

Flight Control Products & Systems

SYSTEM FIFTY FIVE X

Full-function Two-Axis Flight Control System

The System Fifty Five X is a high-performance, 2-axis (roll & pitch) autopilot in an avionics stack-mounted case, containing the mode selector/programmer, annunciator, roll & pitch computers, and servo amplifiers.

HDG (heading) mode – heading pre-select and hold*. When HDG & NAV are activated simultaneously, enables Dual Mode Intercept – autopilot operates in heading mode to automatically intercept and track selected course or localizer; at which point HDG extinguishes.

NAV (coupled navigation) mode – automatic intercept and tracking of enroute NAV signals (VOR/GPS), or LOC (REV for backcourse). 3-level gain selection for NAV mode is automatic. When APR is lit (simultaneous with NAV), indicates high gain localizer mode for high sensitivity coupled approach. Flashing NAV or REV annunciates course deviation by a needle deflection of 50% or more. Selecting APR increases gain sensitivity for VOR or GPS approaches.



Control Wheel Steering (CWS) – allows you to hand-fly the aircraft and then let the autopilot take-over to hold the existing turn rate and vertical speed; can be overridden and hand flown, then re-engaged.



Mode selector buttons for HDG (heading hold and heading pre-select*), NAV (tracking VOR enroute), APR higher gain for GPS enroute, and LOC, VOR & GPS approaches), REV (LOC backcourse), ALT (altitude) hold, and VS (vertical speed) command.

TRIM & arrows annunciate motion of auto trim or manual electric trim, if equipped; if not equipped, annunciates out-of-pitch-trim condition.

Digital vertical speed in 100' increments.

GPSS_{by S-TEC} (GPS Steering) integrates A/P with GPS Navigator function, which outputs roll steering commands. GPSS does not follow a CDI needle movement; it acts on direct left/right steering commands from the Navigator for extremely accurate, hands-off GPS navigation. See separate GPSS data sheet for details.

Pitch modes include: VS, indicating vertical speed control has been selected; ALT, indicating altitude hold is engaged, capturing existing altitude when activated; and GS, indicating glide slope coupling is armed and/or active. In altitude hold mode, altitude can be adjusted (trimmed) in 20' increments using VS knob.

S-TEC's flagship autopilot system, the System Fifty Five X replaces the System 55, and incorporates these performance enhancements:

- New Display – LCD display now black-on-silver for greater contrast and significantly improved readability.
- GPSS_{by S-TEC} (GPS Roll Steering) – flies the composite roll steering commands output by the newer GPS Navigators, for enroute navigation and limited approach/transition procedures such as DME arcs. GPS manufacturers are currently expanding their databases and software to include full procedure approaches, transitions to approaches, procedure turns, holding patterns and more.
- Lift Compensation in Turns – holds altitude more precisely in A/P com-

