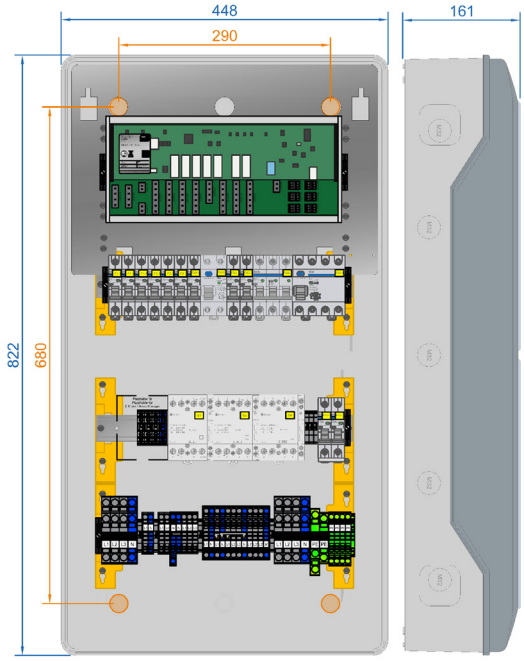
DATA SHEET

3PH-Battery Backup Distribution for 1 x Sunny Boy Storage

3PH_SMA_1ST6_1STP6.0_2SB5_BBDAP_20KW_1PH_PREP_IT_1.0 Art.No. 10013491

Designation	Battery Backup Distribution 3PH
Application	Battery Backup Function - SMA Flexible Storage System
Region	Italy
Battery-Inverter	1 x Sunny Boy Storage 3.7/5.0/6.0
PV-Inverter single phase PV-Inverter three phase	2 x Sunny Boy 3.0/3.6/4.0/5.0/6.0 1 x Sunny Tripower 3.0/4.0/5.0/6.0 (Please note that three phase inverters won't support the backup function)
Monitoring & Control	▪ integrated SMA - Backup-Controller ▪ prepared for retrofitting of SMA - Energy Meter/Home Manager 2.0
Meter connection	Connection M2 and M3 are prepared for connection according to CEI 0-21 „12.1.1.2" or „12.1.1.3"
Grid structure	Three Phase - 3PH 230/400V - TT or TN-S System



All values in [mm]
Dimensions „blue"
Fastening points „orange"

Minimum distances

top	200
bottom	400
lateral	200
front	1.200

SCOPE OF DELIVERY

Quantity	Designation
1	Battery Backup Distribution
2	Cable gland M40 x 1,5 (clamping range Ø 16 – 28mm)
5	Cable gland M32 x 1,5 (clamping range Ø 13 – 21mm)
6	Cable gland M25 x 1,5 (clamping range Ø 9 – 17mm)
2	Cable gland M20 x 1,5 (clamping range Ø 6 – 13mm)
2	Enlargement adaptor -M32 to M40-
2	Enlargement adaptor -M25 to M32-
4	Enlargement adaptor -M20 to M25-
1	Reduction adaptor -M20 to M12- (pressure equalisation valve)
3	Locknut M32
4	Locknut M25

Quantity	Designation
7	Locknut M20
1	Special sealing insert (CAT 5e cable „RJ45 plug"-M25-)
1	Pressure equalisation valve
1	Cover caps for fastenting screws
1	Communication plug (plugged into the backup controller - X2504)
1	Warning label "high voltage"
1	Label - image „with reference to an island mode system ability"
1	Installation instructions
1	Wiring diagram (DIN A3 printout)
1	Circuit diagram (DIN A3 printout)

