Specification For Approval

Customer			
Description	EC fan		
Customer Part number			
Delta Model Number	GTMB63NBV51R		
Safety Model Number			
Issue Date	2025/05/21	Version	00

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

Approved by : _____

Date : _____

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GTMB63NBV51R

Electronically Commutated (EC) Fan

Centrifugal Fan
730 x 730 x 587 mm

GTMB63NBV51R Delta Datasheet
sales@fansco.com
www.fansco.com

Technical features

Input Power	
Nominal Voltage	3~400Vac, 50/60Hz
Voltage Range	3~380Vac-480Vac
Power@ Free air / Max Load	2645W / 5200W
Max. Current	8.78A
Fan Performance	
Max. Rotation Speed	1770 RPM
Max. Airflow (Qmax)	19419 CMH / 11423 CFM
Max. Air pressure (Pmax)	1628 Pa / 6.53 inAq
Noise @ Qmax (Lp@1m inlet)	84.5
Control Signals	
0-10V_{DC} / PWM / Current 4-20mA	
RS485 control bus 《MODBUS (V2.1) RTU / 19200 8N1》	
Output Signals	
Output +10V_{DC} (±10%), max. 10mA	
Voltage / Current monitoring / Alarm relay	
Protections / Functions	
Locked rotor protection	
Abnormal voltage protection	
Over temperature protection	
Initiating start-up while in reverse rotation < 800rpm	
Soft Start (0 to 100% speed around 30 Secs)	

Mechanics	
Rotation Direction	☑ CW ☐ CCW , Seen on rotor
Weight	90 Kg
Electrical Leads	☐ Cable ☑ Via terminal block
Bearing System	Maintain-free ball bearings
Residual Balance	G2.5 (ISO1940)
Vibration	BV-3 (ISO14694)
Environment	
Operating Range	-25~+40 °C, 0~95%RH
Storage Range	-40~+70 °C, 0~70%RH
Ingress Protection	IP55
Life (L10)	60,000 hrs@40 °C,15~65 %RH
Altitude	<1,000m
Regulations	
Safety Approval	☐ UL/cUL ☐ CE ☐ UKCA ☐ CCC ☐ AMCA
EMS (immunity)	EN61000-6-2
- Surge immunity	L-L 2KV,2Ω / L-PE 4KV,12Ω
EMI (emission)	EN61000-6-3
- Conducted emission	Class A (in progress)
- Radiated emission	Class A (in progress)
PFC	Active, THDi<5% at full loading
Protection Class	Class I equipment (EN 61140)
Leakage Current	Lower than 3.5 mA (IEC60990)
Motor Insulation Class	Class F (155°C)
ErP Directive	(EU) No 327/2011 (Erp 2015)

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

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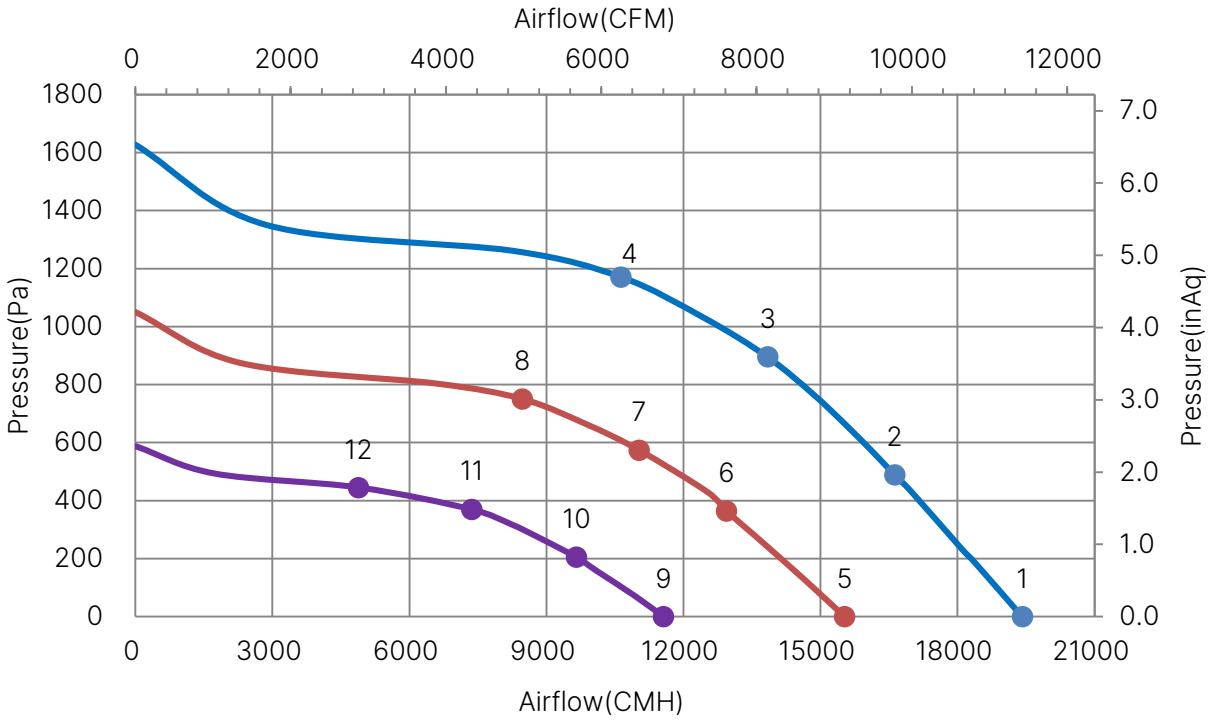
P & Q curves



