

Introduction and Applications

The LW1 are a series of high performance micro stepping drives based on precise PWM sinusoidal current control technology. Thanks to this solution LW1 drives are able to command the stepper motors with lower noise, lower temperature rise and uniform movements, resulting into higher performances and speed than most of drives available on the market.

The series have a wide power range and are designed for controlling 2 and 4 phase hybrid stepper motors from 1.7" to 4.2" NEMA sizes.

As the competitively priced LW1 drives are full digital and realised with surface assembly technology, they offer an extraordinary reliability and mechanical compactness.

They can be used in many types of machines, such as X-Y tables, labelling systems, laser cutting systems, pick-place devices, punching tables, etc., and in all the applications where versatility, precision, velocity and low temperatures are required as well.

Specifications

MODELS

Code	Power supply	Maximal output current
LW1D2014	24 ÷ 36 Vdc	1.4 Arms
LW1D2042	24 ÷ 36 Vdc	4.2 Arms
LW1D3050	24 ÷ 80 Vdc	5.5 Arms
LW1A3050	18 ÷ 56 Vac	5.5 Arms
LW1D4080	48 ÷ 140 Vdc	8.0 Arms
LW1A4085	17 ÷ 100 Vac	8.5 Arms
LW1A9060	115 ÷ 230 Vac	6.0 Arms

POWER STAGE

40kHz. bipolar chopper H-Bridge

OPTICALLY ISOLATED INPUTS

3 5 Vdc NPN, PNP or line-driver (300 kHz) digital inputs

OPTICALLY ISOLATED OUTPUT

1 24 Vdc - 100 mA digital output for drive's status monitoring

STEP RESOLUTION

Step type	Steps per rev.	Degrees per step
Full step	200	1.8°
1/2	400	0.9°
1/4	800	0.45°
1/8	1600	0.225°
1/16	3200	0.1125°
1/32	6400	0.05625°
1/64	12800	0.028125°
1/128	25600	0.0140625°
1/256	51200	0.00703125°
1/5	1000	0.36°
1/10	2000	0.18°
1/25	5000	0.072°
1/50	10000	0.036°
1/125	25000	0.0144°
1/250	50000	0.0072°

SAFETY PROTECTIONS

Over/Under Voltage, Over Current, Over Temperature, Short circuit Phase/Phase and Phase/Ground

DRIVE STATUS MONITORING

power LED and failure status LED

TEMPERATURE

working: from 0°C to 50°C ; storage from 0°C to 55°C

HUMIDITY

0% ÷ 90%

PROTECTION CLASS

IP20

Full Digital Drives for 2 & 4 phase stepper motors for High Performances at Low Costs



LW1

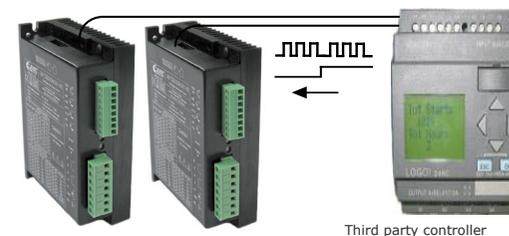
SlimLine Drives

- Equipped with Advanced Safety Devices:
 - ✓ tested for direct unit installation
 - ✓ failures monitoring and handling
- Main Drive's characteristics:
 - ✓ low motor vibrations
 - ✓ low mechanical noise
 - ✓ low heat production
 - ✓ excellent EMC properties
 - ✓ safety protections
 - ✓ AC/DC power supply
 - ✓ compact dimensions
 - ✓ no motor resonance
 - ✓ high reliability
 - ✓ easy to set-up
 - ✓ high speed and torque drive
 - ✓ wide power range

