

RJ45M R1V 3.3N4Y/G TY

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26

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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 (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, 10/100 MBit/s , THT/THR solder connection, 180°, Shield tabs: none, 30...80 μ " Ni / ≥ 30 μ " 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)

Creation date December 21, 2022 3:57:19 PM CET

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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 dimensions	Octagonal
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

Data sheet

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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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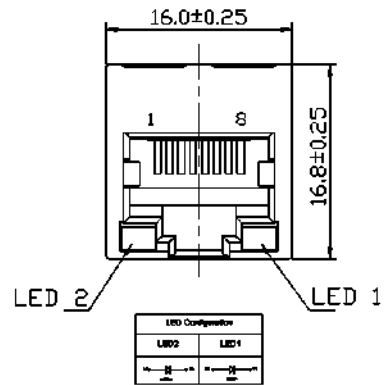
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Drawings

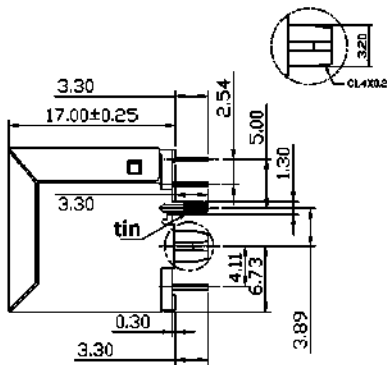
Dimensioned drawing



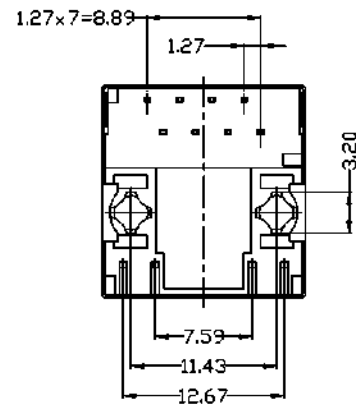
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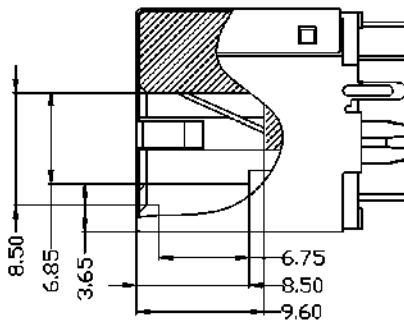
Dimensional drawing



Dimensional drawing



Dimensional drawing



Dimensional drawing



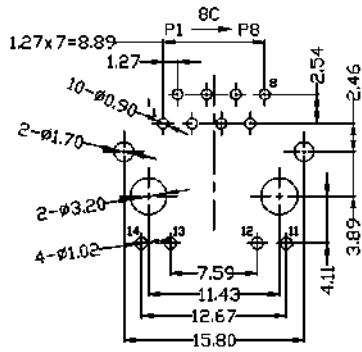
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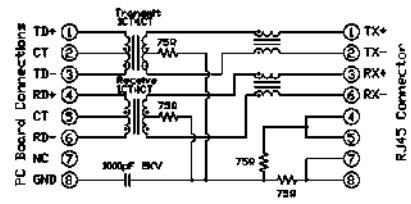
Drawings

PCB design



PCB LAYOUT

Wiring diagram



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Drawings

RJ45 G1 R1 U3.2 E4 GY/GY TY RJ45G1 RTU 3.2E4GY/GY TY		
Packaging	TY	Tray in box (standard assembly)
	NL	Traypack (not a standard assembly)
LED	Y/G	Yellow/Green
	G/Y	Green/Yellow
	O/Y/G	Orange/Yellow/Green
	O/G	Orange/Green
	H/G	Red/Green
	-	LED with non-terminations possible
	N	without LED
Contact surface thickness	A	1 = 5µm, 2 = 1µm, 3 = 15µm, 4 = 50µm, 5 = 50µm
EMI tabs (ground flaps)	E	E = with EMI tabs
	N	N = without EMI tabs
Solder Pin length	3.2	3.2 mm
	1.8	1.8 mm
	D	SWD
Direction, latch style	U	Up-down (180°, 0° or 180°) latch up
	V	Up-down (180°, 0° or 180°) latch down
	Y	Category 1, 180° latch up
Number of Ports	1	1 Port
	12, 14, ... E1, 4E, ...	multi-ports side by side, Multiport multi-ports stacked with 1A, 8 level
Assembly on PCB	R	Through Hole Back-to-Back
	B	Surface Mount, Above or Below depending on board side
	T	Through Hole Back-to-Back, Surface Mounting
	T	Through Hole Back-to-Back, Surface Mounting
Performance Category	Ca	Category 6
	Ca6	Category 6
	Ca6A	Category 6A
	Ca6E	Category 6E
	M6	10/100 Mbit
	d1	10/100/1000 Mbit
	d10	10 Mbit
U	Unshielded	
MP	10/100 Mbit with POE	
MP+	10/100 Mbit with POE+	

Type codes

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°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.