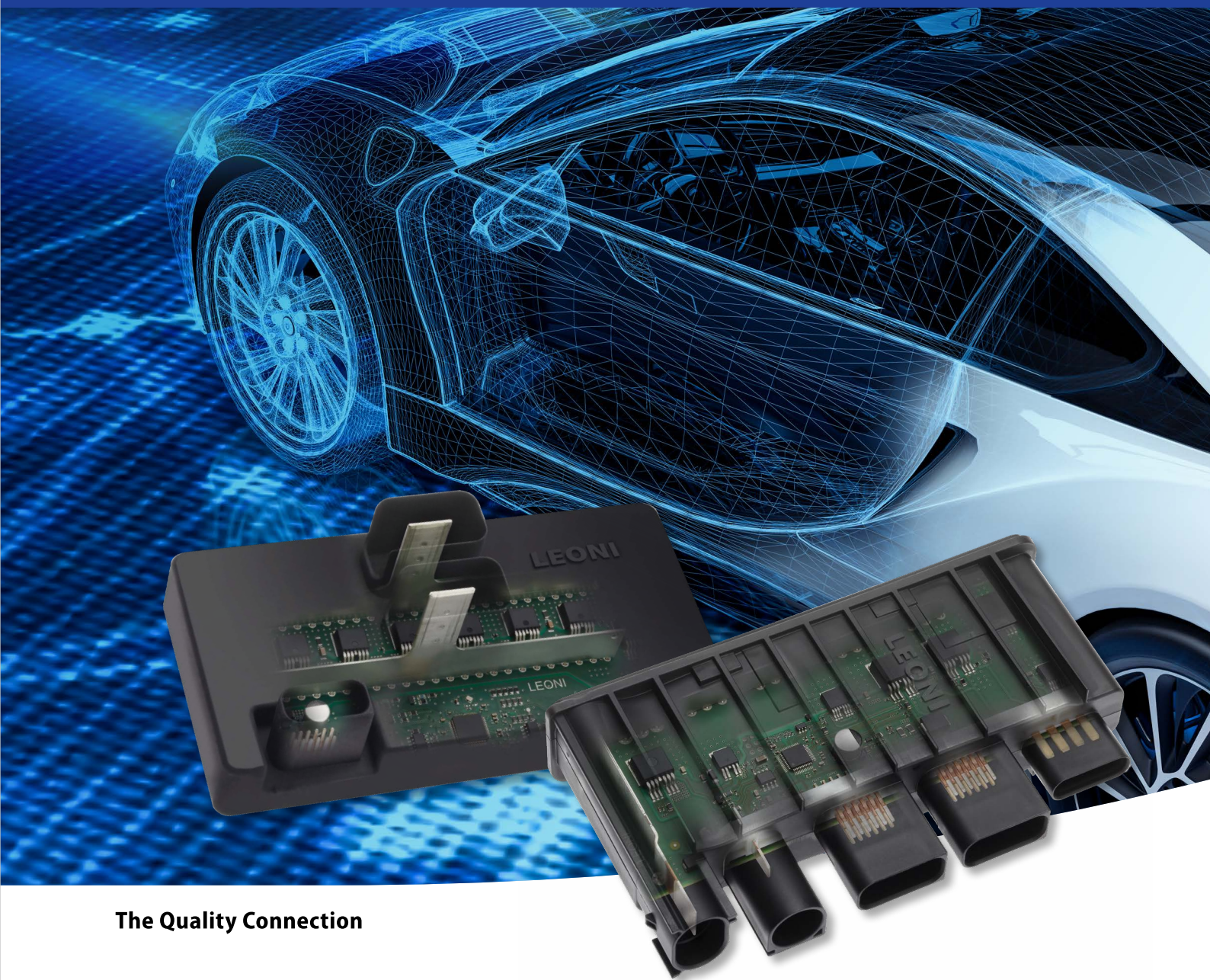


INTELLIGENT POWER DISTRIBUTION

intelligent - modular - system-optimized



The Quality Connection

LEONI

The Future is Electronic

The automotive industry is increasingly moving toward electrification of both vehicle components and the powertrain. Future vehicle generations will also be equipped with automated driving functions. These will intensify demands for functional safety to ensure safe automated driving systems.

Intelligent power distributors play an important role in these changes. They enable fast switching and reliable power distribution – both fundamental requirements for functional safety in automated driving.

This is why LEONI is focusing on electronics to meet the requirements of future vehicles as a system provider and solution partner.

