**Sigma Drive**

**Sigmadrive**

DC MOTOR CONTROLLERS

- 24-80V 175-650A power rating
- DC motor control
- Traction, pump and steering control
- Assured gradient control
- Elegant, low-profile package
- High power-to-size ratio
- Exceptional thermal performance
- High-efficiency, minimal switching losses
- Heatsinking of all internal components
- No internal cables or connections
- High reliability
- CANbus communications
- Field upgradeable software

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**Sigmadrive PM Model**

<table>
<thead>
<tr>
<th>Sigmadrive PM Model</th>
<th>Voltage</th>
<th>Current/Time</th>
<th>Current (1 hour)</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMT835M</td>
<td>72-80V</td>
<td>350A/60s</td>
<td>120A</td>
<td>Medium</td>
</tr>
<tr>
<td>PMT465L</td>
<td>24-48V</td>
<td>650A/60s</td>
<td>260A</td>
<td>Large</td>
</tr>
<tr>
<td>PMT445M</td>
<td>24-48V</td>
<td>450A/60s</td>
<td>180A</td>
<td>Medium</td>
</tr>
<tr>
<td>PMT425S</td>
<td>24-48V</td>
<td>250A/20s</td>
<td>80A</td>
<td>Small</td>
</tr>
<tr>
<td>Steerign</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PME817S</td>
<td>72-80V</td>
<td>175A/20s</td>
<td>70A</td>
<td>Small</td>
</tr>
<tr>
<td>PME425S</td>
<td>24-48V</td>
<td>250A/20s</td>
<td>80A</td>
<td>Small</td>
</tr>
</tbody>
</table>

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**Sigmadrive Permanent Magnet (PM)**

Smooth and predictable control of a wide power range of permanent magnet motors.

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**www.alpatek.com**
The Sigmadrive family of DC motor controllers have been developed for use in a wide range of electric vehicle applications, including Materials Handling, Airport Ground Support, Industrial, Utility and Mobile Work Platforms. The range spans power ratings of 24V/175A to 80V/650A in three package sizes, each intended to give optimal price and performance.

Because of the universal nature of the design, the same hardware can be easily configured to work as either a traction, pump or steering controller.

Insulated Metal Substrate (IMS) technology is fully utilized to provide state-of-the-art thermal performance and exceptional reliability. The innovative design means there is no internal cabling or inter-board connections, as well as providing direct heatsinking for all components and terminals. This increases reliability and enables Sigmadrive to provide a higher power-to-size ratio than competitive controllers of the same rating.

Dual traction applications can be easily and effectively addressed by connecting two controllers in a master-slave configuration. The speed output of each is then determined by the steering angle of the vehicle. In this mode of operation, there is a great deal of flexibility offered by a number of specialist programmable parameters, thereby ensuring smooth comfortable control under all conditions. Assured gradient control comes via selectable Hill-hold and Restraint functions, which are designed to hold the vehicle steady even when no drive signal is present.

CANbus communication provides a safe and reliable electrical connection method to gauges and programmers, as well as between controllers themselves. Additionally, the CANbus can be used to load software updates into the Sigmadrive, meaning a vehicle can be upgraded to include new and improved functions.

**SUPERIOR CONTROL FOR INDUSTRIAL APPLICATIONS**
Sigmadrive, meaning a vehicle can be upgraded and programmers, as well as between controllers, reliable electrical connection method to gauges. Functions, which are designed to hold the vehicle number of specialist programmable parameters, there is a great deal of flexibility offered by a. Output of each is then determined by the steering controllers in a master-slave configuration. The speed of Dual traction applications can be easily and size ratio than competitive controllers of the. Enables Sigmadrive to provide a higher power-to-performance and exceptional reliability. The fully utilized to provide state-of-the-art thermal Insulated Metal Substrate (IMS) technology is supported.

Furthermore, in total, four different motor separately excited and DC permanent magnet. Because of the universal nature of the design, the same hardware can be easily configured to work onto the CANbus, thus into the Sigmadrive itself. by allowing many extra connections to be put by the OEM’s requirements. The backlit, dot-matrix display receives its information over the CANbus, and presents vehicle status and diagnostic information to the operator in clear, easy-to-read icons. The operator, via pushbuttons on the front panel, is also able to select which details are displayed on the screen.

- Large, dot-matrix display with backlight
- Operator selectable display
- Displays include BDI, speeds and timers
- CANbus communications
- Field upgradeable software

**SIGMADRIVE HAND-HELD PROGRAMMER**

The Sigmadrive Hand-held Programmer (HHP) is a powerful tool that can be used to configure all Sigmadrive controllers, as well as the Sigmagauge display. In addition to multiple programming menus, there are status and test functions that provide vehicle designers and service engineers with powerful, real-time system information, making set-up or diagnosis particularly intuitive.

**SIGMADRIVE CANBUS I/O MODULE**

This module expands the Sigmadrive’s I/O count by allowing many extra connections to be put onto the CANbus, thus into the Sigmadrive itself. Full environmental protection is afforded via totally encapsulated electronics.

- 4x digital inputs
- 2x analogue inputs
- 4x contactor outputs
- 4x low-current outputs
- 3x analogue outputs

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### Sigmadrive Controller Dimensions

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>Sigmadrive Frame Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small</td>
</tr>
<tr>
<td>Length</td>
<td>177</td>
</tr>
<tr>
<td>Width</td>
<td>155</td>
</tr>
<tr>
<td>Height</td>
<td>41</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>1.2</td>
</tr>
</tbody>
</table>