

# opportunity in your hands

NEXSYS<sup>®</sup> FAMILY RANGE



# Nexsys<sup>®</sup>

**ADVANCED  
BATTERY SOLUTIONS**

# ADVANCED BATTERY SOLUTIONS

## BATTERIES FOR A CHANGING MARKET

Electric material handling vehicle users are increasingly moving away from outright purchase, in favor of long-term rental and leasing contracts. This means batteries for traction applications must last for the duration of the rental. At the same time, materials handling operators aim to eliminate maintenance and increase operational flexibility, which demands reliable energy in multi-shift operations.

***The good news is that with NexSys® batteries, designed by EnerSys®, this is now possible.***



### **NEXSYS® CORE BATTERIES**

A high-performance alternative to traditional lead-acid, flooded or gel batteries, optimized for low - and medium-duty applications.

## NEXSYS® BATTERY HAS THE ANSWERS

NexSys® batteries from EnerSys® offer not one, but two solutions to meet the market's demands. They are engineered with Thin Plate Pure Lead (TPPL) technology to provide unmatched performance across a wide range of applications. With TPPL, opportunity charging for operational flexibility is easy, by removing any need for watering, while battery changes are reduced or eliminated.

EnerSys® has specialized in TPPL for over 40 years. From that experience and expertise come two solutions covering all materials handling vehicle applications:



### **NEXSYS® PURE BATTERIES**

An effective alternative to Li-ion, based on TPPL technology enhanced by the addition of carbon in the active material formulation and optimized for medium - to heavy-duty applications.



## BETTER FOR MATERIAL HANDLING OPERATORS

NexSys® battery technology means operators can avoid:

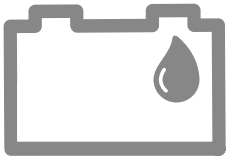
- A full recharging cycle during or after a shift, unlike standard lead-acid batteries, with NexSys® batteries it is possible to use short breaks to charge the battery, even without reaching full state of charge
- The need for lifting equipment, spare batteries, and associated storage space
- A charging room and ventilation equipment
- Electrolyte top-ups with demineralized water
- High energy costs for over-charging

## BETTER FOR YOU

With NexSys® battery technology, you can expect:

- Virtually maintenance-free battery operations
- Maximum flexibility, with ultra-fast charging and opportunity-charging capability
- High daily energy throughput – up to 160% of  $C_5$  per 24 hours
- An increased resistance to corrosion due to the very fine grain structure
- High recyclability
- Minimal gas emissions - ideal for use in shops, public areas and sensitive manufacturing areas
- Fast return on investment
- Longer service life and reduced TCO – so materials handling users can move from purchase to long-term rental

## BETTER FOR YOUR BUSINESS



**Minimal maintenance / zero battery change**



**Longer service life**



**Maximum flexibility**



**Reduced TCO**



**Ultra-fast charging**



**Support**



**Opportunity charge capability that rivals Li-ion**

## WHY CHOOSE NEXSYS® BATTERIES?



### NexSys® CORE batteries benefits:

#### More energy

- 10% more energy and power than standard flooded products and 15% more than standard gel products. NexSys® CORE battery has extremely high energy density, due to plate thickness down to 0.8mm that increases the number of plates (3x more plates than gel and flooded in same volume).

#### Partial State of Charge

- Allows the forklift to work in Partial State of Charge (PSoC) with very high energy and power density, coupled with reduced sensitivity to high discharge rates.

#### Cycle life

- Long life cycle – up to 1500 cycles @ 60% DOD. Cycle life increases exponentially at lower DoD levels. Conversely, a maximum DoD of 80% is permissible.

#### Charging

- Trucks can complete an entire shift, or more, with no need to be taken out of service for a battery change or recharge. NexSys® CORE battery can be recharged or opportunity charged with a NexSys or NexSys+ charger with medium power (0.2C<sub>5</sub>) in roughly 6 hours and contains 15% more energy and power than a standard gel product, thus offering a longer life (shallower depth of discharge) and daily run.

*Available in DIN- size, BS-size and COMpact solution.*



### NexSys® PURE batteries benefits:

#### Core and more

- All the benefits of NexSys® CORE battery, plus ultra-fast recharge and exceptional Partial State of Charge (PSoC) cycling performance.

