

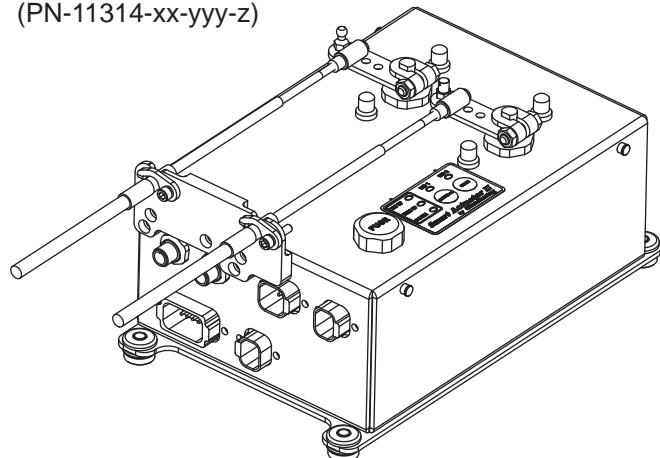


Complete Controls™ - Installation Instructions for Smart Actuator II™ Engine Controls

BASIC SYSTEM COMPONENTS

ACTUATOR: YOU WILL NEED (1) ACTUATOR FOR EACH ENGINE:

Smart Actuator II™
(PN-11314-xx-yyy-z)



You will receive one actuator for each engine, boats equipped with trolling valves will require an additional Smart Actuator II™.

"xx" in part number of Smart Actuator II™ indicates 12 or 24 VDC system.

"yyy" in part number indicates Actuator type
TMG (Throttle Mechanical Gear) TEG (Throttle Electronic Gear) TROLL (if Troll equipped)
TMGB (Throttle Mechanical Gear Backup)

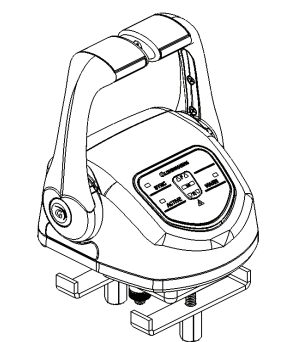
"z" in part number indicates PORT (P)
STBD (S) CENTER (C) engine.

TOPMOUNTCONTROL HEAD(S): MAIN AND REMOTE STATIONS

2-Button
ProGrade
Control Head
(PN-11419-TWIN-2B)



Genesys
Control Head
(PN-11420-TWIN-x)



X = Body Color ("B" = Black, "C" = Chrome)

YOU CAN HAVE A MAXIMUM OF 5 REMOTE
STATIONS FOR EACH SYSTEM:

ALTERNATE CONTROL HEAD STYLES: SIDEMOUNT CONTROLS

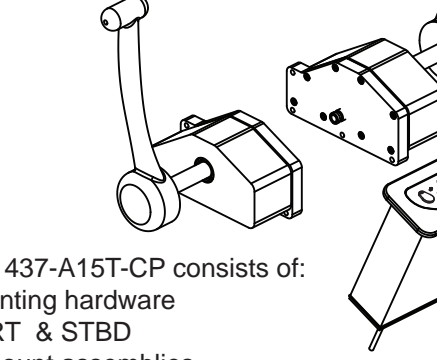
4-Button
ProGrade
Control Head
With Trim control
(PN-11419-TWIN-4B)



Genesys
Control Head
with Trim control
(PN-11420-TWIN-Tx)



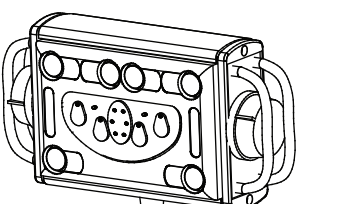
Sidemount Control Head Assembly
(PN-11437-A15T-CP) does not
include the control handles
(PN-50144)



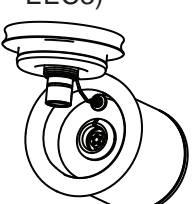
PN-11437-A15T-CP consists of:
• mounting hardware
• PORT & STBD
sidemount assemblies
• keypad assembly (PN-19418)

HANDHELD CONTROLS

6-Button
Handheld Remote
Control Head
(PN-11470-6-25-P pluggable)

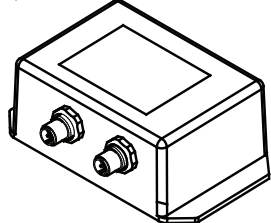


Handheld
"Plug-in"
receptacle
(PN-11472-
EEC3)



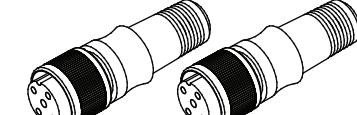
COMPONENTS & HARNESSES:

CP Module (1 for each system)
(PN-11315-xx)

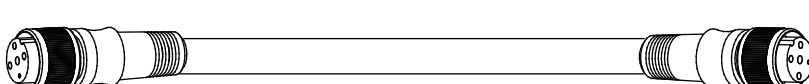


xx = application software

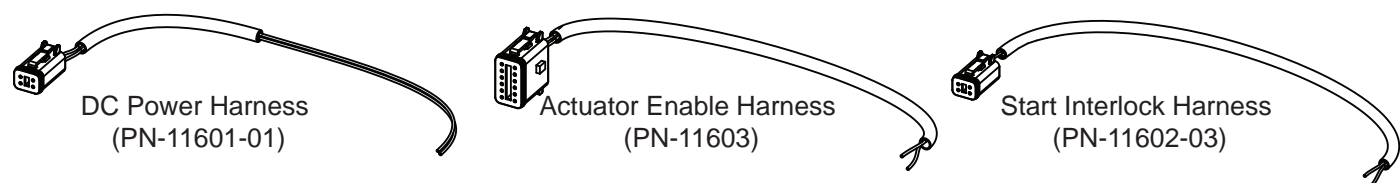
Terminating Resistors (2 for each system)
(PN-11600-TRF)



Station Communication Cable (1 for each control head)
(PN-11600-02-xx) - available in 10 - 120 foot lengths



YOU SHOULD HAVE ONE (1) OF THESE HARNESSES FOR EACH ACTUATOR:



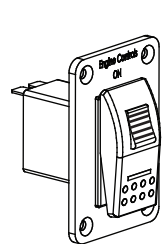
Trim Control Harness
(PN-11611-xx-yy)
installer provides end
connectors)

YOU SHOULD HAVE TWO (2) OF EACH OF THESE CABLES FOR EACH ACTUATOR:

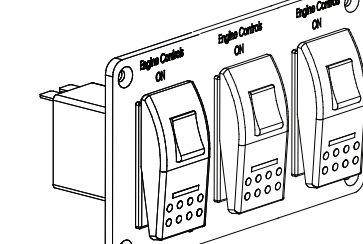


OPTIONAL ACCESSORIES

Remote Enable Switch
(PN-11490)



Triple Engine Enable Switch Panel
(PN-11493-01-xx)



