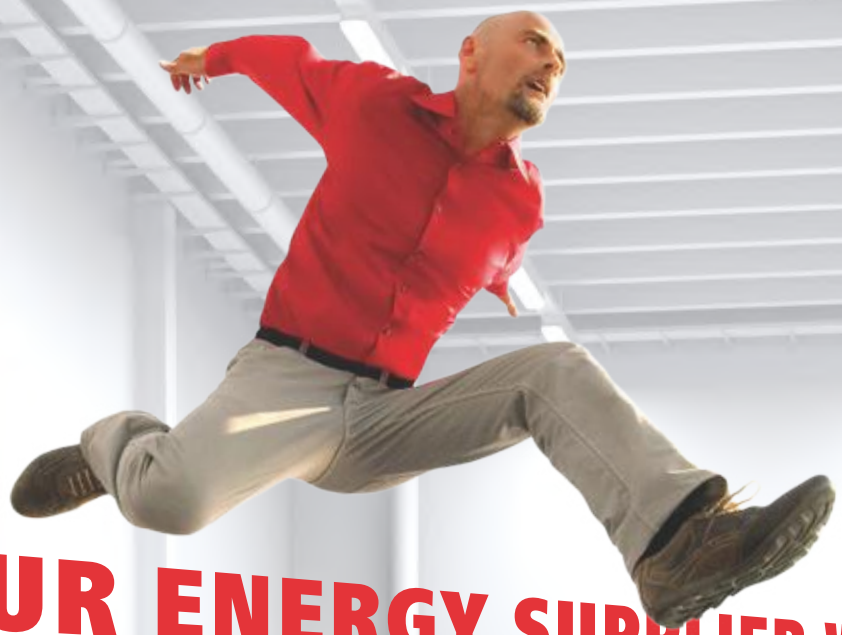
/ Perfect Welding / Solar Energy / Perfect Charging

Fronius
SHIFTING THE LIMITS

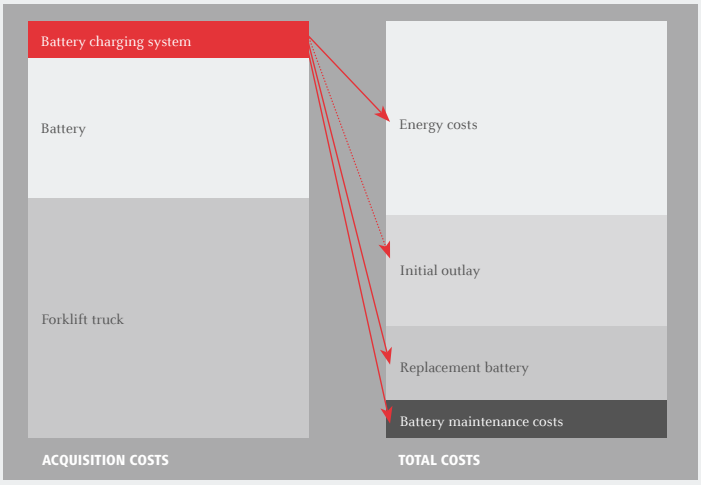


YOUR ENERGY SUPPLIER WILL HATE US. BUT YOUR BATTERIES WILL LOVE US.

/ Selectiva battery charging systems for intralogistics

THE THREE-PART SYSTEM: FORKLIFT TRUCK, BATTERY, BATTERY CHARGING SYSTEM

/ The battery charging system is frequently overlooked during the procurement of electrically powered forklift trucks. Its enormous influence on ongoing operating costs only becomes apparent on closer inspection. An efficient charging system has a positive impact on the service life of a traction battery, maintenance costs and the energy costs associated with charging the battery.



/ Effect of battery charging system on the total cost of an electric forklift truck

ACTIVE INVERTER TECHNOLOGY FROM FRONIUS

/ The Active Inverter Technology developed by Fronius ensures an optimum and gentle charging of the traction battery.

Ri CHARGING PROCESS

/ The Ri charging process allows the charge to be improved even further. It adapts itself automatically to the demands of each battery and only charges the battery with the current that it really needs. Depending on the age, temperature and state of charge of the battery, each individual charging cycle is unique with its own individual characteristic (see the image “Maximum battery service life thanks to unique Ri charging process” on page 4).

