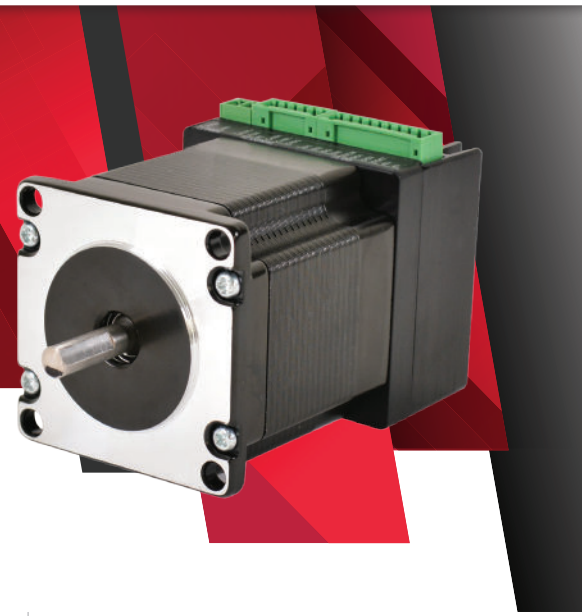
STXiMotion
Motion.Optimized.

stepIM
Powered by SERVOTRONIX

StepIM Integrated Closed-Loop Stepper Motors



With a cost-effective design and superior closed loop servo drive by Servotronix Motion Control, the stepIM provides an efficient and economical solution for applications that require the performance of a servo at the price level of a stepper.

- High torque/ low speed – eliminating the need for a gear
- High speed in low torque ranges
- Can function as distributed I/O points - reducing machine complexity

Integrated components reduce cost, space and machine complexity

In decentralized architectures, wiring and assembly time can be reduced thus enabling significant cost savings for machine builders. Decentralized drives that integrate motor, control and power electronics also free up space and reduce heating in the cabinet.

Benefits of closed loop vs. open loop operation

	Closed loop	Open loop
No step loss	Encoder feedback with closed loop control guarantees accurate motion	Abrupt changes in load may cause lost steps, creating a position error
High dynamics	Load dependent current control Optimal torque utilization for any speed and any load Eliminating the effect of mid-band resonance	Constant current control at all speed ranges without considering load variations
Torque & force control modes of operation	Supported	Not supported
Maximum torque utilization	Utilizing 100% of the full range of rated motor torque	Practical limitation of about 50% of rated motor torque due to risk of synchronization loss
Low noise & vibration	Silent operation due to reduced stepping vibration and low speed resonance	Stepping vibration and high speed resonance cause noisy operation
Energy efficiency	Provides current based on actual load. This reduces heating of the motor and saves energy	Maximum current is applied irrespective of required torque, leading to high losses and respective heating of the motor and drive

Product Highlights

- Sophisticated closed loop control enhances motor performance with no step loss
- Operates in torque, velocity, and position modes
- Efficient torque utilization optimizes motor sizing
- Integrated design minimizes component and wiring requirements
- Fieldbus: CANopen, EtherCAT
- 3 x digital inputs, 1 x digital output
- 1 x Analog differential input
- 12 Bit absolute encoder, 4096 ppr and update rate 16kHz
- Up to IP65 protection class
- Maintenance free
- CE and cUL certifications

High resolution magnetic encoder

With a 12 bit absolute encoder 4096 count per revolution and an update rate of 16 kHz, the stepIM precisely controls the magnetic flux generated based on actual load, ensuring accurate positioning and maximum machine efficiency.

ServoStudio™ for simple commissioning

- Step-by-step guidance through the setup and tuning process
- Real-time data recording and plotting
- Easy integration of servo axes
- Plug-and-play motor and feedback wiring

Rating and dimensions

	Frame Size (mm)	IP rating	Bus-Voltage (VDC)	Holding Torque (Nm)	Inertia (g*cm2)
IST - 17S	42.3	20 / 65	14-48	0.35	57
IST - 17M	42.3	20 / 65	14-48	0.45	82
IST - 17L	42.3	20 / 65	14-48	0.65	123
IST - 23S	56.4	20 / 65	14-48	1.1	260
IST - 23M	56.4	20 / 65	14-48	1.8	460
IST - 23L	56.4	20 / 65	14-48	2.6	750
IST - 34M	86.5	20 / 65	14-75	5.0	1850
IST - 34L	86.5	20 / 65	14-75	7.7	2750

Ordering information

	IS	T	-	23M	1	2	CO	1	0	-	0
	Integrated Stepper Motor										
	Type										
T	High torque										
	Frame Size and Length										
17S	NEMA 17 Short										
17M	NEMA 17 Medium										
17L	NEMA 17 Long										
23S	NEMA 23 Short										
23M	NEMA 23 Medium										
23L	NEMA 23 Long										
34M	NEMA 34 Medium										
34L	NEMA 34 Long										
	Shaft										
1	Single flat (Frame size 17 and 23 only)										
2	Double flat (Frame size 34 only)										
3	Keyway										
4	Full round										
	Connector and Degree of Protection										
2	Crimp connectors, IP20										
6	M-connectors, IP65 (Frame size 23, 34 only)										
	Communication										
CO	CANopen (Frame size 17, IP20 only)										
EC	EtherCAT (Frame size 17, IP65 only)										
	Feedback										
1	Standard – 12-bit absolute single turn										
	Brake										
0	No brake										
1	With brake (Frame size 23, 34 only)										
	Options										
0	Standard:										
1	NEMA 34, 14–48V, 4.5A (IP20 only)										

For Brake options and Gearbox options, contact STXI Motion.

I/Os

Digital (IP20): 4 x Input, 2 x output
Digital (IP65): 3 x Input, 1 x output
Analog: 1 x Differential Input

Motor feedback

12 bit absolute encoder

CANopen
EtherCAT Technology Group
CE UL

STXIMotion
Contact STXI Motion for optimal motion and automation solutions
contact@stxim.com | www.stxim.com