North America E-Mobility

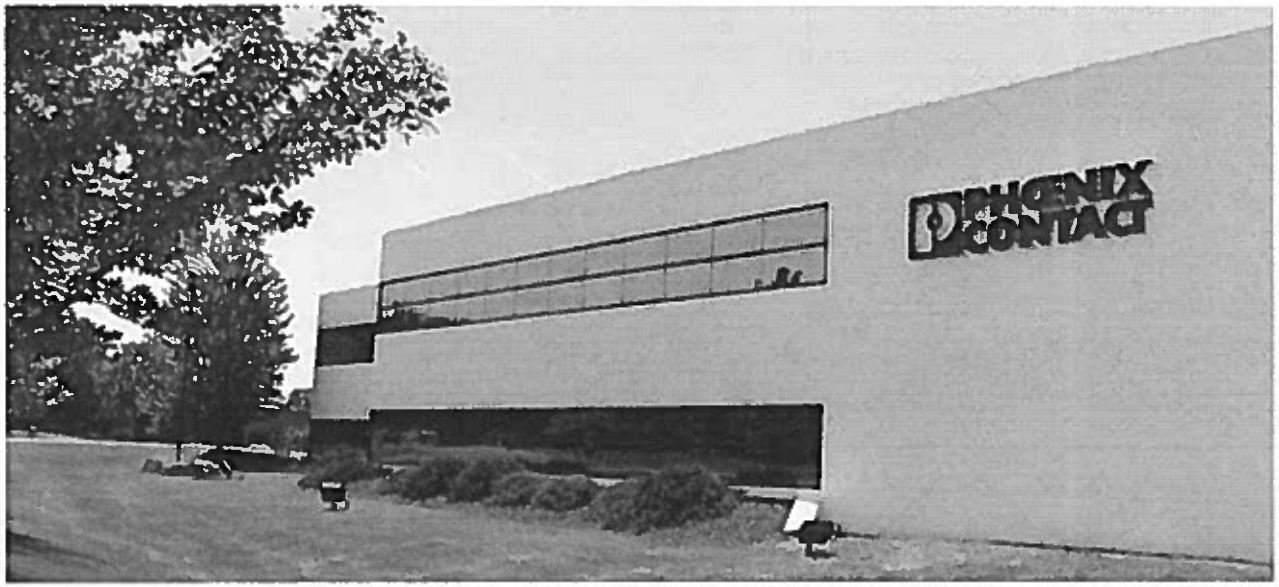
Phoenix Contact E-Mobility

Pioneers of fast charging technology & vehicle Inlets

- Phoenix Contact E-Mobility is the competence center for electromobility within the Phoenix Contact Group
- Reliable partner to the automotive industry
- Further development and worldwide standardization of a modern charging infrastructure suitable for everyday use
- Development of trend-setting technologies such as High Power Charging

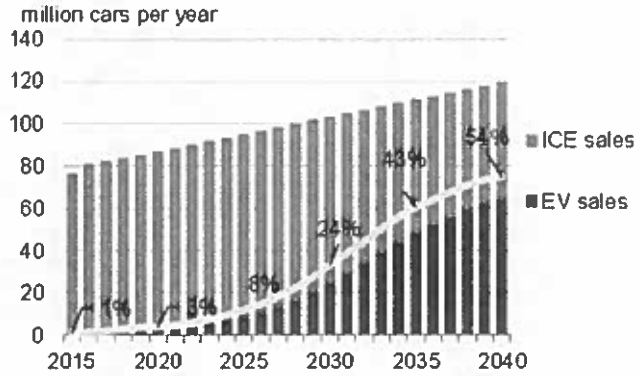
Phoenix Contact Michigan

- E-Mobility North America HQ
- 37 employees Ann Arbor
- 10 employees in home offices around the state
- Software development
- Automotive support
- Vertical Market Management Automotive



Future of EV's .....

