EC Backward Centrifugal Fan

LWBE3G280-102PS-04

Ningbo Longwell Electric Technology CO.,LTD

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Model No.:	LWBE3G280-102PS-04
Version Number:	A0
Make :	Jin
Review :	Zhong
Approvd :	Yao/Jiang
Date:	2023.07.21

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]	3270
Current :	[A]	3.1
Power input :	[W]	700
Air flow (Max) :	[m3/h]	3863
	[CFM]	2272
Static pressure (Max) :	[Pa]	1658
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 13.5 (Kg)

Electrical Protection

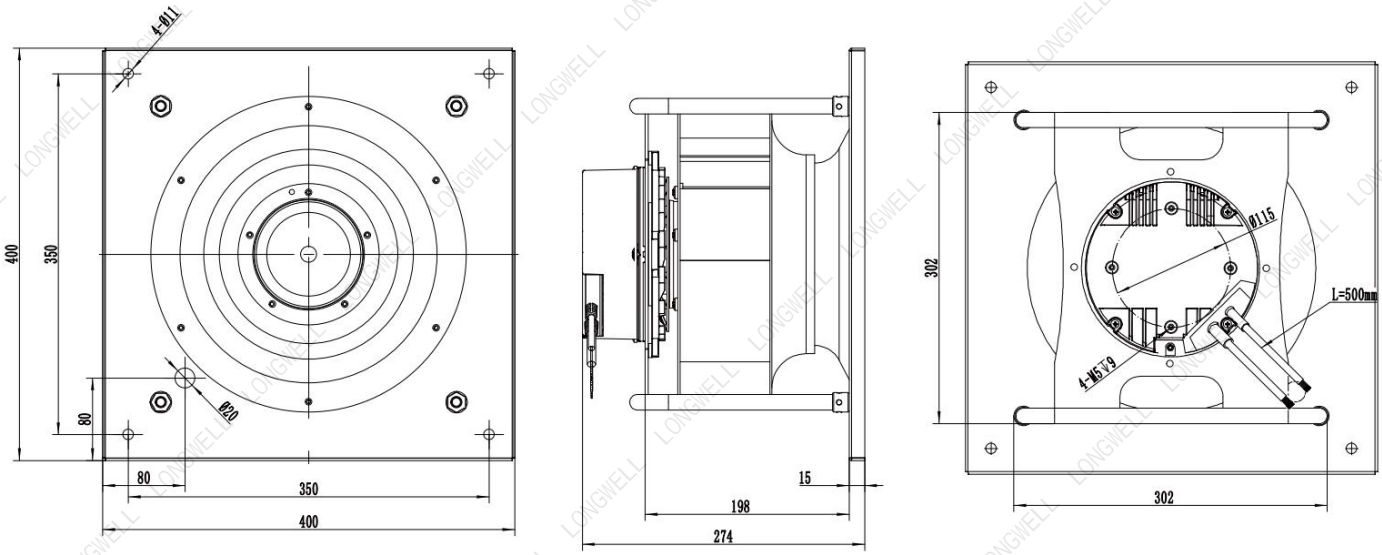
Speed Control	Control input 0~10VDC/PWM/RS485
VSP Control	Control signal VSP voltage range1VDC~9.5VDC (During normal operation, when the VSP voltage is below 0.8VDC, the motor switches from operating mode to standby mode)
PWM Control	PWM signal: frequency 1K ~ 10KHz, amplitude 10V,duty cycle 10% ~ 100% .
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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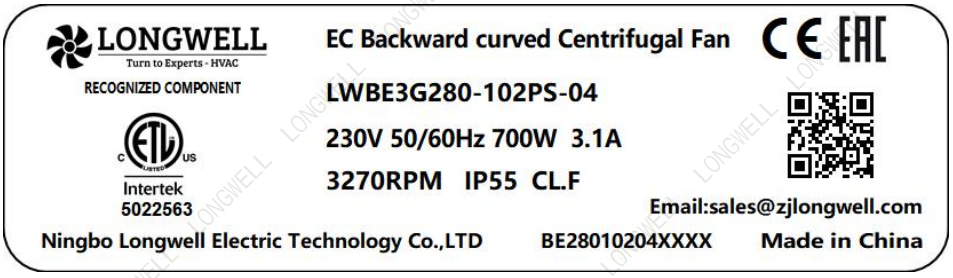
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Wiring Diagram

