



2021

PV BALANCE OF SYSTEMS PRODUCT GUIDE



CABLES / ISOLATORS / SWITCHGEAR / CONDUIT / CONNECTORS / ENCLOSURES / TOOLS / ACCESSORIES



EXCLUSIVE DISTRIBUTORS OF WORLD LEADING ELECTRICAL & AUTOMATION PRODUCTS IN NEW ZEALAND

Founded in 1983 we are a New Zealand family owned business spanning two generations. We began by designing and manufacturing automated machinery for a range of industries including dairy production machinery and production machinery for the construction industry.

Our relationships with our suppliers such as LAPP in Germany was initiated through our own demand for high quality products for our production.

Over the last 30 years ECS has evolved from a manufacturing company to a market leading supplier of electrical and automation products. We are now the exclusive distributors in New Zealand for world leading manufacturers such as LAPP, Wieland Electric, MOXA Networking and LS products.

At ECS we strive to offer the best customer service in the industry. When you phone us you will go straight through to our sales team who are made up of trained electricians and automation engineers. We are not just order takers; we are able to guide you through our products so you can select the right product to suit your requirements.

In 2012 we moved into a purpose built 2500m² warehouse, specifically designed to suit our requirements. Located in Hamilton where we stock 5000 different parts and over 1 million metres of cable, in our 5000m² warehouse, we are committed to holding the right products for you.

Over the course of 2015 we more than doubled the size of our warehouse giving us the ability to hold greater stock quantities and much larger cable sizes.

With our well established logistics network, we are able to deliver products to customers from Kaitia to Invercargill in just one working day. Linking with our supplier's warehouses around the world, if customers are working overseas we are able to drop-ship directly to site anywhere in the world while handling all the paperwork back here in New Zealand.

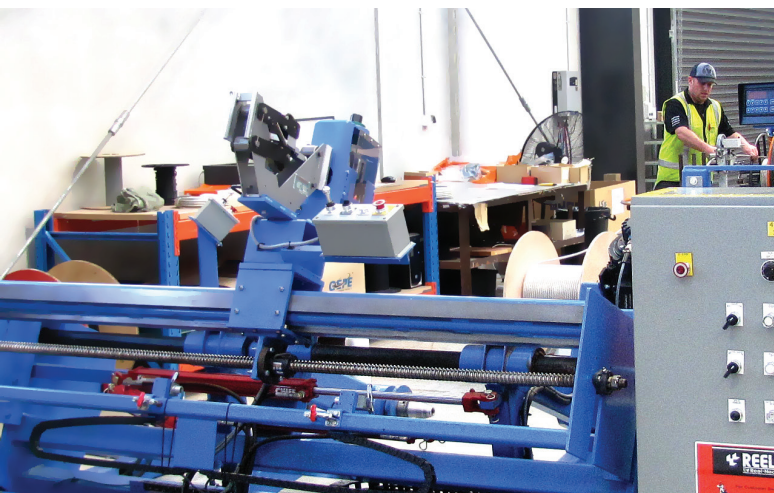
ECS is an expanding and adapting company; we are consistently adding new products to our line-up based on customers' requirements. We strive to offer you a complete package for all your electrical and automation requirements.

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Of cable



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Warehouse

Committed to
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CENTRE FOR COMPETENCE & QUALITY TESTING

THE LAPP CENTER FOR COMPETENCE AND INNOVATION IS A KEY ASSET IN THE DEVELOPMENT OF INDUSTRY LEADING AND INNOVATIVE SOLUTIONS FOR OUR CUSTOMERS.

Underwriters Laboratories Inc. completed an assessment of our Florham Park, New Jersey facility for the UL Data Acceptance Program as a UL Client Data Program laboratory. This means the equipment and test methods have been certified to precisely meet the same requirements as at UL test facilities. We validate designs of high performance Industrial Cables, Industrial Connectors, Strain Relief Cable Glands and Accessories through continuous testing. Some of the testing taking place at our state-of-the-art laboratory include:

Flame Testing (USA)

SCOPE

To evaluate flame resistance characteristics of Lapp wire and cable and insure that the products do not propagate flame or spread burning particles within the specified application.

These tests are performed to verify compliance with Lapp Flame Resistance Cable Attributes, Industry Tests and Safety Agency Standards.

TECHNICAL DETAIL

Multiple samples are cut to a specified length and then a Kraft paper flag is applied to each specimen. The samples are hung vertically in the support apparatus within the flame chamber. The test is performed in chamber which is completely sealed and free from any air drafts. An application of flame is directly applied to the sample in such a manner that flame traverses upward towards the Kraft paper flag. After the specified flame application cycle, the flame is removed for a specific time duration.

This cycle may be repeated several times. Failure occurs if the sample does not self-extinguish, or if falling burning particles ignite the chamber-floor bedding, or if the Kraft paper flag has been burnt.

Independantly Tested Our International Quality Certificate

Almost all of our products are certified, as is our company. Certification is always awarded by an independent authority. In doing so, all the quality-relevant factors are thoroughly examined, in particular, reliability, safety and possible danger, health-hazard or environment aspects. Certificates are both quality certificates as well as certificates of non-objection and technical "passports" for international use.



Endurance Testing (GERMANY & FRANCE)

SCOPE

To evaluate how flexible cables will perform in permanent flexing installations. This test is used to quality check existing cables, and to develop and test new products before they enter mass production.

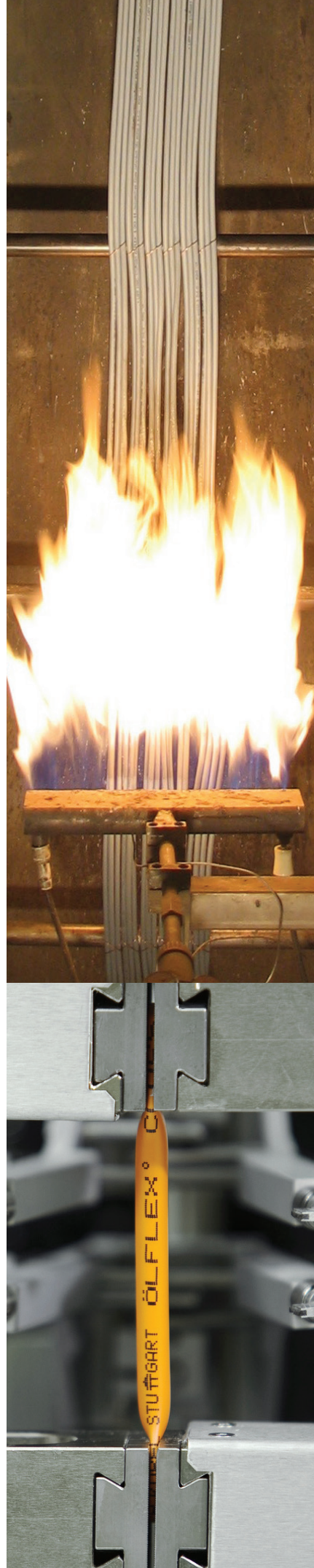
Regular flexible (OLFLEX CLASSIC 110) and super flexible (OLFLEX FD, UNITRONIC FD) cables are testing with this process.

TECHNICAL DETAIL

Cables are tested on a variety of linear test rigs which test specific endurance flexing scenarios.

The 5m linear test rig runs cables at a speed of 6m/s and repeats 20,000 times per day. The 20m linear test rig runs cables at a speed of 6m/s and repeats 5,000 times per day. The 55m linear test rig runs cables at a speed of 5m/s and repeats 1,500 times per day.

Failure occurs if any conductor in the cable loses electrical continuity during the test. Cables are disassembled/dissected after the test to check how specific materials performed to check any wear and tear to the internal of the cable.





