MOOG | AIRCRAFT | AVIONICS

GENESYS™ AUTOPILOTS

FOR FIXED-WING & ROTARY-WING AIRCRAFT

MOOG

A LEGACY OF AUTOPILOT SOLUTIONS

A TRUSTED NAME IN AIRCRAFT AUTOPILOTS

Moog's Genesys brand of autopilots have been produced for over 40 years. Its autopilot heritage includes S-TEC® Corporation, which is still a highly recognized name that have been in the industry for decades.

Autopilot solutions include the Genesys (AKA S-TEC®) autopilot product line for fixed-wing aircraft and the Genesys (AKA GRC™) autopilot product line for rotary-wing aircraft. From low-cost analog wing levelers to sophisticated, digital, multi-axis systems with Flight Director and envelope protection; Moog autopilots have FAA certification for over 1,000 aircraft types with over over 40,000 autopilot systems delivered.

INNOVATION, PERFORMANCE, VALUE & SUPPORT

Moog's Genesys autopilots have gained a reputation of providing Innovation, Performance, Value and Support through its products and services. Choosing Moog autopilots provides a low risk decision for avionics modernization upgrades resulting in improved operational capabilities and increased mission effectiveness.

ENHANCING OPERATIONAL CAPABILITIES

Moog's mission is to improve aircraft capabilities through innovative, avionic solutions tailored to unique operational characteristics and needs.

- Innovation – Moogs' legacy provides safety enhancing, intuitive flight controls and avionics. From digital autopilots to advanced radios & synthetic vision glass cockpits, Genesys Aerosystems brand of avionics products improves the total flying experience.
- Performance – Moog's solutions are designed and tested to perform under the most stringent operational environments to meet and exceed expectations when duty calls.
- Value – Moog's solutions provide a much greater total value compared to competing solutions on the market.
- Agility – Moog prides itself on providing quick and personalized responses resulting in large company quality with small company speed.
- Support – Moog backs up all of its products with total support to ensure continued operation and customer satisfaction.

S-TEC® FIXED-WING AUTOPILOTS

S-TEC 55X AUTOPILOT

HIGH PERFORMANCE AUTOPILOT

Fully IFR-capable, with NAV and glide slope intercepts that make approaches in IMC a breeze.

GPS ROLL STEERING

When coupled to a GPS navigator, the 55X does not follow CDI movement but the commands directly from the navigator to anticipate turns.

CONTROL WHEEL STEERING

Hand-fly aircraft and then let the autopilot take over to hold the existing turn rate and vertical speed.

COMPATABILITY

The S-TEC 55X is a 2-Axis (3-Axis available on some models) Flight Control System, with optional Automatic Pitch Trim. Whether you have advanced glass EFIS displays or the traditional 6-pack steam gauges, the S-TEC 55X supports a wide variety of cockpit setups.

HUNDREDS OF STC'S AVAILABLE

From light singles through twins, there's a good chance the 55X covers what you fly.

FEATURES

- Case contained, radio stack mount
- Heading preselect and hold*
- Altitude hold with optional automatic electric trim
- Numerous NAV modes (GPS, VOR, ILS, LOC)
- Intercept modes - HDG to NAV, NAV to APR & HDG to APR
- Precise Approach control for LPV, LNAV, VNAV, LOC, ILS, & VOR
- Vertical speed control
- Altitude preselect**

* Requires heading system with a heading bug
** Requires a baro corrected source

DIMENSIONS

- Width: 6.25" (159mm)
- Height: 1.50" (38mm)
- Depth: 9.46" (240mm)

WEIGHT

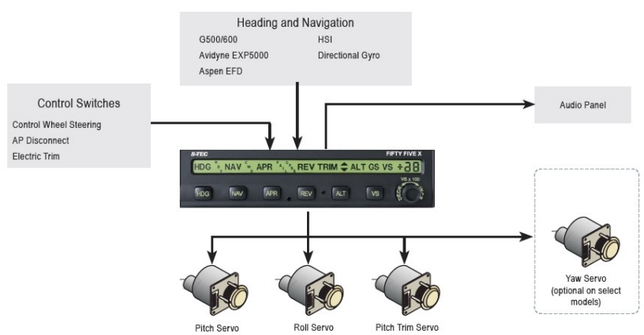
- 2.7 lbs (1.22 kg) (Autopilot only)

HARDWARE

- RTCA DO-160C to meet TSO-C198

SOFTWARE

- RTCA DO-178C Level A



S-TEC® FIXED-WING AUTOPILOTS

S-TEC 3100 AUTOPILOT

DIGITAL ATTITUDE BASED AUTOPILOT

Unlike traditional legacy autopilots that rely on roll information from a turn coordinator, and pitch information from a pressure transducer, the 3100 makes precise corrections based on very accurate internal digital AHRS data.

