

Magna EtelligentReach

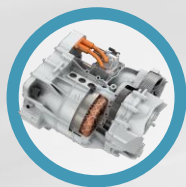
Magna EtelligentReach is an advanced BEV solution setting a new benchmark in range and dynamics with Magna next-Gen eDrives combined with software and controls. Decoupling+ option further extends the electric range. New inverter option with silicon carbide further improves efficiency and comfort.



Complete powertrain solution with BiC Functions

Front Axle

- eDS HV Mid+ HE DCU



Software/Controls

- drive controller
- operation strategy



Rear Axle

- eDS HV mid+ HE TV



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	X	X	X
	Lateral	Traction		X	X	X
		Stability		X	X	X
		Handling		X	X	X
	Options	Decoupling	X	X	X	X
		Park-Lock		X		X
	ADAS / Cloud	On-Board Connectivity	X	X	X	X
Off-Board Connectivity		X	X	X	X	



Magna EtelligentReach

Advanced BEV powertrain solution with maximum range efficiency

The technology demonstrator is powered by the highly integrated Magna EtelligentReach eDrive systems on the front and rear axles and allows for sporty driving with the most efficient use of energy and an extended range. Magna's updated vehicle control strategy precisely pilots the two eDrive systems and their corresponding features to an outstanding driving experience.



Features and Specifications

- | | |
|---|----------------------------|
| Rear Axle Drive | eDS HV Mid+ w/ TV function |
| • Peak Axle Power: | 150 kW for 30 s |
| • Feature: | Torque Vectoring |
| Front Axle Drive eDS HV Mid+ w/ DCU function (based on next-gen eDS technologies) | |
| • Peak Axle Power: | 170 kW for 30 s |
| • Feature: | Decoupling+ |

Competitive advantage/differentiators

- All-wheel-drive system with Magna next-gen eDrive technology and intelligent operating strategy optimizes efficiency and driving dynamics
- Decoupling+ strategy further extends the electric range

Applications/benefits

- New inverters with silicon carbide improve efficiency and comfort



eDS – electric Drive System Mid+

This eDrive with next-gen technologies provides up to 250 kW for 30 seconds and up to 5,000 Nm at the wheels. It can be applied to both hybrid and battery electric vehicles as primary and secondary drive. Next-gen technology options in the eMotor, inverter, gearbox and intelligent software strategy contribute to best-in-class efficiency, driveability and safety. Up to -24 % less weight, +7 % more power and -22 % less volume in packaging compared to other available products in the market.



Features and Specifications

- Scalable from 90 to 250 kWp and 400 to 800 V while providing affordable cost via building block approach
- PMS eMotor with next-gen needle winding technology, highly-optimized bearing concept, smart lubrication concept
- Inverter attached or axially integrated with optional SiC power module
- Advanced eMachine speed control interface enables intelligent launch vehicle function

Competitive advantage/differentiators

- Optimized and scalable to best-in-class-efficiency (aiming > 95% peak efficiency)
- Best-in-class drivability, performance, and safety with TV option
- Optimized and flexible package
- Affordable cost

Applications/benefits

- Advanced direct stator cooling concept enabling increased continuous power performance
- Safety integrity level ASiL “D”
- Optional park lock or disconnect, and small packaged twin-clutch torque vectoring

