

Efficient Battery storages with Active Balancing

Individual Powerfull Efficient Longlife



History

2010 Start with first Lithium Battery for Photovoltaic

2011 First Project with 4.6 kWh, 24V system development of first passive balancer 250+ Batteries with 2.8 & 5.6 kWh for households

2013 Idea for first active balancing Battery Management System (BMS)

2015 Development of Active Balancer BMS for 48V completed

Until today installed capacity with our balancers/ storages: > 4,58 MWh



Passive Balancing

- Waste of energy through resistors during charge
- Unbalanced
 Batterystack during idle and discharge

Standard method: **passive balancing** → energy is wasted





Active Balancing

- efficient energy distribution
- balanced battery stack
- active during charge, idle and discharge
- higher capacity of battery
- longer lifetime (up to 30%)

AutarcTech's Method: Active Balancing → Energy Transfer



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enjoy independence Active Balancing - Measurement

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Active Balancing

- Battery with 3,6 kWh up to 22,4 kWh per unit
- Clusters with more than 200 kWh possible
- secure LiFePO₄-cells





References

- 22,4 kWh Battery as a cluster system: 89,6 kWh
- instead of additional power station -> photovoltaik in combination with battery system
- Peak-shaving reduces energy cost



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References

- e-Rickscha India
- Active Balancing increases distance
- robust against vibration and dust



We took a 3 km track and were able to complete 22 rounds on one charge

3,5 kWh with 60 Ah cells 60 km/h



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frefu

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References

- Containerstorages for FireFly (CCL)
- Delivery: BMS, relays, fuses, cable sets
- Delivered: >140 BMS with assembly sets







"If I would have asked what people want, they would have told me faster horses."

- Henry Ford -

Let's show people the advantages of active balanced Lithium Storages

Thank you!