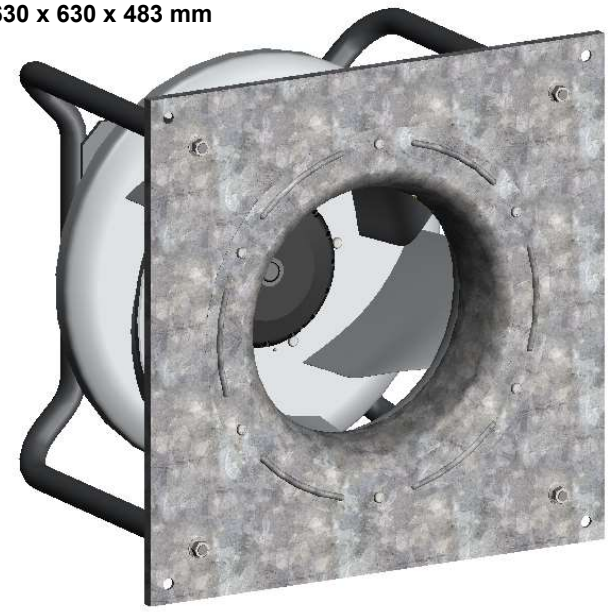
Smarter. Greener. Together.

GTM045PUV42R-D

Electronically Commutated (EC) Fan

Centrifugal Fan

630 x 630 x 483 mm



Delta Electronics (Dongguan) Co., Ltd. certifies that the GTM045PUV42R-D shown herein is license to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Technical features

Input Side	
Nominal Voltage	3~ 400Vac 50/60Hz
Input Source	3~ 380Vac - 480Vac
Power @ Free air	3040 W
Power @ Max. load	5607 W
Output Side	
Speed (RPM)	2600
Qmax. (CMH / CFM)	14735 / 8668
Pmax. (Pa / inAq)	1948 / 7.82
Noise (dB-A) @ Qmax.(LwA)	96
Functions	
Passive power factor correction.	
Control input 0-10V_{DC} / PWM / 4-20mA.	
Output +10V_{DC} (±5%), max. 800mW.	
Control voltage output: 0-10VDC.	
RS485 control bus (MODBUS V2.2 RTU / 8N2)	
Alarm relay, Locked rotor protection, Soft start.	
Voltage / Current monitoring.	

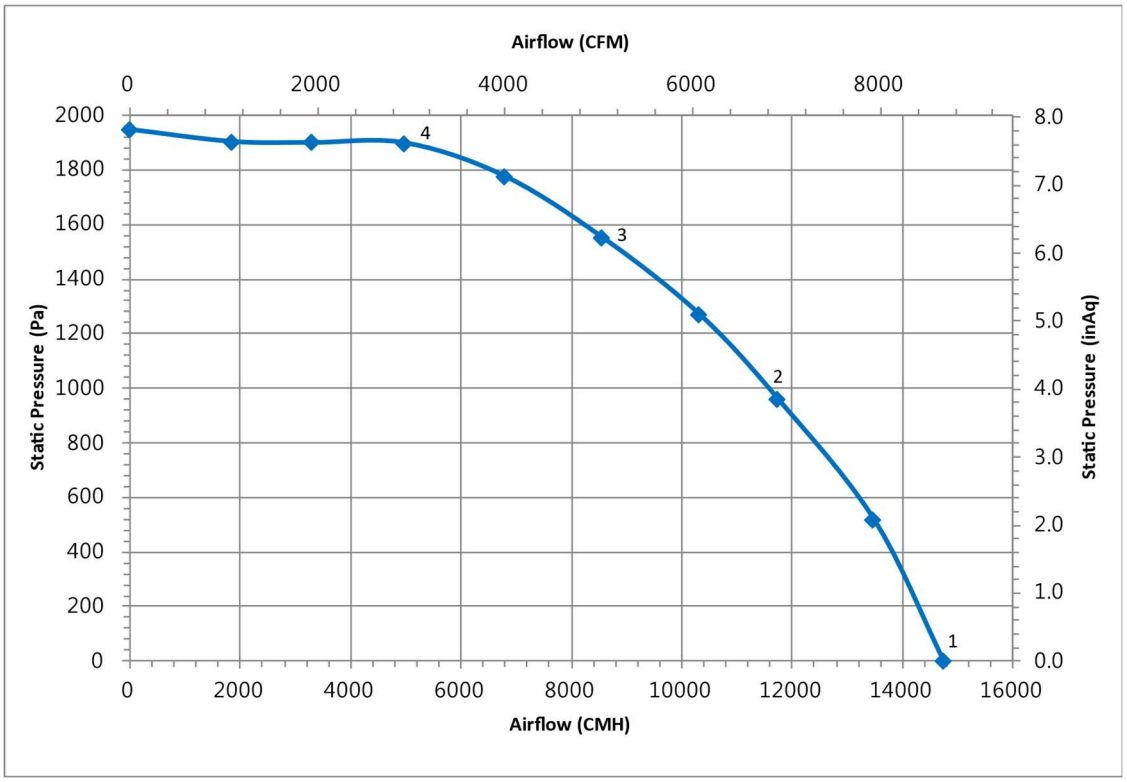
Physical	
Rotation Direction	CW, Seen on rotor
Material (Impeller/ Frame/ Motor cover)	Aluminum / Die-cast aluminum / Metal
Bearing system	Ball bearings
Weight (kg)	56
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 ℃(*)
Storage temperature range	-40 ~ +70 ℃
Safety	
Safety	UL , cUL , CE
IP Level	IP55
EMC	EN61000-6-1/3
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 :

