



3 Channel Air Data Test Set

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- The image shows a yellow D.MARCHIORI Air Data Test Set (ADTS) unit. The main unit is a rugged, yellow plastic case with a grey top panel. It features a digital display, a keypad, and several connectors. A handheld remote control is connected to the main unit. The remote control has a small screen displaying flight data and a keypad with various function buttons. The background is a white grid with blue lines and numbers, suggesting a technical or flight-related context.

MPS35C Precision 3 Channel 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.

FLIGHT LINE TESTER FOR DEMANDING APPLICATIONS

The MPS35C is a digital technology portable Air Data Test Set incorporating many standard features normally found on more expensive test instruments. The construction is both rugged and rainproof for demanding flight line use. The unit is housed in a single wheeled case with a stowable handle.



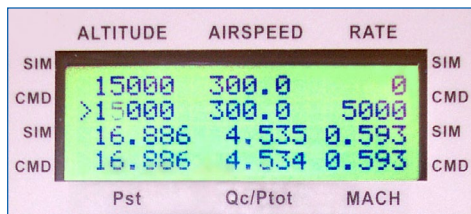
AUTOMATIC CONTROL OF 3 INDEPENDENT PRESSURES

Three pressures are controllable separately and independently: Static and Pitot for altitude and airspeed together with Angle of Attack (AoA) pressure to test those aircraft equipped with the Smart pitot probe.

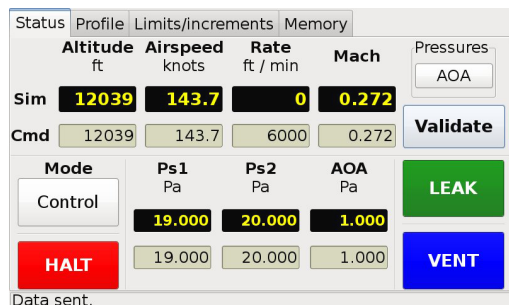
The angle of attack pressure can be displayed either in pressure units with a maximum of 0.0001 inHg resolution or directly in degrees of AoA with 0.1° resolution. When three pressures are not required, AoA ports can be used as Static ports.

EASY INTUITIVE INTERFACE

Using logical key press routines the MPS35C is easy to use by both beginners and experts. Testing and trouble shooting can be performed via the built-in intuitively arranged color-coded keypad and large 4 x 20 character back-lit display. For a remote location



such as the flight-deck, three control options are available: the Hand Held Remote Control, the Touch Screen Remote Control or a wireless Bluetooth connected PDA. All the important air data functions are simultaneously displayed on all interfaces, constant screen or menu changes are not required. Readings of both commanded and measured test values are displayed.



Laboratory testing can also be performed by a PC connected via RS232 to the remote hand terminal connector. The comprehensive manuals include all the control instructions. ADWIN software is available as a ready-to-run PC based interface.

ACCURACY ACHIEVED BY THE END OF SELF TEST

Two vibrating element absolute transducers are utilized for the static and pitot channels and one differential transducer for the Angle of Attack (AoA) parameter. 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.

EXCLUSIVE 5000 HOUR PUMP LIFE WARRANTY

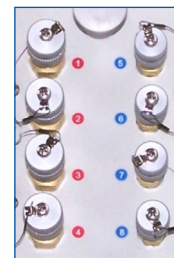
The MPS35C is a rugged flight line instrument designed for low maintenance. Designed by DMA, the low maintenance Internal pressure and vacuum pumps run only on demand, extending the pump life and carrying a 5000 hours industry exclusive warranty (see specification for details), based on test set running hours.

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 vibrating element sensors exceeds the RVSM industry requirements.

FLEXIBLE MULTIPLE LINE SWITCHING

By means of independently addressable ports the MPS35C is configured to control up to 8 lines of isolation: 4 ports for static and 4 for pitot or, alternatively, 2 static, 2 AoA and 4 pitot when in AoA mode.



This multiple line switching permits fast and safe isolation of the lines to isolate leaking channels. Control is possible from any of the local or remote user interfaces. Combinations of line switching are also possible for numerous fault finding routines.

LOW POWER CONSUMPTION FOR HIGH RELIABILITY

Careful consideration during the design ensures low power consumption giving minimal internal temperature rise which consequently results in high reliability: typically 110 VA power consumption from the a.c. line.

INTERNAL BATTERY FOR SAFETY AND VERSATILITY

The MPS35C is equipped with internal rechargeable batteries which provide an emergency power supply able to give up to four hours of full operation. This battery power feature also ensures that operation away from available a.c. supplies causes no problems to the operator. For those occasions when the a.c. power fails during a test there is a complete and seamless transfer over to the battery power allowing testing to continue and safe shutdown with total control.

BUILT IN SAFETY LIMITS FOR UUT PROTECTION

The MPS35C 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. In the unlikely situation where both a.c. and internal battery operation is not possible 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.