/ This has two unbeatable advantages:

/ Maximum battery service life
Adapting the current to the battery minimises charging losses when charging commences and during the recharging phase. This guarantees the coolest and most gentle charging.

/ Maximum energy efficiency
With the highest levels of total efficiency from the socket to the forklift truck, the energy consumption of Fronius battery charging systems is extremely economical compared with 50 Hz transformer technology and high-frequency technology.

SELECTIVA BATTERY CHARGING SYSTEMS

/ The Selectiva range boasts four power categories and housing variants to provide a complete product portfolio for 2 to 80 V traction batteries. In terms of energy costs and battery service life, Fronius battery charging systems guarantee maximum efficiency. 100% safety during charging of the battery, ease of use and flexible installation options ensure trouble-free charging processes. As know-how leader, Fronius offers system solutions for the charging of traction batteries.

/ Selectiva 16kW, Selectiva 8kW, Selectiva 1kW, Selectiva Plus 3kW (from l. to r.)

ENERGY EFFICIENCY

Ri CHARGING PROCESS

/ The Ri charging process provides the highest level of total efficiency from the socket to the forklift truck. Maximum energy efficiency is the watchword.

CALENDAR FUNCTION

/ Use of low-cost tariffs (e.g. off-peak electricity) is possible.

AVOIDING PEAK CURRENTS

/ The low power consumption of Selectiva battery charging systems reduces the connected load. Additional features, such as the adjustable start of charging, further reduce peak loads.

BATTERY SERVICE LIFE

Ri CHARGING PROCESS
/ The Ri charging process adapts to the demands of each battery and only charges the battery with the current that it really needs according to its age and state of charge. Gassing and/or battery warming is therefore minimised, resulting in a maximum battery service life.

LESS MAINTENANCE
/ Charging processes that are adapted to the demands of the battery prevent uncontrolled overloads and decrease maintenance requirements (less water required, less work). The service life of the battery increases as a result.

CALENDAR FUNCTION
/ As charging takes place at defined times, harmful opportunity charging can be avoided.

VISUALISATION OF THE COOLEST BATTERY
/ States of charge displayed using multi-coloured LED lamps. In addition to fully-charged (LED steady green), the LEDs also indicate when the battery has cooled sufficiently (LED steady blue). This shows the optimum deployment time of the battery.

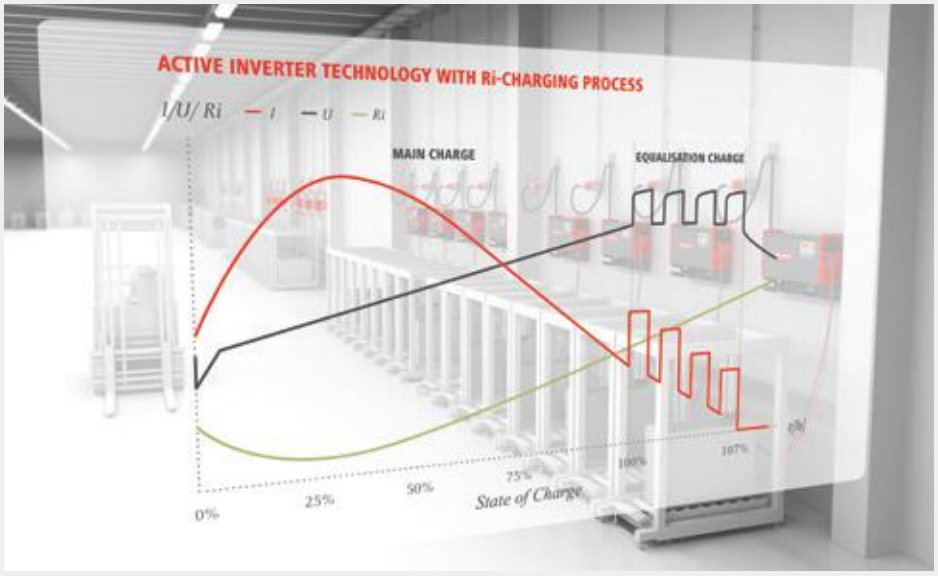
REGENERATION OF DEEP-DISCHARGE BATTERIES
/ A special characteristic can be used to detect deep-discharge batteries and recharge them completely.

REFRESH CHARACTERISTIC
/ This characteristic increases the output of a weak battery.

AQUAMATIC CONTROL
/ Automatic water filling using the Aquamatic option takes place at the ideal time just before the charge end - this prevents the water dropping to critical levels and the resulting damage to the battery.