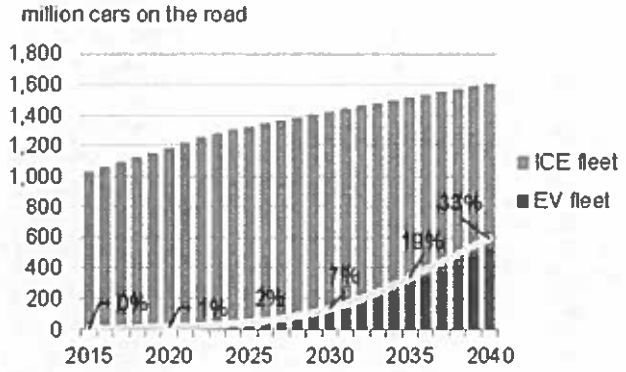
- **By 2040, 54% of new car sales and 33% of the global car fleet will be electric.** Falling battery prices will bring price-competitive electric vehicles to all major light-duty vehicle segments before 2030, ushering in a period of strong growth for electric powertrain vehicles (Figure 1 and Figure 2). While EV sales to 2025 will remain relatively low, we expect an inflection point in adoption between 2025 and 2030, as EVs become economical on an unsubsidized total cost of ownership basis across mass-market vehicle classes



Source: Bloomberg New Energy Finance

Figure 1: Annual global light duty vehicle sales

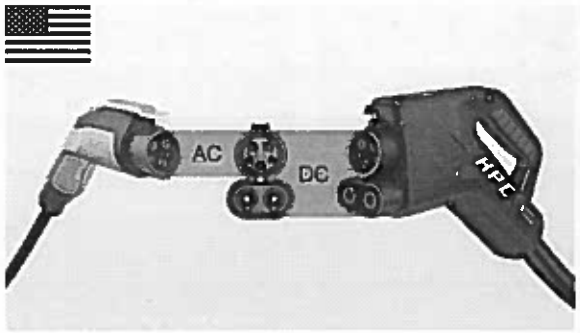
Figure 2: Global light duty vehicle fleet



Source: Bloomberg New Energy Finance

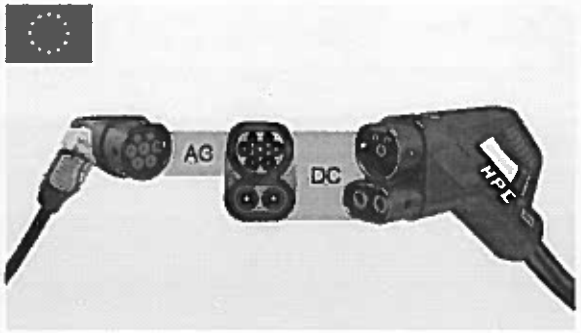
Overview of worldwide charging standards

Charging standards and their mating faces in detail



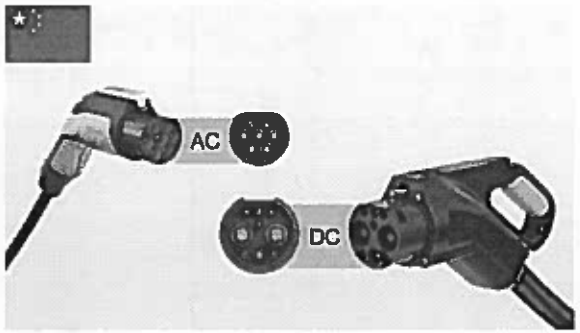
CCS Type 1

- Usage: North America and South Korea
- Standards: SAE J1772 and IEC 62196-3
- AC and DC charging connectors fit into the same CCS inlet



CCS Type 2

- Usage: Europe, Greenland, South America, South Africa, Saudi Arabia and Australia
- Standard: IEC 62196-3
- AC and DC charging connectors fit into the same CCS inlet



GB/T

- Usage: China
- Standard: GB/T 20234
- Separate AC and DC inlets are required in the vehicle

