



**GLENDINNING**

"Relax ... We're On Board"

# COMPLETE CONTROLS CATALOG



Why Complete Controls™?	2
Controls for Electronic Engines	3
Controls for Mechanical Engines	5
Component Dimensions	7
Control Head Options	8
Optional Accessories	9
Automatic Synchronizer™	12
Pro-X Control Cables™	13

## We're On A Mission...

The mission of Glendinning Products is to manufacture and provide quality products to our customers so that they can have the utmost enjoyment and satisfaction in their boating experience. This was the mission of our company in 1972 when my father Hylands (Glen) Glendinning started the company and this mission continues until today. We have brought together a team of talented engineering and manufacturing professionals who enable us to provide products with unrivaled superiority, performance, and durability in order to provide extraordinary value for your investment.. Our employees have a personal commitment to product improvement through our Glendinning Production System. We have been certified to meet the ISO 9001:2000 standard assuring you of consistent quality throughout the manufacturing process. No one works harder to produce better quality products that lead the industry.

"Relax...we're on board!" is more than a slogan with us, if you're not receiving more pleasure from your boating experience because of our products then we are not fulfilling our mission. It's that simple.

**John Glendinning – President**



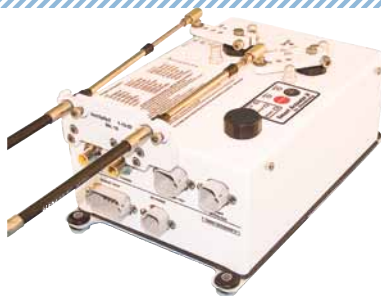


# COMPLETE CONTROLS WHY COMPLETE CONTROLS™?



## About the Company

In 1996, Glendinning introduced its first electronic engine control system to the marine industry — since then we've proven our ability to bring innovative ideas to the market. From the first automatic, integrated mechanical backup system to today's integrated control of your engine's drive unit, we've shown our commitment to giving you the best experience while cruising in your vessel. Thousands of satisfied customers agree — if you're using any other electronic engine control system, then your boat isn't complete! Whether you own a pleasure yacht or a work boat (and everything in between), single, twin, or multiple engine applications, inboard, outboard, stern drive, and water jet applications — Complete Controls™ is your best choice for optimum control of your boat's propulsion system.



## Complete Control of Engine Throttle and Shift for All Engine Types

No matter what type of engine you own — Complete Controls™ is specifically engineered to be compatible with all electronic, mechanical, and electronic / mechanically controlled engines and transmissions.

## Easier Installations with CANbus Technology

CANbus technology has revolutionized the electronic controls industry by simplifying wiring and allowing greater flexibility when adding control stations. Utilizing a single communication cable, up to 6 control stations (including our handheld remote station) can be connected anywhere along the network's path.

## Sophisticated Power Management

The power system receives power from two independent DC power sources. During normal operation, the system will draw power from both power sources. In the event one power source fails, the control system will run off a single DC power source, switching over automatically. We believe this concept of "dual battery inputs" provides a very important feature which improves the product reliability.

## Convenient System Configuration Process

The "heart" for the Complete Controls™ system is housed in a small, watertight, pluggable enclosure that does not need to be opened because the system is pre-configured at the factory. When personal preference dictates a change to the system's configuration, these options are accessible from the main station control head keypad making it even easier to adjust configuration settings.

## Optional Integrated Gear / Throttle Back Up Control

Any product which is installed in the marine environment has the potential for failure. Due to the very critical nature of the propulsion control, we believe that it is wise to have a redundant, backup system for propulsion control. Because of that, the Complete Controls system offers an optional, integrated, backup control to provide the boat owner with the highest degree of confidence that they will always be in control of their boat.



### Standard Features

- Single lever control
- Six-station capability
- "Posi-lock" gear lockout capability (Warm Mode)
- Engine synchronization (Sync Mode)
- Start Interlock
- Selectable station transfer methods
- Station lockout capability
- Adjustable high idle settings
- Control head keypad lights dimmer
- Dual battery inputs
- 12V & 24V DC systems available

### Optional Features

- Variety of control head options
- Handheld remote control
- Trolling valve control
- Integrated gear / throttle backup system
- Integrated trim control (for outboard and stern drive applications only)

# CONTROLS FOR ELECTRONIC ENGINES

## Complete Controls™ Electronic Engine Controls – Model EEC3™ and EEC4™

With the advent of electronic engines into the marine industry, the control of your propulsion system has never been more important. Your electronic propulsion system has become more demanding in terms of information it receives from the electronic engine control system. Glendinning's Complete Controls™ system offers the latest in digital technology which allows it to interface with all types of electronic engines while providing the operator with complete control over the propulsion system.

Complete Controls™ was designed to give the boat operator everything from basic control operation to advanced control operation of any propulsion system that is equipped with electronic throttles and electric (solenoid operated) transmissions.

### Basic Control Operation [model EEC4™]

This system is a compact economical solution to effectively control the propulsion system for any size vessel. The Basic Control features are:

- **Cruise Mode:** Normal operating control of engine speed and transmission.
- **Warm Mode:** Locks transmission in Neutral while allowing engine throttles to be increased or decreased safely.
- **Sync Mode:** Very precise engine synchronization available with the simple press of a button on the control head keypad. While in Sync Mode, one control handle can control the speed of both engines.
- **Exclusive Station Transfer:** In order to transfer control from one station to another a "two-button" press of the keypad button is required.
- **Warning Mode:** A visual indication that a battery voltage problem or check system problem has occurred.
- **Alarm Mode:** The system will continuously monitor system functions and alert the boat operator of a problem that has or can affect the operation of the control system.

### Advanced Control Operation [model EEC3™]

This system was designed with the experienced mariner in mind. Advanced control is by far, the most feature-rich electronic engine control system in the industry. Advanced Control features include the above basic control operations plus:

- **Slow Mode:** Great for "no wake" areas, this mode changes engine throttle response where full handle movement will only result in half the normal full throttle engine speed.
- **Optional Troll Mode:** The EEC3 Control System is compatible with all brands of trolling valves used in the marine industry
- **Optional Automatic Gear / Throttle Backup:** This feature allows you to regain control of your boat's propulsion system, with the simple flip of a switch, in the event that the normal operating system is not functioning properly (see pg. 9 for more information).

### The Benefits of Complete Controls™ include:

- Single or Dual lever control
- Adjustable control head detent / friction settings
- "Posi-lock" gear lockout
- High Idle mode
- Bump mode
- Battery voltage warning indicator
- System diagnostic warning indicator
- Gear positioning indicating lights
- Control head keypad light dimmer
- Two button station transfer

### Control Processor

- For all electronic engines or transmissions
- Single, dual, or multiple engine applications
- Stern drive, water jet, gas or diesel applications
- Plug 'n play Deutsch connectors
- Sealed against moisture
- Capable for single, twin, or triple engine applications.
- Capable for Waterjet and Controllable Pitch Propeller applications.

