

Installation Manual BISOL EasyMount[™] Twin Slim BASE





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TABLE OF CONTENTS

General Requirements	3
Components Overview	4
Tools Required	5
Planning the PV Layout	5
Project Design	5
Designing the PV Module Layout	6
Designing the Bottom Rail Positions	7
ASSEMBLY	8
STEP 1: Assembling the Frames	8
STEP 2: Placement of frames	11
STEP 3: Adding concrete plates	
STEP 4: Attaching PV modules	12
Terms and Conditions	14



GENERAL REQUIREMENTS

The sole purpose of this installation manual is to demonstrate the installation of BISOL EasyMount[™] mounting systems, therefore PV module installation guidelines and related safety precautions are not a part of this manual. For guidelines on how to safely and effectively install BISOL PV modules please refer to the PV installation manual, published on www.bisol.com.



PV design:

The installer carries all responsibility for PV system dimensioning, static calculations of the roof, weather and environmental conditions at location, proper selection and use of components and their mounting. The installer is responsible for the mechanical durability and water tightness of the installed interface connections at the building surface. All safety warnings outlined in this manual are to be closely considered.

Roof:



The continual pressure loading capacity (point load) of the insulation and the roofing material must be checked thoroughly and found to be sound before installation. If the compression strength of the roof surface is not sufficient, extra support surfaces must be added.

The roof must be in good condition and strong enough to bear the weight of the solar panels, including associated materials, ballast, wind and snow load. The customer is responsible to check the stability of the roof structure and, when necessary, employ a builder to correct it.

The customer is responsible to check the compatibility of EasyMount[™] Twin Slim BASE mounting materials with local climate conditions (salt, acidity, sulphates etc.) and roof materials. The types of materials used in the Twin Slim BASE are stated in the product datasheets.



Installation work:

All installation work must be carried out by a specialised company with qualified personnel. Strict safety and accident prevention measures as defined by relevant regulations must be carried out and should be known by the installer. Appropriate protective equipment for work at height must be used throughout the installation process.



Electrical work:

Although electrical connections are strictly not part of this manual, some safety warnings are in place. PV modules and mounting structure must be grounded even when the site is already equipped with lightning protection. PV modules are under high voltage and generate electrical current even in low light conditions. When modules are connected in series, life-threatening voltage is present at the end of the terminals. Open circuited branches can cause electric arc when in touch with conductive surface. Electrical installations must not be carried out in case of dampness.

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COMPONENTS OVERVIEW

	Component	ID Code	Component description
1		EM-BAS_B1530A.3	Bottom profile, Base Bottom 1530 mm Aluminium
2		EM-BAS_B1900A.3	Bottom profile, Base Bottom 1900 mm Aluminium
3		EM-BAS_B2500A.3	Bottom profile, Base Bottom 2500 mm Aluminium
4		EM-BAS.F10A.3	Front leg, Base front 10 Aluminium
5		EM-BAS.F20A.3	Front leg, Base Front 20 Aluminium
6	Δ	EM-BAS.B10A.3	Back leg, Base back 10 Aluminium
7	A	EM-BAS.B20A.3	Back leg adapter, Base Back 20 Aluminium
8]	EM-BAS.BC10S.3	Middle leg, Base Back Centre 10 Steel
9		EM-BAS.BC20S.3	Middle leg, Base Back Centre 20 Steel
10	2.1	EM-BAS.BCA.3	Profile connector, Base Bottom Connector Aluminium
1		EM-CLA.EA30S.3	End clamp, Clamp end EasyMount™ 30mm, assembled
12		EM-CLA.EA35S.3	End clamp, Clamp end EasyMount™ 35mm assembled
13		EM-CLA.MA30S.3	Middle clamp, Clamp Middle EasyMount™ 30 mm, assembled
14		EM-CLA.MA35S.3	Middle clamp, Clamp Middle EasyMount™ 35 mm, assembled
15	-	EM-CLA.E_30S.3	End clamp EasyMount™ 30 mm
16		EM-CLA.E_35S.3	End clamp EasyMount™ 35 mm
17		EM-CLA.E_40S.2	End clamp EasyMount™ 40 mm
18	41	EM-CLA.M_S.3	Middle clamp EasyMount™
19		EM-CLA.SA.3	Clamp Slider EasyMount™ Aluminium
20		SEK-PT_6_15	Self-tapping screw 6,0 x 15 mm
21		SEK-PT_6_50	Self-tapping screw 6,0 x 50 mm
22		SEK-PT_6_55	Self-tapping screw 6,0 x 55 mm
23		EM-DIN912_6_30	Screw Inbus 6,0 x 30 mm PT
24		EM-DIN912_6_35	Screw Inbus 6,0 x 35 mm PT
25		EM-DIN912_6_45	Screw Inbus 6,0 x 45 mm PT
26	D	EM-DIN6923_6	Nut M6 flange A2-70
27	Ť	SEK-JF3_48_19	Selfdrilling screw 4,8 x 19 mm JF3-2
28	·	SEK-PREPDM	EPDM protective rubber 300 mm
29	-	EM-SIK_L150_95	Sika Foil FPO/TPO laminated, 150 x 95 x1,5 mm
30		EM-BP.3	Ballast pan, EasyMount
31		SEK-LOAD_CP15	Load Concrete plate 40/40/3,8 mm (13,5 kg)