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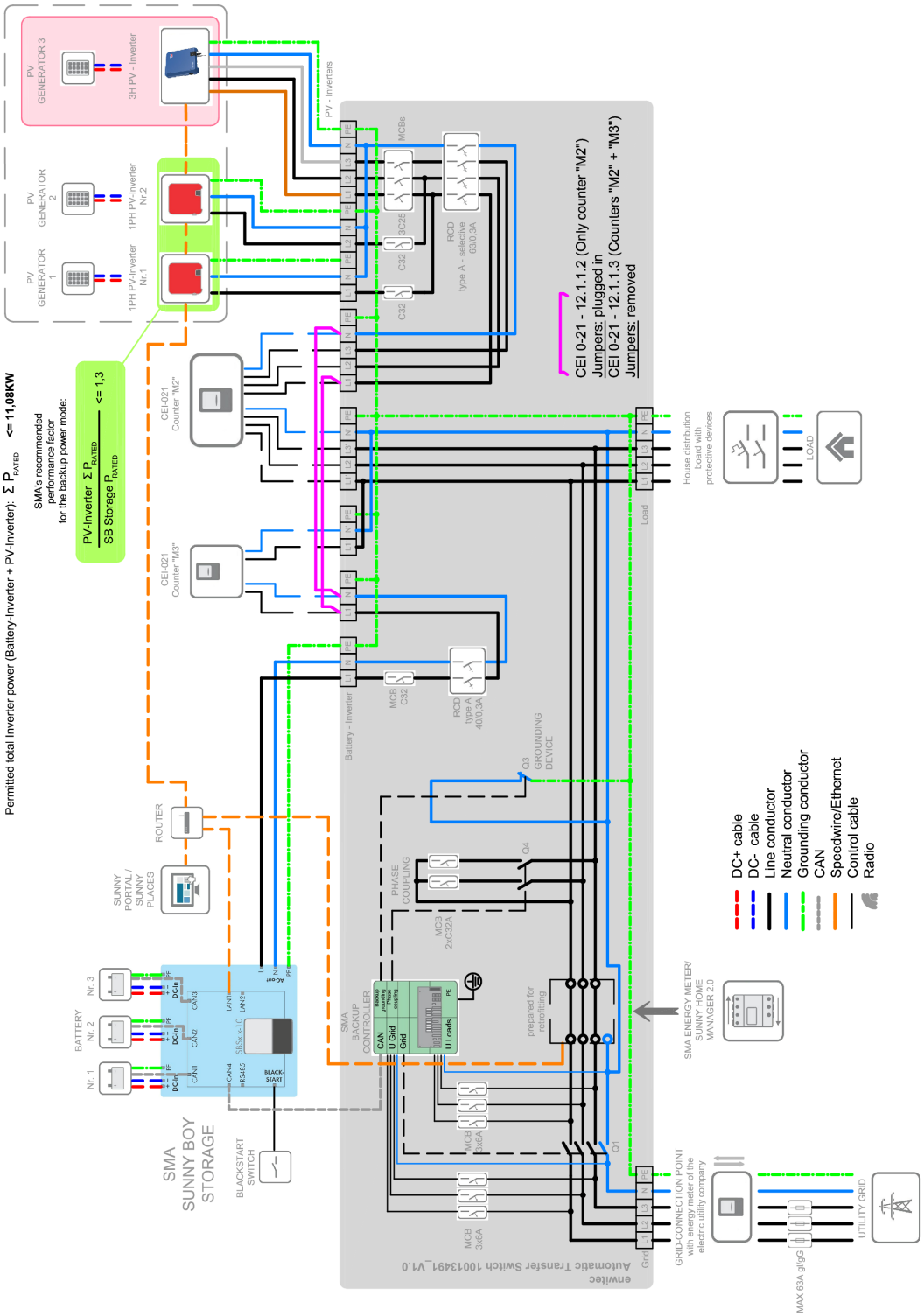
CIRCUITRY OVERVIEW



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SELECTION GUIDE - PV INVERTER

For stable backup power operation, the ratio of the Sunny Boy Storage to the installed PV inverter power must be observed.
PV inverter power must be taken into account!

SMA's recommended performance factor for the backup power mode:

$$\frac{\text{PV-Inverter } \Sigma P_{RATED}}{\text{SB Storage } P_{RATED}} \leq 1{,}3$$

This ratio can also be higher. The following influencing variables play a role here:

- Local output situation/PV irradiation or weather (installed PV inverter output does not always correspond to the PV output power)
- State of charge of the battery (if the battery is fully charged, it can absorb less surplus PV energy).
- Behaviour of the connected consumer loads (large load changes can impair the affect the stability of the backup current).