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ÖLFLEX Solar Cable XLR

APPROVED TO THE LATEST SOLAR STANDARDS EN50618, DESIGNED FOR USE IN HARSH OUTDOOR CONDITIONS



LAPP KABEL STUTTGART ÖLFLEX® SOLAR XLR-E



LAPP KABEL STUTTGART ÖLFLEX® SOLAR XLR-E T



CAUTION: DC CABLE - DO NOT DISCONNECT UNDERLOAD



Application Range

- » PV systems rated 1500VDC
- » Cabling between solar modules and as extension cable between module strings and DC/AC inverters
- » Gable and flat roof PV systems
- » PV parks and power plants
- » Not suitable for direct burial, Installation according to IEC 60364-5-52, respectively HD 60364-5-52

Construction

- » Fine-wire, tinned-copper conductor
- » Core insulation made of electron beam cross-linked copolymer
- » Colour of core insulation: white
- » Outer sheath made of electron beam cross-linked copolymer
- » Outer sheath colour: black respectively black with red stripe

Special Features

- » Halogen-free and flame-retardant
- » Weather /UV-resistant acc. to EN 50618
- » Ozone-resistant according to EN 50396
- » XLR-E = X-Linked Radiated-EN Standard Proven electron beam cross-linked quality

Temperature Rating

- » -40°C to 120°C

Test Voltage

- » AC 6500 V

Norm references / Approvals

- » H1Z2Z2-K (type according to EN 50618)

SKU	Cores	Conductor	Conductor Colours	OD	Drum Size
Single Core					
1023652S	1	4mm	White	5.2mm	100m
1023652	1	4mm	White	5.2mm	500m
1023653	1	6mm	White	5.8mm	500m
1023654	1	10mm	White	7.2mm	500m
Twin Core					
1023712S	2	4mm	Red / Blue	12mm x 5.2mm	100m
1023713	2	6mm	Red / Blue	12mm x 5.8mm	500m

ÖLFLEX Solar Cable XLWP

X LINKED WATER-PROOF, ROBUST, HALOGEN-FREE SUITABLE FOR SUBMERSION



LAPP KABEL STUTTGART ÖLFLEX® SOLAR XLWP



Application Range

- » For floating PV/ canal top installations where cables are in contact with water or exposed to high humidity (see data sheet for more details)
- » For underground installation, for example in conduits which water, heat, and moisture may accumulate in
- » Suitable for direct burial: see data sheet
- » In September 2018 and based on AD8 water-tightness, this product was recommended by Solartechnik Bayern for installation in ground typically realized via underground circuits for PV applications, whereas underground sand beds are not required to channel off water anymore, thanks to this cable's AD8 grade

Benefits

- » The alternative for long-term storage in water, e.g. as it can occur in case after flooding or in buried conduits
- » Reduction of flame propagation and of toxic combustion gases in the event of fire
- » Robust against mechanical impacts
- » Extruded colour stripe serves as reverse polarity protection during installation.
- » Exact quantity control during installation by meter marking on the cable sheath

Special Features

- » Weather/UV-resistant acc. to EN 50618, appendix E
- » Ozone-resistant according to EN 50396
- » Halogen-free and flame-retardant
- » Good notch and abrasion resistance
- » XLWP = X-Linked + Water-Proof (Permanent water contact AD8 acc. to IEC 60364-5-51),
- » Proven electron beam cross-linked quality

Temperature Rating

- » -40°C to 120°C

Test Voltage

- » AC 6500 V

Norm references / Approvals

- » H1Z2Z2-K (type according to EN 50618)
- » Items with other cross-sections on request

SKU	Cores	Conductor	Conductor Colours	OD	Drum Size
Single Core					
1023601	1	4mm	White/Black	5.8mm	100m
1023603	1	6mm	White/Black	6.8mm	100m

ÖLFLEX Solar Cable XLS Earth

EARTH CABLE WITH AN EXTRA UV RESISTANT SHEATH FOR EXPOSED APPLICATIONS



LAPP KABEL STUTTGART ÖLFLEX® SOLAR GN/YE



Construction

Flexible Class 5 fine wire stranding, copolymer insulation, tinned copper conductor. This Solar Cable is a variation on our standard Solar range, a traditional fine stranded earth cable wrapped in a special black solar sheath. This is the only truly UV resistant earth cable on the market.

Temperature Rating

- » -40°C to 120°C

Minimum Bending Radius

- » Fixed installation: 4 x outer diameter

Test Voltage

- » AC 6,500V

Special Features

- » Designed for long outdoor lifespan
- » Small Cable OD
- » Excellent weather and UV resistance
- » Metre marked on sheath

SKU	Cores	Conductor	Conductor Colours	OD	Drum Size
Single Core					
0025814S	1	4mm	Earth	6mm	100m
0025823S	1	6mm	Earth	7.1mm	100m

Regulations For Solar Cable

AS/NZS 5033:2014 - 4.3.6.2

According to previous standards, Solar Cables should meet PV1-F requirements, however, on 27th October 2017 the PV1-F standard was abolished. The new internationally recognised standard for Solar Cable is now EN 50618 which is a higher level and more difficult test requirement. LAPP ÖLFLEX SOLAR XLR-E / XLWP have been independently tested by TUV to ensure they conform to this latest standard.



110 LSZH - Tinned Switchboard Flex

HIGHLY FLEXIBLE RUBBER POWER CABLE SUITABLE FOR BATTERY STORAGE



Flexible 110° - Low Smoke - Halogen Free

X-HF-110 LSZH – Tinned Switchboard Flex

Conductors

- » Tinned Copper Conductors
- » Super Flexible Class 6 Stranding

Insulation

- » Black: R-E-110
- » Earth: X-HF-110

Outer Sheath

- » Black: E-110-R (Flexible Rubber)

Colour Of Outer Sheath

- » Black or Green/Yellow
- » UV Resistant

Application

- » Switchboards and transformers
- » Mains power distribution
- » Portable power feeds
- » Flexible copper tails
- » Other industrial applications
- » LSZH installations

Temperature Range

- » Black: -25°C to 110°C
- » Earth: -40°C to 110°C

Voltage Rating

- » 600/1000V

Features

- » Halogen free
- » Low Smoke
- » Heat resistance
- » Oil and chemical resistant
- » Flame retardant
- » UV and weather resistant

Standards

- » AS/NZS 5000.1
- » AS/NZS 3808
- » AS/NZS 3008
- » AS/NZS 1660.5.2, 1660.5.3
- » IEC 60228
- » IEC 61034-2
- » IEC 60754-2
- » IEC 60332-1

Minimum Bending Radius

- » 5 x cable OD

Item No.	Conductor	Cable OD	Item No.	Conductor	Cable OD
110 LSZH - Single Cores			EARTH - Green Yellow		
TF-G-012568-BK	10mm	9.0mm	TF-G-136326	10mm	6.0mm
TF-G-012569-BK	16mm	10.3mm	TF-G-136327	16mm	7.0mm
TF-G-012570-BK	25mm	11.9mm	TF-G-136318	25mm	8.0mm
TF-G-012571-BK	35mm	13.3mm	TF-G-136329	35mm	9.0mm
TF-G-022907-BK	50mm	15.0mm	TF-G-136331	50mm	11.0mm
TF-G-012573-BK	70mm	17.1mm	TF-G-136335	70mm	13.0mm
TF-G-012574-BK	95mm	19.5mm	TF-G-136336	95mm	15.0mm
TF-G-012575-BK	120mm	21.5mm	TF-G-136355	120mm	16.0mm
TF-G-012576-BK	150mm	23.9mm			
TF-G-012577-BK	185mm	26.5mm			
TF-G-012579-BK	240mm	29.3mm			
TF-G-012581-BK	300mm	32.4mm			

