

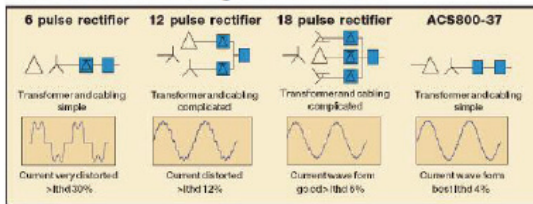


The rack-mounted 3-step drive with switch cabinet and resistor unit reduces onboard installation time.

Soft start solutions for 3-step drives or low harmonic frequency-controlled drives as well as restricted power management systems are state-of-the-art drive solutions from Jastram for limited onboard power supply.

Harmonic distortions produced by frequency converters can be reduced through the following technical solutions:

Alternatives in reducing line harmonics



© ABB

# Thruster Drives and Controls



- ▶ Customised systems
- ▶ All drive applications
- ▶ Specialists in FC drives
- ▶ User-friendly operation
- ▶ New builds and retrofits

For transverse thrusters, azimuth grid thrusters and low-noise thrusters please see our other brochures:

**Transverse Thrusters**

- ▶ 50 kW to 1600 kW
- ▶ 400V and 600V systems
- ▶ Up to 10000 shaft hp
- ▶ 4000 thrusters in operation
- ▶ High-performance IP protection

**Azimuth Grid Thrusters**

- ▶ 240° steering angle
- ▶ Redundant motor gears
- ▶ Redundant to grounding
- ▶ Suitable for shallow water
- ▶ Low-noise in operating mode

**Low-Noise Thrusters**

- ▶ Patented technology
- ▶ Redundant motor gears
- ▶ Redundant to magnetic supply
- ▶ Redundant to drive assembly
- ▶ For transverse, azimuthal thrusters



2008/10

Jastram GmbH & Co. KG  
 Billwerder Billdeich 603  
 21033 Hamburg · Germany  
 Tel: +49(0) 40 / 725 601 - 0  
 Fax: +49(0) 40 / 725 601 - 28  
 Mail: info@jastram.net  
 www.jastram-group.com





Drawing on experience in thruster drive and control systems since 1950 Jastram offer a wide range of applications:

3-step drive systems with resistor units and slip ring motors have been the most popular drives over the last few years.

Dynamic drive, a multistep drive system with resistor unit, slip ring motor and reduced starting current, is the cost-competitive alternative to controllable pitch propeller (CPP) thrusters with the advantages of the robust fixed pitch propeller (FPP).

Frequency-controlled (FC) drives accommodate the increasing demand for stepless control. Interfaces to joysticks and dynamic positioning systems as well as any other customised application can be realised by Jastram.

Control systems including operator panels for hydraulic and diesel engines as well as other drive systems are designed and interfaced in close cooperation with the supplier of the prime mover.

Operator panels for bridges, wings, afts, flybridges and portable stations are available in standard or customised designs.

The alarm system displays alarms and faults on the operator panels and switch cabinet. Interfaces to any alarm monitoring system (AMS) can be achieved.

**Technical features:**

- ▶ PLC / Programmable Logic Control
- ▶ VDR / Voyage Data Recorder interface
- ▶ Heating for motor and switch cabinet
- ▶ PMS / Power Management System, query to main switch panel regarding availability of power
- ▶ Resistor overcurrent protection

**Recommendation:**

- ▶ Motor holding brake is recommended to prevent propeller windmilling during passages.

**Options:**

- ▶ Room fan control and monitoring
- ▶ RPMS / Restricted Power Management System
- ▶ Operator panel for 3-step drive on switch cabinet
- ▶ Soft start for 3-step drive
- ▶ DP Interface for FC drives
- ▶ Low Harmonic Drives for FC drives



3-step master and slave panels with customised colours. New design with two additional spaces for lamps and buttons for special functions such as restricted power management.



Operator panels for dynamic and frequency-controlled (FC) drives.



Operator panels with yacht design. Special applications such as a minimalist design for luxury yachts are implemented in close cooperation with the technical departments of the shipyard.



Bridge and portable panels for four azimuth grid thrusters with 360° levers and joystick control.