

# SOLUTIONS GUIDE FOR SMART TRAILERS

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FORWARD-LOOKING NOW, DEPENDABLE ALWAYS.





Failure is not an option when you're on a deadline for delivery.

You can feel confident your trailers will handle these harsh environments easily and smartly with the rugged and robust connection solutions TE provides.

# CREATING THE CONNECTIONS BETWEEN **SENSORS, CONTROLLERS, AND DOMAINS**

With the new wave of safety and productivity comes a radical increase in data transfer both within your vehicles and with the environment. Today's data-intensive applications heighten demands on sensors, controllers, domains, and the communications among them.

**All the work of sensors, controllers, and domains must be done while trailers are traveling long distances in some of the most wide-ranging conditions imaginable.** Failure is not an option when you're on a deadline for delivery. Operating environment temperatures can be as low as -40°C and as high as +125°C, and the components within a trailer must withstand these extremes. They must also be able to handle the dirt, dust, salt, moisture, shock, and vibrations inherent in long-haul operations and industrial sites. You can feel confident your trailers will cope with these harsh environments easily with the rugged and robust connection solutions TE provides.



# FUTURE TRAILER APPLICATIONS & SOLUTIONS

## DOOR SECURITY •

- Position : Open/Close Switch

## WHEEL-END HEALTH •

- Wheel Speed Sensors
- Temperature Sensors
- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## BRAKE HEALTH •

- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## TIRE HEALTH •

- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## WEIGHT MANAGEMENT •

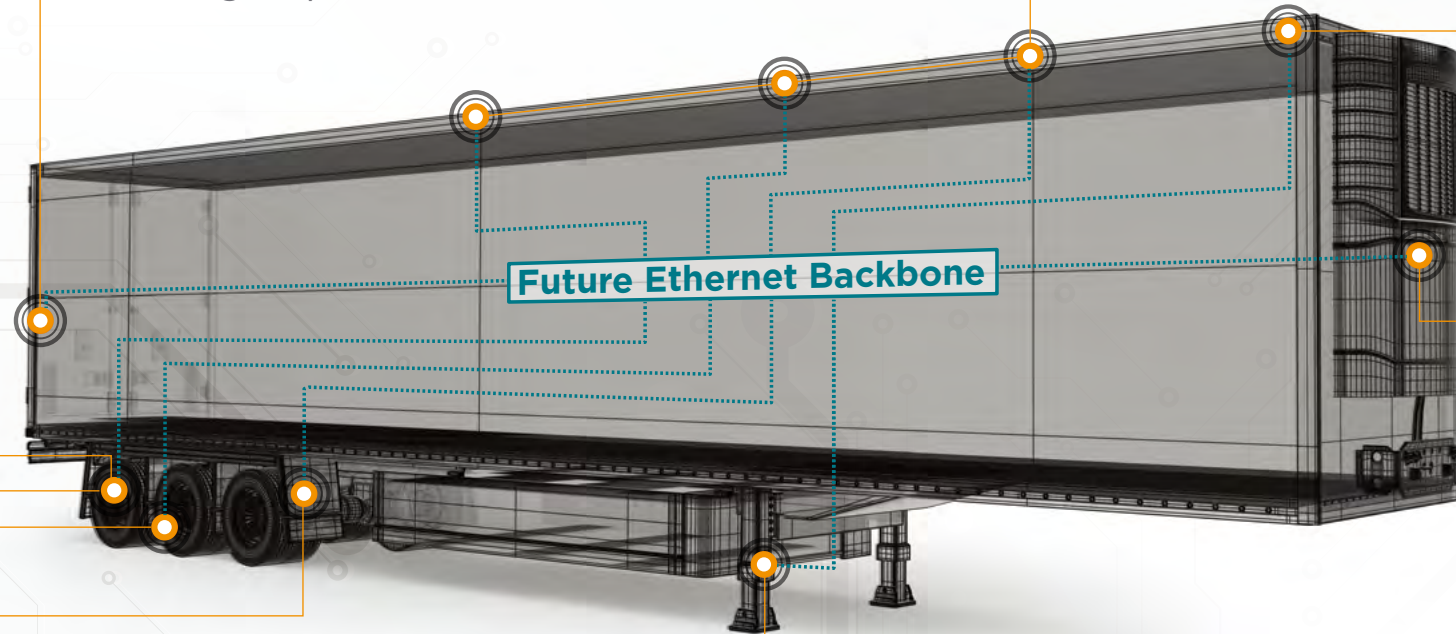
- Load Sensors
- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## EXTERIOR MONITORING & DETECTION

- High-Speed Data Solutions\*

## INTERIOR CARGO MANAGEMENT

- High-Speed Data Solutions\*



## LANDING GEAR •

- Position Sensing
- Inclinometer Sensors

- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## CARGO TEMPERATURE

- Temperature Sensors
- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*

## ASSET HEALTH - TELEMATICS

- High-Speed Data Solutions\*
- Wire-to-Board Solutions\*
- Wire-to-Wire Solutions\*
- Antennas

