



Your Power Connection To The Sun

PV-94121319-EN-CN-30DEC2023



Product Catalog for Solar PV

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通灵股份

江苏省高新技术企业 江苏省名牌产品
AAA级信誉企业 荣誉二十强企业

全国通过 ISO9001 TS16949 认证
产品通过 UL CE TUV GS ROHS 认证

江苏通灵股

Tongling profile

Jiangsu Tongling Electric Co., Ltd was founded in 1984, and we are a hi-tech enterprise which is engaged in R&D, production, sales and service of solar PV components, including connectors, junction boxes, cables, wiring harnesses, ribbons, accessories and tools.

Our relevant products have obtained the certifications from DEKRA, TUV Rheinland, TUV SUD, UL and also including the ISO9001 quality management system, ISO14001 environmental management system, ISO45001 occupational health and safety management system certification, and invention & utility models patents.

江苏通灵电器股份有限公司成立于1984年，我们是集太阳能零部件的研发、生产、销售和服务于一体的高新技术企业，产品种类包括连接器、接线盒、电线、互联线束、焊带、配件和工具等。

我们相关产品获得了DEKRA德凯、TUV莱茵、TUV南德、UL等认证证书，也包括ISO9001质量管理体系认证、ISO14001环境管理体系认证、ISO45001职业健康安全管理体系认证，以及发明和实用新型等专利。

Jiangsu Tongling Electric Co., Ltd was successfully listed on the GEM of Shenzhen Stock Exchange in 2021 (Stock Code: 301168). 江苏通灵电器股份有限公司于2021年在深圳证券交易所创业板成功上市（股票代码：301168）。



Solar PV Connector - BIG series cable connector 线端连接器

UL6703 1500V QIJQ2/QIJQ8.E342623

TUV Rheinland IEC62852 1500V R50424961/R50524455

DEKRA IEC62852 1500V 6058381.05DS.

Low contact resistance & long-term UV resistance

500N Tensile strength

High rated current 40A MAX (14AWG/2.5mm²)

45A MAX (12AWG/4.0mm²)

55A MAX (10AWG/6.0mm²)

80A MAX (UL 8AWG), 70A MAX (IEC 10.0mm²)

Protection degree IP68 (mated) & IP2X (unmated)

Operation temperature -40°C...+90°C

Stamping formed & Machined contact style

Flame class UL94 V-0, Safety class II



Product line	Product type	Interface	Terminal type	Cable/terminal size
BIG: BIG connector	C: Cable connector M16	F: Female	A: Stamping formed	2: 2.5mm ² /14AWG
		M: Male	B: Machined	4: 4.0mm ² /12AWG 6: 6.0mm ² /10AWG 8: 10.0mm ² /8AWG



Solar PV Connector - BIG series panel connector 板端连接器

UL6703 1500V QIJQ2/QIJQ8.E342623

TUV Rheinland IEC62852 1500V R50424961/R50524455

DEKRA IEC62852 1500V 6058381.05DS.

Low contact resistance & long-term UV resistance

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High rated current 40A MAX (14AWG/2.5mm²)

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Protection degree IP68 (mated) & IP2X (unmated)

Operation temperature -40°C...+90°C

Stamping formed & Machined contact style

Flame class UL94 V-0, Safety class II



Product line	Product type	Interface	Terminal type	Cable/terminal size
BIG: BIG connector	P: Panel connector M12	F: Female	A: Stamping formed	2: 2.5mm ² /14AWG
	Q: Panel connector M14	M: Male	B: Machined	4: 4.0mm ² /12AWG 6: 6.0mm ² /10AWG 8: 10.0mm ² /8AWG



Solar PV Accessories - Sealing cap 防尘塞



BIGSCM2



BIGSCF2

Solar PV Connector - TL-CABLE01S-F 线端连接器

UL6703 1500V QIJQ2/QIJQ8.E342623
TUV Rheinland IEC62852 1500V R50332964
DEKRA IEC62852 1500V 6058381.04DS
Long-term UV resistance
Rated current: 30A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX040G series 轴向式单体接线盒

UL3730 1500V QJJB2.E326997
TUV Rheinland IEC62790 EN62790 1500V R50379675
DEKRA IEC62790 EN62790 1500V 6058381.03DS.001
Long-term UV resistance
Rated current: 14A/15A/18A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II

