

SPECIFICATION FOR APPROVAL

CUSTOMER :

DESCRIPTION : AXIAL AC FAN

DIMENSIONS : ø172x51mm

M O D E L : ST171-2-XXX ST171-1-XXX
(Thermal Protection)

P/N :

APPROVED NO :

APPROVED BY :
(AUTHORIZED)

**This specification defines the electrical and mechanical characteristics of an AC-
Tubeaxial fan used for cooling.**

Important Information: TIGER electronics AC+DC-Fans are designed for installation in OEM equipment. The international safety regulations reg. each application must be observed.

1. ELECTRICAL SPECIFICATION

X=H/L (High or Low speed)
B=Ball Bearings (S=Sleeve Bearings)

- <u>Fan Type</u> (model number)	ST171-2-XWB ST171-2-XTB	ST171-1-XWB ST171-1-XTB	W=Wire-Leads T=Terminals
- <u>Nominal Voltage</u> (V AC)	230V	115V	
- <u>Frequency</u>	50/60Hz	50/60Hz	
- <u>Rated Speed</u> (rpm) (rated speed shall be measured after 30 min. of continuous rotation at rated voltage)	2.850/3.400 H 1.400/1.700 L	2.850/3.400 H 1.400/1.700 L	
- <u>Airflow</u> as per performance curve acc. to DIN24163 and AMCA standards (m ³ /min.) „double chamber test stand, intake side measurement“	5,8/6,4 H 2,5/3,0 L	5,8/6,4 H 2,5/3,0 L	
- <u>Static Pressure</u> (mm) performance curve acc. to DIN24163 and AMCA standards (H ₂ O)	16/20 H 3,8/5,5 L	16/20 H 3,8/5,5 L	
- <u>Rated Current</u> (A) (shall be measured after 30 min. of continuous rotation at rated voltage)	0,12/0,12 H 0,08/0,07 L	0,26/0,25 H 0,17/0,15 L	
- <u>Locked Rotor Current</u> (A)	0,19/0,19 H 0,09/0,09 L	0,41/0,43 H 0,20/0,21 L	
- <u>Input Power</u> (W)	29/29 H 29/29 L	31/31 H 31/31 L	
- <u>Direction of rotation</u>	Clockwise, viewed from the air discharge with label side facing up. The same direction is also indicated by an arrow mark on one side of the housing.		
- <u>Motor position</u>	Regardless of the axis direction when ball bearing fan is used. Vertical application/mounting when sleeve bearing fan is used, horizontal mounting possible with „hanging“ rotor.		
- <u>Motor</u>	Reliable internal shaded-pole motor, class E.		
- <u>Overload protection</u>	By Impedance or Thermal protected		
- <u>Operating temperature</u>	From -40°C to + 70°C ball, from -20°C to +60°C sleeve		
- <u>Storage temperature</u>	From -40°C to + 80°C (100h)		
- <u>Internal protection</u> / DIN 40050	IP20		
- <u>Protection Class</u> / VDE 0730	III		
- <u>Insulation class</u> / VDE 0530	A (E), motor manufactured to class E		
- <u>Application Class</u> / DIN 40400	GNE		
- <u>Insulation resistance</u>	Over 100 MEG Ohms at 500V DC between lead wire and housing		
- <u>Dielectric strength</u>	1500V AC 50/60Hz for 1 min. between lead wire and housing		
- <u>Noise level</u> acc. to DIN 45635 and CNS 8T 53 -dB(A)- (to be measured in an anechoic chamber with a microphone positioned 1m from the air intake, testing fan shall be hang in free, clean air.	50/55 H 31/37 L	50/55 H 31/37 L	
- <u>Life expectation</u> acc to DIN 622	Ball: 50.000 hrs., sleeve: 20.000 hrs. @ 25°C room temperature and room humidity. The life is deteriorated when speed fluctuation exceeds -30% more than initial speed value at rated voltage @ room temperature and RH.		

2. MECHANICAL SPECIFICATIONS

- <u>Dimensions</u>	as per attached drawing
- <u>Housing material</u>	Aluminium alloy (ADC12) die casting
- <u>Impeller material</u>	Glass fiber reinforced Fiber, PBT; UL 94-V0, self extinguishable
- <u>Electrical connections</u>	- Wire leads 300mm +/- 15mm long, CSA TR-64, 22 AWG, UL AWM 1007 with stripped and tinned ends - Terminals 2 flat pins 3 x 0,5mm
- <u>Shaft material</u>	Stainless steel
- <u>Bearing-system</u>	Ball bearing + oil impregnated, oil less sinter metal sleeves
- <u>Surface protection</u>	Electrophoretic Black RAL 9005
- <u>Weight</u>	900g approximately
- <u>Vibration</u>	To be judged by tactile comparison with limited sample
- <u>Safety approvals</u>	UL-File No. GPWV2.E146359, CE

