Rethinking motion control automation

Lexium MDrive®

Simplifying machine building
with compact integrated motors

Schneider Electric Motion USA

Schneider Electric

Lexium MDrive®

Rethinking what integrated motors
can deliver to your motion control.

Compactness

Integrated motor and electronics form a single, compact unit for measurable space savings in an application.

Reliability

Reducing component count in a system can eliminate wiring, simplifying the EMC concept and improving machine reliability.

Performance

Stepper motor simplicity enhanced with servo motor features through closed loop hMTechnology performance.

Efficiency

Save time, money and energy with Lexium MDrive products, suitable for a wide range of motion applications.

Printing, packaging

Handling, labeling

Electronics manufacture

Medical technology

Laboratory equipment

Lexium MDrive integrated motors, for a wide range of motion applications.

Performance inspired by simplicity

Compact integrated motion delivers measurable savings while reducing machine complexity and size.

Reliability

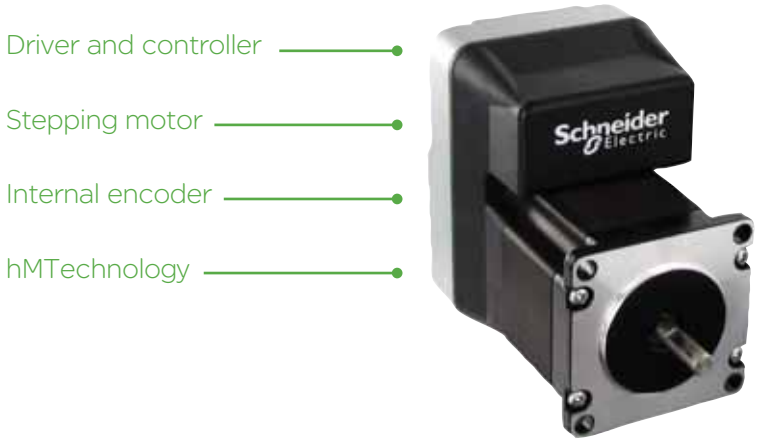
Lexium MDrive integrated motion solutions simplify system design by replacing multiple components with one compact product. Wiring is also reduced, simplifying the EMC concept and improving machine reliability.

Efficiency

Get your machine to market faster with LMD products to help simplify machine assembly. Reduce cabling and installation time. Your system can also be up and running quickly with the user-friendly software provided.

Compact design

Lexium MDrive compact products can reduce the size of your machine footprint. From factory floor to laboratory bench, these compact motion products deliver big performance at a low total installed cost.



Integrated motion

Wiring reduced up to
40%

Installation time cut as much as
25%

Space savings up to
50%

System integration success story: machine tool head exchanger

Compatibility of the conformance tested and approved Lexium MDrive EtherNet/IP products made system expansion easy when adding axis to an existing network.

High torque density success story: medical material cutting machine

High performance of the Lexium MDrive reduced this application's multiple axis mechanical complexity while delivering high acceleration and deceleration, along with high torque density at low speeds.

Optimize your total cost of ownership

Enhanced motor performance delivers system benefits to a wide range of motion applications.

