ThrustSense®
Full Regime Autothrottle

PC-12 Autothrottle

Innovative Solutions & Support
**ThrustSense: Full Regime Autothrottle for the PC-12**

Overview

The IS&S Autothrottle (A/T), ThrustSense, is a full regime A/T, from takeoff to landing phases of flight including go around, in addition the system incorporates engine and speed exceedance protection. Think FADEC functionality with low and high speed protection for the PC-12. ThrustSense is an elegant solution that improves safety, performance, is high value, light weight, installs with minimal downtime and is a mature and proven System. The Return on Investment (ROI) for the A/T includes fuel savings of 3% and when flying constant AoA the fuel savings is 10%. In addition, the engine exceedance protection will pay for the system with one hot section inspection and repair.

The IS&S ThrustSense Autothrottle ensures stabilized approaches by controlling speeds in the descent. During high pilot workload the autothrottle prevents the airplane from getting dangerously slow or fast and protects against overtorque and overtemp enhancing the safety and capability of your PC-12.

Control of the revolutionary autothrottle is housed in an easy to install Flight Instrument Standby that provides standby functionality on a high resolution LCD display. The optimized design for retrofit allows for no structural modifications to the existing throttle quadrant.

**ThrustSense Features:**
- FADEC Like Engine Protection
- Hot Start Protection
- Over/Under Speed Protection
- Vs, Vmo Limit Protection
- In-Trail Spacing
- Haptic Feedback
- Turbulence Penetration Auto Speed
- RNP Speed Management
- Integrated Standby Functionality to work in any NextGen Flight Deck

**Benefits:**
- High Value System
- Reduced Pilot Workload
- Increased Situational Awareness
- Stabilized Approaches
- Asymptotic Approach Into Speed Targets
- No Additional Force Required to Over-ride Power Lever
- Installation - minimum modifications to existing flight deck

---

**Innovative Solutions & Support**
ThrustSense Operation

ThrustSense on PC-12 NG; also available for Legacy

CLIMB
The target torque value for climb is computed based on the Maximum Climb Torque performance table from the AFM. Transitions automatically after 2.5 minutes coming out of the TO/GA mode and is active when the magenta color A/T CLIMB MODE annunciator is displayed. A/T climb is achieved until manual change of torque setting.

TURBO
Take-off (TO) is activated on ground when the Go Around has been activated on the autopilot. The target Torque value is automatically computed based on the Static takeoff Torque performance from the AFM. The A/T has engine limit protection.

CRUISE
Torque Mode will control to an engine torque target value that is set by means of an adjustable target torque value. Can be manually adjusted using the rotary knob on the ISU. Will control to the torque target until the engine ITT limit is approached then will be controlled to not exceed the configured ITT Limit. The A/T has Vmo limit protection.

DESCENT
Airspeed Mode will hold an indicated airspeed (IAS) target that is the same as the selected airspeed value that is manually set on the ISU using the rotary knob. The Airspeed mode cannot be engaged on ground and should not be engaged after takeoff until above 400ft AGL.

APPROACH/MANEUVERING
Airspeed Mode with Asymptotic Approach into Speed Target, no overshoot. RNP Speed Management. Increases Situational Awareness and Stabilized Approaches. A/T has Vmo protection which is active based on flap settings.

GO-AROUND
The Go-Around Mode is activated only in flight and when the GA mode is activated on the autopilot. The target torque values for GA are computed based on the Baked Landing Torque performance table from the AFM.

LANDING
Disconnect A/T at 400ft AGL.
IS&S is the world’s leading supplier of RVSM systems and integrator of Cockpit Information Systems (Cockpit/IP®) for the Commercial Air Transport, Military, and Business Aviation Markets. IS&S incorporates leading edge technologies into sophisticated, cost-effective solutions for the aerospace industry.

Contact Tom Grunbeck, Director of Autothrottle Programs
484.502.6658 or tgrunbeck@innovative-ss.com

ThrustSense®
Autothrottle by

Innovative Solutions & Support
Corporate Headquarters:
720 Pennsylvania Drive
Exton, PA 19341 USA
+1 610 646 9800 phone
www.innovative-ss.com

Data Sheet and all information contained in it is proprietary to Innovative Solutions & Support, Inc. All specifications subject to change without notice from the manufacturer.