Avdira-Solar Power Accu
The ultra light Starter Battery
Made in Germany

Avdira Solar Greece

Avdira-Solar E-HYB Offgrid –lithium-

Avdira-Solar E-HYB Offgrid energy storage system based on lithium-battery technology sets new standards. Almost unnoticeably, it can be installed in every place.

Ready-assembled delivered, the only thing that is necessary to do ist to connect the solar modules with the plus/ minus cables.

- Compact energy storage with control and BMS monitoring
- Long-life lithium-battery 48V>6000 cycle
- High-level reliable BMS system
- Quick charge/discharge ca. 1 hour possible
- Stable voltage within a performance range
- 48V plug-segments with own autarky
- Solar loading efficiency up to 98%
- Solar tracking efficiency > 99%
- Overload protection AC/DC
- Clear control device
- Start/stop function from external generator
- Expandable in all power range: battery, solar, output-power

Avdira-Solar E-HYB Offgrid with lithium-battery

Type/AC-V/Inv. W/ DC-Storage V	TEO-Li-PA-230/2400/12	TEO-Li-PA-230/3500/24	TEO-Li-SE-230/4000/48	TEO-Li-SE-400/1200/48
Solar installed kWp min.-max.	1-1,25	2,5	2,0-5,0	2,0-5,0
Solar yield (Whp.d./kWhp.y.)				
Stockholm	2810/1020	5620/20520	11240/4100	11240/4100
Berlin	3210/1170	6420/2340	12850/4690	12850/4690
Athen	3650/1330	7290/2660	14600/5330	14600/5330
Kairo	4900/1800	9960/3630	19920/7270	19920/7270
Integrated technology and performance (for technical details of the inverter see PLATINA-catalogue X-TM series)				
Inverter VA AC 230V const./30min./5sec. kVA	2.0/2.0/4.8	3.0/3.5/9	3.5/4.0/10.5	10.5/12/30
Charging current from solar MPP-Tracker max. W/A/V	1250/80/80	2500/80/150	5000/80/150	5000/80/150
Charging current 230V from external generator A/W	100/1200	90/2160	50/2400	50/2400
Battery universal display- state of V/A load	yes	yes	yes	yes
External generator start/stop function	yes	yes	yes	yes
Lithium battery 160A/12V	1	2		
Avdira-Solar-battery plug-segments 2,5 kW/48V	-	-	2=5 kWh	3=7,5 kWh
AC output-protection (A)	16	16	20	20
Schuko-socket	230V	230V	230V	clip
DC-MC-4 solar jacks	yes	yes	yes	yes
DC input-protection	yes	yes	yes	yes
AC input-jacks (for generator)	yes	yes	yes	clip
Dimension	700x600x410	700x1100x410	700x600x410	1200x1100x410
Recommended solar technology				
module 250 Wp Unit min. dimens. ca. 100x1650x40	2-6	4-8	8-20	8-20
Expected number of cycles ca.	>5 years	>5 years	>6/8 years	>6/8 years
Externally to be installed components for full E-HYB autarky				
E-HYB Module-solar cable for distance 10m	yes	yes	yes	yes
Extention possibilities of the technology				
Module 250 Wp Unit min./max-from/up to	2/4	4/8	8/16	8/20
Battery plug-in segment Li-Fe 2,5kWh			1-4=2,5-10kWh	1-4=2,5-10kWh
Battery segment infrastructure (4 segments) 50 cm			required	
Battery 160 Ah 12V-Li-Fe dimens. 414x290x290	1-2 free standing	1-2 free standing		

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Technical specifications are subject to change without notice. Mistakes of printing, translation and transmission are possible.

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Avdira-Solar E-HYB Offgrid

Avdira-Solar E-HYB Offgrid energy storage system based on lead-gel-battery technology sets new standards. Almost unnoticeably, it can be installed in every place with the battery in a ventilated area.

- Compact energy control for solar and generator-charging and AC feeding
- Solar loading efficiency up to 98%
- Solar tracking efficiency > 99%

Ready-assembled delivered, the only thing that is necessary to do ist to connect the solar modules with the plus/ minus cables.