COMPATABILITY

The 3100 autopilot is a 3-Axis (2-Axis available on some models) Digital Flight Control System (DFCS), with standard Automatic Pitch Trim. Whether you have advanced glass EFIS displays or the traditional 6-pack steam gauges, the 3100 supports a wide variety of cockpit setups. An AHRS is built into the 3100 and is utilized to drive the precise movements of the servos in aircraft lacking a digital EFIS display.

STRAIGHT AND LEVEL RECOVERY

The 3100's Straight and Level button (LVL), delivers fast and simple automatic recovery to level flight from an unusual attitude no matter what the visibility. Once engaged, LVL instantaneously overrides previous autopilot inputs to safely return and hold your aircraft at a neutral attitude while you get things sorted out.

ENVELOPE PROTECTION AND ALERTING*

The 3100 DFCS helps minimize the chance of entering into an inadvertent stall, unusual attitude, over-speeds or excessive banking situation caused by aggressive autopilot inputs through automatic pitch corrections and visual/aural alerts for pilot situation awareness.

*Additional equipment may be required in some configurations

ENROUTE GPS NAV

When paired to an approved GPS and EFIS, the 3100 can follow the step down enroute vertical guidance from the GPS. This feature is particularly useful when following Standard Terminal Arrival Routes (STARs).

FEATURES

- Flight Director
- Lateral and Vertical navigation functions including LPV, HDG, GPSS, VOR, LOC, GS, ALT, GPS LNAV, GPS VNAV
- Vertical navigation targets set on the bezel or compatible EFIS
- Altitude Preselect** and Hold with Autotrim
- Vertical Speed Control (VS)
- Indicated Airspeed Control (IAS)**
- Under Speed and Over Speed Warnings**
- Roll Envelope Exceedance Warning
- Course Intercept capability HDG/NAV and HDG/APR
- Automatic Trim
- Voice Annunciations
- Single Button Straight & Level (LVL)
- Enroute GPS Vertical Navigation (VNAV)**

**Additional equipment may be required in some configurations

DIMENSIONS

- Width: 6.25" (159mm)
- Height: 1.45" (37mm)
- Depth: 9" (229mm)

WEIGHT

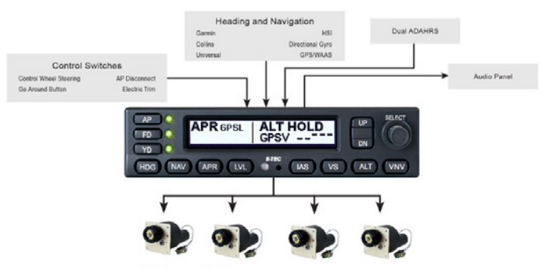
- 2.6 lbs (1.18 kg) (Autopilot only)

HARDWARE

- RTCA DO-160G to meet TSO-C198

SOFTWARE

- RTCA DO-178C Level A



S-TEC 5000 AUTOPILOT

DIGITAL ATTITUDE BASED AUTOPILOT

Unlike traditional legacy autopilots that rely on roll information from a turn coordinator, and pitch information from a pressure transducer, the S-TEC 5000 makes precise corrections based on very accurate intneral digital AHRS data.

COMPATABILITY

The S-TEC 5000 is a 3-Axis Digital Flight Control System (DFCS), with standard Automatic Pitch Trim. Whether you have advanced glass EFIS displays or the traditional 6-pack steam gauges, the S-TEC 5000 supports a wide variety of cockpit setups. An AHRS is built into the S-TEC 5000 and is utilized to drive the precise movements of the servos in aircraft lacking a digital EFIS display.

