



Specification For Approval

Customer : _____ STD _____
Description : _____ EC FAN _____
Customer Part No. : _____ Rev : _____
Delta Model No. : _____ GTM019FUA07R-V _____ Rev : 00
Safety Model No. : _____ GTM019FUA07 _____
Sample Issue No. : _____
Sample Issue Date : _____ 08/22/2019 _____

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

Approved by : _____

Date : _____

Delta Electronics, Inc.

No.252, Shangying Road, Guishan Industrial Zone,

Taoyuan City, 33341, Taiwan

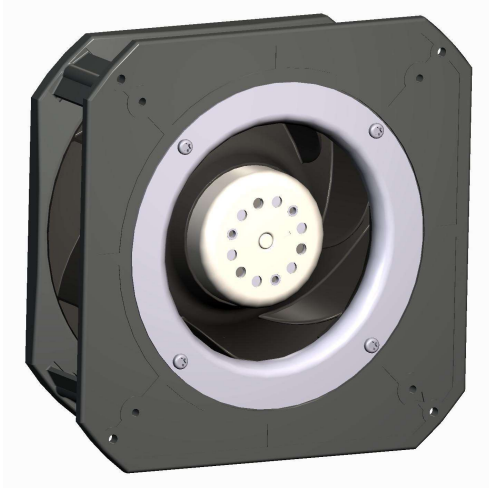
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Electronically Commutated (EC) Fan

