

EN



QUANTRON



BEV

# CIZARIS 12 EV

The full-electric solution for inner-city transit

Empower the Future



QUANTRON

## **Quantron AG**

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Dear customers,

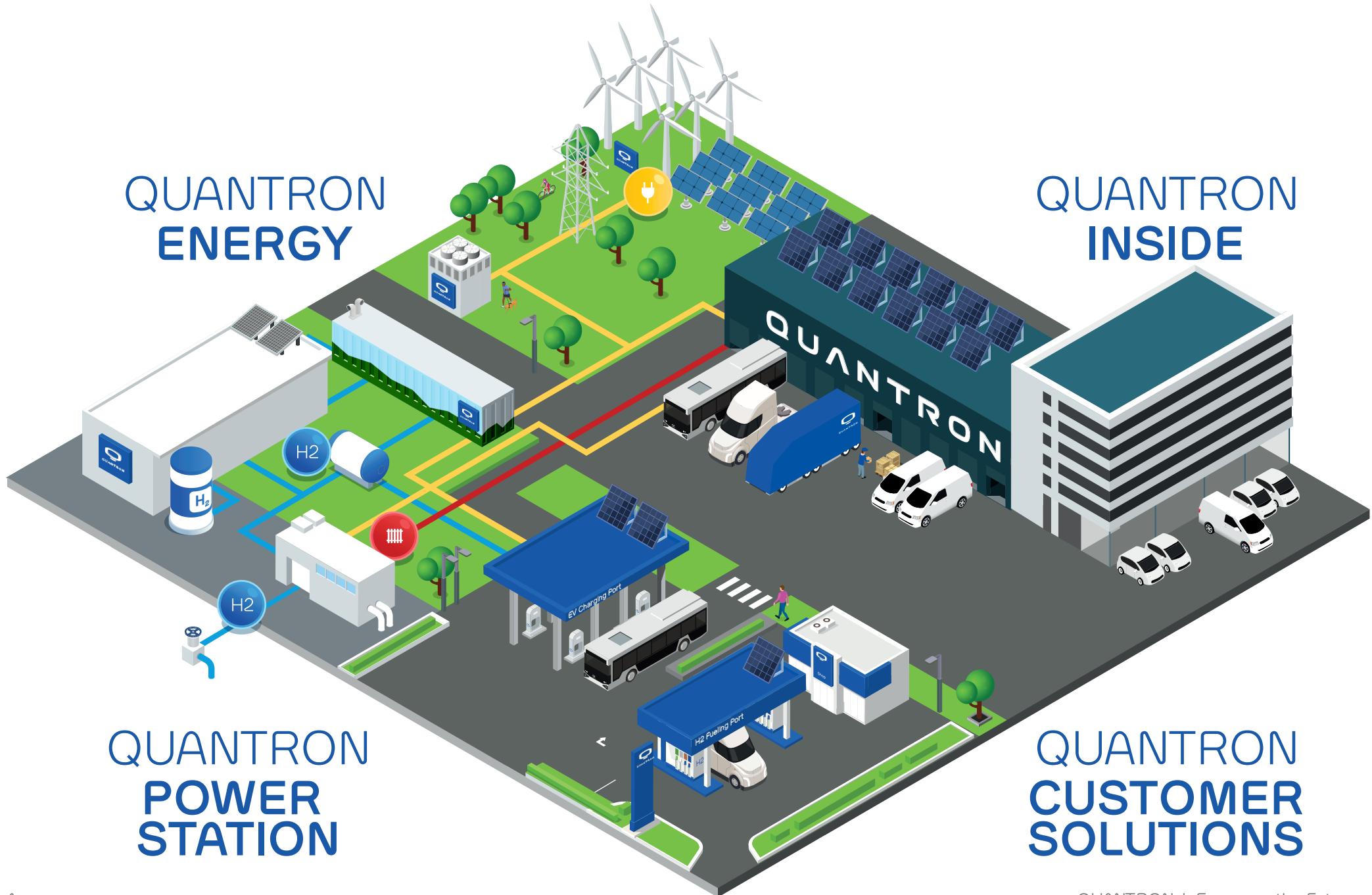
Quantron AG offers you innovative and practical e-mobility solutions and thus makes a sustainable contribution to the decarbonization of road transport. In the Q-Mobility business unit, we supply our own buses, vans and trucks of the QUANTRON brand based on our highly innovative QUANTRON INSIDE technology. Like all our vehicles, the all-electric QUANTRON CIZARIS embodies our core values RELIABLE, ENERGETIC and BRAVE. It stands for emission-free and clean mobility, safety and maximum comfort for passengers. With our Q-Ecosystem, we also offer you an all-round service package – from individual consulting according to your requirements, a vehicle tailored to your personal needs and the installation of the appropriate charging infrastructure to servicing your fleet.

Contact us, we will accompany you on your way to e-mobility.

Best regards

A handwritten signature in black ink, appearing to read "Andreas Haller".

Yours, Andreas Haller  
Founder and Chairman of the Board of Quantron AG



# QUANTRON 360° Platform Solution – Quantron-as-a-Service

With QUANTRON-as-a-Service we are aiming for a 360° Zero Emission product & solution ecosystem. This means: QUANTRON is a solution provider offering an “asset-light” solution that encompasses all facets of the mobility value chain, such as the e-vehicle, service & maintenance, insurance, leasing, financing, infrastructure as well as green electricity and hydrogen.

The result: providing comprehensive zero-emission transport solutions on a per-kilometre basis.

This Q-Ecosystem consists of four central areas: QUANTRON ENERGY, QUANTRON INSIDE, QUANTRON CUSTOMER SOLUTIONS and QUANTRON POWER STATION.

## QUANTRON ENERGY

As a central player in a rapidly developing ecosystem, QUANTRON coordinates resources and partners to realise the production of green energy / green hydrogen and the associated supply to customers at competitive prices in the future as a platform.

## QUANTRON INSIDE

QUANTRON already supplies working, practical e-commercial vehicles with battery and hydrogen-electric drives based on the highly innovative QUANTRON INSIDE technology. The wide range of products includes new vehicles as well as the resource-saving electrification of used and existing vehicles with diesel engines (Q-retrofit).

## QUANTRON POWER STATION

In this area, we cover the topics of charging and hydrogen refuelling. Together with our partners, we are able to offer turnkey solutions for the development of the necessary green charging/fuelling infrastructure for BEVs and FCEVs (own and in cooperation), both at customer depots and along motorways.

## QUANTRON CUSTOMER SOLUTIONS

We offer comprehensive consulting services for the operation of your climate-neutral fleet. This includes, for example, topics such as the appropriate charging infrastructure, rental, financing and leasing options, as well as an all-encompassing aftersales service network with 700 locations. In addition, there are telematics and in-cloud solutions for remote diagnosis and fleet management.



Have you heard  
about the new  
normal?

Zero Emission. Full Power. Better Future.





# QUANTRON CIZARIS 12 EV

QUANTRON's vision is a greener world. With zero-emission commercial vehicles, we are making our contribution to reducing CO2 emissions and thus to achieving global climate targets. We want to change the future in a sustainable way.

