EC Backward Centrifugal Fan

LWBE3G250-102PS-06

Ningbo Longwell Electric Technology CO.,LTD

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Model No.:	LWBE3G250-102PS-06
Version Number:	A0
Make :	Jin
Review :	Zhong
Approvd :	Yao/Jiang
Date:	2023.07.12

技术专用
朗伟电器

Version number	Notes Remarks	Reason content	Revised by	Date

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Nominal Data

Project1	Unit	Rating
Nominal Voltage :	[VAC]	230
Voltage Range :	[VAC]	176~264
Frequency :	[Hz]	50/60
Speed :	[rpm]	3650
Current :	[A]	2.5
Power input :	[W]	520
Air flow (Max) :	[m3/h]	2472
	[CFM]	1454
Static pressure (Max) :	[Pa]	1545
Noise level (LpA):	dB(A)	85
Max.ambient Temp :	℃	60
Min.ambient Temp :	℃	-25
Insulation Class :		Class F
Protection Type :		IP55
Work system :		S1

Technical Features

Production Reference standard	GB12350《Safety requirements of small power motors》 JB/T10563 《technical specification for general purposes centrifugal fans》 EN60335-1《Household and similar electrical appliances-safety》 ISO5801-1997《Industrial fans-performance testing using standardized airways》 GB/T2888《Methods of Noise Measurement for Fans Blowers Compressors and Roots Blowers》
Certification	CE ETL (UL 507:2017 Ed.10+R:27May2020，CSA C22.2#113:2018 Ed.11)
Environmental protection	RoHS、Reach

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Technical Features

Service environment	Operating temperature：-25~60℃；Operating humidity：5 ~ 90 % RH Storing temperature：-40 ~ 80℃；Storing humidity：≤95 % RH Applicable altitude range：＜1000m
Life Expectance	40,000Hours(L10)，At 40℃ room, humidity 15%~65%RH.
Balancing	According to JB/T 9101-1999 requirements G6.3
Vibration of the fan	Test method accord with JB/T 8689
Installation method	Horizontal or vertical installation
Material	Aluminum Alloy （Impeller）
Bearing	Maintenance-free deep groove ball bearings
Weight	APPROX 12.8 (Kg)

Electrical Protection

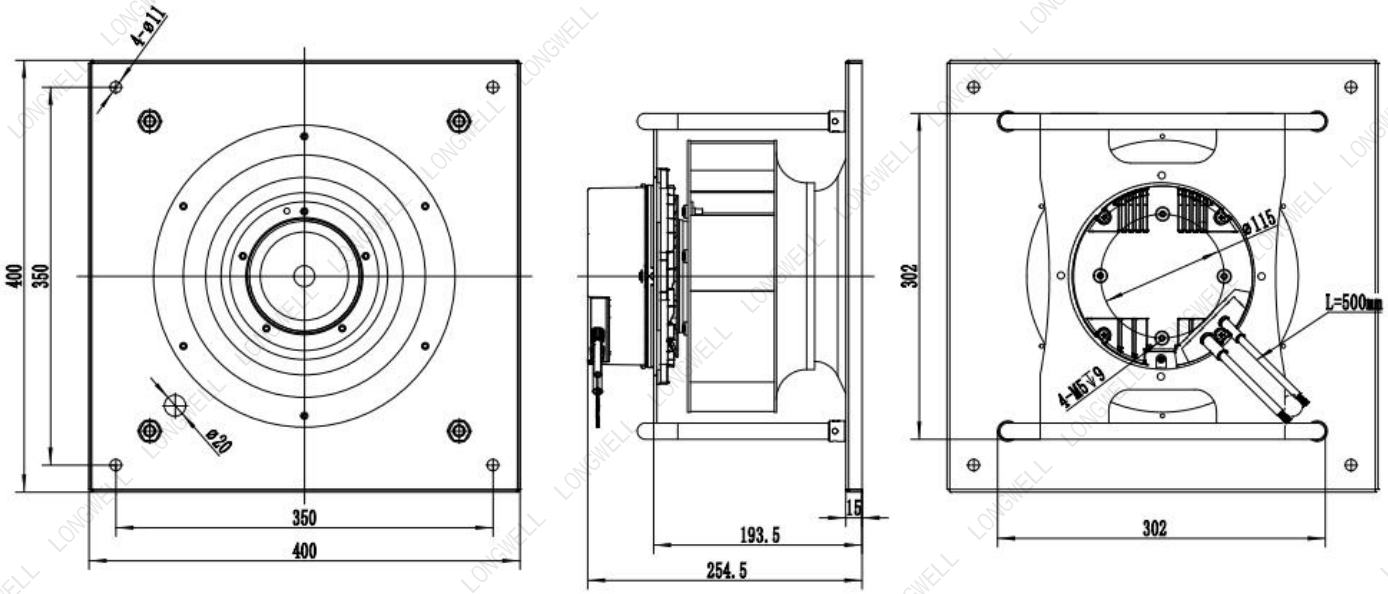
Speed Control	Control input 0~10VDC/PWM/RS485
VSP Control	Control signal VSP voltage range1VDC~9.5VDC (During normal operation, when the VSP voltage is below 0.8VDC, the motor switches from operating mode to standby mode)
PWM Control	PWM signal: frequency 1K ~ 10KHz, amplitude 10V,duty cycle 10% ~ 100% .
Signal Output	Tach output：5 Pulse/R；FG internal open circuit output, external pull-up resistor R, pull-up voltage V+
Auxiliary power output	Output 10VDC，Max Current 10mA
Protection	Current limiting protection 、Over-temperature protection、Over-current protection Locked-rotor protection
Soft start	Delay time <30 seconds to full speed
Serial Communication	LWRS485-02