Centrifugal Fan

225 x 225 x 85 mm



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RoHS

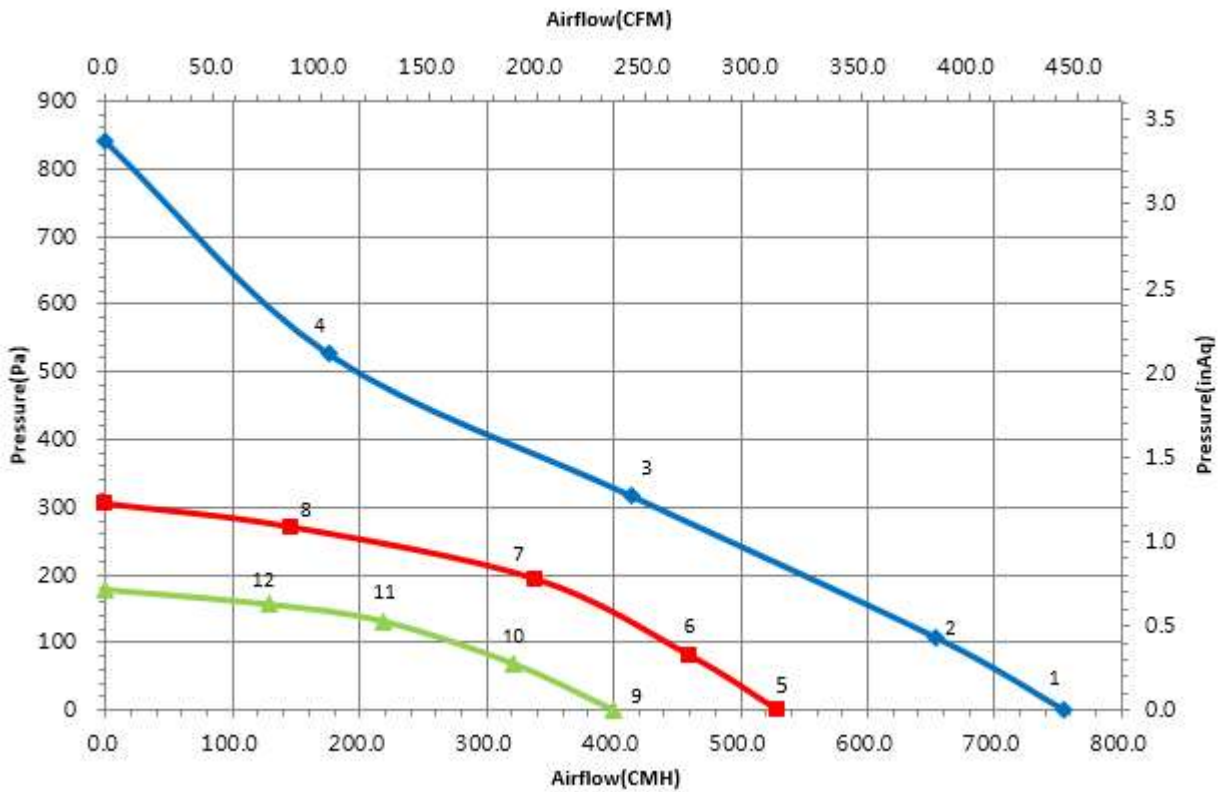
Technical features

Input Side	
Nominal Voltage	1~ 230Vac 50/60Hz
Input Source	1~ 200Vac - 240Vac
Power @ Free air	85 W
Power @ Max. load	85 W
Output Side	
Speed (RPM)	3100
Qmax. (CMH / CFM)	754 / 443
Pmax. (Pa / inAq)	841 / 3.38
Noise (dB-A) @ Qmax.	70
Functions	
Control input 0-10VDC / PWM pattern.	
Output +10VDC ($\pm 10\%$), max. 5mA.	
Locked rotor protection, Soft start.	

Physical	
Rotation Direction	CW, Seen on rotor
Material (Impeller / Frame)	Plastic / Die-cast aluminum
Bearing system	Ball bearings
Weight (kg)	1.8
Electrical leads	Lead wire
Environmental	
Operating temperature range	-25 ~ +60 °C
Storage temperature range	-40 ~ +80 °C
Safety	
Safety	UL; cUL; TUV
IP Level	IP54
EMC	EN61000-6-1/3, EN61000-3-2/3
Protection class	I
Insulation class	B
Leakage current	≤ 3.5 mA
Motor protection	Over temperature protected
Life expectancy	60,000 hrs at 40 °C / 15 ~ 65 %RH

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

P & Q curves



Measure data:

	P [Pa]	Q [CMH]	N [R.P.M.]	P1 [W]	I [A]	Lp [dB(A)]
1	0	754	3554	82	0.63	70
2	107	653	3366	82	0.63	68
3	317	413	3107	82	0.63	63
4	526	176	3474	82	0.63	69
5	0	529	2504	30	0.29	62
6	81	459	2493	35	0.33	60
7	193	339	2493	41	0.37	58
8	270	146	2493	32	0.31	59
9	0	400	1904	14	0.15	57
10	69	320	1903	18	0.19	54
11	131	219	1900	19	0.19	53
12	156	128	1905	16	0.17	53

Test Condition:

