SPECIFICATION FOR APPROVAL

Customer : STD

Description : CONTROL BOARD

Customer Part No. _____ REV. : _____

Delta Model No. : FC241B07-L0E REV. : 00

Sample Issue No. : _____

Sample Issue Date : JUL.13 2020

PLEASE SEND ONE COPY OF THIS SPECIFICAITON BACK AFTER YOU SIGNED APPROVAL FOR PRODUCTION PRE-ARRANGMENT.

APPROVED BY:

DELTA ELECTRONICS, INC.
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TAOYUAN SHIEN, TAIWAN, R.O.C.
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STATEMENT OF DEVIATION

■ NONE

□ DESCRIPTION:

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Specification For Approval

Customer : STD

Description : CONTROL BOARD

Customer P/N : Rev. :

Delta model no. : FC241B07-L0E Delta Safety Model No.:

Sample revision. : 00 Issue no.:

Sample issue date : JUL.13 2020 Quantity :

1. SCOPE:
THIS CONTROL BOARD IS THE DRIVER OF BFN0724SS-01 SERIES AND THE SPEED CONTROL METHOD IS OPEN LOOP.

2. CHARACTERS:
VAID AT AMBIENT=25°C, INPUT VOLTAGE IS 24Vdc AND FREE AIR.

ITEM	DESCRIPTION
CONFIGURATION	BLDC 3PHASE / 6PULSE/4POLE (DEDICATED TO THE DELTA BLOWER BFN0724SS-01)
RATED VOLTAGE	24Vdc±10%
INPUT CURRENT (FREE AIR)(AVG) ★	1.50 (MAX. 1.80) A
INPUT POWER(FREE AIR)(AVG) ★	36.0 (MAX. 43.2) W
SPEED (FREE AIR)	31500±10% R.P.M.
SPEED (AT ZERO AIR FLOW)	36000±10% R.P.M.
OPERATING TEMPERATURE	-10 ~ 50°C
OPERATING HUMIDITY (NO CONDENSATION)	10 ~ 90%RH
STORAGE TEMPERATURE	-20 ~ 60°C
STORAGE HUMIDITY (NO CONDENSATION)	10 ~ 50%RH

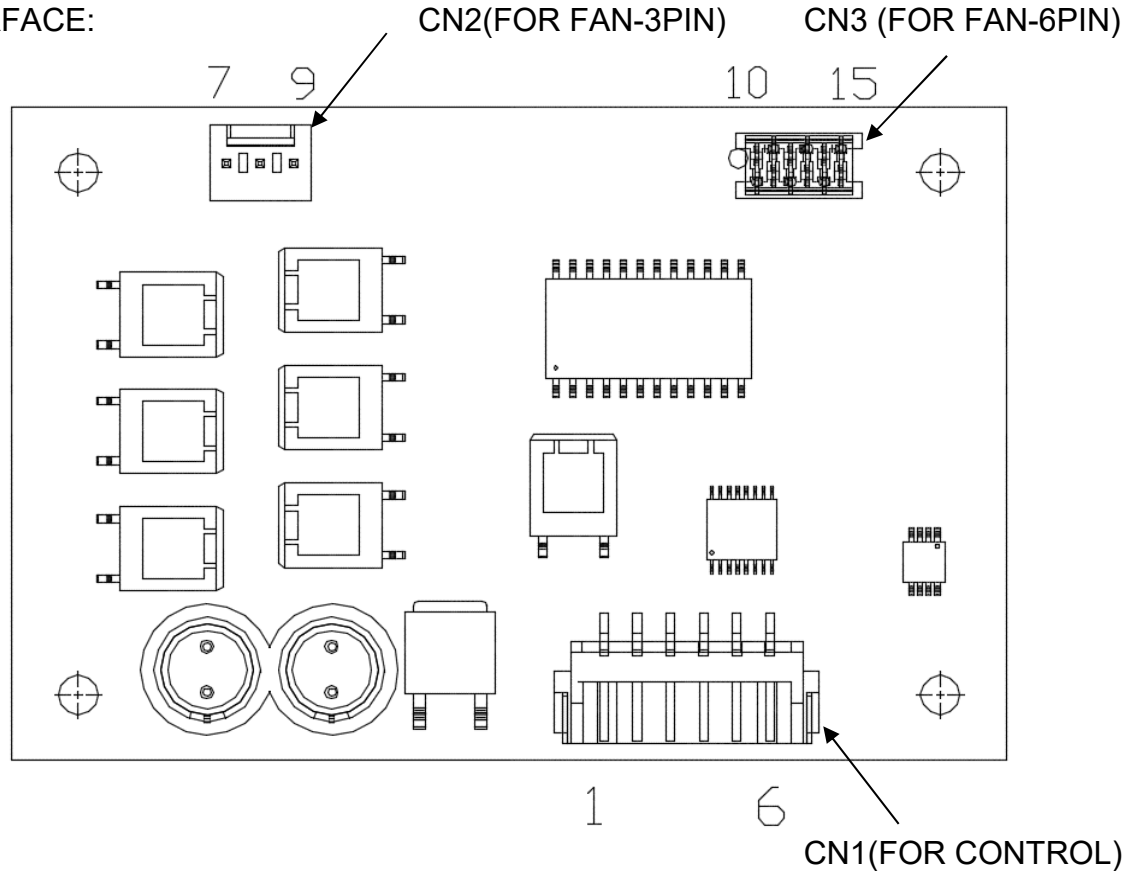
★AVG. IS THE AVERAGE VALUE DURING STEADY OPERATION, AND MAX. IS MAXIMUM AVERAGE VALUE INCLUDED RODUCTION TOLERANCE. ABOUT THE PEAK VALUE, NEED TO USE OSCILLOSCOPE TO MEASURE.