(*) Short time operation between -25~-40℃ is workable.

Copyright © 2020 Delta Electronics, Inc. All rights reserved

P & Q curves



Measure data : AMCA

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	LwA [dB(A)]	FEI
1	1	14735	2628	3040	4.84	96	0.308
2	959	11743	2633	5159	8.01	90	1.332
3	1552	8561	2631	5607	8.70	87	1.404
4	1899	4982	2635	4864	7.55	91	1.192

ErP Directive:

	Actual	2015
Static Pressure Eff (%)	65.8	
Overall Eff (%)	67.4	59.4
Eff Grade N	70	62.0
Power (kW)	5.607	
Air flow (CMH)	8561	
Pressure (Pa)	1552	
Speed (RPM)	2631	

Note :

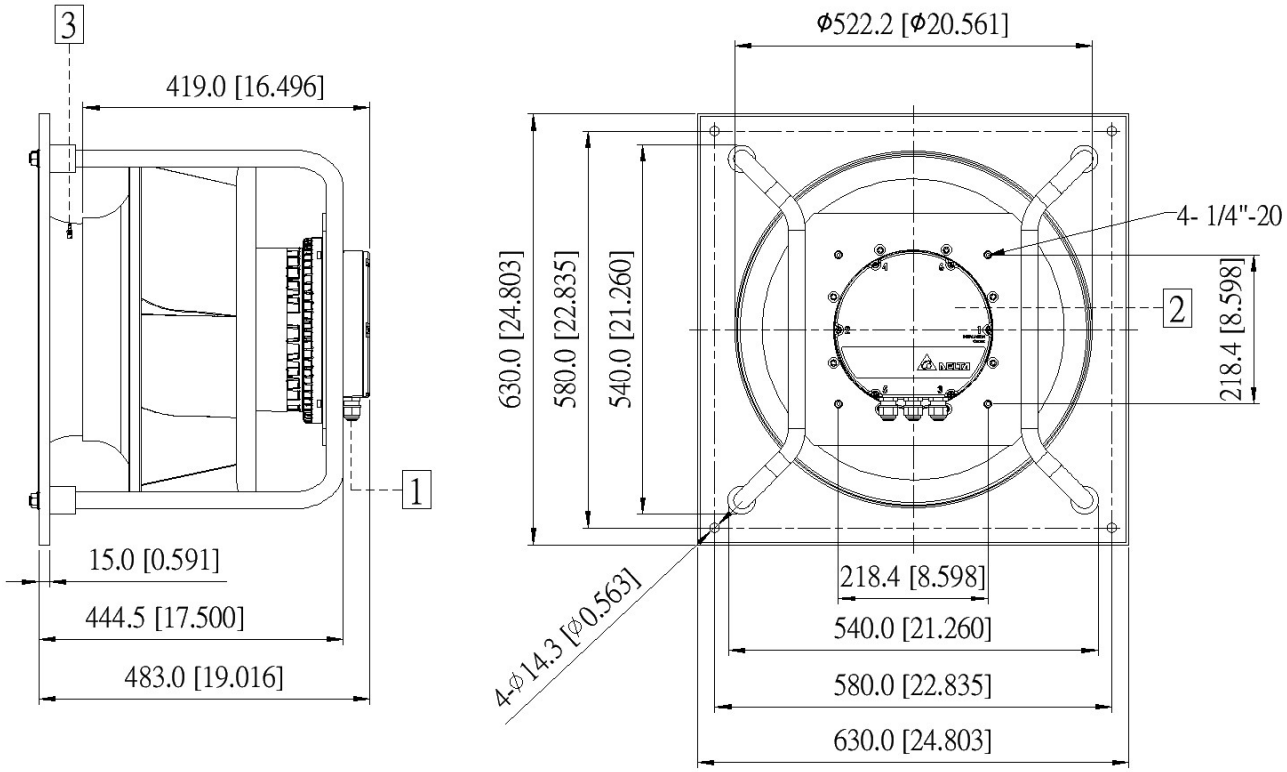
- Power P1 (W) : Motor input power.
- Input voltage / frequency : 400V / 50Hz-60Hz.
- Performance certified is for installation type A : free inlet, free outlet with partition. Performance ratings do not include the effects of appurtenances (accessories). Values shown are for inlet LwiA sound power levels for installation type A : free inlet, free outlet with partition. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