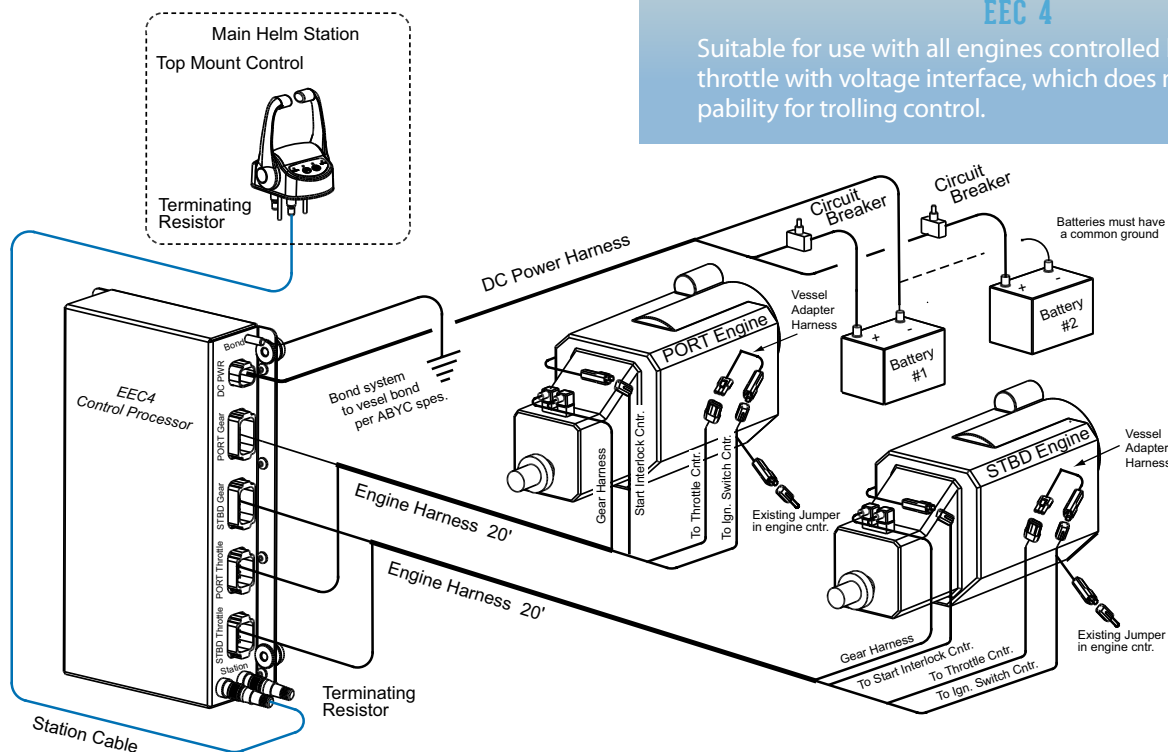


# COMPLETE CONTROLS TYPICAL SYSTEM LAYOUTS



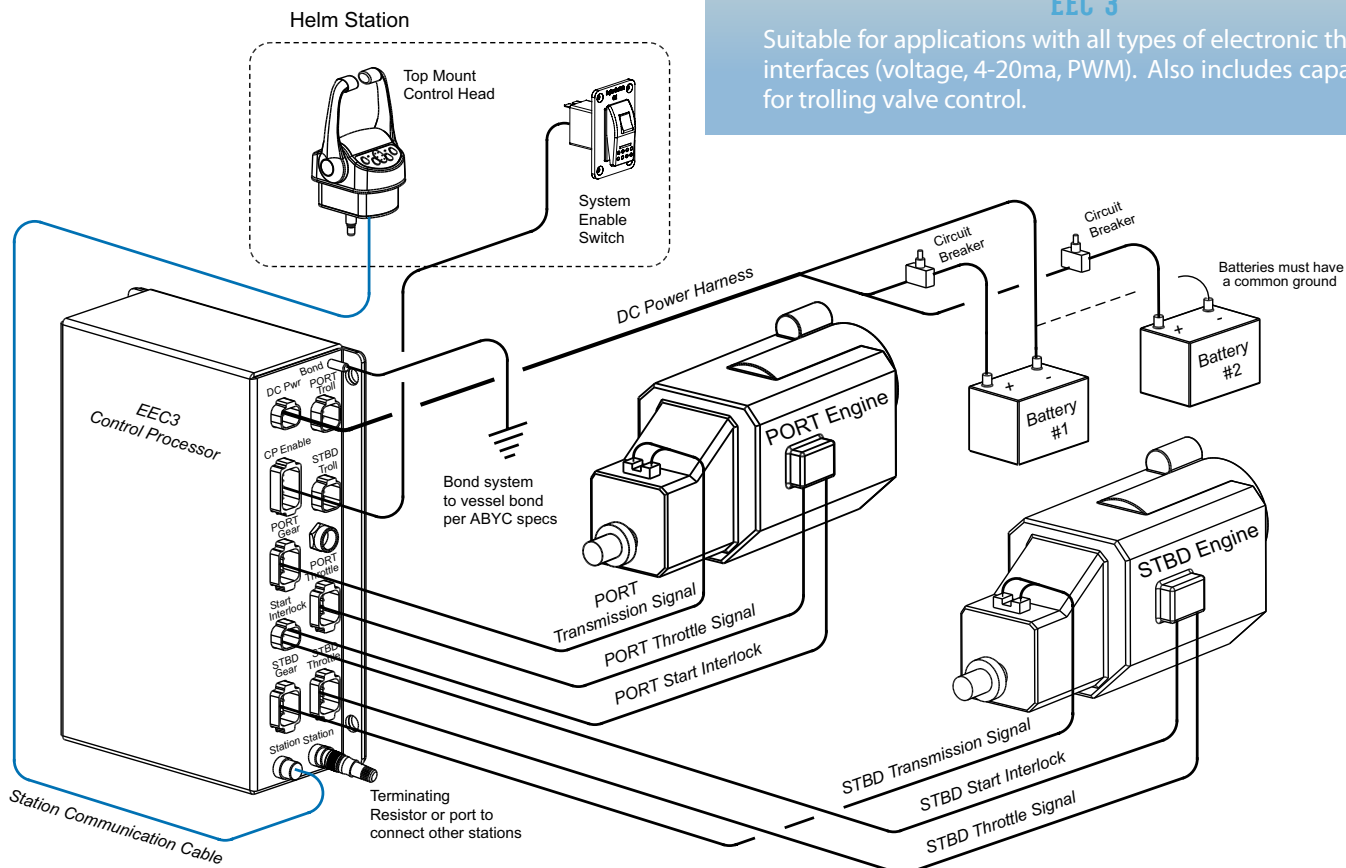
## EEC 4

Suitable for use with all engines controlled by an electronic throttle with voltage interface, which does not need the capability for trolling control.



## EEC 3

Suitable for applications with all types of electronic throttle interfaces (voltage, 4-20ma, PWM). Also includes capability for trolling valve control.



# CONTROLS FOR MECHANICAL ENGINES

## Tired of fighting with hard to move mechanical cables?

Wish your smaller boat could be controlled like a luxury liner? Now your mechanically controlled propulsion system can have the feel of electronic precision.