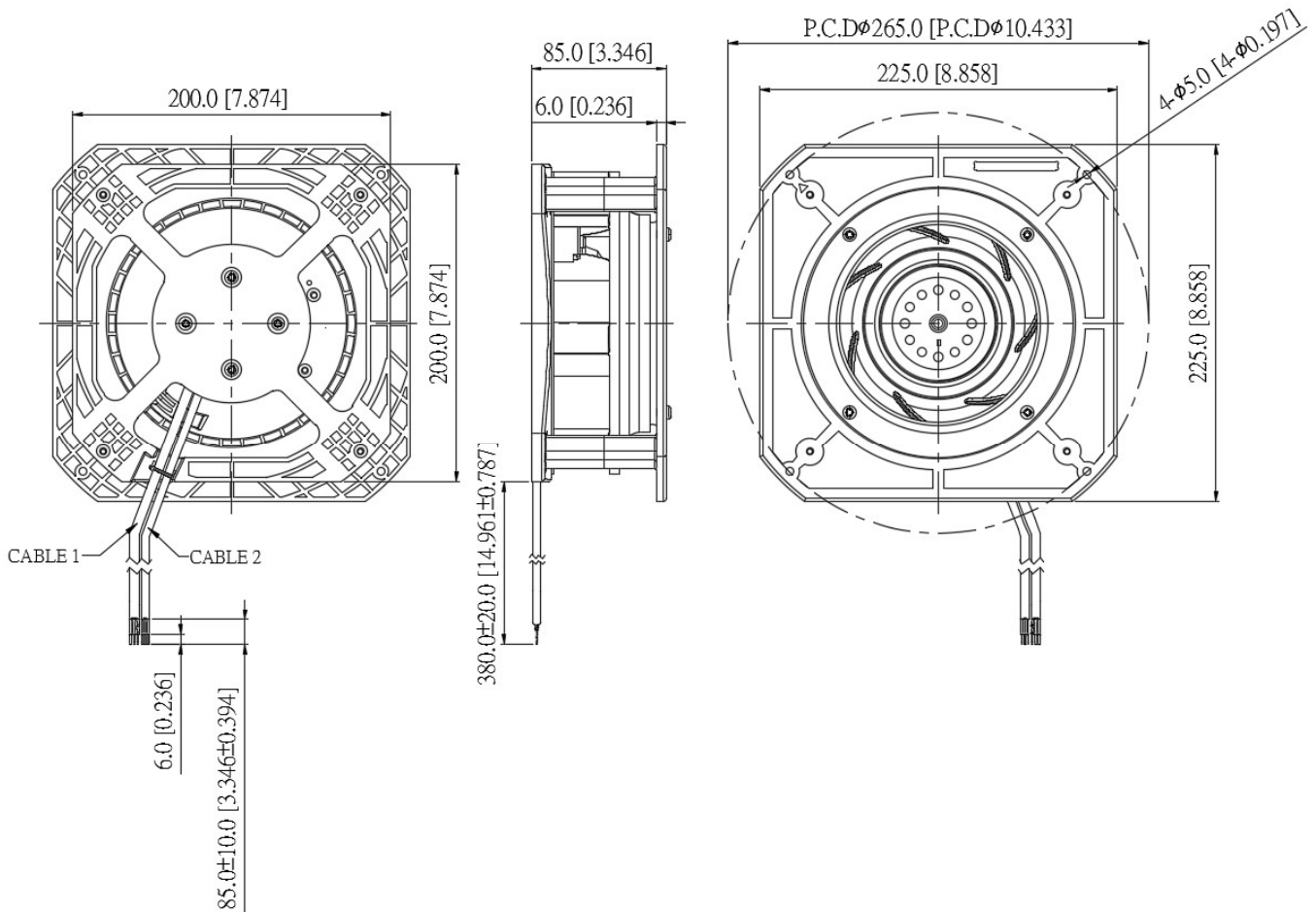
- Input Voltage: Nominal Voltage
- Temperature : Room Temperature
- Humidity : 65%RH
- Measured with inlet cone
- Noise (Lp) is measured at a distance of one meter from the inlet side.

Dimension drawing

Label :

