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ADT-222C

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**The world's leading
air data tester**

The ADT-222C: Better than the best

The Honeywell air data tester ADT-222B, once heralded as the most efficient, accurate and dependable pneumatic test equipment available in the industry has been retired. Taking its place is Honeywell's new ADT-222C, providing many new features and improvements while maintaining the ease-of-use and reliability you expect from a Honeywell system. And rest assured that any investments you may have made in installed software and training for your ADT-222B

are safe, because the ADT-222C interfaces are compatible with its predecessor.

The ADT-222C improves the productivity of any air data test facility, whether laboratory, shop, production or even flight line. It dramatically reduces manual test times, and provides further savings in automated test. Although specifically designed to test Honeywell-developed air data systems, this versatile precision pressure controller is also suited to test other systems and will be an asset to your air data test facility.

The ADT-222C is smaller and lighter than its predecessor and consumes less power. Currently a bench unit is available; however, portable and flight line units are planned, as is remote operation. In addition to ADT-222B modes, a Mach control mode is available with the ADT-222C and a new profile mode can store up to 10 profiles — a considerable time-saver. Perhaps most significant is the use of Honeywell's new silicon pressure sensor which extends the calibration cycle to a minimum of six months.

Operational flexibility

The ADT-222C speaks the operator's language by providing measurement or control in either English, metric or various other units for altitude, airspeed, Mach, absolute pressure or differential pressure functions. When it is used as a pressure controller, desired pressure or altitude, airspeed and Mach values are entered via a new, easy-to-use keypads on the front panel of the unit and information is displayed on state-of-the-art vacuum fluorescent displays. Control to newly selected values is initiated by a single push-button switch, negating the need for multiple keystrokes which many competitive products require. Dynamic test variations can be selected on the front panel and applied to the Ps or Pt channel.

Moreover, the ADT-222C allows for both dry air or nitrogen operation. So, there's no longer a need for separate calibration — one less variable for you to contend with.

Honeywell's patented tuning fork control valve outperforms all competitive pressure controllers by having two independent electronically adjustable nozzle flow areas. This arrangement provides 100 percent vacuum pump efficiency and permits the ADT-222C to operate with only a single vacuum pump, while



Tuning fork control valve

reducing gas consumption and increasing pneumatic load driving capability. The high-performance valve allows the ADT-222C to drive 60 cu. in. volumes at 40,000 ft./min. up to 90,000 ft., and 500 kts./min. up to 1,000 kts. with a single 300 liter/min. vacuum pump, or 200 cu. in. volumes over the same range with two 50 liter/min. vacuum pumps.

The ADT-222C maintains precise electronic range rate control over these operating ranges. Its electrically controlled pressure regulation valves provide high speed control response, with resolution and stability sufficient to resolve a one-foot change in altitude at 60,000 ft.

Electronic slew control

An automatic slew control system maintains the commanded flight profile regardless of the pneumatic load volume or vacuum pump size. The ADT-222C control system detects the side (Ps or Pt) with the largest pneumatic load and reduces the pressure rate on the opposite side by the correct ratio. Pneumatic loads greater than 1,000 cu. in. may be driven while still maintaining the desired flight profile. A commandable slew system can be activated for supersonic equipment to reduce test time by allowing the ADT-222C to proceed to the new pressure at full control valve capacity.



Simplified maintenance

Display components, sensors, electronic cards and subassemblies are packaged for simple maintenance. Also, plug-in interchangeable, solenoid and control valves mount directly onto a custom tailored pneumatic manifold system, which provides higher reliability by eliminating many pneumatic connections. A power-on self-test verifies the initial integrity of the entire system, and the processor continues to monitor certain key functions during normal operation. Last but not least, the ADT-222C allows a minimum of six-months calibration cycle and fully automatic calibration via the IEEE 488.2 interface.

IEEE Interface (ASCII)

An IEEE 488.2 interface card is included in the ADT-222C for a direct data link to a computer or an ATE. This feature minimizes operator intervention required to run an entire flight profile. Additionally, RS-232 and RS-422 interfaces will be supported.

Honeywell's silicon pressure sensor

One of the key contributors to the ADT-222C's superior performance is Honeywell's silicon pressure sensor.

