

Small bus of DPS system



Overview

This study presents an improved method of integrating power transfer and communication through a common bus by applying the concept of power/data time division multiplexing transmission (PD-TDMT). The application of dynamic positioning (DP) systems has been expanded significantly not only in the number of DP vessels, but also in the range of applications and the advancement of DP technologies. An updated recommended practice from DNV can now support the wider adoption of robust, safe and fuel-efficient. “For equipment class 2, the power system should be divisible into two or more systems so that, in the event of failure of one sub-system, at least one other system will remain in operation and provide sufficient power for station keeping.



Article Content

Aug 04, 2025

Guide for Dynamic Positioning Systems

A vessel with DPS-2 or DPS-3 notation is required to have an automatic dynamic positioning system, manual position control system and to be single fault tolerant.

Mar 27, 2026

DC current bus distributed power system and its stability analysis

Then, the current bus DPS is derived, discussed, and the stability criteria are obtained by using two-port small signal model. The proposed criteria are verified by comparing the results of ...

May 05, 2026

DNV-RP-0591: Closed Bus-Tie Guidelines

The document outlines DNV-RP-0591, which provides guidelines for redundant dynamic positioning systems with closed bus-ties, replacing previous technical guidance.

Jun 09, 2026

Improved powered bus communication technique based on PDâ ...

In these communication integrated systems, every module sinks constant current to keep the equivalent impedance of the bus within a proper range, which is not compatible with high power or variable load ...

Feb 24, 2026

Components of the dynamic positioning (DP) system

There is a compulsory requirement for DP class 3 system, that the bus-tie breaker shall be open during DP operation. Thus, a fault on one bus will not affect operation of the other one, and, at least, one ...

Jan 21, 2026

Promoting more robust DP power systems with closed bus-ties

A revised recommended practice issued by DNV can now facilitate the wider adoption of closed bus-ties for the connection of DP power systems in line with recent technological ...

May 24, 2026

DC bus stabilization using passive damping network in distributed ...

In this paper, four passive damping network topologies was proposed to reduce the DC bus instability. The best damping performance of the topologies was chosen and analysed using...

Aug 02, 2025

Decentralized Impedance Specifications for Small-Signal Stability of ...

This paper has proposed decentralized impedance specifications for small-signal stability of a dc DPS which contains one voltage source subsystem, multiple power controlled source ...

Sep 10, 2025

DP notation for closed bus-ties

Better and current guidelines covering a wider scope of system arrangements, suitable for fuel efficient and robust closed bus-ties DP systems. The document can also be used for systems other than DP ...

Mar 13, 2026

Standard form of DC voltage bus DPS

The DC voltage bus distributed power system (DPS) structure has been widely used in the fields of transportation, renewable energy generation systems, communication systems and aerospace ...

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