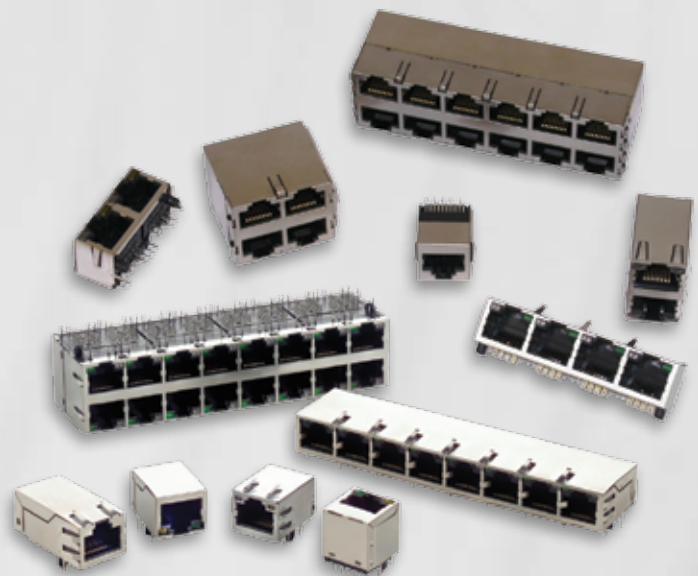


EDAC

edac JAX



Magnetic and Modular RJ45 Jacks



Connect with Us . . . Experience Makes the Difference

Our Capabilities

We have been designing and manufacturing interconnect products for over 50 years. Today we supply a wide variety of products to customers across the globe. We understand our markets and customers and provide off-the-shelf and customised products manufactured to the highest quality standards. Our Experience Makes the Difference.



edacJAX Connectors

Over the years our product offering has evolved and grown and we now have one of the largest ranges of interconnect products on the market. Our edacJAX range of Magnetic and Modular Jacks is no exception and offer many features and benefits.

These connectors are used in Data, Telecom, Networking and Home Entertainment markets for applications such as Servers, Hubs, Routers, Computers, Set Top Boxes and Digital TVs.

Why use a Magnetic Jack Connector?

A Magnetic Jack connector is a combination of up to 10 discrete components:- RJ45 Connector, impedance matching transformers, 2 LEDs, 4 termination resistors, high voltage capacitor and often common mode chokes. Typical use is in Ethernet applications that employ 10BASE-T, 10/100BASE-T, 1000BASE-T / Gigabit and come with or without PoE and VoIP capability.

Today's LAN and Ethernet hardware design engineers have 2 solutions to lay out these components onto the PCB:

1. Lay out the individual components discretely onto the PCB or
2. Use a Magnetic Jack Connector - the integrated approach

There are many advantages of using the integrated approach, so here are the top 5:

Reduction of PCB Real Estate Space – By combining the individual components into the RJ housing the PCB real estate will be cut by more than 50%.

Capitalise on Improving Efficiency – In engineering, purchasing, inventory management and manufacturing. Using only 1 component instead of the potential 10, will enable faster designs, simplify the purchasing process, streamline inventory management and reduce manufacturing time.

Improved Reliability – Magnetics are often the least reliable PCB components, due to the fragile fine copper wire used. In keeping the magnetics and other components inside the RJ45 housing they are protected from heat and other environmental exposures, which can accelerate unexpected and untimely field failures.

Decrease System Noise – As communication speeds increase so do the problems brought on by noise which will be in a number of forms such as EMI, RFI, crosstalk and jitter. As the individual components are contained inside the RJ housing there is a reduction in the number of exposed components, number of traces, the overall signal path and therefore system noise. Putting it simply, using a Shielded Magnetic Jack Connector will reduce system noise.

Connector Availability – Please contact EDAC for stockists.

What will be the most popular Magnetic Jack Connector?

- 10/100BASE-T (with or without POE)
- 1000BASE-T (with or without POE)



Magnetic Jack Connectors

EDAC Magnetic Jack Connectors are designed and manufactured to comply with IEEE 802.3, EIA 364 standard and are fully compliant with RoHS requirements. Available as single or stacked multiport options and with USB and HDMI connectors incorporated into a combined package.



