The new Ethernet interface for EtherNet/IP

Ross D'Amico
Engineering Supervisor, Industrial Ethernet
Amphenol

Matthias Fritsche
Senior Expert Ethernet
HARTING Technology Group

William MacKillop
Director Interconnect Technology
HIROSE Electric Americas

Presented at the ODVA
2026 Industry Conference & 24th Annual Meeting
October 21, 2026
Vilamoura, Portugal

Abstract

This article introduces a compact, robust connector generically referred to as the ix, a next-generation miniaturized Ethernet connector system standardized under IEC 61076-3-124, engineered to replace RJ45 in industrial automation environments. At roughly one-quarter the volume of RJ45, the ix gives design engineers the dimensional headroom to integrate Ethernet connectivity into space-constrained assemblies unsuitable for standard RJ45 jacks. Despite its compact form factor, the interface delivers superior mechanical robustness through dual metal locking latches and through-hole reflow shield pins, yielding PCB retention forces that exceed RJ45. Electrically, the 360-degree shielded, symmetric-pair contact architecture attains inductance values of 0.14 – 0.45 nH – an order of magnitude below RJ45 – enabling Cat.6$_A$-certified for 10GBASE-T transmission with enhanced EMI/ESD immunity. The connector supports PoE++ (IEEE 802.3bt) and offers IP20 and IP65/67 variants, including an IP20 variant with integrated magnetics. Adopted across PROFINET, EtherCAT, GigE Vision, and CC-Link IE TSN protocols, the ix is manufactured by multiple independent vendors including Hirose, HARTING, and Amphenol, ensuring open-market pricing and broad supply chain availability for factory automation, robotics, machine vision, and servo drive applications.

Keywords

Ethernet interface, ix, IEC 61076-3-124, miniaturized Ethernet connector, RJ45 replacement, EtherNet/IP, Cat. 6$_A$ performance, Industrial Ethernet, 10GBASE-T, PoE, IP67, industrial automation, machine vision, servo drives

 ©2026 ODVA, Inc.

Definition of terms (optional)

Term	Definition
ix	Generic designation for the miniaturized connector family standardized under IEC 61076-3-124
RJ45	Registered Jack 45 – conventional 8P8C modular connector widely used for Ethernet
IEC 61076-3-124	International standard defining the ix connector interface
Cat.6_A	Category 6_A – cabling standard supporting transmission up to 500 MHz bandwidth and 10 Gbit/s
PoE	Power over Ethernet per IEEE 802.3bt Type 4 – supports 960mA/pair, allowing up to 90 W power delivery
THR	Through-Hole Reflow – PCB mounting technique combining SMT reflow with through-hole contact pins
SMT	Surface Mount Technology
EMI	Electromagnetic Interference
ESD	Electrostatic Discharge
EtherNet/IP	Industrial Ethernet standard by ODVA
GigE Vision	Camera interface standard for industrial machine vision
PROFINET	Industrial Ethernet standard by PROFIBUS & PROFINET International
EtherCAT	Ethernet for Control Automation Technology by ETG
CC-Link IE TSN	CC-Link Industrial Ethernet with Time-Sensitive Networking by CLPA
IDC	Insulation Displacement Contact

Trademarks

EtherNet/IP™ is a trademark of ODVA, Inc.
PROFIBUS® and PROFINET® are trademarks of PROFIBUS Nutzerorganisation e.V. (PNO).
EtherCAT® is a registered trademark of Beckhoff Automation GmbH & Co. KG.
CC-Link IE TSN is a trademark of Mitsubishi Electric Corporation.
ix Industrial® is a registered trademark of HIROSE Electric and HARTING Electronics GmbH.

Why is a new interface for EtherNet/IP beneficial

The performance of electronics is continuously increasing while the physical space available for components is shrinking. In some industrial devices, overall unit size is no longer driven by electronics or processing capability but rather by the standardized connectors that populate the panels. Well-established interfaces such as RJ45, D-SUB, and M12 were designed for a prior era of industrial equipment and, despite their widespread adoption, impose significant dimensional constraints on modern compact designs.

In adjacent sectors, this challenge has already been addressed. USB interfaces evolved from Type-A to Mini- and Micro-USB, and subsequently to USB-C. Video interfaces migrated from full-size HDMI and DisplayPort to Mini and Micro variants. In each case, miniaturization enabled a new generation of slimmer, lighter, and more integrated products without sacrificing electrical performance. For industrial Ethernet and signal interfaces, however, no equivalent standardized and widely available miniaturized solution existed – until now.

The ix connector family has closed this gap in the market. Standardized under IEC 61076-3-124 and developed collaboratively by leading connector manufacturers, the ix offers a PCB footprint reduction, approximately 50% space reduction on the panel face, and up to 70% in overall volume compared to RJ45. This dimensional advantage is not accompanied by a performance penalty: on the contrary, the ix delivers superior electrical and mechanical characteristics, as detailed in the sections that follow. For EtherNet/IP system designers, this translates directly into new product architectures that were previously impractical – more ports in the same panel area, smaller device housings, and Ethernet connectivity in constrained environments such as servo amplifiers, vision cameras, and embedded controllers.

The ix product family

The ix product family is designed to address the full spectrum of requirements encountered in industrial device integration. It is standardized under IEC 61076-3-124 which specifies three distinct keying variants to prevent mis-mating between different application types:

- **Type A** (ix – Ethernet): The primary variant for Ethernet applications, including all standard IEEE802.3 and industrial Ethernet protocols such as EtherNet/IP, PROFINET, EtherCAT, and CC-Link IE TSN.
- **Type B** (ix – Signal): Intended for non-Ethernet applications including serial buses, RS-485, and other signal interfaces. All 10 contacts are freely assignable according to the application.
- **Type C**: A third keying variant, also specified for Ethernet.

This physical keying ensures safe and reliable differentiation of applications in the field, reducing inadvertent cross-connections. For EtherNet/IP our company representatives recommend the A-coded type. The A coding allows designers to design in any of the orientations of the receptacle (jack).

