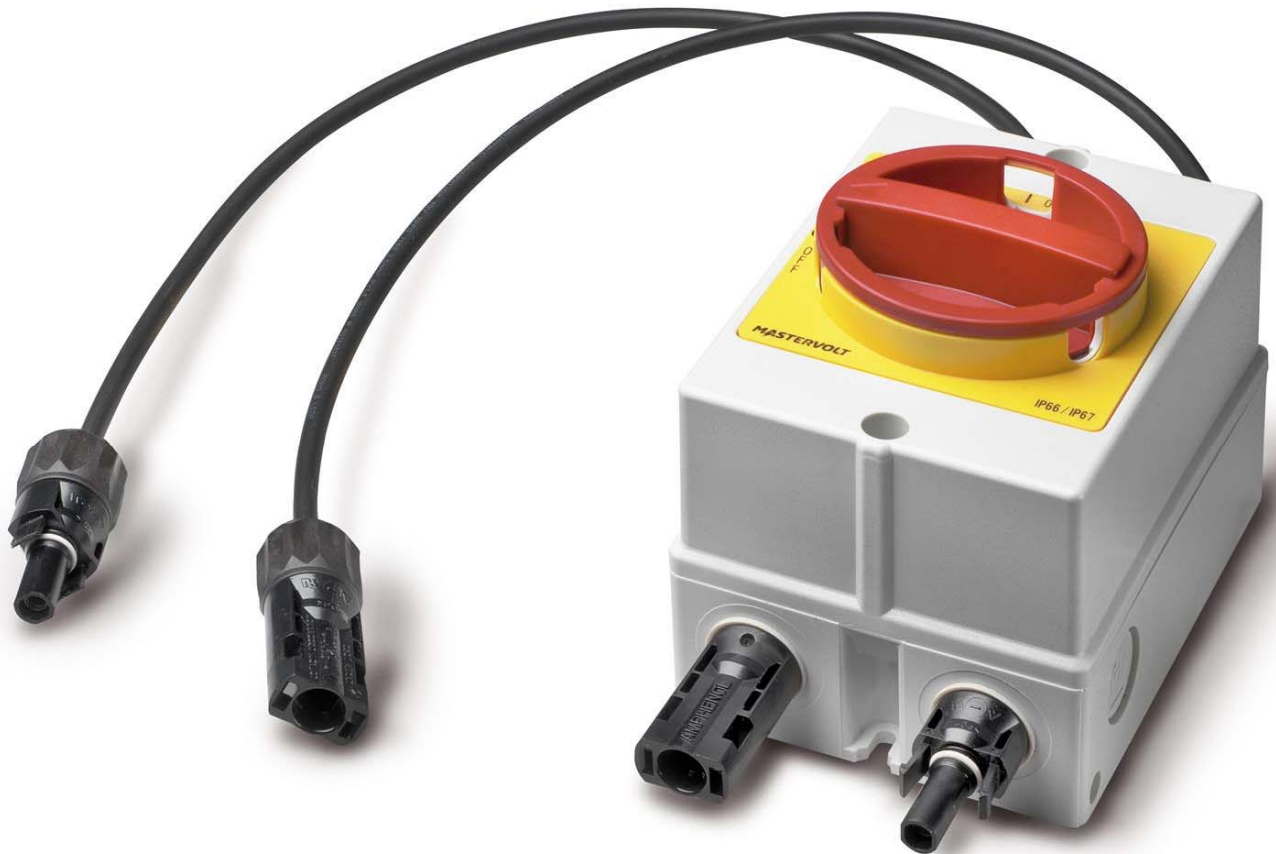


Soladin DC Switch



EN | USER'S AND INSTALLATION MANUAL | P01
NL | GEBRUIKERS- EN INSTALLATIEHANDLEIDING | P09
DE | BEDIENUNGS- UND INSTALLATIONSANLEITUNG | P17
FR | MANUEL UTILISATEURS ET D'INSTALLATION | P25
ES | MANUAL DEL USUARIO Y DE INSTALACIÓN | P33
IT | MANUALE DI USO E MANUTENZIONE | P41

