

(N)TSCGEWÖU 3.6/6kV and 6/10kV FO Cable



Eland Product Group: **A7HF**

APPLICATION

Flexible reeling cable with integrated fibre optic wires for high and extreme mechanical stresses, including torsional stress, deflection into different planes and high reeling speed. Suitable for indoor and outdoor applications.

CABLE STANDARDS

Generally to VDE 0250 Part 813, VDE 0295,
BS EN/IEC 60332-1-2, BS EN/IEC 60811-2-1



The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CONSTRUCTION

Phase Conductor

Class 5 tinned copper conductor according to VDE 0295
(IEC 60228)

Insulation

Rubber compound Type 3GI3 according to VDE 0207 Part 20

Semi-Conductive Layers

Semi-conductive tape over the conductor and inner and outer semi-conductive rubber layer on the insulation

Earth Conductor

Class 5 tinned copper conductor according to VDE 0295
(IEC 60228)

Fibre Optics

Transmission data kind 50/125 multimode, 62.5/125 multimode,
9/125 singlemode
Rubber compound over the twisted cores

Central Filler

Semi-conductive compound on a textile polyester support

Inner Sheath

Rubber compound Type 5GM3 according to VDE 0207 Part 21

Anti-Torsion Braid

Polyester braid between the inner and outer sheath

Outer Sheath

Rubber compound Type 5GM5 according to VDE 0207 Part 21

CHARACTERISTICS

Voltage Rating (U₀/U)

3.6/6kV
6/10kV

Test Voltage

3.6/6kV: 11kV
6/10kV: 17kV

Maximum Short Circuit Temperature

+250°C

Ambient Temperature

Fixed: -40°C +80°C
Flexed: -25°C to +80°C

Minimum Bending Radius

Fixed: 6 x overall diameter
Flexed: 10 x overall diameter

Maximum Torsional Stress

±25°/m

Maximum Tensile Load*

20N/mm²

Maximum Working Speed

120m/min

Sheath Colour

● Red

Note

*Referred to the total phase conductors cross section
KN version with improved mechanical characteristics designed
for ASC's and ARMG's available on request.

DIMENSIONS

ELAND PART NO.	VOLTAGE kV	NO. OF CORES (PHASE + EARTH + FIBRE OPTICS)	NOMINAL CROSS SECTIONAL AREA mm ²		CONDUCTOR DIAMETER mm	MINIMUM OVERALL DIAMETER mm	MAXIMUM OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM TENSILE LOAD N
			Phase Conductor	Earth Conductor					
A7HF06KV1025RD	3.6/6	3 + 2 + FO	25	25/2E	6.8	44.7	47.6	2820	1500
A7HF06KV1035RD	3.6/6	3 + 2 + FO	35	25/2E	7.8	46.6	49.5	3190	2100
A7HF06KV1050RD	3.6/6	3 + 2 + FO	50	25/2E	9.4	49.9	52.9	3990	3000
A7HF06KV1070RD	3.6/6	3 + 2 + FO	70	35/2E	11.2	55.5	58.5	5070	4200
A7HF06KV1095RD	3.6/6	3 + 2 + FO	95	50/2E	12.7	58.9	61.9	5900	5700
A7HF06KV1120RD	3.6/6	3 + 2 + FO	120	70/2E	14.4	64.4	68.3	7490	7200
A7HF06KV1150RD	3.6/6	3 + 2 + FO	150	70/2E	16.3	68.5	72.5	8710	9000
A7HF10KV1025RD	6/10	3 + 2 + FO	25	25/2E	6.8	47.3	50.3	3370	1500
A7HF10KV1035RD	6/10	3 + 2 + FO	35	25/2E	7.8	48.8	51.8	3730	2100
A7HF10KV1050RD	6/10	3 + 2 + FO	50	25/2E	9.4	53.7	56.7	4680	3000
A7HF10KV1070RD	6/10	3 + 2 + FO	70	35/2E	11.2	57.5	60.5	5770	4200
A7HF10KV1095RD	6/10	3 + 2 + FO	95	50/2E	12.7	60.8	64.7	6720	5700
A7HF10KV1120RD	6/10	3 + 2 + FO	120	70/2E	14.4	66.4	70.4	8280	7200

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm ²	LAYING ON THE FLOOR Amps	FREE IN AIR Amps	REELED						
			1 Layer Amps	2 Layer Amps	3 Layer Amps	4 Layer Amps	5 Layer Amps	6 Layer Amps	7 Layer Amps
25	131	138	105	80	64	55	50	35	29
35	162	170	130	99	79	68	62	44	36
50	202	212	162	123	99	85	77	55	44
70	250	263	200	153	123	105	95	68	55
95	301	316	241	184	147	126	114	81	66
120	352	370	282	215	172	148	134	95	77
150	404	424	323	246	198	170	154	109	89

Ambient temperature of 30°C

Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm ²	POWER FACTOR			
	0.7	0.8	0.9	1
25	1.29	1.45	1.60	1.71
35	0.95	1.06	1.16	1.23
50	0.69	0.77	0.83	0.87
70	0.51	0.56	0.60	0.61
95	0.41	0.45	0.47	0.47
120	0.34	0.36	0.38	0.36
150	0.29	0.31	0.32	0.29

Fibre Optics

FIBRE	GRADED INDEX MULTIMODE FIBRE					STEP INDEX SINGLEMODE FIBRE			
	Attenuation at 850nm (dB/km)	Attenuation at 1300nm (dB/km)	Bandwidth at 850nm (MHz*km)	Bandwidth at 1300nm (MHz*km)	Numerical Aperture	Attenuation at 1310nm (dB/km)	Attenuation at 1550nm (dB/km)	Chromatic dispersion at 1285-1300nm (ps/nm km)	Chromatic dispersion at 1550nm (ps/nm km)
50/125	≤ 2.5	≤ 0.7	≥ 200	≥ 500	0.200 ± 0.015	-	-	-	-
62.5/125	≤ 3.0	≤ 0.7	≥ 200	≥ 500	0.275 ± 0.015	-	-	-	-
9/125	-	-	-	-	-	≤ 0.35	≤ 0.24	≤ 3	≤ 18

DE-RATING FACTORS

AMBIENT TEMPERATURE	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C	75°C	80°C
DE-RATING FACTOR	1.15	1.12	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.