

alkè
high performance utility vehicles

ATXelectric



**ATEX Categories 2/3/M2
Explosion-proof vehicles**

ATX210E ATEX 2G/2D, 3G/3D, M2

ATX240E/ED ATEX 2G/2D, 3G/3D, M2



Alkè explosion-proof electric vehicles

Our electric vehicles with explosion-proof capabilities are oriented to market segments dealing with potentially hazardous environments like chemical and petrochemical industries, production sites of mineral oil and natural gas, mining, tunnel construction and maintenance and many other sectors. Electric vehicles used in these areas must be designed to prevent any normal operation of the equipment from igniting the atmosphere.

Alkè electric vehicles with explosion-proof conversion are designed according to ATEX 94/9/EC for category 2 (zone 1) and 3 (zone 2), gas/dust group IIA/IIB, temperature class T3 and for category M2 T450°C for underground activity inside not coal mines tunnels and M2 T150°C for underground activity inside coal mines tunnels.

Explosion-proof according to ATEX 94/9/EC

Coverage for category 2 and 3 (surface activity)

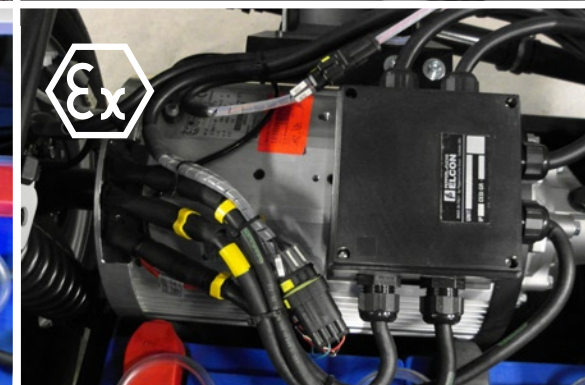
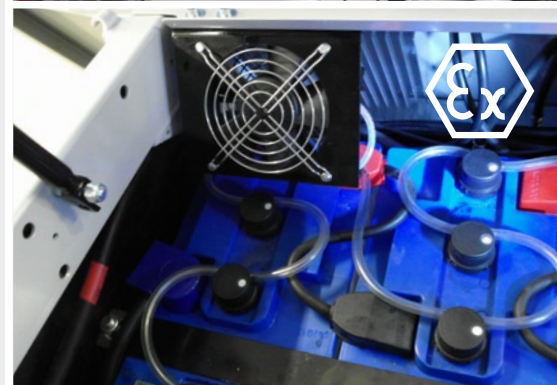
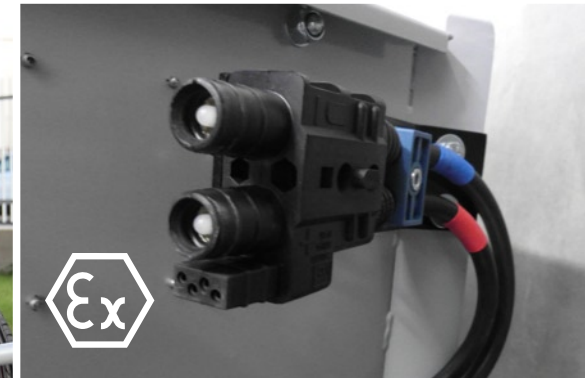
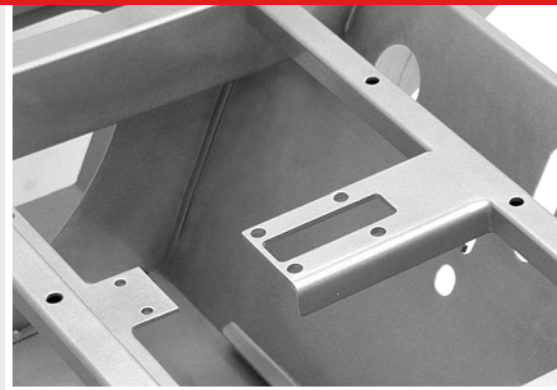
Coverage for category M2 (underground activity)

Under request may also be assessed special transformations such as for example vehicles for environments with presence of explosive materials (eg. warehouses for ammunitions and products for fireworks) with IP 5X and IP 4X protection; versions with temperature class T4 (135°C), versions with combined protection 2G+2D or 3G+3D, versions with different certifications from ATEX (eg. EX / EE conversions according to USA regulations UL583), etc.

