

Typical examples of HVJL Type F jumper cables

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

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

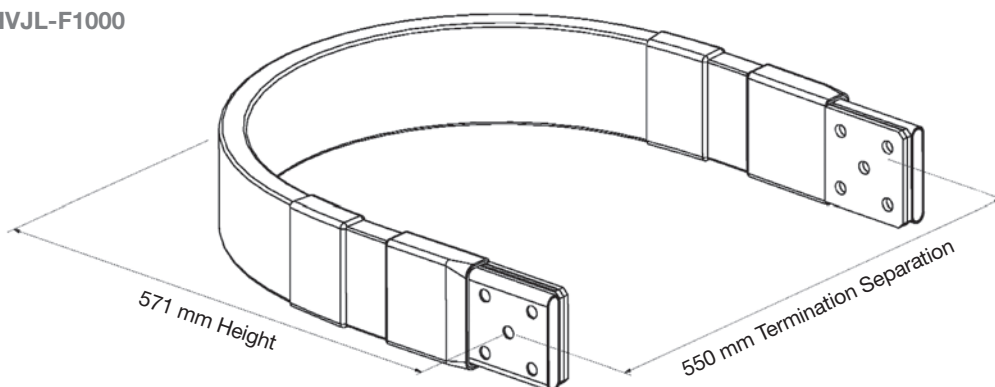
Suitable for use between 750Vdc and 25kVac, the type F jumper is ideal where movements are relatively small and are primarily in the plane of the jumper. Different conductor sizes are available giving a current carrying capacity of up to 2000A.

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:

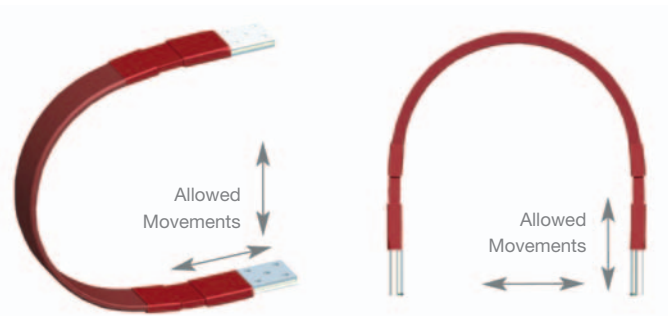
- AC/DC jumper cables optimised for use in the rail environment
- Insulated to reduce the risk of flashover
- Simple design makes this the most economical of the TE Connectivity jumper range
- Horizontal or vertical installation
- Flexing along two axes
- Flexible across a wide operating temperature range
- Dimensions customisable for individual applications
- Impact resistant
- Maintenance free minimising total life-cycle costs

HVJL-F1000



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HVJL type F 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 movements in two directions with small lateral movements also accommodated.

Jumpers are connected to terminal blocks on support insulators that provide the mechanical support and insulation to the train roof.

Typical Ratings:

Characteristic	Value	Value
Part number	HVJL-F300	HVJL-F1000
Conductor (copper braid)	300 mm ²	1000 mm ²
Rated current	800A (at 30°C)	2000A (at 30°C)
Nominal line voltage (U _n)	25 kVac	3 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 separation	550 mm	550 mm
Max. longitudinal deviation	+/- 114 mm	+/- 114 mm
Max. 'vertical' deviation	+/- 133 mm	+/- 133 mm
Typical dimensions		
- width	100 mm	100 mm
- thickness	20 mm	30 mm
'Height' above connections	560 mm	571 mm
Weight	7.5 kg	17.5 kg

This table gives typical examples of type F jumper cables. Other lengths and conductor sizes are available. (Deviation figures are taken from a particular project and are for illustrative purposes only)

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

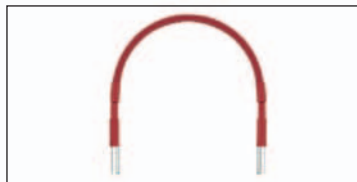
TE Connectivity will design the optimum jumper cable for the application. A 2D or 3D CAD model can be provided.

Testing:

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

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

Test reports are available on request.



The Type F 'U-shaped' 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: 3-1773449-7. August 2012
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