



Product catalogue 2024



THE
CATALOGUE
COVERS
PRODUCTS FOR:



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How to find your way

In this product catalogue you will find our full range of products in these main categories; preheating, charging, power supply, security and e-mobility. Each product page includes the product name, item number, product photo, and technical specifications.

For more information, guides and manuals - visit defa.com

OTHER RESOURCES

www.defa.com is a very useful source of information about DEFA and our products. Here you will find all necessary information and documentation, such as user manuals and installation guides. You can also find the correct engine heater for your car. For more information regarding this matching tool, check page 13. We do our best to keep defa.com updated at all times. Check back if you have questions or if you are curious about our new products.

At defa.com you can also log in to the following portals:

- [Link installation portal](#)
- [Security installation portal](#)
- [Tracking portal](#)

All logins must be approved by DEFA.

SUPPORT

If you want information, help or guidance regarding any of our products, please contact our support service telephone or Phone: +47 32 06 77 00 or our local distributor.

ORDERS

You can place orders by phone or by mail:

Mail: orders@defa.com

Phone: +47 32 06 77 00

MARKETING

We want to make it as easy as possible for you to sell and install our products. We update defa.com regularly, we provide marketing materials and product catalogues, and we make further sales materials available to dealers and distributors, so they are in the best possible position to sell our products and make their customers happy.

We hope you find what you are looking for in the catalogue.

Preheating products

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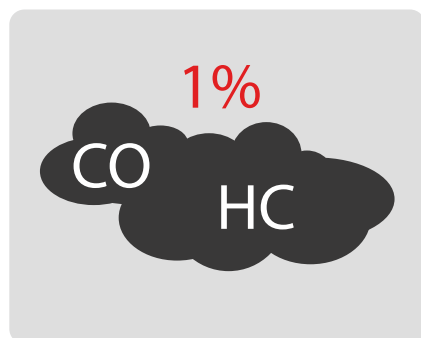


COLD STARTS KILL

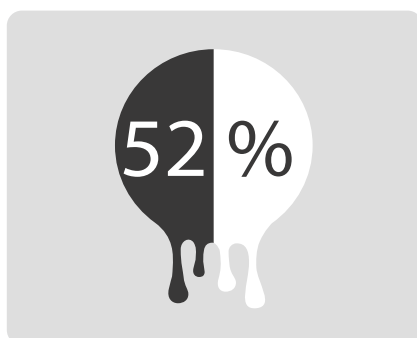
As winter arrives and temperatures drop, the subject of harmful emissions from private cars once again come to the forefront among politicians and journalists. The proposed solutions usually consist of fees, bans, and restrictions, but we offer a cheaper, simpler and equally efficient alternative - DEFA WarmUp.

The independent institute VTT in Finland has conducted a series of tests on emission levels from cars preheated with DEFA WarmUp, compared to cars going through a regular cold start. The results show that preheating with WarmUp dramatically reduces all types of harmful emissions on cold days. And that's not all, WarmUp also reduces your fuel consumption and saves you money.

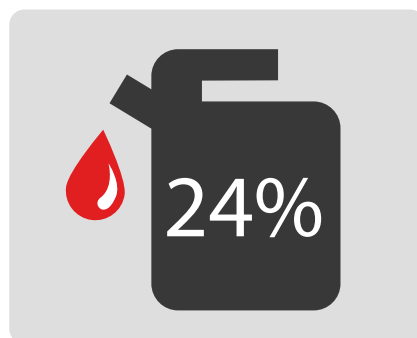
The results are presented below*:



Hydrocarbons (HC) and Carbon Monoxide (CO) are reduced by up to 99%



Nitrogen Oxide (NOx) is reduced by up to 52%



Fuel consumption reduced by up to 24%

*The independent Finnish test institute VTT conducted full scale tests on cars with and without WarmUp installed. The tests were based on the New European Driving Cycle - NEDC, and were focused on the effect of electrical preheating on Euro5 and Euro6 cars. Read more at defa.com

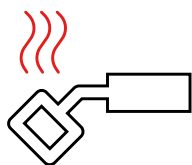
About WarmUp

WarmUp is an electrical preheating system consisting of an engine heater, a cabin heater (Termini™ 1400/1900W), a battery charger, the requisite cables, and a control unit. The engine heater is specialized for each car model, providing the best possible results.

A complete WarmUp system ensures windows, a fully charged battery, and mentally friendly and smooth running from your phone with DEFA Link.

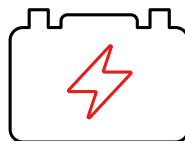


DEFA WarmUp - Start your day in a better way!



Engine heater:

- Lowers fuel consumption
- Reduces emissions
- Reduces wear on the engine



Battery charger:

- Makes sure your car starts
- Improves battery lifetime
- Reduces emissions



Interior heater:

- Comfortable, preheated cabin
- Ice-free windows
- Better visibility and safety



Control through the DEFA App

- Pre-program pick-up times and desired cabin temperature
- Monitor battery status
- Check interior and exterior temperature

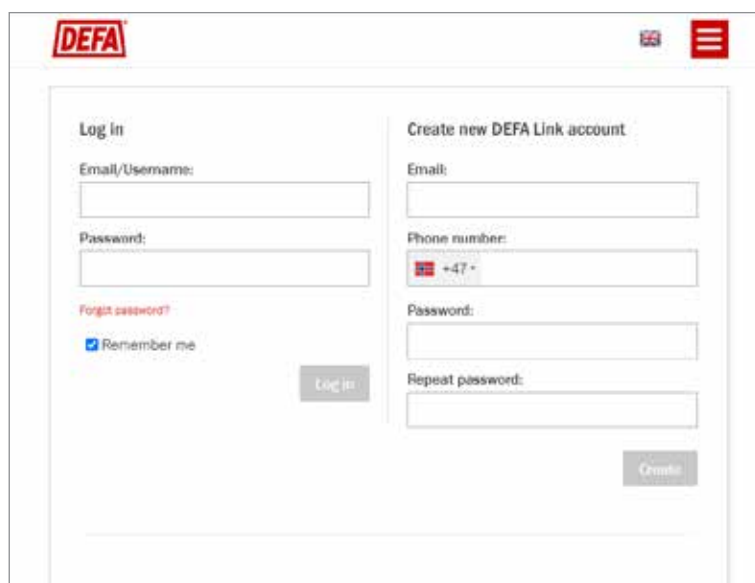
The DEFA App - installer information

Here is information about how to set up an installer account and add a new device for DEFA Link* or DEFA Bluetooth. On defa.com under Log-in in the top menu you will find the link to the portal where you apply for an installer account, or log-in when you need to set up a new subscription and device for your customers.

www.defa.com

Some guidelines:

- Setting up a device and testing the system can be done on the DEFA App on your smartphone, or on the DEFA website.
- The installer starts the process of registration, and the customers contribute to part of the registration process.
- The customer (car owner) can terminate the subscription.
- The customer (car owner) can transfer the subscription to a new owner.
- Installer can replace a device when repair is needed, or following a complaint.

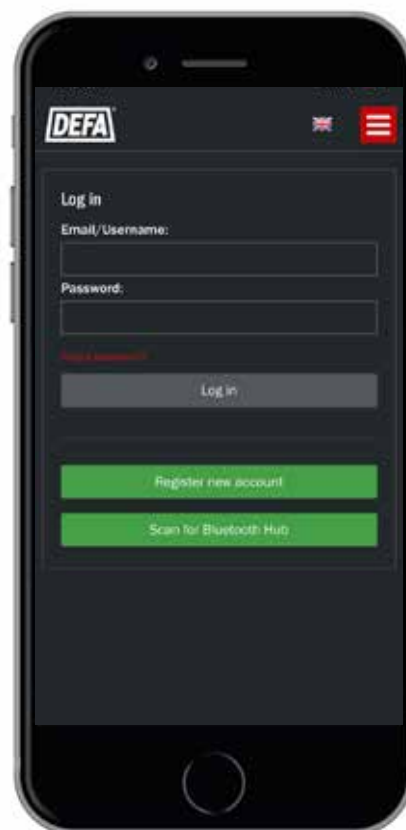


The screenshot shows the DEFA website interface. At the top, there is a red DEFA logo, a flag icon, and a menu icon. Below the logo, there are two main sections: 'Log in' and 'Create new DEFA Link account'. The 'Log in' section has fields for 'Email/Username' and 'Password', a 'Log in' button, a 'Forgot password?' link, and a 'Remember me' checkbox. The 'Create new DEFA Link account' section has fields for 'Email', 'Phone number' (with a '+47' prefix), 'Password', and 'Repeat password', and a 'Create' button.

On the website you can apply for an installer account, and log-in to set up a new device.



Download the DEFA App in AppStore or GooglePlay Store



Register a new device or log in using the DEFA App on your smartphone.

*) DEFA Link is available in Norway, Sweden, Denmark and Finland.

DEFA Link/GPS*

Control your WarmUp preheating system, receive alerts if the car is moved and track its location, all on your mobile. Link will give you total control of your car, wherever you are.

WARMUP

With WarmUp Link it is easy to control the WarmUp system using your mobile, wherever you are. WarmUp Link makes it possible to pre-set when you want your car to be at room temperature and have ice-free windows.

You can monitor the outside and the inside temperature of the car, check the battery status and receive an alert if the voltage gets low.

Security

- Receive an alert if your car is started or moved
 - even with the original key.
- Speed Alert: Set a maximum speed limit and receive an alert if the limit is exceeded.

Finder

- Track and locate your car
- Share location information with the police and insurance company

Is suitable for all vehicles, 12 or 24V.

Vehicles already equipped with DEFA preheating systems can be upgraded with DEFA Link.

For more information about which phones can be used, subscription terms and prices, check www.defa.com

*) Available in Norway, Sweden, Denmark and Finland.



DEFA Bluetooth®

Control your WarmUp preheating-system using Bluetooth® Low Energy technology on your mobile. You can use Bluetooth to pre-program heating times when you are in or around the car with Bluetooth activated. You need to download the DEFA-App to get started, and your phone must support Bluetooth® Low Energy*. Unlike DEFA Link, Bluetooth® requires no subscription.

WARMUP BLUETOOTH

With WarmUp Bluetooth® you can pre-set when you want your car to be heated. The system calculate when to start heating, based on the outside temperature, giving you a comfortable start of the day. All you have to do is to connect the cable.

*Bluetooth® Low Energy is available for most newer smartphones. Check details in App Store or Google Play store.



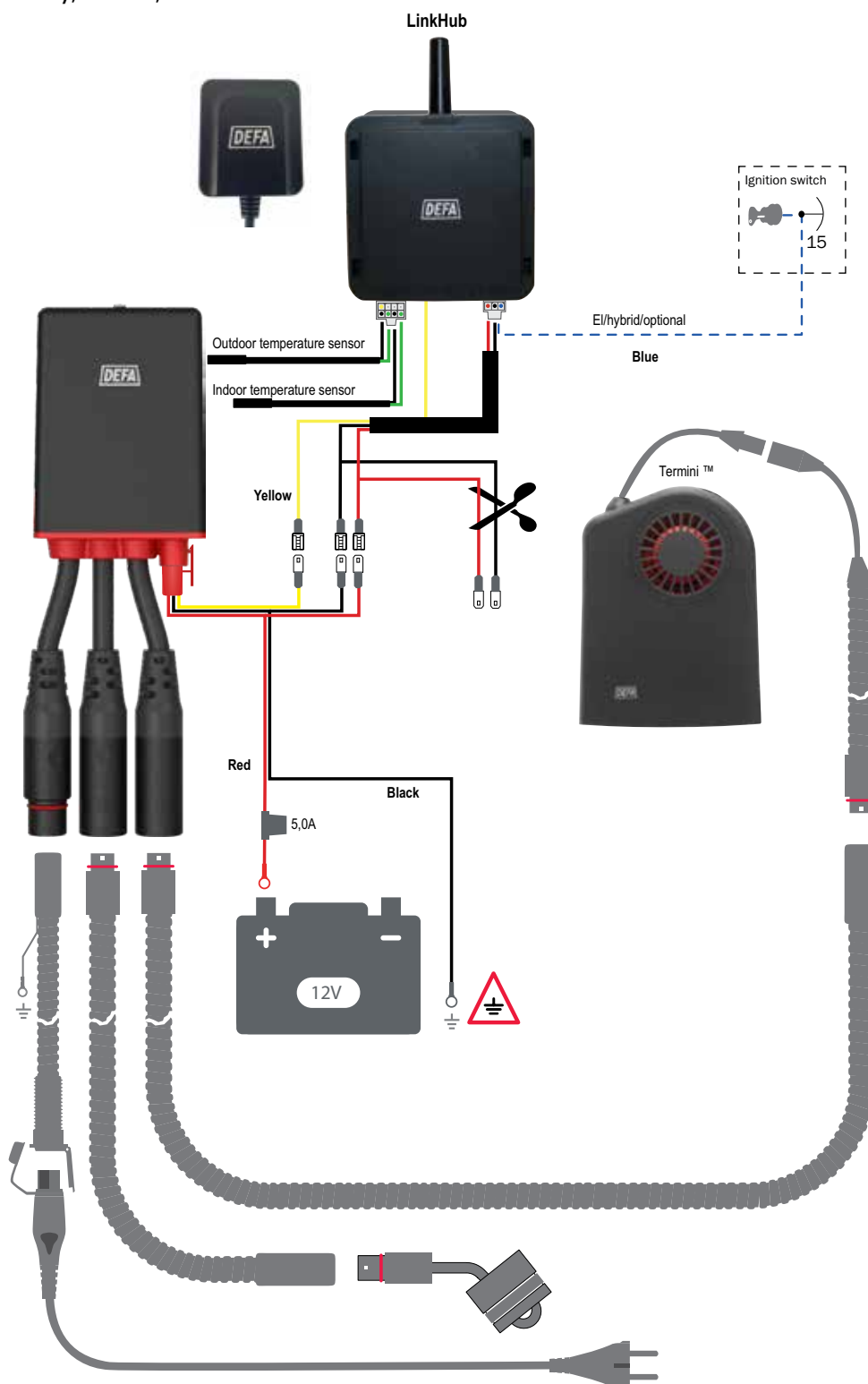
"The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by DEFA is under license."

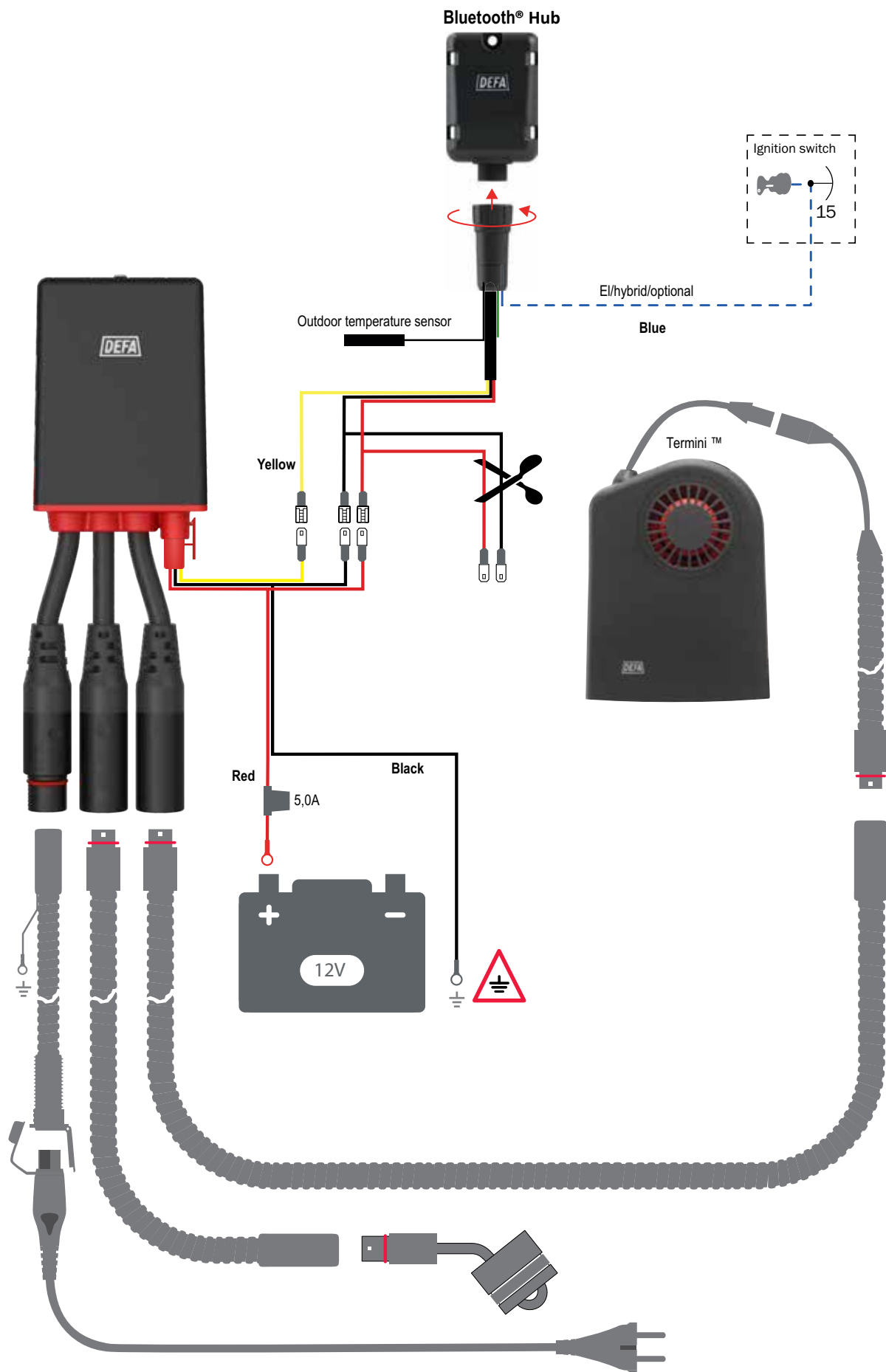


System overview

The circuit diagram illustrates temperature/time control of engine and interior heater through DEFA Link*. The battery charger will charge independently of the heating settings. The overview also includes the GPS Link unit, to control Security and Finder functionalities in WarmUp GPS Link and Finder Link

*Available in Norway, Sweden, Finland and Denmark.





Engine heaters

With an engine heater from DEFA, you get an engine that always starts, with less wear, reduced fuel consumption and reduced harmful emissions.

Some car owners mistakenly believe that contact heaters are less efficient than hose heaters. This misconception likely stems from the fact that the interior heating system in older vehicles got its heat from the engine coolant. For this reason, using a hose heater used to lead to warm air being blown into the interior of the car immediately after starting the engine. Compared to using a contact heater, this created the impression that the engine was heated faster or more efficiently. However, this is not correct. In fact, a contact heater warms up the engine just as efficiently as a hose heater, only by a different mechanism. The temperature of the air in the internal heating system is not a valid measure of how efficiently the engine is being heated.

In modern vehicles, valves have been installed to prevent heat from the coolant from being used to heat the interior of the car until the engine is sufficiently hot. The important thing is that the engine reaches its ideal working temperature as quickly as possible.

The best way to ensure a warm and comfortable interior is to install a Termini cabin heater or a full WarmUp system.



DEFA Contact heater

DEFA Engine heaters

A preheated engine is easier to start, is exposed to less wear, has reduced fuel consumption and provides up to a 71 % reduction in harmful emissions the first 20 minutes of driving on cold days. An electric engine heater is the most environmentally friendly way to achieve these benefits.

The purpose of an engine heater is to transfer heat to the engine in the most effective way possible. This can either be done indirectly, by heating the motor oil or antifreeze fluid, or directly, by heating the engine block or oil pan using a contact heater.

A DEFA engine heater raises the temperature of the engine to as much as 30-40 degrees above the outside temperature, depending the type of heater, where it is placed, and antifreeze volume. At -15 degrees, thermal balance is achieved when the heater has been connected for 3 hours, this means that any heat produced after that point only goes towards maintaining the engine temperature. By controlling your preheating through DEFA Link or DEFA Bluetooth you get the optimal effect, without using excess energy.

DEFA offers heating solutions for all types of vehicles and engines. Including tractors, trucks and buses. DEFA strives to find the best solution for every engine, whether it is big or small, cooled by air or water, and with or without core plugs.

PTC Contact heater

Developed to meet requirements from WLTP and Euro6 engines.

Our new PTC contact heater is developed and patented to meet the requirements of the WLTP. In the WLTP, emissions are measured during actual driving and data are collected from temperature sensors in coolant. Preheating with a hose heater may affect these temperature readings and trigger warnings. For this reason, our new PTC contact heater is the best solution for many new engines. It provides:

- Good heat distribution in the engine and more complete combustion from when the engine is started.
- Proper heating of the oil that reduces its viscosity allows it to better lubricate the engine.

The quickest way to the market

Our solution is based on combining a universal heating element with adaptor pieces customized for each car model. This allows us to quickly have solutions for new cars on the market.

