



D. Marchiori

MPS43

Ultra Compact Automatic Air Data Test Set

- Full automatic control for Altitude & Airspeed
- Fully RVSM compliant with 12 months recalibration period
- Integral pressure and vacuum pumps with 1500 hour warranty
 - Universal AC power, aircraft and National, with battery backup power
 - User programmable safety limits and test programs
 - Lightweight rugged case, carry to the cockpit



MPS43 Precision Ultra Compact Digital Air Data Test Set

SUPPLYING AIR DATA TEST SETS TO THE WORLD

DMA traces its origins back to 1938, mainly as a test equipment manufacturer to support European aviation requirements. Today DMA supply precision Air Data Test Sets and other aviation ground support equipment to aircraft manufacturers, repair stations and operators throughout the world.

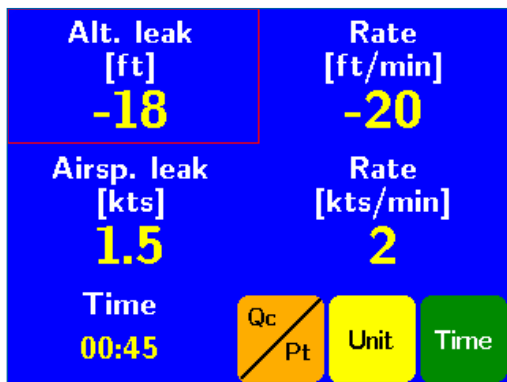
ULTRA COMPACT FLIGHT LINE TESTER

The MPS43 is a unique instrument in that the first class capabilities in terms of precision and performance are all integrated into a remarkably small enclosure. It enables users to both utilise the air data testing characteristics and transport the instrument in ways not possible by more conventionally designed products. The rugged lightweight enclosure meets the demanding requirements of the aerospace industry, while offering cost and ownership benefits unmatched by alternatives.

USER INTERFACE

The conventional keypad is augmented by a multi-coloured touch screen display to provide maximum ease of use by both beginners and experts. Regular testing and troubleshooting is simple to perform with clear unambiguous readout and instruction inputs.

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



ACCURACY ACHIEVED BY THE END OF SELF TEST

A precision absolute sensor is utilised for the static, altitude channel, and a precision differential transducer for the Qc/Pt, airspeed, channel. Pressure and temperature characterisation is applied to the sensors ensuring very high accuracy is achieved at all operating pressure values, without any significant warm-up time.

EXTENDED PUMP LIFE

The MPS43 is a rugged flight line instrument designed for low maintenance. The internal pressure and vacuum pumps run only in control mode of operation, extending the pump life.

AUTOMATED CALIBRATION

Calibration, performed by software, is fast and simple since no mechanical adjustments are required. Calibration factors are password protected for security. The resultant accuracy of the sensors exceeds the RVSM industry requirements.



INTERNAL BATTERY FOR SAFETY AND VERSATILITY

The MPS43 is equipped with an internal rechargeable battery that provides emergency back up power and gives up to 30 minutes of operation. For those occasions when the a.c.power fails during testing the battery allows the test to continue and provides safe shut down under total control at the conclusion of the test.

BUILT IN SAFETY LIMITS FOR UUT PROTECTION

The MPS43 is designed for maximum safety during testing. Key DMA design features protect both the test set and the systems under test. Negative Qc, a pressure condition of Ps greater than Pt, is prevented in both manual and automatic operation. If AC power is lost the Unit Under Test (UUT) is safely isolated and can be manually vented preventing instrument and test set damage.

Numerous preset factory or user programmed safe limits are provided to prevent damage to the UUT. These limits can be modified by the user either temporarily or permanently, with password protection if desired.

PROGRAM TESTING

Up to 30 independent test profiles can be stored in the MPS43, each of which consisting of 26 test points. Profile results, containing the readings of up to 3 UUTs can also be stored from each program, up to a maximum of 300 results.

REMOTE CONTROL

The instrument can be remotely controlled by ADWIN software from an external PC.



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Internal pumps run only in control mode of operation

Fully automatic control. User programmable limits

Portable and rugged splashproof case. Easily carried to cockpit

Emergency battery power for 30 minutes operation

Store 30 test programs and results

Universal power input. Low power consumption for high accuracy and reliability



2 Channels of independent pressure control for Static and Pitot. Includes EPR generation

Colour back-lit touch screen and colour coded keypad. Smart user interface showing all parameters at once