(continued)

PART NO:

DELTA MODEL: FC241B07-L0E

3. INTERFACE:



PIN NO.	SYMBOL	SIGNAL	WIRE COLOR
1	VIN	INPUT VOLTAGE	RED
2	GND	GND	BLACK
3	PWM	SPEED CONTROL SIGNAL	YELLOW
4	FG	SPEED SIGNAL OUTPUT	BLUE
5	BRAKE-L	SHORT BRAKE INPUT	GREEN
6	ERROR	ERROR SIGNAL	PURPLE
7	U	MOTOR COIL(U)	BLUE(FAN)
8	W	MOTOR COIL(W)	RED(FAN)
9	V	MOTOR COIL(V)	BLACK(FAN)
10	HALL 1	HALL IC INPUT 1	RED(FAN)
11	HALL 3	HALL IC INPUT 3	GRAY(FAN)
12	GND	GND	GRAY(FAN)
13	HALL 2	HALL IC INPUT 2	GRAY(FAN)
14	NTC	TERMISTOR	GRAY(FAN)
15	+UH	HALL IC POWER	GRAY(FAN)

PART NO:

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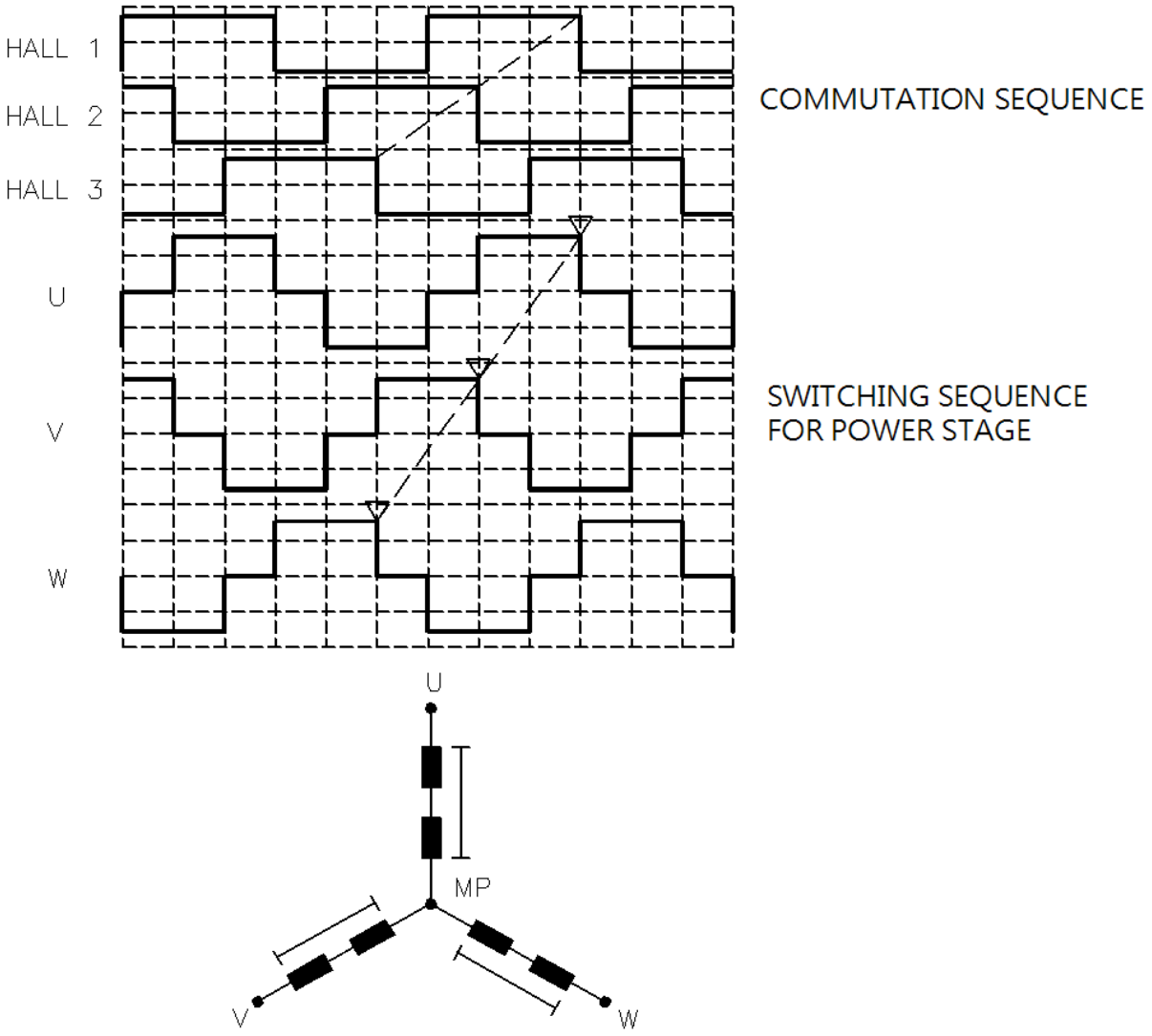
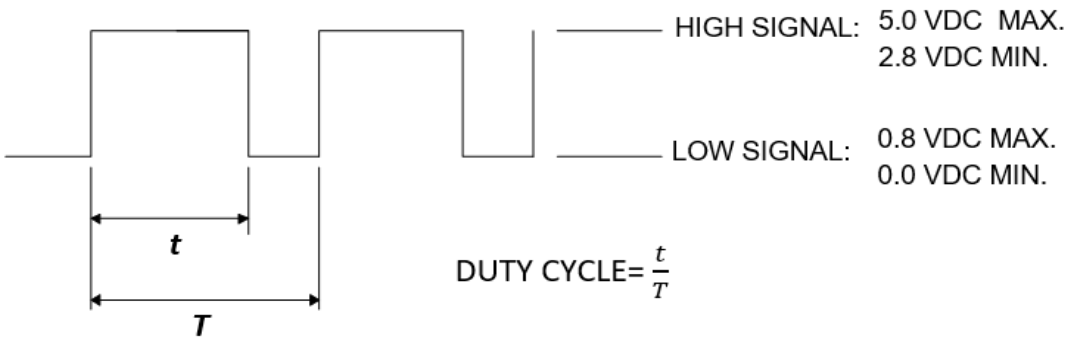
4. MOTOR PHASE SCEQUENCE:



PART NO:

DELTA MODEL: FC241B07-L0E

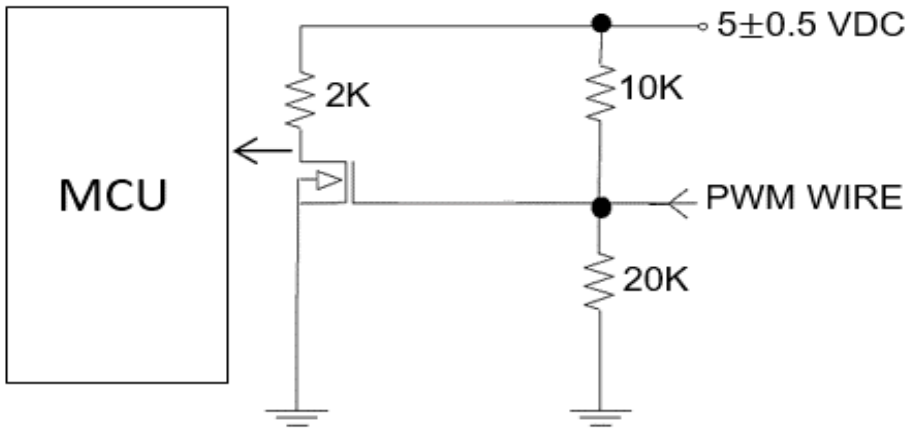
5. PWM CONTROL SIGNAL:



5-1. THE PREFERRED OPERATING FREQUENCY IS 25KHz.
5-2. AT 0-3% DUTYCYCLE, THE CLOWER WILL STOP.
5-3. WITH CONTROL SIGNAL LEAD DISCONNECTED, THE BLOWER WILL SPIN AT MAXIMUM SPEED.
5-4. THE SPEED CONTROL METHOD IS OPEN LOOP.
5-5. AT 25KHz, RATED VOLTAGE, 20%DUTY CYCLE, THE BLOWER WILL BE ABLE TO START FROM A DEAD STOP.
5-6. SPEED VS PWM CONTROL SIGNAL. (AT 25°C, 24Vdc AND FREE AIR CONDITION)

DUTY CYCLE (%)	SPEED (RPM)	CURRENT (A) ★
85-100	31500±10%	1.5
0-3	0	0.03

6. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



7. PROTECTION DEFINITION:

7-1. OVER TEMPERATURE PROTECTION (OTP)

THE BLOWER WILL STOP(LATCH MODE) WHEN THE THERMISTOR OF BLOWER EXCEEDS 85°C (FOR REFERENCE). THE RED LIGHT(LED3) WILL TURN ON.

7-2. LOCK MODE

THE FG SIGNAL OUTPUTS HIGH OR LOW WHEN THE ROTOR IS LOCKED AND FIXED.

7-3. OVER VOLTAGE PROTECTION (OVP)

THE BLOWER WILL BE STOP WHEN THE INPUT VOLTAGE IS OVER 28V (FOR REFERENCE).

7-4. HIGH SPEED LIMIT PROTECTION

THE HIGH SPPED LIMIT OF BLOWER IS 40000RPM (FOR REFERENCE).

8. ERROR SIGNAL

WHEN THE PROTECTION IS LAUNCHED, THE ERROR PIN WILL OUTPUT SINAL AS BELOW TABLE (THE FREQUENCY IS 1KHz AND THE AMPLITUDE IS 5V).

MODE	DUTY (FOR REFERENCE)
LOCK	10%
HIGH SPEED	20%
OVP	30%
OTP	40%

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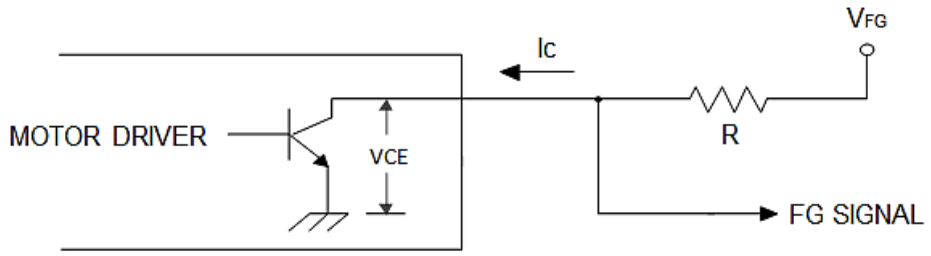
9.FREQUENCY GENERATOR (FG) SIGNAL:

9-1. OUTPUT CIRCUIT-OPEN COLLECTOR MODE.