The conversion regards the general electric circuit, battery and battery connectors and all parts which might cause high temperatures or sparks for various reasons. All original electric components are treated in compliance with requirements for category 2, 3 and M2, specifically guaranteeing that none of them will be able to cause an ignition or explosion in the surrounding environment. These interventions specifically refer to:

Part of the vehicle	Type of protection (2G/2D/M2)	Type of protection (3G/3D)
Electric motors	Ex "e" for AC motors	Ex "e" for AC motors
Solenoid valves	Ex "m"	Ex "n"
Sensors, transducers, micro switches	Ex "i" / Ex "e"	Ex "i" / Ex "n"
Control functions	Ex "i"	Ex "i" / Ex "n"

The surface temperature is checked by specific temperature sensors, according to the temperature class / temperature limit requested, to avoid the risk of overheating. If this occurs the vehicle will automatically shutdown, lighting the indicator.



An earth leakage check system (only on 2G/2D/M2 versions) automatically shuts the truck down in case the max value should be exceeded, lighting the indicator on the dashboard panel.

An appropriate “Reset” pushbutton allows the truck to be moved out of the dangerous area in case of temperature and (only on 2G/2D/M2 versions) earth leakage sensor’s alarms intervention.

The electric wiring is done by using both armoured and non armoured cables, blue cables for connection of components protected with intrinsic safety mode and with certified cable glands for proper category. Bipolar battery cut-off switch is provided.

On 2G/2D/M2 versions the vehicle battery is Ex-e type with refilling system. Battery connectors are Ex-d type certified. On 3G/3D versions battery and battery connectors comply with the standard EN 60079-15.

The disc or brake drums are provided with wear and temperature sensors to guarantee any possible wearing out of the braking material which might cause sparks due to the metal rubbing together and that a high friction temperature might exceed the value of the temperature class / limit.

On 2G/2D/M2 versions seats are covered with antistatic material and external surface of plastic components, when necessary, is treated with electro conducting coating.

All tyres are electro-conductive. Accessories, such as flashing beacon, reversing beeper, headlights are explosion-proof.

First class performance and an extremely solid construction

Alkè models available with ATEX explosion-proof conversion are ATX210E, ATX240E and ATX240ED (double cab), main differences between them are:

	ATX210E ATEX	ATX240E/ED ATEX
Load capacity	up to 500kg	up to 800kg (E) up to 600kg (ED)
Towing capacity	up to 2.000kg	up to 3.000kg
Batteries	8 kWh [std./gel cat. 2] 8.7 kWh [std./gel cat. 3]	14.4 kWh [std. cat. 2/3] 11.5 kWh [gel cat. 2/3]

These units have chassis treated with Cataphoresis anticorrosion process and it is built using tubular steel sections dimensioned to support heavy duty operations. The front bodywork of the vehicle, the control panel and coverings and the back of the cab are built in reinforced fibreglass and finished with car paint (fibreglass is flexible, resistant to blows and can be easily repaired in the case of accidents).

These models have AC motors with very high torque and smooth distribution which prevents skidding and loss of grip also on high risk land-types (sand, snow or ice) and guarantee start-up in ascent with hesitation.

Thanks to their special motors and CURTIS controllers, the ATXs raise the power, if necessary, by 8 kW nominal to a peak of 14 kW to allow operations even in the presence of uneven land and slopes.

Chassis with anticorrosion treatment

AC motors 8 kW (14 kW peak)

Superable gradients up to 25%

The autonomy on standard routes for some models can reach up to 100 km and covers without problems an entire working day even where frequent stops are required for load and unload operations.

Where are required double or triple work shifts the quick-change battery system mounted on the ATX240E/ED allows the use of auxiliary batteries (optional) for prolonged and continuous operability.

The electric ATXs have an energy recovery motor brake system, which in the stopping phase prevents all waste of power and wear of the brakes.

