Product Brief

# TRITON$^2$


TRITON2 | Instruments | Autopilots

# TRITON² - THE CLEAR LEADER IN SAILING

The B&G Triton² range consists of several new components including new Sailing Instrument Displays, Pilot controller & Pilot computers.

**Triton² Instrument Display**

Multi-purpose sailing instrument and autopilot display with a 4.1-inch colour screen, optically bonded for zero condensation and featuring transflective LCD technology for exceptional contrast and visibility in all lighting conditions. 8mm mounting height matches other B&G MFD's and system components

**Triton² Pilot Controller**

This intuitive keypad can be combined with a B&G Triton2 Display to create a fully-featured autopilot controller, including B&G's Intelligent Sail Steering functionality and Smart Manoeuvre controls

**NAC-2 Pilot Computer**

The low-current NAC-2 autopilot computer is ideal for smaller vessels, designed to run small hydraulic drives and mechanical drives for vessels up to 10 metres (33 feet) in length. Also provides solenoid output.

**NAC-3 Pilot Computer**

The high-current NAC-3 autopilot computer is designed for vessels over 10 metres (33 feet) in length, with the ability to run heavy-duty hydraulic drive pumps & linear rams, and also provides solenoid output.

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B&G
6.5
BSPD
40
TWA
TWD
151
TWS
11.3
B&G
25
AWA
SET ANGLE
42
B&G
Chart
Echo
Structure
Radar
Sail Steer
Race
Instruments
Video
Autopilot
Tides Plot
Wind Plot
Vessels
Sun Moon
Trip Calculator
Files
Find
Select One
B&G
STBY
AUTO
Mode

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# Product Description

## Component Overview

# TRITON$^2$ Instrument Display

The full-colour Triton$^2$ Display provides sailors with a clear visual representation of key instrument data including Speed, Depth, Wind, Heading, AIS targets, GPS data and more.

An Optically Bonded display means absolutely zero condensation or fogging, while transflective LCD technology provides exceptional contrast and visibility – day or night – while consuming less power than traditional backlight-only displays.

The flexible, NMEA 2000® certified, Triton$^2$ Display can be integrated into a wider navigation system and also be combined with a Triton$^2$ Pilot keypad and NAC autopilot computer to create a complete autopilot control system, featuring B&G sail-specific autopilot steering algorithms.

# TRITON$^2$ Pilot Controller

This intuitive keypad can be combined with the Triton$^2$ Instrument display to create a fully-featured autopilot controller.

Benefit from B&G's intelligent sail-specific functionality for compass and wind steering, Smart Manoeuvre controls for easy tacking and gybing, and MFD / chartplotter integration for waypoint and route navigation.

Take complete control of your autopilot with a simple seven-button keypad, built for safe and reliable operation in all conditions.

# NAC-2 Autopilot Computer

The NAC-2 Autopilot Computer is the brains behind your B&G Triton$^2$ autopilot system.

NAC-2 contains B&G's *Reflex* control algorithms, developed to helm a yacht across a broad range of weather conditions and sea-states, alongside the electronics needed to operate a hydraulic or mechanical drive unit, while also interfacing with other components including heading sensors and rudder feedback units.

The NAC-2 was designed for boats up to 10 metres (33 feet) in length and is suitable for low-current hydraulic drives, mechanical drives, or solenoid valves with a current rating of 8 Amps continuous (12 Amps peak).


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# NAC-3 Autopilot Computer

The NAC-3 Autopilot Computer is the brains behind your B&G Triton$^2$ autopilot system.

NAC-3 contains B&G's *Reflex* control algorithms, developed to helm a yacht across a broad range of weather conditions and sea-states, alongside the electronics needed to operate a hydraulic or mechanical drive unit, while also interfacing with other components including heading sensors and rudder feedback units.

The NAC-3 was designed for boats 10 metres (33 feet) or greater in length and is rated to operate high-current hydraulic drives, mechanical drive units, and solenoid valves with a current rating of 30 Amps continuous (50 Amps peak).


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# Precision-9 RTM2

## New software update for Precision-9 Compass brings the following new features;


### Auto Calibration

Precision-9 now offers continual automatic calibration. The Precision-9 continuously gathers new calibration data and compares it with the current stored calibration, if the new calibration data exceeds a certain performance threshold, the new data will be used.

### Heave Output

Precision-9 now offers standard NMEA2000 Heave PGN127252.
Precision-9 Heave output will be utilised by other B&G products in future software releases.

# Product Positioning

# TRITON² Product Positioning

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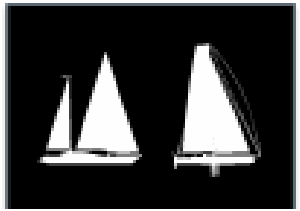
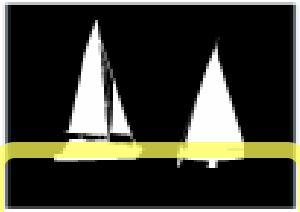
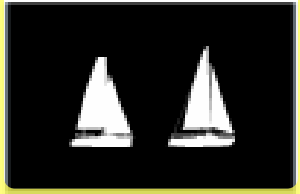
| | | | |
|---|---|---|---|
| GRAND PRIX |  | Highly flexible and powerful systems for Mega-yachts, Superyachts and Grand Prix racing yachts, typically 50'+. Volvo Ocean Race, Vendee Globe, TP52, MOD70 etc. | WTP3 |
| PERFORMANCE |  | Powerful systems with a wide range of settings and calibration options to provide the best instrument and Pilot system for Blue-water cruising yachts, large multi-hulls, offshore and inshore racing yachts. Typically 40'+ blue water cruisers, RORC, IRC, ORC, PHRF, Fast40+ racers etc. | H5000 |
| COMPACT |  | Coastal and Offshore yachts, cruisers, cruiser/racers, club and non-professional racers, users looking for the best quality at a value price point. | TRITON2 |
| | SAIL | | |

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# Key Features

## Selling Points

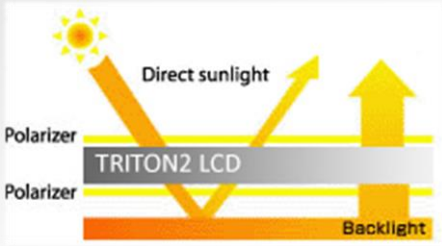
# Key Features: TRITON² Instrument Display (1)

## Optical Bonding

Sporting an Optically Bonded 4.1-inch LCD display, Triton2 allows you to see clearly in all conditions with its large clear colour display 100% free from condensation or fogging.

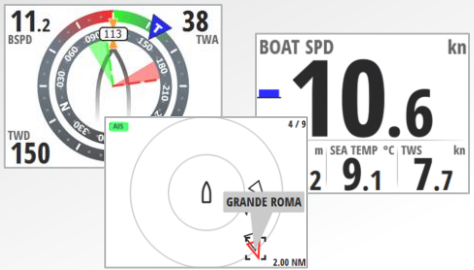
## Efficient LCD Technology

Transflective LCD technology uses reflected ambient light to enhance day-time visibility, providing the clearest sailing dedicated display available. LED backlighting provides highly adjustable illumination when required, making Triton² exceptionally efficient and extending time available from your battery capacity.




## Sailing Features

With sailing specific features including the award winning SailSteer and WindPlot screens – along with integration with Zeus and Vulcan navigation systems for AIS, and Sailing Time data the Triton² is the sailor's solution.

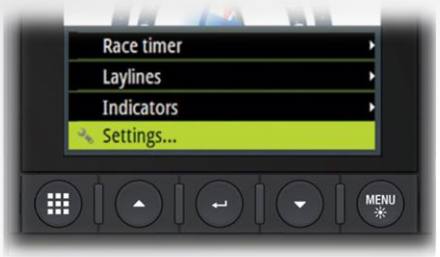



AIS and award-winning SailSteer features join more traditional instrument pages

## Easy to Use

Triton² provides simple on-screen menus controlled by soft-touch and reliable waterproof buttons.

Intuitive design makes it easy to configure and use your display.

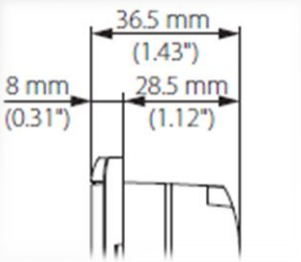


# Key Features: TRITON² Instrument Display (2)

### Low Profile Design

At just 8mm thin the Triton² instrument adds a sleek look to any boat.

Nearly half the dimension of its thick competitors, Triton² won't get in the way, catch ropes or offend the eye!



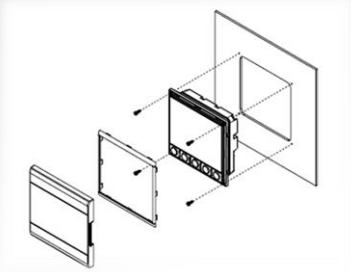

### NMEA 2000® Certified

NMEA 2000 certification means you can be confident when adding Triton² to an existing NMEA 2000 system. NMEA 2000 certification also opens up a wide variety of future expansion options for your Triton² system..

### Easy Installation

A straight-forward front mounting method and a clip-on bezel over the (4) mounting screws combine with a single NMEA 2000 connection carrying both power and networked data.

The Triton² is simple and quick to install.



### Autopilot Integration

Triton² will display B&G Pilot data on a clear status screen.

With the addition of a Triton² Pilot keypad the instrument becomes a fully functional Pilot controller.

# Key Features: TRITON² Pilot

## Intuitive Operation

Reliable, waterproof buttons are designed to be identified easily by sight or touch and to give positive feedback to the user.

A single press of the dedicated Mode key toggles between Steer to Heading and Steer to Wind modes.


## Smart Tack and Smart Gybe

Tack or Gybe via a simple, but safe, double key press.

The Triton² Pilot will control the manoeuvre to deliver you safely on your new course, allowing you to tend to sails. Triton² provides a safe extra pair of hands when needed the most.

## Confident Sailor

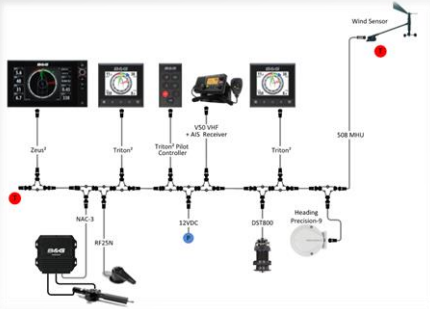
B&G's Wind Steering algorithms are the choice of the world's leading solo sailors.

Proven over literally millions of miles of offshore and transoceanic sailing the B&G Pilot is the sailor's choice.

## System Integration

Triton² Pilot will integrate with your instruments and wider navigation system to provide Steer to Wind and Steer to Waypoint/Route functions.

Also compatible with B&G's H5000 series.

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# Key Features: NAC-2 autopilot computer

- B&G Reflex Sailing algorithms
- Plug & Play installation
- 12/24V input 8A continuous output, 12A peak
- Solenoid output capable
- 1.5A clutch output
- Optional Auto/Standby Switch
- Drive & Processing circuitry and components identical to commercial autopilots
- Rudder feedback options: NMEA2000 Rudder Feedback (RF25), Resistive Rudder Feedback. New SD10 Mechanical Drive plugs straight in to drive and RFU connectors


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# Key Features: NAC-3 autopilot computer

- B&G Reflex Sailing algorithms
- 12/24V input 30A continuous output (50A peak)
- 3A Clutch output
- NMEA 0183 Interface (1 input, 1 output)
- Solenoid output capable
- Rudder feedback options: NMEA2000 Rudder Feedback (RF25), Freq. Rudder Feedback (RF300)
- Solenoid output capable for larger vessels
- Connection for NFU Remotes
- External Mode input, External open/close or pulse contact for SYSTEM SELECT
- External alarm output for buzzer/relay

# TRITON² Instrument: User Interface Overview

## Page Key

- In normal use: Access key pages - **press** to step-through your pages, **hold** to select a page directly
- In a menu: press to go up one menu level or to exit a dialog


## Arrow Keys

- In a menu/dialog: **press** to move up and down or edit values
- In AIS screen: select a vessel.

