



Typical examples of HVJL Type E jumper cables

High Voltage Power Distribution for Rail Vehicles HVJL Type E Jumper Cables

TE Connectivity Type E jumper cables provide a reliable and maintenance free solution as inter-car jumpers in high voltage roof-lines and pantograph connection cables.

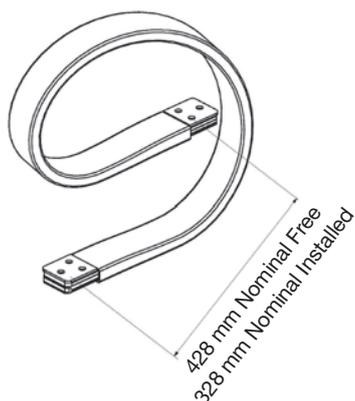
Suitable for use between 750 Vdc and 25 kVac the type E jumper is particularly suited to applications where movement is required along all three axes but size and profile is not critical. Different conductor sizes are available giving a current carrying capacity of up to 2000A.

The combination of industry-leading Raychem high voltage insulation materials and an engineering plastic strength spine gives a design that is flexible over a wide temperature range and is resistant to the rigours of the high voltage rail environment.

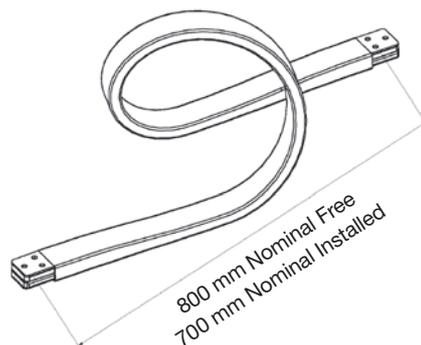
Key Features:

- AC/DC jumper cables optimised for use in the rail environment
- Insulated to reduce the risk of flashover
- Vertical installation
- Flexing along all three axes
- Can carry a secondary LV cable when used up to 3 kVdc
- Flexible across a wide operating temperature range
- Dimensions customisable for individual applications
- Impact resistant
- Maintenance free minimising total life-cycle costs

HVJL-E200

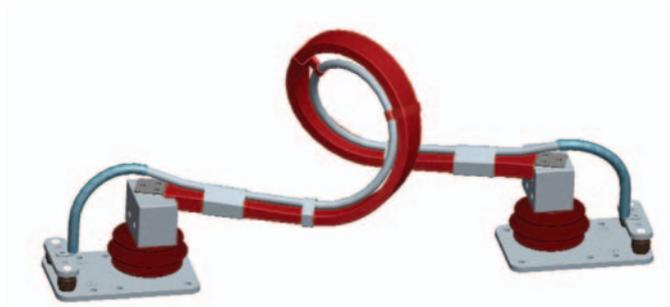


HVJL-E300



High Voltage Power Distribution for Rail Vehicles

HVJL Type E Jumper Cables



HVJL-E300 with secondary LV cable

HVJL type E jumper cables are used as part of the high voltage roof-line on high speed trains and EMUs, and as pantograph connection cables. They are flexible to take up any lateral, longitudinal and vertical movements.

Jumpers are connected to terminal blocks on support insulators that provide the mechanical support and insulation to the train roof. Where the jumper is used at 3kV and below, a secondary low voltage power or communication cable can be attached to the main loop.

Typical Ratings:

Characteristic	Value	Value
Part number	HVJL-E200	HVJL-E300
Conductor (copper braid)	200 mm ²	300 mm ²
Rated current	700A (at 30°C)	800A (at 30°C)
Nominal line voltage (U _n)	25 kVac	2 kVdc
Dielectric withstand (U ₅₀) - 180 mm clearance	75 kV	75 kV
Impulse withstand voltage (U _{imp}) - 180 mm clearance	170 kV	170 kV
Operating temperature	-40 to +80°C	-40 to +80°C
Termination deparation installed		
- free	428 mm	800 mm
- installed	328 mm	700 mm
Coil diameter (approx. od)	265 mm	288 mm
Max. longitudinal deviation		
- normal	+/- 107 mm	+/- 108 mm
- emergency (must be replaced)	-	+/- 302 mm
Max. lateral deviation		
- normal	+/- 127 mm	+/- 56 mm
- emergency (must be replaced)	-	+/- 178 mm
Typical dimensions		
- width	50 mm	50 mm
- thickness	19 mm	25 mm
Weight	3.5 kg	6.5 kg

Custom Design Service:

TE offers a complete design service to provide a tailor made jumper cable for each application. The train designer needs to provide:

- Distance between car ends
- Range of possible movements in service
- Frequency of movements in service
- Current carrying requirements
- Requirements for LV cable

TE Connectivity will design the optimum jumper cable for the application. A 2D or 3D CAD model can be provided.

Testing:

HVJL jumper cables have been subjected to a range of qualification tests including:

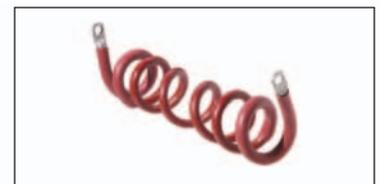
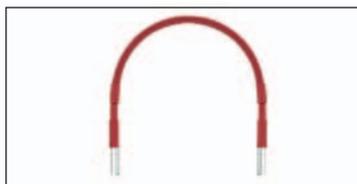
- Whole-life flex testing
- Load cycling
- Mechanical cycling to extremes
- Voltage tests
- Shock and vibration
- Low temperature flexing

Test reports are available on request.

This table gives typical examples of type E jumper cables.

Other lengths and conductor sizes are available.

(Deviation figures are taken from a particular project and are for illustrative purposes only)



The Type E single loop jumper cable is one of a range of jumper cable configurations available from TE Connectivity

For further information contact your local TE Connectivity sales office or:

te.com

Literature No: 3-1773449-8. August 2012
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