CURRENT RATINGS FOR 110 LSZH - SWITCHBOARD FLEX

	Unenclosed				Enclosed				Underground	
	Spaced	Spaced	Touching	Touching	Exposed to sunlight	Exposed to sunlight	In Conduit in air	In Conduit in air	Buried in Conduit	Buried in Conduit
Conductor										
mm2	2	3	2	3	2	3	2	3	2	3
10	109	106	86	86	72	72	82	75	91	81
16	144	139	112	112	94	94	109	97	119	103
25	190	185	149	149	124	124	142	129	152	133
35	236	229	184	184	153	153	179	158	187	160
50	299	289	233	232	192	192	221	203	228	199
70	376	364	292	292	240	240	281	250	282	243
95	452	439	352	352	288	288	334	296	331	284
120	535	521	417	417	340	339	389	354	381	335
150	617	601	482	482	392	391	456	404	439	378
185	706	689	552	552	447	446	515	469	492	428
240	850	829	664	663	535	534	624	576	581	510
300	980	958	766	764	615	612		655	669	575
400	1182	1155	920	915	735	730		810	778	687
500	1380	1348	1069	1059	850	841		924	906	773
630	1636	1598	1250	1235	990	977		1064	1036	878

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On Locally Stocked Cable



ECS

BATTERY STORAGE CABLE

V90HT Appliance Wire

TINNED CONDUCTORS WITH 1000V RATING



Application	Nominal Voltage	Test Voltage	Temperature Rating
Flexible Class 5 fine wire stranding, PVC insulation, tinned copper conductor.	» 600/1000V	» 3000V	» -20 to 105

Conductor	0.5mm ²	0.75mm ²	1mm ²	1.5mm ²	2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²
Cable OD	2.55mm	2.75mm	2.95mm	3.25mm	3.7mm	4.3mm	4.9mm	6.5mm	8.4mm
Green / Yellow	3801000	3801010	3801020	3801030	3801040	3801050	3801060	3801070	
Black	3801001	3801011	3801021	3801031	3801041	3801051	3801061	3801071	3801081
Red	3801004	3801014	3801024	3801034	3801044	3801054	3801064	3801074	3801084
White	3801005	3801015	3801025	3801035	3801045	3801055	3801065	3801075	3801085
Blue	38010014	38010114	38010214	38010314	38010414	38010514	38010614	3801072	3801082
Brown	3801003	3801013	3801023	3801033	3801043	3801053	3801063		3801083
Grey	3801006	3801016	3801026	3801036	3801046	3801056			
Orange	3801009	3801019	3801029	3801039	3801049				
Violet	3801007	3801017	3801027	3801037	3801047				
Pink	3801008	3801018	3801028	3801038	3801048				
Yellow	38010011	38010111	38010211	38010311	38010411				

Current Ratings for V90HT Appliance Wire

Conductor cross-sectional area	Unenclosed						Enclosed		Single Phase Voltage Drop
	Spaced		Spaced from surface		Touching		Conduit in air		
									
mm ²	A	A	A	A	A	A	A	A	mV/A/m
1	18	18	18	15	14	14	14	12	54
1.5	23	22	23	19	18	18	14	15	34.6
2.5	33	32	32	28	25	25	18	22	18.9
4	44	42	43	36	34	34	24	29	11.7
6	56	54	54	46	44	44	33	37	7.9
10	76	74	74	64	59	59	42	52	4.7
16	101	98	98	85	79	79	58	68	2.9

These ratings are based on an ambient air temperature of 30° C, and an ambient soil temperature of 15° C at 0.5m depth.

Copper Tube Terminal Lugs

FOR SINGLE CORE TERMINATION



Application	Features	Benefits	Temperature Rating
» Mainly for connection to rails and to copper connectors	» UL Listed » Slight taper to help when inserting fine stranded cables	» With inspection hole starting from 4mm ² » High-quality electrolytic copper ensures a good crimping quality	» Temperature range up to +90°C » Working temperature: 110°C, max +140°C

Conductor	Bolt Hole Size (mm)					
	4	5	6	8	10	12
4mm ²	61796570	61796580	61796590			
6mm ²	61796600	61796610	61796620	61796630		
10mm ²		61796640	61796650	61796660	61796670	
16mm ²		61796690	61796700	61796710	61796720	61796730
25mm ²			61796740	61796750	61796760	61796770
35mm ²			61796780	61796790	61796800	61796810
50mm ²			61796820	61796830	61796840	61796850
70mm ²				61796860	61796870	61796880
95mm ²				61796890	61796900	61796910
120mm ²					61796930	61796940
150mm ²						61796960
185mm ²						61796990



Circular TPS

POWER DISTRIBUTION CABLE FOR FIXED INSTALLATIONS



LAPP KABEL AS BLACK CIRCULAR V-90/5V-90

Construction

Class 2 stranded conductors, V90 PVC inner insulation material and UV Resistant 5V-90 PVC outer sheath. Cables are metre marked.

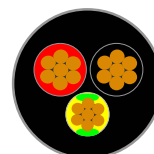
Minimum Bending Radius

» Fixed: 4 x cable OD

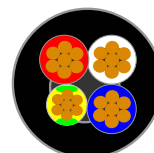
Temperature Rating

» -20 to 90

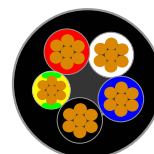
SKU	Type	Conductors	Earth Size	Rating	OD
3 core (2 core + earth)					
3803840	2 Core + Earth	1.5mm	1.5mm	450/750V	9.4mm
3803841	2 Core + Earth	2.5mm	2.5mm	450/750V	11mm
3803842	2 Core + Earth	4mm	2.5mm	450/750V	12.6mm
3803843	2 Core + Earth	6mm	2.5mm	450/750V	13.8mm
3803844	2 Core + Earth	10mm	4mm	600/1000V	16.7mm
3803845	2 Core + Earth	16mm	6mm	600/1000V	18.9mm
3803846	2 Core + Earth	25mm	6mm	600/1000V	20.3mm
3803847	2 Core + Earth	35mm	10mm	600/1000V	22.6mm
4 core (3 core + earth)					
3803852	3 Core + Earth	1.5mm	1.5mm	450/750V	10.1mm
3803853	3 Core + Earth	2.5mm	2.5mm	450/750V	11.9mm
3803854	3 Core + Earth	4mm	2.5mm	450/750V	13.6mm
3803855	3 Core + Earth	6mm	2.5mm	450/750V	15mm
3803856	3 Core + Earth	10mm	4mm	600/1000V	17.3mm
3803857	3 Core + Earth	16mm	6mm	600/1000V	19.8mm
5 core (4 core + earth)					
3803864	4 Core + Earth	1.5mm	1.5mm	450/750V	10.9mm
3803865	4 Core + Earth	2.5mm	2.5mm	450/750V	12.8mm
3803866	4 Core + Earth	4mm	2.5mm	450/750V	14.8mm
3803867	4 Core + Earth	6mm	2.5mm	450/750V	16.3mm
3803868	4 Core + Earth	10mm	4mm	600/1000V	19.9mm
3803869	4 Core + Earth	16mm	6mm	600/1000V	22.8mm
3803870	4 Core + Earth	25mm	6mm	600/1000V	27.4mm
3803871	4 Core + Earth	35mm	10mm	600/1000V	30.5mm
3803872	4 Core + Earth	50mm	16mm	600/1000V	35.4mm
3803873	4 Core + Earth	70mm	25mm	600/1000V	40.7mm
3803874	4 Core + Earth	95mm	25mm	600/1000V	44.5mm



