SOLAR PANELS AND THEFT – SYSTEM OVERVIEW

Solar Panels are favorite targets for vandals and thieves on a daily basis.

We see many sites that used to be fitted with solar panels.

Interlock Systems has developed a family of solar panel protection frames and devices to successfully counter this problem. Our range of products falls into five categories, each with its own unique features. This document is only an overview. Please contact our office for more information.

**SPC – Solar Panel Clamps:**
Hardened bracketry that clamp PV panels securely onto conventional mounting structures. The patented SPC system holds a PV panel from the top and bottom to prevent removal even if the top flange is damaged.

**PVF – Flexible Panel with stainless steel support structure:**
Flexible solar panels do not have glass windows and are thus much more resilient against vandalism. The PVF system enhance these advantages by bonding the panel onto a ridged stainless steel structure that can be mounted onto various secure towers and supports. Available in 220Wp panels.

**SPX – Solar panel with high impact window:**
Suitable for smaller solar panels (10W to 80W) and typically used in critical telemetry applications. The panels are protected against brutal attacks, including potential damage to the panel. Usually mounted on a secure enclosure to house batteries and equipment.

**SPL – Solar panel with high impact window:**
Similar to the SPX system but for larger panels (80Wp and 150Wp), the panels are protected against brutal attacks, including potential damage to the panel by a high-impact window that is held in place by a stainless steel structure. Usually pole mounted, but often designed to integrate into custom applications.

**SPF – Solar Panel in a stainless steel frame (without a window):**
The panels are extremely difficult to remove, and the system is designed that the panels will be destroyed if someone attempts to remove it.
Conventional solar panel clamps are light duty and easy to remove. The SPC clamps (manufactured from Stainless Steel) grip the bottom lip on conventional PV panels, and clamp them down from the top. Non-removable fasteners ensure a formidable clamp system.

SPC clamps are customized and manufactured to fit a specific type (brand) of solar panel.
**PVF – Flexible panel with stainless steel support structure**  
*Patent pending*

A boxed stainless steel support structure forms a base onto which a flexible panel is bonded along its entire rear surface with structural adhesives. Steel edging prevents a potential thief to access the bonded surface.

The flexible panels have a 20+ year life expectancy and is highly resistant to damage. Multiple mounting structures are possible, including Anti-Cut support towers.

The CIGS modules used have a low thermal derating coefficient to assist in warmer climates. **IDEALLY SUITED FOR BOREHOLE APPLICATIONS**
**SPX – Solar panel with high impact window:**
The PV panel is housed in a heavy duty stainless steel box structure and a high-impact window is secured over the PV panel.

This system is typically used to power remote telemetry systems and data loggers. SPX panels can be mounted on various ways, and is typically used with an Interlock secure enclosure which houses electronics, batteries and sensors.

SPX being stress-tested. Watch the full video here: https://www.youtube.com/watch?v=vU60p-wBvKg

SPX units used to monitor a reservoir

SPX Tower for a railroad application

SPX Tower CAD design
**SPL – Solar panel with high impact window:**

Similar to the SPX system, but with an alternative frame system to allow fitment of larger panels (Up to 140Wp), the SPL system encapsulates the solar panel with a stainless steel monocoque box and a high-impact window.

Front and back view of a SPL 140Wp panel

SPL units powering a radio tower at an open cast mine
SPF – Solar Panel in a stainless steel frame (without a window):
The SPF solution holds the PV panel in a stainless steel frame and is typically suited for tower applications. A window is not fitted over the panels to reduce the overall costs, but the risk of panels being damaged due to vandalism does exist. The frames are designed to protect the panels, but at some stage if a thief is persistent, the PV panel will break before it can be removed.

Various SPF towers in remote areas

Secure 19” rack enclosure at a radio tower

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