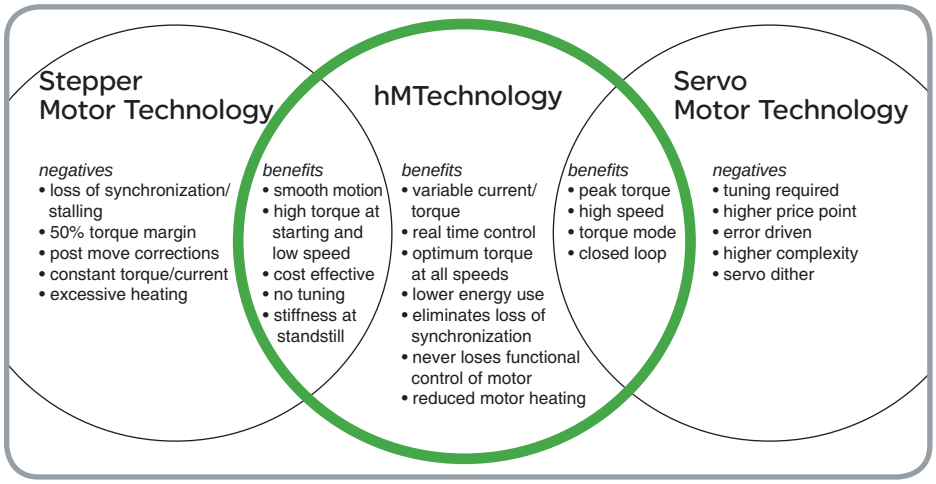
Benefits

- Delivering smooth operation at low speed
- Performance at high speed
- High starting torque
- Torque mode
- Protection against over voltage and DC switching
- Isolated communication and I/O
- LED status indicators

Closed loop hMTechnology

Closed loop hMTechnology blends stepper and servo motor benefits. Within the same compact integrated package, Lexium MDrive products with closed loop hMTechnology deliver enhanced motor performance including:

- Lower energy consumption and cooler operating temperatures
- Higher torque from smaller motors for economic efficiency
- Real time closed-loop control, eliminating loss of synchronization
- Lower cost option to servo motors in many applications



Save energy. Reduce heat. Lower costs.

Benefits of hMTechnology Variable Current Control.

hMTechnology

Allows

100%

motor maximum torque rating so smaller motors can be utilized.

Eliminates

50%

motor derating as buffer to avoid stalling in standard stepper systems.

hMTechnology blending stepper & servo motor benefits

Shock load/resistance success story: material packaging

The servo-like performance of hMTechnology enabled Lexium MDrive to insert cotton packing into plastic bottles, when the application's shock load/resistance caused stalling in typical stepper motors.

Closed loop success story: syringe chemical injection

Sensitivity of this application required a high resolution index for smooth motor movement and an encoder for closed loop positional verification, while the compact size of the Lexium MDrive fit a very limited space.

Flexibility to meet your needs

Flexibility within a common package delivers benefits to diverse industries and applications.

Things in common

Lexium MDrive products offer interchangeable ease to system designers. Each product size has one common product envelope. So choosing different communication protocols — whether it is RS-422/485, EtherNet or CANopen — does not change the product footprint. Product lengths vary with choice of motor stack length in NEMA motor sizes: 17, 23 & 34 (42, 57 & 85 mm).

Locking connector styles are consistent across all product sizes. And the robust mating connectors do not require special tools. Enhancing ease-of-use and simplifying setup.

Product versions

Pulse/Direction	motor + driver, RS-422/485 communication operational modes: step/direction, speed control, torque control, velocity
Motion Control	programmable motor + driver + controller, RS-422/485 communication memory: 336 user labels and 11,120 bytes flash
EtherNet	motor + driver + controller, EtherNet/IP and ModbusTCP slave device
CANopen	motor + driver + controller, CANopen DSP402 system node

1. Three motor sizes and stack lengths
2. One footprint, multiple protocols
3. Robust locking connectors consistent across all product sizes

Lexium MDrive product overview

Specifications	LMD•42	LMD•57	LMD•85
Motor frame sizes	NEMA 17	NEMA 23	NEMA 34
	42 mm	57 mm	85 mm
Holding torque range	44 ... 88 oz-in	103 ... 242 oz-in	336 ... 920 oz-in
	31 ... 62 N-cm	73 ... 171 N-cm	237 ... 650 N-cm
Product length	2.71 ... 3.28 in	3.17 ... 4.38 in	3.68 ... 5.81 in
	68.8 ... 83.2 mm	80.4 ... 111.4 mm	93.5 ... 147.5 mm
Communication protocols	RS-422/485, Ethernet, CANopen		
Configurations	closed loop with hMTechnology and internal 1000 line encoder		
	open loop without hMTechnology or internal encoder		
Product versions	Pulse/Direction with torque mode, velocity and speed control		
	programmable Motion Control		
	EtherNet for EtherNet/IP and Modbus TCP		
	CANopen DSP402		
Motor stack lengths	1, 2, 3		
Connectors	pluggable, locking connectors		

Accessories

USB to RS-422/485 communication converter and cable.
Part number MD-CC404-000

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