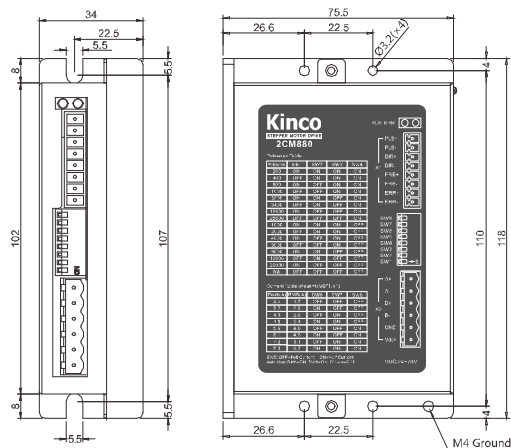


Stepper Driver 2CM880



- Support parameter self-adaptive function, generate optimal parameters according to motor type, ensure motor run at optimal performance;
- Phase memory function;
- Automatic half-current function, selected by DIP switches;
- Test running function, selected by DIP switches;
- Over voltage protection, over current protection functions;
- Micro-step filter function can smooth input pulse to reduce transient motion of motor, make sure motor run more smoothly;
- Opto-isolation ERR signal output with max. current of 100mA;
- Opto-isolation 5-24V pulse input, responding frequency up 400KHz;
- 15 subdivision levels and 8 current levels are selectable by DIP switches;
- Pulse type is selectable by DIP switches: PUL+DIR&CW/CCW.

Mechanical Dimensions (Unit : mm)



Technical Specifications

Input voltage	24 ~ 70VDC	
Ovoltage protection	85VDC	
Undervoltage protection	15VDC	
Overheat protection	80°C(Temperature of thermistor)	
Phase current(Peak)	2.4/3.2/4/4.8/5.6/6.4/7.2/8, 8 settable values in total. (Unit: A)	
Subdivision	200~25600 Pulse/rev , 15 subdivision levels in total	
Adaptable motor	57/86 series 2-phase hybrid stepper motor	
Input signal	PLS, DIR, FREE , Input voltage : 5 ~ 24VDC , Input current : 8mA@5VDC , 12mA@24VDC	
Control mode	Pulse control : PLS+DIR , CW/CCW	
Output signal	ERR, open collector output, maximum current:100mA	
Operation indicator	Combination of RUN and ERR LED indicates different status	
Protection circuit	Over voltage, under voltage, over current, over heat	
Cooling method	Nature air cooling	
Environment	Operation environment	Avoid environment with great amount of metallic powder, oil mist, or erosive gases
	Operation humidity	<85%, RH(Non-condensing or water drops)
	Operation temperature	0°C ~ +40°C
	Storage temperature	-20°C ~ +70°C
Weight(Net)	0.253kg	
Dimensions	118×75.5×34 mm (Toothed heat sink)	
Ingress protection	IP20	

Function of DIP switches

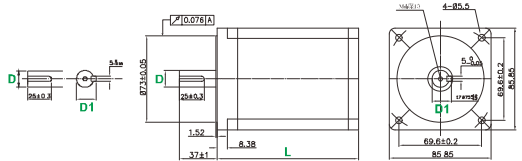
Function	DIP setting	Description
PLS+DIR	SW6,SW7=ON; Others=OFF	Set DIP switches according to functions required when power off. Power on driver, RUN LED blinking in green, ERR LED is red. It means settings take effect. Then power off driver, reset subdivision and current for normal use.
CW/CCW	SW7,SW8=ON; Others=OFF	
Micro-step smooth & dynamic filter disable	SW5,SW6=ON; Others=OFF	
Micro-step smooth filter enable	SW5,SW7=ON; Others=OFF	
Micro-step dynamic filter enable	SW5,SW8=ON; Others=OFF	
Test motor parameter upon power on disable	SW6,SW7,SW8=ON; Others=OFF	
Test motor parameter upon power on enable	SW5,SW6,SW7=ON; Others=OFF	
Test running	SW6,SW8=ON; Others=OFF	Motor running @80RPM
Automatic half-current	SW5=ON	Set SW5=ON to enable automatic half-current. Phase current will reduce to half of the set value after motor stops for 1.5s

Subdivision setting (Unit:PULSE/REV)					Current setting (Unit: A)				
SW1	SW2	SW3	SW4=ON	SW4=OFF	SW6	SW7	SW8	RMS	Peak
ON	ON	ON	200	1000	ON	ON	ON	5.7	8
OFF	ON	ON	400	2000	OFF	ON	ON	5.1	7.2
ON	OFF	ON	800	4000	ON	OFF	ON	4.5	6.4
OFF	OFF	ON	1600	5000	OFF	OFF	ON	4	5.6
ON	ON	OFF	3200	8000	ON	ON	OFF	3.4	4.8
OFF	ON	OFF	6400	10000	OFF	ON	OFF	2.8	4
ON	OFF	OFF	12800	20000	ON	OFF	OFF	2.3	3.2
OFF	OFF	OFF	25600	NA	OFF	OFF	OFF	1.7	2.4

Two-phase stepper motor/86 series



Dimensions (Unit: mm)



Model	L	D	D1
2S86Q-051F6	156	$\text{O}15.875$	$17.875_{-0.02}^{+0.02}$
2S86Q-85B8	118	$\text{O}13$	$15_{-0.02}^{+0.02}$
2S86Q-4580	80	$\text{O}13$	$15_{-0.02}^{+0.02}$
2S86Q-3465	65	$\text{O}13$	$15_{-0.02}^{+0.02}$

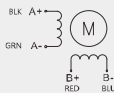
Specification

Technical Specifications	2S86Q-051F6	2S86Q-85B8	2S86Q-4580	2S86Q-3465
Step angle	1.8°	1.8°	1.8°	1.8°
Phase current (A)	6.0	6.0	6.0	6.0
Holding torque (Nm)	12.8	8.5	4.5	3.4
Damping torque (Nm)	0.36	0.24	0.12	0.08
Winding resistance (Ω)	$0.85 \pm 10\%$	$0.6 \pm 10\%$	$0.38 \pm 10\%$	$0.3 \pm 10\%$
Winding inductance (mH)	$10 \pm 20\%$	$6 \pm 20\%$	$3.5 \pm 20\%$	$1.7 \pm 20\%$
Motor inertia ($\text{kg}\cdot\text{cm}^2$)	4	3.4	1.4	1
Motor length L (mm)	156	118	80	65
Shaft diameter (mm)	15.875	13	13	13
Number of lead wires	4			
Insulation class	B			
Withstand voltage level	1200VAC 1S 5mA			
Max. axial load (N)	60			
Max. radial load (N)	220			
Operating temperature	$-20^\circ\text{C} \sim +50^\circ\text{C}$			
Surface temperature rise	Max.80°C (Both phases connected with rated current)			
Insulation impedance	Minimum 100M Ω , 500V DC			
Weight (kg)	5.3	3.7	2.3	1.7
Startup freq. with no load(Hz)*	5.8K	10K	9.1K	10K

Note: The startup freq. is tested under condition of 2000 steps/round, only for reference.

Motor cable

Two-phase 4-wire motor



Note: AWG 18 # UL1332, Length 600

Torque-frequency curve

