

BiTcrane[®] (N)SHTOEU-J FO



Crane cables

Low voltage, reeling cable based on DIN VDE 0250-814



Technical data:

Thermal parameters:

Ambient temperature:
fixed installation: -40 °C to 80 °C
reeling operation: -30 °C to 80 °C
Max. permissible conductor temp.: 90 °C
Max. short-circuit temp. at conductor: 250 °C

Mechanical parameters:

Tensile load static/dynamic: 15 / 30 N/mm²
Torsional stresses: ± 25 °/m
Bending radius acc. to DIN VDE 0298-3:
- fixed installation: ≥ 4 x cable - Ø
- reeling application: ≥ 6 x cable - Ø
- on deflection pulleys: ≥ 7.5 x cable - Ø
- min. distance with S-type directional changes:
20 x cable - Ø
Reeling speed: ≤ 180 m/min

Design:

Main cores:
Conductors: plain copper wires, finely stranded, acc. to IEC 60228 class 5
Insulation: HEPR compound acc. to IEC 60502-1, core colours: acc. to DIN VDE 0293-308

Ground conductor:
Conductor: plain copper wires, finely stranded, acc. to IEC 60228 class 5
Insulation: HEPR compound acc. to IEC 60502-1, core colours: green-yellow

Optical fiber element: 12 / 2x12 fibers in G62.5/125, G50/125 or E9/125 various fiber combinations on request
Inner sheath: heavy duty rubber compound, quality 5GM5 acc. to DIN VDE 0207-21, filling the interstices
Reinforcement: braid made of synthetic threads, in a vulcanized bond between inner and outer sheath
Outer sheath: heavy duty rubber compound, quality 5GM5 acc. to DIN VDE 0207-21, colour: black, inkjet marking

optional version with a cradle separator (K) available on request

Application:

Heavy duty rubber reeling cable for power supply including optional optical data transfer. For applications with high mechanical stress, especially for simultaneous tensile and torsional stress. Suitable for all types of mobile equipment such as stackers/reclaimers, on container handling equipment of any kind in ports or stockyard areas with motor-driven mono spiral / cylindrical reels or spring-operated reels.

Chemical parameters:

Resistance to oil: DIN EN / IEC 60811-404
Behaviour in case of fire: DIN EN / IEC 60332-1-2
Weather resistance: unrestricted use indoors, outdoors, resistance to ozone, UV and moisture

Electrical parameters:

Rated voltage U_0/U [kV]	0.6/1 kV
Maximum permissible operating voltage $U_{0,max}$ in AC systems [kV]:	0.7/1.2 kV
Maximum permissible operating voltage $U_{0,max}$ in DC systems [kV]:	0.9/1.8 kV
AC test voltage:	3.5 kV
Current-carrying capacities in amperes:	acc. to DIN VDE 0298-4 table 15
De-rating factors (thermal/reeling):	acc. to DIN VDE 0298-4

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Protective conductor cross-section split into two parts, optical fiber element in the third interstice

n x mm ²	Outer diameter min. – max. [mm]	Approximate cable weight [kg/km]
3x16+2x16/2+12FO	36-39	1940
3x25+2x16/2+12FO	36-39	2130
3x35+2x16/2+12FO	37-40	2380
3x50+2x25/2+12FO	42-45	3200
3x70+2x35/2+12FO	47-50	4280
3x95+2x50/2+12FO	53-56	5500
3x120+2x70/2+12FO	59-62	6870
3x150+2x70/2+12FO	59-62	7560
3x185+2x95/2+12FO	69-72	9790
3x240+2x120/2+12FO	78-81	12660
3x300+2x150/2+12FO	82-85	15080
3x25+2x16/2+2x12FO	44-47	2890
3x35+2x16/2+2x12FO	45-48	3150
3x50+2x25/2+2x12FO	42-45	3200
3x70+2x35/2+2x12FO	47-50	4260
3x95+2x50/2+2x12FO	53-56	5480
3x120+2x70/2+2x12FO	59-62	6850
3x150+2x70/2+2x12FO	59-62	7540
3x185+2x95/2+2x12FO	69-72	9770
3x240+2x120/2+2x12FO	78-81	12640
3x300+2x150/2+2x12FO	82-85	15060

Regulations of the individual fibre types:

Fiber optic type	Standard	Colour code
Single-mode optical fiber E9/125	ITU-T G.652 D	acc. to ANSI/TIA/EIA 598-A
Multimode fiber G50/125 (OM2-OM4)	ITU-T G.651	
Multimode fiber G62,5/125		

Typical attenuation values:

Fiber optic type	Description	Value (max.)	Unit
Single-mode optical fiber E9/125	attenuation at 1310 nm	0,5	dB/km
Single-mode optical fiber E9/125	attenuation at 1550 nm	0,3	dB/km
Multimode fiber G50/125	attenuation at 850 nm	3,0	dB/km
Multimode fiber G50/125	attenuation at 1300 nm	1,0	dB/km
Multimode fiber G62,5/125	attenuation at 850 nm	3,5	dB/km
Multimode fiber G62,5/125	attenuation at 1300 nm	1,5	dB/km

Cable Factory BITNER reserves the right to modify the specifications without prior notice
 Note: on customer's request other cross sections or number of cores can be produced