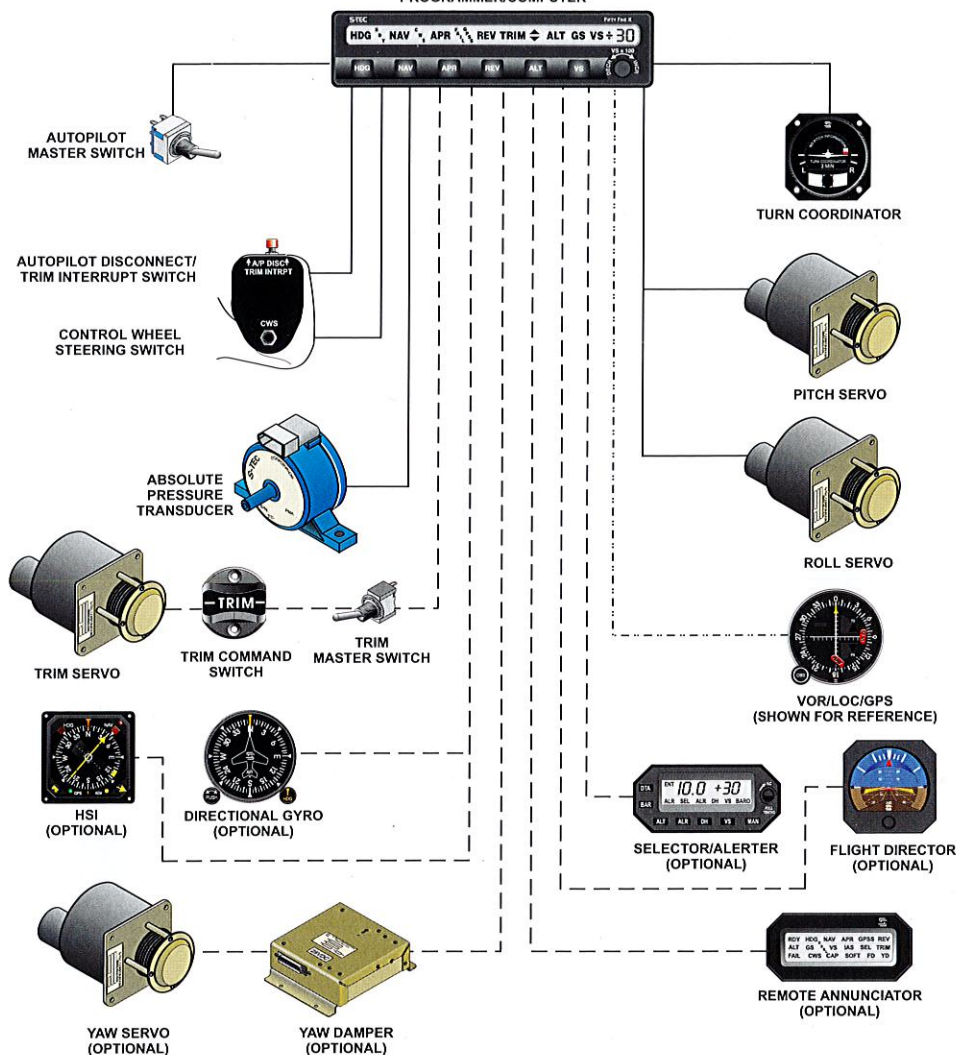
manded turns, with little or no loss of altitude.

- Heading Intercepts – newly commanded headings, even in large changes, result in minimal or no S-turning to accomplish intercept.
- Course Intercepts – enhanced by improved reaction to varying closure rates during leg changes.
- ILS Coupling Performance – as a result of the above enhancements, coupled performance on ILS Approaches is dramatically better.
- Flight Director Performance – improved so the pilot is able to hand fly the airplane more precisely in response to commands from the system.

Please see the reverse side for a system schematic, and detailed features, functions and options.

SYSTEM FIFTY FIVE X

PROGRAMMER/COMPUTER



Features/Functions

- Case-contained, radio stack mount
- GPSS by S-TEC (GPS Roll Steering)
- Heading Preselect & Hold
- Altitude Hold with Altitude Trim
- Course Intercept Capability
 - NAV Mode
 - Dual Mode – HDG/NAV & HDG/APR
- VOR/LOC/GS/REV/GPS Coupling with 3 Gain Levels
- Selectable Coupling Gain
- VOR/LOC/GS/REV/GPS Course Deviation and NAV Flag Warning
- Digital Vertical Speed Command

- Pitch Trim Annunciation
- Control Wheel Steering

Options

- Directional Gyro with Heading Bug, Vacuum Driven
- ST-180 HSI Slaved Compass System
- ST-361 Single Cue Flight Director
- ST-360 Altitude Selector/Alerter System
- Remote Annunciator
- Automatic or Manual Electric Trim (where STC'd)
- Yaw Damper (where STC'd)

* Operational if optional heading system (e.g., DG or HSI with heading bug) is installed and active.



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