Specification For Approval

Customer : STD

Description : EC FAN

Customer Part No. : Rev :

Delta Model No. : GTW091PUR22E Rev : 00

Safety Model No. : EMBP5E5FHL

Sample Issue No. :

Sample Issue Date : 11/07/2022

Please send one copy of this specification back after you signed approval for production pre-arrangement

Approved by :

Date :

sales@fansco.com
www.fansco.com

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GTW091PUR22E

Electronically Commutated (EC) Fan

Axial Fan

1070 x 1070 x 237 mm

GTW091PUR22E Delta Datasheet
sales@fansco.com www.fansco.com

Technical features

Input Side	
Nominal Voltage	3~ 400V_{ac} 50/60Hz
Input Source	3~ 380V_{ac} - 480V_{ac}
Power @ Free air	1526W
Power @ Max. load	2200W
Output Side	
Speed (RPM)	950
Qmax. (CMH / CFM)	30984 / 18226
Pmax. (Pa / inAq)	155 / 0.62
Noise (dB-A) @ Qmax.	83.0
Functions	
Passive power factor correction	
Control input 0-10VDC / PWM	
Output +10VDC (±10%), max. 10mA.	
RS485 control bus (MODBUS (V1.3) RTU / 8N1)	
Alarm relay, Locked rotor protection, Soft start.	
Voltage / Current monitoring.	

NOTE：The Fan IGBT-inverter temperature can be operated at 110°C with full loading, and the rotation speed will be decreased to 80% of full loading if IGBT-inverter temperature is higher than 110°C.

Physical	
Rotation Direction	CCW, Seen on rotor
Material (Impeller / Motor Frame)	Plastic / Cast iron
Material (Wallring / Fan Guard)	Steel / Steel
Bearing system	Ball bearings
Weight (kg)	54
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 ℃
Storage temperature range	-40 ~ +70 ℃
Safety	
Safety	UL , CE
IP Level	IP54
EMC	EN 61000-6-2, EN 61000-6-3
Protection class	I
Insulation class	F
Leakage current	<= 3.5 mA
Motor protection	Over temperature protected
Life expectance	60,000 hrs at 40 ℃ / 15 ~ 65 %RH

NOTE: Delta reserves the right to change specifications and other product information without prior notice.

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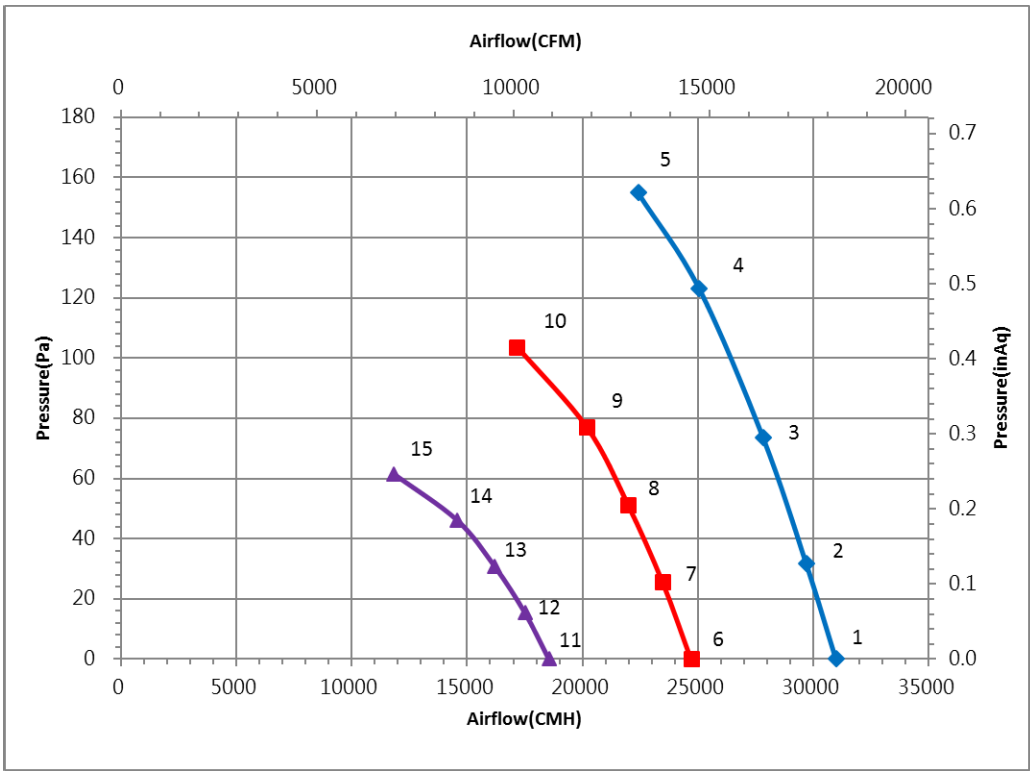
P & Q curves(without fanguard condition)