## Menu/Backlight

- In normal use: **press** once to display the context menu, **double-press** to display the Settings menu, **press and hold** to show the Display setup dialog for backlight, night mode etc.
- Context menus show relevant options for the current page

## Enter Key

- In a menu: **press** to select a menu option, to enter the next menu level or to activate/deactivate a checkbox.
- In AIS screen: view vessel information

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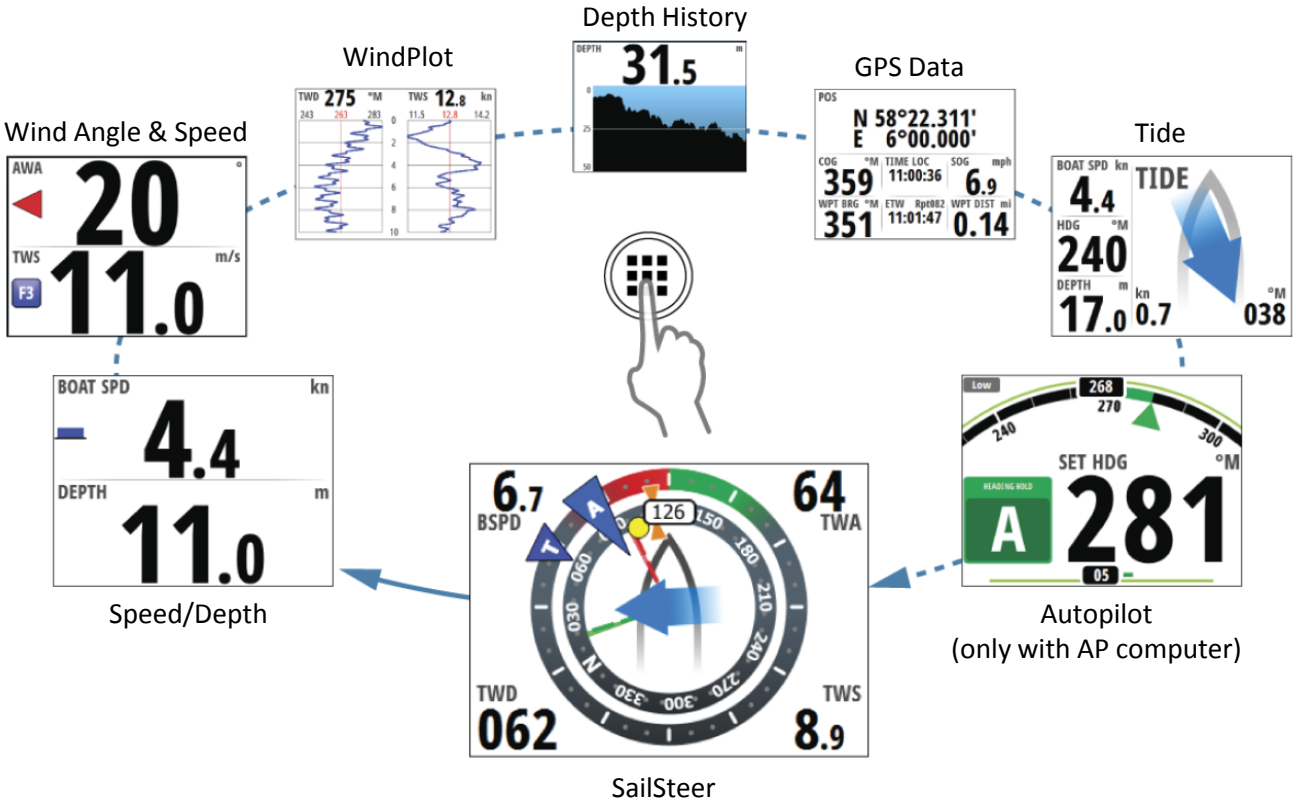
# TRITON² Instrument: Default Page Options




Speed/Depth

Autopilot
(only with AP computer)

SailSteer

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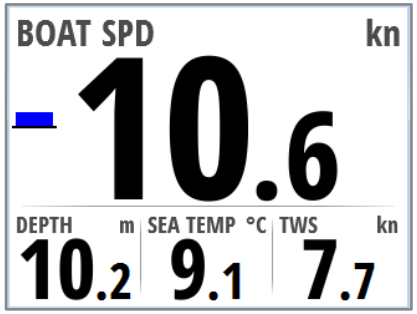
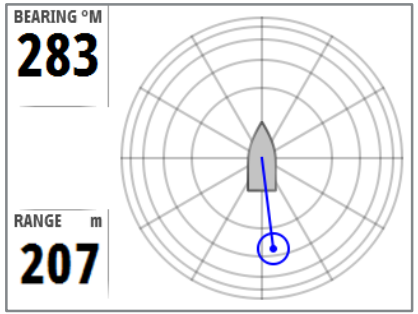
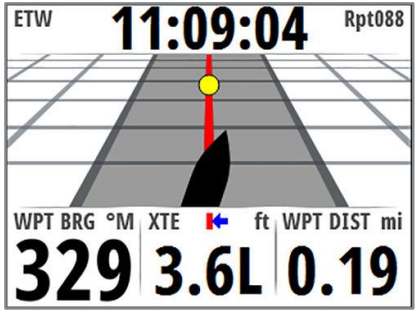
# TRITON² Instrument: Selection of Alternative Page Options



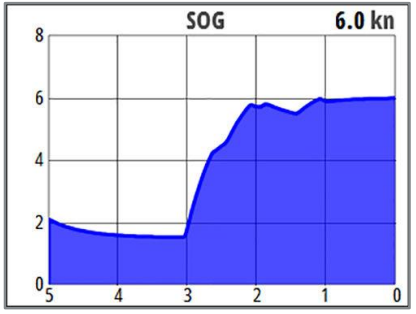

One of many Instrument layouts



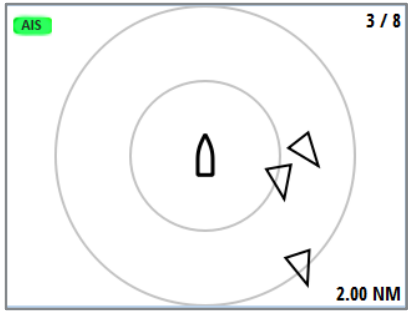

Man Overboard Locator




Highway – waypoint navigation

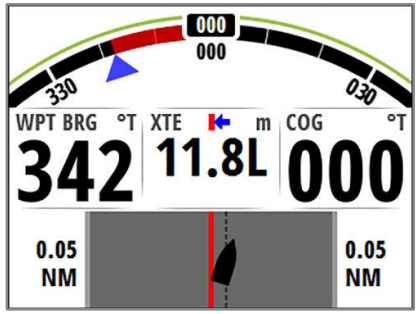



TimePlot – user selected data

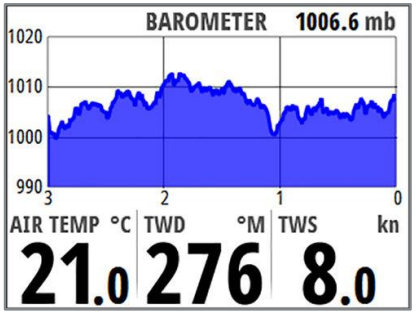



AIS – filtering and vessel select


Big digits!




Steering – Compass plus nav




Weather with Pressure trend

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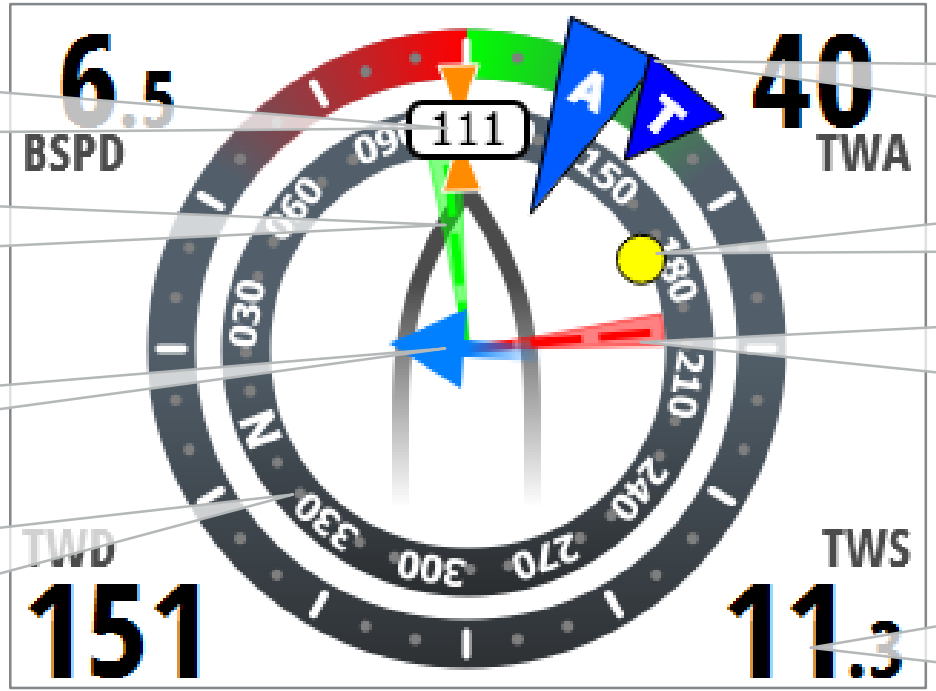
# TRITON² Instrument: SailSteer

**Heading and COG**
Current Heading shown in data box, COG indicated by orange bar

**Current Layline**
Current laylines are dashed lines, shaded sectors shows max/min over recent history.

**Tide**
Direction & Strength of tide

**Compass Scale**
All data can be read off the compass scale: True Wind Direction, Tide, Opposite Tack Heading, Bearing to Waypoint




**Wind Indicators**
Options to display Apparent and/or True Wind indicators

**Waypoint**
Bearing of next waypoint

**Opposite Tack Layline**
Red indicates Port Tack
Dotted line is current value
Shaded segment is max/min over recent history

**Navigation Data**
Corner data shows: Boat Speed along with True Wind Speed/Direction/Angle

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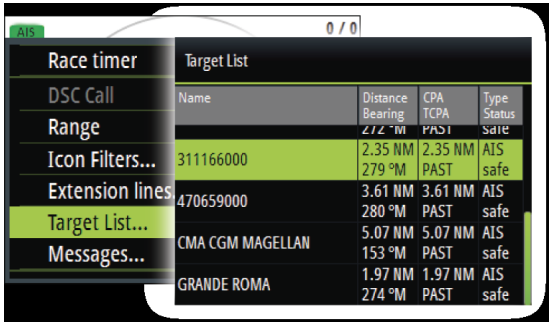
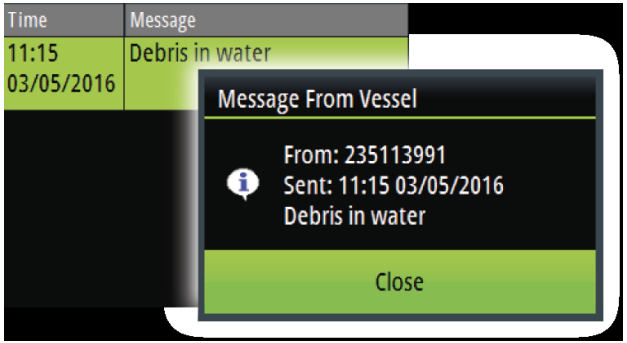
# TRITON² Instrument: AIS-Additional Functionality

## Target List




## Ability to receive AIS Messages




## Initiate a DSC call to an AIS Target


PLUS:

- CPA/TCPA Dangerous Target Alarm
- Lost vessel alarms
- Display of AIS SARTS
- Relative and true course indication
- HDG or COG orientation

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# TRITON² Instrument: AIS

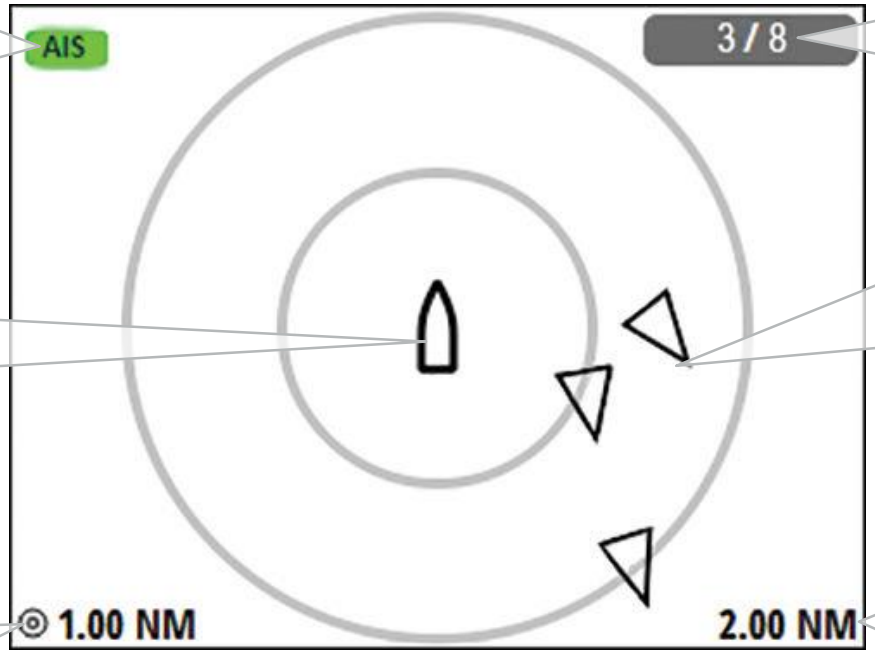
**Transmission Mode**
Shows if the AIS is transmitting or receiving only.

AIS
*Transmitting mode*

*Silent or receive only mode*

**Own Vessel**
Own vessel indicated at centre of display to assist in understanding the relative positions of other targets.

**Range Ring**
Distance between range rings




**Number of Targets**
Number of targets visible vs. number of targets being tracked.

**Other Vessels**
Other vessels' relative position. Smart filtering allows user to only show significant vessels - not just the "closest targets" but the ones that are relevant.

**Range Scale**
Selected range. Targets outside this range are not shown on screen - but are included in the displayed number of targets tracked.