3 core (2 core + earth)



4 core (3 core + earth)



5 core (4 core + earth)

Current Ratings

Conductor cross-sectional area	Unenclosed				Enclosed		Underground Ducts		Three Phase Voltage Drop
	Spaced	Touching	Spaced	Touching	Conduit in air	Conduit in air	Conduit in air	Conduit in air	
mm ²	A	A	A	A	A	A	A	A	mV/A/m
1.5	22	18	21	17	16	15	25	22	30
2.5	31	26	30	25	23	21	35	30	16.4
4	42	35	39	33	30	27	46	39	10.2
6	52	46	50	42	39	35	58	49	6.8
10	73	62	68	58	54	48	78	65	4.05
16	97	82	91	78	72	64	100	84	2.55
25	131	111	120	104	100	90	131	109	1.61
35	160	137	148	125	120	105	160	131	1.17
50	194	165	182	154	143	125	188	160	0.87
70	245	211	228	194	177	160	234	200	0.61

These ratings are based on an ambient air temperature of 30° C

FLAT TPS

POWER DISTRIBUTION CABLE FOR FIXED INSTALLATIONS



LAPP KABEL FLAT TPS 2 X 2.5 + 1G 2.5 V - 90/3V - 90

Standard

AS/NZS 5000.2

Flame retardant to

AS/NZS IEC 60332-1-2

Temperature Rating

-15 °C to 90 °C

Voltage Rating

450/750 V

Part No.	Conductors	Core Colours	Conductor Size	Dimensions Width x Thickness	Colour
3805270	2 + Earth	Red, Black, G/Y	1mm	8.9 x 4.3	White
3805271	2 + Earth	Red, Black, G/Y	1.5mm	9.8 x 4.5	White
3805272	2 + Earth	Red, Black, G/Y	2.5mm	12.2 x 5.4	White
3805273	2 + Earth	Red, Black, G/Y	4mm	13.9 x 6.4	White
3805274	2 + Earth	Red, Black, G/Y	6mm	14.9 x 6.9	White
3805281	3 + Earth	Red, White, Blue, G/Y	1.5mm	12.4 x 4.4	White
3805290	3 Core	Red, White, Blue	1mm	8.9 x 4.3	Yellow
3805291	3 Core	Red, White, Blue	1.5mm	9.8 x 4.5	Yellow
3804871	3 + Earth	Red, White, Blue, G/Y	1.5mm	12.4 x 4.4	Blue

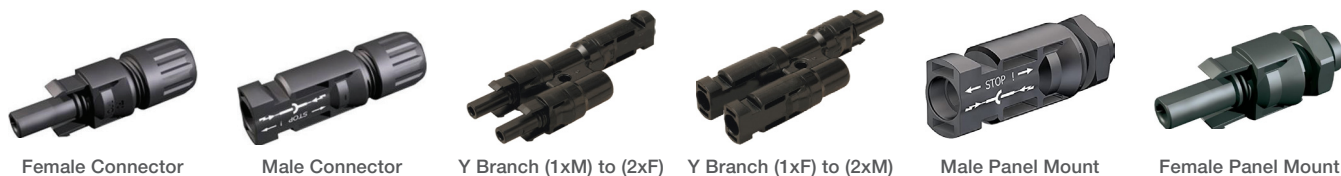
MC4 Solar Cable Connectors

THE LARGEST SELLING SOLAR CONNECTOR IN THE WORLD MC4

STÄUBLI

Multi-Contact

MC



SKU	Type	Conductor Size (mm)	Cable OD (mm)
Female Connectors			
MC-320014	Female	4 & 6	3-6
MC-320016	Female	4 & 6	5.5-9
Male Connectors			
MC-320015	Male	4 & 6	3-6
MC-320017	Male	4 & 6	5.5-9
Y Branch Connectors			
MC-320018	1 x Male to 2 x Female		
MC-320019	2 x Male to 1 x Female		
Panel Mounts for Enclosures			
32.0078P0001	Female Panel-mount	4 & 6	
32.0079P0001	Male Panel-mount	4 & 6	

MC3-MC4 Adapter Cables

FOR ADAPTATION OF LEGACY MC3 TO MC4 CONNECTORS

STÄUBLI

Multi-Contact

MC



SKU	Description	Length	Cable Size (mm²)
MC-326096	MC3 Male to MC4 Female	200mm	4
MC-326097	MC3 Female to MC4 Male	200mm	4

MC4 Solar Extension Cables

PRE-HARNESSED MALE TO FEMALE MC4 EXTENSION LEADS

STÄUBLI

Multi-Contact

MC



SKU	Length (mtrs)	SKU	Length (mtrs)
4mm²		6mm²	
PV-XPMC4PV1F4/0.5M	0.5	PV-XPMC4PV1F6/1M	1
PV-XPMC4PV1F4/1M	1.0	PV-XPMC4PV1F6/2M	2
PV-XPMC4PV1F4/2M	2	PV-XPMC4PV1F6/5M	5
PV-XPMC4PV1F4/5M	5	PV-XPMC4PV1F6/8M	8
PV-XPMC4PV1F4/8M	8	PV-XPMC4PV1F6/10M	10
PV-XPMC4PV1F4/10M	10	PV-XPMC4PV1F6/12M	12
PV-XPMC4PV1F4/12M	12	PV-XPMC4PV1F6/15M	15
PV-XPMC4PV1F4/15M	15		



Avoid Cross-Connection Of PV Connectors

Situation

The generation of safe and clean electrical power relies on high safety standards and high-quality components that guarantee a reliable performance. Stäubli Electrical Connectors over 25 years of experience in producing highly efficient and safe PV connectors that play a key role in a long-term durable and reliable protection against hazards. For quality and safety reasons, Stäubli dissociates itself from cross-connecting components of 3rd party suppliers, being advertised as "MC4 compatible". Cross-connection endangers the safety, performance and efficiency of a PV installation and puts at risk operators and installations as well as the return on investment (ROI) and the levelised cost of energy (LCOE). Even renowned test laboratories (e.g. TÜV and UL) cannot confirm the long-term stability of cross-connections.

Assessment

Stäubli Electrical Connectors assesses the cross-connection of components from different manufacturers as a risk/hazard for safe use. Currently valid PV standards (IEC 60364-7-712:2017; E343181) state that "male and female connectors shall be of the same type from the same manufacturer" and that UL certification for connectors only applies if products from the same product family have been mated. Hence, Stäubli products of the MC4 family mated with third-party connectors lose all relevant IEC and UL certification in their end-use application. Furthermore, the law does not regulate liability in the event of damage; expensive court proceedings may be at stake.

Conclusion

Cross-connection severely endangers the safe operation of a PV plant: mating components of incongruous quality and/or equipped with different core technologies entails various risks and leads to performance losses. Stäubli further disclaims any participation in tests from independent test institutes that are misleading and wrongly indicate compatibility. Stäubli Electrical Connectors considers the efforts from third-party suppliers to verify their connector product by an independent third-party (e.g., TÜV) as Stäubli/MC4 compatible as inappropriate and not beneficial to the PV industry. Stäubli has not recognized any products from third-party suppliers as being compatible with the original MC4 family and does not intend to do so in the future.

Regulations For Solar Cable Connectors

AS/NZS 5033:2014 - 4.3.7 (k)

Solar connectors can only be mated with the same type from the same manufacturer. If your panels have original MC4 (Multi-Contact-Series 4) connectors, then you must use the same type during your installation. If you do not know what brand you have on the panels, then you need to cut them off and put new ones on.