PTC TECHNOLOGY

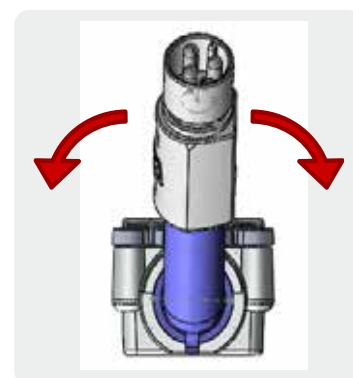
Reduces power consumption during preheating

PATENED

A unique solution for your car models

SAFE AND EFFICIENT

Self-regulating PTC heating element eliminates burn offs.



REVOLVABLE PLUGIN CONTACT

Easier and more flexible installations

ADAPTER PIECES

Customized for each car model

NOTE! IT IS IMPORTANT THAT ONLY RECOMMENDED ENGINE HEATERS ARE USED FOR EACH CAR MODEL. INSTALLATION OF AN ENGINE HEATER NOT RECOMMENDED BY DEFA, OR AN INSTALLATION THAT IS NOT ACCORDING TO GUIDELINES, CAN RESULT IN THE ENGINE HEATER NOT FUNCTIONING AND THE ELECTRONICS OF THE ENGINE BEING AFFECTED. DEFA CAN TAKE NO LIABILITY IF OUR RECOMMENDATION IS NOT FOLLOWED.

In order to find the correct engine heater for the correct car model/engine, go to www.defa.com and 'Find your engine heater'. When correct car model and engine type has been chosen it will be possible to download the last version of the installation guide.



WarmUp GPS Link

WarmUp GPS Link is a complete preheating and security system for your car that can be controlled with your mobile phone. Need subscription.

Maintain total control over your car - wherever you are. WarmUp GPS Link lets you control the preheating in your car and track the car's location on your mobile phone. In addition, you will be alerted if the car is moved, you can track its location in your Link app, and you can set a maximum speed and be alerted if someone is driving too fast while borrowing your car. WarmUp also reduces fuel consumption and harmful emissions. *Available in Norway, Sweden, Denmark and Finland.

- WarmUp GPS Link is available in two different versions depending on the required power of the Termini™ interior heater.
- WarmUp GPS Link includes everything besides the engine heater, which must be ordered separately and integrated in the system.



WarmUp 1400 GPS Link - 471275

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| LinkHub | 440030 |
| LinkHub mounting kit | 440036 |
| GPS antenna | 440037 |

WarmUp 1900 GPS Link - 471276

| | |
|--|--------|
| Termini™ 1900 | 430065 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| LinkHub | 440030 |
| LinkHub mounting kit | 440036 |
| GPS antenna | 440037 |

WarmUp Bluetooth®

WarmUp Bluetooth® is a complete preheating system that can be controlled with the DEFA app and Bluetooth Smart technology. With WarmUp your car will always be warm and comfortable, and your battery will always be fully charged and ready to go. WarmUp also reduces fuel consumption and harmful emissions.

Pre-program your WarmUp system when you are in the vicinity of your car.

- WarmUp Bluetooth® is available in two different versions depending on the required power of the Termini™ interior heater.
- WarmUp Bluetooth® includes everything besides the engine heater, which must be ordered separately and integrated in the system.



WarmUp 1400 Bluetooth® - 471282

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75 m | 460860 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| Bluetooth Hub | 440051 |

WarmUp 1900 Bluetooth® - 471283

| | |
|--|--------|
| Termini™ 1900 | 430065 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75 m | 460860 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| Bluetooth Hub | 440051 |

WarmUp SmartStart™

WarmUp SmartStart™ is a complete preheating system that is controlled with a two-way wireless control unit. With WarmUp your car will always be warm and comfortable, and your battery will always be fully charged and ready to go. WarmUp also reduces fuel consumption and harmful emissions.

- WarmUp SmartStart™ is a two-way wireless Control Unit to control your car heating system.
- WarmUp SmartStart™ is delivered in two versions, the effect on the DEFA Termini™ cabin heater differs.
An engine heater can be ordered separately and integrated in the system



WarmUp 1400 SmartStart™ - 471277

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug Inlet Cable - 1,5m | 460915 |
| PlugIn Extension Cable- 0,5m | 460802 |
| PlugIn Extension Cable - 1,0m | 460803 |
| SmartStart™ wireless Control Unit | 440020 |
| Termini™ Extension Cable - 1,75m | 460860 |
| MiniPlug Inlet Cable - fitting equipment | 418801 |
| MiniPlug Xtreme Connection Cable - 2,5m | 460955 |

WarmUp 1900 SmartStart™ - 471278

| | |
|---|--------|
| Termini™ 1900 | 430065 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug Inlet Cable- 1,5m | 460915 |
| PlugIn Extension Cable- 0,5m | 460802 |
| PlugIn Extension Cable - 1,0m | 460803 |
| SmartStart™ wireless Control Unit | 440020 |
| Termini™ Extension Cable - 1,75m | 460860 |
| MiniPlug Inlet Cable- fitting equipment | 418801 |
| MiniPlug Xtreme Connection Cable- 2,5m | 460955 |

WarmUp Futura

WarmUp Futura is a complete preheating system that is controlled by a timer placed inside the compartment in the car. Futura can be pre-programmed and ensures that the car is preheated when you need it.

Futura can be programmed with set departure times, for which the car will be preheated. This feature is very useful for people who leave for work at the same time every morning. The system can either be programmed to preheat for a set duration, or to automatically determine the required heating period based on the outside temperature.



WarmUp 1400 Futura - 471284

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug Inlet Cable - 1,5m | 460915 |
| PlugIn Extension cable - 0,5m | 460802 |
| PlugIn Extension cable - 1,0m | 460803 |
| Futura timer | 440010 |
| Termini™ Extension cable - 1,75m | 460860 |
| MiniPlug Inlet Cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |

WarmUp 1900 Futura - 471285

| | |
|--|--------|
| Termini™ 1900 | 430065 |
| MultiCharger 1205R Flex | 450015 |
| MiniPlug Inlet cable - 1,5m | 460915 |
| PlugIn Extension cable - 0,5m | 460802 |
| PlugIn Extension cable - 1,0m | 460803 |
| Futura timer | 440010 |
| Termini™ Extension cable - 1,75m | 460860 |
| MiniPlug Inlet Cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |

ComfortKit Plus

The ComfortKit Plus is a simple way to ensure a warm and comfortable cabin and windows free of ice. ComfortKit Plus also includes a MultiCharger 1205 Flex and the necessary connection components. The different sets have varying outputs - 1400 or 1900W. The ComfortKit can be expanded with an engine heater and a control unit or app control.



ComfortKit 1400 Plus - 470073

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn Y-connector | 460853 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MultiCharger 1205 Flex | 450016 |

ComfortKit 1900 Plus - 470074

| | |
|--|--------|
| Termini™ 1900 | 430065 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn Y-connector | 460853 |
| PlugIn extension cable - 0,5m | 460802 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |
| MultiCharger 1205 Flex | 450016 |

ComfortKit

The ComfortKit is a simple way to ensure a warm and comfortable cabin and windows free of ice. The different sets have varying outputs - 1400 or 1900W. The ComfortKit can be expanded with an engine heater, a battery charger and a control unit or app control.



ComfortKit 1400 - 470066

| | |
|--|--------|
| Termini™ 1400 | 430055 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn Y-connector | 460853 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |

ComfortKit 1900 - 470067

| | |
|--|--------|
| Termini™ 1900 | 430065 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn Y-connector | 460853 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |

ComfortKit 2100 - 470060

| | |
|--|--------|
| Termini™ 2100 | 430060 |
| MiniPlug inlet cable - 1,5m | 460915 |
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn Y-connector | 460853 |
| Termini™ extension cable - 1,75m | 460860 |
| MiniPlug inlet cable - fitting equipment | 418801 |
| MiniPlug Xtreme connection cable - 2,5m | 460955 |

Termini™

The Termini™ II interior heater provides a warm and comfortable cabin and ice-free windows. The output is adjusted in relation to the interior temperature, by the PTC (PTC = Positive Temperature Coefficient) heating element.

A 20°C temperature increase will result in a 10% power reduction and as the interior temperature increases the power will gradually be reduced accordingly. The interior heater is equipped with an automatic over-temperature protection.

All interior heaters are approved by: Safety EN 60335-1 and EN 50408. Termini has IP rate 20.



Termini™ 1000

| | |
|-------------------------|------------|
| Item no. Schuko | 430072 |
| Collection box - pcs | 10 |
| Output -25°C - W | 0/1000 |
| Height/Width/Depth - mm | 32/138/182 |
| Weight - gr | 595 |
| Bracket weight - gr | 20 |



Termini™ 1200

| | |
|-------------------------|------------|
| Item no. Schuko | 430058 |
| Collection box - pcs | 12 |
| Output -25°C - W | 0/1200 |
| Height/Width/Depth - mm | 32/138/182 |
| Weight - gr | 595 |
| Bracket weight - gr | 20 |



Termini™ 1400

| | |
|-------------------------|------------|
| Item no. Mini contact | 430055 |
| Item no. Schuko | 430056 |
| Collection box - pcs | 12 |
| Output -25°C - W | 0/1400 |
| Height/Width/Depth - mm | 32/138/182 |
| Weight - gr | 595 |
| Bracket weight - gr | 20 |

Termini™



Termini™ 1700

| | |
|-------------------------|------------|
| Item no. Schuko | 430068 |
| Collection box - pcs | 10 |
| Output -25°C - W | 0/830/1700 |
| Height/Width/Depth - mm | 38/138/183 |
| Weight - gr | 665 |
| Bracket weight - gr | 20 |



Termini™ 1900

| | |
|-------------------------|-------------|
| Item no. Mini contact | 430065 |
| Item no. Schuko | 430066 |
| Collection box - pcs | 10 |
| Output -25°C - W | 0/1150/1900 |
| Height/Width/Depth - mm | 38/138/183 |
| Weight - gr | 665 |
| Bracket weight - gr | 20 |



Termini™ 2100

| | |
|-------------------------|-------------|
| Item no. Mini contact | 430060 |
| Item no. Schuko | 430061 |
| Collection box - pcs | 10 |
| Output -25°C - W | 0/1350/2100 |
| Height/Width/Depth - mm | 47/141/183 |
| Weight - gr | 745 |
| Bracket weight - gr | 20 |



Termini™ Stand

| | |
|-------------------------|------------|
| Item no. | 430100 |
| Height/Width/Depth - mm | 145x127x65 |
| Weight - gr | 112 |

Sold separately, and can be used together with all Termini™ interior heaters.



Termini™ Clip

| | |
|-------------|--------|
| Item no. | 430101 |
| Height - mm | 145x70 |

Sold separately, and can be used together with all Termini™ interior heaters.

PlugIn branch sets

DEFA branch set consists of DEFA PlugIn extension cables in different lengths and DEFA PlugIn Y-connector for connecting engine and interior heaters.

The sets are also suitable for those who have engine heaters and want to upgrade to a complete preheating system combined with an interior heater. If you want to connect DEFA Termini™ with Termini™ Mini Contact, you can use branch set 460750 or 460751. If the interior heater has a Schuko plug, use 760/762/766/768/769. The difference lies in the length of the cables. Different car models require separate sets. See Code Type List column 8.



Branch set - 460750

| | |
|-----------------------------------|--------|
| PlugIn extension cable - 1,0 m | 460803 |
| PlugIn Y-connector | 460853 |
| Termini™ extension cable - 1,75 m | 460860 |

Branch set - 460751

| | |
|-----------------------------------|--------|
| PlugIn extension cable - 1,5 m | 460843 |
| PlugIn Y-connector | 460853 |
| Termini™ extension cable - 1,75 m | 460860 |



Branch set - 460760

| | |
|--------------------------------|--------|
| PlugIn extension cable - 0,5 m | 460802 |
| PlugIn extension cable - 1,0 m | 460803 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |

Branch set - 460762

| | |
|------------------------------------|--------|
| PlugIn extension cable x 2 - 1,0 m | 460803 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |



Branch set - 460765

| | |
|-------------------------------|--------|
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 2,0m | 460804 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |

Branch set - 460766

| | |
|-------------------------------|--------|
| PlugIn extension cable - 1,0m | 460803 |
| PlugIn extension cable - 1,5m | 460843 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |



Branch set - 460768

| | |
|-------------------------------|--------|
| PlugIn extension cable - 0,5m | 460802 |
| PlugIn extension cable - 1,5m | 460843 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |

Branch set - 460769

| | |
|-------------------------------|--------|
| PlugIn extension cable - 0,5m | 460802 |
| PlugIn extension cable - 2,0m | 460804 |
| PlugIn Y-connector | 460853 |
| PlugIn interior heater socket | 460829 |

Link*

Control and monitor your preheating and security systems with your mobile phone - wherever you are.

With DEFA Link you never have to get into a cold car again.



*Available in Norway, Sweden, Finland and Denmark.

THE FOLLOWING PROGRAMS CAN BE USED

- Automatic start controlled by the outside temperature
- DEFA WarmUp ON/OFF
- 1 hour preheating time
- 2 hours preheating time
- 3 hours preheating time
- 4 hours preheating time
- Check Battery Status
- Check temperature in the car and outside
- Receive alert if power cable is not connected



LinkHub

| | |
|----------------------------|----------------|
| Item no. | 440030 |
| Height/Width/Depth - mm | 78 (114)/78/23 |
| Weight - g | 170 |
| Voltage - V | 8 - 32V |
| Current draw, average - mA | 19 *) |
| Operating temperature - °C | -40 - +85 |

*) Without GPS module.



Mounting Kit WarmUp Link

| | |
|------------|--------|
| Item no. | 440036 |
| Weight - g | 360 |



GPS Link

| | |
|--------------------------------|----------|
| Item no. | 440037 |
| Height/Width/Depth - mm | 44/38/19 |
| Weight - g | 130 |
| Average power consumption - mA | 5 *) |
| Protection class - IP | 67 |

*) with the ignition off.



Link GPS Upgrade

| | |
|-------------------------------|--------|
| Item no. | 440038 |
| LinkHub | 440030 |
| WarmUp Link mounting kit | 440036 |
| GPS Link | 440037 |
| PlugIn Relay contact | 460854 |
| PlugIn extension cable - 0,5m | 460802 |
| Total weight - g | 1000 |

Bluetooth®

Control DEFA WarmUp with Bluetooth® from your mobile without the need for a subscription. Pre-program the system in the vicinity of the car when Bluetooth is activated, and you never have to get into a cold car again. The Bluetooth Hub control unit can be installed in the engine compartment, without any cables into the interior compartment.



THE FOLLOWING PROGRAMS CAN BE USED

- Automatic start controlled by the outside temperature
- 1 hour preheating time
- 2 hours preheating time
- 3 hours preheating time
- 4 hours preheating time
- DEFA WarmUp ON
- DEFA WarmUp OFF



Bluetooth® Hub Control Unit

| | |
|----------------------------------|-------------------------|
| Item no. | 440051 |
| Operating temperature | -40 - +80 °C |
| Voltage - V | 8 - 32VDC |
| Average current consumption - mA | 2mA |
| Height/Width/Depth - mm | 112/46/24 |
| IP rate | IP6k9k |
| Frequency/Radio protocol | 2,4GHz /Bluetooth Smart |
| Range | In and around the car |
| Weight, Bluetooth® Hub | 35g |
| Weight, cables | 150g |



Bluetooth Upgrade - 440052

| | |
|------------------------------|--------|
| Bluetooth Hub Control Unit | 440051 |
| Power cable with fuse | 418105 |
| PlugIn Relay connector | 460854 |
| PlugIn Extension cable 0,5 m | 460802 |



Power cable with fuse

| | |
|----------|--------|
| Item no. | 418105 |
|----------|--------|

This power cable with fuse must be ordered separately in case of:

- Upgrade of existing pre-heating systems without control unit
- Installation of Bluetooth® Hub and relay

SmartStart™

The control unit DEFA SmartStart™ 12/24V, which is included in the WarmUp SmartStart™ kits, is a two-way wireless control unit that makes sure that the car is preheated when you need it.

SmartStart can be programmed with set departure times, for which the car will be preheated. This feature is very useful for people who leave for work at the same time every morning. The system can either be programmed to pre-heat for a set duration, or to automatically determine the required heating period based on the outside temperature.

THE FOLLOWING PROGRAMS CAN BE USED:

- Automatic start adjusted according to the outside temperature
- 1 hour preheating time
- 2 hours preheating time
- 3 hours preheating time
- 4 hours preheating time
- Control of fuel heat (analogue control signal)
- DEFA WarmUp ON
- DEFA WarmUp OFF



SmartStart™

| | |
|--|---|
| Item no. 12V with car unit | 440020 |
| Item no. 24V with car unit | 440021 |
| Operating temperature remote control (RC) - °C | -10 - +60 |
| Operating temperature car unit (VU) - °C | -40 - +80 |
| Battery RC ⚠ | 6V Lithium 2CR-1/3N |
| Range - m | up to 400 |
| Frequency - MHz | 868, 370 |
| Current consumption RC | <5µA |
| Height/Width/Depth RC - mm | 78/34/16 |
| Height/Width/Depth VU - mm | 69/54/23 |
| Weight RC - gr | 29 |
| Test and approval | EN 301 489-1:2005-04, ETSI EN 300 220-1:2000-09 EN 301489-1 |



SmartStart™ spare parts

| | |
|-------------------------------|--------|
| SmartStart™ remote control RC | 418100 |
| SmartStart™ VU 12V | 418101 |
| SmartStart™ VU 24V | 418102 |
| Lithium battery ⚠ | 418103 |
| Cable harness | 418072 |

Futura

DEFA Futura is a control unit included in WarmUp Futura kits and installed in the drivers compartment of the car. It ensures that the car is preheated when you need it.

Futura can be programmed with set departure times, for which the car will be preheated. This feature is very useful for people who leave for work at the same time every morning. The system can either be programmed to preheat for a set duration, or to automatically determine the required heating period based on the outside temperature.



Futura control unit

| | |
|----------------------------|------------------------|
| Item no. without relay box | 440010 |
| Best.nr. with relay box | 440011 |
| Voltage - VAC/Hz | 12 |
| Current consumption - mA | 3,5 |
| Height/Width/Depth - mm | 37/47/13 |
| Weight - gr | 19 |
| Test and approval | EN 50081-1, EN 50082-1 |

Futura spare parts

| | |
|---|--------|
| Wire harness WarmUp with temperature sensor 12V | 418007 |
| Wire harness without temperature sensor 12V | 418059 |
| Temperature sensor | 418071 |
| Control unit | 418067 |



PlugIn relay box

| | |
|-------------------------|----------------|
| Item no. 12V | 460838 |
| Item no. 24V | 460863 |
| Range of use °C | -40 / +80 |
| Height/Width/Depth - mm | 63/56/70 |
| Mains voltage - VAC/Hz | 230/12, 230/24 |
| Current, max. - A | 16 |
| Weight - gr | 101 |
| Insulation class - cl | II |
| IP rate | 44 |

NB! Can not be used together with SmartStart, Bluetooth and Link

Connection cables

DEFA Connection cables are developed for DEFA MiniPlug and provides a reliable connection from your mains power outlet to the car. The MiniPlug Xtreme is more durable and is suited for cold weather and rough treatment. Xtreme has a black cap to distinguish it from the MiniPlug.



MiniPlug Xtreme Connection cable 1,5mm²

| | |
|---------------------------------|--------------------|
| Item no. - 2,5m | 460955 |
| Item no. - 5,0m | 460957 |
| Number of pcs in collection box | 955: 22 957: 12 |
| Voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 955/309 - 957/535 |



MiniPlug Connection cable 1,5mm²

| | |
|------------------------------------|---|
| Item no. - 2,5m | 460920 |
| Item no. - 2,5m with angle contact | 460933 |
| Item no. - 3,5m | 460938 |
| Item no. - 3,5m with angle contact | 460942 |
| Item no. - 5,0m | 460921 |
| Number of pcs in collection box | 920: 30 - 933: 22 - 938: 22 - 942: 22 - 921:12 |
| Voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 920/390 - 933/450 - 938/510 - 942/530 - 921/600 |



MiniPlug CableBag

| | |
|---------------|--------|
| Item no. | 460945 |
| Diameter - mm | 280 |
| Weight - gr | 73 |



Power cable LED

| | |
|-------------------------|----------|
| Item no. | 460964 |
| Height/Width/Depth - mm | 12/18/28 |
| Weight - gr | 8 |

Connection cables and sets

The DEFA MiniPlug Inlet cable is developed to fit all new cars. Flush and bracket mounting is equally simple. DEFA MiniPlug was developed with the goal of creating user friendly design, better safety and total reliability.



MiniPlug Connection cable 2,5mm²

| | |
|---------------------------------|---|
| Item no. - 2,5m | 460960 |
| Item no. - 5,0m | 460961 |
| Item no. - 10,0m | 460962 |
| Item no. - 15,0m | 460963 |
| Number of pcs in collection box | 960/22 - 961/12 - 962/1 - 963/5 |
| Voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 530/915/1520/2260 (2,5/5,0/10,0/15,0m) |

DEFA Connection cable 2,5 mm² is used for vehicles with special requirements for connection cables, such as ambulances and fire engines with special equipment. Even if the cable is available with a 2,5mm² core cross-section, the maximum power consumption is 16A.