General Characteristics

Mechanical

- Insertion Force: 5lbs (2.27Kg)max
- Extraction Force: 5lbs (2.27Kg)max
- Durability: 750 cycles
- Dimensions comply with FCC requirement
- Suitable for CAT 5 & 6 Fast Ethernet Cable or better UTP
- Mate with Modular Plug conforming to FCC part 68, subpart F

Electrical

- Meets IEEE 802.3 specification
- 350 μ H minimum OCL with 8mA DC base current
- Voltage rating: 150VAC
- Current rating: 100mA for magnetic, 350mA for POE, 1.5A for USB
- Dielectric strength: 1500VRMS for 1 Minute
- Insulation Resistance: 1000M Ω Minimum
- Contact Resistance: 30m Ω Maximum
- Speed: 10M/100M, 1000M

Physical

- Contact: Copper Alloy
- Housing: Thermoplastic UL94 V0
- Colour: Black
- Shield: Metal Alloy
- Contact: Gold plating on contact area with 50u, 30u, gold flash options
- Shield: Nickel Plating

Environment

- Operating Temperature: 0°C to +70°C
- Storage Temperature: -40°C to +85°C
- RoHS Compliant
- Wave soldering: 260°C/10s

Features & Benefits

- 10/100 and 1000BASE-T options - Full IEEE 802.3 compliance
- Integrated Magnetics – Provides signal integrity, DC isolation and protection for PHY chip
- Integrated Design – Reduces component inventory and process costs
- Spring fingers on shells – Guaranteed EMI/RFI suppression
- LED options – Visual indication of port status and activity usage
- Tab up or tab down options – Complete design for board and unit compatibility



Magnetic Jack

Example Part Number:

A63-112-313P190

Series

- A60 – 10/100/1000BASE-T, 8 Core
- A62 – 10/100BASE-T, 2 Core
- A63 – 10/100BASE-T, 4 Core
- A64 – 10/100BASE-T, 5 Core
- A65 – 10BASE-T, 3 Core
- A66 – 10BASE-T, 4 Core
- A67 – 10/100BASE-T, POE
- A68 – 10/100BASE-T with USB Type A
- A69 – 100/1000BASE-T with USB Type A
- A70 – 100/1000BASE-T, POE

No. of Ports

- | Stack Size | Port per Stack |
|--|--------------------|
| 11 – 1x1: 1 Port, | 21 – 2x1: 2 Ports |
| 12 – 1x2: 2 Ports, | 22 – 2x2: 4 Ports |
| 14 – 1x4: 4 Ports, | 24 – 2x4: 8 Ports |
| 18 – 1x8: 8 Ports, | 28 – 2x8: 16 Ports |
| 1A – 1+2USB: 1 Port + 2 USB Ports | |
| 1B – 1+2 USB3.0: 1 Port + 2 USB3.0 Ports | |

Contact Plating

- 2 – Gold Flash
- 3 – 15 Microinches of Gold
- 4 – 30 Microinches of Gold
- 5 – 50 Microinches of Gold

Connector Type

- 2 – Right Angle with Tab-Up
- 3 – Right Angle with Tab-Down
- 4 – Vertical with Tab-Up
- 5 – Vertical with Tab-Down
- 6 – SMT with Tab-Up
- 7 – SMT with Tab-Down
- 8 – Right Angle with Tab-Up and Panel Stop
- 9 – Right Angle with Tab-Down and Panel Stop
- A – Vertical with Tab-Up and Panel Stop

Electrical Circuit Type:

(See examples for details)

Shield Type

- 0 – No Shield
- 1 – Shielded, no EMI Finger on top
- 2 – Shielded, with EMI Finger on top
- 3 – Shielded, with EMI Finger both sides
- 4 – Shielded, with EMI Finger on three sides
- 5 – Shielded, with EMI Finger on four sides
- 6 – Shielded, with EMI Finger on three sides, LED Tail staggered
- 7 – Shielded, with EMI Finger on three sides, 3 Leg Tail LED

