

SV SENSOR

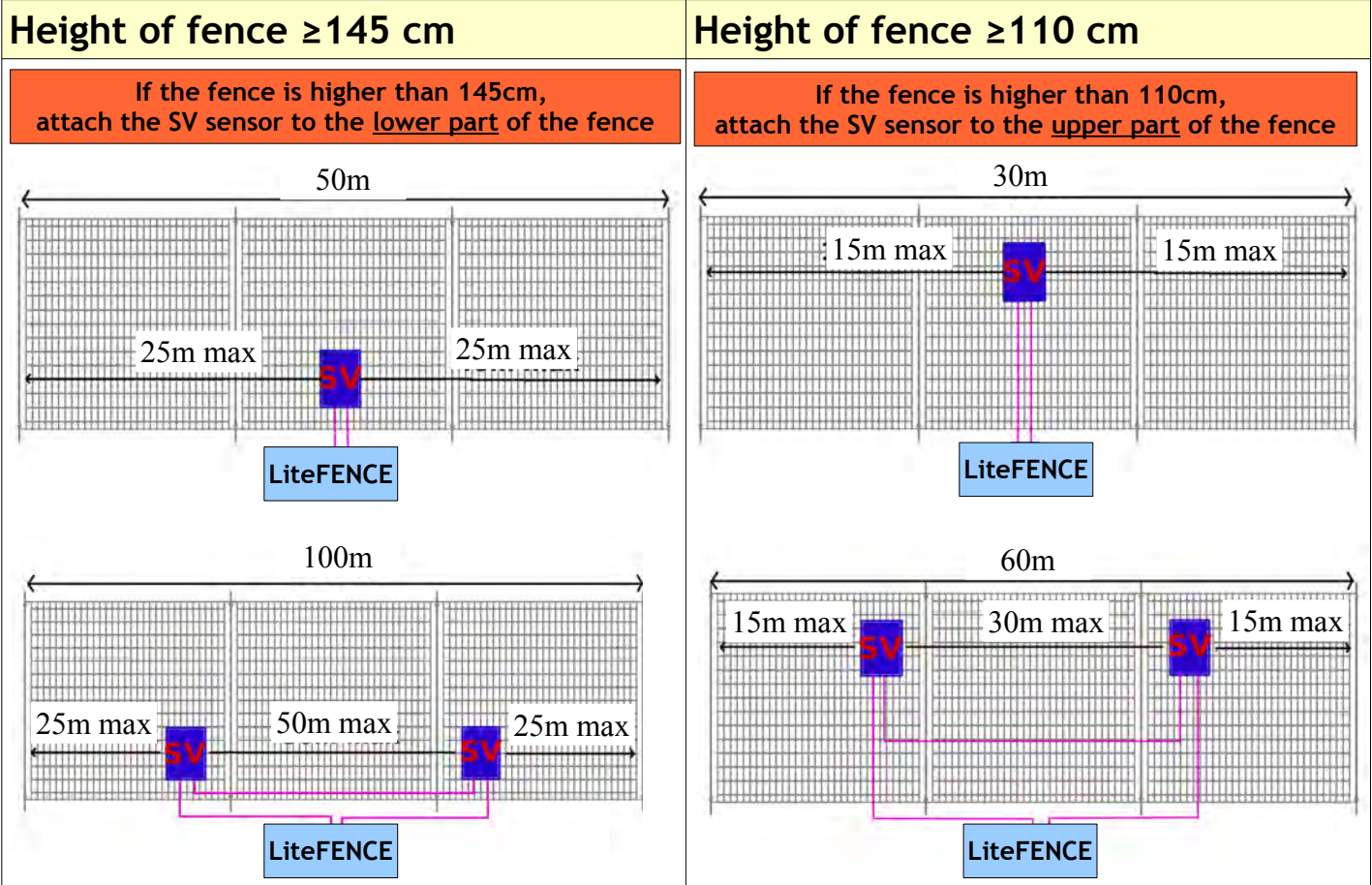
QUICK INSTRUCTION MANUAL



ATTENTION!
HANDLE SV SENSOR WITH CARE
(it contains precision machinery)

Power source: completely passive
Attenuation: 9dB (equal to about 90m of fiber)
Protection rate: IP68 in metal box
Dimensions: 50x83x178mm

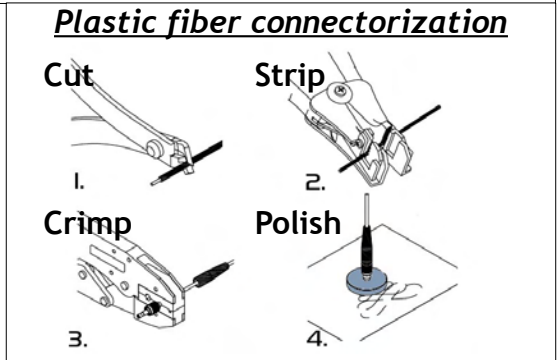
INSTALLATION EXAMPLES



The position of the sensor (on the fence) influences the sensitivity: installing the SV sensor on the upper part of the fence will increase sensitivity

