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BYD at a Glance

- 4 Core Businesses: Electronics, New Energy, Auto, Rail Transit
- The first and only company in the world to provide full market new energy vehicle solutions
- Over 20 years' battery manufacturing expertise – now the world's largest Iron-phosphate battery producer

BYD in Europe

BYD BATTERY-ELECTRIC BUSES

the sensible choice to make city life better

0 EMISSIONS

BYD is dedicated to designing pure electric buses not only for driver and passenger comfort in daily commuting but also for bus fleet operators' confidence in long-term profitable solutions. BYD battery-electric buses, the high quality public transport solution for the city, can help to improve city air quality and reduce noise.

The full range of electric buses is powered by the BYD Iron-Phosphate Battery, which is stable, reliable and safe. It can be integrated easily with any existing fleet and meets most daily range needs in typical urban transport systems. BYD battery-electric buses range from 8m to 18m, including double deckers and articulated buses.

Already today BYD has helped many cities take the first step towards electric mobility. The future of a better electric city life starts now.

Roomy and comfortable, the interior is designed to make every journey happy

BYD battery-electric buses are designed to suit the specific needs of different citizens, with an ergonomic driver's cab and efficient space utilization and arrangement. Taking the journey on a BYD ebus is an enjoyable experience, both quiet and comfortable.

Roomy Passenger Compartment

All aspects of BYD battery-electric buses have been designed to maximize the comfort of passengers. Flat passenger floors, wide doors and windows, top-class seating layouts and handrails demonstrate high quality and can be customized. Also, the installed safety systems and wheelchair areas provide all that is necessary for safe and comfortable journeys.

Considerate Driver's Cab

With wide windscreen, large TFT screen display and easily reached buttons on the centre console, the driver's cab is designed to provide the right ergonomics for ease of daily operation.

BYD Iron-Phosphate Battery

BYD is the first enterprise in the world to fully industrialise the Iron-Phosphate battery. All BYD electric vehicles, including cars, buses, forklifts and trucks, are powered by the Iron-Phosphate batteries which offer multiple advantages.

Environment-friendly

The Iron-Phosphate battery contains no heavy metals or toxic electrolytes with no pollution and emissions during production. Also, end of life batteries can be recycled with minimal environmental impact.

Underwriter Laboratories Inc. Approval

BYD is one of the few companies in the world that obtained UL Approval. Due to its advantage technology, BYD also jointly drafted some proposals with UL (a body founded in 1894 as the Underwriters Electrical Bureau to ensure safety standards).

Long Service Life

The BYD Iron-Phosphate Battery ensures a long service life.

High Stability and Safety

To ensure the power battery's stability and safety, the Iron-Phosphate battery integrated in BYD ebuses has been proven by numerous rigorous tests, including Flame, Nail Penetration, Crush, Drop, Oven, Short Circuit, etc.

Flame

BYD Iron-Phosphate Battery can be placed in open fire and will not cause explosion

Nail Penetration

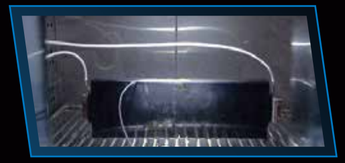
A diameter of 5-8.0 mm steel needle, at speed of 20 mm/s ~ 30 mm/s, perpendicular to the battery cell plates

Crush

Pressure of 200 kN, perpendicular to the battery cell plates, until the cell plates rupture

