DMA-Aero

MPS35C
3 Channel Air Data Test Set

- Testing for AoA, Ps and Pt
- RVSM compliant
- 5000 hour pump warranty
- 4 hour battery back-up
- Multiple line switching
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.

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

3 Independent channels of pressure control
- Static
- Pitot
- AoA

Internal 4 hour battery for safety and versatility

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

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

Low power consumption for high accuracy and reliability

Universal power input with 28 VDC Option

Terminal connector and RS232 port

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

Vacuum supply for static adapters

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

ARINC429, IEEE488 and Altitude encoder interfaces available as options

Manual vents for Static and Pitot

USB port for memory stick

Automatic vents for Static and Pitot

Remote Control, MPR1E
### MPS35C Standard Specifications

#### 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

Integrated 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

#### STANDARDS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude (ft)</td>
<td>-3,000 → 80,000</td>
<td>1</td>
<td>± 2 @ SL</td>
</tr>
<tr>
<td></td>
<td>0 → 60,000</td>
<td>1</td>
<td>± 4 @ 30,000</td>
</tr>
<tr>
<td></td>
<td>0 → 30,000</td>
<td>1</td>
<td>± 7 @ 50,000</td>
</tr>
<tr>
<td>Vertical speed</td>
<td>0 → 6,000</td>
<td>5 @ &lt; 1,500</td>
<td>± 10 ± 1% of setting</td>
</tr>
<tr>
<td></td>
<td>0 → 30,000</td>
<td>1</td>
<td>± 10 ± 1% of setting</td>
</tr>
<tr>
<td>Static</td>
<td>0.8 → 33.3</td>
<td>0.001</td>
<td>± 0.003</td>
</tr>
<tr>
<td></td>
<td>27 → 1130</td>
<td>0.01</td>
<td>± 0.1</td>
</tr>
<tr>
<td>Airspeed (kts)</td>
<td>10 → 850</td>
<td>1 @ &lt; 50</td>
<td>± 0.5 @ 50</td>
</tr>
<tr>
<td></td>
<td>0.1 @ &gt; 50</td>
<td>0.1</td>
<td>± 0.1 @ &gt; 500</td>
</tr>
<tr>
<td>Mach No. (mach)</td>
<td>0 → 4</td>
<td>0.001</td>
<td>± 0.005</td>
</tr>
<tr>
<td></td>
<td>0 → 4</td>
<td>0.01</td>
<td>± 0.17</td>
</tr>
<tr>
<td>Pitot (inHg abs)</td>
<td>0.8 → 47</td>
<td>0.0001</td>
<td>± 0.005</td>
</tr>
<tr>
<td></td>
<td>27 → 2600</td>
<td>0.01</td>
<td>± 0.17</td>
</tr>
<tr>
<td>Engine Pressure Ratio (EPR)</td>
<td>1 → 2.5 @ SL</td>
<td>0.001</td>
<td>± 0.003</td>
</tr>
<tr>
<td>Angle of attack pressure (inHg diff)</td>
<td>-2.5 → 2.5</td>
<td>0.01</td>
<td>± 0.1</td>
</tr>
<tr>
<td></td>
<td>-85 → 85</td>
<td>0.01</td>
<td>± 0.1</td>
</tr>
</tbody>
</table>

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

2 High rate achievable into small system volumes

3 Activated on request, below 200 kts

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.

#### 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.
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#### ENVIRONMENTAL

- Temperature range: -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.