

ETM

Enhanced Throughput Module

Significantly improves move-and-settle time and contouring performance

Increases throughput of existing and new machines

Greatly reduces undesirable effects of frame motion on the servo system

Compatible with all current Aerotech controllers



Aerotech's ETM modules help improve the positioning performance of high-dynamic motion systems by directly measuring the unwanted motion of the machine base and communicating it back to the controller. By working in concert with the Dynamic Controls Toolbox and the Aerotech controllers, they allow the servo system to do a superior job of executing the desired motion path.

Unwanted base motion typically occurs because the force applied to accelerate the stage reacts against the machine frame. The machine frame responds with an oscillation that can extend over hundreds of milliseconds (Figure 1). Fine positioning or high-dynamic motion requires that the controller wait for this oscillation to subside before continuing with the process. This forces the controller to wait or causes inaccurate motion, either of which reduces

productivity. The most appropriate solution is an optimized frame and machine-base design, but in many cases this is either not practical or is prohibitively expensive.

The Aerotech ETM modules provide a low-cost solution for improving the productivity of new and existing equipment with easy installation and no changes to existing mechanical hardware. Figure 2 shows a point-to-point move. As can be seen from the plot, the ETM module and Dynamic Controls Toolbox are able to reduce settling time by 21%. Figure 3 shows integration on a Hermes™ system and Figure 4 shows integration on the AGS15000.

Contact your local Aerotech representative to see how ETM modules can make your machine more productive.

ETM SPECIFICATIONS

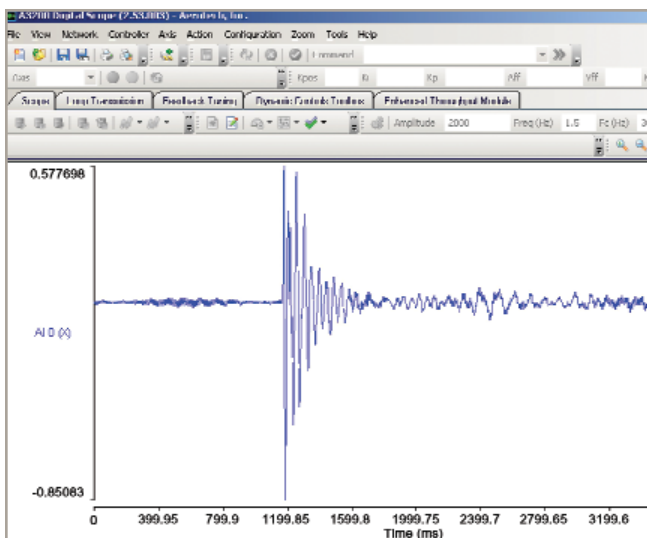


Figure 1. An example of the oscillation generated from stage motion and external disturbances of the base.

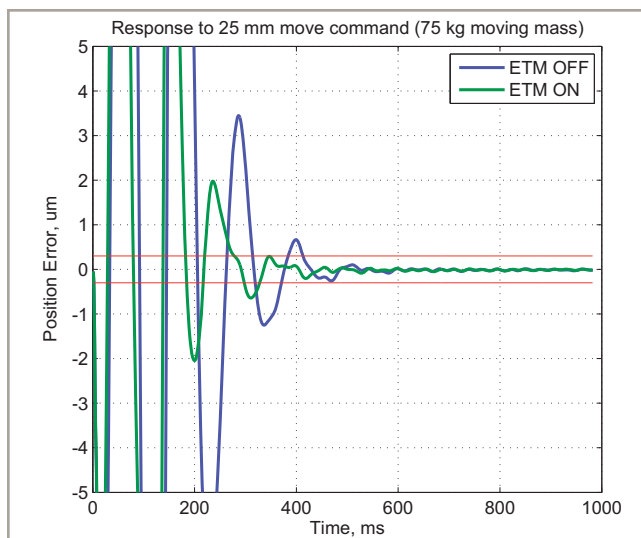


Figure 2. The example plot shows the benefits of the Aerotech Enhanced Throughput Module (ETM). Move-and-settle time for a 75 kg load was reduced by 21%, from 414 ms to 328 ms.

