

Leading motion innovations

Integrated motors, drives and controls

Short form product catalog



Intelligent motion systems

Schneider
Electric

A smiling man with glasses and a woman are pointing at a whiteboard. The whiteboard features a graph with a blue curve and a black line with 'x' marks. The man is wearing a gold ring. The woman is holding a black marker.

Committed to your success

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MDrive® integrated motors family

MDrive is the world leader in integrated motors, delivering reliable performance to a wide range of motion applications. Reducing machine complexity, size, and cost for machine builders.

All-in-one integrated motors

MDrive products integrate motor, driver, controller, internal encoder and closed loop performance, all in one compact package. Units are programmable and networkable, satisfying the motion control requirements of many new and existing applications. And with fewer individual system components, you save space, reduce wiring, and eliminate multiple potential failure points.

The family of MDrive integrated motors includes:

Lexium MDrive

Robust Lexium MDrive products are especially well suited for industrial applications, including an IP65 rated version with circular M12 connectors. Communication protocol choices include EtherNet/IP, Profinet, ModbusTCP, CANopen, and serial RS-422/485 with programmable memory. Closed loop functionality delivers enhanced performance and energy savings.

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MDrive Plus

Applications with extremely limited space may find these products the best fit. Ultra compact MDrive Plus rotary motor products are offered with a wide range of features and options. Match these to your system requirements for products built to order, with quick turn shipping available, delivering your best solution.

Details page 5.

MDrive Linear Actuator

MDrive Linear Actuator products are built on the same integrated technology platform as MDrive Plus products, with the addition of linear mechanicals. These products deliver long life, high accuracy and repeatability in non-captive shaft and external shaft styles.

Details page 5.



MDrive, the world leader in integrated motors, can simplify your motion control design challenges without requiring you be a mechatronics expert.



Integrated motors benefit many industries including:

- Medical
- Pharmaceutical
- Life sciences
- Lab automation
- Imaging
- Printing
- Packaging
- Material handling
- Labeling
- Electronics manufacture

40%

Reduce system wiring up to 40% with integrated motors, while simplifying the EMC concept and improving machine reliability.

25%

Cut installation time up to 25% when you replace multiple individual components with an MDrive integrated motor.

Lexium MDrive



For OEMs who want to reduce machine size, cost and complexity. Robust Lexium MDrive products deliver exceptional performance and value to many stepper and servo motor applications. Especially well suited for industrial applications, including an IP65 rated version with M12 connectors. Closed loop performance is available for unique capabilities and energy savings.

Lexium MDrive

Robust Lexium MDrive products combine 1.8° 2-phase stepper motor, controller, microstepping drive, and internal encoder with hMT closed loop performance. This high degree of integration can reduce machine complexity, size and cost in many stepper and servo motor applications.

Products are especially well suited for industrial applications with built-in protection, and M12 connectorized versions delivering an IP65 rating for harsher environments.

Supported network communication protocols include EtherNet/IP, Profinet, ModbusTCP, CANopen, and serial RS-422/485 with programmability.

hMT closed loop performance

Closed loop performance, with Hybrid Motion Technology/hMT, is available in Lexium MDrive products. Your system can benefit from enhanced features and performance, including:

- closed loop feedback
- motors delivering up to twice as much torque
- variable current control, saving energy and reducing heat
- torque control

Lexium MDrive		LM•42	LM•57	LM•85
Input voltage	VDC	+12 ... +48	+12 ... +60	+12 ... +70
Motor frame size	NEMA	17	23	34
	inch / mm	1.7 / 42	2.22 / 57	3.4 / 85
Motor lengths		single, double, triple	single, double, triple	single, double, triple
Holding torque range	oz-in	44 ... 88	103 ... 390	336 ... 1699
	N-cm	31 ... 62	73 ... 275	237 ... 1200
Connectors		Pluggable with locking keyed color-coded mates or M12 circular connector with IP65 rating		

MDrive



Applications with extremely limited space may find these products the best fit. Ultra compact MDrive Plus products have a wide range of features and options. Match these to your system requirements for the best rotary motion solution. Products are built to order, with quick turn shipping available.

MDrive Linear Actuators, built on the MDrive Plus integrated motor technology platform, include mechanicals for linear motion.

MDrive Plus

Rotary 1.8° 2-phase stepper motors with integrated electronics are low cost and extremely compact. Configure for your specific motion application needs by selecting from numerous options.

Control types range from CANopen and Ethernet to serial RS-422/485. With up to 8 I/O included, from +5 to +24 VDC, and programmable memory.

MDrive Linear Actuator

All-in-one linear motion systems combine leading integrated motor technology with linear mechanicals to deliver long life, high accuracy and repeatability. Two linear shaft styles are available: non-captive shaft and external shaft.

