

NEW PRODUCT: DATASHEET

PowerTube Connector Series:

Modular, scalable and
immensely powerful

Introduction

PowerTube:

The New High Voltage Connector System from TE Connectivity

Introducing the PowerTube Connector System, the High Voltage (500 A and 1000 V) platform by TE Connectivity.

Built to tackle tomorrow's connectivity challenges, TE Connectivity is introducing a new connector system, built to solve the most pertinent problems faced by forward-thinking innovators. It handles large electrical loads, of up to 500 A continuous current and 1000 V – and it can handle multiple wire sizes (between 35 mm² and 150 mm²).

Purpose-built for commercial and industrial electric vehicles.

The PowerTube Connector Series has been devised as a solution for the harsh, intensive, high-power applications found in industrial hybrid, electric and commercial automotive.

In a unique modular design, the connector series reduces overall costs – minimising your inventory, all while simplifying assembly and reducing the total number of components you need to store.

PowerTube is another exemplary illustration of TE Connectivity's ingenuity; a refined circularly designed connector that is reliable, safe, dust and water protected in a robust design.





Connectivity ingenuity

Specified for high power and performance across every environment.

- IP6K9K protection and ISO 16750-3 profile vibration performance
- Connector Position Assurance (CPA) and High Voltage Interlock Loop (HVIL) for each pin
- Circular 360° shielding provides excellent EMI protection

Modular by design.

- Up to 3 pins in one header connector and large cable range
- Cube-shaped bus bar enables multiple screw orientations for easier tool access
- Both 180° and 90° headers use the same size interface on the aggregate
- Unshielded (48 V) and shielded (high voltage) systems can be serviced with the same connector system

Simplifying your design, saving you money and time.

- Modularity reduces inventory cost
- Circular connector design enables simplified routing
- Decreases complexity of assembly and reduced number of components
- Single connector design enables improved serviceability in the field

Best-in-class electromagnetic compatibility (EMC/EMI).

- Shield performance delivered through circular 360 degree shielding, perfect for high vibration applications
- Multiple contact beams for shield transfer; meeting high shield current requirements in AC applications
- Single connector simplifying assembly design



Product Specifications

Descriptions	PowerTube 1000 (HVP-HD 1000)	PowerTube 1400 (HVP-HD 1400)
Voltage level	Up to 1000 V	
Dielectric strength	4000 VDC, 5500 m altitude	
Current level	300 A for connector system (depending on wire size and systems temperature)	500 A for connector system (depending on wire size and systems temperature)
Terminal size	10 mm round pin	14 mm round pin
Wire size	35 mm ² , 50 mm ² , 70 mm ²	70 mm ² , 95 mm ² , 120 mm ²
Shielding*	360° shielding (shield current up to 30% of main current)	
Vibration	ISO 16750-3 profile 7 and profile 9	
Pin count	1/2/3 pin on header side, 1 pin on connector side	
Orientation	180° and 90°	
Sealing	IP67, IP6K9K, IPX8	
Safety	HVIL for each pin, IPXXB, IPXXD	
Coding	12 colour-codings	
Corrosion resistance	VDA 233-102 salt spray test	
Others	CPA, tool and finger access	

* Unshielded options also available

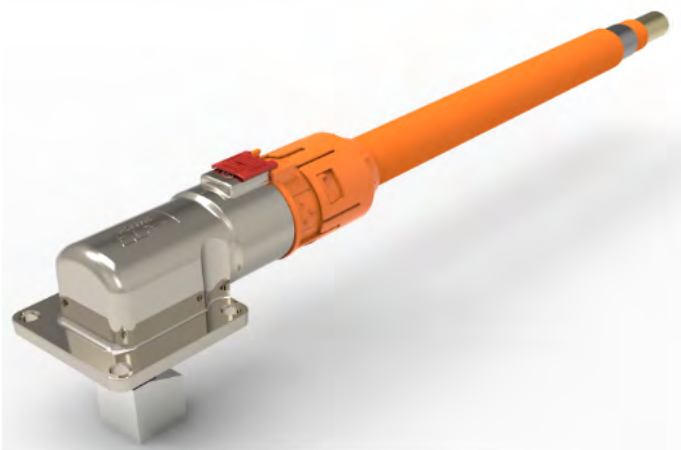


PowerTube Connector System

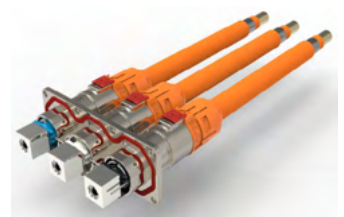
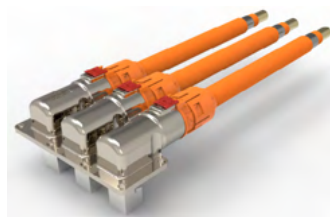
Optimised for high voltage, high current and modularity.

The PowerTube Connector System is a product line from TE Connectivity that provides pluggable power-distribution connector and cabling systems for hybrid and electric industrial and commercial vehicles. It can handle high currents up to 500 A and high voltages up to 1000 V. It is also sealable and modular.