Solar PV Junction Box - TL-BOX022.3-1 series 轴向式三分体接线盒

TUV Rheinland IEC62790 EN62790 1500V R50387928
DEKRA IEC62790 EN62790 1500V 6058381.02DS.001
Long-term UV resistance
Rated current: 15A/18A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX022.3-A-2 series 模块式三分体接线盒

UL3730 1500V QIJB2.E326997
TUV Rheinland IEC62790 EN62790 1500V R50431146
DEKRA IEC62790 EN62790 1500V 6058381.01DS.001
Long-term UV resistance
Rated current: 15A/18A/20A/25A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX022.3-A-1 series 轴向式三分体接线盒

UL3730 1500V QIJB2.E326997
TUV Rheinland IEC62790 EN62790 1500V R50431146
DEKRA IEC62790 EN62790 1500V 6058381.01DS
Long-term UV resistance
Rated current: 15A/18A/20A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX022.3-B-1 series 轴向式三分体接线盒

UL3730 1500V QIJB2.E326997
 TUV Rheinland IEC62790 EN62790 1500V R50431146
 DEKRA IEC62790 EN62790 1500V 6058381.01DS
 Long-term UV resistance
 Rated current: 15A/18A/20A
 Protection degree IP68
 Operation temperature -40°C...+85°C
 Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX022.3-B-2 series 模块式三分体接线盒

UL3730 1500V QIJB2.E326997
 TUV Rheinland IEC62790 EN62790 1500V R50431146
 DEKRA IEC62790 EN62790 1500V 6058381.01DS.001
 Long-term UV resistance
 Rated current: 15A/18A/20A/25A
 Protection degree IP68
 Operation temperature -40°C...+85°C
 Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX060R series 模块式三分体接线盒

UL3730 1500V QIJB2.E326997
 TUV Rheinland IEC62790 EN62790 1500V R50408466
 Long-term UV resistance
 Rated current: 15A/18A/20A/25A
 Protection degree IP68
 Operation temperature -40°C...+85°C
 Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX030-B series 模块式三分体接线盒

UL3730 1500V QIJB2.E326997
 TUV Rheinland IEC62790 EN62790 1500V R50493623
 DEKRA IEC62790 EN62790 1500V 6058381.050A
 Long-term UV resistance
 Rated current: 30A/35A/40A
 Protection degree IP68
 Operation temperature -40°C...+85°C
 Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX216x series 模块式三分体接线盒

UL3730 1500V QJJB2.E326997
TUV Rheinland IEC62790 EN62790 1500V R50501686
Long-term UV resistance
Rated current: 20A/25A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL-BOX217 series 模块式三分体接线盒

UL3730 1500V QJJB2.E326997
TUV Rheinland IEC62790 EN62790 1500V R50503311
Long-term UV resistance
Rated current: 15A/18A/20A/25A
Protection degree IP68
Operation temperature -40°C...+85°C
Flame class UL94 V-0, Safety class II



Solar PV Junction Box - TL206x series 模块式接线盒

UL3730 1500V QJJB2.E326997

TUV Rheinland IEC62790 EN62790 1500V R50487468

Long-term UV resistance

Rated current: 20A/25A

Protection degree IP68

Operation temperature -40°C...+85°C

Flame class UL94 V-0, Safety class II



Solar PV Cable - Single-conductor photovoltaic wire 单芯光伏电线

UL4703 1500V ZKLA.E347221

Size: 18AWG – 2000 kcmil

Long-term UV resistance

Operation temperature: -40°C...90°C wet and 105°C dry

TUV Rheinland IEC62930 R50462100

Size 1X1.5~35mm²

Long-term UV resistance

Operation temperature: -40°C...+90°C



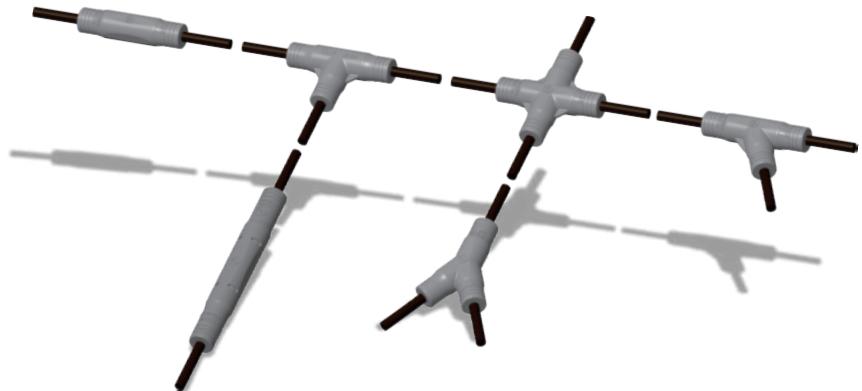
Solar PV Cable - Twins-conductor photovoltaic wire 双并光伏电线

