

OMNIMATE Data - RJ45 jacks transformer RJ45G1 R1V 3.3N4YG/YG TY

Weidmüller Interface 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.

- THT or THR soldering processes
- Wide range of different design types, also with integrated LEDs and shield contact tabs
- Packed either in a tray (TY) or on a roll (tape-on-reel, RL)
- Extended temperature range of -40 °C to +85 °C
- Reinforced gold layer for improved corrosion protection
- Transmission rates of up to 1 Gbit/s

General ordering data

Type	RJ45G1 R1V 3.3N4YG/YG TY
Order No.	1534760000
Version	PCB plug-in connector, RJ45 jacks transformer, THT/THR solder connection, 1.27 mm, No. of poles: 10, 180°, Solder pin length (l): 3.2 mm, Gold over nickel, Black, Tray (manual assembly)
GTIN (EAN)	4050118338423
Qty.	120 pc(s).
Packaging	Tray (manual assembly)

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Technical data
Dimensions and weights

Net weight 3.783 g

Temperatures

Operating temperature, max.	85 °C	Operating temperature, min.	-40 °C
Storage temperature, max.	85 °C	Storage temperature, min.	-40 °C

System specifications

LED	Yes	Mounting onto the PCB	THT/THR solder connection
No. of poles	10	Number of solder pins per pole	1
Outgoing elbow	180°	Packaging	Tray (manual assembly)
Pitch in inches (P)	0.05 inch	Pitch in mm (P)	1.27 mm
Plugging cycles	750	Product family	OMNIMATE Data - RJ45 jacks transformer
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	0.40 x 0.30 mm, LED pins = 0.50 x 0.50 mm
Solder pin length (l)	3.2 mm	Transmission rate	1000 MBit/s
Type of connection	Socket	Wiring	10-wire

Electrical properties

Dielectric strength, contact / contact	≥ 1000 V DC	Insulation resistance	> 500 MΩ
Rated current	1.5 A	Rated voltage	125 V AC

Material data

Insulating material	PA 9T	Colour	Black
Colour chart (similar)	RAL 9011	Insulating material group	II
CTI	≥ 500	Insulation resistance	> 500 MΩ
Moisture Level (MSL)	1	UL 94 flammability rating	V-0
Contact base 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		

Classifications

ETIM 6.0	EC002637	eClass 6.2	27-25-05-04
eClass 7.1	27-25-05-04	eClass 8.1	19-17-01-25
eClass 9.0	19-17-01-25		

Approvals

Approvals



ROHS Conform

Data sheet**OMNIMATE Data - RJ45 jacks transformer
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Technical data**Downloads**

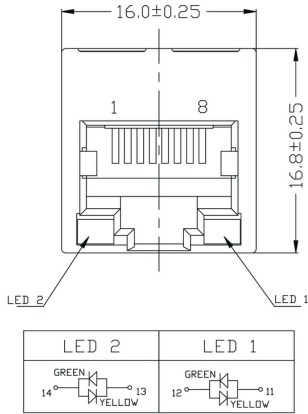
Brochure/Catalogue	MB FREECONTACT EN FL FIELDWIRING EN PI PROFINET CABLING EN
User Documentation	MAN IE GUIDE DE MAN IE GUIDE EN

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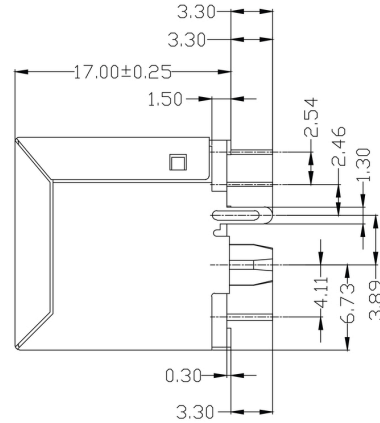
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Drawings

