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# PRO PILOT

## Autopilot



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Track - Course - Intercept - Altitude Hold - Climb/Descent  
Altitude PreSelect - GPSS - GPSV - Auto Trim - Fuel Flow  
G Force Limiting - Automatic 180° Turn - Pilot Command Steering  
Track Offset Capability - Important Safety Features

**Trio**  **Avionics**

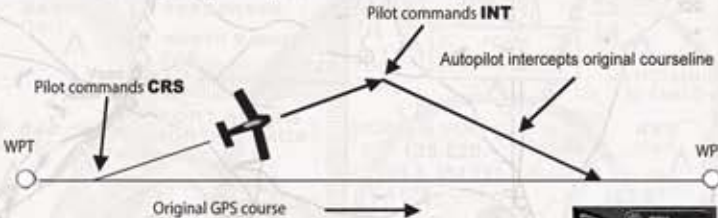
See us online at [www.trioavionics.com](http://www.trioavionics.com)



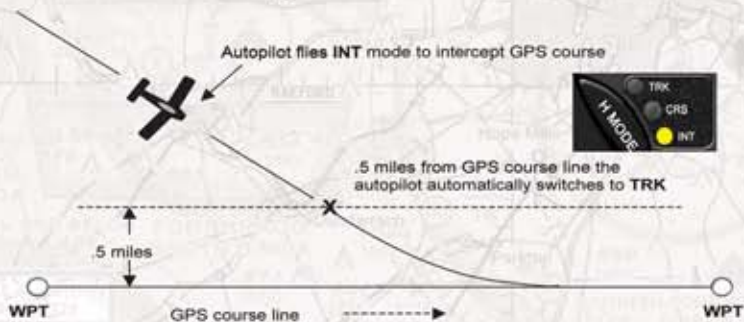
## Horizontal and Vertical navigation modes provide great flexibility



**Track mode (TRK)** - used for area navigation tracking a host GPS flight plan (or GOTO data).



**Course mode (CRS)** - provides vector navigation as illustrated above. CRS also allows tracking an auto-pilot selected course when the host GPS route function is not in use. CRS mode uses the GPS signal to provide the aircraft groundtrack. This mode can be useful for avoiding restricted airspace weather and oncoming air traffic.



**Intercept mode (INT)** - used to intercept a predefined GPS desired track (DTK) as illustrated above. The INT mode also uses the GPS signal to provide the aircraft groundtrack. This mode is useful to regain the original flight plan track after circumnavigating the flight obstacles.

**Altitude Hold** - holds the current altitude. Use the encoder knob to make adjustments for barometric corrections.

**AS/VS -**

allows pilot to command a climb or descent at a selected rate. Pilot may choose the desired vertical speed, or may elect to climb or descend at specific airspeeds by employing Pilot Command Steering. Airspeed limiting prevents the autopilot from stalling or over-speeding the aircraft.

**Altitude Pre-select (ALT SEL) -**

provides the capability to select a target altitude. The pilot may also choose the climb/descent rate, or employ a default rate previously entered into the setup menu. Climb/descent rates decrease when approaching the target altitude to assure a smooth intercept.

**Auto-Trim** - if the aircraft has an electric pitch trim system, this optional feature will keep the elevator trim properly adjusted for all phases of autopilot controlled vertical flight.

### Pro Pilot Standard Features

- Trim Sensing with Annunciator
- Remote Disconnect for Servos
- Auto Servo Disconnect on Takeoff
- Pilot Command Steering
- Adjustable Turn Rate
- Configurable Data Windows
- Programmable Flight Timers

- G Force Limit Protection
- Emergency Course Reversal
- Selectable Track Offset
- Speed Controlled Bank Angle
- GPS Data Scan
- Turn Coordinator with Slip-Skid
- Gold Standard Servos

Trio Avionics designs and manufactures products engineered for outstanding performance while keeping them attractively priced for the LSA and experimental aircraft markets. Innovative design and the use of modern solid state sensors provide superior navigation capability at a competitive price. Our products are designed by pilots for pilots, and we fly them everyday.





**The Pro Pilot series of autopilot systems provides a high-quality, low cost navigation solution for experimental and LSA aircraft**

The Pro Pilot is distinctive in the feature set that it offers to the aircraft owner.