DMA-Aero



Optional Touch Screen Remote Control.
Includes USB port for test program
storage on USB memory



Optional Hand Terminal provides
intuitive user interface with back-lit
display and color coded keypad

Rugged splash proof case
with wheels, stowable
handle and removable lid

Universal power input with
28 VDC Option

Low power consumption for
high accuracy and reliability

USB port for memory
stick

Terminal connector and
RS232 port

Vacuum supply for
static adapters

ARINC429, IEEE488 and
Altitude encoder interfaces
available as options

Internal 4 hour battery
for safety and versatility

Manual vents for
Static and Pitot

Local back-lit display and
color coded keypad for
laboratory use

Multiple line switching:
4 static, 4 pitot
or 2 static, 2 AoA, 2 pitot

3 Independent channels of
pressure control Static, Pitot and AoA

A wide range of pitot-static adapters and
adapter kits are available from DMA



MPS35C Standard Specifications



	PARAMETER		RANGE		RESOLUTION		ACCURACY [5]
			MEASURE	CONTROL	MEASURE	SETPOINT	
STATIC	Altitude	(ft)	-3,000→80,000	-3,000→60,000	1	1	± 2 @ SL ± 4 @ 30,000 ± 7 @ 50,000
	Vertical speed	Standard (ft/min)	0→6,000	0→6,000	5 @ < 1,500 [2]	1	± 10 ± 1% of setting
		High rate [1] (ft/min)	0→30,000	0→30,000			
PITOT	Static (inHg abs) (hPa abs)		0.8→33.3 27→1130	2→33.3 71→1130	0.001 0.01	0.001 0.01	± 0.003 ± 0.1
	Airspeed	Standard (kts)	10→850	10→850	1 @ < 50 0.1 @ > 50	0.1	± 0.5 @ 50 ± 0.1 @ > 500
		Ultra low speed function [3] (kts)	5→200	5→200	0.1 @ > 20		± 0.001 inHg
	Airspeed slew rate (kts/min)		0→700	0→700	10	10	± 10 ± 1% of setting
	Mach No. (mach)		0→4	0→4	0.001	0.001	< ± 0.002
	Pitot (inHg abs) (hPa abs)		0.8→47 27→2600	2→47 71→2600	0.0001 0.01	0.0001 0.01	± 0.005 ± 0.17
	Engine Pressure Ratio (EPR)		1→2.5 @ SL	1→2.5 @ SL	0.001	0.001	0.001
AoA	Angle of attack pressure (inHg diff) (hPa diff)		-2.5→2.5 -85→85	-2.5→2.5 -85→85	0.001 0.01	0.001 [4] 0.01	± 0.003 ± 0.1

Notes: Control capability on all load volumes: Static: 0 to 125 cu. in. (2 L), Pitot: 0 to 80 cu. in. (1.3 L) . Larger volumes acceptable

¹ High rate achievable into small system volumes

³ Activated on request, below 200 kts

² 10 above 1,500 ft/min, 25 above 3,000 ft/min, 50 above 6,000 ft/min, 100 above 12,000 ft/min

⁴ 0.0001 inHg by user setting - inHg units mode only

⁵ Total accuracy includes all metrological uncertainty contributions for the pressure measured. Metrological data has full traceability to NIST.

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
- Pressure/angle of attack input
- Mach Number input
- EPR generation
- TAS / IAS toggle, TAS temperature correction
- Offset correction
- 30 user test programmed profiles of 26 steps
- Ultra low speed (5 to 200 kts) for improved accuracy and stability
- USB port for USB memory to store results and download test programs
- Audible indication when approaching set point

DISPLAY AND KEYPAD

Integral display and keypad in splash proof and shock protected front panel.
Back lit LCD displays all test parameters.
ATEX version also available.

DISPLAYED UNITS

Altitude: ft, m
Airspeed: kts, km/h, mph
Pressure: InHg, hPa, kPa, Pa, psi, mmHg

CALIBRATION

One year interval, performed using software.

PHYSICAL SPECIFICATIONS

Weight: 76 lbs. (34.5 kg.)
Dimensions: L 24.6 x W 19.7 x H 11.7 in.
(L 625 x W 500 x H 300 mm)
Connections: Quick release Hansen fittings.

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.
110 VA
4 hours operation internal rechargeable battery

WARRANTY

Unit: 2 Years
Pumps: 5000 running hours or 4 years,
whichever expires first

OPTIONS

- A0** 28 V d.c. Power supply: (18 to 30 V d.c.)
- B4** IEEE488 GPIB control (RS232 is standard)
- B5** ARINC429 monitoring interface
- B7** Gray Code Altitude Device Read-out
- F2** ADWIN PC Control software (locked to S/N)
- F4** ADWIN PC Control software (unlocked)
- G0** Hand held remote control unit: 4 x 20 characters LCD with 15m extension cable
- Custom Pitot/Static connections available

ASSOCIATED PRODUCTS

MPSRE Touch screen remote control
Pitot-static adapters
Pressure indicators/transfer standards



Ongoing development results in specifications being subject to change without notice



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