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Product Drawing



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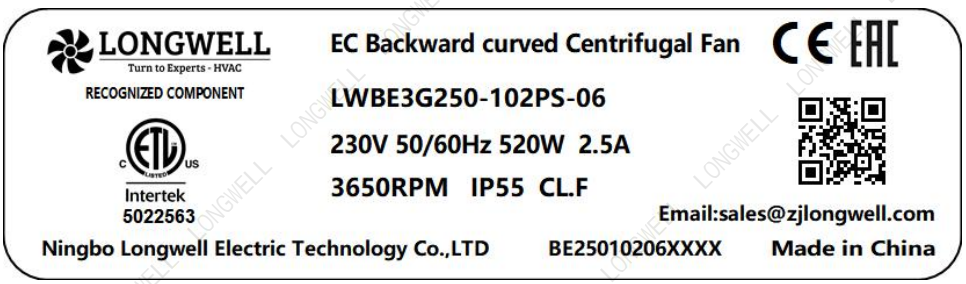
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Wiring Diagram

L	Color	Function	Functional description
L1	Yellow/Green	PE	Ground lead
	Brown	L	Live line
	Black	N	Naught line
	White	NC	Status relay, normally turn-off； break with error
	Gray	COM	The normally closedterminal of the relay is closed with COMduring normal operation or not poweredon,when the fan fails,it is disconnectedfrom COM.
L2	Brown	RS485A	Bus connection RS485; RSA;MODBUS RTU
	Gray	RS485B	Bus connection RS485; RSB;MODBUS RTU
	Yellow	Speed Control	Speed regulation signal input terminal,0-10VDC voltage /PWM
	White	FG	Velocity feedback pulse output 5 Pulse/R
	Red	+10VDC	Fixed voltage output 10VDC,≦10mA
	Blue	GND	Ground reference end of control signal