Housing Material

- P – PBT Polyester
- N – Nylon Polyester
- L – LCP

Right LED Colour

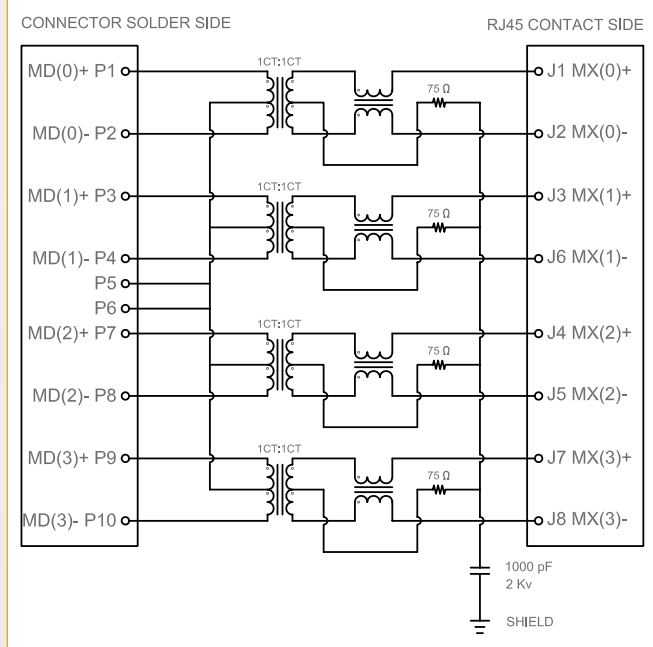
- 0 – No LED
- 1 – Yellow
- 2 – Red
- 3 – Green
- 4 – Orange
- 5 – Green/Yellow Bi-colour
- 6 – Red/Green Bi-colour
- 7 – Green/Orange Bi-colour
- 8 – Red/Yellow Bi-colour
- 9 – Orange/Yellow Bi-colour

Left LED Colour

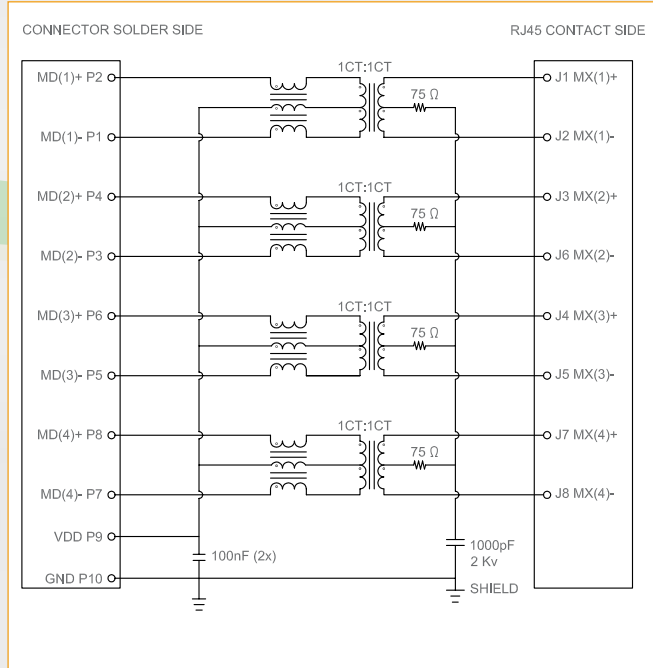
- 0 – No LED
- 1 – Yellow
- 2 – Red
- 3 – Green
- 4 – Orange
- 5 – Green/Yellow Bi-colour
- 6 – Red/Green Bi-colour
- 7 – Green/Orange Bi-colour
- 8 – Red/Yellow Bi-colour
- 9 – Orange/Yellow Bi-colour

Electrical Circuit Examples

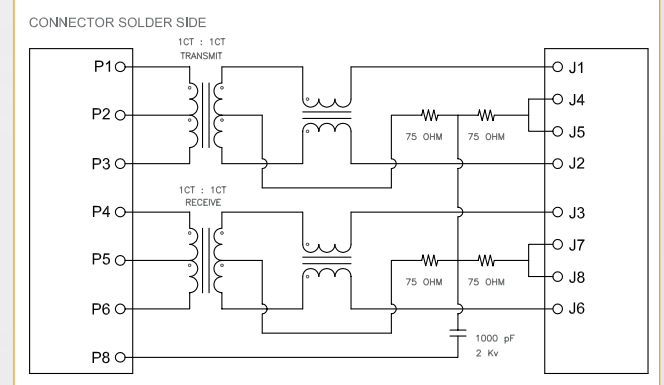
Type II Gigabit Ethernet (1000BASE-T)



