Island-use backplane connector for remote monitoring



Overview

Backplane Connectors | TE ConnectivityOur Eurocard connectors incorporate internationally accepted design advantages of DIN 41612 and IEC 60603-2 two-piece.

Key Takeaways

Backplane connectors enable modular, high-speed, and reliable connections for decentralized I/O islands, supporting remote monitoring and scalable industrial automation systems.

Overview of Backplane Connectors

Backplane connectors are designed to interconnect printed circuit boards (PCBs) or modular I/O systems, providing high-speed data transfer, signal integrity, and mechanical stability. They come in various configurations, including coplanar, orthogonal, mezzanine, and cable-to-board types, and support data rates from 12. 5 Gbps up to 112 Gbps depending on the system requirements (Molex, TE Connectivity).

High-density designs improve airflow and allow compact integration, which is critical for industrial control panels and remote monitoring setups.

Application in Remote Monitoring

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For remote monitoring of decentralized I/O islands, backplane connectors are often used in modular safety controllers like the Modicon MCM system. These systems allow multiple I/O islands to be connected via a backplane expansion connector and communicate over RS485 shielded cables. Each expansion module can monitor and control safety functions, with distances up to 50 meters between islands, enabling flexible deployment across a facility.

Key features include: LED indicators for power, run status, and error diagnostics. IP20-rated housing for industrial environments.

DI

N rail mounting for easy installation.

Scalable I/

O capacity, supporting up to 128 inputs and 32 diagnostic outputs per system. Compliance with safety standards such as Category 4, PL e (EN/ISO 13849-1) and SILCL 3 (IEC/EN 61508) for safe operation.

Choosing the Right Connector

When selecting a backplane connector for remote monitoring: Data Rate Requirements: Ensure the connector supports the necessary bandwidth for your monitoring system (e.g., 12–112 Gbps for high-speed applications). Form Factor: Choose between right-angle, coplanar, or mezzanine connectors depending on PCB layout and space constraints. Compatibility: Verify that the connector matches your modular I/O system or controller, such as Modicon MCM or other industrial PLCs.

Environmental Ratings: Consider IP rating, temperature range, and mechanical robustness for industrial deployment. Scalability: Ensure the system can expand to multiple I/O islands without signal degradation or excessive cabling complexity.

Summary

Backplane connectors are essential for modular, scalable, and reliable remote monitoring systems. They allow multiple I/O islands to communicate efficiently with a central controller, maintain signal integrity, and support high-speed data transfer. Systems like the Modicon MCM leverage these connectors to create decentralized safety and monitoring networks, providing flexibility, safety compliance, and ease of installation for industrial automation applications.

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Article Content

Backplane Connectors | TE Connectivity

Our Eurocard connectors incorporate internationally accepted design advantages of DIN 41612 and IEC 60603-2 two-piece connectors. This enables high signal integrity (SI) and electrical performance.

Backplane Connector Housings | Connectors, Interconnects | DigiKey

Shop DigiKey''s large in-stock selection of Backplane Connector Housings. View inventory, pricing and order now for same day shipping!

Impact Backplane Connectors

Start by specifying your backplane signal and power needs and you will be presented with various module options based on the slot pitch and overall lengths that match your requirements.

Backplanes | Open.Tech

Open.Tech by Amphenol presents die-cast VITA 46 backplane guide pins, meticulously designed to ensure precise alignment and secure connections in high-performance embedded systems.

High Speed Backplane | Cable Assembly | Cable

Designed as a direct replacement for vertical header connectors using hard metric guidelines, it enables streamlined integration across backplane

Backplane Connectors

Backplane Connectors Offering a broad portfolio of backplane connectors that include SOSA aligned optical, COTS plus hard metric, VITA standard and high speed twinax interconnects.

High Speed Backplane Interconnect Solutions

The emergence of faster data rates and decreasing signal rise times requires better performing, high-speed connectors. TE Connectivity''s (TE) broad portfolio of high speed backplane connectors

Board-to-Board | High-Speed Backplane

Pushing 112Gb/s PAM4 with style, the EXAMAX2 ® connector system blends blazing fast performance with backwards compatibility. It''s your plug-and-play upgrade for serious signal integrity,

Quick Reference Guide High Speed Backplane Interconnect Solutions

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High Speed Backplane Interconnect Solutions The emergence of faster data rates, and decreasing signal rise times, requires better performing, high speed connectors. TE Connectivity''s broad

Backplane connectors: What are they and how are they used?

Daughterboards are connected to the backplane to perform different functions. The easy interchangeability of different cards is one of the reasons backplane connectors are so versatile and

What is a Backplane: A Simple Guide – Prototype PCB Assembly

What is a Backplane? A backplane is a printed circuit board (PCB) that serves as the central connection point for other PCBs, modules, or components in an electronic system. It provides

Optical Backplane Connectors in the Real World: 5 Uses You

Top 5 Uses-Cases 1. Data Centers and Cloud Infrastructure Data centers rely heavily on optical backplane connectors to manage vast amounts of data traffic.

What are backplane connectors? How are they used?

What Are Backplane Connectors? Backplane connectors are used to interconnect multiple printed circuit boards (PCBs) in a backplane system. They replace complex cabling with a

ACS Corporate Presentation Template

Data traffic is proliferating, increasing need for robust Backplane connectors Increases the capacity and flexibility of the network Smart Grid Architecture

Why plastic push-pull connectors are ideal for remote patient ...

This is because the connectors need to be a higher speed and density to support greater data acquisition and transfer. If the need for remote patient monitoring continues to increase,

Remote backplane

This not only provides a universal remote backplane which handles the communication between bus modules and via the X2X Link cable, but makes it possible without converters or any

Backplanes Selection Guide: Types, Features, Applications

DIS-MISC-81063 - Backplane component implementation plan. EIA-616 - This standard is applicable to modular two-part connectors for printed wiring boards associated with equipment for

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Backplane Connectors | TE Connectivity

Backplane Connectors This type of connector is engineered to increase data rates and decrease signal rise, delivering a more reliable high-speed transmission with greater clarity. Our portfolio of

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Technical inquiry: https://fdsoluciones.es/project-enquiry.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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