



2022

Statron – your partner in UPS- & battery systems



Power Generation



T & D



Oil & Gas



Industry



Infrastructure



Railway



Telecom



Aviation

Agenda

1. Safety Briefing for Visitors
2. About Statron
3. Technology and Products
4. Services
5. Miscellaneous



SAFETY BRIEFING



Power Generation



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BASIC SAFETY RULES WHEN IN THE FACTORY AREA

- 1.) Please walk within the green lines.
- 2.) Do let us know if you would like to venture out of the green lines.
- 3.) Please follow the lead of your tour leaders during the factory tour and feel free to get in touch with any of our STATRON crew if you have any questions or concerns.
- 4.) This factory is equipped with an Automated External Defibrillator (AED), first aid kits, and trained first aiders should the need arises.

General Safety Information in STATRON Asia Pacific and STATRON Manufacturing

Emergency Instructions

1. Stay Calm → 2. Think → 3. Act



Alarm

In-house first aid:

- Lester

- Shukri

Ambulance

Police

Fire Department

Hospital

Clinic

Who

What

Where

How many

Further

is calling?

happened?

Statron Asia Pacific, 3A-02-A, Luxor Tech Centre, Kota Damansara PJU 5

people are affected?

special risks, hazardous substances?

Call

+6012-3969627

+6017-2073427

999 (1-300-88-1919) – First Ambulance

999 (03-6142 1222) - Kota Damansara Police Station

999 (03-7728 4444) – Balai Bomba TTDI

999 (03-6145 4333) – Sungai Buloh Hospital

03-7499 3287 – Mediviron Clinic Cova Square

General Safety Information in STATRON Asia Pacific and STATRON Manufacturing

In the event of a fire alarm;

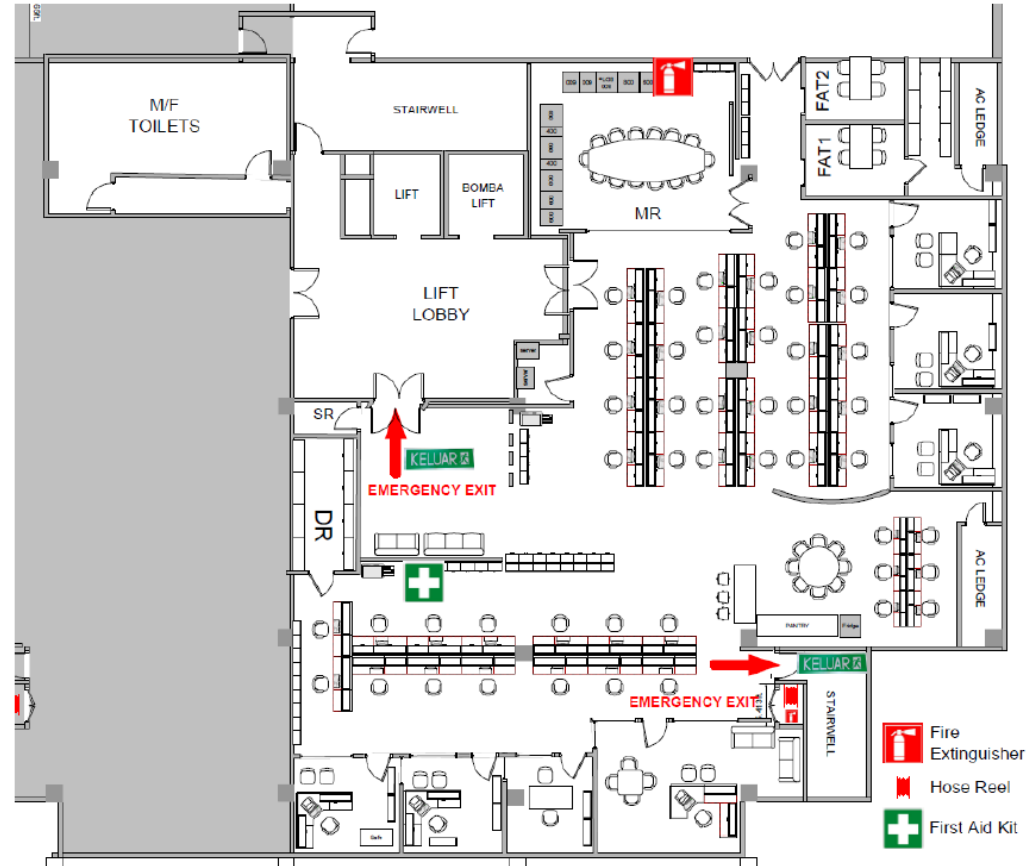
- 1.) **Keep Calm**
- 2.) Head to the nearest **Fire Exit**
- 3.) **Walk** calmly down the stairs
- 4.) Evacuate to the **Assembly Point** in front of the building



General Safety Information in STATRON Asia Pacific and STATRON Manufacturing

OFFICE AREA

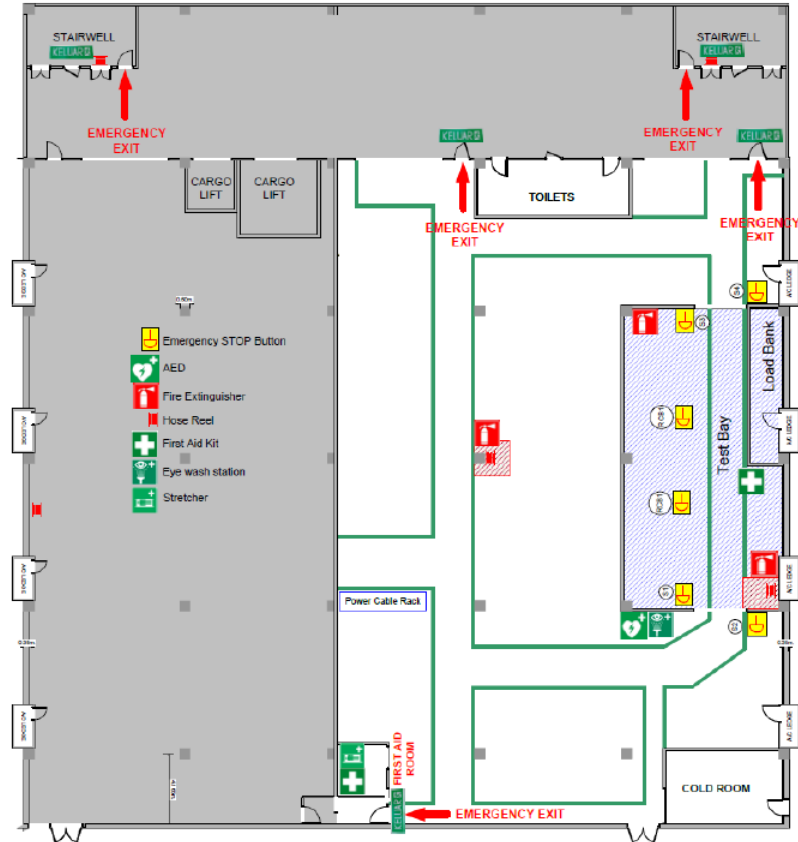
Emergency exit is located beside the pantry.