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# Competitor Comp

# TRITON² Instrument Display: Competitor Comparison

| | B&G Triton² | Raymarine i70s | Garmin GMI20 | Furuno FI70 |
|---|---|---|---|---|
| |  |  |  |  |
| Sailing Specific software | ✓ | | | |
| Transflective LCD | ✓ | | | |
| Flush Mount Height | **8mm** | 14mm | 15mm | 14mm |
| AIS Page | ✓ | ✓ | | ✓ |
| Advanced AIS (Filter/Calls) | ✓ | | | |
| Autopilot Add On | ✓ | | | |
| Histogram Pages | ✓ | | | ✓ |
| NMEA2000 Certified | ✓ | (“pending”) | ✓ | ✓ |
| USD SRP | $549 | $479 | $549 | $595 |

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# Launch Schedule

## Key Dates

# Key Dates

| Key Launch Event | Date |
|---|---|
| Internal Reveal | 20th July 2016 |
| Dealer Reveal | 27th July 2016 |
| Open Order Book | 27th July 2016 |
| Go Live- Public Reveal | 6th September 2016 |
| Commercial Shipping date | 29th September 2016 |
| Product shipped to key Volume Boat Builders for 2017 models | June/July 2016 |

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# Sales Information

## SKU’s & Pricing

# Part Numbers, SKUs and Pricing

| Part Number | Description | APAC (AUD) | EMEA (EUR) | ROW (USD) | AMER MRP (USD) |
|---|---|---|---|---|---|
| 000-13294-001 | TRITON2 DIGITAL DISPLAY | $635.45 | € 478 | $599 | $549 |
| 000-13295-001 | TRITON2 DIGITAL DISPLAY 6PK | $635.45 | € 478 | $599 | $549 |
| 000-13296-001 | TRITON2 AUTOPILOT CONTROLLER | $365.00 | € 320 | $393 | $269 |
| 000-13297-001 | TRITON2 AUTOPILOT CONTROLLER 6PK | $365.00 | € 320 | $393 | $269 |
| 000-13298-001 | TRITON2 SPEED/DEPTH PACK | $1,208.18 | € 929 | $1,099 | $949 |
| 000-13299-001 | TRITON2 SPEED/DEPTH/WIND PACK | $1,908.18 | € 1,259 | $1,649 | $1,399 |
| 000-13561-001 | TRITON2 Pilot Controller/Display Pack | $959.00 | € 769 | $949 | $799 |
| 000-13249-001 | NAC-2 Autopilot Computer | $1,099.00 | € 849 | $1,059 | $849 |
| 000-13250-001 | NAC-3 Autopilot Computer | $1,999.00 | € 1,499 | $1,899 | $1,499 |
| 000-13335-001 | NAC-2 Core Pack | $1,999.00 | € 1,499 | $1,799 | $1,499 |
| 000-13336-001 | NAC-3 Core Pack | $2,699.00 | € 2,200 | $2,650 | $2,200 |
| 000-13337-001 | NAC-2 VRF Core Pack | $1,799.00 | € 1,249 | $1,649 | $1,249 |
| 000-13338-001 | NAC-3 VRF Core Pack | $2,499.00 | € 1,950 | $2,399 | $1,950 |

# Options and Accessories - Instrument

| Part Number | Description | APAC (AUD) | EMEA (EUR) | ROW (USD) | AMER MRP (USD) |
|---|---|---|---|---|---|
| 000-10637-001 | 508 Wind Sensor | $668.80 | € 379.00 | € 604.00 | € 499.00 |
| 000-10652-001 | NMEA 2000 Wind Sensor w/ 20m cable | $749.00 | € 483.00 | € 615.00 | € 579.00 |
| 000-10647-001 | NMEA 2000 Wind Sensor w/ 35m cable | $779.00 | € 516.00 | € 657.00 | € 615.00 |
| 22098552 | DST800 | $490.00 | € 319.00 | € 410.00 | € 339.00 |
| 000-12607-001 | PRECISION-9 COMPASS | $854.05 | € 603.90 | € 779.00 | € 645.00 |
| 000-11048-001 | ZG100 GPS Antenna with mag compass | $299.09 | € 258.00 | € 299.00 | € 199.00 |
| TBA | TRITON2 SUNCOVER | $30.00 | € 25.00 | € 30.00 | € 25.00 |
| TBA | TRITON2 AUTOPILOT CONT SUNCOVER | $30.00 | € 25.00 | € 30.00 | € 25.00 |
| 000-10760-001 | N2k Backbone Starter Kit | $69.00 | € 82.50 | € 95.00 | € 69.95 |
| 000-0119-79 | Micro-C T-connector | $50.00 | $20.66 | $22.96 | $19.95 |
| 000-12612-001 | N2K, 4 WAY (Low Loss) | $79.09 | $49.50 | $62.00 | $51.00 |
| 000-0119-88 | 0.61 m (2-ft) NMEA 2000® cable | $50.00 | $29.17 | $32.65 | $26.95 |
| 000-0127-53 | 1.82 m (6-ft) NMEA 2000® cable | $60.00 | $46.00 | $48.40 | $39.95 |
| 000-0119-86 | 4.55 m (15-ft) NMEA 2000® cable | $100.00 | $51.61 | $60.52 | $49.95 |
| 000-0119-83 | 7.58 m (25-ft) NMEA 2000® cable | $159.99 | $72.30 | $72.63 | $69.95 |

# Options and Accessories - Pilot

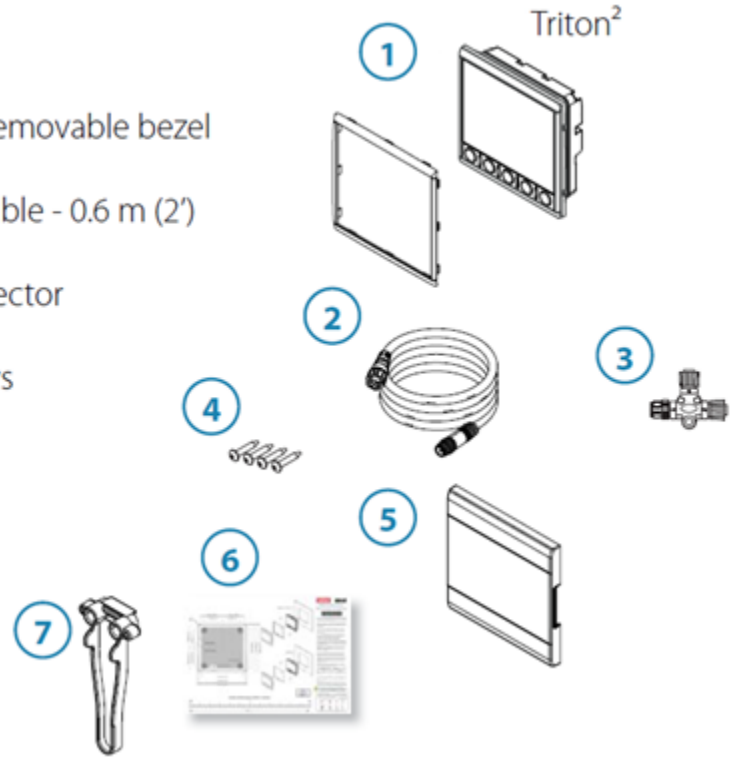
| Part Number | Description | APAC (AUD) | EMEA (EUR) | ROW (USD) | AMER MRP (USD) |
|---|---|---|---|---|---|
| 000-12607-001 | PRECISION-9 COMPASS | $854.05 | $603.90 | $779.00 | $645.00 |
| 000-10756-001 | RF25N NMEA2000 RUDDER FEEDBACK | $390.00 | $290.40 | $359.00 | $310.00 |
| 20193744 | RF300 Rudder Feedback (NAC-3 Only) | $359.10 | $268.40 | $339.00 | $290.00 |
| RAM-T1-12V | Hydraulic Ram T1 12V | $2,694.78 | $1,590.00 | $1,930.00 | $1,930.00 |
| RAM-T2-12V | Hydraulic Ram T2 12V | $2,862.73 | $1,934.00 | $2,230.00 | $2,230.00 |
| RAM-T2-24V | Hydraulic Ram T2 24V | $2,862.73 | $1,934.00 | $2,230.00 | $2,230.00 |
| RAM-T3-24V | Hydraulic Ram T3 24V | $3,817.27 | $2,598.00 | $2,990.00 | $2,990.00 |
| RAM-T4-24V | Hydraulic Ram T4 24V | $12,726.36 | $8,668.00 | $9,980.00 | $9,980.00 |
| 21119896 | DD15 Drive | $3,799.09 | $2,145.00 | $3,028.00 | $2,499.00 |
| 000-13697-001 | SD10 MECHANICAL DRIVE FOR NAC-2 | $2,090.00 | $1,299.00 | $1,729.00 | $1,499.00 |

# Box Contents

# In the Box – TRITON² Instrument Display (000-13294-001)

## Parts included

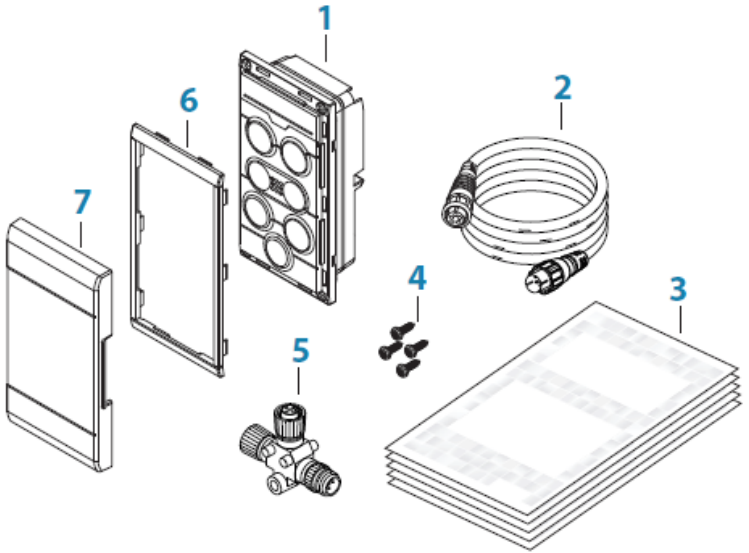
1. 1 x Display unit + Removable bezel
2. 1 x Micro-C Drop cable - 0.6 m (2')
3. 1 x Micro-C T-Connector
4. 4 x Mounting screws
5. 1 x Suncover
6. Mounting template
7. Screw jig




B&G

# In the Box – TRITON² Pilot Controller (000-13296-001)

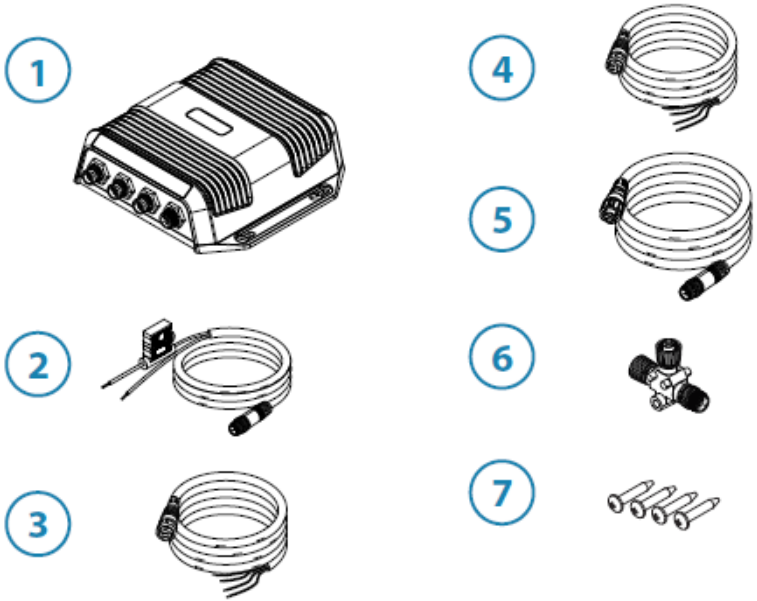
| | |
|---|---|
| 1 | Triton² Pilot controller |
| 2 | Micro-C Drop cable 0.6 m/2 ft |
| 3 | Documentation pack |
| 4 | Mounting screws (4 x #4 x 3/8" PN HD SS screws) |
| 5 | Micro-C T-connector |
| 6 | Bezel |
| 7 | Sun cover |




B&G

# In the Box – NAC-2 Autopilot (000-13249-001)

## Parts included



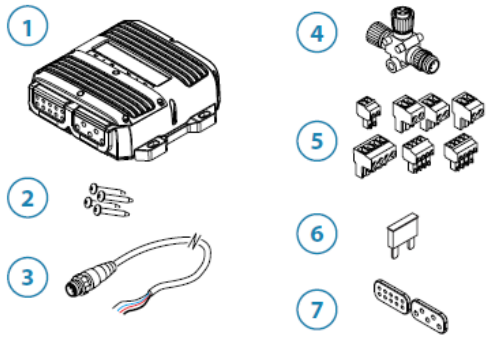
1. 1 x NAC-2 Autopilot Computer - IPX5
2. 1 x NAC-2 Power cable - 2 m
3. 1 x NAC-2 Drive cable - 2 m
4. 1 x NAC-2 Feedback cable - 2 m
5. 1 x NMEA 2000 Network cable - 0.6 m
6. 1 x Micro-C T-Joiner
7. 4 x Fixing screws
8. Warranty card & literature pack

Drive-Pump Cable Joiner (Image TBA)

B&G

# In the Box – NAC-3 Autopilot (000-13250-001)

## Parts included



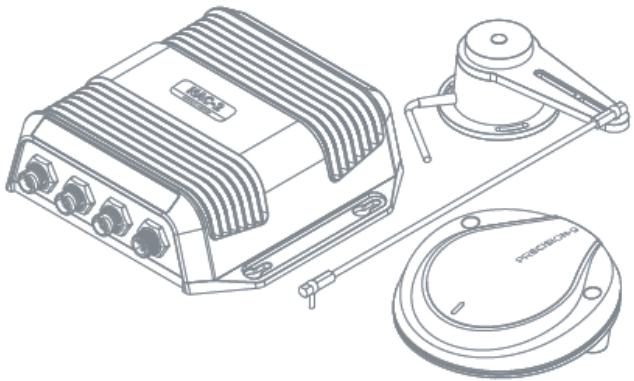

1. 1 x NAC-3 Autopilot Computer - IPX7
2. 4 x Fixing screws
3. 1 x Micro-C Drop cable (male) - 0.6 m
4. 1 x Micro-C T-Joiner
5. 7 x Connectors
6. 1 x 30 Amp fuse
7. Spare cable grommet
8. Warranty card & literature pack

B&G

# In the Box – NAC-2 Core Pack (000-13335-001)

## NAC-2 CORE PACK

AUTOPILOT PACK



| NAC-2 CORE PACK | | 000-13335-001 |
|---|---|---|
| 1 x | NAC-2 AUTOPILOT COMPUTER | 000-13249-001 |
| 1 x | PRECISION-9 COMPASS | 000-12607-001 |
| 1 x | RF25 Rudder Feedback | 000-10756-001 |
| 1 x | MICRO-C BACKBONE KIT | 000-10760-001 |

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# In the Box – NAC-2 VRF, Use with SD10 Plug & Play (000-13337-001)

## NAC-2 VRF CORE PACK

AUTOPILOT PACK

| NAC-2 VRF CORE PACK | | 000-13337-001 |
|---|---|---|
| 1 x | NAC-2 AUTOPILOT COMPUTER | 000-13249-001 |
| 1 x | PRECISION-9 COMPASS | 000-12607-001 |
| 1 x | MICRO-C BACKBONE KIT | 000-10760-001 |

