



# Control systems

Marine Propulsion Systems





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Over fifty years ago we introduced the industry's first single lever control systems, and we have been designing and manufacturing control systems for commercial marine vessels, yachts, and pleasure boats ever since. We have established a reputation for reliable, responsive control systems from the beginning and have continued to use new technology to our advantage. This is evident in our SmartCommand control system. ZF Marine's state of the art control systems are designed for the harsh engine room environment and are available for both mechanical and electronic applications. Our control heads are built to withstand the harshest marine environment while being attractively designed to complement any application.

# Genuine ZF

All of ZF Marine's control systems carry our product "DNA", features that you will find across all of our control systems families.

ZF Marine's electronic propulsion control systems are at the leading edge of electronics technology. The products incorporate well-proven hardware and software to ensure reliability, easy operation and maintenance. A wide range of systems means optimum equipment can be chosen to specifically match the type of vessel or propulsion configuration – single engine, multi-engine or multi-station.



	MicroCommander	ClearCommand	Premium ClearCommand	CruiseCommand	SmartCommand	MiniCommand
Actuation	Mech. Engine	•	•			
	Elec. Engine		•	•	•	•
	Mech. Gear	•	•	•		
	Elec. Gear		•	•	•	•
	Mech. Troll	•	•	•		
	Elec. Troll		•	•	•	•
	Up to 2 stations					•
	Up to 4 stations				•	
Options	Up to 5 stations	•	•	•		
	Up to 6 stations				•	
	Back up	•	•	•	•	•
	Joystick Maneuvering System JMS					•
	SteerCommand					•
	Dynamic Positioning Interface			•		
	iAnchor/iDrift function					•



## Product characteristics

### Plug-in installation

ZF Marine control systems utilize plug connectors that make installation easier and cut installation time significantly. Determine cable length, engine and transmission requirements, and you're ready to plug in our systems. To simplify things further we can provide custom designed kits for production boat builders.

### Push button set up

Configuring the parameters for your controls has never been easier. Simply enter the parameter code and the processor instantly makes the correct adjustment. Changing configurations later to meet a new specification is just as easy.

### Start interlock

Our neutral start interlock prevents engine start up unless the control system is on, in neutral, and a specified station is in command of the engines and transmissions.

### Emergency reversal protection

Speed/shift sequence protection allows shifting from full ahead to full astern in one motion while preventing damage to the engine or transmission. Designed with safety in mind, this sequencing technology allows you to respond safely to emergency situations.

### Synchronization

Engine synchronization is standard on all control systems. Synchronization automatically maintain the same speed on multiple engines, thereby increasing operating efficiency, improving fuel economy, and reducing noise and vibration. Synchronization also allows for one lever operation – allowing the control of multiple engines and transmissions with one lever.

### Multiple control stations

All control systems have the capability to support multiple control stations on a vessel including our optional handheld control.

### Built in processor displays

All control system processors feature digital displays that provide information for set up, system status, and diagnostic purposes.

### Troll

All our control systems are designed to control mechanical or electronic trolling valves as well as ZF AutoTroll. A full range of shaft speed is available below engine idle without the need for additional switches.

# Control heads

ZF Marine control heads are built to withstand the harshest marine environment while being attractively designed to compliment any application – from the most basic marine applications to large offshore supply vessels with highly sophisticated dynamic positioning equipment or luxury yachts. Our control heads incorporate easy to use functionality to give you complete control from up to six different stations on your vessel.



**SmartCommand 5200**



**MiniCommand 4200**



**MC 2000-2**



**MC 2000-4**



**463**



**466-4**



**Handheld remote**



**Tournament lever**



**SmartCommand One  
Button One Function Panel**

# MicroCommander and ClearCommand

MicroCommander and ClearCommand are robust controls that have been long established as industry standards in electronic controls technology. Both systems are suited to applications utilizing mechanically actuated engines and transmissions or any combination of electronic throttle or shift.

MicroCommander and ClearCommand have been tested to requirements set by survey societies such as ABS and DNV, and meet ABYC standards for performance and functional testing. Both products carry the CE mark and are certified for sale in Europe.



## Premium ClearCommand

Utilizing the proven ClearCommand platform, Premium ClearCommand was developed specifically for unique applications in multi-engine commercial, and very large pleasure craft vessel applications. Premium ClearCommand is designed to interface with many commercially available DP systems and meets the stringent standards of most classification societies.

