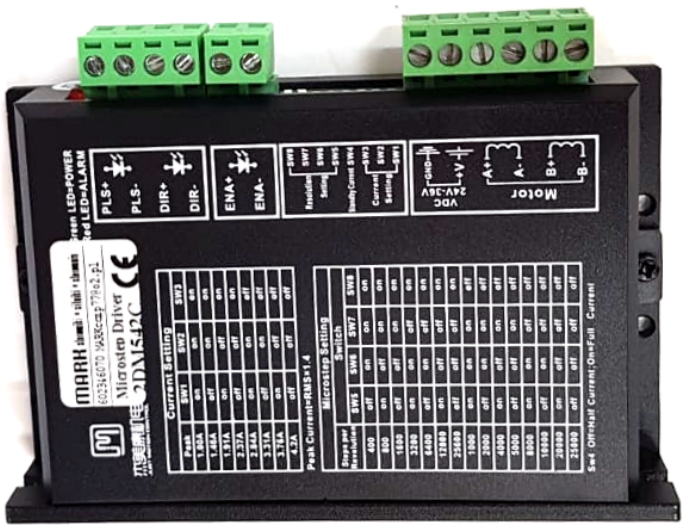
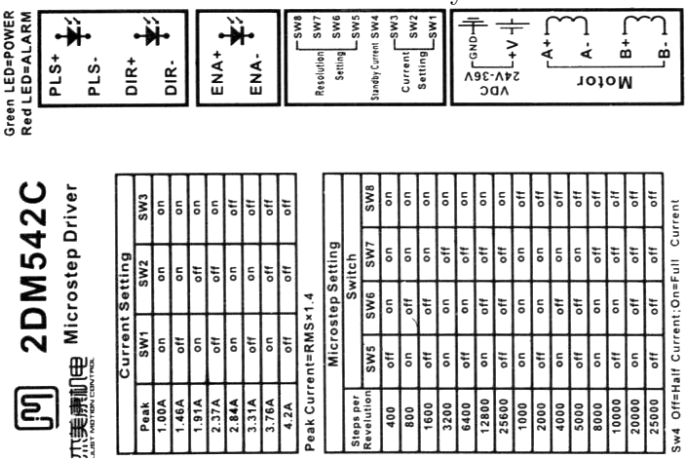
2DM542C $4.2A\ 50V_{DC}$ Digital Stepper Drive



$2DM542C$ is a two phase digital stepper driver based on ARM STM32. Its Micro step resolutions and output current are programmable. And it has advanced control algorithm, which can brings a unique level of system smoothness, provides optimum torque and mid-range instability. The control algorithm of Multi-Stepping can make stepper motor has smooth system performance. The control algorithm of torque compensation can improve the torque of motor in the high speed. The control algorithm of motor self-test and parameter auto-setup technology offers optimum responses with different motors and easy-to-use.

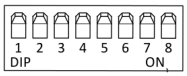


- Parameter auto-setup and motor self-test
- Multi-Stepping inside, small noise, low heating, smooth movement
- Torque compensation in high speed
- Variable current control technology, high current efficiency
- Support PUL/DIR and CW/CCW modes
- Optically isolated input and compatible with $5V$ *to* $24V$
- Over current and over voltage protection
- Green light means running while red light means protection or off line

SPECIFICATION

Parameter	*Min*	*Typical*	*Max*	*Unit*
Input Voltage(DC)	24	48	50	VDC
Output Current	1	-	4.2	A
Pulse Signal Frequency	0	-	200	kHz
Pulse width	2.5			μs

SW2



CURRENT SETTING

peek	rms	***SW2-1***	***SW2-2***	***SW2-3***
1.00A	0.71A	on	on	on
1.46A	1.04A	off	on	on
1.91A	1.35A	on	off	on
2.37A	1.68A	off	off	on
2.84A	2.01A	on	on	off
3.31A	2.35A	off	on	off
3.76A	2.67A	on	off	off
4.20A	2.98A	off	off	off

SW2-4 is used for setting the standstill current.
SW2-4 = off Half Current = on Full Current

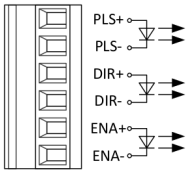
MICROSTEP SETTING

step/rev	***SW2-5***	***SW2-6***	***SW2-7***	***SW2-8***
400	off	on	on	on
800	on	off	on	on
1600	off	off	on	on
3200	on	on	off	on
6400	off	on	off	on
12800	on	off	off	on
25600	off	off	off	on
1000	on	on	on	off
2000	off	on	on	off
4000	on	off	on	off
5000	off	off	on	off
8000	on	on	off	off
10000	off	on	off	off
20000	on	off	off	off
25000	off	off	off	off