TEMPERATURE-CONTROLLED CHARGING
/ Temperature fluctuations can have a negative impact on the service life of the battery. With this option, the charging voltage is adapted to the battery temperature - the battery is protected (for example, when used in a cold store).

AIR-PULS (EUW)
/ A pneumatic recirculation of the electrolyte (Air-Puls) prevents acid stratification in the battery. Faster and gentler opportunity charging is therefore possible.



/ Maximum battery service life thanks to the unique Ri charging process

/ A blue LED indicator and blue LED strips show the fully charged and coolest battery

SAFETY

REDUCED GASSING

/ The Ri charging process guarantees less oxyhydrogen gas formation and fewer unpleasant odours during charging - ensuring the safety of personnel, the battery and the battery charging system.

CHARGE END WITH EXTERNAL START/STOP

/ The "External start/stop" option has been developed to prevent sparking if the charging process is aborted prematurely. This enables the charging process to be terminated in a controlled manner if the charging plug is unplugged - a pilot contact in the plug prevents an oxyhydrogen gas explosion. This also provides additional protection for the charging plug contacts. Maximum safety for the user is guaranteed.

NO MONDAY MORNING SYNDROME

/ A programmable, time-controlled equalising charge ensures that a full charge is available over the weekend and after bank holidays.

SOPHISTICATED VENTILATION SYSTEM

/ Special air channels ensure there is less dirt in the battery charging system. In addition, the optional air filter provides even more protection from dust and dirt - fault tolerance is assured.

DETECTION OF BATTERY DEFECTS

/ Faults, warnings or even information are indicated during the charging process by illuminated LED strips or flashing LED indicators.

AUTOMATIC VOLTAGE DETECTION

/ The new Ri charging process automatically detects the battery voltage, thus avoiding possible errors caused by incorrect operator inputs.

OPERATION

CHARGING SETTINGS ON THE DEVICE

/ Using the Ri charging process means that the battery capacity and voltage data do not have to be specified. Automatic detection of the battery types is possible - all the user has to do is enter the charging time. All the other data is acquired automatically by the battery charging system.

CONFIGURATION AND OPERATION VIA DISPLAY

/ The intuitive display allows specialists to operate the device and set a broad range of parameters very easily. Battery parameters can therefore be entered in addition to the charging time and charging characteristic. Various display languages are also available. Customised configurations can be ordered from the factory or produced by your local contact partner.

USB INTERFACE FOR UPDATES AND REPORTING

/ A USB port is provided to facilitate software updates and detailed analyses. Approximately 1500 charging cycles as well as battery data and information about the application can be stored. Incorrect operator inputs and the degree of utilisation of the battery charging system become apparent right away.

SIMPLE COPYING

/ Settings on the charger (charging time, calendar functions, etc.) can be copied very easily to other battery charging systems via the USB port. This can significantly accelerate the configuration process.

INFRASTRUCTURE

LOW SPACE REQUIREMENTS, FLEXIBLE INSTALLATION

/ The compact design of the battery charging systems cuts down on space requirements, while their low weight simplifies their installation.

LOWER CONNECTED LOAD

/ In many cases, the high degree of efficiency of Selectiva battery charging systems means a lower connected load. This is a clear cost benefit compared with conventional chargers when carrying out the electrical installation in a newbuild or a renovation.

CHARGING AND MORE

/ In addition to battery charging systems, Fronius provides various components and safety accessories that are necessary during the charging of traction batteries. Charging, safety and battery changing modules guarantee trouble-free internal logistics processes.

RETROFITTABLE OPTIONS

/ A range of options, such as temperature-controlled charging, a relay board or the LED strips, can be purchased from approved sales partners and retrofitted as and when required.

