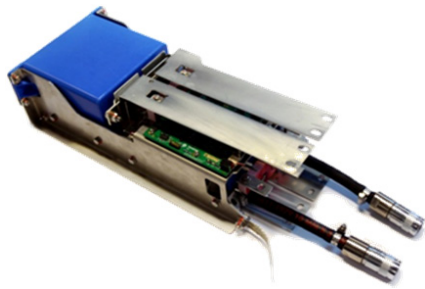




## Strukton Traction and Auxiliary Power System

Integrated traction and auxiliary system for light rail vehicles  
over 35% lighter and 35% smaller than competitive systems

Weight and size are always critical in light rail vehicles. Strukton has developed a highly compact and lightweight system integrating both the traction and auxiliary power functionality into one lightweight container. The Strukton Traction & Auxiliary Power System (STAPS) converts 600 Vdc or 750 Vdc line voltages into traction power for powering the traction motors and auxiliary power to supply the other onboard loads.



### Characteristics

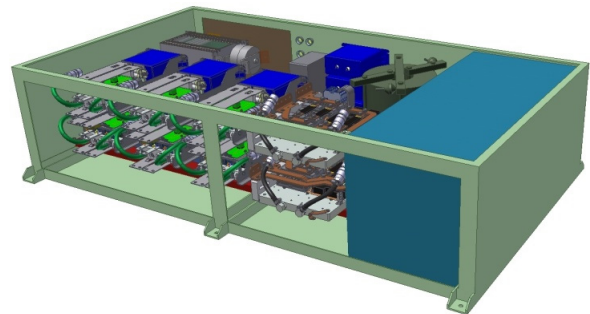
- All power electronics in one box
- Low weight
- Easy maintenance
- Standard Strukton power modules
- Roof mounted or under-floor
- Fused power modules

### Powerful platform

Six identical power modules (<14kgs each) are used for the traction inverters, braking choppers and auxiliary purposes. The software on the power modules defines the module's functionality. This hardware commonality greatly simplifies maintenance processes and the supply chain.

### Mechanical design

The STAPS is designed in a light weight aluminium container. The container is designed for both roof mounting and under-floor mounting. The container is powder coated in grey (RAL 7035).



## Cooling system

The power modules are liquid cooled, the key to a very compact design. The liquid is cooled by a heat exchanger in the same container.

## Diagnostics and service

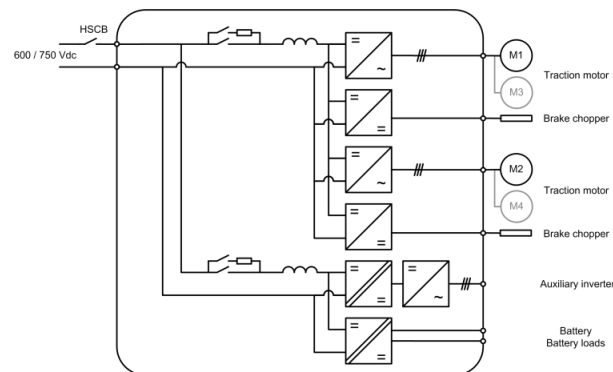
The STAPS is delivered standard with the SCARP software program. SCARP is a user-friendly maintenance tool that can be installed on a Windows based PC or laptop. This programme allows the user to communicate with the control system of a converter, upload stored data, analyze registration files and configure the drive to meet the customer requirements.

## System overview

STAPS converters are extremely compact and light in design, modular and based on state of the art IGBT technology. The STAPS converters are designed for powering Light Rail Vehicles.

One STAPS contains:

- Two independent traction drives, for one large or two smaller motors each
- Two main contactors with two line filters
- Two braking choppers
- Galvanically insulated auxiliary inverter for a 3 phase 400 Vac bus
- Galvanically insulated battery charger (24V or 110V DC)
- Integral controller for both traction and auxiliary functionality



## Baseline STAPS power or STAPS XL

The baseline STAPS is suitable for motors of approximately 100kW nominal power (peak 200kW), and suitable for most cities.

For more demanding operations, more powerful traction modules can be fitted, to allow motors of approximately

200kW nominal power (approximately 300kW peak).

## Options

- MVB, FIP, Ethernet interface
- Permanent magnet motor control
- Current sensors for 3rd and 4th traction motor
- Double pole input contactor (negative polarity)
- Independent traction inverter control
- Additional auxiliary converter for blower control
- Multiple inverter synchronisation 3 x 400 Vac 50 Hz grid
- 5 kVA neutral power on auxiliary inverter
- Dead battery start-up plus extra option 'shore supply' plus extra option 'speed sensorless control'
- White internal coating on inside of container
- Combination with energy storage systems
- Remote monitoring, incl. remote diagnostics
- Welding according to EN 15085
- Heat exchanger in separate container
- Key locking on access panels
- Specific customer requirements on demand
- XL version for more power

## Technical data

<b>DC Voltage input</b>	600   750 VDC according IEC 60850
<b>Traction output</b>	0..500 Vac   2 x 250 kVA @ wheel
<b>Braking chopper</b>	2 x 250 kW
<b>Auxiliary converter</b>	3 x 400 Vac   50 Hz   55 kVA
<b>Battery charger</b>	24 Vdc or 110 Vdc   10 kW
<b>Efficiency</b>	Approximately 95 %
<b>Vehicle control interface</b>	CAN   I/O
<b>Dimensions STAPS</b> (L x W x H)	1800 x 1000 x 430 mm
<b>Dimensions STAPS XL</b> (L x W x H)	2200 x 1000 x 430 mm
<b>Weight STAPS</b> including heat exchanger	Approx. 400 kg
<b>Weight STAPS XL</b> including heat exchanger	Approx. 450 kg



Strukton Rail North America, Inc.

3 Bethesda Metro Center, Suite 700, Bethesda, MD 20814

Phone +1 301 961 1552

E-mail [struktonrailnorthamerica@strukton.com](mailto:struktonrailnorthamerica@strukton.com)