The QUANTRON CIZARIS offers a reliable and environmentally friendly solution for inner-city passenger transport. At QUANTRON, the decision for an electric bus is no longer a question of price, but primarily a decision for a sustainable and low-noise alternative.

As a high-tech spinoff of the family-owned company Haller GmbH & Co. KG, builds on over 140 years of commercial vehicle experience. The name "CIZARIS", a reference to the city goddess Ciza, shows the connection to the hometown of Augsburg, where it all began in 1882 with a horse-drawn carriage business. But "CIZARIS" also stands for the core values of the bus: the basic "CI" for the application area "City", the central "Z" for "Zero (emissions)" and the suffix "ARIS" derived from the Greek for "the noblest/the best".



## That's why QUANTRON CIZARIS:

- No CO<sub>2</sub> emissions
- Pleasantly quiet
- Balanced price-performance ratio
- Top range: 450 km  
(E-SORT 2: 370 km)
- High safety  
(a. o. through MirrorEye System)
- Proven and reliable technology
- Left- and right-hand drive versions available
- 8-year battery warranty\*
- More than a bus: all-round service through the QUANTRON Ecosystem



## Driving safety

Safety and reliability have top priority at QUANTRON. The CIZARIS therefore relies on vehicle technology that has already been proven thousands of times in continuous operation and on a high-quality standard for all installed elements. In combination with the robustly constructed chassis, the CIZARIS offers comprehensive protection for drivers and guests.

The integrated MirrorEye Camera Monitor System (CMS) provides an additional measure of safety for the vehicle occupants, but also for all other road users, in particular cyclists and pedestrians. This mirror replacement system uses external digital cameras in combination with usefully positioned monitors in the driver's cab to provide an enlarged field of vision and thus eliminates blind spots. As a result, even at night and in poor weather conditions, the driver retains an overview of his surroundings and the vehicle interior.

## Modern security systems for comprehensive protection:

- Proven technology of the drive and battery system
- MirrorEye Camera Monitor System (CMS)
- Latest electronic safety systems such as ABS/ASR, EBS 5.0, ECAS (electronic braking system) from European production
- Can be equipped with turn assist on request
- Fire detectors (temperature/gas sensors) and separate powder extinguishing cartridges in the rear compartment, in the battery modules and other high-voltage components





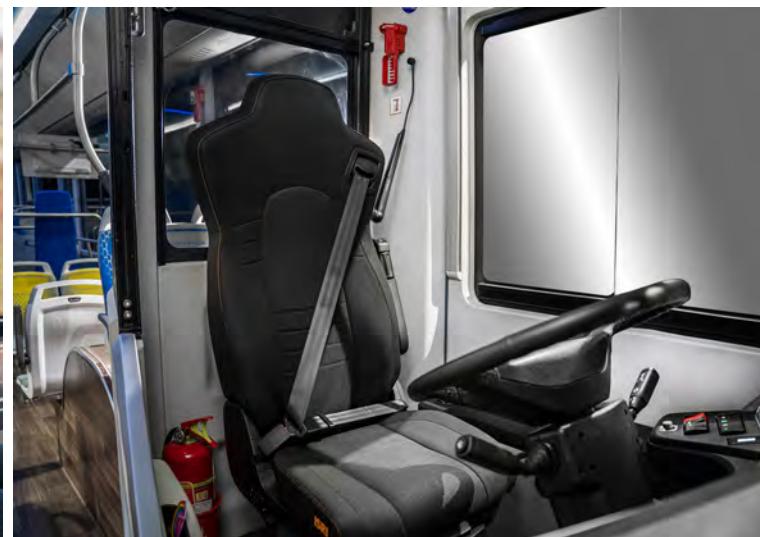
# Comfort guarantee for drivers and guests

## Best European quality

The QUANTRON CIZARIS not only impresses with its appealing design, but also offers maximum comfort for the driver and passengers. The high-quality standard equipment in the driver's compartment, including an ergonomic, air-suspended seat with heating and cooling as well as an adjustable steering column, ensures optimal well-being in the workplace. At the same time, the technical equipment with rear-view camera and the mirror replacement system (CMS) provides an all-round view of the interior and surroundings of the bus for safe driving by day and night.

## Our advantages in the driver's compartment

- Isri driver's seat 6860/875 NTS 2
- Air-suspended, versatile adjustable seat with heating and cooling
- Clear overview of all relevant information via a large, high-resolution display in the dashboard
- Fully digital instrument cluster
- Adjustable steering column
- Low noise power steering pump in rear
- Rear view camera in color display
- Passenger compartment and surroundings optimally in view via CMS
- DTCO 4.0 intelligent tachograph (VDO)
- Data recording (optional)



## Interior design

With its friendly and bright design, the passenger compartment provides a great sense of space. Indirect side lighting and additional transversely mounted LED lights with changeable colors create a pleasant atmosphere that can be adapted to day and night travel. A special design feature is the elaborately perforated aluminum ceiling. On request, the equipment can be additionally individualized with flexibly positionable stop request buttons and seat cover that can be variably designed with digital textile printing. Wide aisles allow free access to all seats with plenty of legroom. The CIZARIS thus offers a comfortable ride, especially for people with limited mobility. Particularly practical are the hop-on/hop-off seats in the rear of the vehicle, which offer short-haul drivers quick and easy access to seats.

Modernity also comes into play when it comes to USB chargers: Available are sidewall-mounted USB-A plugs and USB-C plugs (optional) under the comfortable seats.

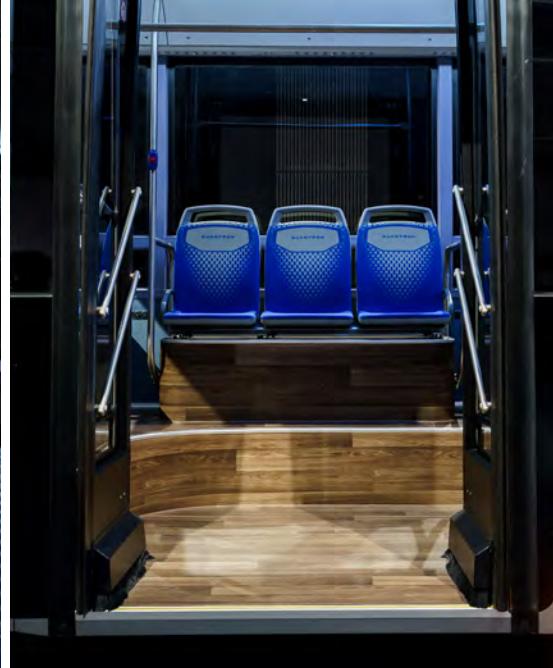


## Our advantages in the passenger compartment:

- Quiet and clean ride thanks to 100 % electric drive
- Appealing interior design thanks to friendly and bright colors
- Color accents for easy orientation
- Individually printable fabric design of the seats  
(produced for the first time in this segment using textile digital printing)
- Plenty of legroom and space for luggage and optional installation of a luggage rack, for example for use at airports
- Depending on the battery package, space for up to 95 passengers
- Aluminum insulated floor with anti-slip coating
- Stainless steel grab rail system
- Aluminum/plastic roof and wide side paneling
- Flexibly positionable stop request buttons with acoustic and visual feedback
- USB ports for passengers on and under seats (USB-A and/or USB-C)
- Hop-on/hop-off seating in the rear area
- Efficient air conditioning and heating
- LED interior lighting for day and night







## Accessibility

The QUANTRON CIZARIS enables sustainable mobility in the city - for everyone. That's why uncomplicated barrier-free entry and exit is part of the vehicle's basic equipment. The front area of the vehicle and the aisle are easily accessible, even with walking aids such as rollators, thanks to their comfortable width. The rear area can be accessed barrier-free by wheelchair users or people with strollers with the aid of a ramp. For easy orientation reference points are highlighted in color in the interior and there are also haptic aids such as Braille on the stop request buttons.

