

Electronically Commutated (EC) Fan

Centrifugal Fan

500 x 500 x 407 mm



Delta Electronics (Dongguan) Co., Ltd. certifies that the GTM036PUQ36R-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

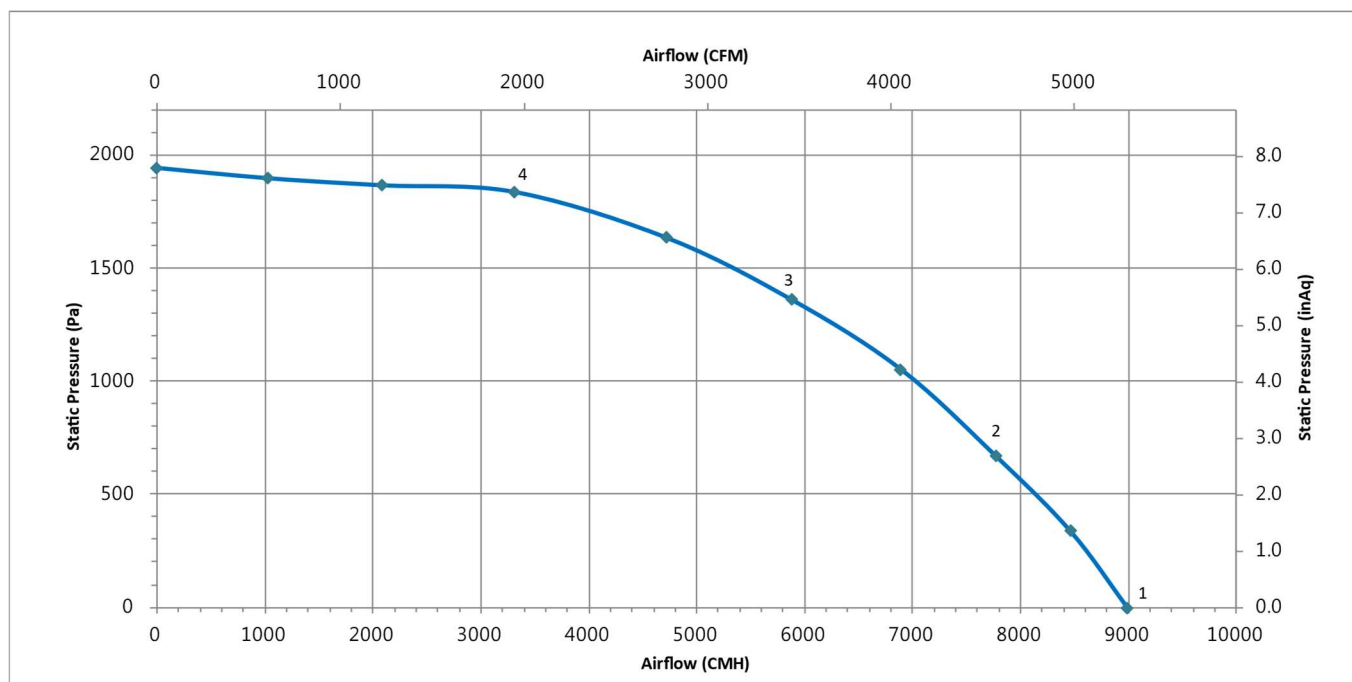
Input Side	
Nominal Voltage	3~ 400V _{ac} 50/60Hz
Input Source	3~ 380V _{ac} - 480V _{ac}
Power @ Free air	1784 W
Power @ Max. load	3303 W
Output Side	
Speed (RPM)	3300
Qmax. (CMH / CFM)	8993 / 5290
Pmax. (Pa / inAq)	1945 / 7.81
Noise (dB-A) @ Qmax.(LwA)	97
Functions	
Passive power factor correction	
Control input 0-10V _{DC} / PWM / 4-20mA.	
Output +10V _{DC} (±5%), max. 800mW.	
Control voltage output: 0-10V _{DC} .	
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)	25
Electrical leads	Via terminal block
Environmental	
Operating temperature range	-25 ~ +60 °C (*)
Storage temperature range	-40 ~ +70 °C
Safety	
Safety	UL , cUL , CE
IP Level	IP55
EMC	EN61000-6-1, EN61000-6-3
Protection class	I
Insulation class	F
Leakage current	<= 3.5 mA
Motor protection	Electronic protection
Life expectance	60,000 hrs at 40 °C / 15 ~ 65 %RH

