



MPS39C

Air Data Test Set



PRECISION THREE CHANNEL DIGITAL AIR DATA TEST SET

For Angle of Attack (AoA) testing the MPS39C is a digital technology portable Air Data Test Set incorporating features normally found on more expensive air data test sets. It is rugged and splash-proof for demanding commercial and military flight line use.

Easy to use the MPS39C is suitable for both experts and first time users. Testing and troubleshooting with the MPS39C can be performed via an intuitively arranged colour-coded keypad using the large (4x20) character front panel LCD backlit display or by a multifunction hand controller or as option a PDA with wireless Bluetooth connection.

All air data functions are simultaneously displayed; constant screen or menu changes are not required. Readings of both commanded and measured test values are displayed.

The use of a precision absolute sensor for Ps and two differential sensors for Qc and AoA with associated pressure and temperature characterisation ensures high accuracy at all pressure values. The specified accuracy is reached after the completion of the self test and initialisation sequence.

Pressures are controlled separately and independently: Static, Pitot and Angle of Attack, to test aircraft equipped with Smart Pitot Probes. The Angle of Attack pressure can be displayed either in pressure units with a maximum of 0.0001 inHg resolution or directly in degrees of AoA with 0.1 deg. resolution.

As an option a 4+4 (or 2+2+4 when in AoA mode) multiple line switching capability provides fast and safe location of a leaking channel.

FEATURES

- Accuracy ± 3 feet at sea level, exceeds RVSM calibration requirements.
- Compact and self contained. Housed in a 66 lb. wheeled case with retractable handle.
- Three pressure channels controlled separately and independently:
Static, Pitot and Angle of Attack (AoA).
- Easy to read LCD backlit display and splash-proof keypad controls.
- Lightweight remote hand held control or optional PDA with wireless Bluetooth connection.
- Low power consumption.
- Low maintenance design; industry exclusive 5000 hour pump guarantee.
- Internal auto-recharge 4 hour battery provides operation versatility and safety.
- Standard version: 1+1+1 outputs or optionally Multiple lines switching: 4+4 static and pitot, or 2 static + 2 AoA + 4 pitot (as shown)

DESIGN HIGHLIGHTS

The MPS39C is a rugged and low maintenance instrument. The internal pump runs only on demand, extending pump life. Calibration, performed by software, is fast and simple, no mechanical adjustments are required. Calibration factors are password protected.

Low power consumption ensures low temperatures and high endurance: typically 90 VA power from the AC line The MPS39C is equipped with internal rechargeable batteries which provide four hours of full operation when AC power is unavailable.

The MPS39C utilises precision pressure sensors for maximum accuracy to exceed the RVSM calibration requirements. All pressure sensors are characterised in environmental chambers and mathematically fully compensated for pressure and temperature variations. New digital control algorithms provide faster approach to the commanded set point and increased stability of control, not previously available.

SAFETY

Maximum safety during testing is the main design criteria. Key DMA features protect the test set and instruments under test. The pressure condition of Ps greater than Pt is prevented in both manual and automatic operation. With loss of power the test system is safely isolated and can be manually vented preventing instrument and test set damage. Pre-set or user defined safe limits prevent damage to the UUT.

MPS39C STANDARD SPECIFICATIONS

Operating temperature range: -5°C to +50°C
Control capability on all load volumes :

Storage: -20°C to +70°C
Static: 0 to 125, Pitot: 0 to 80 cubic inches.

Parameter	Range		Resolution		Accuracy Measure	Stability Control
	Measure	Control	Measure	Control		
Altitude(ft)	From -3,000 to +80,000	from -3,000 to +60,000	1	1	±3 @ SL ±5 @ 30,000 ±20 @ 60,000	±2
Altitude slew rate (ft/min)	N 0 to 6,000 HR 0 to 30,000	0 to 6,000 0 to 30000	25 > 1000 5 < 1000	25	±10±1% of reading	same as measure
Airspeed (knots)	10 to 650	10 to 650	1 < 50 0.1 > 50 0.1 > 20	0.1	±0.5 @ 50 ±0.1 @ >500 ULS: ±0.001 inHg	±1
Ultra Low Speed funct.	ULS: 5 to 200					
Airspeed slew rate (kt/min)	0 to 800	0 to 800	10	10	±10 ±1% of rdg	±5%
Mach No.	0 to 4	0 to 4	0.001	0.001	< 0.002	±0.002
Angle of Attack pressure	-2.5 to +2.5 inHg	-2.5 to +2.5	0.001 in Hg	same	±0.003 inHg	same

N: normal HR: high rate

STANDARD TEST FUNCTIONS:

- pressure/vacuum generation
- automatic leak check
- controlled venting to ambient
- altitude/airspeed input
- static/Qc/total pressure input
- altitude/ airspeed rates input
- pressure/angle of attack input
- Mach Number input
- EPR generation
- TAS / IAS toggle switch
- UUT offset correction
- user programmed test profiles
- ultra low speed (5 to 200 kts) function
- audible indication when approaching set point

HAND HELD REMOTE CONTROL UNIT



ENVIRONMENTAL

Splash-proof and shockproof
CE compliant.

POWER SUPPLY

Universal power supply: 90-240 Vac; 50-400 Hz.
4 hour operation internal rechargeable battery

WARRANTY

MPS39C instrument Two years
Internal Pres/ vacuum Pump 5000 hours

OPTIONS

- A. 28 V d.c. power supply (18 to 36 V d.c.)
- B. ARINC429 interface
- C. IEEE488 GPIB control (RS232 standard)
- D. PDA for Bluetooth wireless remote control
- E. Multiple Pitot and Static isolators controlled from keypad: 4+2+2 in 3 channel mode, or 4+4 in dual pressure mode
- F. ADTWIN PC Control software
- H. Gray Code Altitude Device Readout

Self-seal quick release fittings as standard
(Custom alternatives available)

DISPLAY AND KEYPAD

Integral display and keypad, splash-proof and shock protected front panel.
LCD with back-lighting displays all parameters.

CALIBRATION

One year interval performed using software.

PHYSICAL SPECIFICATIONS

Weight: 66 lbs. (30 kg.)
Dimensions: L 24.4", W 19.7", H 11.8"
(625 x 500 x 300 mm)

Note: -- Specifications subject to change without notice



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