## CARGO HV REFRIGERATION UNIT

- HV Main Interconnection System
- HVA-HD 400/HVA280/
- HVA630 Connector
- HV Battery
- HVP-HD 1000/HVP800 Connector
- HV Charging Interface
- Charging Inlets

## LOW VOLTAGE LIGHTING

- Wire-to-Wire Solutions\*

Click Product Name to **Learn More** 

## INTERCONNECTION SYSTEMS

### \*Wire-to-Wire Solutions

- |                                      |                                   |                                    |
|--------------------------------------|-----------------------------------|------------------------------------|
| • DEUTSCH DT Connector               | • DEUTSCH DTM Connector           | • Multilock Interconnection System |
| • DEUTSCH DTHD Connector             | • NTSEAL Connector                | • Timer Interconnection System     |
| • DEUTSCH HDP20 Connector            | • AMPSEAL 16 Connector            | • MCON Interconnection System      |
| • DEUTSCH HD30 Connector             | • Unsealed Interconnection System | • FASTON Interconnection System    |
| • DEUTSCH DTP Connector              | • SUPERSEAL pro Connector         |                                    |
| • Heavy Duty Sealed Connector Series | • SUPERSEAL 1.5 Connector         |                                    |

### \*Wire-to-Board Solutions

- DEUTSCH PCB Enclosure and Header
- DEUTSCH DT Header
- DEUTSCH DTM Header
- DEUTSCH DTP Header
- SUPERSEAL 1.0 Header
- AMPSEAL PCB Header
- Heavy Duty Sealed Connector Series Header

### \*High-Speed Data Solutions

- DT High Speed Connector (1Gb speeds @ 40m channel)
- AMPSEAL 16 Connector with Coaxial Terminal (Suitable for coax cables, 6GHz)
- Heavy Duty Sealed Connector Series with MATEnet Inserts (Hybrid shielded & unshielded cable options)
- enetSEAL+ Connector (100Mb speeds @ 15 meter channel)





# RELY ON US TO SPEAK YOUR TECHNICAL LANGUAGE

By investing in system knowledge, we confirm our solutions match the demands of the application, to support you across your entire product lifecycle.

Trust us for  
optimal system  
level connectivity  
solutions, not just  
“parts to spec”.

# SUPPORTING SOLUTIONS WITH TE PRODUCTS

We look to the future to provide network connections meet mechanical and electrical performance, reliability, and resilience requirements for high-speed data transmission and e-mobility applications in your trailers.



## DATA CONNECTIVITY PRODUCTS

40m

### • Support longer channel lengths

Our connectors support IEEE802.3bp, 1000base-T1 Type B, which extends reach in your trucks to 40m.



### • Satisfy current and future speeds

For future applications (cable-dependent), TE connectors provide 1 Gbps speeds for 40m channel lengths with four in-line connections. You should also consider the upcoming increase to 2.5/5 Gbps speeds.



### • Provide environmental resilience

You can depend on our connectors to operate reliably and provide signal integrity in the harsh conditions, including high and low temperature and humidity, vibration, and shock.



### • Prevent dust and water inflow

Our sealed connectors meet the IP67/IP69K ratings for protection against ingress of dust and water.



### • Use proven technology

DEUTSCH connector products and the DT/DTM interface have been the market standard for more than 30 years. Our connectors leverage the DEUTSCH size 20 contact terminal using existing tools with stamped and formed terminal or solid terminal options.



### • Enable stable bulkhead mounting

You can reduce costs, streamline installation, and improve serviceability with our bulkhead mount, where half of a connection is attached to a metal vehicle part with screws or a latch. Once mated with another connector, the connection is securely held in place.



### • Combine power and data

By co-locating power and data transmission in a hybrid connector, our products help you minimize space and enable transmission of both electrical current and highspeed data signals for new devices.



### • Simplify assembly

A product design that allows termination to cable without overly complex process parameters gives you the convenience of using your existing harness supply infrastructure.



For more product information, please download brochure

## DATA CONNECTIVITY PRODUCTS

### enetSEAL+ Connector

- **Protocols:** 100BASE-T1 Type A
- **Channel length:** 15 m
- **Signal performance:** 100 Mb
- **Sealing:** IP67, IP69K, USCAR2
- **Terminal system:** MCON 1.2 clean body
- **Cable size:** 0.35 – 0.50 mm<sup>2</sup> (22 – 20 AWG)
- **Cable type:** Jacketed UTP



### Heavy Duty Sealed Connector Series with MATEnet Inserts



- **Protocols:** 100BASE-T1 & 1000BASE-T1 Type A
- **Channel length:** 5 m
- **Signal performance:** 00 Mb to 1 Gb
- **Sealing:** IP67, IP69K
- **Terminal system:** MATEnet for Ethernet, AMP MCP 1.5 for power
- **Cable size:** 0.14 – 0.35 mm<sup>2</sup> (26 – 22 AWG)
- **Hybrid design:** Ethernet + power/signal