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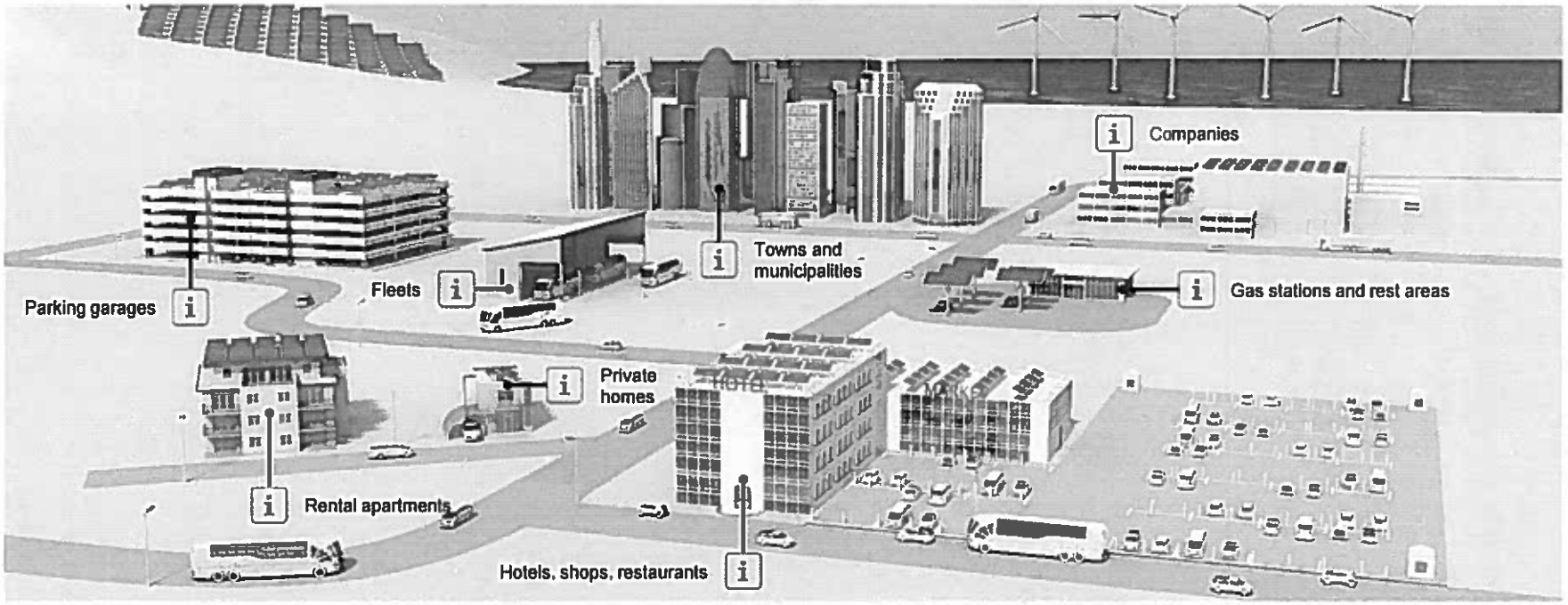
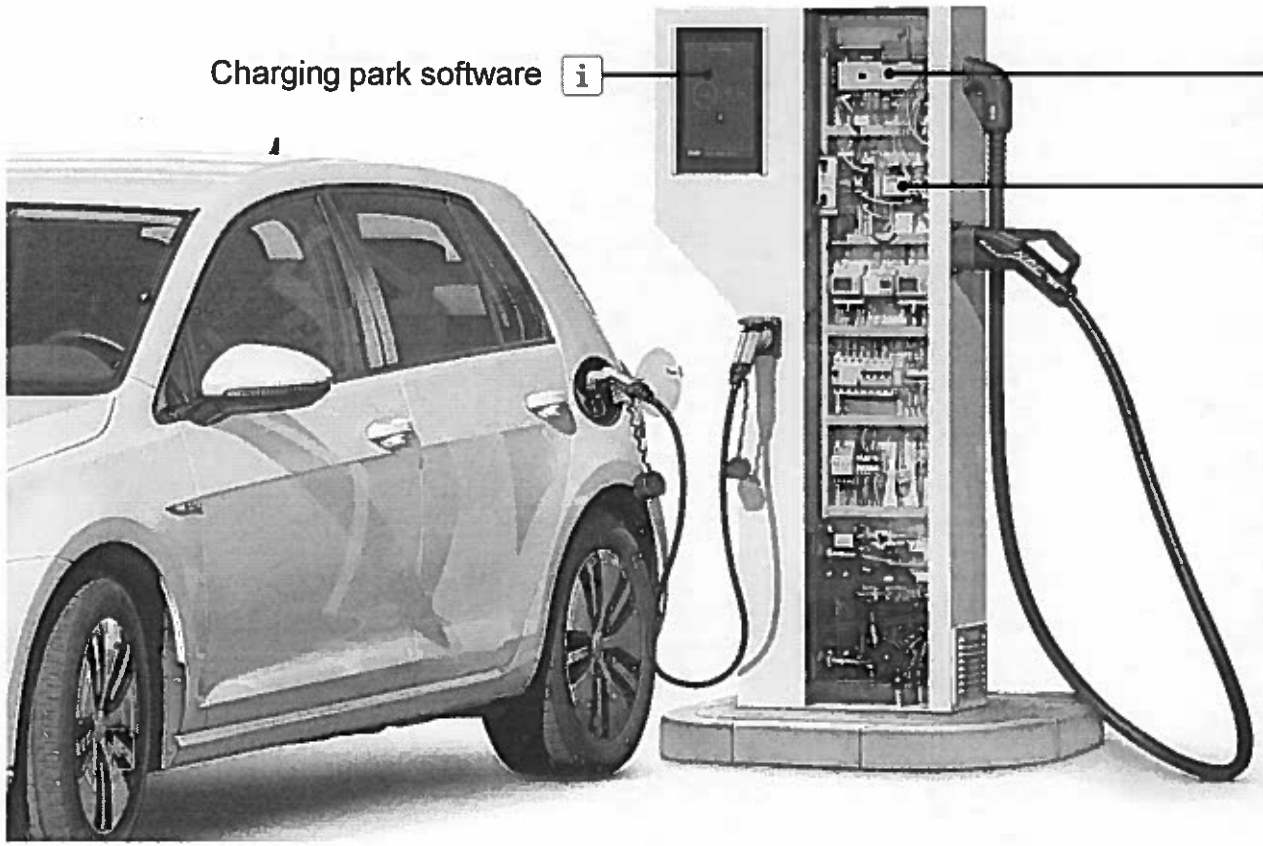
The right products for every application



