E-T-A *PowerPlex*®
Get Smart With Your Systems

PowerPlex® – At a Glance

Enhanced Safety and Reliability by

● Switching and monitoring of electrical loads
● Energy Management
● Tank and pump monitoring
● Displaying single alarms and alarm lists

Increased User Comfort by

● Integration of modern color displays and Touch PCs
● _PowerPlex®_ Remote App
● Individual illumination concepts
● Time control and scenarios
● Visualization of tank levels, battery states and motor data
● Displaying information from external systems SAE J1939
  and NMEA 2000

PowerPlex®
Smart Power Distribution for the Next Generation

Today field buses, in particular CAN, are indispensable. Primarily due to increased demands for safety and comfort, more and more electrical equipment is being installed in vehicles. With *PowerPlex*®, E-T-A offers a comprehensive, on-board system which combines safety, comfort and reliability. *PowerPlex*® connects, regulates, controls and monitors a wide variety of loads, switches and sensors over CAN – precisely and securely. It controls status functions, operating modes and command executions. *PowerPlex*® allows individual and flexible concepts for controlling the illumination, sirens, special signals and much more. It can automatically switch loads and will immediately inform the driver about undesirable behavior of the devices or the electrical installation. This will ensure that everything works as it is designed to – reassuring when loads are not always visible. E-T-A *PowerPlex*® is a decentralized power distribution system with electronic protection – fully geared to the future.

PowerPlex® offers an extensive range of opportunities for intelligent on-board electrics.
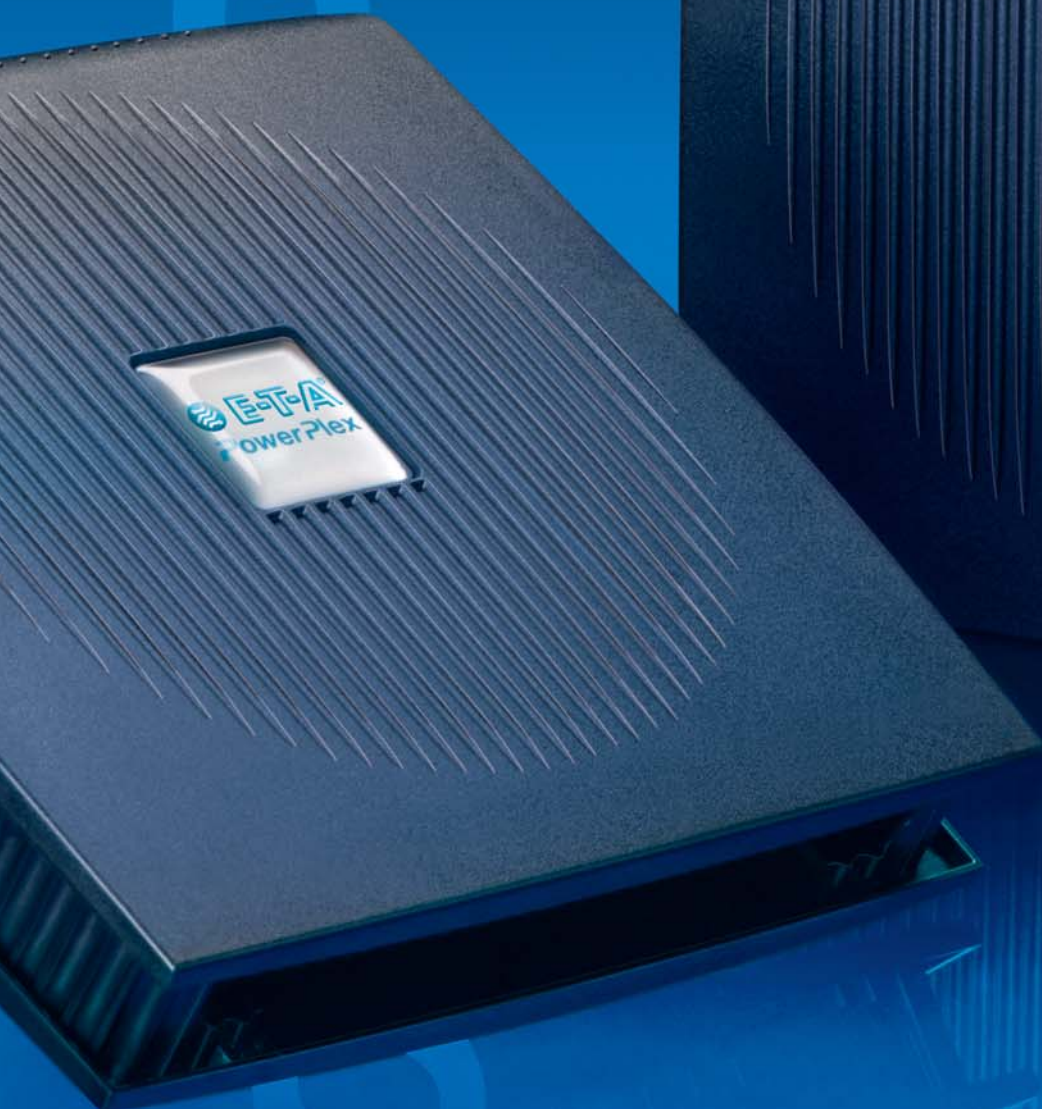
Ideally matched software and hardware components provide a total solution with an enormous potential for customization. You need smart electrical systems on your vehicles – install and configure *PowerPlex*®. It ensures reliable control and monitoring of all electrical equipment and functions. Convince yourself and discover the possibilities for reducing your wiring effort, production times and manufacturing costs.