OBSOLESCENCE UPGRADE

The S-TEC 5000 provides an economical option to upgrade older obsolete Part 23 and Part 25 autopilots with improved in-flight performance from modern digital avionics. The S-TEC 5000 design is based on Genesys' S-TEC autopilot legacy experience, with 1000's of autopilots installed and in operation.

NEXTGEN AIRSPACE OPERATIONS

The S-TEC 5000 was designed with modern airspace operations in mind. Today's aircraft operate in crowded airspaces and need to take advantage of the requirements of modern airspace navigation and approach procedures for improved operations. The S-TEC 5000 meets the requirements of RVSM operations and able to operate using WAAS GPS Satellite Navigation and Approaches and RNP procedures in addition to traditional legacy navigation and approach procedures and equipment.

FEATURES

- Altitude Preselect & Hold w/Autotrim
- Digital Vertical Speed Command
- Yaw Damper and Turn Coordination
- Course Intercept Capability
- HDG to NAV Intercept - HDG/NAV & HDG/APR
- VOR/LOC/GS/REV/GPS Course
- Flight Director
- Pitch Steering
- Control Wheel Steering
- GPS Steering (GPSS)
- Envelope Protection and Alerting
- Vertical Navigation (VNV)*
- Heading Control
- Vertical Speed Control (VS)
- Indicated Airspeed Control (IAS)
- Autopilot Mode Annunciations
- Voice Annunciations
- All Axis Trim Control
- Straight and Level Recovery (LVL)
- Go Around (GA) and Take-off Go Around (TOGA)
- Half Bank
- RVSM Compatible

*Compatible EFIS and GPS equipment required

DIMENSIONS

Width: 6.25" (159mm)
Height: 1.45" (37mm)
Depth: 9" (229mm)

WEIGHT

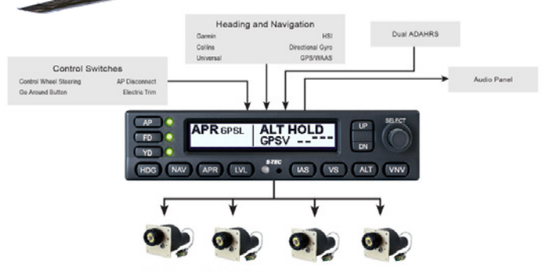
2.6 lbs (1.18 kg) (Autopilot only)

HARDWARE

RTCA DO-160G to meet TSO-C198

SOFTWARE

RTCA DO-178C Level A



GRC™ ROTARY-WING AUTOPILOTS

VFR AUTOPILOT – GRC™ 3000

VFR AUTOPILOT FOR LIGHT & MEDIUM ROTORCRAFT

WORKING ALL THE TIME, SO YOU DON'T HAVE TO

GRC 3000 VFR autopilot and stability augmentation system (AKA HeliSAS®) is the leading autopilot certified for light and medium rotorcraft. This affordable system greatly improves safety, dramatically reduces pilot workload, and provides unprecedented levels of control and confidence in the cockpit, especially in inadvertent IMC onditions. The autopilot delivers life-saving technology, backed by responsive personalized service.

Designed to be on all the time, it helps return the rotorcraft back to straight and level in the event it is inadvertently flown into an unusual attitude or if a pilot becomes disoriented due to a loss of visual references. The autopilot features capabilities such as lateral (GPS, VOR and LOC) and vertical modes (GPS VNAV, VS, ALT). Combining both stability and autopilot functions leads to increased pilot confidence to focus on other tasks.

SIGNIFICANT STABILITY IMPROVEMENT

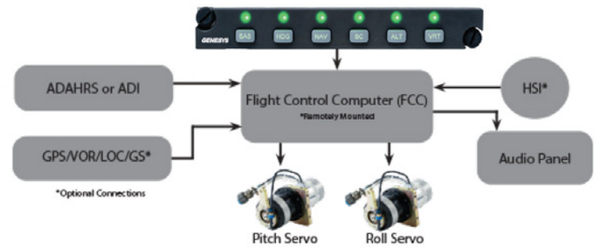
Pilots with no rotorcraft experience have successfully hovered a GRC autopilot equipped rotorcraft with very little practice.

AUTOMATIC RECOVERY TO NEAR-LEVEL FLIGHT

If the rotorcraft is inadvertently flown to an unusual attitude, releasing the cyclic when the autopilot is engaged will automatically return the rotorcraft to a neutral attitude.