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	30984	950	1526	2.72	83.0
2	32	29697	950	1670	2.91	
3	74	27833	950	1826	3.12	
4	123	25058	950	1976	3.31	
5	155	22416	950	2053	3.42	
6	0	24691	760	804	1.75	78.0
7	26	23458	760	887	1.87	
8	77	20179	760	1016	2.04	
9	89	18986	760	1037	2.07	
10	104	17163	760	1079	2.13	
11	0	18545	570	365	1.07	71.0
12	15	17505	570	403	1.13	
13	31	16194	570	429	1.16	
14	46	14554	570	450	1.19	
15	62	11805	570	479	1.22	

Test Condition:

- Input Voltage: 3~400Vac
- Temperature : Room Temperature
- Humidity : 65%RH
- Noise (Lp) is measured at a distance of one meter from the inlet side.
- Testing method is compliance with ISO 3745

ErP Directive

	Actual	2015
Over all Eff (%)	50.1	35.6
Eff Grade N	54.4	40
Power (kW)	2.053	
Air flow (CMH)	22416	
Pressure (Pa)	155	
Speed (RPM)	950	

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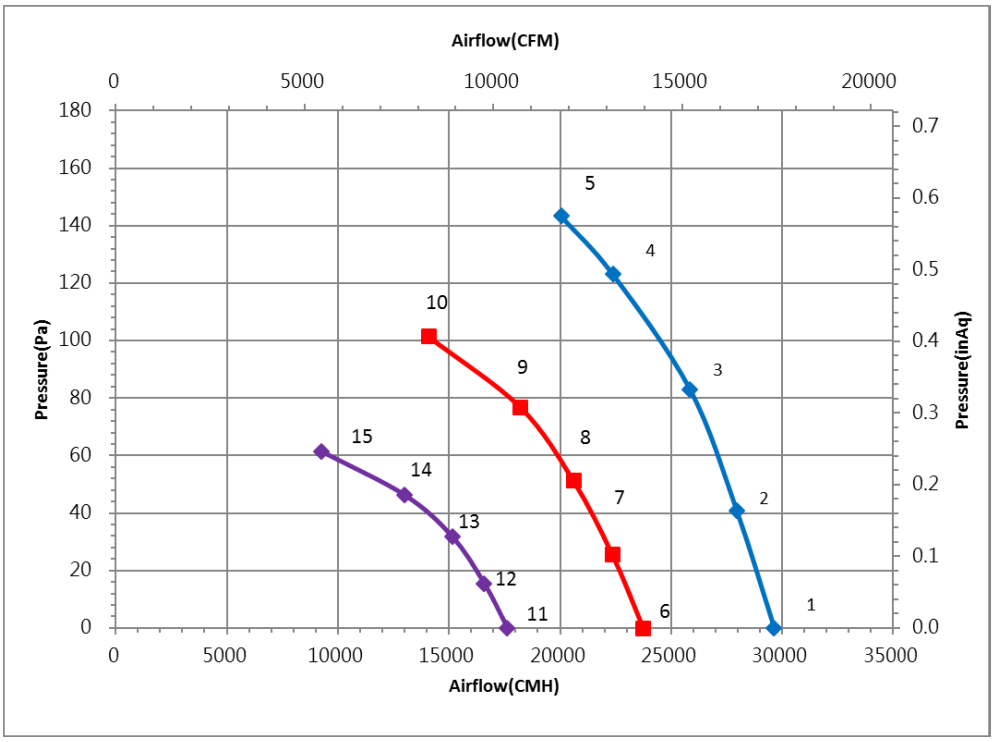
P & Q curves(with fanguard condition)