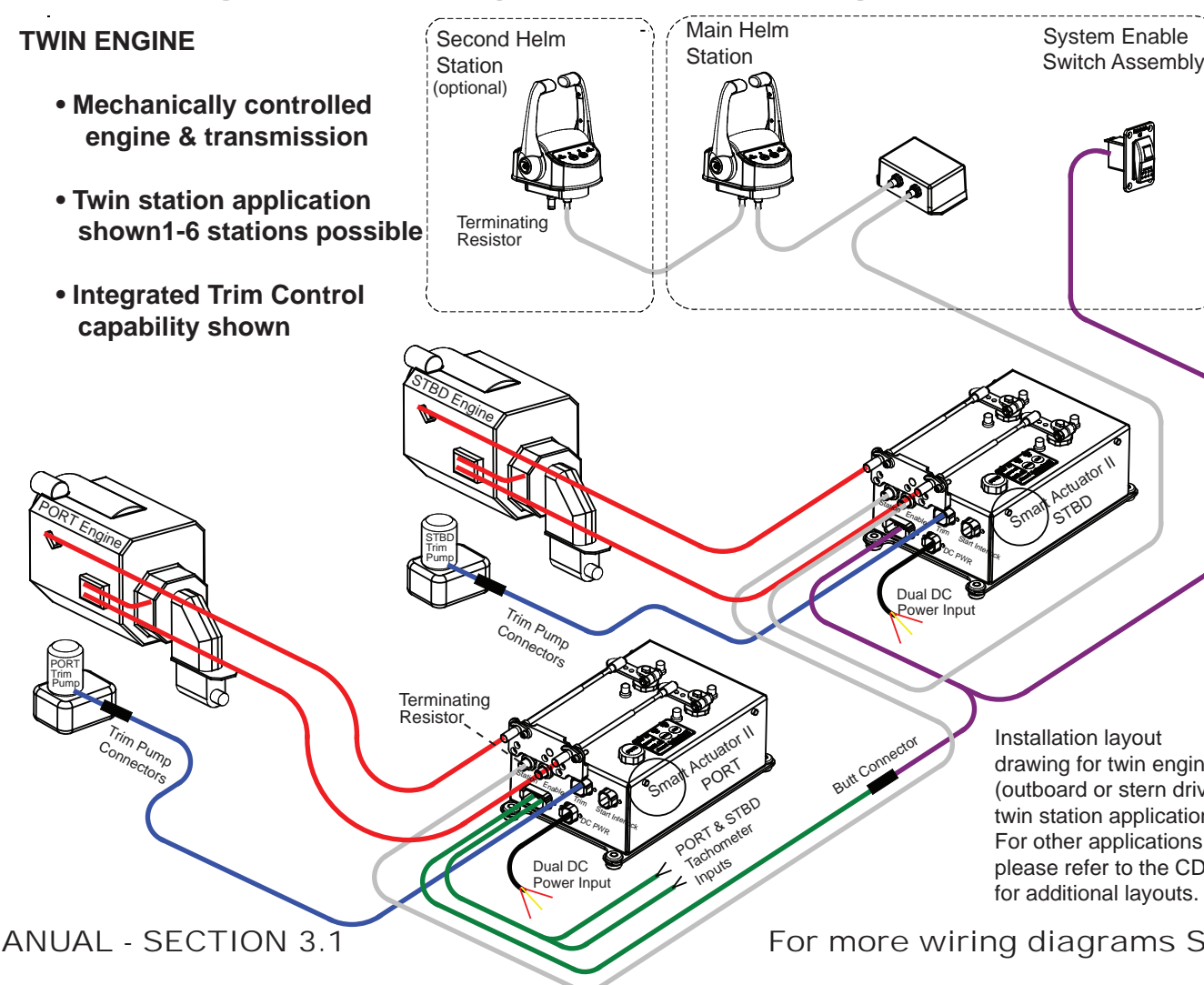
PRE-INSTALLATION PLANNING

TWIN ENGINE

• Mechanically controlled
engine & transmission

• Twin station application
shown 1-6 stations possible

• Integrated Trim Control
capability shown



MANUAL - SECTION 3.1

For more wiring diagrams See MANUAL - SECTION 7.1

Before installing the system, proper
consideration should be given to the
following:

1. Actuator Location

BE SURE TO:
• mount in dry and accessible location.
• allow a minimum of 6.0" of space for the
connection of harnesses to the actuator.
• find a location that provides the shortest,
most direct path from the engine and
transmission control levers to the actuator(s).

2. Dual Battery Input

BE SURE TO:
• provide 2 independent and
uninterrupted sources of DC power.

3. Cable Routing

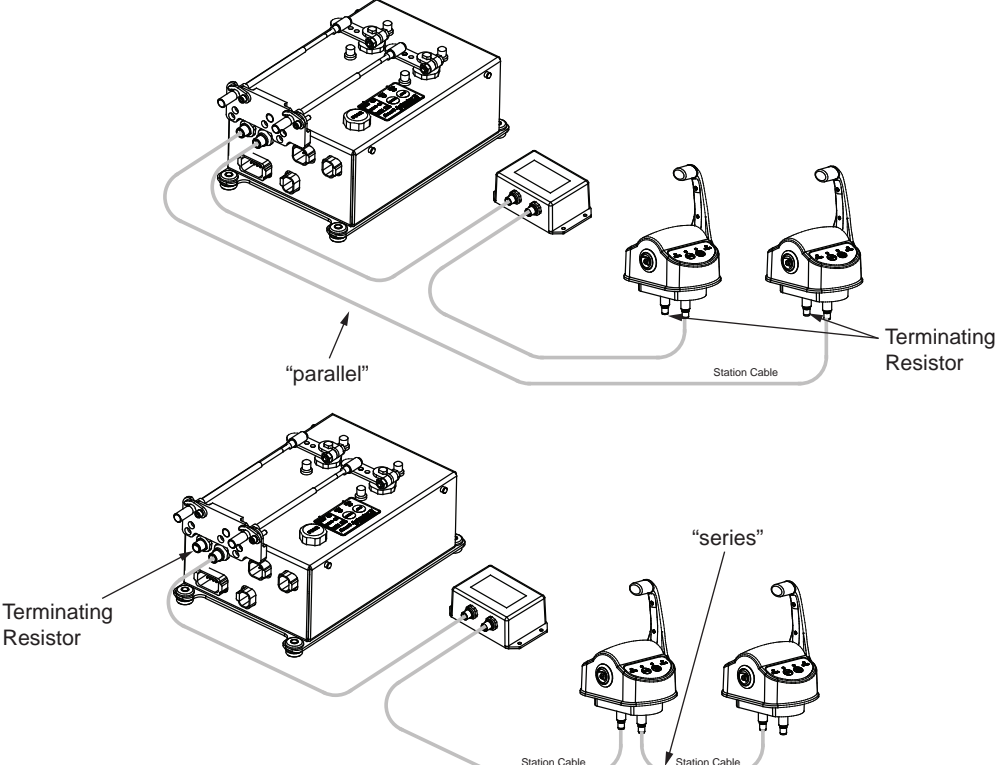
BE SURE TO:
• check surfaces that come in contact
with the cable, make sure they are free of
sharp edges or burrs which could nick the cable.
• determine which method of routing station
communication cables you will use (see step 3).
• identify engine harness hookup connections
(see step 4).

