

RJ45M R1V 3.3N4Y/G 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 ≥ 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
- 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 ($30\mu\text{m}$) 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 transformer, 10/100 MBit/s, THT/THR solder connection, 180°, Shield tabs: none, $30\text{...}80\mu\text{m}$ Ni / $\geq 30\mu\text{m}$ Au, LED: Yes, yellow, green, Number of poles: 8, Tray (manual assembly)
Order No.	2461070000
Type	RJ45M R1V 3.3N4Y/G TY
GTIN (EAN)	4050118476071
Qty.	120 pc(s).
Packaging	Tray (manual assembly)

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Technical data

Dimensions and weights

Depth	16.8 mm	Depth (inches)	0.661 inch
Height	20.3 mm	Height (inches)	0.799 inch
Height of lowest version	17 mm	Width	16 mm
Width (inches)	0.63 inch	Net weight	3.658 g

System specifications

Colour of left LED	yellow	Colour of right LED	green
LED	Yes	Mounting onto the PCB	THT/THR solder connection
Number of poles	8	Number of solder pins per pole	1
Outgoing elbow	180°	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 eyelet hole diameter (D)	0.9 mm
Solder eyelet hole diameter tolerance (D) ± 0.1 mm		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	190 mm	VPE height	69 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

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Approvals

Approvals



ROHS	Conform
Certificate No. (UL)	E471884
Certificate No. (cURus)	E471884

Downloads

Approval/Certificate/Document of Conformity	Certificate of Compliance
Engineering Data	CAD data – STEP
Product Change Notification	PCN PCN
User Documentation	MAN IE GUIDE DE MAN IE GUIDE EN
Catalogues	Catalogues in PDF-format

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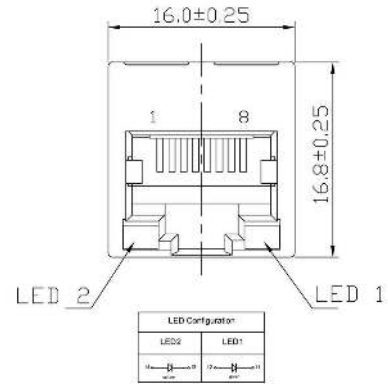
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Drawings

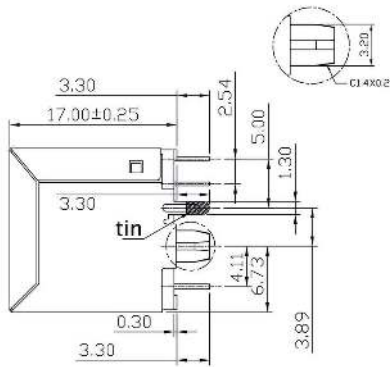
Dimensioned drawing



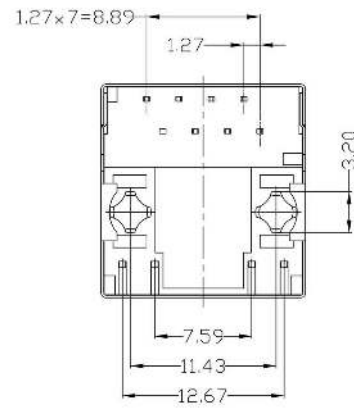
Dimensional drawing



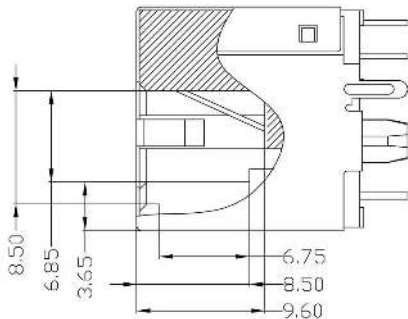
Dimensional drawing



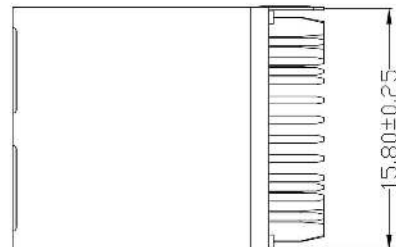
Dimensional drawing



Dimensional drawing



Dimensional drawing



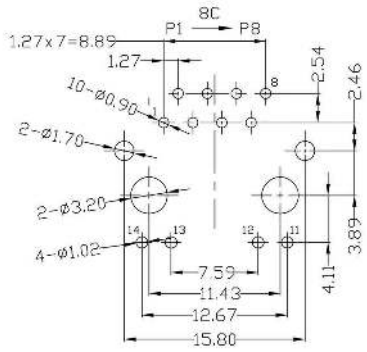
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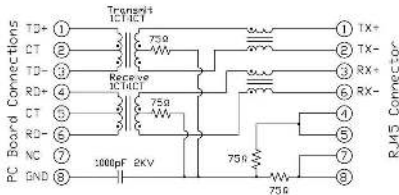
Drawings