Up to 100 km autonomy (extensible with auxiliary batteries)

Regenerative braking

High frequency battery chargers

The special external battery chargers used by these ATX guarantee a greater number of charges with respect to the technologies commonly used (greater number of charges = longer life of the battery set = saving of management costs).

It is not necessary to wait for the battery to be totally flat before re-charging it, the so-called “memory effect” present in other lower sectors is not found here. The investment for an ATX E is re-paid in average terms by the maintenance costs, which are must lower if compared with equivalent diesel and petrol vehicles: maintenance is almost inexistent and there are noteworthy savings in fuel consumption. For an entire day’s work the cost for the complete charging of the battery sets is less than 2 euro.

It is important to know that the technical life, in working hours, of an electrical vehicle of this type is generally double, if not triple, with respect to a conventional fuel vehicle.

Very low maintenance costs

Life 3 times than a fuel vehicle

Cost of a complete charging less than 2 Euro





The images in this catalog are meant to be a guide, the final design of the ATEX versions is related to the type of conversion required.

	ATX210E ATEX 2G/2D/M2	ATX210E ATEX 3G/3D	ATX240E/ED ATEX 2G/2D/M2	ATX240E/ED ATEX 3G/3D	Notes
Seats					
Seats	2		2 (E) / 4 (ED)		2 extra seats can be installed on the cargo bed with the removable people carrier module (optional).
ATEX coverage					
Category in conformity with ATEX 94/9/CE	2G IIB T3 2D IIB T3 (surface)	M2 T450°C M2 T150°C (mines)	3G IIB T3 3D IIB T3 (surface)	2G IIB T3 M2 T450°C M2 T150°C (mines)	3G IIB T3 3D IIB T3 (surface)
Motor/Performance					
Type	AC electric motor				AC motors allow greater performance, they are extremely quiet and require less maintenance than DC motors.
Power in standard conditions	8 kW / 48 V				Available power and torque are really for professional and intensive use.
Maximum power	14 kW				Max power to face slopes and towing jobs.
Maximum speed	40 km/h		30 km/h		The maximum speed is indicative and evaluated on flat ground under optimal conditions of usage in SPORT mode.
Maximum towing capacity	2.000 kg		3.000 kg		Maximum towing capacity under optimal conditions of usage, not for public road use. Trailers used must have repulsion brakes and must be according to law with a maximum vertical weight of 120 kg on the towbar.
Controller type	CURTIS (385 A max output power)				The ATX elaborates controller guarantees higher output power for higher performance and less overheating of the control electronics.
Setting vehicle's performances	2 settings controlled from dashboard (ECO and SPORT)				Allows setting of vehicle performance directly from the dashboard specific switch.
Battery pack					
Type of batteries	8 kWh lead-acid 8 kWh lead-gel	8.7 kWh lead-acid 8.7 kWh lead-gel	14.4 kWh lead-acid 11.5 kWh lead-gel		
Number of batteries	24x2V	8x6V	24x2V		
Range with battery completely charged	60 km	70 km	100 km		The maximum range is indicative and evaluated on flat route under optimal conditions of use, ECO mode with proper and energy-saver driving style, max speed 30 km/h (210E) or 20 km/h (ATX240E), not continuous use (discharge batteries in 5 hours).
Estimated battery charge time	8 hours		12 hours		Supply with a 230V 16A 50Hz socket.
Battery-charger	High frequency charger, external the vehicle				High frequency charger enables better continuous charging, increases battery life. The external battery charger must be installed and must be used in area classified as non-hazardous.
Refilling system	Yes				The refilling system is not mounted when using maintenance free lead-gel batteries (optional).
Quick-change battery system	No		Yes		Quick-change battery system enables non stop working through the day and night using 1 or more auxiliary battery. You can switch between different sets with the support of an hand pallet truck (400 mm lift). The battery change must be done in area classified as non-hazardous.
Transmission					
Type	Electronic speed variation				Equal to the use of automatic gears.
Driving	Rear				
Maximum negotiable slope	25%		20%		The maximum slope is indicative and evaluated with empty vehicle in optimal conditions of usage on non-continuous ramps. Keep in mind that performance on real environment for ATEX converted vehicles is strongly affected by conditions the vehicle is working (ground conditions, vehicle temperature, external temperature, etc). The vehicle safety system cuts-off all devices in presence of temperature of vehicles devices close the T class of the vehicle, even if the vehicle itself (the not ATEX model) could work without problems in that situation.
Rear differential unit	Semi-floating		With removable semi-axis		
Brakes					
Front / Rear	Front hydraulic discs / Rear hydraulic drums with mechanical servo brake				The hydraulic brakes are much safer than mechanically-operated brakes, they guarantee greater safety when weights are loaded or equipment is towed.
Parking brake	Yes				
Regenerative brake	Yes				Regenerative brake ensures a lower energy consumption as well as high safety standards and perfect descent manoeuvrability. When the accelerator is released, braking starts and batteries recharge.
Suspensions					
Front	MacPherson-type with independent wheels				Mac Pherson suspensions allow higher ride comfort and driving precision.
Rear	With De-Dion bridge + stabilising bar				De-Dion axle permits softer ride, better axle articulation, better traction on all land-types.

