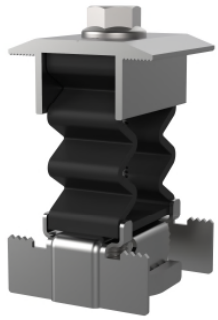
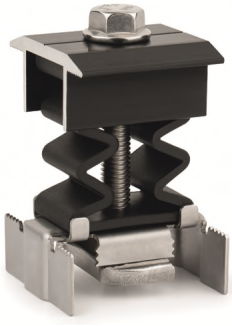
KFR-SC / KFR-SCN





ASSESMENTS

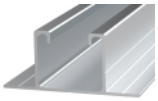
PRODUCT DESCRIPTION

- Quick pre-assembled clamp.

CHARACTERISTICS

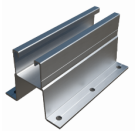
- Complete clamp for solar panel mounting
- Pre-assembled.
- Includes one PGSA26 (ou PGSN26) clamp profile in EN AW 6005-T6 anodised extruded aluminium.
- Includes one DIN-6921 M8x70 bolt and one INDEXTRUT M8 guide nut in stainless steel A2-70.
- Includes one metal bridge in stainless steel AISI-304.
- Includes one EPDM spring.
- For outside use.
- Adjustable 30 mm- and 50 mm-high solar panel frames.
- Support areas on clamp profile and metal bridge on toothed surface for improved upper and lower panel grip.
- Can be used to mount panels in both intermediate areas and at the ends of lines.
- Specifically designed for the fixing of frame gauges when mounting at the ends of lines.
- Creates a 26-mm separation between panels.
- Joint area is reinforced by metal bridge to protect from tearing.
- Facilitates the electrical shunts between solar panels and the support structure via the metal bridge and its toothed contact areas. Ground continuity function.
- Quick, intuitive assembly that facilitates mounting and maintenance work.
- Easy, stable positioning in the groove that facilitates adjustment during panel installation by tightening the EPDM spring.
- Reliable fixing thanks to the central tabs below the metal bridge which prevent incorrect positioning of the guide nut.
- Available in black.

ASSEMBLY APPLICATIONS/ACCESSORIES



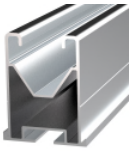
PSA-A

GP-XS

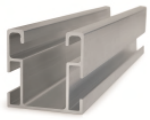


PSA-AV

GP-VD



PSE-A

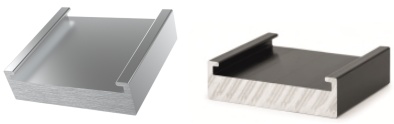


PSE-C

Used to attach solar panels by putting pressure, made by the clamp profile at the top of the solar panel frame and made by the metal bridge at the bottom of the solar panel frame, both included in the kit.

It can be mounted on **GP-XS** and **GP-VD** “INDEXTRUT solar perforated guide” or on any aluminium profile from the solar range, **PSA-A** “Winged aluminium profile”, **PSA-AV** “Winged aluminium profile for direct fixing on valley”, **PSE-A** or **PSE-C** “Aluminium profile for assembled fixing”.

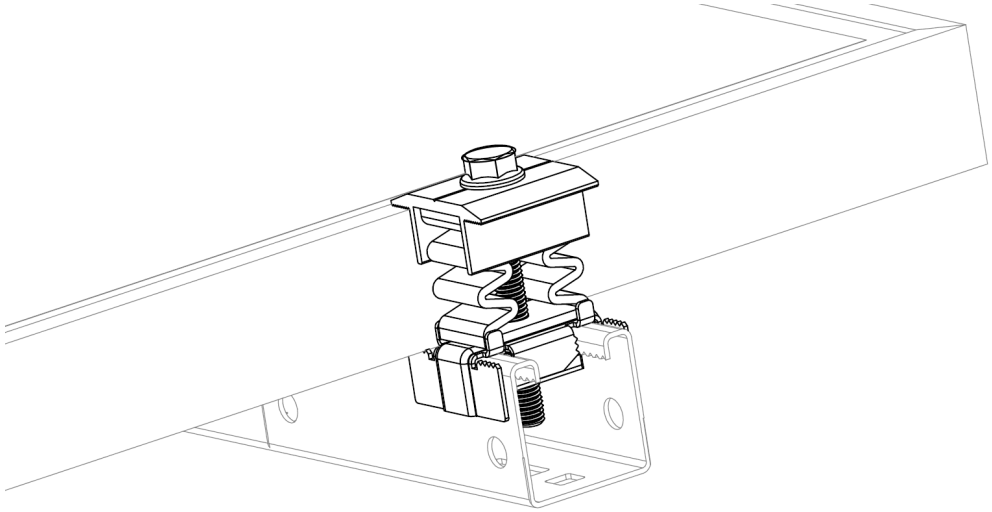
Pressure is exerted through the pre-tightening of the bolt on guide nut with a maximum tightening torque of 14 Nm.



