

**PowerPlex<sup>®</sup>**  
Mobile homes and caravans







## CONTENTS

On-board management with <i>PowerPlex</i> ®.....	4
<i>PowerPlex</i> ® system components.....	8
<i>PowerPlex</i> ® HMI solutions .....	10
<i>PowerPlex</i> ® Service & Support .....	11

# ON-BOARD MANAGEMENT WITH *PowerPlex*<sup>®</sup>

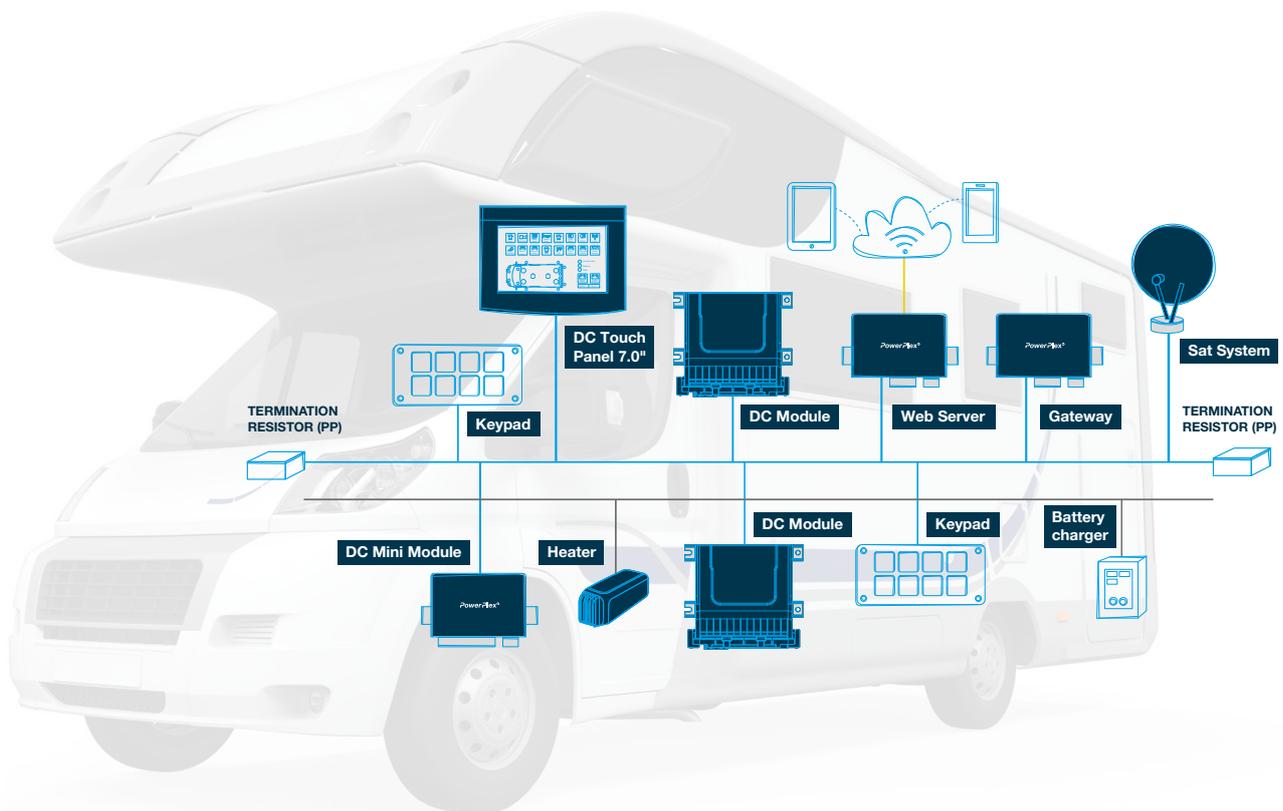
Everyone is talking about digitisation and also in the caravan industry, it is an essential feature of modern mobile homes and caravans. Modern on-board systems reliably and conveniently control a range of loads and functions in a vehicle. *PowerPlex*<sup>®</sup> is E-T-A's comprehensive on-board management system, reliably connecting, regulating, controlling and monitoring loads, switches and sensors via CAN.

## DIGITAL SWITCHING TECHNOLOGY

Digital Switching Systems such as *PowerPlex*<sup>®</sup> offer comprehensive possibilities for controlling and monitoring up to automation of important functions. They provide power distribution as well as control of all electrical and electronic systems such as illumination, heating, pumps and fans.

