GENERAL SPECIFICATIONST

OPERATING TEMPERATURE

◆ Ball Bearings············ −10℃ to +70℃ /15%~60%RH

BEARING SYSTEM LIFE

◆ 2 Ball Bearings········· 70,000 hours @ 45℃
◆ Sleeve Bearings········30,000 hours @ 45℃

IMPELLER/FRAME

◆ Material················· PBT + Glass Fiber
◆ Flammability············ UL94V−0
◆ Color······················Black is standard

STORAGE TEMPERATURE

◆ ALL····················· −40℃ to +70℃

INSULATION RESISTANCE

◆ Standard················· Min.10 MΩ at 500VDC between frame and (+)terminal

DIELECTRIC STRENGTH
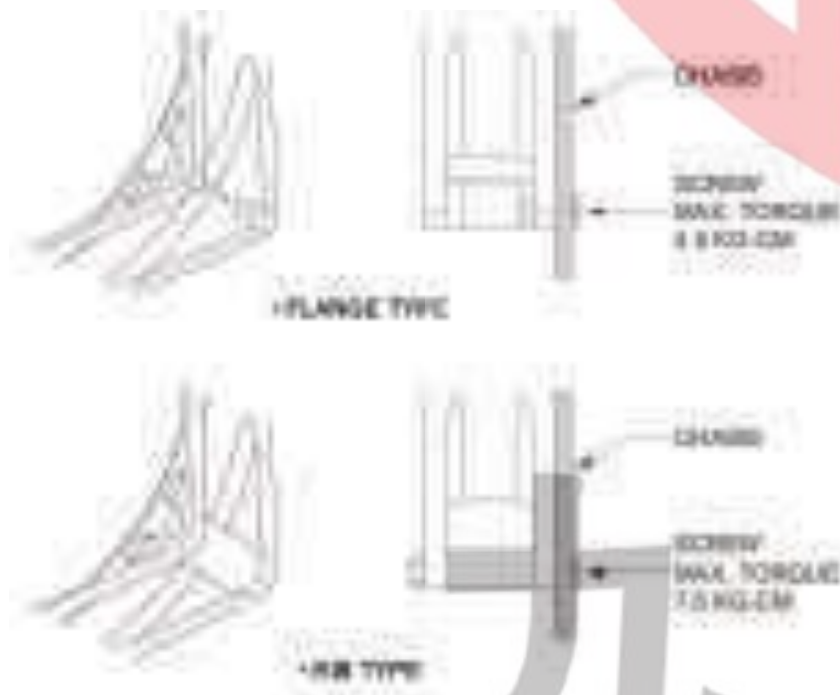
◆ Standard················· −40℃ to +70℃

INSULATION RESISTANCE

◆ Standard················· 5mA max.at 500VAC 60Hz 1 minute between frame
at (+)terminal

NOISE DATE

◆Noise measurements are performed in an Anechoic Chamber with less than 19dBA
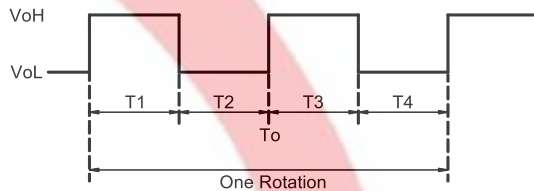background noise in compliance with ISO7779 standards.1m from intake side.

FRAME TYPE

Pulse Sensor/ Tachometer Signal/ FG

Pulse Sensor is for detecting the rotational speed of the fan motor.At locked rotor condition,the signal stops cycling and the output fix at VH or VL.
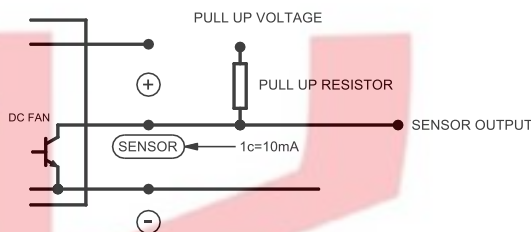
Output Waveform

VoH
VoL
T1   T2   T3   T4
To
One Rotation

$T1\text{-}4 = (1/4)\ T$
N = Fan Rotational Speed (min^{-1})

FG Signal Output Circuit:
Open Collector

PULL UP VOLTAGE
PULL UP RESISTOR
(+)
DC FAN
SENSOR OUTPUT
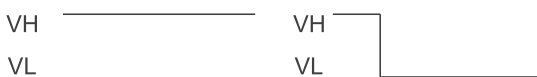SENSOR   Ic=10mA
(-)

Lock Sensor/ Rotation Detector

Lock Sensor is used to detect the fan motor is operating or stopped.
Output Waveform
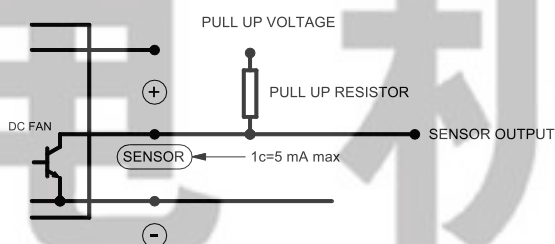Alarm High:The output will be logical low when fan is operating and be logical hign when fan motor is locked.

VH   VH
VL   VL

Alarm Low:The output will be logical low when fan is operating and be logical hign when fan motor is locked.

VH   VH
VL   VL

RD Signal Output Circuit:
Open Collector

PULL UP VOLTAGE
PULL UP RESISTOR
(+)
DC FAN
SENSOR OUTPUT
SENSOR   Ic=5 mA max
(-)

Auto Restart Protection/ Current Limit

When the fan motor is locked,the device will cut off the drive current within two to six seconds and restar automatically after a few seconds.If the lock situation is continued,the device will work on repeated cycle of cut-off and restart until lock is released.

(Speed)
Lock Rotor

(Input Current)
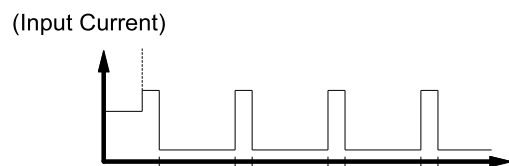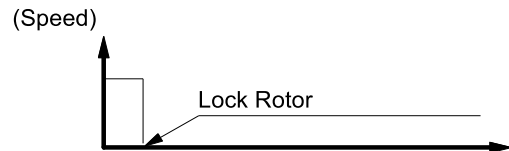
PWM Control Signal

A speed control lead can be provided that will accept a PWM signal from the customer circuit to vary the speed of the fan.The change in speed is linear by changing the Duty-Cycle of the PWM.

Vs
Va

$T=T_1+T_2$, $\alpha=T_1\ /\ T$
$\alpha=$Duty-Cycle
$Va=\alpha \times Vs$

T_1 T_2
T
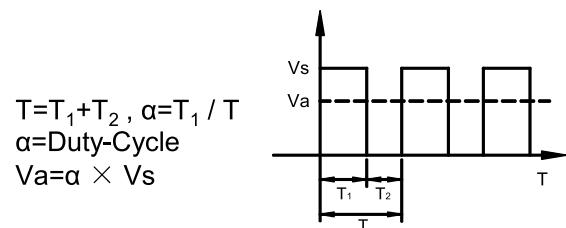
Open collector type and pull-up voltage is changed by maximum operating voltage and sink current by consuming current.

Temperature Sensor

NS TECH uses a thermistor to sense temperature in the thermally controlled fan.The thermistor can be controlled by on board or off board with special length leads.The RPM and temperature range is subject to custom request.

RPM
Brushless DC Fan
(+)
(-)
Thermistor
T1   T2   C