- Convenient access for passengers with restricted mobility (up to three doors, each 1,200 mm wide)
- Wide passages between the axles or to the optional third door at the rear
- Ramp in the rear with 350 kg load capacity
- Can be optionally equipped with electric ramp
- Large and clearly laid out low-floor area, including large wheelchair space
- Customizable color accents for easy orientation
- Stop request buttons with Braille



## Climate system:

The right climate on board is provided by a highly efficient heat pump/air conditioning unit with a cooling capacity of 33 kW, and the driver also has a front box. Through the advanced principle of “Positive Temperature Coefficient Heating (PTC)”, the total heating capacity can be increased to a total of 50 kW.

Roof mounted HVAC unit  
(Heating, Ventilation and Airconditioning)

Passenger area:

Including heat pump functionality

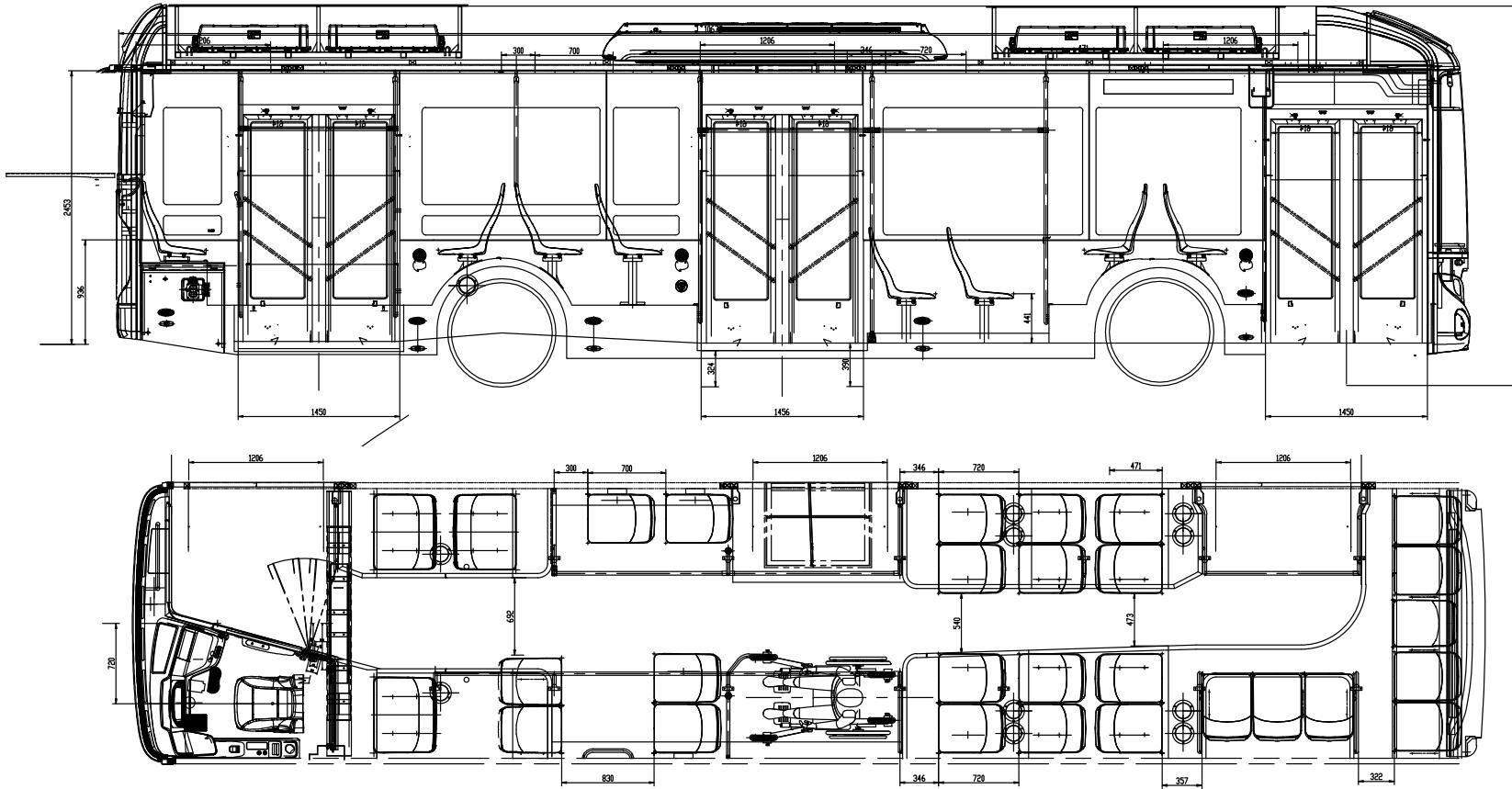
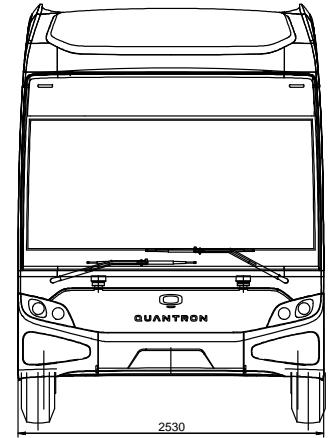
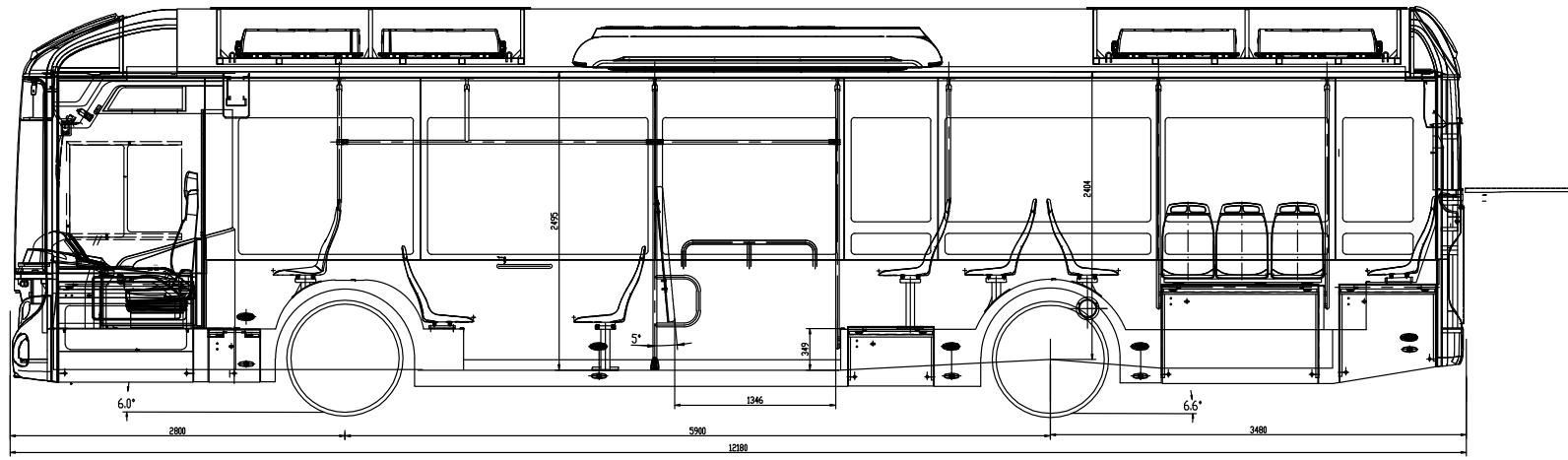
- Capacity cooling 33 kW
- Capacity heatpump 20 kW
- Capacity PTC heating 50 kW (additional heating)

