MDrive® Plus
Ultra-compact integrated motors

Integrated motors

These compact, cost-effective motion control solutions can reduce design and assembly time for a wide range of motion applications, from medical and laboratory to packaging and machinery.

MDrive® Plus

For both new and existing applications, if space is extremely limited, MDrive Plus products may be your best fit. These ultra-compact, integrated motor products are offered with a wide range of features and options. Matching these to your system requirements, you get products built-to-order at competitive prices with quick turn shipping available, delivering your best solution.

MDrive Plus products integrate electronics onto 1.8° 2-phase stepper motors, NEMA sizes 14 to 34. Control types range from CANopen and Ethernet to serial RS-422/485 with up to 8 I/O, +5 to +24 VDC, and programmable memory.

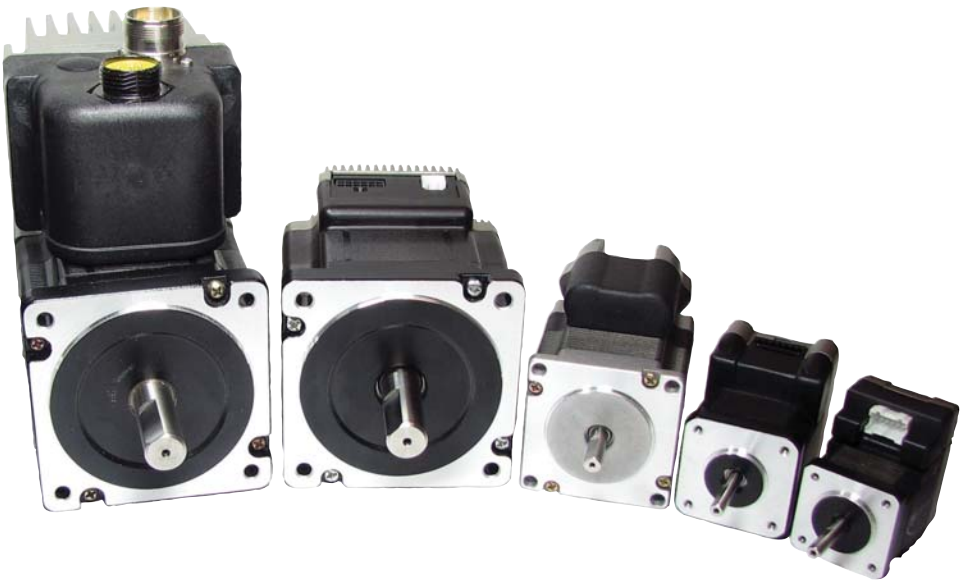
Features

- Input power ranges from +12 up to +75 VDC
- Auxiliary logic power supply input
- 20 microstep resolutions to 51,200 steps/rev
- IP54 & IP65 products available
- Up to 8 I/O, with choice of standard (Plus) or expanded (Plus^2) performance

Networks

Supported communication protocols include:

- RS-422/485 Programmable Motion Control
- CANopen
- Ethernet
- SPI Step/direction & Speed Control versions



MDrive is the world's top integrated motor brand, offering the widest breadth of products. You receive high quality from our USA factory, competitive pricing, and on-time delivery.

Pictured: 34AC, 34, 23, 17 & 14 NEMA motor sizes

Integrated motors can reduce space requirements up to

1/2

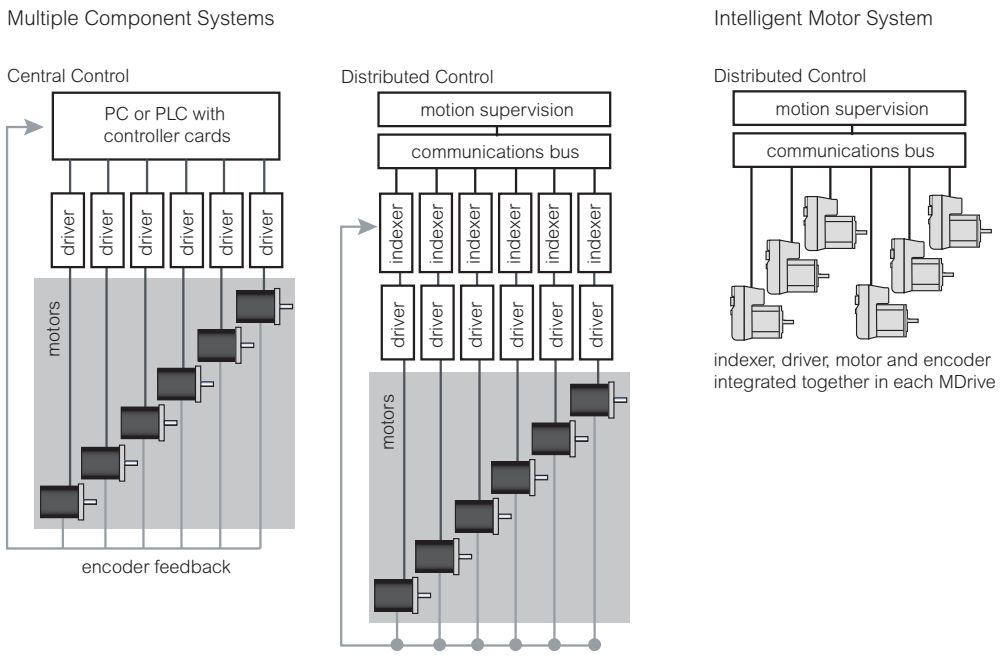
that of traditional motion solutions. Fewer individual system components also eliminate multiple potential failure points.

Integrated motor system advantages

System integrators may be able to reduce machine size, cost and complexity by replacing multiple motion components with an MDrive integrated motor solution. These intelligent motors integrate standard motion system components all-in-one:

- Controller/PLC
- Driver
- Motor
- Wiring/cable harnessing
- Encoder and other accessories
- Power supply for drive/control electronics

MDrive integrated motors eliminate the tedious task of sourcing various system components, plus troubleshooting compatability, performance and wiring issues. With MDrive products delivering complete, fully optimized motion solutions in one, engineers can focus their time and effort on other critical tasks. Fewer components and connections in a system also increase system reliability by reducing potential failure points.



Simplify the complexity of motion control systems with intelligent motor solutions. Above, traditional control systems using multiple separate components are compared alongside a streamlined MDrive integrated motor solution.