3 Route Communication Cables

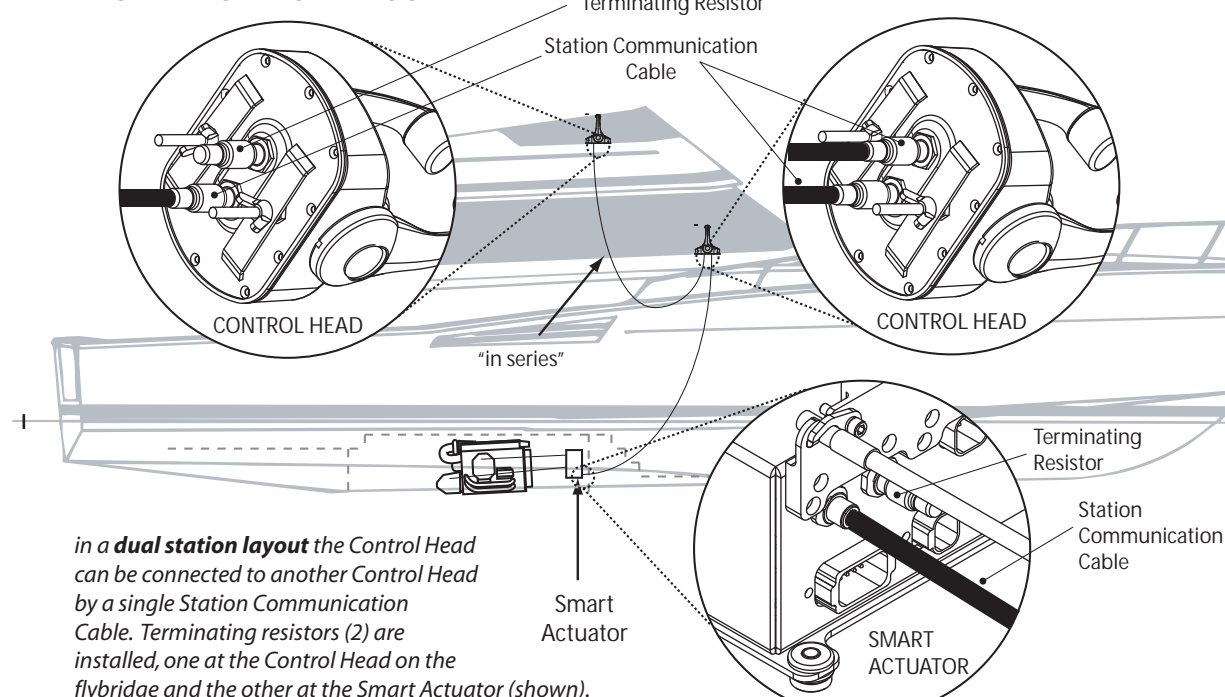
BE SURE TO:
• install a terminating resistor at both ends of the CanBus network.
• align notch in connector before insertion into receptacle (see note below).

BE SURE NOT TO:
• splice or shorten cables in the field - cutting or nicking the cable WILL
compromise the reliability of the system.

There are two methods for connecting Control Heads to the Control Processor:
1) PARALLEL - Both stations connect directly to Control Processor, or
2) SERIES - Stations can be joined "in series" together and connected to the Control Processor
utilizing one station communication cable.



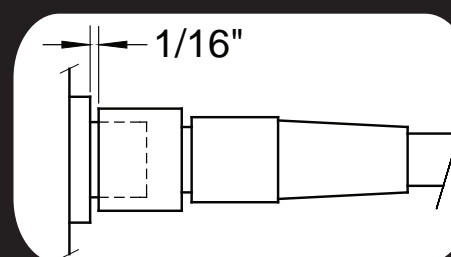
MULTIPLE STATION LAYOUT



in a dual station layout the Control Head
can be connected to another Control Head
by a single Station Communication
Cable. Terminating resistors (2) are
installed, one at the Control Head on the
flybridge and the other at the Smart Actuator (shown).

You may also connect both Control Heads directly to the Smart Actuator
using (2) Station Communication Cables. In this arrangement the (2) terminating
resistors would be installed, one at each Control Head.

IMPORTANT
Align notch in connector with receptacle BEFORE
insertion. Failure to align notch will bend the pins
in the receptacle and will result in erratic system
performance. Cable nut requires 6-7 turns while
pushing in on connector for proper seating. There
should be NO MORE THAN 1/16" [2mm] gap
between the nut and the connector.

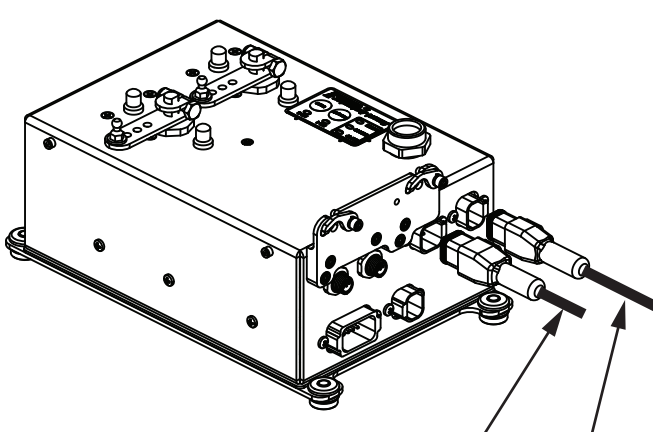


MANUAL
SECTION 3.4E

6 Connect Start Interlock & Trim Harness

BE SURE TO:

• locate the appropriately labeled receptacle on the Smart Actuator
for Start Interlock.
• insert the cable connector fully into the receptacle until you hear a "click".
This signifies that the locking tab has engaged the connector.
• follow the steps below for connecting the Start Interlock harness.



Connect to engine
distribution box for
Start Interlock

Connect to engine
trim pump for Trim Control
and ignition activated remote enable

MANUAL - SECTION 3.4C

1. Verify that you have the
right harness - if not STOP,
call your dealer or consult the
CD for more technical
information.

2. Insert Deutsch connectors
for Start Interlock and Trim
harnesses into receptacle
labeled Start Interlock and
Trim/Tilt on Smart Actuator.

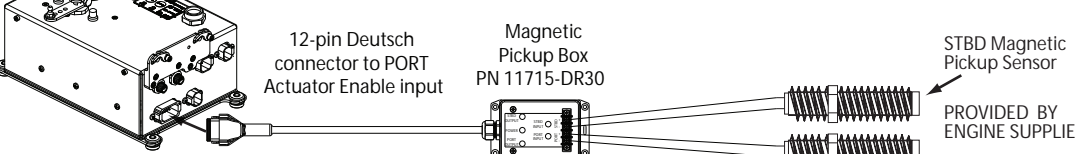
3. Route harness to the engine
distribution box and connect
using appropriate connectors
(see engine manufacturer
for proper connection).