ON-SITE SERVICE

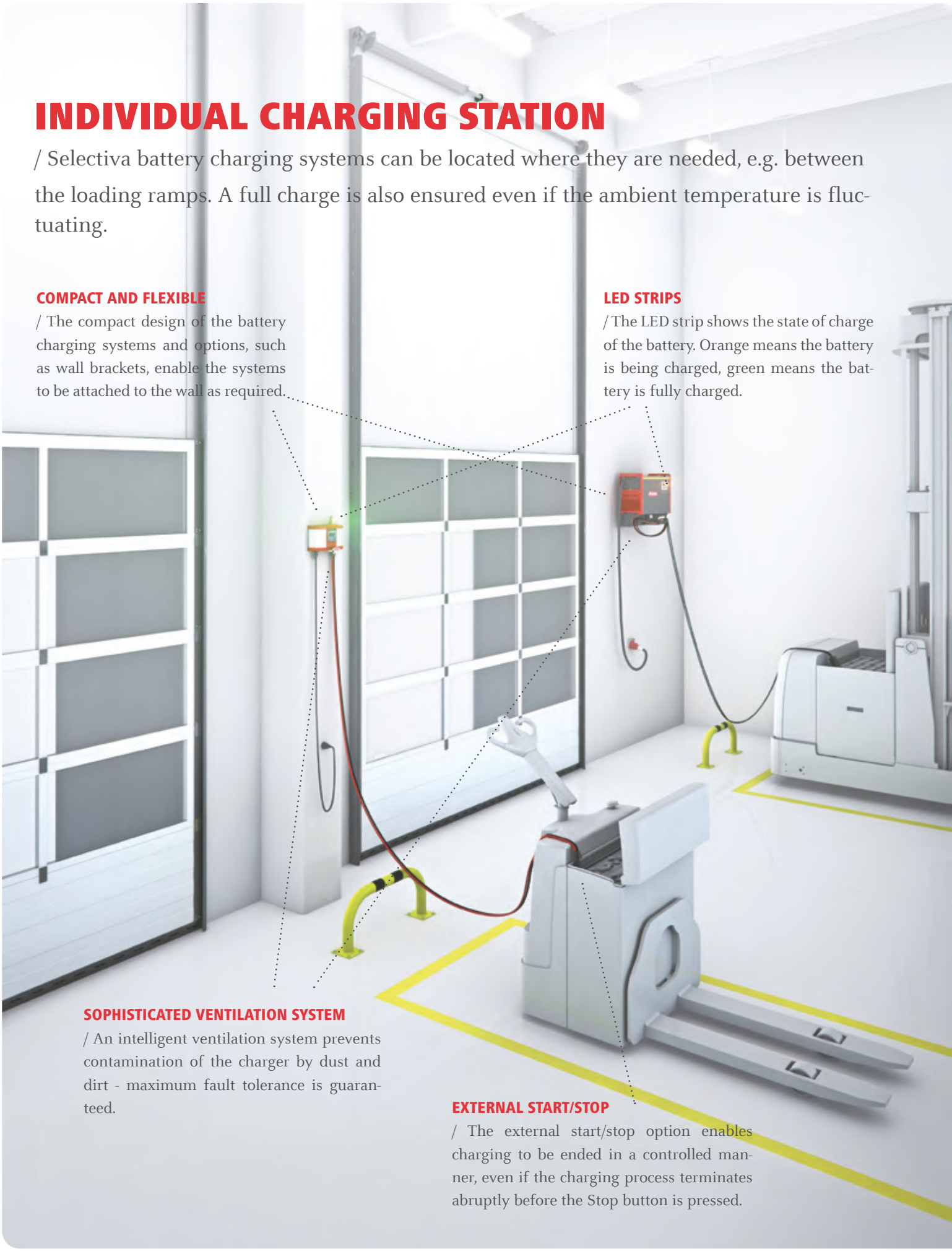
/ The sophisticated service plan allows rapid on-site servicing by qualified personnel.

REMOTE CONTROL SYSTEM, WALL BRACKET, FLOOR BRACKET

/ The wall bracket and floor bracket options make installation simple and flexible. The remote control system allows the battery charging systems to be kept separate from the batteries; a remote control system equipped with a display ensures simple operation despite the physical separation.

INDIVIDUAL CHARGING STATION

/ Selectiva battery charging systems can be located where they are needed, e.g. between the loading ramps. A full charge is also ensured even if the ambient temperature is fluctuating.



COMPACT AND FLEXIBLE

/ The compact design of the battery charging systems and options, such as wall brackets, enable the systems to be attached to the wall as required.

LED STRIPS

/ The LED strip shows the state of charge of the battery. Orange means the battery is being charged, green means the battery is fully charged.

SOPHISTICATED VENTILATION SYSTEM

/ An intelligent ventilation system prevents contamination of the charger by dust and dirt - maximum fault tolerance is guaranteed.