3. ENVIRONMENTAL SPECIFICATIONS

- <u>Vibration Test</u>	Fan under test withstands 2mm, 1.000 CPM amplitude over frequency sweep for 30 minutes in each X.Y.Z. - axis
- <u>Shock test</u>	Dropping with minimum package on the 10mm thick wooden plate from 30cm height
- <u>Locked rotor test</u>	15 days (360 hrs.) locked rotor under conditions 25°C +/-1°C and 55RH +/-5%. During this test, winding temperature is below 140°C. After 72 hrs. from the beginning of the test, the motor withstands an electric strength of 1.000V AC 50/60Hz for 1 min. At the end of the test, the leakage current between the winding and the housing is measured at a voltage equal to twice the rated voltage. Its value doesn't exceed 2mA. Restarting is automatic as soon as any constraint to rotation has been released.
- <u>Humidity</u>	After 96 hrs., 95%RH, 40°C +/-2% per MIL-STD-202F, method 103B humidity test, the measured data on insulation resistance and dielectric strength shall meet the specification

4. ACCESSORIES

- <u>Metal fan guard</u>	G175-1F
- <u>Metal Mesh Filter</u>	--
- <u>Plastic fan guard</u>	G172P
- <u>Filter Kits</u>	FK-175-(45/30/15)
- <u>Connecting Cable / plug in cord</u>	C109-180, lengths: 1m, 1.5m, 2m, 3m, etc.

5. QS / QUALITY CONTROL

- As per attached flow-charts
- All values are determined acc. to SI units, as per DIN 24 136
- All fans shall meet the quality inspection under sampling plan MIL-STD-105D as follows:

Critical...0,25%, Major.....1,00%, Minor.....2,50%

- Double AQL is applied:
 - a) ingoing components quality control
 - b) Flying quality control
 - c) outgoing quality control proceeded under ambient temp. 20°C +/-5°C and air density of „rho“ = 1,2Kg/m³ after a free running time of 5 min. All values are dtermined according to SI-units as per DIN 24 163

6. REMARKS

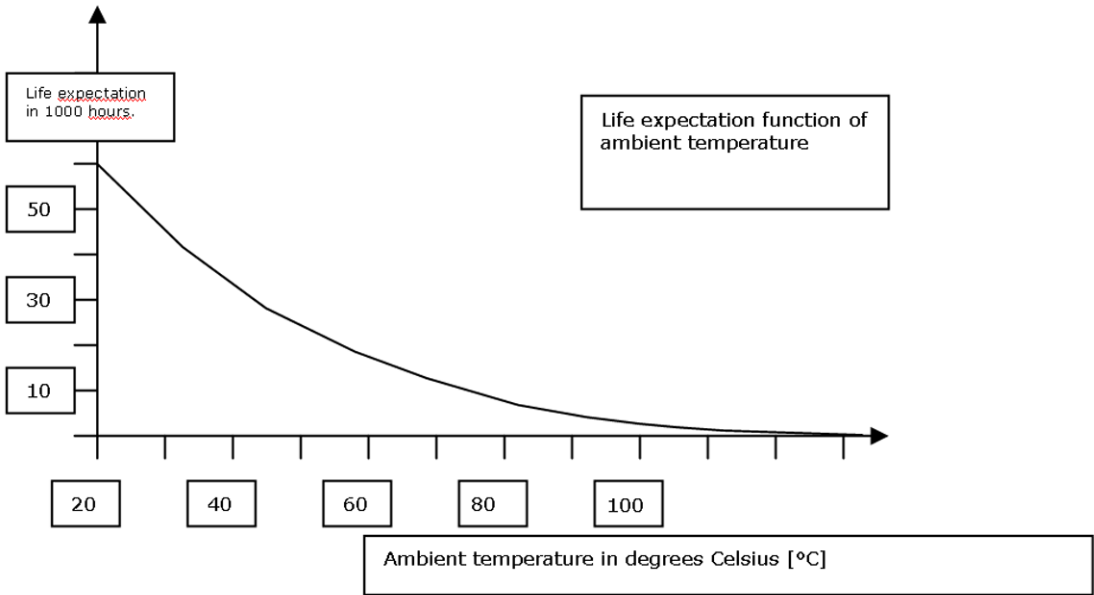
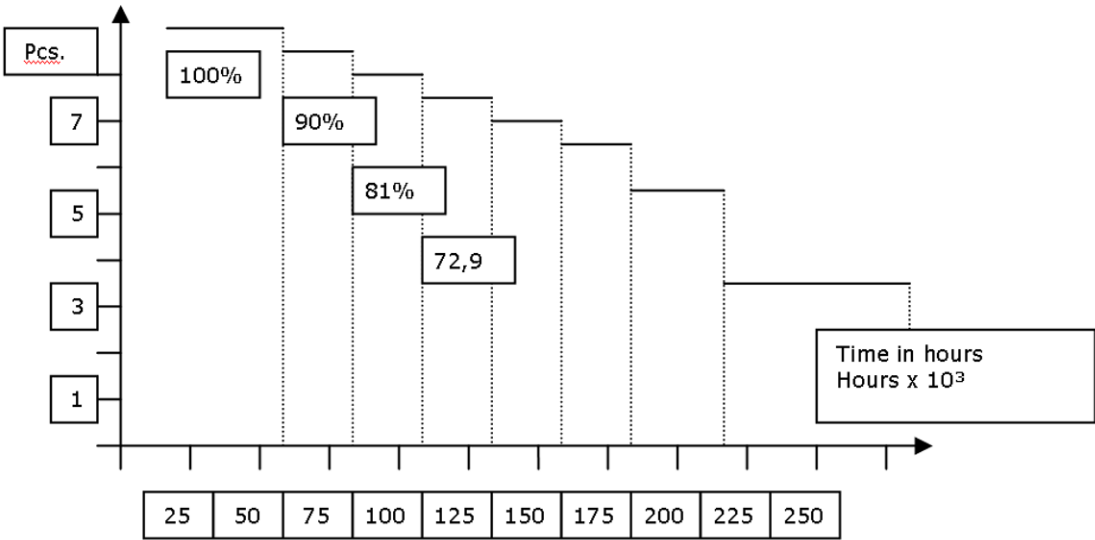
- Connectors (JST, AMP, Molex, DuPont, etc. ..) can be fitted to the fan on customers request
- Non standard wire length can be worked out unde request

