

	REVISION	VERSION
DRAWING	H	I

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCE:

.X =± 0.1  
 .XX =± 0.03  
 .XXX =± 0.015

ANGLES =± 1.0 ° HOLE DIA = + 0.005 / - 0.005

CONFORMS TO ASME Y14.5M-1994.

TRANE

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DRAWN BY: G.REQUENA TRANE DATE: 19 JUN 2023

DO NOT SCALE PRINT

THIRD ANGLE PROJECTION

X70660684

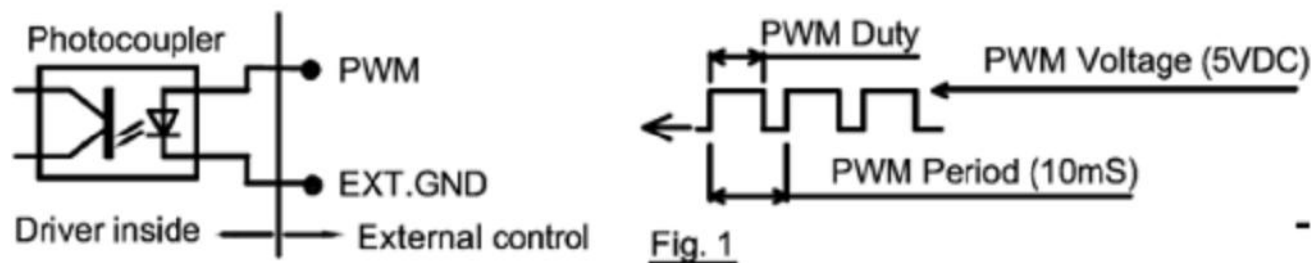
SHEET 1 OF 1 REV H

MOTOR ECM, SINGLE PHASE

1HP 750W .115/208-230/277V BLOWER COIL

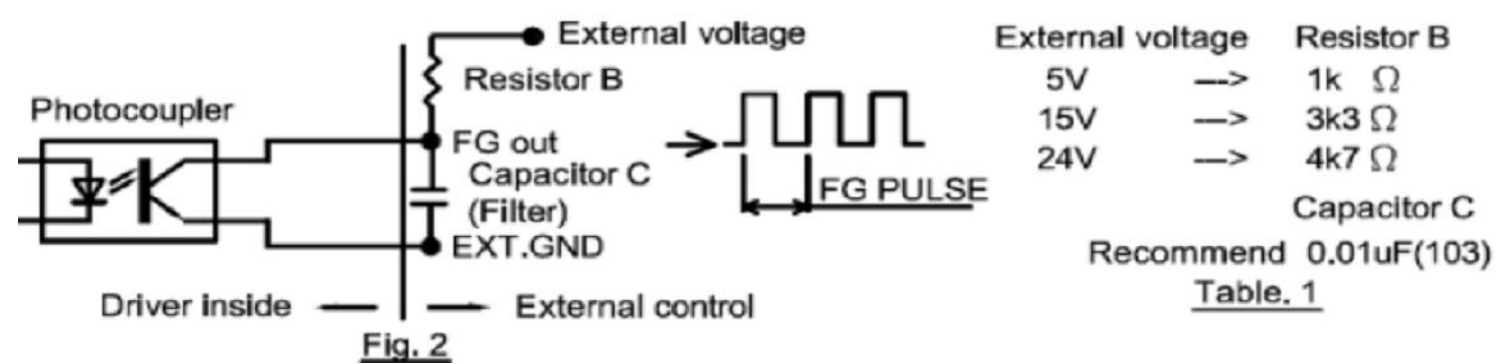
DRIVER FUNCTION:

1. SPEED CONTROL - PWM (PULSE WIDTH MODULATION) MODE
  - 1-1. THE CONNECTOR OF DRIVER, PIN 4 PWM & PIN 3 EXT.GND
  - 1-2. INPUT CIRCUITRY AS FIG. 1, USE PHOTOCOUPLER AND VOLTAGE ISOLATION
  - 1-3. PLEASE INPUT THE PWM VOLTAGE +5V, PWM FREQUENCY 100HZ(PERIOD 10MS)
  - 1-4. WHEN PWM RESPONSIBILITY CYCLE < 15%, MOTOR STOPS  
 WHEN PWM RESPONSIBILITY CYCLE = 100%, MOTOR ROTATES TO HIGHEST SPEED  
 RESPONSIBILITY CYCLE = (PWM DUTY/PWM PERIOD) \* 100%



2. SPEED FEEDBACK

- 2-1. THE CONNECTOR OF DRIVER, PIN 10 FG & PIN 3 EXT.GND
- 2-2. OUTPUT CIRCUITRY AS FIG.2 USE OPEN COLLECTOR OUTPUT, IT NEEDS THE EXTERNAL VOLTAGE UNDER DC24V/6MA SUPPLY VOLTAGE, PLEASE ACCORD TO THE SUPPLY VOLTAGE ADDING LIMITING RESISTOR B, SEE TABLE.1, WHEN FG OUT IS NO NEED EITHER CONNECTION.
- 2-3. RECOMMEND TO USE RC FILTER CIRCUIT FOR FG OUTPUT SIGNAL AND CAPACITOR SHOULD BE 0.01UF(103). PLEASE REFER TO FIG.2.
- 2-4. THE MOTOR POLE IS 12P. ONE TURN OUTPUT 18 PULSE WAVES SIGNAL.