## Complete Controls™ Mechanical Engine Controls – Model Smart Actuator I and II

The Smart Actuator™ offers the same great features of our electronic controls, plus the following:

- **Integrated Multiple Engine Capability:** Two or three engines can be controlled as easily as a single engine, for outboard, inboard, or stern drive applications — with the full advantage and feel of electronic precision.
- **Optional Automatic Mechanical Backup:** The Smart Actuator I™ can be configured with an optional capability for automatic mechanical backup control, which provides for the automatic changeover between electronic and mechanical control at the push of a button.  
(Not available with Smart Actuator II)
- **Integrated Trim Control Capability:** The Smart Actuator II can be equipped with an integrated trim control capability, where these commands are sent over the same CANbus station communications wire used or shift and throttle control. **Cruise Mode:** Normal operating control of engine speed and transmission.
- **Warm Mode:** Locks transmission in Neutral while allowing engine throttles to be increased or decreased safely.
- **Sync Mode:** One control handle can control the speed of both engines with the simple press of a button.
- **Exclusive Station Transfer:** In order to transfer control from one station to another a “two-button” press of the keypad button is required.
- **Warning Mode:** A visual indication that a battery voltage problem or check system problem has occurred.
- **Alarm Mode:** The system will continuously monitor system functions and alert the boat operator of a problem that has or can affect the operation of the control system.
- **Optional Slow Mode:** Great for “no wake” areas, this mode changes engine throttle response where full handle movement will only result in half the normal full throttle engine speed.
- **Optional Troll Mode:** Only the advanced control system gives the boat operator control over the transmission trolling valves (if equipped).



Smart Actuator II

### Smart Actuator I™ or II™ models

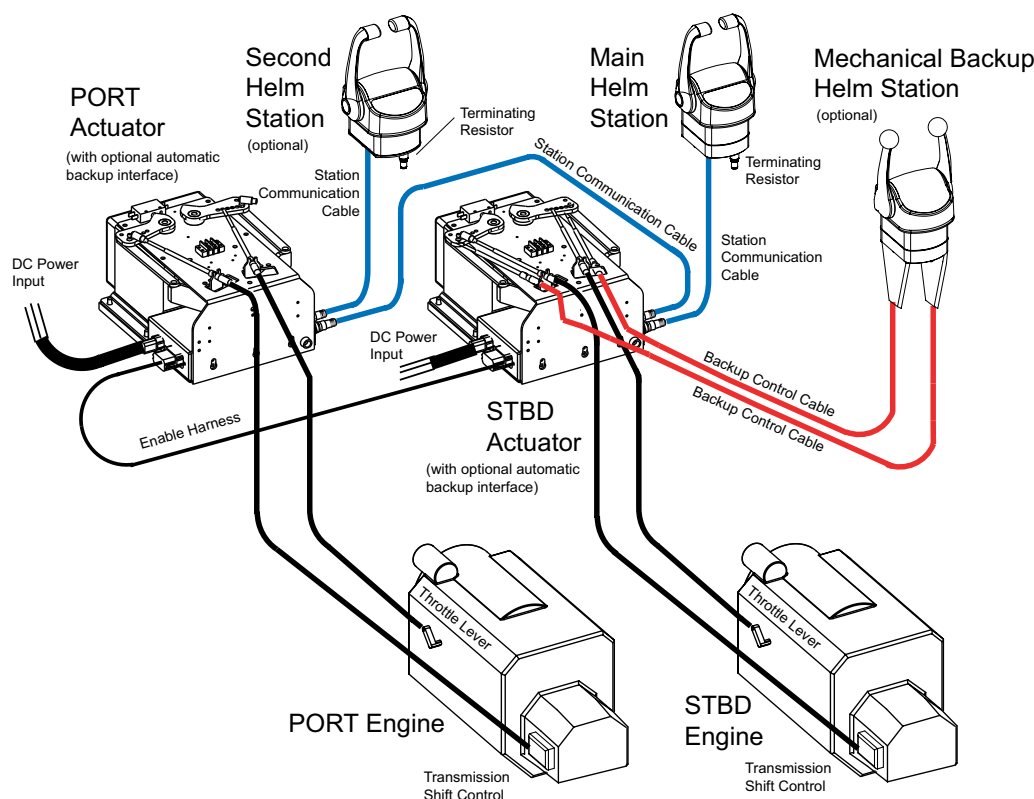
- For all mechanical engines or transmissions
- Single, dual, or multiple engine applications
- Stern drive, water jet, gas or diesel applications
- Used with ITC™ Control Head for control of trim / tilt of engine's drive unit (model II)

### The Benefits of Complete Controls™ include:

- Single or Dual lever control
- Adjustable control head detent / friction settings
- “Posi-lock” gear lockout
- High Idle mode
- Bump mode
- Battery voltage warning indicator
- System diagnostic warning indicator
- Gear positioning indicating lights
- Control head keypad light dimmer
- Two button station transfer

