



# **Reduce** application development time and **increase performance**

**Propel Application Library** 



### Develop **advanced** propel solutions **faster**

The Danfoss Propel Application Library (PAL) is a collection of approximately 40 software function blocks for propel applications split into two packages, PAL Basic and PAL Advanced. Through the use of Danfoss PLUS+1<sup>®</sup> and PAL, you can develop complete propel systems for mobile machinery or easily integrate any PAL function block into your existing propel system - regardless of the system configuration or hardware in use. PAL not only provides you a competitive advantage by allowing for superior machine performance but also can dramatically reduce your development time getting you to market faster.

#### **Reduction in development time:**



Instead of coding software from scratch, your development team can focus on system configuration and fine-tuning your solution to best fit your unique customer needs.

## How **PAL** benefits **your business**

**Reduce development time by 50 percent or more.** Having proven, highquality software blocks ready to drop into your existing system reduces costs and improves time to market.

**Supports the entire development process.** PAL supports you from beginning to end. By providing pre-tested PLUS+1° function blocks and access to the P1D Service Tool and User Manuals throughout implementation, machine software is completed faster.

**Creates efficiency.** You'll manage one software library rather than multiple customized solutions. Using PAL and PLUS+1® gives your programmers a common software environment that encourages collaboration and sharing of best practices. PAL also helps less experienced developers or engineers create advanced propel solutions, without advanced software development expertise.

**Brings the power of Danfoss to you.** When choosing PAL, you're not simply receiving an industry-leading software solution, you're receiving the expertise and support only Danfoss can offer. Whether you want to collaborate with a Danfoss engineer on your unique challenge, or just want the peace of mind that you have the support you need, Danfoss is here for you.

#### Challenges PAL can help you address:

- Hydrostatic core functionalities
- Fuel saving/Eco mode
- Hydrostatic motor overspeed
- Electronic pressure limitations
- Anti-stall

- Engine overspeed protection
- Anti-spin & anti-braking control for Ackermann
- Cruise control



#### DANFOSS PROPEL APPLICATION LIBRARY HIGHLIGHTS

#### **Power Management**

- Electronic pressure limiter (pump) optimizes machine performance
- ECO mode reduces fuel consumption in transport mode
- Engine anti-stall

#### **Machine Protections**

- Engine cold start protection extends engine lifetime
- Engine, pump and motor over-speed protections optimize machine control

#### **Multi-Motor**

- Advanced anti-slip control and antibraking system maximize performance and control
- Optimized control of 0° capable H1B motors

PLUS+1<sup>®</sup> Compliance

Optimized

machine performance and operator control

#### **Danfoss Customization Assistance**

Danfoss programmers and software engineers are always ready to collaborate with your software team to ensure blocks from our PAL meet your needs. Whether it's customization to optimize functionality or general technical assistance, Danfoss is always ready to assist.



ENGINEERING TOMORROW

### About Danfoss Power Solutions

**Danfoss Power Solutions** is a global manufacturer and supplier of high-quality hydraulic and electric components. We specialize in providing state-of-the-art technology and solutions that excel in the harsh operating conditions of the mobile off-highway market as well as the marine sector. Building on our extensive applications expertise, we work closely with you to ensure exceptional performance for a broad range of applications. We help you and other customers around the world speed up system development, reduce costs and bring vehicles and vessels to market faster.

We offer you expert worldwide support for ensuring the best possible solutions for outstanding performance. And with an extensive network of Global Service Partners, we also provide you with comprehensive global service for all of our components.

Danfoss Power Solutions – your strongest partner in mobile hydraulics and mobile electrification.

#### **Products we offer:**

- DCV directional control valves
- Electric converters
- Electric machines
- Electric motors
- Hydrostatic motors
- Hydrostatic pumps
- Orbital motors
- PLUS+1<sup>®</sup> controllers
- PLUS+1<sup>®</sup> displays

- PLUS+1<sup>®</sup> joysticks and pedals
- PLUS+1<sup>®</sup> operator interfaces
- PLUS+1<sup>®</sup> sensors
- PLUS+1<sup>®</sup> software services, support and training
- PLUS+1<sup>®</sup> software
- Position controls and sensors
- PVG proportional valves
- · Steering components and systems
- Telematics

#### Go to www.danfoss.com for further product information.

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