MDrive Plus
Specifications

Specifications – General

			MD•14	MD•17	MD•23	MD•23	MD•34	MD•34 AC version	
Input power	Voltage	VDC	+12…+48	+12…+48	+12…+75	+12…+60	+12…+75	—	
		VAC	—	—	—	—	—	120	240
	Current maximum (1)	Amp	1.0	2.0	2.0	3.5	4.0	—	—
		VAC @ 50/60 Hz	—	—	—	—	—	95 to 132	95 to 264
Motor	Frame size	NEMA	14	17	23	23	34	34	
		mm	35	42	57	57	85	85	
	Holding torque	oz-in	18...36	32 ... 75	90 ...169	283	408 ... 1090	330 ... 750	
		N-cm	13 ... 25	23 ... 53	64 ... 169	200	288 ... 770	233 ... 529	
	Length	stack sizes	1 & 3	1, 2 & 3	1, 2 & 3	4	1, 2 & 3	1, 2 & 3	
Thermal	Operating temp non-condensing	Heat sink maximum	85°C	85°C	85°C	85°C	75°C	75°C	
		Motor maximum	100°C	100°C	100°C	100°C	90°C	90°C	
Protection	Type	Temp warning	na	na	na	na	na	thermal, over voltage/current	
		IP ratings	IP20	IP20, IP65	IP20, IP65	IP20, IP65	IP20	IP54	
Aux. logic input	Voltage range (2)	VDC	+12…+24						
Motion	Microstep resolution	Number of settings	20						
		Steps per revolution	200, 400, 800, 1000, 1600, 2000, 3200, 5000, 6400, 10000, 12800, 20000, 25000, 25600, 40000, 50000, 51200, 36000 (0.01 deg/µstep), 21600 (1 arc minute/µstep), 25400 (0.001mm/µstep)						
	Encoder	Optional	availability determined by product version and size						
Communication	Protocol type	RS-422/485	Programmable Motion Control products, baud rate 4.8…115.2 kbps						
		CANopen	CANopen CiA DS301, DSP402, 2.0B active with features: node guarding, heartbeat, SDOs, PDOs (variable mapping)						
		SPI	Step/Direction and Speed Control products						
		Ethernet	EtherNet/IP (ODVA compliant), ModbusTCP, MCode/TCP – only available with Nema 23 MDrive						

(1) Actual power supply current will depend on voltage and load.
(2) When input voltage is removed, maintains power only to control and feedback circuits. Not applicable to Pulse/Direction and Speed Control products.

Specifications – Step/direction products

		MD•14	MD•17	MD•23	MD•34	MD•34 AC version
Isolated input	Universal	Voltage range: +5 to +24 VDC sourcing or sinking step clock, direction and enable				
	Differential	Voltage range: +5 VDC clockwise and counterclockwise				na
Motion	Step frequency	2 MHz default / 5 MHz maximum				2 MHz default
	Digital filter range	50 nS to 12.9 µS (10 MHz to 38.8 kHz)				
	Clock types	Step/direction, quadrature, step up/step down, clockwise/counterclockwise			Step/direction, quadrature, step up/step down	

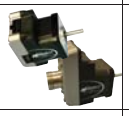
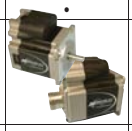
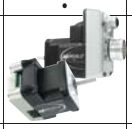
Specifications – Programmable Motion Control, CANopen & Ethernet products (1)

			MD•14	MD•17	MD•23	MD•34	MD•34 AC version
Motion	Counters	Type	Position, encoder / 32 bit, 5MHz edge rate maximum				
	Velocity	Range / resolution	+ / – 5,000,000 steps per second / 0.5961 steps per second				
	Acceleration/deceleration	Range / resolution	1.5 x 10^9 steps per second^2 / 90.9 steps per second^2				
Motion Plus^2 – expanded features	Electronic gearing	Input filter range	50 nS to 12.9 µS (10 MHz to 38.8 kHz)				
		External clock in	Range: 0.001 to 2.0 / resolution: 32 bit / threshold: TTL				
		Secondary clock out	Range: 1 to 1				
	High speed I/O	Position capture	Resolution: 32 bit / input filter range: 50 nS to 12.9 µS (10 MHz to 38.8 kHz)				
		Trip output	Speed: 150 nS / resolution: 32 bit / threshold: TTL				
General purpose I/O	Output sinking current		Up to 600 mA				
	Plus – standard features	Number	4				
		Type	Sourcing or sinking inputs, or sinking outputs				
		Logic range	Inputs and outputs tolerant to +24 VDC				
	Plus^2 – expanded features	Number	8 (or 4 with either remote encoder option or ModbusTCP protocol)				
		Type	Sourcing or sinking outputs/inputs				
		Logic range	Sourcing outputs +12 to +24 VDC, inputs and sinking outputs tolerant to +24 VDC				
	Inputs	TTL level	Compatible				

(1) EtherNet/IP only available with MDrive23 Plus^2 products.

MDrive Plus
Dimensions

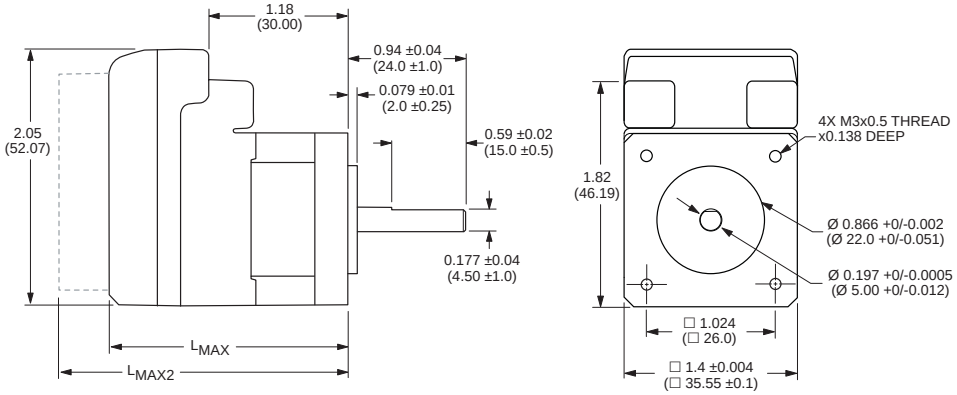
Availability

by size & version	14		17		23		34		34ac	
	Plus	Plus²	Plus	Plus²	Plus	Plus²	Plus	Plus²	Plus	Plus²
M – Step/direction	•		•		•		•		•	
										
I – Motion Control	•	•	•	•	•	•	•	•		•
										
I – CANopen		•	•	•	•	•		•		•
										
I – Ethernet						•				
										
O – Speed control			•		•			•		
										

Dimensions

MD•14 NEMA14 motor, IP20-rated

inches (mm)