In addition to excellent overall accuracy, Honeywell's silicon sensor has virtually zero non-correctable error and unprecedented stability. Moreover, the sensor's reliability is superior to others since it requires no temperature stabilization hardware.

The silicon pressure sensor is a member of the high-accuracy pressure sensor family used in Honeywell world-class air data avionics.



Silicon Sensor

Meeting the savings test

Add up the man-hour savings, the accessory hardware savings and the higher quality end product made possible by using the ADT-222C. Result: cost-effectiveness all the way down the line. Testing and maintenance cost savings alone can easily justify using the ADT-222C to replace existing mercury

manometry, outdated servo-based or lower performance air data test systems.

The ADT-222C. More utility, more capacity, at a considerable cost savings over its predecessor.

ADT-222C Specification

Parameters	Measure Ranges		Control Range		Units
Static Pressure	0.300	to 40.003	0.300	to 32.171	inHg
Pitot Pressure	0.480	to 100.019	0.480	to 90.000	inHg
Differential Pressure	-39.523	to 99.707	-30.500	to 89.700	inHg
Altitude	-2020	to 101540	-2020	to 90000	ft
Airspeed	23.0	to 1000.0	32.0	to 1000.0	kts
Mach Number	0.100	to 5.000	0.100	to 5.000	ratio
Static Pressure Rate	0.000	to 1.000	0.000	to 0.700	inHg/sec
Pitot Pressure Rate	0.000	to 1.000	0.000	to 0.700	inHg/sec
Differential Pressure Rate	0.000	to 2.000	0.000	to 1.400	inHg/sec
Altitude Rate	0	to 65000	0	to 65000	ft/min
Airspeed Rate	0.0	to 700.0	0.0	to 700.0	kts/min

Function	Specification
ATE Interface (Included)	ASCII (IEEE 488.1 Standard 1978) SCPI (IEEE 488.2 Standard)
Remote (Future)	RS-232/RS-422 using IEEE 488.2 SCPI Commands
Size	8.75 in. H x 19 in. W x 23 in. D (22.2 cm x 48.3 cm x 58.4 cm)
Weight	50 lb. (23 Kg)
Pressure Fittings	P _S per MS33656-6 (G) P _T per MS33656-4 (G)
Power	110/220V, 45 - 440 Hz, 100 VA
Operational Temperature	32 F - 122 F (0 C - 50 C)
Vacuum Source	Single: 300 Liters/min. (or) Dual: 50 liters/min. free air displacement
Pressure Source	Clean Dry Air or Dry Nitrogen at 50 PSIG (0.44 SCFM)
Pneumatic Loads	200 - 1000 cu. in. P _S & P _T (with slew adjustment based on volume)

The ADT-222C shall maintain the accuracy and repeatability stated in the following table whether in control or measure mode. This accuracy shall include all non-correctable errors in the sensors (i.e. repeatability, pressure/temperature hysteresis, etc) and A/D converter electronics along with test equipment.

Source	Range	Accuracy ¹	Repeatability			
Ps (inHg)	0.300 to 40.000	±0.003	±0.0015			
Pt (inHg)	0.500 to 32.000	±0.003	±0.0015			
	32.001 to 65.000	±0.004	±0.002			
	65.001 to 90.000	±0.006	±0.003			
	90.001 to 100.000	±0.010	±0.005			
Altitude (ft)	-2000 10,000 20,000 30,000 40,000 50,000 60,000 70,000 80,000 90,000 100,000	±3 ±4 ±6 ±8 ±12 ±19 ±31 ±49 ±80 ±128 ±205				
Airspeed (kts)	23 50 100 200 500 1000	±2.2 ±1.0 ±0.5 ±0.3 ±0.2 ±0.1				
Qc (inHg)	The RSS combination of applicable Ps and Pt tolerances					
Mach	The RSS combination of applicable Ps and Pt tolerances					
<u>NOTES:</u>						
1. The accuracy limits are referenced from the equipment center line.						

Find out more

To find out more about Honeywell's ADT-222C, please email us at RVSMSolutions@honeywell.com or contact:

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