Typical Applications
- Special vehicles
- Emergency vehicles
- Buses
- Recreational vehicles and caravans
- Remote controlled working machines
- Trailer and vehicles bodies

Flexible Integration in Your Vehicle Design
Modern On-Board System Concept – Today and Tomorrow

With *PowerPlex*®, you have access to a modern, forward-looking system, today. The *PowerPlex*® Compact Module offers the perfect solution for the specific needs of commercial and special vehicles. In the vehicle installed *PowerPlex*® components communicate over the SAE J1939 compliant CAN bus. Thereby, the vehicle specifications and requirements determine the complexity and flexibility of the electrical system. The intelligent power distribution is realized through your individual system configuration without a central computer being necessary. Should one *PowerPlex*® module fail, all others remain fully functional. Replacement devices are detected automatically and configured via a neighboring module.
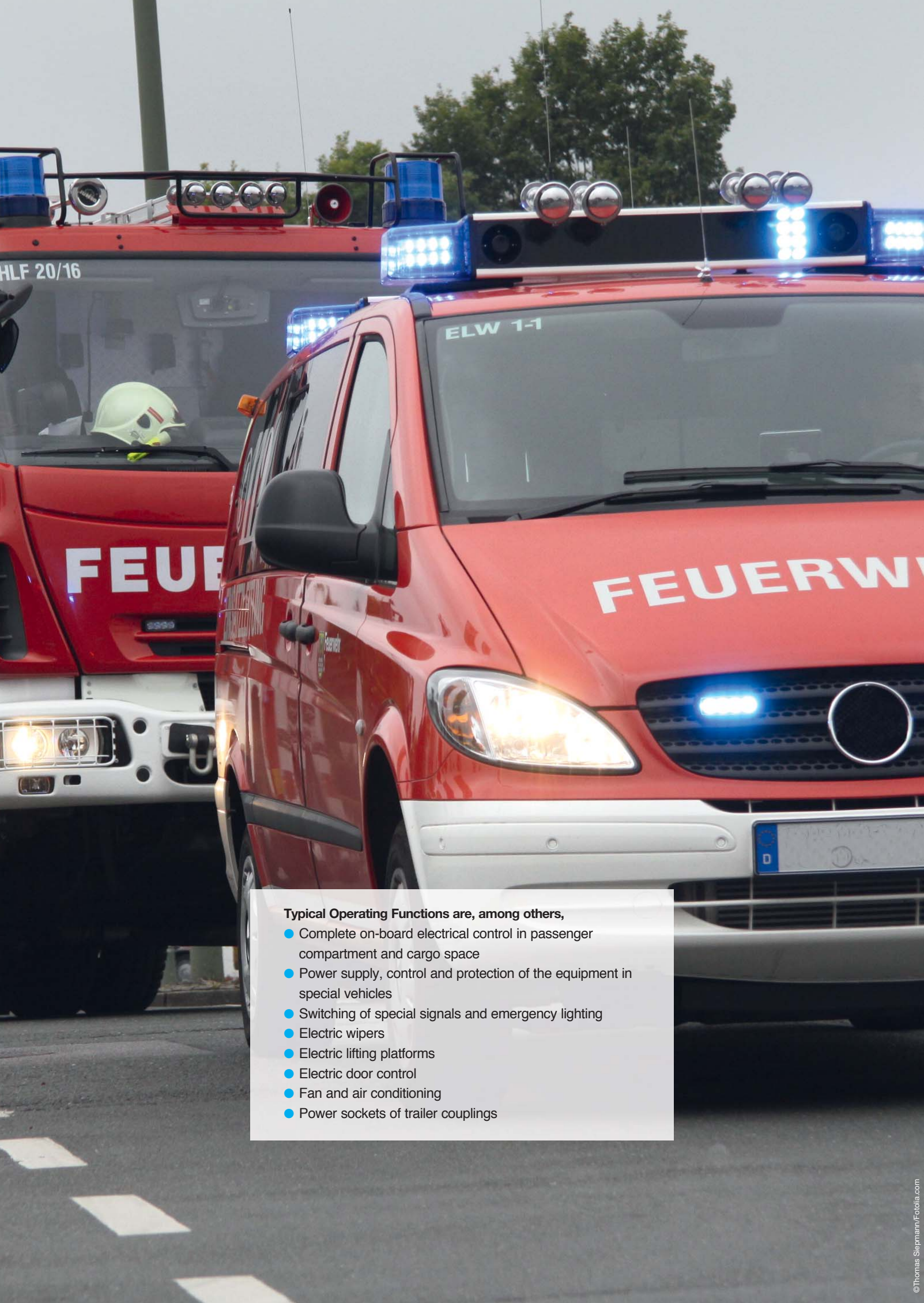
Your Benefits
- Easy to install
- Enormous flexibility
- Less cable and required space
- Auto-configuration of exchanged *PowerPlex*® modules
- Electronic overload and short circuit protection
- Integrated diagnostic and monitoring functions
- Low maintenance requirements

