



4 CHANNEL LABORATORY DIGITAL AIR DATA TEST SET

The MPS48 is a 4-channel laboratory digital technology Air Data Test Set providing extremely high accuracies for aircraft pitot-static component testing.

A four independent channel control allows altitude, airspeed and 2x angles of attack (AoA) simulations.

The MPS48 is designed to meet and exceed manufacturer test requirements both for military and commercial fixed / rotary wing aircraft models.

PC control in laboratory operations can be carried out by serial RS232, USB, parallel GPIB or Ethernet communication protocol interfaces. The MPS48 can be used as a replacement of legacy technology precision laboratory air data test set applications.

The MPS48 through precision pressure transducers embodying an advanced mathematical characterization achieve maximum accuracy of any altitude, airspeed and AoA parameters. An extremely high-resolution A/D converter controlled by its dedicated microprocessor operating pneumatic regulated electro valves is installed onto a minute electronic card. A pressure transducer located on the same card ensures identical sensor and associated electronic conditions.

Relevant accuracy gains similar to an absolute dead weight pressure standard are achieved. Gas pressure media do not affect displayed accuracies.

Technology achieves speeds of 100 readings/sec.

Use of fast and precise digitally operated flow valves enable great stability control.

The MPS48 requires low maintenance costs and extended calibration periods compared to legacy equipment. Up to thirty user programmed test profiles can be entered and memory stored capable of being executed through a single key.

The MPS48 can be used in ATE systems. Simple high level language wording input control parameters reduce new SW development timing.

FEATURES

- Accuracy ± 2 feet at sea level or
- ± 0.002 inHg.
- Ergonomic design reducing calibration and maintenance costs.
- Fully featured color touch screen flat panel display.
- Complete Automatic Safety Protection achieving fail-safe operation.
- USB, RS232, Ethernet and standard IEEE-488 interface ports for ATE/PC operations.
- Multiple pressure/engineering unit display capability.
- 2U 19" rack format (3.5" x 19" x 11")
- Extremely high resolution (0.2 Pa static pressure).
- Up to 30 user programmed test profiles, single key executable, memory stored.

Automatic Safety Protection Features

Unit is structurally safe due to internal HW and SW protections. In case of power failure manual venting allows reach of safe ambient conditions.

Factory safe or custom programmed limits prevent UUT damage.

The LCD color touch display conveys user information through a simple, intuitive and complete visual interface.

Parameters such as altitude, airspeed, rates, Mach number, pressure, measure units and stability indications are simultaneously displayed as logical and simple tables.

The MPS48 range can be extended to additional models and/or options such as:

- internal pump (suffix P)
- different communication ports (option Bx)
- different fittings (option Kx)
- extended range (Jx)

Please enquire for any further requirements.

STANDARD SPECIFICATIONS

Control capability on all load volumes

Static: 0 to 1 L (0 to 62 cu. in.), Pitot: 0 to 1 L (0 to 62 cu. in.).

Larger volumes achievable through reduced RoCs

Parameter		Range Measure Control		Resolution Measure Setpoint		Accuracy
Altitude(ft)		from -7,000 to +100,000	from -7,000 to +80,000 (100,000 with ext. pump)	1	1	± 2 @ SL ± 4 @ 30,000 ± 7 @ 50,000
Vertical speed (ft/min)		0 to 60,000	0 to 6,000	5 @ < 1,000 25 @ > 1,000	25	± 25 ± 1% of reading
Static	(inHg abs)	0.3 to 38	0.8 to 38	0.0001	0.001	± 0.002 inHg @ 30
	(Pa abs)	1,100 to 130,000	2,760 to 130,000	0.2	0.2	± 0.01 inHg @ 50
Airspeed	Standard (kts)	10 to 850	10 to 850	1 @ < 50 0.1 @ > 50	0.1	± 0.5 @ 50 ± 0.1 @ > 500
	High range (kts)	10 to 1,000	10 to 1,000 with ext. pump			
	U.L.S. (kts)	5 to 200	5 to 200	0.1 @ > 20		± 0.001 inHg
Mach No.		0 to 6	0 to 6	0.001	0.001	< 0.002
Airspeed rate (kt/min)		0 to 900	0 to 900	10	10	± 10 ± 1% of reading
Pitot	(inHg abs)	0.8 to 77	same as measure	0.0001	0.001	± 0.004 inHg @ 30 ± 0.006 inHg @ 80
	(Pa abs)	2,760 to 260,000		0.5	2	
High range	(inHg abs)	0.3 to 105	same as measure (with ext. pump)	0.0001	0.001	
	(Pa abs)	1,100 to 350,000		0.5	2	
AoA,		(inHg diff)	-2.5 to 2.5	0.001	0.001	± 0.003
AoA2		(hPa diff)	-85 to 85	0.01	0.01	± 0.1

Note

Accuracy compliant with FAA advisory circular 43-2B, and Reduced Vertical Separation Minimum (RVSM)

CALIBRATION

One year interval, performed using software

PHYSICAL / DIMENSIONS

Rack mount 3.5" high 19" wide 11" deep

Weight, with case: 14 kg. (31 lbs.)

WARRANTY AND CALIBRATION

Warranty two years

Calibration interval one year recommended

Calibration is totally software performed by comparison against a primary or transfer standard instrument.

The MPS is internally self-calibrating for control valve adjustment

MPS48 OPTIONS

- Internal vacuum and pressure pumps
- USB, Ethernet, ARINC 429, GPIB
- Encoding altimeter reading capability
- Touch screen 15" remote control unit
MPSMON
- ADWIN36 PC control software

SOFTWARE LIBRARY

Serial Command Set

GPIB Command Set

Customer interface software for modular ATE applications.

POWER SUPPLY

Universal power supply: 90-240 Vac; 50-400 Hz.

Note: --- Ongoing development results in specifications being subject to change without notice ---

05-2025



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