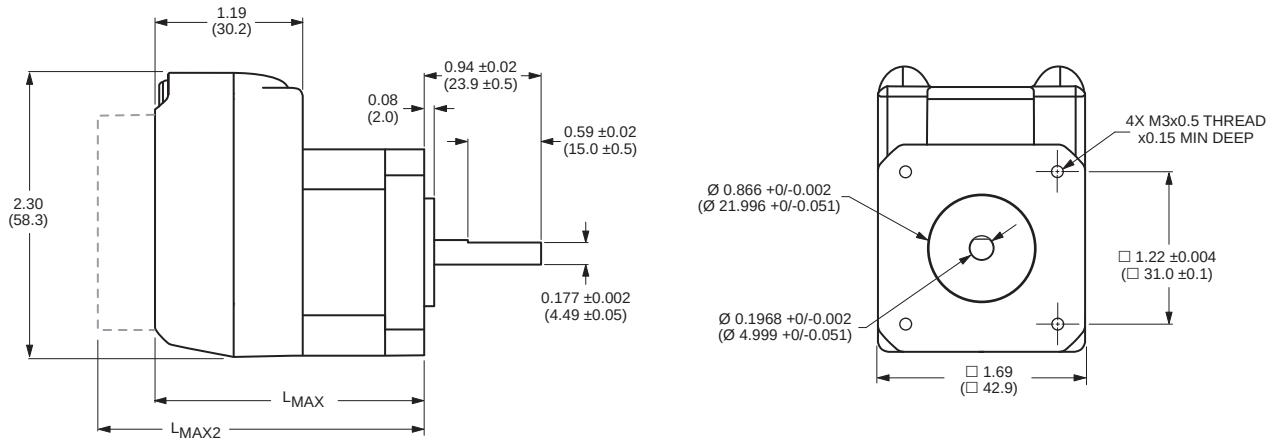


Motor stack length	Lmax1	Lmax2 (1)
Single	1.93 (49.02)	2.62 (66.55)
Triple	3.03 (76.96)	3.73 (94.74)

(1) Represents maximum dimension with connectors/options.

MD•17 NEMA17 motor, IP20-rated

inches (mm)

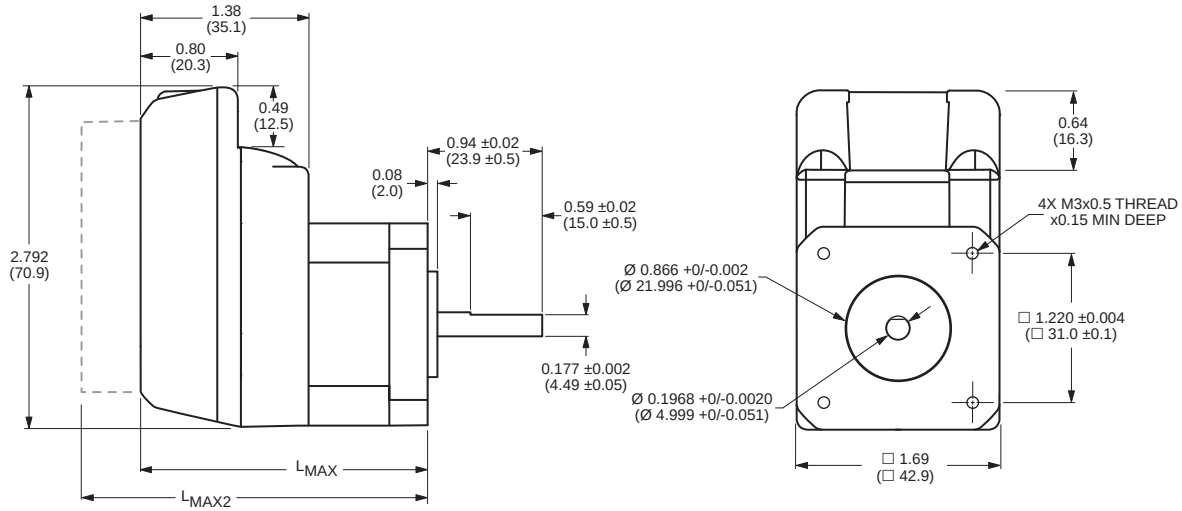


Motor stack length	Lmax1	Lmax2 (1)
Single	2.20 (55.9)	2.79 (70.9)
Double	2.43 (61.7)	3.02 (76.7)
Triple	2.77 (70.4)	3.37 (85.6)

(1) Represents maximum dimension with connectors/options.

MD•17 NEMA17 motor, IP65-rated

inches (mm)

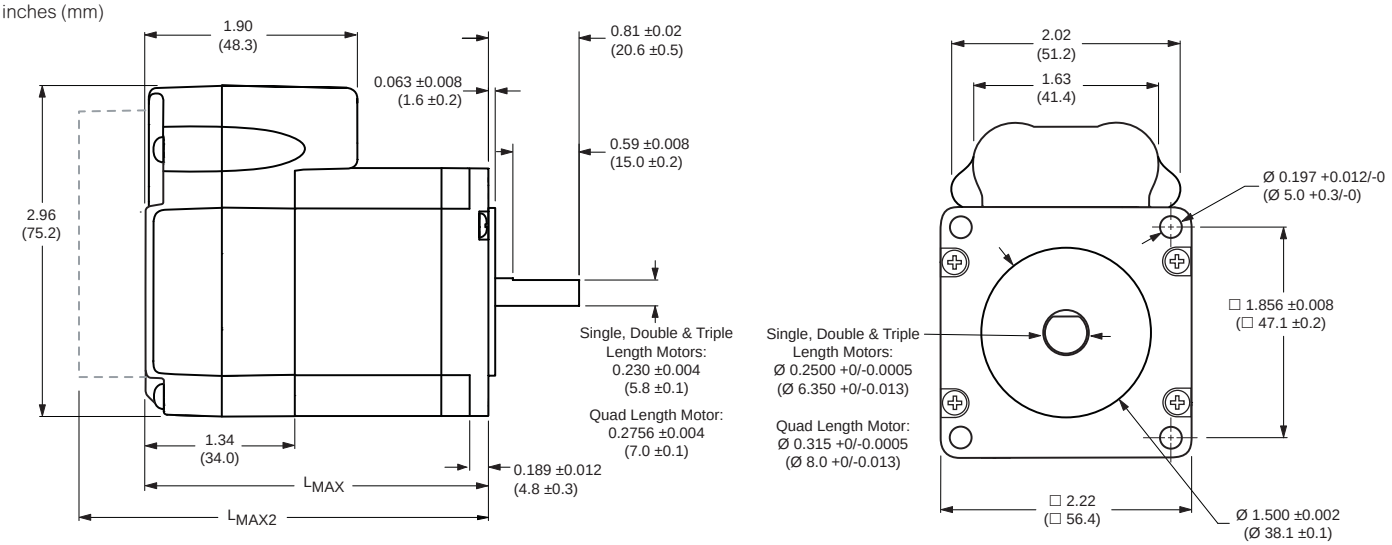


Motor stack length	Lmax1	Lmax2 (1)
Single	2.48 (62.71)	3.15 (79.72)
Double	2.71 (68.55)	3.38 (85.57)
Triple	3.05 (77.18)	3.72 (94.20)

(1) Represents maximum dimension with connectors/options.