PCB design



PCB LAYOUT

Wiring diagram



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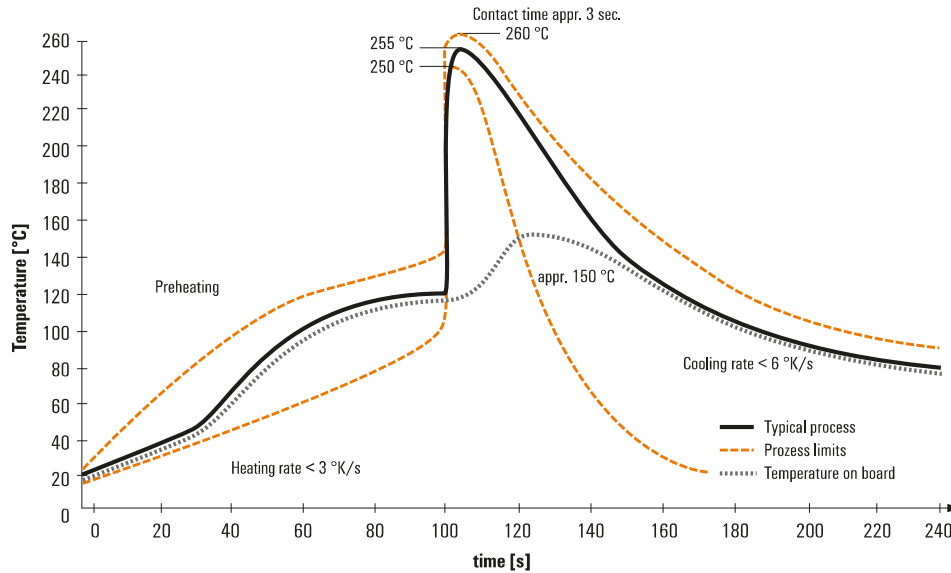
Drawings

Type Code	Parameter	Value	Description
RJ45	Packaging	TY	TY in box (manual assembly)
G1	Packaging	RL	Tape on Reel (automated assembly)
R	Assembly on PCB	R	Through Hole Reflow - THR
R1	Assembly on PCB	S	Soldering process: Wave or Reflow soldering
U	Direction, latch style	U	Horizontal (90°, side entry), latch up
3.2	Contact surface thickness	4	1 = 3µ", 2 = 6µ", 3 = 15µ", 4 = 30µ", 5 = 50µ"
E	EMI tabs (ground fingers)	E	E = with EMI tabs
4	Contact surface thickness	N	N = without EMI tabs
GY/GY	LED	Y/G	Yellow/Green
TY	LED	G/Y	Green/Yellow (standard)
	LED	GY/GY	Green-Yellow/Green-Yellow
	LED	O/G	Orange/Green
	LED	R/O	Red/Orange
	LED (further combinations possible)
	LED	N	without LED
	Solder Pin length	3.2	3.2 mm
	Solder Pin length	1.6	1.6 mm
	Solder Pin length	D	SMD
	Direction, latch style	D	Horizontal (90°, side entry), latch down
	Direction, latch style	V	Vertical (90°, top entry)
	Direction, latch style	Y	Diagonal (45°), latch up
	Number of Ports	1	1 Port
	Number of Ports	12; 14; ...	multi ports side by side, Multiport
	Number of Ports	21; 41; ...	multi ports about each other, Multilevel
	Assembly on PCB	S	Surface Mount Technology - SMT
	Assembly on PCB	T	Soldering process: Reflow soldering
	Assembly on PCB	T	Through Hole Technology - THT
	Assembly on PCB	T	Soldering process: Wave
	Performance Category	C5	Category 5
	Performance Category	C6	Category 6
	Performance Category	C6A	Category 6A
	Performance Category	C5e	Category 5e
	Performance Category	M	10/100 Mbit
	Performance Category	G1	10/100/1000 Mbit
	Performance Category	G10	10 Gbit
	Performance Category	U	Unshielded
	Performance Category	MP	10/100 Mbit with POE
	Performance Category	MP+	10/100 Mbit with POE+

