

1.6 Servo versus vector

Table 1-1 Servo versus vector

	Servo	Vector
Typical applications	Drives with highly dynamic motion control. Angular synchronism with clock cycle synchronous PROFIdrive. For use in production machine tools and clocked production machines.	Speed and torque-controlled drives with high speed and torque accuracy especially for operation without an encoder (sensorless operation).
Maximum number of drives that can be controlled by one Control Unit.	1 Active Line Module + 6 Motor Modules (for current controller sampling rate 125 μ s / speed controller 125 μ s) 1 Active Line Module + 2 Motor Modules (for current controller sampling rate 62.5 μ s / speed controller 62.5 μ s)	1 Active Line Module + 2 Motor Modules (current controller scanning frequency 250 μ s / speed controller 1 ms) 1 Active Line Module + 4 Motor Modules (for the current controller sampling time 400 μ s/500 μ s / speed controller 1.6 ms/2ms) 1 Active Line Module + 10 Motor Modules (current controller scanning frequency 500 μ s / speed controller 4 ms)
Dynamic response	High	Medium
Sampling time current controller/ speed controller/ pulse frequency	Booksize: 125 μ s / 125 μ s / \geq 4 kHz (factory setting, 4 kHz) Chassis (sizes Fx and Gx): 250 μ s / 250 μ s / \geq 2 kHz (factory setting, 2 kHz) 125 μ s / 125 μ s / \geq 4 kHz	Booksize: 250 μ s / 1000 μ s / \geq 2 kHz (factory setting, 4 kHz) 400 μ s / 1600 μ s / \geq 1.25 kHz (factory setting, 2.5 kHz) Blocksize: 250 μ s / 1000 μ s / \geq 2 kHz (factory setting, 4 kHz) 500 μ s / 2000 μ s / \geq 2 kHz (factory setting, 4 kHz) Chassis: \leq 250 kW: 250 μ s / 1000 μ s / \geq 2 kHz > 250 kW: 400 μ s / 1600 μ s / \geq 1.25 kHz 690 V: 400 μ s / 1600 μ s / \geq 1.25 kHz