MD•23 NEMA23 motor, IP20 and IP65-rated

inches (mm)

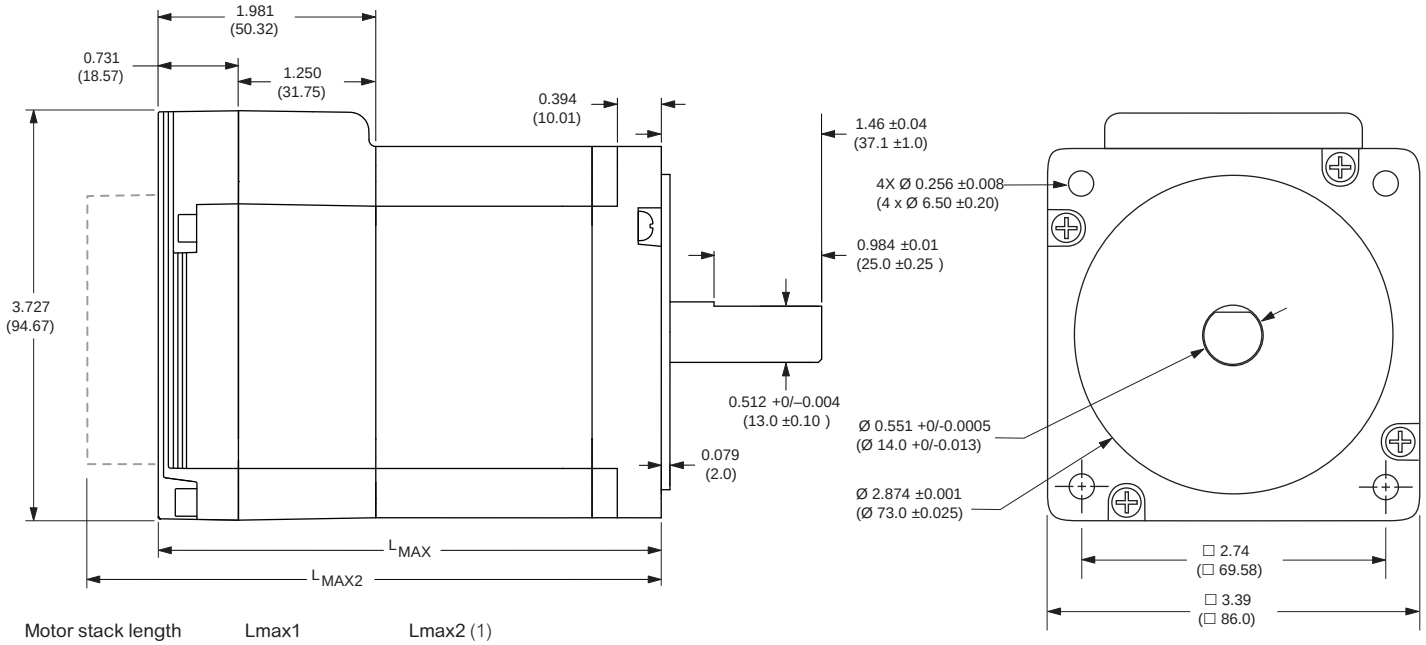


Motor stack length	Lmax1	Lmax2 (1)
Single	2.91 (73.63)	3.57 (90.39)
Double	3.25 (82.26)	3.91 (99.03)
Triple	4.11 (104.11)	4.76 (120.62)

(1) Represents maximum dimension with connectors/options.

MD•34 NEMA34 motor, IP20-rated

inches (mm)



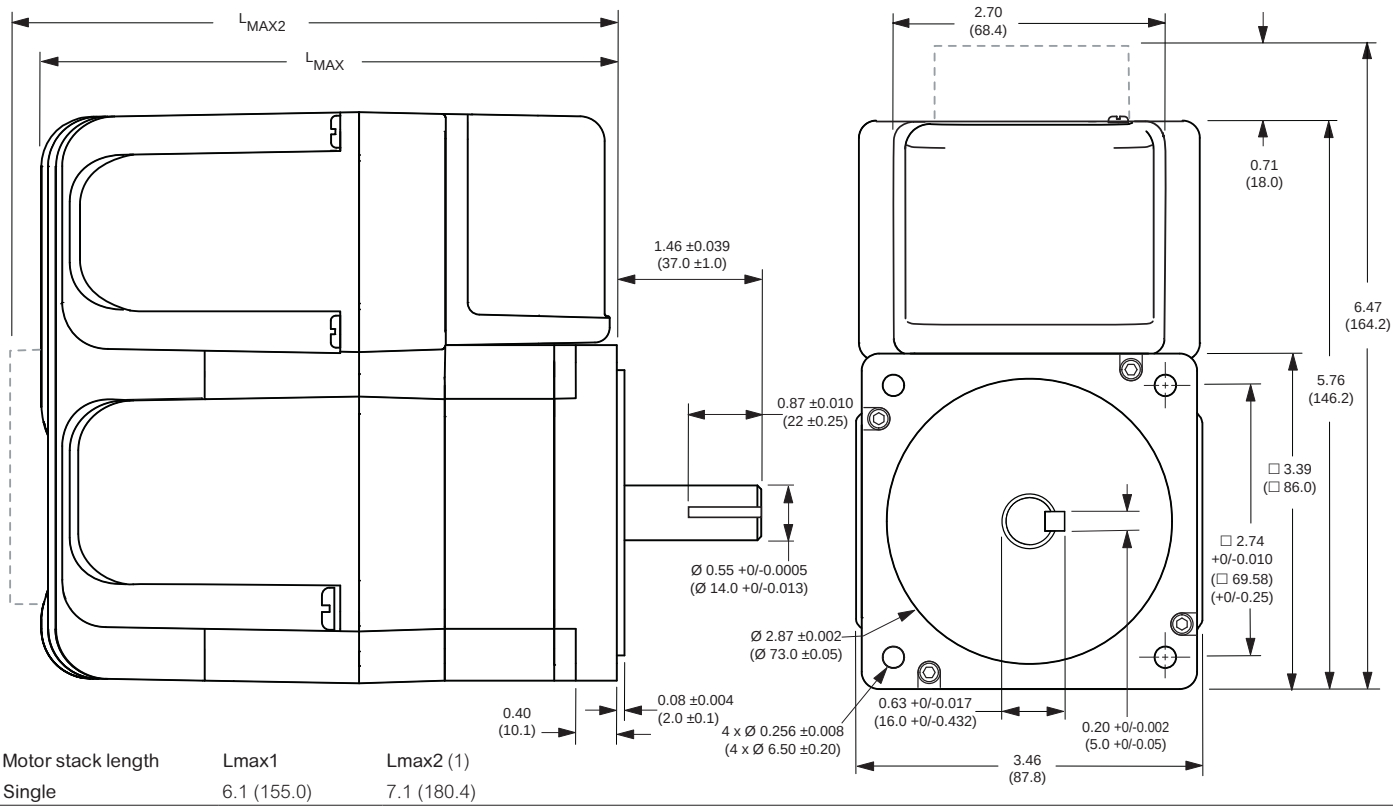
Motor stack length	Lmax1	Lmax2 (1)
Single	3.81 (96.77)	4.52 (114.81)
Double	4.60 (116.84)	5.31 (134.87)
Triple	6.17 (156.72)	6.88 (174.75)