Genuine Multi Contact Crimp tool



MC4 Socket Wrench Tightening Insert



MC4 Socket Wrench Securing Insert



MC4 Assembly Spanners



MC4 Male Connector Pins



MC4 Female Connector Pins

SKU	Description	Notes
320024	MC4 Assembly Spanners	Set of 2
32.6020.19100	Multi-Contact Crimp Tool for MC4 Solar Connectors	Genuine Multi Contact Tool
326006	MC4 Socket Wrench Securing Insert	PV-WZ-AD/GWD
326026	MC4 Socket Wrench Tightening Insert	PV-SSE-AD4
32.0507P0001	MC4 Male Connector Pins	Spare Pins for MC4 Male Connector
32.0107P0001	MC4 Female Connector Pins	Spare Pins for MC4 Female Connector

Solar Cable Connector & Tie Tools

FOR CUTTING, STRIPPING, CRIMPING AND SECURING



LAPP Universal Length Stop Strip Tool



CIMCO Click-N-Crimp Tool



CIMCO Click-N-Crimp MC4 Insert



FLEXIMARK S/S Cable Tie Gun

SKU	Description	Notes
106000	CIMCO Click-N-Crimp Crimping Tool	Interchangeable inserts included not including MC4
106028	CIMCO Click-N-Crimp MC4 Insert	For CIMCO 10600 Click-N-Crimp Crimp Tool
21920120	LAPP Universal Strip Tool with length stop	One blade included
83250022	FLEXIMARK Stainless Steel Cable Tie Gun	Includes cutting head

Heavy Duty uPVC Solar Conduit

FOR SOLAR POWER INSTALLATIONS



Application

Our flexible solar conduit is designed specifically for long term outdoor applications. Flexible conduit is very popular leading into the DC isolators, or when bending rigid conduit is not really an option.

Features

- » Compatible with a full range of Marley uPVC fittings
- » Heavy duty for solar applications
- » UV resistant



SKU	Description	Diameter	Length
Rigid			
PV-Rigid-25-4m	Grey Heavy Duty uPVC SOLAR Rigid Conduit - Comes with Solar Markings	25mm	4m
PV-Rigid-32-4m	Grey Heavy Duty uPVC SOLAR Rigid Conduit - Comes with Solar Markings	32mm	4m
Flexible			
PV-Flex-25-50m	Grey Heavy Duty uPVC SOLAR Corrugated Conduit - Comes with Solar Markings	25mm	50m
PV-Flex-32-25m	Grey Heavy Duty uPVC SOLAR Corrugated Conduit - Comes with Solar Markings	32mm	25m

Marley Solar Conduit Accessories

FOR HEAVY DUTY UPVC SOLAR CONDUIT



Coupling



Female Adapter



Male Adapter



Male XL Adapter



Plain Bend



Sweeping Bend



Inspection Bend



Inspection Junction



Saddle



Conduit Clip



Flexible Conduit Gland

SKU	Type
25mm	
PV-CON-02.25	Coupling
PV-CON-04.25	Female Adapter
PV-CON-05.25	Male Adapter
PV-CON-05.25-XL	Male XL Adapter
PV-CON-10.25	Saddle
PV-CON-12.25	Plain Bend
PV-CON-12A.25.90	Sweeping Bend
PV-CON-14.25	Inspection Junction
PV-CON-15.25	Inspection Bend
PV-CON-19.25	Conduit Clip
PV-CON-27.25G	Flexible Conduit Gland

SKU	Type
32mm	
PV-CON-02.32	Coupling
PV-CON-04.32	Female Thread Adapter
PV-CON-05.32	Male Thread Adapter
PV-CON-10.32	Plastic Saddle
PV-CON-12.32	Plain Bend
PV-CON-12A.32.90	Sweeping Bend
PV-CON-14.32	Inspection Junction
PV-CON-15.32	Inspection Bend
PV-CON-19.32	Conduit Clip
PV-CON-27.32G	Flexible Conduit Gland

Roof Penetration

DEKTITE UV RESISTANT ROOF PENETRATION FOR SOLAR CONDUIT



Application

Dektite is a trusted brand for roof penetration systems. When it comes to roofs it is not worth risking inferior no-name products on the market. A leaky home will cost you dramatically in the long run, so to avoid this always choose the market leader brand Dektite.

SKU	Description	Type	Conduit Fitting
PV-DFE100BS	Dektite Colour Steel Roof Penetration	Long life EPDM high quality rubber	0-35mm OD
PV-TFL5-55	Dektite Concrete Tile Roof Penetration	Long life and easy to mould lead	5-55mm OD



PV-DFE100BS



PV-TFL5-55

Regulations For Conduit

AS/NZS 5033:2014 - 4.3.6.3.1

All conduit and ducting exposed to sunlight shall be of a UV resistant type

AS/NZS 5033:2014 - 4.3.6.3.2

DC cables should be installed in heavy duty conduit. We recommend installers read this clause for further clarification.

Kraus & Naimer DC Isolators

DC DISCONNECTORS FOR PV SUPPLY SYSTEM



Details

Kraus & Naimer (K&N) are known in the market for their high quality product. The K&N DC isolators we stock are all manufactured in Germany. For peace of mind, you can always trust a K&N isolator.

Features

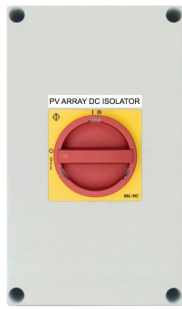
- » Simple Design
- » IP67
- » UV Resistant
- » Lockable off position

Conductors

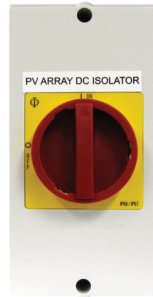
- » 4mm² Flexible
- » 6mm² Class 2
- » 6mm² Flexible with Ferrule

Ambient Temperature

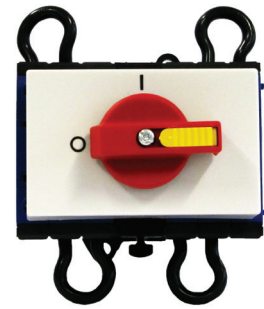
- » 25A: 50°C
- » 58A: 65°C



PV-110598647 (1000V 58A)



PV-110457907 (1500V 25A)



PV-110363011 (1500V 25A)

SKU	Type	Voltage	Max Amps	Dimensions	Knockout Entries	IP Rating
Box Mounted						
PV-110598647	Standard box	1000	58	100W x 190H x 93D	4 x M12 2 x m20 (Threaded)	IP67
PV-110457907	Large box	1500	25	100W x 190H x 93D	6 x M25	IP67
Din Mounted						
PV-110363011	DIN Mount	1500	25	76W x 45H (4 pole spaces)		

Isolator Current Ratings		
Rated Current (A)	Number of Series Contacts	Total Voltage DC V (1.2 x Voc Array)
DC21B A	3	6
25	240	480
25	330	660
25	420	840
25	510	1000
23	600	1200
19	690	1380
14	900	1500
12	1000	1500
9	1100	1500
7	1200	1500

AC Isolators

AC DISCONNECTORS FOR PV POWER SUPPLY SYSTEM



Details

Basic A/C isolators suitable for switching standard AC circuits (such as the Inverter mains power).

Features

- » Simple Design
- » IP56 & IP66
- » UV Resistant
- » Lockable off position



PV-AC20A (25A)



PV-AC20A-XL (25A)



PV-AC35A (35A)



PV-AC35A3P (35A)

SKU	Type	Voltage	Max Amps	Dimensions	IP Rating
Single Phase (1 Pole)					
PV-AC20A	Small box	250	20	132h x 85w x 64d	IP66
PV-AC20A-XL	Large Box	250	20	170h x 85w x 90d	IP56
PV-AC35A	Large Box	250	35	170h x 85w x 90d	IP56
Three Phase (3 Pole)					
PV-AC35A3P	Large Box	440	35	167h x 83w x 87d	IP56



AC & DC ISOLATORS

Noark DC MCBs

NON-POLARISED DC, K TYPE FOR PV SYSTEMS



Application

DC miniature circuit breakers Ex9BP are designed for direct current applications. Thanks to their polarity independency they are suitable for PV applications.

