EC Backward Centrifugal Fan

LWBE3G310-102PT-09

Ningbo Longwell Electric Technology CO.,LTD

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Model No.:	LWBE3G310-102PT-09
Version Number:	A0
Make :	Jin/Pan
Review :	Zhong
Approvd :	Yao/Jiang
Date:	2023.07.05

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]	380
Voltage Range :	[VAC]	304~456
Frequency :	[Hz]	50/60
Speed :	[rpm]	3000
Current :	[A]	1.8
Power input :	[W]	1100
Air flow (Max) :	[m3/h]	5150
	[CFM]	3029
Static pressure (Max) :	[Pa]	1730
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
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 14 (Kg)

Electrical Protection

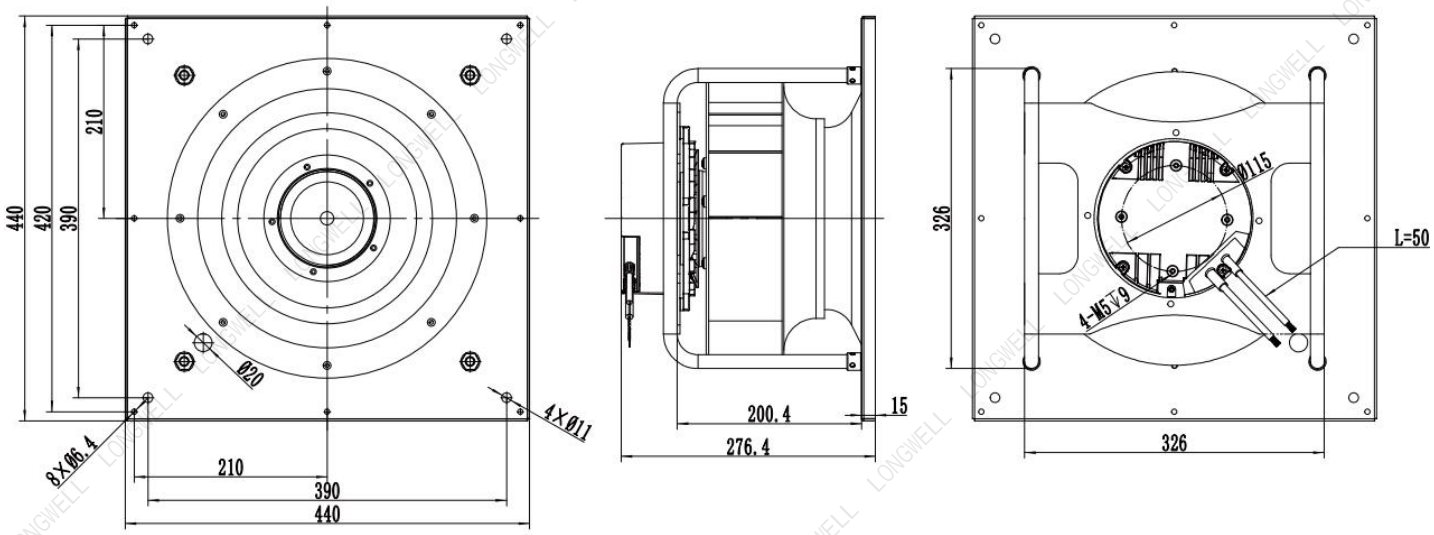
Speed Control	Control input 0~10VDC/PWM/RS485
VSP Control	Control signal VSP voltage range1VDC~9.5VDC (During normal operation, when the VSP voltage is below 0.8VDC, the motor switches from operating mode to standby mode)
PWM Control	PWM signal: frequency 1K ~ 10KHz, amplitude 10V,duty cycle 10% ~ 100% .
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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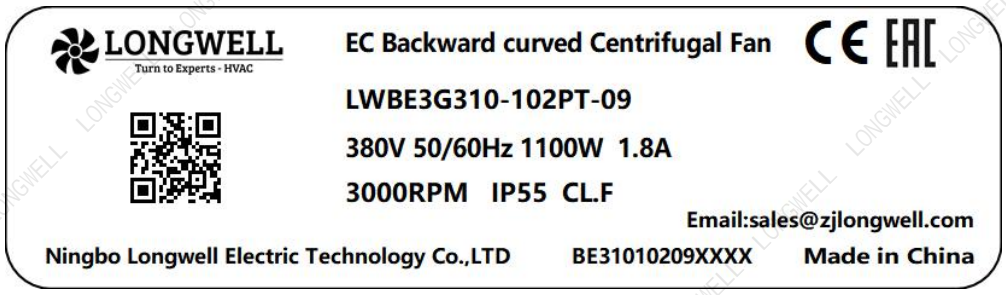
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LWBE3G310-102PT-09

