

Magna EtelligentEco

Magna EtelligentEco is an advanced PHEV solution that makes high-volume SUVs with front-wheel drives more range- and cost-efficient by using software and controls and DHTeco hybrid transmission for up to - 38 % greenhouse gas reduction in real world daily drive. Best driveability also in purely electric drive mode.



Complete powertrain solution with BiC Functions



		X Required for BiC Functionality	Covers all Real World Driving Situations			
			BiC Efficiency	BiC Safety	BiC Dynamics	BiC Convenience
Vehicle Sub Functions	Longitudinal	Launch - Accelerate	X	X	X	X
		Steady State - Sailing	X			X
		Brake - Regenerate	X			
	Lateral	Traction		X		
		Stability		X	X	X
	Option	Handling		X		
ADAS / Cloud	Option	Park-Lock		X		X
	Cloud	On-Board Connectivity	X	X	X	X
		Off-Board Connectivity	X	X	X	X



Magna EtelligentEco

Enables -38 % CO2 emission for vehicles in real world driving situations.

It makes high-volume PHEVs with front-wheel drive more range- and cost-efficient by using an advanced operating strategy.

This technology demonstrator is fully scalable with a gasoline engine and a dedicated hybrid transmission (DHT) at the front axle. The DHTeco, the integrated eMachine, inverter and hybrid manager are developments from Magna.



Features and Specifications

Front Axle Drive

- 4 gears with eLaunch, eReverse and two gears in electric driving
- Nominal ICE torque: 230 Nm, eBoost up to 300 Nm
- Engine: 100 kW / 1.5 l gasoline
- Electric Machine: 120 kW at 350 V, 200 Nm peak

Prototype HV Battery

- Discharge Power: max. 135 kW
- Energy Content: 21 kWh

Competitive advantage/differentiators

- Intelligent operating strategy for real world drive optimization
- Best-in-class efficiency leading to extended range and reduced operating costs
- Best-in-class torque-to-weight ratio
- Integrated system with compact design and no increase in packaging length

Applications/benefits

- Adjustable drivability by software and clutch modulation, and customizable driving modes
- Charge at standstill and creep
- Scalability allows for customized applications



Dedicated Hybrid Transmission DHTeco

The DHTeco is part of the 230 family, and uses a smart modular scalability approach for Low Torque HV applications. The DHTeco is reduced to four gears (acting as a dedicated hybrid transmission) with eLaunch, eReverse and two gears in electric driving.



Features and Specifications

- Nominal torque: 230 Nm
- Boost torque: up to 300 Nm (E-boost)
- eMotor: 120 kW at 350 V;
200 Nm peak
- Installation length: 350 mm
- Weight (including oil): 83 kg
- Center distance: 183 mm
- Ratio ensures all-electric drivability up to 135 kph

Competitive advantage/differentiators

- Best-in-class efficiency leading to extended range and reduced operating costs
- Best-in-class torque-to-weight ratio
- Integrated system with compact design and no increase in packaging length
- Adjustable drivability by software and clutch modulation, and customizable driving modes
- Charge at standstill and creep

Applications/benefits

- PSM eMachine integrated in transmission housing, cooled by common oil circuit for wet dual clutch and gear set
- Water cooled, transmission mounted inverter
- ICE restart can be operated by transmission at all vehicle speeds

