

E-Mobility

KTM Motorrad AG

21.10.2014



KTM

FREERIDE E 2015



The KTM FREERIDE E models combine innovative electric drive technology with outstanding design and the unique KTM-DNA.

- » Low-noise, no emission
- » Easy to ride
- » New fields of application
- » 0% Emission / 100% Fun / 100% KTM

FREERIDE 

KTM

FREERIDE E 2015 PRODUCT RANGE

FREERIDE E-SX	FREERIDE E-XC	FREERIDE E-SM
<ul style="list-style-type: none"> » Pure closed course bike » No homologation features » Low seat 	<ul style="list-style-type: none"> » Homologated - street legal version » A1 driving license requirements fulfilled » Fitted with lights, speedometer, steering lock, ignition lock » Higher and more comfortable seat 	<ul style="list-style-type: none"> » Same features as the E-XC » Smaller wheels with good grip, almost without tread » Longer gear ratio for higher speeds



FREERIDE E - TECHNICAL DATA

» Nominal Power	11 kW (15 PS) / 5500 Umin-1
» Peak Power	16.3 kW (22 PS) / 4500 Umin-1
» Max. Torque	42 Nm @ 0 rpm
» Voltage Battery	259.2 V (nom.), 302.4V (max.)
» Capacity	2.6 kWh
» Speed	72 Km/h (E-XC), 85 Km/h (E-SM)
» Fixed Gearbox Ratio	10.5
» Charging Time	50min (80%), 90 min (100%)
» Vehicle Weight	106 kg (E-SX), 108 kg (E-SX, E-SM)

FREERIDE E - COMPONENTS

Power Pack
HV Battery
(260V)

including
BMS

LV Battery
(12V)

ECU
Inverter
Vehicle
Control Unit
DC/DC
converter

Wiring
harness
connector



E-Throttle

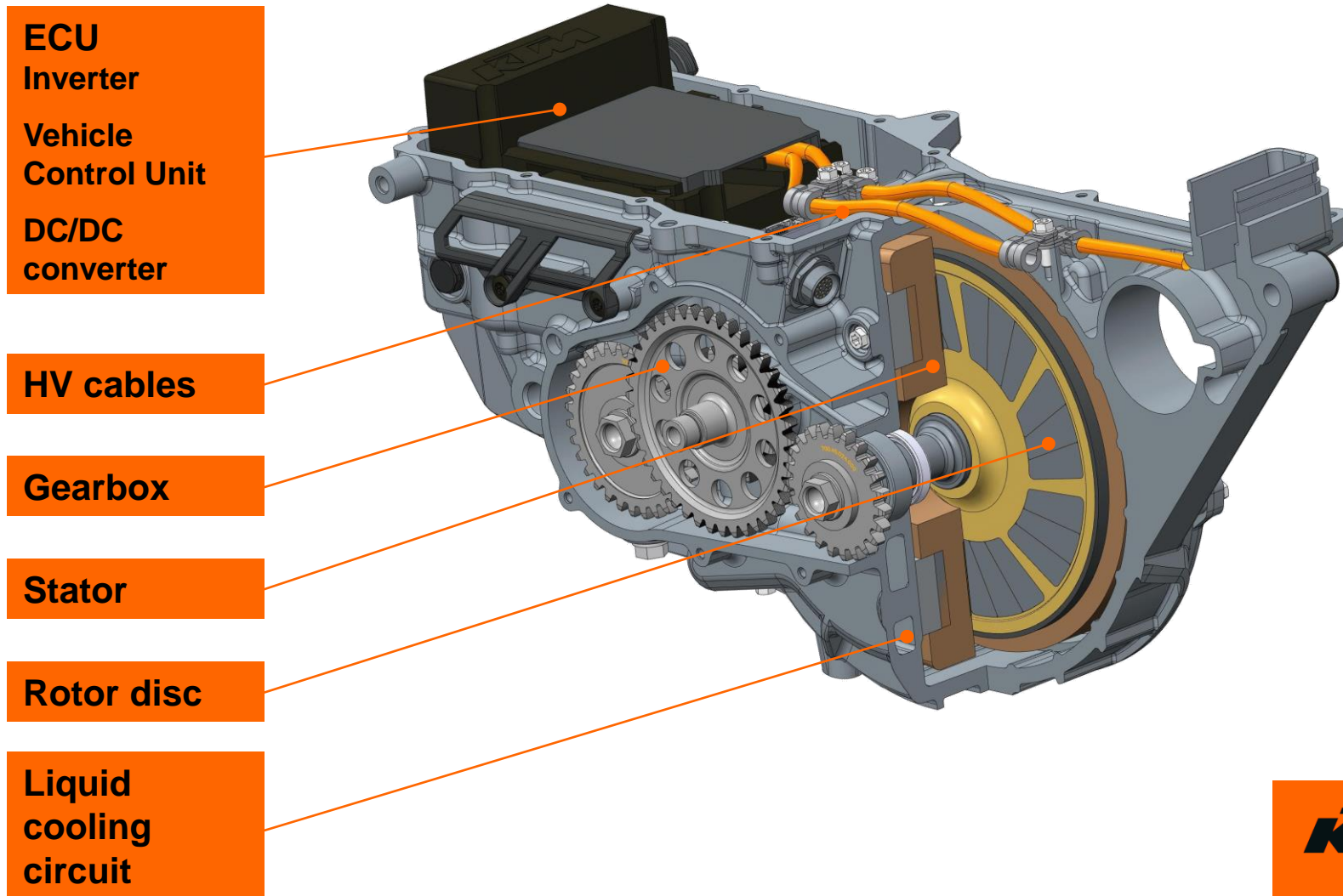
Charge
indicator

HV-
connector

Electric
Motor
Gearbox

KTM

FREERIDE E – ELECTRIC MOTOR



FREERIDE E – POWER PACK (HV BATTERY)



- » NMC lithium-ion cylindrical cells
- » 360 single cells in 72s5p configuration
- » 259.2V nominal voltage
- » Integrated, distributed Battery Management System for cell monitoring and balancing
- » Integrated main- and charging relays
- » Integrated pre-charge circuit
- » Aluminum die-cast housing IP67

Next development steps

- » Expand the product range for Urban Mobility vehicles
 - Based on Freeride E component platform
 - Lower cost electric vehicles (e.g. L1e category)
- » Higher capacity of the battery pack
 - Intensive cooperation with cell manufacturer
 - Efficient BMS algorithms for DOD/SOC/SOH
- » Cost efficiency
 - Efficient pack design
 - Standardization

Cooperative R&D Projects

» SeIECt

- Title: **S**ichere Integration von **e**lektrischen **E**nergiespeichern im Motorrad beim **C**rash und im **t**äglichen Gebrauch
- Project partner: TU Graz, Institut für Fahrzeugsicherheit
- Ends October 2014



» RE²BA

- Title: Recycling and Reuse of Lithium-Ion Batteries
- Electric Mobility Flagship Project
- Project partners: Saubermacher, AVL, MU Leoben, MaxSolar
- Ends June 2016



» Kore

- Title: **K**ostenoptimierungspotential bei elektrischen Motorrad**e**nergiespeichern durch Zulassen von Verformungen in Crashlastfällen
- Project partner: TU Graz, Institut für Fahrzeugsicherheit
- Ends October 2016





**READY
TO »
RACE**