Copyright © 2020 Delta Electronics, Inc. All rights reserved

Dimension drawing

Label :

Fan :



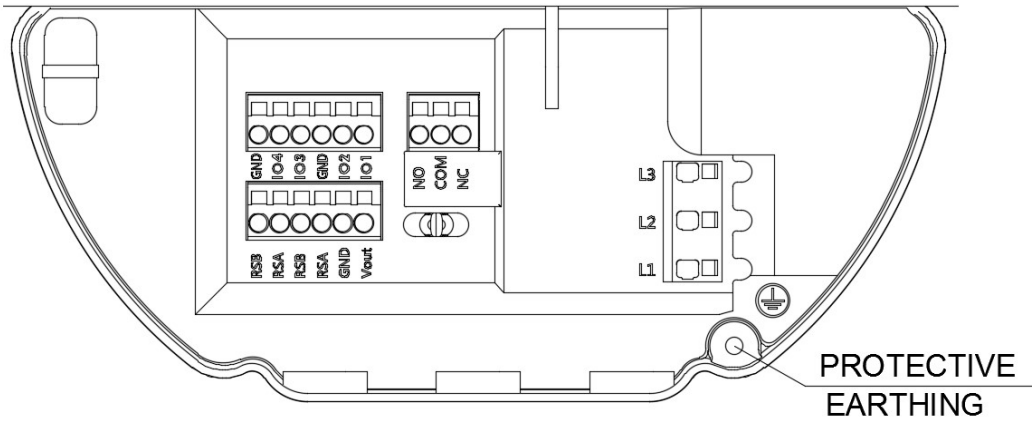
UNIT : mm[INCH]

Note :

1. Cable diameter : Ø7.0 ~ Ø12.7mm.
2. Open the cover and refer to definition of terminal block.
3. Pressure tap is applicable for inner diameter of gas pipe 4mm, K Factor is 251.8.

Copyright © 2020 Delta Electronics, Inc. All rights reserved

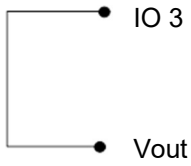
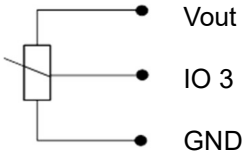
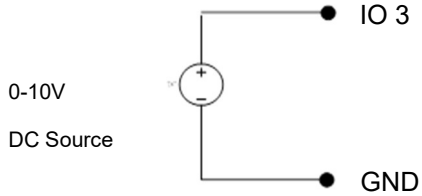
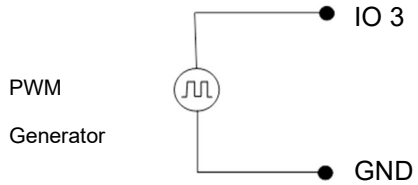
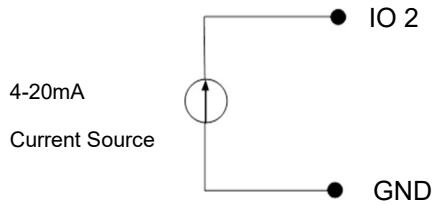
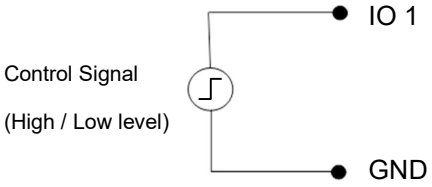
Definition of terminal block