10000006477/03

MASTERVOLT
THE POWER TO BE INDEPENDENT

OVERVIEW SOLADIN DC SWITCH

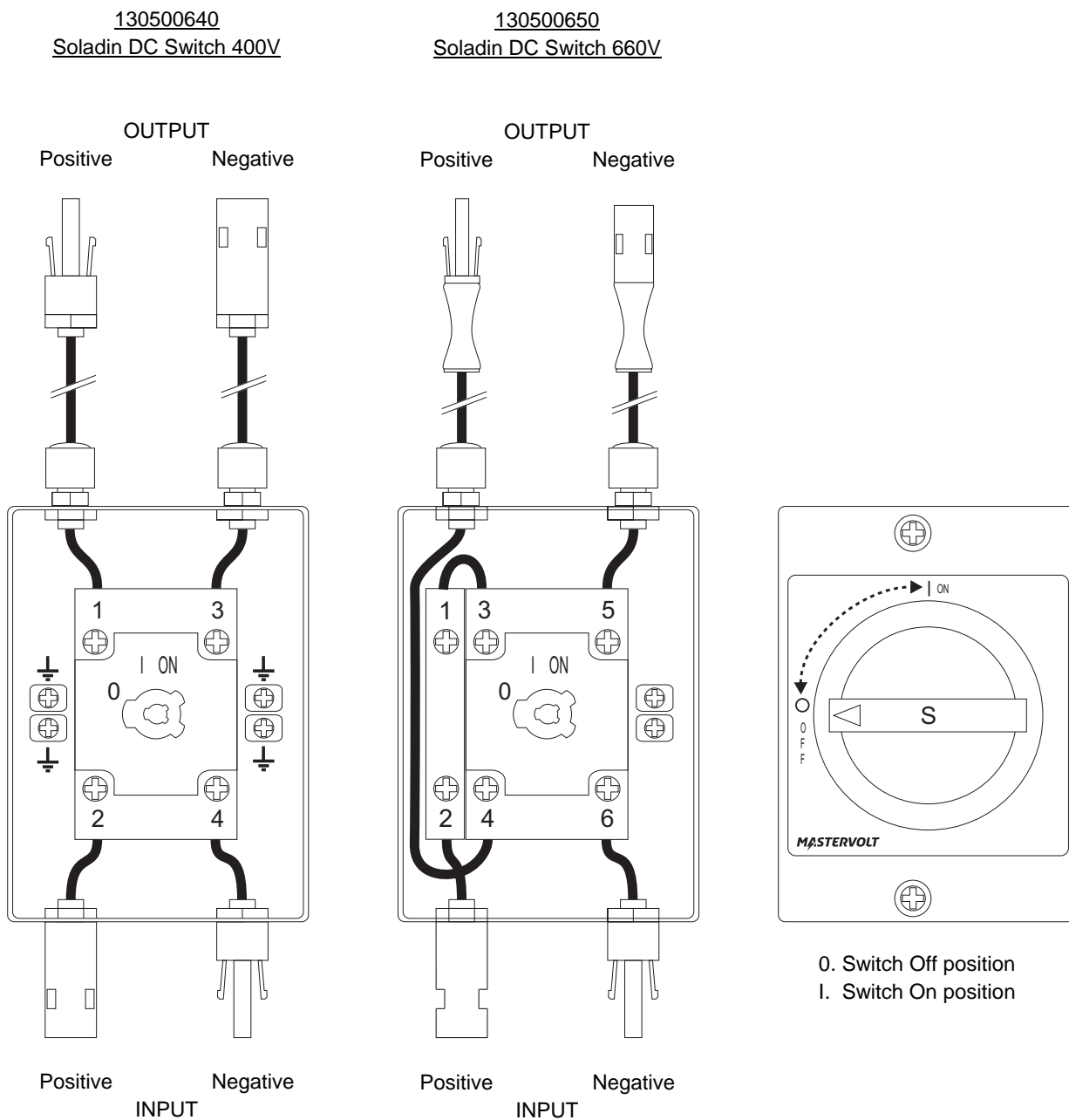


Figure 0-1: Overview of the Soladin DC Switch

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1 GENERAL INFORMATION

1.1 Product description

The Soladin DC Switch disconnects the PV string from a solar inverter. Use of an external DC-switch is required as described in IEC60364-7-712

