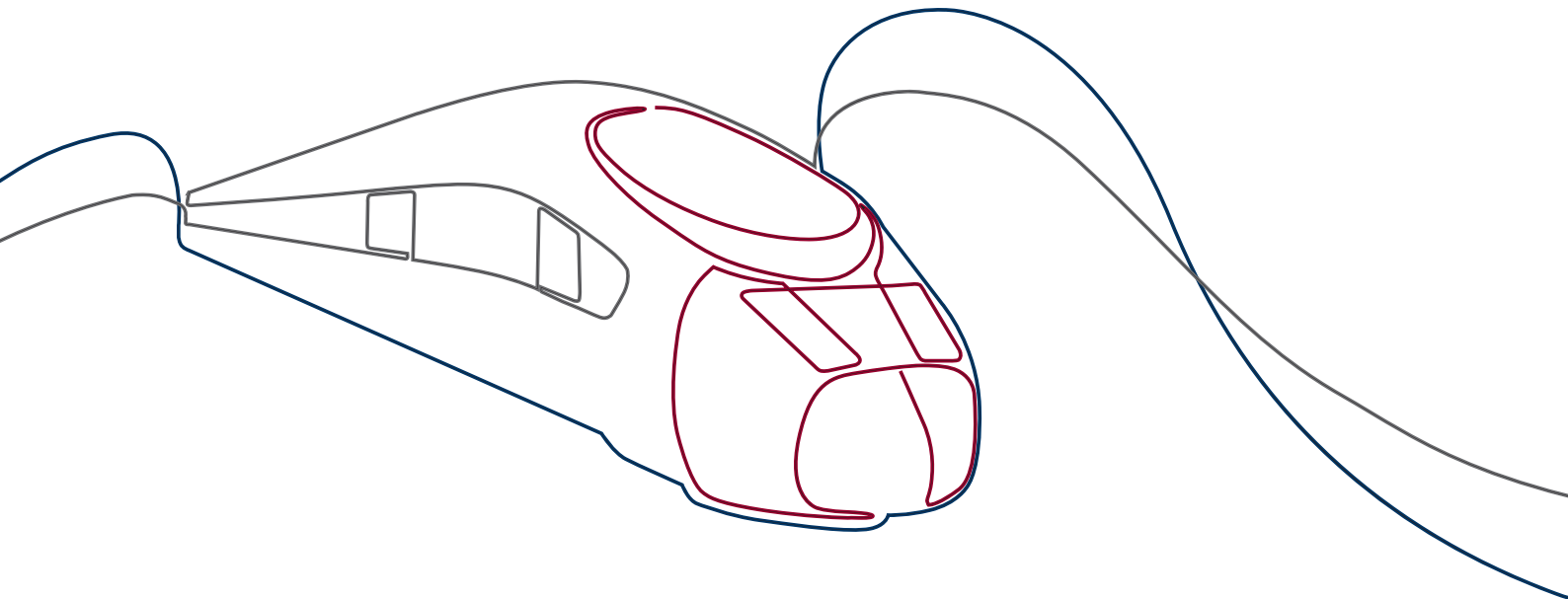


ETHERNET UPGRADE SOLUTIONS



Commitment to quality: We supply this product in accordance with our tested and certified quality standard



DIN EN ISO 9001:2015
Certified
Quality Management System



DIN EN 15085-2 CL1
International welding
certification for railway
vehicles



**IRIS Certification® based on
ISO/TS 22163:2017**
Quality management standard
for the railway industry

era-transceiver® FIBRE-EXTENSION

The *era-transceiver® fibre-extension* is a transmission unit that can be placed wherever there is enough space, e.g. in the body.

The solution offers space for even more optical contacts even with small couplers in the original equipment.

For retrofitting existing fleets, the *era-transceiver® fibre-extension* offers the renovation advantage that existing contact holes can be used.

Based on the *era-transceiver®*-technology



era-transceiver® fibre-extension includes:

- era-transceiver®
- Fibre lines
- Already complies with the standard requirements of ETB (Electronic Equipment for Railways - Train Communication Network)
- maximum bandwidth right from the start, thus faster data transmission
- Increased security against external access and manipulation: The *era-transceiver®* fiber-extension ensures that all desired signal circuits can be transmitted over ethernet



Use of example: 20 optical contacts for 10 GBit/s ethernet transmission

Requirements for era-transceiver® fibre-extension:

- This solution requires only two fibre contacts in the electrical coupler, which take up as much room in the installation space as a regular pin contact
- The total number of optical contacts is open and depends on customer requirements and possible number of any contact positions in the respective couplers
- For refurbishment: existing boreholes