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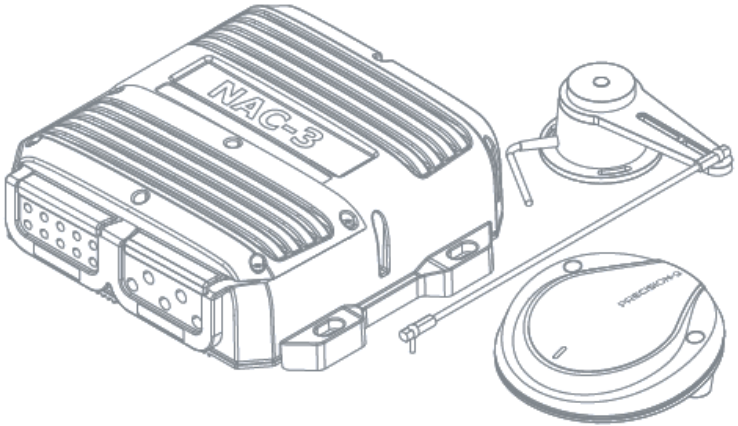
# In the Box – NAC-3 Core Pack (000-13336-001)

## NAC-3 CORE PACK

AUTOPILOT PACK




| NAC-3 CORE PACK | | 000-13336-001 |
|---|---|---|
| 1 x | NAC-3 AUTOPILOT COMPUTER | 000-13250-001 |
| 1 x | PRECISION-9 COMPASS | 000-12607-001 |
| 1 x | RF25 Rudder Feedback | 000-10756-001 |
| 1 x | MICRO-C BACKBONE KIT | 000-10760-001 |

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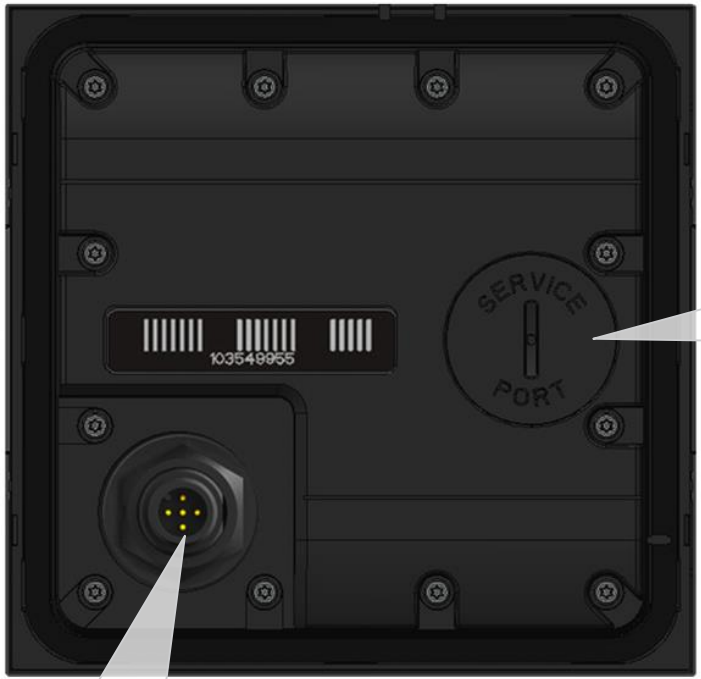
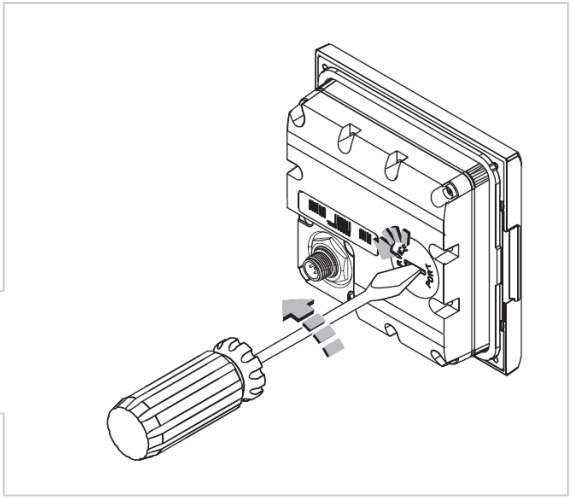
# Technical Info

## Connectors & Systems

# TRITON² Instrument Display: Connectors

Rear view of Unit



| Connector | Description |
|---|---|
| **NMEA 2000** | Power and Data |
| **USB Service Port** | Covered, Full size USB for SW updates (remove using coin or side screwdriver) |

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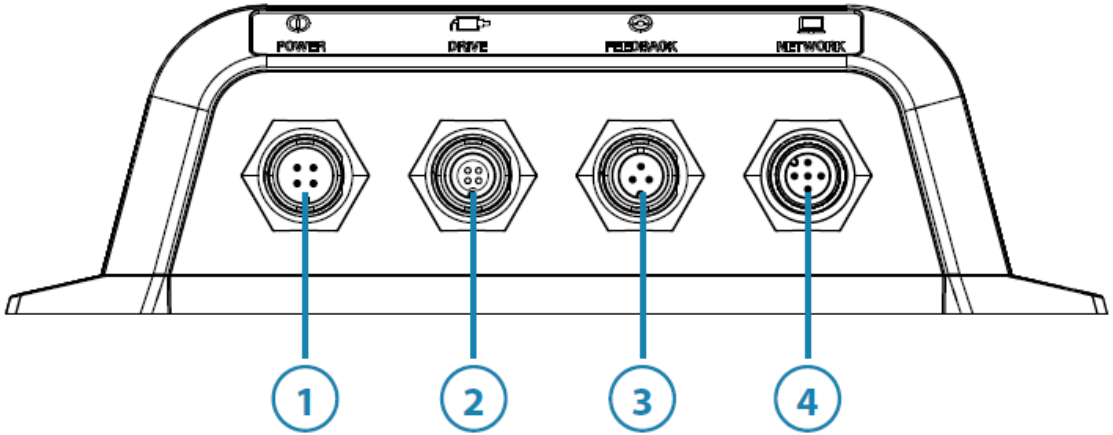
# TRITON² Pilot Controller: Connectors

Rear view of Unit


| Connector | Description |
|---|---|
| **NMEA 2000** | Power and Data |

# NAC-2 Autopilot Computer: Connectors




1. **Power** (12 / 24 V DC)) - Max 8A/12A Continuous/Peak
2. **Drive** (Drive unit) - Max 8A/12A Continuous/Peak
3. **Feedback** (Rudder reference - Resistive feedback units only)
4. **Network** (NMEA 2000)

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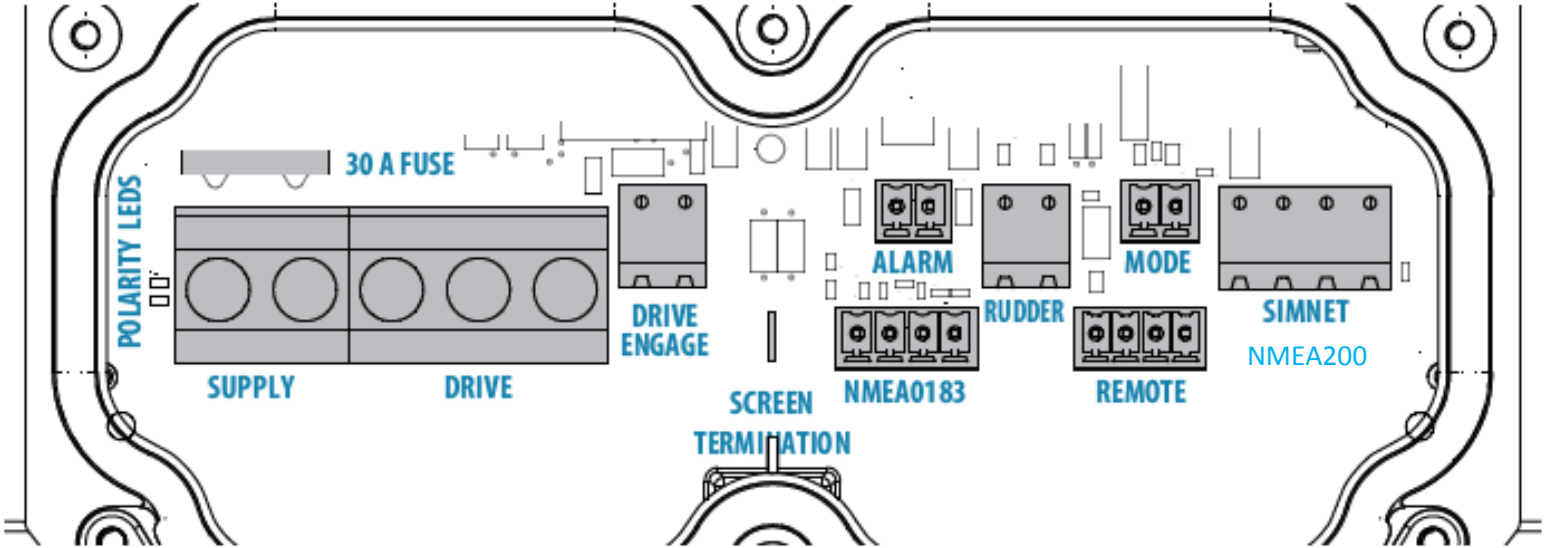
# NAC-3 Autopilot Computer: Connectors