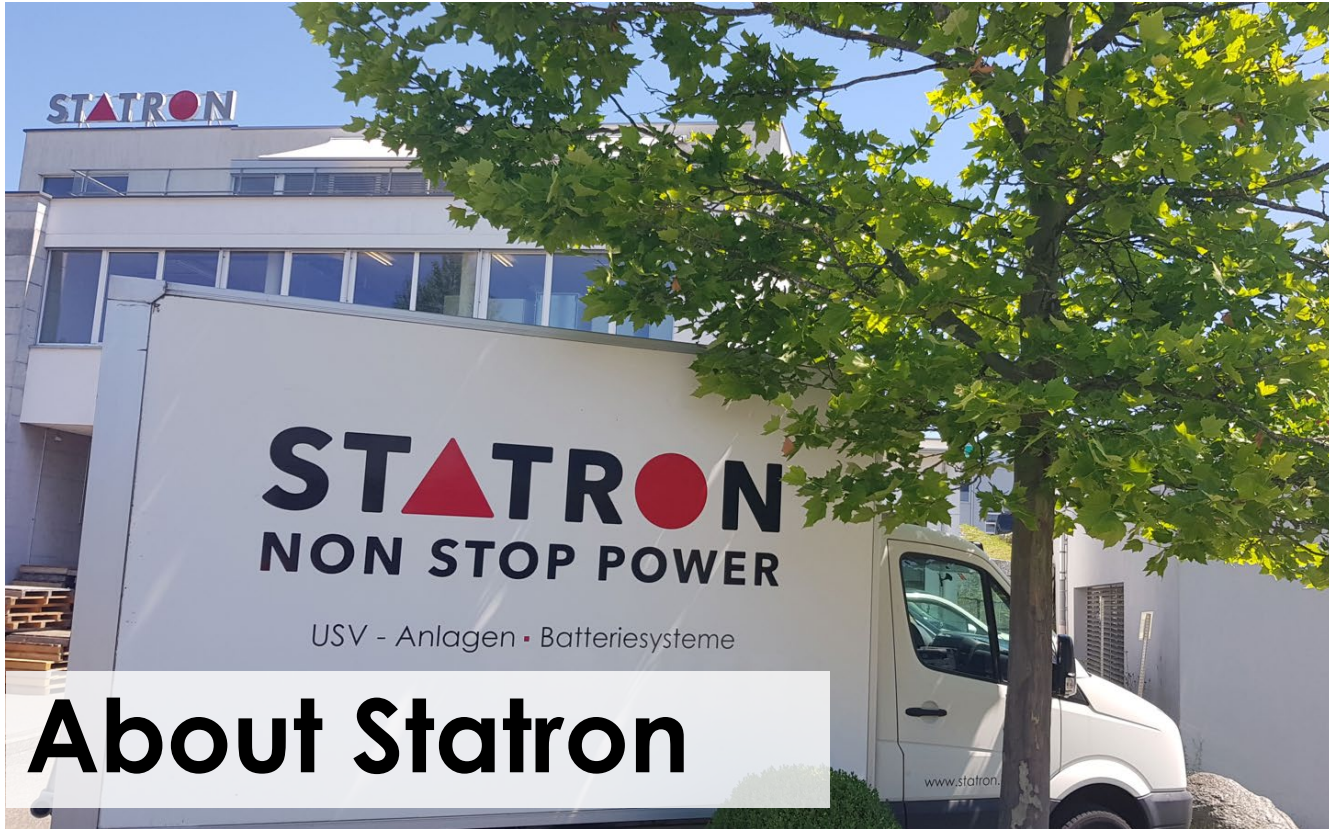
General Safety Information in STATRON Asia Pacific and STATRON Manufacturing

FACTORY AREA

Emergency exits are located right at the back of the factory area, to the **left** and to the **right**.



Any questions?



About Statron

45 years successful in the market

20 Mägenwil
Années
STATRON
NON STOP POWER 45
Années

20 Mägenwil
Jahre
STATRON
NON STOP POWER 45
Jahre

20 Mägenwil
Years
STATRON
NON STOP POWER 45
Years



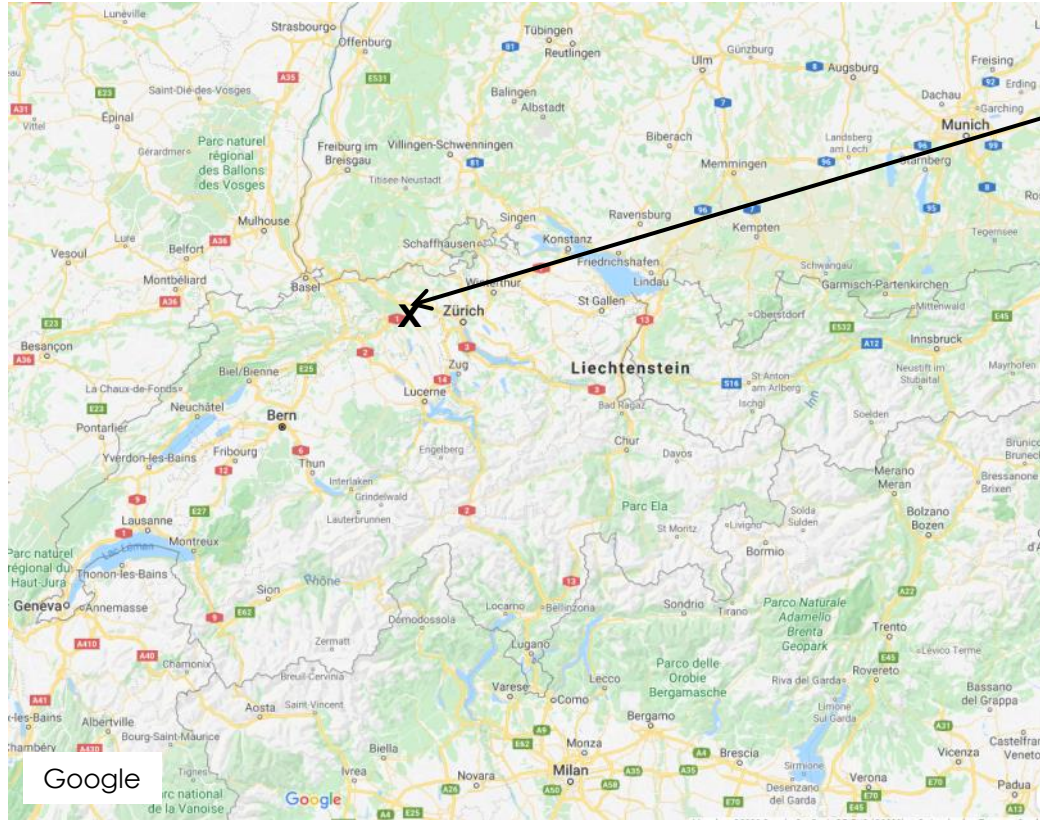
We are a top quality **solution provider**
for **UPS and battery storage systems.**

Your demand is our strength

We can execute your projects ... what ever it might be!



