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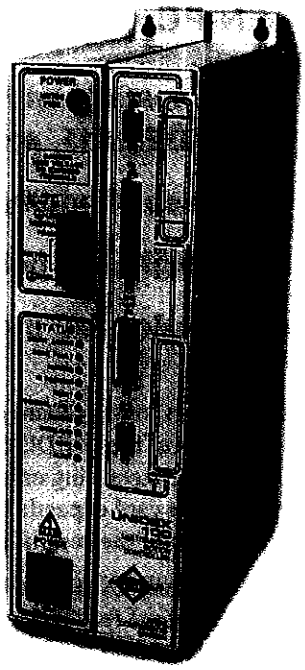
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Find the *Aerotech U100M* at our website: ***Click HERE***

SINGLE-AXIS, STAND-ALONE MOTION CONTROLLER

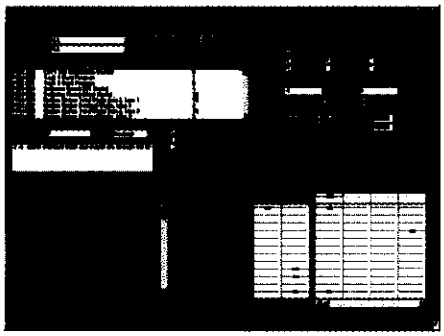
UNIDEX® 100 Series



- **Complete package includes controller, driver, and power supply**
- **Brushless, DC servo, and microstepping driver models**
- **Advanced motion control for master-slave, cam profile, and registration-based applications, plus output-on-the-fly**
- **Autotuning feature minimizes set-up time**
- **Multi-tasking operating system enables background PLC function or operator interface**
- **Stand-alone operation: store user programs in 32 KB nonvolatile memory**
- **RS-232 interface standard; RS-422 and IEEE-488 optional**
- **16 opto-isolated digital I/O points; 2 position latch inputs; dedicated home, limit, and analog inputs**
- **Compatible with LabVIEW® for Windows™**

Aerotech's UNIDEX 100 is a single-axis servo controller with power supply, amplifier and position controller in a single package. With features such as variables, math and multitasking, the UNIDEX 100 is ideal for your toughest factory automation projects. The UNIDEX 100 also has high-speed position latch inputs and advanced data logging capabilities, making it ideal for laboratory and test instrument applications.

Our GDS100 graphical development software is so easy to use you may never need to consult the manual. This Windows-based interface provides powerful diagnostic, development and analysis tools for generating and executing your application.



GDS100 Development Software

Total Solution

The UNIDEX 100 cuts your design time by providing matched drives, and taking care of details like tuning and cabling to assure a trouble-free installation. Units are fully tested, burned-in and ready to run right out of the box.

Practical Power

Four UNIDEX 100 models are available to drive a wide range of motors, including brushless, DC servo, and microsteppers. Brushless motors are sinusoidally commutated to minimize torque ripple.

The UNIDEX 100 uses a PIDF (feedforward) servo algorithm to determine the precise drive command profile to tightly track velocity and position trajectories with virtually zero position error. On-board autotuning makes servo tuning simple.

Variables, Math and More

With variables and math capability, one program can be used to produce a variety of parts by simply prompting the user for new application data. The UNIDEX 100 can send and receive messages from a terminal or thumbwheels so you can customize your operator interface. You can even teach the UNIDEX 100 positions with a digitizing joystick.

Application Versatility

The UNIDEX 100 has other built-in features such as axis calibration and backlash compensation, so you can maximize your machine's precision and accuracy. The "user units" feature makes it easy to customize the UNIDEX 100 to your specific machine,

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UNIDEX® 100 Introduction/Specifications

whether you want to display English or metric, linear or rotary units.

The UNIDEX 100 comes standard with 16 programmable I/O, two analog I/O, and 12 dedicated I/O and limit inputs. Operator interfaces are available including a hand-held terminal, thumbwheel assembly, and LED display.

The UNIDEX 100 is equipped with dual encoder inputs, so you can tackle master-slave applications and solve transmission compliance problems with dual-loop control.

Precise registration-based moves are also possible because of the UNIDEX 100's fast 0.1 microsecond acknowledge time. The UNIDEX 100 easily handles complex functions such as output-on-the-fly and velocity profiling.