	Text	Functions
Power	L1	AC main (3~ 380-480VAC)
	L2	AC main (3~ 380-480VAC)
	L3	AC main (3~ 380-480VAC)
Status	NC	Alarm relay, open by failure
	COM	Alarm relay, common (2A/250VAC)
	NO	Alarm relay, close by failure
Signal	RSB	RS485-B
	RSA	RS485-A
	RSB	RS485-B
	RSA	RS485-A
	GND	Ground
	Vout	+3.3-24V/800mW output (default: +10V)
	GND	Ground
	IO4 (OUT)	Control voltage output 0-10VDC
	IO3 (0-10V/PWM)	Speed control, input 0-10VDC
	IO2 (4-20mA)	Speed control, input 4-20mA
	IO1 (Enable)	Active high. The fan will run the speed that is set by enable function.

Copyright © 2020 Delta Electronics, Inc. All rights reserved

Lead wire connection

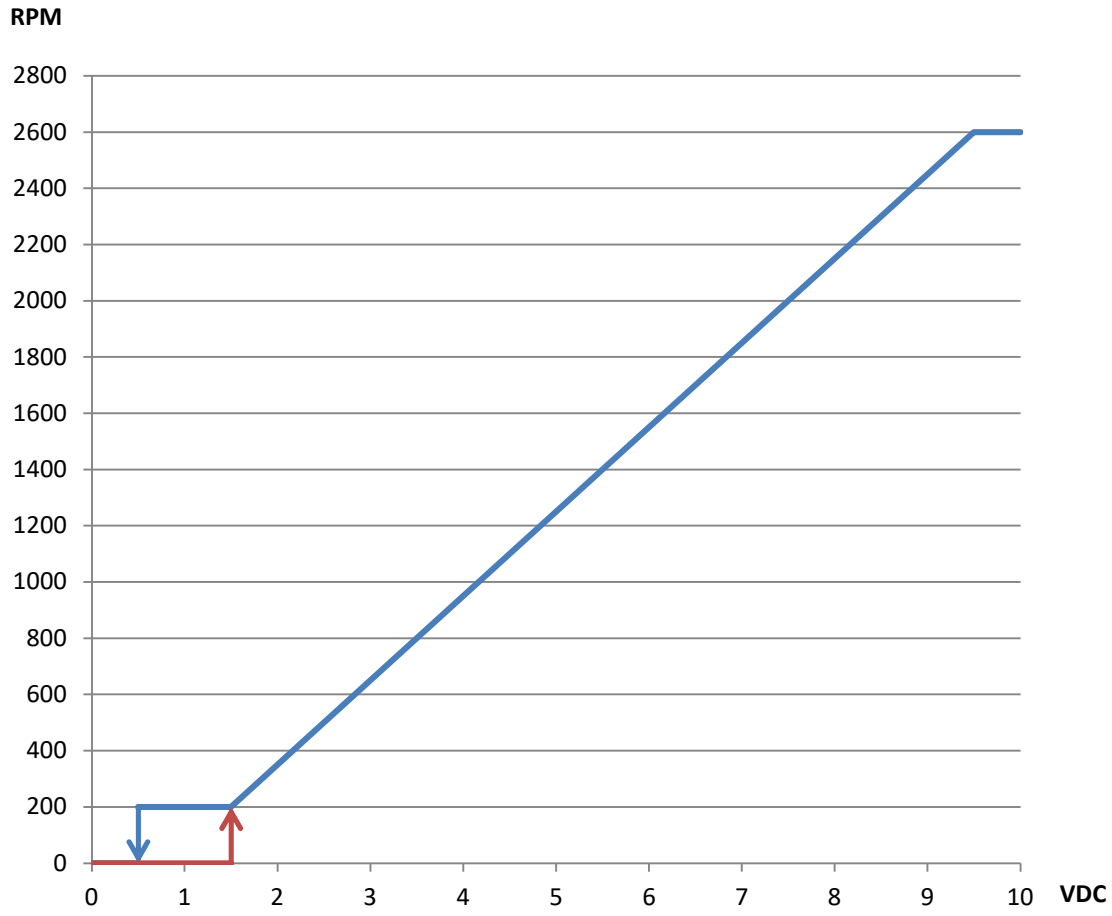
Speed setting	
Full Speed 	**Short the Vout & IO3.** Fan will run full speed.
Voltage Control A 	**By using the 1-10kΩ variable resistor.** Between **Vout** with **GND** and IO3 (**0-10V/PWM**) Vary the variable resistance to change the 'IO3' voltage (0...10V), then change FAN speed.
Voltage Control B 	**By using voltage source supply 0~10V_{DC} voltage.** DC+ : connect to IO3 (+) DC - : connect to GND (-)
PWM Control 	**PWM duty control.** PWM amplitude is 3.3-24V_{DC}. (Except for the 10V_{DC}, other voltage amplitude must change IO3 to PWM mode by RS485.) Frequency Range is 100Hz...10kHz -PWM duty higher than 15%, fan start up。 -PWM duty lower than 5%, fan stop。
Current Control 	**4~20mA Current Control.** Open IO3 PIN - 4.0 mA → Fan Stop - 6.0 mA → Fan Start up - 19.5 mA → Maximum Speed
Enable Function 	IO1 with high level (8 ~ 24 V_{DC}) - Fan will run the speed that is set by enable function IO1 with low level (0 ~ 1 V_{DC}) - Fan will run the speed that follows speed command from other control port