- Overload protection AC/DC
- Clear control device
- Alternative separated standing Li-battery

Self-sufficient Avdira-Solar E-HYB with lead-gel battery - alternative lithium technology

Type/AC-V/Inv. W/ DC-Storage V	TEO-LG-230/900/12	TEO-LG-230/2400/12	TEO-LG-230/3500/24	TEO-LG-400/3500/48
Solar installed kWp min.-max.	0,5-1,0	1,0-2,0	2,0-4,0	2,0-5,0
Solar yield (Whp.d./kWhp.y.)				
Stockholm	1400/510	2810/1020	5620/20520	11240/4100
Berlin	1600/580	3210/1170	6420/2340	12850/4690
Athen	1820/660	3650/1330	7290/2660	14600/5330
Kairo	2490/900	4900/1800	9960/3630	19920/7270

Integrated technology and performance (for technical details of the inverter see PLATINA-catalogue X-TM series)				
Inverter VA AC 230V const./30min./5sec. kVA	1.0/0.75/2,3	2.0/2.0/4,8	3.0/3.5/9	10.5/12/30
Charging current from solar MPP-Tracker max. W/A/V	1000/65/80	1250/80/80	2500/80/150	5000/80/150
Charging current 230V from external generator A/W	35/420	100/1200	90/2160	50/2400
Battery universal display- state of V/A load	yes	yes	yes	yes
External generator start/stop function	yes	yes	yes	yes
AC output-protection (A)	16	16	20	20
Schuko-socket	yes	yes	yes	yes
DC-MC-4 solar jacks	yes	yes	yes	yes
DC input-protection	yes	yes	yes	yes
AC input-jacks (for generator)	yes	yes	yes	yes
Dimension	700x600x410	700x600x410	700x600x410	1200x600x410

Externally to be installed components for full E-HYB autarky				
Batteries 210 Ah 12V lead-gel (in ventilated room)	1	1	2	4
Storage integrated capacity/ usage kWh	2.52/ 1.26	2.52/ 1.26	5/ 2.5	10.0/ 5.0

Expected number of cycles ca. <2500 (above all when battery is installed in cool places)				
E-HYB Module-solar cable for distance 10m	yes	yes	yes	yes
Battery connection cable to E-HYB 2m	yes	yes	yes	yes

Extention possibilities of the technology - solar equipping				
module 250 Wp Unit min. dimens. ca. 100x1650x40	2	4	8	8
Module 250 Wp Unit min./max-from/up to	2/4	4/8	8/16	8/20
Batteries 210 Ah 12V lead-gel dimens. 380x205x385 65Kg Usage kWh	**1/ 1.25**	**1/ 1.25**	**2/ 2.5**	**4/ 5**

Avdira-Solar Power Accu
The ultra light Starter Battery
Made in Germany

Power Accu - The ultra light Starter Battery

Iron Lithium Phosphate Technology
Very high operating and function safety

Smaller, lighter, more powerful and durable
The best starter battery

The advantages during engine-starting:

- Sensational starting-power performance Kg/A
- Small weight : ca 80% saving
- Very compact: just 1/3 of the usual size
- Rapid charging capability: ca. 1h/1C
- Recharging after starting within ca. 5 minutes
- Charging by means of dynamo
- Steady voltage curve
- Lowest self-discharge: 10% per year
- Full Ah supply, even though with higher power
- Vehicles 12V –external protection relay-
- Plastic case
- Contact connections: 1 x plus, 1 x minus
- Long lifecycle: more than 5 years
- Extreme performance even with extreme temperature

Ideal by engine starting for motorcycles, cars, jet-skis, snowmobiles, ATVs, quads, micro-ultralight fliegers, sport airplanes

Starter Batteries Designation	motorcycles - engines (ccm)	car/racing engines			discharge puls current (1 sec.)/perf. (A/W)	max. continuous discharge at 13,2 V (A/W)	Nominal capacity/ power 13,2 V (Ah/Wh)	charge current (4C)/ charge current for endurance (1C)	high/low operating temperature (°C)	high/low storage temperature (°C)	High rate discharge performance at 20°C (Ah/Wh)	weight (Kg)	small volume W x H x D mm
TP-ST 12V2600P-AC	450				**150/1980**	50/660	2,6/34	10/3	-30/+60	-50/+60	2,185/29	0,45	114x82x35
TP-ST 12V5200P-BC	1000				**300/3960**	100/1320	5,2/68	20/6	-30/+60	-50/+60	4,37/57	0,85	114x82x62
TP-ST 12V7800P-CC	1500		x		**450/5940**	150/1980	7,8/103	30/9	-30/+60	-50/+60	6,555/86	1,3	120x93x82
TP-ST 12V10P-DC	Harley	2 L	x		**600/7920**	200/2640	10/130	40/12	-30/+60	-50/+60	8,74/115	1,7	120x127x82
TP-ST 12V10P-SC	Harley	2 L	x		**600/7920**	200/2640	10/130	40/12	-30/+60	-50/+60	8,74/115	1,7	200x132x77
TP-ST 12V15P-EC		3 L			**900/11880**	300/3960	15/198	60/18	-30/+60	-50/+60	13,11/173	2,5	120x180x82
TP-ST 12V15P-SC		3 L			**900/11880**	300/3960	15/198	60/18	-30/+60	-50/+60	13,11/173	2,9	200x132x77
TP-ST 12V20P-FC		4 L			**1200/15840**	400/5280	20/264	80/24	-30/+60	-50/+60	17,48/231	3,2	120x236x82
TP-ST 12V20P-SC		4L			**1200/15840**	400/5280	20/264	80/24	-30/+60	-50/+60	17,48/231	3,6	248x140x95
TP-ST 12V25P-SC		6 L			**1500/19800**	500/6600	25/330	100/30	-30/+60	-50/+60	21,85/288	**4,2**	248x140x95