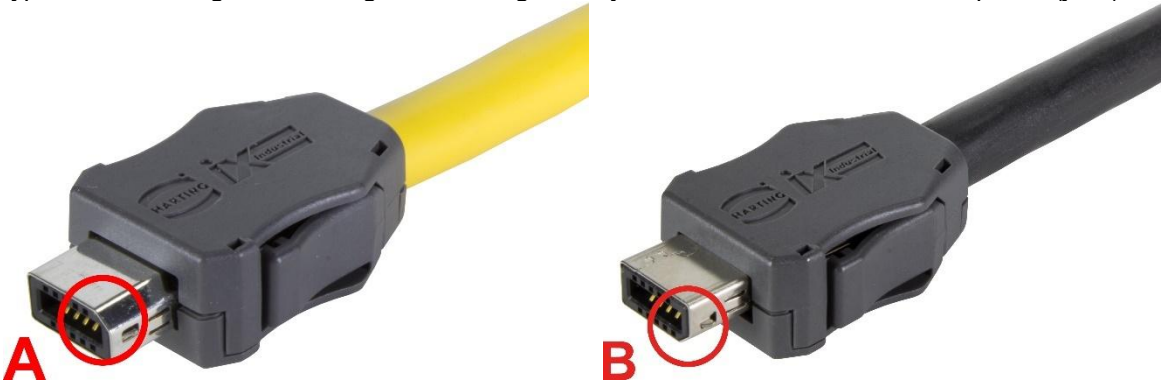


Figure 1: ix-plugs A-coded for Ethernet and B-coded for signals and serial BUS systems

 ©2026 ODVA, Inc.

Product Range Overview

The ix product family provides a comprehensive set of components to support every stage of device design and field deployment:

PCB Receptacles (Jacks):
The ix receptacle is available in multiple orientations – flag-style, flat right-angle, and vertical (Figure 2) – to maximize layout flexibility. Shield pins are implemented as Through-Hole Reflow (THR) contacts, providing a mechanically robust anchoring to the PCB while signal contacts are SMT-mounted for optimum high-frequency performance. Variants with and without integrated magnetics (integrated transformer and EMI filter) are available, enabling compact single-board Ethernet interface designs.



Figure 2: Different orientations of the ix PCB jacks

Cable Plugs:
Plug variants are available to accommodate a range of field termination methods:

- Solder termination for pre-assembled cable assemblies
- IDC (Insulation Displacement Contact) termination for AWG 22 - 30 conductors, enabling on-site assembly without special tools
- Field-terminable kits with a simplified, tool-free assembly process (six steps, no crimping tool required)
- Angled plug variants for constrained cable routing geometries

IP20, IP54, and IP65/67 Versions:
The ix family bridges the conventional separation between the IP20 (indoor/cabinet) and IP65/67 (outdoor/washdown) worlds. IP20 variants include PushPull locking and Pull-Tab release mechanisms, the latter allowing connector extraction even in densely populated panels where finger access to a conventional latch is impossible. IP65/67 variants extend the interface to applications requiring ingress protection, enabling consistent Ethernet connectivity from the controller cabinet through to field-mounted devices. Additionally, IP54 cover accessories are available to convert IP20 plugs to splash-proof variants.

Cable Assemblies and Accessories:
Pre-assembled system cables are available in ix-to-ix, ix-to-RJ45, and ix-to-M12 (D-coded and X-coded) configurations, facilitating mixed-infrastructure installations and migration scenarios.

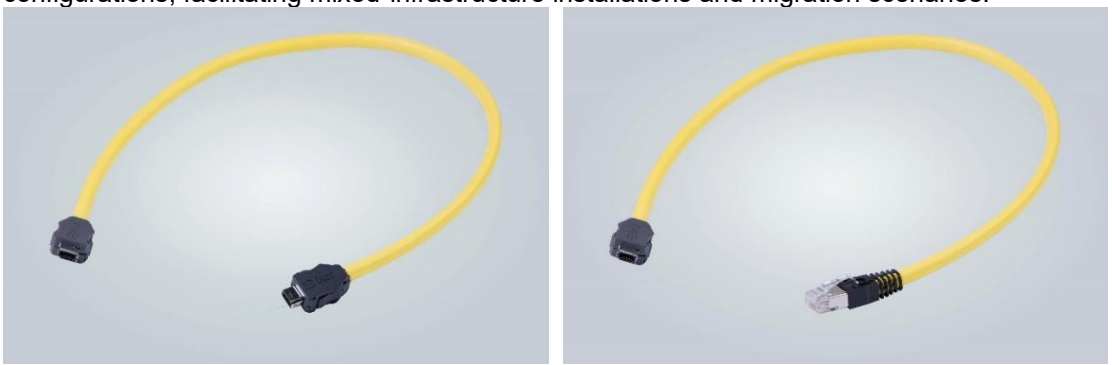


Figure 3: ix Ethernet System Cable ix-to-to ix and ix-to-RJ45 (A-coded)

 ©2026 ODVA, Inc.

The product range is completed with the associated mounting tools and measuring adapters, in particular to measure the RF transmission properties with the typical field measuring devices from FLUKE or SOFTING.

Multi-Vendor Ecosystem

A key principle of the ix standardization is the promotion of an open, competitive market. The IEC 61076-3-124 standard is freely accessible, and multiple independent manufacturers have developed and are supplying ix products:

- Hirose Electric
- HARTING Electronics
- Amphenol

Each manufacturer develops and prices its products independently, resulting in genuine market competition and avoiding supply chain dependency on a single source. This multi-vendor structure is analogous to the established RJ45 ecosystem and is a prerequisite for broad industrial adoption.

Technical details and specifications

Mechanical Design and Robustness

The ix connector achieves its compact dimensions without compromising mechanical reliability – an area where the conventional RJ45 has well-known weaknesses. RJ45 latches are frequently cited as a source of field failures: the plastic latch lever is susceptible to breakage during insertion and extraction, particularly in cramped panel environments.

The ix addresses this through a fundamentally different locking architecture. Two independent metal locking pins engage the receptacle housing with positive retention and produce an audible click on mating. The metal construction is more durable than the RJ45 plastic latch and provides resistance to vibration-induced contact fretting. Retention at the cable end is achieved through a durable crimp connection between the plug body and cable jacket.

PCB Retention:
Despite being an SMT-compatible product, the ix receptacle achieves PCB retention forces that exceed those of standard RJ45 DIP (through-hole) receptacles by more than 10% under upward peel loading. This is achieved by the THR shield pins, which act as robust mechanical anchors to the PCB while allowing the signal contacts to be placed as SMT pads for optimal RF performance. This approach is a primary reason for selecting the ix interface for integration into industrial devices.



Figure 4: Details ix jack with through-hole reflow (THR) shield pins

Miniaturization:
The ix receptacle face occupies approximately 50% of the panel area of an RJ45 jack. The overall connector volume – including plug and receptacle – is reduced by up to 70–75% compared to RJ45 and approximately 65% compared to IEEE 1394 (FireWire) connectors of equivalent wire count. At a mounting pitch of 10 mm,

 ©2026 ODVA, Inc.

six ix ports can be mounted in the same panel width that accommodates only three RJ45 ports, doubling port density in a given panel area.