In addition to all of the standard features of ZF Marine control systems, Premium ClearCommand offers unique features such as:

- Engine room and remote station lock out
- Unique transfer functionality and station in command indication as required by ABS
- Dynamic Positioning and joystick interface
- Fixed neutral delay for shaft brake sequencing





# CruiseCommand

CruiseCommand is the next step based on the proven MicroCommander and ClearCommand product families. It is designed specifically for larger vessels with multiple control stations and electronic engines and electrically shifted transmissions. CruiseCommand incorporates all the standard features of ZF Marine control systems including:

- Warm up mode
- Station transfer
- Single lever operation
- Engine synchronization

Electric trolling valve control is a standard feature with CruiseCommand and can be activated as part of the initial system set up. This allows for a range of low speed control at engine idle.

CruiseCommand has a number of type approvals if classification is required for the application.





# MiniCommand

MiniCommand is the evolution of standard electronic controls. MiniCommand provides affordable single lever control of electronically actuated diesel engines and marine transmissions. Designed specifically for pleasure craft and light duty commercial applications up to sixty feet in length, with a maximum of two control stations, the MiniCommand control processor incorporates the logic circuits for two engines and transmissions in one compact package. The single unit design allows for the processor to be mounted in smaller spaces while maintaining two completely separate operating systems. MiniCommand provides the features of control systems costing significantly more, all with the proven durability from ZF Marine.

For operators already familiar with ZF Marine's existing control systems, MiniCommand offers the flexibility to be paired with the same control heads offered for MicroCommander, CruiseCommand, and ClearCommand. In addition the 4200 Series control head was designed specifically for MiniCommand. A derivative of the popular 5200 control head for the SmartCommand control system, the 4200 offers all the ergonomic comfort and modern European design required by many of today's boat builders.



# SmartCommand

SmartCommand is the result of fifty years of experience in designing vessel control systems. A powerful control system for today's electronically controlled engines and ZF transmissions, SmartCommand integrates the latest in CAN-bus communication technology with a user-friendly multifunction control head for up to six vessel control stations.

The compact control head design combines an ergonomic lever shape with a user-friendly touch pad allowing for all system functions to be easily selected using soft-touch push buttons. Visual indicators help to locate the neutral detent position and two color LEDs indicate station in command, and transmission engagement.

SmartCommand puts you in complete control with dedicated control modes for all standard ZF Marine control system functions with the addition of Easidock and AutoTroll.

Easidock ensures positive clutch response resulting in easy and precise maneuverability in confined areas. It provides the ability to modulate clutch engagement and control engine speed to obtain the optimum propeller speed for safe docking.

AutoTroll permits a full range of low speed control incorporating a shaftline sensor for closed loop feedback to maintain a specifically demanded propeller rpm. The function allows for clutch slippage to be controlled while maintaining minimum engine speed.

SmartCommand's CAN-bus communication perfectly synchronizes engines in all modes without the need for dedicated buttons or switches.





## Joystick Maneuvering System JMS

The ZF Joystick Maneuvering System operates off of the SmartCommand control system, and offers simple and intuitive vessel control at your fingertips. JMS manages the vessel's main engines, ZF transmissions and bow thruster all through the joystick, giving the operator precise speed, smooth maneuvering and easy docking. JMS offers vessel operators the ability to move the vessel sideways, rotate 360 degrees on the vessel's axis, and hold vessel position accounting for current and wind. The control functions iAnchor (automatic positioning) and iDrift (drift speed and direction control) are unique JMS features.



## SteerCommand

Based on the SmartCommand platform, SteerCommand brings to marine the most advanced steer-by-wire technology for unparalleled performance and greatest ease of installation. Traditional bulky hydraulic steering systems with their plumbing and many liters of fluid are now replaced with simple electronic harnesses. The vessel control experience is also significantly improved. Steering feel at the helm is more precise, and ZF Marine's patented force feedback system, offers rudder feel at the helm. Individual rudder controls offer increased maneuverability by allowing each rudder to move independently. Safety is our primary concern and as such SteerCommand has double redundancy built in. Because SteerCommand is tied to the SmartCommand control system, it can operate through either main processor. Also, if complete vessel power is lost, the rudders can still be actuated manually.



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