawing



Dimensioned drawing

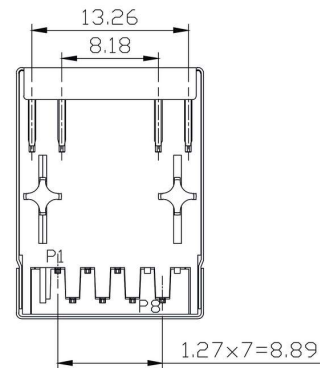


PCB design



PCB Layout

Dimensioned drawing



**Data sheet**

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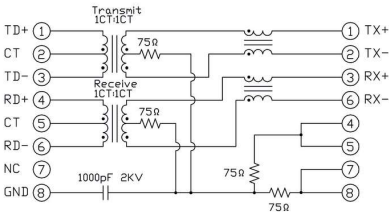
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**Drawings**

**Wiring diagram**



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Drawings

Code	Description	Options
RJ45	Category	G1, G10, U, MP, MP+
G1	Performance Category	G1, G10, U, MP, MP+
R	Assembly on PCB	R, S, T
1	Number of Ports	1, 12; 14; ..., 21; 41; ...
U	Direction, latch style	U, D, V, Y
3.2	Solder Pin length	3.2, 1.6, D
E	EMI tabs (ground fingers)	E, N
4	Contact surface thickness	4, 1 = 3µ, 2 = 6µ, 3 = 15µ, 4 = 30µ, 5 = 50µ
GY/GY	LED	Y/G, G/Y, GY/GY, O/G, R/O, ..., N
TY	Packaging	TY, RL

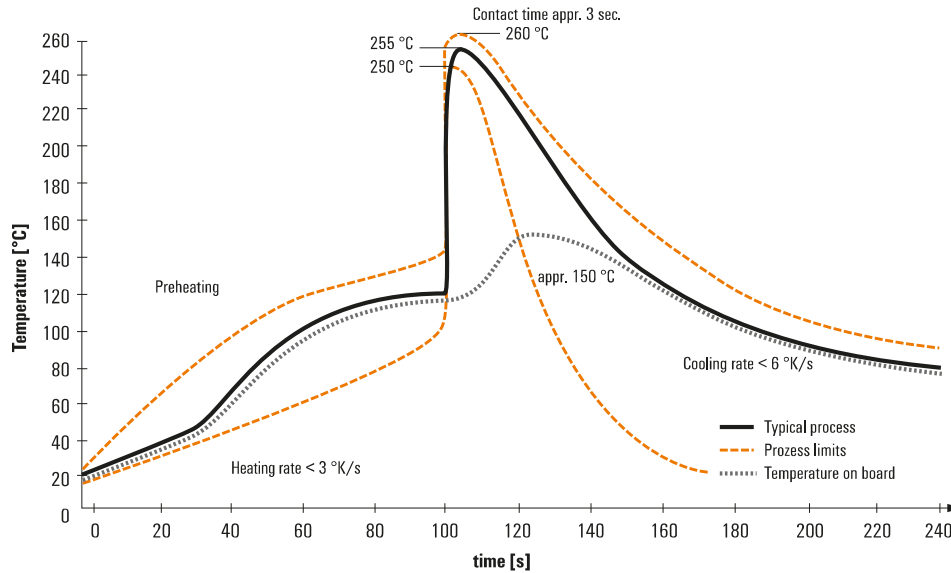
  

Code	Description	Options
TY	Packaging	TY: Tray in box (manual assembly) RL: Tape on Reel (automated assembly)
Y/G	LED	Yellow/Green
G/Y	LED	Green/Yellow (standard)
GY/GY	LED	Green-Yellow/Green-Yellow
O/G	LED	Orange/Green
R/O	LED	Red/Orange
...	LED	... (further combinations possible)
N	LED	without LED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

