User Manual for
DMDT68A

(Manual Version 1.2)
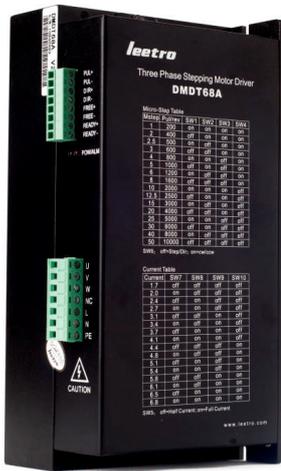
Features:

- PWM Constant wave chopper

- Up to 400KHz Pulse response frequency

- TTL compatible and optically isolated input

- 16-level currents, Max current 6.8A/phase (RMS)

- 16-level Micro-steps, up to 10000-pulse per revolution

- Auto semi-current while in still status

- Over-current protections

- Support PUL/DIR (default) and CW/CCW modes

- AC160-245V power supply

1. Electrical Specifications

Tj=25℃

Parameters	Min.	Typical	Max.	Unit
Output Current (RMS)	1.7	-	6.8	A
Power Supply	160	220	245	VAC
Logical Current	6	10	30	mA
Pulse Frequency	0	-	400	KHz
Isolation Resistance	500	-	-	MΩ
Approx. Net Weight	-	1.4	-	Kg

2. Operation Environment

Condition	Caution	Avoid dust and corrosive gas/oil
	Temp.	0℃ ～ +50℃
	Humidity	Under 90% RH
	Vibration	5.9m/s^2 Max
Storage Temperature		-20℃ ～ +70℃

3. Micro-step Setting

Micro-step	Step/rev. (1.2° Motor)	SW1	SW2	SW3	SW4
1	200	on	on	on	on
2	400	off	on	on	on
2.5	500	on	off	on	on
3	600	off	off	on	on
4	800	off	off	off	on
5	1000	off	on	off	on
6	1200	on	off	off	on
8	1600	off	off	off	on
10	2000	on	on	on	off
12.5	2500	off	on	on	off
15	3000	on	off	on	off
20	4000	off	off	on	off
25	5000	on	on	off	off
30	6000	off	on	off	off
40	8000	on	off	off	off
50	10000	off	off	off	off

NOTE:
Please shut down and re-apply power after micro-step setting is changed!

4. Pins

Pin	Description
PUL+	One step ahead when the pulse rising edge is active. Step distance is
PUL-	subject to the micro-step.
DIR+	This Active-high/low signal is used for determining the rotate direction of motor. Please note that rotation direction is also related
DIR-	to the connection of motor wires.
FREE+	This signal is used for enabling/disabling the driver. Active-high for enabling the driver (optical-isolation is not through), Active-low for
FREE-	disabling the driver (optical-isolation is through).
READY+	Input Ready +, to controller, Max 30VDC, 20mA
READY-	Output Ready -
U	Motor Phase U
V	Motor Phase V
W	Motor Phase W
NC	Not Available
L	Power Supply, +160～245VAC, including voltage fluctuation and
N	EMF voltage.
PE	Protecting Earthing

5. Output Current Setting

5.1 Dynamic Current

| Peak Current (A)	RMS Current(A)	SW7	SW8	SW9	SW10
2.4	1.7	off	off	off	off
2.8	2.0	on	off	off	off
3.4	2.4	off	on	off	off
3.8	2.7	on	on	off	off
4.4	3.1	off	off	on	off
4.8	3.4	on	off	on	off
5.2	3.7	off	on	on	off
5.8	4.1	on	on	on	off
6.2	4.4	off	off	off	on
6.7	4.8	on	off	off	on
7.1	5.1	off	on	off	on
7.6	5.4	on	on	off	on
8.2	5.8	off	off	on	on
8.6	6.1	on	off	on	on
9.1	6.5	off	on	on	on
9.6	6.8	on	on	on	on

5.2 Standstill Current

SW5 defines the standstill current.

Status "off" is to set the standstill current as the half of dynamic current.

Status "on" is to set the standstill current as same as the dynamic current.

6. Wiring Connections

6.1 to the Stepping Motor

Star Mode   Triangle Mode
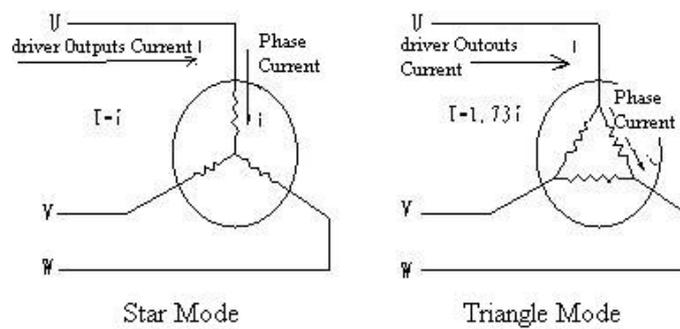
6.2 to the Controller

