EC Backward Centrifugal Fan

LWBE3G190-072NS-06 A1

Ningbo Longwell Electric Technology CO.,LTD

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Model No.:	LWBE3G190-072NS-06
Version Number:	A0
Make :	HE
Review :	Zhong
Approvd :	Yao/Jiang
Date：	20220322

技术专用

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]	4100
Current :	[A]	1.3
Power input :	[W]	170
Air flow (Max) :	[m3/h]	973
	[CFM]	572
Static pressure (Max) :	[Pa]	1009
Noise level (LpA):	dB(A)	72
Max.ambient Temp :	℃	60
Min.ambient Temp :	℃	-25
Insulation Class :		Class B
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	PA6+GF30% （Impeller）
Bearing	Maintenance-free deep groove ball bearings
Weight	APPROX 1.75 (Kg)

Electrical Protection

Speed Control	Control input 0~10VDC/PWM
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：2 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 <10 seconds to full speed
Serial Communication	/

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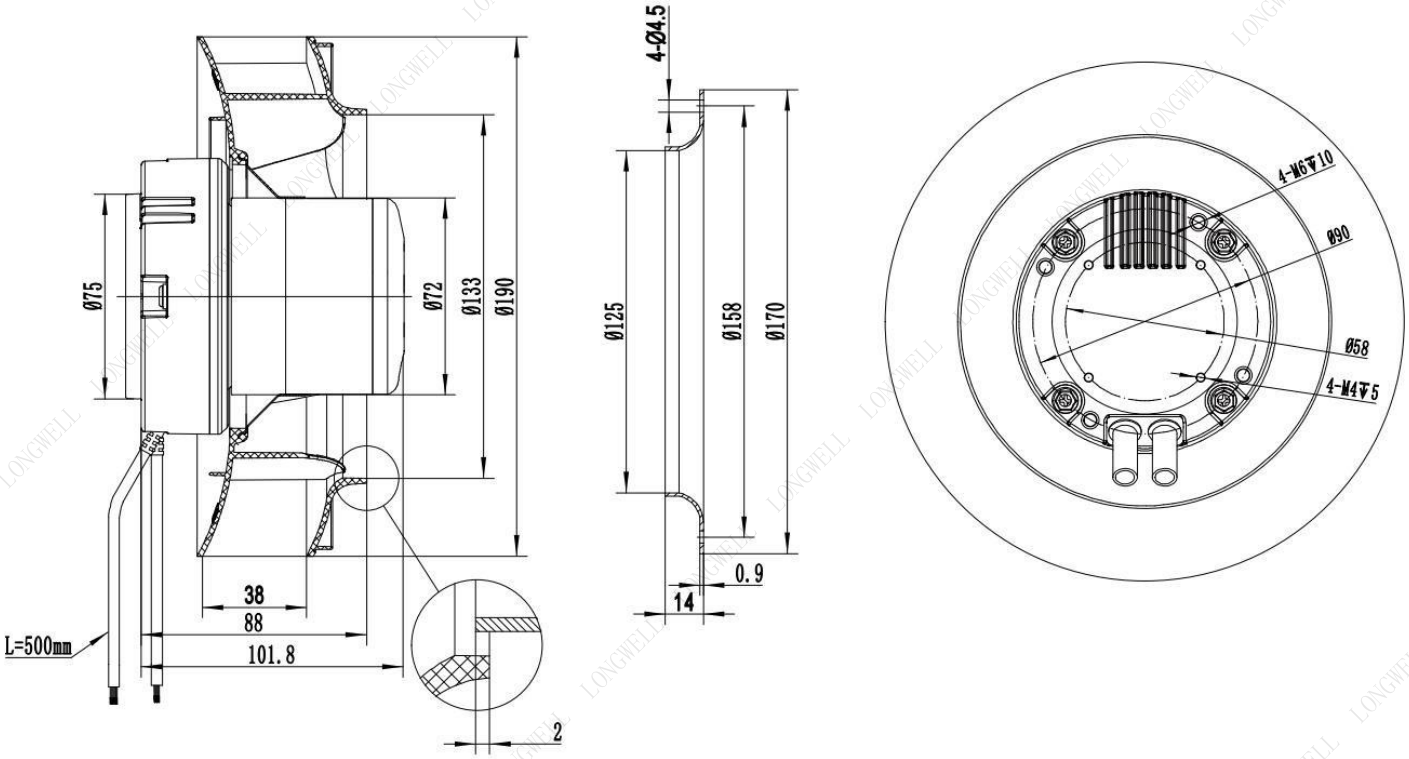
Product Drawing



