



# eConversion

Premium protection and sustainability for highly critical applications

A unique high-efficiency mode available for Galaxy V-series UPSs



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# The next step in your sustainability journey

## eConversion mode: the unbeatable combination of power quality and efficiency

Protect power to your load, reduce your electricity consumption, and meet your sustainability goals with up to 99% efficient, Class 1-compliant eConversion mode for Galaxy V-series UPSs.

This patented high-efficiency mode achieves Class 1 categorization (the highest protection class), equaling Double Conversion, the legacy default operating mode of 3-phase UPSs. In eConversion mode, the inverter operates continuously, ensuring that if power fluctuates, your UPS can protect the load with no transfer time. eConversion mode also recharges batteries and provides power factor correction and harmonics compensation, making it a versatile solution for protecting both IT and non-IT loads.

Operating at up to 99% efficiency isn't just good for the environment, it's good for your balance sheet. Within 10 years, the electricity savings of operating your UPS in eConversion typically equals 3x the price of the UPS. Delivering premium power protection and optimized total cost of ownership, eConversion is both the recommended operating mode for your Galaxy V-series UPS and an effortless step toward a more profitable business and a more sustainable world.



# Maximum availability, third-party certified

Enjoy the highest energy efficiency available today without sacrificing load protection. Every Galaxy V-series UPS includes eConversion mode and delivers these benefits:



## Class 1 protection

Choose eConversion mode with confidence; its performance has been certified Class 1 per IEC® 62040-3, the same class as Double Conversion.



## Third-party certified performance

eConversion is the first UL-verified high efficiency mode. It has passed the rigorous testing of this 3rd-party, industry-leading certification agency.



## Excellent load protection, including patented zero-break transfer design

The UPS continues to deliver input power factor correction, harmonic filtering, and no-break transfer to Double Conversion mode or battery operation.



## Continuously charging batteries

With eConversion mode, your batteries are ready when you need runtime.



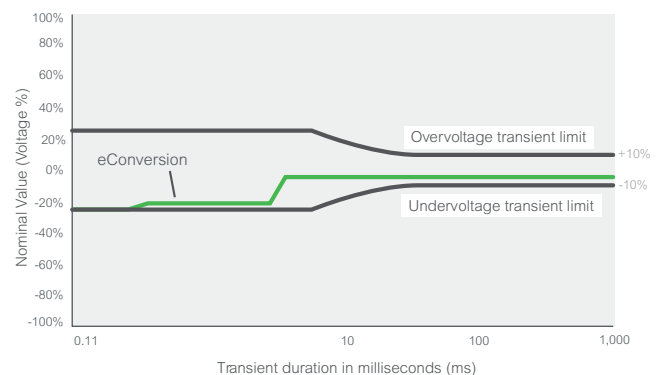
## Over 8 years of field deployment

Since its launch in 2014, eConversion has been successfully deployed all over the world. Join thousands of customers who use it daily to protect their critical loads.



## Ideal for IT and non-IT applications

- Data centers
- Factories
- Commercial offices
- Transportation
- Hospitals



eConversion meets Class 1 of IEC 62040-3: zero-break transfer during power outage.

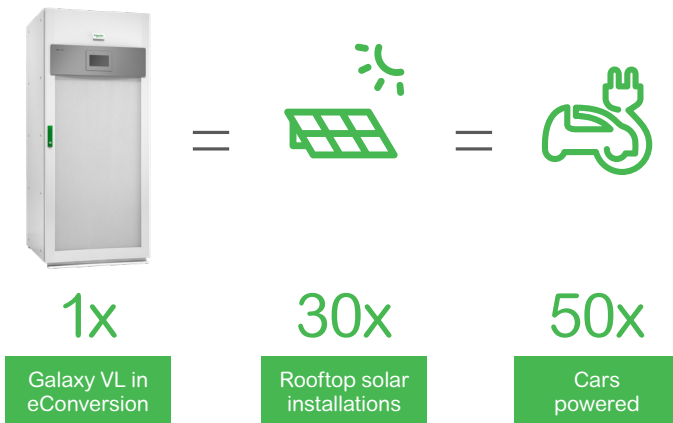
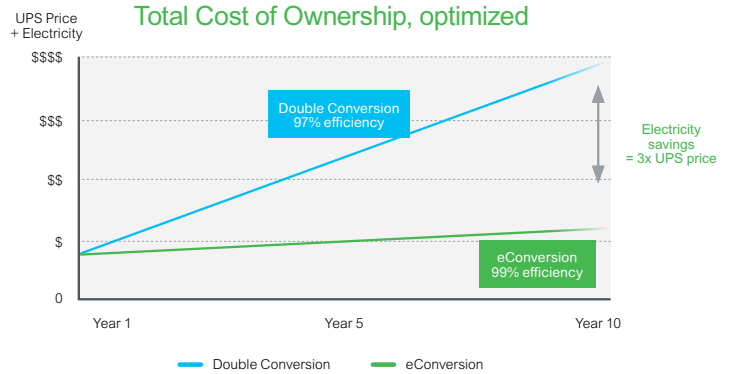
# 3x reduction in electricity use

## Sustainably reduce your operating costs

Using eConversion mode achieves 99% efficiency, which provides significant savings every year on your electricity bill. Compared to Double Conversion, the savings are typically equivalent to 3 times the UPS acquisition price after 10 years.

## Optimize your energy consumption

eConversion power savings accrue fast. For example, Galaxy VL with eConversion mode conserves every year as much power as the electricity generated by 30 rooftop solar installations, equivalent to the electricity required to recharge 50 electric cars.