Software and controls for an intelligent charging infrastructure



More products:

- Charging technology sets
- Differential current monitoring

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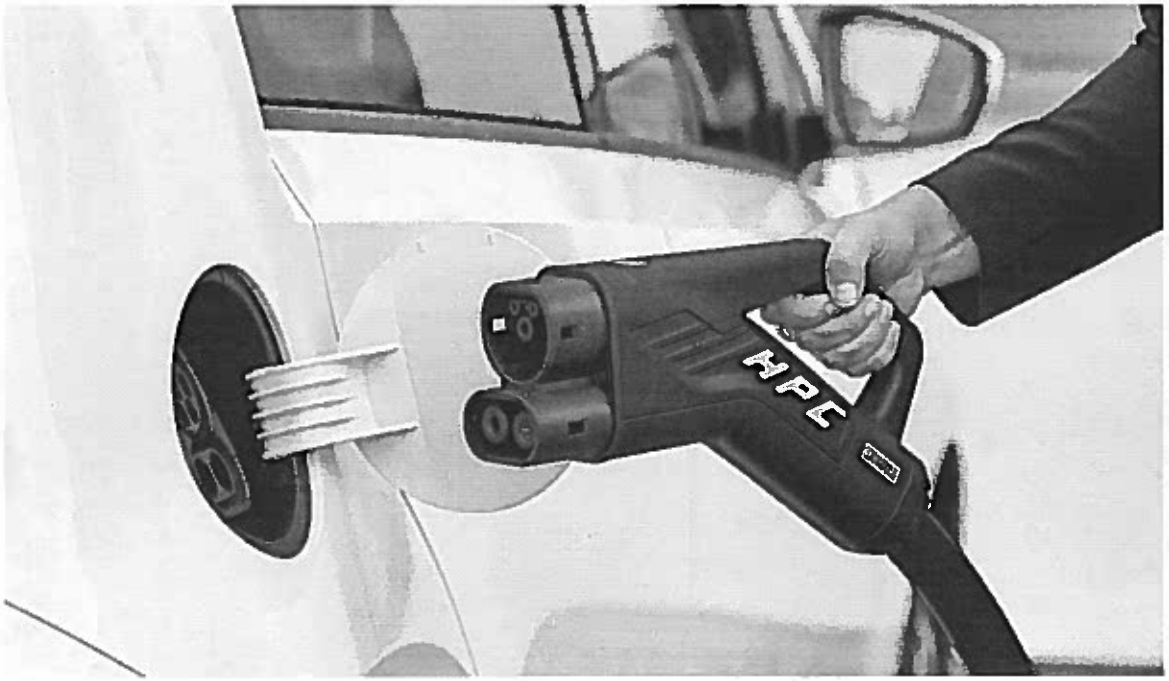
Reliable connection systems for vehicles and charging points

High Power Charging – fast charging in a new dimension



- **Extremely fast**
  100 km range in 3-5 min thanks to 500 kW charging power
- **Extremely safe**
  Permanent temperature and leakage monitoring
- **Maintenance-friendly**
  Interchangeable mating face and semi-open cooling system
- **Environmentally friendly**
  Water-glycol mixture as coolant
- **Fully CCS compatible**

