

METHOD AND APPARATUS FOR CONTROLLING A
VOICE COIL MOTOR OF A HARD DISK DRIVE

ABSTRACT OF THE DISCLOSURE

A hard disk drive device (11) includes an actuator (16) controlling movement of read/write heads (20) relative to a stack (12) of rotating disks. A control arrangement (30) for controlling the actuator includes a control loop (50) using a model reference control portion (68, 76) to generate a first digital positioning signal component (72), and using a further control portion (66, 60, 62, 64) to generate a second digital positioning signal component. Two low-precision digital-to-analog converters (54, 56) respectively convert the first and second digital positioning signal components to respective analog positioning signal components (61, 59). A summing junction (57) combines the analog positioning signal components in a manner giving one greater weight than the other in a resulting analog positioning signal (48), which is applied to the actuator.

Figure 1