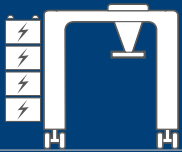


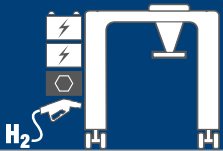
## FE-RTG

Electrified RTG  
with grid power  
and small battery pack



## BE-RTG

Electrified RTG  
with extra-large  
battery pack



## FBE-RTG

Electrified RTG  
with fuel cell  
and battery pack



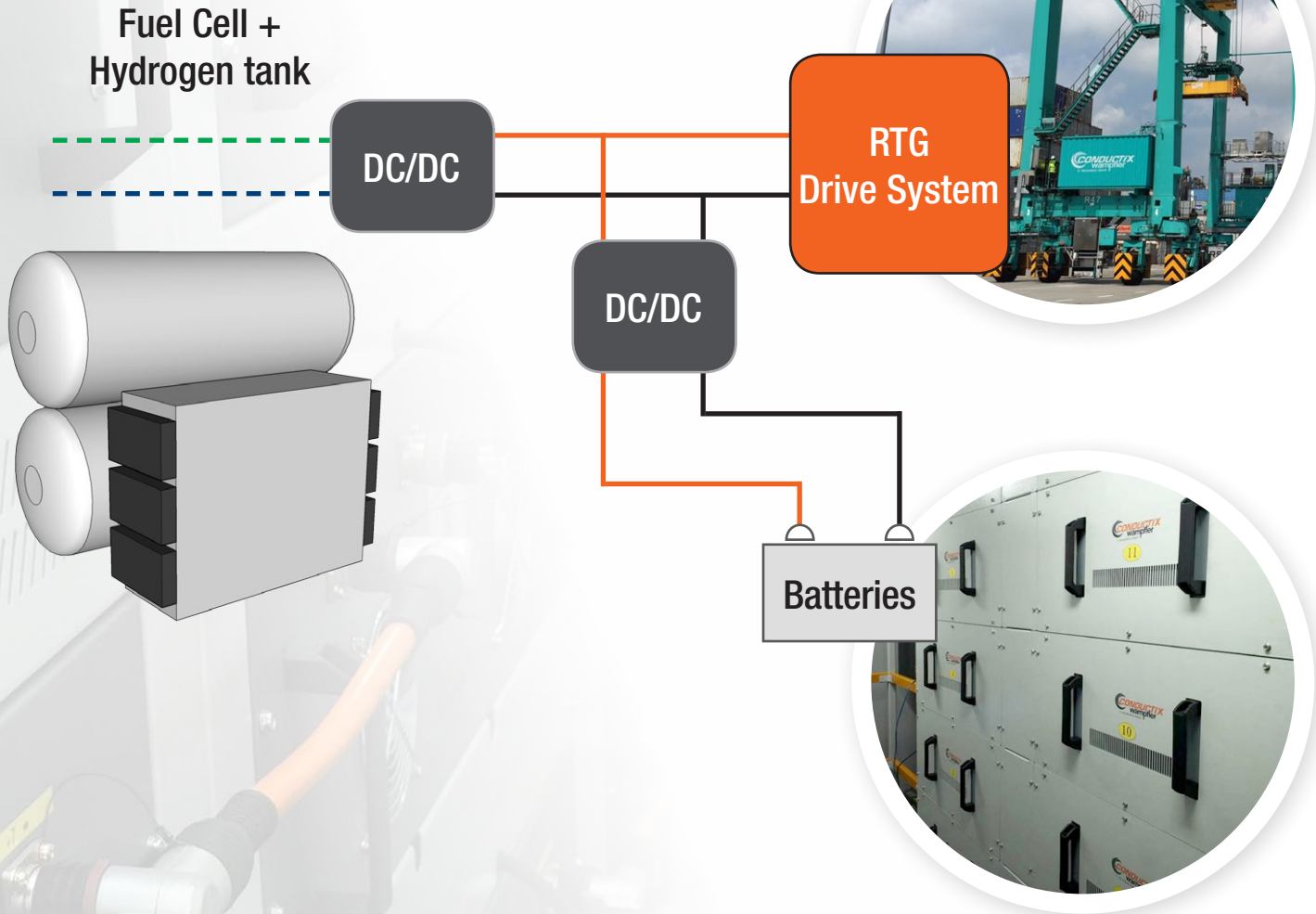
# E-RTG

## Zero Emission Solutions

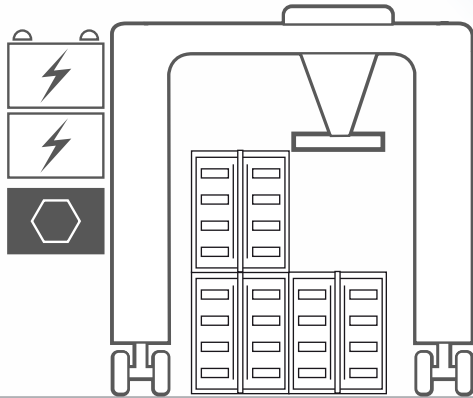


DELACHAUX GROUP

# FBE-RTG | Electrified RTG with fuel cell and battery pack



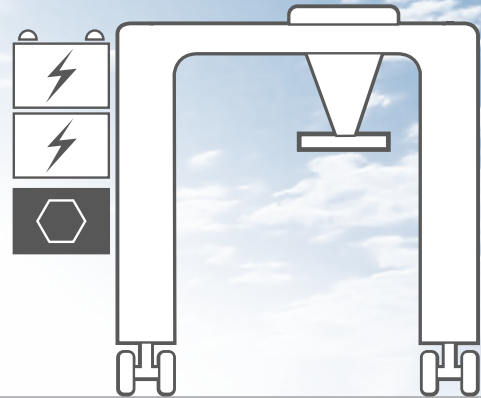
# Stacking Yard



In Conductix-Wampfler Hybrid RTG systems the battery pack is the main power supply and connected through a very efficient DC/DC converter to the DC bus of RTG drive.

All energy consumed by the hoist, gantry, trolley and the auxiliaries in the stack and during block changes is provided by the sufficiently sized battery system.

# Block changing



Regenerated energy from the motors during e.g. lowering a container can be recovered and is fed back to the battery system through the DC/DC converter. If the battery system reaches its low level State of Charge (SOC) the fuel cell will recharge the battery system until it attains its upper level of SOC again.

During the charging process the RTG can be operated without any limitation. The fully charged battery system supports more than 30 container moves\* or an idling period of 2-4 hours\*\* before the battery system is recharged again.

\* based on an average container weight of 12t

\*\* depending on the actual ambient conditions

# Benefits

- Fast re-filling of hydrogen.
- Maximized FC life time vs FC only
- No loss of RTG operation efficiency.
- No change of operational behaviors.
- Regenerative power can be reused.



# Technical Details

## Battery Pack

- Battery type: Li-ion
- Energy stored in battery: 110kWh
- Approximate moves operated when battery fully charged and no charging from FC: 30
- DC/DC converter: 1x250kW (bi-directional)
- Designed battery lifetime: 8 years\*
- Warranty (batteries): 5 years
- Remote monitoring and diagnosis

## Fuel Cell

- Nominal power: 100kW
- Fuel Cell current: 0-300A
- Fuel: Hydrogen
- Pressure Hydrogen tank: 5,076psi (350bar)
- Lifetime: >10,000 hours

\*200 moves per day, 350 working days per year.



# www.conductix.com

Conductix-Wampfler has just one critical mission: To provide you with energy and data transmission systems that will keep your operations up and running 24/7/365.

We remove **Emission** from your RTGs!

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