



# D. Marchiori

General Catalogue



Laboratory ADTS

Ultra  
Compact  
ADTS



Pitot-Static  
Adapters

2 or 3 Channel ADTS  
for Smart Probes



## Air Data Test Sets

and

Aircraft Ground Support Equipment



Tachometer Testers

Angle Protractors



3 Axis Tilt Tables



Transfer Standards and  
Automated Calibration Systems



# Air Data Test Sets



DMA's Air Data Test Sets provide the accuracy, long term stability and low cost of ownership demanded by the world's leading aircraft manufacturers, repair stations and operators.



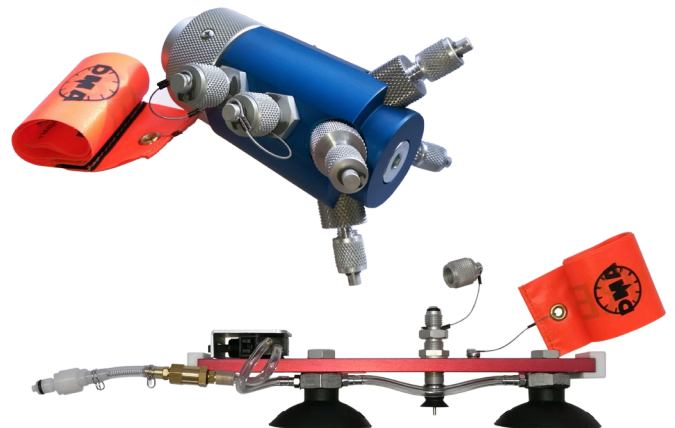
The MPS49 shown includes 3 channels to cover Ps, Pt and Angle of Attack (AoA) for Smartprobe testing capability.



The wide range of Air Data Test Sets form the core of DMA's product range. Constant innovation and improvement with unique features such as battery backup has placed DMA amongst the top Air Data Test Set manufacturers in the world.

MPSRW  
Wireless remote.

The test sets are all digitally controlled. The local display and keypad provide an intuitive user interface for the operator. For remote control locations such as the flight deck, various options are available including hand held duplications of the front panel interface and comprehensive touchscreen units. Wi-Fi, Bluetooth and other computer orientated options are available for connecting to PCs, tablets or the MPSRW.







With a wide range of base models and an extensive complement of options the ADTS are ideal for all pitot-static test requirements. All test sets meet the stringent requirements for RVSM certification testing. DMA also design and manufacture a wide range of pitot-static adapters and full kits of associated hoses and fittings for a wide range of aircraft. The list is constantly expanding.



D. Marchiori

# Feature Table

## CURRENT MODELS

TYPE NO	MPS43B	MPS45/45HF <sup>[1]</sup>	MPS49	MPS46/46H/56 <sup>[2]</sup>
Range/Type	Ultra Compact	Extended Range	Extended Range	Laboratory
Accuracy	RVSM	RVSM	RVSM	RVSM +
AoA Channel	✗	✗	✓	✗
Size	●	● ●	● ●	2U high (MPS56 3U)
Range Alt	● ●	● ● ●	● ● ●	● ● ●
Pump Capacity	●	● ● <sup>[1]</sup>	● ●	Option (MPS46P)
Pump Warranty	1,500 hours / 2 Years <sup>[3]</sup>	5,000 hours / 4 Years <sup>[4]</sup>	5,000 hours / 4 Years <sup>[4]</sup>	MPS46P: 5,000 hours / 4 Years <sup>[4]</sup>
Vacuum Hold Down	✓	✓	✓	✗
4+4 Isolate	✗	Option	Option	✗
3+3 Isolate	✗	Option	Option	Option
2+2 Isolate	✗	Option	Option	Option
Keyboard	✓	✓	✓	✓
Hand Terminal	Option	Option	Option	✗
Wi-Fi	✗	Option	Option	✗
Bluetooth	Option	Option	Option	✗
Ethernet	✗	Option	Option	Option
USB Port <sup>[5]</sup>	✗	✓	✓	✗ <sup>[6]</sup>
USB Control <sup>[7]</sup>	✓ <sup>[8]</sup>	✓ <sup>[8]</sup>	✓ <sup>[8]</sup>	Option
Alt. Encoder <sup>[9]</sup>	Option	Option	Option	Option
GPIB IEEE488	✗	Option	Option	Option
ARINC 429	✗	Option	Option	Option
Battery (hours)	● <sup>[10]</sup>	● ●	● ●	✗
28VDC	✓	Option	Option	✗
Software <sup>[11]</sup>	ADWIN	ADWIN	ADWIN	ADWIN36 as Option
Weight	4.5 Kg	15 Kg	15 Kg	10 Kg (MPS46P 12 Kg)
				