Label

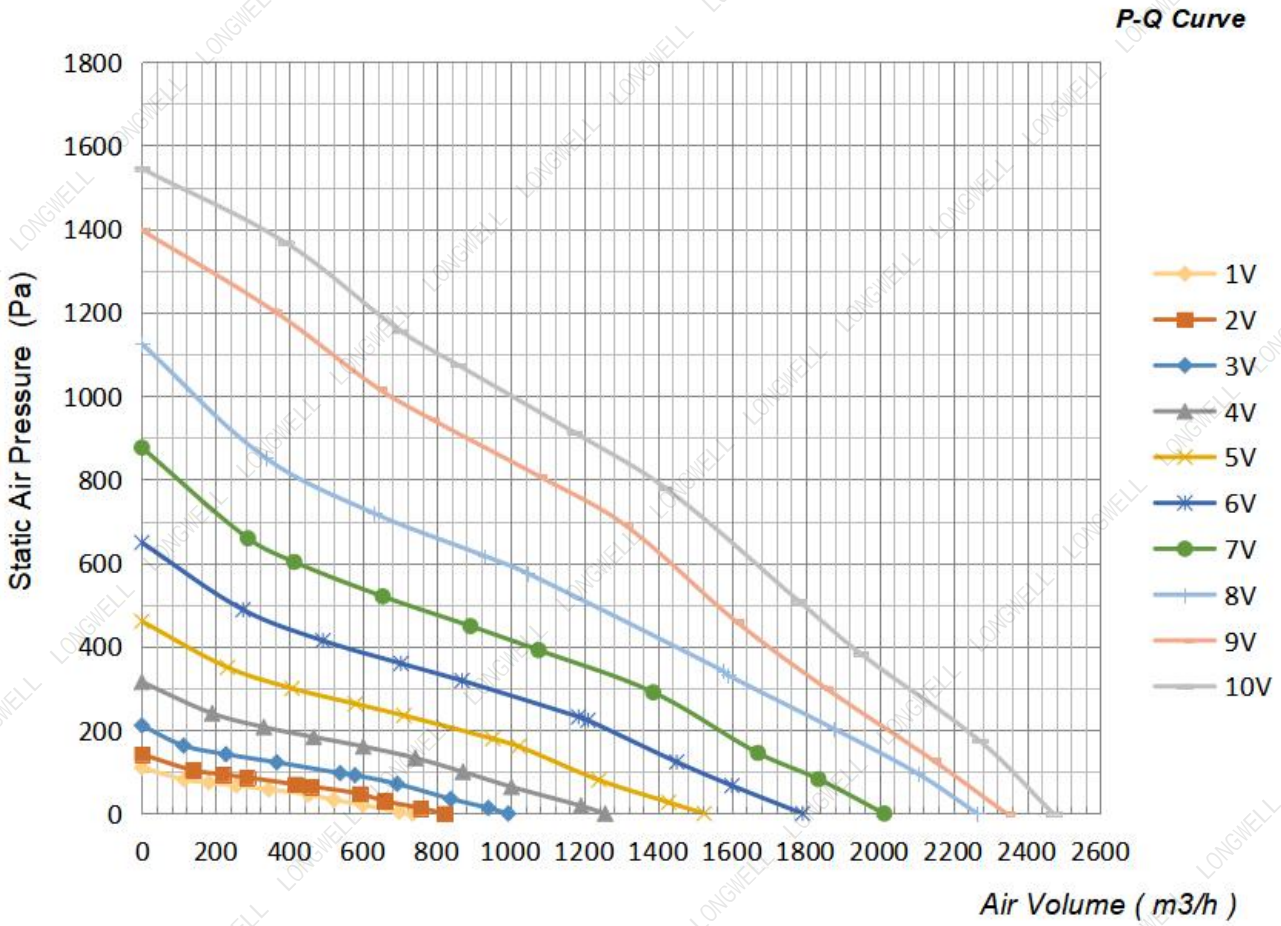


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Charts :Air Flow (P-Q)