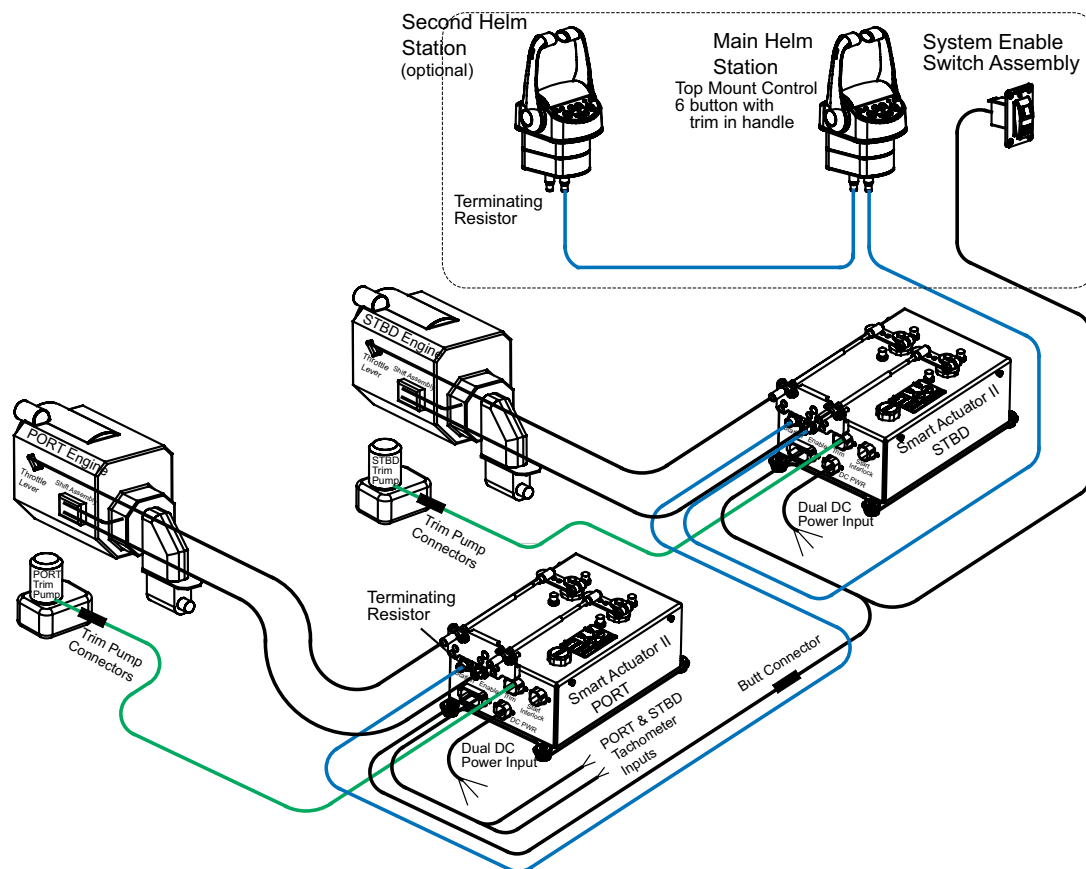


# COMPLETE CONTROLS TYPICAL SYSTEM LAYOUTS



## Smart Actuator I

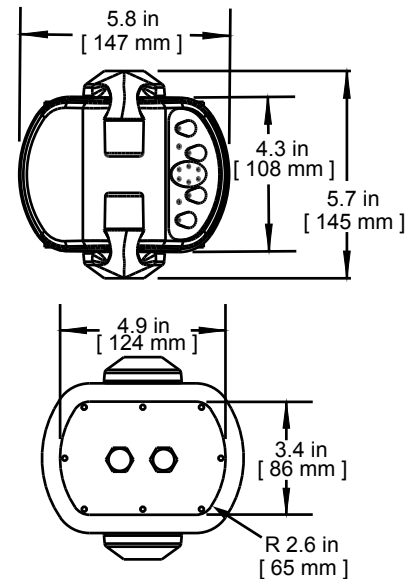
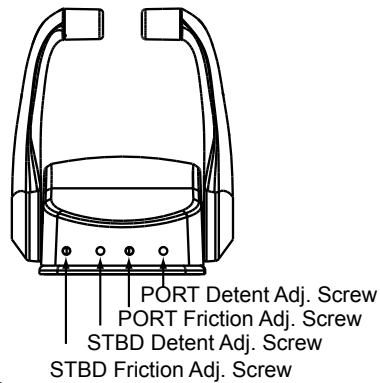
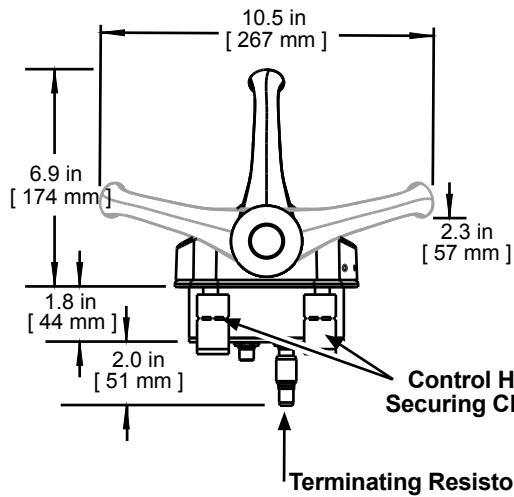
- Suitable for use with all engines with mechanical throttle, shift, or trolling.
- Optional capability for redundant, backup control (shown in drawing)
- Does not include capability for trim control.
- Up to 6 station remote control.



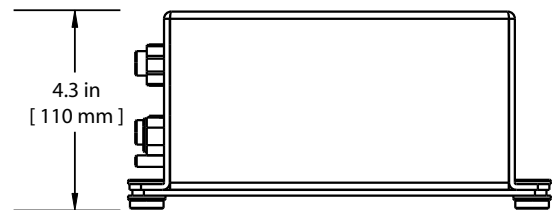
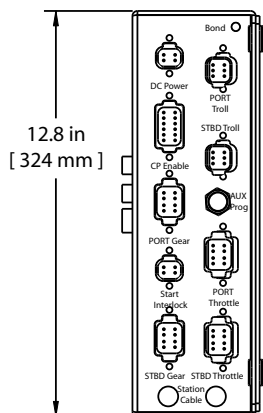
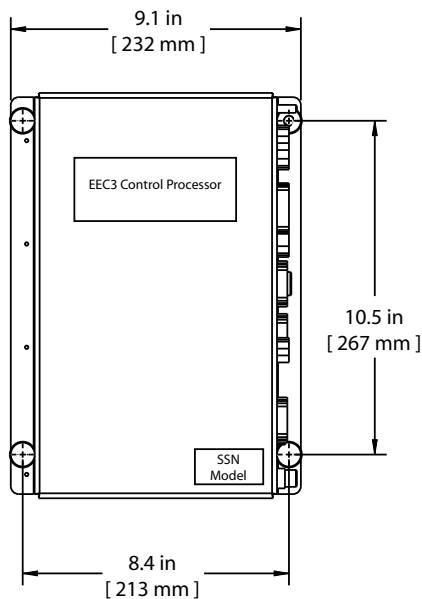
## Smart Actuator II

- Suitable for use with all engines with mechanical throttle, shift, or trolling.
- Includes capability for trim control.
- Up to 6 station remote control.

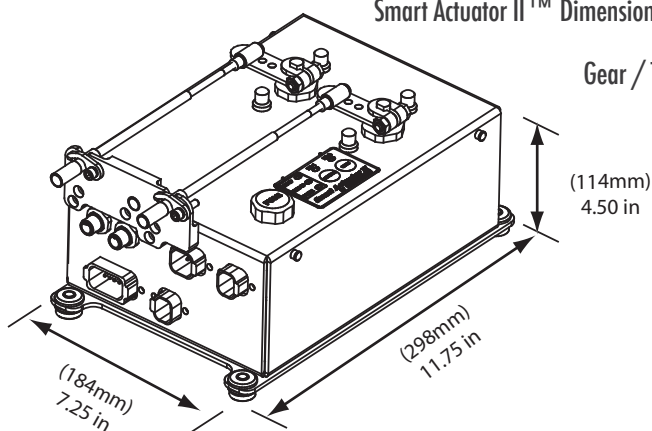
## Control Head Dimensions



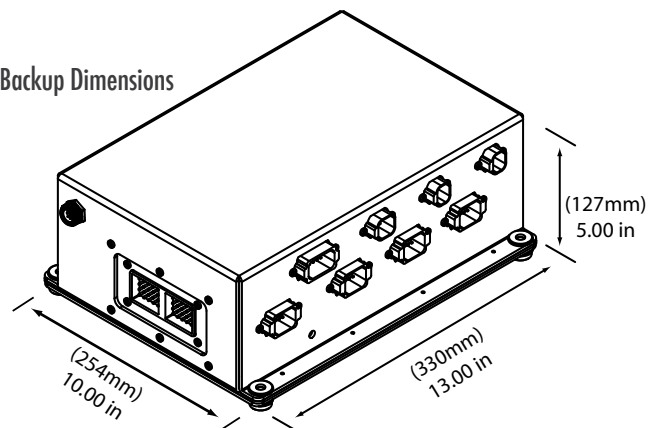
## Control Processor Dimensions



## Smart Actuator II™ Dimensions



## Gear / Throttle Backup Dimensions





# COMPLETE CONTROLS CONTROL HEAD OPTIONS



The Complete Controls™ system is comprised of 4 basic components which work interactively to provide you with the ultimate in electronic engine propulsion control.

## Control Head Options

The Complete Controls™ control head is by far, the most informative control head in the industry. The control head keypad has integrated switches and indicator lights which allow the boat operator to control all aspects of the boat's propulsion system. The control head's robust, watertight construction is a hallmark at Glendinning — we build our control heads to withstand the extreme conditions that exist in the marine environment.