Statron headquarter – in the heart of Europe

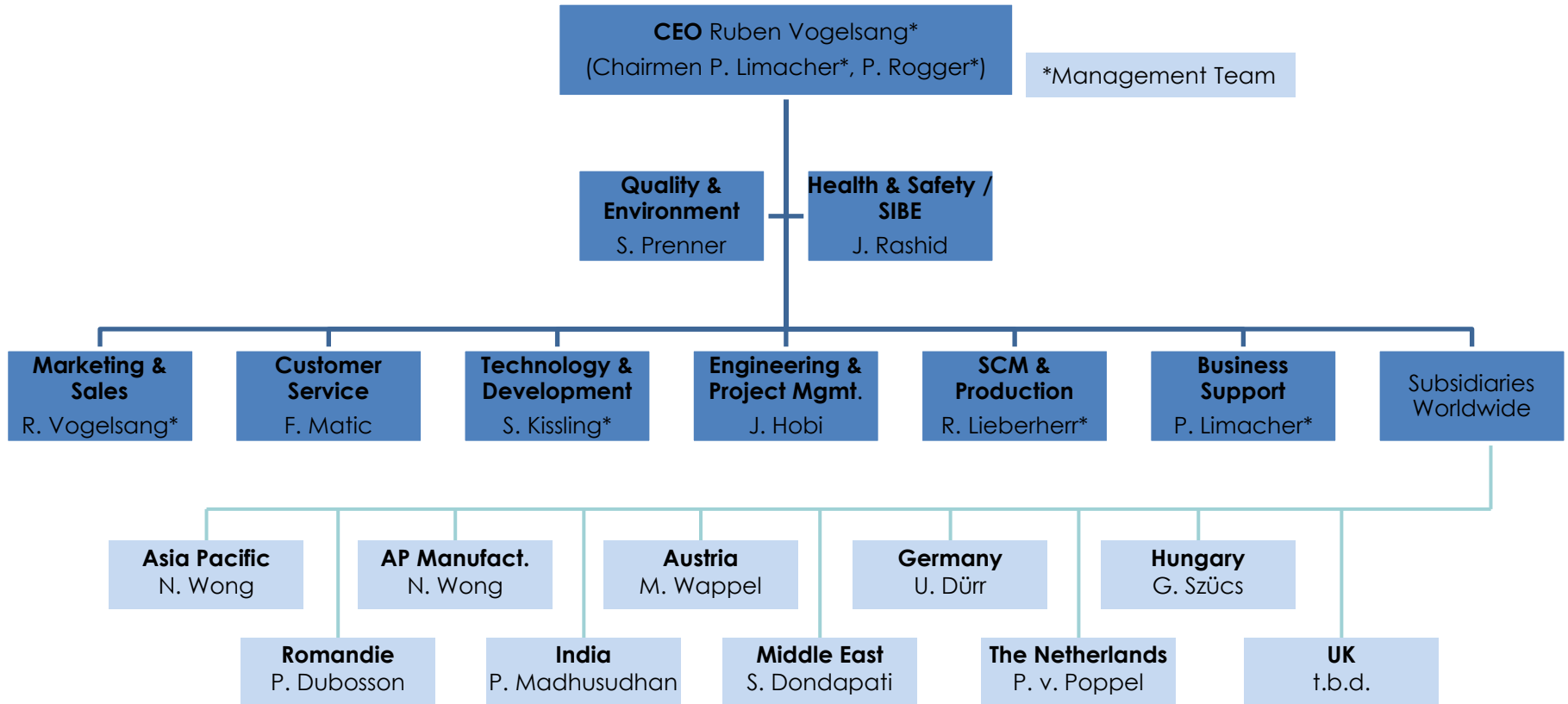


Mägenwil
(30min from ZRH airport)

Global presence of Statron



Structure of headquarter and subsidiaries



Statron today



- Privately owned, independent company
- 8 fully owned subsidiaries
- 45 years of battery and UPS experience
- ISO 9001/14001 certified since 1998 (9001 all sub.)
- ISO 45001 (HQ) since 2021
- Execute > 200 projects/a
- Design, built, deliver, execute > 1'000 systems/a
- Ratio 20 % CH, 80 % International
- Have all in-house: R&D, Sales, Prod., Services etc.

=> We can independently execute your projects with long-term perspectives

Milestones

- 1976 **Company established**
- 1986 **Exclusive** contract with NIFE for **NiCd Batteries** in Switzerland
- 1998 ISO 9001 certification
- 1999 – '05 Established subsidiaries in DE, NL, UK and AT for Sales & Services
- 2005 Established Statron Middle East (Dubai)
- 2006/09 Several frame agreements, such as: **Sunrise, Swisscom, Alstom, Siemens**
- 2009/10 Established new subsid. in IN & MY
- 2012 **Change of ownership**
- 2016 Launch of **new battery charger BDTe**
- 2017/18 Relocation and start of new production facilities in HU & MY
- 2018 Renewal **Global EFA Shell for 5 years**
- 2019 Grand opening Malaysia
- 2020 Opening of new showroom at HQ
- 2022 Installation of first large battery storage system “BESS”**



Statron subsidiaries today

	Headquarter Statron AG CH - 5506 Mägenwil		Austria Statron GmbH AT - Grafenschachen
	Switzerland Statron Romandie SA CH - 1023 Crissier		Germany Stavolt Non Stop Power GmbH DE - Bad Herrenalb
	UAE / Middle East Statron Middle East FZCO Dubai airport free zone		The Netherlands Statron B.V. NL - Lijnden
	India Statron India Pvt. Ltd. IN - Hyderabad		Hungary Statron Hungary Ltd HU - Budapest
	Malaysia / Asia Pacific Statron Asia Pacific Sdn. Bhd. MY - Petaling Jaya		Malaysia Manufacturing Statron Manufact. Sdn. Bhd. MY - Petaling Jaya

Statron AP Malaysia - General



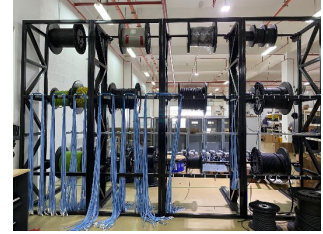
Information

- Identical setup as Switzerland
- **ISO 9001:2015 Certified**
- **ISO 14001:2015 Certified**
- Space 16,789 sqft
- Factory 10,470 sqft
- 1000 panels per year
- Responsible for Asia Pacific Market
- Market includes transportation, oil & gas, power generation, T&D and renewable

Full Functionality

- Sales & Marketing
- Project Management
- Engineering Design
- Research & Development
- Manufacturing Capability
- Advance Testing Facility
- Field Service Engineer
- Modern Training Centre
- Battery Testing Facility
- Modification & Repair
- FEED & Consultation
- Seminar & Training

Statron Manufacturing Malaysia I



Warehouse



Mechanical Assembly Area

Statron Manufacturing Malaysia II



Wiring Area



Test bay

Statron Manufacturing Malaysia III



System + Battery Integration Test

Battery Monitoring System



Finishing & Packing

STATRON Malaysia Advantages

Commercial Advantages

Commercial

- Competitive Pricing
- Shorter Delivery Lead Time for Systems, Spare Parts and Repair
- Localization empowering local economy and knowledge
- Lower Transportation Cost
- Local understanding of requirement & culture
 - Systems, Batteries and
 - Spares Availability

Technical Advantages

Technical

- Project Management
- Engineering Design
- Research & Development
- Manufacturing Capability
- Advance Testing Facility
- Field Service Engineer
- Modern Training Centre
- Battery Testing Facility
- Modification & Repair
- FEED & Consultation Seminar & Training

Additional Services

- Installation Team
- Maintenance
- Retrofitting
- Modification & Repair
- Servicing and providing spares for all brands of UPS systems
- Rental of Systems (UPS, Charger, Inverter), Load Banks, BMS, Lighting.
- 24/7 Availability

