

# Energy Storage System

## ESS-3G-1K

BAE Systems offers energy storage system options depending on your operating needs. Our new ESS-3G-1K uses highly efficient, power-dense, and reliable, ultracapacitor technology to increase energy storage system life while improving the total cost of ownership. Depending on the duty cycle, users can expect a 12-year life with its ability to withstand millions of charge/discharge cycles.

What's more, with this option, operators can enable Stop/Start technology which allows the bus engine to shut-off at stops, while electric accessories continue to operate. \* BAE Systems' hybrid electric systems power the accessories, such as air conditioning, power steering, and air brake compressor electrically to save both fuel and emissions.

\*Engine-off time and electric accessory performance will vary; talk to a sales representative about anti-idling.



High-reliability ultracapacitor technology for longer-life and lower cost

### Features

- Electric double-layer capacitor (ELDC) technology
- High-efficiency, high-reliability, long-life
- Lower-cost option
- Lightweight
- J1939 SAE messaging
- Allows for system-level compliance to OBD
- Finger-tip proof, high voltage connectors (IPXXB)
- 1 kWh nominal energy
- Environmentally-sealed IP65 ultracapacitor module
- Fully-engineered simple single fan cooling system (no heating required for cold climates)

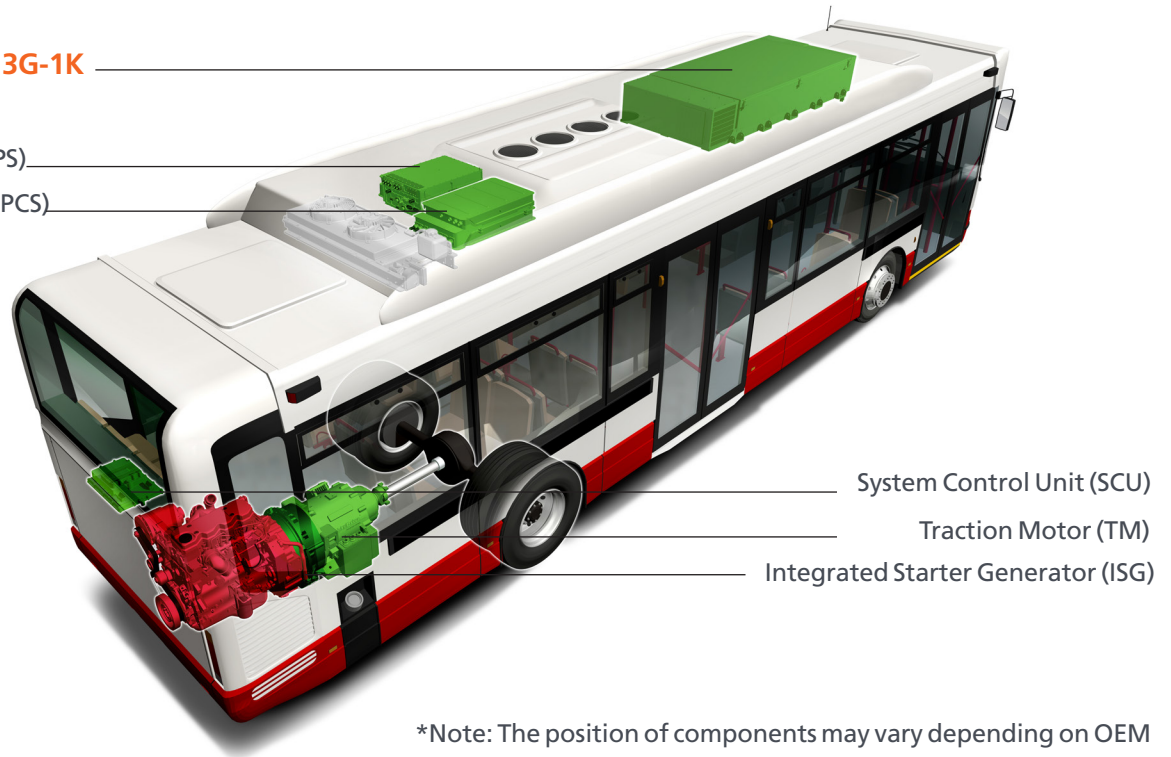
### Benefits

- Provides highly-efficient and reliable energy storage for hybrid application
- Ultracapacitor technology is rugged, generating long product life
- Maximizes energy recovery from regenerative braking to improve fuel economy
- 12-year design life eliminates the need for mid-life refresh

## Energy Storage System 3G-1K

Accessory Power System (APS)

Propulsion Control System (PCS)



System Control Unit (SCU)

Traction Motor (TM)

Integrated Starter Generator (ISG)

\*Note: The position of components may vary depending on OEM

### ESS-3G-1K Specification

#### Ratings

- Peak design power: +200 kW
- Nominal voltage: 550-750 Vdc
- Total capacity: 866 Wh
- Chemistry: EDLC
- Operating temperature: -40°F to 125°F (-40°C to 52°C)
- Design life: 12 years (nominal)

#### Size

- Height: 13.5 in (.343 m)
- Width: 40.1 in (1.020 m)
- Length: 85.3 in (2.167 m)
- Weight: 744 lbs (351 kg)
- Cabinet material: aluminum

#### Cooling

- Filtered, forced, ambient air, IP65 module

The new ESS-3G-1K is available for HDS100, HDS200, HDS300 family of products.

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