### "Top Mount" Control Heads



#### 2-Button / Basic Operation

- 2 buttons control basic functions
- Neutral gear positioning lights

#### 4-Button / Full Featured

- 4 buttons control all functions
- Gear positioning lights
- Warning indicator lights

#### Integrated Trim Control

- 2 buttons control functions
- 4 buttons control trim of engine
- Neutral gear positioning lights

### Handle Options



Twin Engine



Single Engine

### Color Options



Chrome  
(standard)



Black  
(optional)



Gold  
(optional)

### "Palm Beach" / Sidemount

- Used primarily by tournament or sportfishers
- Same features as top mount control heads



### Handheld Remote

- Used when "walk-around" control is preferred
- Same features as top mount control heads
- Includes capability for remote control of bow and stern thruster, engine shutdown, steering, etc.



## Integrated Gear / Throttle Back Up™ Control [optional for EEC3 or EEC4 Control Systems]

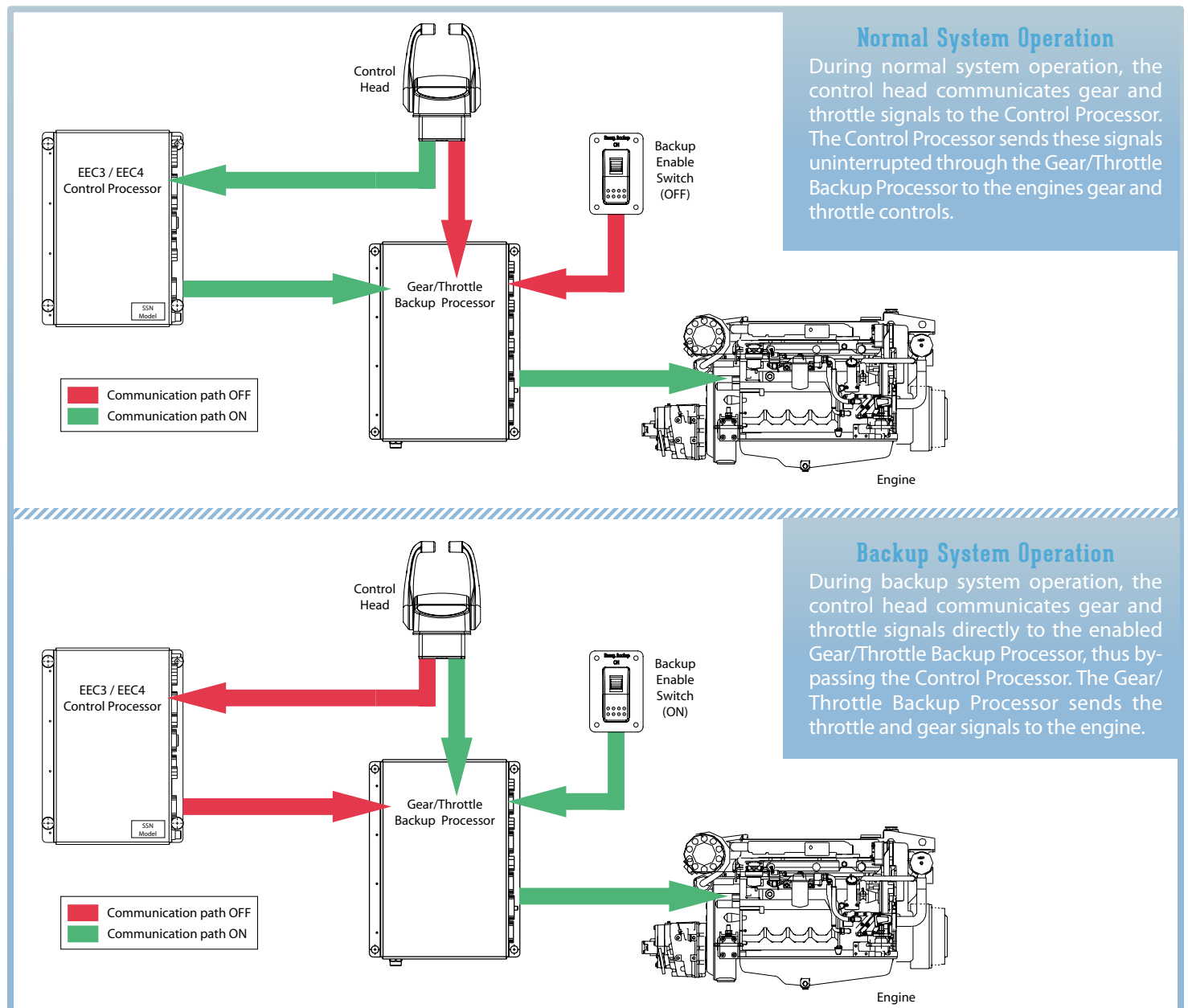
Integrated Gear / Throttle Backup option allows you to regain control of your boat's propulsion system, with the simple flip of a switch, in the event that the normal operating system is not functioning properly.

Features include:

- **Automatic** — changeover of control from normal operation to the backup system is done by simply flipping a switch
- **Integrated** — the same control head that is used for normal operations is also used for backup operations. No need to install a separate control panel for back up operation
- **Independent** — backup control is completely independent from the primary control system.
- A failure in the primary control system will not affect the operation of the backup control



Here's how it works:



# COMPLETE CONTROLS OPTIONAL ACCESSORIES

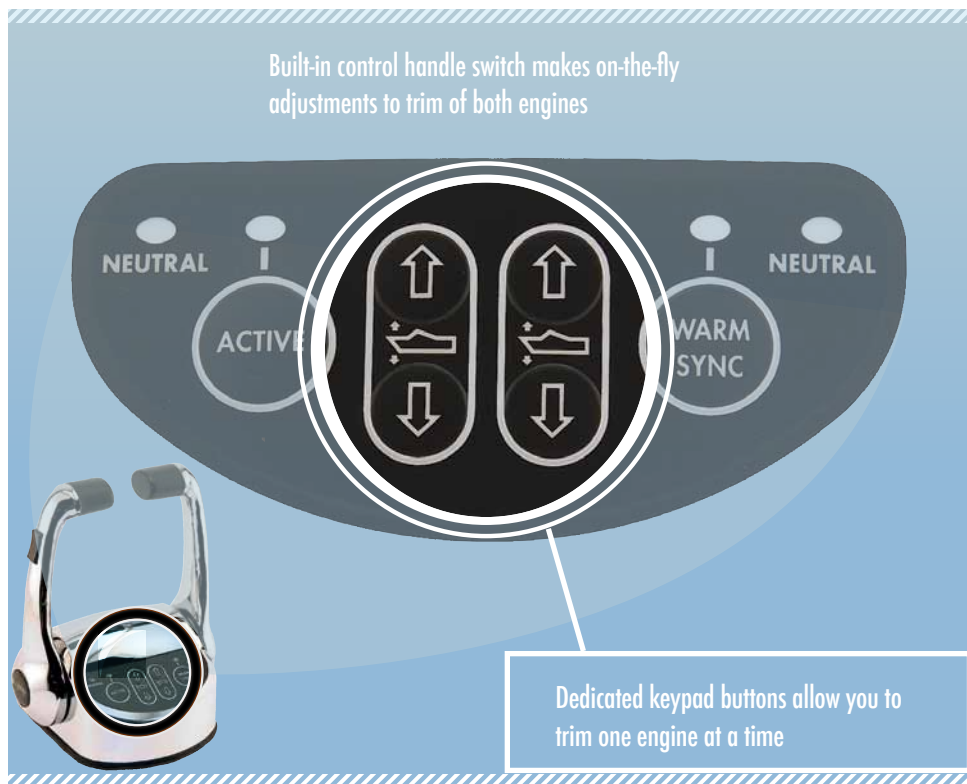


## Integrated Trim Control™ [for Smart Actuator II only]

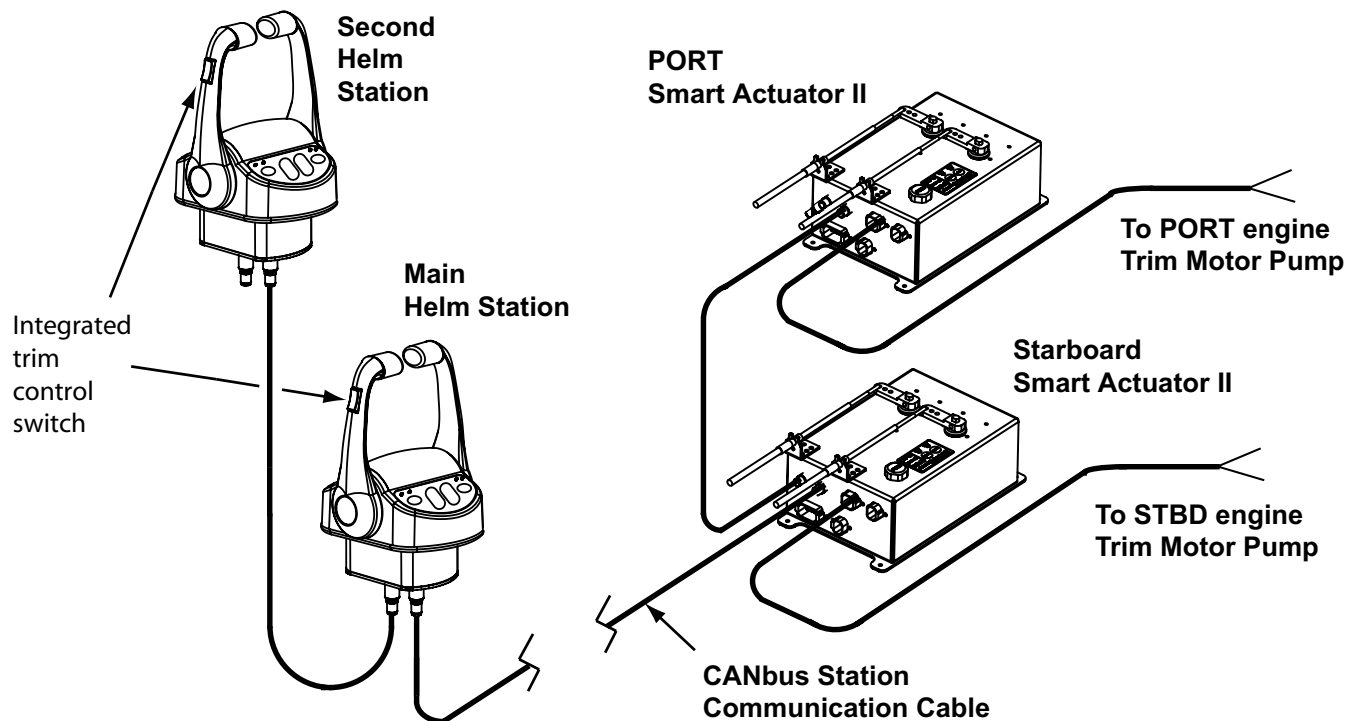
Now you can have complete control of your stern drive or outboard engine trim conveniently at your fingertips — no more fumbling around trying to locate separate switch panels. With one hand on our control head, you'll have complete control over every aspect of your propulsion system!

### ITC™ Control Head features:

- **Neutral gear indicator lights:** tells you when the transmission is in neutral.
- **Dedicated trim/tilt buttons:** move engine drive unit with a simple press.
- **Operating mode buttons:** for quick access to all operations.
- **Utilizes existing control system communication cables:** no additional wires to run.
- **Compatible with Smart Actuator II™** product.



## Typical Layout





## Handheld Remote Control™ [optional]

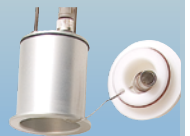
The Handheld Remote Control™ option gives boat operators total control of both transmission and throttle from virtually anywhere on the boat. This portable control station puts the same operational features of our fixed control station in your hands for easier docking and maneuvering of your boat in tight spots. The Handheld Remote Control™ option incorporates the following features:

- **CANbus Technology:** with CANbus technology, communication components are more robust, wiring is simplified, and installation is made easier.
- **Ergonomic Design:** our design fits more comfortably in your hands than any other remote control option on the market. The "game pad" style design allows you to effortlessly control both engines at the same time.
- **Complete Engine Control:** all normal functions available at any stationary control head are available on the Handheld Remote. Keypad appearance is the same eliminating steep learning curve.
- **Additional Functions Available:** up to 8 other propulsion functions can be added to the Handheld Remote through the Auxiliary Output Function Unit (i.e., engine stop/start, bow/stern thruster, and rudder control).
- **Wiring Options:** you can choose how to connect the Handheld Remote to the system. "Hard-wired" option allows you to use an existing system component to connect the Handheld to the CANbus network. "Plug-in" option allows multi-location of the Handheld anywhere on your boat for the ultimate convenience (see below).



### "Plug-in" for increased mobility

A "plug-in" receptacle can be installed in multiple locations on the boat to increase the usefulness of the remote. The remote comes with 25 feet of cable (only). The receptacle can be connected to the system with standard station communication cables.

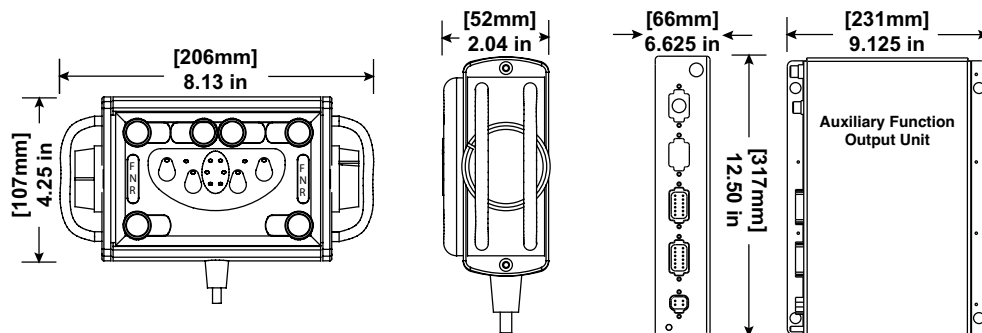


6 button handheld remote shown.  
Remote with 8 button capability is available as an option



### "Hard-wired" to existing components

The remote is "hard-wired" to another component (i.e. Control Processor, Control Head station, or Auxiliary Function Unit) in the Complete Controls™ system. The remote includes 35 feet of cable (standard). If necessary, a station communication cable can be used to extend the remote's connection.