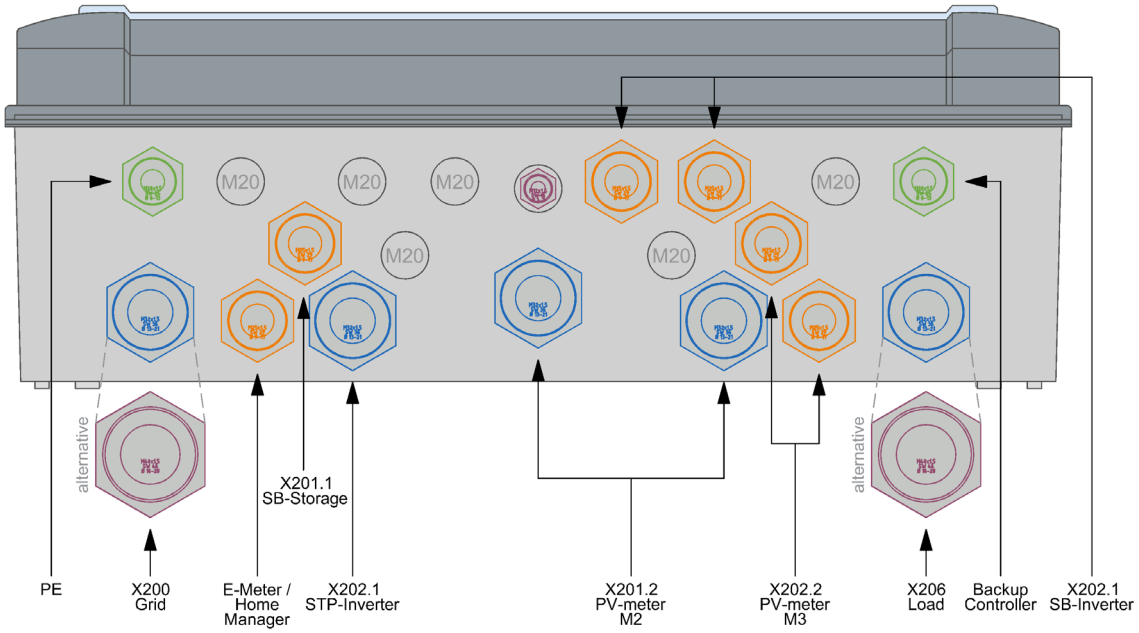
For example, it is also possible to use a Sunny Boy 5.0 or two Sunny Boy 3.0 in the battery-backup system on a Sunny Boy Storage SBS3.7 (marked # in the table). However, in the case of large load jumps, short-term interruptions in the standby power system may then occur.

Permitted unbalanced load PV-Inverter $\Sigma P_{RATED} \leq 6$ [kW]

Permitted total inverter power (Battery-Inverter + PV-Inverter) $\Sigma P_{RATED} \leq 11{,}08$ [kW]

Amount of 1PH-Inverters	PV-Inverter - 1PH	Amount of 3PH-Inverters	PV-Inverter - 3PH	SB-Storage 3.7	SB-Storage 5.0	SB-Storage 6.0
1	Sunny Boy 3.0	-	-	✓	✓	✓
		1	Sunny Tripower 3.0	✓	✓	x
		1	Sunny Tripower 4.0	✓	x	x
2	Sunny Boy 3.0	-	-	✓#	✓	x
1 1	Sunny Boy 3.0 Sunny Boy 3.6	-	-	✓#	x	x
1	Sunny Boy 3.6	-	-	✓	✓	✓
		1	Sunny Tripower 3.0	✓	x	x
2	Sunny Boy 3.6	-	-	✓#	x	x
1	Sunny Boy 4.0	-	-	✓	✓	✓
		1	Sunny Tripower 3.0	✓	x	x
1	Sunny Boy 5.0	-	-	✓#	✓	✓
1	Sunny Boy 6.0	-	-	✓#	✓	x
-	-	1	Sunny Tripower 3.0	✓	✓	✓
-	-	1	Sunny Tripower 4.0	✓	✓	✓
-	-	1	Sunny Tripower 5.0	✓	✓	✓
-	-	1	Sunny Tripower 6.0	✓	✓	x

CABLE ENTRY AND CONNECTIONS



Cable gland	Terminal block	Clamping range [mm]	Wire type	Cross section max. [mm²]	Stripping length [mm]	Wire-end sleeve
M32	X200 - Grid	13 - 21	solid	16	18 - 20	-
M40		16 - 28	stranded	25		-
			stranded	16		✓
M32	X206 - Load	13 - 21	solid	16	18 - 20	-
M40		16 - 28	stranded	25		-
			stranded	16		✓
M25	X201.1 - SB-Storage	9 - 17	solid	10	13 - 15	-
			stranded	10		-
			stranded	6		✓
M25	X202.1 - STP/SB-Inverter	9 - 17	solid	10	13 - 15	-
M32		13 - 21	stranded	10		-
			stranded	6		✓
M25	X201.2 - Meter M2	9-17	solid	10	13 - 15	-
M32	X202.2 - Meter M3	13 - 21	stranded	10		-
			stranded	6		✓
M25	E-Meter / Home Manager	special sealing insert for RJ45 connector	-	-	-	-
M20	X2504 - Communication	6-13	Communication cable according to SMA's specifications			
M20	PE	6-13	solid	16	18 - 20	-
			stranded	25		-
			stranded	16		✓

