ADTS542F

Pitot Static Tester

Applications and Industries

Pitot Static testing of aircraft and avionic equipment in:

- Aerospace, Defence and Space

Highlights

- Cockpit controlled using ADTS Touch hand terminal with Bluetooth® wireless technology
- Accuracy suitable for RVSM validation (FL550 version)
- Low airspeed option
- 12-month accuracy as standard
- 15-month accuracy option
- Engine Pressure Ratio (EPR) option
- Druck ADTS global service support
- Lower cost non-RVSM airspace option (FL280)
- Patented integration with Viavi AVX-10K Flight line test set for combined pitot-static and Mode-S / Mode-C testing
- Simple semi-automated calibration using PACE Tallis
- 24 months warranty as standard

ADTS Touch

The ADTS Touch is a removable, robust wireless hand terminal that communicates to the test set via secure Bluetooth® wireless technology. This technology and the innovative design of the ADTS Touch remove the need to run cables or hoses into the cockpit.*

*Due to individual country radio license requirements, Bluetooth® wireless technology may not be available in some countries. An up-to-date list of countries that the ADTS Touch with Bluetooth® wireless technology is licensed to be used in is available upon request from Druck.

A rechargeable battery pack enables up to eight hours of continuous ADTS Touch wireless use. The battery can be charged by the ADTS Touch when connected to the test set, by power cable, or by an optional desk charger.

As an alternative, the ADTS Touch can be used as a conventional wired hand terminal, with or without a battery pack, by attaching a supplied cable, or as a local user interface by docking the hand terminal onto the ADTS542F.

A large, easy-to-read display in pressure or aeronautical units and swipe navigation, with intuitive icons that are logical and easy to remember, allow you to quickly scroll through available tasks. The ability to set "aircraft safety limits," enable "auto leak recovery" and save or recall aircraft test sequences make the ADTS Touch an easy-to-use hand terminal. Its multi-language selection further enhances the ADTS Touch's usability.

For the more demanding wireless application, such as a large aircraft outside of a hanger (nothing for the wireless signal to bounce off), the ADTS Touch-ER offers a solution. The ADTS Touch-ER extends the wireless range, by the use of a fixed external antenna, or by using the supplied window attach antenna.

ADTS542F

The ADTS542F, supplied with an ADTS Touch, is a small, lightweight and cost-effective portable two-channel flightline pitot static tester for "Aircraft on the Ramp" testing. The ADTS542F is also ideal for any aircraft with low pitot static demands or for light aircraft, including helicopters and propeller-driven airplanes.

To ensure an accuracy that is suitable for RVSM (reduced vertical separation minimum) validation, the new ADTS542F incorporates advanced Druck TERPS (trench etched resonant pressure sensor) technology together with innovative Druck proportional pressure control.

ADTS542F and ADTS Touch specifications

- ADTS542F pitot static tester
- ADTS Touch hand terminal
- AC power lead: 1.8 m (6 ft) length approximately
- ADTS Touch remote connecting cable: 5m (16ft) length approximately
- ADTS Touch battery pack
- ADTS Touch AC power supply unit
- Pack of Ps and Pt color labels
- Multi-language installation manual
- Accessories bag
- Operator manual (installed in ADTS Touch)
- Calibration certificate traceable to international standards

Simple PACE Tallis Calibration

As standard, all models are available with a simple 2 point calibration routine which utilises PACE Tallis as the pressure reference and the ADTS internal pump as the pressure source.

All sensors can be calibrated or checked at the same time through a connection to the Pt port on the unit. With this simple intuitive process calibration of the ADTS550F takes a matter of minutes.

PACE Tallis
Transfer Standard Calibrator

Viavi AVX-10K Flight line test set integration

Available as a paid option, the simple integration of the 2 class leading technologies of ADTS 542F pitot-static tester and Viavi AVX-10K flight line test set enables end to end loop testing for Mode-S and Mode-C transponder testing procedures whilst carrying out pitot static testing.

This patented functionality offers clear time savings and efficiency improvements to aircraft maintenance operations. Requires AA500F-50 and AAADS-B accessories.

