



DESIGN FEATURES

Type designation:	METSEC (PV) PV1-F
Conductor:	Electrolytic Tinned Copper, Class 5 in accordance with IEC 60228
Insulation:	Crosslinked Polyethylene
Core Identification:	Natural Colour – White
Sheath:	Low Smoke Zero Halogen
Sheath-Colours:	Black, Blue, Red
Marking:	METSEC (PV) PV1-F (cross-section) 0.6/1kV

SELECTION AND ORDERING DATA

Nominal cross-section and colour	Stock Code	Overall diameter of cable Min. value	Overall diameter of cable Max. value	Approx. net weight	Minimum bending radius	Maximum permissible tensile load	Current carrying capacity at 60°C ambient temperature	Permissible short circuit current (1s)
		[mm]	[mm]	[kg/km]	[mm]	[N]	[A]	[kA]
1.5mm ²	CZSLXT001501BK0	4.4	4	29	14.4	23.000	29	0.19
1.5mm ²	CZSLXT001501BL0	4.4	4	29	14.4	23.000	29	0.19
1.5mm ²	CZSLXT001501RD0	4.4	4	29	14.4	23.000	29	0.19
2.5mm ²	CZSLXT002501BK0	4.7	5	43	15.3	38.000	41	0.32
2.5mm ²	CZSLXT002501BL0	4.7	5	43	15.3	38.000	41	0.32
2.5mm ²	CZSLXT002501RD0	4.7	5	43	15.3	38.000	41	0.32
4.0mm ²	CZSLXT004001BK0	5.2	5	58	16.8	60.000	55	0.50
4.0mm ²	CZSLXT004001BL0	5.2	5	58	16.8	60.000	55	0.50
4.0mm ²	CZSLXT004001RD0	5.2	5	58	16.8	60.000	55	0.50
6.0mm ²	CZSLXT006001BK0	5.7	6	76	18.3	90.000	70	0.76
6.0mm ²	CZSLXT006001BL0	5.7	6	76	18.3	90.000	70	0.76
6.0mm ²	CZSLXT006001RD0	5.7	6	76	18.3	90.000	70	0.76
10mm ²	CZSLXT010001BK0	6.8	7	120	21.6	150.000	98	1.26
16mm ²	CZSLXT016001BK0	8.3	9	178	3	240.000	132	2.01
25mm ²	CZSLXT025001BK0	10.0	10.7	273	4	375.000	176	3.15
35mm ²	CZSLXT035001BK0	11.1	11.8	364	4	525.000	218	4.41
50mm ²	CZSLXT050001BK0	12.6	13.3	500	5	750.000	276	6.30
70mm ²	CZSLXT070001BK0	14.4	15.2	686	6	1.050	347	8.82
95mm ²	CZSLXT095001BK0	16.2	17.0	899	6	1.425	416	12.0
120mm ²	CZSLXT120001BK0	17.7	18.7	1.131	7	1.800	488	15.1
150mm ²	CZSLXT150001BK0	19.7	20.7	1.382	8	2.250	566	18.9
185mm ²	CZSLXT185001BK0	21.3	22.3	1.669	8	2.775	644	23.3
240mm ²	CZSLXT240001BK0	24.2	25.5	2.208	10	3.600	775	30.4



Manufacturer:	Metsec Cables Ltd
Trademark:	METSEC (PV)
Type designation:	PV1-F
Application:	METSEC (PV) PV1-F PV-Wire is intended for use in Photovoltaic Power Supply Systems: Indoor and /or outdoor, in industrial and agriculture fields. They are suitable for applications in/at equipment with protective insulation (Protecting Class II), in explosion hazard areas (METSEC internal Testing) and may be installed as well as fixed or freely suspended or free movable. Installation in cable trays, conduits, on
METSEC Internal Testing:	(PV) PV1-F PV-Wire is permitted for direct burial.
Rated Voltage:	(Uo/U) 600/1000V AC Maximum PV-System voltage: DC up to 2000V possible
Maximum permissible operating voltage in AC systems:	700/1200V
Maximum permissible operating voltage in DC systems:	900/1800V
Test voltage:	6500V AC / 15000V / 5 min.
Tests	Meets VDE 0282 Section 2, HD 22.2 and EN 50395 Conductor Resistance, Test Voltages AC and DC, Electric Strength, Surface Resistance, Spark Test on Insulation, EN 50305 Part 6 DC stability (10 days, 85°C, salt water, 1500V DC), Insulation Resistance at 20°C and 90°C in Water.
Internal Testing:	Insulation Resistance at 120°C in Air.

THERMAL PARAMETERS	
Ambient Temperature:	From -40°C up to +90°C (-40°F up to +194°F) for fixed and flexible installation
Maximum Permissible	+120°C (+248°F) per IEC 60216 permanent temperature 120°C for 20.000 h
Conductor Operating Temperature:	(= 2.3 years), at max. 90°C permanent temperature (= 30 years)
Short-circuit temperature	
-Internal Testing:	+200°C (392°F) at the conductor max. 5 sec.
	+250°C (482°F) at the conductor max. 5 sec.
Resistance to cold:	Cold Bend Test at -40°C temperature per DIN EN 60811-1-4
	Impact Test -40°C temperature similar to DIN EN 50305
Damp-Heat Test:	Meets EN 60068-2-78
MECHANICAL PARAMETERS	
Tensile Rating:	15 N/mm ² in operation, 50 N/mm ² during installation per HD 516
	DIN VDE 0298 Section 3 § 7.1 and Section 300§ 5.4.1
Minimum bending Radius:	min. 4 x D (D=Overall Cable Diameter)
Abrasion	Meets DIN EN 53516: against abrasive paper,
Internal Testing:	Sheath against sheath,
	Sheath against metal,
	Sheath against plastics
Shrinkage Test:	<2% per EN 60811-1-3
Pressure Test at High Temperature:	<50% per EN 60811-3-1
Dynamic Penetration Test:	Meets requirements for PV-Wire
Shore-Hardness A:	85 per DIN EN 53505 (Internal Testing)
Gnawer resistance:	Safety can be optimized by utilizing protective hoses and cables with spinning or braid metallic coatings
CHEMICAL PARAMETERS	
Mineral Oil Resistance:	Meets VDE 0473-811-2-1, DIN EN 60811-2-1 24h, 100°C
Acid and Alkaline Resistance:	Meets EN 60811-2-1
Ammonia Resistance:	30 days in Saturated Ammonia Atmosphere
Weather resistance	Ozone resistance per DIN EN 50396 Test Type B, HD 22.2 Test Type B UV-Resistance per UL 1581 (Xeno-Test), ISO 4892-2 (Method A) and HD506/A1-2.4.20
Internal Testing:	Absorption of Water (Gravimetric) per DIN EN 60811-1-3
Fire Behavior	Flame propagation:
	Single Cable Flame Test per IEC 60332-1-2, DIN EN 60332-1-2
	Halogen-free per IEC 60754-1
	No Corrosivity per IEC 60754-2
Internal Testing:	Multiple Cable Flame Test per DIN EN 50305-9
	Low Smoke Emission per IEC 61034, EN 61034 (Light Transmittance > 70%)
	Low Toxicity per DIN EN 50305, ITC < 3
Environmentally Friendly:	METSEC (PV) PV-Wire complies with RoHS directives 2002/95/EG, 2005/69/EG and 2006/122/EG of the European Union
DIRECT BURIAL	
Installation Instruction:	Installation Conditions per VDE 0800 Section 174§ 5.4.2 and VDE 0891 Section 6 § 4.2 ratings