CL-TT



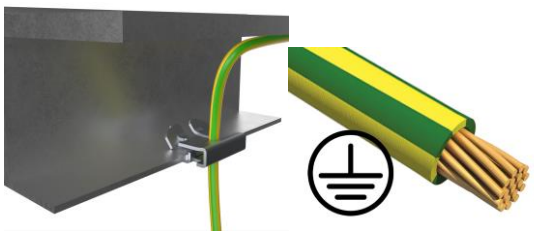
PRODUCT DESCRIPTION

- Ground continuity clip.

CHARACTERISTICS

- Clip allows cut, electrically connect and tighten the ground continuity cable.
- Quick mounting by clipping onto the solar panel frame.
- Carbon steel.
- Finish Atlantis C4 M.
- For outside use.
- For 1,5 a 2,5 mm thick support. Can be fitted to the edges of the module or to the structure.
- It is used in both intermediate and extreme areas of the profile.
- Quick and intuitive assembly that facilitates assembly and maintenance work, without the need for specific tools for installation.
- Single-use clip, allowing disassembly with specific tools.
- Allows attachment of 6 mm² flexible cables or 6 mm² rigid copper cable

APPLICATIONS / COMPATIBLE WITH



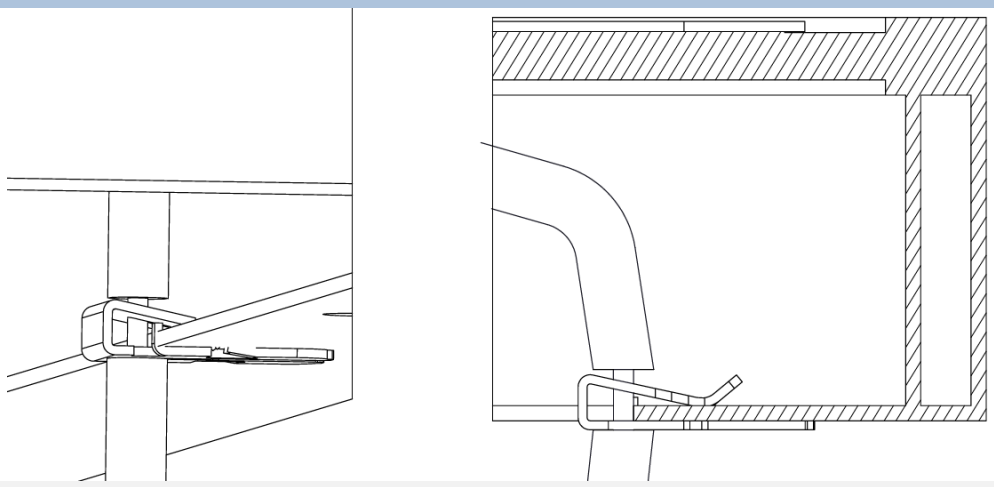
A single action allows the grounding cable to be cutted, electrically connected and adjusted in one easy step, while installed on the PV module frame.

TOOLS FOR ASSEMBLY



EXTENSIBLE PLIER

APPLICATION EXAMPLE



Application example 1: Mounting of the ground continuity clip on the photovoltaic modules frame

1. GAMA

ITEM	CODE	PHOTO	DESCRIPTION	FRAME THICKNESS	MATERIAL	FINISH
1	**CLTT01**		Ground continuity clip	1,5 a 2,5 mm	Carbon steel	Atlantis C4 M