Connection set 460785

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Xtreme Connection cable - 2,5 m | 460955 |
| MiniPlug Inlet cable - fitting equipment | 418801 |



Connection set 460787

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Xtreme Connection cable - 5,0 m | 460957 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

Connection set 460789

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Connection cable angle - 2,5 m | 460933 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

Inlet cables

DEFA MiniPlug Inlet cables are tailor-made for all new car models, and are delivered with improved mounting equipment to make the installation easier. The new mounting equipment consists of a set of mounting rings to be used for optimal installation in the car's front, and a bracket to be used behind the license plate.



MiniPlug Inlet cables

| | |
|-------------------------------|--|
| Item no. (0,6m) | 460902 |
| Item no. (1,0m) | 460901 |
| Item no. (1,5m) | 460915 |
| Item no. (2,0m) | 460939 |
| Voltage - VAC/Hz | 230 |
| Current - A | 16 |
| Weight (Length/Weight) - m/kg | 0,6/0,23 - 1,0/0,35 - 1,5/0,41 - 2,0/0,57 |

The Inlet cable has a MiniPlug 'female-connector' with a cap in one end and a DEFA PlugIn connector in the other. In addition, it has an earth connector for earthing the system.



MiniPlug Mounting Bracket

| | |
|-------------------------------|-----------------|
| Item no. | 460996 |
| Height/Width/Thickness - mm | 160x40x2 |
| Dimension mounting holes - mm | 6 |

The bracket fixed behind the license plate makes it possible to install the inlet in the front of the car - vertically or horizontally, whichever is more suitable for each vehicle.

PlugIn extension cables

The components are easily connected together with DEFA's armored PlugIn extension cables. The system ensures a reliable and tight connection and eliminates incorrect connections.



PlugIn extension cables

| | |
|------------------|---|
| Length - m | 0,5 - 1 - 1,5 - 2 - 3 - 4 - 5 - 8 - 10 - 12 |
| Voltage - VAC/Hz | 230 |
| Current - A | 16 |
| IP rate | 44 |

PlugIn extension cables

| Item no. | Length - m | Weight - gr | Pcs. in collection box |
|----------|------------|-------------|------------------------|
| 460802 | 0,5 | 145 | 22 |
| 460803 | 1,0 | 265 | 22 |
| 460843 | 1,5 | 380 | 22 |
| 460804 | 2,0 | 497 | 22 |
| 460844 | 3,0 | 731 | 12 |
| 460846 | 4,0 | 965 | 12 |
| 460809 | 5,0 | 1200 | 1 |
| 460847 | 8,0 | 1900 | 1 |
| 460851 | 10,0 | 2420 | 1 |
| 460850 | 12,0 | 2838 | 1 |



Termini™ interior heater cable with Mini-contact

| | |
|---------------------------------|--|
| Item no. | 460860 |
| Length - m | 1,75 (soft part 0,6m - armored part 1,15m) |
| Number of pcs in collection box | Single box or 22 |
| Voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 250 |
| IP rate | 44 |

PlugIn branches and connectors

The DEFA relay connector is adapted to DEFA PlugIn contacts and used to control the engine and interior heater, together with a DEFA control units. It can also be used for separate control of engine and interior heaters together with DEFA SmartStart. At branching, use H-, T- or Y- connectors.



PlugIn Relay connector

| | |
|---|-----------------------|
| Item no. 12V | 460854 |
| Item no. 12V - external ground connection | 701445 |
| Item no. 24V - external ground connection | 460856 |
| Range of use °C | -40 / +80 |
| Height/Width/Depth - mm | 61/31/67 |
| Mains voltage - VAC/Hz | 230/12, 230/24 |
| Current - A | Max 16 |
| Weight - gr | 59 |
| Insulation class - cl | II |
| IP rate | 44 |



PlugIn Y-connector

| | |
|-------------------------|-----------------|
| Item no. | 460853 |
| Height/Width/Depth - mm | 53/48/24 |
| Mains voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 23 |
| IP rate | 44 |

DEFA Y-connector is an all-welded connector for connecting engine and interior heater or MultiCharger battery charger.



PlugIn H-connector

| | |
|-------------------------|-----------------|
| Item no. | 460857 |
| Height/Width/Depth - mm | 42/63/21 |
| Mains voltage - VAC/Hz | 230 |
| Current. - A | 16 |
| Weight - gr | 30 |
| IP rate | 44 |

DEFA H-connector is an all-welded connector for more flexible connection of engine and interior heater or MultiCharger battery charger

PlugIn branches and contacts



PlugIn T-connector 90°

| | |
|-------------------------|----------|
| Item no. | 460831 |
| Height/Width/Depth - mm | 42/63/21 |
| Mains voltage - VAC/Hz | 230 |
| Current, max. - A | 16 |
| Weight - gr | 22 |
| IP rate | 44 |

DEFA T-connector is an all-welded connector for connecting the engine and interior heater or the MultiCharger battery charger.



LED Indicator Kit

| | |
|------------------------|---------|
| Item no. | 460881 |
| Mains voltage - VAC/Hz | 110-240 |
| Current, max. - A | 16 |
| IP rate, PlugIn/LED | 44/67 |



PlugIn Interior heater socket

| | |
|-------------------------|----------|
| Item No. | 460829 |
| Height/Width/Depth - mm | 70/54/41 |
| Voltage - VAC/Hz | 250/12 |
| Current, max. - A | 16 |
| IP rate | 20 |



Termini™ Adapter cable

| | |
|-------------------|--------|
| Item No. | 418069 |
| Length - m | 0,25 |
| Voltage - VAC/Hz | 250/12 |
| Current, max. - A | 10 |
| Weight - gr | 54 |
| IP rate | 44 |

Special tools

Tools for installation of MiniPlug and of cables through firewalls.



Pullwire kit 866

Item no. **460866**

No. of pcs. **1 set**

Tool for simpler installation of PlugIn extension cables with male or female contact through the firewall.



Pullwire kit 868

Item no. **460868**

No. of pcs. **2**

Tool for simpler installation of PlugIn extension cables with male or female contact through the firewall. Delivered with 2 extensions of 1m.



Installation tool

Item no. **460840**

Hole saw Ø24mm **For MiniPlug inlet cable**

Hole saw Ø20mm **For Interior heater cable**

File **For MiniPlug feed track**

Hole saw retainer **With pilot hole drill**



Tools for feed through bulkhead

Item no. **460862**

Put the tools on PlugIn male or female contact for simpler installation through the firewall.



Crow foot tool

Item no. **460867**

Crow foot 27mm.

Mounting- and dismounting tool for simpler installation of the following engine heaters: 241, 277, 292, 299.



Tool for heater 241

Item no. **460861**

Steering tool for Allen wrench.

Extractor tools

To use these tools, you need the main tools, the extractor and the taper clamping sleeve. The extractor and taper clamping sleeve can be purchased separately in 4 different sizes, depending on the inside diameter of the frost plug you wish to remove.

The tool is suitable for deep frost plugs and functions like an extractor. It is securely tightened around the side walls of the frost plug by tightening the nut. Next, a suitable adapter sleeve is attached. The frost plug is gradually pulled off by tightening the nut. Follow the instructions that come with the tools! These tools come separately or in a complete set.



Complete extractor tools

Item no. **491012**

Consists of main tools (491011), 4 extractor tools (491006) and 4 taper clamping sleeves (491005).



Main tools

Item no. **491011**



Extractor

Item no. complete set (4 extractors) **491006**

Item no. (Ø20mm) **491001**

Item no. (Ø27mm) **491002**

Item no. (Ø34mm) **491003**

Item no. (Ø41mm) **491004**



Taper clampings

Item no. complete set (4 taper clampings) **491005**

Item no. (Ø31mm) **491007**

Item no. (Ø35mm) **491008**

Item no. (Ø39mm) **491009**

Item no. (Ø46mm) **491010**



Extractor hook

Item no. 30,5mm **460835**

Item no. 37,5mm **460836**

Item no. 44,5mm **460837**

NOTES

[illegible]

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DEFA Charging products



DEFA offers battery chargers for a wide variety of vehicles, the maritime sector, and industrial applications.

DEFA develops and manufactures a series of charging products that allow our customers to get the most out of their batteries.

Emergency vehicles and boats, life-saving equipment and electronic wheelchairs impose the strictest standards both on us and our products, and are just some of the things that drive us to always want to do better.

We continuously strive to meet the highest standards of quality, safety and flexibility, and to keep our customers going - for longer than ever.

DEFA charging products have been developed for use with our own protected and splash proof cables with PlugIn connectors. The system eases installation of 230VAC in boats, mobile units and military equipment. The system is intuitive, reliable and durable, and can be installed without tools or a certified installer.

The 230VAC shore power system for boats includes a distribution box with fuses, a ground leakage circuit breaker, mains connections, outlets, PlugIn battery chargers and galvanic isolators to reduce the risk of galvanic corrosion and ground leakage. The system is module-based, enabling extension with additional components, such as engine heaters and auxiliary equipment.

Our customers are professional and private users in such areas where strict demands are required to meet expectations on functionality and a high degree of readiness. Quality control, knowledge and customer demand is an important part of our development and product philosophy.

Battery care

The best way of charging a 24V system is to charge each 12V battery with a separate charger. An alternative to this is to charge with a 24V charger even if this will not provide an optimal charge for both batteries.

NEGATIVE CHARGING

Negative charging is an unfamiliar term for most owners of cars, trucks and busses. Even so, the problem of negative charging is commonplace.

A battery consists of a collection of cells that provide energy. A 12V battery, commonly found in private cars and smaller boats, normally contains six such cells. For heavier vehicles, such as trucks and buses, 24V is preferred, since they require more "pressure" (voltage) to start. A 24V setup is often made by connecting two 12V batteries in a series.

When charging these batteries, a sufficiently high voltage is necessary to ensure that they are fully charged. Generally speaking, a low charging voltage reduces battery lifespan. The proper charging voltage for 12V lead/acid car batteries is 14,4V at a temperature of 20 degrees.

Most cars produce insufficient charging voltage, and the problem of negative charging will be especially noticeable in 24V setups. Charging the batteries separately overnight is the best way to avoid this issue.

A quality charger must also switch to maintenance voltage when the batteries are fully charged. This voltage is a little lower, and makes sure that the batteries do not expend too much fluid.

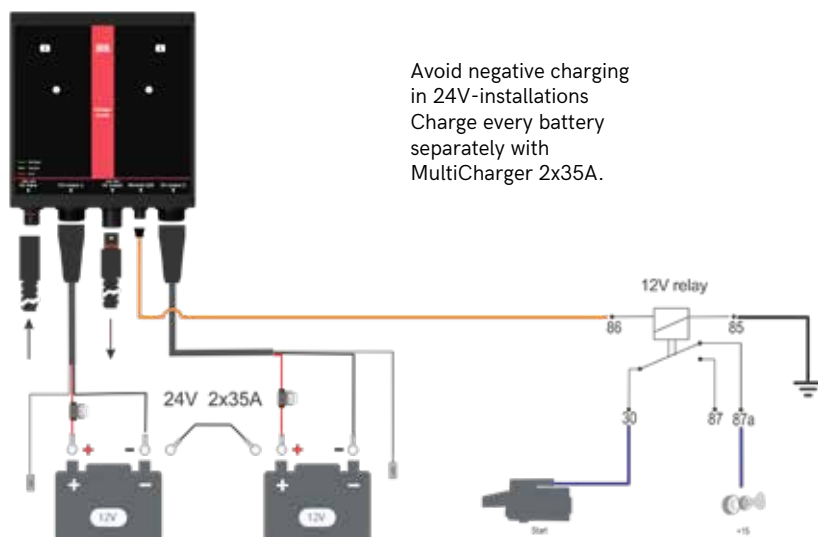
LONGEVITY

One can generally say that low charging voltage gives the batteries a short lifespan. When charging, it is necessary that the charger's voltage is high enough to fill the batteries completely. Correct charging voltage for a lead/acid car battery is 14,4V (for a "12V" battery) at 20°C. Most cars give too low charging voltage and in 24V installations negative charging will intensify the problem even more. It is therefore important to charge the batteries separately (see figure below) during the night. In that way both batteries achieve the correct voltage. When choosing a charger one should also make sure that the charger automatically changes to maintenance voltage when the batteries are full. This voltage should stay a little lower in order to make sure that the batteries are not "cooked", i.e. that the batteries consume too much fluid.

IN SHORT

Excellent operating economy is achieved by charging batteries in a 24V setup at a voltage of 14,4V at a temperature of 20 degrees.

- Negate negative charging by using a charger that charges the batteries individually
- Use a charger that switches to maintenance voltage when the batteries are fully charged.
- Keep batteries and cables clean, and make sure that the fluid levels in the batteries are correct.



MultiCharger 1x12A

DEFA MultiCharger 1x12A is a battery charger made for permanent installation in all types of vehicles and in any conditions. It is well suited for all lead/acid batteries (AGM, GEL, EFB, Start&Stop) up to 150Ah. With the DEFA Plugin connectors, both input and output, this charger integrates perfectly into the rest of the DEFA system.

The charger is delivered with 2 meter fixed cable including temperature sensor



MultiCharger 1x12A

| | |
|----------------------------|---|
| Item no | 705200 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Operating temperature [°C] | -35 +50 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Charging current [A] | 12 |
| Battery size. [Ah] | 150 |
| IP-rate | 44 |
| Weight [kg] | 1 |
| Height/Width/Depth [mm] | 138x98x53 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

* Temperature compensated ca 5,0 mV/°C/celle. Ref. 25 °C



MultiCharger 1x12A with remote LED and starter kill

| | |
|----------------------------|---|
| Item no | 706500 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Operating temperature [°C] | -35 +50 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Charging current [A] | 12 |
| Battery size. [Ah] | 150 |
| IP-rate | 44 |
| Weight [kg] | 1 |
| Height/Width/Depth [mm] | 138x98x53 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

* Temperature compensated ca 5,0 mV/°C/celle. Ref. 25 °C

MultiCharger 2x12A

DEFA MultiCharger 2x12A consists of two 12A battery chargers mounted on the same bracket. This combination is made for permanent installation in all types of vehicles and in any conditions. It is well suited for all lead/acid batteries (AGM ,GEL,EFB, Start&Stop) up to 2x150Ah. With the DEFA Plugin connectors, both input and output, this charger integrates perfectly into the rest of the DEFA system.

The charger is delivered with 2 meter fixed cable including temperature sensors.



MultiCharger 2x12A

| | |
|----------------------------|---|
| Item no | 705300 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Operating temperature [°C] | -35 +50 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Charging current. [A] | 2x12 |
| Battery size [Ah] | 2x150 |
| IP-rate | 44 |
| Wight [kg] | 2 |
| Height/Width/Depth [mm] | 138x201x53 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

* Temperature compensated ca 5,0 mV/°C/celle. Ref. 25 °C

LithiumCharger 1x20A



LithiumCharger 1x20 is a powerful and compact charger that is easily installed in all types of vehicles and in any conditions. The lithium chargers can all start up batteries that are below the cut-off threshold. To make the system more flexible, DC cable in the desired length is ordered separately. Cables available in 2, 4 and 6 meters.

Note: Only use with lithium batteries including Battery Management System (BMS) that accept 14,4V charging.



LithiumCharger 1x20A

| | |
|----------------------------|--|
| Item no | 709850 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Charging current. [A] | 20 |
| Battery size, max [Ah] | 300 |
| Height/Width/Depth [mm] | 183x98x53 |
| Wight [kg] | 1,5 |
| IP-rate | 44 |
| Operating temperature [°C] | -35/+50 |
| Protection class | 1 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

ACCESSORIES

| | |
|---------|----------------------------|
| Item no | |
| 706483 | 2m Charging cable |
| 706484 | 4m Charging cable |
| 706485 | 6m Charging cable |
| 705294 | 5m Remote panel |
| 705295 | 10m Remote panel |
| 705296 | 20m Remote panel |
| 705297 | 25m Remote panel |
| 705463 | Connection Schuko - PlugIn |



Connection
Schuko - PlugIn

LithiumCharger 2x20A



These chargers are powerful and compact, and are easily installed in all types of vehicles and in any conditions.

The lithium chargers can all start up batteries that are below the cut-off threshold. To make the system more flexible, DC cable in the desired length is ordered separately. Cables available in 2, 4 and 6 meters.

Note: Only use with lithium batteries including Battery Management System (BMS) that accept 14,4V charging.



LithiumCharger 1x20A + MultiCharger 1x20A

| | |
|----------------------------|---|
| Item no | 709860 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5/13,6 |
| Charging current. [A] | 2x20 |
| Battery size, max [Ah] | 2x300 |
| Height/Width/Depth [mm] | 183x190x53 |
| Wight [kg] | 3 |
| IP-rate | 44 |
| Operating temperature [°C] | -35/+50 |
| Protection class | 1 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |



LithiumCharger 2x20A

| | |
|----------------------------|---|
| Item no | 709870 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Charging current. [A] | 2x20 |
| Battery size, max [Ah] | 2x300 |
| Height/Width/Depth [mm] | 183x190x53 |
| Wight [kg] | 3 |
| IP-rate | 44 |
| Operating temperature [°C] | -35/+50 |
| Protection class | 1 |
| Certifications | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

MultiCharger 1x20A

DEFA MultiCharger 1x20A is a powerful and compact charger that is easily installed in all types of vehicles and in any conditions. It is designed to handle any conditions. To make the system more flexible, DC cable in the desired length is ordered separately. Cables available in 2, 4 and 6 meters.



MultiCharger 1x20A

| | |
|----------------------------|--|
| Item no. | 705800 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Operating temperature - °C | -35 +50 |
| Charging Voltage- VDC | 14,4 |
| Float voltage- VDC | 13,5 |
| Charging Current - A | 20 |
| Battery size - Ah | 250 |
| IP-rate | 44 |
| Weight - kg | 2 |
| Height/Width/Depth - mm | 182x98x53 |
| Certifications: | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |



ACCESSORIES:

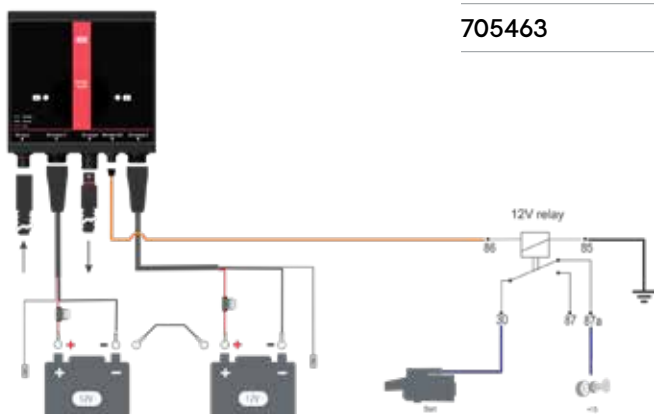
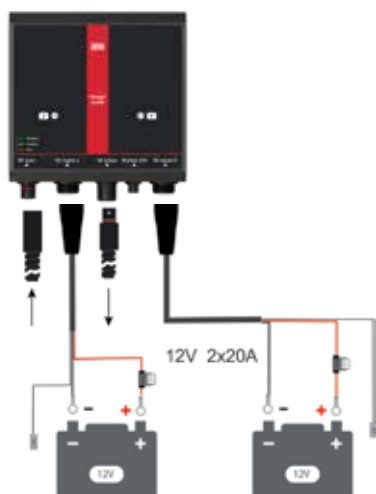
| | |
|----------|----------------------------|
| Item no: | |
| 706483 | 2m Charging cable |
| 706484 | 4m Charging cable |
| 706485 | 6m Charging cable |
| 705294 | 5m Remote panel |
| 705295 | 10m Remote panel |
| 705296 | 20m Remote panel |
| 705297 | 25m Remote panel |
| 705463 | Connection Schuko - PlugIn |



Connection Schuko - PlugIn

MultiCharger 2x20A

DEFA MultiCharger 2x20A is a powerful and compact charger that is easily installed in all types of vehicles. It is designed to handle any conditions. To make the system more flexible DC cables in desired lengths are ordered separately. Cables available in 2, 4 and 6 meters.

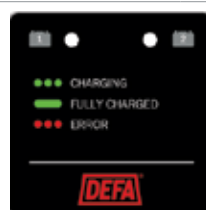


MultiCharger 2x20A

| | |
|----------------------------|--|
| Item.no. | 705900 |
| Mains Voltage - VAC/Hz | 230/50-60 |
| Operating temperature - °C | -35 +50 |
| Charging Voltage - VDC | 14,4 |
| Float voltage - VDC | 13,5 |
| Charging Current- A | 2x20 |
| Battery size- Ah | 2x250 |
| IP-rate | 44 |
| Weight - kg | 3 |
| Height/Width/Depth- mm | 182x190x53 |
| Certifications: | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

ACCESSORIES:

| | |
|----------|----------------------------|
| Item no: | |
| 706483 | 2m Charging cable |
| 706484 | 4m Charging cable |
| 706485 | 6m Charging cable |
| 705162 | 5m Remote panel |
| 705163 | 10m Remote panel |
| 705164 | 20m Remote panel |
| 705165 | 25m Remote panel |
| 705463 | Connection Schuko - PlugIn |



Connection Schuko - PlugIn

MultiCharger 1x35A

DEFA MultiCharger 1x35A is a small and powerful charger for use in all types of vehicles and in any conditions. To make the system more flexible, cables are ordered separately in desired lengths.



