

Photo courtesy of POSH Semco Pte Ltd.

## Jastram Digital Control System

The Digital Control System consists of four basic components:

- A Digital Steering Controller (DSC)
- At least one Mode Control Processor (MCP)
- At least one Steering Input Device
- A Rudder Feedback Unit (RFU)

The core of the Jastram Digital Control System is the Digital Steering Controller (DSC). The DSC processes signals from the Mode Control Processors (MCP) and in turn controls the response of the hydraulic power units and, ultimately, the rudder. The MCP is a station processor which connects the signals from the station Input Devices and Control Panels to the DSC.

Type Approved Product; see details on back page



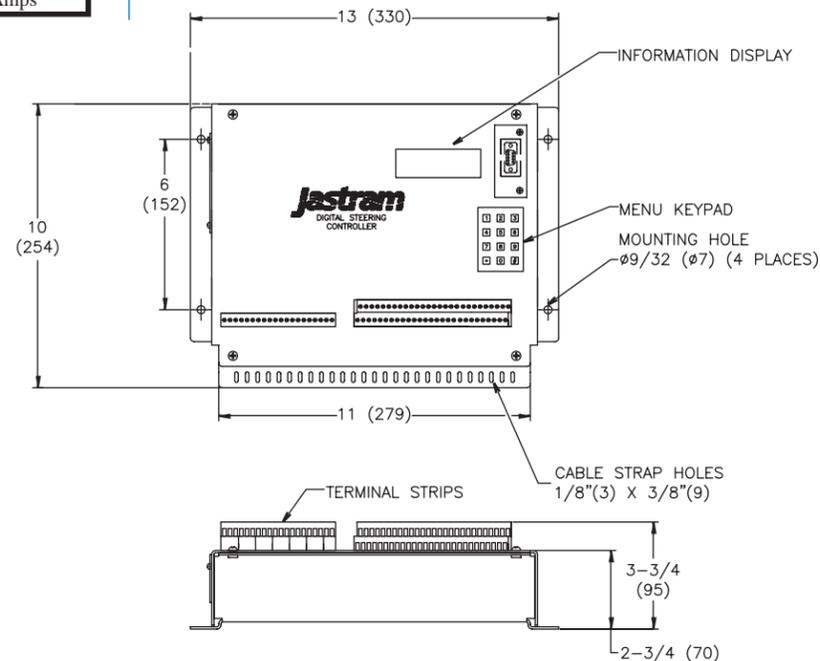
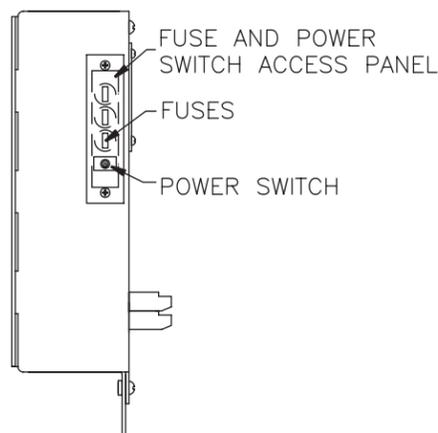
## Digital Steering Controller (DSC)

The DSC is designed specifically for marine steering. It contains a sophisticated microprocessor to perform all computations from the input devices in order to maintain extremely accurate control.

Configuration software is provided to allow each steering system to be customized specifically to the characteristics of each vessel.