	P	Q	N	P1	I	Lp
	[Pa]	[CMH]	[R.P.M.]	[W]	[A]	[dB(A)]
1	0	19419	1772	2645	3.94	84.5
2	490	16623	1772	4133	6.13	
3	896	13841	1772	5020	7.44	
4	1171	10630	1771	5265	7.83	
5	0	15528	1425	1385	2.10	79.0
6	364	12942	1425	2226	3.32	
7	574	11028	1425	2601	3.87	
8	750	8468	1425	2710	4.03	
9	0	11562	1068	627	1.06	71.5
10	205	9654	1068	987	1.54	
11	370	7363	1068	1177	1.81	
12	445	4884	1068	1128	1.74	

Erp Directive		
	Actual	Req. Erp2015
Overall Eff (%)	70.7	58.9
Eff. Grade N	73.8	62
Power (kW)	5.02	
Air Flow (CMH)	13841	
Pressure (Pa)	896	
Speed (RPM)	1772	

Test Condition :

Test method refers to ISO5801 (air density of 1.15 kg/m³)
Input Voltage : Nominal Voltage

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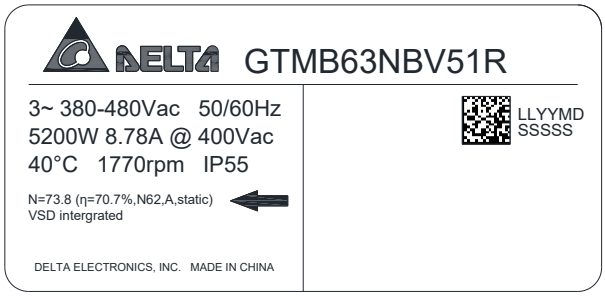
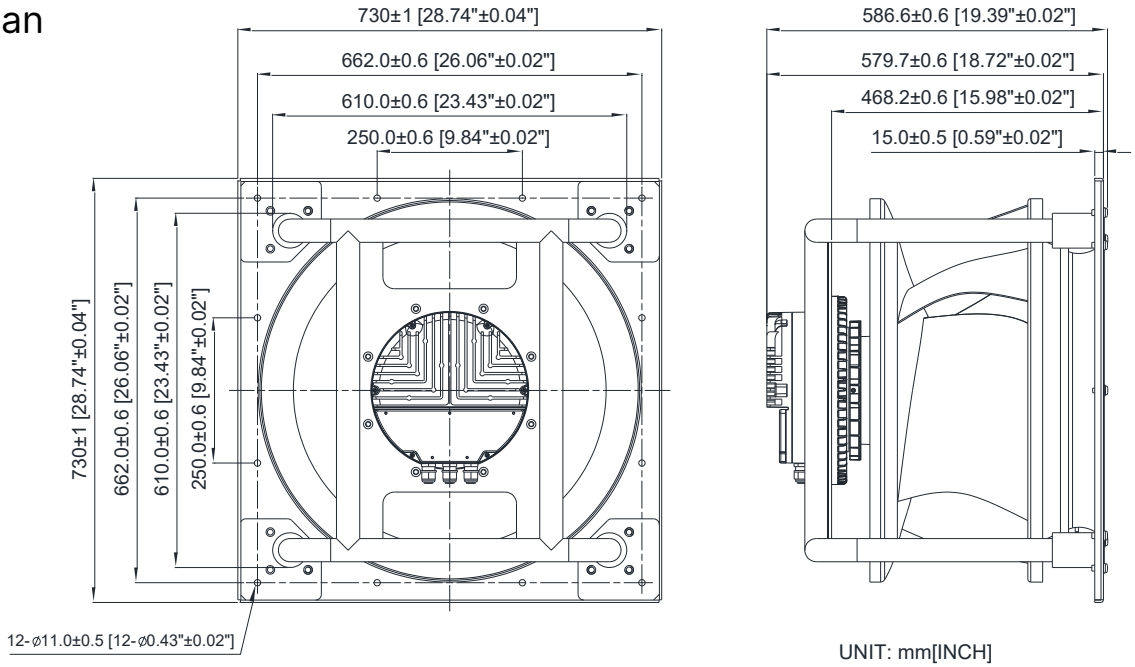
Dimension Drawing

Label



Fan



Note :

1. With 3 Cable Glands (M20 x 1.5), Please refer to the Appendix for details regarding the suitable cable diameter and screw torque.
2. Materials :

Impeller	Aluminum Sheet
Motor electrical housing	Aluminum
Motor wiring cover	Aluminum
Bracket	Steel sheet and pipe with painting
Nozzle	Steel with painting

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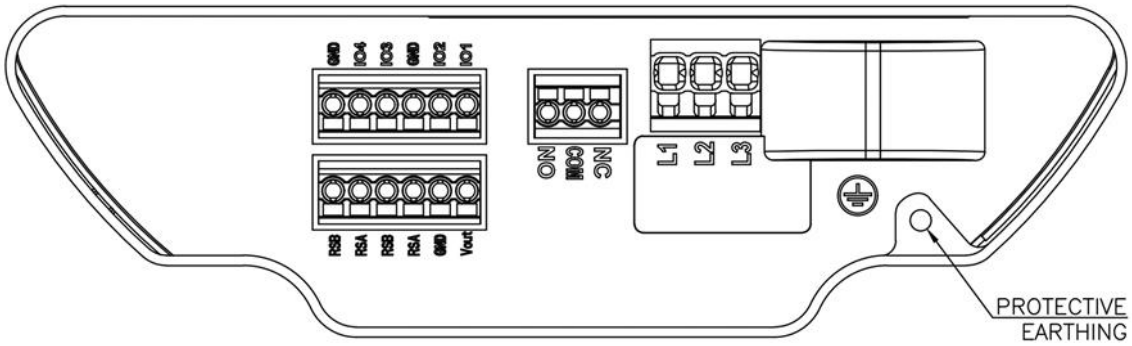
Definition of terminal box