## NOTES

● = min, ● ● ● ● = max

2 The MPS46H and MPS56 provide higher flow rates

4 5,000 test set running hours or 4 years, whichever comes first

6 Available via the MP5MON Touchscreen Remote Terminal

8 Uses supplied USB to RS232 control cable to provide USB control capability

10 1 hour+ operation from internal battery. EPU6 available to extend MPS43B battery life

1 The MPS45HF provides higher flow rates for large system volumes

3 1,500 hours or 2 years, whichever comes first

5 USB port for USB memory device to store results and download test programs








7 Allows control of the ADTS from a PC via USB

9 Gray Code Altitude Device Read-out

11 Control software included. ADWIN is DMA designed Ps/Pt control software

## HERITAGE PRODUCTS

In special circumstances DMA are able to manufacture the Heritage instruments shown below to support our Customers who wish to continue using these legacy products due to ongoing commitments.

MPS27C	MPS31C	MPS34C	MPS35C	MPS36	MPS43	MPS39C/40C
2 Channel Flightline ADTS	2 Channel Flightline ADTS	2 Channel Flightline ADTS	2 Channel Flightline ADTS	2 Channel Laboratory ADTS	2 Channel Compact Flightline ADTS	3/4 Channel Flightline ADTS
						



# Features, Options and Associated Products

## ACCURACY ACHIEVED BY THE END OF SELF TEST

The use of precision transducers together with pressure and temperature characterisation result in high accuracy without any significant warm-up time at all operating pressure values.

## INTUITIVE INTERFACE

All the test sets are easy to use by both experts and first time users with all the important air data functions simultaneously displayed.

## EXCLUSIVE 5,000 HOUR PUMP LIFE WARRANTY

The low maintenance internal pressure and vacuum pumps run only on demand extending the pump life and reducing power consumption. In all but the MPS43 series, these pumps carry a 5,000 hours (4 year maximum) industry exclusive warranty.

## AUTOMATIC CONTROL OF 3 OR 4 INDEPENDENT PRESSURES

The MPS49 offers independent control of 3 pressures – static and pitot for altitude and airspeed and additionally Angle of Attack (AoA) to test those aircraft equipped with the Smart Pitot probes. The MPS40C is a 4 channel test set with 2 AoA channels.

## INTERNAL BATTERY FOR SAFETY AND VERSATILITY

Many of the test sets are equipped with internal automatically recharged batteries for two or four hours full operation. These also provide a seamless auto switch over emergency power supply.

## FLEXIBLE MULTIPLE LINE SWITCHING

Independently addressable output ports can be configured to control up to 12 lines of isolation controlled from the keypad. This multiple line switching permits fast and safe closing of the lines to isolate leaking channels or for functional testing of systems such as over speed switches. The MPS45 can control up to 8 static and 4 pitot lines and the MPS49 can control up to 4 static, 4 pitot and 4 AoA lines.

## BUILT IN SAFETY LIMITS FOR UUT PROTECTION

Key DMA design features protect both the test set and instruments under test. Preset or user programmed safe limits protect the UUT.

## LOW POWER CONSUMPTION

The careful consideration during the design ensures low power consumption giving minimal heat generation internally which consequently results in high reliability and accuracy.

## HAND TERMINAL, WIRELESS OR COMPUTER CONTROL

The front panel keypad and display or the remote hand terminal provide the versatility needed for flight line or laboratory operation. The instrument can also be controlled via a wireless Bluetooth connection or from a PC using DMA designed specific Ps/Pt testing software, ADWIN.