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	29633	950	1638	2.87	83.0
2	41	27943	950	1787	3.07	
3	83	25850	950	1914	3.23	
4	123	22386	950	2028	3.38	
5	143	20048	950	2118	3.50	
6	0	23722	760	858	1.83	78.0
7	26	22330	760	930	1.92	
8	51	20582	760	990	2.00	
9	77	18199	760	1044	2.08	
10	102	14074	760	1116	2.18	
11	0	17621	570	382	1.10	71.0
12	15	16582	570	414	1.14	
13	32	15139	570	437	1.17	
14	46	13007	570	462	1.20	
15	62	9245	570	479	1.22	

Test Condition:

- Input Voltage: 3~400Vac
- Temperature : Room Temperature
- Humidity : 65%RH
- Noise (Lp) is measured at a distance of one meter from the inlet side.
- Testing method is compliance with ISO 3745

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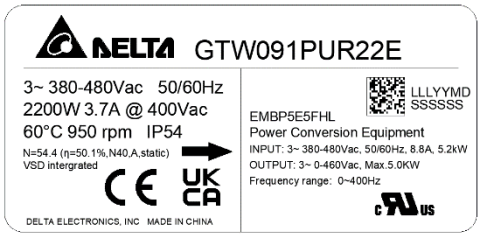
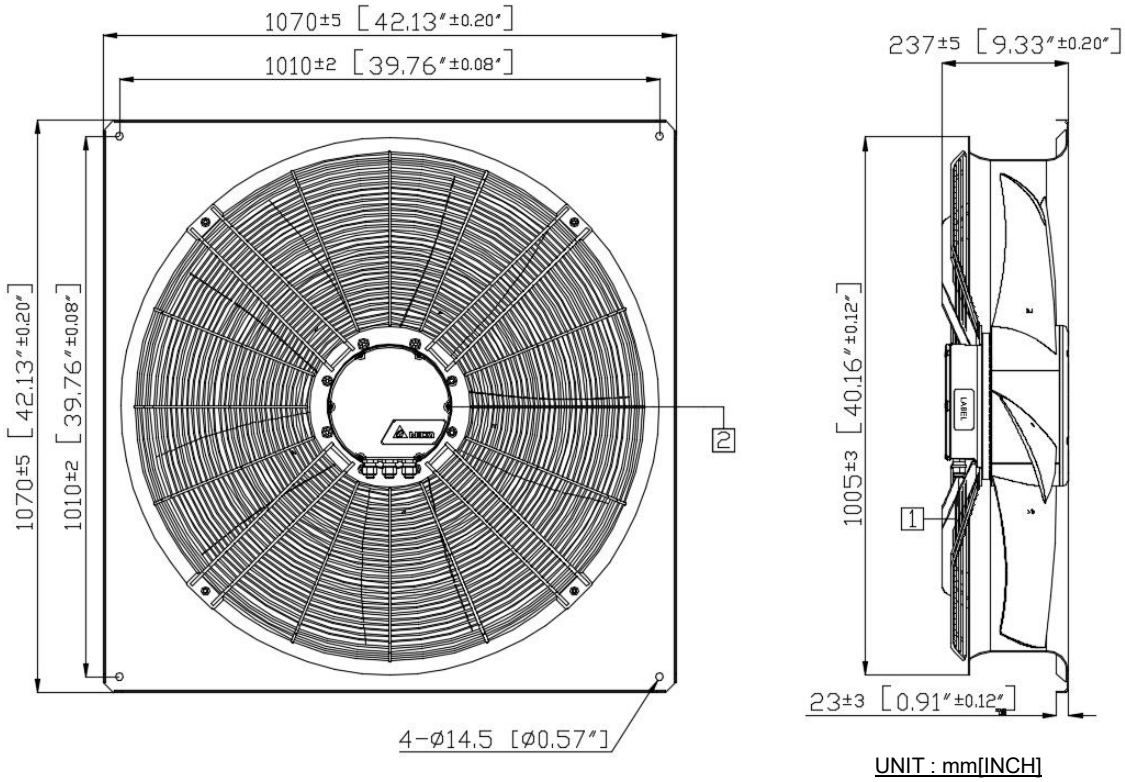
Dimension drawing