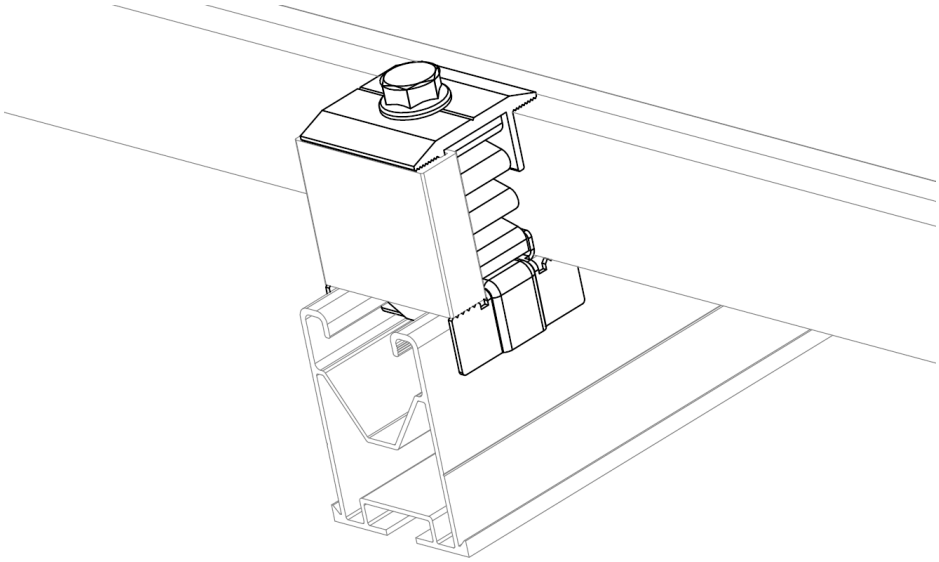
GM-A / GM-N

When panels are mounted at the ends of lines it is also necessary to use a **GM-A** (o GM-N) **“**aluminium gauge for solar frame”. The gauge size should be the same height as the solar panel frame.

APPLICATION EXAMPLES



Application example 1: Mounting on a GP-XS INDEXTRUT solar perforated guide in an intermediate position.



Application example 2: Mounting on a PSE-A “Aluminium profile for assembled fixing”

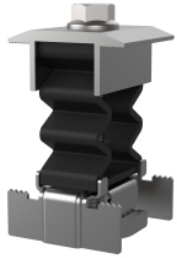
1. RANGE

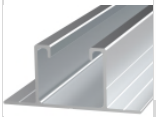
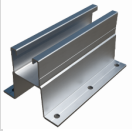
ITEM	CODE	PHOTO	DESCRIPTION	FRAME HEIGHT	MATERIALS	FINISH
1	**KFRSC3050 / KFRSCN3050**		Quick pre-assembled clamp kit.	30 - 50 mm	Al C3 AW 6005-T6 A2 INOX AISI 304 C4 AISI-304 EPDM EPDM	A Anodised

2. INSTALLATION INFORMATION

2.1 KFR-SC / KFR-SCN

Quick pre-assembled clamp.