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

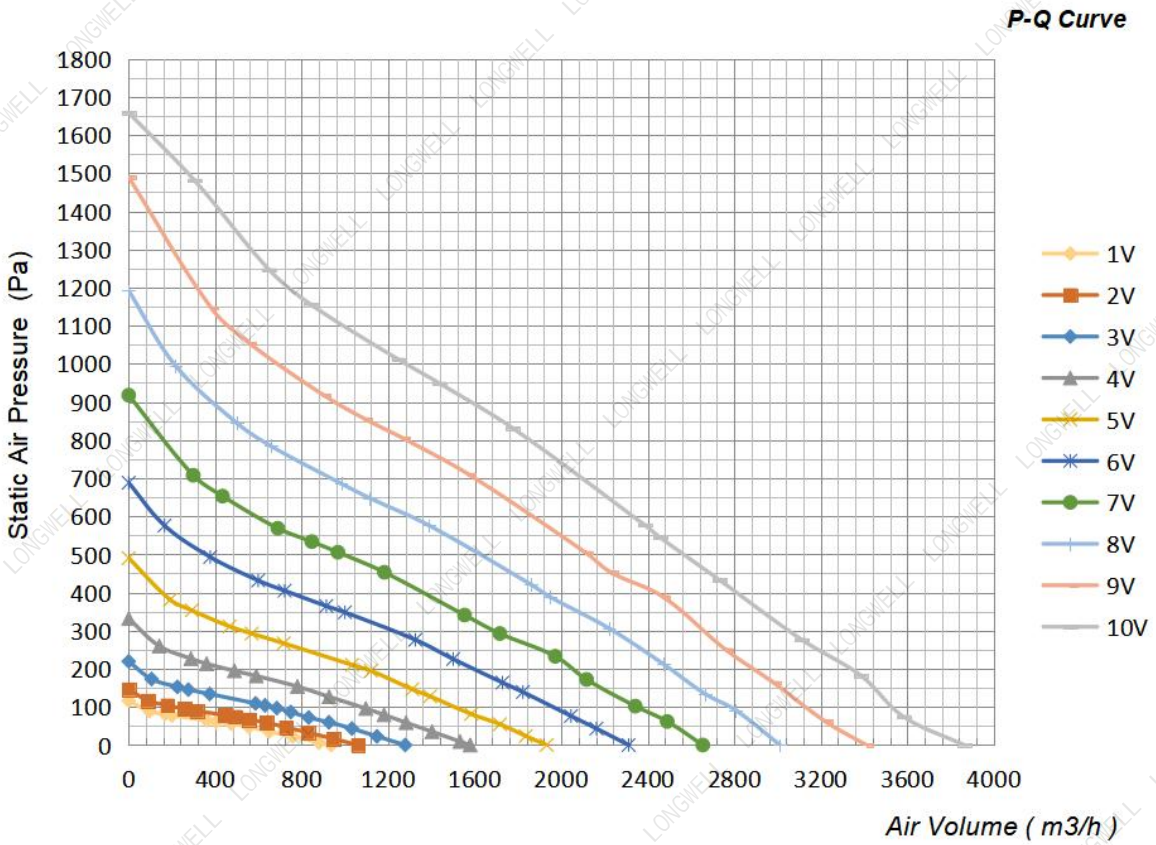
Label



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Charts :Air Flow (P-Q)



K-FACTOR=95

VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
10V	3270	636	0	1658
	3170	698	304	1481
	3130	699	650	1246
	3030	698	842	1156
	2973	699	1247	1011
	2893	700	1437	949
	2837	699	1775	831
	2760	700	2386	577
	2752	700	2458	544
	2847	700	2732	433
	2902	700	3112	276
	3017	700	3385	182
	3082	699	3583	74
	3110	700	3863	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
9V	3121	542	0	1489
	3000	544	382	1146
	2930	543	559	1054
	2855	543	901	918
	2713	543	1093	855
	2682	544	1269	804
	2582	544	1572	710
	2550	542	2113	505
	2548	544	2229	453
	2593	544	2469	389
	2695	543	2760	250
	2737	544	2981	164
	2868	544	3221	62
	2875	543	3410	0
8V	3034	391	0	1192
	2922	391	217	995
	2750	390	500	845
	2598	390	656	785
	2447	391	982	686
	2413	391	1114	648
	2313	390	1389	576
	2300	389	1859	421
	2270	389	1949	388
	2300	390	2218	307
	2417	390	2473	212
	2463	389	2666	134
	2503	390	2806	92
	2585	390	3012	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
7V	2805	268	0	918
	2467	270	298	708
	2365	269	434	653
	2230	269	689	569
	2147	269	846	534
	2117	269	967	506
	2048	269	1182	453
	1985	269	1553	341
	2020	268	1716	293
	2042	268	1972	233
	2077	269	2117	172
	2147	269	2342	102
	2182	269	2490	62
	2283	269	2654	0
6V	2400	180	0	688
	2223	180	166	576
	2083	180	377	493
	1937	180	599	432
	1880	181	721	405
	1810	179	914	365
	1800	179	1000	348
	1762	180	1325	276
	1730	181	1500	226
	1787	179	1728	164
	1820	181	1823	139
	1888	179	2045	76
	1905	180	2163	43
	1960	179	2311	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
5V	2025	115	0	490
	1808	113	192	381
	1753	115	292	353
	1655	114	467	311
	1613	113	569	293
	1553	114	717	267
	1508	113	1033	210
	1512	114	1120	195
	1483	114	1311	146
	1503	113	1393	128
	1562	115	1584	81
	1608	113	1717	55
	1647	114	1836	24
	1658	114	1932	0
4V	1678	70	0	332
	1510	69	142	260
	1418	69	288	227
	1375	69	360	213
	1307	70	489	195
	1277	70	590	181
	1255	70	780	153
	1222	70	926	127
	1223	71	1096	96
	1250	70	1181	79
	1288	69	1283	59
	1323	70	1403	35
	1360	70	1532	9
	1377	70	1579	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
3V	1350	43	0	219
	1232	42	106	173
	1145	44	225	152
	1122	44	276	145
	1072	44	375	134
	1025	43	586	109
	1033	43	630	104
	1032	42	685	97
	1017	43	749	87
	1008	42	832	72
	1028	43	926	60
	1052	43	1032	43
	1082	43	1148	23
	1137	42	1278	0
2V	1105	29	0	146
	1017	29	89	116
	955	29	179	104
	913	27	258	95
	893	28	315	90
	863	28	444	78
	857	28	492	74
	843	29	556	67
	845	28	637	59
	828	29	727	46
	865	28	828	33
	900	28	945	16
	938	27	1060	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
1V	987	24	0	116
	880	23	96	89
	852	22	167	81
	837	22	201	77
	767	24	360	65
	758	23	404	61
	763	23	475	56
	748	23	555	47
	758	23	649	35
	777	22	758	23
	815	23	880	6
	832	24	936	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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