MultiCharger 1x35A

| | |
|-------------------------------|--|
| Item no. with PlugIn 1x35A | 708501 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Ambient temperature [°C] | -35 +50 |
| Charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Max charging current [A] | 35 |
| Recommended battery max[Ah] | 600 |
| IP rate [IP] | 44 |
| Weight [kg] | 1,6 |
| 1x35A Height/Width/Depth - mm | 200x98x53 |
| Certifications: | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

ACCESSORIES:

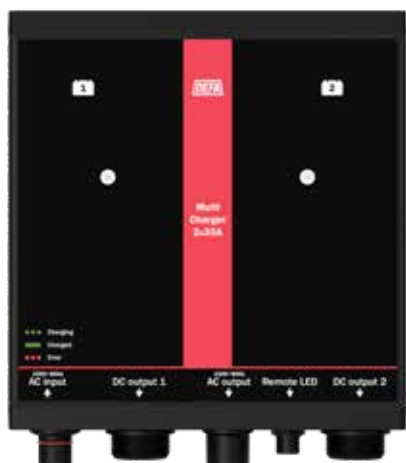
| | |
|----------|----------------------------|
| Item no: | |
| 705099 | 2m Charging cable |
| 705147 | 4m Charging cable |
| 705159 | 6m Charging cable |
| 705160 | 8m Charging cable |
| 705294 | 5m Remote panel |
| 705295 | 10m Remote panel |
| 705296 | 20m Remote panel |
| 705297 | 25m Remote panel |
| 705463 | Connection Schuko - PlugIn |



Connection Schuko - PlugIn

MultiCharger 2x35A

DEFA MultiCharger 2x35A is a small and powerful charger for use in all types of vehicles and in any conditions. To make the system more flexible, cables are ordered separately in desired lengths.



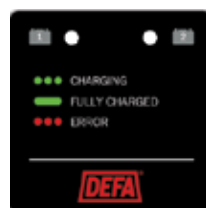
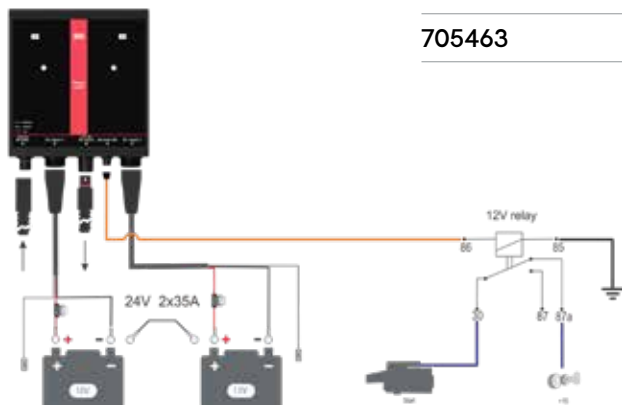
MultiCharger 2x35A

| | |
|-------------------------------|--|
| Item no. with PlugIn 2x35A | 708502 |
| Mains voltage - VAC/Hz | 220-240/50-60 |
| Ambient temperature [°C] | -35 +50 |
| Max charging voltage [VDC] | 14,4 |
| Float voltage [VDC] | 13,5 |
| Max charging current [A] | 2x35 |
| Recommended battery max [Ah] | 2x600 |
| IP rate [IP] | 44 |
| Weight [kg] | 3,3 |
| 2x35A Height/Width/Depth - mm | 200x190x53 |
| Certifications: | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

ACCESSORIES:

| | |
|----------|----------------------------|
| Item No: | |
| 705099 | 2m Charging cable |
| 705147 | 4m Charging cable |
| 705159 | 6m Charging cable |
| 705160 | 8m Charging cable |
| 705162 | 5m Remote panel |
| 705163 | 10m Remote panel |
| 705164 | 20m Remote panel |
| 705165 | 25m Remote panel |
| 705463 | Connection Schuko - PlugIn |

24V SYSTEM



Connection Schuko - PlugIn

MultiCharger 40A - 24V

DEFA MultiCharger 40A is a 24V charger for trucks and heavy vehicles. It is compact with high efficiency, and robuste for tough environments. To make it even more flexible to mount in tight spaces, remote panels are available as accessory.



MultiCharger 40A 24V

| | |
|-----------------------------|--|
| Item no. | 708400 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Ambient temperature [°C] | -30 +50 |
| Max charging voltage [VDC] | 28,8 |
| Float voltage [VDC] | 27,2 |
| Max charging current [A] | 40 |
| IP rate [IP] | 67 |
| Weight [kg] | 4 |
| Height x Width x Depth - mm | 280 x 175 x 85 |
| Certifications: | EN60335-1, EN60335-2-29, EN55014-1, EN55014-2, EN61003-3/2 |

ACCESSORIES:

| | |
|----------|----------------------------|
| Item no: | |
| 705294 | 5m Remote panel |
| 705295 | 10m Remote panel |
| 705296 | 20m Remote panel |
| 705297 | 25m Remote panel |
| 705480 | Connection Schuko - PlugIn |



Connection Schuko - PlugIn

MultiCharger 1205 Flex

DEFA MultiCharger 1205 Flex is a powerful and compact charger for modern cars. It needs 48% less space for installation than its predecessor, and it has flexible cables to allow for easy installation in tight spaces. The bracket allows for easy installation in all cars, and the PlugIn cables integrate it perfectly with the rest of the DEFA system.



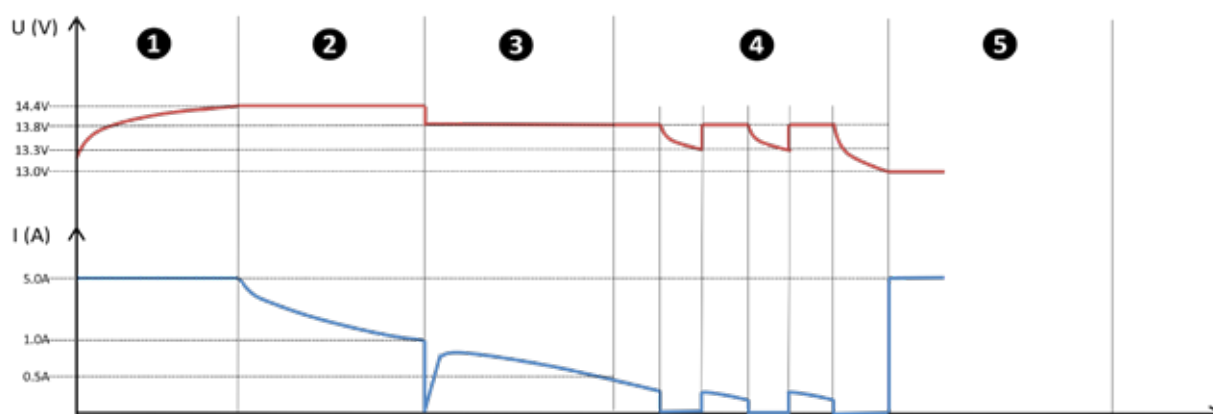
MultiCharger 1205 Flex

| | |
|-------------------------|-------------|
| Item no. | 450016 |
| Charging current - A | 5 |
| Charging voltage - V | > 14,4 |
| Float voltage - VDC | 13,3 - 13,8 |
| Height/Width/Depth - mm | 95/71/38 |
| Weight - gr | 369 |
| Fuse - A | 7,5 |
| IP rate | 65 |



EXTREMELY EASY TO INSTALL
Flexible 230V connections, reduced size and flexible bracket

CHARGING CURVE:



MultiCharger 1205R Flex

DEFA MultiCharger 1205R Flex is a powerful and compact charger with built-in relay and the best option for charging the vehicle when a pre-heating system is installed. It needs 60% less space for installation than its predecessor. With a bracket with more optional installation ways and flexible connection cables it is still 37% smaller than the previous.



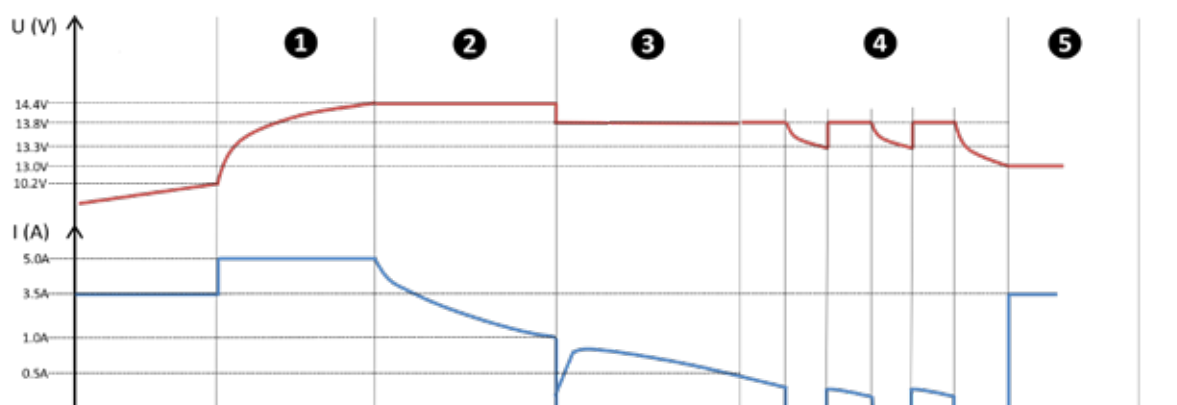
MultiCharger 1205R Flex with relay

| | |
|-------------------------|-----------|
| Item no. | 450015 |
| Charging current - A | 5 |
| Charging voltage - V | > 14,4 |
| Float voltage - VDC | 13,3-13,8 |
| Height/Width/Depth - mm | 95/71/38 |
| Weight - gr | 325 |
| Fuse - A | 7,5 |
| IP rate | 65 |



EXTREMELY EASY TO INSTALL
Flexible 230V connections, reduced size
and flexible bracket

CHARGING CURVE:



MultiCharger 1210 Flex

MultiCharger 1210 Flex is a 12V/10A battery charger which is more compact than similar chargers in the category. It needs 89% less space for installation than its predecessor. The new 1210 Flex has more flexible cables making the mounting of the charger easier and faster. The new waterproof 12V connections reduced corrosion risk and improves the durability of the charger. Our most powerful and compact charger for modern cars.



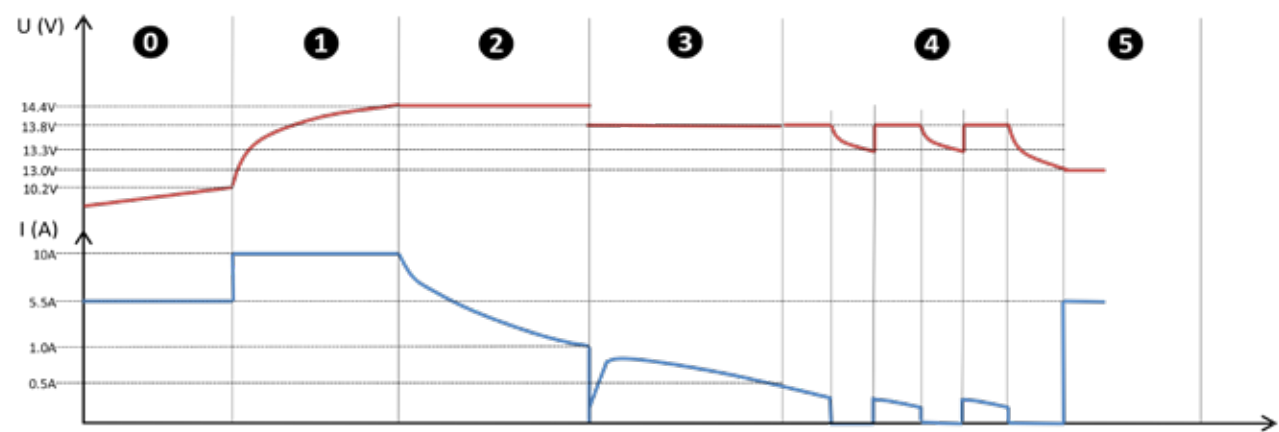
MultiCharger 1210 Flex

| | |
|----------------------------|-----------|
| Item no. | 450017 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Charging voltage - VDC | 14,4 |
| Maintenance charging - VDC | 13,6 |
| Max. Charging current - A | 10 |
| Height/Width/Depth - mm | 105/71/42 |
| Weight - gr | 384 |
| IP rate - IP | 65 |

The charger is delivered with a bracket for easier mounting



CHARGING CURVE:



ChargerKits 1205 Flex and 1210 Flex

A battery charger keeps your batteries fully charged, extends its lifespan and ensures that your car starts regardless of weather or temperature. DEFA ChargerKit is available with MultiCharger 1205 Flex or MultiCharger 1210 Flex and the kit includes all necessary cables for easier installation. These ChargerKits are particularly suitable for cars with parking heaters. Choose the ChargerKit 1210 Flex if you appreciate faster charging. Because of the charger's advanced and responsive charging cycle, your battery is charged even when other chargers would fail.



ChargerKit 1205 Flex

| | |
|--|--------|
| Item no. | 450034 |
| Collection box - pcs | 12 |
| MultiCharger 1205 Flex | 450016 |
| Cable set 12V | 418109 |
| MiniPlug inlet cable 1,5 m | 460915 |
| MiniPlug Xtreme connection cable 2,5 m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |



ChargerKit 1210 Flex

| | |
|--|--------|
| Item no. | 450033 |
| MultiCharger 1210 Flex | 450017 |
| Cable set 12V | 418107 |
| MiniPlug inlet cable 1,5 m | 460915 |
| MiniPlug Xtreme connection cable 2,5 m | 460955 |
| MiniPlug inlet cable - fitting equipment | 418801 |

QUALITIES

- A highly efficient switch mode and advanced charging profiles prevent damage to the battery
- The charger can therefore be continuously connected
- Temperature compensated charging voltage ensures that the battery is fully charged regardless of the condition of the battery. No risk for overcharging.
- Light indication of charging mode
- The chargers are protected against short circuits and reverse polarity
- Does not harm advanced electronics
- Small dimensions
- Protects the battery from breaking down (sulphating) and extends the batteries lifetime.
- DEFA's chargers are all approved by; EN 60335-2-29 + A2:210, EN 60335-1 + A11, EN 62233, EN 550141 + A1 + A2, EN 61000-3-3, EN 610003-2, EN 55014-2

ChargerKits 12A

Chargerkits includes the battery charger and necessary cables. Easily install the DEFA ChargerKit by connecting the DEFA MiniPlug inlet into the front of the vehicle and the connection cable to the nearest mains outlet.



ChargerKit 1x12A - 706910

| | |
|--|--------|
| MultiCharger 1x12A | 705200 |
| MiniPlug Inlet Cable - 1,5m | 460915 |
| MiniPlug Xtreme Connection Cable - 2,5m | 460955 |
| MiniPlug Inlet cable - fitting equipment | 418801 |



ChargerKit cables of different lengths

ChargerKit 1x12A - 706252

| | |
|--|--------|
| MultiCharger 1x12A | 705200 |
| MiniPlug Inlet Cable - 2,0m | 460939 |
| MiniPlug Xtreme Connection Cable - 5,0m | 460957 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

ChargerKit 2x12A - 706253

| | |
|--|--------|
| MultiCharger 2x12A | 705300 |
| MiniPlug Inlet Cable- 2,0m | 460939 |
| MiniPlug Xtreme Connection Cable - 5,0m | 460957 |
| MiniPlug Inlet cable - fitting equipment | 418801 |



ChargerKit cables of different lengths

ChargerKits 20A and 40A

Chargerkits includes the battery charger and necessary cables. Easily install the DEFA ChargerKit by connecting the DEFA MiniPlug inlet into the front of the vehicle and the connection cable to the nearest mains outlet.



ChargerKit 1x20A - 706930

| | |
|--|--------|
| MultiCharger 1x20A | 705800 |
| MiniPlug Inlet Cable - 2,0m | 460939 |
| MiniPlug Xtreme Connection Cable - 5,0m | 460957 |
| Detachable charging cable - 2,0m | 706483 |
| MiniPlug Inlet cable - fitting equipment | 418801 |



ChargerKit 2x20A - 706931

| | |
|--|--------|
| MultiCharger 2x20A | 705900 |
| MiniPlug Inlet Cable- 2,0m | 460939 |
| MiniPlug Xtreme Connection Cable - 5,0m | 460957 |
| 2 x detachable charging cable -2,0m | 706483 |
| MiniPlug Inlet cable - fitting equipment | 418801 |



ChargerKit 40A 24V - 711152

| | |
|---|--------|
| MultiCharger 40A 24V | 708400 |
| MiniPlug Inlet Cable- 2,0m | 460939 |
| MiniPlug Xtreme Connection Cable - 5,0m | 460957 |

ShowroomCharger 32A

DEFA Showroom Charger 32A is based on modern switch mode technology and galvanized divisions, and represents the latest technology within battery charging. It is well suited to maintenance charge the battery for an unlimited time, and will always keep your cars in the showroom ready for demonstration. The detachable cables and compact size, makes it easy to move from car to car, and will hardly be noticeable under the car.



ShowroomCharger 32A

| | |
|---------------------------|---|
| Item no. Standard clamps | 707000 |
| Item no. Special clamps | 708800 |
| Volt | 12V Charging |
| Rated voltage AC - VAC/Hz | 220-240/50-60 |
| Charging voltage | 14.4V |
| Float charging | 13,6V |
| Min battery voltage | 2.0V |
| Max charging current | 32A |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +40°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop Batteries |
| Battery Capacity | 30-600Ah |
| Dimensions L/B/H | 219/125/62 |
| IP rate | IP40 |
| Weight | 1,7 kg |



Standard clamps

Special clamps,
Suitable for Mercedes-Benz



Detachable cables:

- 708227** 2,5m charging cable with standard clamps
711440 2,5m charging cable with special clamps

ShowroomCharger 50A

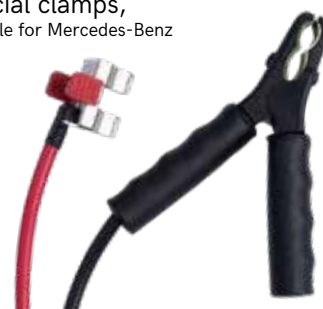
The new ShowroomCharger 50A is a new premium charger in the Showroom range. It is compatible with all types of automotive batteries - both lead/acid and Lithium, and has a 14.7 button so you can change the voltage according to the battery type in the vehicle. A power supply function is also available, which delivers 13,7V without the presence of a battery. It is based on modern switch mode technology and galvanized divisions, and represents the latest technology within battery charging. as previous chargers, and has detachable cables.



ShowroomCharger 50A

| | |
|---------------------------|---|
| Item no. Standard clamps | 709800 |
| Item no. Special clamps | 715030 |
| Volt | 12V Charging |
| Rated voltage AC - VAC/Hz | 100-240/50-60 |
| Charging voltage | 14.4V/14.7V |
| Float charging | 13.5V/13.6V |
| Min battery voltage | 2.0V |
| Max charging current | 50A |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +40°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop and Lithium batteries |
| Battery Capacity | 30-600Ah |
| Dimensions L/B/H | 280/175/85 |
| IP rate | 5K3 |
| Weight | 3.8 kg |

Special clamps,
Suitable for Mercedes-Benz



Standard
clamps



Detachable cables:

- 714931 2,5m charging cable with standard clamps
- 711440 2,5m charging cable with special clamps

WorkshopCharger 25A

The new WorkShopCharger 25A from DEFA is a battery charger as well as 13,7V power supply. Its unique display makes every function available with one button access, and allows for easy monitoring of the charging process. It provides continuous current when you need stable voltage to avoid lost data during ECU programming or battery change. It is delivered with cable, a wall bracket and isolated hood for easy storage and use.



| WorkShopCharger 25A | |
|---------------------------|---|
| Item no. | 706900 |
| Volt | 12V Charging / Power supply 13,7 Volt |
| Rated voltage AC - VAC/Hz | 230/50-60 |
| Charging voltage | 14.4V/14,7V |
| Float charging | 13,6V |
| Min battery voltage | 2.0V |
| Max charging current | 25A |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +50°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop Batteries |
| Battery capacity | 30-500Ah |
| Dimensions L/W/H | 202x96x53 |
| IP rate | IP20 |
| Weight | 2 kg |

WorkshopCharger_{2.0} I 35A

The 35A WorkshopCharger 2.0 is a versatile and efficient battery charger and power supply that helps you save time in the workshop. It is delivered with a detachable charging cable, a wall bracket and an isolated hook that makes it easy to place wherever you need. The new WorkshopCharger is compatible with all types of automotive batteries - both lead/acid and Lithium. It has no fan and produces no noise. The power supply function provides continuous current and stable volt and helps you avoid lost data during ECU programming or a battery change.



| WorkshopCharger 2.0 35A | |
|---------------------------|---|
| Item no. with 2,5m cable | 707700 |
| Item no. with 5m cable | 709100 |
| Volt | 12V Charging / Power supply 13,7 Volt |
| Rated voltage AC - VAC/Hz | 100-230/50-60 |
| Charging voltage | 14.4V/14,7V |
| Float charging | 13,6V |
| Minimum battery voltage | 2.0V |
| Max charging current | 35A |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +50°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL), Start-Stop and Lithium batteries |
| Battery capacity | 30-600Ah |
| Size L/W/H | 227x125x62 mm |
| Insulation class | IP40 |
| Weight | 1,8 kg |

The detachable cables can easily be connected and disconnected to improve the user friendliness of the charger at the workshop - 2,5 meter or 5 meter cable available.

