

Absolute MDrive

Lexium MDrive® with multi-turn absolute encoder



Multi-turn absolute encoder and control electronics integrated with stepper motors

   REACH IP65

Intelligent motion systems



Description

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At an extremely competitive price, multi-turn absolute encoders enhance LMD integrated motor and electronics products while fitting in the same compact footprint.

Product offer

Absolute MDrive® products integrate a 1000 line count (4000 counts/rev) multi-turn absolute encoder with 1.8° 2-phase stepper motor and control electronics. Rotary and linear motors are available. IP65-rated products for protection against dust and moisture are also available. These products can reduce machine complexity, size and cost for a wide variety of motion applications.

Robust Lexium MDrive (LMD) products are enhanced with a multi-turn absolute encoder at an extremely competitive price. Internal to the product so there is no increase in size, absolute encoders detect and store position information even when powered down. This can eliminate homing routines and reduce setup time at system startup.

Three (3) communication versions are available:

- Programmable Motion Control: RS-422/485 interface with programmable controller.
- CANopen: CANopen interface with programmable controller.
- Ethernet: supports user-selectable protocols Profinet, EtherNet/IP and ModbusTCP.

LMD products will also operate in closed loop hMTechnology (hMT) mode. Unlike traditional motor systems, hMT closed loop performance combines the best of servo and stepper motor technologies, while delivering unique capabilities and enhancements over both, including:

- real time closed loop control
- no loss of synchronization/stalling
- full use of motor torque
- torque mode control
- reduced motor heat (1)
- lower energy consumption (1)

(1) Achieved with hMTechnology variable current control.

Application areas

Absolute MDrive® products are compact motion control solutions that can reduce system cost, design and assembly time for a wide range of motion applications. Save space, reduce wiring, and eliminate multiple potential failure points with fewer individual system components. Ideal for machine builders who want a robust motor with integrated electronics and multi-turn absolute encoder performance.

OEMs who want to reduce machine size, cost and complexity will find robust Lexium MDrive with Absolute Encoder products deliver exceptional performance and value for many applications.



Absolute MDrive products: NEMA 34 rotary | NEMA 23 rotary | IP65 & IP20 connector styles | NEMA 17 rotary | NEMA 23 external shaft linear | NEMA 17 external shaft linear

General specifications				LMD•42 rotary & linear	LMD•57 rotary & linear	LMD•85 rotary only
Input power	Voltage			+12...+48 VDC	+12...+60 VDC	+12...+70 VDC
	Current maximum (1)			2.0 A	3.5 A	4.0 A
Motor	Frame size	NEMA		17	23	34
		inches		1.7	2.22	3.39
		mm		42.7	56.4	86.11
	Step angle α	°		1.8	1.8	1.8
	Premium high torque	option		no	yes	yes - custom
Length (2)	stack size		single, double, triple	single, double, triple	single, double, triple	
Thermal	Operating temp non-condensing	heat sink maximum		85°C		
		motor maximum		100°C		
Protection	Type	temp warning		0...84°C, user selectable		
		earth grounding		via product chassis ground lug		
		IP ingress rating		IP20, IP65		
Communication versions	Programmable Motion Control		RS-422/485 programmable with stored memory			
	CANopen		CANopen interface with programmable controller			
	Ethernet		EtherNet/IP, Profinet, ModbusTCP			
External Linear Actuators only						
Maximum thrust (3)	General purpose nut	lbs		25	60	not offered
		kg		11	27	
	Anti-backlash nut	lbs		5	25	
		kg		2	11	
Repeatability	Maximum	inch		0.005	0.005	
		mm		0.127	0.127	

(1) Actual power supply current will depend on voltage and load.

(2) Linear actuator products only offered in single stack motor length.

(3) Performance data for maximum force/load is based on a static load and will vary with a dynamic load.

An optional Communication Converter is recommended with first orders.

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ICP0531

for all products

description	length feet (m)	part number
Back-up battery pack Extend stored position data up to 5-years for 1 to 6 LMD units		
Battery pack, DIN-rail mount. Uses 3 AA batteries, not provided	—	ICP0531
LMD mating cable(s) with crimp connector to flying lead end	3.3 (1.0)	PD02-0531-FL1
PLC mating cable with crimp connector to flying lead end	3.3 (1.0)	PD04-0531-FL1

for IP20 products – pluggable connectors

comm types (1)

description	length feet (m)	part number	M	A	E
Communication converters USB-pluggable converter to set/program communication parameters in 32- or 64-bit					
Mates to DB9 connector	6.0 (1.8)	MD-CC404-000	•		
Mates to DB9 connector. Includes: CAN dongle, terminating resistor, and pre-wired mating cables	6.0 (1.8)	MD-CC501-000		•	
Replacement mating connector kits					
Includes one 2-pin power mate, and one set (2 pieces) 7-pin multifunction mates	—	CK-15	•	•	•



MD-CC404-000



MD-CC501-000



MD-CC405-000



MD-CC502-000

for IP65 products – M12 connectors

comm types (1)

description	length feet (m)	part number	M	A	E
Communication converters USB-pluggable converter to set/program communication parameters in 32- or 64-bit					
Mates to M12 5-pin female connector	6.0 (1.8)	MD-CC405-000	•		
Mates to M12 5-pin male connector. Includes: CAN dongle, terminating resistor, and pre-wired mating cables	6.0 (1.8)	MD-CC502-000		•	

Cordsets

Shielded cables pre-wired with straight M12 mating connectors

Communication cordset mates to 5-pin female connector	10.0 (3.0)	MD-CS600-000	•		
Power cordset mates to 4-pin male connector	10.0 (3.0)	MD-CS620-000	•	•	•
I/O cordset mates to 12-pin male connector	10.0 (3.0)	MD-CS610-000	•	•	•
Communication cordset mates to 4-pin female connector	6.5 (2.0)	MD-CS640-000			•
Communication cordset mates to 5-pin male connector	10.0 (3.0)	MD-CS650-000		•	

Daisy chaining

Connect multiple units together in sequence with Y cable. Termination plug, sold separately, is required at end of run.

Y cable mates to M12 communication connector	0.3 (1.0)	MD-CS660-000		•	
M12 bus termination (resistor) plug	—	PLG-M12TP		•	

(1) Communication types:

M = Programmable Motion Control via RS-422/485 serial interface

A = CANopen interface

E = EtherNet/IP, ModbusTCP, Profinet, MCode/TCP



MD-CS600-000



MD-CS620-000



MD-CS610-000



MD-CS640-000



MD-CS650-000



PLG-M12TP

MD-CS660-000

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