(1) Represents maximum dimension with connectors/options.

MDrive Plus
Dimensions

MD•34AC NEMA34 motor, IP54-rated

inches (mm)

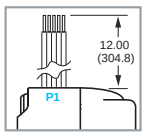


Motor stack length	Lmax1	Lmax2 (1)
Single	6.1 (155.0)	7.1 (180.4)
Double	6.9 (174.3)	7.9 (199.7)
Triple	8.4 (214.3)	9.4 (239.7)

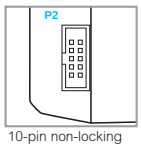
(1) Control knob option.

IP20 connector examples

Flying leads

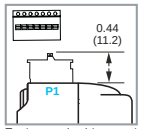


IDC



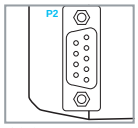
10-pin non-locking

Pluggable



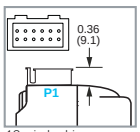
7-pin non-locking spring clamp terminal strip

DB9



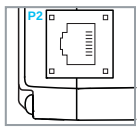
CANopen products

Wire crimp



12-pin locking

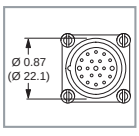
RJ45



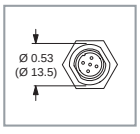
Ethernet products

IP54/65 connector examples

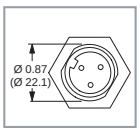
19-pin M23



5-pin M12

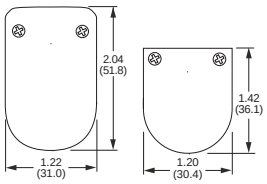


3-pin Euro AC



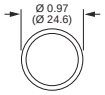
Lmax2 option examples

External encoders



Differential Single-end

External control knob



20 in-lb / 225 N-cm max torque

MDrive® Plus
Motor performance

MD•14 NEMA 14 motor specifications	Motor	Stack length	Single		Triple
	Holding torque	oz-in	18		36
		N-cm	13		25
	Detent torque	oz-in	2.0		4.4
		N-cm	1.4		3.1
	Rotor inertia	oz-in-sec^2	0.000198		0.000801
		kg-cm^2	0.014		0.0566
	Weight (motor+driver)	oz	5.29		12.8
		g	150		380

MD•17 NEMA 17 motor specifications	Motor	Stack length	Single	Double	Triple
	Holding torque	oz-in	32	60	75
		N-cm	23	42	53
	Detent torque	oz-in	1.7	2.1	3.5
		N-cm	1.2	1.5	2.5
	Rotor inertia	oz-in-sec^2	0.0005	0.0008	0.0012
		kg-cm^2	0.038	0.057	0.082
	Weight (motor+driver)	oz	10.4	12.0	15.2
		g	295	340	431

MD•23 NEMA 23 motor specifications	Motor	Stack length	Single	Double	Triple	Quad
	Holding torque	oz-in	90	144	239	283
		N-cm	64	102	169	200
	Detent torque	oz-in	3.9	5.6	9.7	14.2
		N-cm	2.7	3.9	6.9	10.0
	Rotor inertia	oz-in-sec^2	0.0025	0.0037	0.0065	0.0108
		kg-cm^2	0.18	0.26	0.46	0.76
	Weight (motor+driver)	oz	21.6	26.4	39.2	62
		g	612	748	1111	1746

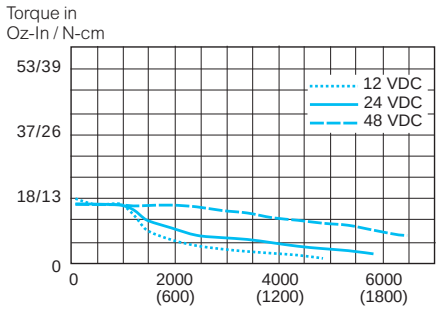
MD•34 NEMA 34 motor specifications	Motor	Stack length	Single	Double	Triple
	Holding torque	oz-in	408	574	1090
		N-cm	288	405	770
	Detent torque	oz-in	10.9	14.16	19.83
		N-cm	7.7	10.0	14.0
	Rotor inertia	oz-in-sec^2	0.01275	0.01924	0.03849
		kg-cm^2	0.90	1.35	2.70
	Weight (motor+driver)	lb	4.1	5.5	8.8
		kg	1.9	2.5	4.0

MD•34AC NEMA 34 motor specifications	Motor	Stack length	Single	Double	Triple
	Holding torque	oz-in	330	500	750
		N-cm	233	353	529
	Detent torque	oz-in	10.9	14.16	19.83
		N-cm	7.7	10.0	14.0
	Rotor inertia	oz-in-sec^2	0.01416	0.02266	0.04815
		kg-cm^2	1.0	1.6	3.4
	Weight (motor+driver)	lb	6.4	7.7	11.0
		kg	2.9	3.5	5.0

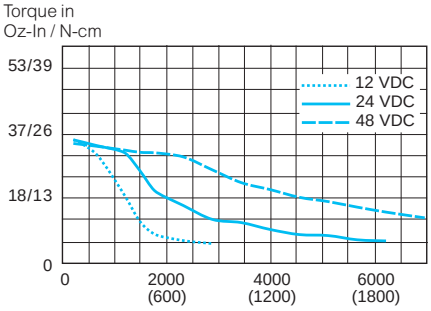
MDrive® Plus
Motor performance

MD•14 NEMA 14 speed torque (1)