Market segments



Power Generation



Transmission & Distribution



Oil & Gas



Infrastructure



Industry



Railway



Telecommunication



Aviation

Quality Assurance

- STATRON Asia Pacific Sdn Bhd & STATRON Manufacturing Sdn Bhd are certified with;
 - ISO9001:2015
 - ISO14001:2015
- Internal audits
 - Conducted three times a year
 - At least one internal audit conducted by Global QHSE Manager from Switzerland
- External audit
 - Conducted once a year by our Global QSHE Manager from Switzerland together with the external SWISO Auditor

ISO9001:2015



ISO14001:2015



Focussed product portfolio

Additional products

Semi-Industrial UPS:

- S1300
- S6300e
- S9000
- Eaton
- BCSe

Others:

- Voltage stab.
- BESS
- Mobile power storage

Core products

Industrial UPS:

- Battery charger BDS, BDTe
- Inverter IDSe/IDTe
- UPS – S2000e, S3000
- Modular - SMT

Batteries:

- Lead-Acid
- NiCd

Auxiliary systems:

- DVR
- Bypass

Services

- Installation & commissioning
- Maintenance
- Trainings
- Service contracts
- System checks
- Modification & refitting
- Spares
- Repairs



Go green

Basics for need of BESS (Battery Energy Storage System)

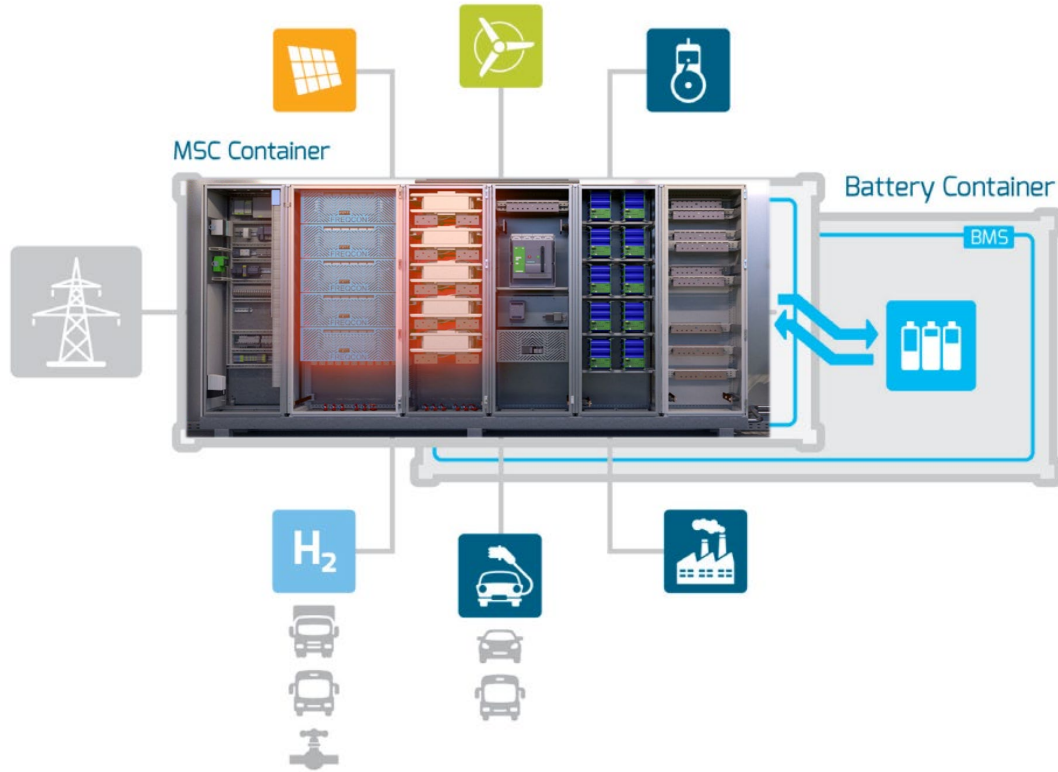


To handle fluctuating loads and sources



To buffer high loads

BESS – principle



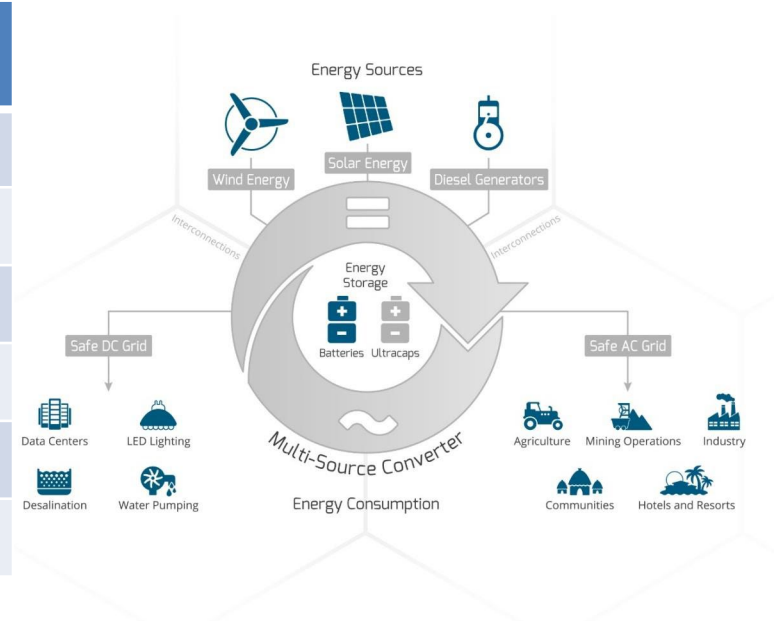
BESS – advantages

- Multi Source Converters 150 kW to 2 MW, scalable to > 100 MW
- Hybrid converter for integration of various energy sources/consumers
- Subsequent integration of further energy sources and consumers very easy
- Flexible energy storage solution with batteries and/or ultracapacitors
- Compliance with all required grid codes
- Compact, modular solution in an ISO container
- Charging and discharging rates of 0.25 C to 20 C



BESS – Examples footprint for systems 1h backup

Power MW	Capacity MWh	Container Converter	Container Battery
0.5	0.68	1 x 20 ft.	
1.0	1.13	1 x 30 ft.	
1.5	1.58	1 x 30 ft.	
2.0	2.03	1 x 30 ft.	
3.0	3.39	1 x 20 ft.	1 x 30 ft.
4.5	4.74	1 x 20 ft.	1 x 40 ft.



Emost – a mobile UPS or mobile BESS



First mobile UPS or mobile storage system

Basic need for mobile BESS



Avoid high costs for larger installation



Avoid costs and delays for crossing of streets



Avoid noise and dust from Diesel engines

Advantages of mobile BESS

1



ECOLOGIC:

- Ecologic: Fulfills all regulatory norms – now and in a CO2 free world.
- With no emissions, the emost Butler is ideal also for closed quarters.

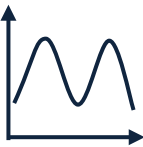
2



QUIET:

- Leads to increased comfort, health & safety and enables nighttime construction.

3



HIGH ENERGY QUALITY:

- Generates high quality power under minimum loads as well as under full load.
- Thus allows the use of sensitive equipment.

4



EASY TO USE:

- Permit-free and simple installation for rapid site mobilization.
- Trouble-free transport and easy operation.
- Robust design for industrial use.