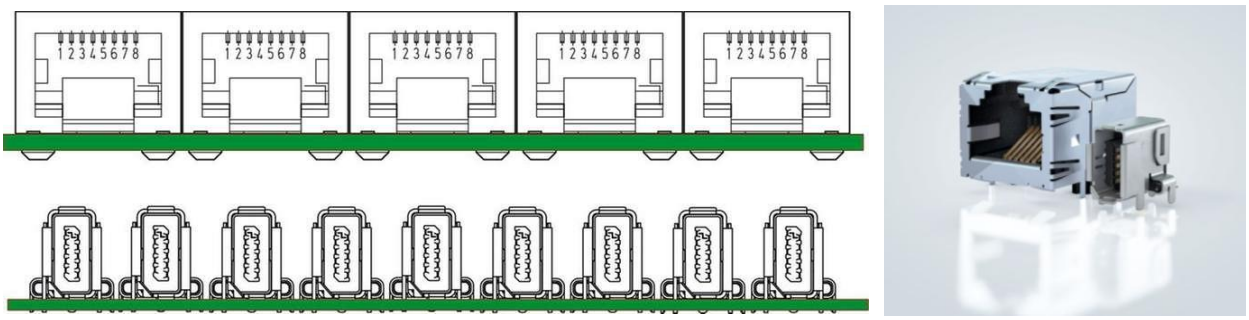


Figure 5: Size comparison ix and RJ45

Electrical Performance

The ix contact system is designed around a symmetric pair arrangement with 360-degree shielding throughout. Each of the four Ethernet data pairs is individually shielded in a manner analogous to M12 X-coded connectors. This shielding architecture provides two key benefits: low inductance and high EMI/ESD immunity.

Inductance:
Measured inductance values for the ix interface range from 0.14–0.45 nH. Comparable RJ45 connectors exhibit inductance values of 1.1–2.5 nH. This lower contact inductance directly reduces signal path impedance discontinuities at high frequencies, which is the primary enabler of the reliable 10 Gbit/s transmission performance through the connector interface.

Category 6_A Performance for 10 Gbit/s Industrial Ethernet deployment:
The entire ix product family is certified to Category 6_A performance per ANSI/TIA and ISO/IEC 11801-x cabling standards. Cat.6_A specifies transmission parameters up to 500 MHz, which is the requirement for 10GBASE-T (IEEE 802.3an). Test results using FLUKE Networks DSX-CHA-5-IX adapters confirm that both patch cord (end-to-end) and channel configurations pass all mandatory Cat.6_A parameters, including Return Loss (RL), Insertion Loss (IL), and Near-End Crosstalk (NEXT) etc.. To achieve the best possible RF performance the signal contacts are designed as SMT contacts, the continuous 360° shielding design and the special contact assignment. Each Ethernet data pair, similar to the M12 X-coded, is individually shielded.



Figure 6: Location of the Ethernet contact pairs of the ix interface (highlighted in red)

Shielding and EMI/ESD:
The metal shell of the plug mates with the receptacle shell through spring contacts, providing a continuous low-impedance ground path from the cable braid through the connector to the PCB ground plane via the

 ©2026 ODVA, Inc.

THR shield pins. The plug shell folds the cable braided shield, ensuring circumferential ground contact. This grounding architecture is effective for both EMI containment (emissions) and ESD protection (immunity), meeting the demands of industrial electromagnetic environments as defined in IEC 61326-1 and related standards.

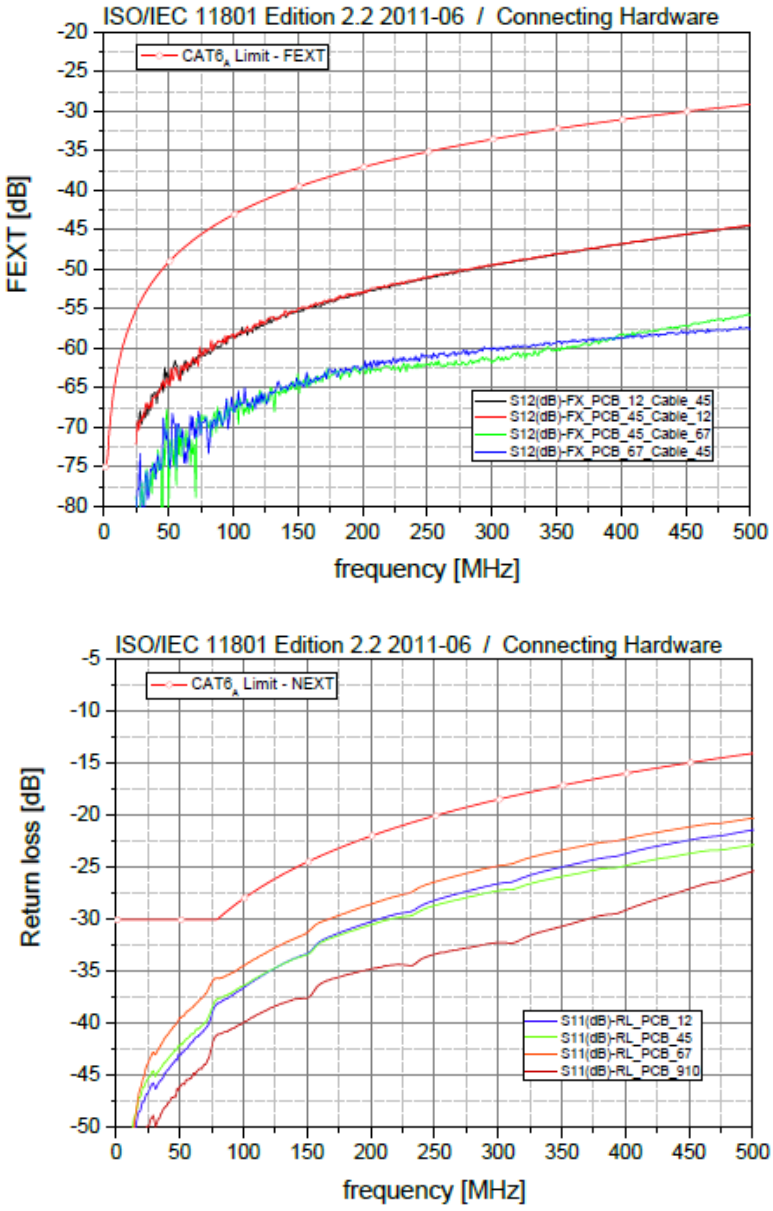


Figure 7: Test results for FEXT and NEXT shows the good performance compared to the Cat.6$_A$ limits for the ix interface

PoE Compatibility:

The ix connector is fully compatible with Power over Ethernet up to and including PoE as defined in IEEE802.3bt Type 4. Compared to RJ45, the ix contact system provides higher rated current margins, supporting all four PoE power classes (up to Class 8, 90 W) without derating. The ix Magnetics Receptacle (as offered by Amphenol) incorporates integrated galvanic isolation and DC biasing, enabling direct connection to the Ethernet cable with Common Mode noise rejection between PHY and cable.