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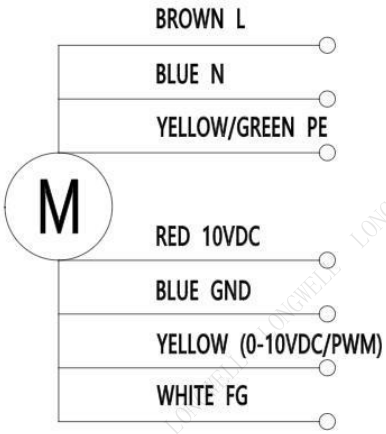
Wiring Diagram



L	Color	Function	Functional description
L1	Brown	L	Live line
	Blue	N	Naught line
	Yellow/Green	PE	Ground lead
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

Label

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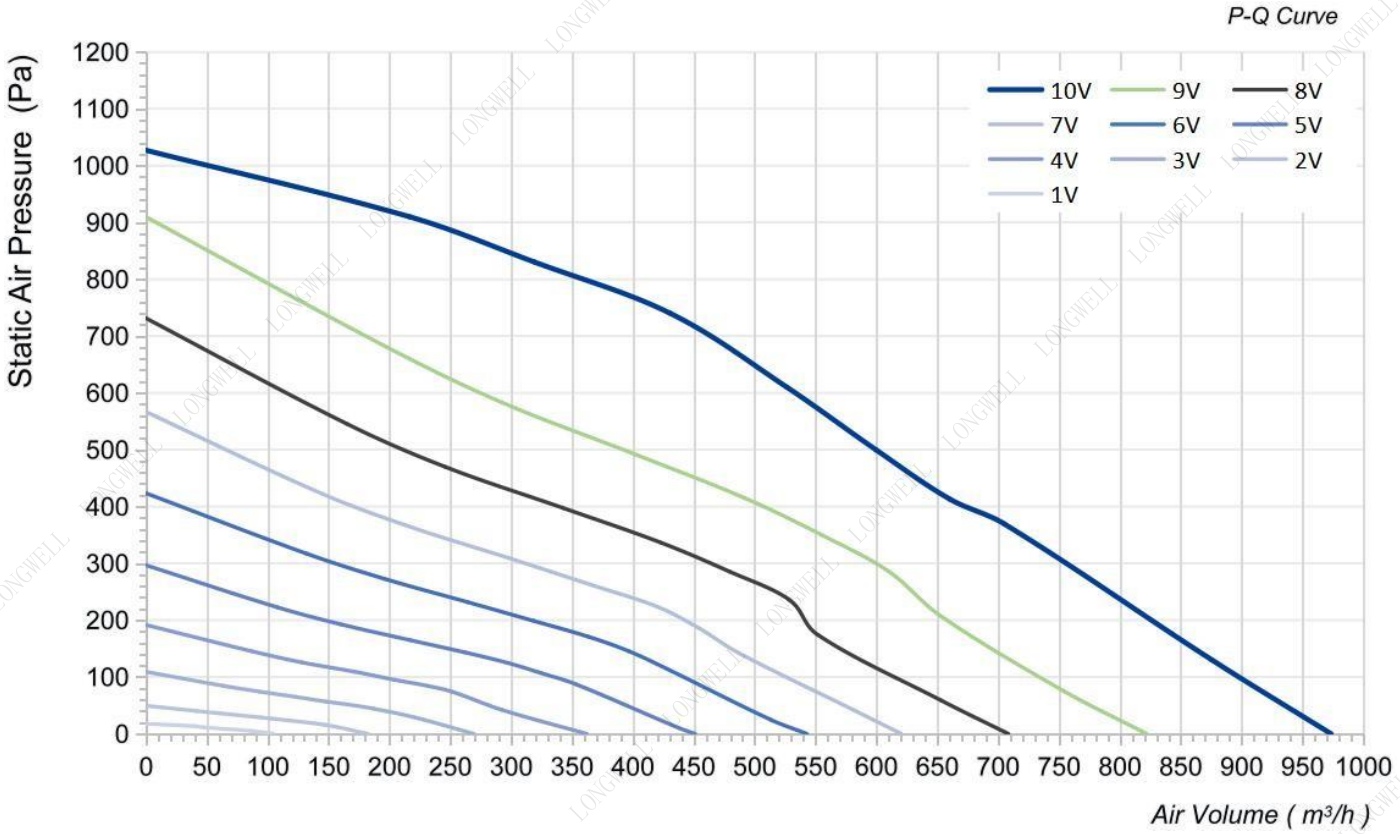
Charts :Air Flow (P-Q)



