

## 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
LW1D2042	24 ÷ 36 Vdc	4.2 Arms
LW1D3050	24 ÷ 80 Vdc	5.5 Arms
LW1D4080	48 ÷ 140 Vdc	8.0 Arms
LW1A4080	36 ÷ 100 Vac	8.0 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

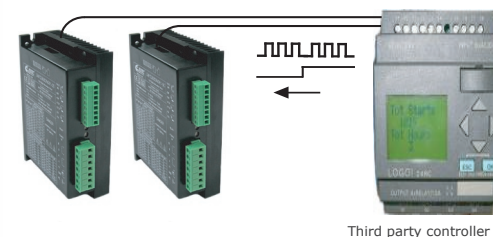
## SlimLine Drives

- 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

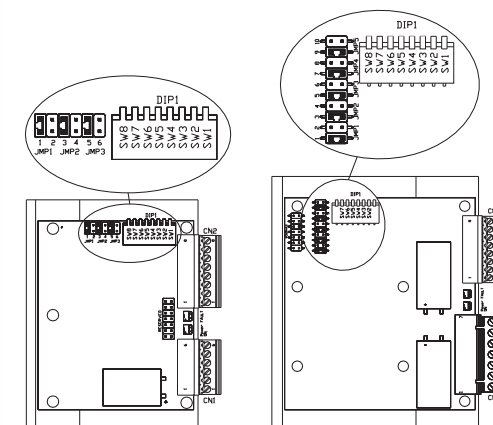
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The clever drive  
since 1977

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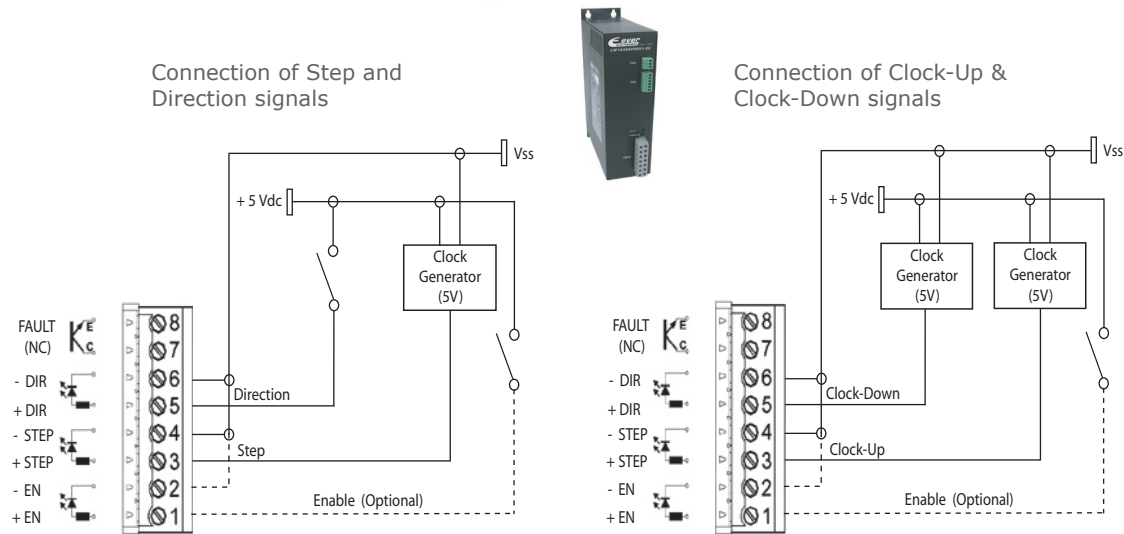
## Step & Direction



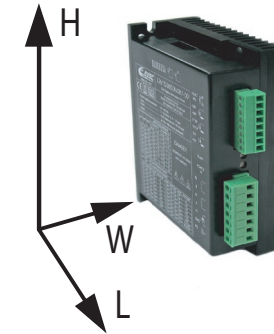
- Setting of the current value by means of dip-switches
- Selection of the step angle by means of dip-switches
- Enabling of automatic current reduction
- Possibility to select five user functions by means of jumper settings (model 2042 and 3050) or additional dip-switches (model 9060) choosing:
  - 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	
LW1D2042N081-00	100.0	74.0	37.0	250
LW1D3050N081-00	120.0	97.5	45.5	500
LW1D4080N0A1-00	165.0	97.5	54.3	680
LW1A4080N0A1-00	165.0	97.5	62.3	900
LW1A9060N081-00	235.0	151.5	62.5	1350

## Ordering Information for LW1 Drives

Ordering code	Power		System Resources		
Versions	Power supply	Current	Digital Inputs	Analog Inputs	Digital Outputs
<b>LW1 Drive Series: Models 2042</b>					
LW1D2042N081-00	24 ÷ 36 Vdc	0.2 ÷ 4.2 Arms (0.3 ÷ 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
<b>LW1 Drive Series: Models 3050</b>					
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
<b>LW1 Drive Series: Models 4080</b>					
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
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
LW1A4080N0A1-00	36 ÷ 100 Vac	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
LW1A4080N0A1-01	36 ÷ 100 Vac	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
<b>LW1 Drive Series: Models 9060</b>					
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