 ©2026 ODVA, Inc.

How to integrate the ix interface to your device

Mechanical Integration

The mechanical device integration of the ix receptacle follows standard PCB assembly practices and is compatible with existing SMT/THR production lines. No specialized equipment beyond standard reflow soldering is required.
The suppliers provide comprehensive design support materials for rapid design-in:

- **CAD models** in all common formats (STEP, IGES, EPLAN, etc.)
- **Datasheets** with full PCB layout parameters, recommended land patterns, solder paste mask recommendations, and tape-and-reel packaging specifications

The PCB layout for the ix receptacle must accommodate both the SMT signal contact pads and the THR drill holes for the shield pins. The shield pin through-holes serve a dual function: they provide the mechanical PCB retention force and establish the ground connection to inner-layer ground planes, which is important for high-frequency shielding integrity.

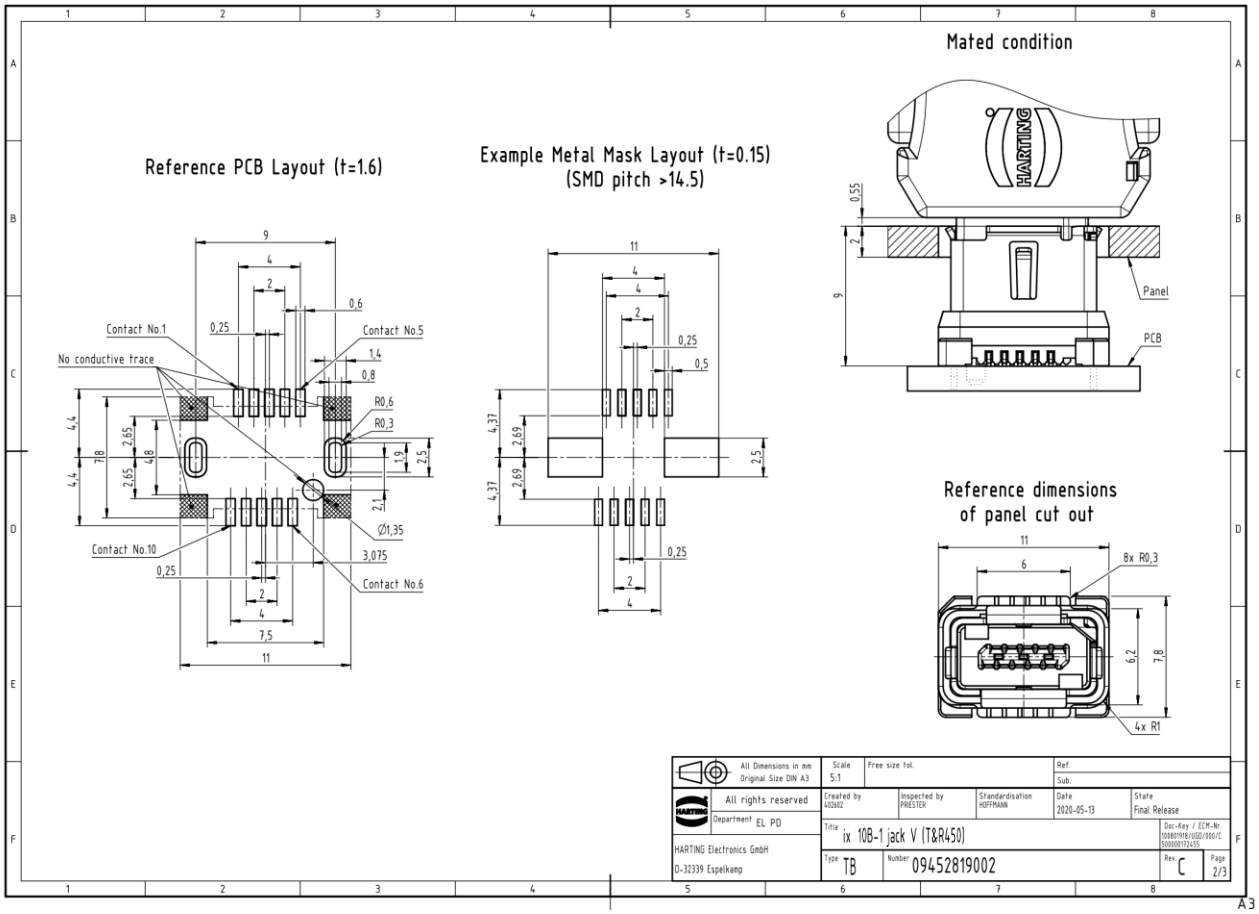


Figure 8: Excerpt from the data sheet HARTING ix jack (example 0945 281 9002)

Electrical Integration for Ethernet Interfaces

The ix receptacle can be electrically integrated using the same filter and transformer circuit topologies as RJ45 and M12 (D-coded and X-coded) Ethernet interfaces. This is a significant advantage for system designers migrating from or designing in parallel with RJ45-based platforms: no new schematic development is required for the magnetics circuit.

 ©2026 ODVA, Inc.

Circuit Topologies:
Three representative circuit configurations are applicable depending on the target application:

Fast Ethernet (10/100 Mbit/s): A standard common-mode choke and discrete magnetics (e.g., from TDK or Würth Elektronik) are placed on one or both sides of the PCB around the ix receptacle. The compact footprint of the ix allows magnetics components to be positioned more flexibly and in closer proximity to the receptacle than with RJ45.