#### Enhanced with carbon

- The latest iteration of Thin Plate Pure Lead technology is enhanced with carbon in its negative active material. This reduces negative plate sulfation and increases surface area and porosity. It also reduces internal resistance and increases charge acceptance.

#### Partial State of Charge

- Ideal for multi-shift operations in PsoC mode with multiple opportunity charges to complete daily missions that may overtake the nominal capacity of the battery.

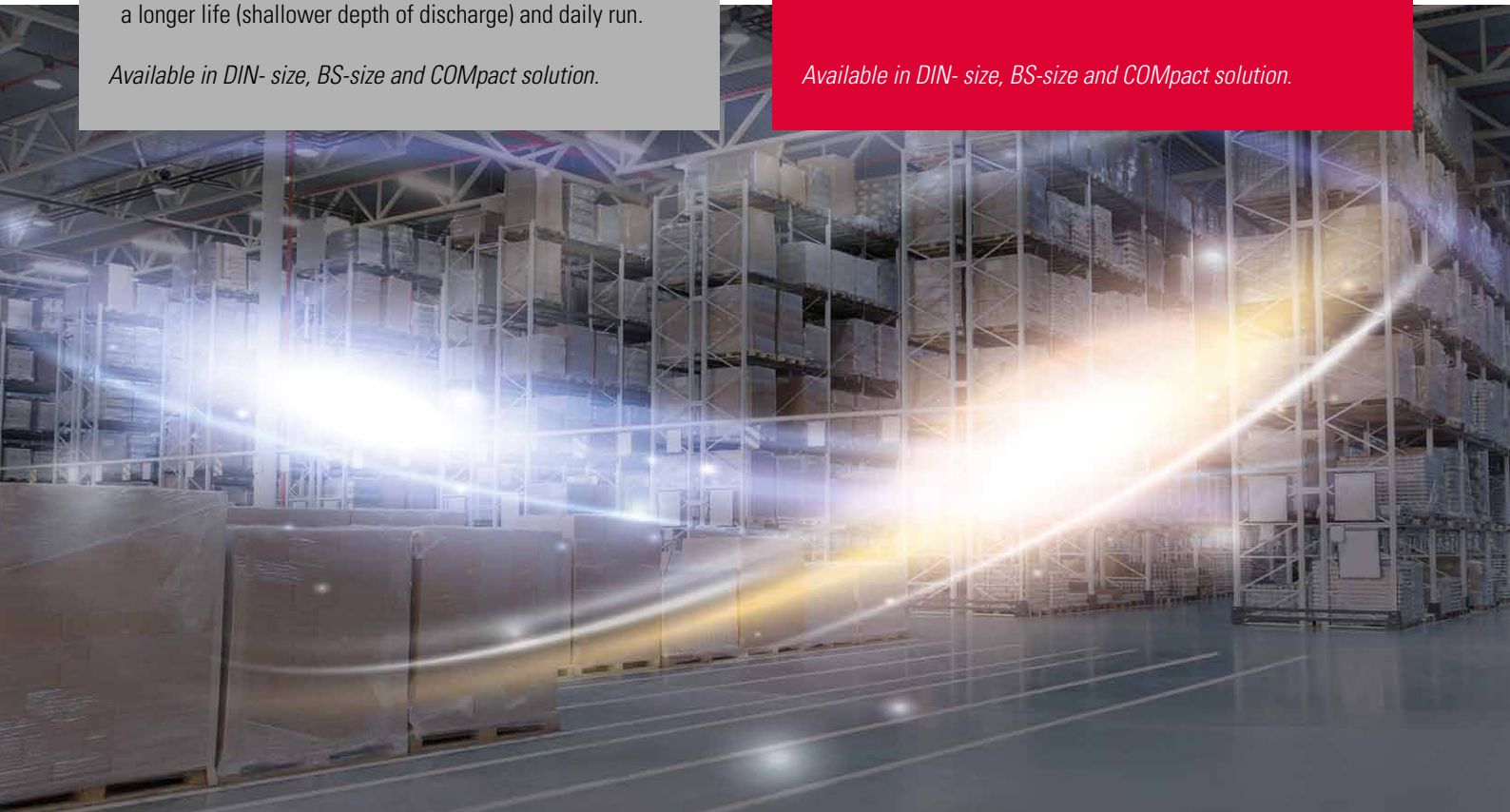
#### Cycle life

- Up to 50% more cycle life than NexSys® CORE battery by using it in a range of down to 50% State of Charge.