Drop

1.5 m height, free fall

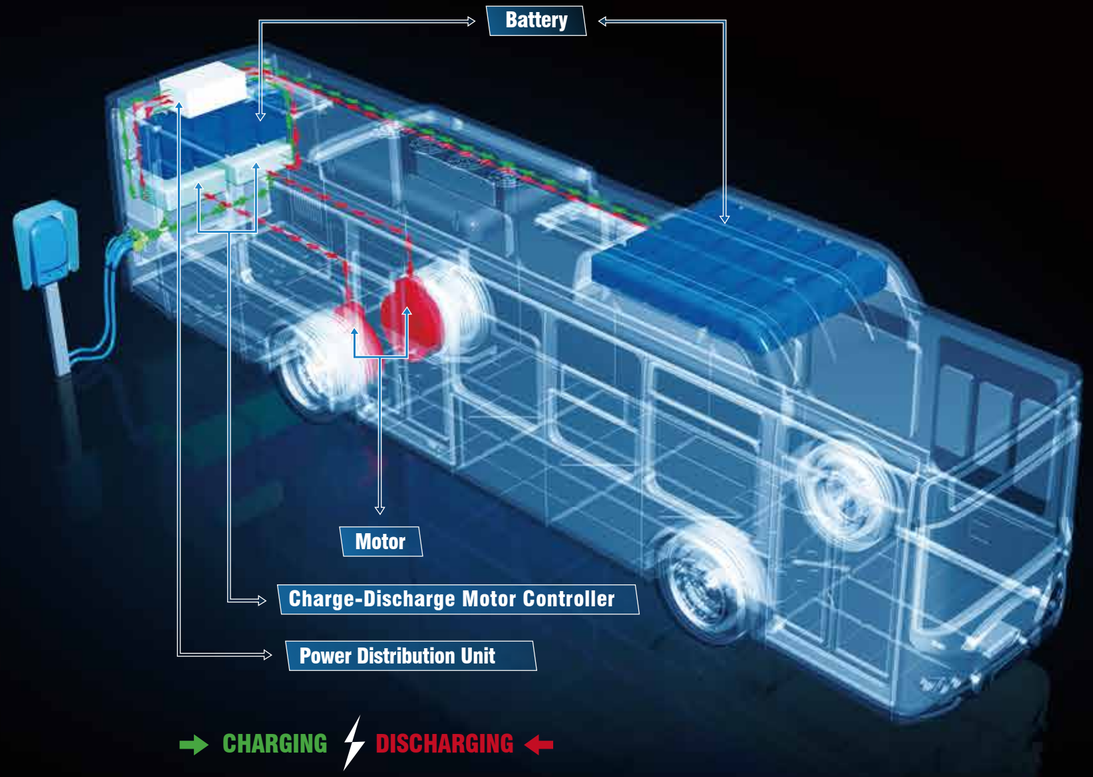


Oven

130±2℃, 2h.

Short Circuit

External circuit resistance ≤5 mΩ



Wheel-side Drive

With the liquid-cooled traction motor and two-stage reduction gearing integrated into the axle directly, and no transmission shaft which is heavy and requires a long mounting, the low-floor drive axle can be light-weighted, consume less energy and occupies reduced space. The extra space allows more interior room to transport more passengers.

Motor Type	Permanent Magnet Synchronous Motor		
Max. Power	kW	90×2	150×2
Max. Torque	N·m	400×2	550×2
Rotation Speed	rpm	0-7,500	0-10,000
Speed Ratio		17.7	22
Cooling Type		Coolant	Coolant

All-elements testing system ensures excellent bus quality

BYD's all-elements testing system involves tests for the whole vehicle, system and components, driving system, vehicle material, safety, EMC, NVH to ensure the safety and reliability of the ebus.


EMC Test

Safety, NVH and EMC Test

BYD's EMC and NVH laboratories are state of the art and meet national and international standards. Tested in these BYD labs, the BYD ebus has already proved that it does no electromagnetic harm and delivers an outstanding performance in noise, vibration and harshness. It's safe, quiet and comfortable.


NVH Test

Wading Test

The degree of Ingress Protection of BYD ebus electrical components can reach IP67, which makes BYD ebuses pass the flooding test with 300mm water depth and vehicle immersion test with 500mm. Thus, The strong wading ability guarantees that the BYD ebus can operate well in heavy weather like rainstorms or flooding.