Features

- » Non-polarized, suitable for PV
- » K type tripping
- » 1 to 4 modules

Standards

- » Tested according to IEC / EN 60947-2

Working Temperature

- » -35~+70



2 Pole | 360Vdc



4 Pole | 720Vdc



Locking Device (PV-86218)

SKU	Poles	Current Rating (A)
360V		
PV-N84449	N2P	10A
PV-N84450	N2P	16A
PV-N84451	N2P	20A
PV-N84452	N2P	25A
PV-N84453	N2P	32A
PV-N84454	N2P	40A
PV-N84455	N2P	50A
PV-N84456	N2P	63A
720v		
PV-N84475	N4P	10A
PV-N84476	N4P	16A
PV-N84477	N4P	20A
PV-N84478	N4P	25A
PV-N84479	N4P	32A
PV-N84480	N4P	40A
PV-N84481	N4P	50A
PV-N84482	N4P	63A

Gave String Fuses 1000VDC

FITS NOARK EX9FP PV STRING FUSE HOLDERS



Application

A range of fuse links specifically designed for the protection and isolation of photovoltaic strings. The fuse links are capable of interrupting low overcurrents associated with faulted PV (reverse current, multi-array fault) string arrays.

Features

- » gPV Type for Solar Applications
- » Suitable for Ex9FP Fuse Holder
- » 10 x 38mm
- » 1000VDC

SKU	Amperage
30F2PV	2
30F6PV	6
30F8PV	8
30F10PV	10
30F12PV	12
30F15PV	15
30F20PV	20



Noark String Fuse Holders 1000VDC

SUITABLE FOR CYLINDRICAL FUSE LINKS



Application

Designed for PV applications. Includes built in fuse integrity indicator and is ideally suited to fitting in consumer units, as the profile is the same as a standard circuit breaker.

Features

- » DC Fuse disconnectors for PV systems
- » Rated short-circuit breaking capacity Icn with appropriate fuse-link up to 33 kA
- » Rated current up to 30 A
- » Optical tripping indicator
- » Fuse-links of size 10 x 38 mm
- » Utilization category DC-20B

SKU	Type
85500	Single Pole
85515	Double Pole



Noark DC SPDs

COMPLETE SURGE PROTECTION DEVICES SUITABLE FOR PV SYSTEMS



Application

Noark DC Surge protection devices Ex9UEP are suitable for photovoltaic applications. These SPDs are designed and tested according to PV T2 class from EN 50539-11 standard. Indication front window helps users to know the status of device and remote-signal port is able to provide remote indication and alarm. Plug-in module design makes it convenient to change module without device disconnection.

Features

- » PV T2 (Class II, Type 2, C) class SPDs
- » For grounded and ungrounded PV systems
- » Meet requirements of EN 50539-11
- » Nominal discharge current In 20 kA (8/20 μs) per path
- » Maximum discharge current I_{max} 40 kA (8/20 μs)
- » Max. continuous operational voltage UCPV from 600 to 1500 V DC
- » Plug-in module design with status indication

SKU	System Type	Poles	Connection Configuration	Max Voltage
PV-108016	Ungrounded	1	I	600 V DC
PV-108022	Grounded	3	Y	1200 V DC



ABB MCBs

INDUSTRIAL LOW VOLTAGE C-CURVE MINIATURE CIRCUIT BREAKERS



Application

The ABB S200 series is the industrial range of circuit breakers from ABB (not to be confused with the ABB SH series for residential/commercial applications). The industrial range are designed for tougher installations like in factories, and they are suitable for both AC and DC applications.

Voltage Ratings

- » Maximum (Incl. Tolerance) 253 V AC
- » Maximum (Incl. Tolerance) 72 V DC
- » Maximum 253 V AC
- » Maximum 72 V DC
- » Minimum 12 V AC
- » Minimum 12 V DC

Standards

- » IEC/EN 60898-1
- » IEC/EN 60947-2
- » UL 1077

Working Temperature

- » Operation -25 ... +55 °C



S201



S202



S203

Current Rating	1 Pole	2 Pole	3 Pole
1	S201C1		
2	S201C2	S202C2	
3	S201C3		
4	S201C4	S202C4	S203C6
6	S201C6	S202C6	S203C10
10	S201C10	S202C10	S203C16
16	S201C16	S202C16	S203C20
20	S201C20	S202C20	S203C25
25	S201C25	S202C25	S203C32
32	S201C32	S202C32	S203C40
40	S201C40	S202C40	S203C50
50	S201C50	S202C50	S203C63
63	S201C63	S202C63	

PV Power Enclosures

IP65 ENCLOSURES FOR STRING COMBINING AND ISOLATING



Application

PV Power IP65 Enclosures are manufactured in Europe from ASA (Acrylonitrile Styrene Acrylate). ASA material is extremely tough with good chemical resistance and thermal stability, UV stabilized, and outstanding resistance to weather and aging. These enclosures are fitted with a small handle for locking the door and can be retrofitted with a key lock assembly. Each enclosure is equipped with multiple metric knockouts in numerous sizes, in top, bottom and sides for extra versatility.

Features

- » Tamper evident security seal
- » Optional key lock available
- » Blanking Plates included
- » Made in Europe
- » UV stabilised

Specifications

- » Material: Acrylonitrile Styrene Acrylate (ASA)
- » Complies with: IEC 60670-1 :2002 IEC 60670-24:2005
- » Rated voltage: 1000VDC
- » Resistance of insulating material to fire (glow wire test): 650°C
- » Protection degree IP65
- » Insulation class II



PV-N4D



PV-N8D



PV-N12D



PV-N24D



PV-N36D

SKU	Poles	Dimensions (WxHxD)	Rows
Enclosures			
PV-N4D	4	127 x 200 x 120	1 Row
PV-N8D	8	200 x 200 x 120	1 Row
PV-N12D	12	318 x 258 x 142	1 Row
PV-N24D	24	318 x 383 x 142	2 Rows
PV-N36D	36	318 x 507 x 142	3 Rows
Accessories			
PV-LOCKDP	Enclosure Lock		
PV-103547	Enclosure Earth Neutral Bar (14 + 9 + 8 holes)		



LV MCBs & ENCLOSURES

Gave NH Fuse Switch Disconnectors

HIGH CURRENT FUSES FOR BATTERY PROTECTION



Application

NH fuse switch disconnectors are used on low voltage electrical systems that require high protection against short-circuit while securing on load circuit disconnection and isolation.

Standards

- » IEC/EN 60 947-3
- » VDE 0660 / part 100
- » IEC/EN 60 269-2-1
- » VDE 0636 / part 201

Features

- » Voltage Rating: 440Vdc
- » For use with NH1 Size Fuses
- » Fuses are sold separately



SKU	Size	Max Current Rating
PV-713	NH00	160A
PV-733	NH1	250A

NH Fuse Switches

FUSES FOR HIGH CURRENT APPLICATIONS



Application

80 to 630A (Grey) are designed to protect installations and equipment against overload and short-circuit currents on low voltage electrical circuits.