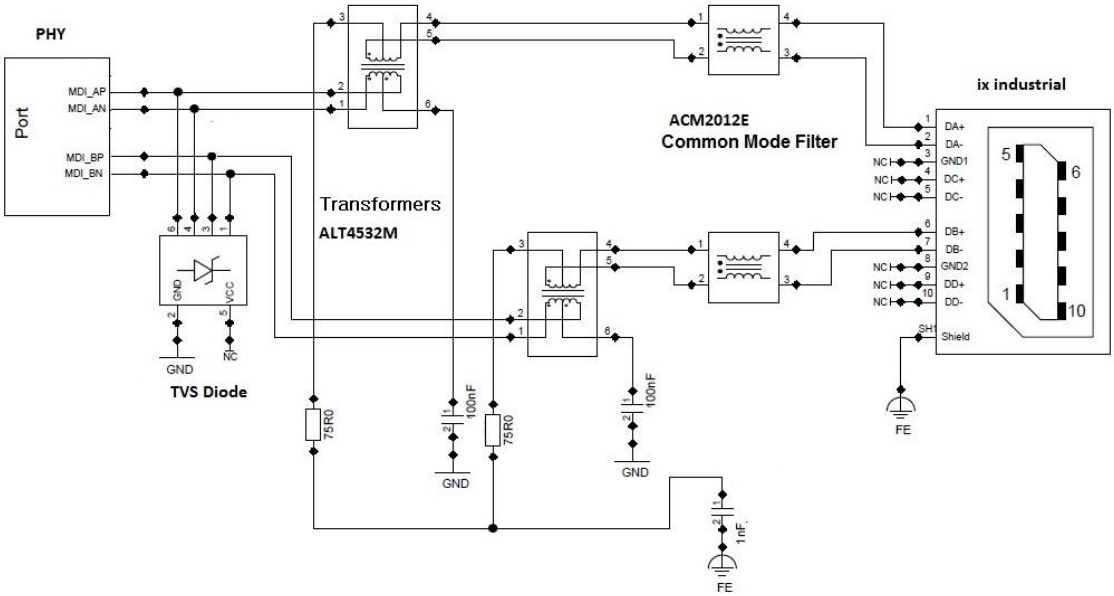


Figure 9: Typical circuit for Fast-Ethernet (10/100 Mbit/s)

Gigabit/10 Gigabit Ethernet (1/10 Gbit/s): A four-pair discrete transformer arrangement with individual common-mode chokes per pair is used. The same SMD-packaged inductors and transformers used in RJ45 designs are directly applicable.

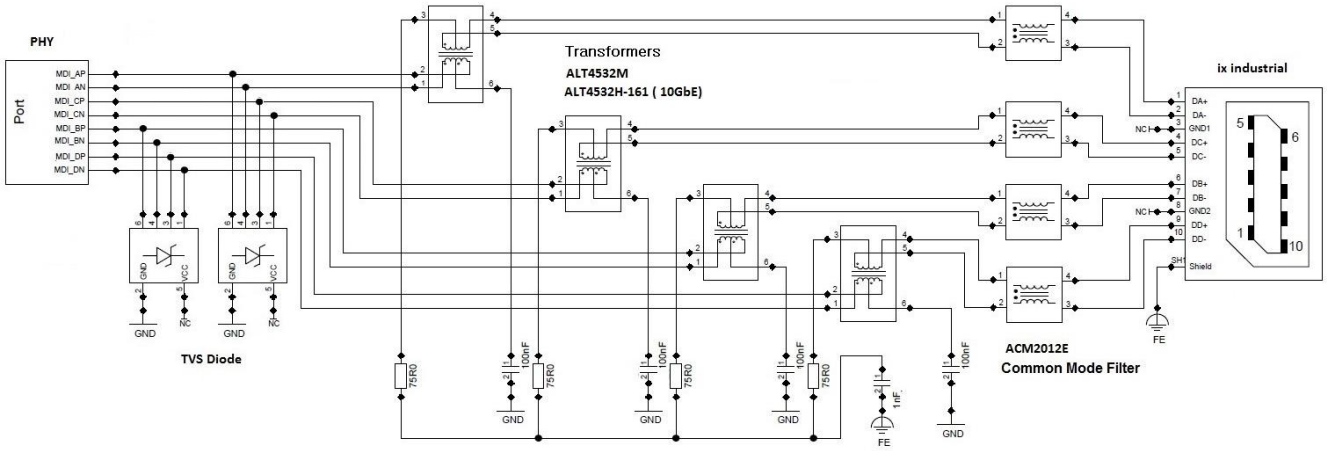


Figure 10: Typical circuit for Gigabit-Ethernet (1/10 Gbit/s)

 ©2026 ODVA, Inc.

Gigabit/10 Gigabit Ethernet with PoE: Additional PoE injection circuitry is added to the magnetics circuit, consistent with IEEE 802.3bt requirements. The ix-contact system's current rating margin accommodates all PoE power classes.

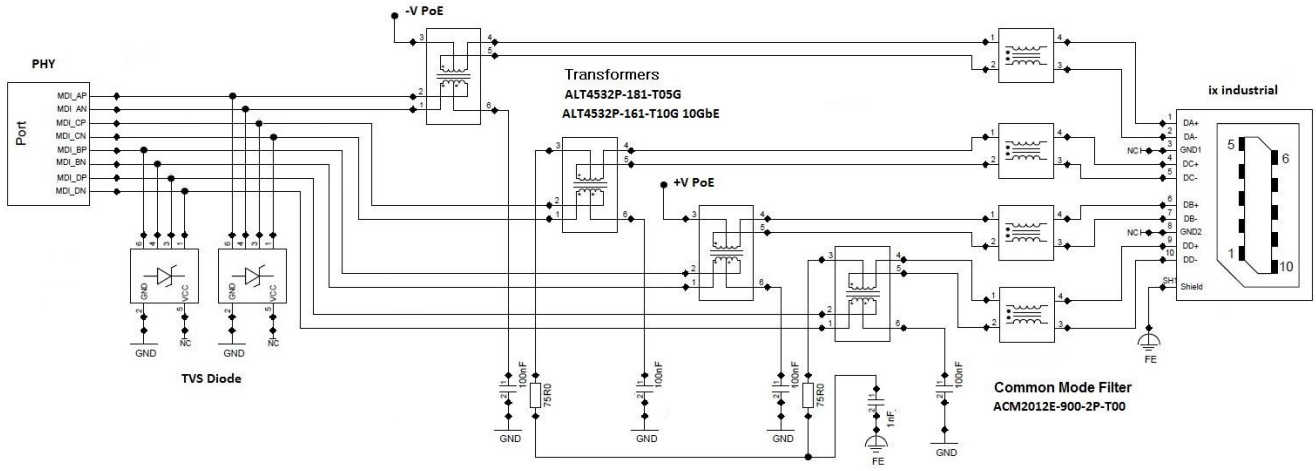


Figure 11: Typical circuit for Gigabit -Ethernet (1/10 Gbit/s) and PoE

These pictures show the placement of the transformer and filter circuit on both sides of the PCB.