Wading Test

Temperature Test

The BYD ebus does not only have a perfect performance in extremely high temperature areas like Turpan, China, but also works well in very low temperatures like in Nordic cities.


50°C High Temperature Test


-25°C Low Temperature Test

Road Test

In line with the European road test standards, BYD ebus has gone through a series of road tests with various loads (empty load, half load and full load) and road conditions, etc.


1000km Loop Road Test


Cobblestone Road Test

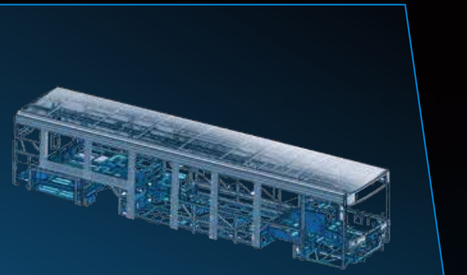

Washboard Road Test

Brand-new All Aluminum Body Design

BYD ebus adopts a brand-new practical all aluminum body, with lighter weight, improved sealing performance and anti-corrosion properties as well as higher structural strength.

This brand-new all aluminum body has better elasticity and shock-absorbing characteristics than a traditional all-steel body, so reducing vibration and noise and improving ride comfort during driving as well as delivering active crumple deformation and absorbing shock during a collision, helping to ensure the safety of the driver and passengers.

BYD ebus has passed high-level tests both in Europe (R107/R66 of ECE - The United Nations Economic Commission for Europe) and America (Altoona testing).



Brand-new All Aluminum Body

Rollover Angle Test

Side Impact

Intelligent Designed Systems

Keyless System

With Keyless System, the bus can be started and stopped by just one press on the ‘POWER’ button.

Regenerative Braking System

Regenerative Braking System converts part of the kinetic energy into electricity and stores it in the battery to give additional driving range.

Intelligent Start Battery Management

The intelligent start battery management will always keep the vehicle ready. Once the start battery is detected in low power, the system will charge it automatically.

Autohold System

Autohold System ensures safety. When the driver brakes and the bus comes to a stop, the bus will automatically hold to prevent from moving even on the slope without stepping on the brake pedal.

Pre-heating System

The air conditioning can be switched on at a pre-set time thanks to the Pre-heating System.

100% Electric

BYD ebus is 100% Electric when choosing the optional fully electrical climate control system.

Superior AC Charging Solution – the Perfect Selection

The BYD AC charger's space-saving design allows convenient installation and offers fast charging for all BYD commercial electric vehicles. Optionally, under a secure protocol, the AC charger can be connected to a server via TCP/IP network, providing an online monitoring and smart charging management solution.

- Shorter charging time
- Cost-effective facilities
- Less occupied area
- Flexible usage

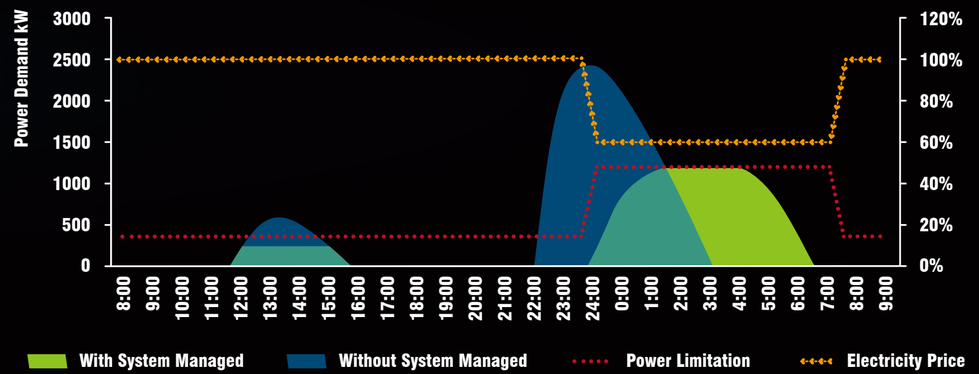
Specifications	
Power Output	40 kWx2
Dimensions	400x200x690 (mm)
Weight	30 kg
Rated Voltage	400 V
Max. Current	126 A
IP Grade	IP55
Cable Length	3/5 m
Plugs	2

*DC Charging and Opportunity Charging are optional.

