Electro Hydraulic Systems

The New Generation EHS

Brushless Hydraulic Pump Motors with Integrated Drive Electronics

Compact, Robust with Integrated Intelligence
“The Ultimate Motion Solution for Hydraulic Systems”
Motion Control for Electro Hydraulic Systems

The Allied Motion EHS series of products are specifically designed for hydraulic pump applications, such as electro-hydraulic steering of buses and trucks and lift- or auxiliary applications on fork lift trucks. They can be directly connected to hydraulic pumps and will provide an intelligent node in a modern vehicle network.

Its robust construction is designed for long life, even in very tough conditions.

- Very compact design!
- Up to 90% total efficiency!
- Simple installation; battery+, battery- and signal connector
- Mounting configurations available for common SAE standards
- Degree of protection IP54 standard, IP67 or IP6k9k optional
- Fulfilling most standards common for on- and off-road vehicles.

- PMAC 8 pole motor (Permanent Magnet Alternating Current)
- 1.5-6 kW peak output power, 0.5-2 kW S2 60 minutes
- Integrated electronics for power and control
- Sinusoidal current wave form for maximum efficiency and ripple free rotation
- High resolution rotational sensor for smooth, quiet operation also at low speeds

- Isolated CAN bus with J1939 protocol or CAN open
- Speed control down to 200 rpm with full torque, to zero rpm with reduced torque
- Hardware interface for operation without CAN
- Self-protected against over temperature, overload, over- and under voltage
- Protection and fault messages via CAN or hard wire
- Integrated reverse polarity protection optional
- Provisions for customized diagnostics
- Customized speed / torque performance and control algorithms to reduce system energy consumption and optimize solution to exact system requirements

Manufacturers of road trucks and buses ask for improved fuel efficiency and flexibility, especially but not only for their hybrid versions. A separate motor for the hydraulic steering or other auxiliary functions offers cost savings in fuel economy as well as complete flexibility. The motor can either shut down or reduce speed when steering is not required, but the engine needs to run. Thanks to very low inertia, the motor can accelerate quickly as soon as steering power is required.

Fork lift truck manufacturers also receive requirements for separate hydraulic steering motors, but also separate motors for auxiliary equipment, which needs hydraulic power. Again this saves energy and improves flexibility, adding range and run-time.

The EHS series products support these applications well, with several options and versions facilitating optimization for each occasion.

Preliminary, may be changed without notice.
Technical Data and Dimensions

<table>
<thead>
<tr>
<th>Model no</th>
<th>Voltage V DC</th>
<th>Torque Nm at 52 60 min</th>
<th>Output power kW at 52 60 min at speed rpm</th>
<th>Peak Torque Nm for 30 s</th>
<th>Output power kW peak 30 s at speed rpm</th>
<th>DC Current Nominal / Peak</th>
<th>Dimensions in mm</th>
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</thead>
<tbody>
<tr>
<td>EHS-11024J10</td>
<td>24</td>
<td>2</td>
<td>0,6 kW at 3600 rpm</td>
<td>8</td>
<td>1,5 kW at 2600 rpm</td>
<td>30 / 95</td>
<td>85 187 192 55 43</td>
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<tr>
<td>EHS-11024J20</td>
<td>24</td>
<td>3</td>
<td>1,0 kW at 3000 rpm</td>
<td>12</td>
<td>2,5 kW at 2000 rpm</td>
<td>52 / 130</td>
<td>105 207 212 55 43</td>
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<tr>
<td>EHS-11048J20</td>
<td>48</td>
<td>3</td>
<td>1,0 kW at 3000 rpm</td>
<td>12</td>
<td>2,5 kW at 2000 rpm</td>
<td>27 / 65</td>
<td>105 207 212 55 43</td>
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<tr>
<td>EHS-15024J20</td>
<td>24</td>
<td>5</td>
<td>1,2 kW at 2400 rpm</td>
<td>15</td>
<td>3,0 kW at 2000 rpm</td>
<td>55 / 145</td>
<td>118 217 236,5 100 45,5</td>
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<tr>
<td>EHS-15048J20</td>
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<td>1,2 kW at 2400 rpm</td>
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<td>3,0 kW at 2000 rpm</td>
<td>27 / 72</td>
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<td>EHS-15024J30</td>
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<td>1,75 kW at 2100 rpm</td>
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<td>5,3 kW at 1700 rpm</td>
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<td>30</td>
<td>5,3 kW at 1700 rpm</td>
<td>38 / 137</td>
<td>148 247 266,5 100 45,5</td>
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</table>

Other power, voltages, torque and speed data available on request.

Drawings

EHS-110

EHS-150

Spline Data

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<tr>
<th>Standard</th>
<th>ANSI B92.1-1996</th>
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<tbody>
<tr>
<td>Root type</td>
<td>Flat</td>
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<tr>
<td>Fit type</td>
<td>Side</td>
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<tr>
<td>Number of teeth</td>
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<td>Pressure angle</td>
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<tr>
<td>Pitch diameter</td>
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<tr>
<td>Hardness</td>
<td>HRC 58-62</td>
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</table>

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Motion Solutions that Change the Game
www.alliedmotion.com
Performance Curves

EHS-11024N20 at 24V and 28V

Output power at 24V
Speed rpm at 24V
Output power at 28V
Speed rpm at 28V
Battery current A
Efficiency %

EHS-11024N30 at 24V and 28V

Output power at 24V
Speed rpm at 24V
Output power at 28V
Speed rpm at 28V
Battery current A
Efficiency %

EHS-15024N20 at 24V and 28V

Output power at 24V
Speed rpm at 24V
Output power at 28V
Speed rpm at 28V
Battery current A
Efficiency %

EHS-15024N30 at 24V and 28V

Output power at 24V
Speed rpm at 24V
Output power at 28V
Speed rpm at 28V
Battery current A
Efficiency %

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