TOOLS REQUIRED









Measuring tool

Electric drill

Torque wrench

Torx T30 socket

PLANNING THE PV LAYOUT

Project Design





Designing the PV Module Layout

10 degree system



Minimal horizontal roof space required:

a = number of modules * (module length + 20 mm) + 60 mm $a_{max} = 16 \text{ m}$

Minimal vertical roof space required:

b = number of rows * r $b_{max} = 16 m$ r = 2500 mm c = module length + 20 mm

Distance between rows(r), 10°: 2500 mm

20 degree system



Minimal horizontal roof space required:

a = number of modules * (module length + 20 mm)+ 60 mm $a_{max} = 16 \text{ m}$

Minimal vertical roof space required:

b = number of rows * r $b_{max} = 16 \text{ m}$

r = 2400 mm

c = module length + 20 mm

Distance between rows(r), 20°: 2400 mm



Designing the Bottom Rail Positions





ASSEMBLY

STEP 1: Assembling the Frames

Attach the Twin Slim BASE's front and back legs to the bottom profile based on the project design described in previous chapter and the distances in the next step. The tightening torque of the legs is 10 Nm.

10 degree system





MIDDLE LEG

Position the middle leg with the pad in the middle between rear legs and the side of the module as shown in the photo and glue the protection foil under the leg.





MIDDLE LEG

Position the middle leg with the pad in the middle between rear legs and the side of the module as shown in the photo and glue the protection foil under the leg.



OPTIONAL

For additional protection on lower parts/profiles add protective EPDM rubber.

3x rubber, two on the edges and one in the middle for a 2500 mm long profile

WARNING: The part must be placed in the slot of the rubber on both sides.

CONNECTING PROFILES

Connect the parts with the connector and screw.







STEP 2: Placement of frames

10 degree system





20 degree system





STEP 3: Adding concrete plates

All calculations regarding concrete plates must be approved by the local engineer in accordance with local building regulations. Please, contact BISOL sales team for concrete plates recommendation and report, as BISOL also requires local engineer approval.

For Twin BASE system, concrete plates 400 x 400 x 38 must be used.





Use the end clamp to attach the ballast.



Use the middle clamp to attach the double ballast.



OPTIONAL: Install ballast supports on the profiles, on which we place the concrete slabs

Annual inspections/checking of concrete plates are recommended due to potential roof vibrations.

STEP 4: Attaching PV Modules

Before installing the modules, check if the profiles are perpendicular. The distance from the roof edge should be at least 800mm.





Attach the PV modules with clamps using 10 Nm torque. Use the end clamp on the edges and the middle clamp between two PV modules.





Use end connectors for the middle leg.



TERMS AND CONDITIONS

BISOL Production Ltd. as manufacturer of BISOL EasyMount[™] mounting solutions in connection with their installation takes no responsibility for the design solutions of individual designers, also assumes no responsibility in connection with the installation of BISOL EasyMount[™] mounting solutions by a third party and contrary to these instructions, as well as for the choice of mounting structure in this regard.

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In addition, our General Sales Terms and Conditions for Supply of Goods and Services (GSTC) as well as Standard Limited Guarantee terms and conditions for mounting systems, both published on the website <u>www.bisol.com</u>, apply.



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