TUV Rheinland IEC62930 J50536307
 Type Designation: 62930 IEC 131 2X2.5~10mm²
 Long-term UV resistance
 Operation temperature: -40°C...+90°C



Solar PV Wiring Harnesses - TL-F/T/Y/X/R/I/Z 互连线束及Inline fuse熔断器线束

UL9703 1500V QHZS.E491434
 Low contact resistance & long-term UV resistance
 Strong tensile strength
 Protection degree IP68
 Flame class UL94 5VA



Product type	Cable size	Connector type	System voltage	Fuse rating (For fuse only)	Fuse rating (For fuse only)
TL-F: Fuse holder	A: 12AWG	G: Tongling BIG series	K: 1000V	01: 1A	"Blank" (for 10*57 fuse)
TL-I: I junction	B: 10AWG	E: Tongling 01S series	H: 1500V	02: 2A	L(for 10*85 fuse)
TL-R: R junction	C: 8AWG	C: Staubli KS(B)T4 series		xx: Upto 80A	3(for 10*38 fuse)
TL-T: T junction	D: 6AWG	D: Staubli EVO 2 series			4(for 14*51 fuse)
TL-X: X junction		A: Amphenol H4 series			5(for 24*56 fuse)
TL-Y: Y junction		B: Amphenol UTX series			
		S: BizLink S418 series			
		Z: Sunter PV-ZH202B series			
		J: Jinko JK03M/1 series			
		T: Trinasolar TS4 series			
		Q: QC Solar QC4.10*			
		K: TE Pv4-s*			
		**			



TL-Z Product Series - Aluminum/Copper Transition

Weather resistant & Outdoor rating

UL94 5V Flame class

UL9703/UL486A-486B Approval



PRODUCT TYPE	CABLE SIZE - AL	CABLE SIZE - CU
TL-Z: AL/CU TRANSITION	C: 8AWG (40A)	B: 10AWG (30A)
	D: 6AWG (50A)	C: 8AWG (50A)
	E: 4AWG (65A)	D: 6AWG (65A)
F: 2AWG (90A)	**	
**		

Solar PV Wiring Harnesses - TL-F/T/Y/X/R/I/Z
 可根据客户端要求任意串并连接组合

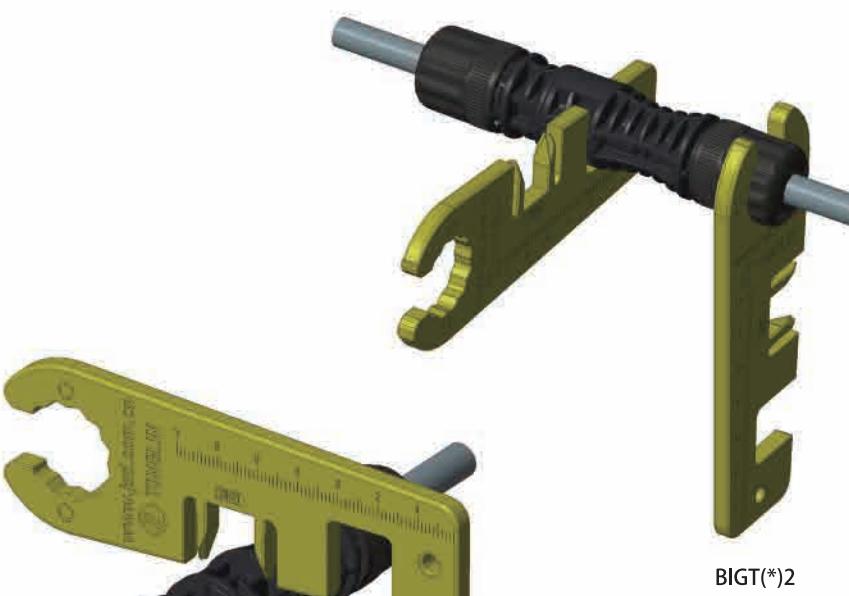

Solar PV Wiring Harnesses - TL-F/T/Y/X/R/I/Z

可根据客户端要求任意串并连接组合

All of junctions (TL-F/T/Y/X/R/I/Z) can be combined in any series-parallel interconnection under customer's requirements.