5



ECONOMIC:

- Better price-performance ratio than with diesel generators and complex time-limited network connections
- Eliminates the 20% minimum load and/or power oversizing.

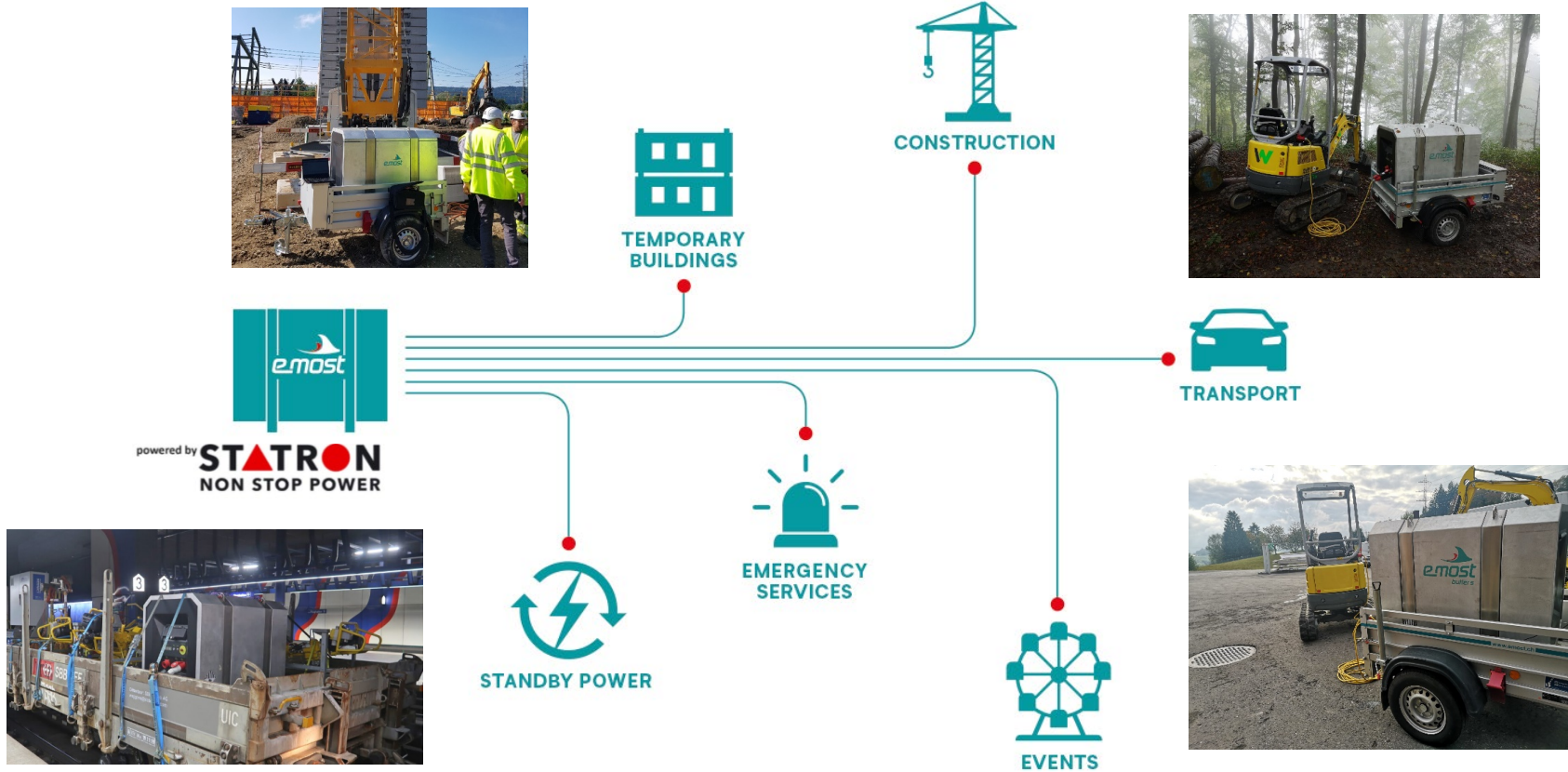
6



TRANSPARENCY:

- Professional monitoring and control by an integrated service platform (IoT platform)
- Possibility for the digitalization of existing processes.

Applications of mobile BESS



Applications of mobile BESS

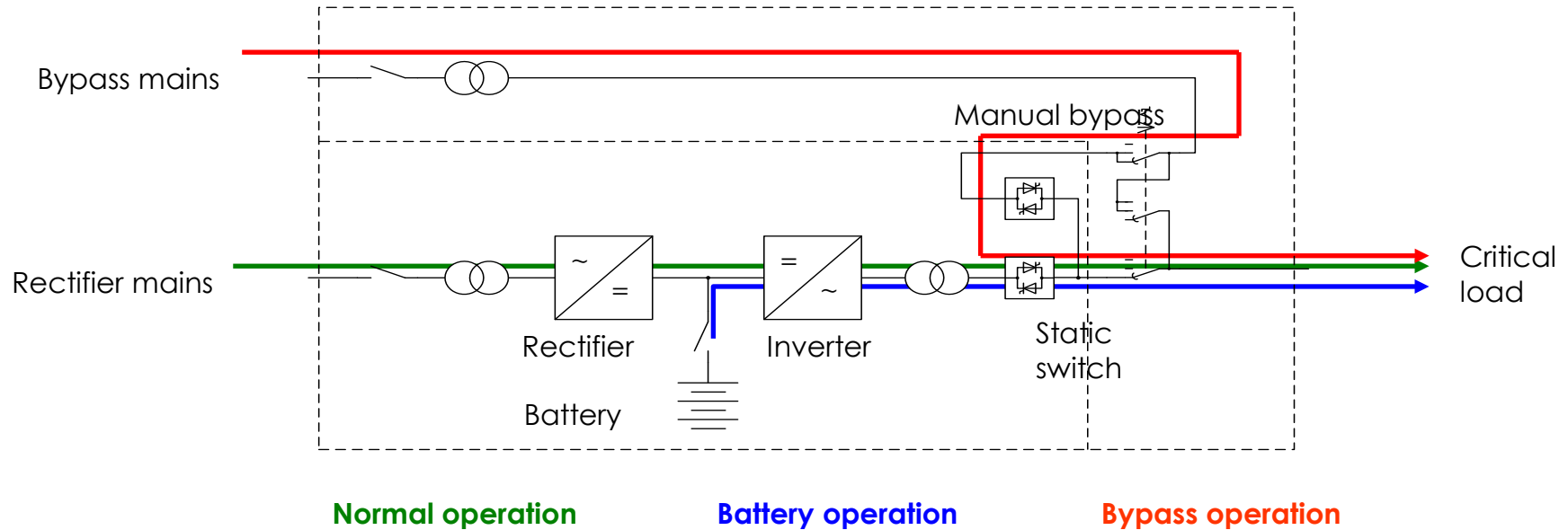


- Lithium-Ion technology
- Peak power 75 kVA
- Nominal power 50 kVA
- Capacity 25 kWh
- Charging: 3-p, 400VAC, 16 or 32 A plug; optional 1-p 220V type 13 plug
- Discharge:
 - CEE 400 VAC 32 A plug
 - CEE 400 VAC 16 A plug
 - Type 25 1-p, 230 VAC
 - Optional CEE 400 VAC 63 A plug
- Dimensions: 0.8 m x 1.5 m x 1.1 m
- Weight: approx. 650 kg