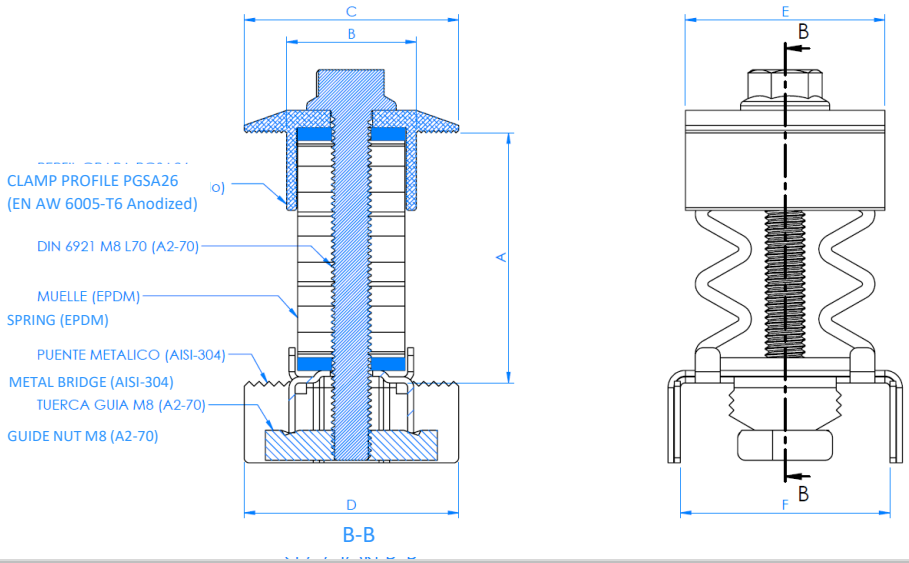
Material-1	Compatible					
Al C3						
6005-T6 aluminium	**PSA-A** Winged aluminium profile	**PSA-AV** Winged aluminium profile for direct fixing on valley	**PSE-A** Aluminium profile for assembled fixing	**PSE-C** Aluminium profile	**GP-XS** INDEXTRUT solar perforated guide	**GP-VD** INDEXTRUT solar perforated guide

Finish-1	Material-2	Material-3	Accessory
A	A2 INOX C4 AISI 304	EPDM	
Anodised	AISI-304	EPDM	**GM-A / GM-N** Aluminium gauge for solar frame

Measurement table

Code	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
KFRSC3050 KFRSCN3050	30-50	26	43	43	40	42

Drawing



Mechanical properties of the material

	Yield strength $F_{y\,0.2}$ (N/mm²)	Ultimate load F_u (N/mm²)	Elastic modulus E (N/mm²)	Transverse elastic modulus G (N/mm²)	Linear expansion coefficient α_L (µm/C°)	Specific weight ρ (kg/m³)
EN AW-6005-T6 aluminium	225	270	69,500	26,200	23.3	2,710
A2-70 stainless steel	450	700	200,000	81,000	17.3	7,930
AISI-304 stainless steel	230	540	200,000	81,000	17.3	7,930

Installation table

	Guide rail/Profile	Mounting wrench (mm)	Maximum installation tightening torque (N/m)	Extraction load N_{Rd} (kN)
KFRSC3050 KFRSCN3050	GPXS4115	SW13	14	4.73
	PSA-A	SW13	14	3.89
	PSE-A	SW13	14	4.24

3. GROUND CONTINUITY TEST

TEST PERFORMED. STANDARD

The following test have been performed:

- Ground continuity test (10A, 25A, 40A) according to IEC 61439-1:2020 (Clause 10.5.2)
- Salt mist test according to IEC 61439-1:2020 (Clause 10.2.2). Severity test B

The tests have been performed according to the following standard:

- IEC 61439-1:2020 "Low-voltage switchgear and controlgear assemblies- Part 1: General rules"

TEST METHOD AND RESULTS

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

Test was performed by injecting a current between the frame and the rail. Current values selected were successively 10A, 25A and 40A (AC 50 Hz).

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

Measurements resistance after and before corrosion test

SAMPLES	CURRENT	MEASUREMENTS BEFORE SALT MIST TEST	MEASUREMENTS AFTER SALT MINT TEST
	(A)	Resistance (mΩ)	Resistance (mΩ)
Sample 1 (Aluminium rail)	10	6,97	32,19
	25	6,84	32,04
	40	6,04	32,02
Sample 2 (Steel rail)	10	1,30	5,65
	25	1,27	5,31
	40	1,25	5,21

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