ELAND® CABLES

(N)TSCGEWÖU 8.7/15kV and 12/20kV 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.

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

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.

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CHARACTERISTICS

Voltage Rating (Uo/U)
8.7/15kV
12/20kV

Test Voltage
8.7/15kV: 24kV
12/20kV: 29kV

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 mm²		CONDUCTOR DIAMETER mm	MINIMUM OVERALL DIAMETER mm	MAXIMUM OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km	MAXIMUM TENSILE LOAD N
			Phase Conductor	Earth Conductor					
A7HF15KV1025RD	8.7/15	3 + 2 + FO	25	25/2E	6.8	52	55	3680	1500
A7HF15KV1035RD	8.7/15	3 + 2 + FO	35	25/2E	7.8	55.2	58.2	4310	2100
A7HF15KV1050RD	8.7/15	3 + 2 + FO	50	25/2E	9.4	58.4	61.4	5020	3000
A7HF15KV1070RD	8.7/15	3 + 2 + FO	70	35/2E	11.2	62.1	66	6170	4200
A7HF15KV1095RD	8.7/15	3 + 2 + FO	95	50/2E	12.7	67.2	71.2	7380	5700
A7HF20KV1025RD	12/20	3 + 2 + FO	25	25/2E	6.8	58	61	4490	1500
A7HF20KV1035RD	12/20	3 + 2 + FO	35	25/2E	7.8	59.4	62.4	4830	2100
A7HF20KV1050RD	12/20	3 + 2 + FO	50	25/2E	9.4	64.3	68.2	5840	3000
A7HF20KV1070RD	12/20	3 + 2 + FO	70	35/2E	11.2	68.1	72.1	7030	4200

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	LAYING ON THE FLOOR Amps	REELED						
		1 Layer Amps	2 Layer Amps	3 Layer Amps	4 Layer Amps	5 Layer Amps	6 Layer Amps	7 Layer Amps
25	139	111	85	68	58	53	38	31
35	172	138	105	84	72	65	46	38
50	216	173	132	106	91	82	58	48
70	265	212	162	130	111	101	72	58
95	319	255	195	156	134	121	86	70

Ambient temperature of 30°C

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Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm²	POWER FACTOR			
	0.7	0.8	0.9	1
25	1.29	1.45	1.6	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	0.6	0.61
95	0.41	0.45	0.47	0.47

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

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