Text		Functions			
Power	L1	AC main (3~ 380-480VAC)			
	L2	AC main (3~ 380-480VAC)			
	L3	AC main (3~ 380-480VAC)			
Status	COM	Alarm relay (2A/250VAC)		Normal	Abnormal
	NC		NC-COM	Close	Open
	NO		NO-COM	Open	Close
I/O Signals	RSB	RS485-B			
	RSA	RS485-A			
	RSB	RS485-B			
	RSA	RS485-A			
	GND	Ground			
	Vout	+3.3-24V/800mW output (default: +10V)			
	GND	Ground			
	IO4	Control voltage output 0-10VDC			
	IO3	Speed control, input 0-10VDC/PWM			
	GND	Ground			
	IO2	Speed control, input 4-20mA			
	IO1	Frequency generator (FG) signal			

Wire end condition	Power	Status & IO
Wire stripping length	13mm	9mm
AWG	10-24	12-26
Solid conductor	0.2-4mm^2	0.2-2.5 mm^2
Stranded conductor	0.2-4mm^2	0.2-2.5 mm^2
Ferrule without insulation	0.25-4mm^2	0.25-2.5 mm^2
Ferrule with insulation	0.25-4mm^2	0.25-1.5 mm^2
operation screwdriver head size 0.5mmx3mm		
* Please note the range provided only takes into account the compatibility between the terminal and wire. Users should also consider the current limitation associated with usage scenarios to ensure safety.		

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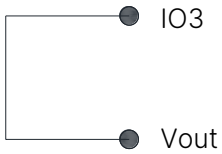
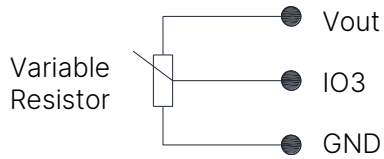
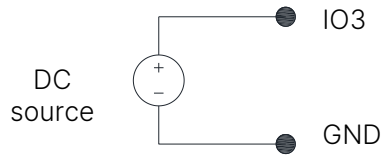
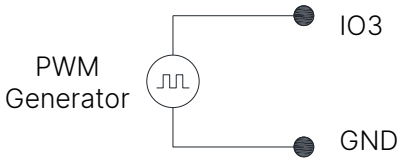
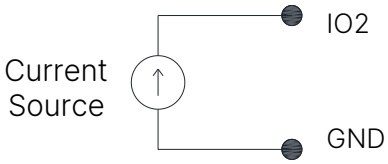
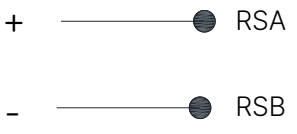
Control and Signals

Diagram	Note
Full speed control 	By shorting Vout & IO3, the fan will run at full speed.
Variable resistor control 	Connect a 1-10kΩ variable resistor between Vout with GND and IO 3 (0-10V/PWM). The fan speed can be controled by adjusting the resistance of the variable resistor.
Voltage control 	Employ a 0~10V_{DC} source DC+ connect to IO 3 (+) DC- connect to GND (-) The fan speed can be controlled by voltage.
PWM duty control 	Employ a PWM generator amplitude 3.3~24V_{DC}, frequency range 100Hz~100kHz The fan speed can be controlled by varying the PWM duty. -PWM duty higher than 15%, fan start up -PWM duty lower than 5%, fan stop
Current control 	Employ a 4~20mA current generator I+ connect to (IO2) I- connect to GND (-) Leave 0-10V/PWM PIN open - 4.0 mA → Fan Stop - 6.0 mA → Fan Start up - 19.5 mA → Maximum Speed
RS485 control (can be used for status monitor purpose only) 	• Control mode selection (speed, fixed speed or fixed PWM duty) • Speed and power consumption monitor • Multiple FANs control and status patrol *To ensure better communication quality, shielded MODBUS over Serial Line Cable is required. At one end of each cable, its shield must be connected to protective ground.