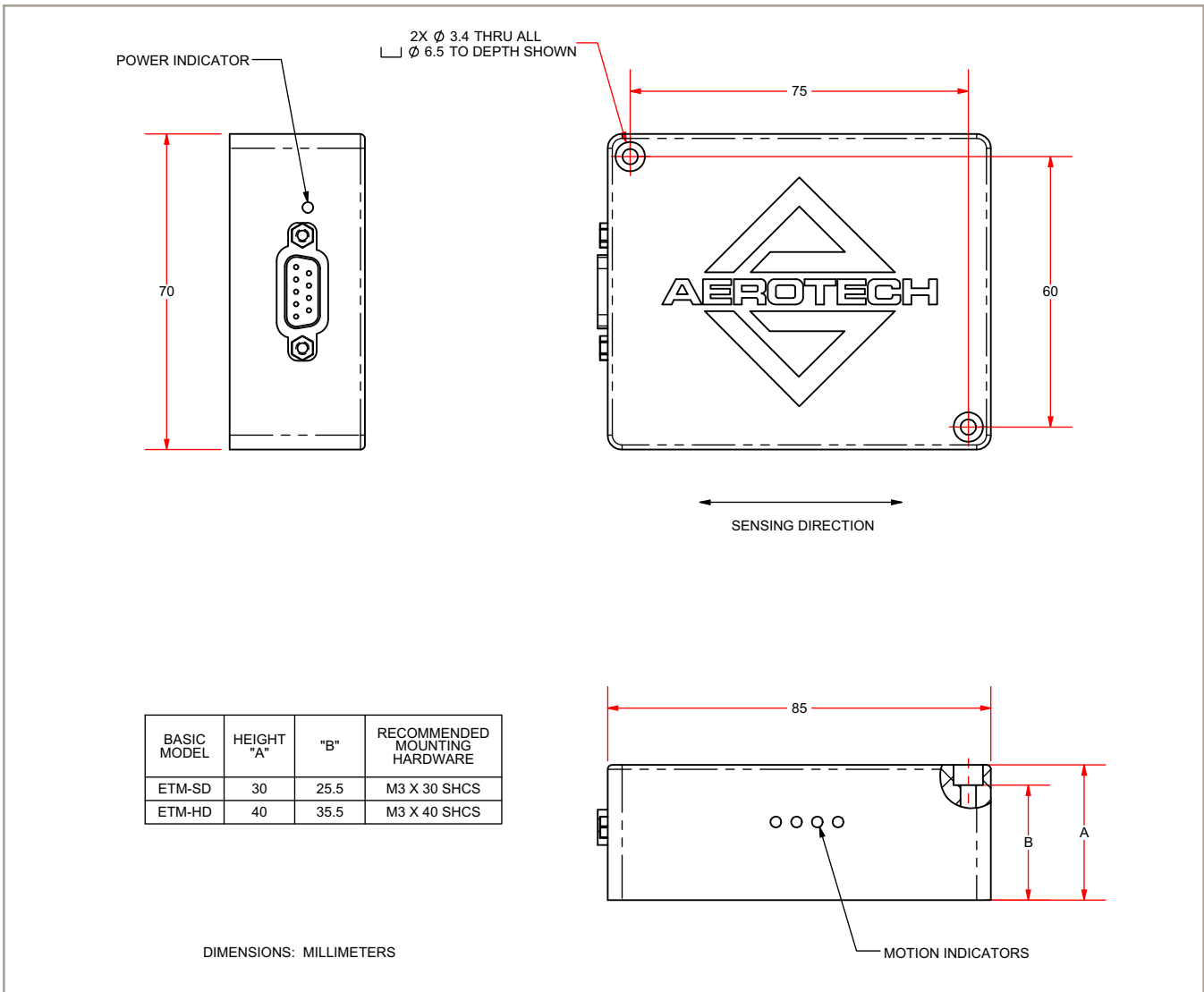


Figure 3. ETM is used to improve the positioning performance of Aerotech's HermeSys™ laser seam-welding system. ETM provides a measurable increase in productivity.



Figure 4. ETM can be used to get the most from high dynamic performance positioning systems, like the Aerotech AGS15000 Cartesian gantry, to reduce contouring error.

ETM DIMENSIONS and ORDERING INFORMATION



ETM (Enhanced Throughput Module)

ETM-SD Standard solution for higher-performance automation applications

ETM-HD High-performance solution for the most demanding applications

Note: Must be ordered with the "ETM Controller Option" on any Aerotech controller family (A3200/Ensemble/Soloist).

Cables

C22501-50	ETM 9D to flying leads; 5 m
C22502-50	ETM 9D to 26HD for CP/CL/HPe/HLe direct connection; 5 m
C22503-50	ETM 9D to 2x26HD for CP/CL/HPe/HLe direct connection – gantry mode; 5 m
C22504-50	ETM 9D to 15D Npaq analog IO connector; channel 0; length 5 m
C22505-50	DUAL ETM 9D to 15D Npaq analog IO connector; channels 0/1; 5 m