MPS38B
Compact Automatic Air Data Test Set

- Full automatic control for Altitude & Airspeed
- Fully RVSM compliant with 12 months recalibration period
- Integral pressure and vacuum pumps with 1000 hour life
- Universal ac powered for national and aircraft supplies
- User programmable safety limits and test programs
- Lightweight rugged case, carry to the cockpit
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 MPS38B is a budget priced two channel, static and Qc / Pitot, digital technology hand 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 an easily hand-carried case.

EASY INTUITIVE INTERFACE
Using logical key press routines the MPS38B is easy to use by both beginners and experts. Testing and trouble shooting can be performed via the built-in intuitively arranged colour-coded keypad and large 4 x 20 character back-lit display.

All the important air data functions are simultaneously displayed, constant screen or menu changes are not required. Readings of both commanded and measured test values are displayed.

ACCU ACHIEVED BY THE END OF SELF TEST
A precision absolute sensor is utilised for the static, altitude channel, and a precision differential transducer for the Qc/Pt, airspeed, channel. 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.

EXTENDED PUMP LIFE
The MPS38B is a rugged flight line instrument designed for low maintenance. The internal pressure and vacuum pumps run only on demand, when the instrument needs them operable, extending the pump life.

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 sensors exceeds the RVSM industry requirements.

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 75 VA power consumption from the a.c. line.

BUILT IN SAFETY LIMITS FOR UUT PROTECTION
The MPS38B 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. If a.c. power is lost 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.
Back-lit display and colour coded keypad.
Smart user interface showing all parameters at once

Universal power input.
Low power consumption for high accuracy and reliability

Internal pumps run only on demand
Fully automatic control. User programmable limits

Manual vents for Static and Pitot

Portable and rugged splashproof case.
Easily carried to cockpit

2 Channels of independent pressure control for Static and Pitot

Accuracy ± 3 ft at sea level, meets RVSM requirements

A wide range of pitot-static adaptors and adaptor kits are available from DMA
# MPS38B 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
- Mach Number input
- TAS / IAS toggle, TAS temperature correction
- Altitude offset correction
- 30 user test programmed profiles of 26 steps each
- Ultra low speed (5 to 200 kts) for improved accuracy and stability
- 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.

## 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: 10 kg (22 lbs.)
- Dimensions: L 430 x W 360 x H 180 mm (L 17 x W 14 x H 7 in.)
- 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
- 75 VA
- EPU8E External battery supply available

## STANDARD SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
<th>CONTROL STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>(ft)</td>
<td>(ft)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-2,000 ~+65,000</td>
<td>5 @ &lt; 1,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-2,000 ~50,000</td>
<td>25 @ &gt; 1,000</td>
<td>± 25 ± 1% of reading</td>
</tr>
<tr>
<td>Vertical speed</td>
<td>(ft/min)</td>
<td>(ft/min)</td>
<td>0 @ &lt; 50</td>
<td>0.1 @ &gt; 50</td>
</tr>
<tr>
<td>Static</td>
<td>(inhg abs)</td>
<td>(inhg abs)</td>
<td>± 0.003</td>
<td>± 0.1</td>
</tr>
<tr>
<td></td>
<td>(hPa abs)</td>
<td>(hPa abs)</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Pitot</td>
<td>(inhg diff)</td>
<td>(inhg diff)</td>
<td>± 0.005</td>
<td>± 0.17</td>
</tr>
<tr>
<td>Mach No.</td>
<td>(mach)</td>
<td>(mach)</td>
<td>± 0.001</td>
<td>± 0.001</td>
</tr>
<tr>
<td>Pitot (Qc)</td>
<td>(inhg diff)</td>
<td>(inhg diff)</td>
<td>± 0.005</td>
<td>± 0.17</td>
</tr>
</tbody>
</table>

**Notes:**
- Control capability on all load volumes (cu. in.): Static: 0 to 2 L (125 cu. in.), Pitot: 0 to 1.3 L (80 cu. in.). Larger volumes acceptable
- Standard mode of test set below 200 kts

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Ongoing development results in specifications being subject to change without notice

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01-2009
MPS31C
Civil Range Air Data Test Set

- Independent control of Altitude & Airspeed
- Fully RVSM compliant with 12 months recalibration period
- Integral pressure and vacuum pumps with 5000 hour guarantee
- Universal ac powered and internal 2 hour battery back-up
- Optional multiple Ps & Pt ports with automatic line switching
- Rugged flightline unit with wheels and stowable tow handle
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 MPS31C is a two channel 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.