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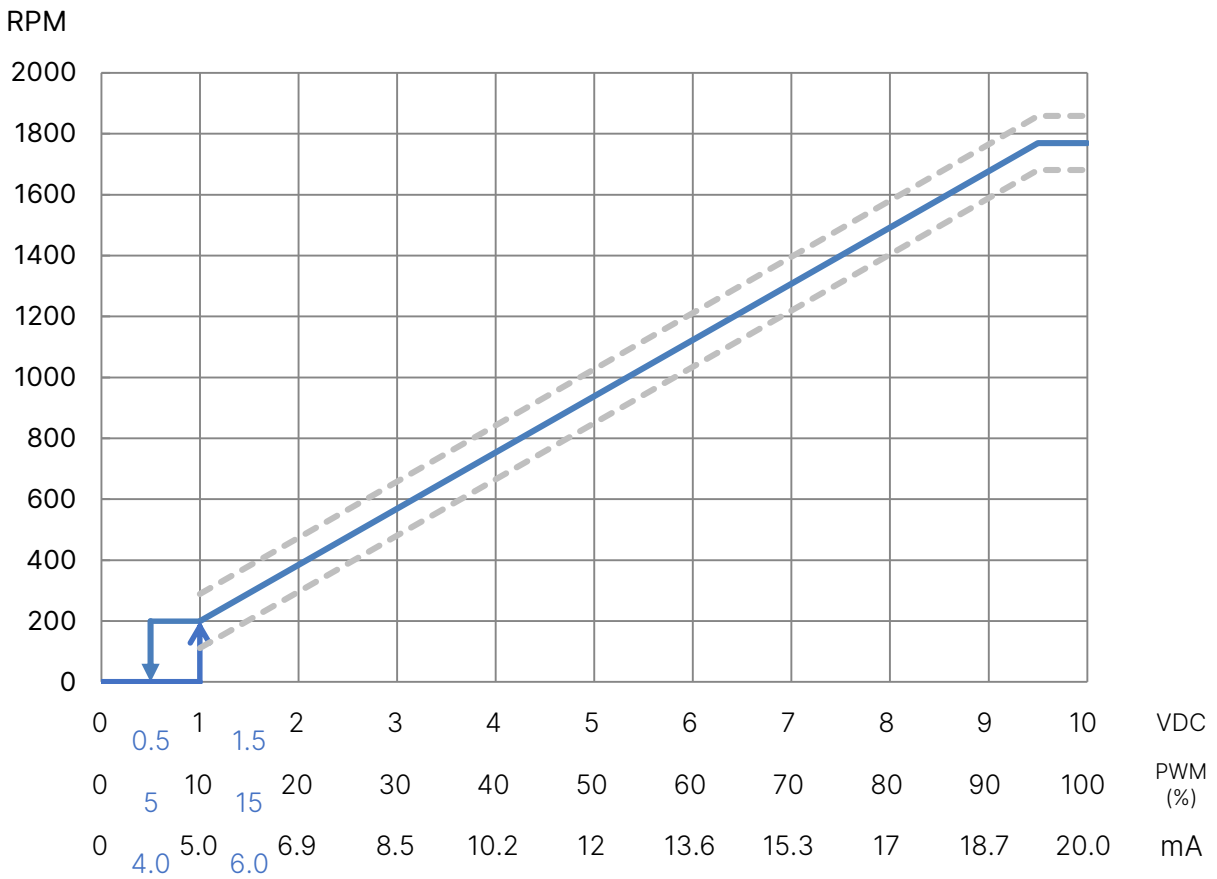
Control Curve



Note:

rpm tolerance, ± 5% of maximum speed
If the fan operates under the following situations, its speed may drop below the specified lower bound:

1. When the input voltage is lower than the rated range.
2. If the fan's power reaches its maximum limit.
3. When the surrounding temperature exceeds the specified limit.

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Appendix : Safety Instruction

Attention!!

Please carefully read and follow the instructions to ensure the correct installation and operation of the fan and to prevent any damage to personnel or machinery.

Scope to use

- The fan is intended solely for air movement and heat dissipation within the system and should not be utilized for any other purposes. Please refrain from using it outside of the designated system.
- **Avoid using the fan in the following scenarios unless the specifications sheets specifically meet the requirement.**
  a. Environments prone to corrosion, flammable gases and liquids, floating dust, and metal particles.
  b. Environments experiencing significant vibrations during transportation and installation.
  c. Medical equipment or equipment vital for life safety.

Basic safe regulation

- Only qualified professional staff are permitted to install, repair, and maintain the fan. Non-technical individuals should be prevented from undertaking these actions.
- If the fan exceeds 10 kg in weight, it is recommended to have it handled by two persons or to utilize a lifting machine for its movement and installation.
- Modification of internal parts or circuits of the fan by oneself, as well as disassembling the fan into separate components for individual use, is strictly prohibited.
- Applying additional painting or coating onto the fan is prohibited.
- Improper installation may result in damage to the fan.
- It is necessary to perform routine maintenance checks.

Safety check

Risk of electric shock

- If defects are detected in the connecting components or cables during installation or routine inspections, it is crucial to replace them promptly.
- When working with live equipment, please ensure to stand on an insulated surface, such as a rubber mat or wear insulating shoes, to reduce the risk of electric shock.
- Before conducting maintenance, please ensure to switch off the fan power and wait for five minutes to allow complete discharge, minimizing the risk of electric shock.
- Although the fan body features basic insulation protection, there remains a potential risk of electrification under abnormal conditions. It is advisable to use testing instruments to verify safety before operation.
- If the fan body is equipped with a terminal box, ensure that the top cover of the box is correctly installed prior to powering on the fan.
- A grounding check is mandatory before usage. The cross-sectional area of the ground wire must not be less than 0.75mm² (minimum 18AWG).

Risk of physical injury

- The system must have sufficient structural integrity to support the operation of the fan, and it is recommended to use screws equipped with anti-loosening mechanisms for fan installation. The distance between the fan and surrounding components should be no less than 25mm.
- Before conducting maintenance, it is crucial to deactivate the power and wait for the equipment to be completely stopped. Ensure the fan remains inactive throughout the maintenance period, and clear all materials after completion.
- Upon powering on, the fan may start operating immediately due to control voltage or stored speed settings. Therefore, please ensure that individuals and objects maintain a safe distance from the fan.
- If there is a risk of individuals coming into contact with the fan blades, it is strongly recommended to install a protective guard or cover. These protective measures must comply with relevant safety regulations.
- Exercise caution to prevent long hair or loose clothing from becoming entangled in the fan, potentially resulting in injury.
- Personnel are advised to wear appropriate gloves and footwear to minimize the risk of cuts and impacts.

Others risks

- The fan motor generates heat during operation, posing a potential burn risk to individuals. It is advisable to install a safeguard if necessary, and nearby components should be able to tolerate this heat.
- During fan operation, high decibel levels may be generated, posing a risk of hearing damage to operators. It is advisable to implement soundproofing or protective mechanisms to mitigate this risk.
- Please ensure that the entire setup adheres to EMC standards, and apply appropriate shielding to the system.