Single stack length

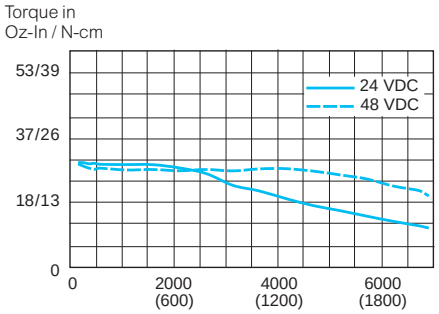


Triple stack length

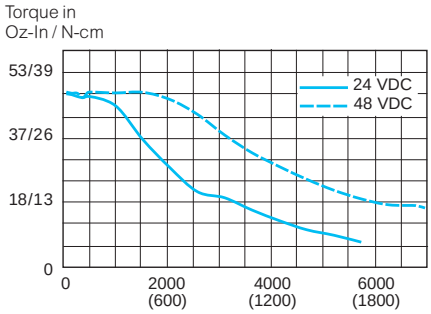


MD•17 NEMA 17 speed torque (1)

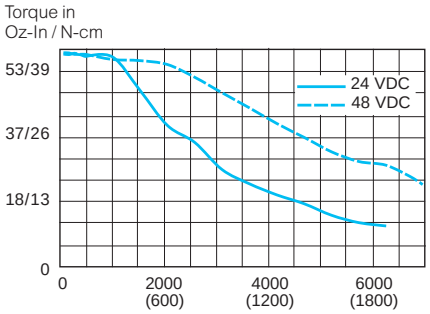
Single stack length



Double stack length

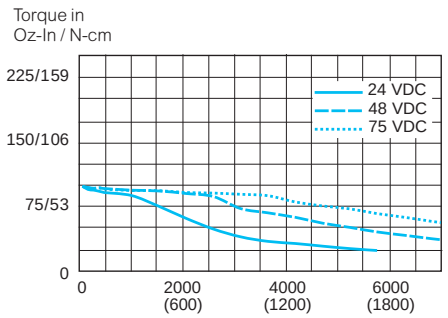


Triple stack length

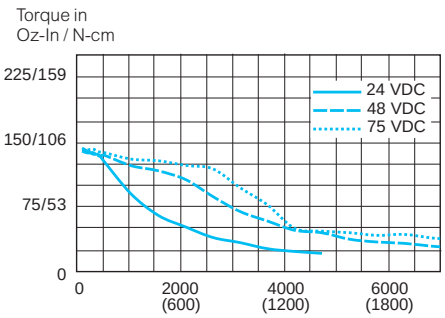


MD•23 NEMA 23 speed torque (1)

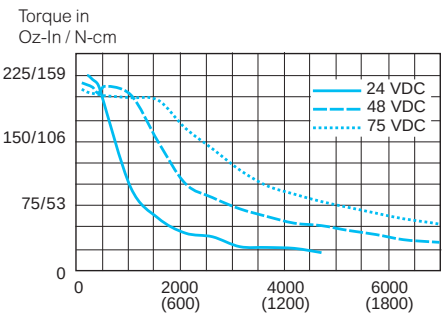
Single stack length



Double stack length



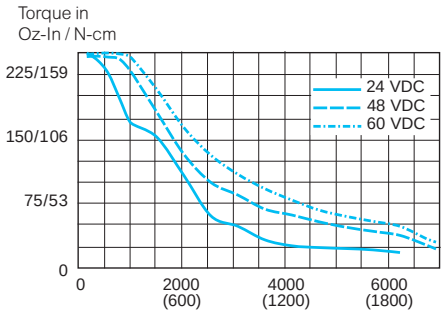
Triple stack length



(1) Test conditions: 100% current with damper simulating load.

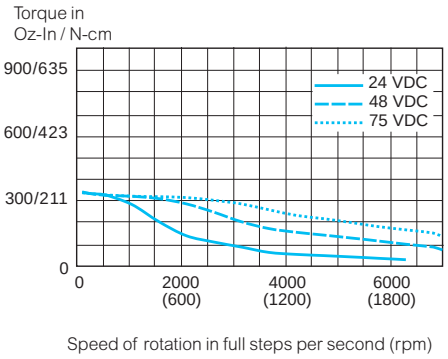
MD•23 NEMA 23 speed torque (1)

Quad stack length

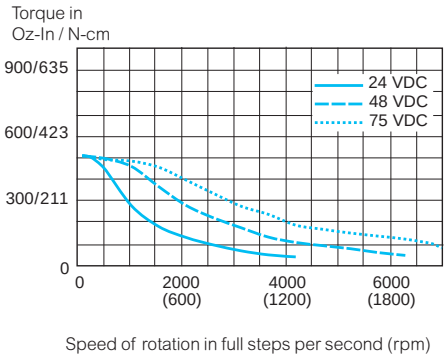


MD•34 NEMA 34 speed torque (1)

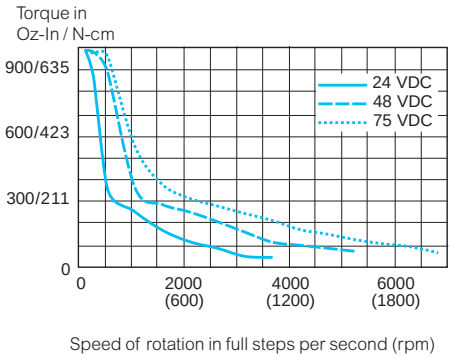
Single stack length



Double stack length

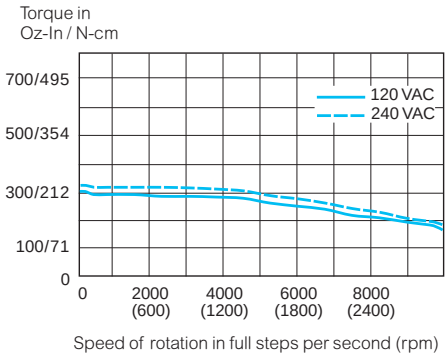


Triple stack length

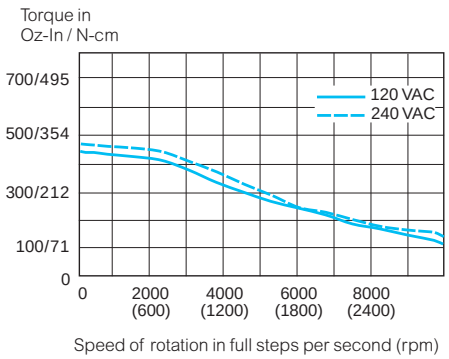


MD•34AC NEMA 34 speed torque (1)

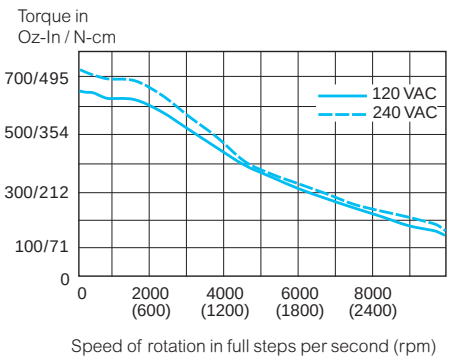
Single stack length



Double stack length



Triple stack length



(1) Test conditions: 100% current with damper simulating load.