Viavi AVX-10K Flight line

ADTS Touch ADS-B control screen

Parameter		Operating range	Resolution	ADTS542F 12 mth accuracy*	ADTS542F-E3 15 mth accuracy*
Altitude	FL550	-3,000 to 55,000 ft	1 ft	±3 ft at sea level ±7 ft at 29,000 ft ±12 ft at 41,000 ft	±3 ft at sea level ±7 ft at 29,000 ft ±12 ft at 41,000 ft
	FL280	-3,000 to 28,000 ft	1ft	±3 ft at sea level ±7 ft at 29,000 ft ±12 ft at 41,000 ft	±3 ft at sea level ±7 ft at 29,000 ft ±12 ft at 41,000 ft
Ps	FL550	92 to 1,130 mbar abs	0.01 mbar	±0.1mbar abs	±0.1mbar abs
	FL280	329 to 1,130 mbar abs	0.01 mbar	±0.1mbar abs	±0.1mbar abs
Standard airspeed (CAS) FL550		20 to 650 knots	0.1 kts	±1.5 kt at 20 kts ±0.6 kt at 50 kts	±1.5 kt at 20 kts ±0.6 kt at 50 kts
Standard airspeed (CAS) FL280		20 to 450 knots	0.1Kts	±1.5Kt at 20Kts ±0.6Kt at 50Kts	±1.5Kt at 20Kts ±0.6Kt at 50Kts
Standard airspeed Pt FL550		92 to 1,997 mbar abs	0.01 mbar	±0.13mbar abs	±0.13mbar abs
Standard airspeed Pt FL280		92 to 1,498 mbar abs	0.01 mbar	±0.13mbar abs	±0.13mbar abs
Low airspeed option (ECAS) FL550		20 to 650 knots	0.1 kt	±1.2Kt at 20Kts ±0.5Kt at 50Kts	±1.2Kt at 20Kts ±0.5Kt at 50Kts
Low airspeed option (ECAS) FL280		20 to 450 Knots	0.1Kt	±1.2Kt at 20Kts ±0.5Kt at 50Kts	±1.2Kt at 20Kts ±0.5Kt at 50Kts
Low airspeed option Pt FL550		92 to 1,997 mbar abs	0.01 mbar	±0.10mbar abs	±0.10mbar abs
Low airspeed option Pt FL280		92 to 1,498 mbar abs	0.01 mbar	±0.10mbar abs	±0.10mbar abs
Rate of climb		0 to 6,000 ft/min	1 ft/min	±2% Aim	±2% Aim
Mach**		0 to 2.0	0.001	Better than 0.005	Better than 0.005
Engine Pressure Ratio (EPR)		0.1 to 10	0.001	Better than 0.005	Better than 0.005

*Accuracy over operating temperature includes: calibration uncertainty, non-linearity, hysteresis, repeatability, measurement stability over calibration period and control stability.

**Depends on altitude at max Qc

Scaling factors

- Altitude: ft, meters
- Airspeed: knots, km/hr, mph
- Rate of climb: ft/min, m/min, m/s
- Others: mbar, in Hg, in H_2O, mmHg, kPa, hPa, psi

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

- ADTS542F: Better than 0.05 mbar (Ps) and 0.05 mbar (Pt) over 12 months
- ADTS542F-E3: Better than 0.05 mbar (Ps) and 0.05 mbar (Pt) over 15 months

Recalibration

Simple keypad instruction, use of primary standard pressure reference is recommended.

Display

7" WVGA (800X480) TFT, LED backlit display. High contrast ratio, wide view angle, two readings-per-second update.

Power supplies

Auto-selection between:

- 100/120/230 Vac, 50/60 Hz, 200 VA power
- 115 Vac, 400 Hz, 200 VA power

Power failure protection

System locks and a manual let-down feature provided.

Self test

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

Temperature range

- Storage: -20°C to 70°C (-4°F to 158°F)
- Operating: 0°C to 50°C (32°F to 122°F)

Humidity

0 to 95% non-condensing

Environmental

Vibration, shock/drop and solar radiation to MIL-PRF-28800F Class 2

Conformity

EMC EN61326, LVD EN61010 (Electrical safety, PED, WEEE, CE marked)

Physical

- ADTS542F base weight: 14 kg (30.9 lb)
- Base unit dimensions (H x W x D): 300 x 320 x 420 mm (11.8 x 12.6 x 16.5 in.) [Note: dimensions include lid.]
- Hand terminal weight: 1.1 kg (2.4 lb), battery weight: 0.4 kg (0.9 lb)
- Hand terminal dimensions (H x D x W): 153 x 58 x 223 mm (6.0 x 2.3 x 8.8 in.)

Pneumatic connections

AN6 for Ps, AN4 for Pt

Sealing

Weatherproof in operating mode (lid removed). Base unit IP23, ADTS Touch IP65

Pneumatic supplies

Integral pressure and vacuum pumps capable of generating for a minimum of 1,000 running hours:

- 1,829 m/min (6,000 ft/min) into a 3L total volume (2L Ps + 1L Pt) up to 9,144 m (30,000 ft)
- Water/moisture content vented automatically

ADTS542F options and accessories

Options

Option - Low airspeed

To facilitate the testing of aircraft with low airspeed such as helicopters, the ADTS542 low airspeed option offers an improved QC measurement accuracy.