Wiring Diagram

L	Color	Function	Functional description
L1	Blue	L1	Three-phase power supply terminalVoltage
	Brown	L2	
	Black	L3	
	Yellow/Green	PE	Ground lead
	White	NC	Status relay, normally turn-off; break with error
	Gray	COM	The normally closedterminal of the relay is closed with COM during normal operation or not poweredon,when the fan fails,it is disconnected from COM.
L2	Red	+10VDC	Fixed voltage output 10VDC,≦10mA
	Blue	GND	Ground reference end of control signal
	Yellow	Speed Control	Speed regulation signal input terminal,0-10VDC voltage /PWM
	White	FG	Speed feedback pulse output
	Brown	RS485A	Bus connection RS485; RSA;MODBUS RTU
	Gray	RS485B	Bus connection RS485; RSB;MODBUS RTU

Label

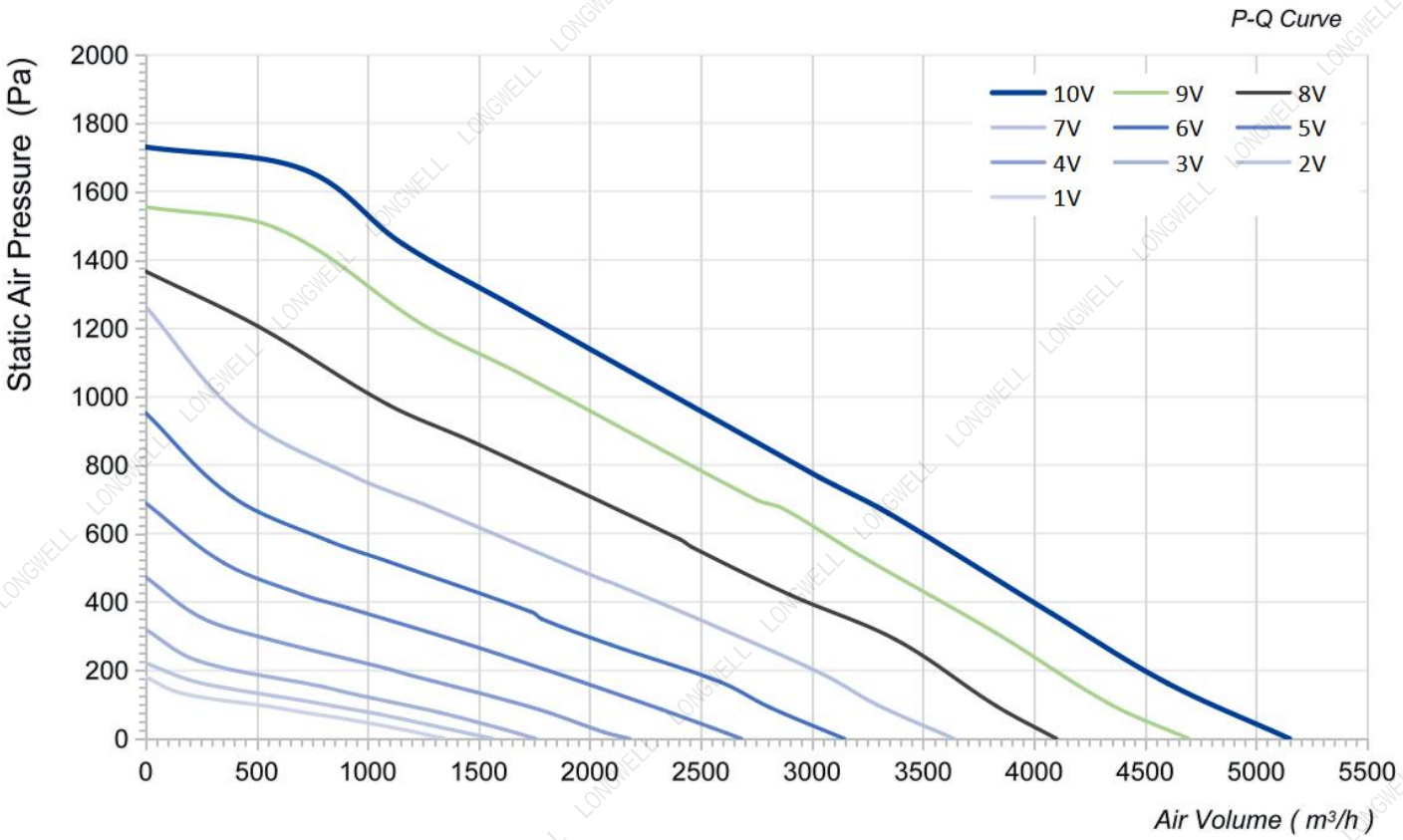


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Charts :Air Flow (P-Q)



K-FACTOR：199

VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
10V	3867	1100	0	1730
	3435	1100	708	1666
	3227	1100	1157	1447
	3037	1100	1647	1268
	2848	1100	3033	764
	2873	1100	3101	742
	2858	1100	3345	659
	2968	1100	4078	367
	3177	1100	4602	162
	3242	1100	5150	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
9V	3718	939.0	0	1555
	3295	939.0	587	1494
	2998	939.0	1257	1207
	2825	939.0	1684	1068
	2730	939.0	2751	698
	2700	939.0	2868	674
	2743	939.0	3219	535
	2867	939.0	3831	308
	2968	939.0	4345	100
	3075	939.0	4696	0
8V	3363	678.0	0	1367
	2930	678.0	506	1206
	2680	678.0	1093	976
	2575	678.0	1476	867
	2438	678.0	2406	583
	2415	678.0	2462	559
	2478	678.0	2899	421