7. CAUTION

- Avoid storing in high temperature, humidity and corrosive gas environment
- Soldering of lead wires should be done within 2-3 seconds.

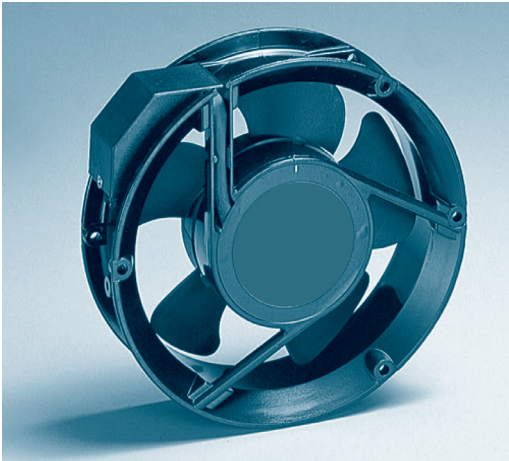
8. MTBF - DIAGRAMM

- The meantime before Failure is based on the running time, afterwhich 10% of set fans fail, and therefor 90% of them continiue running (reg. DIN 622)

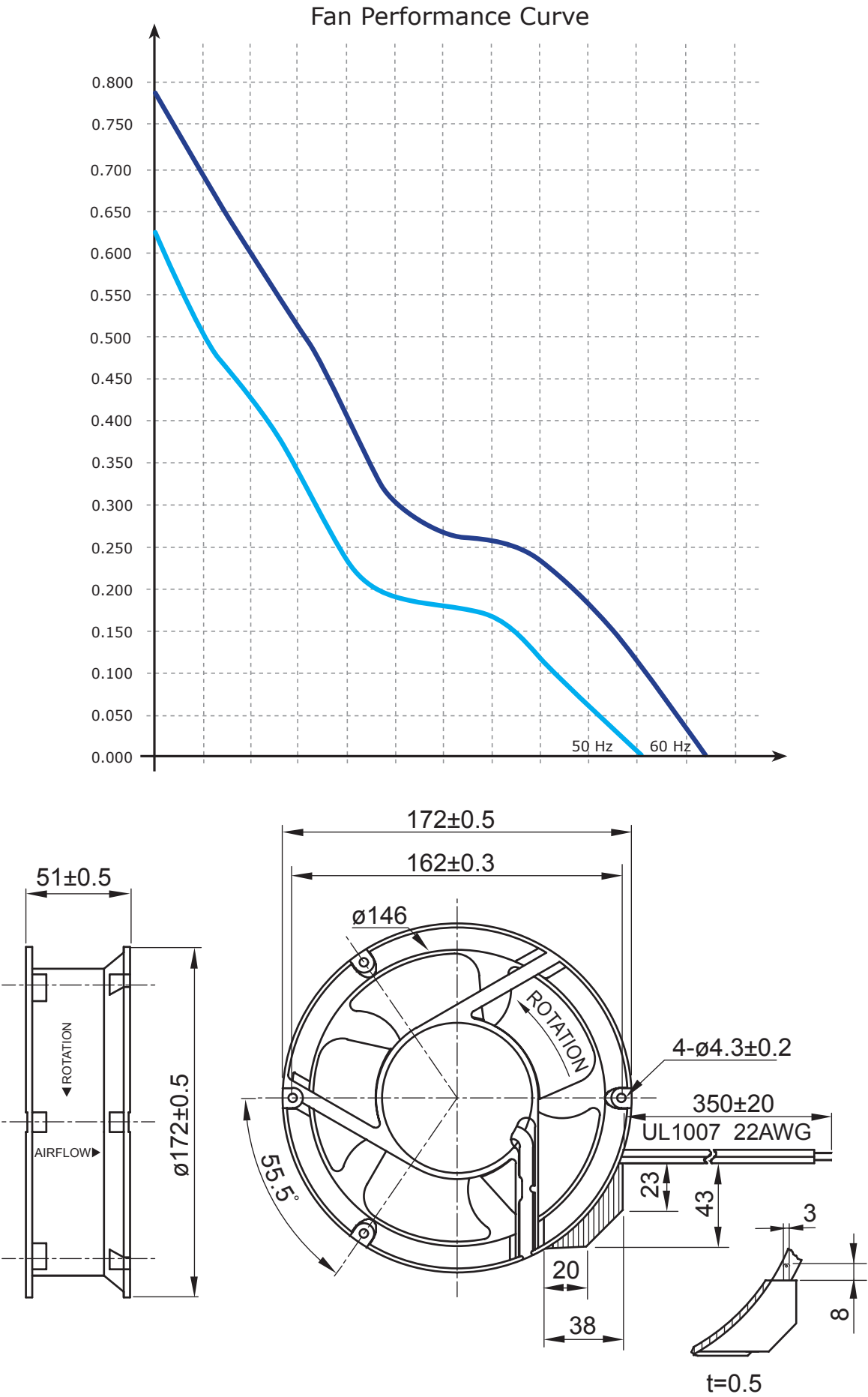


9. APPLICATION

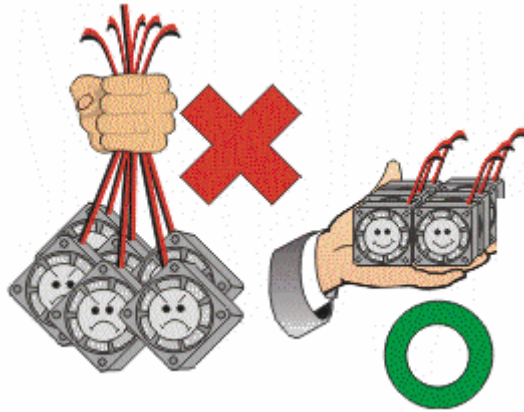
- As long as the specifications are satisfied, the material and construction may be subject to partial technical changes.