Technical data	*PowerPlex*® Compact Module PP-C-COM24
Voltage rating	DC 12 V/DC 24 V
Operating voltage	9...32 V DC
Total current max.	60 A per module
Protection class	IP20
CAN according to	SAE J1939 250 kBits/s
Inputs:	
10 digital inputs	0...50 Ω: ON; > 100 kΩ: OFF
4 analog inputs	1 for capacitive level monitoring
	1 for temperature monitoring
	1 for battery monitoring
	1 for four point level indication
Outputs:	
10 outputs	with 8 A / 10 A max. continuous current
load output	Power MOSFET, high side switching
max. current rating	8 A/10 A
Functions:	Motor function (H-bridge)
	High Current function
	Dimming function
Approvals	E1, CE

PowerPlex® Compact Module incorporates high-end power semiconductors with integral protective elements for switching and protecting electrical loads. The modules are free of any mechanical components and are thus hardwearing as well as shock- and vibration-proof.

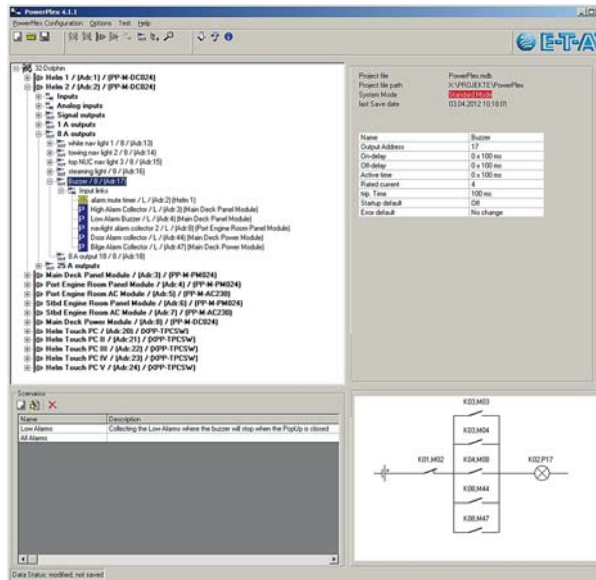*) Find more information in the datasheet