7 Install Tachometer Inputs

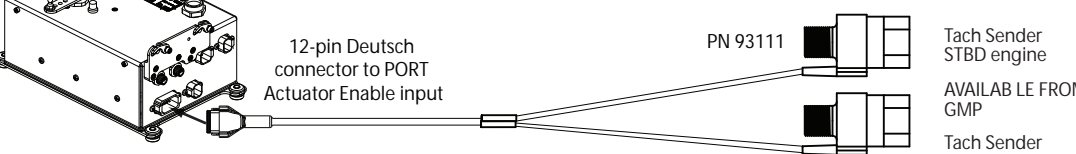
BE SURE TO:

• provide RPM information to the Smart Actuator II™ system by one of 4 methods:
1) Open Loop Sync - in the absence of a tach signal the Actuator will try to match
the Slave engine RPM to the position of the Lead engine control handle. NO
ACTION REQUIRED proceed to step 8.
2) Magnetic Pickup Interface (MPI) - provided by engine supplier
3) Tach Senders (or drive adapters where applicable) - must be supplied by GMP
4) Direct Connection from tachometer (outboard applications)

MAGNETIC PICKUP INTERFACE CONNECTION



TACH SENDERS CONNECTION



DIRECT CONNECTION FROM TACHOMETERS



MANUAL - SECTION 3.4D

PROVIDED BY
ENGINE SUPPLIER

STBD Magnetic
Pickup Sensor

PORT Magnetic
Pickup Sensor

PN 93111

Tach Sender
STBD engine

AVAILABLE FROM
GMP

Tach Sender
PORT engine

Make sure you tap
into ANALOG tach
signal

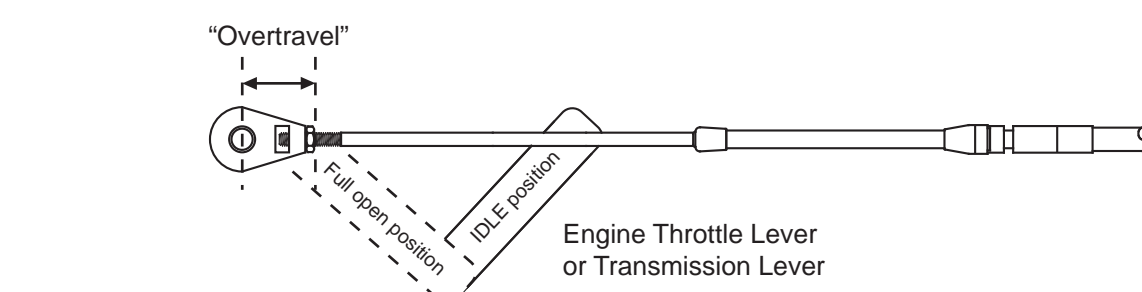
8 Install Control Cables at Engine

BE SURE TO:

• use premium grade Type 33C control cables - we recommend PRO-X A7100 by Glendinning.
• mount cables on engine and transmission but DO NOT connect to control levers at this time.
• remove terminal eye attached to actuator coupler plates and install on the end of each control
cable making sure that you have a minimum of 3/16" thread engagement - DO NOT tighten jam
nuts at this time.

1. Ensure that each control cable has "overtravel," that is the cable is able to travel farther than the lever that it
will be attached to. Check this for both ends of travel. If the cable will NOT overtravel in both directions, make
adjustments:

• For 1/4" or less adjustment - the terminal eye on the end of the cable may be screwed on or off the
cable end. Terminal eye engagement on the control cable end must never be less than 3/16".
• For more than 1/4" adjustment - move the cable clamp position on the engine or transmission -
check with engine or transmission manufacturer on how to do this.



2. After control cable terminal eyes are attached to the control levers on the engine governor and transmission.
Measure the amount of travel for each control cable at the Actuator end. Record the information below:

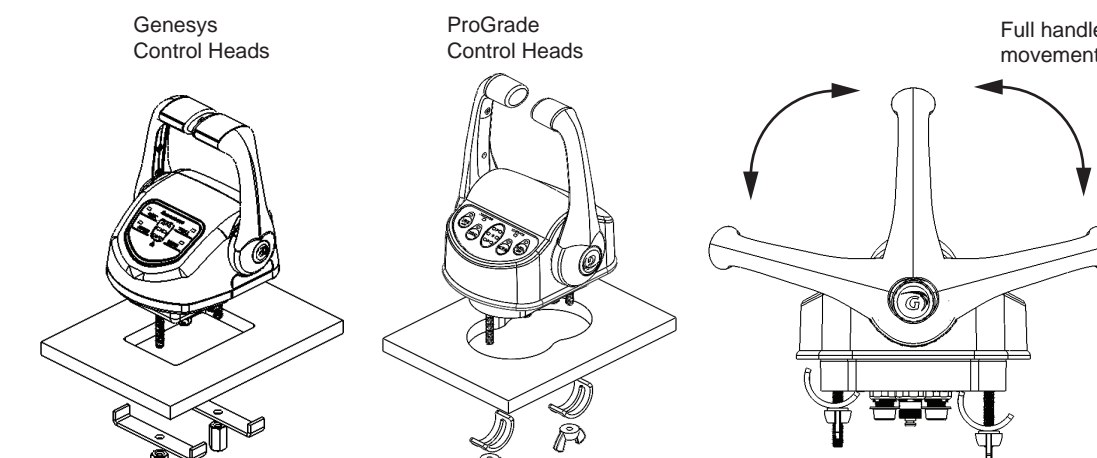
| PORT ENGINE | | STBD ENGINE | |
|---------------|------------------|---------------|------------------|
| Control Cable | Length of Travel | Control Cable | Length of Travel |
| Throttle | | Throttle | |
| Gear | | Gear | |
| Troll Valve | | Troll Valve | |

MANUAL
SECTION 3.3

2 Install the Control Head(s)

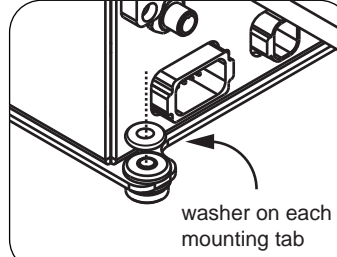
BE SURE TO:

• mount in a location free of standing water.
• in a location that allows full movement of handles (full astern / full ahead)
• use templates provided with control head for cutout.



1. Mark location with template.
2. Cut hole in console.
3. Place control head in cutout.
4. Mount control head to surface by using the mounting clamps and wing nuts provided.