A configured system automatically switches loads and immediately alerts the driver to undesired conditions of the devices or of the entire electrical installation. Thus it is ensured, that everything works precisely – which is reassuring, as most of the loads are often not in plain sight.

Central operation is via user-friendly operating interfaces with touch displays and smart phones. A *PowerPlex*<sup>®</sup> system is individually adapted to your requirements and an integral component of the vehicle.





## YOUR BENEFITS

- **On-board management with centralised operating options** for the various devices and systems
- **Comprehensive product range** for modular system set-up
- **Fast and easy wiring** thanks to standardised plug connections
- **Enhanced reliability** through integral diagnosis and safety functions

### **DIGITAL SWITCHING: ARTLESS AND ELEGANT**

Fuse distributors, cross switches and other complex cabling are a thing of the past. Manufacturers of mobile homes and caravans appreciate the easy installation and the clear innovative edge. The modular design increases flexibility and allows weight savings and shorter production times. The system scope can individually be adjusted for each vehicle series. Users appreciate the convenience of

operating their mobile homes' systems via intuitive user interfaces and benefit from new technologies which are fit for the future.

### **RELIABLE OPERATION**

The well-proven CAN bus technology from the automotive sector is the basis of the **PowerPlex®** system. Your customers are supplied with an on-board electrical system that offers safety, reliability and user-convenience. It regulates, controls and monitors

many different loads conveniently, reliably and - if required - automatically, e.g. lighting, heating, step treads, lift-up beds, sun blinds, tanks and more. Special diagnosis and safety functions alert the user in the event of disturbances or malfunctions, e.g. leakage detection of the water pump, exhaustive discharge of battery (with time stamp upon request), error list.





### **FUSES ARE ELIMINATED**

E-T-A's **PowerPlex**<sup>®</sup> is a decentralised power distribution system with electronic overcurrent protection. Replacement of defective fuses is eliminated. The system is designed for the specific requirements in vehicles and boats and has continuously been enhanced over the past 10 years. Perfectly matched software and hardware components, suitable for industrial use, offer a complete solution with maximum customisation potential. Market-specific product approvals round off the overall concept.

### **MODULAR DESIGN INCREASES FLEXIBILITY**

Together with you we customise a **PowerPlex**<sup>®</sup> system individually adapted to the lifestyle and the requirements of your brand and customers. There is no "one size fits all" package. The strength of **PowerPlex**<sup>®</sup> is the possibility to design your own digital switching and automation solutions – exactly matching your ideas and visions.

A **PowerPlex**<sup>®</sup> system can be a single module or else a complex system

consisting of several modules and control devices. The system will be as compact or comprehensive as you need it. Upon request, it can be pre-configured, for easy caravan or luxury mobile home automation. The possibilities are endless. **PowerPlex**<sup>®</sup> provides perfectly tailor-made automation technology for your vehicle.



**VERSATILE OPERATING OPTIONS, COMPLETELY INDIVIDUAL**

**PowerPlex®** allows controlling and monitoring of the on-board electrical system via smartphones, tablets, touch-displays or keypads. Thanks to the various operating options, controlling the entire on-board equipment is child's play. Our touch panels are cost-effective displays, allowing state-of-the-art access and monitoring of the on-board electrical systems. There are significantly more communication and configuration

options than with conventional control panels. Relevant system data of electrical loads, sensors and operating conditions are processed and displayed on the customer-specific user interfaces.

**TRAVELLING WITH CONFIDENCE: TECHNICAL SUPPORT VIA REMOTE MAINTENANCE**

If your customers require support with their on-board system, it may be helpful to receive support promptly and regardless of the present location.

Upon request, we can analyse the electrical system remotely via an existing internet connection thanks to our worldwide service network. This remote maintenance enables trouble-shooting of customer-specific problems and challenges, dramatically reducing downtime, interruptions and costs.



**YOUR BENEFITS**

- **Customer-specific power distribution, controlling and monitoring (DC / AC)**
- **Intelligent lighting scenes** to create the perfect atmosphere
- **Automated temperature control and monitoring**
- **Automated tank level control**, e.g. fresh water and black water, gas
- **Reliable control and monitoring** of water pumps
- **Well-proven control and display** of third party systems of major manufacturers
- **Control and monitoring option** via touch PCs, touch panels, smart phones and tablets
- **Automated scenes** for enhanced user friendliness and convenience
- **Remote maintenance** via internet connection

# PowerPlex® SYSTEM COMPONENTS

**PowerPlex®** simply connects anything. Light, heating, air conditioning, pumps and more. Our modular system design makes your engineering work even more flexible. Various DC- and

AC-control modules as well as different operating devices make up the comprehensive **PowerPlex®** product range for the realisation of intelligent on-board electronics. The system scope is a direct

result of your application specification and individual control and automation requirements.