High quality, precision rolled lead screws are manufactured from premium grade stainless steel with optional Teflon® coating. Designed specifically for motion control applications to deliver long life and quiet operation.

		size 14	size 17	size 23	size 34
Input voltage	VDC	+12 ... +48	+12 ... +48	+12 ... +75	+12 ... +75
Motor frame size	NEMA	14	17	23	34
	inch / mm	1.4 / 36	1.7 / 42	2.22 / 57	3.4 / 85

MDrive Plus

Motor lengths		single, triple	single, double, triple	single, double, triple, quad	single, double, triple
Holding torque range	oz-inch	18 ... 36	32 ... 75	90 ... 283	408 ... 1090
	N-cm	13 ... 25	23 ... 53	64 ... 200	288 ... 770
Options		Encoder, control knob, industrial connectors with IP rating, interface cables, QuickStart Kit, Drive Protection Module, Ethernet Gateway			

MDrive Linear Actuator

Motor lengths		single	single	single
Screw length	inches	3.0 ... 18.0	3.0 ... 18.0	3.0 ... 24.0
	mm	76 to 457	76 to 457	76 to 610
Screw diameter	inch / mm	0.25 / 6.35	0.25 / 6.35	0.375 / 9.525
Maximum thrust		up to 50 lbs	up to 50 lbs	up to 200 lbs

Drives, Controllers and Motors



Component level solutions available for motion control applications include stand-alone drives, controllers and naked motors.

MForce drives

Compact MForce microstepping drives incorporate the same patented technology and programming as industry leading MDrivePlus products, just without the integrated stepper motor. MForce drives have up to 20 resolution settings from full to 256 microsteps per full step, extended operating temperature range, and advanced current control.

Product configurations

- step/direction input with drive only
- programmable motion with drive and controller

Input voltage by version

+12 to +75 VDC, MForce PowerDrive
+12 to +48 VDC, MForce MicroDrive

PowerDrive delivers enhanced performance and speed with max 5A RMS/7A peak per phase output current. While 3A RMS/4A peak of MicroDrive is big power from a small package 1.7x2.3x1.3" (42x59x33mm).

Stepper motor drives

From ultra-miniature PCB mountable drives to controller/drive products. From single to multi-axis stepper motor applications. We manufacture stepper motor drives that deliver high performance at low cost. Compact drives do not sacrifice features, and may reduce space used in your system.

Naked motors

Numerous stepper motors are available to satisfy your system requirements. From meeting torque demands with various motor stack lengths, NEMA motor sizes, windings, IP ratings, shaft finishes and more. Motor accessories are also available, such as encoders with choice of line count, index mark.

For complete current product details, go to www.motion.schneider-electric.com

Machine networking

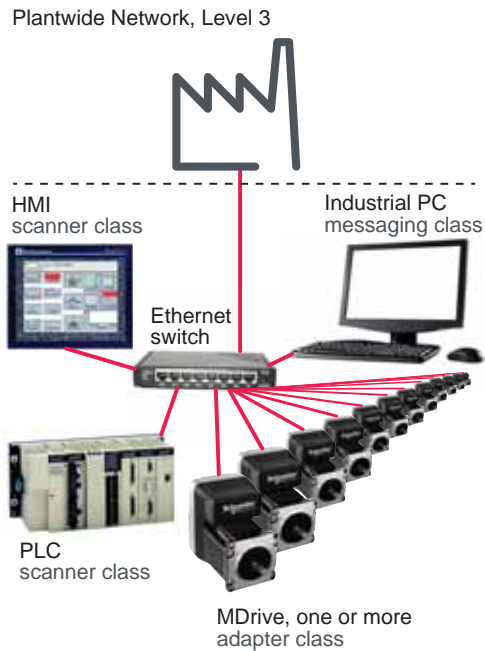


Diagram above represents MDrive products on a typical Ethernet network.

Supporting standardized communication protocols, such as Ethernet and CANopen, ensures consistent system interface with products from various vendors.

Ethernet

Supported Ethernet protocols include Profinet, EtherNet/IP and ModbusTCP. ODA tested and conformance compliant, products operate as adapter class devices capable of explicit or implicit messaging.

CANopen

CANopen CiA DS301 and DSP402 protocols are supported, enabling products operate as nodes on a common network. Consistent device profiles enable interoperability in new and existing systems.

RS-422/485

Products are available with RS-422/485 serial interface. These include programmability, along with on-board memory for storing programs.

Custom products



Partnering for success. We will work with you to develop innovative solutions for your unique motion application requirements.

Experience

In addition to our standard products, we design customized solutions for OEMs. Our in-house team of experienced engineers has developed innovative system solutions in motion around the world. Ranging from:

- hardware modifications
- motor variations, e.g. shaft, seals, high torque
- connector styles
- accessories, e.g. gearbox, encoder, brakes
- software/firmware locks and code creation
- PCB and chip level motion development

When it comes to customizing products to meet your unique application needs, we can manage the entire life cycle from design to production. Minimum volumes apply.

Please contact our U.S. factory to learn more.

CE



REACH

EtherNet/IP™
conformance tested

IP65

Product compliance is independently validated to meet the most recent quality, environmental and performance standards. In addition, an internal quality staff conducts rigorous ongoing testing and inspection to ensure conformance.



You want to simplify
complex motion control

Our innovative and
reliable solutions

We are committed to your motion automation success – from the MDrive family of all-in-one integrated motor products, to drives, controls and naked motors.

Schneider Electric Motion USA

370 North Main Street
Marlborough, CT 06447
Phone: (860) 295-6102
Fax: (860) 295-6107
www.motion.schneider-electric.com