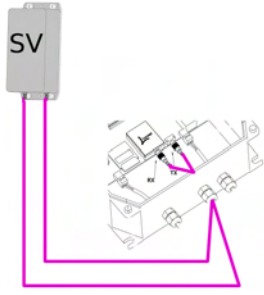
Pass the fiber (sewing) into the fence to avoid intrusion by panel removal

The fiber can be fastened with cable ties
DO NOT TIGHTEN CABLE TIES TOO MUCH!
Intensive use of tight cable ties increases fiber attenuation reducing the maximum distance

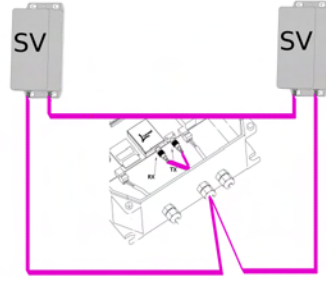


INSTALLATION

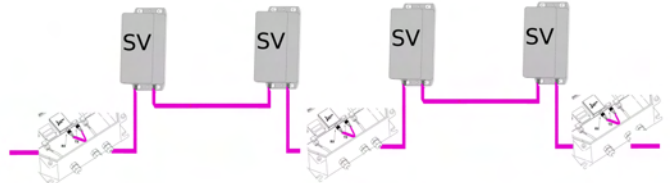
1- Attach the SV sensor to the fence by using the brackets supplied and connect plastic fiber to the LiteFENCE analyser



1 SV Sensor
1 LiteFENCE analyser




2 SV Sensors
1 LiteFENCE analyser



Daisy-chain

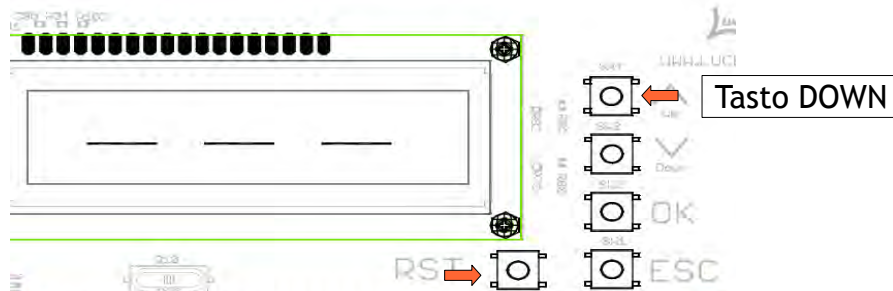
Each LiteFENCE tolerates a maximum attenuation of 30dB, equal to 2 SV sensors (equal to 9dB each) and 100m* of LiteWIRE plastic fiber (equal to 10dB).

Set LiteFENCE in the “power meter mode” so you'll constantly monitor the attenuation of the fiber during the installation of cable ties to identify and avoid any increase of fiber attenuation 

(* reachable distance considering a correct installation with fiber attenuation <0,1 dB/m at 525nm. Sharp curves, cable ties or mechanical stress while placing the fiber can reduce the distance

HOW TO SET LiteFENCE IN POWER METER MODE

Keep the DOWN button pressed while you switch-on the system: a dashed line appears on the display



N.B.: if you want to set the system in Power Meter mode when it is already switched-on, you need to RESET the system: while you keep the DOWN button pressed, press and release the RESET button, and then release DOWN button. After few seconds a dashed line will appear.

HOW TO READ THE POWER METER DATA CORRECTLY

Plastic optical fiber is made of a polymeric material realized in such a way that it can lead the light inside and guarantee the total reflection of the input signal, to transfer all the entering light to the exit. However, physical and technical phenomena occur (ties, tension bolts, eye bolts) and cause power losses along the fiber. That power loss is called attenuation.

Attenuation = optical power loss

Every meter of the installed plastic fiber introduces an attenuation resulting in: the more fiber you install, the more attenuation you introduce, and the less optical power you will get at the end of the fiber. Optical power is measured in dBm.