Our mission: To offer electronic products that provide safe, reliable, and intelligent power supply for automated driving functions at level 2 and higher.

intelligent, modular, system-optimized

The products in our electronics portfolio cover a wide range of important safety requirements and offer many additional features to fulfill the expectations of tomorrow's intelligent power distribution systems:

intelligent



- Reliable component self-protection and self-diagnosis
- Diagnosis of connected wires and loads
- Undervoltage protection for the power net by switching off faulty and/or unneeded loads
- Adaptive wire protection against thermal overload
- Protection against inductive incident pulse energy incidents
- Pre-charging function for capacitive loads

modular



- Variety of possible communication interfaces: CAN-FD, CAN, LIN
- Functional safety: Cost-optimized system solution to implement safety functions up to ASIL D
- Scalable number and maximum current capacity of power channels
- Designed for different voltage levels: 12 / 24 / 48V
- Use of AUTOSAR enables customer-specific plug-ins

system-optimized



- Development and production partner for wiring systems and electronic solutions
>> One-Stop-Shopping
- Optimization of packaging space and weight for both component and wiring system
- Exploit previously unused packaging space through maintenance-free design
- Freedom from interference through reliable and fast separation of dependent loads



Intelligent Power Distribution by LEONI

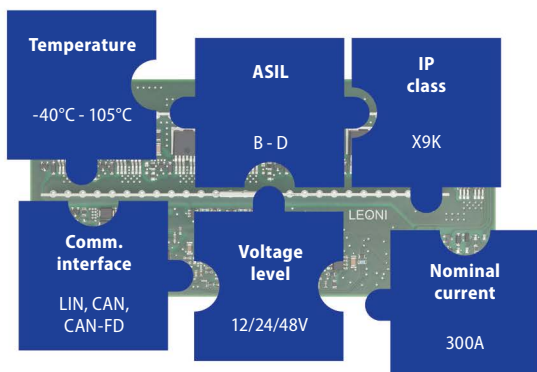
Our power distributors have modular designs and are offered for different voltage levels to allow easy customization for specific applications. Our portfolio facilitates optimal integration into new or existing wiring system architectures, and can replace conventional pre-fuse boxes or passive electromechanical power distributors.

Use Cases

intelligent Power Distribution Switch (iPDS)

iPDS separates the power net into two parts so that the non-safety-relevant part can be switched off in the event of a fault, thus ensuring availability of the safety-critical part.

- Fast, safe, and reversible switching of loads up to 300A
- Compliance with safety requirements up to ASIL D
- Makes previous passive pre-fuses in the switched path obsolete

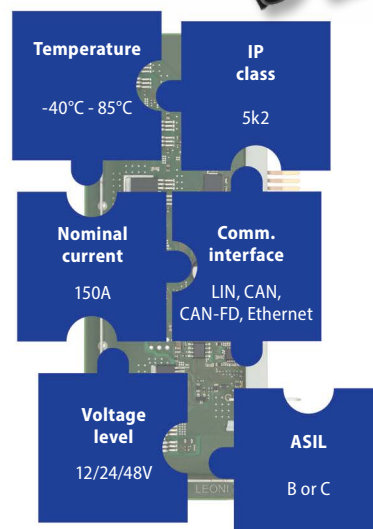
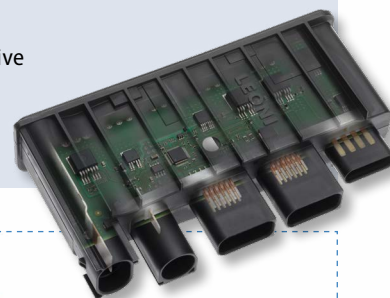


Intelligent Pre-fuse

intelligent Power Distribution Module (iPDM)

iPDM enables fast and reversible switching of a scalable number of connected loads in the vehicle. This allows individual connected loads to be switched off in the event of a fault, for example to prevent a voltage drop.

- Reliable distribution of current up to 150A
- Compliance with safety requirements up to ASIL C
- Makes previous passive power distributors obsolete



Intelligent Power Distribution and Protection



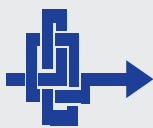
Benefits of intelligent power distribution

Reduction



Costs

- Reduction of quiescent currents in the vehicle power net
- Reduction of heat losses



Complexity

- Reduced requirements for the robustness of connected ECUs
- Enables zonal and automatically producible subsystems



Weight

- Up to 50% lower as compared to electromechanical solutions
- Savings of several kg of cable



Packaging Space

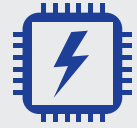
- Up to 50% reduction in component volume and height
- Flexible positioning and orientation in (previously) inaccessible areas of the vehicle

Optimization



CO2 Footprint

- Reduction of quiescent currents in the vehicle power net
- Reduction of heat losses



Safety

- Enables Fail Safe/Fail Operational
- Freedom from interference



Availability

- Reversible switching
- Diagnostics and predictive maintenance



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