## UPS eConversion savings over 10 years

| UPS       | kW rating | Electricity savings* | Carbon Emissions (Metric Tons) Savings | Equivalent solar rooftop production | Cars powered |
|-----------|-----------|----------------------|--|-------------------------------------|--------------|
| Galaxy VS | 150 kW    | \$41,000             | 135                                    | 10                                  | 16           |
| Galaxy VM | 225 kW    | \$73,000             | 243                                    | 17                                  | 28           |
| Galaxy VL | 500 kW    | \$146,000            | 484                                    | 31                                  | 53           |
| Galaxy VX | 1500 kW   | \$684,000            | 2300                                   | 154                                 | 263          |

\*Model dependent; based on a market electricity price: \$0.15 /kWh and CO<sub>2</sub> emissions factor of 0.5 kg/kWh. The annual electricity and carbon emissions savings are done by comparing the UPS efficiency in Double Conversion mode to its efficiency in eConversion mode.

Carbon emissions are calculated based on the world average reported by the International Energy Agency (IEA):

<https://www.iea.org/reports/global-energy-co2-status-report-2019/emissions>

Calculate your efficiency and carbon emissions savings using the eConversion vs Double Conversion calculator, using this link or the QR code on page 6:

<https://www.se.com/ww/en/work/solutions/system/s1/data-center-and-network-systems/trade-off-tools/econversion-vs-double-conversion-calculator/>

# A unique combination

## eConversion, Double Conversion, or ECO mode? A comparative study

For decades, **Double Conversion** has been used as the default mode in 3-phase UPSs. The main disadvantage is the very high amount of electricity used 24 hours a day, 365 days a year to permanently regulate the output with a very tight +/-1% voltage tolerance. The cost of electricity used to perform permanent regulation typically represents 3x the UPS price over 10 years, while permanently re-creating a perfect sinewave has no extra benefit to the load as even the most critical loads are insensitive to a +/-10% voltage.

| Double Conversion             | eConversion           | ECO mode                      |
|-------------------------------|-----------------------|-------------------------------|
| Legacy 3-phase 'Default' mode |                       | Legacy 'High-efficiency' mode |
|                               |                       |                               |
| Voltage fluctuation           | Voltage fluctuation   | Voltage fluctuation           |
| ★★★                           | ★★                    | ★★                            |
| Frequency fluctuation         | Frequency fluctuation | Frequency fluctuation         |
| ★★★                           | ★★                    | ★★                            |
| Recharge batteries            | Recharge batteries    | Recharge batteries            |
| ★★★                           | ★★★                   | Option                        |
| No transfer time              | No transfer time      | No transfer time              |
| ★★★                           | ★★★                   | No                            |
| PF Correction                 | PF Correction         | PF Correction                 |
| ★★★                           | ★★★                   | No                            |
| Protection class              | Protection class      | Protection class              |
| <b>Class 1</b>                | <b>Class 1</b>        | <b>Class 3</b>                |
| Efficiency                    | Efficiency            | Efficiency                    |
| <b>96-97%</b>                 | <b>99%</b>            | <b>99%</b>                    |

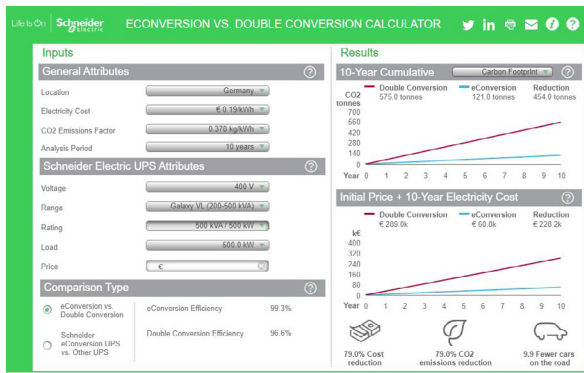
Most important for the availability of critical loads is the no-break transfer, certified by **Class 1 protection** (the highest category). In **eConversion**, the load is powered by the grid as long as it is within tolerance, but the inverter is kept operating in parallel. This ensures a no-break transfer in case of an outage, surge, or short circuit, and ensures third-party certified, Class 1 output, which denotes the highest availability.

In comparison, using **ECO mode** (the legacy high-efficiency mode) reduces load availability and is therefore not a preferred mode of operation for applications requiring maximum protection.

# Calculate your savings

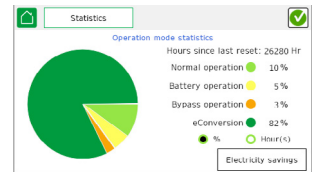
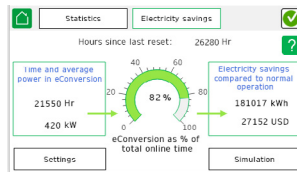
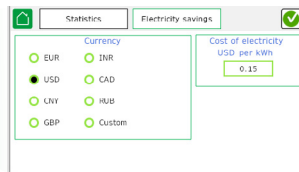
Use our eConversion vs Double Conversion Calculator to quickly assess your potential energy savings, operating cost optimization, and CO<sub>2</sub> emissions reduction by comparing the cost of running your Galaxy V-series UPS in eConversion mode vs Double Conversion mode.

Scan this QR code with your phone camera, or access the calculator from the Schneider Electric Data Center Trade Off Tools™ Web page: <https://www.se.com/ww/en/work/solutions/system/s1/data-center-and-network-systems/trade-off-tools/econversion-vs-double-conversion-calculator/>



# On-screen savings meter

If you already have a Galaxy V-series UPS, start using eConversion mode and watch the savings add up!



If you have site-specific questions, our trained Field Service Representatives can perform a technical assessment of your site before you activate eConversion mode. To learn more, contact your Schneider Electric representative.

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To learn more about eConversion mode, contact your Schneider Electric representative or visit <https://www.se.com/ww/en/work/solutions/eConversion-high-efficiency-UPS-mode>

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