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Appendix : Storage / transportation / maintenance

Storage and transportation

- Refer to the datasheet for the suitable ambient temperature range for storage, avoid storing in environments with long-term high relative humidity (higher than 60% RH); ensure that the storage environment is well-ventilated.
- It is recommended to store or transport using the original packaging and pallet. Ensure that the packaging remains intact, avoid any collisions or impacts.
- The total height of stacked pallets should not exceed 2.5 meters.
- Avoid storing the fan in environments containing corrosive gases and liquids
- Avoid storing the fan in areas exposed to direct sunlight or prone to vibration.
- If the fan is stored within a system, ensure the wiring cover and cable gland are installed properly. If the system is stored outdoor, the fan is better to be shielded.
- The fan may contain an electrolytic capacitor. It is recommended to power it on at least once every 12 months and run the fan for at least 60 minutes to prevent capacitor degradation.

Regular Maintenance Inspection Items

Recommended Maintenance Inspection Interval : Every 6 Months

Inspection items	Inspections method
If conditions on-site permit inspection during system operation, assess for any abnormal noise or vibration. Inspectors should stand in a secure position and adhere to all safety regulations.	Visual inspection/ Related equipment
Check the ambient temperature and humidity surrounding the fan are within the range of specified.	Related equipment
Check the input voltage and control voltage are normal.	Related equipment
Inspect the vicinity of the fan for any foreign objects or potentially hazardous materials that could enter the fan's operational space and induce hazards.	Visual inspection
Inspect for any abnormal conditions in the vicinity of the fan, such as the presence of oil or water droplets, or any odors indicative of burning.	Visual inspection/ Odor inspection
Check if there is any dust or foreign objects obstructing the air intake and exhaust sides of the system	Visual inspection
Inspect for any fasteners or cables that may have loosened.	Visual inspection/ Torque confirmation
Inspect the fan body and cables for any indications of deformation, cracks, damage, aging, or discoloration.	Visual inspection
Inspect whether the fan body is covered with dust, as this may affect fan’s heat dissipation.	Visual inspection

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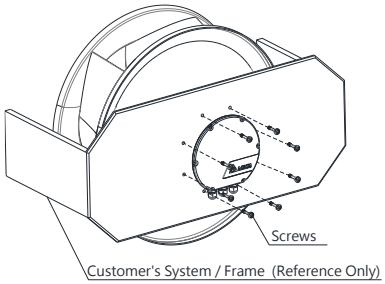
Appendix : Installation Guide

Fan installation

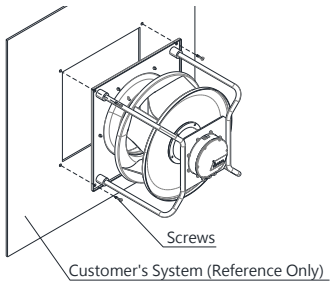
Before installation, please carefully read the **Safety Instructions**. If any anomalies are detected during the unpacking process, such as dents, cracks, or fragments, refrain from using the fan and promptly notify the Delta contact window for further assistance. Generally, there are two installation scenarios: one for installing a single fan and the other for installing a fan with a frame or bracket. Please refer to the following instructions for detailed guidance accordingly. During installation, avoid using the fan blades as lifting points.



Single Fan

The fastening holes are primarily located behind the EC motor. The PCD (Pitch Circle Diameter), thread type, and thread depth can be referenced from the model specifications. If necessary, the cable gland may be removed during the installation process and then reattached once the fan is securely positioned. If the fan operates with a nozzle, please ensure proper concentric alignment and relative positioning. Recommended using Class 8.8 screws with torque values as listed below, and the engagement length >1.5d is suggested.

M5 52Kgf.cm / M6 90Kgf.cm
M8 216Kgf.cm / M10 430Kgf.cm
(Torque tolerance ±10%)

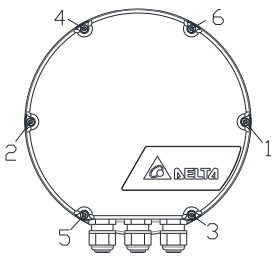


Fan with Frame/bracket

The fastening holes are primarily situated on the frame/bracket. The quantity, size, and positioning of installation holes may vary depending on the customer's specific installation system.

Wiring cover installation (models with terminal box only)

Please adhere to the instructions provided below for the correct installation of the motor cover, as improper installation may result in water ingress and subsequent damage to the fan. Any damage incurred due to inadequate installation will not be covered under warranty. The appearance of the cover may vary among models. Nevertheless, the installation procedures and principles remain consistent.



M4 Screw Torque
1st round 10 Kgf.cm
2nd round 17 Kgf.cm
(Torque tolerance ±10%)

Guideline & Steps :

When tightening the screws, it is crucial to do so in two stages with different torque settings. This ensures even stress distribution across the motor cover and helps prevent deformation.

STEP 1:

After properly positioning the motor cover, tighten the screws in a diagonal sequence (for example, in the order of 1, 2, 3... as illustrated above), following the first round torque values and order of tightening.

STEP 2:

Tighten the screws again in the same sequence according to the second round torque.

Notes:

Avoid tightening all screws directly to the target value, as this may compromise the fan's waterproofing.
Upon completion, please inspect the cover for any misalignment or gaps. Should any such issues be detected, please reinstall the cover. If the above problems persist or if any damage is observed, please promptly notify the Delta contact window for assistance.
In environments that may potentially exceed specifications, such as extended outdoor exposure to sunlight and rain, users should increase waterproofing measures, for example, applying supplementary sealant around the wiring cover.