Resolution	
Stepping	User programmable from 1.8 degree to 0.007 degree (200 to 50,000 steps/revolution in 50 steps/revolution increments)
DC Servo	0.09 degree (4000 steps/revolution) standard
Brushless	0.09 degree (4000 steps/revolution) standard
Accuracy	
Stepping	±5 arc minute typical, unloaded, bidirectional, motor dependent
DC Servo and Brushless	±3 arc minute ±1/2 count typical, loaded, bidirectional, encoder dependent
Repeatability	
Stepping	±5 arc second typical, unloaded, unidirectional
DC Servo and Brushless	±1/2 count typical, loaded
Hysteresis	3 arc minute unloaded, bidirectional (stepping models only)
Position Range	±1.4 x 10^{14} counts
Velocity Range	1 Hz to 4 MHz after x4 feedback signal multiplication
Acceleration Ramp	1 ms to 8000 seconds; independent acceleration and deceleration capability
Acceleration Profile	Linear, modified parabolic
Positioning Modes	Absolute and incremental
Positioning Control	Point-to-point, velocity profiling, output-on-the-fly, registration-based moves, master-slave, dual-loop control, torque control, axis calibration, backlash compensation, free-run, digitizing teach mode, auto focus, manual feedrate override
Servo Loop	0.1 msec proportional (Kp), integral (Ki), derivative (Kd), feedforward (Kf1) servo loop; automatic Kp, Ki, Kd, Kf1, servo loop tuning; stepper encoder verification
Memory	32 KB battery-backed for user programs and variables
Modes	EDIT: Enter new programs, modify existing program FILE: Copy, delete, directory, transfer, check sum MACHINE: Run programs, immediate command execution PARAMETER: Machine and drive setup AUTOBOOT: Run program on power-up MULTITASKING: Run 2 tasks simultaneously STATUS: Position, velocity, error status
Language	Mnemonic, menu-driven from HT, personal computer or terminal
Variables	1000 integer, 200 long integer, 1000 floating point, 20 string
Math	Integer and floating point format; add, subtract, multiply, divide, square root, trig functions, absolute value
Logic	AND, OR, EXCLUSIVE OR
Comparisons	Greater than, less than, equal, not equal, equal or greater than, equal or less than
Branching	Conditional, interrupt, and program initiated IF, ELSE, WHILE, GOTO, GOSUB
Interrupt	5 microsecond acknowledge time
User Units	Permits programming in English or metric, rotary or linear units
Programmable Message	Display operator prompts, input/output data and variables via interface
Safe Zone Programming	Permits safe operating zones to be programmed through software
Data Acquisition	Store data to variables while running programs

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UNIDEX® 100 Specifications

Command (9 pin D)	RS-232, (RS-422 optional) with programmable baud, parity, data bits, stop bit. Up to 30 UNIDEX 100's can be daisy-chained on one RS-232 or RS-422 line; 5 VDC output
Input/Output (37 pin D)	8 programmable inputs; 8 programmable outputs. Analog input (0 to ±10 VDC, 8 bit); analog output (0 to ±10 VDC, 8 bit); two position latch inputs (one per encoder interface, 0.1 microsec acknowledge time); interrupt (5 microsec acknowledge time); set-up; feedhold IN, shutdown IN; enable OUT; reset IN. All I/O except analog are optically isolated. Opto-isolated I/O require external 5-24 VDC, 250 mA supply.
Limits/Primary Encoder (25 pin D)	Buffered inputs for CW, CCW, home limits, marker, 5 VDC complementary line driver encoder; RS-422, 4 MHz max after quadrature; Hall-effect device; 5 VDC output; tachometer input (tach optional)
Auxiliary Encoder (9 pin D)	Inputs for 5 VDC complementary line driver encoder, 5 VDC output; RS-422, 4 MHz max after quadrature
Expansion Bus (64 pin DIN)	24-bit interface to option cards, maximum of two expansion bus option cards per system. Options include: IEEE 488 interface card; thumbwheel assembly and interface card; interface card to two OPTO 22 PB8 boards; resolver (Inductosyn)-to-digital converter card; LED display and interface card.
Motor Output (Screw Terminals)	Stepping Models: 0-160 VDC, 0-10 A, 20 kHz PWM DC Servo Models: 0-160 VDC, 20 A peak, 12 A continuous, 20 kHz PWM Brushless Models: 0-320 VDC, 20 A Peak, 12 A continuous, 20 kHz PWM
Status LEDs	+ limit, - limit, overload, remote, reset, in-position, marker, control fault, drive fault, shunt
Status Registers	Four 24-bit status registers; abort, halt, disable, fault, interrupt, and output conditions are programmable via status register bit masks
Output Short Circuit Protection	Line-to-line, line-to-ground
Current Limiting	Software selectable peak and rms output current limits; AC inrush
Fusing	AC input, motor output
Shunt Regulator	Protects power supply against regenerative energy in high-current models
U100 Chassis Weight	6.4 kg (14 lb) with transformer; 2.7 kg (6 lb) without transformer
U100i Chassis Weight	1.7 kg (3.7 lb)
Ambient Temperature	
Operating	0 to 50°C (32 to 122°F)
Storage	-20 to 70°C (-4 to 158°F)
Humidity	0 to 95%, non-condensing
AC Power (screw terminals)	115 VAC (nom) single-phase, 60 Hz, 1000 VA (max) Optional 230 VAC single-phase, 50/60 Hz, or 100 VAC single-phase, 50/60 Hz

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