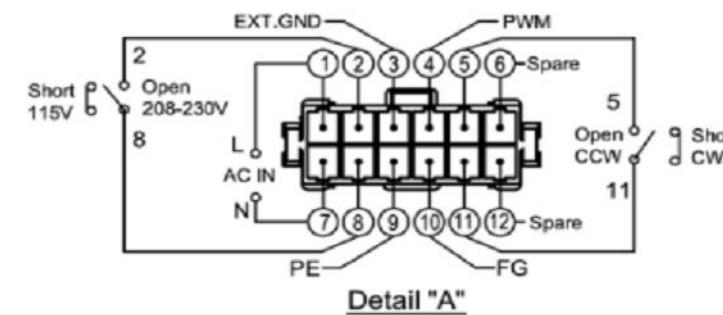


4. ATTENTION:

- 4-1. PLEASE TURN OFF THE POWER BEFORE CHANGING THE ROTATING DIRECTION. (CW/CCW)
- 4-2. WHEN PIN 2 AND PIN 8 BEEN SHORT-CIRCUIT, THE APPLY VOLTAGE IS AC115V.INPUT VOLTAGE CANNOT BE AC208-230/277V.
- 4-3. WHEN MOTOR IS UNDER NO-LOAD CONDITION, THE PWM DUTY SHOULD LESS THAN 20% TO PREVENT ANY DAMAGE.
- 4-4. MOTOR TURNS ON PROCEDURE  
 PLEASE APPLY THE AC POWER FIRST AND THEN THE PWM SPEED COMMAND.
- 4-5. MOTOR TURNS OFF PROCEDURE  
 PLEASE TURN OFF THE SPEED COMMAND FIRST AND THEN THE AC POWER.

5. LOCKED ROTOR PROTECTION AND RESET:

- 5-1. WHEN MOTOR REACHES THE 200 PERCENT OVERLOAD CONDITION, THE OVERLOAD PROTECTION WILL OPERATE THE LOCKED ROTOR FUNCTION PRIOR THAN IT, SEE THE DESCRIPTION AS BELOW:
- 5-2. WHEN MOTOR LOCKED, DRIVER WILL SHUT DOWN SPEED COMMAND AFTER 10 SEC.
- 5-3. AFTER MOTOR LOCKED, PLEASE STOP SPEED COMMAND, REMOVE DEFECT CAUSES, RESET SPEED COMMAND AND THEN MOTOR WILL RESTART. IF DEFECT CAUSES DO NOT REMOVE, MOTOR WILL BE LOCKED AGAIN AFTER RESET.



NOTES:

1. COLOR: MOTOR CORE ED BLACK  
 MOTOR DRIVER ED BLACK
2. THERMAL GREASE FOR MOUNTING IPM SHALL BE SFY-340 WITH A THICKNESS OF 0.0055"-0.0079" (0.14MM-0.2MM) (CF)
3. IPM MOUNTING SCREWS SHALL BE TIGHTENED TO 6.16 IN LBS.-7.03 IN LBS.(7.1 KG CM - 8.1 KG CM) OF TORQUE (CF)
4. CLEARANCE NOTCH OF 0.30" X 0.18" IN DRIVER FOR VLP-12V-1 PLUG
5. HEAT SINK FLATNESS SHALL BE -0.0021"-0.0039" (-54-100 MICRO METERS) (CF)
6. HEAT SINK ROUGHNESS SHALL BE 0.000126"-0.000248" (3.2-6.3 MICRO METERS) (CF)
7. MOTOR SHAFT ROTATION DIRECTION FROM SHAFT END.
8. INTERNAL RAMP RATE DECREASED.

**TRANE** BLDC MOTOR

115 / 208 - 230 / 277 Vac 50/60Hz  
 12.0/ 6.95-6.45 / 4.95 A (Rated Amps)  
 Speed Range : 300~2500Rpm  
 Max FLA : 13.3/7.73-7.73/6.73A  
 T P/N : X70660684010  
 H P/N : HMF186A02R151V  
 S/N : 000000000000

1725Rpm 1.0HP  
 Cont Air Over  
 Amb. 40°C/104°F

E313041

NAME PLATE