Control Signal Input Connector

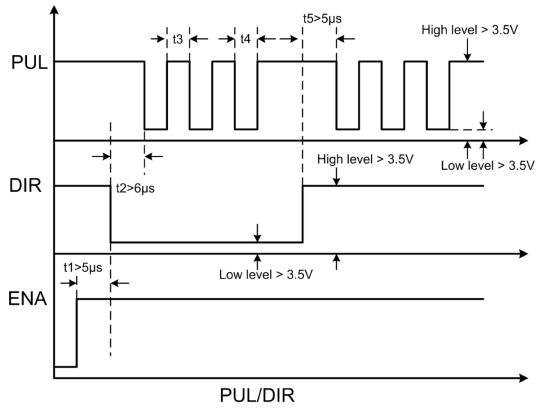
PLS+	Puls signal+
PLS-	Puls signal-
DIR+	Direction signal+
DIR-	Direction signal-
ENA+	Enable signal+
ENA-	Enable signal-

Compatible with 5V to 24V



Control Signal

In order to avoid some fault operations and deviations, PUL, DIR and ENA should abide by some rules, shown as following diagram:



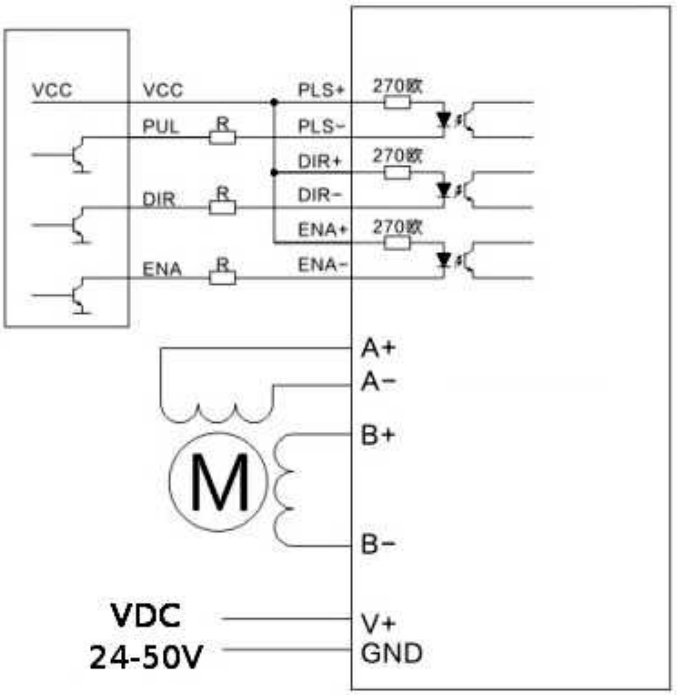
t1: ENA must be ahead of DIR by at least $5\mu s$. Usually, ENA+ and ENA- are NC (not connected).

t2: DIR must be ahead of PUL active edge by $6\mu s$ to ensure correct

t3: Pulse width not less than $2.5\mu s$

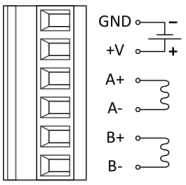
t4: Low level width not less than $2.5\mu s$

Typical Connection



Power and Motor Connector

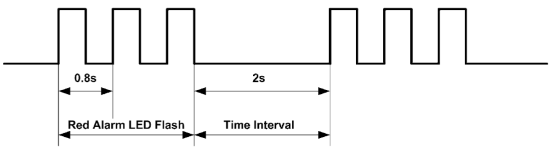
GND	Power Input Negative
+V	Power Input Positive
A+	Motor Phase A+
A-	Motor Phase A-
B+	Motor Phase B+
B-	Motor Phase B+



$+V$ DC $24V - 50V$

Output Alarm Signal

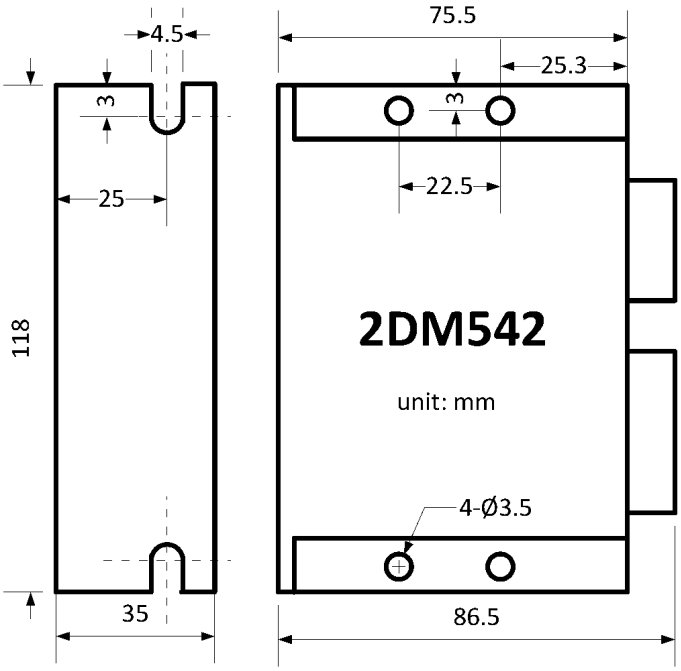
Faults alarm and LED flicker frequency



flash(s)	*description to the Faults*
1	Error occurs when the motor coil current exceeds the drive's current limit.
2	Voltage reference error in the drive
3	Parameters upload error in the drive
4	Error occurs when the input voltage exceeds the drive's voltage limit.

The drive will halt when there is fault. The user need to disconnect power source and reconnect the power source to eliminate the fault.

Mechanical Specifications



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