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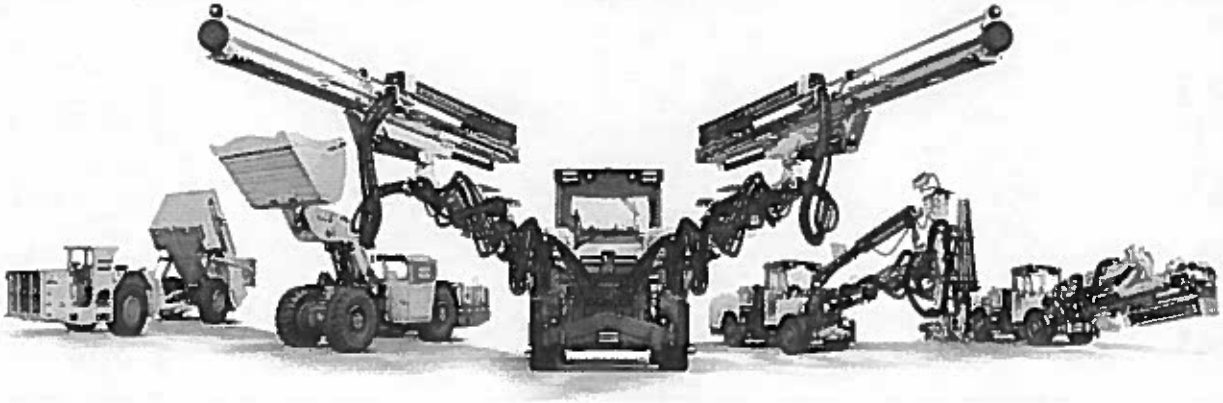
Committees / Fairs

- NAIAS / Automobil-D
- Electric & Hybrid Battery Show

- MichAuto
  - Mobility Committee
  - Awareness Committee
- Clean Fuels Michigan
- CharIN
  - Committee
- Michigan EBIC
- SAE – J1772 & Electric & Hybrid

Potential focus customers



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Potential focus customers

Ford

Mercedes-Benz

JAGUAR

LAND ROVER

Audi

VOLVO

PORSCHE

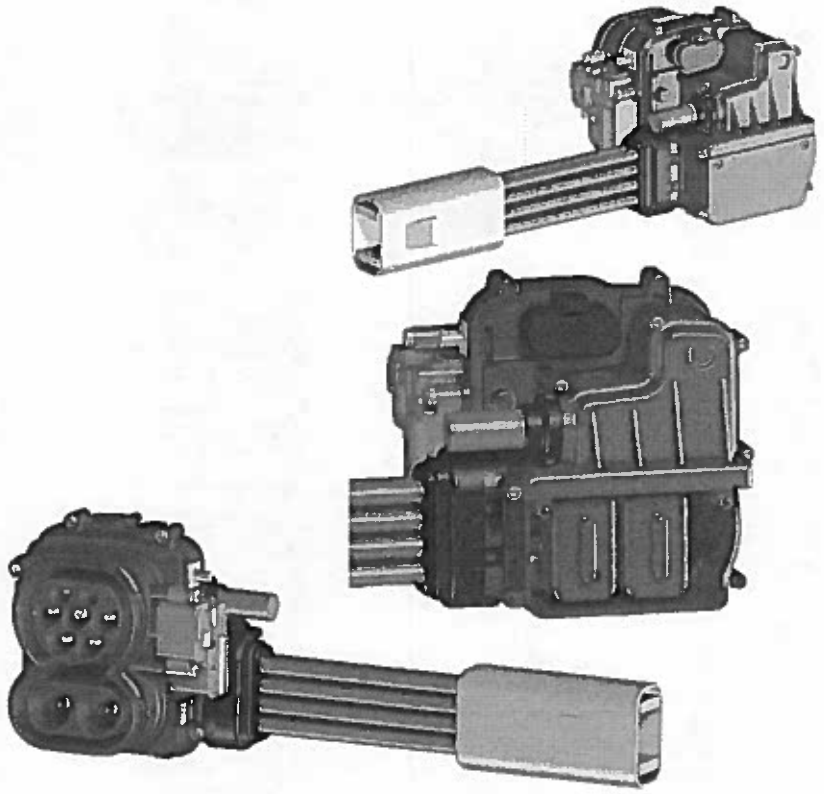
SKODA AUTO

PSA

BMW

NISSAN

TOYOTA



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Potential focus customers

US Market

OEM

Ford

GM

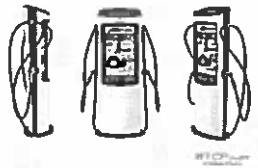
LUCID

TESLA

may mobility

RIVIAN

Infrastructure



chargepoint

EVgo

CLIPPERCREEK
RELIABLE. POWERFUL. MADE IN AMERICA.