EASY INTUITIVE INTERFACE
Using logical key press routines the MPS31C is easy to use by both beginners and experts. Testing and trouble shooting can be performed via the built-in intuitively arranged colour-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
A vibrating element absolute transducer is utilised for the static, altitude channel and a differential transducer for the Qc/Pt, airspeed channel. 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.
Universal power input with 28 VDC Option

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

Low power consumption for high accuracy and reliability

Terminal connector and RS232 port

Vacuum supply for static adaptors

ARINC 429, IEEE 488 and Altitude encoder interfaces available as options

Optional multiple line switching, 2+2, 3+3 or 4+4 static and pitot

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

Internal 2 hour battery for safety and versatility

2 Channels of independent pressure control for Static and Pitot

A wide range of pitot-static adaptors and adaptor kits are available from DMA

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 colour coded keypad
MPS31C Standard Specifications

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
<th>CONTROL STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude (ft)</td>
<td>±2,000 to 65,000</td>
<td>±2,000</td>
<td>±1</td>
<td>±2</td>
</tr>
<tr>
<td>Vertical speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (ft/min)</td>
<td>0 to 6,000</td>
<td>0 to 6,000</td>
<td>±5 @ &lt; 1,500</td>
<td>±10 ± 1% of reading</td>
</tr>
<tr>
<td>High rate [1]</td>
<td></td>
<td>0 to 20,000</td>
<td>0 to 20,000</td>
<td>±20 @ 60,000</td>
</tr>
<tr>
<td>Static (inHg abs)</td>
<td>1.7±32</td>
<td>0.001</td>
<td>±0.003</td>
<td>±0.002</td>
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<tr>
<td>Airspeed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard [2]</td>
<td>10 to 700</td>
<td>0.1 @ &gt; 50</td>
<td>±0.5 @ 50</td>
<td>±1 @ &lt; 50</td>
</tr>
<tr>
<td>Ultra low speed</td>
<td>5 to 200</td>
<td>0.1 @ &gt; 20</td>
<td>±0.03 hPa</td>
<td>±0.03 hPa</td>
</tr>
<tr>
<td>Mach No.</td>
<td></td>
<td></td>
<td>±5</td>
<td></td>
</tr>
<tr>
<td>Pitot (Qc)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (inHg diff)</td>
<td>0 to 30.8</td>
<td>0.001</td>
<td>±0.003</td>
<td>±0.003</td>
</tr>
<tr>
<td>Option I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine Pressure</td>
<td>1±2.5 @ SL</td>
<td>0.001</td>
<td>±0.005</td>
<td>±0.005</td>
</tr>
<tr>
<td>Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: Control capability on all load volumes: Static: 0 to 2 L (125 cu. in.), Pitot: 0 to 1.3 L (80 cu. in.). Larger volumes acceptable
1 High rate achievable into small system volumes
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
3 Range increase to 830 kts with Option I
4 Standard mode of test set below 200 kts

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
• Mach Number input
• EPR generation
• TAS / IAS toggle, TAS temperature correction
• Altitude offset correction
• 30 user test programmed profiles of 26 steps each
• Ultra low speed (5 to 200 kts) for improved accuracy and stability
• Audible indication when approaching set point

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

DISPLAY AND KEYPAD
Integral display and keypad in splash proof and shock protected front panel.
Back lit LCD displays all test parameters.

CALIBRATION
One year interval, performed using software.

PHYSICAL SPECIFICATIONS
Weight: 20 kg. (44 lbs.)
Dimensions: 1558 x W 356 x H 230 mm (L 22 x W 14 x H 9 in.)
Connections: Quick release Hansen fittings.

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.