#### Ultra-fast charging

- Ultra-fast charge acceptance capability, with charge rates from 0.25 to 0.4 using a NexSys®+ charger.

*Available in DIN- size, BS-size and COMpact solution.*



## NEXSYS® CORE BATTERIES - ATEX

NexSys® CORE batteries are available in an ATEX version.

The term "ATEX" applies to atmospheres that are potentially explosive due to the possible presence of dusts vapors or gases that are likely to ignite or explode.

The battery is specifically designed for use in material handling equipment operating in hazardous areas. ATEX batteries conform with the relevant provision of directive 94/9/EC of 23 March 1994. Conformity has been demonstrated with reference to SIRA ATEX and SIRA IECEx documentation.

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### Lower maintenance requirements than flooded batteries

- No topping-up required

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### Non-spillable battery

- The electrolyte is absorbed in the AGM separator material

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### Shorter recharge time than VRLA gel and flooded lead-acid batteries

- For increased productivity and lower costs

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### Longer life in service than a VRLA gel battery

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*NexSys® ATEX battery cells are available in nearly all DIN sizes*



# NEXSYS® COMPACT BATTERY - SIMPLER CHARGING FOR GREATER FLEXIBILITY

To satisfy increasing demand for more flexible and integrated solutions, EnerSys® has designed and developed an advanced range of 24V batteries for Class III trucks that combine charging flexibility and best-in-class technology in one package.

NexSys® CORE and NexSys® PURE batteries are offered in COMpact variants with on-board NexSys® chargers and Battery Monitoring Systems (BMS). This solution enables operators to recharge literally anytime at the nearest available AC socket, to eliminate any unprofitable and unproductive transfer to remotely located charging stations.

The COMpact solution removes the need for extra investment in charging rooms, loading bays or parking areas.

## How does it work?



The onboard charger is physically installed on the battery tray, making charging quicker and easier. The advanced charging profiles guarantee a safe, fast and efficient recharge, ensuring that your forklift runs with reduced downtime. An external current sensor is added to measure average current in discharge and recharge and communicate with the embedded Wi-iQ® battery monitoring device.

Meanwhile, the Low Voltage Alarm (LVA) device embedded into the onboard charger, and Bluetooth BLE communication capability with the ENS mobile app, enables precise monitoring of your fleet.

The NexSys® COMpact battery + charger configuration ensures optimized power management in your electric materials handling vehicles by providing the maximum levels of **EFFICIENCY (up to 94%)**, **FLEXIBILITY** and **COST SAVINGS**.



## ENHANCED COMMUNICATIONS FOR OPTIMAL PERFORMANCE

Knowing and understanding battery and truck usage can optimize efficiency and performance.