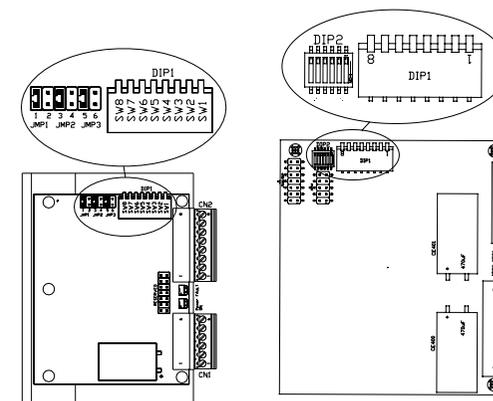


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Step & Direction

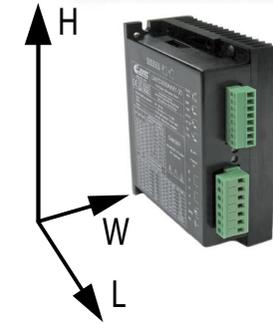
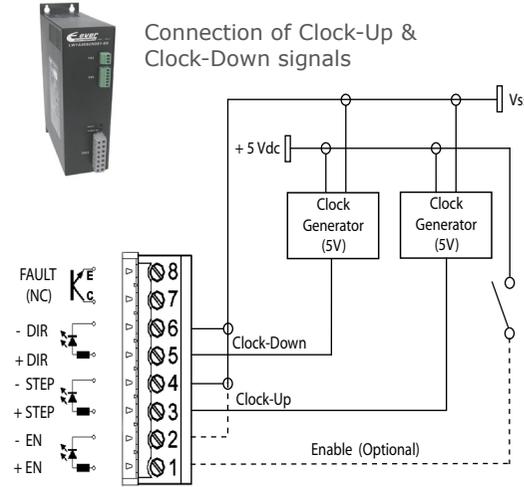
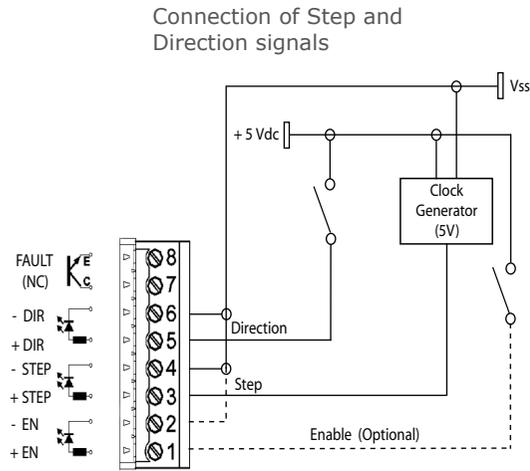


- Setting of the current value by means of dip-switches
- Selection of the step angle by means of dip-switches
- Enabling of automatic current reduction
- Possibility to select five user functions by means of jumper settings (model 2042) or dip-switches (model 3050) or additional roto-switches (model 9060) choosing:
 - 1 - active edge of step and direction inputs
 - 2 - Step / Direction or Clock-Up / Clock-Down control mode
 - 3 - drive enable input functioning:
 - a) the motor is powered if the power input is open
 - b) the motor is powered if the power input is closed
 - 4 - 'Voltage mode' functioning: when the motor rotation speed exceeds 400 rpm, the drive switches automatically to full step to compensate the efficiency and torque loss due to current auto-limitation when the rotation speed increases
 - 5 - maximum current range for precise setting of the desired value



Inputs-connection

Mechanical Data



Models	Dimensions (mm)			Weight (g.)
	H	L	W	
LW1D2014N081-00	100.0	74.0	37.0	250
LW1D2042N081-00	100.0	74.0	37.0	250
LW1D3050N081-00	120.0	97.5	45.5	500
LW1A3050N081-00	120.0	97.5	62.3	610
LW1D4080N0A1-00	165.0	97.5	54.3	680
LW1A4085N0A1-00	165.0	108.0	49.0	780
LW1A9060N081-00	235.0	151.5	62.5	1350

Ordering Information for LW1 Drives

Ordering code	Power			System Resources		
Versions	Power supply	Auxiliary output	Current	Digital Inputs	Analog Inputs	Digital Outputs
LW1 Drive Series: Models 2014						
LW1D2014N081-00	24 ÷ 36 Vdc	---	0.5 ÷ 1.4 Arms (0.7 ÷ 2.0 Apeak)	# 3 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1 Drive Series: Models 2042						
LW1D2042N081-00	24 ÷ 36 Vdc	---	1.5 ÷ 4.2 Arms (2.1 ÷ 6.0 Apeak)	# 3 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1 Drive Series: Models 3050						
LW1D3050N081-00	24 ÷ 80 Vdc	---	1.0 ÷ 5.5 Arms (1.4 ÷ 7.8 Apeak)	# 3 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1D3050N081-01	24 ÷ 80 Vdc	---	1.0 ÷ 5.5 Arms (1.4 ÷ 7.8 Apeak)	# 3 opto isolated 24 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1A3050N081-00	18 ÷ 56 Vac	24 Vdc - 3 Amps	1.0 ÷ 5.5 Arms (1.4 ÷ 7.8 Apeak)	# 3 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1 Drive Series: Models 4080						
LW1D4080N0A1-00	48 ÷ 140 Vdc	---	1.0 ÷ 8.0 Arms (1.4 ÷ 11.2 Apeak)	# 4 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1D4080N0A1-01	48 ÷ 140 Vdc	---	1.0 ÷ 8.0 Arms (1.4 ÷ 11.2 Apeak)	# 4 opto isolated 24 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1 Drive Series: Models 4085						
LW1A4085N0A1-00	17 ÷ 100 Vac	---	1.5 ÷ 8.5 Arms (2.1 ÷ 12.0 Apeak)	# 4 opto isolated 2÷5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1A4085N0A1-01	17 ÷ 100 Vac	---	1.5 ÷ 8.5 Arms (2.1 ÷ 12.0 Apeak)	# 4 opto isolated 11÷24 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault
LW1 Drive Series: Models 9060						
LW1A9060N081-00	115 ÷ 230 Vac	---	1.0 ÷ 6.0 Arms (1.4 ÷ 8.4 Apeak)	# 3 opto isolated 5 Vdc 300 kHz configurable as NPN, PNP or Line Drive	---	# 1 opto isolated 24 Vdc 100mA transistor output for Fault