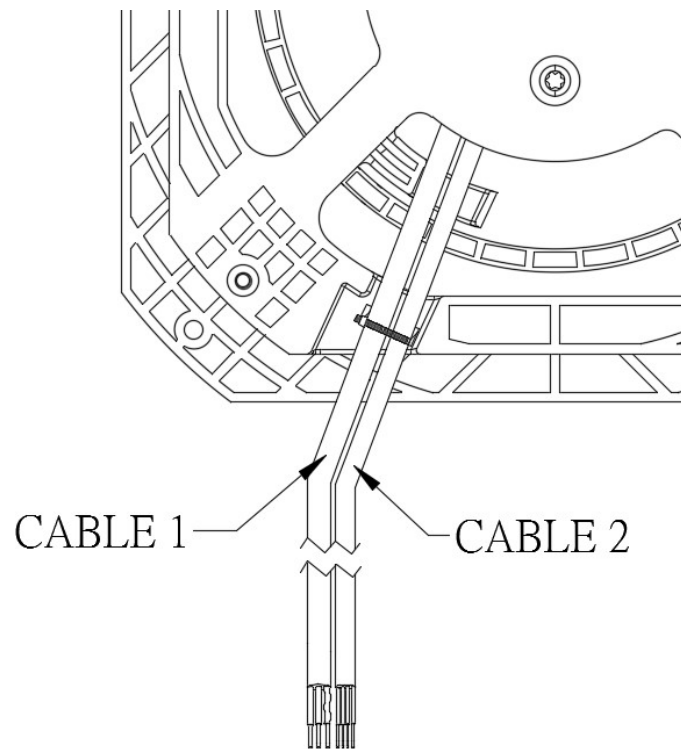


Fan :



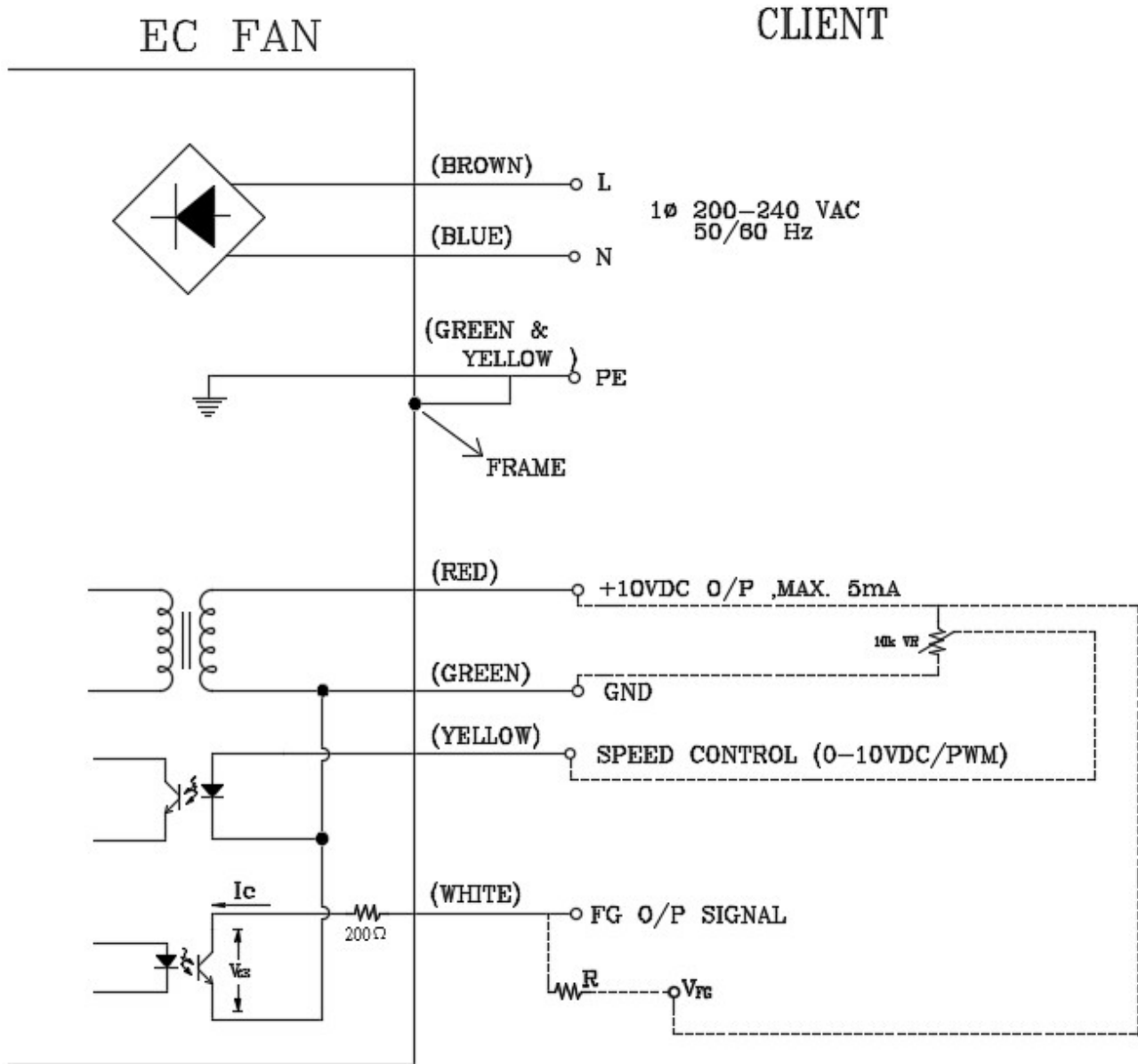
UNIT : mm[INCH]