## AIRCRAFT AND CONTROL INTERFACES

The ARINC 429 interface receives data from the aircraft's ARINC 429 bus and displays it alongside the associated test set parameters. The IEEE488 interface allows full control of the test set over the IEEE488 GPIB interface. An RS232 interface is provided as standard. A USB to RS232 cable is available.

## ALTITUDE READ-OUT DEVICE

Gray code encoded data from altitude devices can be displayed alongside altitude data on the test set display.

## GROUND PROXIMITY WARNING COMPUTER

This option integrates GPW testing by generating a voltage output equivalent to the radio altimeter output.

## AUTOMATED CALIBRATION

Calibration, performed by software, is fast and simple since no mechanical adjustments are required. Calibration factors are password protected for security.

## PITOT-STATIC ADAPTERS

Available singly or in comprehensive kits, DMA design and manufacture pitot-static adapters for a wide range of aircraft types. The list of available adapters is continuously growing.



ADAPTER KIT



PITOT ADAPTER



SMART PROBE ADAPTER



STATIC ADAPTER



MPS43B WITH EPU6

## PRESSURE AND VACUUM GENERATORS

The EPSR2 provides pressure and vacuum supplies for the laboratory test sets. Available in rack mount or table top versions.

The DMAKV2 provides vacuum for static adapter hold down.



EPSR2



DMAKV2

## CONTROL OPTIONS

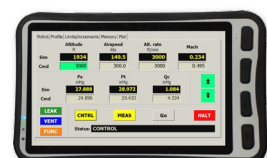
The MPSRC handheld remote control, the MPSRE touchscreen remote terminal, the MPSMON table-top touchscreen remote terminal or the MPSRW wireless/bluetooth terminal provide alternative forms of remote control for the Air Data Test Sets. An ATEX certified terminal is also available.



MPSRC



MPSRE



MPSRW

## EPU6 POWER UNIT

The EPU6 is an external power unit which extends the battery life of the MPS43B to 6 hours.

The EPU6 can be recharged whilst powering the MPS43B.

# Ground Test Equipment

## ULTRA COMPACT AUTOMATIC AIR DATA TEST SET MPS43B

The MPS43B is a unique instrument offering first class capabilities in terms of precision and performance. The rugged, lightweight and remarkably small enclosure meets the demanding requirements of the aerospace industry, while offering cost and ownership benefits unmatched by alternatives.

- Full automatic control for Altitude & Airspeed
- Ps to 55,000 ft, Pt to 550 kts, ROC to 6,000 ft/min
- Fully RVSM compliant with 12 months recalibration period
- Integral pressure and vacuum pumps with 1500 hour warranty
- Powered by AC, 28VDC or 1 hour+ operation from internal battery
- User programmable safety limits and test programs
- Vacuum port holds DMA adapters to fuselage
- Weighs just 4.5 Kg, carry to the cockpit
- Wired and wireless remote terminals available
- Option of extra 3 x Ps & 3 x Pt outputs on rear side



MPS43B

## PRESSURE CALIBRATION STANDARDS

The MM14-BW digital automatic pressure calibration system combines high technology and comprehensive features to allow easy calibration of pressure systems such as Air Data Test Sets.

- Better than 25ppm accuracy
- Automatic calibration in aircraft pitot and static ranges
- High Performance Primary Standard pressure balance
- Integral Transfer Standard
- Pressure and Vacuum pumps included



MM14-BW

## MINIATURE TRANSFER STANDARDS

The PAMB10H and PAMB11H precision pressure indicators provide transfer standard accuracy in single or dual channel units.

- Single channel PAMB10H
- Dual channel PAMB11H
- High accuracy transfer standards
- Colour touchscreen display and control
- Ultra low drift
- Ultra high sensitivity
- Sensors unaffected by gaseous pressure media (Air or Nitrogen)



PAMB11H

## DIGITAL TACHOMETER TESTERS

The BCE14/15 provide simultaneous testing of up to three tachometers and indicators used with turbine engines.

- Range: 0 - 12,000 RPM
- Reading accuracy:  $\pm 1$  RPM
- Speed stability  $\pm 0.1\%$
- Up to 3 independent drives
- Selectable safety limits
- "Y" or "Δ" resistive loads



BCE15

## TILT TABLES

Various models of Tilt Table are available providing very accurate position and motion control for testing and calibrating attitude/heading and inertial reference units.