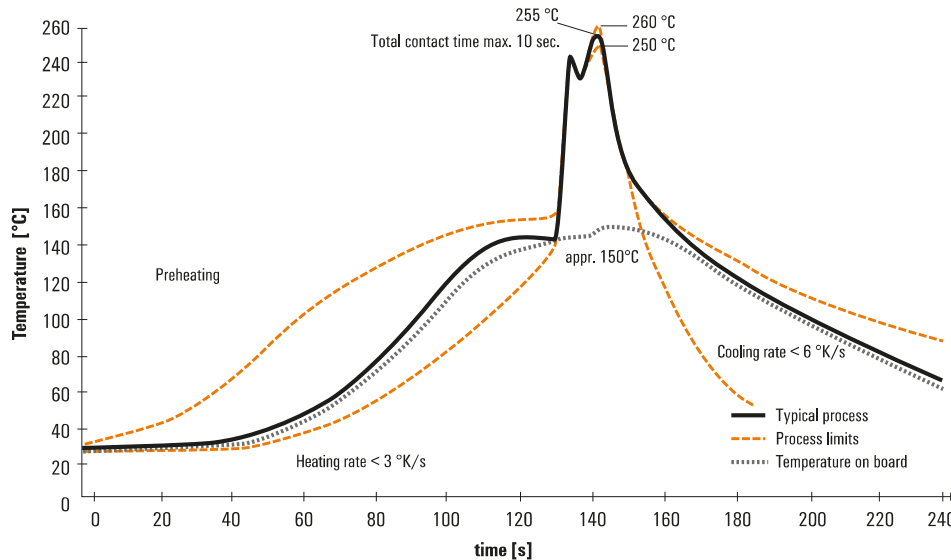
Recommended wave soldering profiles

Weidmüller Interface GmbH & Co. KG
 Klingenbergstraße 16
 D-32758 Detmold
 Germany
 Fon: +49 5231 14-0
 Fax: +49 5231 14-292083
 www.weidmueller.com

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:

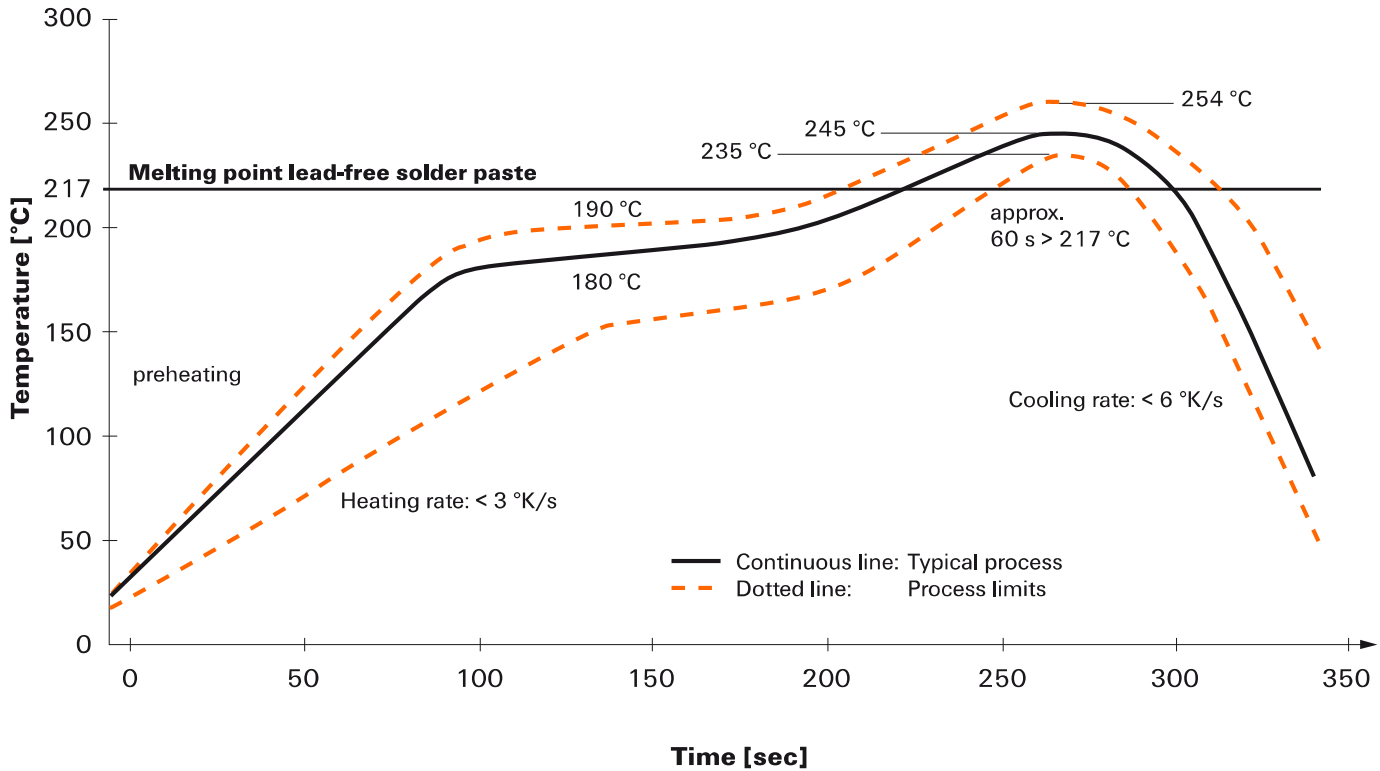
- PCB thickness
- Proportion of Cu in the layers
- Single/double-sided assembly
- Product range
- Heating and cooling rates

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.

Reflow Solder Profile

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
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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.