	2553	678.0	3378	289
	2672	678.0	3827	97
	2698	678.0	4101	0
7V	2982	474.0	0	1264
	2618	474.0	436	940
	2357	474.0	950	763
	2253	474.0	1265	682
	2148	474.0	2032	472
	2157	474.0	2121	450
	2198	474.0	2608	316
	2282	474.0	3055	186
	2342	474.0	3297	98
	2423	474.0	3640	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
6V	2592	315.0	0	953
	2278	315.0	392	707
	2047	315.0	826	578
	1978	315.0	1087	519
	1870	315.0	1740	370
	1867	315.0	1786	349
	1875	315.0	2097	274
	1967	315.0	2587	166
	2003	315.0	2810	92
	2095	315.0	3145	0
5V	2203	204.0	0	689
	1922	204.0	352	514
	1758	204.0	706	421
	1692	204.0	913	382
	1602	204.0	1426	281
	1602	204.0	1843	193
	1660	204.0	2047	147
	1703	204.0	2323	85
	1763	204.0	2610	18
	1782	204.0	2682	0
4V	1813	120.0	0	473
	1610	120.0	250	354
	1467	120.0	538	294
	1330	120.0	1081	206
	1313	120.0	1187	186
	1328	120.0	1347	160
	1347	120.0	1572	122
	1385	120.0	1800	79
	1457	120.0	2066	19
	1485	120.0	2178	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
3V	1492	75.0	0	319
	1288	75.0	237	228
	1108	75.0	802	151
	1097	75.0	919	133
	1103	75.0	1098	108
	1140	75.0	1325	76
	1192	75.0	1598	30
	1228	75.0	1756	0
2V	1248	48.0	0	221
	1118	48.0	200	171
	1038	48.0	379	146
	948	48.0	711	111
	930	48.0	842	96
	933	48.0	1046	72
	977	48.0	1271	41
	1035	48.0	1562	0
1V	1132	36.0	0	180
	985	36.0	161	133
	872	36.0	560	94
	852	36.0	697	78
	858	36.0	909	57
	903	36.0	1165	26
	948	36.0	1347	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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