WARRANTY
Unit: 2 Years
Pumps: 5000 running hours

OPTIONS
B. ARINC429 monitoring interface
C. IEEE488 GPIB control (RS232 is standard)
D. PDA and software 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: 4 x 20 characters LCD with 15m extension cable
H. Gray Code Altitude Device Read-out
I. Extended range to 830 kts
L. Touch Screen Remote Control
• Custom Pitot/Static connections available

ASSOCIATED PRODUCTS
EPUBE Power unit for 8 hours battery operation
Pitot-static adaptors
Pressure indicators/transfer standards

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01 - 2009
MPS27C
Extended Range Air Data Test Set

• Independent control of Altitude & Airspeed
• Fully RVSM compliant with 12 months recalibration period
• Integral pressure and vacuum pumps with 5000 hour guarantee
• Universal ac powered and internal 4 hour battery back-up
• Optional multiple Ps & Pt ports with automatic line switching
• Rugged flightline unit with wheels and stowable tow handle
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 MPS27C is a two channel 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.

EASY INTUITIVE INTERFACE
Using logical key press routines the MPS27C is easy to use by both beginners and experts. Testing and trouble shooting can be performed via the built-in intuitively arranged colour-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.

EXCLUSIVE 5000 HOUR PUMP LIFE GUARANTEE
The MPS27C is a rugged flight line instrument designed for low maintenance. The internal pressure and vacuum pumps run only on demand, extending the pump life and carrying a 5000 hours industry exclusive guarantee, 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 OPTION
The MPS27C standard 2 connectors for altitude and airspeed can optionally be changed to independently addressable ports configured to control up to 8 lines of isolation: 4 ports for static and 4 ports for pitot. 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 90 VA power consumption from the a.c. line.

INTERNAL BATTERY FOR SAFETY AND VERSATILITY
The MPS27C 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 permitting testing to continue and safe shutdown with total control.

BUILT IN SAFETY LIMITS FOR UUT PROTECTION
The MPS27C 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.

ACCURACY ACHIEVED BY THE END OF SELF TEST
A vibrating element absolute transducer is utilised for the static, altitude channel and a differential transducer for the Qc/Pt, airspeed channel on the standard instrument. A High range version utilises twin vibrating element sensors which also offer improved accuracy. 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.
2 Channels of independent pressure control for Static and Pitot

Internal 4 hour battery for safety and versatility

Low power consumption for high accuracy and reliability

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 colour coded keypad

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

ARINC429, IEEE488 and Altitude encoder interfaces available as options

Universal power input with 28 VDC Option

Manual vents for Static and Pitot

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

USB port for USB memory

Optional multiple line switching, 2+2, 3+3 or 4+4 static and pitot

Terminal connector and RS232 port

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

Vacuum supply for static adaptors

A wide range of pitot-static adaptors and adaptor kits are available from DMA

2 Channels of independent pressure control for Static and Pitot
MPS27C Standard Specifications

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<thead>
<tr>
<th>PARAMETER</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
<th>CONTROL STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MEASURE</td>
<td>CONTROL</td>
<td>MEASURE</td>
<td>SETPOINT</td>
</tr>
<tr>
<td>Altitude (ft)</td>
<td>-3,000 ~ 99,999</td>
<td>-3,000 ~ 80,000</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical speed</td>
<td>0 ~ 6,000</td>
<td>0 ~ 6,000</td>
<td>5 @ &lt; 1,500</td>
<td>1</td>
</tr>
<tr>
<td>High rate [2]</td>
<td>0 ~ 99,999</td>
<td>0 ~ 50,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static Hg (hPa abs)</td>
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<td>10 ~ 113</td>
<td>0.01</td>
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<tr>
<td></td>
<td>0.8 ~ 33.3</td>
<td>27 ~ 1130</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8 ~ 33.3</td>
<td>27 ~ 1130</td>
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<td></td>
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<tr>
<td>Airspeed Standard</td>
<td>5 ~ 700 [4]</td>
<td>5 ~ 700 [4]</td>
<td>1 @ &lt; 50</td>
<td>0.1 @ &gt; 50</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Airspeed slew rate</td>
<td>0 ~ 800</td>
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<td>10</td>
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<tr>
<td>Mach No. (mach)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitot (Qc)</td>
<td>(inHg diff)</td>
<td>(hPa diff)</td>
<td>0 ~ 31</td>
<td>0 ~ 1040</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(inHg diff)</td>
<td>(hPa diff)</td>
<td>0 ~ 50</td>
<td>0 ~ 1040</td>
</tr>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>(hPa abs)</td>
<td>(hPa abs)</td>
<td>0.8 ~ 103</td>
<td>0.8 ~ 3500</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Engine Pressure Ratio (EPR)</td>
<td>1 ~ 2.5 @ SL</td>
<td>1 ~ 2.5 @ SL</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Notes:
- Control capability on all load volumes: Static: 0 to 2 L [125 cu. in.], Pitot: 0 to 1.3 L [80 cu. in.]. Larger volumes acceptable
- 1 For option I, accuracy improved to ± 2 @ SL, ± 4 @ 30,000, ± 15 @ 60,000
- 2 High rate achievable into small system volumes
- 3 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 Standard mode of test set below 200 kts

