

**DESIGN STANDARDS**

EN 50618
IEC 62930

APPLICATION

Solen H1Z2Z2-K Solar cables conforming to European standard 'EN 50618' and international standard 'IEC 62930' are designed for installations in photovoltaic systems, solar parks, solar farms, rooftop solar systems and in interconnection of solar panels and inverter. They are intended for permanent use outdoor and indoor, for free movable, free hanging and fixed installation. Installation also in conduits and trunkings on, in or under plaster as well as in appliances. Suitable for the application in/at equipment with protective insulation (protection class II).

CONSTRUCTION

Conductor	Tinned annealed flexible copper-Class 5 according to IEC 60228
Insulation	Halogen free Cross-linked compound according to EN 50618 Table B.1
Outer Sheath	Halogen free Cross-linked compound according to EN 50618 Table B.1
Sheath Colour	Black or Red (Blue and Green-yellow available upon request)

Insulation and sheath are firmly bonded to enhance insulation resistance

KEY FEATURES

- TÜV NORD approval certified
- REACH and RoHS Compliant
- CE-CPR rating Dca acc. to EN 50575 (Cca upon request)
- UKCA-CPR rating Dca to BS EN 50575
- Expected service lifetime (Min. 25 years acc. to EN 50618)
- Higher insulation resistance
- High current carrying capacity
- Compatible for all major connectors
- AD8 water submersion compatible
- AG2 Medium severity impact resistance
- Suitable for wet, damp and humid locations
- Excellent flexibility
- Good stripping performance from conductor
- Abrasion resistant
- UV, Oil, Grease and Ozone resistant
- Resistance against Ammonia
- Acid and Alkaline resistant
- Anti rodent and Anti termite versions are available.
- Conditional Direct Burial



Customer:

Date:

Solen Kablo San. Tic. A.Ş.
Arap Cami Mah. Arapkayyum Sok.
Karavelioğlu Han No.23 / 5
Beyoğlu - 34420 İstanbul - Türkiye

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**TECHNICAL CHARACTERISTICS**

Rated Voltage (U0/U)	AC 1000 / 1000 V DC 1500 V
Max Voltage	AC 1200 / 1200 V DC 1800 V
Test Voltage	6,5 kV AC, 15 kV DC (5 min.)
Operating Temperature	-40°C / +90°C
Max. Temperature at Conductor	+120°C based on EN 60216-1 (20.000 h, 50% residual elongation)
Installations Temperature	-25°C / +60°C
Short Circuit Temperature	+250°C (Max. 5 sec.)
Min. Bending Radius	> 4 x D as per EN 50565-1
Insulation Resistance	EN 50395 Clause 8.1, IEC 60227-2 Clause 2.4
Surface Resistance of Sheath	EN 50395 Clause 11, IEC 62821 Clause 5.1
Cold Bend Test	EN 60811-504 (-40°C)
Cold Elongation Test	EN 60811-505 (-40°C)
Cold Impact Test	EN 60811-506 & EN 50618 (-40°C)
Damp Heat Test	EN 50618 (Table 2), EN 60068-2-78 (1000 hours, 90°C & %85 humidity)
Halogen Free Properties	EN 50525-1 (Annex B), IEC 60754-1, IEC 60754-2
Low Smoke Emission	EN 61034-2 (Light transmittance > 60%)
Flame Retardancy	EN 60332-1-2
Ozone Resistance	IEC 60811-403, EN 50396 Clause 8.1.2
Weather / UV Resistance	EN 50618 (Annex E), IEC 62930
Dynamic Penetration Test	IEC 62930, EN 50618 (Annex E)
Impact Condition	AG2 acc.to EN 50618 and HD 60364-5-52
Vibration Condition	AH3 acc.to EN 50618 and HD 60364-5-52
Water Submersion	AD8 EN 50525-2-21 Appendix E (internal tested)
Acid and Alkaline Resistance	EN 50618 (Annex B)
Ammonia Resistance	30 days in saturated ammonia atmosphere (internal tested)
Shrinkage Test	EN 60811-503, IEC 60811-503, EN 50618 (Table 2)
Durability of Print	EN 50618
Long Term Resistance of Insulation to DC	EN 50395 Clause 9, IEC 62821-2

DIRECT BURIAL CONDITIONS

Allowed to be direct burial to earth that does not contain any damaging chemicals, solvents, rodents, termites etc.
Proper and correct installation methods based on VDE 0800-174 and VDE 0891-6 should be applied.
Necessary cautions should be taken to avoid physical damage of cables during installation.
It is better that installation to be in pipes/conduits/concrete channels.