Spare parts:

| | |
|--------|---------------------|
| 711940 | 2,5m charging cable |
| 711950 | 5,0m charging cable |
| 712510 | 2,5m power cable |



WorkshopCharger 50A

The WorkshopCharger 50A is a versatile and efficient battery charger and power supply that helps you save time in the workshop. It is delivered with a detachable charging cable, a wall bracket and hook that makes it easy to place near your workstation. The new WorkshopCharger is compatible with all types of automotive batteries - both lead/acid and Lithium. It has no fan and produces no noise. The power supply function provides continuous current and stable volt and helps you avoid lost data during ECU programming or a battery change.



WorkshopCharger 50A

| | |
|---------------------------|--|
| Item no with 2,5m cable | 713000 |
| Item no with 5m cable | 713200 |
| Volt | 12V Charging / Power supply 13,7 Volt |
| Rated voltage AC - VAC/Hz | 100-240/50-60 |
| Charging voltage | 14.4V/14,7V |
| Float charging | 13,5V/13,6V |
| Min battery voltage | 2.0V |
| Max charging current | 50A |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +40°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop and Lithium batteries |
| Battery capacity | 30-600Ah |
| Size L/W/H | 280 x 175 x 85 mm |
| IP rate | IP5K3 |
| Weight | 3,8 kg |

The charger is delivered with detachable cables that can be replaced if needed. This increases the lifetime of the product.



Spare parts:

| | |
|--------|---------------------|
| 711940 | 2,5m charging cable |
| 711950 | 5,0m charging cable |
| 711533 | 2,5m power cable |

WorkshopCharger 125A

DEFA ShowroomCharger 125A is based on modern switch-mode technology, and will help maintain the batteries optimal performance and durability. The charger is delivered with detachable and replaceable cables. It can be mounted permanently on the wall or a workstation, or you can use the wall bracket included for a more portable solution. It is compatible with all types of automotive batteries, including WET, AGM, EFB, GEL and Lithium. With its capability to provide continuous output power of 125A the WorkshopCharger 125A is perfect for all ECU programming and diagnostic jobs.



| WorkshopCharger 125A | |
|---------------------------|--|
| Item no. | 709000 |
| Volt | 12V/24V Charging / Adjustable power supply 13,7 Volt |
| Rated Voltage AC - VAC/Hz | 100-240/50-60 |
| Output voltage range | 2V-32V |
| Min battery voltage | 2.0V |
| Charging current | 125A@230V, 65@120V |
| Back current drain | <1Ah/month |
| Ambient temperature | -20°C ~ +40°C |
| Charging types | 7 step, fully automatic charging cycle (Analyze/main charge/top charge/analyze/float/sleep/wake Up) |
| Battery types | All types of 12V lead-acid batteries (WET, MF, Ca/Ca, AGM, EFB and GEL) Start-Stop and Lithium batteries |
| Battery capacity | 30-600Ah |
| Size L/W/H | 373 x 206 x 104 mm |
| IP rate | IP20 |
| Weight | 7,2 kg |

MENU FOR OPERATIONS:

A scroll wheel and a back button is used to operate the charger. The scroll wheel can be turned in both directions and can also be pushed down.

Turning the scroll wheel will switch between the different options available, and pushing the scroll wheel will make a selection. The back button is used to go back to the previous screen in the menu



Spare parts:

| | |
|--------|--|
| 714552 | Battery Clamp H500 set |
| 714554 | DC cable 5m, 25mm ² , with clamps |
| 714556 | Mounting Bracket |
| 714557 | Air filter accessory |
| 714558 | Power cable 5m, with lock |



SmartCharge 4A and 6A

SmartCharge 4A and 6A are intelligent chargers which makes it easy and safe to charge your batteries. All you have to do is connect the charger to an outlet, connect the clips to your battery, and then press "On". SmartCharge recognizes which type of battery it is connected to, and charges it accordingly. When you are done, wind it up, click the parts in place and keep it handy. SmartCharge has power supply for access to continuous current.



SmartCharge 4A / 6A

| | |
|-------------------------|-----------|
| Item no. 4A | 701515 |
| Item no. 6A | 706060 |
| Item no. 6A Lithium | 712006 |
| Height/Width/Depth - mm | 210/90/54 |
| Weight- gr | 620 |
| IP-rate | 65 |

SmartCharge 6A that also charges Lithium batteries will be launched soon



EASY TO USE

- On/off button
- Backlit user-friendly interface and display.
- Adapts automatically to the size (Ah) of your battery.
- A display to easily read the actual power level of your battery.
- Integrated cable storage solution.
- It will never over-charge your battery. Ever.
- Temperature compensated charging cycle.



AWARD FOR DESIGN EXCELLENCE
NORWEGIAN DESIGN COUNCIL

POWERSUPPLY

Every so often you need access to continuous current, for instance when changing the battery in your car. With power supply you can avoid leaving the car without power and having to reset every setting in the car later. You can also use power supply to power 12V units such as an cooling box or a portable sound system. The power supply function is now available with all SmartCharge versions.

It is activated by pressing and holding the ON button for 5 seconds. The charger will then generate 13,6V, indicated by 5 LED segments lighting from bottom to top.

SmartCharge 8A and 10A

SmartCharge 8A and 10A are larger and more powerful chargers designed for more rapid charging of larger batteries, such as in a car or boat. SmartCharge has power supply for access to continuous current.



SmartCharge 8A / 10A

| | |
|-------------------------|-----------|
| Item no 8A | 701785 |
| Item no 10A | 706161 |
| Height/Width/Depth - mm | 235/90/54 |
| Weight - gr | 750 |
| IP-rate | 65 |



CHARGING BATTERIES WITH LOW VOLTAGE

If your battery is running low, then what you need is SmartCharge 8A or 10A. It will charge 12V batteries with voltages as low as 2V.

CHARGES BOTH LARGE AND SMALL BATTERIES

SmartCharge 8A/10A is suitable for batteries from 20 to 250Ah. The charger is only 2,5 cm higher than 4A and 6A, and faster.



Which SmartCharge do I need?

SmartCharge version

| | |
|-----------------|--------------------|
| SmartCharge 4A | 2 - 110Ah battery |
| SmartCharge 6A | 10 - 150Ah battery |
| SmartCharge 8A | 20 - 200Ah battery |
| SmartCharge 10A | 30 - 250Ah battery |



Display for promotion of SmartCharge:

SmartCharge display:

| | |
|----------|--------|
| Item no. | 706782 |
|----------|--------|

| |
|--------------------------------|
| Fits 8 chargers of any version |
|--------------------------------|

SmartCharge Accessories

We offer a wide range of accessories for DEFA SmartCharge. These accessories address your everyday need to charge your various devices. Our range of accessories consists of cables, connectors, battery status indicators, and outlets which can be adapted to your every need. For more information, visit www.defa.com

CHARGE CONNECTOR AND POWER OUTLET - SIDE BY SIDE

With an extra DEFA power outlet installed in your boat or vehicle, you can easily charge your mobile phone or power your cooling box, and charge your battery at the same time. When your battery needs charging, simply connect your SmartCharge when docking and you have access to 230V. Nothing could be easier.



SmartCharge accessories



12V Battery status indicator

| | |
|---------------------------------|--------|
| Item no. | 701758 |
| Length - mm | 48 |
| Cross section - mm ² | 28 |
| IP rate | 65 |



12V Charging cable, with ring terminals

| | |
|---------------------------------|--------|
| Item no. | 701762 |
| Cable length - m | 1,3 |
| Cross section - mm ² | 1,3 |
| IP rate | 65 |



12V Charging cable, with clamps

| | |
|---------------------------------|--------|
| Item no. | 701764 |
| Cable length - m | 1,3 |
| Cross section - mm ² | 1,3 |
| IP rate | 65 |



12V Charging kit

| | |
|----------|--------|
| Item no. | 701761 |
|----------|--------|

DEFA USB Charger

USB Charger with two outlets makes it possible to charge both tablet and smartphones at the same time. Delivered in a handy packaging that can be displayed in the showroom or reception.



12V USB Charger

| | |
|-----------------------------|--------|
| Item no. | 706611 |
| Length - mm | 48 |
| Dimension - mm ² | 28 |
| Max charging current - A | 3.1 |
| IP Rate | 20 |

Inverter 1200W 12V

The Inverter 1200W 12V is 20% smaller than previous inverters. The inverter is available with or without transfer switch*. Due to the DEFA PlugIn connectors the inverter fits perfectly into a DEFA charging system.

The inverters will provide access to 230VAC mains voltage. They deliver pure sinus and are therefore excellent for TV and DVD-equipment as well as laptop computers.

TRANSFER SWITCH*:

Integrated transfer switch automatically ensures that 230V power is supplied from a connected mains outlet when possible. This prevents the inverter from drawing power from the battery, allowing it to recharge. When mains power is disconnected power supply is switched back to the inverter.



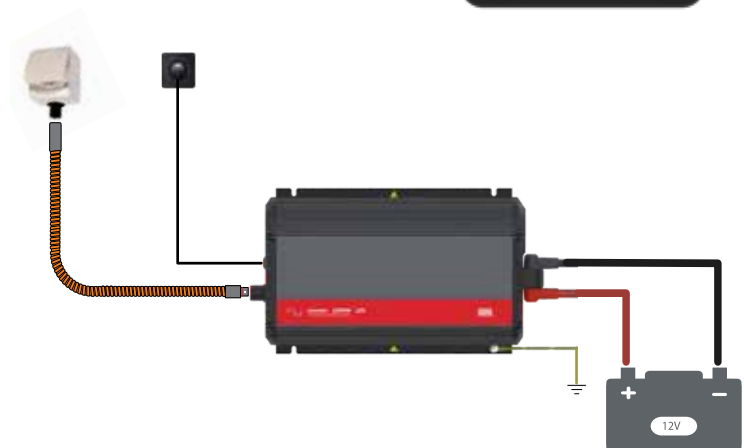
Inverter 1200W

| | |
|------------------------------|-------------|
| Item no. w/Transfer switch | 709090 |
| Item no. wo/Transfer switch* | 709191 |
| Item no. Remote panel | 709340 |
| Height/Width/Depth (mm) | 360x225x98* |
| Weight (kg) | 4,7* |

Remote panel

For Inverter 1200W 12V

The inverter can be installed in hard-to-reach areas, and be operated with a remote panel. With 6 meter cable
Item no: 709340



Inverter 2500W 24V

The new Inverter 2500W 24V is 20% smaller than previous inverters. The inverter is available with or without transfer switch*. Due to the DEFA PlugIn connectors the inverter fits perfectly into a DEFA charging system.

The inverters will provide access to 230VAC mains voltage. They deliver pure sinus and are therefore excellent for TV and DVD-equipment as well as laptop computers.

TRANSFER SWITCH*:

Integrated transfer switch automatically ensures that 230V power is supplied from a connected mains outlet when possible. This prevents the inverter from drawing power from the battery, allowing it to recharge. When mains power is disconnected power supply is switched back to the inverter.



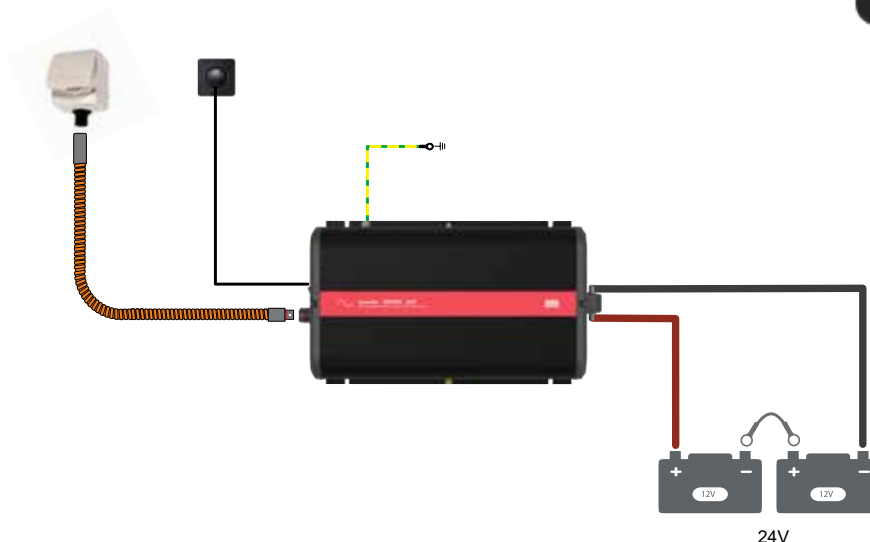
Inverter 2500W - 24V

| | |
|----------------------------------|--------------|
| Item no. with Transfer switch | 709595 |
| Item no. without Transfer switch | 709797 |
| Item no. Remote panel | 709340 |
| Height/width/depth (mm) | 412x254x88,5 |
| Weight (kg) | 6,3 |

Remote panel

For Inverter 2500W 24V

The inverter can be installed in hard-to-reach areas, and be operated with a remote panel. With 6 meter cable
Item no: 709340



Inverters - PlugIn / Schuko

Our high-quality inverters are safe to use and make it possible to use electrical equipment in boats and vehicles.



| Item no | Connection | Input - VDC | Output - VAC | Output Power - W | Weight - kg | Size - mm |
|---------|------------|----------------|-----------------|---------------------|----------------|--------------|
| 702935 | PlugIn | 12 | 230 | 300 | 2,6 | 230x151x64 |
| 702937 | PlugIn | | | 600 | 3,5 | 324x170x68 |
| 702941 | PlugIn | | | 1500 | 6,2 | 420x223x101 |
| 702943 | PlugIn | | | 2000 | 6,5 | 420x289x100 |
| 702949 | PlugIn | 24 | | 1000 | 5,2 | 390x223x101 |
| 702951 | PlugIn | | | 1500 | 6,2 | 420x223x101 |
| 702953 | PlugIn | | | 2000 | 6,5 | 420x289x100 |
| 703254 | PlugIn | | | 2500 | 8,0 | 480x289x100 |
| 702950 | Schuko | 24 | 250 | 1000 | 5,2 | 390x223x101 |

Inverter control panels

All inverters can be remotely controlled from a separate control panel. This makes it easier to use the inverter when it is not easily accessible.



Remote control Flush mounted

| | |
|-----------------|---|
| Item no. 702912 | Remote Control for 300/600W inverter, 6 m cable. |
| Item no. 702913 | Remote Control for 1000/1500/2000/2500/3000W inverter, 6m cable |
| Item no. 704030 | Remote Control for 1000/1500/2000/2500/3000W inverter, 10m cable. |



Remote control Surface mounted

| | |
|-----------------|--|
| Item no. 705115 | Remote Control for 300/600W inverter, 6m cable |
| Item no. 705116 | Remote Control for 1000/1500/2000/2500/3000W inverter, 6m cable |
| Item no. 705117 | Remote Control for 1000/1500/2000/2500/3000W inverter, 10m cable |

InverterKit

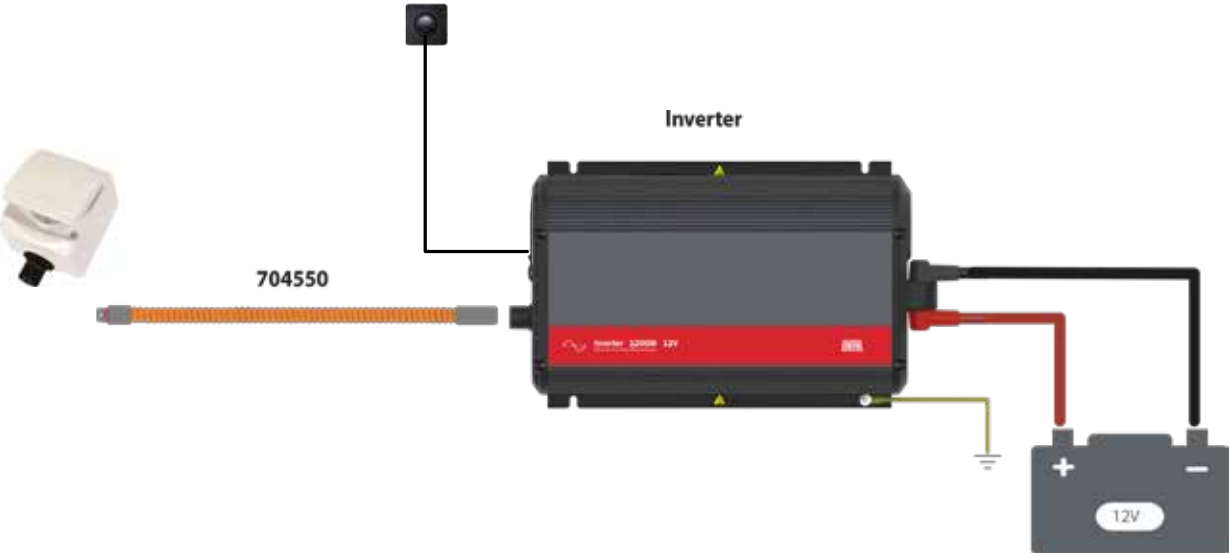
DEFA inverter kits consist of the inverter, a 2m orange extension cable and a double power outlet. It can easily be expanded, as it is based on the DEFA PlugIn system.



The new inverter in the InverterKit 1200W is 20% smaller than the predecessor.

InverterKit

| Item no: | Item name: | Inverter: | Cable: | Outlet: | Remote: |
|----------|--|-----------|--------|---------|---------|
| 715967 | Inverter Pack 300W/12V Single socket outlet | 702935 | 704550 | 700401 | 702912 |
| 715968 | Inverter Pack 600W/12V Single socket outlet | 702937 | 704550 | 700401 | 702912 |
| 715969 | Inverter Pack 1200W/12V Single socket outlet | 709191 | 704550 | 700401 | 709340 |
| 715970 | Inverter Pack 1500W/12V Single socket outlet | 702941 | 704550 | 700401 | 702913 |
| 715971 | Inverter Pack 2000W/12V Single socket outlet | 702943 | 704550 | 700401 | 702913 |
| 715972 | Inverter Pack 1000W/24V Single socket outlet | 702949 | 704550 | 700401 | 702913 |
| 715973 | Inverter Pack 1500W/24V Single socket outlet | 702951 | 704550 | 700401 | 702913 |
| 715974 | Inverter Pack 2000W/24V Single socket outlet | 702953 | 704550 | 700401 | 702913 |
| 715975 | Inverter Pack 2500W/24V Single socket outlet | 709797 | 704550 | 700401 | 709340 |



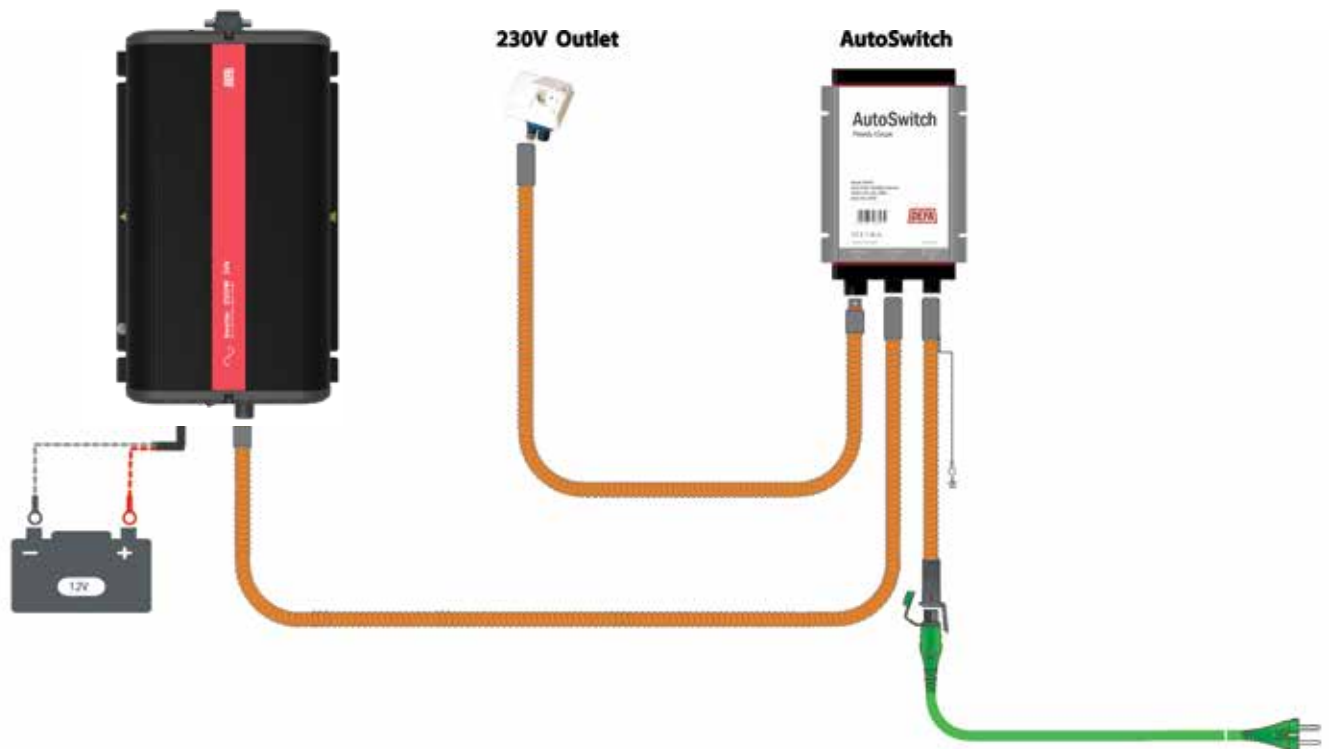
AutoSwitch

AutoSwitch makes sure that the mains power always has priority when both it and the inverter are connected to the same outlets. This ensures that the batteries are not used to power the outlets when the vehicle is plugged into mains. The AutoSwitch also makes sure that there is no power in the mains inlet when the inverter is in use.