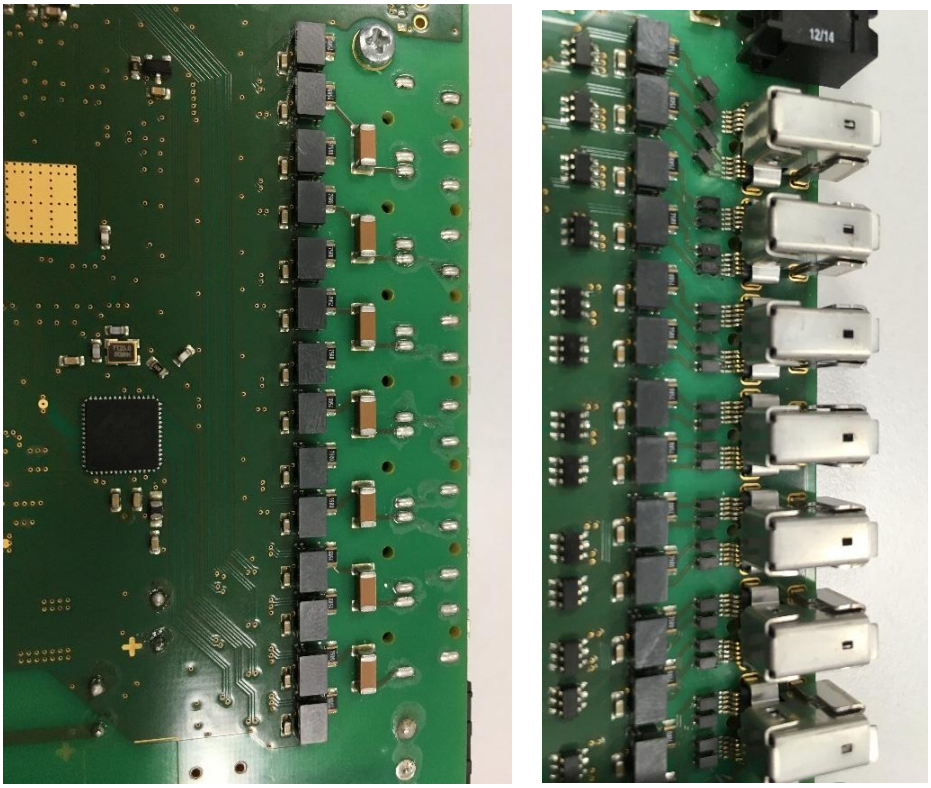


Figure 12: Example of Gigabit Ethernet (1/10 Gbit/s) and ix jacks

For designs where board space is at a premium, integrated transformer modules (combining magnetics and EMI filtering in a single SMD package) can be used in lieu of discrete component approaches. Multiple manufacturers supply ix-compatible integrated magnetics modules.

Alternatively, the usual integrated transformer circuits can be used.

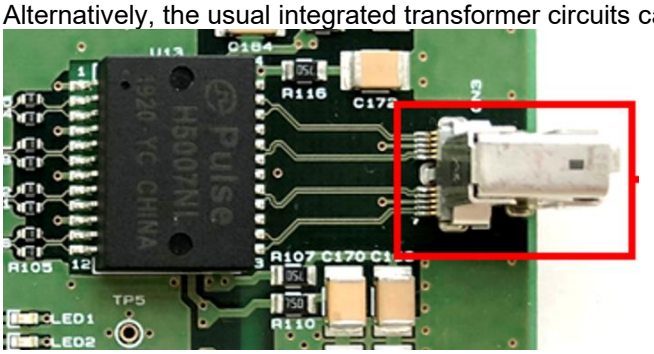


Figure 13: Example of Gigabit Ethernet (1 Gbit/s) and ix jack

An alternative to discrete magnetics is the use of ix receptacles with integrated magnetics, as available from Amphenol. These units incorporate the transformer and EMI filter within the connector body itself, eliminating the need for external magnetics components and further reducing the PCB footprint.

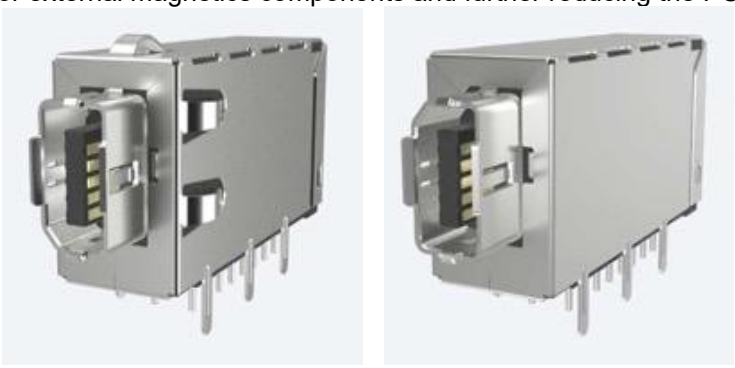


Figure 14: ix jacks with integrated magnetics from Amphenol (Type A shown at left, Type B at right)

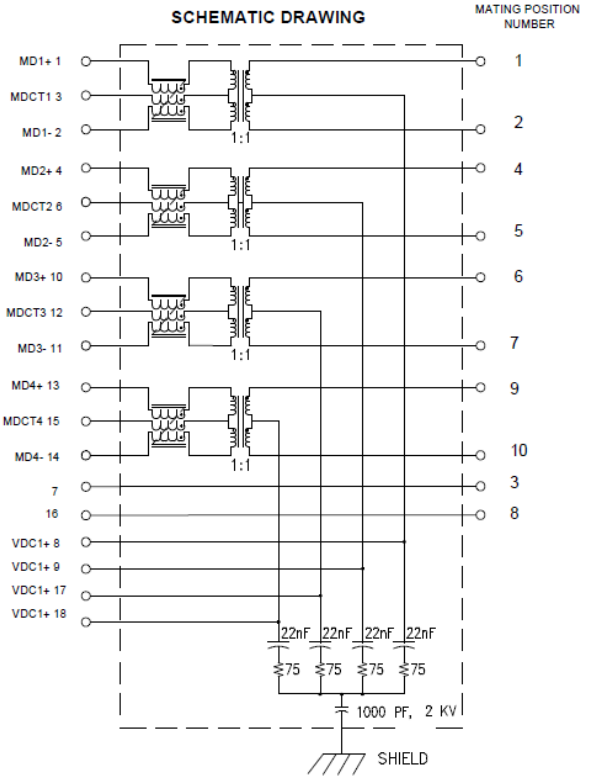


Figure 15: Gigabit circuit ix jacks with integrated magnetics from Amphenol

 ©2026 ODVA, Inc.