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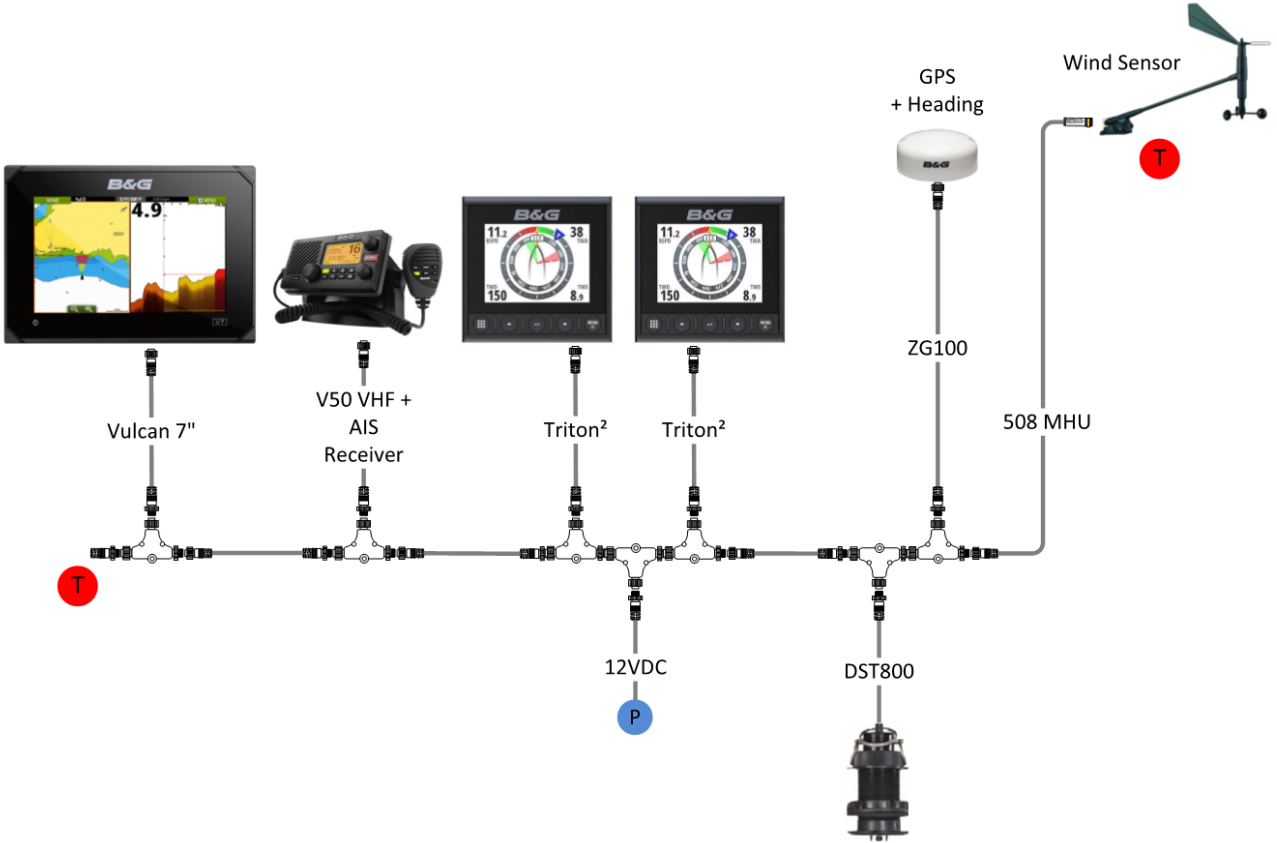
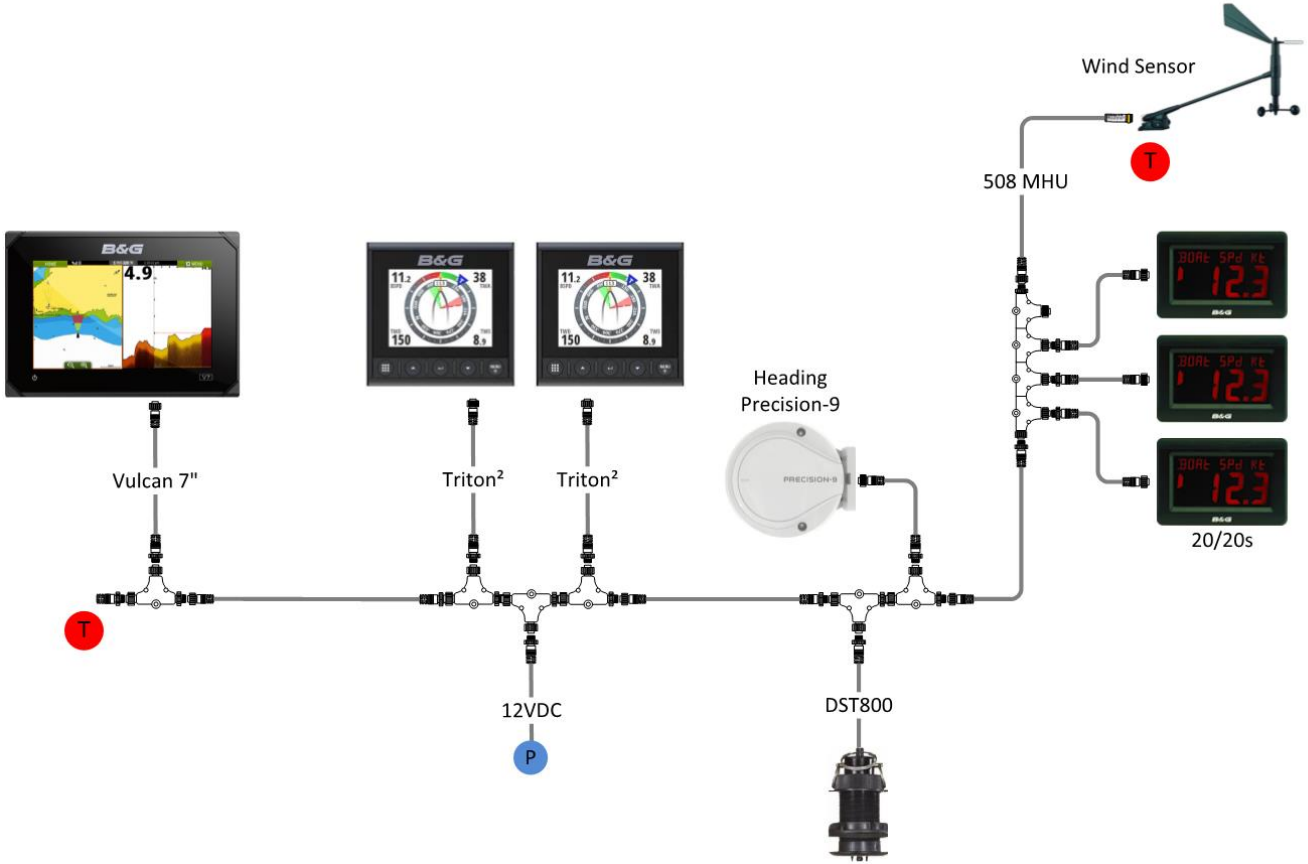
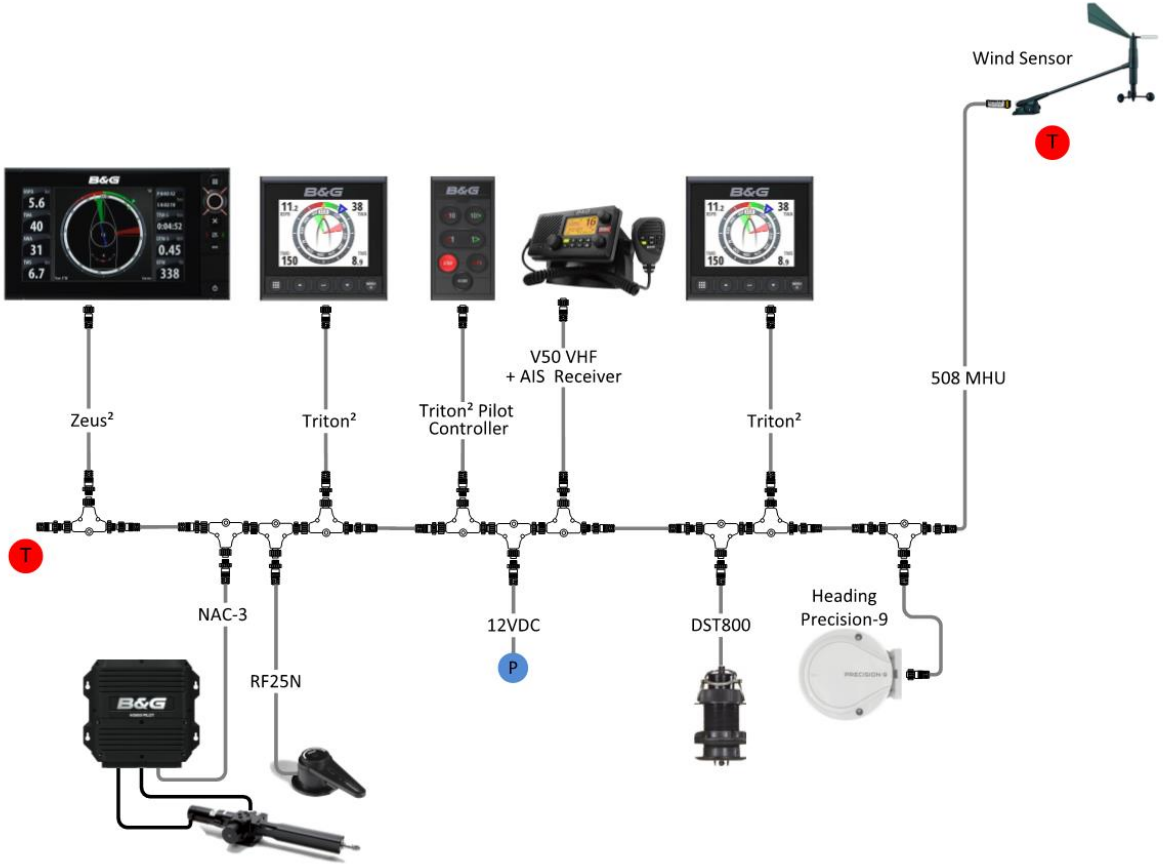
# Example System (1)



# Example System (2)



# Example System (3)



# Language Packs

**Standard Language Pack**:

English(US), English(UK), Danish, German, Spanish, Finnish, French, Greek, Icelandic, Italian, Dutch, Norwegian, Portuguese, Brazilian Portuguese, Swedish, Afrikaans

**Asian Language Pack**:

English (US), Japanese, Korean, Simplified Chinese, Traditional Chinese.

**Eastern European Language Pack**:

English (US), English (UK), Bulgarian, German, Spanish, French, Hebrew, Hungarian, Italian, Slovak

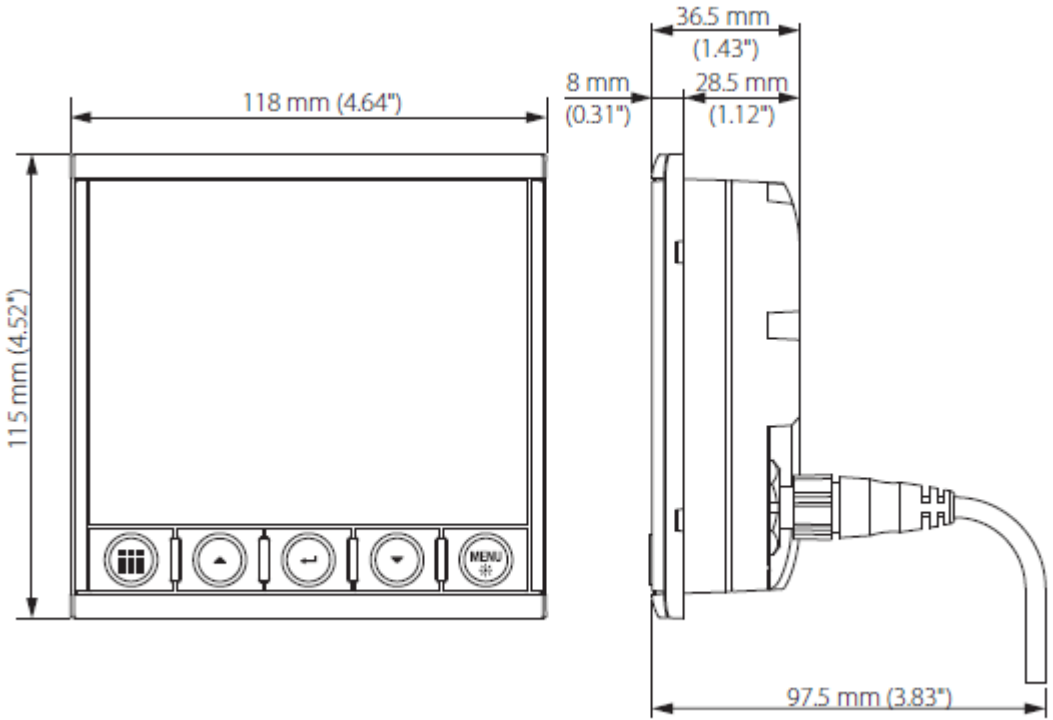
**Russia/Ukraine Language pack**:

English (US), English(UK), German, Spanish, French, Italian, Russian, Ukrainian

# Technical Specs

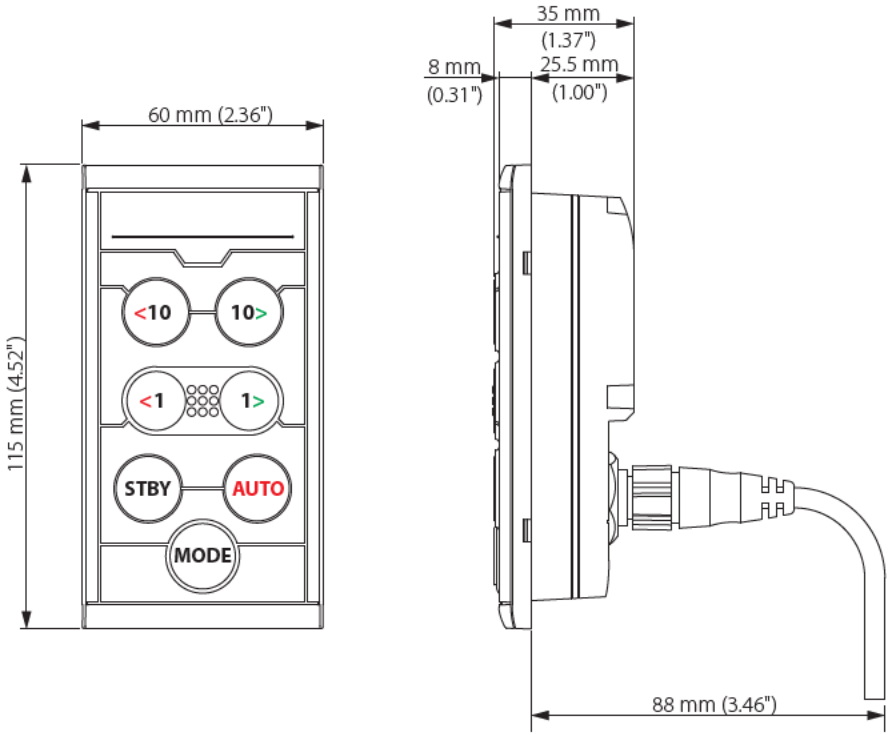
B&G

# Dimensions: Triton$^2$ Instrument Display

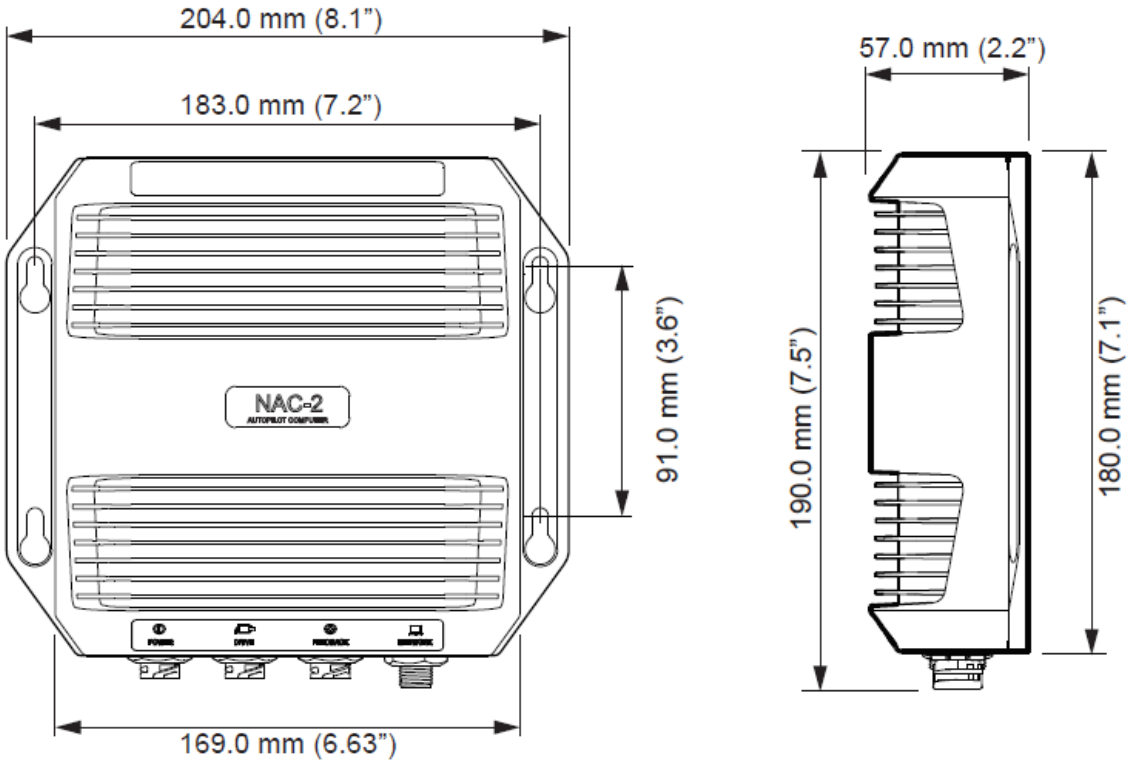



B&G

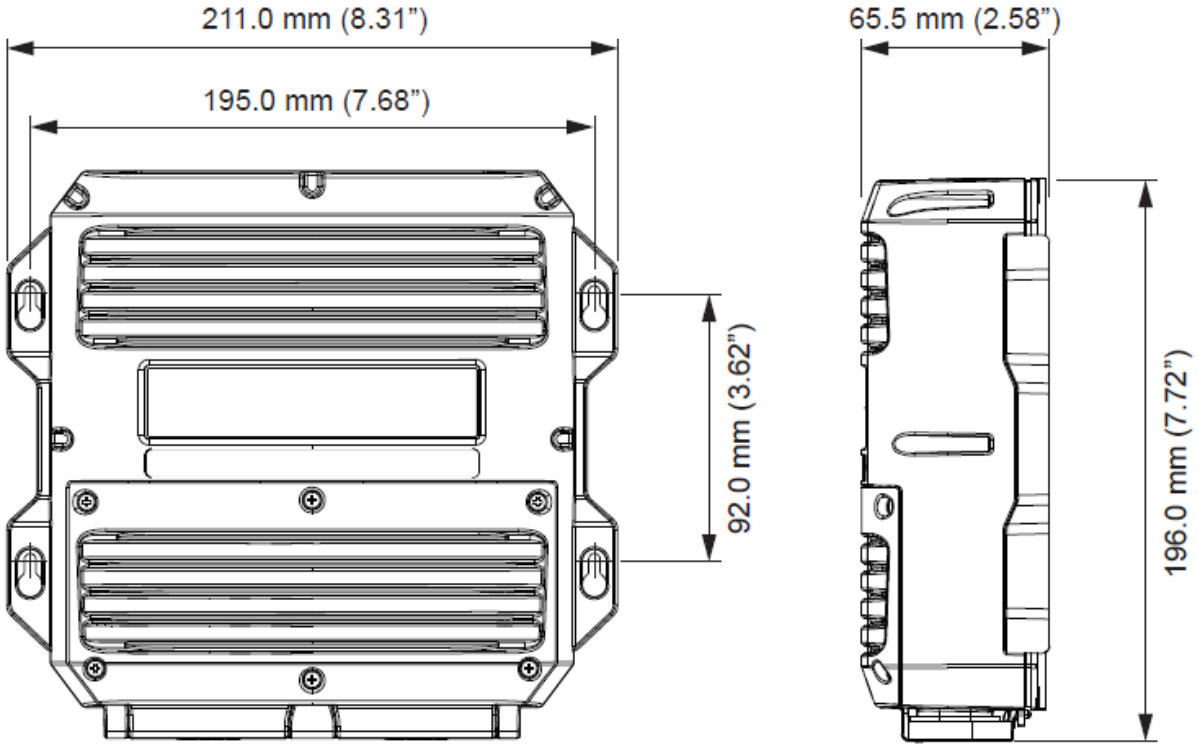
# Dimensions: Triton$^2$ Pilot Controller



# Dimensions: NAC-2 Autopilot Computer



# Dimensions: NAC-3 Autopilot Computer




B&G

# Technical Specifications: Triton² Instrument Display

| Triton² Display Technical Specifications | |
|---|---|
| Dimensions: | 118 x 115 x 28mm (4.6 x 4.5 x 1.1”) |
| Weight: | 0.32 kg (0.7 lbs) |
| Power Consumption: | 2.2 Watts (MAX) |
| Network Load: | 4 LEN |
| Colour: | Black |
| Display Size: | 4.1" (diagonal). 4:3 Aspect ratio |
| Display Type: | Transflective TFT-LCD, bonded. White LED backlight |
| Dsiplay Resolution: | 320 x 240 pixels |
| Illumination: | White for day mode. Red, green, blue or white for night mode |
| Environmental Protection, Waterproof: | IPx7 |
| Environmental Protection, Humidity: | up to 95% RH |
| Compass Safe Distance: | 300mm (1.0”) |
| Temperature Operating: | -25 to +65ºC (-13ºF to +149ºF) |
| Temperature Storage: | -40 to +70 ºC (-40 to +158 ºF) |

B&G

# Technical Specifications: Triton² Pilot Controller

| Triton² Pilot Keypad | |
|---|---|
| Dimensions: | 60 x 115 x 32mm (2.4 x 4.5 x 1.3”) |
| Weight: | 0.12 kg (0.3 lbs) |
| Power Consumption: | 1.4 Watts |
| Network Load: | 3 LEN |
| Colour: | Black |
| Environmental Protection, Waterproof: | Waterproof rating: IPx7 |
| Environmental Protection, Humidity: | Up to 95% RH |
| Compass Safe Distance: | 300mm (1.0”) |
| Temperature Operating: | -25 to +65ºC (-13ºF to +149ºF) |
| Temperature Storage: | -40 to +70 ºC (-40 to +158 ºF) |

B&G

# Technical Specifications: NAC-2 Autopilot Computer

| NAC-2 Technical Specification | |
|---|---|
| **Mechanical/Environmental** | |
| Operating temperature | -25°C to +55°C (13°F to 131°F) |
| Protection | Splashproof, IPx5 |
| Weight | 0.6 kg (1.3 lbs) |
| Overall Dimensions | Width: 7.1 in \ 180 mm |
| | Height: 2.2 in \ 57 mm |
| **Electrical** | |
| Power supply | 9-31.2 V DC |
| Load | 140 mA + drive unit load (@12V) |
| Performance | Drive: 8 A cont., 16 A for 1 s |
| **Interfaces** | |
| Network | 1xMicroC (NMEA2000) |
| Feedback | Variable voltage/resistive 0-5V |
| Power supply | 9-31.2 V DC |
| Solenoid | 12/24V DC, common, load range 10mA to 10A, off current <1mA |
| Clutch | 12/24V DC, min 10mA, max 3A |

# Technical Specifications: NAC-3 Autopilot Computer

| NAC-3 Technical Specifications | |
|---|---|
| **Environment** | |
| Temperature, operation | 0 to +55°C |
| Temperature, storage | -32 to +70°C |
| Protection | IPx7 |
| **Mechanical** | |
| Weight in Kg | 0.7kg, 1.6lbs |
| Dimmension Max size, mm (length x width x height) | 211x196x65.5mm, 8.31"x7,72"x2.58" |
| Mounting | Bulkhead |
| Construction | Plastic |
| Color | Black |
| Cable inlet | Grommet (Spare Incl) |
| **Power** | |
| Local supply | 12/24 V DC +10-30% |
| NMEA 2000 Load Equivalent number (50mA) | 1 |
| **Interface** | |
| Reversible motor control of rudder | Max continious load 30A, peak 50A for 1s |
| On/off solenoid control of rudder | 12/24V DC, common, load range 10mA to 10A, off current <1mA |
| Engage output for bypass/clutch | 12/24V DC, min 10mA, max 3A |
| Rudder angle, frequency input | 15V, 1.4 to 5kHz, resol. 20Hz/° OR NMEA2000 |
| NFU port/stbd input and mode indicator output | External open/close contact, common ret, contact current max 30mA |
| Mode input | External open/close or pulse contact for SYSTEM SELECT, common ret, close to activate, contact current max 30mA |
| External alarm output for buzzer/relay | Max 100mA, voltage level as local supply |
| **Networking** | |
| IEC 61162-1 input (NMEA0183 In) | 1 ch |
| IEC 61162-1 output (NMEA0183 Out) | 1 ch |
| IEC 61162-1 speed | 4800, 9600, 19200, 38400 baud |
| NMEA2000 | Certified (pending) |

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# FAQ’s

# FAQs

**Q. Is Triton$^2$ compatible with Triton (mk.1)?**

A. Yes. Note that some new features in Triton2 cannot be accessed via Triton (mk.1)

**Q. Are NAC-2/3 compatible with Zeus, Zeus Touch, Zeus$^2$ or Vulcan products?**

A. NAC-2 and NAC-3 autopilot computers are compatible with the integrated Pilot control feature in Zeus$^2$ (from v4.0), Zeus2 Glass Helm (from v4.0), Vulcan 7 [mk.1] (from v3.0) and Vulcan FS variants (from v1.5). NAC-2 and NAC-3 autopilot computers are not compatible with Zeus [keypad] or Zeus Touch product ranges

**Q. Can I use Triton$^2$ in place of H5000 Graphic Displays on an H5000 system?**

A. Triton$^2$ will operate with H5000 systems, however there are some features that cannot be accessed on the smaller, Triton$^2$, display including True Wind Correction tables and Boat Speed Linearity tables. Other functions may be limited vs. their representation on H5000

**Q. Can I use the wireless Pilot remote, WR10 Remote, with NAC-2 & NAC-3?**

A. Yes. WR10 is compatible with NAC-2 & NAC-3

**Q. I want to replace my Triton (mk.1) Instrument and Pilot controller with Triton$^2$ so that my instruments match my new Zeus$^2$ MFD, can I keep my AC42 Pilot computer?**

A. Yes. Triton$^2$ is backwards compatible with AC12 & AC42

**Q. I have a AC12 Pilot Computer on my existing network with Triton1 instruments and Pilot Controller, can I replace the Pilot Computer with a NAC-2?**

A. No, Triton (mk.1) instruments and Pilot Controller cannot control a NAC-2 or 3, so you will need a Triton$^2$ Display and Pilot controller to setup and control the autopilot, however, the existing Triton displays can remain and be used as an instrument on the same network.

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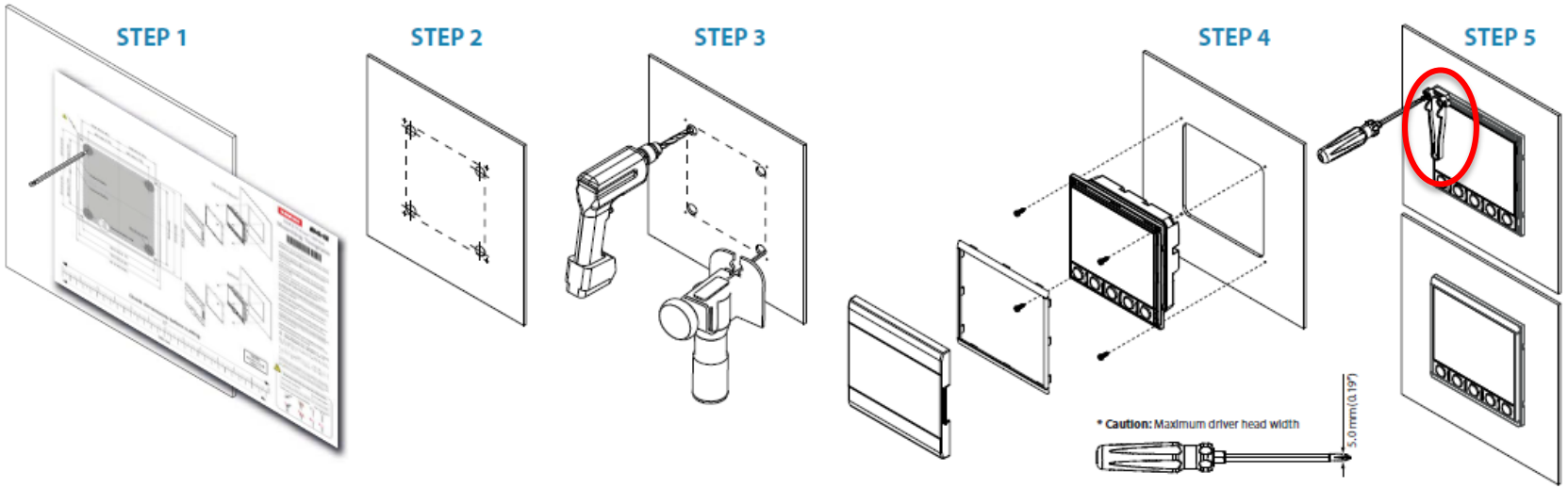
# Technical

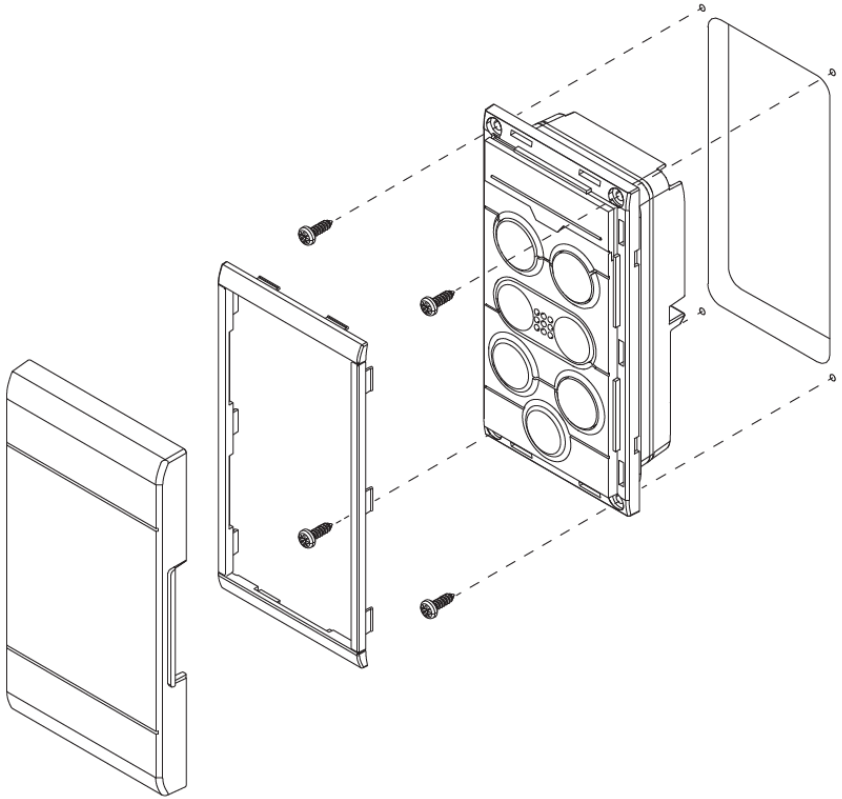
## Mounting & Wiring

# Installation & Mounting: Triton$^2$ Instrument Display

Jig tool included to protect glass during installation



# Installation & Mounting: Triton$^2$ Pilot Controller



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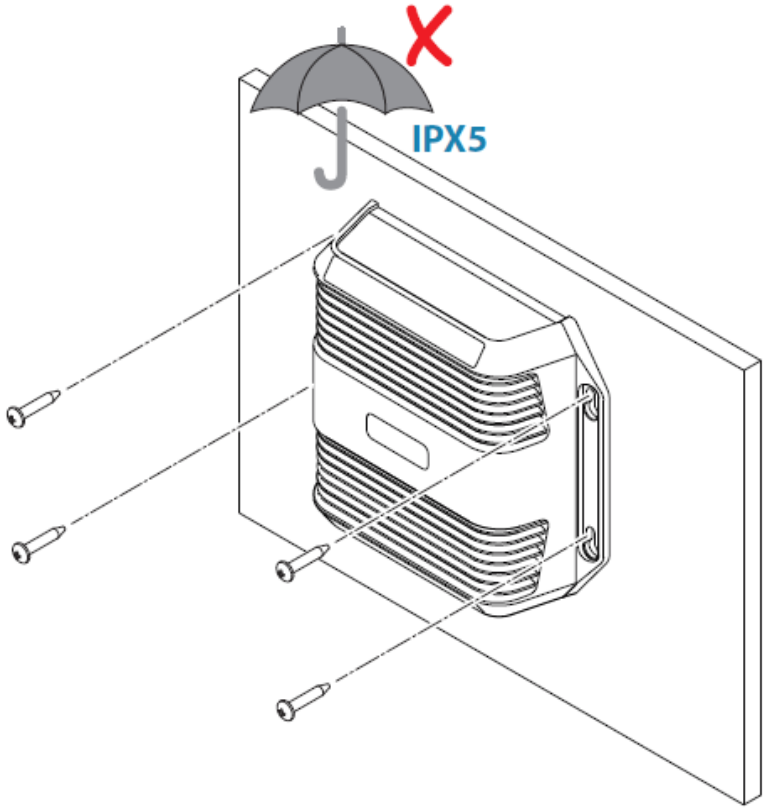
# Installation & Mounting: NAC-2 Autopilot Computer