AutoSwitch

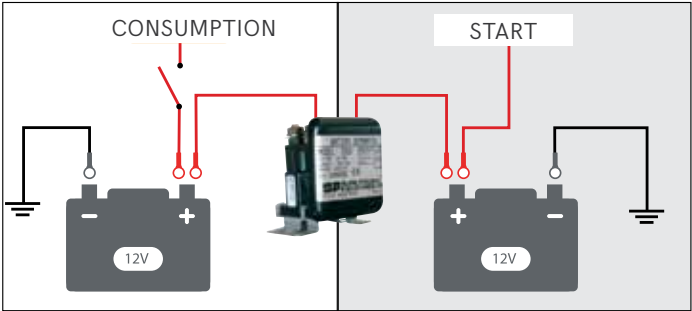
| | |
|------------------------|------------|
| Item no | 703697 |
| Input voltage - VAC/Hz | 230/50-60 |
| Output voltage (VAC) | 230 |
| Max current (A) | 16 |
| Max power (W) | 3680 |
| Fuse (A/V) | 16/T250 |
| Height/Width/Depth- mm | 58/132/205 |
| IP rate | 44 |



Battery separators

The battery separator connects two separate battery groups, for instance the start and consumption battery during charging. If the charging is interrupted, the batteries are separated again. The battery separators measure voltage on both battery groups and are activated automatically.

Installation of the separator is simple, and it is an optimal solution for a 2-circuit system that does not require changing the original set-up.



Battery separator 12V 100A

| | |
|----------------------------|-----------|
| Item no. | 700595 |
| Function | Separator |
| Continuous current - A | 100 |
| Max output - A | 400 |
| On function (typical) - V | 13,2 |
| Off function (typical) - V | 12,8 |
| Height/Width/Depth - mm | 76/83/64 |

Special characteristics: Both batteries will activate the separator.



Battery separator 12V 200A

| | |
|----------------------------|-----------|
| Item no. | 700596 |
| Function | Separator |
| Continuous current - A | 200 |
| Max output - A | 1000 |
| On function (typical) - V | 13,2 |
| Off function (typical) - V | 12,8 |
| Height/Width/Depth - mm | 76/83/64 |

Special characteristics: Both batteries will activate the separator.

El-centrals

The system can be installed without the need for tools or a certified installer.



El-central

Main inlet cabinet 230VAC/16A, 1 DEFA PlugIn inlet, 1 DEFA PlugIn outlet, for use with TN-grid inverters or mains power. **Item no. 716692**



El-central

Main inlet cabinet 230VAC/16A, 1 DEFA PlugIn inlet, 1 DEFA PlugIn outlet, with PE-N connection. Only for use with DEFA IT-grid inverters. **Item no. 715520**

Connection cables

DEFA Connection cables are developed for DEFA MiniPlug and provides a reliable connection from your mains power outlet to the car. The MiniPlug Xtreme is more durable and is suited for cold weather and rough treatment. Xtreme has a black cap to distinguish it from the MiniPlug.



MiniPlug Xtreme Connection cable 1,5mm²

| | |
|---------------------------------|--------------------------|
| Item no. - 2,5m | 460955 |
| Item no. - 5,0m | 460957 |
| Number of pcs in collection box | 460955: 22 460957: 12 |
| Voltage - - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr | 460955/309 - 460957/535 |



MiniPlug Connection cable 1,5mm²

| | |
|------------------------------------|---|
| Item no. - 2,5m | 460920 |
| Item no. - 2,5m with angle contact | 460933 |
| Item no. - 3,5m | 460938 |
| Item no. - 3,5m with angle contact | 460942 |
| Item no. - 5,0m | 460921 |
| Number of pcs in collection box | 920: 30 - 933: 22 - 938: 22 - 942: 22 - 921:12 |
| Voltage - - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr | 920/390 - 933/450 - 938/510 - 942/530 - 921/600 |



MiniPlug Connection cable 2,5mm²

| | |
|---------------------------------|------------------------------|
| Item no. - 2,5m | 460960 |
| Item no. - 5,0m | 460961 |
| Item no. - 10,0m | 460962 |
| Item no. - 15m | 460963 |
| Number of pcs in collection box | 960/22 - 961/12 - 962/1 |
| Voltage - - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr | 530/915/1520 (2,5/5,0/10,0m) |

DEFA Connection cable 2,5 mm² is used for vehicles with special requirements for connection cables, such as ambulances and fire engines with special equipment. Even if the cable is available with a 2,5mm² core cross-section, the maximum power consumption is 16A.

Connection cables and sets

The DEFA MiniPlug Inlet cable is developed to fit all new cars. Flush and bracket mounting is equally simple. DEFA MiniPlug was developed with the goal of creating user friendly design, better safety and total reliability.



Connection set 460785

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Xtreme Connection cable - 2,5 m | 460955 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

Connection set 460787

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Xtreme Connection cable - 5,0 m | 460957 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

Connection set 460789

| | |
|--|--------|
| MiniPlug Inlet cable - 1,5 m | 460915 |
| MiniPlug Connection cable angle - 2,5 m | 460933 |
| MiniPlug Inlet cable - fitting equipment | 418801 |

PlugIn extension cables

The components are easily connected together with DEFA's armored PlugIn extension cables. The system ensures a reliable and tight connection and eliminates incorrect connections.



PlugIn extension cables

| Item no. black | Item no. orange | Length |
|----------------|-----------------|--------|
| 460802 | 704547 | 0,5 m |
| 460803 | 704548 | 1,0 m |
| 460843 | 704549 | 1,5 m |
| 460804 | 704550 | 2,0 m |
| 460844 | 704551 | 3,0 m |
| 460846 | 704552 | 4,0 m |
| 460809 | 704553 | 5,0 m |
| 460847 | 704554 | 8,0 m |
| 460851 | 704555 | 10,0 m |
| 460850 | 704556 | 12,0 m |

Voltage 230 VAC, max. current 16A, IP 44.
Test and approval EN 50066 -, EN 60309-1

Inlet cables

DEFA MiniPlug Inlet Cable is adjusted to all new cars. Both flush mounted and bracket mounted versions are equally functional and easy to install. During the development of DEFA MiniPlug we have focused on user friendly design, safety, and ease of installation.



| MiniPlug Inlet cable | Item no. Black | Item no. Orange |
|-------------------------------|--|---|
| Item no (0,6m) | 460902 | 704557 |
| Item no. (1,0m) | 460901 | 704558 |
| Item no. (1,5m) | 460915 | 704559 |
| Item no. (2,0m) | 460939 | 704561 |
| Voltage - VAC/Hz | 230/50-60 | 230/50-60 |
| Current - A | 16 | 16 |
| Weight (Length/Weight) - m/kg | 0,6/0,23 - 1,0/0,35 - 1,5/0,41 - 2,0/0,57 | 0,6/0,23 - 1,0/0,35 -1,5/0,41 - 2,0/0,57 |

The Inlet Plug has MiniPlug with lid in one end and DEFA PlugIn contact in the other end. In addition, it has a ground conductor with cable clip for grounding the system.



CEE / PlugIn Contact

| | |
|------------------|-----------|
| Item no. | 701150 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A | 16 |
| Weight | 0,158 |



DEFA Rettbox®

| | |
|--|--------|
| Rettbox® 12V without air - Item no. | 707175 |
| Rettbox® 24V without air - Item no. | 706411 |
| Rettbox® cable without air 4m - Item no. | 706412 |
| Rettbox® 12V with air - Item no | 707174 |
| Rettbox® 24V with air - Item no | 706413 |
| Rettbox® cable with air 4m - Item no | 706414 |

The RETTBOX® is an electromagnetic self-eject system comprising coupler socket and an inlet mounted in a box. The self-ejection of the coupler socket is activated electrically via the vehicle's ignition system. The release mechanism is housed in a compact enclosure fitted into the vehicle. On ignition, a solenoid plunger lifts the socket release latch thus ejecting it from the inlet. Rettbox® is available with DEFA PlugIn for easy installation in a DEFA system.

Outlets and frames

All 230VAC Schuko outlets have DEFA PlugIn connections.
The connections are available in both flush mounted and wall mounted versions.



Wall outlet - on-wall mounted single

| | |
|------------------------|-----------|
| Item no. | 700401 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,100 |
| IP rate - IP | 44 |



Wall outlet - on-wall mounted double

| | |
|------------------------|-----------|
| Item no. | 700403 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,200 |
| IP rate - IP | 44 |



Wall outlet - on-wall mounted double with PlugIn, in- and outlet

| | |
|------------------------|-----------|
| Item no. | 702779 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,058 |
| IP rate - IP | 44 |



PlugIn wall outlet Main outlet double 16A

| | |
|--------------------------------------|-----------|
| Item no. recessed with cover - white | 700405 |
| Mains voltage - VAC/Hz | 230/50-60 |



Wall outlet - flush mounted single

| | |
|---|---------------|
| Item no. Single main outlet, 230VAC/16A, recessed - white | 701317 |
| Item no. Single main outlet, 230VAC/16A, recessed - grey | 701315 |



Frames for wall outlets

| | |
|---|---------------|
| Item no. Single frame for wall outlet - white | 701307 |
| Item no. Single frame for wall outlet - grey | 701305 |
| Item no. Double frame for wall outlet - white | 701310 |
| Item no. Double frame for wall outlet - grey | 701308 |



Manual summer and winter switch

| | |
|-------------------------|------------------|
| Item no. | 701123 |
| Height/Width/Depth - mm | 67/135/76 |
| Weight - kg | 0,200 |

The summer/winter switch is a manual switch which makes it possible for an engine heater/interior heater to be disconnected during the summer without the battery charger being disconnected.

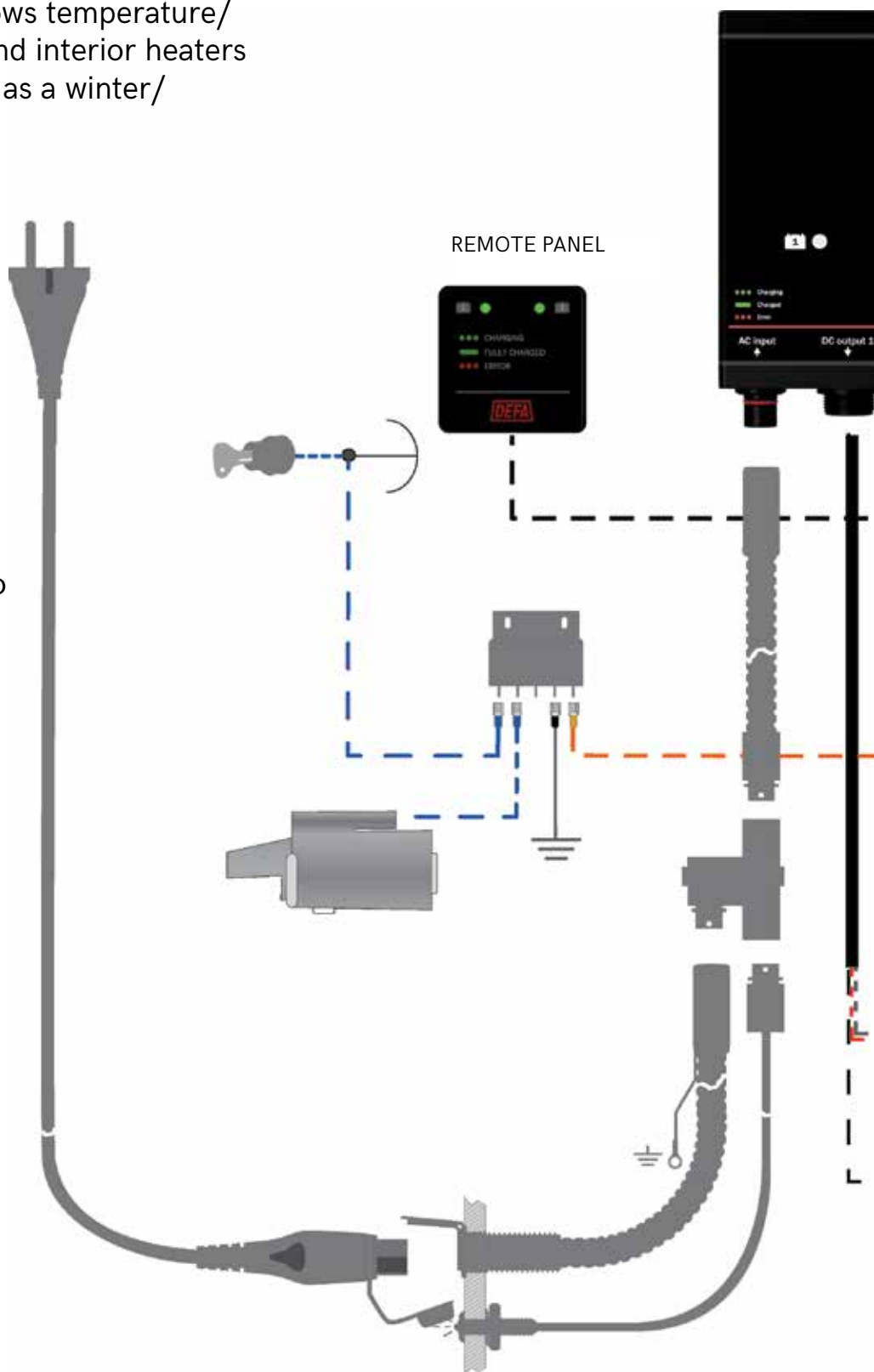
System overview

The circuit schematic shows temperature/ time control of engine- and interior heaters by using DEFA Bluetooth as a winter/ summer switch.

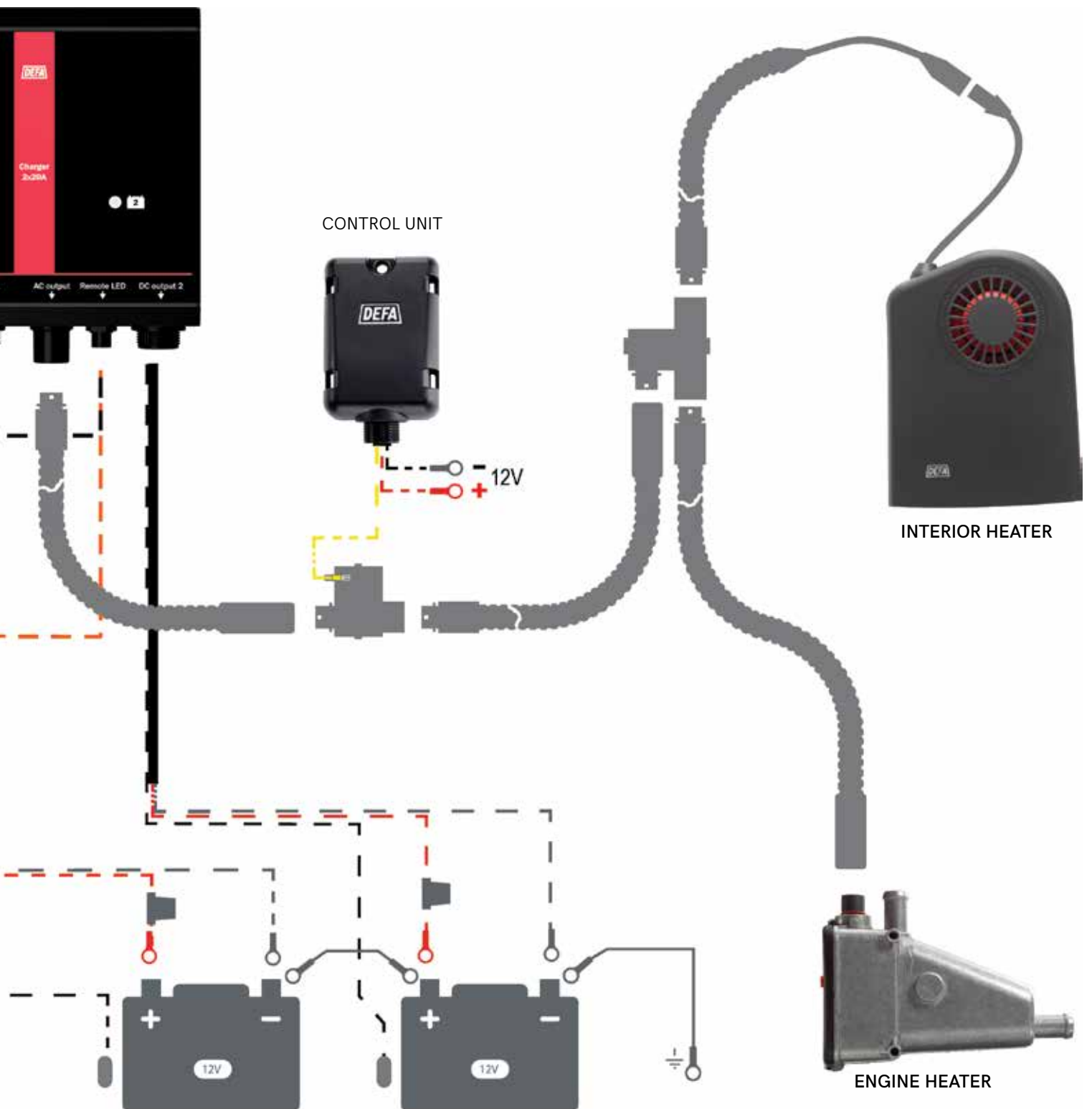
The battery charger will charge independent of winter/summer settings.

In addition, the diagram shows the "starter kill" device function through a separate relay.

Remote LED shows the charging status of two batteries with red, yellow or green LED light.



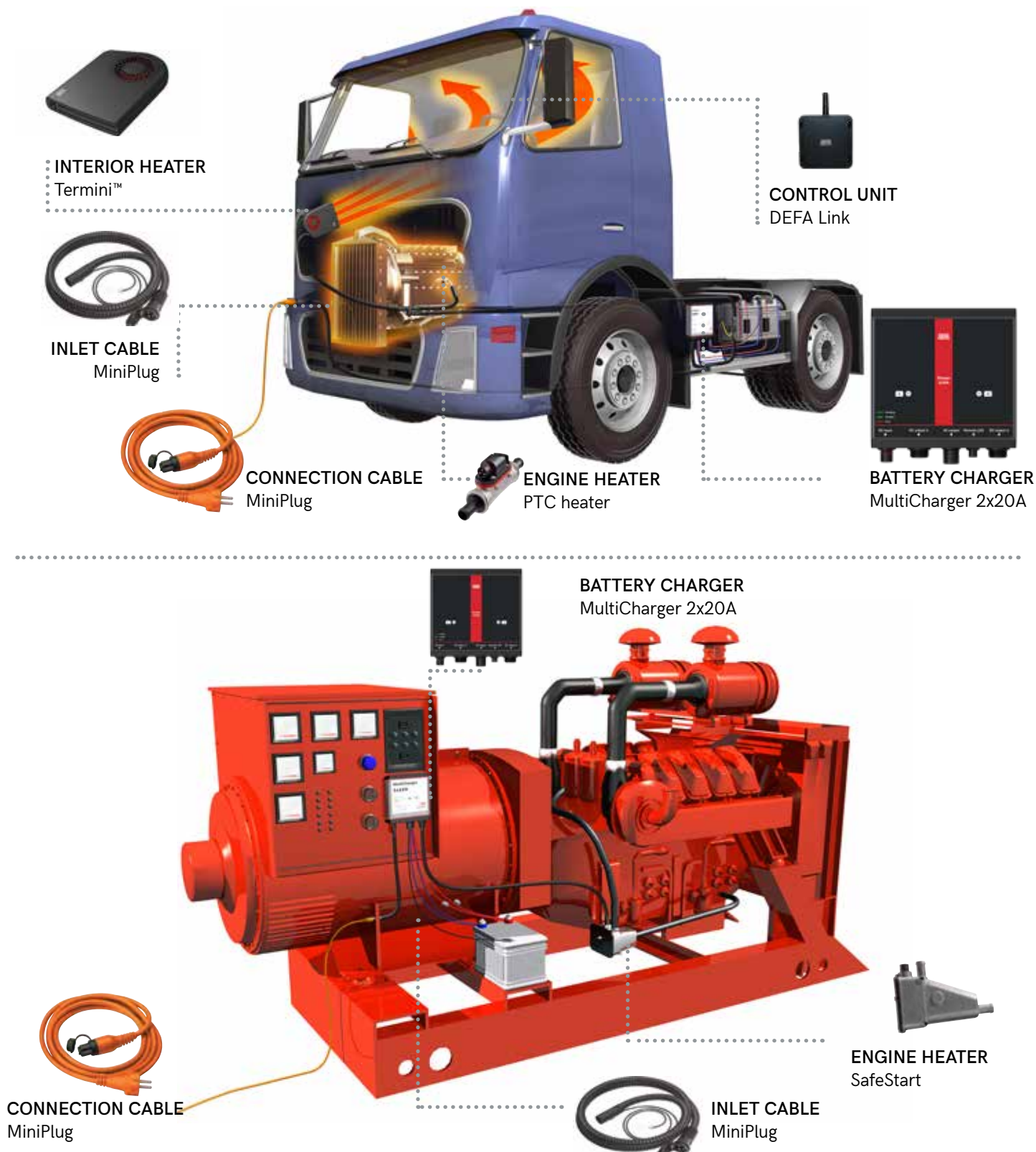
BATTERY CHARGER



Trucks and GenSet

The DEFA Charging system is developed with the intention of simplifying installations of battery chargers in cars, trucks, buses, tractors and construction equipment.