The advantage of this ix jacks with integrated magnetics are:

- Galvanic isolation and DC biasing from the Ethernet cable; Common Mode noise rejection between PHY chip and cable
- Versions for 100BASE-TX, 1000BASE-T, 10GBASE-T Ethernet transmission speed
- PoE++ compatibility per IEEE 802.3bt Type 4 provides ability to power devices over the Ethernet cable, eliminating separate power supply requirements
- 360° EMI shielding to ensure signal integrity
- Versions with panel grounding tabs to ensure a complete shielding connection between the jack and the front panel

Testing of ix cabling installations

To test patch cables and cable installations with the ix interface for the mostly use network analyzers from Fluke networks and Softing IT Networks GmbH test adapters are available. This adapter can be used also to test mixed cabling for example with one side RJ45 and the other side the ix interface.



Figure 16: ix test adapter compatible to Fluke network tester

 ©2026 ODVA, Inc.

Typical applications for the ix interface

The ix connector is already deployed across a broad range of industrial applications. The following examples illustrate the diversity of use cases and the value delivered in each:

HARTING Industrial Ethernet Switch
An eight-port industrial Ethernet switch based on the ix interface demonstrates the density advantage directly. Compared to an equivalent RJ45-based switch:

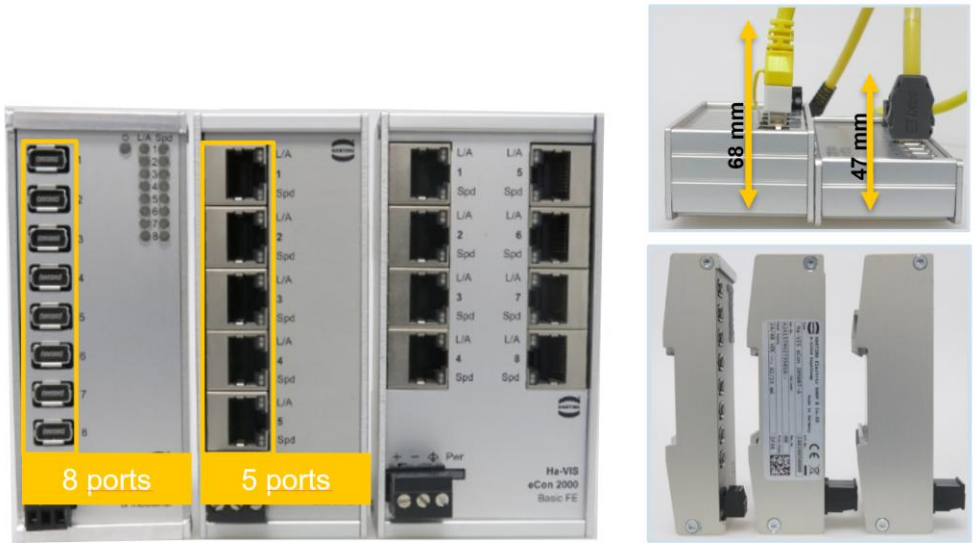


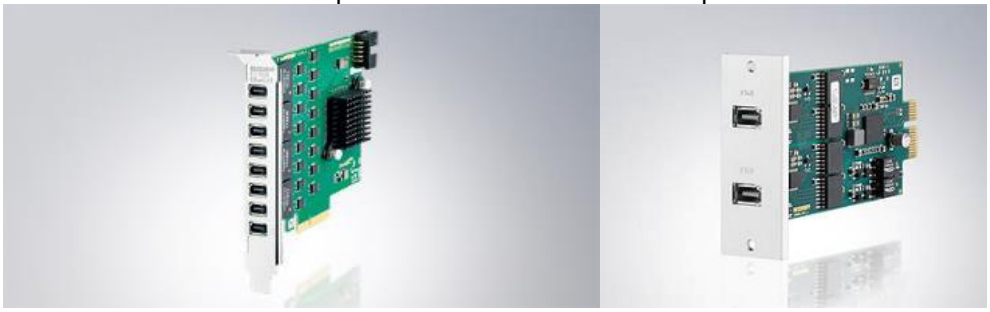
Figure 17: HARTING ix Industrial® Switch compared to typical switches with RJ45 interface

- Footprint (PCB area) is substantially reduced
- Overall device height is reduced
- The resulting device occupies significantly less DIN rail or cabinet space

This example is particularly compelling for machine builders and system integrators who allocate cabinet space at a premium and where the density of Ethernet switch ports has increased with the adoption of IO-Link masters, EtherNet/IP adapters, and other Ethernet-connected field devices.

Other applications with the ix Ethernet interfaces
The ix interface is already in use in a wide range of applications. Here is a selection:

PC-Controller for XTS linear transport system from Beckhoff
The Beckhoff eXtended Transport System (XTS) linear motor transport system uses the ix interface for Ethernet connectivity. In this application, the compact form factor and IP20 robustness of the ix enable Ethernet ports to be accommodated within the XTS movers and track segments without enlarging the system profile. With the ix interface the port count can be doubled compared to the RJ45 interface.



Source: Beckhoff Automation GmbH & Co. KG
https://www.beckhoff.com/de-de/produkte/motion/xts-linearer-produkttransport/#text_bild

 ©2026 ODVA, Inc.

Multi-Axis Drive Modules with 3 analogue multi-encoder interfaces ACOPOS P3
B&R Industrial Automation integrates the ix interface into the ACOPOS P3 servo drive plug-in modules, specifically the three-channel analogue multi-encoder interface (Part No. 8EAC0152003-1). The ix interface provides the signal interface for encoder feedback, with the B-coded variant enabling safe assignment of the non-Ethernet signal application.