## A **PowerPlex®** SYSTEM CONSISTS OF A SELECTION OF THE FOLLOWING COMPONENTS

<p><b>PowerPlex® Mini Module MM500</b></p>		<p>The <b>PowerPlex® MM500</b> is perfectly suitable for LEDs and ambient lighting. Its small size allows installation in places where space is at a premium. As a standard the <b>PowerPlex®</b> mini module is equipped with eight multifunctional inputs. They can be configured as digital or analogue inputs. Its multi-functionality makes it suitable for battery monitoring as well as for voltage and resistance measurement, e.g. with level sensors.</p>
<p><b>PowerPlex® Compact Module CM500</b></p>		<p>The <b>PowerPlex® Compact Module</b> is designed for DC 12 V and DC 24 V on-board electrical systems of recreational vehicles and boats. It offers eight multi-functional inputs, which can be used for measuring current, voltage, temperature and/or liquid levels, as well as 14 load outputs. For the motor control of e.g. step treads, lift-up beds, sun blinds, two outputs can be used as H-bridges.</p>
<p><b>PowerPlex® Power Module PM500</b></p>		<p>The <b>PowerPlex® PM500</b> includes a physically isolated CAN bus interface and redundant protective functions for connected DC loads. One power module can control and monitor a total of twelve electrical loads. Each module has a manual override function for each 8 A and 25 A output via integral electro-mechanical mini circuit breakers. This allows manual and direct switch-over and ensures access to critical functions.</p>
<p><b>PowerPlex® Gateway CG300</b></p>		<p>The <b>PowerPlex® Gateway</b> is a multiprotocol module for the connection of <b>PowerPlex®</b> systems with other networks. It allows the combination of the <b>PowerPlex®</b> CAN bus with different bus systems: CAN (e.g. NMEA2000, SAE J1939), Modbus. The Gateway automatically translates and filters incoming messages so that only relevant data will be transmitted or received. This ensures a consistent flow of information for controlling and monitoring of the entire application.</p>

**A PowerPlex® SYSTEM CONSISTS OF A SELECTION OF THE FOLLOWING COMPONENTS**

<p><b>PowerPlex® Web Server WS300</b></p>		<p>The <b>PowerPlex®</b> web server allows display, monitoring and control of a <b>PowerPlex®</b> system via smartphones, tablets, multifunctional displays and computer. Up to eight devices can be integrated into a system either via WiFi (WLAN) or via LAN.</p>
<p><b>PowerPlex® Touch Panel 7.0“ TP070</b></p>		<p>The <b>PowerPlex®</b> Touch Panel 7.0“ is a favourably priced colour touch-display, which allows ultra-modern operation and monitoring of the on-board electrical systems. Whether alone or in combination with other displays, it can completely replace conventional panels and displays. Relevant system data of electrical loads, sensors and operational states are recorded and displayed on the customer-specific user interfaces. The ON/OFF operation for all connected loads is accessible via touch operation. Various monitoring functions enable the user to act preventively.</p>
<p><b>PowerPlex® Keypad series KP100/120/200</b></p>		<p>Our <b>PowerPlex®</b> Keypads are universal operation units for various control and visualisation demands. Matching your wishes and requirements, they offer flexible programmability. They switch loads and visually indicate their operating conditions. Keypads of the 200 series can additionally show measuring values on a 7-segment display, e.g. the room temperature. The colour of the LED background illumination can be selected by means of a sample board. The colours per keypad can be defined in relation to events.</p>

**FURTHER E-T-A PRODUCTS:**

<p><b>1610 Automotive circuit breakers</b></p>		<p>Single pole thermal automotive circuit breaker in miniaturised design, colour coded housing caps or manual release buttons are optionally available. The terminal area is interchangeable with fuse blocks according to DIN 72581 Part 3. Normal trip curve according to ISO 10924. Type version 1616 available especially for the automotive area (current ratings according to the fuse series). Fast trip curve according to ISO 10924 for direct exchange of vehicle fuses.</p>
<p><b>MPR10 Power relays</b></p>		<p>The MPR10 single pole power relay was designed for switching high current loads and isolating the battery from the on-board electrical system. It is a bistable relay, i.e. you need a short current impulse only for switching operations. The contact is then held in its position by permanent magnets without current. The electro-mechanical MPR10 power relay is:</p> <ul style="list-style-type: none"> <li>• <b>energy-saving, extending the self-sufficiency time</b></li> <li>• <b>can be perfectly integrated into existing vehicle concepts</b></li> </ul>