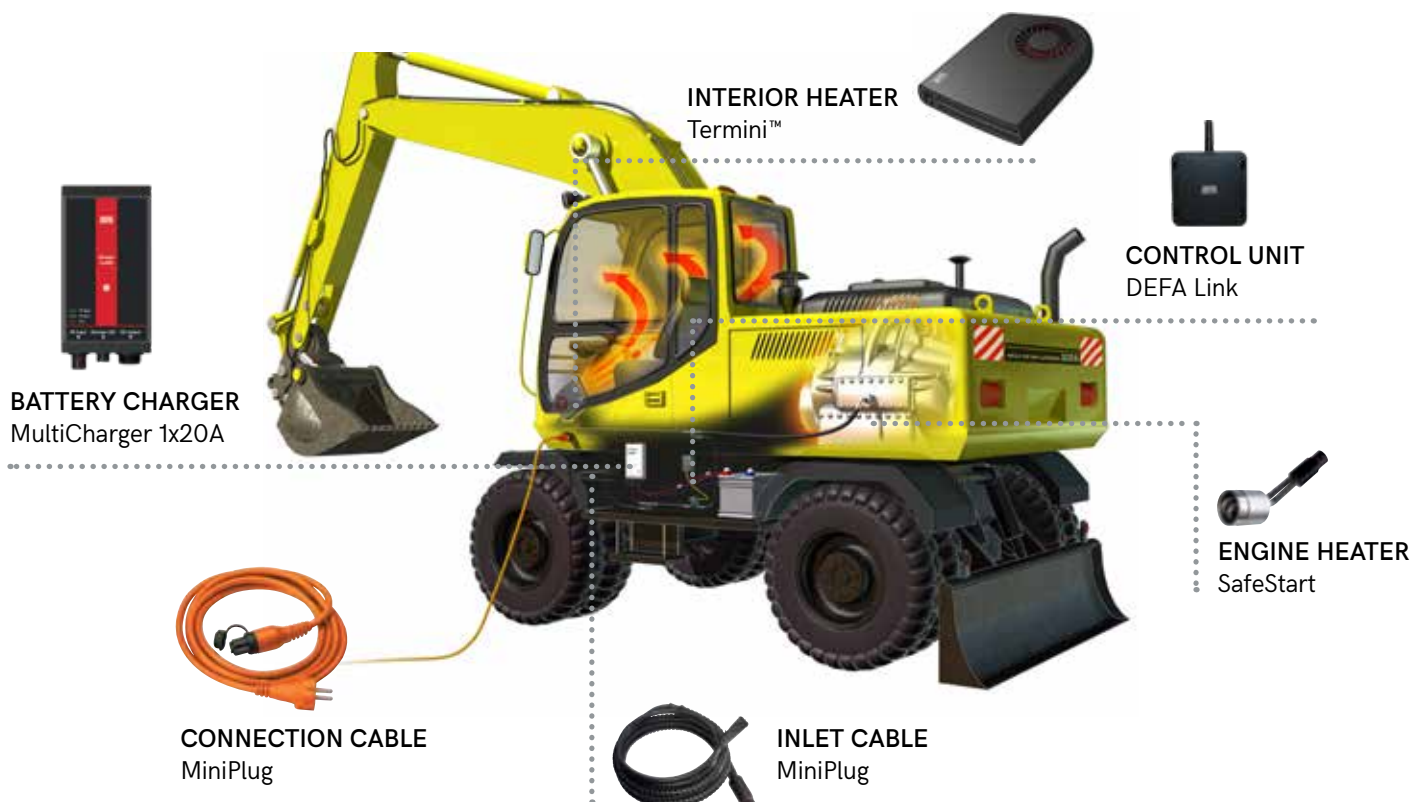
The system eases and enables connections with DEFA PlugIn cables, and eliminates the need for tools, and can be installed without assistance from a certified installer.



Agriculture and Construction

The DEFA charging system is simple, reliable and durable.

All cables and connectors are waterproof. DEFA PowerSystems is a module-based system which makes it easy to expand the system with additional components, such as engine and interior heaters.



Bus

In addition to charging and preheating of the engine and cabin, an inverter which provides 230VAC is necessary. 230VAC is used for powering lap-tops, charging mobile phones etc.



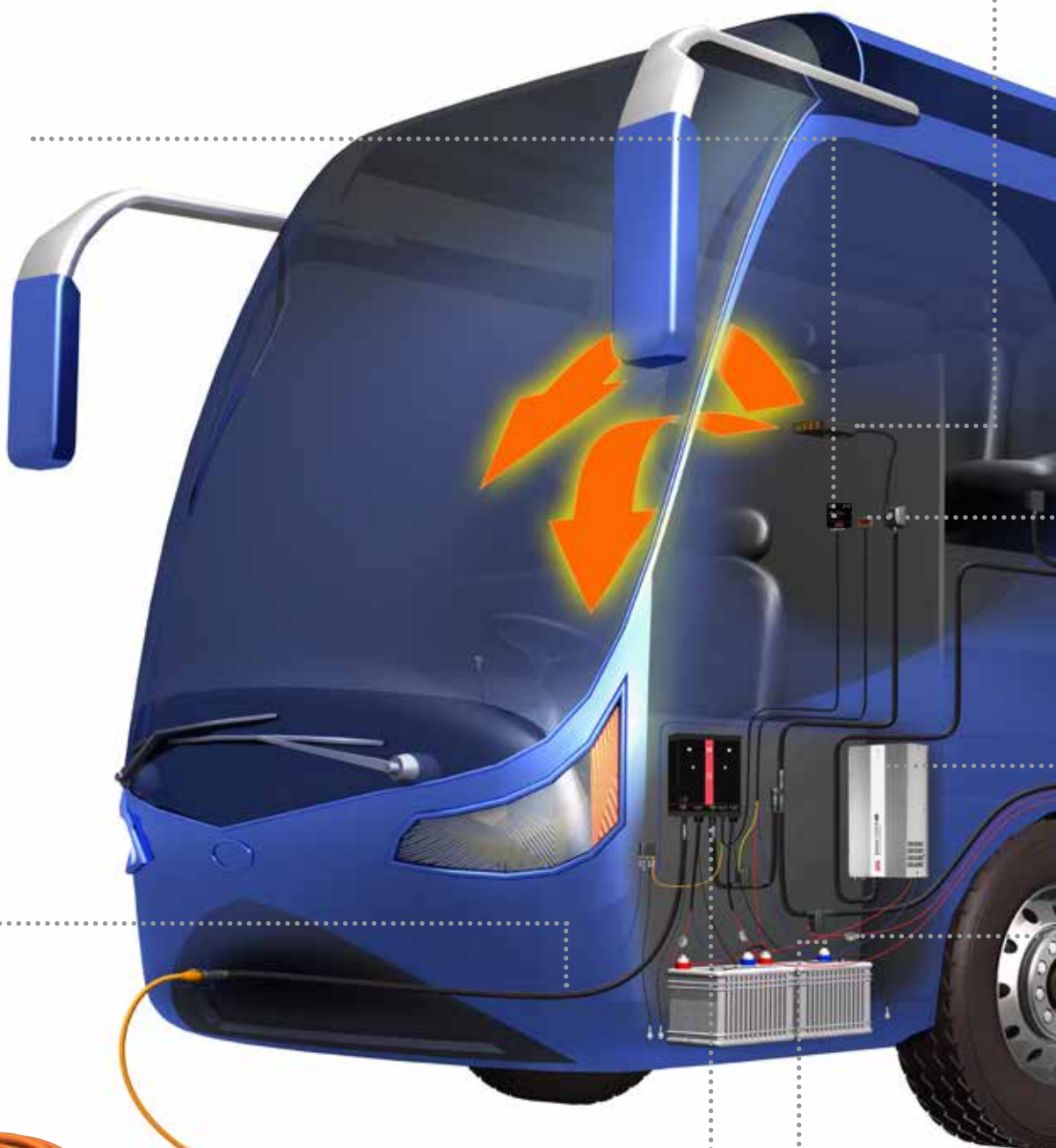
REMOTE PANEL
Battery status



INLET CABLE
MiniPlug inlet



CONNECTION CABLE
MiniPlug



BATTERY CHARGER
MultiCharger 2x35A



RELE CONNECTOR
PlugIn 12V / 24V



.....
EXTERIOR HEATER
Termini™



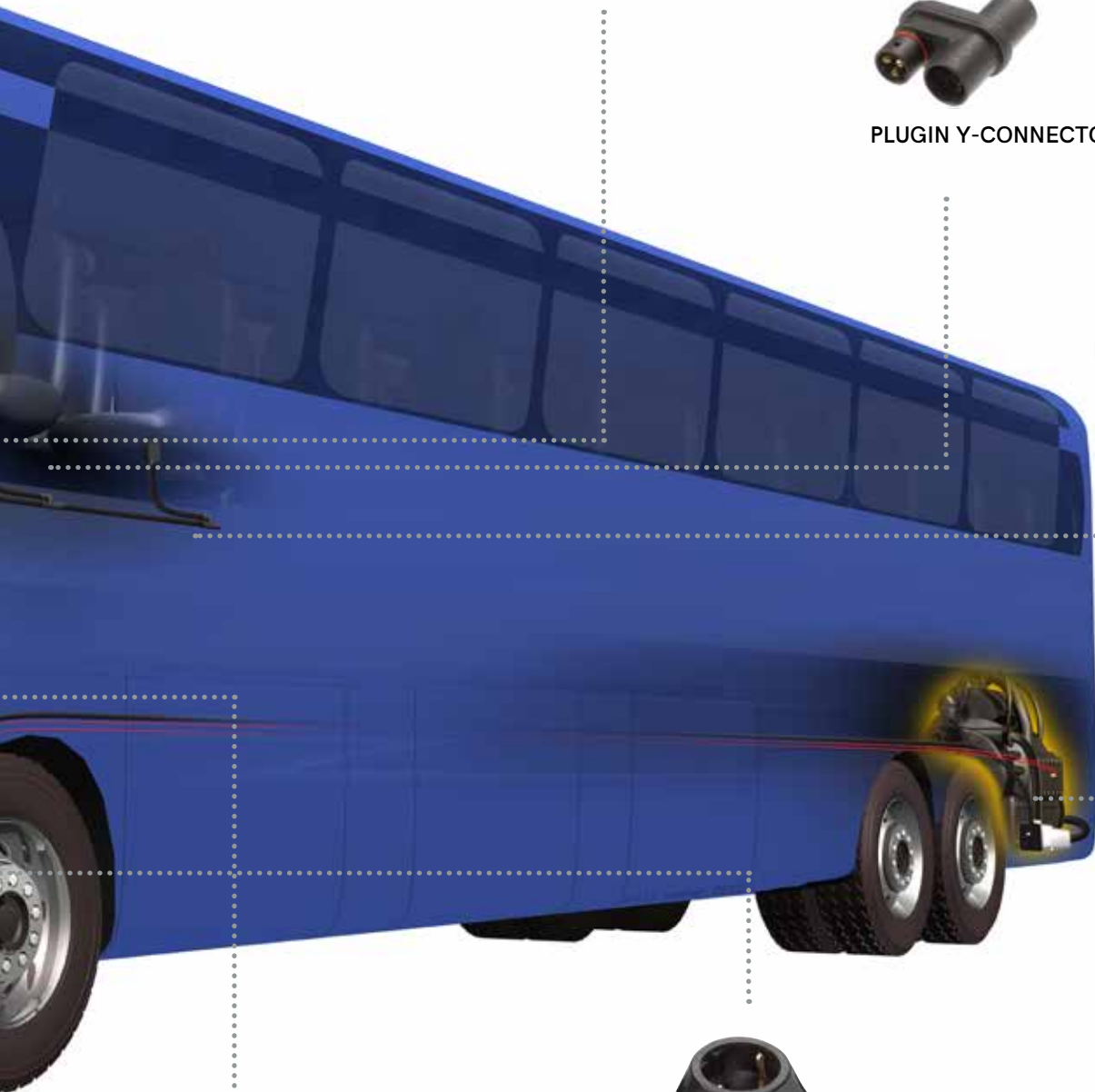
CONTROL UNIT
DEFA Link



PLUGIN Y-CONNECTOR



EXTENSION CABLE
DEFA PlugIn



ENGINE HEATER
SafeStart



CONNECTOR
Schuko - Plugin



INVERTER
From 12V or 24V to 230VAC,
with PlugIn or Schuko

Fire engine

DEFA RescueCharger has a specialized charging profile for emergency response vehicles.



CONTROL UNIT
DEFA Link



INLET CABLE
MiniPlug



CONNECTION CABLE
Miniplug



DEFA PlugIn system for Rescue can
also use Rettbox connector.



REMOTE LED
Charge indicator





INTERIOR HEATER
Termini



SINGLE SCHUKO OUTLET
PlugIn



ENGINE HEATER
DEFA Safestart



BATTERY CHARGER
MultiCharger 2x20A



INVERTER
From 12V or 24V to 230VAC,
with PlugIn or Schuko

Ambulance

In addition to charging and preheating the engine and the cabin, an inverter for medical equipment is essential. The inverter delivers 230VAC while driving.



REMOTE LED
Charge indicator



CONTROL UNIT
DEFA Link



ENGINE HEATER
Safestart



INLET CABLE
MiniPlug



DEFA PlugIn system for Rescue can also use Rettbox connector.



CONNECTION CABLE
Miniplug





DUAL SCHUKO OUTLET
PlugIn



INTERIOR HEATER
Termini



INVERTER
From 12V or 24V to 230VAC,
with PlugIn or Schuko



BATTERY SEPARATOR



BATTERY CHARGER
MultiCharger 1x20A

PlugIn solutions for the marine segment

DEFA charging systems has been developed to ease 230VAC installation and connection. This is made possible by splash proof PlugIn connectors and fitted cables. The system is very simple, reliable and durable, and can be installed without assistance from a certified installer.

There are different functional demands for boat installations. In addition, the boat system features a distribution box. This contains fuses, earth leakage circuit breakers and galvanic isolators to reduce the risk of galvanic corrosion and earth leakage from shore power. The best way to protect against galvanic corrosion is to use an ISO transformer. DEFA charging system is module-based, facilitating the addition of other functions (e.g., engine heaters) and auxiliary equipment.



Battery Charger range

DEFA Multicharger's are perfect fit with the rest of the products of the Marine segment. See info about the chargers from page 39.

| | |
|----------------------------------|--------|
| MultiCharger 1x12A | 705200 |
| MultiCharger 1x12A w/ remote LED | 706500 |
| MultiCharger 2x12A | 705300 |
| MultiCharger 1x20A | 705800 |
| MultiCharger 2x20A | 705900 |
| MultiCharger 1x35A | 708501 |
| MultiCharger 2x35A | 708502 |
| MultiCharger 1x40A - 24V | 708400 |
| MultiCharger 1205A | 450016 |
| MultiCharger 1205RA | 450015 |
| MultiCharger 1210A | 450017 |

Boat packages

There are three different boat packages to choose from. Each package can easily be installed without the need for an electrician. Chargers are bought separately, as this choice depends on the size and number of battery banks in the boat.

The system is rated for 16A and can easily be expanded using the DEFA PlugIn system.



Boat package 1

| | |
|--|--------|
| Item no. | 706272 |
| Shore power cable 10m, 2,5mm ² -DEFA MiniPlug - CEE | 706285 |
| Adapter CEE2166 Male - Schuko Female - yellow - 1 pcs | 700574 |
| Inlet cable 1,5m - 1 pcs | 701099 |
| El-central 230VAC - 1 pcs | 717212 |
| Extension cable 1,0m - 1 pcs | 460803 |
| Bag for shore power system - 1 pcs | 701097 |





Boat package 2

| Item no. | 701183 |
|---|--------|
| Shore power cable 25m, 2,5mm ² CEE2166 Male - yellow | 700577 |
| Adapter Schuko Male CEE 2166 Female - yellow - 1 pcs | 700574 |
| Inlet cable 1,5m - 1 stk | 700459 |
| El-central 230VAC/16A - 1 pcs | 717213 |
| Extension cable 1,0m - 1 pcs | 460803 |
| Extension cable 2m - 3 pcs | 460804 |
| Wall outlet, single - 1 pcs | 700401 |
| Bag for shore power system - 1 pcs | 701097 |



Boat package 3

| Item no. | 706274 |
|--|--------|
| Shore power cable 10m, 2,5mm ² - IP67 - DEFA MiniPlug - CEE | 706288 |
| Adapter CEE2166 Male - Schuko Female - yellow - 1 pcs | 700574 |
| Inlet cable 0,6m, IP67 - 1 pcs | 701821 |
| El-central 230VAC - 1 pcs | 717213 |
| Extension cable 2,0m - 3 pcs | 460804 |
| Wall outlet single - 1 pcs | 700401 |
| Bag for shore power system - 1 pcs | 701097 |



Inlet and shore power cables



Inlet stainless steel

| | |
|--------------------------------|-----------|
| Item no. Inlet stainless steel | 700578 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |
| IP rate | 67 |



Inlet stainless steel

| | |
|--|-----------|
| Item no. with DEFA PlugIn, Inlet stainless steel | 700459 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 6 |
| IP rate | 67 |



Shore power cable - for Item No. 700578/700459

| | |
|----------------------------------|-----------|
| Item no. | 700577 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |
| Dimensions - mm ² - m | 2,5 - 25 |
| IP rate | 67 |



Main adapter

| | |
|--|-----------|
| Item no. adapter schuko male/CEE female - yellow | 700574 |
| Item no. adapter schuko female/CEE male - yellow | 701096 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |



Inlet MiniPlug

| | |
|-----------------------|-----------------------------|
| Item no. - m - colour | 701098 - 0,6 - chrome |
| Item no. - m - colour | 701099 - 1,5 - chrome |
| Item no. - m - colour | 701100 - 3,0 - chrome |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |
| Weight - gr | 098/180 - 099/550 - 100/850 |
| Test and approval | EN 50066-, EN 60309-1 |



CEE Shore power cable 2,5mm² - for Inlet MiniPlug

| | |
|--------------------------------|------------------------|
| Item no. with MiniPlug, 5,0 m | 706284 |
| Item no. with MiniPlug, 10,0 m | 706285 |
| Item no. with MiniPlug, 15,0 m | 706286 |
| Item no. with MiniPlug, 25,0 m | 706287 |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |
| Weight - gr | 840/1565/2260/3745 |
| Length - m | 5,0/10,0/15,0/25,0 |
| Test and approval | EN 50066-1, EN 60309-1 |

Inlet and shore power cables



Inlet, stainless steel IP67

| | |
|-----------------------|------------------------------|
| Item no. - m - colour | 701821 - 0,6 - chrome |
| Item no. - m - colour | 701822 - 1,5 - chrome |
| Item no. - m - colour | 701823 - 3,0 - chrome |
| Voltage - VAC/Hz | 230/50-60 |
| Current - A, max. | 16 |
| Weight - gr | 821/500 - 822/720 - 823/1090 |
| Test and approval | EN 50066-, EN 60309-1 |



CEE Shore power cable 2,5mm² - for IP67 Inlet

| | |
|--------------------------------|---------------------------------|
| Item no. with MiniPlug, 10,0 m | 706288 |
| Item no. with MiniPlug, 15,0 m | 706289 |
| Item no. with MiniPlug, 25,0 m | 706290 |
| Voltage - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr - m | 1565/2260/3745 - 10,0/15,0/25,0 |
| Test and approval | EN 50066-1, EN 60309-1 |



Bag for shore power cable

| | |
|----------|--------|
| Item no. | 701097 |
|----------|--------|



PlugIn extension cables

| Item no. black | Item no. orange | Length |
|----------------|-----------------|--------|
| 460802 | 704547 | 0,5 m |
| 460803 | 704548 | 1,0 m |
| 460843 | 704549 | 1,5 m |
| 460804 | 704550 | 2,0 m |
| 460844 | 704551 | 3,0 m |
| 460846 | 704552 | 4,0 m |
| 460809 | 704553 | 5,0 m |
| 460847 | 704554 | 8,0 m |
| 460851 | 704555 | 10,0 m |
| 460850 | 704556 | 12,0 m |

Voltage 230 VAC, max. current 16A, IP 44.
Test and approval EN 50066 -, EN 60309-1



LED Indicator kit

| | |
|------------------------|---------------|
| Item no. | 460881 |
| Mains voltage - VAC/Hz | 110-240/50-60 |
| Current, max. - A | 16 |
| IP rate, PlugIn/LED | 44/67 |

PlugIn branches and contacts

The DEFA relay connector is adapted to DEFA PlugIn and used for controlling the engine and interior heater, together with DEFA control units. It can also be used for separate control of engine and interior heater together with DEFA SmartStart. At branching, use H-, T- or Y- connectors.



