6250 Stand-alone two-axis servo controller

The 6250 provides sophisticated control for any standard ±10V analogue input servo drive system and is perfect for the synchronization of 2 axes of motion. High speed position/velocity feedback on both axes allows sub-micron positioning using incremental encoders or laser interferometers. A Digital Signal Processor (DSP) is used for high-speed servo control. A separate microprocessor is used for executing high-level motion programs. The 6250 uses a dual processor approach for industry-leading servo control and motion command execution.

As with all 6000 Series products, the 6250 uses the 6000 command language. This language is powerful enough to implement complex motion control applications, and simple enough not to overwhelm the novice programmer. Many useful features are incorporated into the command language, including subroutine definition, conditional programming, unit scaling, programmable I/O, contouring, and mathematical functions.

The 6250 comes as standard with Motion Architect, a comprehensive software package for creating and executing motion control programs under Microsoft Windows. Within Motion Architect, a user is able to automatically generate setup code, edit and execute motion control programs and create a custom test panel. On-line help is available throughout Motion Architect, including interactive access to the complete contents of the 6250's Software Reference Guide. This powerful tool allows the user to save valuable setup and development time.

Features

Motion

- 2 axes of optically isolated servo control (± 10V 12 bit analogue interface) with incremental encoder feedback
- Controls servo drives in velocity or torque mode
- Update rates for servo loop as fast as 150 microsecs for one axis
- Digital Signal Processor (DSP) for servo control (PIV with velocity and acceleration feed-forward)
- 1.2 MHz post-quadrature position feedback frequency

I/O

- All inputs and outputs are optically isolated
- Home limit, Pos and Neg end-of-travel limits
- 48 programmable inputs (24) and outputs (24)
- Auxiliary high-speed programmable inputs and outputs providing position capture or output on position to ±1 count at maximum encoder frequency
- Drive Enable outputs, Drive Fault inputs
- Three 8-bit analogue inputs that can be used for joystick or variable input (temperature, tension, etc.)
- 6250 ANI option offers two ±10V, 14-bit analogue inputs (one per axis) with anti-aliasing filter; can also be used for position feedback
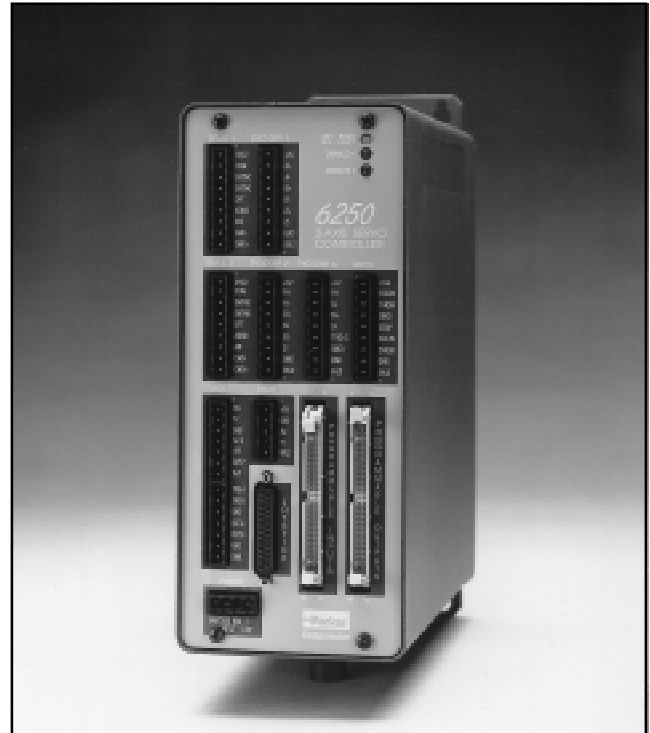
Language

- Capability to interrupt program execution on error conditions
- Position-based following
- Linear interpolation and contouring
- Variable storage, conditional branching, and maths capability
- Program debug tools—trace mode, break points, and simulation of I/O
- Scaling of distance, velocity and acceleration
- S curve or trapezoidal motion profiling
- 150,000 bytes of non-volatile memory for storage of programs and paths

