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
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.

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.

Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>PowerPlex® Compact Module PP-C-COM24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage rating</td>
<td>DC 12 V/DC 24 V</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>9...32 V DC</td>
</tr>
<tr>
<td>Total current max.</td>
<td>60 A per module</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP20</td>
</tr>
<tr>
<td>CAN according to</td>
<td>SAE J1939 250 kBits/s</td>
</tr>
</tbody>
</table>

Inputs:
- 10 digital inputs
- 4 analog inputs
  - 0...50 Ω: ON; > 100 kΩ: OFF
  - 1 for capacitive level monitoring
  - 1 for temperature monitoring
  - 1 for battery monitoring
  - 1 for four point level indication

Outputs:
- 10 outputs
- load output max. current rating with 8 A / 10 A max. continuous current
  - Power MOSFET, high side switching
  - 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

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
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.

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

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

Find out why PowerPlex® is the most modern approach for your electrical installation.
Modern Control and Monitoring

PowerPlex® HMI Solutions

**PowerPlex® Touch Panel 4.3” and 7.0”**
These high resolution color touch panels offer 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® 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® 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.
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

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Compact Module</th>
<th>Power Module</th>
<th>Panel Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total voltage</td>
<td>DC 12 V</td>
<td>DC 12 V</td>
<td>DC 12 V</td>
</tr>
<tr>
<td></td>
<td>DC 24 V</td>
<td>DC 24 V</td>
<td>DC 24 V</td>
</tr>
<tr>
<td>Total current max.</td>
<td>60 A per module</td>
<td>102 A per module</td>
<td>20 A per module</td>
</tr>
<tr>
<td>Inputs</td>
<td>10</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>digital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>analog</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Outputs</td>
<td>8 (max. 8 A, 2 (max. 10 A)</td>
<td>4 (max. 8 A, FLPC)</td>
<td>2 (max. 8 A, FLPC)</td>
</tr>
<tr>
<td></td>
<td>two are configurable as H-bridge)</td>
<td>6 (max. 8 A, FLPC)</td>
<td>2 (max. 25 A, FLPC)</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP20</td>
<td>IP22</td>
<td>IP22</td>
</tr>
<tr>
<td>Order number</td>
<td>PP-C-COM24-00E-0-Z-00</td>
<td>PP-M-DC024-000-0-0-00</td>
<td>PP-M-PM024-000-0-0-00</td>
</tr>
<tr>
<td>Description</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Touch Panel 4.3&quot;</th>
<th>Touch Panel 7.0&quot;</th>
<th>Touch PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>4.3&quot;</td>
<td>7&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Pixel number</td>
<td>480x272</td>
<td>800x480</td>
<td>1024x768</td>
</tr>
<tr>
<td>Order number</td>
<td>PP-C-CDP24-00E-0-Z-00</td>
<td>Please contact us or visit <a href="http://www.e-t-a.de/e">www.e-t-a.de/e</a></td>
<td>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)</td>
</tr>
</tbody>
</table>
### Technical data

<table>
<thead>
<tr>
<th></th>
<th>AC Module Wall-mount</th>
<th>AC Module Flush-mount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total voltage</strong></td>
<td>AC 120 V</td>
<td>AC 120 V</td>
</tr>
<tr>
<td></td>
<td>AC 230 V</td>
<td>AC 230 V</td>
</tr>
<tr>
<td><strong>Total current max.</strong></td>
<td>75 A per module</td>
<td>75 A per module</td>
</tr>
<tr>
<td></td>
<td>30 A per channel</td>
<td>30 A per channel</td>
</tr>
<tr>
<td><strong>Channels</strong></td>
<td>16 (single pole)</td>
<td>16 (single pole)</td>
</tr>
<tr>
<td></td>
<td>8 (double pole)</td>
<td>8 (double pole)</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP65</td>
<td>IP65</td>
</tr>
<tr>
<td><strong>Order number</strong></td>
<td>PP-M-AC230-000-0-Z-00</td>
<td>Please contact us or visit <a href="http://www.e-t-a.de/e">www.e-t-a.de/e</a></td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th></th>
<th>Keypad Power Key Pro</th>
<th>Remote App</th>
<th>Switch Panels</th>
<th>Touch PC Software</th>
<th>USB/CAN converter</th>
<th>USB/CAN converter, opto-decoupled</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Order number</strong></td>
<td>Please contact us or visit <a href="http://www.e-t-a.de/e">www.e-t-a.de/e</a></td>
<td>Please contact us or visit <a href="http://www.e-t-a.de/e">www.e-t-a.de/e</a></td>
<td>Please contact us or visit <a href="http://www.e-t-a.de/e">www.e-t-a.de/e</a></td>
<td>XPP-TPCSW</td>
<td>XPP-USBC0</td>
<td>XPP-USBC1</td>
</tr>
</tbody>
</table>
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