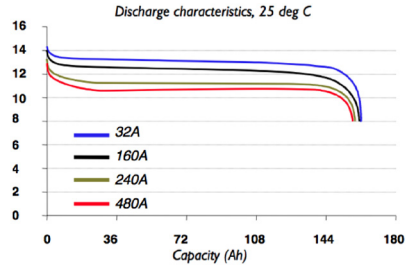
Avdira-Solar POWER ACCU
The stable Traction Battery
Made in Germany

Power Accu - The stable traction battery

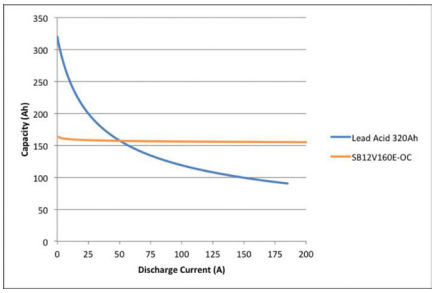
Iron Lithium Phosphate Technology Very high operating and function safety

The advantages during engine-starting:

- Small weight : ca 80% saving
- Very compact: just 1/3 of the usual size
- Rapid charging capability: ca. 1h/1C
- Charging by means of normal charging devices e.g. PLATINA-TCX-series,also with dynamo
- Ventilation not required
- Higher discharge current up to 3C continuously
- Steady voltage curve
- Lowest self-discharge: 10% per year
- Integrated battery manage system
- Integrated melt fuse and cell balancing
- Data interface CANopen
- Full Ah supply, even though with higher power
- Serial connection up to 1100V permitted
- Triggering for external protection relay
- Aluminium-plastic case
- Contact connections: 2 x plus, 2 x minus
- Long lifecycle



Performance Graphics



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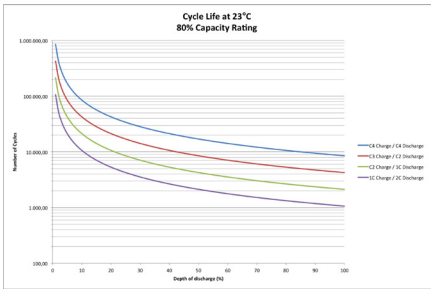

DoD vs Cycle Count

Traction Batteries Designation	System	max. continuous discharge at 13,2 V (A/W)	discharge puls current/ performance (A/W)	Nominal capacity/ power 13,2 V (Ah/Wh)	Charge method CC CV to 14,4V (A)	high/low storage operating temperature (charge) (°C)	high/low operating temperature (discharge) (°C)	High rate discharge performance at 20° C (Ah/Wh)	weight (Kg)	small volume W x H x D mm
TP-TR 12V3200E-AC	Balancing	12/158	28/370	3,2 /42	3,2	+60/-20	+60/-20	2,88/38	0,45	114x82x35
TP-TR 12V6400E-BC	Balancing	24/317	56/739	6,4 /84	6,4	+60/-20	+60/-20	5,76/76	0,85	114x82x62
TP-TR 12V10E-CC	Balancing	36/475	84/1100	9,6 /127	10	+60/-20	+60/-20	8,64/114	1,3	120x95x82
TP-TR 12V13E-DC-SC	Balancing	48/634	112/1500	12,8 /169	13	+60/-20	+60/-20	11,52/152	1,7	120x126x82/ 200x133x77
TP-TR 12V19E-EC-SC	Balancing	72/950	168/2200	19,2/253	19	+60/-20	+60/-20	15,36/203	2,5	120x180x82/ 200x141x96
TP-TR 12V26E-FC-SC	Balancing	96/1300	224/3000	25,6/338	26	+60/-20	+60/-20	20,48/270	3,2	120x238x82/ 249x141x96
TP-TR 12V32E-SC	Balancing	120/1600	280/3700	32/422	32	+60/-20	+60/-20	25,6/337	4,2	248x140x95
TPC-TR 12V50E-MC	BMS	150/2000	250/3300	50/660	50	+45/0	+60/-20	45/594	11	270x245x175
TPC-TR 12V100E-NC	BMS	300/4000	500/6600	100/1300	100	+45/0	+60/-20	90/1188	20	365x265x190
TPC-TR 12V160E-OC	BMS	480/6300	800/10500	160/2100	160	+45/0	+60/-20	144/1841	28	415x290x190