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Typical Operating Functions are, among others,

- Complete on-board electrical control in passenger compartment and cargo space
- Power supply, control and protection of the equipment in special vehicles
- Switching of special signals and emergency lighting
- Electric wipers
- Electric lifting platforms
- Electric door control
- Fan and air conditioning
- Power sockets of trailer couplings

The System Configuration Makes the Difference
PowerPlex® Configuration Software

The installation of *PowerPlex*® was intended from the beginning to be user-friendly. With this in mind, we designed the *PowerPlex*® Configuration Software so that it is both intuitive and logical. The software allows each user to define, save and modify individual configurations for power distribution, control and monitoring. The "intelligence" contained in the configuration is transferred to the *PowerPlex*® system over off-the-shelf components. Your electrical installation is then complete, professionally and quickly. With *PowerPlex*®, all electrical system components work, act and communicate with each other in the way you decide. You determine the individual character and complexity of your electrical system and, by doing so, enhance your competitive advantage.

Using the system configuration, you determine the exact behavior of your electrical system.

Your Benefits
● Easy configuration of individual logics for electrical loads
● Visualization of the corresponding circuit
● Easy transmission of new or saved configurations
● No programming skills required – intuitive to understand

Find out why PowerPlex® is the most modern approach for your electrical installation.

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Modern Control and Monitoring
PowerPlex® HMI Solutions

PowerPlex® Touch Panel 4.3" and 7.0"
These high resolution color touch panels offers a modern and easy-to-use interface for all kinds of installations. By default, six pages are provided. Time, details of tank levels, battery voltage, electrical switching and alarms can be displayed accordingly. In addition to these predefined standard displays, customized pages can be implemented.

PowerPlex® Touch Panel 4.3"

PowerPlex® Touch Panel 7.0"

PowerPlex® Remote App
Make your customers life easier. The PowerPlex® Remote App allows control and monitoring of important PowerPlex® functions with the iPhone and iPad. A WiFi router connected via a LAN/CAN converter makes it possible to monitor and control your installation directly from these mobile devices. They can then be used to check the shore connection, batteries or tank levels, but also for switching loads.

PowerPlex® Remote App

PowerPlex® Touch PC
The PowerPlex® Touch PC is a high performance 12" panel PC to control and display the installed system. Thanks to its design and adjustable brightness, it is possible to install the Touch PC in different areas of your vehicle. The Touch PC and its high performance enhance your control systems versatility.

PowerPlex® Touch PC

Variety in Design and Function
PowerPlex® TouchPC Software

Do you have special visualization requirements? Make the vehicle operators life easier with intuitive user interfaces. The *PowerPlex*® TouchPC Software allows you to customize individual user interfaces and to integrate every Windows-based Touch PC into the system. Conventional switch panels and indicating instruments can be combined with or completely replaced by *PowerPlex*®.

All loads can be switched on or off via the touch screen. On-screen buttons provide the on/off function of switches. Via the systems configuration, it is possible to switch several loads simultaneously using just one button. Thanks to the scenario functions, the complete electrical system can be configured to operate in a pre-determined way i. e. on- and off-mode, parking- or night-mode. Using this function *PowerPlex*® examines each power consumer, and determines if and for how long it is needed for a selected scenario.

Furthermore you can implement various energy concepts with *PowerPlex*®. For each on-board battery, the current status will determined and displayed. This allows the automatic shutdown of unimportant loads when pre-determined battery levels have been reached, preserving the limited available battery capacity. Increased safety of the electrical system is made possible by using special customized safety management functions. *PowerPlex*® monitors, informs and alerts the driver of any malfunctions of the electrical installation. In order to better see any malfunctions, all alarms of the last 30 days are listed in an alarm history. Warnings and other messages are displayed as pop-up's and also entered into the alarm history.

