

Solar PV Systems

ESSENTIAL
PARTS FOR **BoS**
COMPONENTS

SOLAR PV SYSTEMS - **EVERY COMPONENT MATTERS**

The solar industry is one of the fastest growing industries of our time. BloombergNEF predicts Wind Energy and Solar PV will grow to meet 56% of world electricity demand in 2050.*

Solar power technology has advanced impressively while also becoming less expensive. Getting PV panels installed is a perfect way to generate electricity without negatively impacting the environment. Photovoltaic solar panels especially have become extremely popular in various domestic, industrial and commercial applications.

Unfortunately, poor installation can cause a lot of expensive problems. Customers are often left paying the price for repairs and services, installation teams' reputations suffer, and the solar community ends up looking untrustworthy.

"THANKS TO THE INTERNATIONAL PRODUCTION FACILITIES AND GLOBAL SALES NETWORK, ESSENTRA PROVIDES WORLD-CLASS PLASTIC PRODUCTS & SERVICE SWIFTLY FOR PV BUSINESS WHICH IS THE MOST DESIRED FEATURE IN THE INDUSTRY.

HOPEFULLY IN COOPERATION WITH TOP COMPANIES LIKE ESSENTRA, WE CAN MAKE SOLAR EVEN BETTER, THE EARTH EVEN GREENER, THANK YOU, ESSENTRA."

Jerry Zhang,
Purchasing Director of SA Dept. Trinasolar



HERE ARE A FEW COMMON CHALLENGES THAT WE CAN HELP YOU WITH:

- Proper cable management to avoid damaged wire insulation
- Identifying cable polarisation
- Ensuring electronic components are watertight and tamper-proof
- Making electronic components easy to assemble
- Easy access to enclosures for BoS components
- Fastening solutions for rack building
- Protecting mounting rails, bolts and nuts against corrosion
- Avoiding microcracks with proper module protection

Our product offering, either standard from stock or tailored to your specific requirements, will help you minimise maintenance, maximise safety and help you achieve a service life of 25 years and beyond.

No matter what stage your product is at, whether you're refining your design or prototyping, our expert advice, extensive range, consistent quality and custom solutions can make all the difference.

*<https://about.bnef.com/new-energy-outlook>

CABLE MANAGEMENT SOLUTIONS

Proper cable management is not often a priority, but there are many potential issues that could arise when cables and wires aren't secured.

Solar panels and PV systems have a typical life expectancy of more than 25 years. When all cables are properly managed, the system is much more likely to last and will require fewer repairs over the course of its lifetime. For inevitable maintenance however, proper cable management allows for easier maintenance to troubleshoot and target problems.

To secure proper installation, cables must run in such a way to avoid: sharp corners from panels or mounting rails, direct exposure to sunlight, excessive bending, or anything that could damage the cable insulation. They must also be bundled and labelled, for easy identification during future maintenance or emergencies, and secured with the appropriate components and fasteners. Environmental factors such as nesting or curious animals and exposure to

the elements can cause significant damage, for example wind is the most common cause of damage to PV systems. Loosely hanging cables can scratch at mounting systems and become bare over time. Constant cable movements also have an effect on the tightness at the junction boxes.

Damaged cable insulation not only jeopardises the system's reliability, but also its safety, because it can lead to ground faults, system downtime and fire.

Manage, organise and protect your cabling to almost eliminate the risk of damage with our vast range of cable management solutions, designed to suit a range of demanding applications and varied environments. From cable clamps and cable conduit to grommets and UV-resistant cable ties, we're here to help.



CABLE TIES AND CLAMPS



UV-RESISTANT CABLE TIES

UL94 V-2 UV-resistant cable ties are ideal for applications where heat is generated or present. UV-resistant cable ties offer greater stability properties in harsh environments.



METAL CABLE TIES

Our 316 stainless-steel cable ties are self-locking and are easily installed by hand. They are resistant to extreme temperatures and offer great strength and durability. Also available with PVC coating and with ladder construction to provide extra gripping strength to avoid slippage.