CABLE MARKING

**SOLEN CABLE TUV NORD EN 50618 H1Z2Z2-K 1xN mm² 1,5 kV DC / 62930 IEC 131 AD8 HALOGEN FREE LOW SMOKE SCXXXX <CE>
Dca (yyyy) XX MT**

*N: Cross Section *SCXXXX: Traceability Code *(yyyy): Year marking *XX MT: Meter Marking

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DIMENSIONAL PARAMETERS

PART NO.	NUMBER OF CORES	CROSS SECTIONS mm ²	CONDUCTOR DIAMETER mm	OVERALL DIAMETER mm	BENDING RADIUS (min.) mm	WEIGHT kg/km
SPV50015CL000	1	1,5	1,6	4,50 -0,2 /+0,3	22	33
SPV50025CL000	1	2,5	2,0	4,90 -0,2 /+0,3	24	41
SPV50040CL000	1	4	2,5	5,50 -0,2 /+0,3	26	57
SPV50060CL000	1	6	3,0	5,90 -0,2 /+0,3	30	73
SPV50100CL000	1	10	4,0	6,90 -0,2 /+0,3	35	114
SPV50160CL000	1	16	5,0	8,20 -0,2 /+0,3	41	174
SPV50250CL000	1	25	6,1	10,00 -0,3 /+0,5	50	260
SPV50350CL000	1	35	7,4	11,20 -0,3 /+0,5	56	360
SPV50500CL000	1	50	8,8	13,20 -0,3 /+0,5	65	500
SPV50700CL000	1	70	10,5	15,00 -0,3 /+0,5	75	715
SPV50950CL000	1	95	11,9	16,70 -0,3 /+0,5	84	933
SPV50120CL000	1	120	13,4	18,60 -0,5 /+0,8	112	1152
SPV50150CL000	1	150	14,8	20,60 -0,3 /+0,5	124	1402
SPV50185CL000	1	185	16,5	23,00 -0,5 /+0,8	138	1737
SPV50240CL000	1	240	18,9	25,80 -0,5 /+0,8	155	2250

CL refers to colour for :

Red replace RD Green/Yellow replace GY
Black replace BK Blue replace BL

ELECTRICAL PARAMETERS

PART NO.	NUMBER OF CORES	CROSS SECTIONS mm ²	CONDUCTOR RESISTANCE 20 °C ohm/km	CURRENT CARRYING CAPACITY (*) at 60 °C Ambient Temperature			SHORT CIRCUIT CURRENT (5s. From 90 °C to 250°C) kA
				Single Cable in Free Air A	Single Cable on Surface A	Two Loaded Cables Touching on Surface A	
SPV50015CL000	1	1,5	13,7	30	29	24	0,09
SPV50025CL000	1	2,5	8,21	41	39	33	0,15
SPV50040CL000	1	4	5,09	55	52	44	0,25
SPV50060CL000	1	6	3,39	70	67	57	0,37
SPV50100CL000	1	10	1,95	98	93	79	0,63
SPV50160CL000	1	16	1,24	132	125	107	1
SPV50250CL000	1	25	0,795	176	167	142	1,6
SPV50350CL000	1	35	0,565	218	207	176	2,2
SPV50500CL000	1	50	0,393	276	262	221	3,2
SPV50700CL000	1	70	0,277	347	330	278	4,40
SPV50950CL000	1	95	0,21	416	395	333	6,00
SPV50120CL000	1	120	0,164	488	464	390	7,67
SPV50150CL000	1	150	0,132	566	538	453	9,59
SPV50185CL000	1	185	0,108	644	612	515	82,7
SPV50240CL000	1	240	0,08	775	436	620	15,34

(*) Max. conductor temperature: 120 °C. Based on EN50618 Table A.2 and A.3

NOTE: The expected period of use at a max. conductor temperature of 120 °C and at a max. ambient temperature of 90 °C is limited to 20.000 h.

CURRENT RATING CONVERSION FACTORS FOR DIFFERENT AMBIENT TEMPERATURES

Ambient temperature	< 60	70	80	90
Conversion factor	1	0,92	0,84	0,75

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