1.2 Use of this manual

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This manual serves as a guideline for the safe and effective use and installation of the Soladin DC Switch:

- For the electrician this manual provides directions for the installation, operation and commissioning.
- For the end-user it instructs in operation and maintenance.
- Every person who works with the apparatus should be familiar with the contents of this manual, and must carefully follow the instructions contained herein.
- Store the manual in an accessible place.

1.3 Validity of this manual

This manual is valid for the following models:

Part no	Model
130500640	Soladin DC Switch 400V
130500650	Soladin DC Switch 660V

All the specifications, provisions and instructions contained in this manual apply solely to the Mastervolt-delivered standard version of the Soladin DC Switch.

1.4 Scope of warranty

Mastervolt assures a manufacturer's warranty of the Soladin DC Switch during ten years after your purchase, on the condition that all instructions and warnings given in this manual are taken into account during installation and operation. Among other things, this means that installation is carried out by a qualified person, that installation and maintenance are executed according to the stated instructions and correct working sequence, and that no changes or repairs may have been performed on the Soladin other than by Mastervolt. The warranty is limited to the costs of repair and/or replacement of the product by Mastervolt only.

For more details, refer to the Soladin warranty terms and conditions which are available on request.

For making an appeal on warranty you can contact your supplier directly, stating your complaint, application, date of purchase and part number / serial number.

1.5 Liability

Mastervolt accepts no liability for:

- consequential damage due to use of the Soladin DC Switch;
- possible errors in the manuals and the results thereof.

1.6 Changes to the Soladin DC Switch

Changes to the Soladin DC Switch may be carried out only after the written permission of Mastervolt.

1.7 Identification label

The identification label is positioned at the right side of the Soladin DC switch. Refer to Figure 4-1.



CAUTION!

Never remove the identification label.

2 SAFETY GUIDELINES AND WARNINGS

2.1 Warnings and symbols

Safety instructions and warnings are marked in this manual and on the product by the following pictograms:



A procedure, circumstance, etc which deserves extra attention.



CAUTION!

Special information, commands and prohibitions in order to prevent damage.



WARNING

A WARNING refers to possible injury to the user or installer or significant material damage to the Soladin DC Switch if the installer / user does not (carefully) follow the stated procedures.



Read this manual before installation and use.



This product has been declared conform the EC directives and standards.

IP66

Degree of protection: IP66. The product is protected against dust intrusion and water jets from any angle.

2.2 Use for intended purpose

The Soladin DC Switch is constructed as per the applicable safety-technical guidelines. Use the Soladin DC Switch only in installations that meet the following qualifications:

- In permanent installations
- the electrical installation must meet the applicable regulations and standards, must be carried out correctly and must be in a good condition;
- according to the technical specifications. See chapter 4.



WARNING

Never use the Soladin DC Switch in situations where there is danger of gas or dust explosion or potentially flammable products!

Use of the Soladin DC Switch other than as mentioned under section 2.2 is considered to be conflicting with the intended purpose. In such cases, Mastervolt will not accept liability for any damage or injury caused by the functioning or malfunctioning of the Soladin DC Switch

2.3 Installation, maintenance, repair



WARNING

As lethal voltages exist, only allow installation, maintenance and repair of the Soladin DC Switch to be carried out by a qualified person.

Connections and safety features must be executed according to the locally applicable regulations.

In case of decommissioning and/or demounting follow the instructions as stated in this manual. If repairs or replacements are required, only use original Mastervolt spare parts.

2.4 Warning of special dangers



WARNING

- The voltages present at both sides of the Soladin DC Switch and inside the enclosure are not safe to touch. Do not work on the Soladin DC Switch and/or the electrical installation if it is still connected to the PV panels or the inverter.
- Allow time for the inverter capacitors to de-energize. Verify de-energizing of all connections using a suitable metering instrument.
- Make sure two persons are present when working on an installation, at least until the installation has been de-energized and verified by a suitable metering instrument.
- When connecting to the Soladin DC switch, use only connectors and tools of the same type and brand

3 INSTALLATION AND COMMISSIONING



CAUTION!