**- Unique Safety Features** - "G" force limiting, automatic servo disconnect on takeoff, "intelligent" servos with full disconnect authority in the event of a malfunction, redundant "supervisory" microprocessors, voice alarms and audible warnings are just a few of the safety considerations. Additionally, flight safety is enhanced by bank angle limiting, Min and Max airspeed limits, track offset capability, and pitch and roll trim sensing. Servos accidentally left engaged during preflight disconnect automatically during the takeoff roll. Trio's "automatic 180 degree turn" feature (for VFR pilots encountering poor weather) has been credited with saving lives.

**- Ease of Operation** - Basic operation is as easy as "turn it on and push the button." Advanced features are easily accessible by means of tactile buttons and a rotary encoder. Multi-color LEDs and a bright PLED display screen provide a clear picture of functions and displayed data (LCD screen is available upon request).

**- Ergonomic Design** - The Pro Pilot is a fit companion to today's sleek, efficient experimental and LSA aircraft. The industrial design reflects an understanding that "functional but boxy" isn't what modern aircraft owners want in their instrument panels.

**- Configurations** - The Pro Pilot may be enhanced with optional features.

**GPSS** - GPS steering uses GPS or EFIS generated roll commands via an ARINC 429 data input.

**GPSV** - GPS Vertical Steering using ARINC 429 vertical data input from advanced WAAS enabled GPS receivers and approach-capable EFIS systems.

**Fuel Management** - Uses a fuel flow sensor and GPS data to provide information on current fuel consumption, fuel used, time and distance remaining. Annunciates low fuel warning.

**Backup Battery** - Provides emergency power to the autopilot, servos, and backup GPS in the event of a failure of the aircraft electrical system. Will continue to fly the airplane for up to 1-1/2 hours



## Gold Standard Servo



The Gold Standard servo is unique in the industry.

The servo has inherent "intelligence" capability acquired by the two internal microprocessors that govern its operation. It has full authority to disconnect itself from the controls if it senses anything that deviates from normal operational conditions. It watches motor driver currents and temperatures (both servo and auto-trim) as well as short circuits. It monitors crank arm positions and will disconnect (and alert the pilot) in abnormal circumstances - i.e. extreme elevator/aileron positions. The servo will disconnect if the "G" force limitations are exceeded. It will also disconnect itself if it detects a communications error. A reliable slip clutch allows the pilot to override the servo in emergency situations. It fully disconnects the internal gears when not engaged so the pilot will not feel any drag on the control system.

The servo communicates with the control head via a high-speed bidirectional data bus. This unique capability allows it to inform the control head (and the pilot, via the display screen) of any unusual activity within the servo. For instance, it can notify the pilot if the clutch is not properly adjusted. If critical activity is reported, the control module will immediately remove all power from the servo, releasing the controls and (if installed) automatic trim system.

## Pro Pilot Specifications

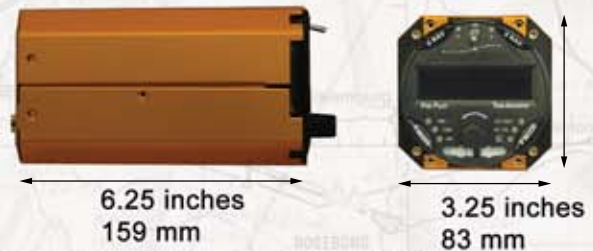


### Weight

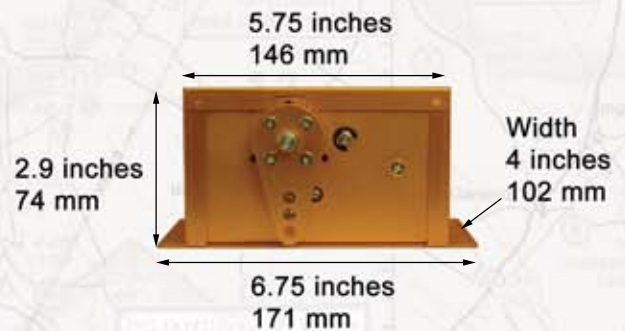
Control Head 12 ounces / 340 grams  
Each Servo 27 ounces / 765 grams

### Current draw @ 12 VDC

Power On - servos off 308 ma  
Servos engaged, at rest 600 ma  
Servos engaged and moving 1.6 amp



Control head fits standard 3-1/8" instrument cutout



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