- 3 Axis capability, X, Y & Z
- High accuracy
- Independent settings for each axis
- Control by internal computer or PC
- Safety limits
- Fast zero position finder



MTG7

## ANGULAR PROTRACTORS

Electromechanical devices to measure the relative rotation between movable surfaces.

- Goniometric scale and/or angular position sensor with 0.01 deg. resolution.
- Transversal misalignment up to 20 mm (0.8 inch)
- Multi-channel computer controlled read-out system
- Screw or suction fixing plates



IAC90



## DMA

D.Marchiori (DMA) design and manufacture Aviation Ground Support Equipment (AGSE) such as: RVSM Air Data Test Sets, fly-by-wire flight control surface movement analysers, tachometer test sets, tilt tables and equipment designed to customer specifications. This precision aircraft ground test equipment is used worldwide by established overhaul bases, civil airlines and general aviation.

DMA traces its establishment back to 1938, mainly as a test equipment manufacturer to support European aviation requirements. As a growing and developing company DMA is committed to continual product improvement to meet and exceed the exacting standards required in the aviation industry today.

## FACILITIES

D.Marchiori are based in Aprilia, situated just south of Rome in Italy, conveniently close to the international airports of Fiumicino and Ciampino, both only some 30 minutes drive away.

The plant is a large purpose built facility and all the activities associated with design, development and manufacture are carried out here, along with the internationally traceable Calibration Laboratory.

## WORLDWIDE AGENTS

### AFRICA

Various countries

### AMERICAS

Brazil

Canada

Columbia

U.S.A.

### ASIA

Brunei

China

Hong-kong

India

Indonesia

Japan

Korea

Malaysia

Pakistan

Philippines

Singapore

Sri Lanka

Taiwan

Thailand

Vietnam

### AUSTRALASIA

Australia

New Zealand

### EUROPE

Belgium

Czech Republic

Denmark

Finland

France

Germany

Greece

Holland

Norway

Poland

Russia

Slovakia

Spain

Sweden

U.K.

### MIDDLE EAST

Algeria

Egypt

Emirates

Iran

Jordan

Lebanon

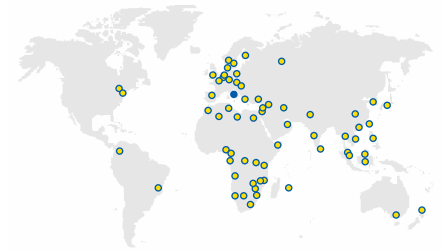
Libya

Morocco

Syria

Tunisia

Turkey



## SERVICE

The range of instrumentation products manufactured by DMA are all supplied with manuals to enable the owner to undertake calibration, maintenance and repair within their own organization if they so wish.

For those users who prefer to have the equipment calibrated, maintained or repaired by DMA, all returned equipment will be fast-tracked to reduce the time spent away from the operator to an absolute minimum.

DMA offer training courses for operator's staff if the decision is made to carry out service activities within their own organization.

Lists of Recommended Spare Parts can be supplied to enable the operator to stock parts within their organization for rapid response.

## CALIBRATION

The precision and accuracy of DMA Air Data Test Sets and Precision Barometric Indicators is supported by a first class calibration laboratory, enabling stringent accuracy requirements such as RVSM to be achieved. The DMA laboratory is approved to international standards via the ACCREDIA calibration system and is traceable through the accredited national laboratories.



## DATA SHEETS

Individual data sheets are available for most products. Please enquire using the contact details below.

Data sheets can also be downloaded from our website [www.dma-aero.com](http://www.dma-aero.com).

Ongoing development results in specifications being subject to change without notice



**D. Marchiori srl**  
Via Pontina km 43,856  
04011 Aprilia (Lt)  
Italy

Tel: +39 06 9282 733  
+39 06 9270 3073  
Fax: +39 06 9275 401

E-mail: [marchiori@dma-aero.com](mailto:marchiori@dma-aero.com)  
Web: [www.dma-aero.com](http://www.dma-aero.com)



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Representative