Auxiliary output Functions are controlled by the push buttons on the Handheld Remote and allow control of up to 8 other propulsion functions.

Standard capability is 6 button / function

8 button / function capability is optional.

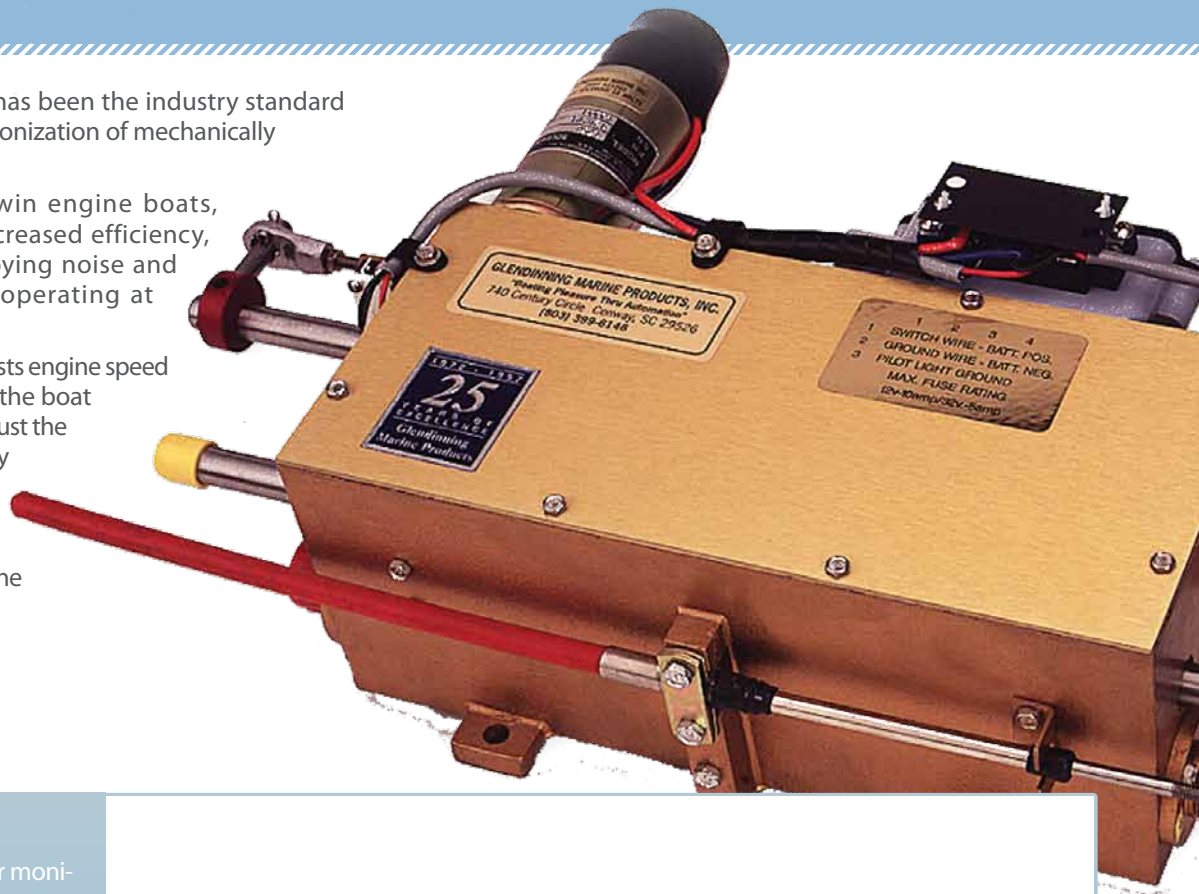
# AUTOMATIC SYNCHRONIZER™



The Automatic Synchronizer™ has been the industry standard for automatic twin-engine synchronization of mechanically operated engines since 1971.

Synchronization is vital on twin engine boats, not only for the purpose of increased efficiency, but also to eliminate the annoying noise and vibration caused by engines operating at different speeds.

The Automatic Synchronizer™ adjusts engine speed without any effort on the part of the boat operator. When activated, it will adjust the speed of the Port engine to exactly match the speed of the Starboard engine. The result is that the boat operator can control the speed of both engines by merely adjusting the speed of the Starboard engine.

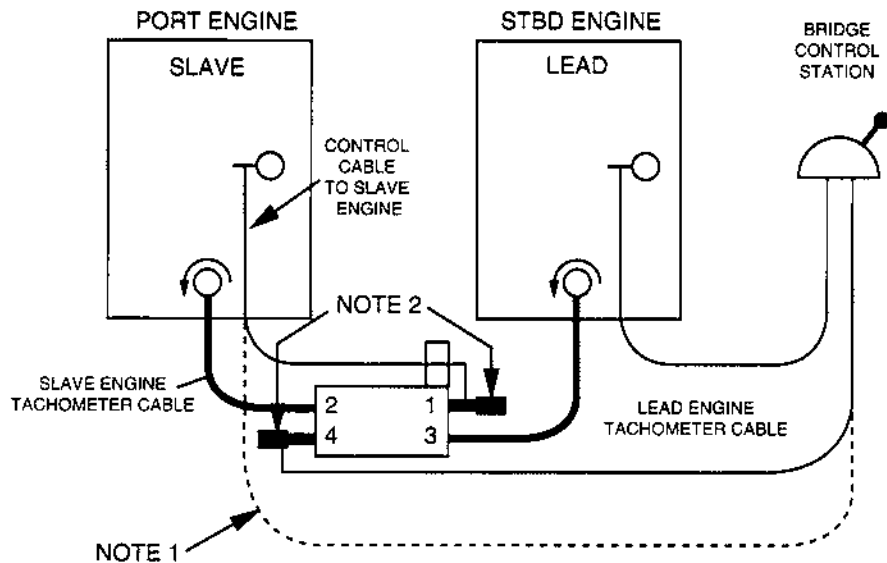


## Benefits

- No more adjusting throttles or monitoring tachometers!
- A smoother, quieter ride!
- Engines work together increasing fuel efficiency!
- Reduces steering deviations!
- Built to last!

