Leadshine 2-phase Digital Stepper Drives

Leadshine has been an industry leading motion control supplier since 1997, and is one of the largest stepper drive manufacturers in the world. Leadshine steppers offer high quality products (Leadshine factories are ISO9001 certified) at very affordable prices. Leadshine steppers are simple, easy to use, long-lasting, and reliable.

AutomationDirect sells a wide range of linear and switching power supplies, stepper motors, cables, and PLCs with hi-speed outputs that are compatible with Leadshine stepper drives.

Features

- 2-phase digital stepper drives
- Anti-resonance for optimal torque, extra smooth motion, low motor heating and noise
- Motor auto-config on power up
- All drives support step and direction control, some models support CW/CCW as well
- Micro-stepping for smooth motor movement
- DIP switch configurable
- Wide range of input voltages supported (12-110 VDC, 18-80 VAC)
- Pulse input frequency up to 200kHz
- Soft-start with no "jump" when powered on
- Automatic idle-current reduction
- Protections for over-voltage and over-current
- NEMA 11, 14, 17, 23, 24, 34 and 42 frame size step motors supported

Leadshine Series – Drives Features Comparison1

Drive Model	DM322E	DM542E	DM556E	DM860E	DMA860E	DM805-AI	EM542S	EM556S
Price	$32.00	$46.00	$51.00	$63.00	$79.00	$129.00	$59.00	$72.00
Drawing	PDF	PDF	PDF	PDF	PDF	PDF	PDF	PDF
Drive Type	2-phase digital stepper drive							
Supply Voltage	12–30 VDC (24 VDC typical)	20–50 VDC (24–48 VDC typical)		24–74 VDC (48–68 VDC typical)	24–110 VDC (48–90 VDC typical) or 18–80 VAC (36–70 VAC typical)	20–80 VDC (30–60 VDC typical)	20–50 VDC (24–48 VDC typical)	
Pulse Input Type	Single-ended2	Differential, Single-ended				Single-ended2	Differential, Single-ended	
Step Input Modes	Step & Direction			Step & Direction, CW & CCW		Step & Direction, Analog input	Step & Direction, CW & CCW	
Digital Input Voltage	5V (add a 1K resistor to accept +12V input, or a 2K resistor to accept +24V input)						DIP switch selectable for 5V or 24V	
PPR Range	400–12800	400–25600		400–51200		200-12800	200–25600	
Motor Output Current Range	0.3–2.2 A peak (0.2–1.6 RMS)	1.0–4.2 A peak (0.7–3.0 RMS)	1.8–5.6 A peak (1.3–4.0 RMS)	2.4–7.2 A peak (1.7–5.1 RMS)		2.6–7.0 A peak (0.3–5.0 RMS)	0.5-4.2A peak (0.4-2.9 RMS)	0.5-5.6A peak (0.4-3.9 RMS)
Digital Output	No						+24VDC (Brake and Fault Detection)	
Self-test Capable	No	No	No	No	No	Yes	Yes	Yes
Special Features	Soft-start, motor auto-config				Accepts a DC or an AC power supply, soft-start, motor auto-config	Built-in pulse generator, command source	Auto-tuning, soft-start, fault and brake outputs, shaft lock	

1 - Refer to Specifications Tables for detailed specifications.
2 - See the User Manual or Quick Start Guide for instructions on wiring Single-Ended drives to a Differential (Line Driver) controller.

Leadshine

Stepping Drives

DM542E

DMA860E

DM542E, DM556E, DM860E, DMA860E

The DM542E and DM556E drives are capable of pulse and direction operation, with auto-motor config on power up.

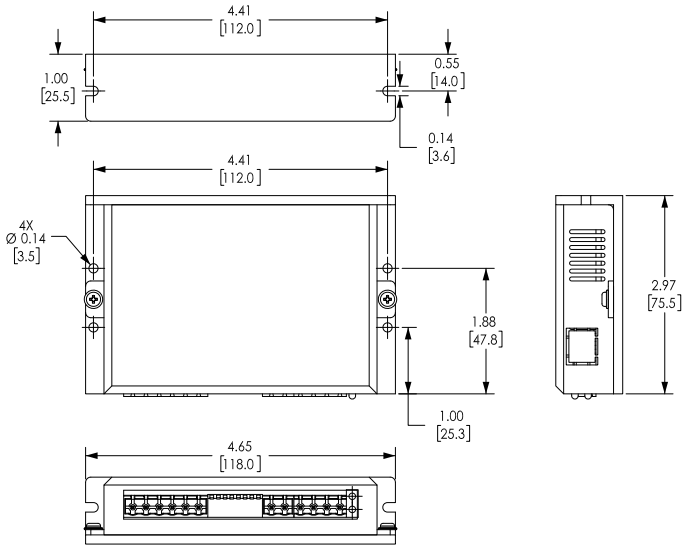
The DM860E and DMA860E drives possess the same capabilities but can also do CW and CCW pulse operation. The main difference between these models are output current range to the motor and supply voltage.