CABLE STRAPS

Cable straps can be wrapped and secured around a number of cables to bundle them together. Available in elastomer or nylon material.



EDGE-MOUNT CABLE-TIE HOLDER

Metal edge cable-tie mounting clips are a permanent fixing for all sheet material applications, also available as clip or with cable-tie already installed.



ADHESIVE-MOUNT CABLE-TIE HOLDER

The adhesive mount cable-tie holder range offers versatility in terms of mounting options. It comes supplied with adhesive and also allows screw fixing. Available in fixed four-way cable-tie installation direction or swivel base holder.



CABLE CLAMPS

Cable clamps help you support cables and define their route. They come in a great variety with adhesive, clip-in or screw-in mounts. This one-piece design is self-mounting. Quick to install by hand. Many sizes are available for various bundle diameters and colours/materials.



MARKER CABLE TIES

All the benefits of a standard cable-tie, plus they have an identification tag, that can be written on.

CABLE PROTECTION



SPIRAL CABLE WRAPS

A lightweight and protective wrap, which provides a cost-effective hose and cable protection.



CONDUIT EDGE CLIPS

These clips are designed to mount onto the edge of a panel. They come in several styles that hold different corrugated tube sizes.



CABLE CONDUIT

The cable conduit range supports plastic or metal conduit systems and accessories like elbows, fittings and clamps. Comes in a variety of materials to suit your requirements.



CONDUIT CLAMPS

Securely holds corrugated/convoluted tubing or other bundles. An internal rib spanning the diameter of the clamp provides a tight grip. Releasable latch for convenient maintenance. Fir-tree mount accommodates a large range of panel thicknesses.













CABLE-CONDUIT HOLDER

The cable-conduit holders are designed to keep the cable conduit in place and are easy to install with a single screw.

CHOOSING THE RIGHT CABLE CLAMP

Choosing the correct cable clamp will ensure a clean, easy-to-manage cable installation. Here are some simple guidelines to get you started.

	Cables raised off the panel-board surface STANDOFF CLAMP		Run ribbon cables for computers and other applications FLAT CABLE CLAMP, ADHESIVE MOUNT, TENSION
	Ability to adjust for cabling changes ADJUSTABLE ADHESIVE DIAMETER CLAMP		Hose protection, vibration absorption and electrical insulation STEEL CABLE CLAMPS WITH RUBBER CUSHION
	Quick and simple installation on flat, dry surfaces ADHESIVE-BACKED CLAMPS, D STYLE		Prevent cables from shifting and/or tipping U-SHAPED CLAMP, SCREW MOUNT
	Push-in-place installation for pre-drilled or non-predrilled applications ROUND CABLE CLAMPS, PLUG IN		Add support for strain relief STRAIN RELIEF CLAMP
	Run multiple cables or cable bundles in parallel MULTI-CABLE CLAMPS, SCREW-MOUNT CABLE GRIPS		Route cable bundles in limited space HALF U SNAP-IN CABLE CLAMPS

MODULE PROTECTION DURING TRANSPORT

Often, solar modules are temporarily left unpacked awaiting installation on site. If they are uncarefully stacked or handled microcracks could occur, especially with frameless glass-glass modules. Using **corner protectors** can help you avoid this.



CORNER PROTECTORS

Our range of corner and edge protectors are designed to protect your products during transit, handling and storage. Designed to increase safety and minimise potential damage, we offer a variety of products in various materials dependent on your requirement.

Solar modules are usually packed in layers on wooden pallets or in cardboard packaging. The pallets are fixed with belts for transport. **Edge protectors** are used here to prevent damage to these precious goods.



EDGE PROTECTORS

Edge protectors increase the load capacity when stacking and stabilize and support products during transport, as well as during handling and storage. Our protectors are available in a variety of materials and styles to protect plastic straps and protruding corners.