Label:



Fan :



UNIT : mm[INCH]

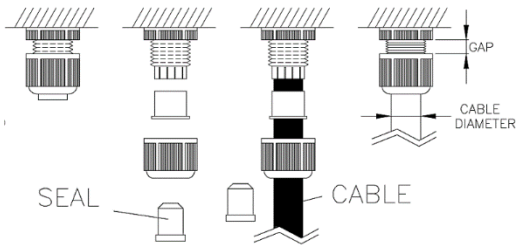


Fig1

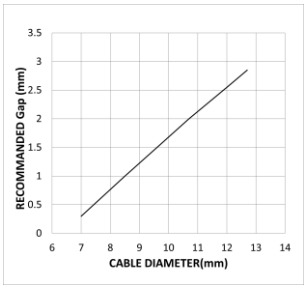


Fig 2

Note:

1. Cable Diameter: ϕ 7.0~ ϕ 12.7 mm
2. Open the cover and refer to definition of terminal block.
   Screws tighten torque 17±2 Kgf-cm, when close the cover.
3. Cable sealing nut's gap refer Fig 1 & 2.

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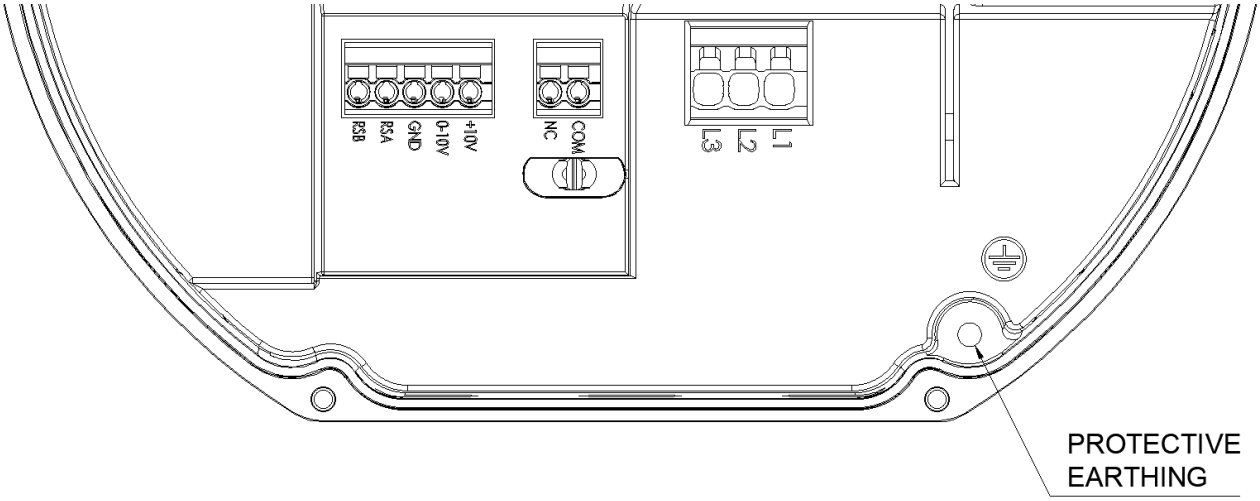
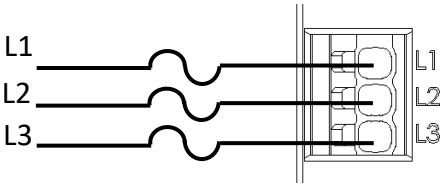
Definition of terminal block