MDrive® Plus
Part numbers

IP20-rated products

availability by MDrive size

example part number	K	M	D	M	1	F	S	D	1	7	A	4	–N	14	17	23	34
QuickStart Kit (1) K = kit option, or leave blank if not wanted	K	M	D	M	1	F	S	D	1	7	A	4	–N	•	•	•	•
MDrive product MD = MDrive Plus IP20-rated products		M	D											•	•	•	•
Version M = Step/direction input I = Intelligent motors, via • RS-422/485 programmable Motion Control • Ethernet • CANopen O = Speed control				M										•	•	•	•
														•	•	•	•
														•	•	•	•
															•	•	•
Input 1 = standard (Plus) 3 = expanded features (Plus²) 5 = differential CW/CCW input – only Step/direction products					1									•	•	•	•
														•	•	•	
														•	•	•	
P1 connector F = flying leads 12.0" / 305mm P = pluggable C = wire crimp						F									•	•	•
															•	•	
														•	•	•	•
Communication type S = SPI R = RS-422/485 I = EtherNet/IP — only NEMA 23 motors E = ModbusTCP — only NEMA 23 motors C = CANopen							S							•	•	•	•
														•	•	•	•
																•	
																•	
														•	•	•	•
P2 connector D = IDC Z = none L = wire crimp B = DB9 – only CANopen products R = RJ45 – only Ethernet & Modbus products								D							•	•	•
														•	•	•	•
														•	•	•	•
														•	•	•	•
																•	
Motor size 14 = NEMA 14 1.4" / 36mm 17 = NEMA 17 1.7" / 42mm 23 = NEMA 23 2.3" / 57mm 34 = NEMA 34 3.4" / 85mm									1	7				•			
															•		
																•	
																	•
Motor length A = single stack B = double stack C = triple stack D = quad stack — only NEMA 23 motors											A			•	•	•	•
															•	•	•
														•	•	•	•
																•	
Drive voltage 4 = +12 to +48 VDC — NEMA 14 & 17 motors 6 = +12 to +60 VDC — only NEMA 23 quad stack motor 7 = +12 to +75 VDC — NEMA 23 & 34 motors												4		•	•		
																•	
																•	•
Options Omit from part number, if unwanted.													–N				
–N (2) = rear control knob, may be combined with internal encoder option														•	•	•	•
–E__ (3) = for step/direction & speed control products: optical encoder w/ index mark														•	•	•	•
–EQ = for Version I products: internal 512-line magnetic encoder with index mark														•	•	•	•
–EE = remote encoder interface for select Plus² products, differential encoder not provided														•	•	•	•

	line count	100	200	250	256	400	500	512	1000	1024
NEMA 17, 23, 34	single-end part #	E1	E2	E3	EP	E4	E5	EQ	E6	ER
NEMA 17 & 23	differential part #	EAL	EBL	ECL	EWL	EDL	EHL	EXL	EJL	EYL
NEMA 34	differential part #	EA	EB	EC	EW	ED	EH	EX	EJ	EY

(1) QuickStart Kits include connectivity and instructions for setup and testing.

(2) Max torque: 20 in-lb (225 N-cm)

(3) External encoder style provided with NEMA 17 & 23 products; internal encoder with NEMA34 products.

MDRIVE PART BUILDER is an interactive, easy-to-use online tool:
motion.schneider-electric.com/mdrive_part_builder/
We recommend using it to confirm valid part numbers,
as the above table does not detail all possible combinations.

MDrive® Plus
Part numbers

IP65-rated products

example part number	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
QuickStart Kit (1) K = kit option, or leave blank if not wanted	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
MDrive product MD = MDrive Plus IP65-rated products with industrial connectors	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
Version M2MSZ = Step/direction with SPI universal input I4MRQ = RS-422/485 programmable motion control with expanded features (Plus²) I4MCQ = CANopen with expanded features (Plus²)	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
Motor size 17 = NEMA 17 1.7 inch 42mm 23 = NEMA 23 2.3 inch 57mm	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
Motor length A = single stack B = double stack C = triple stack D = quad stack — NEMA 23 motors only	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
Drive voltage 4 = +12 to +48 VDC — NEMA 17 motors 6 = +12 to +60 VDC — NEMA 23 D quad length motor 7 = +12 to +75 VDC — NEMA 23 A, B & C length motors	K	M	D	M	2	M	S	Z	1	7	A	4	–EQ
Options – encoders (2) Omit from part number, if unwanted. –EQ = internal encoder, 512-line magnetic encoder with index mark –EE = remote encoder interface, differential encoder not provided													–EQ

(1) QuickStart Kits include connectivity and instructions for setup and testing.

(2) Unavailable with step/direction products.

IP54-rated AC power products

example part number	K	M	D	M	2	M	S	Z	3	4	A	1	–N
QuickStart Kit (1) K = kit option, or leave blank if not wanted	K	M	D	M	2	M	S	Z	3	4	A	1	–N
MDrive product MD = MDrive Plus with AC power, IP54-rating and industrial connectors	K	M	D	M	2	M	S	Z	3	4	A	1	–N
Version M2MSZ = Step/direction with SPI universal input I4MRQ = RS-422/485 programmable motion control with expanded features (Plus²) I4MCQ = CANopen with expanded features (Plus²)	K	M	D	M	2	M	S	Z	3	4	A	1	–N
Motor size 34 = NEMA 34 3.4 inch 85mm	K	M	D	M	2	M	S	Z	3	4	A	1	–N
Motor length A = single stack B = double stack C = triple stack	K	M	D	M	2	M	S	Z	3	4	A	1	–N
Drive voltage 1 = 120 VAC 2 = 240 VAC	K	M	D	M	2	M	S	Z	3	4	A	1	–N
Options Omit from part number, if unwanted. –N = rear control knob, not IP54-rated, may be combined with encoder –E__ = for step/direction products: internal optical encoder with index mark –EQ = for motion control & CANopen products: internal 512-line magnetic encoder with index mark –EE = for motion control products: remote encoder interface, differential encoder not provided													–N

line count	100	200	250	256	400	500	512	1000	1024
differential part #	EA	EB	EC	EW	ED	EH	EX	EJ	EY

(1) QuickStart Kits include connectivity and instructions for setup and testing.