Industrial UPS

UPS topology online UPS with double conversion



Industrial UPS: Construction



Cabinet: Robust, self-contained steel frame, meeting the specified IP-degree, allowance for air filters

Material: Corrosion-proof components and connections

Layout: Good accessibility and operability, clear and permanent component identification

Wiring: Non-halogenated wiring insulation with a high temperature degree

Industrial UPS: Design criteria



Accessibility:

Quick and safe accessibility in case of failures or maintenance activities,
Low MTTR due to easy front access

Replaceability:

Simple replacement of modules/
assemblies (almost) without

**Fans:
Redundancy:**

N+1 or 100% redundant fans in case natural
cooling is not adequate

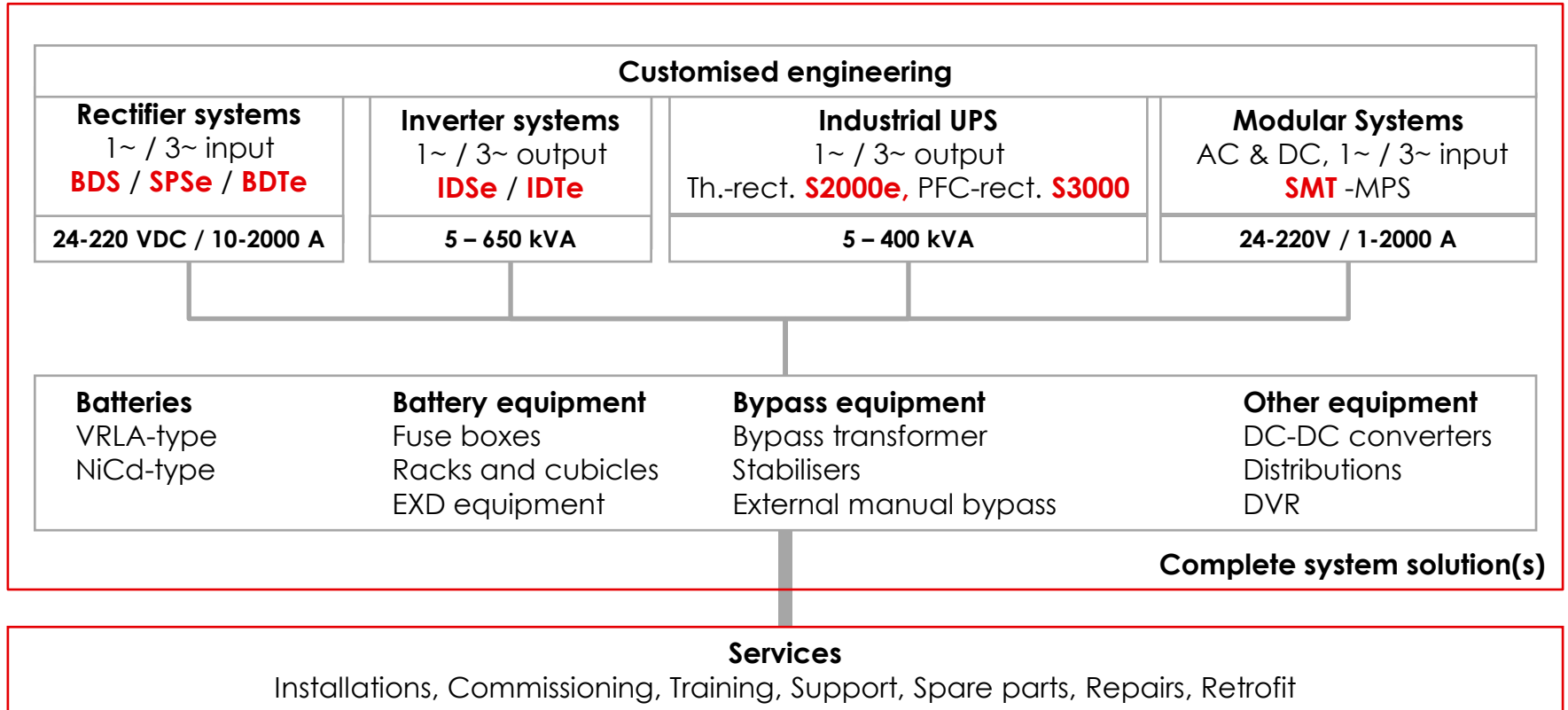
Replacement:

Safe replacement without disturbing the
load

Lifetime:

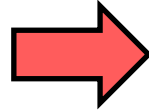
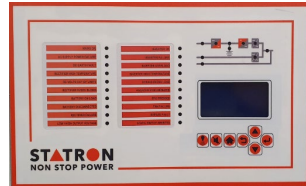
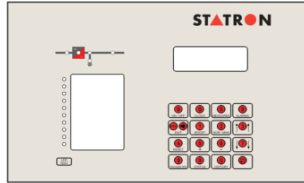
Extended replacement intervals

Product portfolio “Industrial”

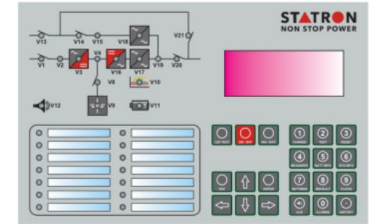
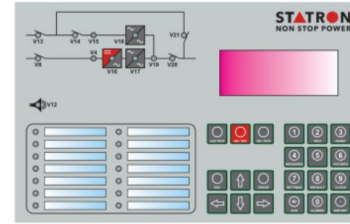
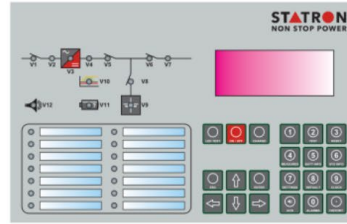


Display improvements – Statron UHMI concept

Former HMI



Improved Universal HMI concept



- Membrane foil panel
- Representation of actual block diagram
- Multicolour-LED's / Programmable alarms
- Comprehensive sealed keypad
- 192x64 dot / 8 lines LCD with backlight
- Real time Event Recorder (2500 entries)
- Multi-language support
- 12 programmable alarms / indications
- Multi-level user management
- Universal HMI for all Statron industrial products

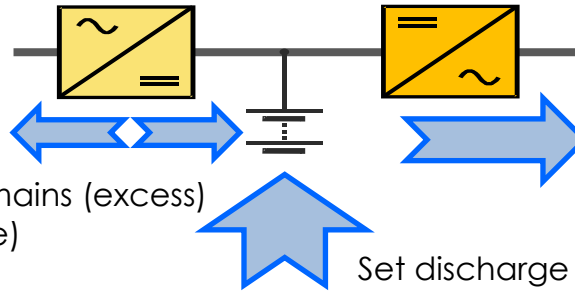
S3000: Unique feature battery mgmt. with integrated battery discharger



- Constant current battery discharge test by means of sinusoidal mains back-feed
- Battery monitoring with programmed discharge data
- Periodic automated battery availability check
- Real time battery capacity and back-up time display
- Three voltage levels / two current limitation steps
- Temperature compensation

Illustration of automatically managed constant current battery discharge test

Balance energy fed back to mains (excess) or drawn from mains (shortage)