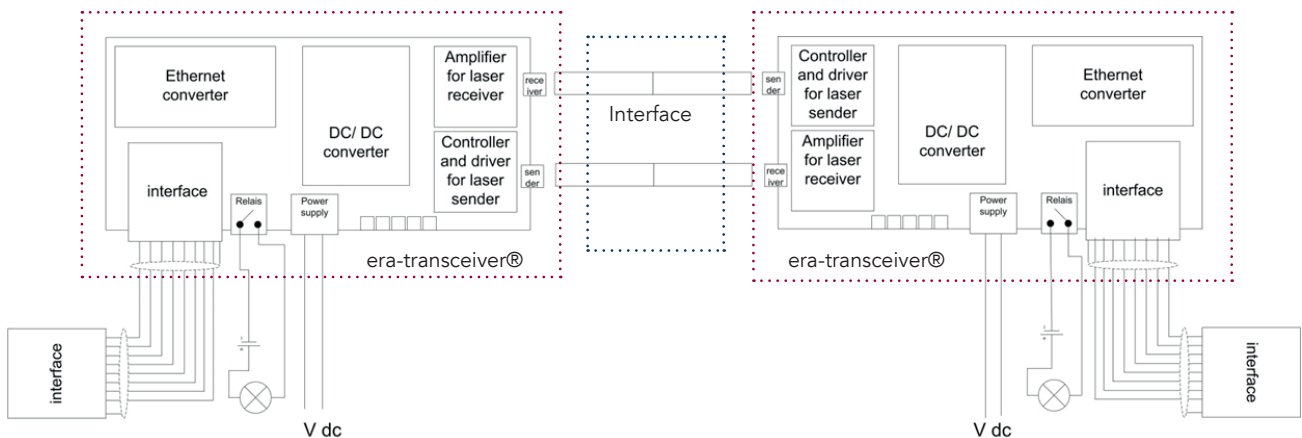
The advantages for you:

- Unlimited data transmission of fast ethernet signals
- An upgrade solution without a exchange or damaging the original coupler
- Customer-specific adaptations to the circumstances
- Fast and particularly modern upgrade of older models of railway vehicles

era-transceiver® – DATA PULSES WITH NO WEAR

The *era-transceiver®* is a unique contactless system for high-speed data transmission with full galvanic isolation, which means that no mechanical wear is caused on the contact itself. As a result, you benefit from a longer service life and cost savings throughout the entire product life cycle.

The *era-transceiver®* provides an ideal data transmission solution for both the initial equipping of a new vehicle and for the upgrading (Plug & Play ETHERNET, ETHERNET-UPGRADE-SOLUTION) of existing fleets and older models of railway vehicles.



Transmission principle of the *era-transceiver®*

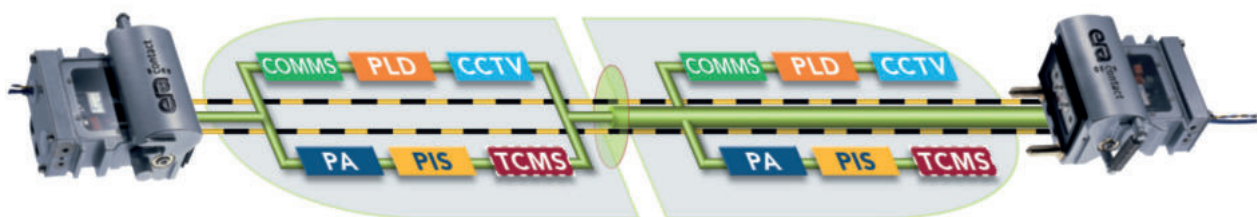
The incoming electrical Ethernet signal is converted into an optical signal. The optical signal is received on the opposite side and is converted back into an electrical signal. This involves correcting the level and timing (data clock recovery). Galvanic isolation is achieved using the interface.

Optical signals are free from EMC influence and potential shifts and are resistant to relative movements. The transmission unit operates in full-duplex mode, i.e. data is sent and received simultaneously.

era-transceiver® – PRODUCT RANGE

era-contact manufactures the 100 Mbit/s and 1000 Mbit/s versions in series production – versions up to 10 Gbit/s are available upon customer request.

Data rate	100 MBit/s	1000 MBit/s
Data interface	RJ45 (24V DL) M12 D-coded (24... 48 V DC)	M12, X-coded SC multimode
Cable requirement	min. CAT 5	min. CAT 7
Power supply	24 V DC	24 ... 48 V DC, 110 DC
General power consumption	< 5 W	< 5 W
Operating temperature range	RJ45: -25 ... +85 °C M12: -40... +35 °C	-40 ... +85 °C
Bit error rate	< 10 ⁻¹²	< 10 ⁻¹²



PA	Public Address
PIS	Passenger Information System
CCTV	Closed Circuit Television
COMM	Communications Systems
PLD	Passenger Load Determination
TCMS	Train Control Management System



OUR BENEFITS FOR YOU:

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- Consistently high quality all over the world
- Comprehensive service wherever you are in the world
- Years of expertise for your product
- International presence
- On-site engineering service – from prototyping to after-sales
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- A team just for you



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