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

DISPLAYED UNITS
- Altitude: ft, m
- Airspeed: kts, km/h, mph
- Pressure: inHg, hPa, kPa, Pa, psi, mmHg

DISPLAY AND KEYPAD
- Integral display and keypad in splash proof and shock protected front panel.
- Back lit LCD displays all test parameters.

CALIBRATION
- One year interval, performed using software.

PHYSICAL SPECIFICATIONS
- Weight: 30 kg. (66 lbs.)
- Dimensions: 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. 100 VA
- 4 hours operation internal rechargeable battery

WARRANTY
- Unit: 2 Years
- Pumps: 5000 running hours

OPTIONS
- A. 28 V d.c. Power supply: (18 to 30 V d.c.)
- B. ARINC429 monitoring interface
- C. IEEE488 GPIB control (RS232 is standard)
- D. PDA and software 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: 4 x 20 characters LCD with 15m extension cable
- H. Gray Code Altitude Device Read-out
- I. Multiple range (850 knots, 2 pumps)
- J. Extended range (1000 knots, 2 pumps) with absolute resonant transducer for Pitot
- L. Touch Screen Remote Control
- Custom Pitot/Static connections available

ASSOCIATED PRODUCTS
- Pitot-static adaptors
- Pressure indicators/transfer standards

Ongoing development results in specifications being subject to change without notice

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01-2009
MPS39C
3 Channel Air Data Test Set

- 3 independent channels for Altitude, Airspeed & Angle of Attack.
- Fully RVSM compliant with 12 months recalibration period
- Integral pressure and vacuum pumps with 5000 hour guarantee
- Universal ac powered and internal 4 hour battery back-up
- Multiple Ps, Pt & AoA ports with automatic line switching option
- Rugged flightline unit with wheels and stowable tow handle
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 MPS39C 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 for altitude and Qc/Pt for 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.

EASY INTUITIVE INTERFACE

Using logical key press routines the MPS39C is easy to use by both beginners and experts. Testing and trouble shooting can be performed via the built-in intuitively arranged colour-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

A vibrating element absolute transducer is utilised for the static, altitude channel and a differential transducer for the Qc/Pt, airspeed channel. 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 GUARANTEE

The MPS39C is a rugged flight line instrument designed for low maintenance. The low maintenance internal pressure and vacuum pumps run only on demand, extending the pump life and carrying a 5000 hours industry exclusive guarantee, 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

The MPS39C standard 3 connectors for altitude, airspeed and AoA can optionally be changed to independently addressable ports configured to control up to 8 lines of isolation: 4 ports for static and 4 ports 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 100 VA power consumption from the a.c. line.

INTERNAL BATTERY FOR SAFETY AND VERSATILITY

The MPS39C 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 permitting testing to continue and safe shutdown with total control.

BUILT IN SAFETY LIMITS FOR UUT PROTECTION

The MPS39C 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.
Independent channels of pressure control: Static, Pitot, and AOA.

