Introduction

Purpose
- Introduce Conec's Industrial Ethernet Connector System

Objectives
- Review differences between available products
- Discuss several application

Content
- 12 pages

Learning time
- 5 minutes

Welcome to the Conec Industrial Ethernet connector product training module. This module introduces Conec's Industrial Ethernet product offerings and the various configurations available.

Industrial Ethernet Networks

Target: any RJ45 application that will be subject to harsh environments, especially the need for Sealing against Liquids & dusts (IP67 rating).

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Outside the usual 'office' environment, there are many industrial applications for Ethernet data transfer. This requires a robust, sealed connector system.

CONEC IE Connectors

RJ45 connector for EtherNet/IP – IP67 rated

Product features

• bayonet coupling mechanism to IEC 61076-3-106 standards

• secure fastening by audible 'click' sound while locking connector halves

• RJ45 Cat. 5e connector in acc. EIA/TIA-568-B2

• protective cover for closing unconnected interfaces

• IP 67 protection when connected or closed

• three types of receptacle housings

• shielded and unshielded versions

• plastic and plastic metalized versions

• zinc diecast version

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This connector family is designed specifically for challenging environments. From sub zero cold, to baking in the sun weather. From food processing to factory chemical contamination. Typically an IP67 rating means it can be 'splashed' or 'rained on'. The official test is to pressurize it to 1.5 psi for 30 minutes, with no water leakage. In practice, these connectors withstand most common industrial liquids that might get splashed around.

CONEC IE Connectors

RJ45 connector for EtherNet/IP – IP67 rated

Receptacle housings Panel Mounted:

• for panel thicknesses up to 3,2 mm
• front or rear mounting possible
• set with protective cover
• epoxy sealed versions for additional
  device protection in unmated condition

PCB version –
solder connection
inside the device

Inline Coupler version –
connection with
standard
IP 20 patch cord cable
inside the device

IDC version –
IDC connection
inside the device

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Conec offers Receptacles suitable for all types of internal connections including PCB termination, IDC, panel mount and inline cable versions. Receptacles are available in black plastic, metalized plastic, and full metal versions.

Panel Mounted Receptacle

- Creates a sealed connection, between the outside world, and the box with an RJ45 interface.

Inline Coupler version –
RJ45 both inside and outside.
Makes for easy feed-thru using
standardized cord sets.

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This IP67 rated Receptacle, is panel mounted. It is available in black plastic, or metalized plastic. It is available kitted with a cap and tether to provide IP67 rating when NOT mated, but Capped.   Individual parts also available. Standard RJ45 plugs fit into both ends of the 'coupler'. This is the most popular style.

Panel Mounted Receptacle

RJ45 connector for EtherNet/IP – IP67 rated

• For discrete wires, IDC type

IDC version –
Simple ‚punch-down' wire termination

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For those applications that are not connectorized inside, this handy IDC insulation Displacement Connection) version is available to provide a simple punch down wire termination that facilitates field installations .

Panel Mounted Receptacle

- Solder termination style
- Accepts 'wires', or 'pins'

PCB version –
Versatile means to solder to the RJ device

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For systems that do not use a pre-assembled RJ45 patchcord internally, or prefer the durability of a soldered connection, this Receptacle version offers the versatility of soldering any wire that you choose, or even soldering pins of any length, to create a right angle PC tailed device.

PLUG KITS

RJ45 connector for EtherNet/IP – IP67 rated

Plug kit

- RJ45 Cat. 5e plug connector in acc. EIA/TIA-568-B2
- for AWG 24 copper wire, stranded or solid cable
- plastic and metalized plastic version
- version with zinc die cast coupling ring
- full metal die cast version

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Now that we've discussed the panel mounted receptacles, here are some Plugs that mate with them. The internal plug assembles to the wires using industry standard crimp and seat RJ45 tooling. Featuring the 1/16th turn bayonet coupling action for fast, positive latching. When mated with receptacles a pair will provide full IP67 water sealing rating. These are available black plastic, metalized plastic or zinc die cast.
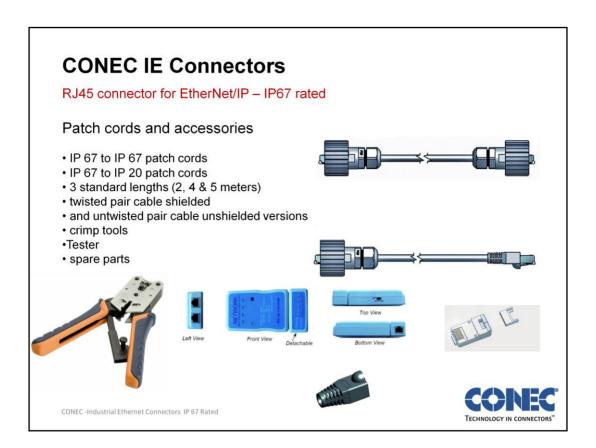
Strain Relief Plug Kit

- Typically used Inside the box for high vibration applications.
- M28 threaded attachment.

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Looks like the sealed external RJ45 Plug, but this one is actually screwed onto the INSIDE of the 'receptacle coupler' to provide support for the internal plug. This Strain Relief shares the mounting threads on the inside. The robust body handles all the forces of vibration to protect the RJ45 coupler interface. This version can also be threaded onto the bayonet side of a coupler (when front mounted) for a secure IP67 connection.

CONEC IE Connectors

RJ45 connector for EtherNet/IP – IP67 rated

Patch cords and accessories

• IP 67 to IP 67 patch cords
• IP 67 to IP 20 patch cords
• 3 standard lengths (2, 4 & 5 meters)
• twisted pair cable shielded
• and untwisted pair cable unshielded versions
• crimp tools
•Tester
• spare parts

Left View   Front View   Detachable   Top View   Bottom View

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For those designs that require field flexibility, Pre-terminated Patch cords are available.

These Plug to Plug cords can be sealed on one or both ends, depending on your needs.

Testers to confirm wiring and continuity are all part of the comprehensive Ruggedized IP67 Sealed RJ45 package.

For more information please contact Mouser Technical Support…

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