	Text	Functions
Power	L1	AC main (3~ 380-480VAC)
	L2	AC main (3~ 380-480VAC)
	L3	AC main (3~ 380-480VAC)
Status	COM	Alarm relay, common (2A/250VAC)
	NC	Alarm relay, open by failure
Signal	+10V	10VDC output, MAX 10mA (For external potentiometer)
	0-10V	Speed control, input 0-10VDC
	GND	Ground
	RSA	RS485-A
	RSB	RS485-B

Wiring diagram

Input: 3-phase power



Branch Circuit Protector: 20A class CC fuse
Fuse must be UL listed and CSA certified, or UL listed and cUL certified.

Overvoltage category - OVC II.
For use in Pollution Degree 2 Environment.

The drive is suitable for use in a circuit capable of delivering not more than 5000 rms symmetrical amperes, 480 volts maximum.

The power input wire shall be copper conductors rated 60/75°C.

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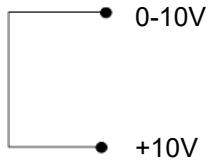
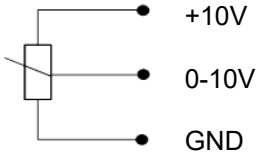
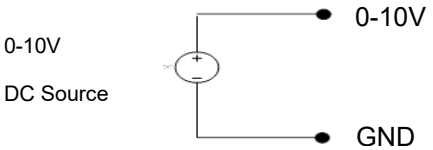
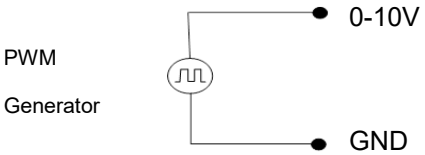
Speed setting	
Full Speed  	**Short 0-10V & +10V** Fan will run at full speed.
 	**Connector 1-10kΩ variable resistor** Between **+10V** with **GND** and 0-10V Vary the variable resistance，to change the ‘(0-10V)’ voltage (0...10V), then change FAN speed。
Voltage Control  	**Use voltage source supply 0~10V_{DC} voltage** DC+ : connect to (0-10V)(+) DC - : connect to GND (-)
PWM Control  	**PWM duty control** PWM amplitude is 10VDC(+-5%) Frequency Range is 100Hz...100kHz -PWM duty higher than 15%, fan start up。 -PWM duty lower than 5%, fan stop。

<table>
<tr><th colspan="2">Signal function</th></tr>
<tr><td>RS485 control function</td><td>RS485 control function
-Select the control mode of speed, fixed speed or fixed PWM duty
-Speed and power consumption feedback.
-Allow multiple FANs control and status patrol.
Cable: A MODBUS over Serial Line Cable must be shielded. At one end of each cable its shield must be connected to protective ground.</td></tr>
<tr><td>Voltage/PWM control</td><td>The speed comparison will control level
<table>
<tr><th>Voltage (V)</th><th>PWM (%)</th><th>Speed (RPM)</th></tr>
<tr><td>0</td><td>0</td><td>0</td></tr>
<tr><td>1.5</td><td>15</td><td>200 ± 50 RPM</td></tr>
<tr><td>6.0</td><td>60</td><td>620 ± 8%</td></tr>
<tr><td>9.5</td><td>95</td><td>950± 5%</td></tr>
</table></td></tr>
<tr><td>Alarm state</td><td>NC and COM will OPEN</td></tr>
</table>