Manual vents for Static and Pitot.

Local back-lit display and colour coded keypad for laboratory use.

Optional multiple line switching: 4 static, 4 pitot, or 2 static, 2 AOA, 2 pitot.

Low power consumption for high accuracy and reliability.

Universal power input with 28 VDC Option.

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

Terminal connector and RS232 port.

Vacuum supply for static adaptors.

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

Hand terminal provides intuitive user interface with back-lit display and colour coded keypad.

ARINC 429, IEEE 488 and Altitude encoder interfaces available as options.

Internal 4 hour battery for safety and versatility.

Manual vents for Static and Pitot.

Optional Touch Screen Remote Control.

Includes USB port for test program storage on USB memory.

A wide range of pitot-static adaptors and adaptor kits are available from DMA.
MPS39C Standard Specifications

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
<th>CONTROL STABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude</td>
<td>(ft)</td>
<td>-3,000 to 80,000</td>
<td>1</td>
<td>± 2</td>
</tr>
<tr>
<td>Vertical speed</td>
<td>(ft/min)</td>
<td>0 to 6,000</td>
<td>5 @ &lt; 1,500 [(2)]</td>
<td>± 10 ± 1% of reading</td>
</tr>
<tr>
<td>Static</td>
<td>(inHg abs)</td>
<td>0.8 to 33.3</td>
<td>0.001</td>
<td>± 0.003</td>
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<tr>
<td>Airspeed</td>
<td>(kts)</td>
<td>0 to 800</td>
<td>0.01</td>
<td>± 0.003</td>
</tr>
<tr>
<td>Mach No.</td>
<td>(mach)</td>
<td>0 to 4</td>
<td>0.001</td>
<td>&lt; ± 0.002</td>
</tr>
<tr>
<td>Engine Pressure Ratio (EPR)</td>
<td></td>
<td>1 to 2.5 @ SL</td>
<td>0.001</td>
<td>± 0.003</td>
</tr>
<tr>
<td>Angle of attack pressure</td>
<td>(inHg diff)</td>
<td>-2.5 to 2.5</td>
<td>0.001</td>
<td>± 0.003</td>
</tr>
<tr>
<td></td>
<td>(inHg diff)</td>
<td>-85 to 85</td>
<td>0.01</td>
<td>± 0.01</td>
</tr>
</tbody>
</table>

Notes: Control capability on all load volumes: Static: 0 to 2 L (125 cu. in.), Pitot: 0 to 1.3 L (80 cu. in.). Larger volumes acceptable.
High rate achievable into small system volumes.
Standard mode of test set below 200 kts.

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
- Altitude offset correction
- 30 user test programmed profiles of 26 steps each
- Ultra low speed (5 to 200 kts) for improved accuracy and stability
- Audible indication when approaching set point

DISPLAY AND KEYPAD
Integral lit LCD display and keypad in splash proof and shock protected front panel.
Back lit LCD displays all test parameters.
Hand held remote control unit: 4 x 20 characters LCD with 50 ft extension cable.

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: 30 kg. (66 lbs.)
- Dimensions: L 625 x W 500 x H 300 mm (L 24.6 x W 19.7 x H 11.7 in.)
- Connections: Quick release Hansen fittings.

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. 100 VA
4 hours operation internal rechargeable battery

WARRANTY
- Unit: 2 Years
- Pumps: 5000 running hours

Options
- 28 V d.c. Power supply: (18 to 30 V d.c.)
- ARINC429 monitoring interface
- IEEE488 GPIB control (RS232 is standard)
- PDA and software for wireless remote control
- Multiple Pitot and Static isolators controlled from keypad: 4+2+2 in 3 channel mode, or 4+4 in dual pressure mode
- ADWIN PC Control software
- Hand held remote control unit: 4 x 20 characters LCD with 50 ft extension cable
- Gray Code Altitude Device Read-out
- Touch Screen Remote Control
- Custom Pitot/Static connections available

ASSOCIATED PRODUCTS
- Pitot-static adaptors
- Pressure indicators/transfer standards

Ongoing development results in specifications being subject to change without notice.

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