Standards

- » IEC/EN 60 947-3
- » VDE 0660 / part 100
- » IEC/EN 60 269-2-1
- » VDE 0636 / part 201

Features

- » AC Voltage: 500V
- » DC Voltage: 440V



SKU	Size	Max Current Rating
PV-66920080	NH00	80A
PV-66920100	NH00	100A
PV-66920160	NH00	160A
PV-67120200	NH1	200A
PV-67120250	NH1	250A

Susol MCCB for DC Application

MOULDED CASE CIRCUIT BREAKERS SUITABLE FOR AC AND DC APPLICATIONS



Application

Susol MCCB is suitable for DC application such as Photovoltaic Circuit Breaker, UPS and data-centre.

Features

- » DC short circuit test tested by VDE
- » Available for AC/DC application

Specifications

- » Rated Current: 16A~800A
- » Higher nominal voltage range up to 1000 VDC
- » No of Poles: 2/3/4Pole



TS100N



TS160N



TS250N



TS400N



TS800N

SKU	Current Rating(A)	kA@415V	Lug Hole Size	Trip Unit
TS100N				
0105011500	40	50	M8	FMU
0105011600	50	50	M8	FMU
0105011700	63	50	M8	FMU
0105011800	80	50	M8	FMU
0105011900	100	50	M8	FMU
TS160N				
0105025900	125	50	M8	ATU
0105025800	160	50	M8	ATU
TS250N				
0105022900	200	50	M8	ATU
0105023000	250	50	M8	ATU
TS400N				
0108005100	400	65	M10	ETS33
0108006300	630	65	M10	ETS33
TS800N				
0111002300	800	65	M12	ETS43

Nylon Cable Glands

THREADED NYLON GLANDS FOR USE IN CONTROL CABINETS



About the threads

Metric thread is the most commonly used in New Zealand. However for some specialist equipment imported from overseas you may occasional find they have been tapped with PG threads. In this case we have a full range of PG threaded glands. If you have any questions on thread types feel free to contact our sales teams for more information.

Construction

Special Polyamide (nylon plastic) for harsh applications

Temperature Rating

» Static: -40 to 100
» Cable Moving: -20 to 100

Protection

» IP68 - 5 bar
» IP69K



Size	Clamping Range	Thread Length	Gland	Locknut	Gland	Locknut
Metric Thread						
M12	3.5 to 7mm	8	53111200	53119100	53111000	53119000
M16	4.5 to 10mm	8	53111210	53119110	53111010	53119010
M20	7 to 13mm	9	53111220	53119120	53111020	53119020
M25	9 to 17mm	10	53111230	53119130	53111030	53119030
M32	11 to 21mm	10	53111240	53119140	53111040	53119040
M40	19 to 28mm	10	53111250	53119150	53111050	53119050
M50	27 to 35mm	12	53111260	53119160	53111060	53119060
M63	34 to 45mm	12	53111270	53119170	53111070	53119070
PG Thread						
PG7	2.5 to 6.5mm	8	53015200	53019200	53015000	53019000
PG9	3.5 to 8mm	8	53015210	53019210	53015010	53019010
PG11	4 to 10mm	8	53015220	53019220	53015020	53019020
PG13.5	6 to 12mm	9	53015230	53019230	53015030	53019030
PG16	9 to 14mm	10	53015240	53019240	53015040	53019040
PG21	13 to 18mm	11	53015250	53019250	53015050	53019050
PG29	14 to 25mm	11	53015260	53019260	53015060	53019060

Spiral Cable Glands

CABLE GLANDS WITH SPIRAL STRAIN RELIEF



Construction

» Special Polyamide (nylon plastic) for harsh applications

Temperature Rating

» Static: -40 to 100
» Cable Moving: -20 to 100

Protection

» IP68 - 5 bar
» IP69K



Size	Clamping Range	Thread Length	Gland	Locknut	Gland	Locknut
Metric Thread						
M12	3.5 to 7mm	8	53111700	53119100	53111600	53119000
M16	4.5 to 10mm	8	53111710	53119110	53111610	53119010
M20	7 to 13mm	8	53111720	53119120	53111620	53119020
M25	9 to 17mm	9	53111730	53119130	53111630	53119030
M32	11 to 21mm	10	53111740	53119140	53111640	53119040
PG Thread						
PG7	2.5 to 6.5mm	8	53015800	53019200	53015600	53019000
PG9	3.5 to 8mm	8	53015810	53019210	53015610	53019010
PG11	4 to 10mm	8	53015820	53019220	53015620	53019020
PG13.5	6 to 12mm	9	53015830	53019230	53015630	53019030
PG16	9 to 14mm	10	53015840	53019240	53015640	53019040
PG21	13 to 18mm	11	53015850	53019250	53015650	53019050

Nylon Cable Glands Vents

BREATHABLE PRESSURE COMPENSATION ELEMENT WITH MEMBRANE TECHNOLOGY



Material

» Polyamide 6 - Standard version / UL 94 V2
» Polyamide 66 - UL Version / UL 94 V0
» Flat sealing NBR - Standard version
» O-Ring NBR - UL version

Features

» Closure element and a pressure equalization in one system
» Lower space requirement
» High air flow

Protection Rating

» Standard: IP66 / IP68 / IP69
» UL: IP66 / IP67 / IP69

Temperature Range

» -20°C to +100°C



Article number	Size	Overall length C mm	Thread length D mm	Pieces
Not certified version				
51730200	12x1.5 BK	17.3	10	25
51730202	12x1.5 LGY	17.3	10	25
cURus certified version				
51730201	12x1.5 BK plus	17.3	10	25
51730203	12x1.5 LGY plus	17.3	10	25

Multi-Hole Inserts

GLAND INSERTS WITH MULTIPLE CABLE HOLES



Application

Multi-hole inserts are the perfect option when brining multiple cables through a single gland (for example: string cables and earth cables). Using the Multi-hole insert you can achieve IP68 waterproofing. Also, unlike using silicon, you can remove the multi-hole insert at and time to service the device.

SKU	For Gland	Number of Holes	Hole Size
Multiple Hole Inserts			
53316220	M16	2	2 mm
53316230	M16	2	3 mm
53316240	M16	2	4 mm
53320250	M20	2	5 mm
53320260	M20	2	6 mm
53320340	M20	3	4 mm
53320353	M20	3	5.3 mm
53320440	M20	4	4 mm
53325260	M25	2	6 mm
53325350	M25	3	5 mm
53325360	M25	3	6 mm
53325370	M25	3	7 mm
53325450	M25	4	5 mm
53325540	M25	5	4 mm
53325640	M25	6	4 mm
53332270	M32	2	7 mm
53332280	M32	2	8 mm
53332290	M32	2	9 mm
53332380	M32	3	8 mm
53332470	M32	4	7 mm
53332560	M32	5	6 mm
53332650	M32	6	5 mm
53332840	M32	8	4 mm
53332850	M32	8	5 mm
53332940	M32	9	4 mm
53340480	M40	4	8 mm
53340580	M40	5	8 mm
53340590	M40	5	9 mm
53340670	M40	6	7 mm
53340860	M40	8	6 mm
53340969	M40	9	6.9 mm
53350166	M50	16	6 mm
53350680	M50	6	8 mm
Special Automation Inserts			
53611001	M20	1	ASI Flat Cable
53440980	M25	1	RJ45's
Solid Inserts for Sealing			
54113000	M12	Solid	Solid
54113010	M16	Solid	Solid
54113020	M20	Solid	Solid
54113030	M25	Solid	Solid
54113040	M32	Solid	Solid
54113050	M40	Solid	Solid
54113060	M50	Solid	Solid

PINS FOR SEALING OFF UNUSED HOLES

SKU	Pin Diameter	Length
53100004	4mm	9mm
53100005	5mm	11mm
53100006	6mm	14mm
53100007	7mm	14mm
53100008	8mm	14mm
53100009	9mm	14mm



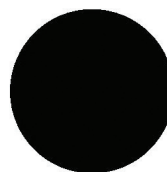
Standard Dix Inserts for Multiple Cables



Special AS-I Insert for Flat Cable



Special Insert for RJ45 Ethernet Cable



Solid Rubber for Sealing Glands



Sealing Pins

Regulations For Sealing

AS/NZS 5033:2014 - 4.3.6.3.1

Cables exiting from conduit or ducting that connects to a disconnect enclosure shall have the end of the conduit or ducting sealed. Use of silicon or other similar sealant product as primary means of sealing cable entry/exit point shall not be permitted... this sealing may be achieved by use of an appropriate cable gland.

