SOLAR PHOTOVOLTAIC CABLES HALOGEN FREE

H1Z2Z2-K

EN 50618 / IEC 62930



APPLICATION

Cables are designed for use in photovoltaic power supply systems: indoor and/or outdoor.

The special insulation has qualities of high abrasion resistance to high temperature.

Special insulation has property of flame retardant and ozone resistance.

Cables are resistant to climatic influences, UV radiation, oils and chemicals.

Odeskabel Solar PV cable family fully complies with requirements of standard EN 50618, IEC 62930 and EU Directives CE (LVD), RoHS, CPR.

The high quality of Solar PV cables portfolio has been confirmed by successfully passed type tests according to EN 50618 in the TÜV laboratory (Approval: TÜV-Rheinland Certificate no. MK 69262571 0001).

STANDARDS

EN 50618

IEC 62930

IEC 60332-1-2

EN 60228

EN 60811

DIRECTIVES AND APPROVAL

Directives: CE (LVD), RoHS, CPR

Approval: TÜV-Rheinland Certificate no. MK 69262571 0001

RoHS COMPLIANT

REACH COMPLIANT

CE

CPR COMPLIANT Construction Products Regulation EN 50575

HALOGEN FREE HF HALOGEN-FREE

CONSTRUCTION

Conductor:	electrolytic tinned annealed copper, class 5 acc. to EN 60228
Insulation:	halogen free cross-linked polyolefin
Insulation color:	natural-white
Outer sheath:	halogen free cross-linked polyolefin
Sheath color:	black or red (blue - upon request)

CHARACTERISTICS AND TESTS

Electrical parameters

Rated voltage U0/U:	1,0/1,0 kV AC; 1,5/1,5 kV DC
Max. voltage:	1,2 kV AC; 1,8 kV DC (conductor/conductor, non-earthed system, circuit not under load)
Test voltage:	6,5kV AC; 15kV DC

Thermal parameters

Ambient temperature in operation, °C	-40...+90
Ambient temperature for installation, °C	-25...+40
Max. conductor temperature, °C	90 (Max. conductor temp 120°C and at a max. amb. temp of 90 °C is limited to 20 000 h.)
Max. short-circuit temperature on conductor, °C	250 (5 sec)
Thermal endurance test:	EN 60216, parts 1 and 2

Fire performance

Reaction to fire (CPR) class:	Dca
Fire requirements:	EN 50575:2014 + A1:2016
Classification with respect to fire:	EN 13501-6
Test methods:	EN 60332-1-2
Non-propagation of flame:	EN 60332-1-2; IEC 60332-1-2

Chemical parameters

Weathering / UV resistance:	EN 50618, Annex E; Halogen free acc. to EN 50525-1, Annex B; Smoke emission acc. to EN 61034-2 (light transmittance >75%); Sheath resistance against acid and alkaline acc. to EN 60811-404

Anticipated period of use

25 years

Mechanical parameters

Tensile rating in operation, N/ mm²	15
Min bending radius:	4 diam. cable (fixed); 5 diam. cable (flexing)
Resistance to cold:	Cold Bending Test acc. to EN 60811-504 (at -40°C); Cold Elongation Test acc. to EN 60811-505 (at -40°C); Cold Impact Test acc. to EN 60811-506 (test conditions acc. to EN 50618, annex C); Damp-Heat Test Acc. to EN 50618 (temp. 90°C, duration 1000h, relative humidity min 85%).
Shrinkage Test:	EN 50618, table 2 (max. 2%)

DIMENSIONS AND WEIGHT

No. of cores × Nominal cross section	Min outer diameter	*Nominal outer diameter	*Nominal weight
(N x mm²)	(mm)	(mm)	(kg/km)
1 × 4	5,1	5,6	56
1 × 6	5,6	6,1	75
1 × 10	6,6	7,1	115
1 × 16	9,0	9,8	200
1 × 25	10,3	11,2	290
1 × 35	11,7	12,5	400
1 × 50	13,5	14,5	560
1 × 70	15,5	16,5	750
1 × 95	17,7	18,7	970
1 × 120	19,2	20,4	1200
1 × 150	21,4	22,6	1500
1 × 185	23,7	25,1	1800
1 × 240	27,1	28,5	2400

CURRENT CARRYING CAPACITY

No. of cores × Nominal cross section	Current carrying capacity at +60°C amb. temp. acc. to the method of installation			Short Circuit current (1 sec. 90-250°C)	Electric resistant of conductor at +20°C
	Single cable free in air	Single cable on a surface	Two loaded cables touching, on a surface		
(N x mm²)	(A)	(A)	(A)	(kA)	(Ω/km)
1 × 4	55	52	44	0,57	5,09
1 × 6	70	67	57	0,86	3,39
1 × 10	98	93	79	1,43	1,95
1 × 16	132	125	107	2,29	1,24
1 × 25	176	167	142	3,58	0,795
1 × 35	218	207	176	5,01	0,565
1 × 50	276	262	221	7,15	0,393
1 × 70	347	330	278	10,01	0,277
1 × 95	416	395	333	13,59	0,210
1 × 120	488	464	390	17,16	0,164
1 × 150	566	538	453	21,45	0,132
1 × 185	644	612	515	26,46	0,108
1 × 240	775	736	620	34,32	0,0817

CURRENT RATING CONVERSION FACTORS FOR DEVIATING TEMPERATURES

Ambient temperature, (°C)	Conversion factor
up to 60	1.00
70	0.92
80	0.84
90	0.75