MANUAL - SECTION 3.2



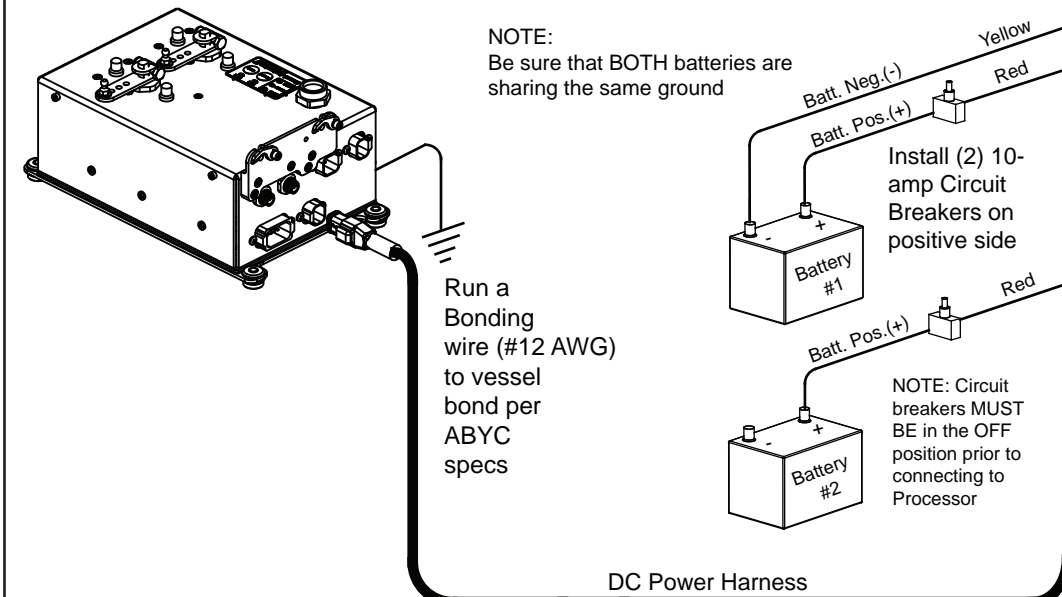
When mounting the Smart
Actuator, it may be necessary
to use washers on each
mounting point to keep
actuator securely fastened to
wall

Possible Actuator Mounting
Locations
1. PORT Side Wall
2. STBD Side Wall
3. Back Wall
4. Ceiling

4 Connect DC Power Harness & Bonding Wire

BE SURE TO:

• follow ABYC standards for all electrical connections. If unfamiliar with ABYC
standards, consult a marine electrician.
• know whether your system uses 12v or 24v DC. The Smart Actuator can use
both - refer to specific wiring diagram for your engine type in Section 7.1 of manual
• use 2 independent batteries for power for the system. Power voltage drops
cause reliability issues, using 2 sources will help eliminate power problems.



NOTE: For each actuator you install you will need to supply battery power to each. Each actuator will
require it's own DC Power Harness and it's own set of breakers.

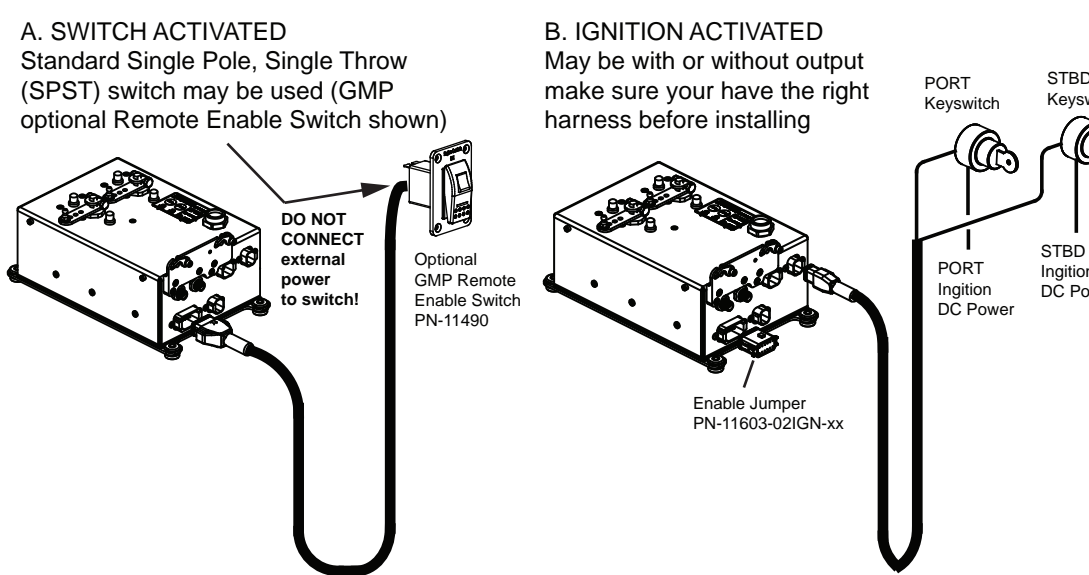
MANUAL SECTION 3.4A

5 Connect Remote Enable Switch

BE SURE TO:

• follow ABYC standards for all electrical connections. If unfamiliar with ABYC
standards, consult a marine electrician.
• turn OFF circuit breakers that control power to the Control Processor BEFORE
installing Remote Enable Switch and Harness.
• If using a Single Pole, Single Throw (SPST) switch - locate the switch in an
area where it will not be inadvertently turned OFF during operation.

1. There are two methods for connecting Remote Enable:
A. Switch Activated - which uses a Single Pole, Single Throw (SPST) switch
B. Ignition Activated - which supplies DC power from the Ignition switch(es)



NOTE: PN 11603 - Enable Harness is different for "switch activation" than PN 11611 -
Enable harness for "ignition activation." Be sure to use the correct enable harness for
the specific type of start up arrangement.

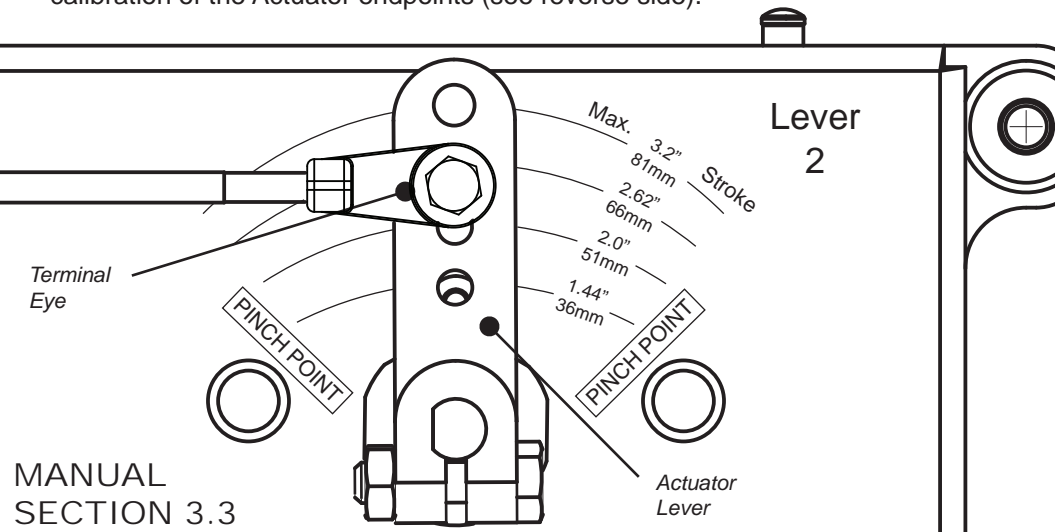
MANUAL SECTION 3.4B

9 Cable Connection at Actuator

BE SURE TO:

• mount the engine / transmission control cables to the Actuator by backing off
the screws holding the locking clamp in place. Make sure that the control
cables are seated properly before replacing locking clamp.