FIBER ENTRANCE
0 dBm = 0meters

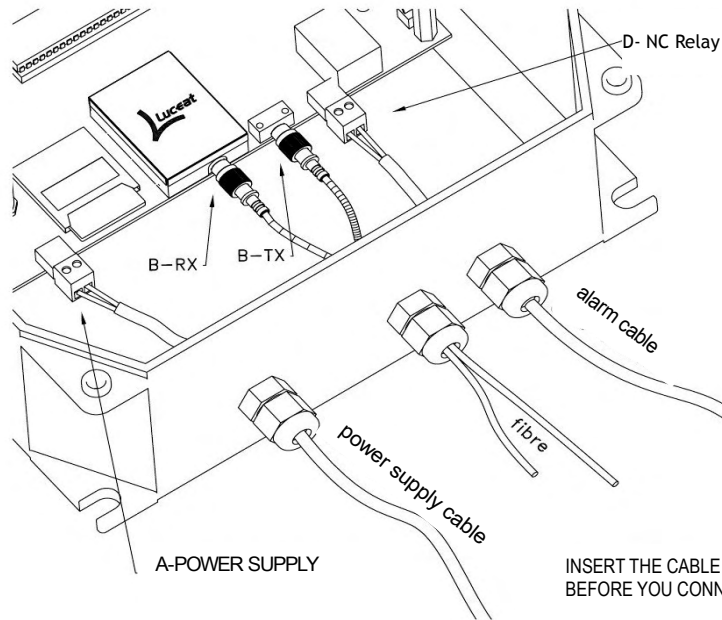
Example:

FIBER EXIT
-10dBm = 100meters

Maximum sensitivity of Luceat systems is 30dB.

The distances mentioned take into account all common source of attenuation (9dB every SV sensor and 0.1dB every meter of fiber)

2-Supply the power to LiteFENCE SV device



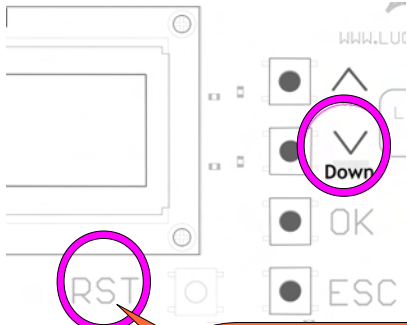
Insert cables and fibers through the cable glands before you connectorize them
Connect the shield to the ground in case of armoured cables

INSERT THE CABLE AND FIBER THROUGH THE CABLE-GLANDS BEFORE YOU CONNECTORIZE THE FIBER

3- Set the sensitivity

Default setting of LiteFENCE is: height $\geq 145\text{cm}$; pre-alarm time is 5s, filter is ON

In case of special environmental conditions or if you want to have different sensitivity performances you can reset these values in the menu



Press the "DOWN" button to enter in the menu

Reset after every change of sensitivity

1 - **Thresholds:** select fence type and height
(110 for rigid or $> 110\text{cm}$ fence / 145+ for semirigid or $> 145\text{cm}$ fences)

2 - **Time Window:** pre-alarm time before triggering the alarm (from 0.1 to 10 sec.)

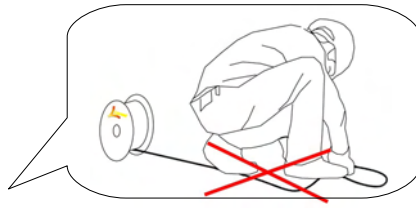
3 - **Input filter:** high frequency filter ("OFF" only if you want to detect vibrations on very rigid fences)

SUGGESTED PRESET				
Fence height	Detection from XXX to XXX	SENSITIVITY	PRE-ALARM TIME	FILTER
110cm	From 15 to 25m* each side	S3	0,1 sec	Off
$\geq 145\text{cm}$	From 25 to 40m* each side	S3	5,0 sec	On

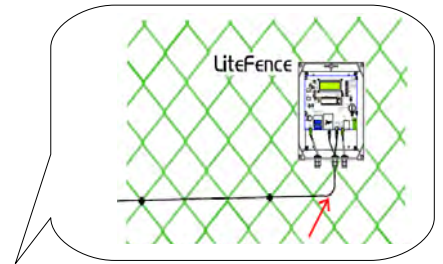
*These distances are aproximate and may change depending on fence type - we suggest making a real test on the fence

What NOT to do
(these actions increase fiber attenuation)

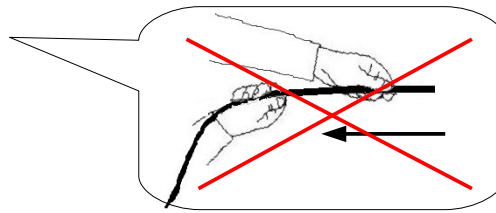
1. do not walk on the fiber



2. do not make angles or sharp bendings (min. bending radius: 25mm)



3. do not pull hard on the fiber



You can splice the cable mechanically

Each coupler reduces the max. distance of the system by about 20m (2dB)



Coupler