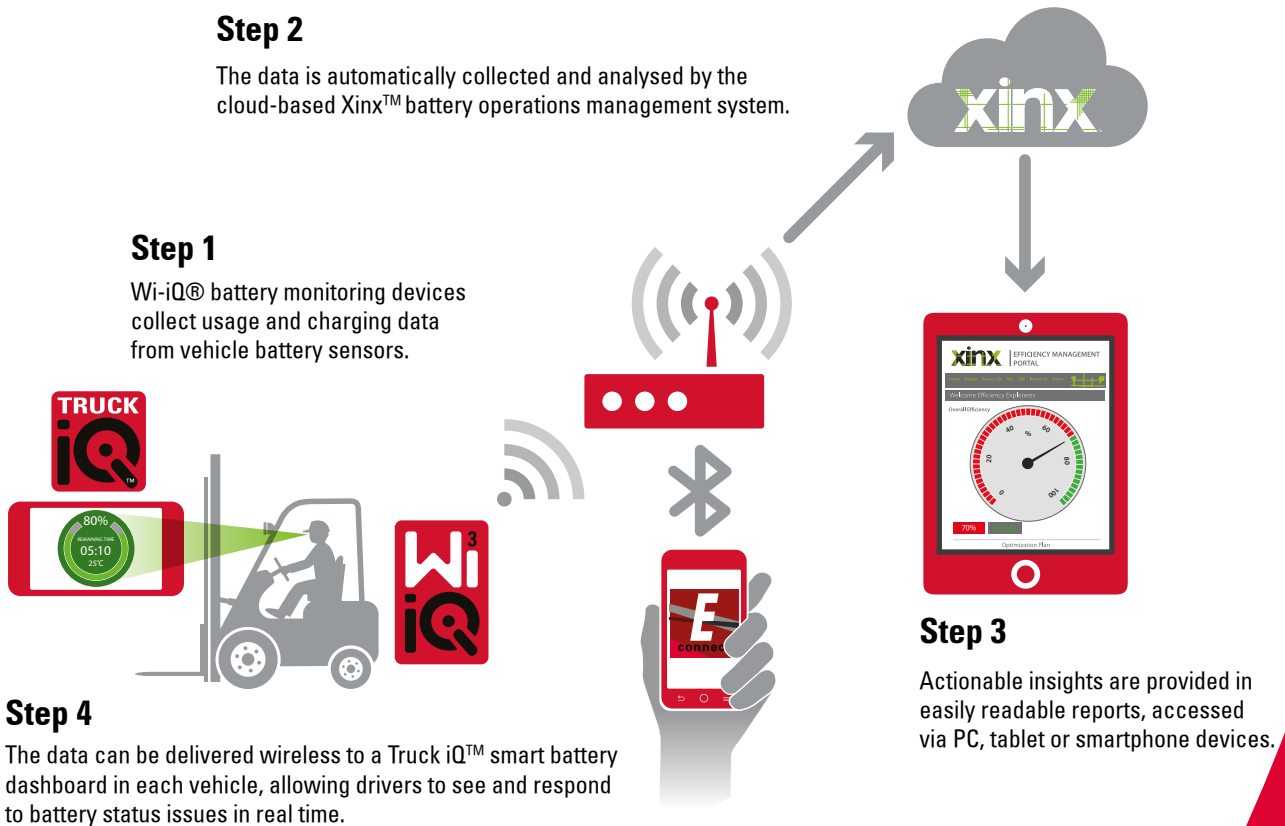
To enable deep insight and reporting, NexSys® CORE and NexSys® PURE batteries are fitted with new generation of Wi-iQ® battery monitoring devices, which communicate with the ENS Connect mobile app.

An optional cloud-based battery operations management system can be set up using Xinx™, to read each Wi-iQ® battery monitoring device and transmit all data to a cloud server.

The Truck-iQ™, smart battery dashboard add-on, gives materials handling vehicle drivers real-time visibility of their truck's battery status. Each driver can easily see and understand their battery's condition and associated parameters – from their seat, in real time.

They can therefore react immediately to optimize performance and prevent downtime.

A full monitoring package can be set up together with an EnerSys® service contract, ensuring enhanced electric vehicle operation and zero unscheduled downtime.



## SUPERIOR POWER, GREATER PERFORMANCE, BEST CHOICE

Offering the power and performance that the market demands, the NexSys® batteries family is the best choice for all your materials handling truck customers.

**For more detailed information on the NexSys® batteries family, or to contact EnerSys®, please visit [www.discovernexsys.com](http://www.discovernexsys.com)**

# WHEREVER YOU DO BUSINESS, ENERSYS® CAN SUPPORT YOU WITH MOTIVE POWER ENERGY.

## ABOUT ENERSYS

EnerSys®, the global leader in stored energy solutions for industrial applications, manufactures and distributes reserve power and motive power batteries, battery chargers, power equipment, battery accessories and outdoor equipment enclosure solutions to customers worldwide.

Motive power batteries and chargers are utilized in electric forklift trucks and other commercial electric powered vehicles.

Reserve power batteries are used in the telecommunication and utility industries, uninterruptible power supplies, and numerous applications requiring stored energy solutions including medical, aerospace and defense systems.

With the recent Alpha acquisition, EnerSys provides highly integrated power solutions and services to broadband, telecom, renewable and industrial customers.

Outdoor equipment enclosure products are utilized in the telecommunication, cable, utility, transportation industries and by government and defense customers.

The company also provides aftermarket and customer support services to its customers in over 100 countries through its sales and manufacturing locations around the world.



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