Verify that all wiring is disconnected from any energy source during the entire installation. For safety reasons, do not work on the installation until all wiring has been verified to be de-energized

Short circuiting, miswiring or reverse polarity may lead to damage to the Soladin DC Switch, the inverter, the cabling and/or the modules.

3.1 Things you need for installation

Make sure you have all necessary parts to install the Soladin DC Switch:

- This printed user's manual (included).
- 2 screws to fix the enclosure to the wall.
- Screwdriver
- Tools to install the optional grounding wiring

3.2 Installation step by step

1. Fix the Soladin DC Switch to the wall, the input facing downwards. The screw holes are positioned at the center, 110 mm apart. Use suitable screws and plugs.
2. Mount the optional resistor for grounding, see section 3.6.
3. Connect the output cables to the inverter.
4. Connect the cables from the PV strings to the input, check PV polarity.
5. Check string voltages and polarities.
6. Close the lid securely to prevent water ingress. Turn the screws clockwise to tighten the lid.



Fix the top screw first, hang the Soladin DC Switch into position. Then fix the bottom screw. The lid only opens and closes with the knob in the Off position, see figure 4-1.

3.3 Commissioning after installation

Move the DC switch to the ON position (vertical).

3.4 De-commissioning



CAUTION!

If it is necessary to take the Soladin DC Switch out of operation, follow these steps:

1. Turn the switch to the 0 (Off) position
2. Disconnect the PV connectors first
3. Disconnect the Soladin connectors
4. Disconnect the optional grounding

Now the DC Switch can be taken off the wall safely

3.5 Maintenance

If necessary, use a soft clean cloth to clean the enclosure of the Soladin DC Switch. Never use any liquids, acids and/or scourers. Examine your electrical installation on a regular base, at least once a year. Defects such as loose connections, burnt wiring etc. must be corrected immediately.

3.6 PV grounding (p/n 130500640 only)

Depending on the PV panel type, functional grounding may be required. The Soladin DC Switch includes material to ground either the inverter input positive or negative. See figure 3-1. Use 100 k Ohm resistor R to connect 2 or 4 to PE.

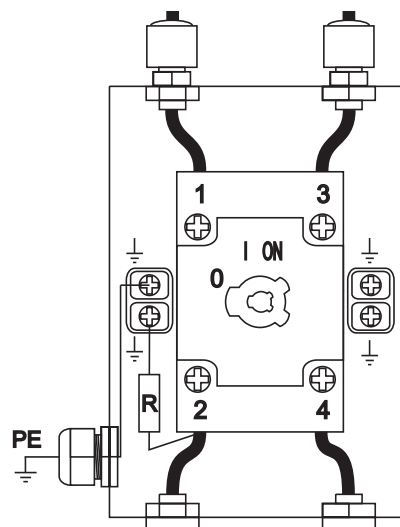


Figure 3-1: Grounding by means of a resistor

Follow these steps, using figure 3-1:

1. Make sure no DC is present, refer to chapter 2.
2. Remove the knock out at the side you want to use.
3. Mount the gland in place.
4. Connect a grounding wire to the open side of the PE terminal and lead it through the gland.
5. Connect the other end of the wire to PE of the electrical installation.
6. Tighten the gland (in this example at the left side).
7. Connect the 100 k Ohm resistor with the PE terminal.
8. Connect the other side of the resistor to 2 (positive input) or 4 (negative input).



