


1150100	<b>DATA SHEET</b>	
valid from: 17.09.2019	<b>ÖLFLEX® TORSION FRNC</b>	

## Application

ÖLFLEX® TORSION FRNC cables are halogen-free, oil resistant and highly flame retardant signal and control cables for use in wind turbines (nacelle, tower) under torsion load conditions. They are suitable for outdoor use if the indicated temperature range is observed. Continuous working in flexible applications is not allowed. They are suitable for occasional, non-automated movements. The maximum tensile load is 15 N/mm<sup>2</sup> of conductor cross-section during installation and operation. Compulsory guidance is not permitted. This cable is suitable for torsion application in wind turbines (WTG). The torsional load is limited to applications, as they typically occur in the loop of a wind turbine.

## Design

Design	based on EN 50525-3-11 (VDE 0285-525-3-11), UL/CSA AWM Style 21288
Certification	UL AWM Style 21288 (File No. E 63634)
Conductor	extra fine wire strands of bare copper, acc. to IEC 60228 resp. VDE 0295, Class 6
Insulation	halogen-free special compound
Core identification code	Control cables: acc. to VDE 0293-1, with or without GN/YE ground conductor up to 5 cores coloured acc. to VDE 0293-308 6 and more cores: Black cores with white numbers acc. to DIN EN 50334 resp. VDE 0293-334 signal cables: DIN 47100
Screen	layer of tinned copper wires (optional) on slip-wrapping
Outer sheath	highly flame retardant halogen-free special compound Colour: black, similar RAL 9005

## Electrical properties at 20°C

Nominal voltage	U <sub>0</sub> /U: 600/1000 V UL/CSA: 1000 V
Test voltage	core / core: 4000 V AC core / screen: 3000 V AC

## Mechanical and thermal properties

Minimum bending radius	flexing: 10 x outer diameter fixed installation: 6 x outer diameter
Temperature range	flexing: -40 °C up to +90 °C (UL +80°C) max. conductor temperature fixed installation: -50 °C up to +90 °C (UL +80°C) max. conductor temperature
Torsional stress	TW-0 (5000 cycles at ≥ +5°C) TW-2 (2000 cycles at ≥ -40°C) ± 150 °/m at 1 revolution per minute
Flammability	flame retardant acc. to IEC 60332-1-2 resp. VDE 0482-332-1-2 no flame propagation in acc. to IEC 60332-3-24 resp. VDE 0482-332-3-24 or in acc. to IEC 60332-3-25 resp. VDE 0482-332-3-25
Halogen free	acc. to IEC 60754-1 resp. VDE 0482-754-1
Corrosivity of gases	acc. to IEC 60754-2 resp. VDE 0482-754-2
Smoke density	acc. to IEC 61034-2, EN 61034-2
Toxicity	acc. to NES 02-713 part 3
UV resistance	acc. to EN 50618 resp. VDE 0283-618 acc. to EN 50620 resp. VDE 0285-620 acc. to EN ISO 4892-2-2013, method A (change of colour allowed)
Oil resistance	acc. to IEC 60811-404 resp. VDE 0473 part 811-404 UL OIL RES I and OIL RES II
Tests	acc. to IEC 60811 resp. VDE 0473 part 811, EN 50395, EN 50396, UL 1581
General requirements	These cables are conform to the EU-Directive 2014/35/EU (Low Voltage Directive)

Creator: HESC / PDC	Document: DB1150100EN	Page 1 of 1
Released: ALTE / PDC	Version: 08	