1. Select the correct Actuator cable lever connection hole to be used, determined by the
length of control cable travel recorded on the chart in step 8.
2. Move the terminal eye on the Actuator coupler plate to the correct stroke value listed
on the Actuator beneath the coupler plate.
3. Adjust control cable terminal prior to attaching cable to the Actuator coupler plate.
Leave the control cables DISCONNECTED until you are ready to proceed with
calibration of the Actuator endpoints (see reverse side).



MANUAL
SECTION 3.3



740 Century Circle
Conway, SC 29526
P: 843-399-6146
F: 843-399-5005

It is strongly recommended that the installer have a thorough
understanding of the complete Manual prior to installation.
To view the complete Manual, scan the QR Code below or
visit our website.



www.glendinningprods.com/
complete-controls-docs



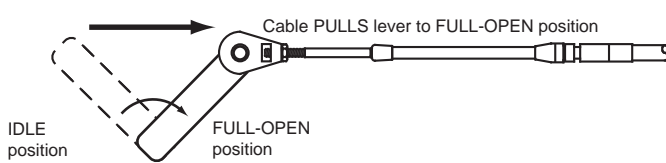
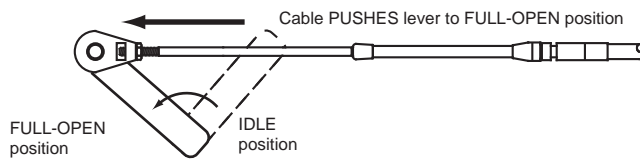
Installation IS NOT COMPLETE until endpoint calibration &
verification is performed, see reverse side or consult the
Manual - Section 4.0 For wiring diagrams, see Section 7.1



Complete Controls™ - System Test & Checkout / Troubleshooting Mode - Alarm Code Retrieval

SMART ACTUATOR II™ ENDPOINT CALIBRATION INSTRUCTIONS:

- 1 DETERMINE THE DIRECTION OF TRAVEL FOR THE ENGINE THROTTLE AND TRANSMISSION CONTROL LEVERS FOR EACH ENGINE AND RECORD ON THE TABLE BELOW:



| ENGINE THROTTLE LEVER MOVEMENT INCREASES Engine Speed | | | | TRANSMISSION GEAR LEVER MOVEMENT ENGAGES AHEAD Gear | | | |
|--|----|-------------|--|--|----|-------------------|--|
| PORT Engine | | STBD Engine | | PORT Transmission | | STBD Transmission | |
| PUSH | OR | PULL | | PUSH | OR | PULL | |

- 2 TO CALIBRATE THE ACTUATOR ENDPOINTS AND SET CABLE DIRECTION (ABOVE), FOLLOW THE STEPS BELOW:

| Step 1 | ACTION | RESULT |
|--|--|---|
| | Turn ON power to Smart Actuator II™ | No result. |
| | Press & Release both the RED & BLACK buttons on the Smart Actuator II™ simultaneously 3 times | Both LEDs above the RED and the BLACK buttons will flash to indicate you have entered Actuator Configuration Mode |
| IF calibration of the throttle actuator (LEVER 1) is desired, continue with the steps below. IF calibration of ONLY the gear actuator (LEVER 2) is desired and not LEVER 1, then PRESS & RELEASE the RED button 1 time BEFORE continuing with the steps below. | | |
| | Press & Release both the RED & BLACK buttons on the Smart Actuator keypad simultaneously 1 time | Both LEDs above the RED and the BLACK buttons will out - this indicates you are ready to calibrate the Actuator endpoints |
| | Press & Release the RED button repeatedly to EXTEND LEVER 1 to the desired position - if you go too far, press & release the BLACK button to RETRACT | You may also Press & Hold the RED button to EXTEND LEVER 1 in larger amounts until desired position is achieved - Release button when position is achieved! |
| | Press & Release both the RED & BLACK button simultaneously 1 time to confirm LEVER 1 extended position | The LED above the RED button will illuminate to indicate that extended position has been saved in memory |

| Step 6 | ACTION | RESULT |
|--------|--|---|
| | Press & Release the BLK button repeatedly to RETRACT LEVER 1 to the desired position - if you go too far, press & release the RED button to RETRACT | You may also Press & Hold the BLK button to EXTEND LEVER 1 in larger amounts until desired position is achieved - Release button when position is achieved! |
| | Press & Release both the RED & BLACK buttons on the Smart Actuator II™ simultaneously 1 time to confirm LEVER 1 position | Both LEDs above the RED and the BLACK buttons will illuminate to indicate that retracted position has been saved in memory |
| | IMPORTANT Press the RED or the BLK button to confirm correct travel direction for LEVER 1 | |
| | For PUSH to OPEN / AHEAD - press & release the RED button | |
| | For PULL to OPEN / AHEAD - press & release the BLK button | |
| | REPEAT steps 3-8 for LEVER 2 (gear actuator position). NOTE: After completing endpoint calibration of LEVER 1 (throttle actuator), if endpoint calibration of LEVER 2 is not required, you may proceed to step 10. | |
| | Turn OFF power to Actuator and RESTART | You have successfully completed the calibration of the Smart Actuator. Proceed with calibration verification (see right). |

DO NOT CONNECT PUSH / PULL CABLES TO THE ACTUATOR LEVERS PRIOR TO CALIBRATING ACTUATOR ENDPOINTS AND CABLE DIRECTION

USE CAUTION: KEEP HANDS AWAY FROM MOVING COMPONENTS OF ACTUATORS WHEN CALIBRATING ACTUATOR ENDPOINTS!

Vessels equipped with mechanical gears (outboards and I/O) leave the control system in "WARM" mode until the engines are running. Attempting to shift gears with the engines OFF may result in damage.

ENDPOINT CALIBRATION VERIFICATION:

Leave the control cable ends DISCONNECTED from the levers on the actuator. The throttle and gear cables will be moved manually to confirm that the actuator lever and control cable travel achieve the same position. For I/O and Outboard applications, it may be necessary to rotate the propeller when moving the gear cable. This will allow proper gear engagement and will assure full cable travel.

Upon completion of the Endpoint Calibration procedure, it is advisable that the operation of the Smart Actuator II™ system be inspected to verify that each engine throttle and transmission lever is being properly moved in the correct direction and through the full range of travel.