	ATX210E ATEX 2G/2D/M2	ATX210E ATEX 3G/3D	ATX240E/ED ATEX 2G /2D/M2	ATX240E/ED ATEX 3G/3D	Notes
Chassis and body					
Chassis	Steel chassis with anticorrosion treatment and powder coating finish				ATX chassis have anticorrosion treatment by cataphoresis and powder coating. They are built to support heavy duty operations.
Bodywork	Fiberglass				Fibreglass is repairable, durable, more resistant to shocks.
Tow hooks /hitches	Front and rear hook for towing the vehicle on emergency and rear ball trailer hitch				
Differential guard	Yes				Full protection for differential and other lower parts of vehicle in off road situations.
Front bull-bar protection	Yes				In case of accident prevents damage to the front bonnet, tires and steering system.
Electronics and lighting system					
Heating	Electric defogger (optional, front only for ED version)				
Round display	Speedometer, odometer, battery indicator/Motor temperature, inverter temperature, inverter errors, power supplied by the inverter (3G only)				
Dashboard display	Hourmeter, warning lights for lights, indicator lights, emergency lights, brake oil shortage, parking brake				
Battery capacity indicator	Yes				
Lights	main lights, stop lights, indicators, emergency lights, reverse light, beacon light (opt)				
Reverse buzzer	Yes				
Accessories					
Wing mirrors	Yes				
Horn	Yes, manual				
Windshield wiper	Yes, manual with operation from inside the cab				
Safety on-board	3-point seat belts, presence sensor on the driver's seat, external armrests (opt)				The armrests are standard in version without doors, they are optional in version with doors.
Dimensions					
Length	3520 mm (E) / 4280 mm (ED)				
Width	1270 mm				1320mm with closed side mirrors, 1560mm with fully open side mirrors.
Height	1850 mm				
Wheel base	2120 mm (E) / 2880 mm (ED)				
Ground clearance	260 mm at the center		190 mm at the center		145 mm under hubcap
Cargo bed dimensions	1800 x 1240 mm				Height loading platform from the floor 780 mm, height sides 300 mm. Rubber mat for cargo bed protection included.
Loading capacity	400 kg	500 kg	700 kg (E) / 500 kg (ED)	800 kg (E) / 600 kg (ED)	
Empty weight	1100 kg	1000 kg	1520 kg (E) / 1670 kg (ED)	1400 kg (E) / 1550 kg (ED)	
Steering					
Rack and pinion	Yes				
Minimum steering radius (internal)	320 cm (E) / 384 cm (ED)				
Loading bed					
3 aluminium drop sides	Yes				Access is made easier to the entire load bed from all sides also in the presence of the body tarp. The drop sides are in anti-corrosion tubular aluminium.
Bed tipping	Manual				
Tyres					
Front	23x8.50-12 (std.) - 175/65 R14 (opt.)				
Rear	23x8.50-12 (std.) 23x10.50-12 (opt.) - 175/65 R14 (opt.)		23x10.50-12 (std.) 175/65 R14 (opt.)		The 6 ply tyres used by the electric ATX are more resistant to puncturing and other damage and allow greater safety in the case of overloading.