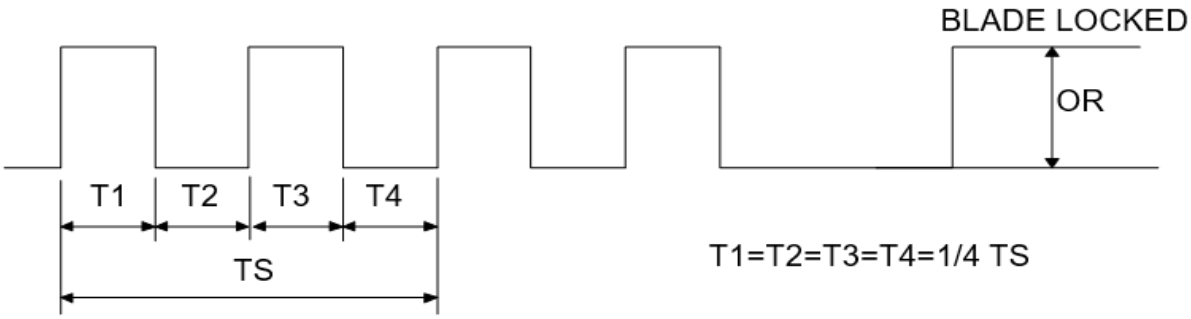
CAUTION: THE LEAD WIRE OF FG SINGMAL CAN NOT TOUCH.
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

9-2. SPECIFICATION:

VFG = 26.4 Vdc max. Ic=5 mA max.

Vce(sat) = 0.5 V max. R≥Vfg/Ic.

9-3. FREQUENCY GENERATOR WAVEFORM:



N = RPM

Ts = 60/N(SEC)

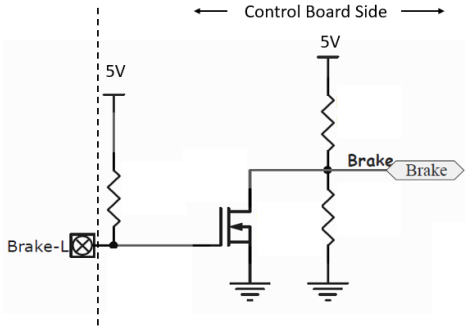
VOLTAE LEVEL AFTER BLADE LOCKED.

4 POLE

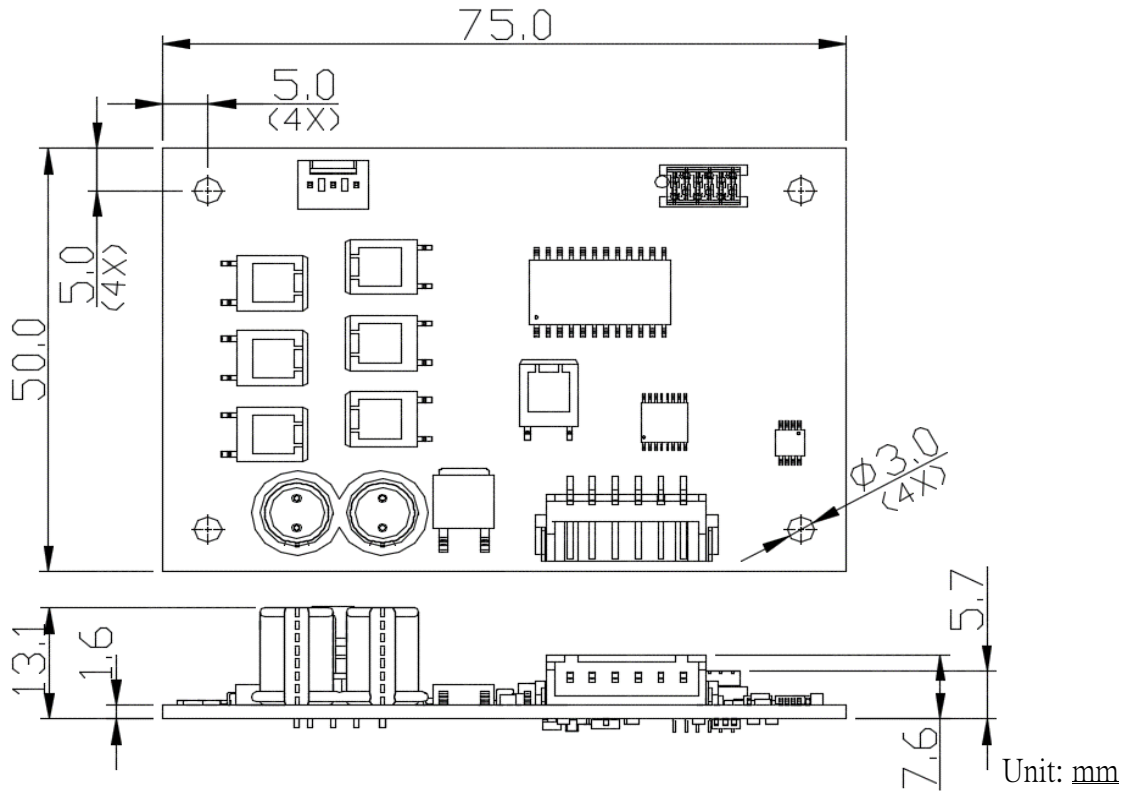
10. BRAKE FUNCTION:

10-1. THE BLOWER WILL BE SHORT BRAKE WHEN THE BRAKE PIN IS LOW (NOT EXCEED 2.0 SEC).

10-2. THE BLOWER WILL ROTATE NORMALLY WHEN THE BRAKE PIN IS FLOATING.

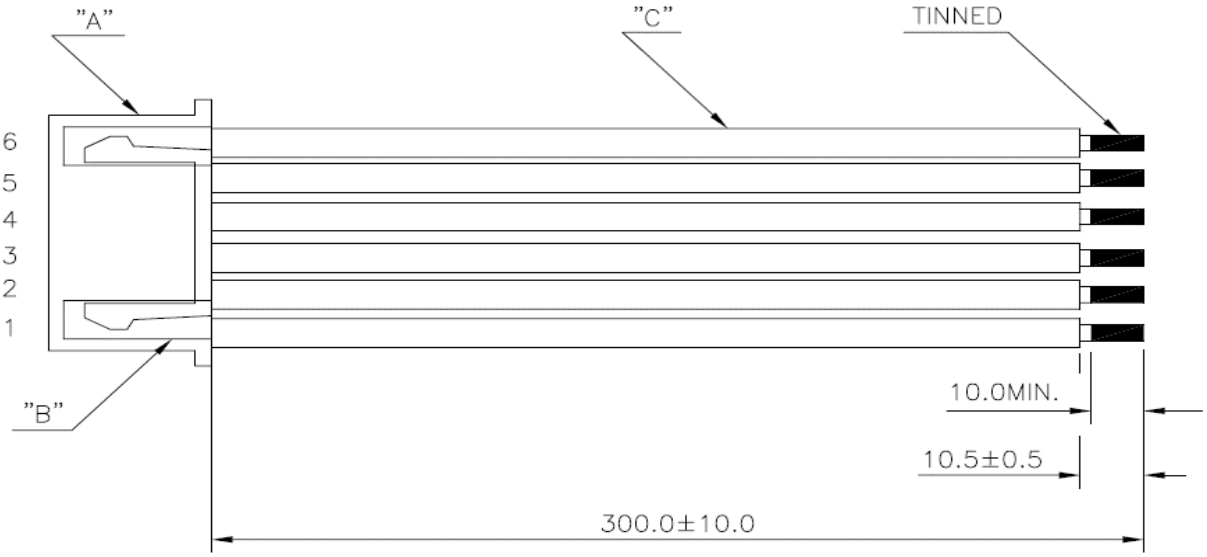


11.DIMENSION DRAWING



Unit: mm

12.EXTENSION WIRE:



MATERIAL:

A. HOUSING: J.S.T P/N: XHP-6 OR EQUIVALENT ----------1PC
B: TERMINAL: J.S.T P/N: SXH-001T-0.6 OR EQUIVALENT ----2PCS
C. LEAD WIRE UL:1007 AWG#24

PIN 1: RED WIRE	---	(+)
PIN 2: BLACK WIRE	---	(-)
PIN 3: YELLOW WIRE	---	(PWM)
PIN 4: BLUE WIRE	---	(FG)
PIN 5: GREEN WIRE	---	(BRAKE)
PIN 6: PURPLE WIRE	---	(ERROR)