

ENGINE HEATING AND POWER SUPPLY

Calix is one of the world's leading companies in electric thermal management and intelligent power handling for automobiles. Since more than 50 years Calix has been a development partner with producers of cars, trucks, buses and off-road vehicles.

Thermal Management

Calix provides innovative electric heating solutions of power-trains, compartments, cabs and batteries for all types of vehicle applications.

Intelligent Power Handling

Calix offers solutions for on board charging of 12, 24 and 48 V batteries and power conversion between 12, 24 and 48 Vdc.

Calix cable system

Calix plug & play cable and connector system is the interface between the different components such as engine and compartment heaters, battery chargers, converters and inverters. This flexible power distribution system is approved for permanent installation in all types of vehicles, even for military and emergency applications.

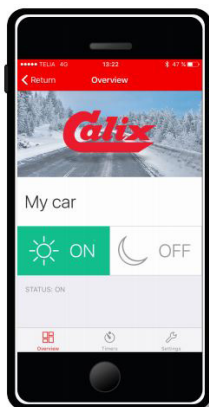
Traditional or app-based smartphone timers can be added to manage automatic operation of the devices.



Development, design and production are co-located in the same facilities in Eskilstuna, Sweden, ensuring efficient process and quality control and short lead times. The R&D laboratory is equipped with a climate chamber, operating between -40° C and +60° C, third-party certified by Intertek. The chamber is designed to enable R&D work on cars, light-duty trucks and cabs for heavy-duty trucks.



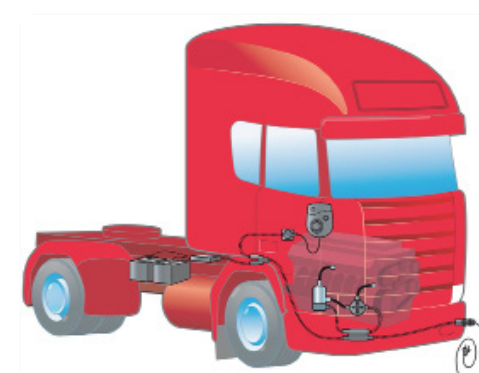
Connecting cable connected to the installed Calix system



App-solution



Calix Dual cables are approved for both EU and North America



System overview- truck

Calix battery chargers

The electrical systems in all vehicles consumes electrical power drawn from the battery even in vehicle off-state. A fixed on-board charger mitigates this drain and assures a proper state-of-charge of the main battery at all conditions. A permanently installed battery charger from Calix is very convenient for the user – just plug it into a wall socket – and guarantees start of the engine. The broad and full range of Calix battery chargers and cable systems meet all legal and quality requirements.

Calix DC/DC converters

DC/DC converters are frequently used to convert and stabilize the input voltage for the attached devices. The Calix converters are highly efficient with minimum heat generation.



Battery Charger, BC 1205



DC/DC converter

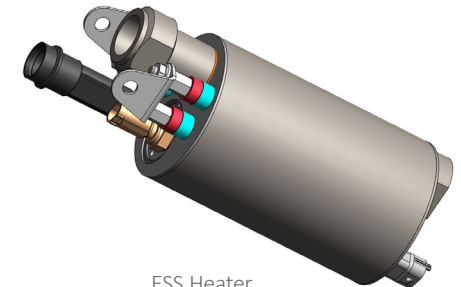
Calix heaters

Pre-heating of the engine and the compartment results in a reliable start of the engine and an increased comfort for the driver and passengers. In addition the engine reaches its optimum temperature much faster which significantly reduces engine wear, fuel consumption/CO2 and hazardous emissions such as nitrogen oxides (NOX) and particles.

Calix offers solutions, individually designed, for almost all gasoline and diesel vehicles on the market.

The efficiency of a Li-ion battery in e.g. a hybrid is substantially reduced in cold temperatures, which can be improved by installing Calix pre-heating systems. The range of the vehicle in fully electric mode can be dramatically increased with a proper pre-conditioning of the battery. In pure electric vehicles there is also a need to pre-heat e.g. the passenger compartment. Calix has in close cooperation with leading OEMs developed different types of pre-heating solutions and some are already in serial production.

Example of different models of engine heaters



ESS Heater