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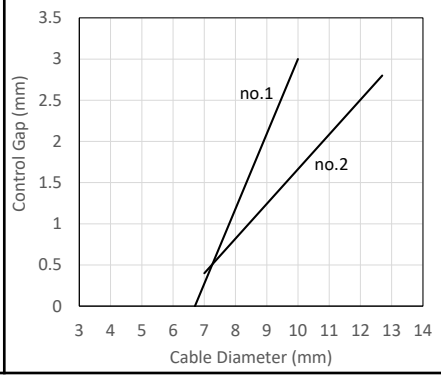
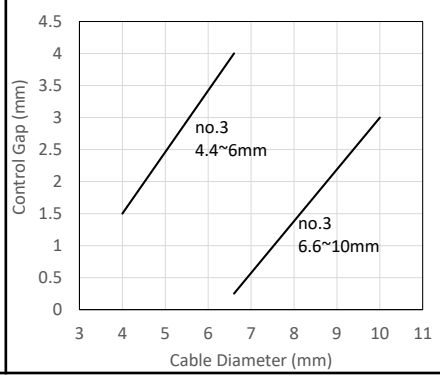
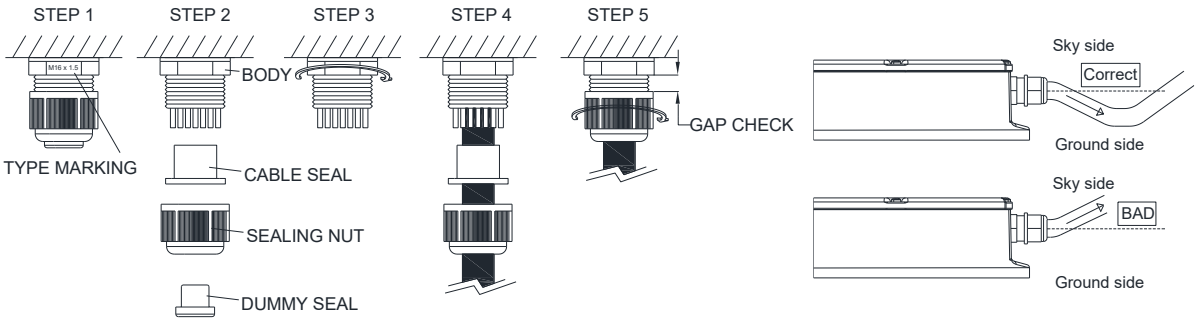
Appendix : Installation Guide

Cable Gland Installation (models with cable gland only)

Please adhere to the instructions below for the proper installation of cable glands, as incorrect installation may result in water ingress and subsequent damage to the fan. Damages incurred due to improper installation will not be covered by the warranty. Delta EC fans feature various motor modules tailored for different applications, each employing different cable gland types or combinations. Please identify the appropriate cable gland type for cable wiring and installation guidelines.

Information of Cable Gland			
No	No.1	No.2	No.3
Type	M16 X 1.5 Single layer rubber	M20 X 1.5 Single layer rubber	M16 X1.5 Double layer rubber
Cable Dia.	6.6~10.0 mm	7~12.7 mm	Using 1 layer : 6.6~10.2 mm Using 2 layers : 4.6~6.6 mm
Gland Body-Fan Suggested Toque	26 Kgf.cm±10%	40 Kgf.cm±10%	26 Kgf.cm±10%
Control Gap (mm)			



Installation Step

1. Identify the specification of the cable gland. (refers to preceding Table)
2. Loosen the sealing nut.
3. Tighten the body; please consult preceding table for the recommended torque. (Repeat STEPs 1-3 for other cable glands.)
4. Route the cables sequentially through the sealing nut, cable seal, and cable gland body into the motor terminal box for wiring.
5. After wiring, securely tighten the sealing nut and fasten the cables. Utilize the "Control Gap" method to verify proper cable installation. The "Control Gap" corresponds to the cable diameter, and the gap measurement should be slightly less than the specified value.

Notes :

1. Ensure that the cable diameter aligns with the recommended specifications, allowing only one cable to pass through each cable gland. Verify that all torques and control gap measurements adhere to the suggested values.
2. Retain all dummy seals if certain cable glands are unused, ensuring that all torques and control gap measurements meet the prescribed values provided.
3. Position cables to face downwards to prevent water ingress into the fan motor; avoid orienting cables upwards.
4. Proceed with motor cover installation only after ensuring proper installation of all cable glands.

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附录：安全指示

注意!!

请仔细阅读并遵循以下指示，以确保风扇能正确安装和操作，以避免人员受伤或机器损坏。

使用范围

- 该风扇仅用于系统内的空气移动和散热功能，不应使用于任何其他用途，请勿在指定系统之外单独使用风扇。
- 避免在以下情况下使用风扇：（规格明确表明符合特定规格除外）
  a. 存在腐蚀、易燃气体和液体、漂浮尘埃和金属颗粒的环境。
  b. 在运输和安装过程中出现明显震动的环境。
  c. 医疗设备或对生命安全至关重要的设备中。

基本安全规范

- 仅有合格的专业人员才被授权权责安装、维修和保养风扇，非技术人员应被禁止执行这些操作。
- 如果风扇的重量超过10公斤，建议由两人共同处理或使用起重机进行移动和安装。
- 严禁自行修改风扇的内部零件或电路，以及将风扇拆解为单独的部件进行个别使用。
- 禁止对风扇进行额外的涂漆或涂层处理。
- 不正确的安装可能导致风扇损坏。
- 应进行定期的保养检查工作。

安全检查

电击风险

- 在安装时或定期检查中发现连接部件或电缆有缺陷时，请务必更换。
- 在使用带电设备时，请确保站在绝缘表面上，如橡胶垫，或着胶鞋，以降低电击风险。
- 在进行保养工作之前，请关闭风扇电源并等待五分钟，以确保完全放电。
- 尽管风扇机身具有基本的绝缘保护，但在异常条件下仍存在电气化的潜在风险。建议在操作之前使用测试仪器进行安全验证。
- 如果风扇机身配有配线盒，请确保在启动风扇之前正确安装盒子的配线盖。
- 使用前必须进行接地检查。接地线的横截面积不得小于0.75mm²（最小18AWG）。