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TECHNICAL DATA

• applicable / - not applicable

NOMINAL VALUES

Rated operating voltage	[V]	3PH - 230/400
Rated insulation voltage	[V]	400
Operating frequency	[Hz]	50 ±5%
Max. prospective short circuit current	[kA]	10
Permitted grid structure		TT / TN-S
Max. value of pre-fuses gL/gG	[A]	63
Max. thermal power	[kW]	20
Max. power feed-in (limited by the system)	[kW]	11,08
Standby-loss, approx.	[W]	15

BATTERY BACKUP FUNCTION

Max. overload currents (effective value)		
Sunny Boy Storage SBS3.7-10 Sunny Boy Storage SBS5.0-10 Sunny Boy Storage SBS6.0-10	[A]	20 28 32
Max. Output - fault current (<200µs)	[A]	198
Voltage to ground during preparedness of short circuit current	[V]	<20
Temporary current carrying - Island Grid grounding for 5 seconds	[A]	240
Continuously current carrying - Island Grid grounding	[A]	63
Switch-off time - starting at the point of exceeding the overload current	[ms]	80
Switch-off time - starting at the point of exceeding the current of 55A Peak (= short circuit)	[µs]	250

CONTACTORS (IEC/EN 61095; IEC/EN60947-1; IEC 60947-5-1)

Q1	Grid disconnection	AC1/AC3 [A]	63 / 30
Q3	Grounding device	AC1/AC3 [A]	63 / 30
Q4	Phase coupling	AC1/AC3 [A]	63 / 30
Control voltage		[V]	230
Hum-free		•/-	•

CIRCUIT BREAKERS

F1.1/2/3	Backup Controller	[A]	3 x B6
F2.1/2/3	Backup Controller	[A]	3 x B6
F4	Phase coupling	[A]	2 x C32
F201.1	SB-Storage	[A]	C32
F202.1/2	SB - 1PH-Inverter	[A]	2 x C32
F202.3	STP - 3PH-inverter	[A]	3C25
F201.2	SB-Storage	[A]	Type A / 40 - 0,3
F202.4	PV-Inverter (selective)	[A]	Type A / 40 - 0,3

GENERAL DATA

Dimensions WxHxD (without cable glands)	[mm]	448 x 822 x 161
Weight, approx.	[kg]	14
Operating temperature range	[°C]	-25 ... +40
Temperature - transport/storage (24h 70°C)	[°C]	-25 ... +55
Humidity - condensing allowed	•/-	-
Humidity - permitted range	[%]	5...95
Max. altitude above sea level	[m]	2000
Protection class IP (EN 60529)		65
Outdoor suitability (protected area)	•/-	-
Installation type		Indoor area
Protection against electric shock (EN 61140)		II
Case material		Polycarbonate
RoHS-conformity (2011/65/EU)	•/-	•
Case colour		RAL7035
Cover		transparent
Mounting method		Wall mounting
Locking system		without tool

MISCELLANEOUS

Customs tariff number	85371098
SMA Backup Controller - spare part number	10012490

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EC DECLARATION OF CONFORMITY

The product,	designation:	**3PH_SMA_1ST6_1STP6.0_2SB5_BBDAP_20KW_1PH_PREP_IT_1.0**
	article number:	**10013491**
	manufacturer:	**enwitec electronic GmbH** **Scherrwies 2** **84329 Rogglfing**
	description:	**Battery Backup Distribution for the SMA Flexible Storage System**

to which this declaration relates, is in conformity to the following standards or normative documents:

EN 61439-1	**Low-voltage switchgear and controlgear assemblies**
EN 61439-2	**Power switchgear and controlgear assemblies**
EN 61439-3	**Distribution boards intended to be operated by ordinary persons (DBO)**
CEI 0-21:2019-04	**Low-voltage directive**

and is in accordance with the provisions of the following EC-directives:

Low-voltage directive 2014/35/EU

Restriction of Hazardous Substances Directive 2011/65/EU (RoHS)

Year of affixing CE-marking: **2018**

Date of issue: **09.10.2018**

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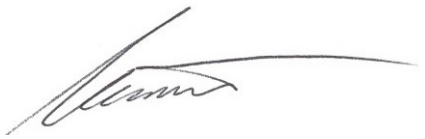

Name / Signature

Johann Wimmer
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