WARNING

Check the resistor regularly for burn marks. Damage to the resistor indicates a ground fault is present elsewhere in the PV system. Check PV modules, connectors and cabling for insulation damage and leakage

4 TECHNICAL DATA

4.1 Technical specifications

	Soladin DC Switch 400V	Soladin DC Switch 660V
GENERAL		
Part number:	130500640	130500650
Operating temperature:	-20°C to 45°C	-20°C to 45°C
Protection degree:	IP66	IP66
Relative humidity:	4-90%	4-90%
Safety class:	Class II	Class II
Weight:	450g including cables	500g including cables
Dimensions:	See figure 4-1	See figure 4-1
SOLAR INPUT / OUTPUT (DC)		
Maximum input / output voltage	400 VDC	660 VDC
Maximum input / output current	15 A	13 A
String connections	1 string with DC switch in positive and negative cable	
String connectors	Amphenol Helios H4	MultiContact MC4
Connection for functional grounding	Yes	No
	Resistor 100 kΩ / VR37 included	

4.2 Outline drawings

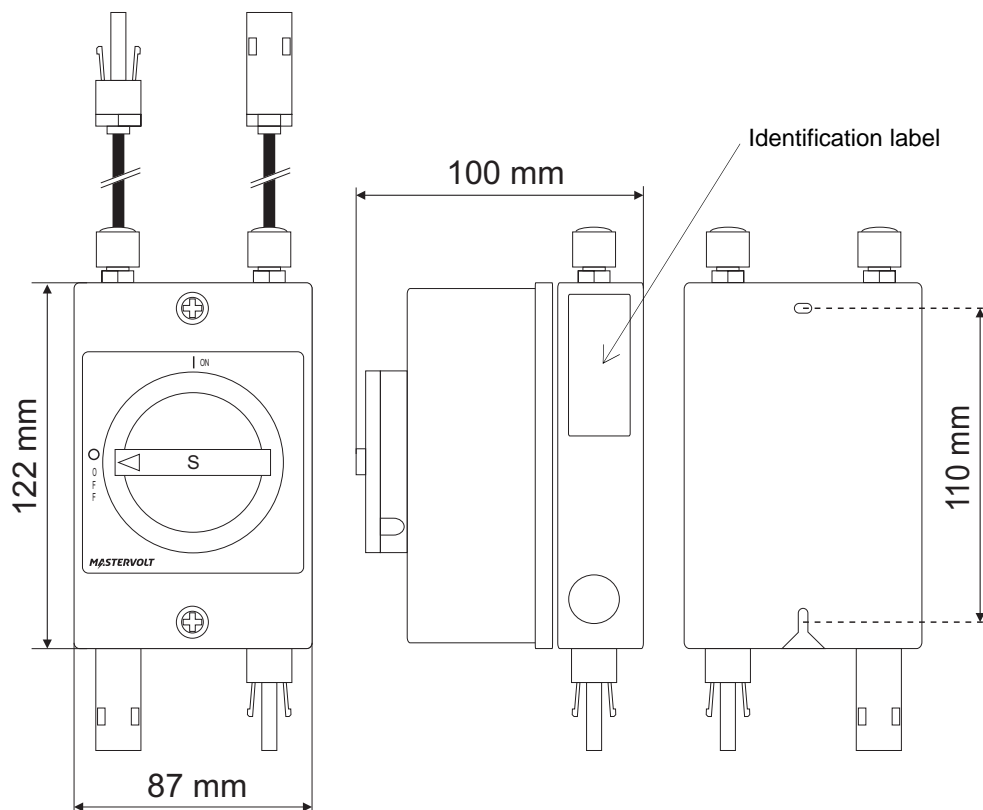


Figure 4-1: Dimensions of the Soladin DC Switch

5 CERTIFICATES

5.1 EC Declaration of Conformity

We,
Manufacturer Mastervolt International B.V.
Address Snijdersbergweg 93
1105 AN Amsterdam
The Netherlands



Declare under our sole responsibility that the product:

Article number	Product name
130500640	Soladin DC Switch 400V
130500650	Soladin DC Switch 660V

is in conformity with EU directives:

2006/95/EC	Low Voltage Directive
2011/65/EU	RoHS Directive

The following harmonized standards haven been applied:

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-3	Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Amsterdam, 10 July-2014
MASTERVOLT INTERNATIONAL B.V.

A handwritten signature in black ink, appearing to be 'D.R. Bassie', with a long horizontal line extending to the right.

Ing. D.R. Bassie
Product Manager Solar