Driver's area:

Defroster with airconditioning and electric heating function

- Capacity cooling 4 kW
- Capacity heating 6 kW





# Dimensions

Overall length	12180 mm
Overall width	2550 mm
Overall height	3450 mm
Wheel base	5900 mm
Overhang (front/rear)	2800/3480 mm
Turning radius (outer front corner)	11461 mm
Turning radius (outer front wheel)	9429 mm
Angle of approach & departure	7°
Permissible total weight	19000 kg
Passenger seat capacity	25-36
Passenger capacity	81 - 95





# Features

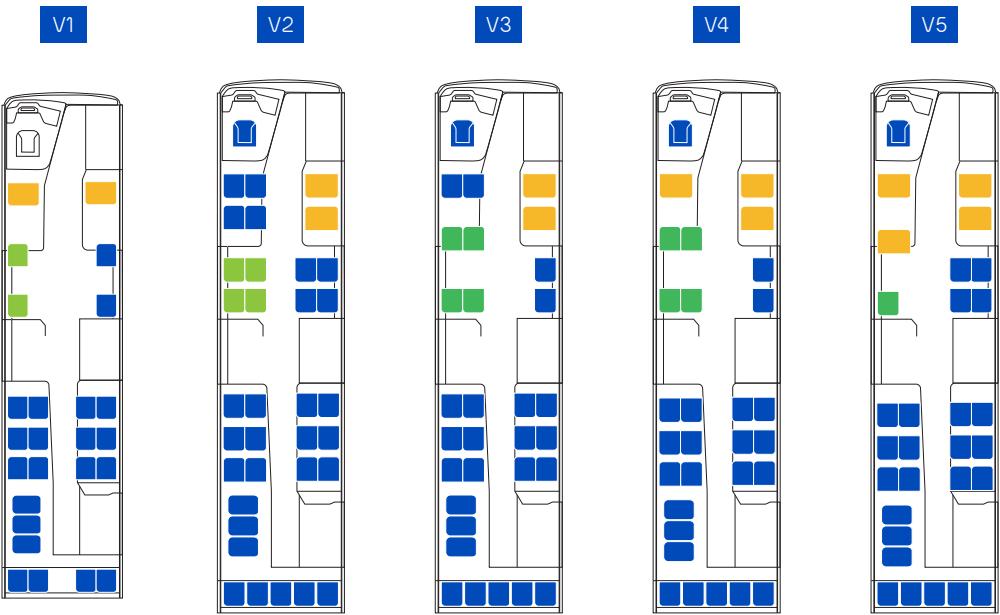
The all-electric low-floor city bus is currently available with BEV (battery-electric) drive as a 2 or 3-door model and as a left- or right-hand drive.

9 passenger seats configurations:

- 5 configurations for the 3 doors version
- 4 configurations for the 2 doors version

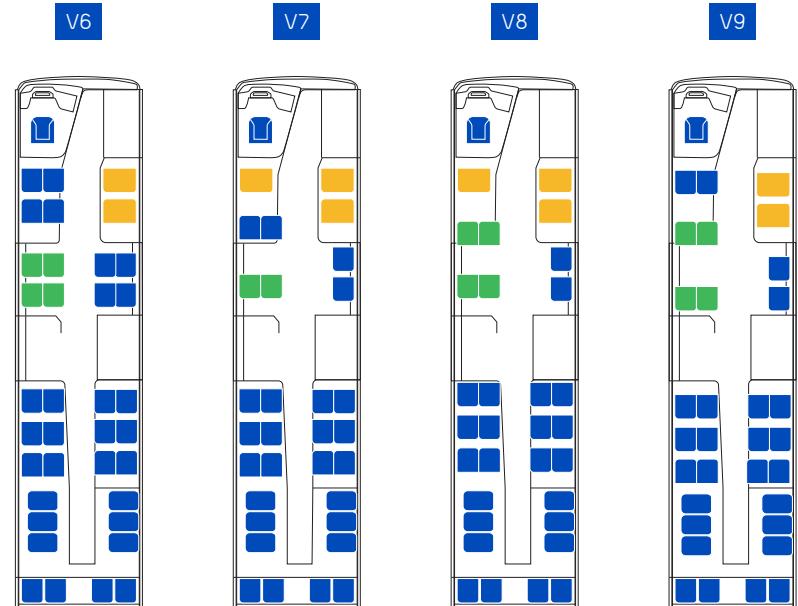
Amount of capacity of total passengers depends on:

- Configurations of the seat plan
- Size of the battery (weight)
- Single glass or double glazed windows
- 2 or 3 doors version
- Further options



3 Doors	Seats	Standee's + wheel chair	Standee's no wheel chair	Total passengers	Standing surface
V1	25	60	70	95	8.8862 m <sup>2</sup>
V2	34	47	57	91	7.1411 m <sup>2</sup>
V3	30	53	63	93	7.9534 m <sup>2</sup>
V4	29	56	66	95	8.0732 m <sup>2</sup>
V5	29	54	64	93	8.0732 m <sup>2</sup>

2 Doors	Seats	Standee's + wheel chair	Standee's no wheel chair	Total passengers	Standing surface
V6	36	44	53	89	6.777 m <sup>2</sup>
V7	32	50	60	92	7.5893 m <sup>2</sup>
V8	31	52	62	93	7.7294 m <sup>2</sup>
V9	31	52	62	93	7.7091 m <sup>2</sup>