## Features

- **Cruise control for your boat:** set the speed for your engine and the other engine speed is automatically and precisely adjusted to match!
- Turn On/Off at any speed with the flip of a switch
- **Adaptable to any boat:** gas or diesel engines
- **Dependable:** widely used by knowledgeable yachtsmen for over 30 years

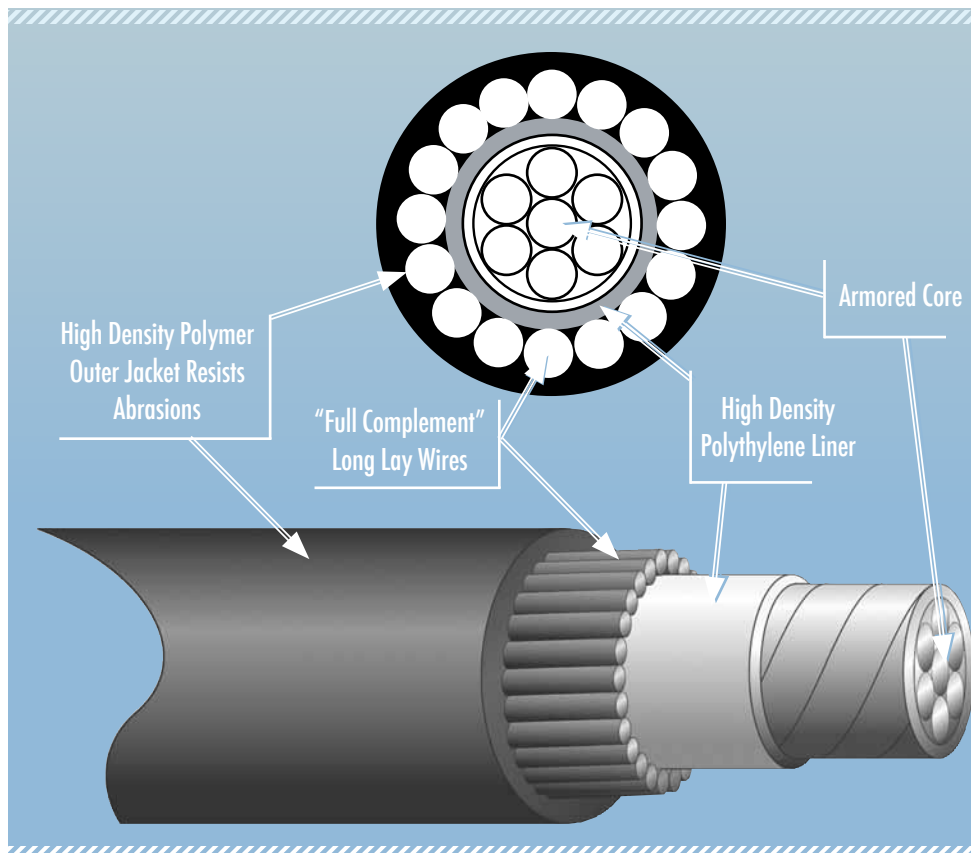


Let's face it — you've made a substantial investment in your boat and you've got a lot riding on the line. The operation of your control cables will either give you hours of boating pleasure or cause you to regret your purchase. With so much riding on the line, wouldn't you rather go with professional grade control cables?

## Features & Construction

Not all control cables are created equal! With the competing demands of higher performance and lower costs, many companies have sacrificed the long term advantages of high performance cables for the short term benefit of lower costs. That's a sacrifice we're not willing to make. HIGH PERFORMANCE PRO-X Control Cables™ feature:

- **"Armored" Core:** Highly efficient "armored" core technology is the best in the industry. Stainless steel flat wire swaged over stainless steel stranded cable and burnished to a smooth, close tolerance finish, provides high flexibility and incredible strength.
- **Inner Liner:** Specially processed polymer liners minimize friction for maximum efficiency. The inside diameter is precisely controlled to minimize lost motion and premature wear, problems that seem to plague most "splined" or "grooved" liners.
- **Conduit:** A "full complement" of reinforcing wires are placed in a long lay pattern to protect the liner and inner core. The close tolerances achieved between the cable core and conduit result in minimal deflections during cable operation, assuring precise controlling action to the operator.
- **Outer Jacket:** Heavy duty, high density non-hydroscopic polymer jacket is extruded onto the conduit for maximum cable strength and abrasion resistance.
- **End Fittings:** 300 series stainless steel and nickel-plated brass are used throughout to ensure maximum corrosion resistance.
- **Seals & Boots:** Durable polymer seals are used to prevent moisture and contaminants from entering the cable.



## Manufactured in the USA

Many companies outsource their manufacturing to other countries in an effort to save money, but by doing this they lose control over the manufacturing process. PRO-X Control Cables™ are manufactured right here in the USA. We're committed to providing cables that are cost efficient yet made of the highest quality.

## Best Warranty in the Industry

We give you more confidence with a PRO-X Control Cable™ on board your boat by backing up our claims with a 3-year warranty. Without a doubt, it is the best warranty in the industry.







GMP P/N ..... A7100-XX

Pro-X 33c Control Cables – Universal SAE type 3/16"



GMP P/N ..... A7110-XX

Pro-X 33c – Mercury / Universal Control Cables – Mercury fitting at engine / Universal SAE fitting at control head



GMP P/N ..... A7120-XX

Pro-X – BRP/Johnson/Evinrude Control Cables – 1979 – present




GMP P/N ..... A7130-XX

Pro-X Mercury GEN I Control Cables




GMP P/N ..... A7140-XX

Pro-X Mercury GEN II Control Cables




GMP P/N ..... A7200-XX




GMP P/N ..... A7300-XX

Pro-X 43C Control Cables – clamp fittings both ends (3" stroke)

Pro-X 64C Control Cables – clamp fittings both ends (4" stroke)



GMP P/N ..... A7210-XX



GMP P/N ..... A7310-XX

Pro-X 43BC Control Cables – clamp fittings one end / bulkhead fitting other end (3" stroke)

Pro-X 64BC Control Cables – clamp fittings one end / bulkhead fitting other end (4" stroke)

### Comparison Grade Finder

CABLE TYPE	DESCRIPTION	GMP P/N	MORSE P/N	TELEFLEX P/N	UFLEX
33C – Premium	Universal clamp bracket, 3/16 threaded ends	A-7100-xx	301947-003	CC633	Czero
33C – Mercury™	Mercury Gen 1 – Universal	A-7110-xx	N/A	CC630	N/A
BRP / OMC	Evinrude / Johnson after 1979	A7120-xx	N/A	CC636	C14
Mercury GEN I	Mercury Replacement Compatible with Gen 1 control boxes	A-7130-xx	N/A	CC635	C5
Mercury GEN II	Mercury Replacement Compatible with Gen 1 control boxes	A-7140-xx	N/A	CC679	C36
43C – Premium	Clamp ends 1/4" threaded ends	A-7200-xx	065885-003	CC693	C22
43BC – Premium	Bulkhead/Clamp ends 1/4" threaded ends	A-7210-xx	046348-003	CC692	C23
64C – Premium	Clamp ends 5/16" threaded ends	A-7300-xx	304262-004	CC695	N/A
64BC – Premium	Bulkhead/Clamp ends 5/16" threaded ends	A-7310-xx	304263-004	CC694	N/A
xx = cable length in feet					



# TRY OUR OTHER PRODUCTS!



## For Cable & Hose Storage Solutions

### **Cablemaster™ Shore Power Cable Storage System**

- 3 models to handle all types of shore power cable
- Electrically extend, retract & store your power cable
- Handles as much power cable as your storage space can hold
- Adaptable to fit most applications
- Eliminates the need for extension cords



### **Hosemaster™ Water Hose Storage System**

- Can be used for wash down or ship to shore connection
- Exclusive levelwind feature frees you from monitoring hose as it is stored onto the reel
- Engineered to take advantage of standard garden hose fittings
- Compact size fits virtually anywhere
- Can be mounted in a variety of positions



740 Century Circle • Conway, SC 29526 • Phone: (843) 399-6146 • Fax: (843) 399-5005

[www.glendinningprods.com](http://www.glendinningprods.com)

MADE IN THE USA