A wide range of pitot-static adaptors and adaptor kits are available from DMA

Accuracy ± 3 ft at sea level, meets RVSM requirements





MPS43 Standard Specifications

PARAMETER		RANGE		RESOLUTION		ACCURACY [3]	
		MEASURE	CONTROL	MEASURE	SETPOINT		
STATIC	Altitude (ft)	-2,000→55,000	-2,000→55,000	1	1	± 3 @ SL ± 7 @ 30,000 ± 18 @ 50,000	
	Vertical speed (ft/min)	0→6,000	0→6,000	5 @ < 3,000 ^[1] 25 @ > 3,000	1	± 1% of setting	
	Static (inHg abs) (hPa abs)	2.7→32 91→1090	2.7→32 91→1090	0.001 0.01	0.001 0.01	± 0.003 ± 0.1	
PITOT	Airspeed	Standard (kts)	10→550	10→550	1 @ < 50 0.1 @ > 50	1	± 0.5 @ 50 ± 0.1 @ > 500
		Ultra low speed function ^[2] (kts)	5→200	5→200	0.1 @ > 20		± 0.03 hPa
	Airspeed slew rate (kts/min)	0→500	0→500	10	10	± 10 ± 1% of setting	
	Mach No. (mach)	0→1.5	0→1.5	0.001	0.001	< ± 0.003	
	Pitot (Qc) (inHg diff) (hPa diff)	0→17	0→17	0.0001	0.0001	± 0.005	
		0→581	0→581	0.01	0.01	± 0.17	
Engine Pressure Ratio (EPR)	1→2.5 @ SL	1→2.5 @ SL	0.001	0.001	± 0.001		

Notes: Control capability on all load volumes (cu. in.): Static: 0 to 1.5 L (92 cu. in.), Pitot: 0 to 1 L (61 cu. in.). Larger volumes acceptable

¹ Selectable to ± 1 ft/min

² Activated on request, below 200 kts

³ Total accuracy includes all metrological uncertainty contributions for the pressure measured. Metrological data has full traceability with International accredited Labs.

STANDARD TEST FUNCTIONS

- Pressure/vacuum generation
- Automatic leak check
- Controlled venting to ambient
- Altitude/airspeed input
- Static/dynamic(Qc)/total pressure input
- Altitude/airspeed rates input
- Mach Number input
- EPR generation
- TAS / IAS toggle , TAS temperature correction
- Altitude offset correction
- 30 user test programmed profiles of 26 steps each. Results from 3 UUTs can be stored up to a total of 300 results.
- Ultra low speed (5 to 200 kts) for improved accuracy and stability
- Audible indication when approaching set point

DISPLAY AND KEYPAD

Integral display and keypad in splash proof and shock protected front panel.

Multi-coloured backlit LCD touch screen, 114mm (3.5") diagonal, displays all test parameters.

DISPLAYED UNITS

Altitude: ft, m, hm

Airspeed: kts, km/h, mph

Pressure: inHg, hPa, kPa, Pa, psi, mmHg, inH2O

CALIBRATION

One year interval, performed using software.

PHYSICAL SPECIFICATIONS

Weight: 4 kg. (8.8 lbs.)

Dimensions: L 300 x W 250 x H 120 mm
(L 11.8 x W 9.8 x H 4.7 in.)

Connections: Static: AN-4 37° flare
Pitot: AN-3 37° flare

Fittings fitted with O-ring for finger-tight sealing.
Captive dust caps supplied.

ENVIRONMENTAL

Temperature range

Operating: -5°C to +50°C

Storage: -20°C to +70°C

Splashproof and shockproof.

CE compliant.

POWER SUPPLY

Universal power supply: 90-240 VAC; 50-400 Hz.
20 VA

Rechargeable internal battery providing 30 minutes back up for safe shut down.
For greater battery life operation use EPU6

WARRANTY

Unit: 2 Years

Pumps: 1500 hours or 2 years,
whichever expires first.

OPTIONS

A0 28 VDC

A2 No internal battery

B7 Gray Code Altitude Device Read-out

F4 ADWIN PC Control software (unlocked)

J5 Extended Range 650 knots at -320ft

K0 AN4 (Ps), AN3 (Pt)

K1 AN4 (Ps), AN4 (Pt)

K2 AN6 (Ps), AN4 (Pt)

K5 Staubli red (Ps), Staubli black (Pt)

T0 Power cable 2m Schuko plug

T1 Power cable 2m American plug

T2 Power cable 10m Hubbel HBL5266C

T3 Power cable 2m Australian plug

INCLUDED ACCESSORIES

ADWIN PC Control software (MPS43/43H only)

USB cable

Power cable chosen from above options

Hoses and fittings

ASSOCIATED PRODUCTS

Pitot-static adaptors

EPU6 External battery power unit,
providing 6 hours operation.

DMAKV2 Vacuum Source for adaptor hold
down use.

Pressure indicators/transfer standards

Ongoing development results in specifications
being subject to change without notice



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Representative