Copyright © 2020 Delta Electronics, Inc. All rights reserved

<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.
Note:
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</td><td>The relation between speed and control signal as below table
<table>
<tr><th>Voltage (V) ± 5%</th><th>PWM(%)± 5%</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</td></tr>
<tr><td>6.0</td><td>60</td><td>1550 ± 8%</td></tr>
<tr><td>9.5</td><td>95</td><td>2600 ± 5%</td></tr>
</table></td></tr>
<tr><td>Current Control</td><td>The relation between speed and control signal as below table
<table>
<tr><th>Current (mA) ± 5%</th><th>Speed (RPM)</th></tr>
<tr><td>0 ~ 4.0</td><td>0</td></tr>
<tr><td>6.0</td><td>200 ± 50</td></tr>
<tr><td>13.6</td><td>1550 ± 8%</td></tr>
<tr><td>19.5</td><td>2600 ± 5%</td></tr>
</table></td></tr>
<tr><td>IO4 OUT
(Control O/P)
＊’OUT’ outputs a 0-10V voltage, for series fan connection. (fan1→ fan2 → …→fan(n)). Which apply a voltage command, all fans run in same RPM.</td><td>The OUT voltage Vs. current control input (almost linear, 4~20mA).
<table>
<tr><th>Current (mA) ± 5%</th><th>OUT (VDC)± 5%</th></tr>
<tr><td>4.0</td><td>0.5</td></tr>
<tr><td>6.0</td><td>1.5</td></tr>
<tr><td>13.6</td><td>6.0</td></tr>
<tr><td>19.5</td><td>9.5</td></tr>
</table></td></tr>
<tr><td>Alarm state</td><td>1. NC and COM will OPEN.
2. NO and COM will CLOSE.</td></tr>
</table>

Copyright © 2020 Delta Electronics, Inc. All rights reserved

Control Voltage VS. RPM Curve



Voltage (VDC) , PWM duty (%), 4~20mA table

Voltage	0	0.5	1	1.5	2	3	4	5	6	7	8	9.5	10	VDC
PWM duty	0	5	10	15	20	30	40	50	60	70	80	95	100	%
4~20 mA	0	4.0	5.1	6.0	6.8	8.5	10.2	11.9	13.6	15.3	17.0	19.5	20	mA

Copyright © 2020 Delta Electronics, Inc. All rights reserved