**Solar PV Tools - BIGT spanner wrench and unlocking
开锁及拧紧扳手**



BIGT(*)2



BIGT(*)3

Solar PV Tools - BIGC1/C2 crimping pliers 压线钳

BIGC1 for 2.5/4/6mm²,
14/12/10AWG
Stamping formed contact
冲压端子专用



Solar PV Tools - BIGS1/S2 stripping pliers 剥线钳

BIGS1 for 2.5/4/6mm², 14/12/10AWG cable

BIGS2 for 4/6/10mm², 12/10/8AWG cable



Appendix I 附录

UL486A-486B Table 27 – Pullout test values (Clause 9.3.4.1) 拉力参考要求

AWG or kcmil	(mm ²)	Pullout force,N(lb)		
		Copper	Aluminum/Copper-clad aluminum	
30	(0.05)	6.7	(1-1/2)	-
28	(0.08)	8.9	(2)	-
26	(0.13)	13.4	(3)	-
24	(0.20)	22.3	(5)	-
22	(0.32)	35.6	(8)	-
20	(0.52)	57.9	(13)	-
18	(0.82)	89.0	(20)	-
16	(1.3)	134	(30)	-
14	(2.1)	223	(50)	-
12	(3.3)	312	(70)	156 (35)
10	(5.3)	356	(80)	178 (40)
8	(8.4)	401	(90)	200 (45)
6	(13.3)	445	(100)	223 (50)
4	(21.2)	623	(140)	312 (70)
3	(26.7)	712	(160)	356 (80)
2	(33.6)	801	(180)	401 (90)
1	(42.4)	890	(200)	445 (100)
1/0	(53.5)	1 113	(250)	556 (125)
2/0	(67.4)	1 335	(300)	668 (150)
3/0	(85.0)	1 558	(350)	779 (175)
4/0	(107)	2 003	(450)	1 001 (225)
250	(127)	2 225	(500)	1 113 (250)
300	(156)	2 448	(550)	1 224 (275)
350	(177)	2 670	(600)	1 335 (300)
400	(203)	2 893	(650)	1 446 (325)
500	(253)	3 560	(800)	1 780 (400)
600	(304)	4 005	(900)	2 003 (450)
700 - 2 000	(354 - 1 010)	4 450	(1 000)	2 225 (500)

Fuse requirement (UL248-19, IEC60269-6) 熔断器要求

Fuses for Photovoltaic Systems (gPV)	Opening Time (Minutes)				
	Fuse (A)	100% of Amp Rating per UL	113% of Amp Rating per IEC	135% of Amp Rating per UL	145% of Amp Rating per IEC
1~80	Temperature Stabilization	60 Min	60 Max	60 Max	4 Max

Appendix II 附录

UL486A-486B Table 7 - Test current for connectors intended for a single conductor, A
电流参考要求 (Clauses 7.2.1, 7.3.1, 8.2.2, 8.3.2, and 8.3.3)