NOTE :

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

P & Q curves



Measure data: AMCA

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	LwA [dB(A)]	FEI
1	0	8993	3334	1784	2.97	97	0.344
2	671	7772	3334	2736	4.28	91	1.270
3	1361	5886	3337	3303	5.11	84	1.507
4	1838	3319	3338	2960	4.64	89	1.338

ErP Directive:

	Actual	2015
Static Pressure Eff (%)	67.4	
Overall Eff (%)	69.9	56.9
Eff Grade N	75.0	62.0
Power (kW)	3.303	
Air flow (CMH)	5886	
Pressure (Pa)	1361	
Speed (RPM)	3337	

Note :

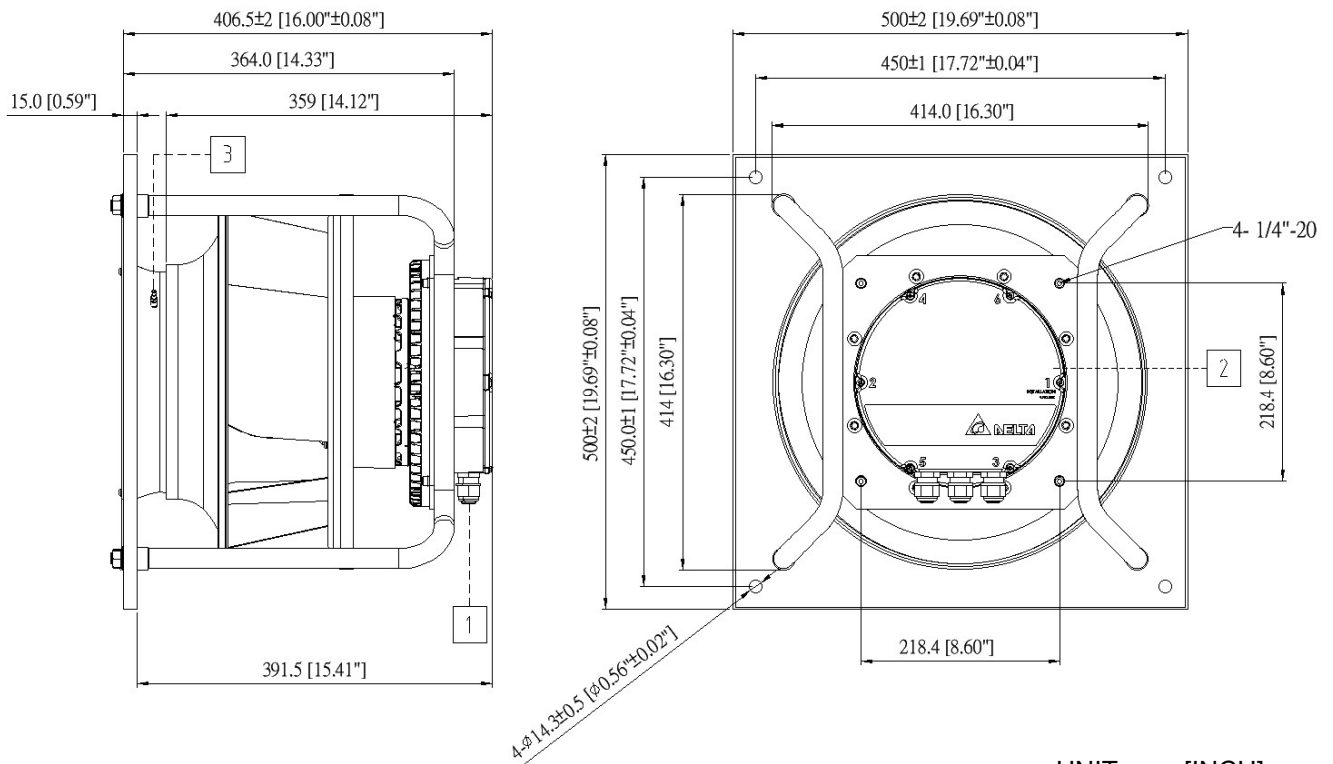
- Power P1 (W) : Motor input power.
- Input voltage / frequency : 400V / 50Hz-60Hz.
- Performance certified is for installation type A : free inlet, free outlet with partition. Performance ratings do not include the effects of appurtenances (accessories). Values shown are for inlet LwA sound power levels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

Dimension drawing

LABEL:



Fan :