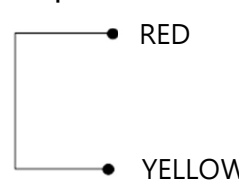
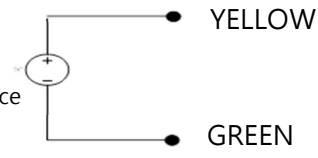

Definition of terminal block

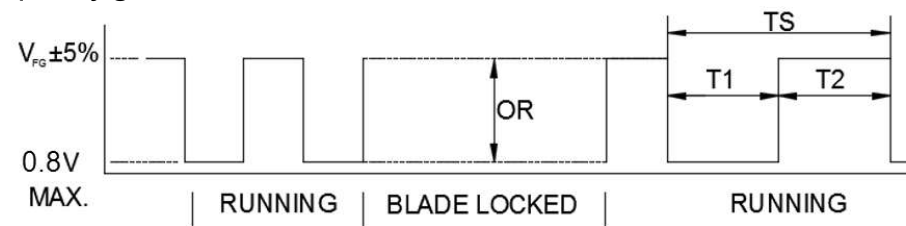


Cable	Wire Type	Color	Functions
1	UL2464 18#AWG	Brown	Line / AC main
		Blue	Neutral /AC main
		Green / Yellow	Protective Earth
2	UL2464 24#AWG	Green	Ground
		Red	+10V output
		White	F00
		Yellow	0-10VDC / PWM

