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Project name: mattiaz
Project number: ---

Location: Sweden / Goteborg

Grid voltage: 230V (230V / 400V)

System overview

36 x Heckert Solar AG NeMo 60M300 (5BB) 2.0 (06/2017) (garaget)

Azimuth angle: 15 °, Tilt angle: 45 °, Mounting type: Roof, Peak power: 10.80 kWp

22 x Heckert Solar AG NeMo 60M300 (5BB) 2.0 (06/2017) (Huset)

Azimuth angle: 67 °, Tilt angle: 32 °, Mounting type: Roof, Peak power: 6.60 kWp



1 x STP 15000TL-30

PV design data

Total number of PV modules:	58	Annual energy yield*:	16,716.77 kWh
Peak power:	17.40 kWp	Energy usability factor:	100 %
Number of PV inverters:	1	Performance ratio*:	87.8 %
Nominal AC power of the PV inverters:	15.00 kW	Spec. energy yield*:	961 kWh/kWp
AC active power:	15.00 kW	Line losses (in % of PV energy):	---
Active power ratio:	86.2 %	Unbalanced load:	0.00 VA

Signature

*Important: The yield values displayed are estimates. They are determined mathematically. SMA Solar Technology AG accepts no responsibility for the real yield value which can deviate from the yield values displayed here. Reasons for deviations are various external conditions, such as soiling of the PV modules or fluctuations in the efficiency of the PV modules.

Evaluation of design

Project name: mattiaz

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Location: Sweden / Goteborg

Ambient temperature:

Annual extreme low temperature: -13 °C

Average high Temperature: 17 °C

Annual extreme high temperature: 28 °C

Subproject 1

1 x STP 15000TL-30 (PV system section 1)

Peak power:	17.40 kWp
Total number of PV modules:	58
Number of PV inverters:	1
Max. DC power (cos $\varphi = 1$):	15.33 kW
Max. AC active power (cos $\varphi = 1$):	15.00 kW
Grid voltage:	230V (230V / 400V)
Nominal power ratio:	88 %
Dimensioning factor:	116 %
Displacement power factor cos φ :	1



STP 15000TL-30

PV design data

Input A: garaget

36 x Heckert Solar AG NeMo 60M300 (5BB) 2.0 (06/2017), Azimuth angle: 15 °, Tilt angle: 45 °, Mounting type: Roof

Input B: Huset

22 x Heckert Solar AG NeMo 60M300 (5BB) 2.0 (06/2017), Azimuth angle: 67 °, Tilt angle: 32 °, Mounting type: Roof

	Input A:	Input B:	
Number of strings:	2	1	
PV modules per string:	18	22	
Peak power (input):	10.80 kWp	6.60 kWp	
Typical PV voltage:	✓ 540 V	✓ 660 V	
Min. PV voltage:	502 V	614 V	
Min. DC voltage (Grid voltage 230 V):	150 V	150 V	
Max. PV voltage:	✓ 802 V	✓ 980 V	
Max. DC voltage:	1000 V	1000 V	
Max. MPP current of PV array:	✓ 18.8 A	✓ 9.1 A	
Max. operating input current per MPPT:	33 A	33 A	

PV/Inverter compatible

Wire sizing

Project name: **mattiaz**

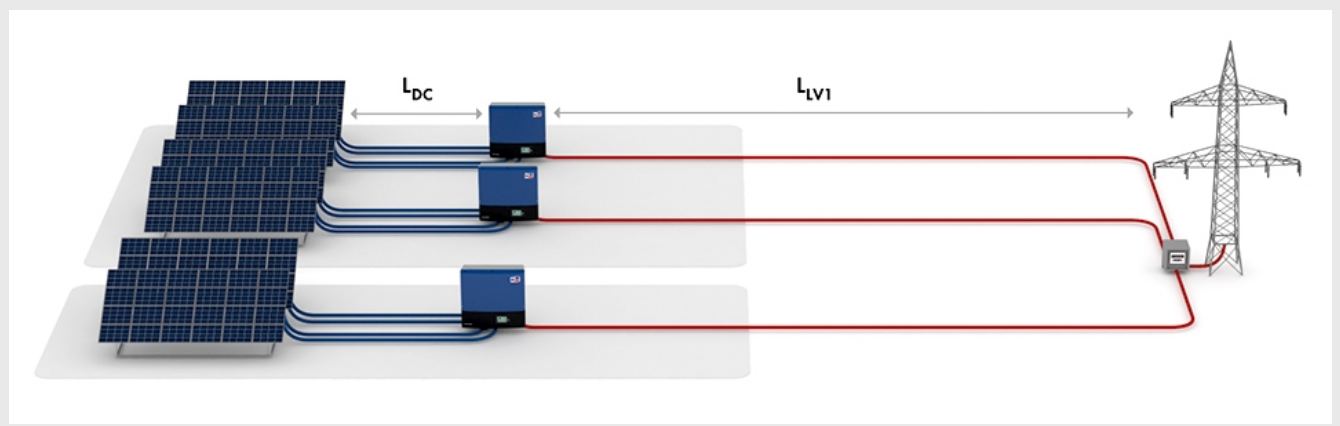
Location: **Sweden / Goteborg**

Project number:

Overview

	✓ DC	✓ LV	✓ Total
Power loss at nominal operation	42.84 W	121.93 W	164.77 W
Rel. power loss at rated nominal operation	0.25 %	0.81 %	1.06 %
Total cable length	160.00 m	30.00 m	190.00 m
Cable cross-sections	6 mm ²	6 mm ²	6 mm ²

Graphic



DC cables

	Cable material	Single length	Cross section	Voltage drop	Rel. power loss	
Subproject 1						
1 x STP 15000TL-30 PV system section 1	A	Copper	35.00 m	6 mm ²	2 V	0.35 %
	B	Copper	10.00 m	6 mm ²	524 mV	0.08 %

Lines LV1

	Cable material	Single length	Cross section	Line resistance	Rel. power loss
Subproject 1					
1 x STP 15000TL-30 PV system section 1	Copper	30.00 m	6 mm ²	R: 28.667 mΩ XL: 2.250 mΩ	0.81 %

The displayed results are approximate values to give a general indication to users of possible operating results. The results are determined mathematically based on standardized assumptions. The actual operating results will be dictated significantly by the actual irradiation conditions, the actual efficiency, the genset operating conditions and the individual consumption behavior and can deviate from the calculated results. SMA SOLAR TECHNOLOGY AG THEREFORE ASSUMES NO LIABILITY FOR YIELD SHORTFALLS IN THE EVENT OF DEVIATIONS BETWEEN THE CALCULATED- AND ACTUAL OPERATING RESULTS.

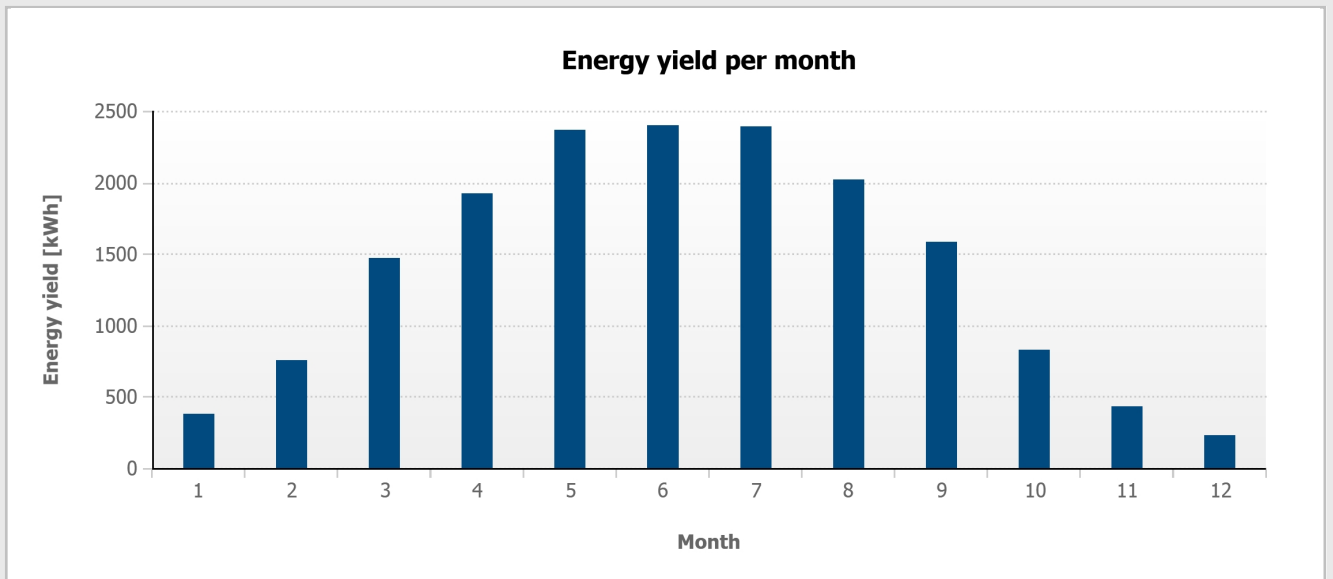
Monthly values

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Diagram



Table

Month	Energy yield [kWh]	Performance ratio
1	377 (2.3 %)	86 %
2	750 (4.5 %)	90 %
3	1467 (8.8 %)	91 %
4	1915 (11.5 %)	89 %
5	2358 (14.1 %)	88 %
6	2393 (14.3 %)	88 %
7	2385 (14.3 %)	87 %
8	2013 (12.0 %)	87 %
9	1578 (9.4 %)	88 %
10	825 (4.9 %)	87 %
11	428 (2.6 %)	86 %
12	227 (1.4 %)	83 %