The following points should be kept in mind when verifying actuator position and operation:

- Direction of travel** - the location of engine idle and full throttle, gear ahead and astern, and troll valve lockup / slip should be considered to ensure that the actuator is moving the engine and gear controls in the appropriate direction.
- Actuator endpoint** - the actuator should move its associated control lever to the mechanical stop without placing undue strain on the control cable or control lever.
- Control lever detent position** - when positioning the gear lever or trolling valve lever, it may be helpful to disconnect the push-pull cable from the lever and move the control lever independently from the system.

| ACTION | | RESULT |
|--|--|--|
| With Actuator lever(s) in NEUTRAL position, check ... | | • Engine throttle lever should be in IDLE. • Gear control lever should be in NEUTRAL. • Troll valve (if equipped) should be at LOCKUP position. |
| Move control head handle(s) to AHEAD detent position ... | | Gear cable(s) can be moved to and matched with the AHEAD position of the Actuator lever(s). If not, recalibration is necessary. |
| Move control head handle(s) to ASTERN detent position ... | | Gear cable(s) can be moved to and matched with the ASTERN position of the Actuator lever(s). If not, recalibration is necessary. |
| Move control head handle(s) to FULL AHEAD and FULL ASTERN position ... | | Throttle cable(s) can be moved to and matched with the WIDE OPEN THROTTLE position of the Actuator lever(s). If not, recalibration is necessary. |
| Move control head handle(s) to NEUTRAL position ... | | Throttle cable(s) should be at IDLE position and transmission cable(s) should be at NEUTRAL position of the Actuator lever(s). Cable(s) SHOULD NOT be binding. |
| IF TROLL VALVE EQUIPPED, move control head handle(s) to NEUTRAL position(s) and PRESS & RELEASE Troll button on the keypad ... | | Troll LED will illuminate indicating that Troll Mode is ON. Verify that Troll Actuator lever(s) have moved to Troll Valve Open position. Cable(s) SHOULD NOT be binding. |
| IF TROLL VALVE EQUIPPED, move control head handle(s) to FULL THROTTLE position ... | | Verify that Troll Actuator lever(s) have moved toward LOCKUP position, but NOT into LOCKUP position. Cable(s) SHOULD NOT be binding. |
| IF TROLL VALVE EQUIPPED, move control head handle(s) to NEUTRAL position and PRESS & RELEASE Troll button on keypad ... | | Troll LED will go out indicating that Troll Mode is OFF. Verify that Troll Actuator lever(s) have moved to the LOCKUP position. Cable(s) SHOULD NOT be binding. Verify that NORMAL gear / throttle operation is now available from the helm station. |

After performing the Endpoint Calibration Verification, if you find that one actuator position needs to be changed, refer to the beginning of the Endpoint Calibration instructions (left) and follow the instructions to re-calibrate the actuator endpoints. This completes the Calibration procedure. The system is now fully operational and ready for use.

SYSTEM TEST & CHECKOUT

COMPONENT INSTALLATION CHECKS

Smart Actuator:

- Verify Actuator(s) is securely fastened to the boat structure.
- Verify electrical power connections:
 - Battery Negatives - Negatives from both batteries should be connected (not at Control Processor). It is vital that there be zero voltage potential between battery negative terminals. Battery negative terminals should be connected to bonding system.
 - Negative Lead - Negative wire from EEC system is connected to single battery negative.
 - Positive Leads - Power should be connected from battery positive terminal or disconnect switch (battery side of switch) to CP via 15 amp fuse / circuit breaker.
 - Check that all battery connections are tight and verify that bonding wire is properly connected to bonding stud.
- Verify that all connectors are properly inserted into their receptacles (Station cables, Transmission harness, Throttle harness, and Trim harness (if applicable)). DO NOT FORCE connectors into receptacles! All wires should be secured with tie-wraps along route.
- Verify that a terminating resistor is installed at each end of the CANbus network and that there is NO open station connector.

Control Head(s):

- Verify Control Head(s) are securely fastened to the boat structure.
- Verify that Control handles have an unobstructed freedom of movement (full ahead and full reverse).
- Return all handles to NEUTRAL.
- Verify that a terminating resistor is installed at each end of the CANbus network and that there is NO open connector.

OPERATIONAL CHECKS

General Functions:

NOTE: While performing system checks, verify that the "Check System" LED stays OFF. If it comes ON, the system is in Alarm Mode and alarm condition MUST be checked and corrected BEFORE proceeding.

- Turn system ON.
- Verify at MAIN station various functions: Warm Up, Slow, Troll, and Sync.
- Verify the operation of the trim buttons on the control head handle and keypad.
- Transfer control to other control stations and verify proper operation of functions at each station.

Start Interlock:

- Move STBD control handle out of NEUTRAL position. Attempt to start engine (NOTE: Be prepared to immediately shutdown engine if start interlock has been wired incorrectly!).
- Engine should NOT start. If it does, start interlock has been wired incorrectly. Fix wiring and re-check.
- Move STBD control handle back to NEUTRAL position. After handle is moved to NEUTRAL position, then try to start engine. Engine should start.
- Perform same check for PORT engine.

Power Inputs:

- To verify separate power inputs, turn ON individual breakers one at a time and verify that DC power (12 or 24 VDC) is supplied to the Control Processor.

Engine Room Checks:

- Gear Operation - Verify that transmission levers are moving through their full range as you move control handles into and out of gear. Make sure that transmission shifts into appropriate direction (pushing handle forward causes forward boat motion, etc.).

Trolling Valve (if equipped):

- Enter Troll Mode and move handles to the forward detent - there should be little of NO propeller rotation. Rotation should increase as handle is pushed forward until Full-Lockup is achieved. Full-Lockup is verified by speed or transmission pressure.

ALARM MODE:



If your keypad looks like this - your system is in Alarm Mode

Alarm Mode is indicated by all 4 lights on the keypad flashing simultaneously.
During operation, the system will continuously monitor system functions and will alert the operator if a system problem has been detected. When Alarm Mode is activated, the control system will STOP functioning. In the case of most alarm conditions, the control system will return to engine IDLE and NEUTRAL gear on the transmission.

TO VIEW ALARM CODES:

For other control head and keypad configurations, please visit website or scan QR code on reverse side for alarm code retrieval procedure.

1 Enter Troubleshooting Mode:

| | ACTION | RESULT |
|--|---|--|
| | Turn System OFF | Check to see that the control head keypad LEDs are NOT illuminated. This is a visual indication that the system has been turned OFF. |
| | Move control station handles to FULL throttle positions | The Main station control head handles MUST be in the full throttle positions in order to enter Troubleshooting Mode. |
| | Turn System ON | When the system has been turned ON the TAKE LED will blink slowly and a beeping sound will be emitted from the keypad. |
| | Press & Release the SYNC & WARM buttons in unison three (3) times | After pressing the two buttons, the keypad's 4 LEDs will now begin to alternate between slow blinking and fast blinking every 4 seconds. |

2 Retrieve Alarm Count & Codes:

| | ACTION | RESULT |
|--|--|--|
| | Record the sequence of alternating slow and fast blinking LEDs on the Alarm Code chart (see right) | This first series of alternating blinking LEDs shows the alarm count - that is how many times the system went into Alarm Mode. |
| | Press & Release the SYNC button to cycle through the 16 most recent alarm codes | When the SYNC button is pressed & released the next series of alternating blinking LEDs will show the alarm code. Record the alarm codes on the Alarm Code chart (far right) and determine what the alarm codes are. |

3 Delete Codes & Reset Count:

| | ACTION | RESULT |
|--|--|--|
| | Press & Release the SYNC & WARM buttons simultaneously | This action deletes the alarm codes and resets the alarm count to zero. All LEDs will begin to flash to indicate alarm codes have been deleted. You may delete alarm counts and alarm codes anytime after entering "Troubleshooting Mode". |

4 Exit Troubleshooting Mode:

| | ACTION | RESULT |
|--|---|--|
| | Turn System OFF | You have now exited Troubleshooting Mode. |
| | Move control station handles to their NEUTRAL positions | You may now restart the system in Normal Run Mode. |

ALARM COUNT CHART

The first series of alternating Slow and Fast blinking LEDs shows the alarm count - that is how many times the system went into Alarm Mode.