Option - EPR test

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

Option - ADTS Touch-ER

ADTS Touch with external antenna for greater Bluetooth® range

Option – ADTS542F-E3

ADTS542F with 15-month accuracy (includes one UKAS calibration with new instrument)

Accessories

Part number	Description
AA542F-2	ADTS542F back pack
AA500F-18	ADTS542F accessories bag
AATOUCH-4	ADTS Touch carry case
AA500F-7	Additional ADTS Touch remote connecting cable – 5 m (16 ft) length approximately (can be connected to ADTS Touch connecting cable for 10 m (32 ft) total length)
AA500F-8	Additional ADTS Touch remote connecting cable – 18 m (59 ft) length approximately
AATOUCH-1	Additional ADTS Touch battery pack
AATOUCH-5	ADTS Touch battery pack AC desk top charger (state mains lead requirement, US, UK or EU)
ADTSTOUCH	Additional ADTS Touch hand terminal (state mains lead requirement)
ADTSTOUCH-ER	ADTS Touch with external antenna for greater Bluetooth range® (state mains lead requirement)
AA500F-1	Pressure connector AN3 male
AA500F-2	Pressure connector AN4 male
AA500F-3	Pressure connector AN6 male
AA500F-4	2 X Staubli quickfit female pressure connector kit (2 X G 1/8th plus 1 X red dot Staubli plus 1 X black dot Staubli)
AA500F-5	Pressure connector AN4 to Hansen quickfit male
AA500F-6	Manifold, one way + one way switched
AA500F-9	Pressure connector AN6 to Hansen quickfit male (does not include AN6 connector, part number AA500F-3 is also required)
AA500F-10	Bulkhead service kit for 1 connector
AA500F-19	Red hose (please state length in meters or feet)
AA500F-20	Blue hose (please state length in meters or feet)
AA500F-17	Black hose (please state length in meters or feet)
AA500F-21	Hose pressure connector AN3 female
AA500F-22	Hose pressure connector AN4 female
AA500F-23	Hose pressure connector AN6 female
AA500F-24	2 X Staubli quickfit male hose pressure connector kit (1 X red dot Staubli plus 1 X black dot Staubli)
AA500F-25	Hose pressure connector AN4 Hansen quickfit female
AA500F-27	Hose pressure connector AN6 Hansen quickfit female
AA500F-41	10 m (33 ft) length approximately mains lead – UK plug
AA500F-42	10 m (33 ft) length approximately mains lead – Japan plug
AA500F-43	10 m (33 ft) length approximately mains lead – Europe plug
AA500F-44	10 m (33 ft) length approximately mains lead – USA plug
AA500F-45	10 m (33 ft) length approximately mains lead – India plug
AA500F-46	10 m (33 ft) length approximately mains lead – China plug
AA500F-47	10 m (33 ft) length approximately mains lead – Australia/New Zealand plug
AA500F-48	10 m (33 ft) length approximately mains lead – South Africa plug
AA500F-50	ADTS to Viavi Interface Cable
AAADS-B	Retrofit of Viavi ADS-B Test

ADTS542F ordering information

1. Model number configuration

ADTS542F 2-channel pitot static tester, CW ADTS Touch

- FL550 55,000ft and below
- FL280 28,000ft and below
  - E0 12 month accuracy option
  - E3 15 month accuracy option
    - SCAS Standard airspeed accuracy
    - ECAS Low airspeed option
      - SR ADTS Touch standard range Bluetooth®
      - ER ADTS Touch extended range Bluetooth®

ADTS542F - FL550 - E0 - SCAS - SR [Example model number]

2. Options

- EPR
- Wireless disabled

3. Mains lead

Choose one from this list:

- Mains lead - UK plug
- Mains lead - Japan plug
- Mains lead - EU plug
- Mains lead - USA plug
- Mains lead - South Africa
- Mains lead – India plug
- Mains lead - China plug
- Mains lead - Australia/New Zealand plug

4. Country of use

Please state country of use for Bluetooth® setup.**

**Due to individual country radio license requirements, Bluetooth® wireless technology may not be available in some countries. An up-to-date list of countries that the ADTS Touch with Bluetooth® wireless technology is licensed to be used in is available upon request from Druck.

5. Accessories

Please state any accessories required as separate items when placing order.

Warranty terms

New product is supplied with an initial warranty of 24 months. For peace of mind, extend coverage on your equipment beyond the initial period up to a total four-year term.

Supporting services

Should your equipment need calibration or maintenance, our global repair facilities are happy to serve.

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