- Up to five Mode Control Processors can be connected at the same time allowing virtually unlimited configurations of multiple steering stations to be installed, even after the vessel has been commissioned
- Built-in self diagnostic software with full follow-up failure alarm assist troubleshooting and system servicing
- No routine maintenance required
- Optional waterproof enclosure available, IP55, NEMA 12 (As seen in picture to left & above)

Specifications	
Enclosure Protection:	IP 22, NEMA 2
Operable Ambient Temperature:	+5°C to +70°C
Supply Voltage:	12 or 24VDC, -10% +20%
Power Consumption:	Dependent on system configuration approx. 7 Watts, DSC only
EMC Protection:	EN60945, 2005
Dimensions:	Approx. 13" x 10" (330mm x 254mm)
Weight:	4.25 Lbs. (1.93 kg)
Maximum rudder speed	8 seconds (on-off)
	5 seconds (proportional)
Rudder position accuracy	±1/2°
Safe distance to compass:	2 Ft. (0.63 m)
Short Circuit Protection:	Controller (F1), 4 Amps Directional Solenoid (F2), 4 Amps DHM/Speed Solenoids (F3), 4 Amps

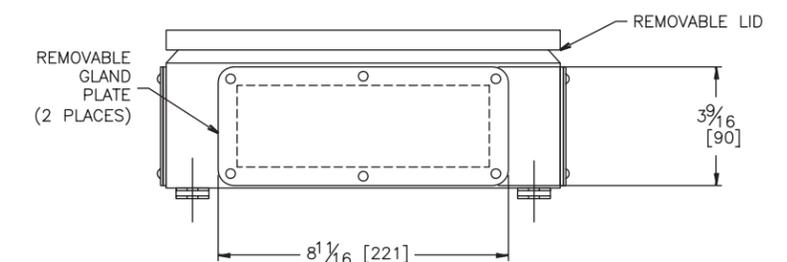
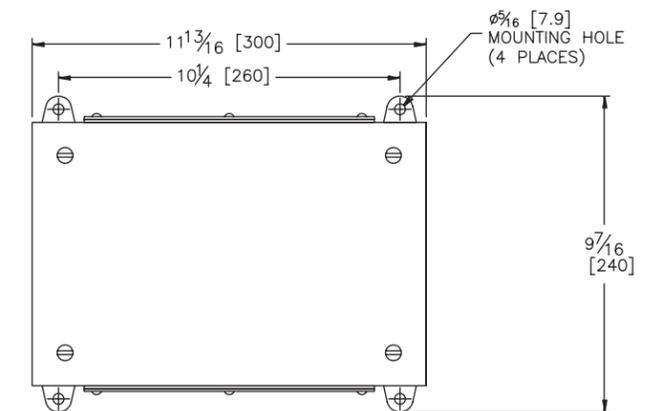
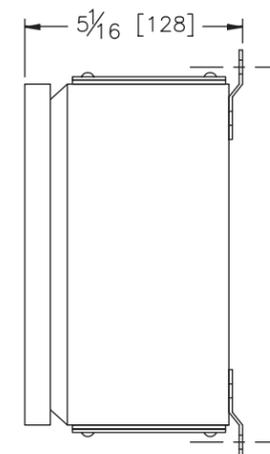


## Mode Control Processor (MCP)

The MCP receives signals from the input devices & control panels then transmits these signals to the Digital Steering Controller for processing. It also receives commands for the RAI, ROI and station transfer logic from the DSC, all through a single RS485 cable.

- Each MCP has the capacity to process:
  - \* Two digital inputs
  - \* Two analog inputs
  - \* One non follow-up input
- Plus the MCP can drive
  - \* Two digital and two analog rudder order indicators
  - \* Five rudder angle indicators.
- Command can be transferred between digital inputs devices instantaneously, without interruption
- Allows both ramping control and basic on /off for backup in one non follow-up jog switch
- Individual adjustment of indicators is provided
- The housing is corrosion resistant

Specifications	
Enclosure Protection:	IP 55, NEMA 12
Operable Ambient Temperature:	-25°C to +70°C
Supply Voltage:	Supplied from DSC
Power Consumption:	Dependent on system configuration approx. 1 Watt, MCP only
EMC Protection:	EN60945, 2005
Dimensions:	Approx. 12" x 8" (300mm x 200mm)
Weight:	9 Lbs. (4.1 kg)
Safe distance to compass:	2 Ft. (0.63 m)
Short Circuit Protection:	Yes 1.5 Amp fuse
Mounting:	Bulkhead
Cable Specifications	
Cable:	2 twisted shielded pairs, 120Ω controlled impedance, RS485 communication cable, Belden 3082A, LAPP 2170340 or equiv.
Maximum cable length:	230m (750 ft.)
Cable Break Protection	Yes
Connector:	3.81mm pitch pluggable screw terminals