- Any problems concerning this specification sheet or change in the specifications, if any, should be settled and decided through the mutual agreement of both parties.



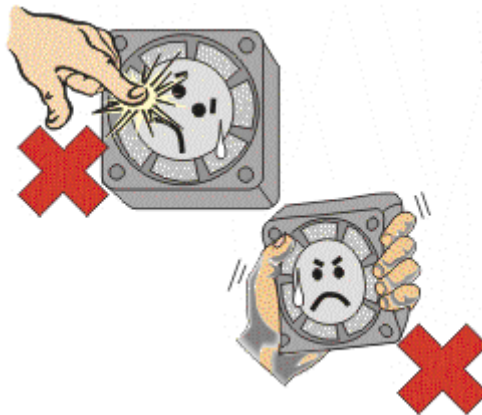
9. CURVES + DRAWING



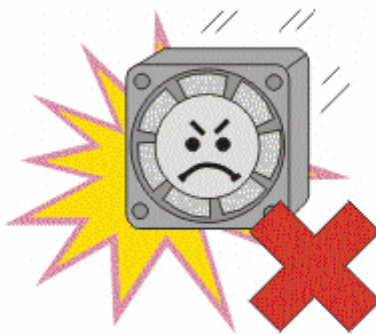
1. Hold the fan by frame side. Do not hold lead wires to support the fan.



2. No touching or pressing on the impeller hub. Avoid crushing the frame side.



3. Do not drop on the ground. Do not pound on the frame side.



4. Connect leads properly and apply voltage according to specification.

