

# Dredger Drives Control Unit (DreDCU)

## A more reliable and integrated control platform for dredger drivers

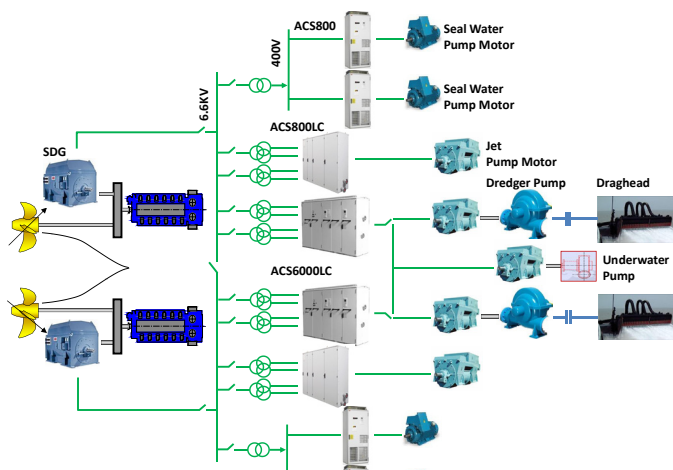
DreDCU is an advanced PLC unit to control, protect and supervise the dredging relevant consumers and system in Dredger Vessel with capability to control multiple drives simultaneously.

### Consumer features in Dredger Vessel

In the electric drive dredging concept, a number of diesel engines are running generators that supply electrical power to the main switchboards to which all consumers are connected. The electric dredger system consists of power plant (include diesel-genset and main switchboard), supply transformers and frequency converters, and a set of dredger related consumers, dredger drives control unit and remote control system and optional diagnostics system.

The dredger related consumers include but not limited to following equipments:

- Dredger pump motor
- Jet pump motor
- Cutter motor
- Underwater pump
- Seal water pump motor



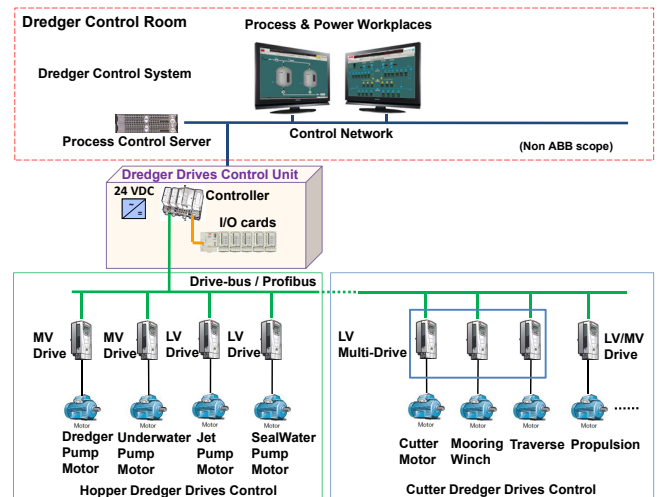
A typical Hopper Dredger vessel configuration

### DCU Function Introduction

The Dredger Drives Control Unit provides functions to control, protect and supervise the dredger drive chains which are used to control above dredger related consumers. DreDCU consists of AC 800M hardware platform and embedded application software.

The application software is standardized and scalable software package. The standard software is adapted to the project-specific configuration by means of parameterization due to different dredging application. The DreDCU software provides functions as below:

- Standard control for dredger consumers such as sequence start/stop control, emergency stop and ramp accelerate.
- Optional control types such as Master/Follower, duty over-load running and changeover.
- Monitor and protect of dredger drive chains.
- Send alarm to integrated automation system.
- Implement auxiliary control for main dredger consumers.

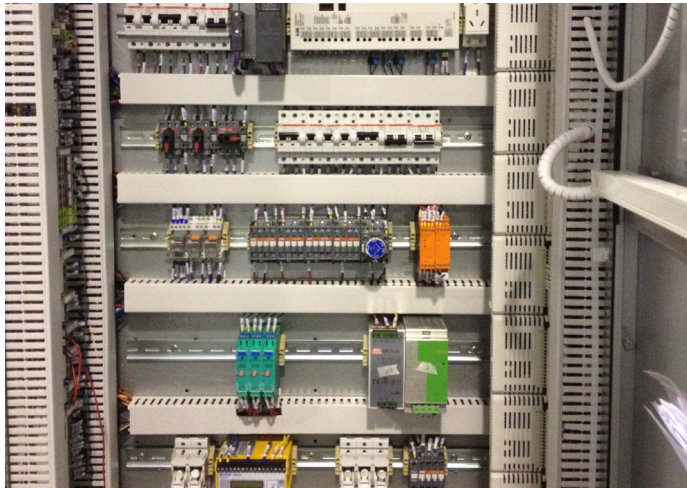


DreDCU's role presented in the system

### DreDCU Hardware configuration

DreDCU is designed based on ABB AC 800M serial automation product concept. The hardware includes application controller AC 800M, communication modules and modems, S800 local I/O modules and power supplies.

An optional local panel can provide the alarm list and display the detail information for each activated alarm .



### DreDCU main features

- One unit control up to 11 drives.
- With interface to remote control and integrated automation system (support profi-bus and modbus).
- With optional local panel.
- With optional interface to remote diagnostics support.
- With optional interface to advisory system
- Meet main class society requirements

### To a Shipowner DreDCU means:

- Increase the safety and reliability of dredging operation, hence reducing risk of down time due to power loss.
- Single control contact for different dredging application
- More stable control against hard working environment
- Optional remote diagnostic service help to increase the efficiency of trouble shooting, therefore reducing the down time.
- Monitors dredger consumers' conditions and supports owner to plan actions.
- Using standard platform increase the possibility of share same spare parts with more ABB products

### To Shipyard and designers DreDCU means:

- It's more convenient to interface with ABB other products and 3rd part deliveries.
- Standard software save time and work load for FAT, commissioning and sea trial.
- Smaller cabinets provide flexibility for equipment location.
- Powerful functions help to increase the competence of system solution.



The 'TongTu' 15000m3 Suction Dredger in which DreDCU has been installed.

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