Stainless Steel Solar Cable Management

FOR SOLAR POWER INSTALLATIONS



Ties

Some basic cable ties are bare metal and are quite sharp, however Wiley cable ties have a black Epoxy coating and are less likely to cut into cables.

Clips

- » Can hold 2 cables: 5.0mm-5.7mm (i.e. a loop)
- » Can hold 1 cable: 5.0mm-7.0mm
- » Quick tidy cable handling
- » 304 Stainless Steel
- » Wiley is the market leader for this type of product



SKU	Description	Stainless Steel Rating	Dimensions	Pack Size
Ties				
PV-TS1-4-46200-316C	Epoxy Coated Stainless Steel Cable Ties	316	4.6 x 200mm	100
PV-TS1-4-46360-316C	Epoxy Coated Stainless Steel Cable Ties	316	4.6 x 360mm	100
LAPP-83250022	Stainless Steel Cable Tie Tool			1
Clips				
PV-ACC-EACH	Stainless Steel Cable Clips Each	304		1
PV-ACC	Stainless Steel Cable Clips Packet	304		100

Regulations For Stainless Steel Solar Cable Management

AS/NZS 5033:2014 - 4.3.6.3.1

Plastic cable ties shall not be used as a primary means of support... even if installed under the array.

PV Warning Labels

PV WARNING STICKER PACKS FOR AC & DC SYSTEMS



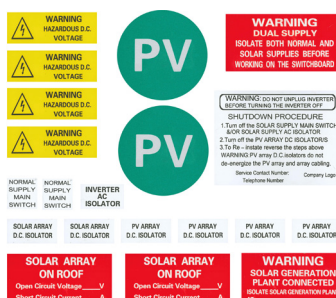
Features

- » Pre-Printed
- » UV Resistant
- » Water Resistant
- » Self Adhesive Backing

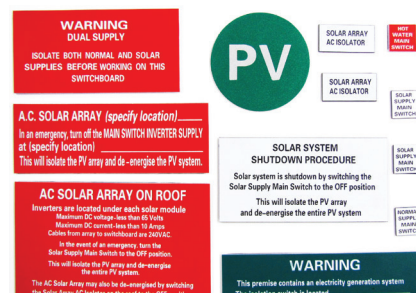
SKU	System Type	Pack Size
PV-Sticker3	DC	1
PV-Sticker5	DC	24
PV-Sticker6	AC	12



PV-Sticker3



PV-Sticker5



PV-Sticker6



STAINLESS STEEL & PV LABELS

Wieland Micro Inverter Connectors

GESIS RST CONNECTION SYSTEM FOR MICRO-INVERTERS



Features

- » 3 pole IP68 Connector System
- » Pre-assembled components
- » IP68 protection for a fast and safe installation
- » On-site field wiring as well as pre-assembled leads in a variety of lengths
- » Resulting cable lengths repeat from system to system
- » AC side can be installed similarly to the traditional DC module to module interconnection method
- » Wieland RST connectors can be found on most of the world's leading micro inverters

Notes

Each micro inverter plugs into a Wieland RST Distribution Block, and the Distribution Blocks are connected using either the 1m, 2m or in some cases the 5m Wieland RST extension cables.



20A Female Inline Socket



20A Male Inline plug



20A Distribution block



25A Female Inline Socket



25A Male Inline Plug



Protective Male Cover (20A & 25A)



Protective Female Coverover (20A & 25A)



20A Male To Female Lead (2.5mm2 H07RNF)



25A Male To Female Lead (4mm2 H07RNF)

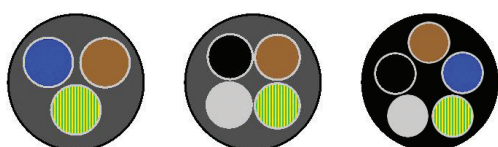
SKU	Description	Notes
20A Inline Socket		
96.031.4053.1	6-10mm cable OD	
96.031.4153.1	10-14mm cable OD	
20A Inline Plug		
96.032.4053.1	6-10mm cable OD	
96.032.4153.1	10-14mm cable OD	
20A Distribution Block		
96.030.0153.1		3 x female and 1 x male
25A Inline Socket		
96.031.4154.3	10-14mm cable OD	
96.031.4554.3	13-18mm cable OD	
25A Inline Plug		
96.032.4154.3	10-14mm cable OD	
96.032.4554.3	13-18mm cable OD	
Protective Male Cover (20A & 25A)		
99.416.6205.2		Suits male
Protective Female Coverover (20A & 25A)		
99.414.6205.2		Suits female
20A Male To Female Lead (2.5Mm2 H07rnf)		
96.233.1030.1	1 metre	
96.233.2030.1	2 metre	
96.233.5030.1	5 metre	
25A male to female lead (4mm2 H07RNF)		
96.834.1030.3	1 metre	
96.834.2030.3	2 metre	
96.834.4030.3	4 metre	

COLOUR CODING FOR POWER CABLES



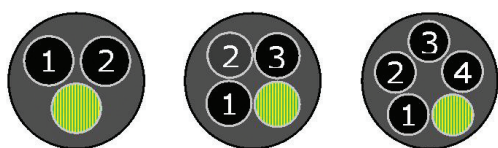
AS/NZS STANDARD

Cores	3	4	5
Application	Single Phase	Three Phase	3 Phase + N
Earth	Green/Yellow	Green/Yellow	Green/Yellow
Neutral	Black		Black
	Red	Red	Red
Phases		White	White
		Blue	Blue



VDE EUROPEAN STANDARD

Cores	3	4	5
Application	Single Phase	Three Phase	3 Phase + N
Earth	Green/Yellow	Green/Yellow	Green/Yellow
Neutral	Blue		Blue
	Brown	Brown	Brown
Phases		Black	Black
		Grey	Grey



NUMBER CODED

Cores	3	4	5
Application	Single Phase	Three Phase	3 Phase + N
Earth	Green/Yellow	Green/Yellow	Green/Yellow
Neutral	2		4
	1	1	1
Phases		2	2
		3	3

CROSS-REFERENCE BETWEEN STANDARDS

	AS/NZS	European	Number Coded
Phase 1	Red	Brown	1
Phase 2	White	Black	2
Phase 3	Blue	Grey	3
Neutral	Black	Blue	4
Earth	Green/Yellow	Green/Yellow	Green/Yellow

Accepted Standards AS/NZS 3000:2007

For industrial factory and machine applications many of the cables are being designed and manufactured in Europe.

Some cables use AS/NZS colour coding but many of the high end cables (including flex's and robotic cables) will use the European VDE colour coding standard.

AS/NZS Standard, European and number coded standards are accepted in Australia (AS/NZS 3000:2007 ref 3.8.3.3)





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**SALES
PHONE
FAX**

0800 849 2211
(07) 849 2211
(07) 849 2220

**WEB
SHOP
EMAIL**

ecsnz.com
express.ecsnz.com
sales@ecsnz.com