



Fiber Optical System

FOS UNIT



The unit FOS is constituted by an electronic type STANDALONE, compact and user-friendly, where inside there is a microcontroller. The module, which has the function of emitting a light beam modulated, transmitted over an optical fiber, and to analyze the same signal. If the signal transmitted by the control unit is interrupted, or does not match the one sent, the controller enters in alarm State.

The Electronic Unit is constituted:

- Internal Voltage DC-DC circuit with protection against reverse polarity and overload;
- Alarm system with transmitter and receiver multi-mode fiber ST connector;
- Alarm relay;

Optical Fiber



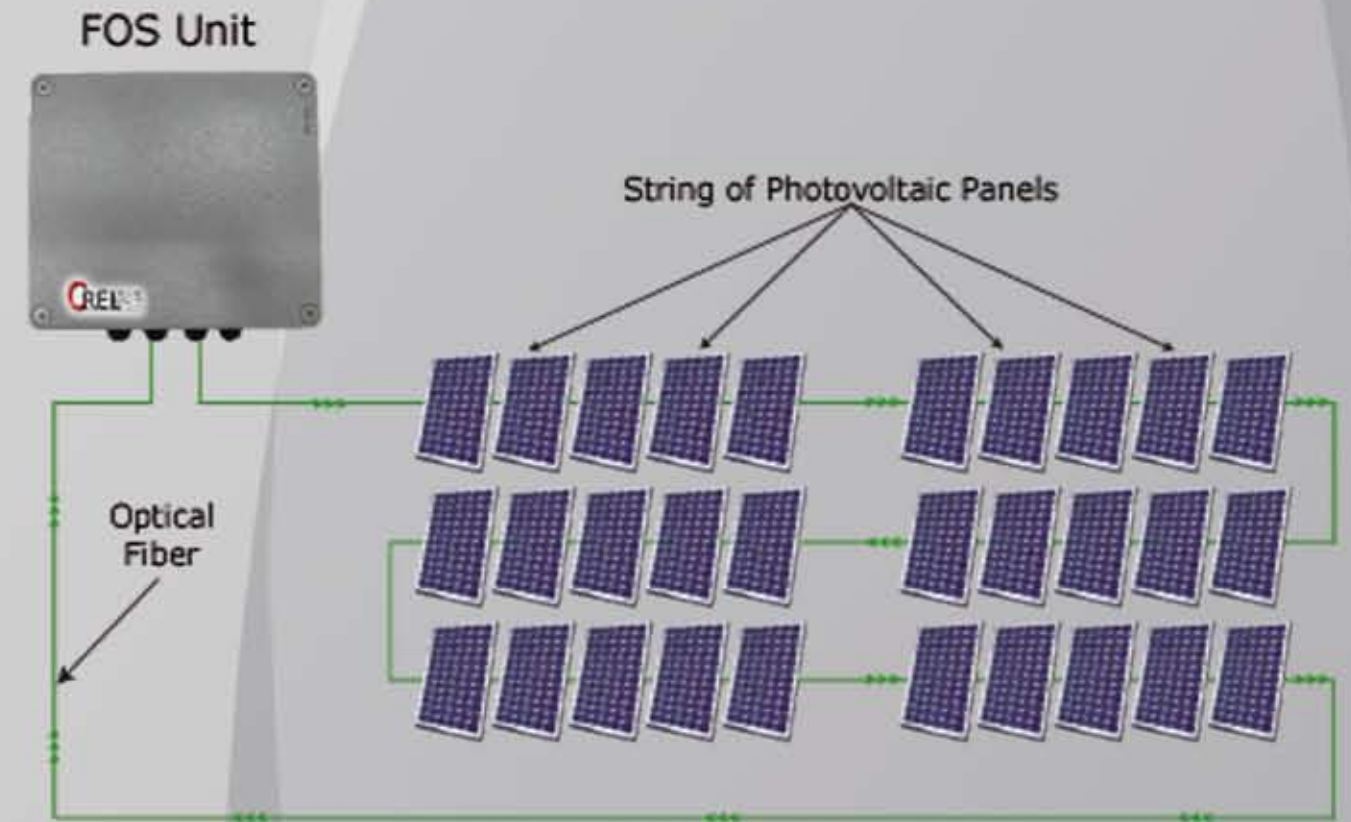
Fiber Multimode 62,5 / 125 of small diameter, high flexibility, ideal for cable distribution systems with terminal connection.

Attenuation at 850 nm of 0.35 dB / km

Bandwidth at 850 nm equal to 160: 300 MHz for Km

Operating temperature: - 25 ° / 80 ° C.

Connection Diagram



The alarm system is designed to ensure the protection of the solar panels, to avoid unwanted remove one. It consists of a transmitter of infrared light that emits a light radiation with wavelength of 820 nm; the light radiation modulated is sent to a multi-mode optical fiber of the type 62.5/125 μm . The light so transmitted is received by an optical sensor in charge and later analyzed by the processor. If the signal received is absent or not corresponding to the transmitted light it generates an alarm signal, either through a relay contact, and through the data transmission bus. The connectors to the optical fiber are ST type.

The optical fiber is mounted on the structures of the solar panels, "binding them mechanically" to each other, and can reach a length varying between 1000 and 1500 meters. In case of unwanted removal of the photovoltaic panels, will cause an interruption of the optical fiber consequently the FOS Unit generate the alarm signal.

To facilitate installation, the optical fiber can be divided into various sections and consequently joined with the aid of connectors cold joints and passers-ST type, or with the hot junctions.