碰撞风险

- 系统必须具有足够的结构完整性来支撑风扇运行，建议使用配备防松动机制的螺丝进行风扇安装。
- 风扇与周围组件之间的距离不应小于25毫米。
- 在进行维护之前，必须关闭电源并等待设备完全停止运行，在整个维护过程中需确保风扇处于停止状态，并在工作后清除所有物料。
- 通电后，由于控制电压或内部存储的速度设置，风扇可能会立即启动运行，请确保人员和物体与风扇保持安全距离。
- 若存在人体碰触风扇叶片的风险，强烈建议加装安装防护罩或盖子。此类防护措施必须遵守相关的安全法规。
- 请注意防止长发或宽松服装被风扇缠绕，将导致受伤。
- 建议相关操作人员穿着适当的手套和鞋子，以减少割伤和碰撞的风险。

其他风险

- 风扇电机在运行中会发热，可能对人员造成烫伤风险，建议安装保护措施，并确认附近的组件应能够承受这些热能。
- 风扇转动期间可能会产生高分贝音量，建议实施隔音或保护机制，以防止操作人员听力受损。
- 请确保整个设置符合电磁兼容性（EMC）标准，并对系统进行适当的屏蔽。

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附录: 储存 / 运输/ 保养

储存与运输

- 合适储存的温度范围请参考风扇规格，避免储存在相对湿度长期潮湿的环境下(60%RH)，存放环境应保持通风。
- 建议使用原始包装和托盘进行储存，若有风扇运输流程，请确保使用原始包装，并确保包装完好无损，同时应避免任何碰撞或冲击。
- 堆栈托盘的总高度不应超过2.5米。
- 避免将风扇存放在含有腐蚀性气体和液体的环境中。
- 避免将风扇存放在阳光直射或容易受到震动的地区。
- 如果风扇储存在系统内，请确保线缆盖和电缆密封圈安装妥当。如果系统储存在户外，建议对风扇进行遮蔽。
- 风扇可能含有电解电容，建议每12个月至少通电一次，并启动风扇运转至少60分钟，避免电容劣化。

定期保养检查项目

建议的保养检查间隔：每6个月

检查项目	检查方法
若现场环境允许在系统运行时检查，请确认是否存在任何异常噪音或振动。检查人员应站在安全的位置，并确保遵守所有安全规定	目视检查 / 相关设备
确保风扇周围的环境温度和湿度在指定范围内	相关设备
确保输入电压和控制电压都符合设计值	相关设备
检查风扇周围有无外来物，可能进入风扇的运行空间并引发危险	目视检查
检查风扇周围是否存在异常情况，例如是否有油渍或水滴，是否有烧焦的异味	目视检查 / 嗅觉检查
检查系统的进风口和排风口是否被灰尘阻塞或附着有外来物	目视检查
检查螺丝固定件或电缆是否有松动状况	目视检查 / 扭力确认
检查风扇机身和电缆是否有变形、裂纹、损坏、老化或变色的迹象	目视检查
检查风扇机身是否被灰尘覆盖，这可能影响风扇的散热进而影响散热性能	目视检查

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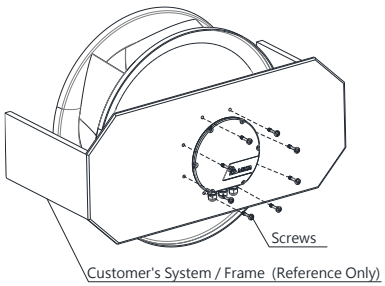
附录: 安装指南

风扇安装

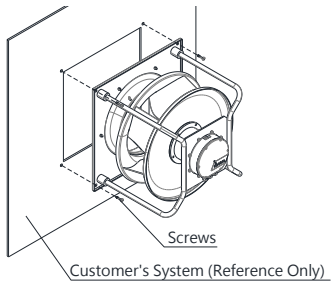
在安装之前，请务必仔细阅读安全说明。如果在拆卸包装至安装过程中察觉到任何异常，如凹痕、裂纹或碎片，请勿使用此风扇，并立即通知 Delta 联络窗口以获得进一步协助。风扇安装一般有两种安装状况：一种是单独风扇的安装，另一种是带框风扇安装，可根据不同情况参考以下安装说明。安装过程中，请避免使用叶片作为搬运支撑点。



单体风扇

风扇固定孔主要位于 EC 马达后方。尺寸、位置、螺纹类型和深度，可以从型号规格中查找。在风扇稳固安装后再进行配线，如有需要，在风扇安装过程中可先移除电缆防水头，待配线时再装回原位。如果风扇搭配其他导流装置，请确保的同心相对位置和合适间隙。建议使用以下扭矩值的8.8级螺丝，建议有效结合牙长>1.5d

M5 52Kgf.cm / M6 90Kgf.cm
M8 216Kgf.cm / M10 430Kgf.cm
(扭矩公差 ±10%)

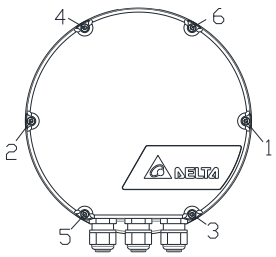


带框风扇

固定孔主要位于框架/支架上。通常为通孔型式，孔的数量、尺寸和位置会因客户的安装系统方式而异。

配线盖安装(仅适用于有配线盒机种)