Further, the autopilot system provides many of the functions found in very heavy, expensive rotorcraft autopilots, these functions include:

- SAS Engages system to provide attitude stabilization at all speeds.
- HDG Selects the desired heading the pilot wants to fly. If a Horizontal Situation Indicator (HSI) is installed, it will fly to and maintain the heading selected by the heading bug. If there is no HSI, the HDG function will maintain the existing GPS track.
- NAV The active GPS, VOR, or Localizer course will be automatically intercepted and tracked when NAV is engaged. VOR and Localizer coupling require an HSI. GPS does not.
- BC Intercepts and flies a back course localizer approach (requires an HSI).
- ALT Maintains the existing altitude for an indefinite period.
- VRT Vertical navigation allows automatic flying of ILS glide slope or GPS VNAV if a WAAS-enabled GPS is installed. Both functions require an HSI.



IFR AUTOPILOT – GRC™ 3000, GRC™4000

IFR AUTOPILOT FOR FAR PART 27/29 ROTORCRAFT

WORKING ALL THE TIME, SO YOU DON'T HAVE TO

The GRC IFR autopilots include more robust hardware and redundancy for the harsher environment and heavier controls of larger rotorcraft. The IFR autopilots (GRC™ 3000, GRC™ 4000) are designed for three-axis (pitch, roll, and yaw) and *four-axis (pitch, roll, yaw, and hover hold with collective control). GRC autopilots can also work in conjuction with the existing Stability Augmentation System (SAS) to add upper mode capabilities.

Designed to be on all the time, the SAS helps return the rotorcraft back to straight and level in the event it is inadvertently flown into an unusual attitude or if a pilot becomes disoriented due to a loss of visual references. The autopilot also features other capabilities, such as lateral (GPS, VOR and LOC) and vertical modes (GPS VNAV, VRT/GS, ALT, SPD). Combining both stability and autopilot functions leads to increased pilot confidence to focus on other tasks. Additionally, beep trim allows the pilot to keep both hands on the controls while changing heading, altitude, vertical speed and indicated airspeed targets.

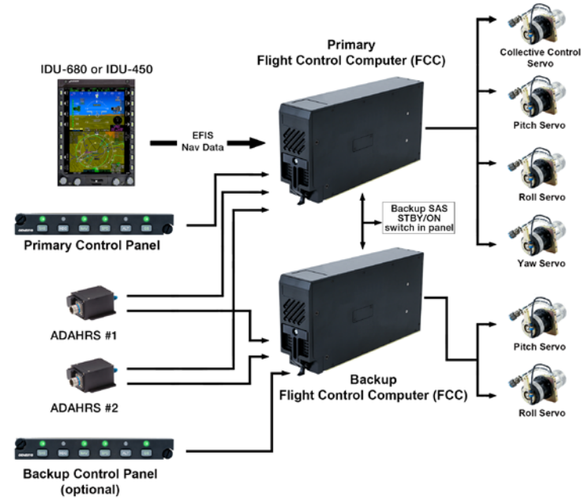
KEY FUNCTIONS

GRC IFR autopilots provide many of the functions found in very heavy, expensive rotorcraft, these functions include:

- SAS Engages system to provide attitude stabilization at all speeds.
- HDG Selects the desired heading the pilot wants to fly. If a Horizontal Situation Indicator (HSI) is installed, the autopilot will fly to and maintain the heading selected by the heading bug. If there is no HSI, the HDG function will maintain the existing GPS track.
- NAV The active GPS, VOR, or Localizer course will be automatically intercepted and tracked when NAV is engaged. VOR and Localizer coupling require an HSI. GPS does not.
- SPD Indicated Airspeed Hold allows pilots to select a specific airspeed for climbs and descents.
- ALT Maintains the existing altitude for an indefinite period. Pilots can also preselect their altitude.
- VRT/GS Vertical navigation allows automatic flying of ILS glide slope or GPS VNAV if a WAAS-enabled GPS isinstalled

*Only available on approved helicopter models

.



MOOG | Shaping the way our world moves™

+1.817.215.7600
Genesys-Aerosystems.com

The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement.

Form 500-1458 0225