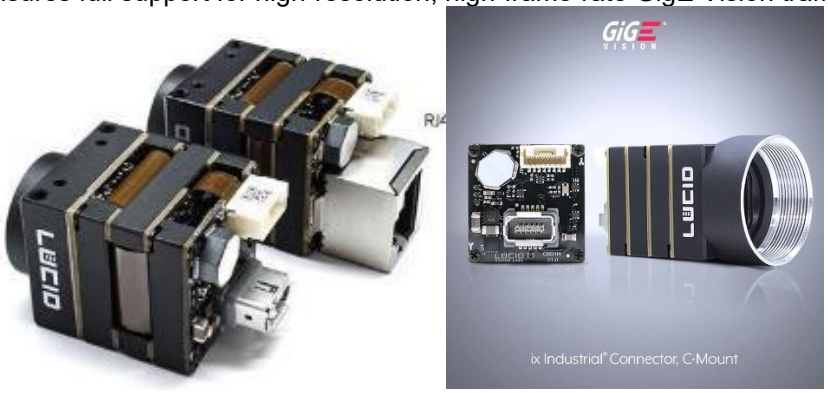
Source: B&R Industrial Automation GmbH
https://www.br-automation.com/de-de/produkte/antriebstechnik/acopos-p3/einsteckmodule/8eac0152003-1/

Automotive and On-Board Network Test Equipment – Vector Informatik GmbH
Vector Informatik integrates the ix interface into VN56xx series network interface hardware for automotive and on-board Ethernet testing. This application illustrates that the ix interface is not confined to industrial factory automation but is applicable wherever compact, high-performance Ethernet interfaces are required at the hardware level.



Source: Vektor Informatik GmbH
https://www.vector.com/int/en/products/products-a-z/hardware/network-interfaces/vn56xx/#c9340
https://www.vector.com/int/en/products/products-a-z/hardware/network-interfaces/vn5650-vn5240/

ix GigE Vision interface for industrial cameras and vision sensors
LUCID Vision Labs and other machine vision camera manufacturers integrate the ix interface for GigE Vision connectivity. In this application, the small panel footprint of the ix allows cameras to be designed with smaller housing, which is directly advantageous for compact vision systems, embedded vision, and applications where camera placement in confined spaces is required. The Cat.6$_A$ performance of the ix ensures full support for high-resolution, high-frame-rate GigE Vision traffic up to 10 Gbit/s.



Source: LUCID Vision Labs Inc.
https://thinklucid.com/de/product/ix-industrial-ethernet-cat6a-cable-5-0m-black/
https://thinklucid.com/product/phoenix-5-0-mp-imx568/

 ©2026 ODVA, Inc.

Signal or BUS interface applications – Servo Drive System Transducer Interface SINAMICS
Siemens integrated the ix interface into the SINAMICS S210 servo drive system as the encoder interface. The mechanical robustness of the ix – specifically the PCB retention force provided by the THR shield pins – was a primary selection criterion, as servo drives are subject to continuous vibration and shock loads during machine operation. The miniaturized form factor also allowed Siemens to reduce the overall drive housing dimensions.



Source: Siemens AG: https://mall.industry.siemens.com/mall/de/WW/Catalog/Products/10339917

Standardization and Ecosystem Status

The ix connector is standardized under **IEC 61076-3-124**, an international standard that defines the mating interface geometry, electrical requirements, environmental performance, and test methods for the ix connector family. The standard specifies the three keying variants (Type A, B, C) and is the normative basis for all ix products regardless of manufacturer.
Beyond the base IEC standard, the ix interface has been referenced or adopted in a growing number of industrial protocol and fieldbus standards:

- **PROFINET:** The ix is referenced in the PROFINET standard documents as a recommended interface for compact PROFINET devices
- **EtherCAT:** EtherCAT Technology Group (ETG) has posted the ix as a promoted next-generation product on the association's website (ETG5003.1 V1.1.0.19), with designation as "EtherCAT SEMI RJ45: Promoting Defacto as Next Generation Product"
- **CC-Link IE TSN:** The ix interface achieved CC-Link IE TSN certification in September 2023
- **GigE Vision:** The ix is referenced in GigE Vision standard documents
- **FL-net:** ix is recommended on the FL-net association's website
- **MECHATROLINK IV:** IEC standardization of the ix interface for MECHATROLINK IV is scheduled for IEC 61785-5-19 (target: 2028)
- **Σ-LINK II:** The ix has received Σ-LINK II certification (details not publicly disclosed)

The ix interface has received recognition through multiple industry awards for its contribution to industrial connectivity innovation.

 ©2026 ODVA, Inc.

Conclusion

The ix connector represents a mature, standardized, and commercially available solution to a long-standing gap in the industrial connectivity landscape: the absence of a miniaturized, high-performance Ethernet interface suitable for the demanding requirements of industrial automation. The combination of a 50% reduction in panel footprint, 70% reduction in overall volume, superior mechanical robustness, Cat.6$_A$/10GBASE-T electrical performance, and multi-vendor availability makes the ix a compelling choice for any new EtherNet/IP device design where dimensional efficiency is a priority.

For ODVA members and EtherNet/IP implementers, the option to use the ix enables next-generation device form factors without compromise in connectivity performance, protocol compatibility, or supply chain resilience. As the industrial Ethernet ecosystem continues to evolve toward higher data rates, increased device intelligence, and more compact machine architectures, the ix interface is well positioned to become the standard Ethernet connector for the next generation of industrial devices. Furthermore, the ix interface is specified for all relevant Industrial Ethernet systems, making it possible for devices to achieve compliance with multiple Industrial standards via this data interface.

References

[1] https://www.hirose.com/en/product/en/pr/ix_industrial/
[2] https://www.harting.com/en-US/s/harting-ix-industrial
[3] https://www.amphenol-cs.com/product-series/ix-industrial-ip20.html
[4] IEC 61076-3-124: Connectors for electronic equipment – Product requirements – Part 3-124: Rectangular connectors – Detail specification for 10-way, shielded, free and fixed connector series for data transmission up to 500 MHz. IEC, Geneva.

****
The ideas, opinions, and recommendations expressed herein are intended to describe concepts of the author(s) for the possible use of ODVA technologies and do not reflect the ideas, opinions, and recommendation of ODVA per se. Because ODVA technologies may be applied in many diverse situations and in conjunction with products and systems from multiple vendors, the reader and those responsible for specifying ODVA networks must determine for themselves the suitability and the suitability of ideas, opinions, and recommendations expressed herein for intended use. Copyright ©2026 ODVA, Inc. All rights reserved. For permission to reproduce excerpts of this material, with appropriate attribution to the author(s), please contact ODVA on: TEL +1 734-975-8840 FAX +1 734-922-0027 EMAIL odva@odva.org WEB www.odva.org. CIP, Common Industrial Protocol, CIP Energy, CIP Motion, CIP Safety, CIP Sync, CIP Security, CompoNet, ControlNet, DeviceNet, and EtherNet/IP are trademarks of ODVA, Inc. All other trademarks are property of their respective owners.