Leadshine DM542E, DM556E, DM860E, DMA860E Specifications					
Drive Model		***DM542E***	***DM556E***	***DM860E***	***DMA860E***
Output Current		1.0–4.2 A peak (0.7–3.0 RMS)	1.8–5.6 A peak (1.3–4.0 RMS)	2.4–7.2 A peak (1.7–5.1 RMS)	2.4–7.2 A peak (1.7–5.1 RMS)
Input Voltage		20–50 VDC (24–48 VDC typical)		24–74 VDC (48–68 VDC typical)	24–110 VDC (48–90 VDC typical) or 18–80 VAC (36–70 VAC typical)
Logic Signal Current		7–16 mA (10mA typical)			
Pulse Input Frequency		0–200 kHz			
Minimal Pulse Width		2.5 µs			
Minimal Direction Setup		5.0 µs			
Isolation Resistance		500mΩ			
Connector P1 Functions	***PUL+***	Pulse signal: 5V signal, differential input. High input is 4-5V, Low input is 0-0.5 V. Minimum pulse width = 2.5 µs. Add a 1kΩ resistor for +12V signals, 2kΩ for +24V signals.			
	PUL-				
	DIR+	Direction signal: 5V signal, differential input. High input is 4-5V, Low input is 0-0.5 V. Minimum pulse width = 2.5 µs. Add a 1kΩ resistor for +12V signals, 2kΩ for +24V signals. Direction Function: requires 5µs setup time. CW/CCW Function (DM860E and DMA860E only): see DIP switch SW14.			
	DIR-				
	ENA+	Enable signal: 5V signal, differential input. High input is 4-5V, Low input is 0-0.5 V. Minimum pulse width = 2.5 µs. Add a 1kΩ resistor for +12V signals, 2kΩ for +24V signals. Enable Function: Close (pull low) to disable the drive.			
	ENA-				
Replacement Connectors		Power = DN-6PLUG, I/O = DN-4PLUG, Enable = DN-2PLUG			
Cooling		Natural cooling or forced cooling			
Ambient Temperature		0°C to 65°C (32°F to 149°F)			
Humidity		40–90% relative humidity			
Operating Temperature		0°C to 50°C (32°F to 122°F)			
Vibration		10–50 Hz / 0.15 mm			
Storage Temperature		-20°C to 65°C (-4°F to 149°F)			
Self Test		No			
Weight		227g (8 oz)	300g (10.6 oz)	510g (1.13 lbs)	510g (1.13 lbs)

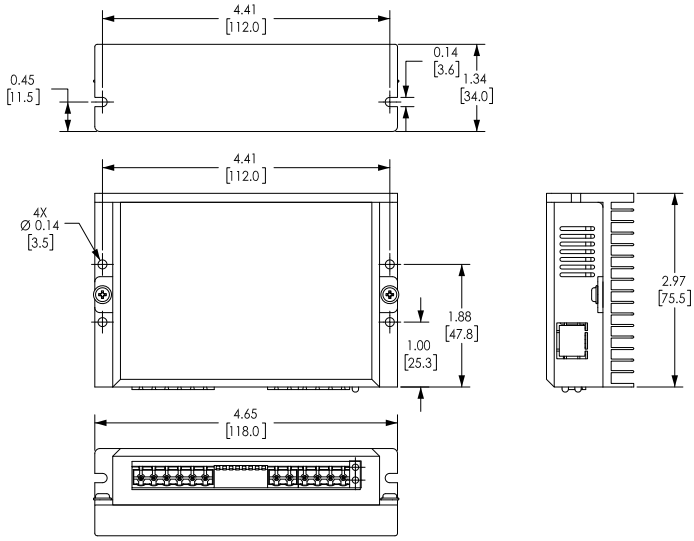
Leadshine Drive Dimensions

Dimensions = in [mm]