K-FACTOR=63

VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
10V	3812	523	0	1545
	3693	523	389	1368
	3332	523	702	1156
	3235	523	857	1074
	3113	524	1173	912
	3113	523	1420	780
	3088	524	1782	509
	3178	523	1950	383
	3340	522	2272	175
	3425	522	2472	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
9V	3560	424	0	1397
	3343	432	356	1205
	3123	434	642	1017
	3043	434	784	945
	2938	432	1077	808
	2928	432	1308	693
	2862	432	1611	461
	2997	433	1853	301
	3178	433	2143	129
	3262	432	2345	0
8V	3458	312	0	1125
	3045	312	336	852
	2847	311	630	719
	2697	311	929	617
	2652	311	1045	576
	2555	312	1576	342
	2587	311	1589	332
	2665	311	1877	203
	2755	312	2104	96
	2873	311	2266	0
7V	3060	217	0	877
	2692	218	288	659
	2575	217	413	603
	2423	217	653	520
	2323	217	891	449
	2293	218	1076	391
	2343	216	1387	290
	2375	217	1671	145
	2468	216	1835	82
	2560	216	2014	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
6V	2655	145	0	649
	2302	146	275	488
	2150	147	491	414
	2057	147	703	359
	1998	147	868	318
	2008	145	1185	232
	2002	146	1210	224
	2042	145	1451	124
	2097	145	1601	67
	2200	146	1792	460
5V	2225	95	0	350
	1973	94	232	300
	1850	93	408	263
	1763	93	580	235
	1715	94	711	179
	1705	94	952	161
	1728	94	1022	80
	1755	94	1240	27
	1825	94	1429	0
	1872	95	1525	460
4V	1840	61	0	315
	1642	60	191	240
	1545	59	331	207
	1470	61	466	183
	1433	60	600	161
	1410	60	742	133
	1388	60	871	100
	1427	60	1002	64
	1508	59	1191	19
	1565	59	1257	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
3V	1510	37	0	211
	1358	37	113	163
	1280	38	228	142
	1207	39	366	123
	1168	38	538	97
	1168	37	578	92
	1193	37	692	71
	1193	39	838	35
	1247	39	940	13
	1292	37	994	0
2V	1245	27	0	142
	1102	26	138	104
	1047	27	219	94
	1008	27	285	87
	980	28	416	70
	977	28	458	65
	1012	26	591	47
	988	27	658	30
	1028	28	756	13
	1065	27	821	0
1V	1105	21	0	110
	953	22	115	81
	932	21	182	74
	900	21	256	67
	867	22	344	58
	875	21	452	45
	867	20	521	33
	892	20	599	21
	918	22	698	4
	950	22	734	0

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Warning:

1.The fan and motor must be used within the prescribed scope of temperature and humidity otherwise it will cause an unexpected damage.

2. Fan is not set wrong connection protection，Provide the right voltage and line sequence according to the nameplate otherwise it will damage the product.

3. Wiring depends on the wiring diagram and please connect the earth ground if required. We don't suggest to use the extension cord .Any wrong connection may cause the damage of the fan.

4. Be careful when moving the fan and do not take the blades as a handle because it will cause the distortion and chatter.

5. Connect the thermostat if required otherwise it would damage the motor because of the over temperature.

6. The length of the mounting screws shall not exceed the requirement, otherwise the fan will be damaged.

7. Do not disassemble the fan arbitrarily. It may hurt the capacity of water tightness and dynamic balance or cause other serious problems.

8. The over current protector is necessary in case the damage from the over current.

9. Install the fan as required, any other installing direction would affect the service life of the product.

10. The fan with inlet ring should be installed follow the requirements or it will affect the performance.

11. Users should use the standard cable when install the fan otherwise it will affect the water tightness.

12. The fan should keep away from the children especially the blade and electric parts .And the children are not allowed to operate the fan alone.

13. Do not connect the white signal cable directly to the red signal cable or the external DC power supply. Otherwise, the fan may be damaged.T

14.Please do not perform extraction and insertion of the connector under revolution irrespective of power on and power on and power off , and the fan should not touch or move when running.

15. Do not lift the fan wire when taking the fan, and do not impact the bearing during the handling process.

16. The version change may not be notified, please ask our company for the latest version when necessary.

17.Please be informed that we are not responsible for any damage or accidents caused by violating above rules to install and operate the fan.

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Approval

CUSTOMER APPROVAL

CUSTOMER SIGNATURE:	DATE :

Product Data Confirm :

Speed Control System :

☐ PWM ☐ 0-10V ☐ Rs485

Accessories:

☐ Air Inlet Cone ☐ Pressure nozzle ☐ Custom wire length

Note :Please check and mark the data when you sign the specification sheet .

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