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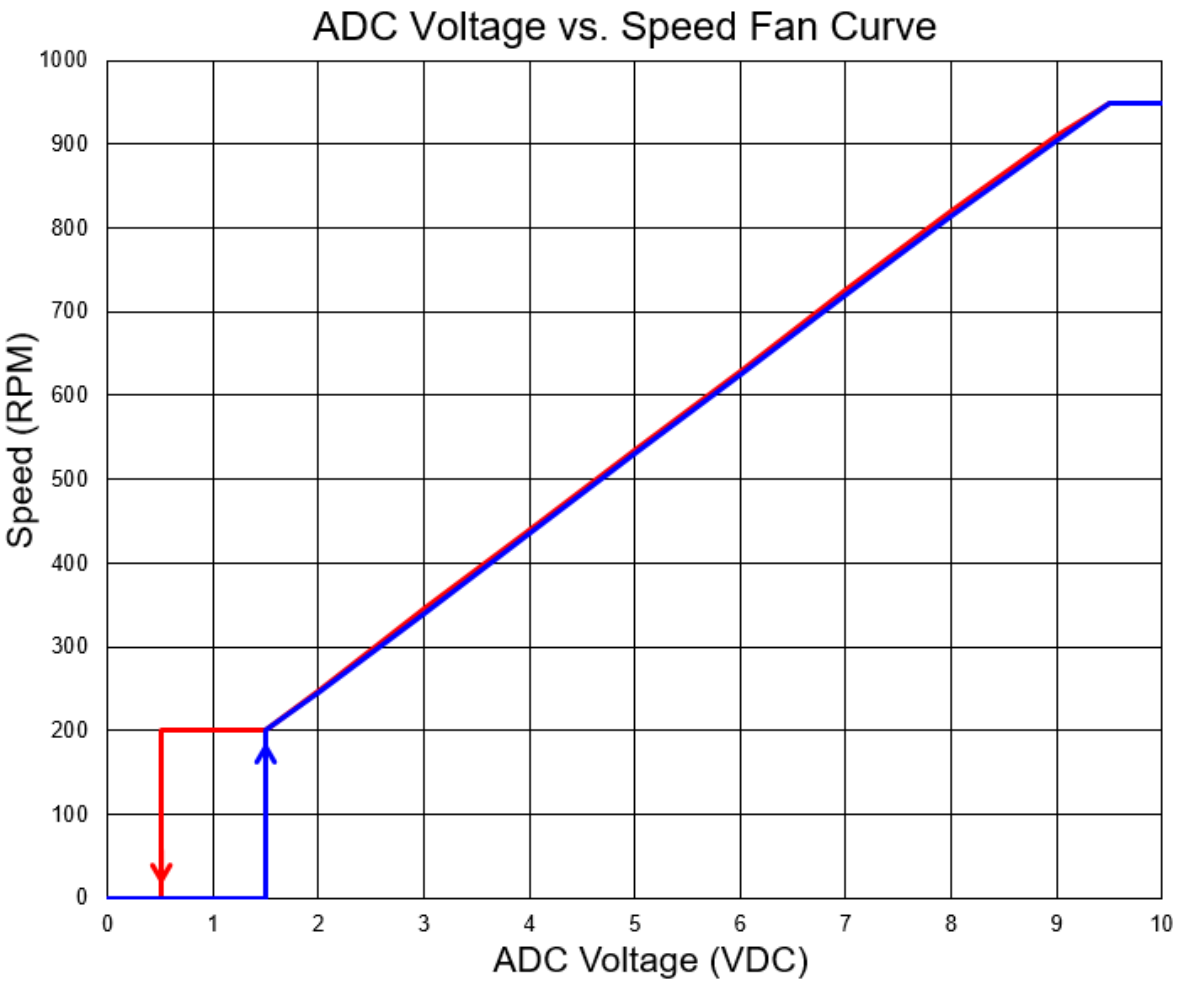
Control Voltage VS. RPM Curve



Voltage(V_{DC}) , PWM duty (%) table

Voltage	0	0.5	1	1.5	2	3	4	5	6	7	8	9	10	VDC
PWM duty	0	5	10	15	20	30	40	50	60	70	80	90	100	%