Your Benefits
- Integration of Touch PCs
- Customized design of your graphical user interface (GUI)
- No programming skills required
- Convenient control and monitoring of electrical installation
- Status control at a glance
- Displaying alarms and alarm lists

Your Requirements Determine the Solution
Overview of the *PowerPlex*® Components

DC Modules

Technical data	Compact Module	Power Module	Panel Module
Total voltage	DC 12 V DC 24 V	DC 12 V DC 24 V	DC 12 V DC 24 V
Total current max.	60 A per module	102 A per module	20 A per module
Inputs digital	10	8	32
analog	4	4	4
Outputs	8 (max. 8 A, two are configurable as H-bridge) 2 (max. 10 A)	4 (max. 1 A) 6 (max. 8 A, FLPC) 2 (max. 25 A, FLPC)	4 (max. 1 A) 2 (max. 8 A, FLPC)
Protection Class	IP20	IP22	IP22
Order number	PP-C-COM24-00E-0-Z-00	PP-M-DC024-000-0-0-00	PP-M-PM024-000-0-0-00
Description	*PowerPlex*® for DC systems incorporates high-end power semiconductors with integral protective elements for switching and protecting electrical loads. The DC modules are free of any mechanical components and are thus hardwearing as well as shock- and vibration-proof.		

Your Benefits
- **Four Level Protection Concept** (FLPC)
    - Software-controlled overcurrent protection with current measurement
    - Hardware-controlled safety disconnection
    - Intrinsic protection of power transistors
    - Thermal protective elements with manual switching functions
- Override function for the unlikely event of a catastrophic failure

Control Elements

Technical data	Touch Panel 4.3"	Touch Panel 7.0"	Touch PC
Size	4.3"	7"	12"
Pixel number	480x272	800x480	1024x768
Order number	PP-C-CDP24-00E-0-Z-00	Please contact us or visit www.e-t-a.de/e	XPP-TPCHW - without TouchPC Software XPP-TPC-Z001 - incl. SW and USB/CAN converter XPP-TPC-Z002 - incl. SW and USB/CAN converter (opto-decoupled)

AC Module

Technical data	AC Module Wall-mount	AC Module Flush-mount
Total voltage	AC 120 V AC 230 V	AC 120 V AC 230 V
Total current max.	75 A per module 30 A per channel	75 A per module 30 A per channel
Channels	16 (single pole) 8 (double pole)	16 (single pole) 8 (double pole)
Protection class	IP65	IP65
Order number	PP-M-AC230-000-0-Z-00	Please contact us or visit www.e-t-a.de/e
Description	*PowerPlex*® for AC systems incorporates high-end power semiconductors with integral hydraulic-magnetic circuit breakers for protection of overcurrent. Due to the integrated switch-mode power supply, the *PowerPlex*® AC modules are independent of the battery.	

Your Benefits
- Integral, easily replaceable hydraulic-magnetic circuit breakers
- Perfect separation of the AC and DC side
- Changes of the nominal current settings of a channel possible

Others

	Keypad Power Key Pro	Remote App	Switch Panels	Touch PC Software	USB/CAN converter	USB/CAN converter, opto-decoupled
Order number	Please contact us or visit www.e-t-a.de/e	Please contact us or visit www.e-t-a.de/e	Please contact us or visit www.e-t-a.de/e	XPP-TPCSW	XPP-USBC0	XPP-USBC1

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E-T-A
Worldwide
Service Network

Europe
- Austria
- Belgium
- Bosnia-Herzegovina
- Bulgaria
- Croatia
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Hungary
- Ireland
- Italy
- Luxembourg
- Macedonia
- Montenegro
- Netherlands
- Norway
- Poland
- Portugal
- Russia
- Serbia
- Slovakian Republic
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom

America
- Argentina
- Brazil
- Canada
- Chile
- Mexico
- USA

Asia
- Brunei
- China
- Hong Kong
- India
- Indonesia
- Japan
- Korea
- Malaysia
- Philippines
- Singapore
- Taiwan
- Thailand

Africa
- South Africa
- Tunisia

Oceania
- Australia
- New Zealand