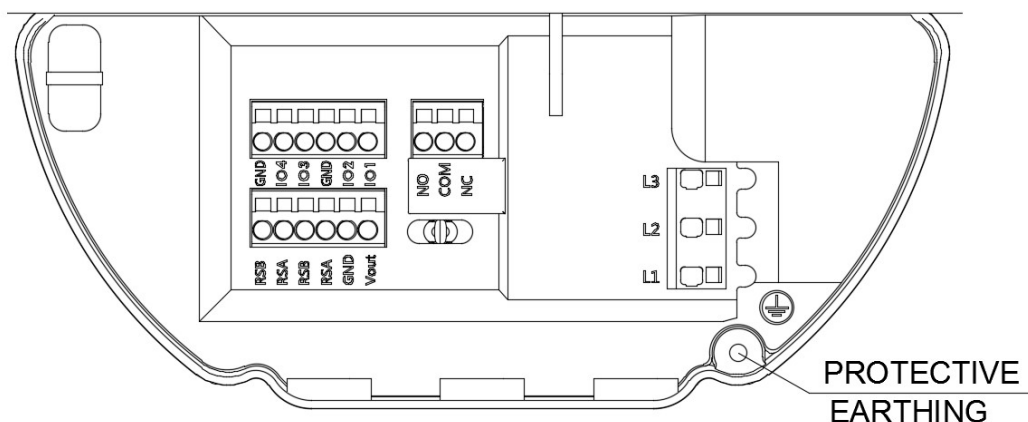


UNIT : mm[INCH]

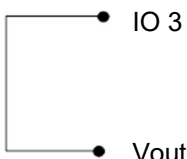
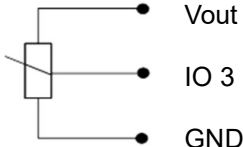
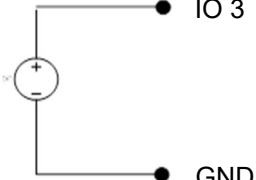
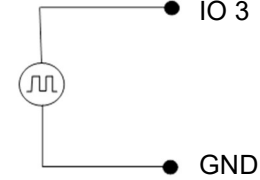
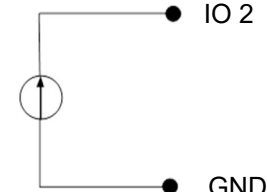
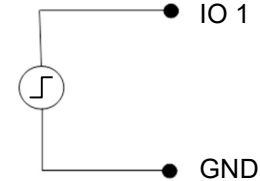
Note :

- 1 Cable diameter : Ø6.0 ~ Ø10mm.
- 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 151.3.