ED: double cab

The mentioned technical specifications (like performance, autonomy, dimensions etc.) can or will be depending on temperature, surface, driving style, options, cargo or usage of the vehicle. Data supplied are usually reported for use on flat ground under optimal conditions of usage, it means with unladen vehicle in the basic version with lighter battery, smooth and paved road, outdoor temperature 25°C, fully charged batteries, on board electronic devices off without any other external consumption.

Alkè company profile

The company Alkè is based in Padova, 40km far from Venice, North-East of Italy. Design, prototyping, production and after sales support for our products are managed directly from our corporate office, only in this way the highest Alkè quality standards are assured.

Alkè started its activity in 1992 and from the beginning has focused its efforts on the study of innovative vehicles, vanguard and high-quality products. We have approached the electric vehicles market during year 2000, today this is our core business and we are recognized as one of the European key player on this segment.

During year 2012 we have opened a completely new 10.000m² production plant, the same year we have received ISO 9001, ISO 14001 and OHSAS 18001 (Quality, Environment, Safety) certification for our Integrated Management System.

Our goal is to consistently deliver services at a level of excellence. Today Alkè vehicles are sold in more than 40 countries at worldwide level.

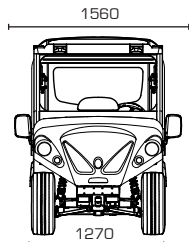
After sales and Quality

We deliver spare parts worldwide from our headquarters, via express carrier, in 24-48 hours (areas covered by main international carriers). Our after-sales service is in permanent contact with our distributors and dealers to guarantee that any problems are solved quickly (if they should occur) or to suggest the best practices for the programmed maintenance of our vehicles.

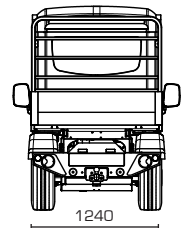
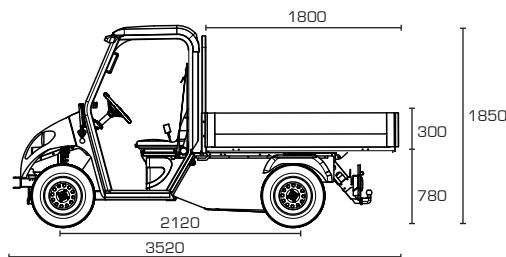
We are convinced that the best tests are those carried out by anyone using a machine from the morning to the evening. In spite of the fact that before the release of each new product thousands of hours have tests have already been carried out in the most varied environments, we are not so presumptuous as to say we have had the last word. If a customer suggests improvements, deriving from his experience in the field, we immediately transmit them to our designers and engineers.

Our philosophy is that of building strong vehicles like the ones in years gone by. No photograph, even the best, can transmit the construction quality of a product, and this is valid, above all, for our Alkè vehicles. Try them yourself, just for five minutes, and you will understand why we have no problem in saying that we are not afraid of comparison.

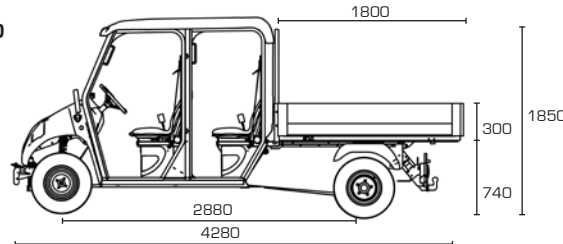
Dimensions



ATX210E
ATX240E



ATX240ED



Accessories

INTERIOR:

- front doors/front doors with sliding windows
- rear doors (ED)
- door protection cages (front only)
- electric defogger (front only)

BATTERIES:

- GEL maintenance free batteries
- auxiliary quick-change battery system

CARGO AREA:

- steel mesh sides
- closed body tarp
- open shade canopy for the cargo area
- rear people-carrier module
- ambulance module

OTHER OPTIONS:

- ball & pin trailer hitch
- orange/blue beacon light
- road/off-road tyres

COLOURS:

- white
- red
- custom RAL colour

To see the updated list see www.alke.com. Some options and accessories may not be available for all models or may not be compatible for use on the road.



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ISO 9001:2008 - 687903

ISO 14001:2004 - 687426

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