Actual power demand from connected UPS AC loads

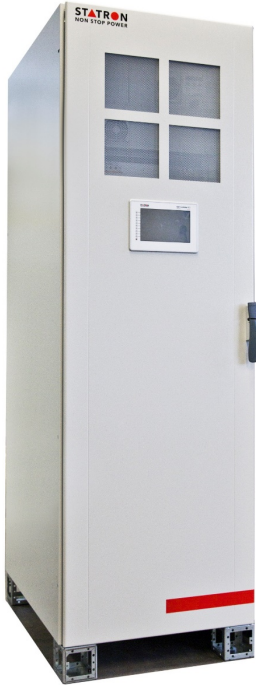
Set discharge current (e.g. I_5) kept constant throughout test cycle

SMT – Statron Modular Technology



- 24, 48, 110, 220 VDC modules
- 1 kW to 3 kW modules (typ. 3 kW)
- Hot swappable
- uP controlled
- Very low input THDi < 4%
- Galvanic isolated output

SMT: Main features and advantages



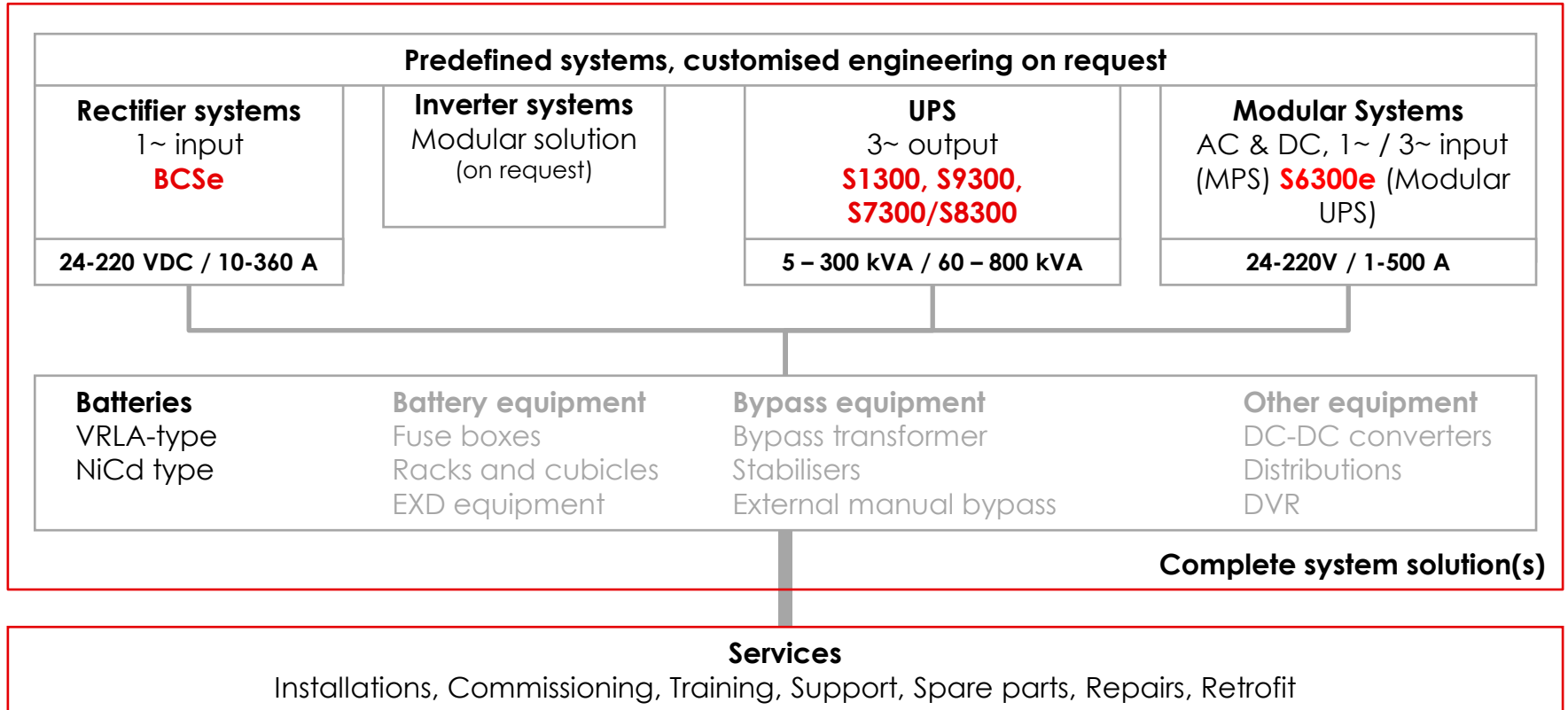
- For NiCd and lead acid batteries
- Automatic and manual boost charge with interlocking
- 2 x 100% and n + 1 solutions
- Modern touch display for status, metering and alarms
- Modbus / TCP/IP Interface, RS485 / SNMP
- Event history
- Total system solutions





Semi-Industrial / Commercial UPS

Product portfolio “Semi-Industrial / Commercial UPS”



BCSe: THE small, reliable and cost-effective battery charger



- Based on well proven technology
- Power factor corrected rectifier (PF 0,99)
- Simple to use, easy to adjust
- Clear structured front panel
- High efficiency
- Very low ripple voltage
- 2-level charging for NiCd and Lead Acid batteries
- Design life of up to 20 years
- Economic price
- Different voltage levels available
- Different sizes available
- Battery inside available

S1300: Well established semi-industrial UPS



- Double conversion online UPS with high efficiency (up to 96%) and compact construction
- High efficiency thanks to Power Efficiency Mode (PEM)
- Output designed for PF 1.0 loading
- Power factor corrected rectifier (PFC), PF 0.99, THDi < 3 %
- Dynamic Charge Mode (DCM) reduces battery recharge time
- Advanced Battery Care (ABC) extends battery lifetime
- Power transformer free UPS design leads to low weight and high efficiency
- Large touchscreen, easy operation and monitoring
- Comprehensive set of communication options for flexible remote monitoring
- Same handling and spare parts over full power range
- Modern LCD HMI

S6300e: Reliable modular UPS: 20 – 60 kVA



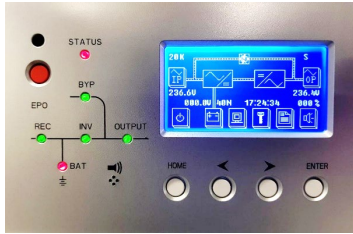
- Compact design, small dimensions, 60 kVA with ~6 min. autonomy on 0,61 m²
- Power factor correction PF > 0,99
- Power module 20 kVA / 18 kW
- Max. 3 modules (60 kVA or 40 kVA N+1) in standard cabinet
- Built in batteries, Nominal +/-240 VDC
- Intelligent charging management
- Battery cold start
- Smart sleep function – shutdown of power modules to increase system efficiency
- Multi communication interface (RS232, RS485, USB, SNMP, AS400 and programmable dry contacts)

S6300e: Reliable modular UPS: 50 – 500 kVA



- Compact design, small dimensions 500 kVA on 1,45 m²
- Power factor correction PF > 0,99
- Power module 50 kVA/45 kW
- 4 different cabinet sizes (100, 200, 300, 500 kVA)
- High scalability 50 – 500 kVA in one cabinet, 3 units in parallel up to 1500 kVA
- Redundancy N+x
- Nominal battery voltage +/-240 VDC (2x20 blocks VRLA)
- Intelligent charging management
- Battery cold start
- Smart sleep function – shutdown of power modules to increase system efficiency
- Multi communication interface (RS232, RS485, USB, SNMP, AS400 and programmable dry contacts)

S9300: Reliable semi-industrial UPS for small ratings



- Compact design, small dimensions
- Power factor correction PF >0,99
- Built in batteries, Nominal +/-240VDC
- Optional with external batteries
- Can be used as „replacement“ for S4100 UPS (32 Blocks 12V) with some limitations
- Float and Boost charge level
- High resolution LCD screen
- 8 different temperature sensors inside UPS
- 4 circuit breakers (Input, Output, Bypass, Battery)
- Internal manual Bypass
- Cable entry backside
- Transportation wheels
- Short circuit current $3 \times I_{nom} / 200ms$
- No galvanic isolation input & output !!!

