GE
Measurement & Control

ADTS 403

Druck Air Data Test System

GE is the foremost supplier of air data test systems, with over 25 years of experience in the design and manufacture of advanced pressure measuring instruments and sensors.

The ADTS 403 is the latest in a series of reliable, high accuracy, air data test systems designed for the civil aviation industry. The compact, rack-mount design has evolved as a result of GE's continuous research and development, customer feedback and experience gained from manufacturing thousands of automatic pressure controllers. This has enabled performance, ease of maintenance and operational simplicity to be optimized.

Features

- High accuracy, RVSM compliant
- ATE systems compatible
- Protection for unit under test
- Compatible with existing IEEE systems
- 12 month recalibration period
- Programmable limits

The ADTS 403 is a twin-channel Ps and Pt pressure control system used for the precision calibration/ verification of aircraft pitot-statics, compliant with reduced vertical separation minima (RVSM) requirements. A separate pressure/vacuum supply unit type PV103R provides suitable pneumatic supplies.

Fully programmable for a wide range of fixed or rotary wing aircraft, the ADTS 403 enables vital flight instrumentation, such as altimeters, airspeed indicators, rate of climb indicators, Mach meters and air data computers to be quickly and accurately tested.

The ADTS 403 has been designed for 483 mm (19 in) rack mounting and being only 178 mm (7 in) (4U) high with a range of IEEE 488 interfaces available it is ideal for use with existing automatic test equipmen (ATE) systems. In addition to automated and local keypad control, a remote hand terminal option is also available for even greater flexibility of operation.

Control Key Function

ALT/Ps
Altitude read and value entry.

Speed/QC
Airspeed read and value entry.

Mach/Pt
Mach read and value entry.

ERP
Engine Pressure Ratio test
(Ps/Pt for inlet/exhaust).

RoC/Ps Rate
Rate of climb, rate of speed entry and timing display.

Rate Timer
Select timing for RoC testing or leak testing.

Hold
Freeze control value to 'on state' at current conditions.

Rate
Rate control for Pt channel.

Help
On-screen operator advice.

Leak Measure/Control
Select Measure or Control Mode.

Ground
Controlled vent to ground and read QFE/QNH.

Local/Remote
Keypad control or ATE/IEEE 488.

Port
Select multi-outputs on Ps and Pt if Line Switching Unit (LSU) is in use.

Print
Print displayed values if printer connected.

Set Up
Select units, limits, local conditions, display format, etc.

ADTS 403 Specifications

Parameter	Operating Range	Resolution	Accuracy	Repeatability
Altitude	-914 m to 2 4,384 m[1] (-3,000 ft to 80,000 ft)	0.3 m (1 ft)	0.9 m (3 ft) at sea level[2] 2.1 m at 9144 m[2] (7 ft at 30,000 ft) 9 m at 18,288 m[2] (29 ft at 60,000 ft)	±0.3 m (±1 ft) ±0.6 m (±2 ft) ±2.1 m (±7 ft)
Static Sensor	35[3] to1 to 1355 mbar (1 to 40 inHg) absolute	0.01 mbar (0.0003 inHg)	±0.1 mbar (0.003 inHg)	±0.05 mbar (±0.0015 inHg)
Airspeed	10 to 1,000 knots	0.1 kts 0.1 kts	±0.5 kts at 50 kts ±0.07 kts at 550 kts ±0.05 kts at 1,000 kts	±0.4 kts ±0.02 kts ±0.02 kts
Pitot Sensor	35(3) to 3500 mbar (1 to 103 inHg) absolute	0.01 mbar (0.0001 inHg)	0.01 FS	0.05 mbar rising to 0.17 mbar (0.0015 inHg rising to 0.005 inHg)
Rate of Climb	(0 to 1829 m/ minute(5) (0 to 6000 ft/ minute)	0.3 m/ minute (1 ft/minute)	±1% of value	±0.5%
Mach	0 to 10	0.001	Better than 0.005	0.001 rising to 0.005
Engine Pressure Ratio (EPR)	0.1 to 10	0.001	Better than 0.005	

(1) 32,004 m (105,000 ft) available (control with suitable vacuum pump).
(2) Accuracy at ambient 5°C to 35°C (41°F to 95°F) for 0°C to +50°C (32°F to 122°F) x 1.5
(3) Lowest calibration point, operates to 0 mbar (0 psi) a
(4) Limits settable to prevent excessive mach. (Civil limit Mach 1).
(5) 30,480 m/minute (100,000 ft/minute) rates selectable
- limit protected for safety
- volume dependent

The ADTS 403 is a 483 mm (19 in) rack mounted instrument with a local front panel display and keypad. A remote hand held terminal is optional and a matched separate pressure/vacuum supply unit PV 103R is available.

Scaling Factors
- Altitude: ft, meters
- Airspeed: knots, km/hr, mph
- Rate of Climb: ft/min, m/min, m/sec, hm/min
- Others: mbar, inHg, inH2O (4°C, 20°C, 60°F), mmHg, kPa, hPa, psi
- Airspeed: CAS (calibrated), TAS (true_ability to enter temperature)

Rate Control/Indication
- Roc: Rate of Climb
- Rt Ps: Rate of Static
- Rt Pt: Rate of Pitot
- Rt Qc: Rate of Pt-Ps
- Rt CAS: Rate of calibrated airspeed
- Rt EPR: Rate of engine pressure ratio

Overpressure
Negligible calibration change with up to 1.25 x full scale (FS) overload applied.