90° Design Overview

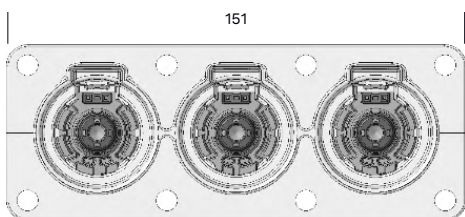
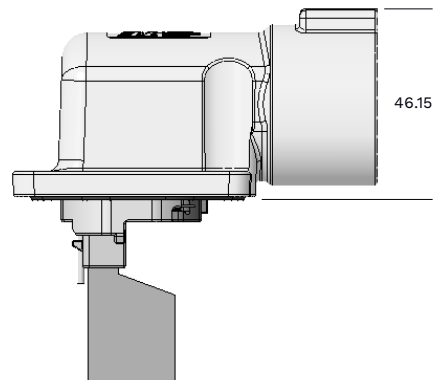
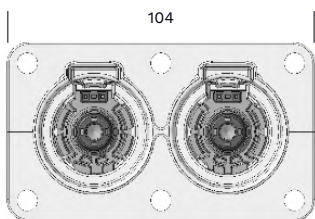
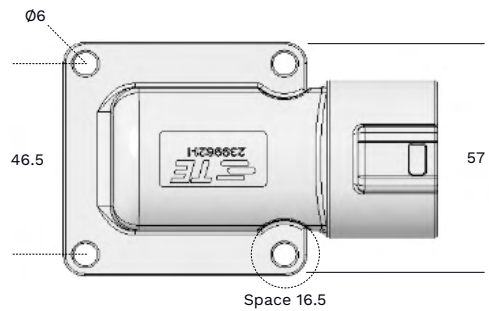
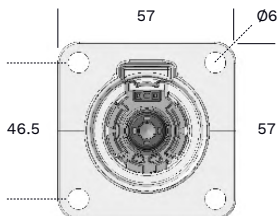
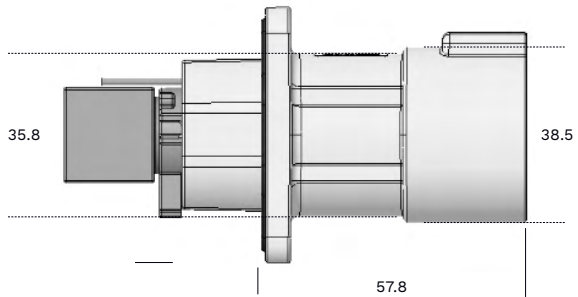
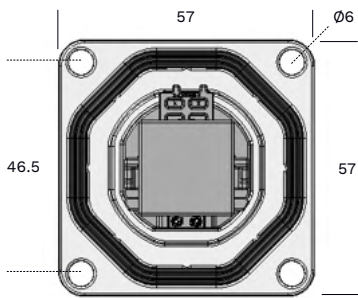


180° Design Overview





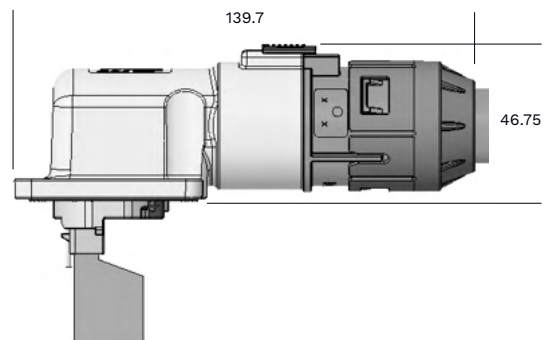
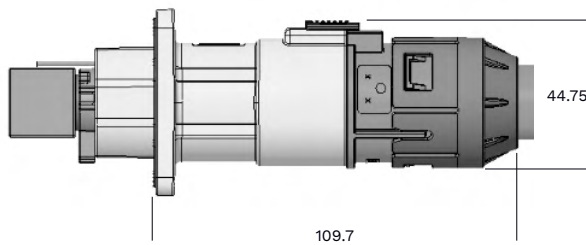
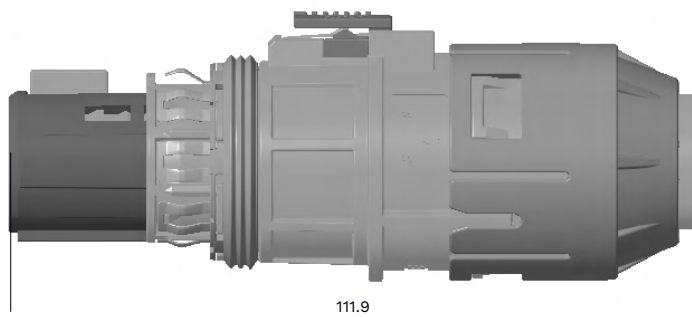
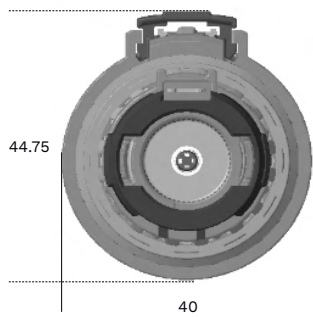
Technical Illustrations (HVP-HD 1400)



Unit: mm



Technical Illustrations (HVP-HD 1400)



Unit: mm

Get manufacturer-level dedicated support from Dalroad.

Dalroad is a dedicated partner to TE Connectivity, as well as an authorised distributor to the United Kingdom and Ireland. Through Dalroad, you can get manufacturer-level support for your project, as well as access support from our expert team. If you're working on a commercial EV project – there's few better teams to call upon for free, no-obligation advice and product support.

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