AV aerovironment

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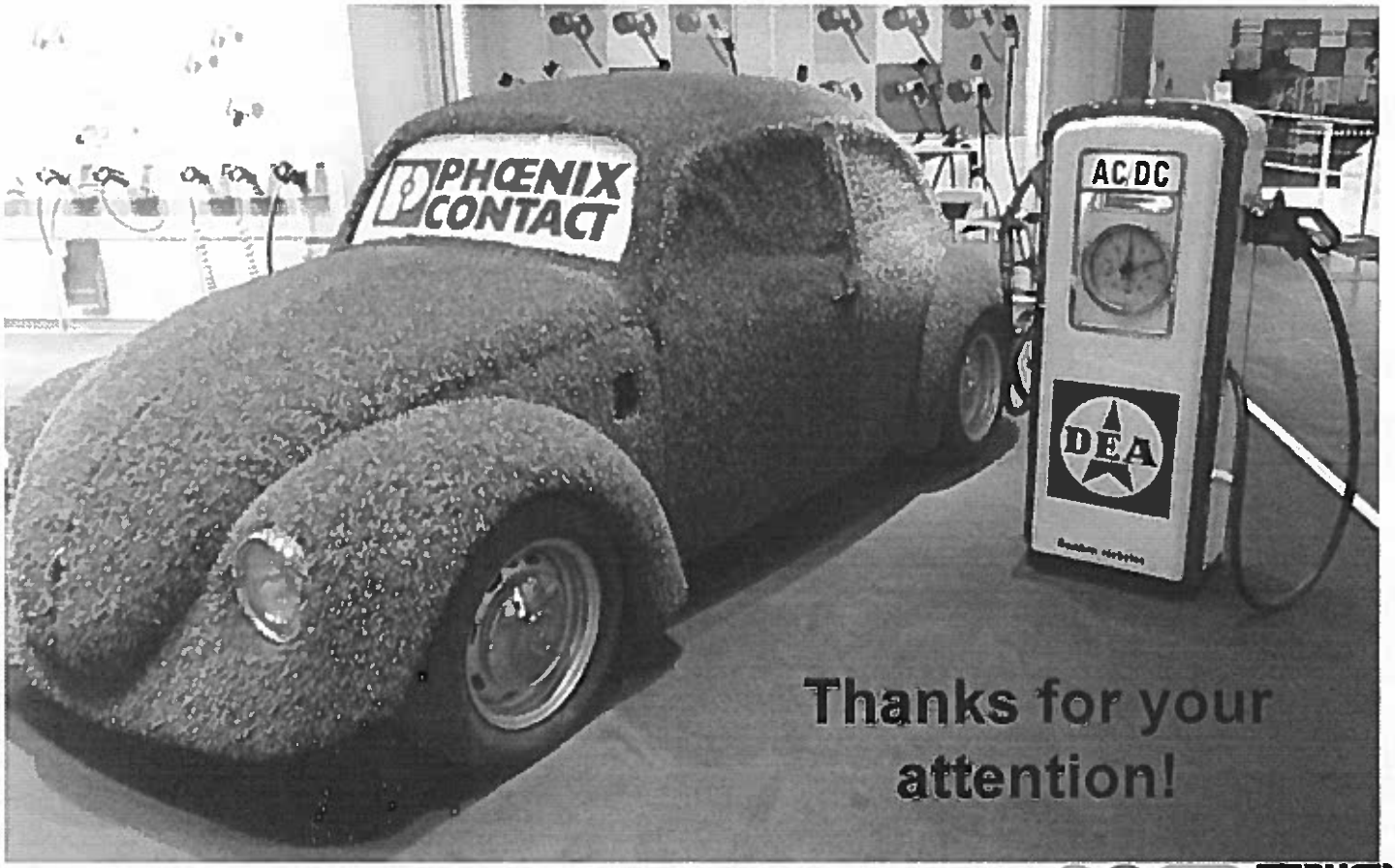
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AC/DC
DEA
Thanks for your attention!