Calibration Stability
Better than 50 ppm per annum.

Recalibration
Simple keypad instruction. 12 month interval suggested. Use of a primary pressure standard is recommended, Ruska primary pitot static tester Model 2468.

Display
- LCD backlit, supertwist/wide angle viewing.
- 4.8 in x 1.6 in (122 mm x 41 mm) window with four lines of 20 characters 8 mm (0.3 in) high. Optional hand terminal display window 73 mm x 24 mm (2.87 in x 0.95 in).

Response
- Two readings per second display value update
- Five readings per second remote interface updates

Power Supplies
200 VA maximum

Nominal 100/120 VAC	50/60/400 Hz
Nominal 230 VAC	50/60 Hz

Power Failure Protection
In the event of a power interruption, the output ports will be vented to ambient conditions safely. On power reconnect, the system is in measure mode.

Self Test
Integral test routines and reporting for both electrical and pneumatic systems.

Digital Interfaces
Parallel printer interface available as standard. IEEE-488.2 and earlier versions also available in excess of those detailed. Please refer to GE.

Temperature Range
- Calibrated: 5°C to 35°C (41°F to 95°F)
- Operating: 0°C to 50°C (32°F to 122°F)
- Storage: -20° to 70°C (-4° to 158°F)

Sealing
Front panel dustproof. Enclosure complies with CE safety requirements.

Humidity
0% to 90% non-condensing

Shock and Vibration
Designed to meet section 8, EN61010.

Safety Performance
- EN61326 for EMC emissions and immunity.
- EN61010 for electrical and mechanical safety.

Physical
- Weight: 13 kg (29 lb) nominal
- Case dimensions: 483 mm x 432 mm x 178 mm (19 in x 17 in x 7 in)

Pneumatic Connections
Front and rear panel mounted fittings with blanking caps:
- Static: AN-6 37° flare
- Pitot: AN-4 37° flare

Rear panel mounted fittings with blanking caps:
- Pressure supply: AN-4 37° flare
- Vacuum supply: AN-6 37° flare

All fittings are supplied with replaceable filters and 2.5 m (8 ft) long mating hoses. Rear Ps and Pt connections available as an option.

Pneumatic Supplies
For normal use, dry, non-corrosive gases with source pressure at a maximum 25% above specified pressure range. PV 103R recommended.

Options

(A) Remote Control Terminal
A remote control hand-held terminal complete with approximately 2 m (6 ft) long cable.

(C1) IEEE-488 Interface (SCPI version)
Current air data test systems communications protocol.

(C2) IEEE-488 Interface (Honeywell Sperry compatible)
Compatible with earlier instruments.

(E) Altimeter Encoder Interface
For altimeters with ICAO reporting encoders. Permits display of the bit stream and reporting of altitude value. details.

Accessories

Regional AC power lead—2 m length (6 ft) approximately. Ps, Pt, pressure and vacuum hoses—2.5 m lengths (8 ft) approximately. Operator's manual and calibration certificate also supplied as standard.

Calibration Standards

Instruments manufactured by GE are calibrated against precision calibration equipment traceable to international standards.

Ordering Information

Please state the following (where applicable):

1. Basic model number ADTS 403
2. Options and related products if required. If C1 + C2 are selected, please state required power-up default (SCPI or Sperry).
3. Power lead region:
   - UK
   - North America
   - Europe
   - Japan
4. Supporting Services (order as separate items)

Supporting Services

GE Measurement & Control provides services to enhance, support and complement the Aviation GSE range. Our highly trained staff can support you, no matter where you are in the world. Further details can be found in www.ge-mcs.com/en/services-and-support.html

Nationally accredited calibration

New product is supplied with factory calibration certificates with measurements traceable back to international standards. For applications where initial nationally accredited calibration certificates are required or periodic re-calibration is desired, GE Measurement & Control can provide the solution.

Extended warranty terms

New product is supplied with an industry benchmarked initial warranty. For peace of mind, particularly if final installation is months away from your product purchase, extend coverage on your equipment beyond the initial period up to 4 years term.

- Improved cost predictability
- Increased assurance

Multi-year calibration and repair services agreements

Multi-year service agreements increase cost predictability by providing fixed rates for extended periods.

Rental

GE's rental program offers a simple, quick and affordable solution for unexpected measurement need. Rentals allow customers to be fully operational when challenges that are not foreseen arise. We can provide measurement, test and calibration instruments, from simple pressure indicators to sophisticated air data test systems. The rental fleet is available from inventory, Factory tested & calibrated with a minimum rental period only 1 week. With larger scope undertakings any product can be made available for rental.

Maintenance

Should your equipment need maintenance, our global repair facilities are happy to serve. Work is conducted by trained approved technicians, using controlled original equipment parts and procedures so restoring the product to design condition.

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