## Control Panel (CP33, CP36)

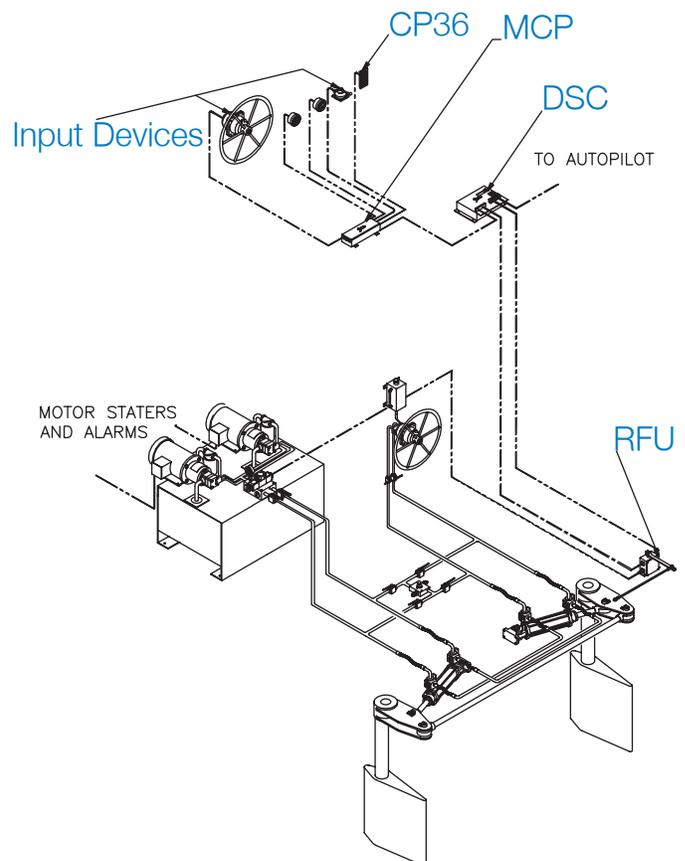
This unit provides direct button selection of the available steering control modes. It is configured for each system installation. Mode selection is located at every steering station as required by Classification Societies.

- Single button panels can be supplied for steering stations requiring only one option
- Selected mode of steering is illuminated
- Control Panel face is backlit and includes a built-in dimmer control.
- Fault light and audible alarm are built in
- Black Lexan face panels are:
  - \* 3 in. (76mm) wide by 6 in. (152mm) high, or
  - \* 3 in. (76mm) wide by 3 3/4 in. (95mm) high
- Panels can be modified on the vessel in the event of a refit or system reconfiguration
- Selection panels can also be supplied by others for integration into an integrated bridge

## Jastram Digital Control System Summary

The key features of the Jastram Digital Steering Control System are:

- Optional VDR (Vessel Data Recorder) Interface
- Autopilot, Joystick or DP systems are easily interfaced
- Custom configurations can be easily accommodated including:
  - \* Twin independent systems for DP & Joystick compliance
  - \* Duplicate Full Follow-up systems for redundancy
  - \* Proportional hydraulics
- The RFU 2000 is the suggested feedback for the Digital system
- All Jastram Digital and Analog Input Devices work with the Digital Steering system
- DNV Type Approved for Classification of Ships, High Speed & Light Craft and DNV Offshore Standards
- GL Approval Certificate Guidelines for the Performance of Type Approvals Part 2, Edition 2003, IEC 60945 (2002)



*Data is subject to change without notice.*