S7300/8300: Reliable semi-industrial UPS for high ratings

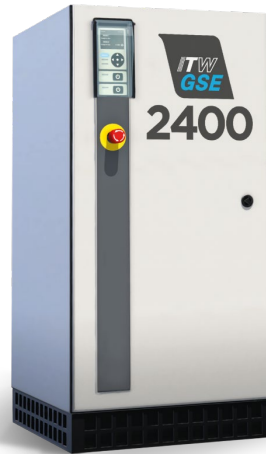


- Online double conversion UPS with high efficiency
- Large power range 60 – 300 kVA or 400 – 800 kVA
- Input power factor < 0.99
- Inverter output isolation transformer
- User friendly LCD Display
- Automatic and manual battery test
- Service access from the front and top
- Dynamic charge mode (DCM) that allows fast recharge of battery in partial load operation
- High track record in tunnel-applications



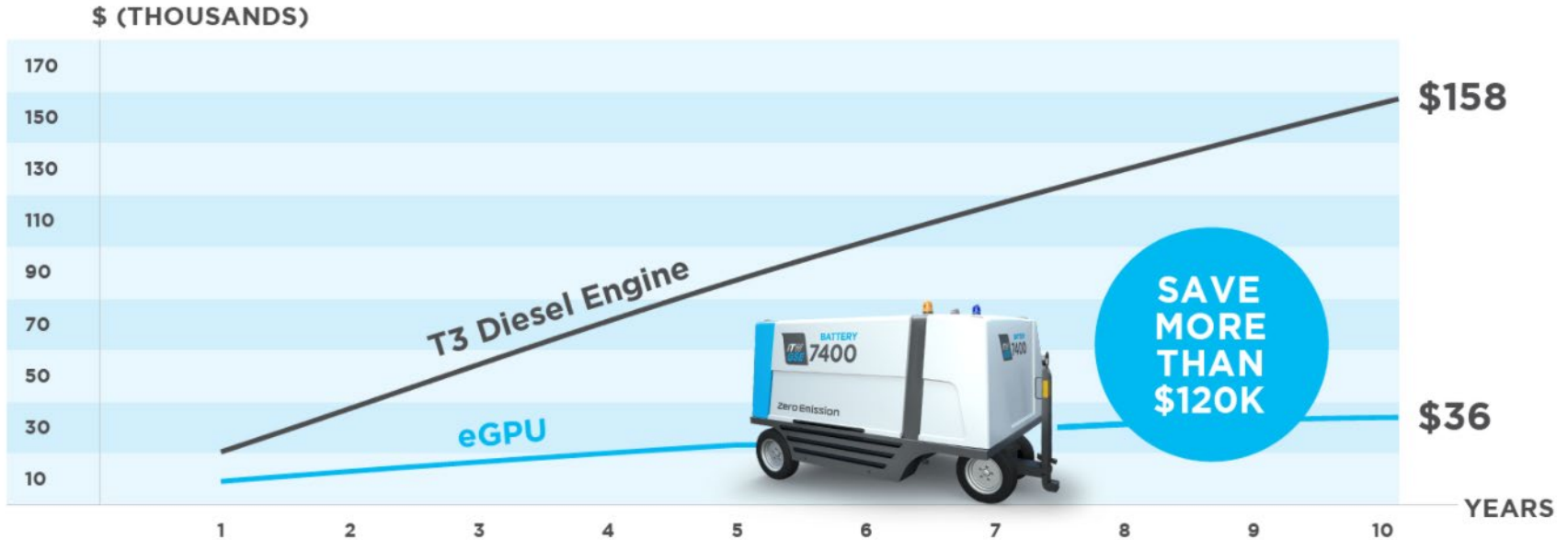
Aviation

Reliable and innovative ground power units (GPU)



- Mobile and fix-installed
- Fits for every airport
- Fits for every heli-port

Go green with first full-electric GPU 7400



- First unit sold from Statron
- Saves costs and emissions
- Extremely low noise

Reliable and innovative pre-conditioned air (PCA) units



- Innovative products
- Intelligent power management



Industrial batteries

Industrial batteries



- All systems require secure energy storage
- STATRON collaborates with renowned manufacturers of industrial batteries
- Allows our engineers to choose the best battery from a complete range of technologies suitable for every application, such as:
 - **Maintenance free valve regulated lead acid batteries**
 - **Low maintenance vented lead acid batteries**
 - **Nickel cadmium batteries**
 - **Li-Ion battery systems**



Batteries: Lead acid maintenance free valve regulated



- Flat and tubular plates
- AGM and Gel technologies
- Single cells, 6V / 12V Blocks
- Front terminal versions



Batteries: Vented lead acid low maintenance



- Tubular plate
- Flat plate
- GroE plate



Batteries: NiCd



- Pocket plate: technology offering best mechanical strength
- Sintered plate: technology for maximum power to volume ratio
- Plastic-bonded plate: technology for high performance with very long cycle life





Services

After Sales Services portfolio



Consulting

Approval

Testing

Delivery

Engineering

Assembly

FAT

Commissioning

STATRON Service Support

After Sales Service

- 7 Service Engineers
- 4 Site service
- 2 In house testing
- 1 Troubleshooting
- 1 Sales & planning
- 1 Training & Support

Service

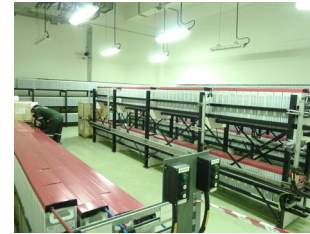
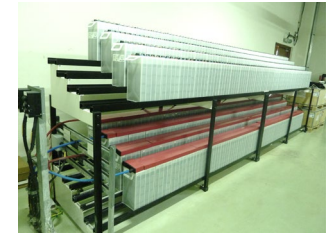
- Installation (sub con)
- Testing & Commissioning
- Maintenance
- Troubleshooting (24 hrs)
- Retrofitting
- Repairing 24/7

Support

- Spare parts (stock)
- Class / Online training
- Site training
- Load bank (AC&DC)
- Rental systems (AC&DC)
- Batteries & BMS
- Lighting



STATRON TNB & Petronas Site Installation



STATRON-LRT3 Installation – 29 locations



Total: 58 Chargers

Installation at 26 stations +
3 Depot with Saft Nickel
Cadmium batteries



STATRON-Retrofit Charger for Larut-A Platform

Installation of 9 Retrofit
chargers at platform E-POMS



STATRON-Wiener Linien, Austria



WIENER LINIEN

300 Panels

150 units of parallel redundant systems
With SAFT Nickel Cadmium batteries



Conclusion

We can execute your projects ... what ever it might be!



Motto 2022: Grow and look for attractive opportunities