■ Seats for passengers with disabilities

■ Mother/Child seats



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CIZARIS

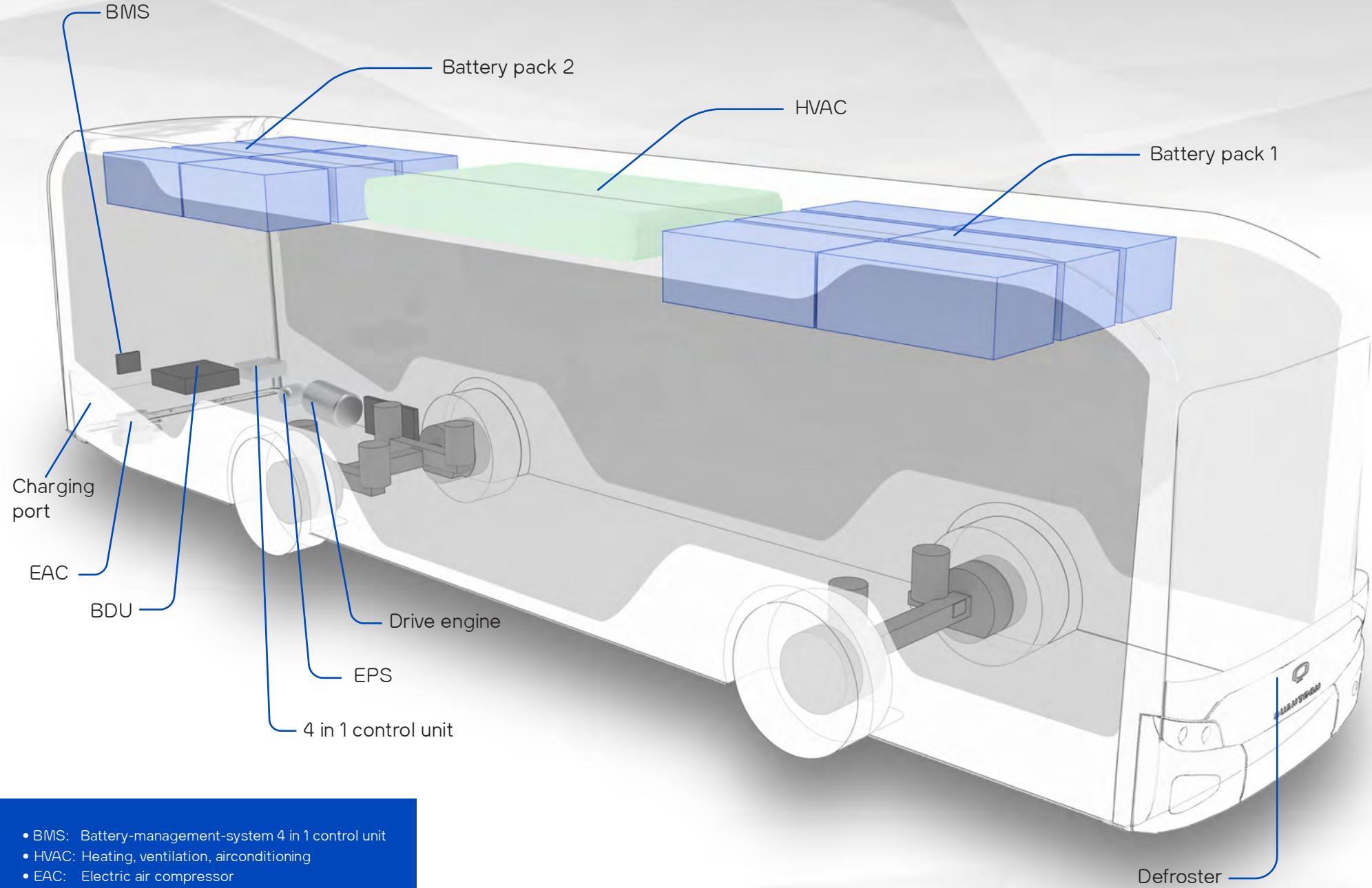
# Electric drive line specifications

## Battery-electric version (BEV)

Max. motor power	245 kW
Max. motor torque	3329 Nm
Range	450 km*
Battery capacity	242/281/363/422 kWh
Charging time	2-5 hours
Maximum charging power	150 kW
Max. speed	80 km/h
Gradeability	20 %