### DT Highspeed Connector

- **Protocols:** 100BASE-T1 & 1000BASE-T1 Type A & Type B
- **Channel length:** 15 m & 40 m
- **Signal performance:** 100 Mb to 1 Gb
- **Sealing:** IP67, IP69K, USCAR2
- **Terminal system:** DEUTSCH size 20
- **Cable size:** 0.50 mm<sup>2</sup> (22 – 20 AWG)
- **Cable type:** Jacketed STP



### AMPSEAL 16 Connector with Coaxial Terminals



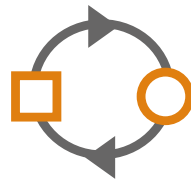
- **Protocols:** FPD-LINK-II/III/IV, GMSL 2/3
- **Signal performance:** up to 6 GHz
- **Sealing:** IP67, IP69K
- **Terminal system:** MATE-AX
- **Cable type:** RTK031 and RG174 50 ohm coaxial cable

# E-MOBILITY PRODUCTS



## • High EMC Performance

Our HIVONEX HV connectors offer 360-degree shielding to provide safety and long-term reliability.



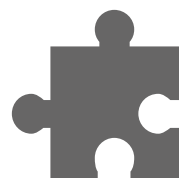
## • Adaptability

Many of our products offer multiple positions in the same interface, minimal changes are needed to fit different applications or future technologies.



## • Designed for Harsh Conditions & Extreme Environments

E-mobility connector & charging solutions are specifically designed to withstand high-level vibrations and resist water and dust ingress.



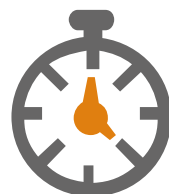
## • Modular Design

Variety of off-the-shelf configurations to adapt to the customers' designs, not the other way around.



## • Accurate Temperature Monitoring

With a total of 3 integrated PT1000 sensors providing safe charging.



## • Fast Charging Cycles

Thicker conductors with superior thermal management allow for charging up to 250A DC, depending on ambient temperature.



## • Future Proofing

TE's standard mounting bracket allows for easy transition from one generation inlet to the next



## • Visual Confirmation of The Charging Activity

Configurable LEDs quickly show charging status



For more product information, please download brochure

# E-MOBILITY PRODUCTS

## HVA HD400 Connector

- **Operating Temperature:** -40°C~+140°C
- **Voltage Range:** 1000 VDC
- **Conductor Cross-sections:** 2.5/4/6 mm<sup>2</sup>
- **Current Carrying Capacity:** 250/300/(400A) @85°C
- **Vibration Level:** LV214-S3
- **Fire Classification:** UL94-V0
- **IP Rating:** IP67, IP68, IP6K9K



## HVP HD 1000 Connector



- **Operating Temperature:** -40°C~+140°C
- **Voltage Range:** 1000 VDC
- **Conductor Cross-sections:** 35/50/70 mm<sup>2</sup>
- **Current Carrying Capacity:** 250/300/(400A) @85°C
- **Vibration Level:** ISO 16750-3 Chassis
- **Fire Classification:** UL94-V0
- **IP Rating:** P67, IP68, IP6K9

## HVP HD 1400 Connector

- **Operating Temperature:** -40°C~+140°C
- **Voltage Range:** 1000 VDC
- **Conductor Cross-sections:** 70/95/120/150 mm<sup>2</sup>
- **Current Carrying Capacity:** 250/300/(400A) @85°C
- **Vibration Level:** ISO 16750-3 Chassis
- **Fire Classification:** UL94-V0
- **IP Rating:** IP67, IP68, IP6K9K



## IPT-HD Power Bolt Connector



- **Operating Temperature:** -40°C~+125°C
- **Voltage Range:** 1000 VDC
- **Conductor Cross-sections:** 50/70/95mm<sup>2</sup> LV216/(ISO)\*
- **Current Carrying Capacity:** 250/300/(400A) @85°C
- **Vibration Level:** ISO 16750-3 Chassis, LV214-S4/USCAR V3
- **Fire Classification:** UL94-V0
- **IP Rating:** IP67, IP68, IP6K9K

## Charging Inlets Connector

- **Operating Temperature:** -40°C to +85°C
- **Voltage Range:** 250 VAC 1000 VDC
- **Conductor Cross-sections:** DC 70 mm<sup>2</sup> / PE 25 mm<sup>2</sup> / AC 6 mm<sup>2</sup>
- **Current Carrying Capacity:** 32 A (AC), 250 A (DC)
- **Coding:** CCS1 and CCS2
- **IP Rating:** IP67



## ABOUT TE CONNECTIVITY

TE Connectivity is a global industrial technology leader creating a safer, sustainable, productive, and connected future. Our broad range of connectivity and sensor solutions, proven in the harshest environments, enable advancements in transportation, industrial applications, medical technology, energy, data communications and the home.

With approximately 85,000 employees, including more than 8,000 engineers, working alongside customers in approximately 140 countries, TE ensures that EVERY CONNECTION COUNTS. Learn more at [www.te.com](http://www.te.com) and on LinkedIn, Facebook, WeChat and Twitter.

## LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. For additional information or product assistance, please contact your field representative or our customer service department. Additional information is also available on the website [te.com/ict](http://te.com/ict).

## TECHNICAL SUPPORT

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