K-FACTOR=41

VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
10V	4850	169	0	1009
	4333	169	216	910
	4221	169	319	830
	4217	169	431	740
	4271	169	526	610
	4342	169	599	500
	4342	169	660	413
	4296	169	705	370
	4396	169	876	130
	4550	168	973	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
9V	4517	138	0	909
	4042	138	198	680
	3908	138	292	583
	3904	138	401	492
	3942	139	492	415
	4000	138	556	349
	4054	139	610	286
	4033	138	653	207
	4133	138	754	75
	4200	138	822	0
8V	4050	100	0	731
	3625	100	165	546
	3525	100	246	470
	3492	101	342	398
	3538	101	422	337
	3567	102	479	285
	3638	100	528	236
	3579	101	552	174
	3692	101	653	59
	3746	101	708	0
7V	3579	71	0	567
	3175	70	145	422
	3067	69	218	364
	3071	71	300	308
	3083	70	366	262
	3117	70	420	224
	3163	70	454	186
	3154	71	487	142
	3250	70	583	40
	3254	71	620	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
6V	3079	48	0	423
	2750	47	132	317
	2650	47	195	273
	2667	48	264	232
	2679	48	318	199
	2683	47	363	171
	2717	48	397	145
	2746	48	428	114
	2804	48	513	25
	2804	48	543	0
5V	2563	31	0	297
	2292	31	108	222
	2221	31	160	193
	2213	31	217	165
	2233	31	262	143
	2246	31	297	125
	2275	31	324	107
	2296	31	353	88
	2346	31	438	10
	2371	31	451	0
4V	2054	18	0	192
	1854	18	87	145
	1813	19	128	126
	1792	19	171	109
	1788	18	205	95
	1808	19	231	84
	1804	19	251	74
	1813	19	292	42
	1879	18	362	0

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VSP	Speed(RPM)	Power input(W)	Airflow(m^3 /h)	Static pressure(Pa)
3V	1558	11	0	109
	1408	12	63	84
	1375	11	93	74
	1363	11	123	65
	1346	12	148	57
	1358	11	166	52
	1371	11	187	44
	1379	12	221	29
	1425	11	269	0
2V	1029	7	0	49
	958	8	41	40
	946	6	60	36
	933	7	80	32
	925	7	94	29
	925	7	103	27
	942	7	148	15
	971	7	182	0
1V	683	5	0	18
	592	5	22	15
	579	5	32	14
	583	5	40	13
	554	5	47	11
	563	5	86	5
	575	4	105	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 :
2025/03/04

Product Data Confirm :

Speed Control System :

☑ PWM ☑ 0-10V

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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