



# D.MARCHIORI

## MPS31C Digital Air Data Test Set



### FLIGHT-LINE AIR DATA TEST SET WITH FULL DIGITAL CONTROL

The DMA MPS31C is a low cost air data test solution for troubleshooting and certification of aircraft pitot-static systems with RVSM accuracy requirements. It provides test and envelope generation capabilities required for air data testing of all modern commercial fixed and rotary wing aircraft.

The MPS31C uses precision hi-tech resonant element and silicon bridge transducers for maximum accuracy.

An internal rechargeable battery for in excess of 2 hours operation is included.

### EASY TO USE CONTROLS, CLEAR DISPLAY

The MPS31C is easy and fast to use. The operator interface is easy to learn by both experts and first time users. All testing and troubleshooting with the MPS31C is performed via an intuitively arranged color-coded keypad on the front panel. All test information is displayed on a large, easy to read LCD display. As an option, a hand held remote control unit (HHRCU) can be supplied.

The Bluetooth wireless data connection permits the MPS31C to be controlled through an external PC such a notebook or a Pocket PC being used as a wireless HHRCU.

Commanded and measured test values are simultaneously displayed at all times.

The DMA on-demand pump system of the larger MPS air data test set series is used in the MPS31C providing high flow rates. The internal vacuum and pressure source runs only if required to ensure long pump life.

### FEATURES

- Accuracy  $\pm 3$  ft at sea level.
- Exceeds RVSM accuracy requirements.
- Smart user interface supports first time users.
- Optional, up to 4+4 multi-port isolators for ease of leak localisation.
- Optional encoding altimeter readout system with automatic sequence control.
- User programmed test profiles.
- User programmed limits.
- Low maintenance design.
- Five minutes warm up time.
- Transportable with built-in wheels.
- Bluetooth remote wireless connection.
- Internal auto-recharge battery provides more versatility and safety.

### BUILT IN INSTRUMENT SAFETY

No more damaged instruments or air data test sets. The MPS31C comes equipped with built in protection and safeguards.

Both the test set and instruments under test are protected by key MPS31C design features. The pressure condition of  $P_s$  greater than  $P_t$  (-ve  $Q_c$ ) is prevented in both manual and automatic operation. The test set system is safely isolated in the event of power loss.

The MPS31C is designed to reject any commanded values which exceed preprogrammed limits. Limits values are password protected. To facilitate leak troubleshooting, the MPS, as an option, can be supplied with multiple isolating ports, located on the front panel, which can be controlled by key-press on the HHRCU or front panel keyboard.

The low power consumption ensures low internal temperatures for high reliability and accuracy, typically 50 VA power from a.c. line (including power supply efficiency).

The MPS31C is equipped with internal rechargeable batteries providing more than two hours operating life.

### SIMPLE CALIBRATION

MPS31C permits easy in-house calibration. Using a transfer calibration standard (such as DMA's own PAMB6), the MPS31C can be calibrated in typically less than 20 minutes.

Calibration is performed only by software adjustment. No mechanical adjustments are required to the MPS. All calibration factors are password protected for QA security.

## MPS31C SPECIFICATIONS

Operating temperature range: -5°C to +50°C, Storage: -20°C to +70°C

Control capability on all load volumes (cu. in.): Static: 0 to 125, Pitot: 0 to 80 cubic inches. Greater volumes permitted

Parameter	Range (*)		Resolution		Accuracy	
	Measure	Control	Meas.	Contr.	Measure	Control
Altitude(ft)	-2,000 +65,000	-2,000 +65,000	1	1	±3 @ SL ±5 @ 30,000 ±20 @ 60,000	±2
Altitude slew rate Rate of Climb/Dive (ft/min)	N 0 to 6,000 HR 0 to 20,000	N 0 to 6,000 HR 0 to 20,000	25 > 1000 5 < 1000		±10 ±1% of reading	Same as measure
Airspeed (kt) (note:option up to 830 kts) Ultra low speed function	N: 10 to 700 ULS: 5 to 200	N: 10 to 700	1 < 50 0.1 > 50 0.1 > 20	0.1	±0.5 @ 50 ±0.1 @ >500 ULS: ±0.001 inHg	±2
Mach No.	0 to 6	0 to 6	0.001	0.001	< 0.002	±0.002
Airspeed slew rate (kt/min)	0 to 500	0 to 500	10	10	±10 ±1% of rdg	±5%

N: normal HR: high rate

### STANDARD FUNCTIONS

- Pressure/vacuum generation
- Controlled venting to ambient
- Altitude/airspeed input
- Static/dynamic/total pressure input
- Altitude/ Airspeed rate input
- Mach Number input
- Bluetooth wireless data communication
- Plus:
- EPR generation
- TAS temperature correction
- Altitude offset correction
- Automatic leak test
- User programmable test profiles
- Audible indication when approaching set point

### DISPLAY AND KEYPAD

Easy to read display in splashproof and shock protected front panel.  
LCD with back-lighting displays all test parameters.

### CALIBRATION

Traceable to International Standards One year interval, performed using software.

### SAFETY

Hardware and software protection prevents UUT and test set damage

### PHYSICAL SPECIFICATIONS

Weight: 20 kg (44 lbs)  
Dimensions: L 558, W 356, H 230 mm (22" x 14" x 9")

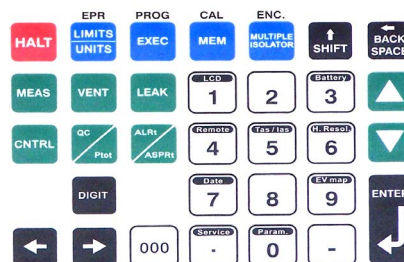
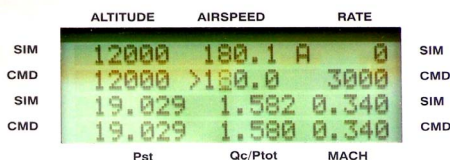
### ENVIRONMENTAL

Splashproof and shockproof  
CE compliant, EN61010, EN 61326 CE marked

### POWER SUPPLY

Universal power supply: 90-240 Vac; 50-400 Hz., 80 VA  
2 hours operation internal rechargeable battery

### FRONT PANEL DISPLAY AND KEYBOARD



### WARRANTY

Unit Two years.  
Internal pumps 5000 hrs.

### CASE

Lightweight, HDPE moulded case, incorporating stowable handle and wheels

### OPTIONS

- B. ARINC429**
  - C. IEEE488** GPIB control (RS232 standard)
  - D. PDA** for wireless remote control
  - E. Multiple Pitot and Static Isolators** controlled from keypad. 2+2, 3+3 or 4+4
  - F. ADWIN** PC Control software
  - G. Hand held remote control unit** including 15 m extension cable
  - H. Gray Code Altitude Device Readout**
  - **Custom Pitot/Static** connections available
- Note: --- Specifications subject to change ---



**D. Marchiori srl** Ground Support Equipment  
Via Pontina, km 43,856 - 04011 Aprilia (LT) ITALY - phone: ++39 06 9282733  
fax++39 06 9275401 - [www.dma-aero.com](http://www.dma-aero.com) [d.marchiori@mcclink.it](mailto:d.marchiori@mcclink.it)