MOUNTING FOR QUICK ASSEMBLY, BOLT PROTECTION AND THE FINISHED LOOK

In case you are using rubber mats to level out your base structure or avoid roof damaging, our fasteners can help you hold everything in place. Mounting rails can have sharp and unfinished-looking ends. Our end caps can help you create a more finished look.



PUSH-IN RIVETS

These fir-tree or barbed rivets have a ribbed design that ensures a fast-and-easy installation while securely holding into various materials such as wood, metal, foam, rubber and plastic. When pushed into a hole, the flexible ribs deflect, then spring back, to lock securely in place. Available in over 100 sizes and styles for different hole diameters and panel thicknesses.



FLEXICAPS AND INSERTS

These black PVC square end caps are available in a range of sizes that are suitable for square profiles. They are an ideal finishing product for tubular profiles and are flexible and easy to fit. Square inserts and glides come in a variety of options and styles. Standard square ribbed inserts are ribbed for easy assembly and secure fitting and cover sharp edges. They are available in a wide range of sizes, 10 different colours and in both a polished or eroded finish. Chrome-plated inserts offer an attractive finish and provide an enhanced aesthetic appearance. They are ribbed for ease of insertion and a positive fit. Chrome inserts provide a very neat finish with a high-gloss chrome coating. They are available in either chrome or dark chrome finishes.



BOLT AND NUT PROTECTION CAPS

Snap-on bolt and nut protection caps are supplied in a variety of sizes to suit your application. These standard caps protect washers, as well as bolts and nuts. Our LDPE option features an extendable head that is suitable for large studs and helps protect against weathering and tampering, while providing more of a finished appearance. Available in a choice of colour options.



PCB HARDWARE - MAKING ELECTRONIC COMPONENTS' ASSEMBLY QUICK AND EASY

From managing space to conductivity in your application, there are lots of factors to take into consideration when building electrical solutions. When it comes to circuit-board hardware, material and mounting type are key. Our PCB and electronics hardware range offers an extensive array of PCB spacers, PCB pillars, PCB supports and PCB standoffs to support, lock, space or guide the PCB. Here are a few examples of our star products.



CARD GUIDES

PCB card guides are used to mount circuit boards in tight spaces. Available in different mounting methods and holding alternatives.



PCB FAN ACCESSORIES

Fan accessories provide protection and mounting for small DC and AC fans. These silicone fan mountings offer a simpler, faster installation method than conventional screw mounts. Fan mounts have a high elongation rubber for easy fan mounting and component assembly and provides shock and vibration protection.



PCB MOUNTING PILLARS AND SUPPORTS

Raise, support, mount and space your PCB to the required surface with these items. They also add an element of insulation and protection from electrical transmission, while providing a more secure, stable hold. For materials, you can choose between plastics and metal. Plastics make your PCB lighter, and you might prefer the ease of installation that most of these supports offer. Mounting options vary, and include adhesive, edge locking, reverse locking, screw locking and snap lock.



LED MOUNTING HARDWARE

These LED spacers are available in three different styles to accommodate both T-1 and T-1 3/4 LEDs. They provide height control and lead wire retention and stability. They have a self-retaining feature for auto insertion and pre-assembly.

WHICH MOUNTING TYPE DO YOU NEED?



