

RJ45M S1D DE4N RL

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	OMNIMATE Data - RJ45 transformer jack, PCB plug-in connector, SMD solder connection, 90°, bottom, 6 tabs, No, Plugging cycles: 750, Number of poles: 8, PA 9T, 30..80 μm Ni / ≥ 30 μm Au , Tape
Order No.	2564450000
Type	RJ45M S1D DE4N RL
GTIN (EAN)	4050118572940
Qty.	220 items
Packaging	Tape

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Technical data

Approvals

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

Dimensions and weights

Depth	21.55 mm	Depth (inches)	0.8484 inch
Height	13.46 mm	Height (inches)	0.5299 inch
Height of lowest version	12.86 mm	Width	16 mm
Width (inches)	0.6299 inch	Net weight	8.64 g

Environmental Product Compliance

RoHS Compliance Status	Compliant without exemption
REACH SVHC	No SVHC above 0.1 wt%

System specifications

Number of poles	8	LED	No
Solder pin length (l)	0 mm	Mounting onto the PCB	SMD solder connection
Pitch in inches (P)	0.050 "	Shielding material	Brass
Shielding	Yes	Side termination, characteristic	Solder flange
Transmission rate	10/100 MBit/s	Number of solder pins per pole	1
Type of connection	SMT solder connection, Solder connection	Product family	OMNIMATE Data - RJ45 transformer jack
Pitch in mm (P)	1.27 mm	Protection degree	IP20
Plugging cycles	750	Outgoing elbow	90°
Shield surface	nickel-plated	Shield tabs	6 tabs
Performance-Category	10/100 MBit/s	Soldering process	Reflow soldering, Manual soldering
Latch option	bottom	Solder pin dimensions	Octagonal
Coplanarity:	100 µm	Tolerance of solder pin position	± 0.1 mm

Electrical properties

Dielectric strength, contact / shield	1500 V DC	Dielectric strength, contact / contact	1000 V DC
Insulation resistance	≥ 500 MΩ	Nominal voltage	125 V
Rated current	1.5 A		

Standards

Connector standard	IEC 60603-7
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Material data

Insulating material	PA 9T	Colour	black
Colour chart (similar)	RAL 9011	Insulating material group	II
Comparative Tracking Index (CTI)	≥ 500	Insulation resistance	≥ 500 MΩ
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

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Technical data**Packing**

Packaging	Tape	VPE length	356.00 mm
VPE width	351.00 mm	VPE height	129.00 mm
Tape reel diameter \varnothing (A)	330 mm	Surface resistance	Rs = 109 - 1012 Ω

Important note

Notes

Classifications

ETIM 8.0	EC002637	ETIM 9.0	EC002637
ETIM 10.0	EC002637	ECLASS 14.0	27-46-02-01
ECLASS 15.0	27-46-02-01		

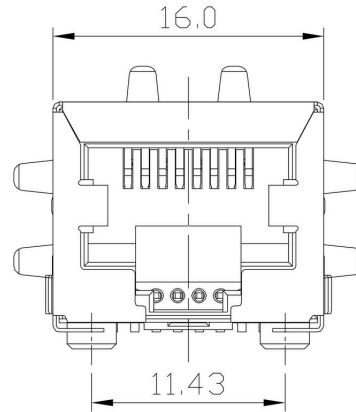
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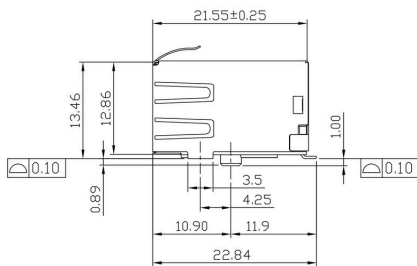
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Drawings

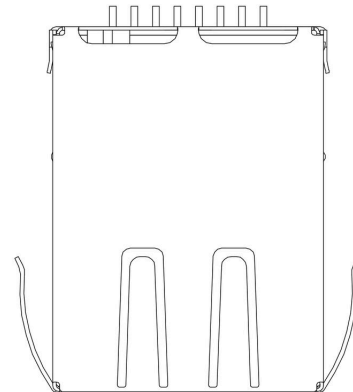
Dimensioned drawing



Dimensioned drawing



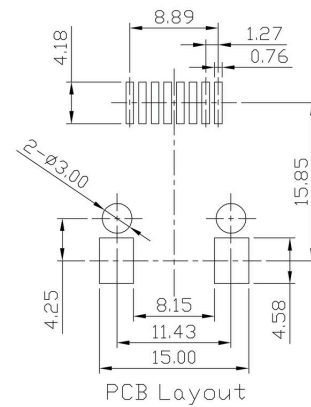
Dimensioned drawing



Dimensioned drawing

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

PCB design



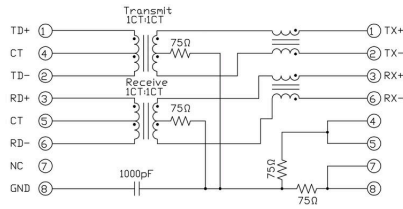
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Wiring diagram



RJ45 G1 R1 U3.2 E4 GY/GY TY RJ45G1 R1U 3.2E4GY/GY TY		
Packaging	TY RL	Tray in box (manual assembly) Tape on Reel (automated assembly)
LED	Y/G G/Y GY/GY O/G R/O ... N	Yellow/Green Green/Yellow (standard) Green-Yellow/Green-Yellow Orange/Green Red/Orange ... (further combinations possible) without LED
Contact surface thickness	4	1 = 3μ", 2 = 6μ", 3 = 15μ", 4 = 30μ", 5 = 50μ"
EMI tabs (ground fingers)	E N	E = with EMI tabs N = without EMI tabs
Solder Pin length	3.2 1.6 D	3.2 mm 1.6 mm SMD
Direction, latch style	U D V Y	Horizontal (90°, side entry), latch up Horizontal (90°, side entry), latch down Vertical (180°, top entry) Diagonal (45°), latch up
Number of Ports	1 12; 14; ... 21; 41; ...	1 Port multi ports side by side, Multiport multi ports about each other, Multilevel
Assembly on PCB	R S T	Through Hole Reflow - THR Soldering process: Wave or Reflow soldering Surface Mount Technology - SMT Soldering process: Reflow soldering Through Hole Technology - THT Soldering process: Wave
Performance Category	C5 C6 C6A C6e M G1 G10 U MP MP+	Category 5 Category 6 Category 6A Category 6e 10/100 Mbit 10/100/1000 Mbit 10 Gbit Unshielded 10/100 Mbit with POE 10/100 Mbit with POE+

Type codes