\* E-SORT 2 : 370 km



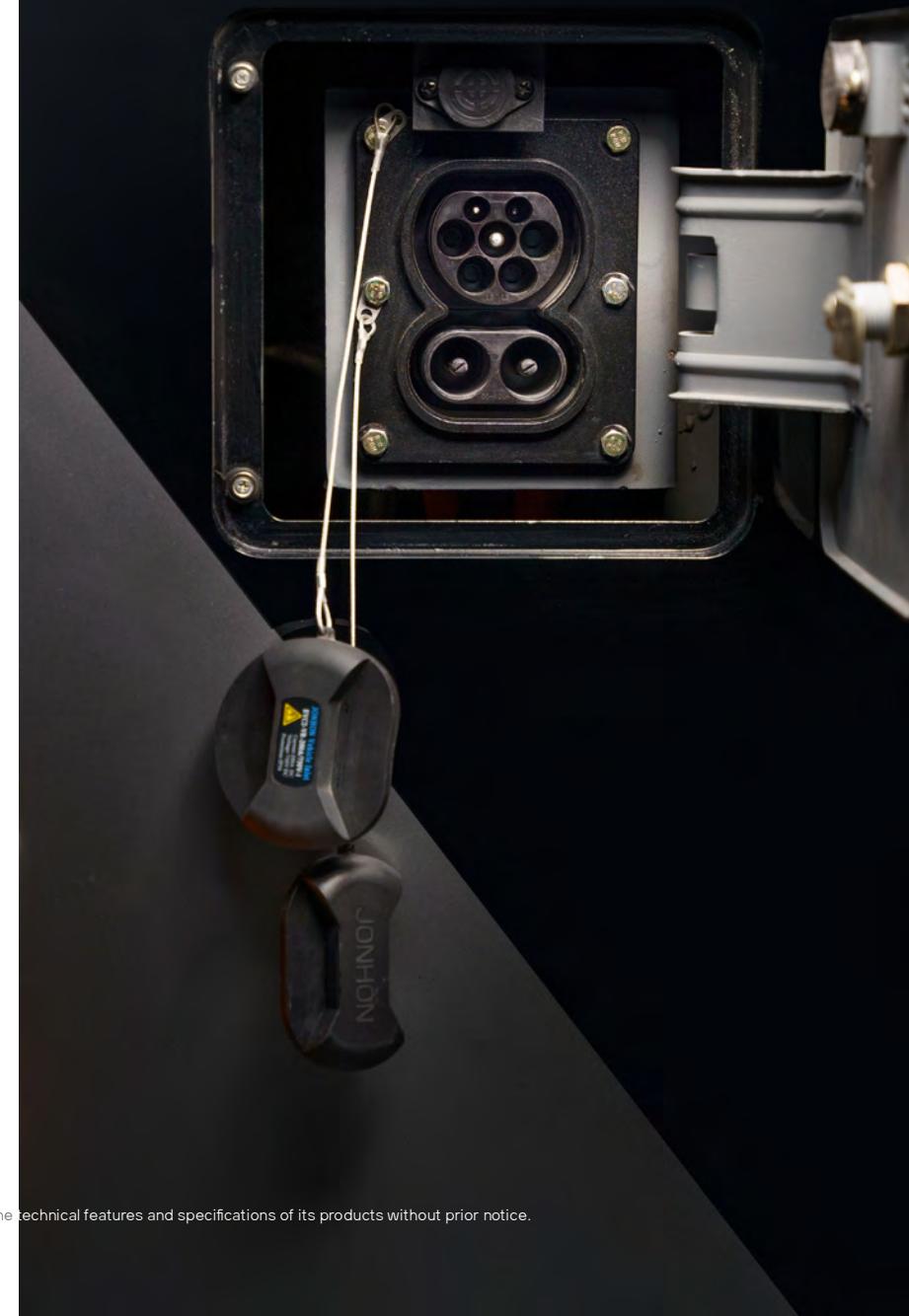


# Information on high-voltage technology

## Battery-electric version (BEV)

Traction motor & controller	Dana TM 4	Liquid cooled, permanent magnetic, 6 phase motor
Battery pack & Battery management system	CATL	LiFePO4 Lithium Iron Phosphate battery with water cooling and PTC heating
Air compressor	SORL	Electric driven piston air compressor 5 kW
Power steering	Bosch/ZF	Electric-hydraulic pump 3 kW
Transmission	None	Direct drive
High control system	HCH	4 in 1 intelligent control system
Charging port	CCS TYPE II DC charging up to 150 kW	

The undoubtedly most important technology component of an electric bus is the battery and drive technology. Here, QUANTRON relies on the combination of robust and reliable lithium-iron phosphate batteries and the highly efficient synchronous central motor from Dana/TM4. This combination is the optimal duo to convert on-board energy into propulsion as safely and efficient as possible. The battery capacity can be chosen from 242 kWh to 424 kWh. The roof-mounted battery packs (maximum six at the front and six at the rear, depending on customer requirements) from CATL with a maximum of 150 kW direct current (DC) allow fast-charging in two to five hours. The matching CCS combo plug is installed on the right or left in the rear according to the customer's wishes.





## Top quality from leading suppliers

QUANTRON cooperates with renowned international partners in order to ensure high quality equipment and safe technology in all its vehicles.

The brand-typical design features as well as the customer-specific adaptations for the highly regulated municipal traffic are carried out in first-class european workshops such as the QUANTRON plant in Augsburg. This ensures European quality standard down to the smallest detail.

## Chassis

Front axle	DANA GK Kenway BFA 80I	Load capacity 7500 (8000) kg Load capacity 8000 kg (optional)
Rear axle	DANA GK	Load capacity 13000 kg
Brake system	WABCO ABS/EBS	Hill aid/doorbrake function
Retarder	Dana TM 4	Regenerative braking
Air suspension	Wabco ECAS	With kneeling function
Wheels & rims	Michelin	Tire size 275/70 R22.5 with aluminium rims

## Our partners:

- Ballard Power Systems Inc.
- Dana Incorporated
- Michelin
- Grammer AG
- CATL
- Knorr Bremse
- Franz Kiel GmbH
- Isringhausen GmbH & Co. KG
- Wabco
- Valeo





## The QUANTRON design - interior & exterior

The CIZARIS features a modern vehicle design with an appealing welcome character. The eye-catching features are the deliberately placed color components in "Absolute Zero Blue". The front of the vehicle with its windshield pulled far down and the clearly rounded roof edges take away the vehicle's bulkiness and, in conjunction with the refined side graphics, convey a distinctly three-dimensional impression. The low-floor character of the bus is highlighted by the black contrasting center section, while the roof edge trim at the front and rear puts the emphasis on the battery technology, which is hidden there on the roof outside any crash zones. The rear also has a visually striking effect with its large taillights, some of which are made of frosted glass or have a light-barrel design.

The QUANTRON logo can be found in many details of the vehicle - a symbol for the three brand values "Reliable, Energetic, Brave". The values are also embodied in the striking three-part intermittent "running light indicators" in the front, which are similarly installed in other QUANTRON models.





## Our way to a better future

### QUANTRON Infrastructure

Regardless whether it is a charging station or wallbox, a conventional charging unit or fast charger, we support you with the necessary infrastructure according to your requirements. For easy handling, modern payment systems are integrated into our Q-Charging models.

### New, stock or used

We focus on your requirements: Quantron AG supplies zero-emission new vehicles, electrifies your existing vehicles or converts used vehicles to environmentally-friendly electric drive versions for you.

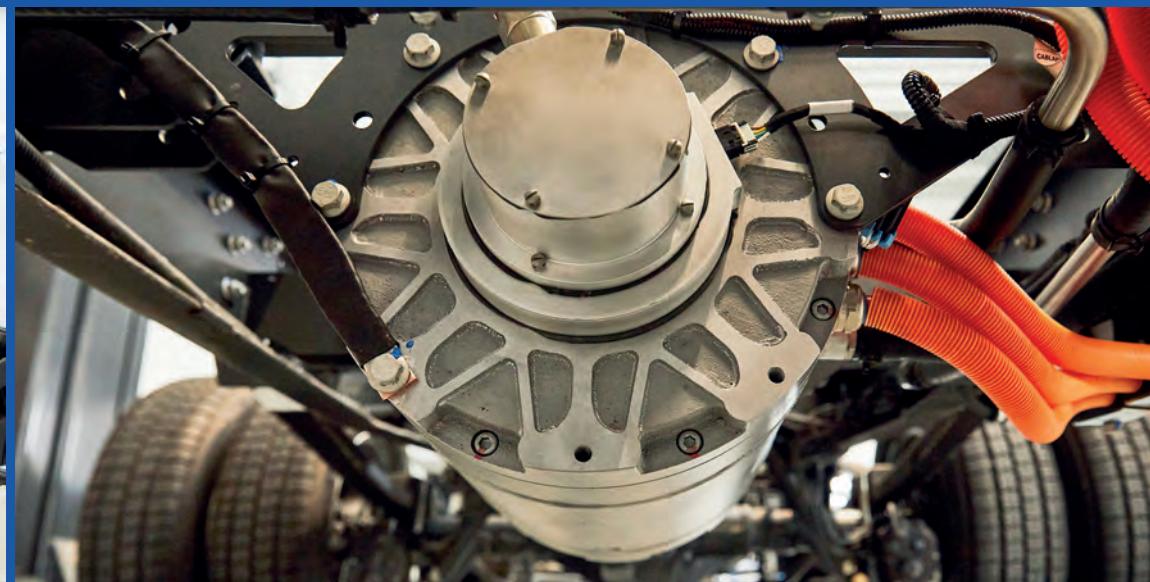
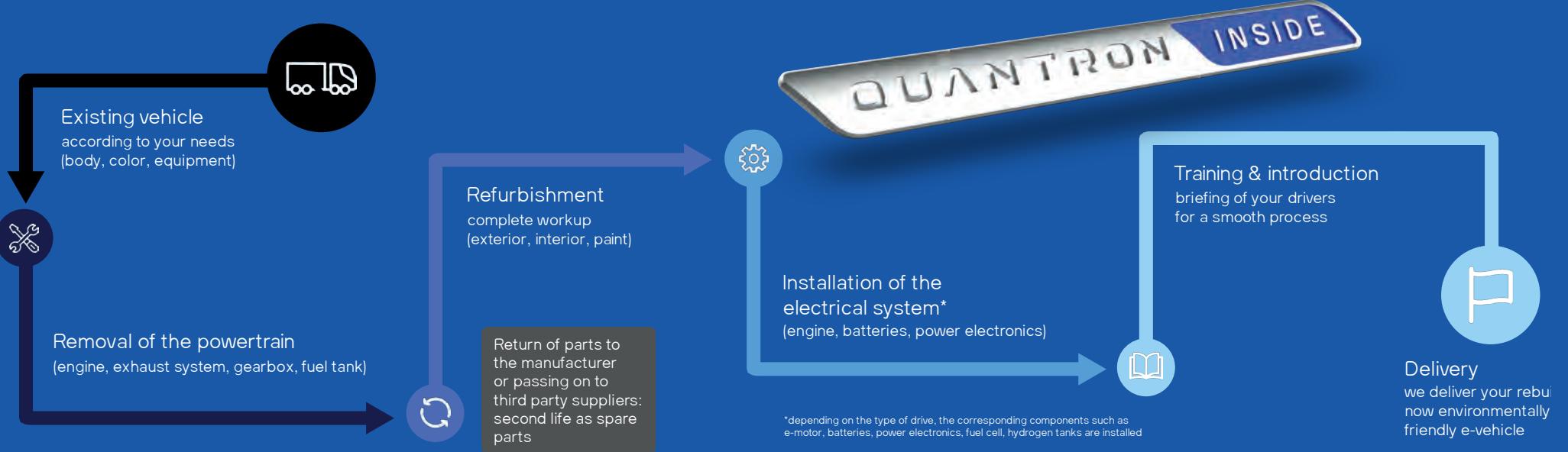
### Think Green – Second Life Vehicle