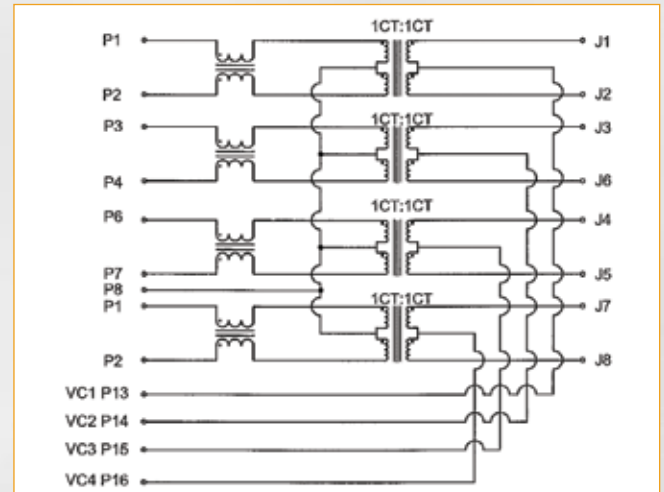
Type 62 Gigabit Ethernet (1000BASE-T)



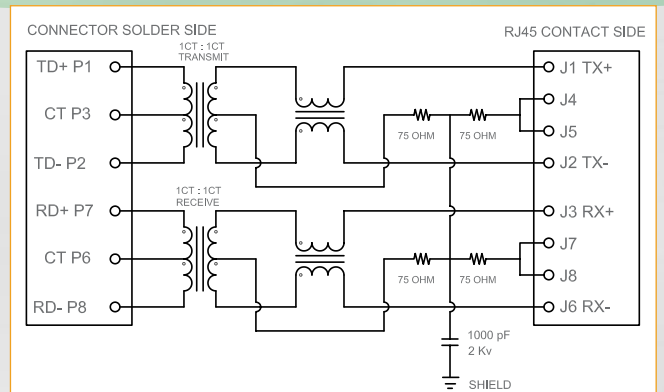
Type 90



Type 49 Power over Ethernet



Type 31



As there are many IC Manufacturers to accommodate for Electrical Circuit types please contact EDAC for your specific requirements. We can then design and produce a connector to suit.

All further relevant parameters including Insertion Loss, Return Loss, Cross Talk, CMRR, Hi Pot, Common Mode Attenuation, DC Resistance, TR and RX are stated on the EDAC drawing for each particular Connector.

Modular Jack without LED



The Series A00 has many features including top performance for high speed networking, voice and data applications. It has an industry standard footprint and height. Options available include low profile, with or without shielding, ganged and/or stacked for multiple port requirements. This Series has advanced EMI/RFI protection and both plugs and jacks can be fully or partially loaded.

Specifications:

FCC Compliance	Part 68 Sub Part F
Modular Jack Housing:	PBT Polyester, UL 94V-0
Contact:	Phosphor Bronze, gold on contact area, tin over nickel on tails
Contact Resistance:	30mΩ max.
Insulation Resistance:	500MΩ min.
Dielectric Withstanding Voltage:	1000VAC

Example Part Number:

A00-108-260-450

Series

RJ45 Modular Jack

No. of Ports

- 1 - 1 Port
- 2 - 2 Ports
-
-
- 8 - 8 Ports

No. of Contacts

- 8 - 8 Contacts on 1 Port
- 16 - 16 Contacts on 2 Ports
-
-
- 64 - 64 Contacts on 8 Ports
- AA - 128 Contacts on dual row 8 Ports

Contact Plating

- 2 - Gold Flash
- 3 - 15 Microinches of gold
- 6 - 30 Microinches of gold
- 9 - 50 Microinches of gold

Connector Type

- 1 - Adapter
- 2 - Vertical
- 5 - R/Angle Single Row with Stop
- 6 - R/Angle Single Row
- 7 - R/Angle Two Rows
- 8 - R/Angle Single Row High Profile
- 9 - Surface Mount
- 0 - Low Profile R/Angle (0.460")
- A - R/Angle Single Row with optional Panel Stop

Contact Arrangement

Key	High/Low Profile	Panel Stop
0 - No	Low **	No
1 - Yes	Low **	No
2 - No	High	No
3 - Yes	High	No
4 - No	High	Yes
5 - Yes	High	Yes
6 - No	Low	Yes
7 - Yes	Low	Yes