Software Provided:

- Motion Architect—Microsoft Windows-based application development software
- DOS support software program editor and terminal emulator software
- Dynamic Link Library (DLL) provided for use with Microsoft Windows software development kit

Optional Software:

- Servo Tuner, CompuCAM, Motion Toolbox, Motion Builder and Dynamic Data Exchange Server

Interface Capability

- Operates stand-alone or interfaces to computers, programmable logic controllers
- Two RS-232C Communications Ports

Physical

- Stand-alone package
- 120-240 VAC

Parker Automation

Parameter	Value
Power	
Input	100-120/200-240 VAC, 50-60 Hz, or 110-340 VDC
Servo Performance	
Processor	32-bit CPU/24 bit DSP
Servo update	As fast as 150 µsec per axis, user selectable
Encoder	Two phase quadrature incremental encoders with differential (recommended) or single ended outputs (+5 VDC TTL compatible). Max frequency = 1.2 MHz, post-quadrature. Minimum time between transitions = 833 ns. Optically isolated
Position	$\pm$2,147,483,648 encoder counts
Velocity	1 to 1,200,000 encoder counts/sec.
Acceleration	1 to 50,000,000 encoder counts/sec^2
Inputs	
24 Programmable	Plug compatible with OPTO-22™ signal conditioning equipment (50 pin DIN header). TTL compatible, voltage range 0-24 VDC. Optically isolated.
2 Interrupt	TTL compatible, voltage range 0-24 VDC. Optically isolated.
3 Analogue	Voltage range 0-2.5 VDC, 8-bit A/D converter. Optically isolated.
Enable	Hardware analogue command output enable. TTL compatible, voltage range 0-24 VDC. Optically isolated.
Home; Pos and Neg Limits; Drive Fault; Trigger; Release; Axis Select & Velocity Select	TTL compatible, voltage range 0-24 VDC. Optically isolated.
Outputs	
24 Programmable	Plug compatible with OPTO-22™ signal conditioning equipment (50 pin DIN header). Open collector output will sink up to 30 mA, and allow up to 24 VDC. Optically isolated.
2 Auxiliary	Open collector output will sink up to 30 mA, and allow up to 24 VDC. Optically isolated.
Command signal	$\pm$10V Analogue output. 12 bit resolution DAC.
Enable drive	Relay output will sink up to 30 mA and allow up to 24 VDC. (Normally open and normally closed available)
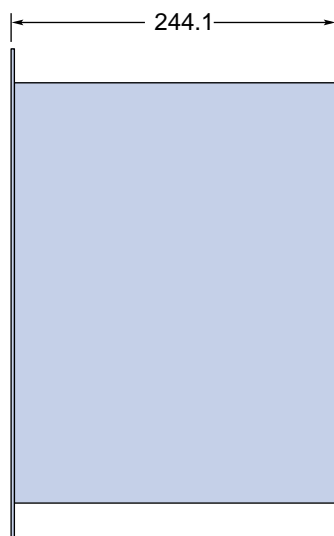
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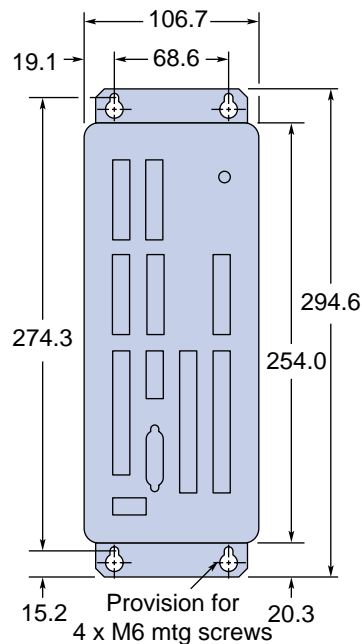
Ordering Information

Part No.	Description
6250	6250 with user guides and software support disks and power cable.
6250–ANI	Same as 6250 including two 14 bit analogue inputs.

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