For IP20-rated products

		compatibility with MDrive by version & size															
		M Step/ direction				I Motion Control				I Ether Net	I CAN open				O Speed control		
description	reference	14	17	23	34	14	17	23	34	23	14	17	23	34	17	23	34
Communication converters																	
Set/program communication parameters with these USB-pluggable, electrically isolated in-line converters, pre-wired with mating connector 3.6 m / 12.0 feet long																	
10-pin non-locking IDC connector mate	MD-CC300-001		•	•	•										•	•	•
	MD-CC400-001						•	•	•								
10-pin friction lock wire crimp connector mate	MD-CC302-001		•	•	•										•	•	•
	MD-CC402-001					•	•	•	•								
12-pin locking wire crimp connector mate	MD-CC303-001		•	•	•												
	MD-CC305-001	•															
	MD-CC403-001					•											
DB9 connector mate *requires power supply, not provided*	MD-CC500-000										•	•	•	•			
Encoder cables																	
Cables are pre-wired with mating connectors																	
for external single-end optical encoder 0.3 m / 1.0 feet long	ES-CABLE-2	•	•	•											•	•	
for external differential optical encoder 1.8 m / 6.0 feet long	ED-CABLE-6	•	•	•											•	•	
for internal differential optical encoder 1.8 m / 6.0 feet long	PD10-3400-FL3				•												
Prototype development cables																	
To speed your test/development, these cables are pre-wired with mating connectors 3.0 m / 10.0 feet long																	
2-pin locking wire crimp connector mate	PD02-2300-FL3							•		•			•				
	PD02-3400-FL3				•				•					•			•
10-pin friction lock wire crimp connector mate	PD10-1434-FL3					•	•	•	•								
12-pin locking wire crimp connector mate	PD12B-1434-FL3	•				•											
	PD12B-2334-FL3																•
	PD12-1434-FL3		•	•	•												
14-pin locking wire crimp connector mate	PD14-2334-FL3				•			•	•	•			•	•			
16-pin locking wire crimp connector mate	PD16-1417-FL3					•	•				•	•					
20-pin locking wire crimp connector mate	PD20-3400-FL3							•						•			
	PD20B-3400-FL3																•
Mating connector kits																	
For making your own mating cables. Included: 5 connectors per kit. Cable material and crimp tool not supplied																	
10-pin non-locking IDC connector	CK-01		•	•	•		•	•	•						•	•	•
10-pin friction lock wire crimp connector	CK-02				•	•	•	•	•						•	•	•
12-pin locking wire crimp connector	CK-03		•	•	•												
2-pin locking wire crimp connector	CK-04							•		•			•				
2-pin locking wire crimp connector	CK-05				•									•			•
12-pin locking wire crimp connector	CK-08	•				•											•
14-pin locking wire crimp connector	CK-09							•		•			•	•			
16-pin locking wire crimp connector	CK-10					•	•				•	•					
20-pin locking wire crimp connector	CK-11								•					•			•
Drive protection module																	
Limits surge current and voltage to a safe level when DC input power is switched on-and-off	DPM75	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

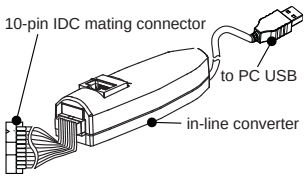
For IP54- and IP65-rated products

description	reference	compatibility with MDrive by version & size								
		M Step/direction			I Motion Control			I CANopen		
		17	23	34ac	17	23	34ac	17	23	34ac
Communication converters										
Set/program communication parameters with these USB-pluggable, electrically isolated in-line converters, pre-wired with mating connector 3.6 m / 12.0 feet long										
19-pin M23 industrial connector mate	MD-CC301-001	•	•	•						
5-pin M12 industrial connector mate	MD-CC401-001				•	•	•			
5-pin M12 industrial connector mate (1)	MD-CC500-000							•	•	•
Prototype development cables										
To speed your test/development, these cables are pre-wired with mating connectors 4.0 m / 13.0 feet long										
19-pin M23 industrial connector, straight termination mate	MD-CS100-000		•	•	•	•	•	•	•	•
19-pin M23 industrial connector, right angle mate	MD-CS101-000		•	•	•	•	•	•	•	•
3-pin Euro AC industrial connector, straight termination mate	MD-CS200-000			•			•			•
3-pin Euro AC industrial connector, right angle mate	MD-CS201-000			•			•			•
Drive protection module										
Limits surge current and voltage to a safe level when DC input power is switched on-and-off	DPM75	•	•		•	•		•	•	

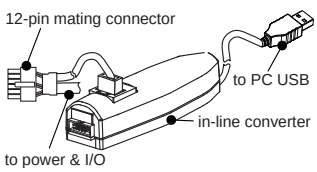
(1) Requires mating connector adapter and power supply, not provided.

Communication converter examples

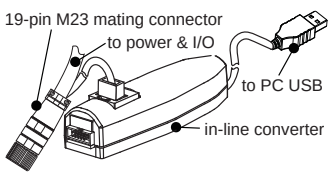
MD-CC300/400-001



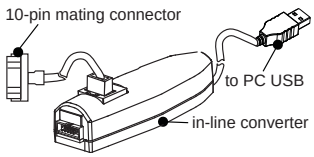
MD-CC303/305/403-001



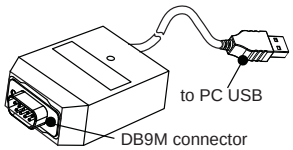
MD-CC301-001



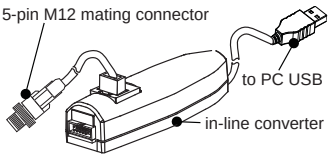
MD-CC302/402-001



MD-CC500-000



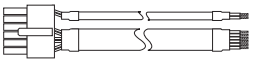
MD-CC401-001



Prototype development cable examples

PD02-2300/3400-FL3

PD12-1434-FL3



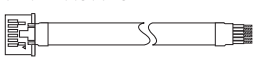
MD-CS100-000

PD10-1434-FL3

PD14-2334-FL3,
PD16-1417-FL3

MD-CS200-000

PD12B-1434-FL3



PD20/20B-3400-FL3