** Vertical available in high profile only

1U Type

- 45 - CAT 5 (with latch for adapters only)
- 11 - RJ11 (with latch for adapters only)

Shielding:

- 0 - No Shield
- 1 - Metal Shield (Grnd Back)
- 2 - Metal Shield (Grnd Front)
- 3 - Half Metal Shield
- 4 - Metal Shield Adapter
- 5 - Metal Shield (Grnd Back) with Top Panel Grnd
- 6 - Metal Shield (Grnd Front) with Top Panel Grnd
- 7 - Metal Shield (Grnd Back) with Top and Side Panel Grnd
- 8 - Metal Shield (Grnd Front) with Top Panel and Side Grnd
- 9 - Metal Shield (Grnd Back) with Bottom Panel Grnd

Modular Jack with LED



Series A20 has the combined functionality of Series A00 RJ45 Cat. 5 Jacks, with the signal capabilities of independent LEDs mounted within the jack housing. Each jack can have one or two LEDs, which are available as either a single colour with matching coloured lens, or a bi-colour variant that utilises a clear lens. Colour can be changed in Bi-colour LEDs simply by reversing the voltage polarity.

Specifications:

FCC Compliance	Part 68 Sub Part F
Insulator Housing	Black Thermoplastic PBT, UL94-V0
Contact	Phosphor Bronze, Gold on contact area, tin on tails all over nickel
Contact Resistance	20mΩ Max.
Insulation Resistance	500MΩ Min.
Dielectric Withstand Voltage	1000VAC

Example Part Number:

Series

RJ45 Modular Jack W/LED

No. of Ports

1 – 1 Port
 2 – 2 Ports
 -
 -
 8 – 8 Ports

No. of Contacts

8 - 8 Contacts on 1 Port
 16 - 16 Contacts on 2 Ports
 -
 -
 64 – 64 Contacts on 8 Ports
 AA – 128 Contacts on dual row 8 Ports

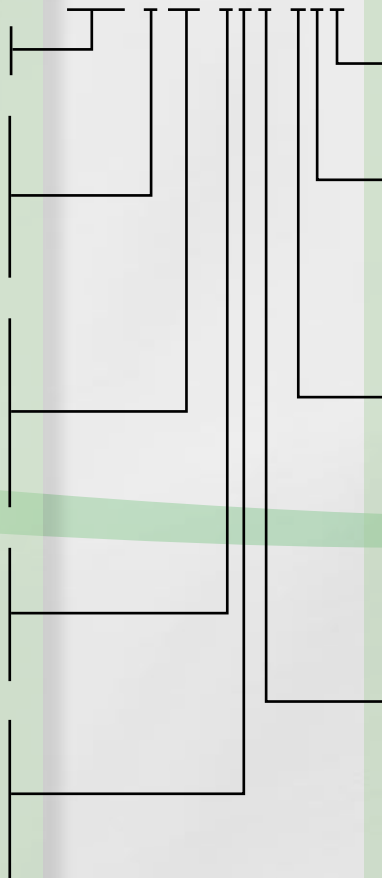
Contact Plating

2 – Gold Flash
 3 – 15 Microinches of gold
 6 – 30 Microinches of gold
 9 – 50 Microinches of gold

Connector Tail Type

2 – Vertical
 6 – Right Angle
 7 – Vertical Surface Mount
 8 – Right Angle Surface Mount
 9 – Surface Mount only in Single Port

A20-108-261-310



Port Type

0 – Single Row of Port
 1 – Two Row of Ports

Shielding

0 – No Shield
 1 – Metal Shield

Right LED Colour

0 – Blank
 1 – Yellow
 2 – Red
 3 – Green
 4 – Green/Yellow Bi-colour
 5 – Red/Green Bi-colour
 6 – Green/Orange Bi-colour
 7 – Red/Yellow Bi-colour
 8 – Orange

Left LED Colour

0 – Blank
 1 – Yellow
 2 – Red
 3 – Green
 4 – Green/Yellow Bi-colour
 5 – Red/Green Bi-colour
 6 – Green/Orange Bi-colour
 7 – Red/Yellow Bi-colour
 8 – Orange

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EJ/1115/V2

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