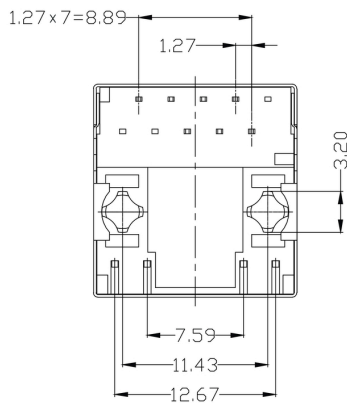
Dimensioned drawing



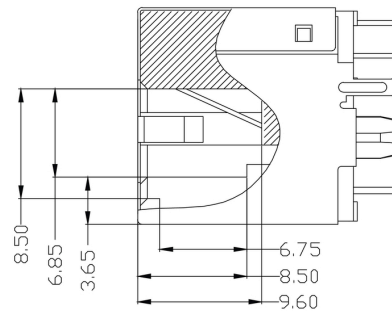
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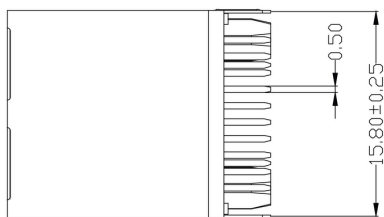
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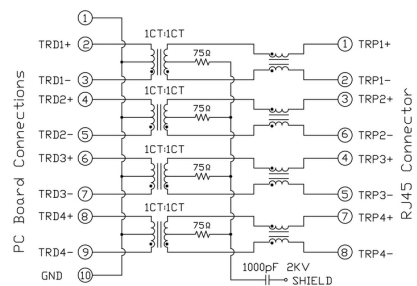
Dimensioned drawing



Dimensioned drawing



Wiring diagram

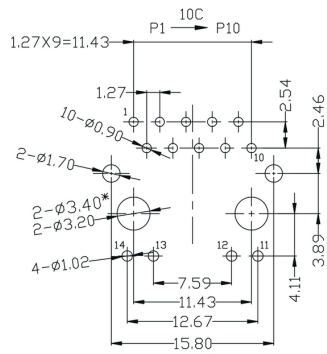


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Drawings

PCB design



PCB LAYOUT

Miscellaneous

Characteristics

Inductance	350 µH min. @ 100 kHz, 100 mV, 8 mA DC Bias
Leakage Inductance	0.3 µH max. @ 100 kHz, 100 mV
Insertion Loss	1.1 dB max. @ (1 - 100) MHz
Return Loss	18 dB min. @ (1 - 30) MHz 16 dB min. @ (30 - 60) MHz 12 dB min. @ (60 - 80) MHz
Cross Talk	30 dB min. @ (1 - 100) MHz
Common Mode Rejection	30 dB min. @ (1 - 100) MHz

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Drawings

Legend

Legend	Code	Description					
RJ45	G1	R1U	3.2	E4	GY/GY	TY	RJ45G1 R1U 3.2E4GY/GY TY
Packaging	TY	Tray in box (manual assembly)					
	RL	Tape on Reel (automated assembly)					
LED	Y/G	Yellow/Green					
	G/Y	Green/Yellow (standard)					
	GY/GY	Green-Yellow/Green-Yellow					
	O/G	Orange/Green					
	R/O	Red/Orange					
 (further combinations possible)					
	N	without LED					
Contact surface thickness	4	1 = 3µ, 2 = 6µ, 3 = 15µ, 4 = 30µ, 5 = 50µ					
EMI tabs (ground fingers)	E	E = with EMI tabs					
	N	N = without EMI tabs					
Solder Pin length	3.2	3.2 mm					
	1.6	1.6 mm					
	D	SMD					
Direction, latch style	U	Horizontal (90°, side entry), latch up					
	D	Horizontal (90°, side entry), latch down					
	V	Vertical (180°, top entry)					
	Y	Diagonal (45°), latch up					
Number of Ports	1	1 Port					
	12; 14; ...	multi ports side by side, Multiport					
	21; 41; ...	multi ports about each other, Multilevel					
Assembly on PCB	R	Through Hole Reflow - THR					
	S	Soldering process: Wave or Reflow soldering					
	SMT	Surface Mount Technology - SMT					
	T	Soldering process: Reflow soldering					
	THT	Through Hole Technology - THT					
	W	Soldering process: Wave					
Performance Category	C5	Category 5					
	C6	Category 6					
	C6A	Category 6A					
	C5e	Category 5e					
	M	10/100 Mbit					
	G1	10/100/1000 Mbit					
	G10	10 Gbit					
	U	Unshielded					
	MP	10/100 Mbit with POE					
	MP+	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°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.