SNAP-FIT

Pushes into place for secure hold



THREADED

Holds in position with standard, undercut and self-tapping options



BLIND HOLE

Fins hold securely to blind holes



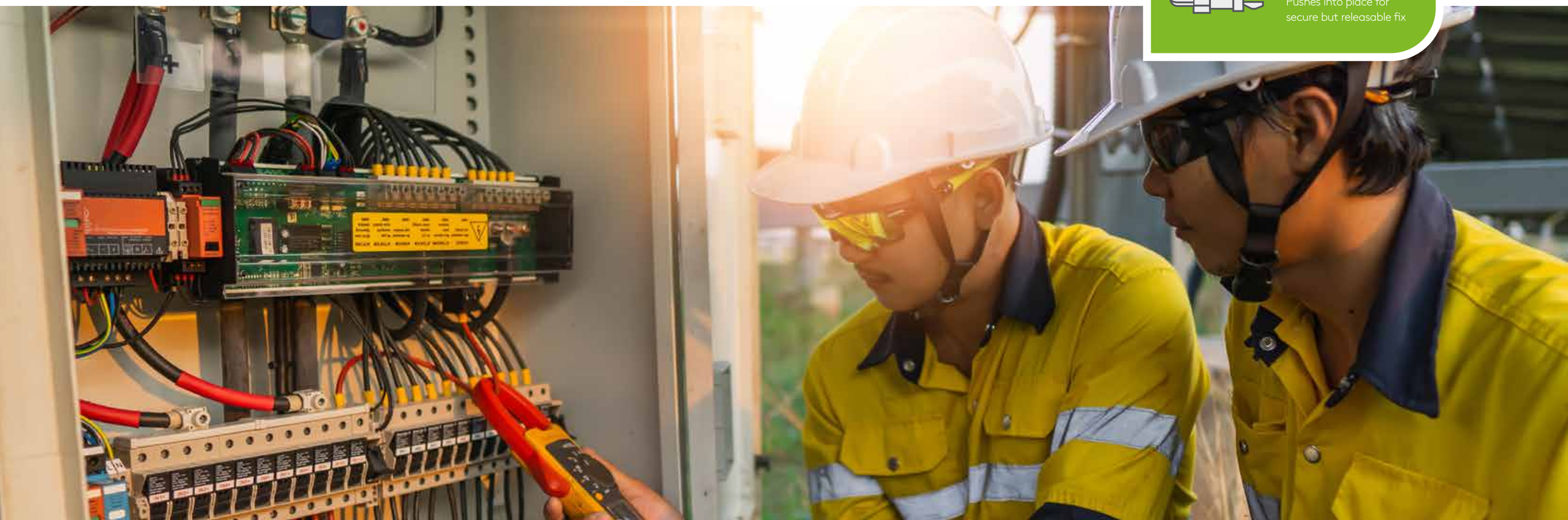
ADHESIVE BASE

Adhesive tape backing for a strong hold



SNAP-LOCK

Pushes into place for secure but releasable fix



ESSENTIAL PARTS FOR ELECTRONIC ENCLOSURES

Inverters play a crucial role in any solar energy system and are often considered to be the brains of a PV system. Solar combiner boxes consolidate incoming power into one main feed that distributes to a solar inverter. This saves labour and material costs through wire reductions. The combiner box is the first piece of equipment connected to the output of the solar modules, so it should be of good quality. A faulty combiner box can have serious safety implications, in some cases, resulting in fire.

Protecting the inner workings of these crucial components against extremes of weather and insects is imperative. Essentra can offer you weatherproof solutions with guaranteed ingress protection. Just what you need to prevent costly repairs.

Keeping your enclosures, cabinets and industrial units secure and safe is essential to building a successful application. With over 2000 parts available, our wide range of hinges and seals come in multiple variations and materials, all built to the highest industry standards, such as ISO, RoHS and Reach.



WEATHERPROOF SOLUTIONS



MULTI-SLOT CABLE GLANDS

With variations in thread size, colour and mounting thread lengths, the range supports an array of cable glands to suit your application needs.



MEMBRANE ENTRY GROMMETS

Quick and easy installation without tools. Dust tight & easy mounting. Suitable for unthreaded holes.



IP67 SEALING GROMMETS

IP67 grommets provide a dust and watertight seal. They are suitable for external applications, acting as a blanking plug until a cable is installed. They can withstand vibrations.



PUSH-IN CABLE BLANKING PLUG

Ideal for closing panel cavities. They provide a clean finish and a quick solution. They come in a large offering to suit hole diameter and panel thickness.



CABLE-GLAND INSERTS

These cable-gland inserts are designed to fit inside a metric cable gland. They are available with a various number of holes that allow several cables to be led through it simultaneously.



LIQUID-TIGHT PLUG

Liquid-tight plug IP67 is made from UL94-V0 silicone rubber and offers protection to IP67.