We give used commercial vehicles and buses a second, environmentally-friendly life - great potential for climate protection and resource management.

### Second Life Battery

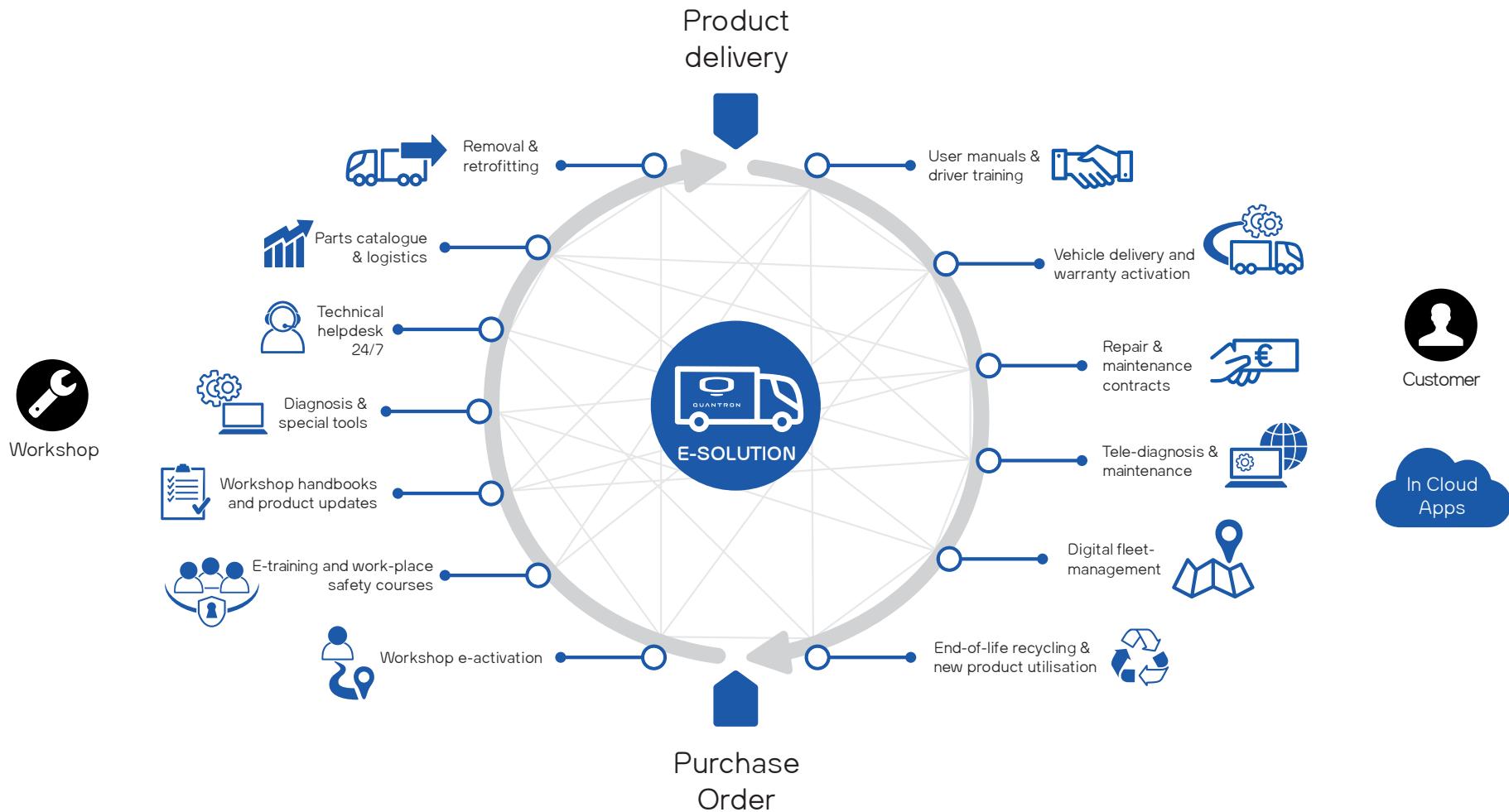
After 6-8 years, the used batteries enter their second life in the stationary area (e.g. in connection with photovoltaics as energy storage devices, for charging e-vehicles and absorbing peak currents).

# The QUANTRON sustainability concept – Q-Retrofit



# The QUANTRON CUSTOMER SOLUTIONS

## Aftersales service circle



Combining product, organizational, digital and commercial know-how, QUANTRON-Aftersales offers a full package of e-mobility services to both, workshops and customers.



Ein-/Verkauf  
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/ Vermietung  
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QUANTRON  
Fahrzeuge für  
die Zukunft