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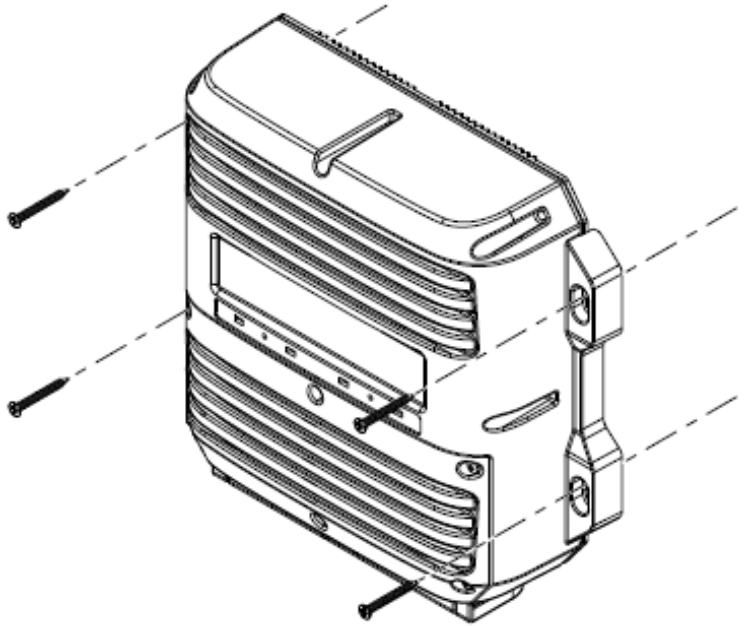
# Installation & Mounting: NAC-3 Autopilot Computer



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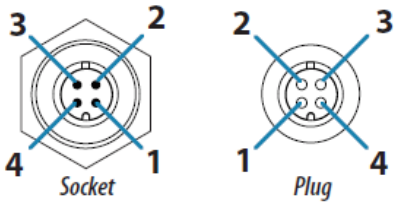
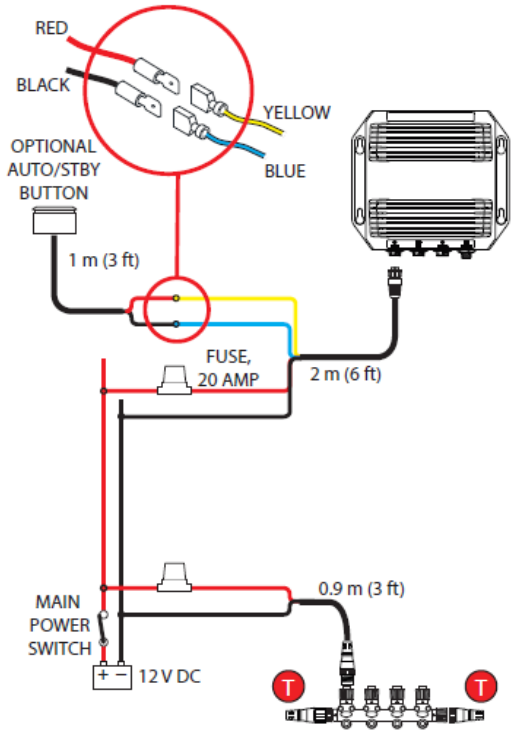
# Advanced Connections: NAC-2 Autopilot Computer (1/3)

## Power




| Key | Function | Color |
|---|---|---|
| 1 | - 0V DC | Black |
| 2 | + 12 / 24V DC | Red |
| 3 | Auto/ Standby button (Optional) | Yellow |
| 4 | | Blue |

## Auto/Stby button (optional)

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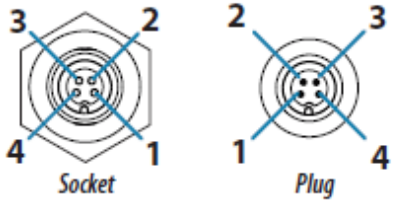
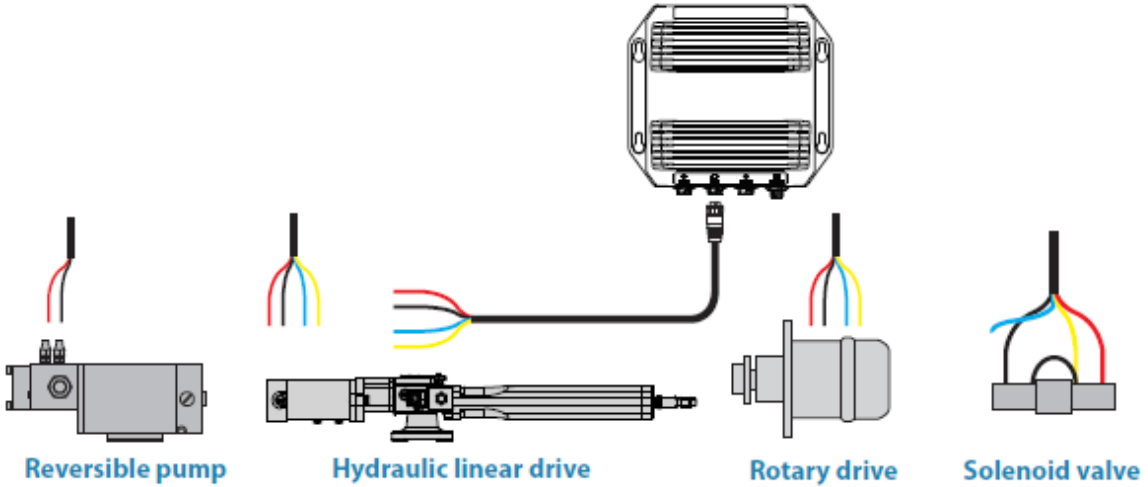
# Advanced Connections: NAC-2 Autopilot Computer (2/3)

## Drive (Max 8A/12A Continuous/Peak)




| Key | Function | Color |
|---|---|---|
| 1 | Clutch GND/Solenoid Common | Yellow |
| 2 | Clutch | Blue |
| 3 | Motor_A | Red |
| 4 | Motor_B | Black |



# NAC-2 Rudder Feedback Details

NAC-2 is using a resistive or voltage RFU, as opposed to the traditional Simrad Freq RFU. Resistive RFU is used by many of our competitors and by many drive and feedback unit manufacturers.

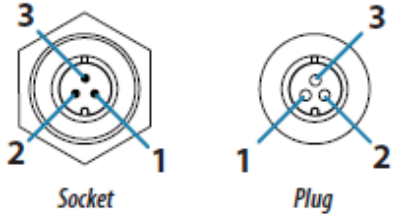
**RFU Options for NAC-2**

- RF25N, NMEA2000 Rotary Rudder Feedback with transmission links
- Plug & Play SD10 has resistive RFU built in and plug directly into NAC-2
- Other generic 0-5V Rudder Feedback/Reference units. Including legacy H3000 rotary & linear feedback units. NAC-2 has a RFU Plug & Cable supplied in the box.

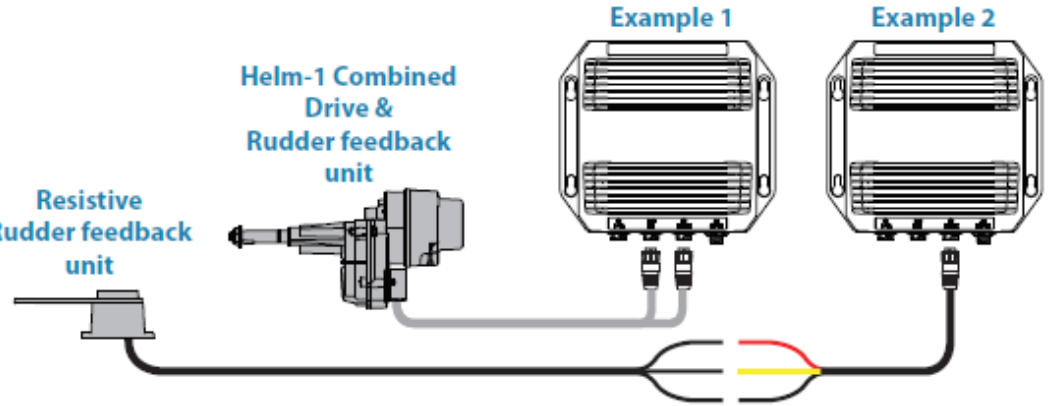
5YU Upgrades from AC12 will be completed with NAC-3 as a replacement so the existing RF300 can be retained.

# Advanced Connections: NAC-2 Autopilot Computer (3/3)

## Feedback



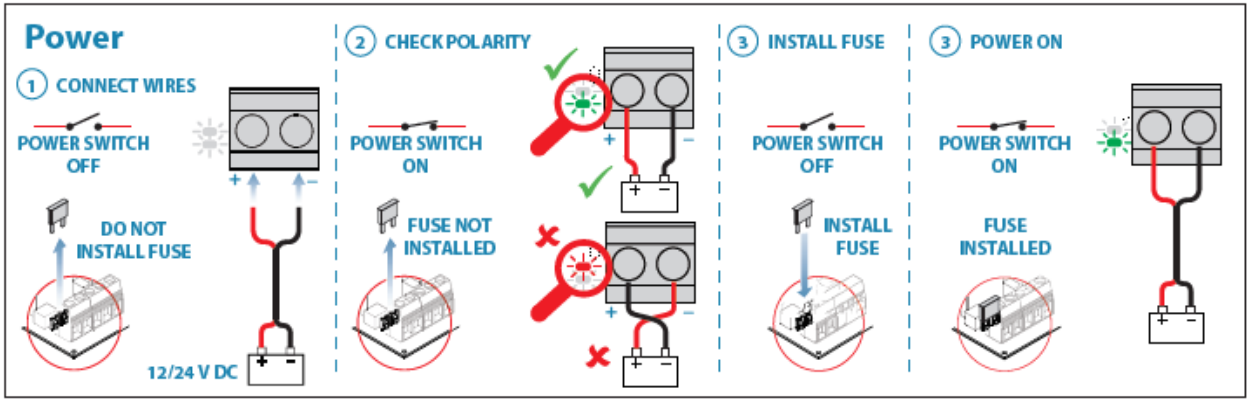

| Key | Function | Color |
|---|---|---|
| 1 | + 5V DC | Red |
| 2 | Signal | Yellow |
| 3 | - 0V DC | Black |