6.2.1   Common Anode
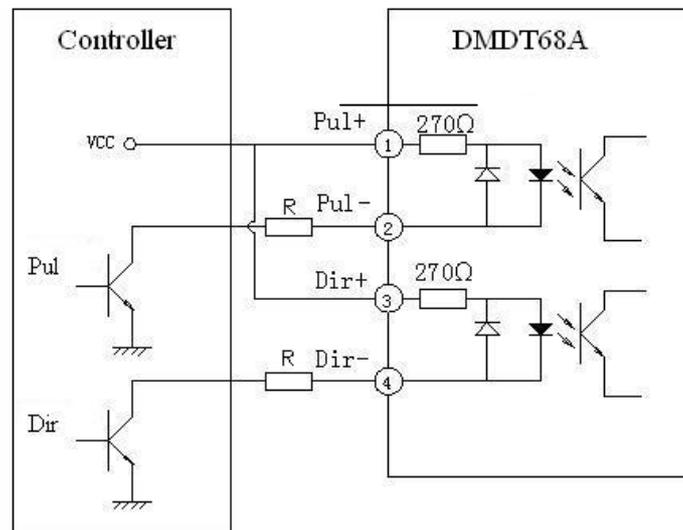
VCC=5V   R=0
VCC=12V, R=1KΩ (≥1/8W)
VCC=24V, R=2KΩ (≥1/8W)

6.2.2 Common Cathode
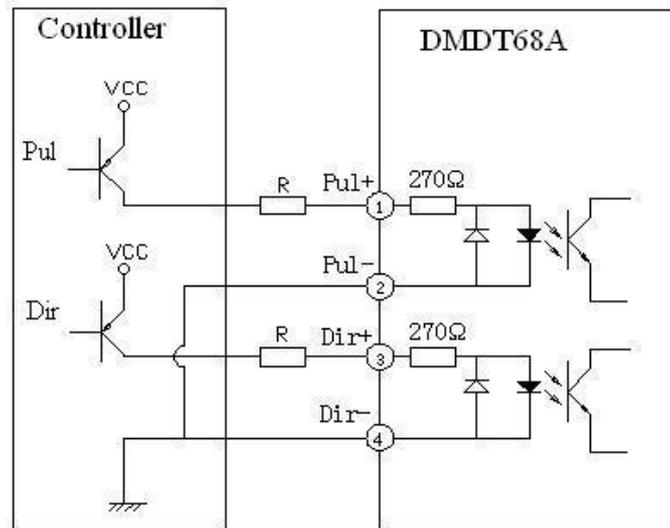
$VCC=5V \quad R=0$
$VCC=12V, R=1K\Omega (\geqslant 1/8W)$
$VCC=24V, R=2K\Omega (\geqslant 1/8W)$

6.3 Typical System
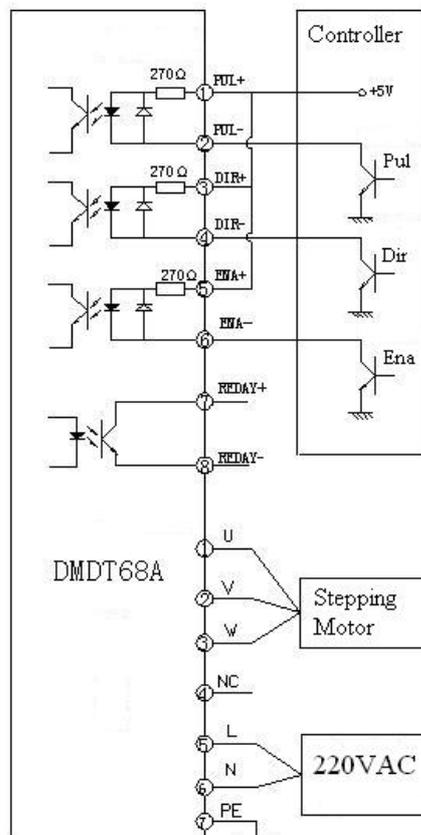
7. Mechanical Structure (unit: mm)
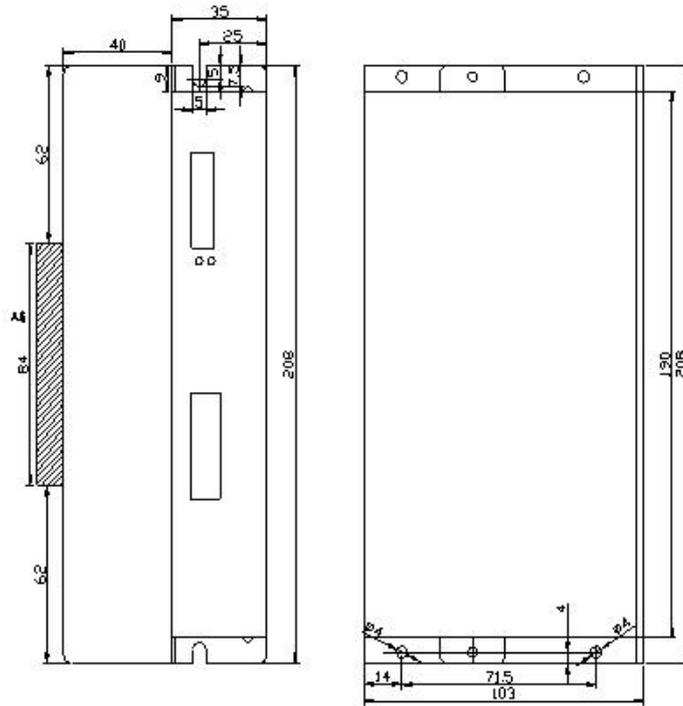
SW6=off: PUL+DIR
SW6=on: CW+CCW

8. Sequence Chart of Control Signal