Place a mark in the boxes (right) to correspond with the alternating Slow and Fast blinking LEDs on the keypad at the Main station.

| | | LEDs SLOW BLINKING | | | | LEDs FAST BLINKING | | | | = ALARM COUNT |
|--|--|--------------------|---------------|---------------|----------------|--------------------|---------------|---------------|----------------|---------------|
| | | 4-button TAKE | 4-button SYNC | 4-button WARM | 4-button TROLL | 4-button TAKE | 4-button SYNC | 4-button WARM | 4-button TROLL | |
| | | PORT N | PORT N | ACTIVE | WARM | STBD N | PORT N | ACTIVE | WARM | STBD N |

Match the blinking LEDs recorded above with the chart below to determine the Alarm Count.

| Count | LEDs SLOW BLINKING | | | | LEDs FAST BLINKING | | | | Count | LEDs SLOW BLINKING | | | | LEDs FAST BLINKING | | | | |
|-------|--------------------|--------|--------|-------|--------------------|--------|--------|-------|--------|--------------------|--------|--------|-------|--------------------|--------|--------|-------|--------|
| | TAKE | SYNC | WARM | TROLL | TAKE | SYNC | WARM | TROLL | | TAKE | SYNC | WARM | TROLL | TAKE | SYNC | WARM | TROLL | |
| | PORT N | PORT N | ACTIVE | WARM | STBD N | PORT N | ACTIVE | WARM | STBD N | | PORT N | ACTIVE | WARM | STBD N | PORT N | ACTIVE | WARM | STBD N |
| 1 | ● | | | | | | | | | 17 | ● | | | | | | | |
| 2 | | ● | | | | | | | | 18 | | ● | | | | | | |
| 3 | | | | | | | | | | 19 | ● | ● | | | | | | |
| 4 | | | ● | | | | | | | 20 | | | ● | | | | | |
| 5 | | | | ● | | | | | | 21 | ● | | ● | | | | | |
| 6 | | ● | ● | | | | | | | 22 | | ● | ● | | | | | |
| 7 | ● | ● | | | | | | | | 23 | ● | ● | ● | | | | | |
| 8 | | | | ● | | | | | | 24 | | | ● | ● | | | | |
| 9 | | | | | ● | | | | | 25 | ● | | | ● | | | | |
| 10 | | ● | | | | | | | | 26 | | | ● | ● | | | | |
| 11 | ● | ● | | | | | | | | 27 | ● | ● | ● | | | | | |
| 12 | | | ● | | | | | | | 28 | | | ● | ● | | | | |
| 13 | ● | | ● | | | | | | | 29 | ● | ● | ● | ● | | | | |
| 14 | | ● | ● | ● | | | | | | 30 | | ● | ● | ● | | | | |
| 15 | ● | ● | ● | ● | | | | | | 31 | ● | ● | ● | ● | ● | | | |
| 16 | | | ● | | | | | | | 32 | | ● | | | | | | |
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For more detailed information on Troubleshooting / Alarm Codes, refer to MANUAL - SECTION 6.0 by visiting our website www.glendinningprods.com/complete-controls-docs

ALARM CODE CHART

Record the second set of alternating Slow and Fast blinking LEDs by placing an "X" in the column marked X. After recording each alarm code press SYNC button to advance to the next alarm code until all 16 codes are recorded. Once alarm codes are recorded, match each alarm to the description chart (below) and record this information next to each alarm code.

| LEDs SLOW BLINKING | | | | LEDs FAST BLINKING | | | | ALARM CODE DESCRIPTION | |
|--------------------|---------------|---------------|----------------|--------------------|---------------|---------------|----------------|------------------------|--|
| 4-button TAKE | 4-button SYNC | 4-button WARM | 4-button TROLL | 4-button TAKE | 4-button SYNC | 4-button WARM | 4-button TROLL | | |
| PORT N | PORT N | ACTIVE | WARM | STBD N | PORT N | ACTIVE | WARM | STBD N | |
| X | | | | | | | | | Detected multiple handles with the same handle ID at startup. |
| | | | | | | | | | No handle connected at startup. |
| | | | | | | | | | ** Control Processor lost communication with Handle #1. |
| | | | | | | | | | ** Control Processor lost communication with Handle #2. |
| | | | | | | | | | ** Control Processor lost communication with Handle #3. |
| | | | | | | | | | ** Control Processor lost communication with Handle #4. |
| | | | | | | | | | Detected multiple actuators with the same actuator ID at startup. |
| | | | | | | | | | Control Processor lost communication with actuator #1 (port throttle / gear). |
| | | | | | | | | | Control Processor lost communication with actuator #2 (stbd throttle / gear). |
| | | | | | | | | | Control Processor lost communication with actuator #3 (port / stbd troll). |
| | | | | | | | | | Control Processor lost communication with actuator #4 (port/stbd throttle / elec gear). |
| | | | | | | | | | Control Processor lost communication with actuator #6 (center throttle / gear). |
| | | | | | | | | | Actuator #1 battery input below 10V / 19V. |
| | | | | | | | | | Actuator #1 battery input above 17V / 32V. |
| | | | | | | | | | Actuator #1 - Port throttle exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #1 - Port gear can not reach commanded position. |
| | | | | | | | | | Actuator #1 - Port gear exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #1 - Port gear can not reach commanded position. |
| | | | | | | | | | Actuator #2 battery input below 10V / 19V. |
| | | | | | | | | | Actuator #2 battery input above 17V / 32V. |
| | | | | | | | | | Actuator #2 - Stbd throttle exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #2 - Stbd throttle can not reach commanded position. |
| | | | | | | | | | Actuator #2 - Stbd gear exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #2 - Stbd gear can not reach commanded position. |
| | | | | | | | | | Actuator #6 battery input below 10V / 19V. |
| | | | | | | | | | Actuator #6 battery input above 17V / 32V. |
| | | | | | | | | | Actuator #6 - Center throttle exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #6 - Center throttle can not reach commanded position. |
| | | | | | | | | | Actuator #6 - Center gear exceeded 5A for more than 6 seconds. |
| | | | | | | | | | Actuator #6 - Center gear can not reach commanded position. |
| | | | | | | | | | ** = Handle losing communication will cause an alarm condition if handle is the ACTIVE handle at time of fault |

For more detailed information on Troubleshooting / Alarm Codes, refer to MANUAL - SECTION 6.0 by visiting our website www.glendinningprods.com/complete-controls-docs

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