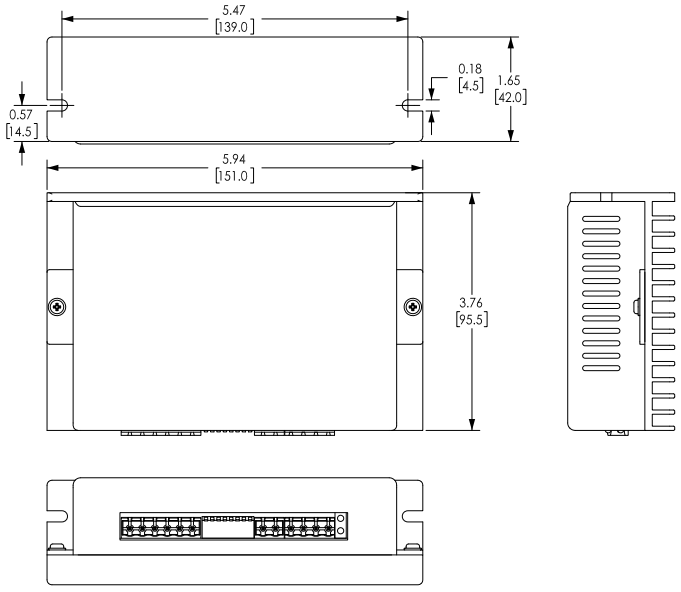
DM542E



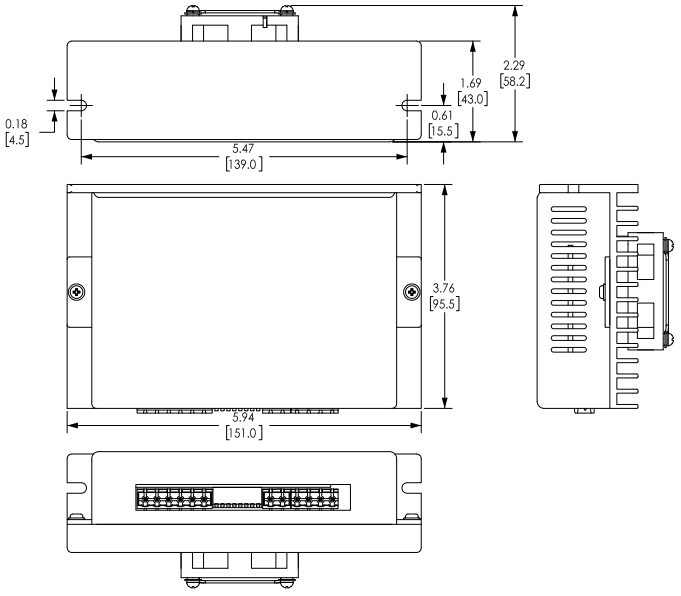
DM556E



DM860E

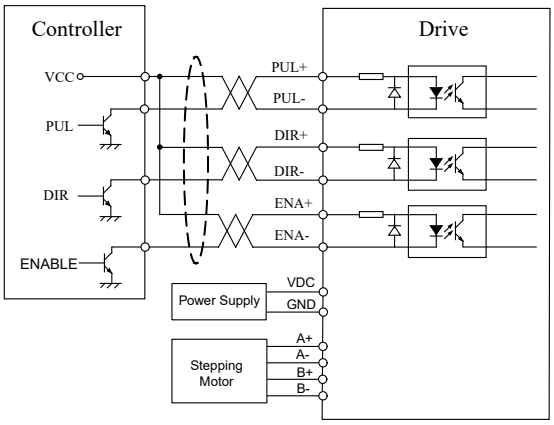


DMA860E

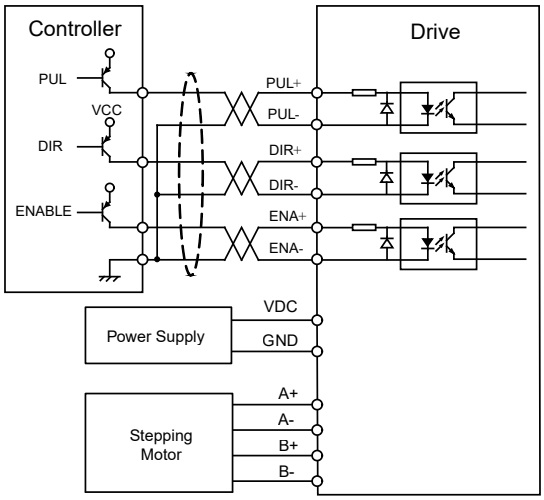


Leadshine Drive Wiring

DM542E, DM556E, DM860E, DMA860E Connection to Open Collector Signal



DM542E, DM556E, DM860E, DMA860E Connection to PNP Signal



DM542E, DM556E, DM860E, DMA860E Connection to Differential Signal