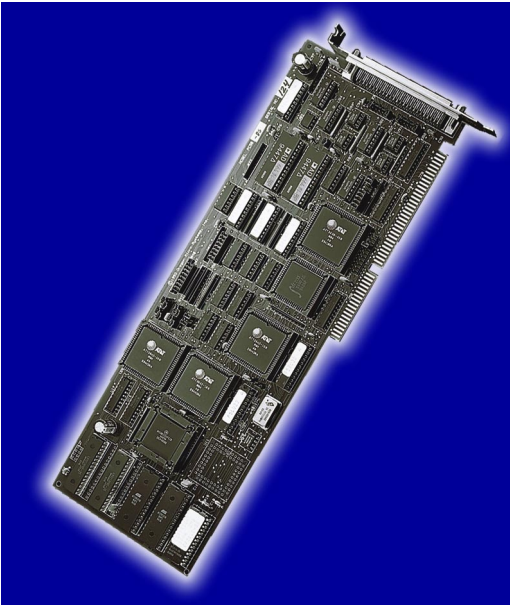


# Motion Control

## PC58 Family



### FEATURES

- Encoder feedback for stepper axes is available
- Servo outputs can be +/- 10VDC, 0-10VDC with direction, bipolar PWM, or unipolar PWM with direction (configurable by the user)
- Can control a mix of servo and stepper axes
- Up to 22 "user definable" TTL I/O lines
- Independent and coordinated motion of all axes
- Constant velocity linear interpolation (all axes)
- Custom, Parabolic, Cosine & Linear trajectory profiles
- Dual-Port RAM for real-time communications
- Software for Windows® 95 and Windows® NT
- Compatible with the IO58 breakout board
- Electronic gearing
- Circular interpolation

### DESCRIPTION

The PC58 brings the Oregon Micro Systems, Inc. (OMS) intelligent motion control technology to servo applications as well as stepping motors. This generation of motion controllers provides up to 8 axes of motion control to ISA or EISA bus compatible computers. Outputs are provided for 12 bit analog or PWM servo output as well as step and direction for stepper applications. A PID filter is provided with user adjustable parameters for ease in tuning for optimum system stability. Limit and home switch inputs are provided for all axes as well as user definable I/O for synchronization and control of other events. Incremental encoder feedback is used for all servo axes and is available on stepper axes on some models. This is used for position feedback and may also be used for slip or stall detection. Electronic gearing is also available for tracking with another motor or manual input device.

The bus interface uses dual port RAM technology for communication of commands from the host and feedback of motion control parameters. Commands may be written to this RAM by the host, eliminating the communication bottlenecks of I/O port based communications. Critical motion parameters such as position and velocity are available in the dual port RAM allowing the host to interrogate these parameters in real time while the motion is in progress. This RAM may be mapped to any desired memory location within the computer memory space by writing the base address to an I/O register.

Interrupt control and other data is available through a block of eight I/O registers. These registers include interrupt control and status, limit and home switch status, done flag status and slip status for each axis as well as the user definable I/O. Some commands may be passed to the PC58, bypassing the communication channel. These commands cause an immediate interrupt and may be used for critical commands such as abort. Each axis may perform individual unrelated moves or they can be coordinated as required by the application

### PROGRAMMING

The PC58 motion controls are easily programmed with double character ASCII commands through an extensive command structure. The commands are combined into character strings to create sophisticated motion profiles and are passed to the PC58 through the dual port RAM communication buffer. Separate 256 character buffers are provided in the RAM for communication in both directions. A separate command queue for each axis is used to store the parsed commands by the PC58 until they are executed allowing the host to send a complex command sequence and attend to other tasks while the PC58 manages the motion process. These command queues store 200 commands and parameters and include a command loop counter which allows multiple executions of any command string.