PlugIn Relay connector

| | |
|-------------------------|----------------|
| Item no. 12V | 701445 |
| Item no. 24V | 460856 |
| Range of use °C | -40 / +80 |
| Height/Width/Depth - mm | 61/31/67 |
| Mains voltage - VAC/Hz | 230/12, 230/24 |
| Current, max. - A | 16 |
| Weight - gr | 59 |
| Insulation class - cl | II |
| IP rate | 44 |



PlugIn Y-connector

| | |
|-------------------------|-----------|
| Item no. | 460853 |
| Height/Width/Depth - mm | 53/48/24 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr | 23 |
| IP rate | 44 |

DEFA Y-connector is an all-welded connector for connecting the engine and interior heater or the MultiCharger battery charger.



PlugIn T-connector 90°

| | |
|-------------------------|-----------|
| Item no. | 460831 |
| Height/Width/Depth - mm | 42/63/21 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Current, max. - A | 16 |
| Weight - gr | 22 |
| IP rate | 44 |

DEFA T-connector is an all-welded connector for connecting the engine and interior heater or the MultiCharger battery charger.



PlugIn H-connector

| | |
|-------------------------|------------------|
| Item no. | 460857 |
| Height/Width/Depth - mm | 42/63/21 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Current. - A | 16 |
| Weight - gr | 30 |
| IP rate | 44 |

DEFA H-connector is an all-welded connector for connecting the engine and interior heater or the MultiCharger battery charge

El-centrals

The system eliminates the need of tools, and can be installed without assistance from a certified installer. Including zink-saver diode.



El-central

| | |
|--|------------------------|
| Main inlet cabinet 230VAC/16A 1 DEFA PlugIn inlet, DEFA PlugIn outlet - Schuko outlet - grey | Item no: 717213 |
|--|------------------------|



El-central

| | |
|--|------------------------|
| Main inlet cabinet 230VAC/16A 1 DEFA PlugIn inlet, 3 DEFA PlugIn outlet - grey | Item no. 717213 |
| Main inlet cabinet 230VAC/16A 2 DEFA PlugIn inlet, 3 DEFA PlugIn outlet, with general switch - grey | Item no. 717214 |

Outlets and frames

All 230VAC Schuko outlets have DEFA PlugIn connections.
The connections are available in both flush and wall mounted versions.



Wall outlet - on-wall mounted single

| | |
|------------------------|-----------|
| Item no. | 700401 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,100 |
| IP rate | 44 |



Wall outlet - on-wall mounted double

| | |
|------------------------|-----------|
| Item no. | 700403 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,200 |
| IP rate | 44 |



Wall outlet - on-wall mounted double with PlugIn, in- and output

| | |
|------------------------|-----------|
| Item no. | 702779 |
| Mains voltage - VAC/Hz | 230/50-60 |
| Weight - kg | 0,058 |
| IP rate | 44 |

PlugIn wall outlets and fuse



PlugIn wall outlet

Item no. Main outlet double 230VAC/16A, recessed with cover - white**700405**



Wall outlet - flush mounted single

Item no. Single main outlet, 230VAC/16A, recessed - white **701317**

Item no. Single main outlet, 230VAC/16A, recessed - grey **701315**



PlugIn fuse

Item no. Automatic fuse 230V 16A PlugIn/Out **700429**

Wall outlets and frames



Frames for wall outlets

| | |
|---|--------|
| Item no. single frame for wall outlet - white | 701307 |
| Item no. single frame for wall outlet - grey | 701305 |
| Item no. double frame for wall outlet - white | 701310 |
| Item no. double frame for wall outlet - grey | 701308 |
| Item no. triple frame for wall outlet - grey | 701311 |

Security products

Car alarm:

| | |
|-----------------------------|-----|
| Security | 97 |
| Finder Link | 98 |
| Security combined with Link | 99 |
| Accessory and tools | 100 |

Security

DVS90 is a modern alarm system designed on a flexible electronic platform that ensures a very easy set up and installation. The alarm can be installed in all vehicles regardless of electrical supply and electronic systems. To raise the security level further, additional plug and play sensors and Second Authorization remote control are available.

WINDOW MODULE

The flashing blue LED shows that the car is equipped with a DEFA alarm. The alarm is triggered by the glass break sensor

WINDOW DECAL

Thieves avoid car alarms

LEVEL SENSOR

Detects changes in angle and attempts to tow away the car. (Accessory)



SIREN/BACK-UP SIREN

Emits a high-pitched sound when the alarm is triggered

DVS90 CENTRAL UNIT

MOTION SENSOR

Detects movement inside the car (Accessory)

SECOND AUTHORIZATION

Protect your car against the most advanced methods of car theft:

Original alarm and original start-up protection without any other authorization functionality can easily be turned off by stealing the signals from the car's keyless system. PC programs can activate and deactivate the keyless system and start the car. DEFA DVS90 and Second Authorization as an extra remote control makes it impossible to open the door and start the car, because of the rolling "anti-grabbing" code that protects the system.



Car specific installation drawings and dedicated support from DEFA makes DVS90 a number one in rapid installation and reliability. DVS90 has digital interfaces for all types of CAN buses found in modern cars. It also provides interfaces for analogue and semi-digital inputs with corresponding functionality, for support of older vehicles or boats. The alarm can be installed in all vehicles using 12V or 24V battery systems. www.defa.com

Security DVS90 - Car Alarm Kit

Item no.

600900



Finder Link

Finder Link alerts you if your car is stolen, and helps you track its location on your mobile. You will receive an alert to your phone if the car is started - even with the original key - or if the car is moved in any way. Then you can easily track its location and share the coordinates. To get started, install Finder Link in your car, and sign up on defa.com. The App can be downloaded free of charge.

FINDER AND SECURITY

Finder Link includes our Security and Finder solutions, and consists of a GPS/GSM unit that is installed in your car, and connected with the DEFA App.

Security

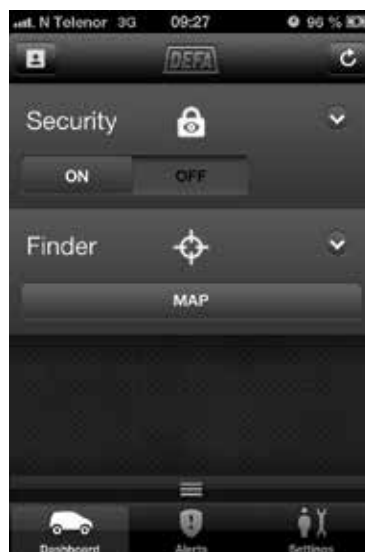
Security protects your car from theft, with a visible sticker in the window.

- Alerts you if the car is moved or started - even with original keys.
- Let you set a maximum speed, and alerts if this speed is exceeded.

Finder

- Helps you track and locate your car in the app
- Let's you share the coordinates of your car's location with the police and insurance company.

Tip: Do not forget to ask your insurance company for better terms after installing Finder Link!



Receive theft alert



Locate and follow your car's movements



Finder Link - 440034

| | |
|-----------------|--------|
| Link Hub module | 440030 |
| GPS Link module | 440037 |

Security combined with Link

With the combination of the DEFA Car Alarm Kit (DVS90) and Finder Link, the car owner will receive a burglar alarm on the mobile phone if the car is broken into, moved or started. Then the functionality Finder will locate the car on a map on the mobile App. Further increase the security with sensors and the remote control Second Authorization.

DEFA ALARM SYSTEM COMBINATIONS:

Alarm system with burglar alarm notification on the mobile:

Vehicles with no alarm installed:

- | | |
|---------------------------|-----------------|
| • DVS90 Alarm Kit | Item no. 600900 |
| • Finder Link | Item no. 440034 |
| • Input wire for Link Hub | Item no. 440060 |

Vehicles with DVS90 (600900), for upgrade to Link:

- | | |
|---------------------------|-----------------|
| • Finder Link | Item no. 440034 |
| • Input wire for Link Hub | Item no. 440060 |

Vehicles with Finder Link (440034) for increased security with DVS90 Alarm kit:

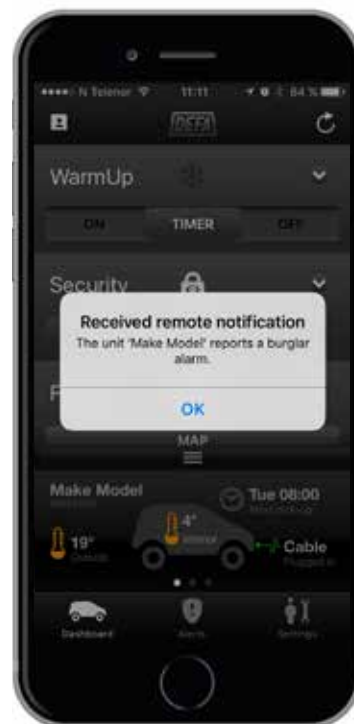
- | | |
|---------------------------|-----------------|
| • DVS9 Alarm Kit | Item no. 600900 |
| • Input wire for Link Hub | Item no. 440060 |

Vehicles with WarmUp GPS Link for increased security with DVS90 Alarm kit:

- | | |
|---------------------------|-----------------|
| • DVS90 Alarm Kit | Item no. 600900 |
| • Input wire for Link Hub | Item no. 440060 |

For increased security, DVS90 (Item No. 600900) can be supplemented with:

- | | |
|-------------------------|-----------------|
| • Motion sensor | Item no. 600914 |
| • Level sensor | Item no. 600922 |
| • Second Authorization | Item no. 600678 |
| • 2-circuit immobilizer | Item no. 600890 |



Accessories and tools for Security



Motion sensor

2,5 m cable

Item no. 600914

5 m cable

Item no. 600916



Level sensor

Item no. 600915



Sirens

Standard Siren

Item no. 600911

Back-up Siren

Item no. 600912



2-circuit immobilizer

Item no. 600890



Remote control

Item no. 600677



Second Authorization

Second Authorization remote control

Item no. 600676

2 Second Authorization remote control
and user manual

Item no. 600678



Accessories and tools

1. Extractor tools for P2

Item no 600525

2. Splitter kit

Item no. 600913

3. Hood switch

Item no. 600523

4. Central locking module

Item no. 600295

5. Extractor tools for P4, P5, P6 and P7

Item no. 600930



Input wire - upgrade to Finder Link

Item no. 440060

e-mobility

eConnect™

| | |
|-------------------|-----|
| Charging cables | 102 |
| Smart accessories | 102 |

eMove®

| | |
|------------------|-----|
| Portable charger | 103 |
|------------------|-----|

DEFA Power™

| | |
|------------------|-----|
| Charging station | 104 |
|------------------|-----|

DEFA Solid™

| | |
|------------------|-----|
| Charging station | 105 |
|------------------|-----|

eConnect™ charging cables - Mode 3

eConnect charging cables have been developed and tested for long term use in harsh environments. They are lightweight and durable, they remain flexible even in severe cold and have smart features and accessories that help make them the most user-friendly EV charging cables on the market. To validate the quality of our cables, we have conducted a wide variety of extensive material and usability tests.

ECONNECT - PRODUCT RANGE:

| Item No: | Ampere (A) | kW | Phase | Length (m) |
|----------|------------|------|-------|------------|
| 711304 | 20 | 4,6 | 1 | 5,0 |
| 711305 | 20 | 4,6 | 1 | 7,5 |
| 711308 | 32 | 7,4 | 1 | 5,0 |
| 711309 | 32 | 7,4 | 1 | 7,5 |
| 711306 | 20 | 13,8 | 3 | 5,0 |
| 711307 | 20 | 13,8 | 3 | 7,5 |
| 711310 | 32 | 22,0 | 3 | 5,0 |
| 711311 | 32 | 22,0 | 3 | 7,5 |



Tested in all weather conditions
Resistant materials
Withstands UV radiation,
chemicals and wear

eConnect™ -smart accessories

Smart accessories make eConnect cables even more user-friendly. With the docking station unit on the wall, your cable can be secured with a lock and protected from theft. It also makes it easier to coil and protect the cable from dirt and moisture. The cable bags makes it easier to store and transport the cable when it's not in use.



Item no: 712268
eConnect Docking



Item no: 712593
eConnect Basic Bag



Item no: 712594
eConnect Premium Bag

eMove® EV portable charger - Mode 2

eMove Mode 2 is a portable charger for electric vehicles that has been made with the user in mind. Unique features, unmatched user-friendliness, and extreme durability for safe charging on the move.

Efficient cable management: Cable clips and guides keep the cable tidy and convenient to bring with you

Robust and durable: Aluminum housing ensures a long product life, even in rough conditions

Easy to wind: The markets most flexible cable, even in temperatures down to -40°C

Flexible mounting options: Use wall bracket included with the product or hang from hook

Safe power connection: It checks temperature in domestic plug and control box and charging will stop if temperature becomes too high





User-friendly: Intuitive interface

Power Adjustment: User can reduce charging current to protect the infrastructure where the cable is connected

High mode: High mode provides faster charging for the first 120 minutes (see table)

eMove - made with the user in mind.



| Item no.* | Normal rating [A] | High rating for 120 min [A] | Pre-set low rating [A] | Total length[m] | Country* | Domestic plug (with protective earth) |
|-----------|-------------------|-----------------------------|------------------------|-----------------|---|--|
| 502001 | 16 | - | 10 | 6 | Germany, Austria, Netherlands | CEE 7/7 Type E / Type F  |
| 502002 | 13 | 15 | 8 | 6 | Sweden | |
| 502003 | 10 | 15 | 8 | 6 | Norway, Sweden and most of Europe | |
| 502004 | 8 | 12 | 6 | 6 | France, Finland, Estonia Latvia, Lithuania | |
| 502005 | 6 | 9 | 6 | 6 | Denmark** | |
| 502103 | 10 | 13 | 8 | 6 | UK, Ireland | UK plug BS1363 & S.I. 1768 Type G  |
| 502117 | 8 | 10 | 6 | 6 | Switzerland | Swiss plug SN441011 Type 13  |
| 502125 | 6 | 9 | 6 | 6 | Denmark** | Danish plug DS 60884-2-D1 DK2-1a, Type K  |

* Check national regulations, your fuse size and defa.com for which product to be used in your country.

** See different domestic plugs

DEFA Power™ - More power to you

The smartest way to control your power, allowing you to charge at the lowest cost with the maximum output. DEFA Power has an intuitive display and 6 meter integrated charging cable that simplifies your daily use and gives you full control of your charging. DEFA Power optimizes available power, and with PowerSmart you can avoid peak periods and charging when power is most expensive.

Made for maximum power

True 22kW charging. DEFA Power is designed through advanced simulations ensuring fastest possible charging.

PowerSmart™ with the Power App

The power to set your charge when the prices are low, based on daily prices from Nord Pool. You can also avoid extra tariffs on peak periods. Can be used with any energy company and all cars.

Best in Test

DEFA Power has won several tests, been recommended by experts, and has been named the Charging Station of the Year.

User-friendly

Intuitive high quality display with step by step charging experience.



Future ready

Connectivity: WiFi, 4/5G*, LAN
Configuration: Bluetooth
Open standard: OCPP 2.0.1 and ISO15118

**Mobile network subscription needed*

Easy access

Effective access steering.

- Access control via QR-code
- RFID / NFC, and SMS


Integrated charging cable

Robust 6 meter charging cable made for extreme condition provides flexibility for daily use. Includes a smart vehicle plug cap to protect the connector.

One device fits all

Can handle all power and phase needs in all European markets.

Item.no. 715000

| Technical specifications | | | |
|--------------------------|--|--------------------------|--|
| Dimension | L: 350 x W: 167 x D: 113 | IP | 55 (Wall bracket IP44) |
| Weight unit | 2,5 kg | IK | 10 |
| Weight cable | 3,5 kg | Fire classification | UL94 V0 |
| Operating temperature | -40°C to +50°C | Isolation class | I |
| Storage temperature | -50°C to +85°C | Overvoltage category | III |
| Material charging unit | Plastic | Overheat protection | Internal sensor |
| Charging power | Up to 22kW | Standard & certification | CE, IEC 61851-1, IEC 61439-7, ACSEV, IEC 62955 |
| Charging current | 6–32A (adjustable) | Grid | TN / IT / TT |
| Voltage | 230/400 V (1/3-phase, 50-60Hz) | Fuse size | 40A |
| Charging mode | Mode3 | RCD | RCCB Type A and MCB or RCBO |
| Connection to vehicle | Type 2 | Maximum cable size | 16 mm ² |
| Charging cable | Included, 6m  | Torque value | 2,5Nm |
| Integrated display | Size: 69 mm x 69 mm, Brightness: Automatically adjusted, Power setup: App to set DEFA Power | Stripping length | 20 mm +/-2 |
| RDC-DD | 6mA DC in acc. IEC 62955 | | |

DEFA Solid™ - Solid simplicity

A solid and convenient EV charger giving you the power you need. DEFA Solid has a robust design made for extreme conditions. The premium charging cable and intuitive interface with energy saving simplifies your daily use and lowers your energy costs. Can easily be connected utilizing available power infrastructure, such as a domestic socket.

Robust charging solution: The EV charger has a robust design made for extreme conditions. The premium integrated charging cable keeps flexible even in severe cold. Up to 4.6 kW.

Easy to use: DEFA Solid has an intuitive interface, with an on/off button that is also used for energy saving, that helps you lower your energy costs.

Connection is easier with an integrated cable, and you can wrap the cable around the charger when it's not in use.

Energy saving: You can easily control the charging power with the intuitive Select button on the display.

Choose between 4.6kW, 3.6kW or 2.3kW if the charging station is set to 20A.

Upgrade your existing domestic plug or industrial outlet with DEFA Solid:

A quick and easy installation – giving you a convenient charging solution, – and a no brainer for your installer.


Integrated charging cable: DEFA Solid has a 6 meter charging cable which provides flexibility for daily use and when connecting to the car.

The vehicle plug cap is fastened with an adjustable strap that lets you pull it away from the car during charging. The strap is fastened on the back of the cap so that it is left hanging upside down and doesn't collect water, snow and dirt. This smart solution also prevents scratches on your car

Easy and flexible installation: Your electrician can easily install DEFA Solid with the included wall bracket and quick connectors.



Item no. 712800

| Technical specifications | |
|--------------------------|--|
| Rated voltage | 230 VAC (1-phase, 50-60Hz) |
| Rated current | 6A-20A |
| Charger type | Mode 3 |
| Connection to vehicle | Type 2  |
| RCD | 30mA AC & 6mA DC |
| GRID | TN- and IT-power grid |
| Overheat protection | Internal sensor |
| Operating protection | -40 °C to 50 °C |
| Storage temperature | -50 °C to +85 °C |
| Size (L x W x D) | 312 x 85 x 70 mm |
| Material charging unit | Aluminum with double protected plastic end caps |
| IK rating | IK 10 |
| IP rating | IP 45 |
| Weight | 2,5 kg |
| Certification | CE, IEC61851, IEC62955 |
| Recycling | EE-waste |

Manufacturer

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About DEFA

Our goal is to make people's lives easier and more environmentally friendly by helping them use energy as efficiently as possible. Our products and services improve the way people charge and preheat their vehicles and light up their buildings or roads. We keep improving our offering by focusing on continuous improvement and innovation.

DEFA is a Norwegian company, founded in 1946. We currently have more than 400 employees on three continents. Our products and services are distributed in more than 30 countries worldwide.

Our products and solutions cover electrical preheating, battery chargers and inverters for all types of vehicles, as well as EV charging solutions for private homes and facilities.

www.defa.com



WARMUP



CHARGERS



SECURITY



FINDER



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