Real-time Controlled Smart Charging System

With its leadership in the NEV industry, BYD developed a real-time controlled Smart Charging System for fleet charging. It allows the fleet to charge vehicles according to departure schedule, remained SOC and grid power supply limitations. Vehicles can be plugged in at any time but charging only starts under the setup rules.

Simulated 30 ebuses fleet charging power demand curve in one day

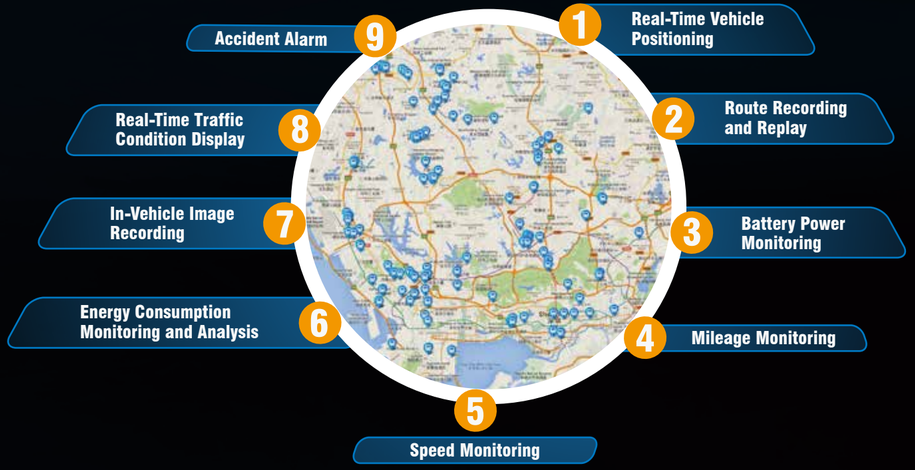


What can Smart Charging System bring to us?

With this Smart Charging System put into use, the fleet can gain the benefits including Charging Peak Shaving, Charging Time Planning, Off-Peak Electricity Usage Rate Increasing, etc.

Real-time Monitoring System

By incorporating the auto electronics technology, image recording technology, GPS system and communications technology, the real-time monitoring system can monitor buses both on duty and off duty.



All-round after-sales service leads to a change

BYD cooperates with accredited service providers and has established highly professional service teams with 100% localization in Europe. In particular, designated service advisors with years of expertise in the auto industry are on call to offer special technical support.

BYD can provide comprehensive training courses which cover driving operation and safety, and repair and maintenance with optimized trainers and selected training content.

BYD can offer an optional long-term full service up to 12 years and an extended warranty for the power battery.

BYD your reliable electric bus supplier

BYD has already trialed and operated its ebuses in more than 200 major cities. Each city received BYD electric buses to conduct their own programme of tests on operational cost-effectiveness and return on investment in the new technology. The encouraging test data and financial figures demonstrate the outstanding reliability and efficiency of BYD's unique electric system.

BYD ebus in Europe


Schiermonnikoog


Barcelona


Pécs & Debrecen


Milan


Tel Aviv


Sant Cugat


London


Nottingham


London

BYD ebus European Footprint

over **21** Countries & Regions

over **61** Cities

BYD EV Global Footprint

6 Continents

over **50** Countries & Regions

over **200** Cities

BYD Battery-Electric Buses and Coaches Option

BYD is introducing a full spectrum of electrified mini, midi, double-decker and articulated buses and BRT solutions in Europe. The ebus range features different body types, interiors, ranges and load capacities and can be tailor-made according to customer's requirements, providing complete operational flexibility.