Definition of terminal block

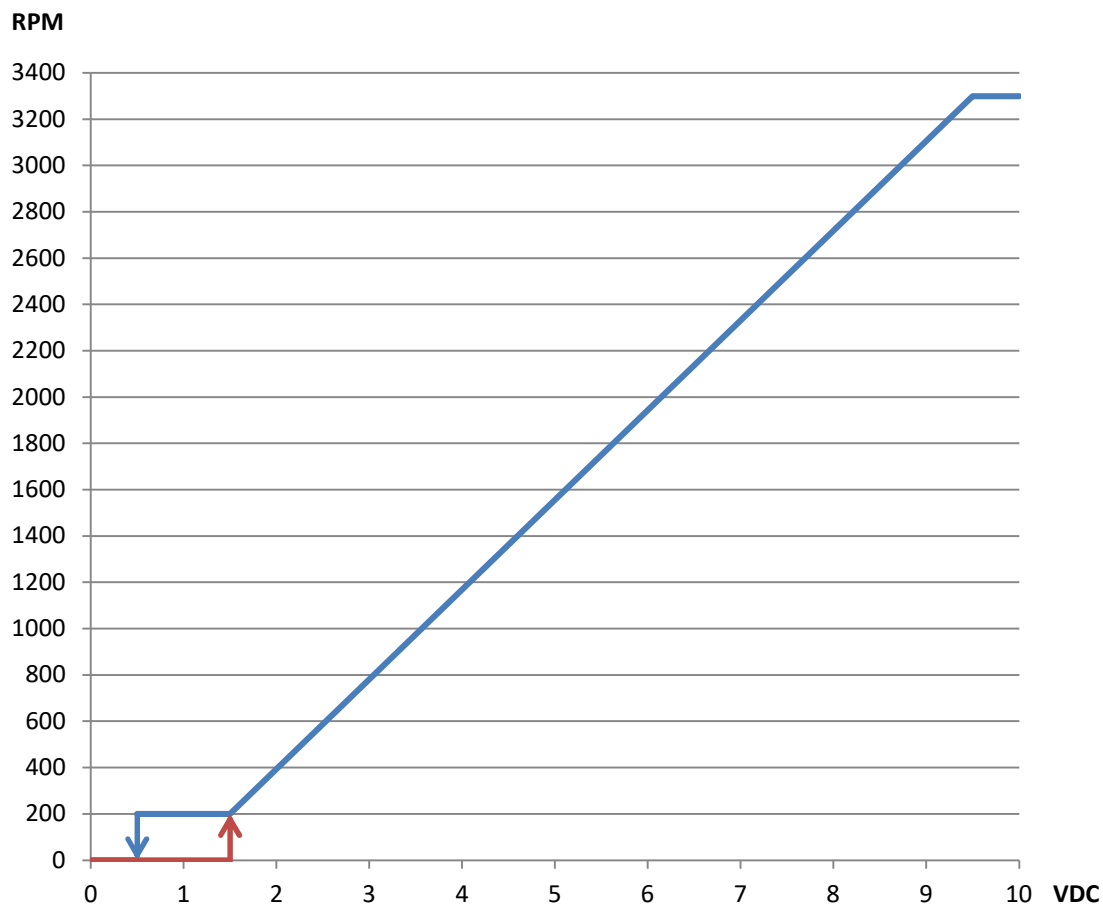


	Text	Functions
Power	L1	AC main (3~ 380-480VAC)
	L2	AC main (3~ 380-480VAC)
	L3	AC main (3~ 380-480VAC)
Status	NC	Alarm relay, open by failure
	COM	Alarm relay, common (2A/250VAC)
	NO	Alarm relay, close by failure
Signal	RSB	RS485-B
	RSA	RS485-A
	RSB	RS485-B
	RSA	RS485-A
	GND	Ground
	Vout	+3.3-24V/800mW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

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  0-10V DC Source	By using voltage source supply 0~10V_{DC} voltage. DC+ : connect to IO3 (+) DC- : connect to GND (-)
PWM Control  PWM Generator	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 Source	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  Control Signal (High / Low level)	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

Signal function			
RS485 control function	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.		
Voltage / PWM	The speed corresponds to the control level.		
	Voltage (V)	PWM(%)	Speed(RPM)
	0	0	0
	1.5	15	200 ± 50
	6.0	60	1944 ± 8%
	9.5	95	3300 ± 8%
Current Control	The speed corresponds to the control level.		
	Current (mA)		Speed (RPM)
	4.0		0
	6.0		200 ± 50
	13.6		1944 ± 8%
	19.5		3300 ± 8%
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.	The OUT voltage VS current control input (almost linear ,4~20mA).		
	Current (mA)		OUT (VDC) (REF)
	4.0		0.5
	6.0		1.5
	13.6		6.0
	19.5		9.5
Alarm state	1. NC and COM will OPEN.		
	2. NO and COM will CLOSE.		

Control Voltage VS. RPM Curve



Voltage(V_{DC}) , 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

Interface of DLL File

INPUT	OUTPUT
Total Static Pressure	Total Static Pressure
Flow	Dynamic Pressure
	K Factor
	Work RPM
	Max RPM
	Efficiency
	Efficiency (Reg327/2011)
	Electrical Power Input
	Power Class • PMREF (EN13053)
	Nominal Motor Power
	Nominal Motor Current
	Electrical Connection
	Sound power @ 63Hz (Inlet)
	Sound power @ 125Hz (Inlet)
	Sound power @ 250Hz (Inlet)
	Sound power @ 500Hz (Inlet)
	Sound power @ 1000Hz (Inlet)
	Sound power @ 2000Hz (Inlet)
	Sound power @ 4000Hz (Inlet)
	Sound power @ 8000Hz (Inlet)
	Sound power @ 63Hz (outlet)
	Sound power @ 125Hz (outlet)
	Sound power @ 250Hz (outlet)
	Sound power @ 500Hz (outlet)
	Sound power @ 1000Hz (outlet)
	Sound power @ 2000Hz (outlet)
	Sound power @ 4000Hz (outlet)
	Sound power @ 8000Hz (outlet)
	External Dimension Width (mm)
	External Dimension Height (mm)
	External Dimension Length (mm)
	Weight (Kg)