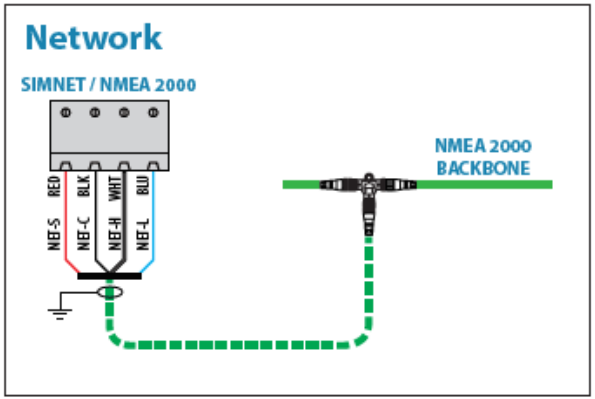


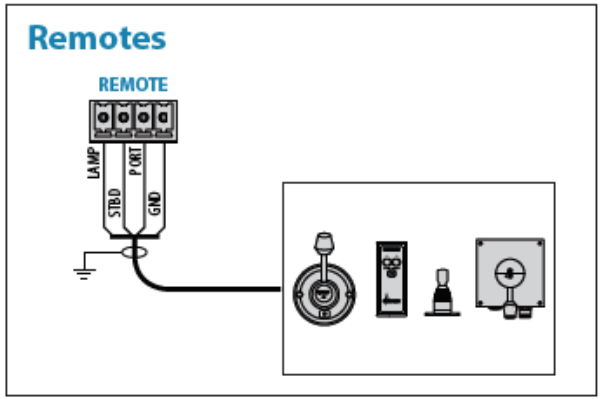

**Note:** Navico NMEA 2000 Rudder feedback units should be connected directly to the NMEA 2000 backbone.

B&G

# Advanced Connections: NAC-3 Autopilot Computer (1/3)

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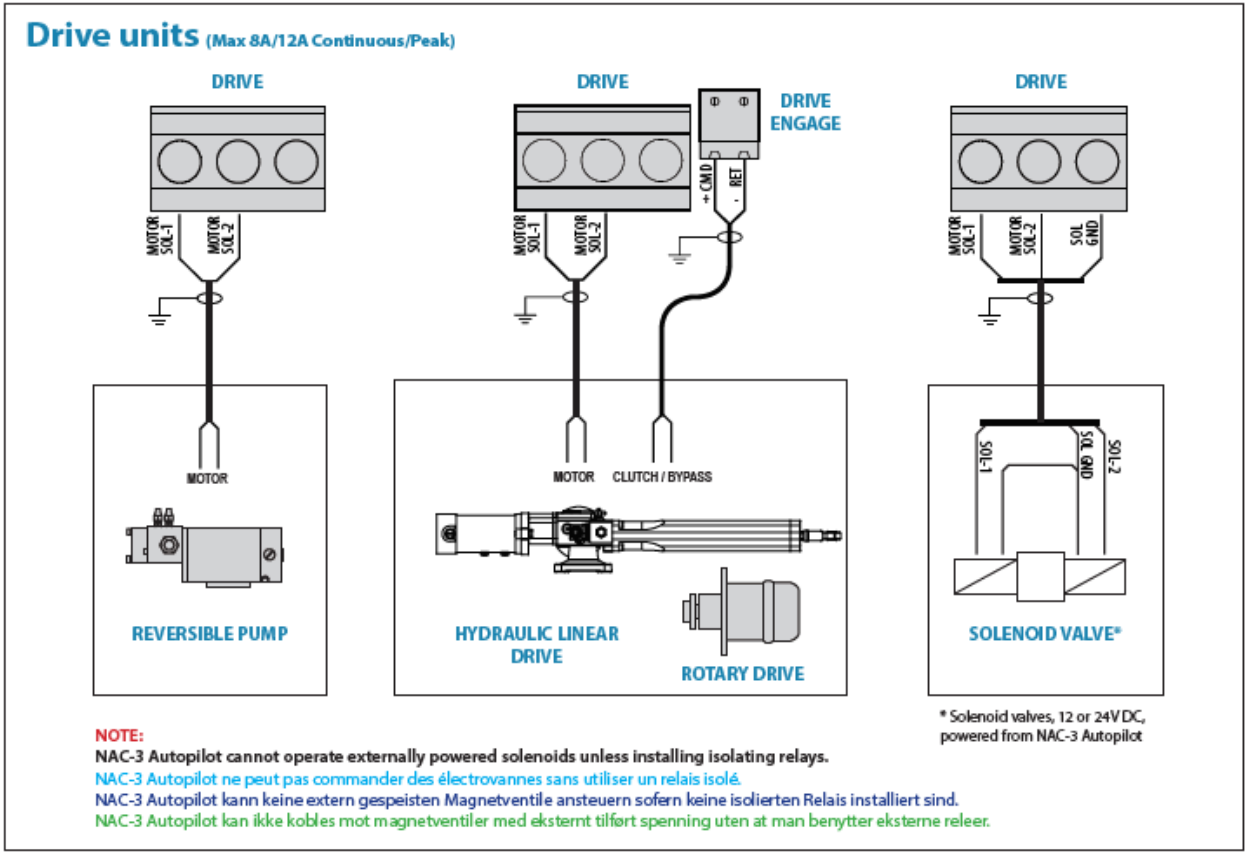
# Advanced Connections: NAC-3 Autopilot Computer (2/3)

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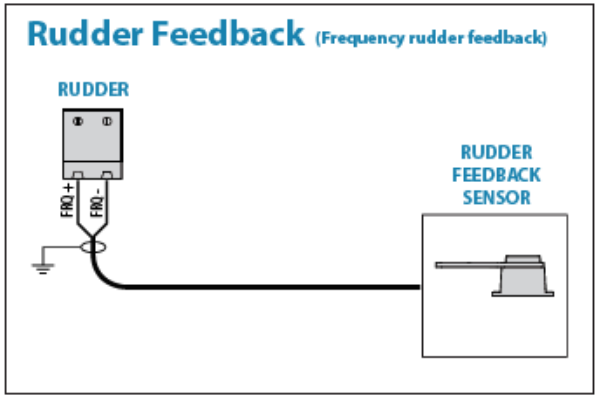
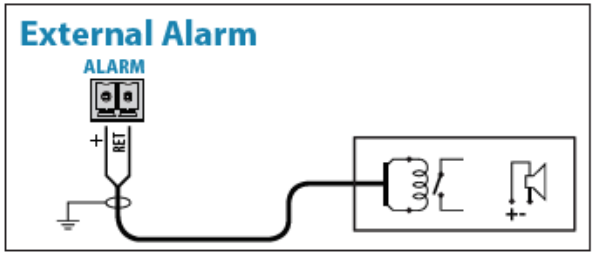
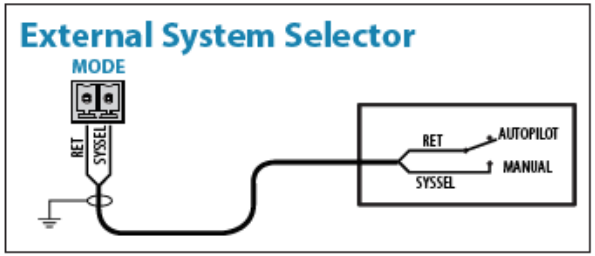
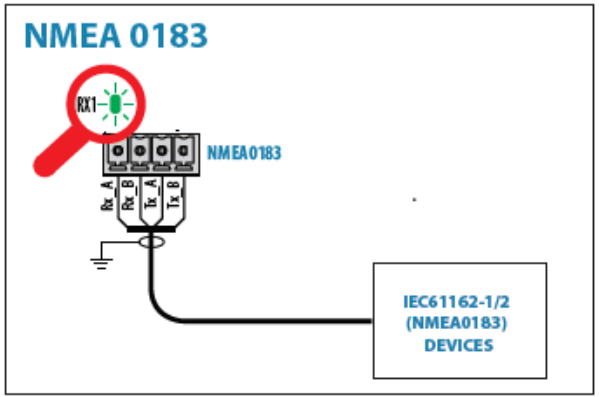
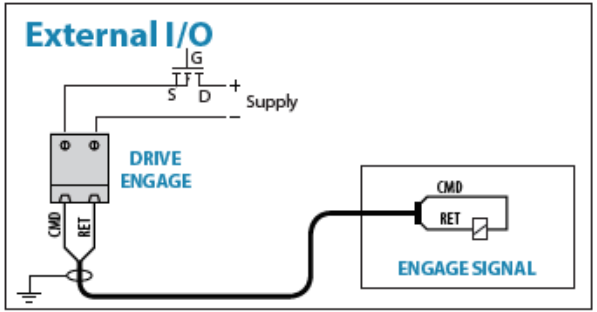
# Advanced Connections: NAC-3 Autopilot Computer (3/3)

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# Precision-9 Auto Calibration 1

For Precision-9, there are two sets of calibration parameters at all times. Those are the user calibration parameters, and the auto calibration parameters which is introduced by this feature. To control which is used, a set of modes for the auto calibration is available for the user with a Navico MFD.

**The different modes are**:

Auto calibration off

Auto calibration on

Auto calibration locked

Auto calibration auto

# Precision-9 Auto Calibration 2

**Auto calibration off:**

The compass uses the available user calibration parameters in the calculation of the heading. The auto calibrator still gathers data and calculates new auto calibration parameters. These parameters can not be put to action until another mode is selected. The result will be a new 20 minute phasing of the parameters.

**Auto calibration on:**

The standard auto calibration mode. At all time new data is gathered and continuously compared to the current auto calibration parameters in use. New parameters are only applied when the performance level is over a certain threshold.

**Auto calibration locked:**

The mode where the auto calibration parameters are not changed.

When the user is satisfied with the performance of the compass heading, they can put the auto calibration mode to auto locked. Still, data is gathered and the data is always compared to the current calibration parameters to update status and warning, but the parameters will never be changed.

This makes this mode suitable for vessels operating in a small geographical area with no big variation in the local magnetic field.

**Auto calibration auto:**

The auto calibrator will change the parameters if the existing parameters are classified to be not valid due to changes in magnetic field and the new parameters are proven to be better. Once the performance of the parameters are classified as valid, the auto calibrator doesn't bother to update new parameters, but will continue to gather data and calculate new parameters should the existing parameters performance drop and be classified as not valid. This is also put as the default state from factory.

# Compatibility

# Compatibility: Backwards Compatibility

| | | B&G | | | | | | | | Accessories |
|---|---|---|---|---|---|---|---|---|---|---|
| | | B&G Pilot heads | | | B&G MFD's | | | | | Remotes |
| Pilot Computers | | Triton Controller | Triton² Controller | H5000 | Zeus | Zeus Touch | Zeus 2 | Zeus2 Glass Helm | Vulcan | WR10 |
| | AC12 | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | AC42 | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | NAC-1 | No | No | No | No | No | No | No | No | Yes |
| | NAC-2 | No | Yes | No | No | No | NOS 55 | NOS 55 | NOS 55 | Yes |
| | NAC-3 | No | Yes | No | No | No | NOS 55 | NOS 55 | NOS 55 | Yes |
| | H5000 | No | Control | Yes | No | No | Yes | Yes | Yes | Yes |

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# H5000 Compatibility

Triton$^2$ Instrument Displays and Pilot Controllers may be used on H5000 systems.

When used on an H5000 system the Triton$^2$ products:

- Can fully configure and control an H5000 Pilot
- Enable additional features which are provided by the H5000 Instrument CPU, e.g.
    - Layline data
    - MOB Estimated Position (drift from known location)
    - H5000 CPU settings / controls not used in Triton$^2$

Triton$^2$ cannot control or view some H5000 CPU based data, e.g.

- Boat Speed Linearity/Heel Correction table
- True Wind Correction tables

# Old vs. New Part Number Reference

| OLD P/N | Description | NEW P/N | Description |
|---|---|---|---|
| 000-10607-001 | Triton Digital Display | 000-13294-001 | TRITON2 DIGITAL DISPLAY |
| 000-10611-001 | Triton Pilot Controller | 000-13296-001 | TRITON2 AUTOPILOT CONTROLLER |
| 000-10608-001 | Triton Speed/Depth Pack | 000-13298-001 | TRITON2 SPEED/DEPTH PACK |
| 000-10609-001 | Triton Speed/Depth/Wind Pack | 000-13299-001 | TRITON2 SPEED/DEPTH/WIND PACK |
| 000-10610-001 | Triton, Pilot add-on System, Low Current | N/A | N/A |
| 000-10619-001 | Triton, Pilot add-on System, High Current | N/A | N/A |
| N/A | | 000-13561-001 | TRITON2 Pilot Controller/Display Pack |
| 000-10616-001 | TRITON DISPLAY x 6 | 000-13295-001 | TRITON2 DIGITAL DISPLAY 6PK |
| 000-10617-001 | PILOT CONTROLLER,TRITON,6 PK | 000-13297-001 | TRITON2 AUTOPILOT CONTROLLER 6PK |
| 000-11036-001 | AC12 Core Pack | 000-13335-001 | NAC-2 Core Pack |
| 000-11038-001 | AC42 Core Pack | 000-13336-001 | NAC-3 Core Pack |

**NOTE**

The presence of parts in the old (left) column does not automatically mean these are End Of Life. Refer to separate Sales Bulletins for EOL notifications where relevant.

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# NMEA2000 PGN's

## NMEA 2000 PGN (transmit)

| | |
|---|---|
| 59904 | ISO Request |
| 60928 | ISO Address Claim |
| 126208 | ISO Command Group Function |
| 126996 | Product Info |
| 127258 | Magnetic Variation |

## NMEA 2000 PGN (receive)

| | |
|---|---|
| 59392 | ISO Acknowledgement |
| 59904 | ISO Request |
| 60928 | ISO Address Claim |
| 126208 | ISO Command Group Function |
| 126992 | System Time |
| 126996 | Product Info |
| 127237 | Heading/Track Control |
| 127245 | Rudder |
| 127250 | Vessel Heading |
| 127251 | Rate of Turn |
| 127257 | Attitude |
| 127258 | Magnetic Variation |
| 127488 | Engine Parameters, Rapid Update |
| 127489 | Engine Parameters, Dynamic |
| 127493 | Transmission Parameters, Dynamic |
| 127505 | Fluid Level |
| 127508 | Battery Status |
| 128259 | Speed, Water referenced |
| 128267 | Water Depth |
| 130577 | Direction Data |
| 128275 | Distance Log |
| 129025 | Position, Rapid Update |
| 129026 | COG & SOG, Rapid Update |
| 129029 | GNSS Position Data |
| 129033 | Time & Date |
| 129038 | AIS Class A Position Report |
| 129039 | AIS Class B Position Report |
| 129040 | AIS Class B Extended Position Report |
| 129041 | AIS aids to Navigation |
| 129283 | Cross Track Error |
| 129284 | Navigation Data |
| 129539 | GNSS DOPs |
| 129540 | AIS Class B Extended Position Report |
| 129283 | Cross Track Error |
| 129284 | Navigation Data |
| 129539 | GNSS DOPs |
| 129540 | GNSS Sats in View |
| 129794 | AIS Class A Static and Voyage Related Data |
| 129801 | AIS Addressed Safety Related Message |
| 129802 | AIS Safety Related Broadcast Message |
| 129808 | DSC Call Information |
| 129809 | AIS Class B "CS" Static Data Report, Part A |
| 129810 | AIS Class B "CS" Static Data Report, Part B |
| 130074 | Route and WP Service - WP List - WP Name & Position |
| 130306 | Wind Data |
| 130310 | Environmental Parameters |
| 130311 | Environmental Parameters |
| 130312 | Temperature |
| 130313 | Humidity |
| 130314 | Actual Pressure |
| 130576 | Small Craft Status |

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