2. INSTALLATION INFORMATION

2.1 CL-TT

Ground continuity clip

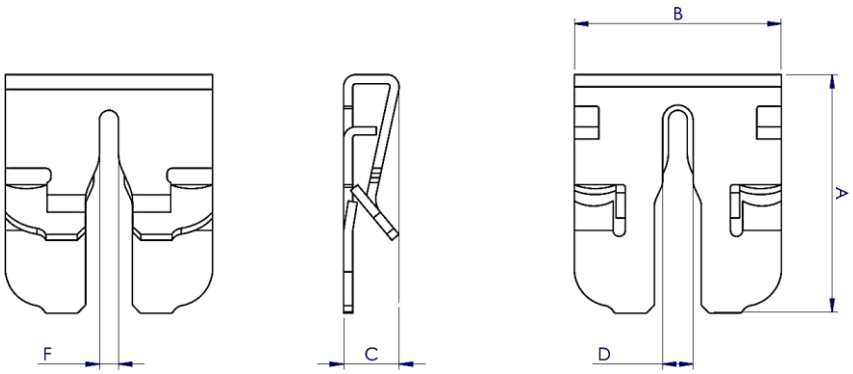


Material	Finish	Compatible with
Carbon Steel	Atlantis C4 M	Supports between 1,2 and 2,5 mm

Measurement table

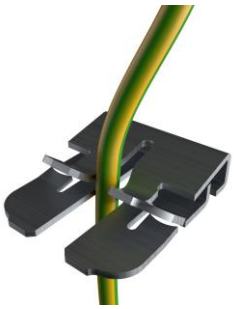
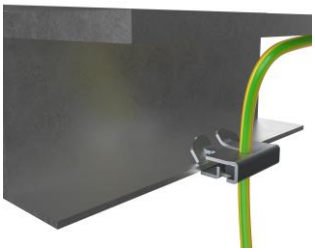
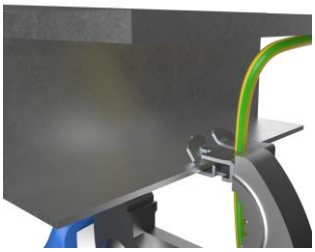
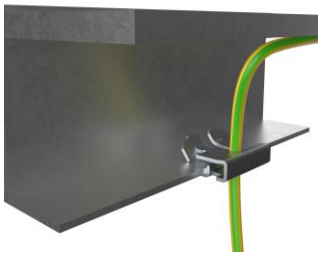
Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
CLTT01	23.3	20	5.6	3	0.9 mm	1.9

Drawing



THICKNESS = E

	Mechanical properties of the materials		
	Yield strength Fy0,2 (N/mm²)	Ultimate tensile strength Fu (N/mm²)	Hardness HV
Carbon steel	480	520	160

Process of assembly		
Step	**Representative photo**	**Description**
Step 1 **Lay the cable**		Insert the cable into the central part of the clip.
Step 2 **Lay clip**		Position the clip with the cable on the frame of the module, it is positioned by hand.
Step 3 **Pressing with the extensible pliers**		With the help of an extensible pliers press the clip towards the module so that the clip cuts the cable protection.
Paso 4 **Final position**		The cable must be in contact with the module profile in order to be grounded.

3. GROUND CONTINUITY TEST

TEST PERFORMED. STANDARD

The following test have been performed:

- Ground continuity test (41A) according to IEC 61730-2:2007 (Clause 10.4 MST 13)
- Salt mist test according to EN 60068-2-11: 1999
- Tensile test according to IEC 60947-1:2007 (Clause §8.2.4.4.1)

TEST METHOD AND RESULTS

The test was to measure the strength of the connection made by the system between a clipped cable and a frame of photovoltaic panel.

Test was performed by injecting a current between the cable and the rail. Current value selected was 41A (AC 50 Hz).

The resistance shall not exceed 0,1 Ω (100 mΩ)

Measurements resistance after and before corrosion test and the tensile test.

TEST	MEASUREMENTS BEFORE SALT MIST TEST	MEASUREMENTS AFTER SALT MINT TEST	MEASUREMENTS AFTER TENSILE TEST
	Resistance (mΩ)	Resistance (mΩ)	Resistance (mΩ)
Frame of photovoltaic panel 41A	1,35	4,18	2,10
	1,83	1,71	2,00
	1,62	2,65	2,91

Result: **CORRECT**. All measurements are within the limits stablished in the standard.

TEST SUMMARY

The following table shows the performed tests in their sequential order of execution:

Order	Test	Result
1	Ground continuity test (Before resistance to salt mist test)	Correct
2	Resistance to corrosion test	Correct
3	Ground continuity test (after resistance to salt mist test)	Correct
4	Tensile test	Correct
5	Ground continuity test (after tensile test)	Correct