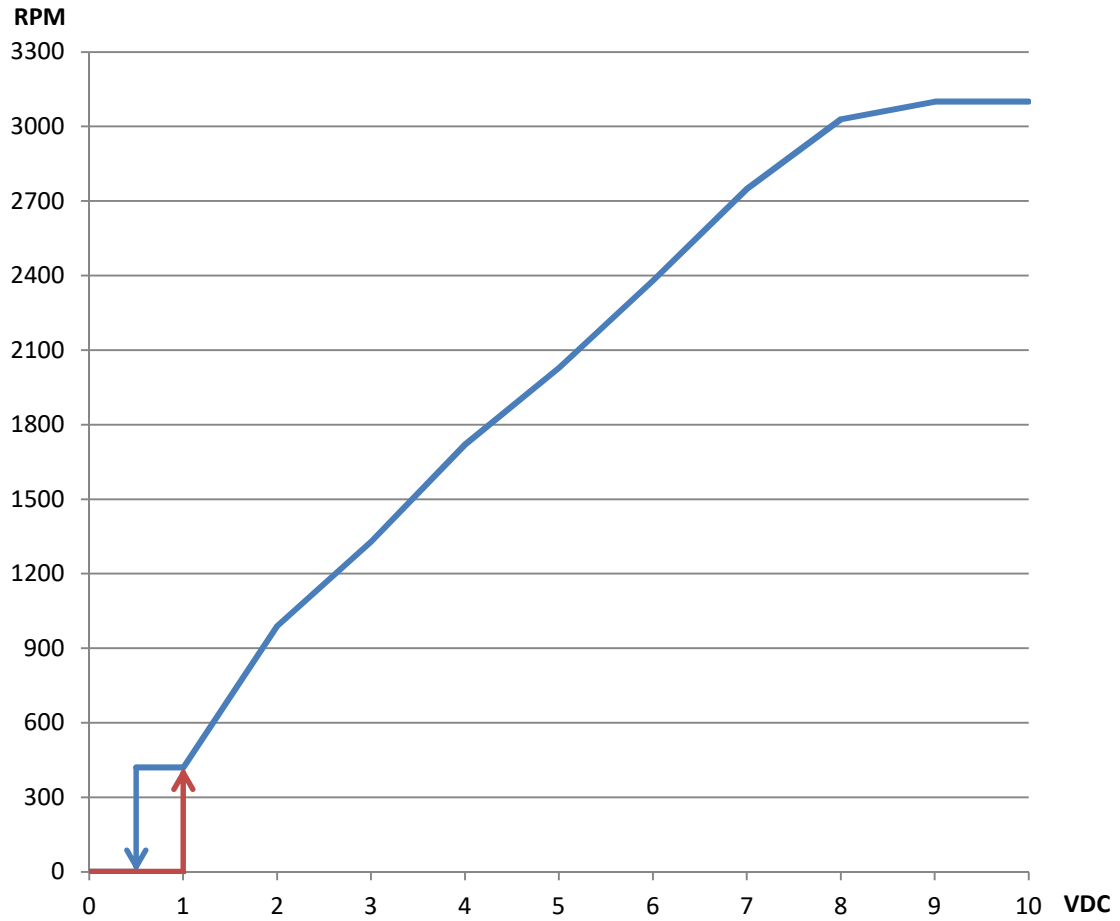
Lead wire connection:



Speed setting	
<p>Full Speed</p> 	<p>Short RED & YELLOW Fan will run full speed.</p>
<p>Voltage Control</p> 	<p>Use voltage source support 0~10VDC voltage DC+ : connect to YELLOW DC - : connect to GREEN -Voltage higher than 1.0 VDC, fan start up. -Voltage lower than 0.5 VDC , fan stop</p>
<p>PWM Control</p> 	<p>PWM duty control PWM amplitude is 10VDC(+/-5%) Frequency Range is 100Hz ~ 100kHz -PWM duty higher than 10%, fan start up ° -PWM duty lower than 5%, fan stop °</p>

Signal function													
<p>Voltage / PWM control</p>	<p>The speed comparison will control level.</p> <table border="1"> <thead> <tr> <th>Voltage (V)</th> <th>PWM(%)</th> <th>Speed (RPM) (REF)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> <td>420 ± 50RPM</td> </tr> <tr> <td>10</td> <td>99</td> <td>3100⁽¹⁾ ± 5%</td> </tr> </tbody> </table> <p>(1) Depending on power consumption conditions, speed might be different.</p>	Voltage (V)	PWM(%)	Speed (RPM) (REF)	0	0	0	1	1	420 ± 50RPM	10	99	3100 ⁽¹⁾ ± 5%
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<p>FG</p>	<p>$V_{CE(sat)} = 0.8V \text{ MAX.}$ $V_{FG} = 30.0V \text{ MAX.}$ $I_C = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_C$</p> <p>Frequency generator waveform</p>  <p style="text-align: center;"> RUNNING BLADE LOCKED RUNNING</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>$N=R.P.M$</td> <td>1 PULSE PER REVOLUTION</td> </tr> <tr> <td>$TS=60/N(\text{SEC})$</td> <td>$T1=T2=1/2 \text{ TS}$</td> </tr> </table>	$N=R.P.M$	1 PULSE PER REVOLUTION	$TS=60/N(\text{SEC})$	$T1=T2=1/2 \text{ TS}$								
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Control Voltage VS. RPM Curve



Voltage (VDC), 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	%

Note: If the fan is used on heavy load, the speed will be limited by power consumption.