请遵循以下提供的指示，正确安装马达配线盖，不正确的安装可能导致水气侵入并对风扇造成损坏。因安装不当造成的任何损坏将不在保修范围内。不同型号的配线盖外观会有所不同，但安装步骤和原则一致。



M4 Screw Torque
1st round 10 Kgf.cm
2nd round 17 Kgf.cm
(Torque tolerance ±10%)

指南与步骤：

在拧紧螺丝时，必须分两个阶段进行，各阶段使用不同的扭矩设置。可确保配线盖上的应力均匀分布，有助于防止因变形而防护失效。请勿一次拧紧所有螺丝，因为这可能影响风扇的防水性能。

步骤1： 在正确定位马达罩后，按照对角线顺序（按照上述示意图的1、2、3...顺序）将螺丝拧至第一轮的扭矩值。
步骤2： 同上，再次按照指定的顺序和的螺丝扭矩值进行拧紧至第二轮的扭力值。

注意事项：

完成后，请检查配线盖是否存在任何不对齐或间隙。如果发现任何此类问题，请重新安装一次。如果上述问题持续存在或发现任何损坏，请立即通知 Delta 联络窗口寻求协助。
若风机应用于可能超出规格范围的环境中，例如长时间的室外暴露于阳光和雨水中，用户应增加防水措施，例如在配线罩周围施加额外的密封剂。

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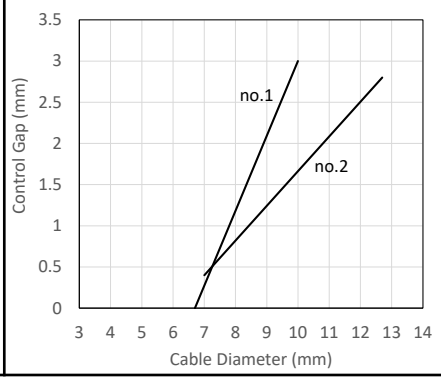
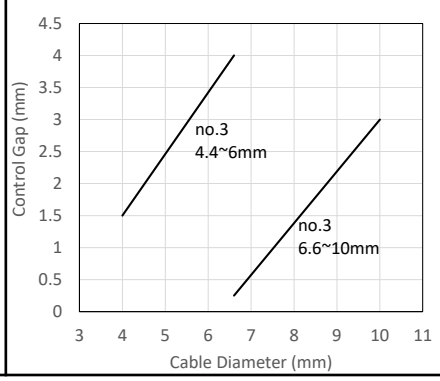
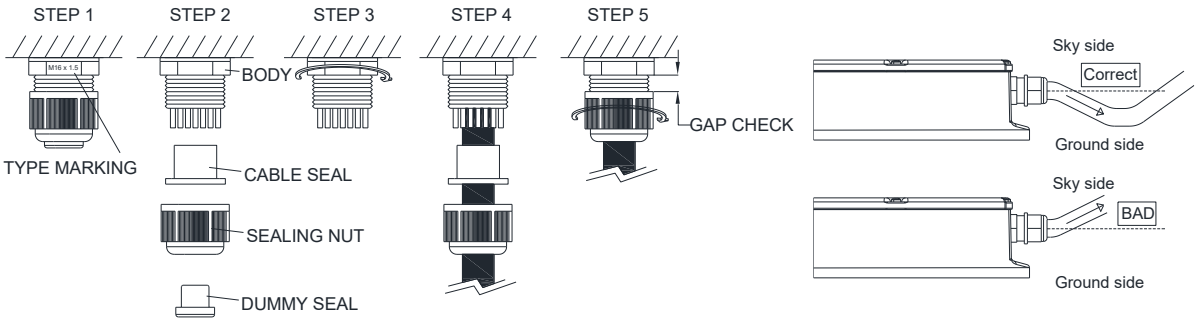
附录: 安装指南

电缆防水接头安装 (仅适用于有电缆防水接头机种)

请遵循以下指示进行电缆防水接头的正确安装方式，安装不当可能导致水气进入并对风扇造成损坏。安装不当造成的损坏将不在保修范围内。风扇根据不同的使用范围可能配备不同的电缆防水接头组合。安装时，请先确认防水接头类型与适用范围。

电缆防水接头			
No	No.1	No.2	No.3
型号	M16 X 1.5 单层防水橡胶	M20 X 1.5 单层防水橡胶	M16 X1.5 双层防水橡胶
适用线径	6.6~10.0 mm	7~12.7 mm	单层 : 6.6~10.2 mm 双层 : 4.6~6.6 mm
本体与风机间扭力	26 Kgf.cm±10%	40 Kgf.cm±10%	26 Kgf.cm±10%
控制间隙值 (mm)			



安装步骤：

1. 确认电缆防水接头的型号与适用范围
2. 松开防水接头上的密封螺帽
3. 先拧紧本体；请参考前面的表格，查看建议的扭矩值。（对全部防水接头重复步骤1-3）
4. 将电缆线依序穿过密封螺帽、防水硅胶和本体，进入马达配线盒进行配线
5. 配线完成后，锁紧密封螺帽后可固定电缆线。
   * 利用“控制间隙”方法来验证防水接头是否正确安装，“控制间隙”大小与电缆直径相关，间隙测量值应略小于图表的对应值。

备注：

1. 使用的电缆线直径应符合建议的直径规格，每个防水接头仅允许通过一条电缆线。
2. 应确认所有扭矩和控制间隙测量值均符合建议的值。
3. 如有防水接头未被使用，务必保留虚拟密封在防水接头上，以确保控制间隙测量值可符合提供的规定值。
4. 电缆线出防水接头后应朝向地面，避免将电缆线朝向天空，以防止水流入顺着电缆流入配线盒内。
5. 确保所有电缆密封胶帽均正确安装后，再进行配线盖的安装。