EXTERNAL START/STOP

/ The external start/stop option enables charging to be ended in a controlled manner, even if the charging process terminates abruptly before the Stop button is pressed.

BATTERY CHARGING STATION

/ With Fronius safety, battery changing and charging modules.

FRONIUS CHARGING MODULE

/ The standards-compliant Fronius charging modules can accommodate one or more battery charging systems. Both sides of the modules can be used. Furthermore, the stipulated markings for fire and explosion are shown. The charging modules are available in various types with different fittings.

FRONIUS SAFETY MODULE

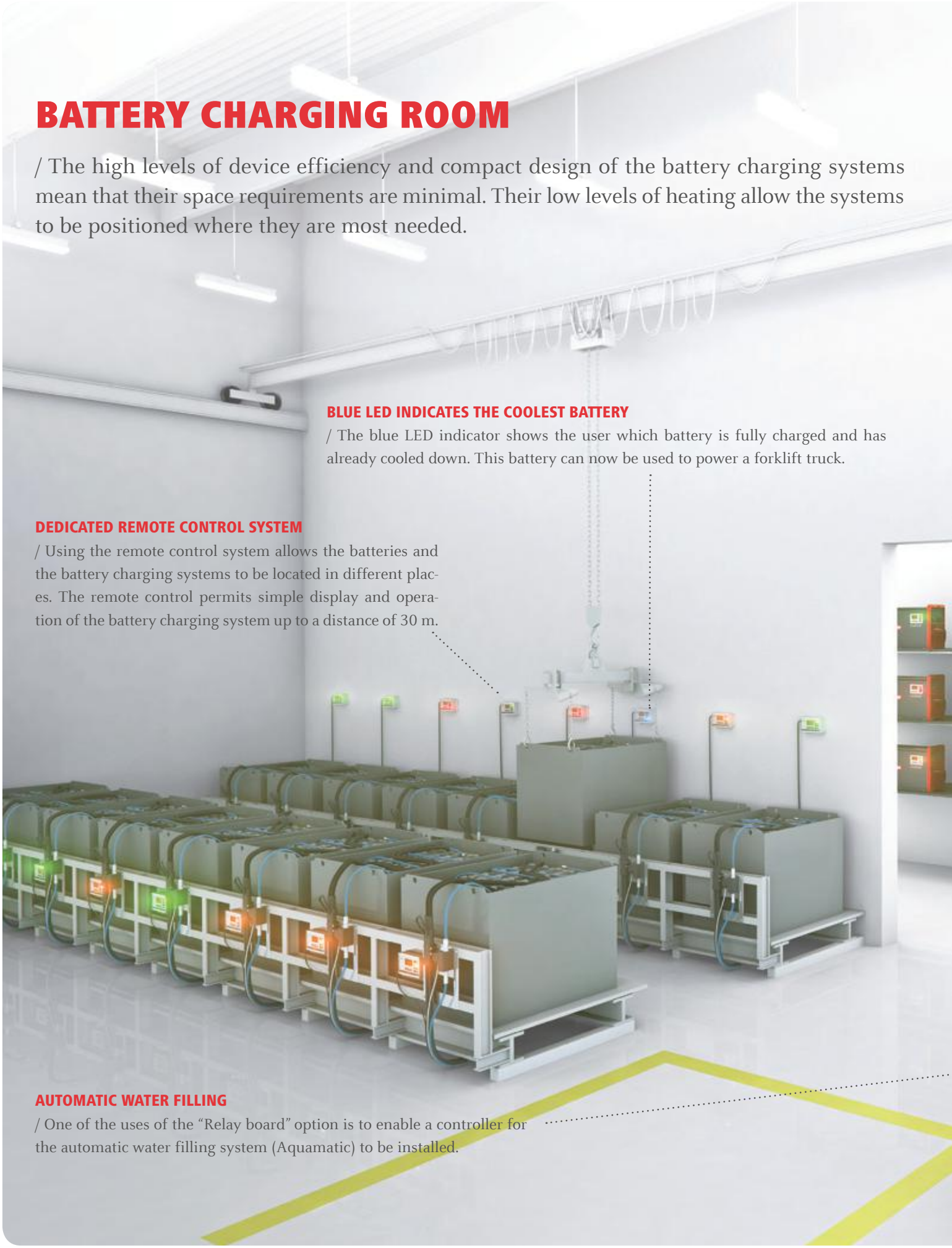
/ The Fronius safety module comprises a first-aid box, a fire extinguisher, an eye bath and a printed copy of the safety rules. The safety modules can be tailored to satisfy the regulations laid down by your organisation.