Conductor size		Copper			Aluminum and copper-clad aluminum			On (and off) times for current-cycling hours ⁱ		
		Assigned max. ampere rating ^b	Static-heating ^{c,g}	Current-cycling connector temperature rating ^a		As signed max. ampere rating ^b	Static-heating ^{c,g}			
AWG or kcmil (mm ²)				75°C ^{d,g}	90°C ^{e,g}		75°C ^{d,g}	90°C ^{e,g}		
30	(0.05)	—	0.5	3	3.5	4	—	—	—	1
28	(0.08)	—	0.8	3.5	4	5	—	—	—	1
26	(0.13)	—	1	5.5	6	8	—	—	—	1
24	(0.20)	—	2	7	8	10	—	—	—	1
22	(0.32)	—	3	9	12	13	—	—	—	1
—	—	0.5	4.8	11.7	15.6	16.6	—	—	—	1
20	(0.52)	—	5	12	16	17	—	—	—	1
—	—	0.75	6.5	15.8	18.3	22.4	—	—	—	1
18	(0.82)	—	7	17	19	24	—	—	—	1
—	—	1	8	17.4	19.4	26.6	—	—	—	1
16	(1.31)	—	10	18	20	31	—	—	—	1
—	—	1.5	11.2	21	23.2	33.2	—	—	—	1
14	(2.08)	—	15	[20]	30	[22]	33	[27]	40	—
—	—	2.5	16.7	[21.7]	31.7	[24]	35	[31.4]	44.8	—
12	(3.31)	—	20	[25]	35	[28]	39	[40]	54	15
—	—	4	23.5	[30.3]	40.3	[34]	45	[47]	61.4	18.5
10	(5.26)	—	30	[40]	50	[45]	56	[60]	75	25
—	—	6	34.7	54.7	61.7	81	28.5	43.6	48.6	64
8	(8.37)	—	50	70	80	100	40	55	60	77
—	—	10	55	78.3	88.3	110	43.3	61.6	68.3	85.3
6	(13.3)	—	65	95	105	131	50	75	85	102
—	—	16	71.8	105	117	146	55.1	83.5	93.5	115
4	(21.2)	—	85	125	140	175	65	100	110	140
—	—	25	105	132	149	185	68.4	105	115	147
3	(26.7)	—	100	145	165	205	75	115	125	160
2	(33.6)	—	115	170	190	240	90	135	150	190
—	—	35	117	174	195	246	91.6	138	154	194
1	(42.4)	—	130	195	220	275	100	155	175	215
—	—	50	144	219	244	306	114	172	192	239
1/0	(53.5)	—	150	230	255	320	120	180	200	250
2/0	(67.4)	—	175	265	300	370	135	210	230	295
—	—	70	179	272	307	380	138	214	236	301
3/0	(85.0)	—	200	310	345	435	155	240	270	335
—	—	95	214	333	372	467	166	258	290	360
4/0	(107)	—	230	360	405	505	180	280	315	390
—	—	120	246	389	431	544	196	303	338	423
250	(127)	—	255	405	445	565	205	315	350	440
—	—	150	283	442	496	620	228	347	387	486
300	(152)	—	285	445	500	625	230	350	390	490
350	(177)	—	310	505	555	708	250	395	435	555
—	—	185	318	517	570	726	256	404	446	567
400	(203)	—	335	545	605	765	270	425	470	595
—	—	240	368	601	668	843	417	470	522	658
500	(253)	—	380	620	690	870	310	485	540	680
—	—	300	417	685	768	960	338	536	595	754
600	(304)	—	420	690	775	968	340	540	600	760
700	(355)	—	460	755	850	1055	375	595	675	835
750	(380)	—	475	785	885	1100	385	620	700	870
—	—	400	487	809	913	1132	393	640	720	898
800	(405)	—	490	815	920	1140	395	645	725	905
900	(456)	—	520	870	980	1220	425	700	785	980
—	—	500	542	926	1036	1298	442	743	832	1040
1000	(507)	—	545	935	1045	1310	445	750	840	1050
—	—	630	589	1062	1182	1486	484	853	947	1192
1250	(633)	—	590	1065	1185	1490	485	855	950	1195
1500	(760)	—	625	1175	1320	1645	520	950	1065	1330
—	—	800	633	1208	1356	1691	528	981	1100	1374
1750	(887)	—	650	1280	1435	1790	545	1050	1175	1470
—	—	1000	664	1376	1531	1928	559	1142	1271	1599
2000	(1010)	—	665	1385	1540	1940	560	1150	1280	1610

Appendix III 附录

Inline fuse rating for wiring harnesses
熔断器线束额定参数选型

Rated vol.(V)	Fuse spec.(A)	Inline fuse rating (A) fuse spec / (1.25*1.25)
1000/1500	1	0.64
	2	1.28
	2.25	1.44
	2.5	1.6
	3	1.92
	3.5	2.24
	4	2.56
	4.5	2.88
	5	3.2
	6	3.84
	7	4.48
	8	5.12
	10	6.4
	12	7.68
	15	9.6
	16	10.24
	20	12.8
	25	16
	30	19.2
	32	20.48
	35	22.4
	40	25.6
	45	28.8
	50	32
	55	35.2
	60	38.4
	63	40.32
	65	41.6
	70	44.8
	80	51.2

The specifications are subject to change without notice, and Tongling reserve all the right of final interpretation!

Millimeter/Inch unit 度量尺(1:1)