GASKETING

Essentra provides a wide range of clip-on gasket seals such as bubble and flipper, which provide an additional seal to enclosure boxes. We also offer weather-stripping tape which works well in outdoor applications, and gasketing that is resistant to water absorption. Our range includes neoprene gaskets and urethane gaskets.



CLICK-IN CABLE GLAND

Designed for tool-free mounting and dismantling.

ENCLOSURE ACCESS SOLUTIONS



SPRING-LOADED CAM LOCKS

IP65 quarter-turn spring latches are ideal for use on electrical cabinets and enclosures. With 6 head styles and 7 grip ranges available, as well as 3 material options, the variations are wide ranging for this product.



CORNER HINGES/ CONCEALED HINGES

Offset corner hinges come in different profiles to fit a combination of possibilities to offset the door to the frame. Concealed hinges prevent tampering from outside. Removable, they are also known as take-apart hinges.



CAM SWITCHES

These ABS plastic enclosures come complete with a 22mm operator and contact block and meet NEMA 4, 4x, 12, 13 and IP65 standards. Watertight, oil tight and corrosion resistant. Handle designed to fit finger ergonomics.



SWING HANDLES

Swing handles consist of a slam-action, spring-loaded handle and can be used either indoors or outdoors. They come with a choice of keyed alike, key to differ or a button to press.



PULL HANDLES

Pull handles are suitable for use on access cabinets or similar applications. They come in different designs and materials such as aluminium, polyamide and die-cast zinc alloy.



DON'T SEE WHAT YOU NEED HERE?

Ask us about different sizes, shapes, materials and finishes. Our Custom Solutions team will work to your specification. Find out more and contact us at:

essentracomponents.com

WHEN EVERY COMPONENT MATTERS

We're Essentra, a worldwide manufacturer and distributor of small, but vital components for multiple industries and are proud that even the smallest solutions have a big part to play in the Renewable Energy Industry. More specifically to the Solar Industry we can offer a vast array of essential components for solar equipment manufacturers or PV-system installers that can help you achieve a 25+ years' warranty.

We work with many of the world's leading solar-PV equipment manufacturers, providing the highest standards of service and quality.

Being a FTSE 250 company our reach is global with 12 manufacturing facilities around the world, yet we work hard to maintain a local understanding. For you, that means our manufacturing capabilities, experience, customer focus, and global infrastructure allows us to leverage our extensive network to deliver bespoke solutions.

We're able to bring together the best products, ideas and distribution for solar EPC firms, installers, electrical contractors and OEM rack or inverter manufacturers.

"ESSENTRA WAS SO EASY TO DEAL WITH, PROVIDING SAMPLES AND 3D PROTOTYPES THROUGHOUT THE PROJECT."

Bob Siegwald,
Burgaflex Executive Vice President

WE ARE PROUD
TO SUPPLY TO
7 OF THE TOP 10
GLOBAL
MANUFACTURERS

WE WORK TO THE
**HIGHEST
INDUSTRY
STANDARDS**
WITH ISO
ACCREDITATION

EUROPE



AMERICAS



ASIA PACIFIC



GLOBAL REACH WITH A LOCAL TOUCH

Whether you have a global or local project, with over 65 years' experience, and worldwide coverage, we are here to help you.

WHO IS ESSENTRA COMPONENTS?

We combine the expertise of a manufacturer with the range and service of a distributor. We act as the one-stop shop, single-source supplier of c-class components to 70 of the top 100 global manufacturers.

12

manufacturing
facilities

More than

65

years
heritage

>1

BILLION
parts in
stock

33

distribution
centres

More than

45k

products
available



WHY ESSENTRA?

FREE
SAMPLES

FREE
CAD

LOCAL
STOCK

FAST
DISPATCH

LOCAL
TEAM

OVER
45,000
PRODUCTS

ISO
ACCREDITED

LET'S TALK

For more information and to contact your nearest
Essentra office please visit essentracomponents.com
or email sales@essentracomponents.com