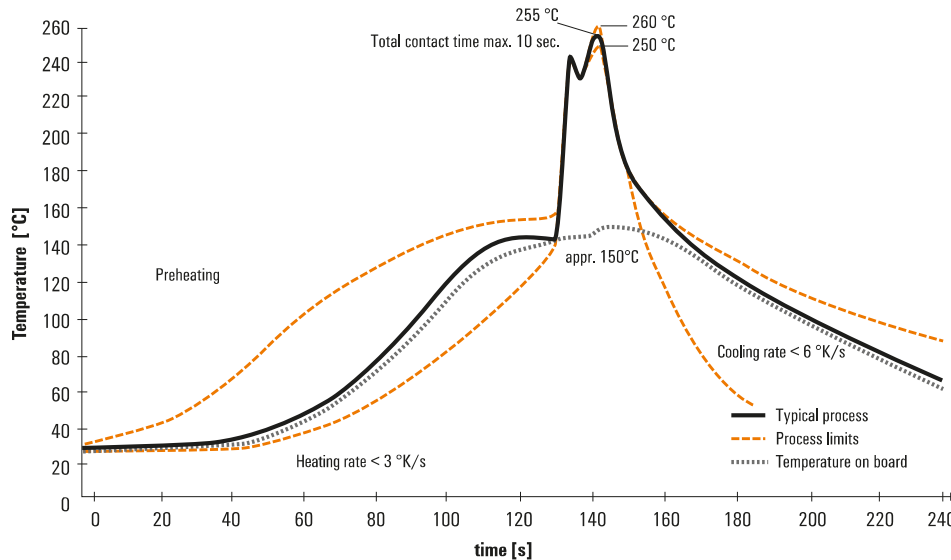
## Recommended wave soldering profiles

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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.

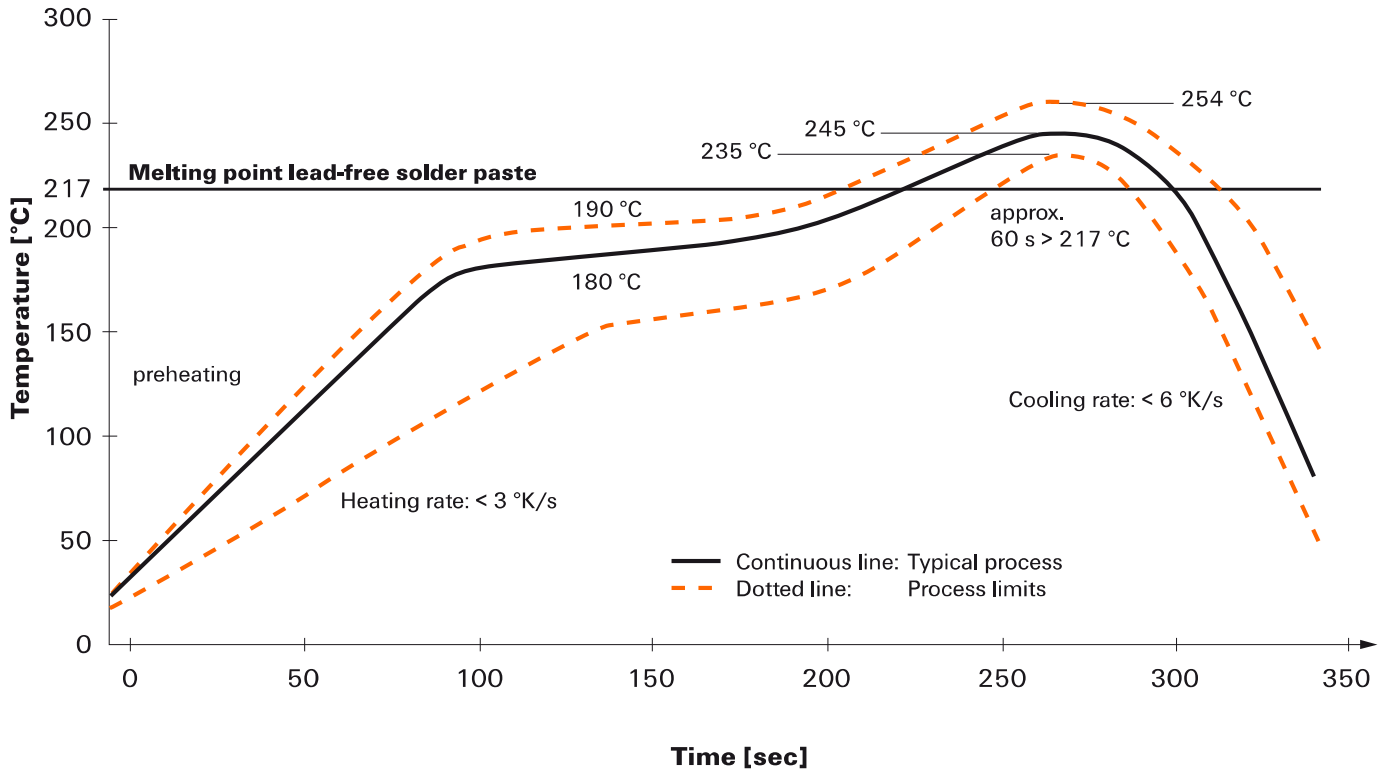
When choosing a suitable profile for your application, the following factors also need to be considered:

- 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.

## 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  $217^\circ\text{C}$  the paste gets liquid and components and boards begin to connect. The maximum temperature of  $245^\circ\text{C}$  to  $254^\circ\text{C}$  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.