# PowerPlex® HMI SOLUTIONS

standardised and individual

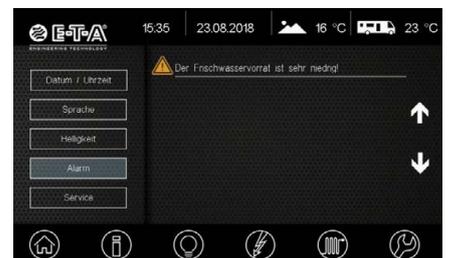
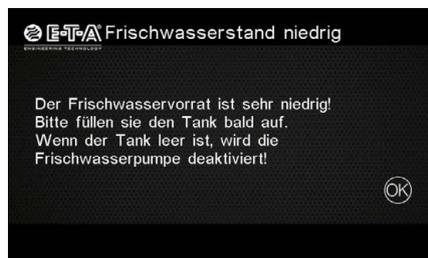
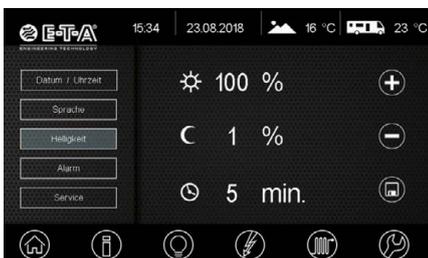
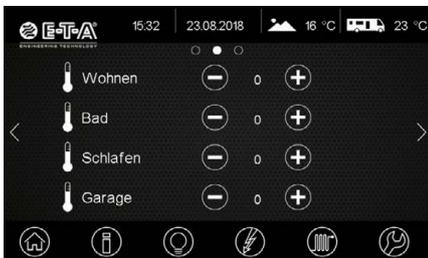
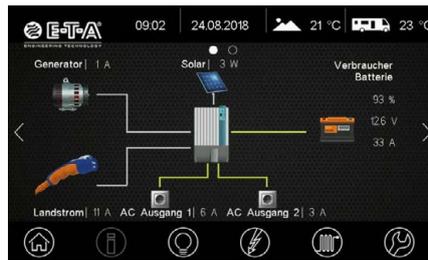
The **PowerPlex®** HMI devices allow convenient monitoring and intuitive operation and visualise status, alarm or error messages. Select your favourites from various keypads and touch displays for your **PowerPlex®** application.

## E-T-A'S STANDARD DESIGN

E-T-A's standard design already covers many functions of a mobile home or caravan. It will be adapted to your application and vehicle and provided with your company logo.

## INDIVIDUAL DESIGN

Simply create your own operating interfaces. **PowerPlex®** Suite is ideal for system configurations and designing individual user interfaces. The easy-to-use software provides a selection of various graphically high-quality objects, which can be combined and adapted as required using drag & drop. Actions for touch-buttons, for example, are easy to create. No limits for your creativity.



# PowerPlex® SERVICE & SUPPORT

Our specialists will support you with the best service regarding product, system or application. We assist you with a suitable selection of **PowerPlex®** components and help you with technical queries during system planning,

installation and start-up. Many things can easily and quickly be clarified on the phone or via remote maintenance without having to be on site. Upon request, we can provide you with a complete system configuration and

tailor-made user interfaces. We will be pleased to give you a comprehensive **PowerPlex®** training.

## OUR PARTNERS

All over the world, we serve our national and international customers as partners and offer comprehensive support. Thanks to long-term relationships with established manufacturers, we have continuously adapted our

performance promise to the requirements of the mobile home industry.

For the realisation of different system solutions we are working with a network of partners who complete E-T-As **PowerPlex®** product portfolio.



**E-T-A Elektrotechnische Apparate GmbH**

Industriestraße 2-8

90518 Altdorf

Phone +49 9187 10-0

Fax +49 9187 10-397

Email: [info@e-t-a.de](mailto:info@e-t-a.de)

[global.e-t-a.com](http://global.e-t-a.com)