8.7 meter
Battery-Electric Bus

10.8 meter
Battery-Electric Bus

13 meter
Battery-Electric Coach

12 meter
Battery-Electric Bus

18 meter
Battery-Electric Bus

8.7 meter
Battery-Electric Bus

Dimensions / Weight		
L/W/H	mm	8,750/2,455/3,225
Wheelbase	mm	4,350
Turning circle	m	16
Floor height	mm	370
Boarding height	mm	325/340
Approach/Departure angle	°	8/8
Tyres		285/70R19.5
Interior headroom	mm	1,900
Clear door width	mm	800/1,200
G.V.W	kg	13,000
Passenger capacity*		58
Passenger seats		22
Powertrain		
Max. motor power	kW	90×2
Max. climb gradient	%	17

*The passenger capacity may differ due to specifications.

10.8 meter
Battery-Electric Bus

Dimensions / Weight		
L/W/H	mm	10,850/2,500/3,300
Wheelbase	mm	5,650
Turning circle	m	22
Floor height	mm	370
Boarding height	mm	325/340
Approach/Departure angle	°	7/8
Tyres		275/70R22.5
Interior headroom	mm	2,400
Clear door width	mm	1,200/1,200
G.V.W	kg	18,000
Passenger capacity*		80
Passenger seats		31
Powertrain		
Max. motor power	kW	90×2
Max. climb gradient	%	15

*The passenger capacity may differ due to specifications.

13 meter
Battery-Electric Coach

Dimensions / Weight		
L/W/H	mm	12,900/2,550/3,550
Wheelbase	mm	6,850
Turning circle	m	24
Floor height	mm	1,020
Boarding height	mm	360/360
Approach/Departure angle	°	8/8
Tyres		295/80R22.5
Interior headroom	mm	2,162
Clear door width	mm	650/650
G.V.W	kg	19,000
Passenger capacity		59
Passenger seats		59
Powertrain		
Max. motor power	kW	180×2
Max. climb gradient	%	20

12 meter
Battery-Electric Bus

Dimensions / Weight		LF 3Doors	LF 2Doors	LE 2Doors
L/W/H	mm	12,050/2,550/3,360	12,050/2,550/3,360	12,050/2,550/3,360
Wheelbase	mm	5,900	5,900	5,900
Turning circle	m	23.5	23.5	23.5
Floor height	mm	370	370	370
Boarding height	mm	325/340/340	325/340	325/340
Approach/Departure angle	°	7/7	7/7	7/7
Tyres		275/70R22.5	275/70R22.5	275/70R22.5
Interior headroom	mm	2,400	2,400	2,400
Clear door width	mm	1,200/1,200/1,200	1,200/1,200	1,200/1,200
G.V.W	kg	19,000	19,000	19,000
Passenger capacity*		90	90	90
Passenger seats		27	31	36
Powertrain				
Max. motor power	kW	90x2/150×2	90x2/150×2	150×2
Max. climb gradient	%	15/17	15/17	15/17

*The passenger capacity may differ due to specifications.

18 meter
Battery-Electric Bus

Dimensions / Weight		3 Doors	4 Doors
L/W/H	mm	18,250/2,550/3,380	18,250/2,550/3,380
Wheelbase	mm	5,250/6,700	5,250/6,700
Turning circle	m	23.5	23.5
Floor height	mm	370	370
Boarding height	mm	320/320/320	320/320/320/320
Approach/Departure angle	°	7/7	7/7
Tyres		275/70R22.5	275/70R22.5
Interior headroom	mm	2,200	2,200
Clear door width	mm	1,200/1,200/1,200	1,200/1,200/1,200/1,200
G.V.W	kg	28,000	28,000
Passenger capacity*		150	150
Passenger seats		51	40
Powertrain			
Max. motor power	kW	150×2	150×2
Max. climb gradient	%	15	15

*The passenger capacity may differ due to specifications.