FRONIUS BATTERY CHANGING MODULE

/ The Fronius battery changing module offers a simple way of replacing traction batteries. The LED strips on the battery changing module show which batteries are charged, which have already cooled down and which are still in the charging phase.

BATTERY CHARGING ROOM

/ The high levels of device efficiency and compact design of the battery charging systems mean that their space requirements are minimal. Their low levels of heating allow the systems to be positioned where they are most needed.



BLUE LED INDICATES THE COOLEST BATTERY

/ The blue LED indicator shows the user which battery is fully charged and has already cooled down. This battery can now be used to power a forklift truck.

DEDICATED REMOTE CONTROL SYSTEM

/ Using the remote control system allows the batteries and the battery charging systems to be located in different places. The remote control permits simple display and operation of the battery charging system up to a distance of 30 m.

AUTOMATIC WATER FILLING

/ One of the uses of the "Relay board" option is to enable a controller for the automatic water filling system (Aquamatic) to be installed.

ADVICE, PLANNING, DESIGN AND OPERATION

/ Fronius is know-how leader in the field of battery charging.

/ In addition to the battery charging system itself, Fronius offers a system solution consisting of advice and the planning, design and operation of individual charging points, battery rooms and charging stations. Our aim is to provide the end user with a complete system consisting of battery charging system, battery, mounting and safety rules. Fronius is know-how leader in the field of traction batteries.

DATA INTERFACE

/ The USB port on the Fronius battery charging systems makes updating the software very easy and permits comprehensive analyses of the charging data.

PRODUCT FEATURES & OPTIONS

FEATURES, OPTIONS	SELECTIVA 1KW	SELECTIVA PLUS 3KW	SELECTIVA 8KW	SELECTIVA 16KW
Ri charging process	-	-	●	●
LED strips	-	-	○	○
Automatic battery detection (V voltage, Ah capacity)	-	-	●	●
Calendar function	-	-	●	●
Aquamatic	-	○	○	○
Temperature-controlled charging	○	-	○	○
Refresh characteristic	●	●	●	●
Air-Puls (EUW)	-	○	○	○
External start/stop	○	○	○	○
Deep discharge function	●	●	●	●
USB port	○ (Update)	-	●	●
Remote control system	-	○	○	○
Wall bracket	○	○	○	○
Charging status indication	○	○	●	●
Carrying handle, carrying strap	-	○	○	○
Charge data recording	-	-	●	●
Immobiliser device	○	○	○	○
Air filter	-	○	○	○
Charging plug	○	○	○	○

● *Standard feature* ○ *Option* - *Not available*

TECHNICAL DATA - SELECTIVA BATTERY CHARGING SYSTEMS

DEVICE	SELECTIVA 1KW	SELECTIVA PLUS 3KW	SELECTIVA 8KW	SELECTIVA 16KW
Type of housing	Type 1	Type 2	Type 3	Type 4
Power	1 kW	3 kW	8 kW	16 kW
Dimensions w/h/d	247 x 162 x 88 mm	315 x 200 x 110 mm	633 x 344 x 180 mm	647 x 392 x 247 mm
Weight including charger lead and mains cable	4 kg	8 kg	23 kg	34 kg
Protection class	IP44 / IP40	IP21	IP20	IP20
Mains cable	2 m	2.5 m	3 m	3 m
Charger lead	2.5 m	3 m	3 m	3 m
Mains voltage	1 x 230V AC (+/- 10%)	1 x 230V AC (+/- 10%)	3 x 400V AC (+/- 10%)	3 x 400V AC (+/- 10%)

/ Perfect Welding / Solar Energy / Perfect Charging

WE HAVE THREE DIVISIONS AND ONE PASSION: SHIFTING THE LIMITS OF POSSIBILITY.

/ Whether welding technology, photovoltaics or battery charging technology – our goal is clearly defined: to be the innovation leader. With around 3,000 employees worldwide, we shift the limits of what's possible - our more than 850 active patents are testimony to this. While others progress step by step, we innovate in leaps and bounds. Just as we've always done. The responsible use of our resources forms the basis of our corporate policy.

Further information about all Fronius products and our global sales partners and representatives can be found at **www.fronius.com**