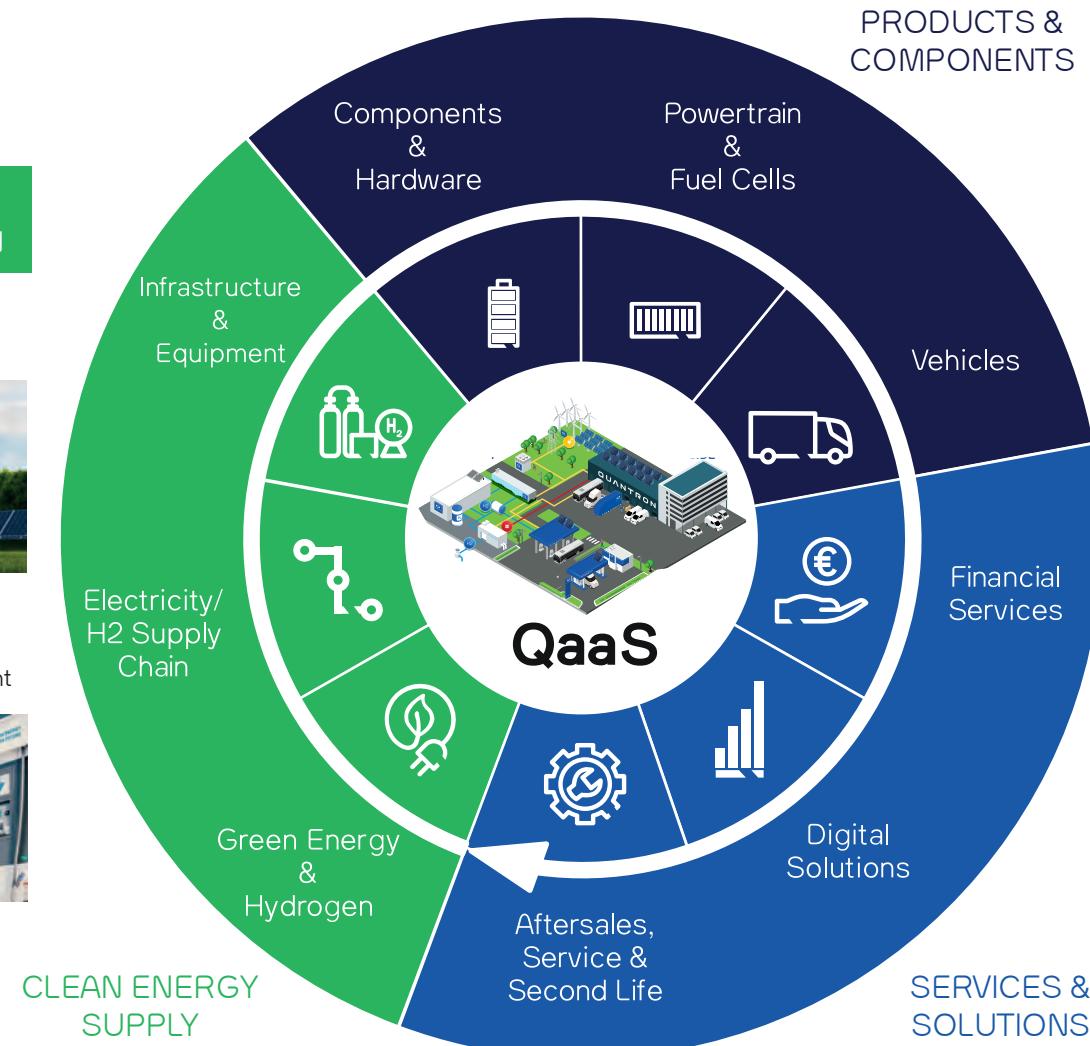
# QUANTRON orchestrates an untapped 360° ecosystem

## QUANTRON ENERGY & POWER STATION

Sourcing and distribution of green energy and hydrogen



H<sub>2</sub> refilling & electricity charging infrastructure network and equipment



## QUANTRON INSIDE

Fuel cell and battery electric commercial vehicles and components

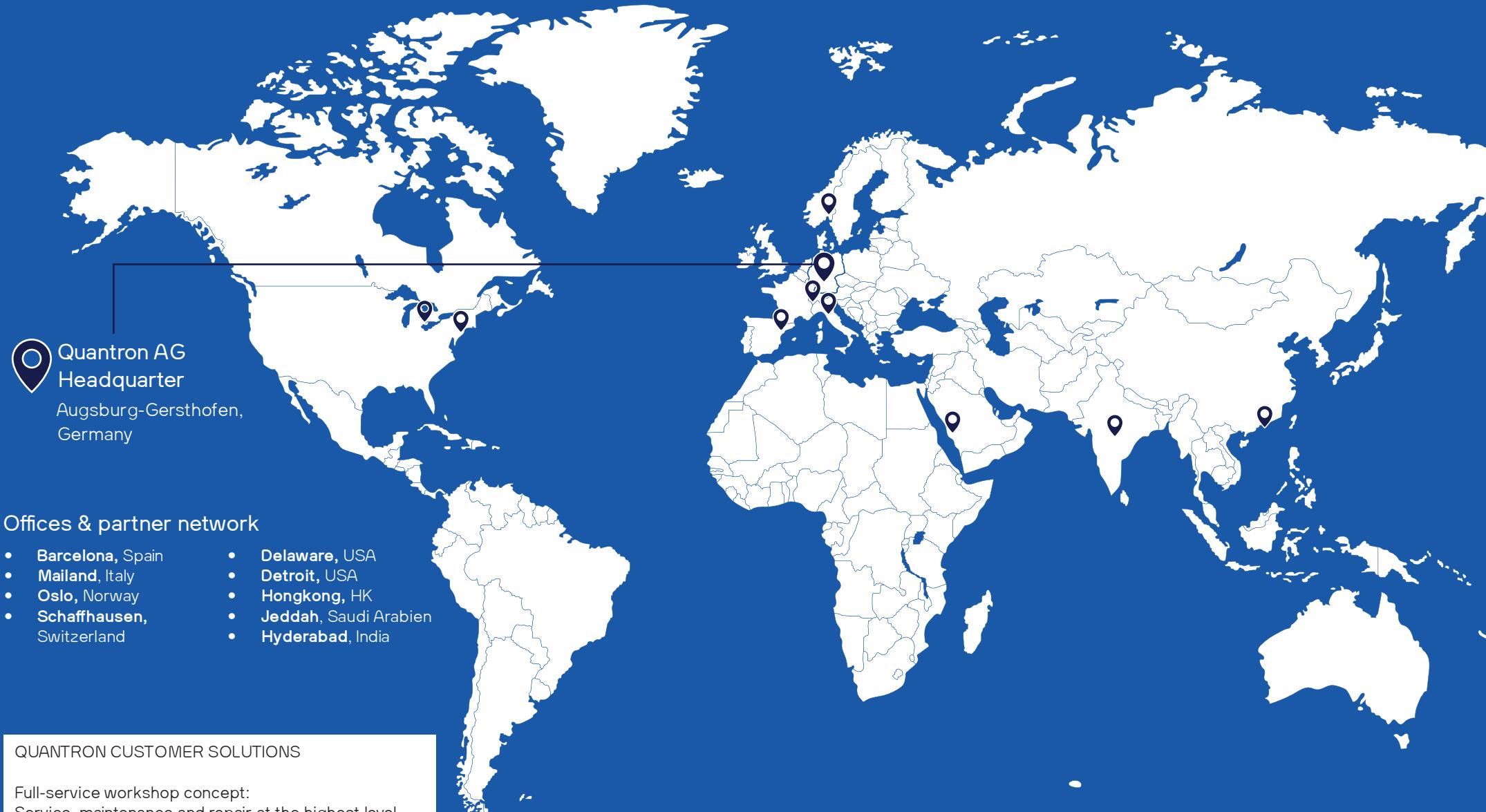


## QUANTRON CUSTOMER SOLUTIONS

Physical and digital solutions for sales, aftersales, financing and 2<sup>nd</sup> life



Global availability with a strong network of QUANTRON offices and 700 service partners





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and specifications of its products without prior notice.