

# NF-A12x25 PWM

## Product specifications

| | |
|---|---|
| YST edition | 2.0 |
| Date | 20.06.2018 |


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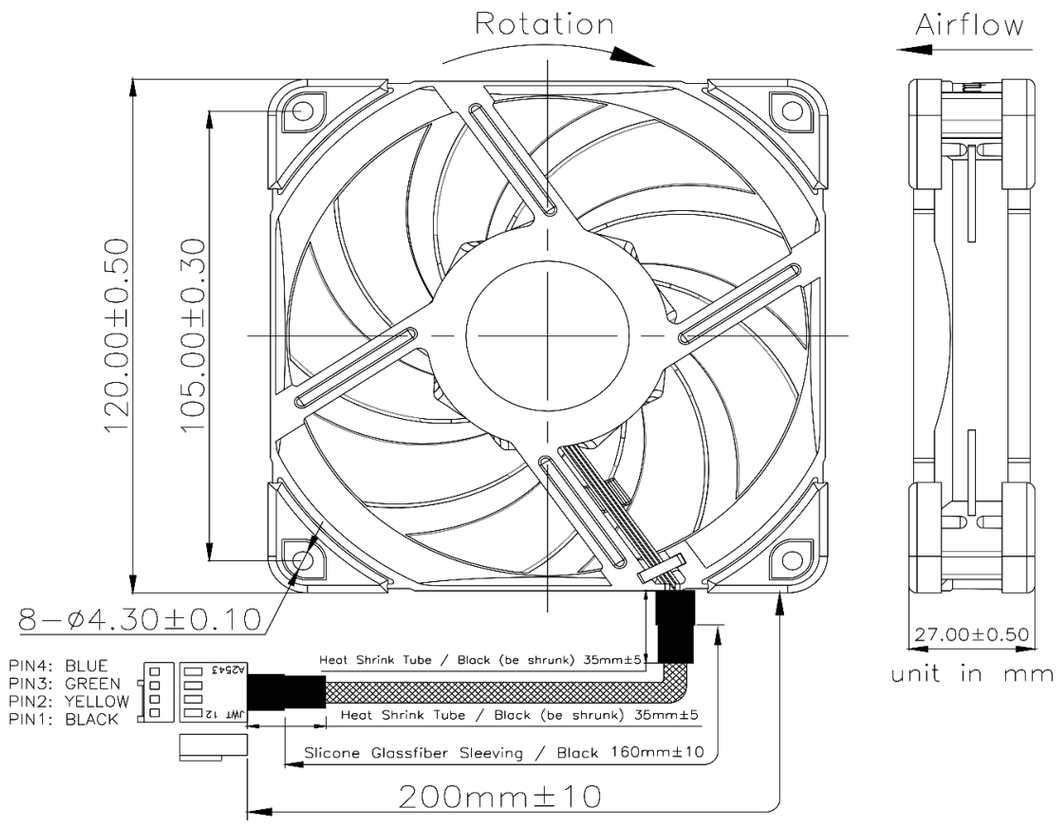
# 1. General specifications

## 1.1. Mechanical specifications

| | |
|---|---|
| **Dimensions (without AVP*)** | 120x120x25 mm |
| **Dimensions (with AVP*)** | 120x120x27 mm |
| **Wire length** | 200 mm |
| **Weight** | 200g |
| **Rotational direction** | Counter-Clockwise |

* AVP: Anti-vibration pads

## 1.2. Dimensions



## 1.3. Parts & materials

| | |
|---|---|
| **Plastic type - frame** | PBT ABS GF30 |
| **Plastic type - impeller** | LCP GF30 |
| **Bearing** | SSO2 |
| **Wire** | 26 AWG w/ Mesh-Sleeving |
| **Connector type** | A2543-4PIN (or equal) |

## 1.4. Standards

| | |
|---|---|
| **Production standards** | Produced according to ISO9001 & ISO14001 |
| **Safety standards** | EN55032, EN55035, EN62368-1 |
| **Enviromental standards** | RoHS according to EU directive 2011/65/EU-RoHS and amendment 2015/863 |
| **UL listed (E356416)** | Yes |

## 1.5. Flammability

| | |
|---|---|
| **Plastic housing and frame** | UL 94 V-0 |
| **Printed Circuit Board (PCB)** | UL 796, UL 94 V-0 |
| **Cable** | UL 1007 |
| **Mesh sleeving** | UL 1441 VW-1, E203950 |
| **Heat shrink tubing** | UL 224 VW-1, E203950 |
| **Connector** | UL 94 V-0 |

## 1.6. Labels




Main label

- Model number
- Rated voltage
- Rated power consumption
- Rated current
- Enviromental & safety standards

071024DA
1A2HKQ2

Side label (printed in white)

- Production date
- Internal reference numbers

## 1.7. Environmental specifications

| | |
|---|---|
| **Operating temperature** | -10°C to +60°C |
| **Operating humidity** | 15% to 90% |
| **Storage temperature** | -20°C to +65°C |
| **Storage humidity** | 15% to 90% |
| **Protection level** | IP50 |

# 2. Electrical specifications

## 2.1. Wire specifications

| | |
|---|---|
| **Pin 1** | Black: Ground (GND) |
| **Pin 2** | Yellow: Voltage (Vcc) |
| **Pin 3** | Green: RPM Signal |
| **Pin 4** | Blue: PWM Signal |

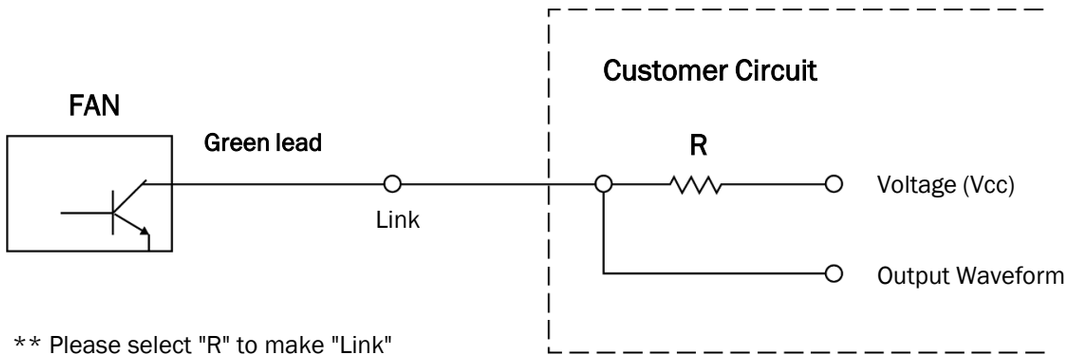
## 2.2. Motor specifications

| | |
|---|---|
| **Number of poles / slots / phases** | 4/4/1 |
| **Rated voltage** | 12V DC |
| **Operating voltage** | 7.0V - 13.2V DC |
| **Starting voltage** | 7.0V DC |
| **Rated current** | 0.14A (+/-10%) |
| **Rated power consumption** | 1.68W (+/-10%) |
| **Locked rotor protection** | Auto power off after locked at rated voltage for 1 sec. After auto power off, the circuit attempts to restart in 2 to 6 sec. |
| **Polarity protection** | Open circuit when Vcc & GND are exchanged. Circuit won't be burned within 5 sec when Vcc & GND are exchanged. |

## 2.3. Insulation

| | |
|---|---|
| **Insulation resistance** | 10 MΩ / between unshielded wire and frame at 500 VDC/min |
| **Dielectric strength** | 5 mA max. / measured between lead wire (+) and frame at 500 VAC/min |

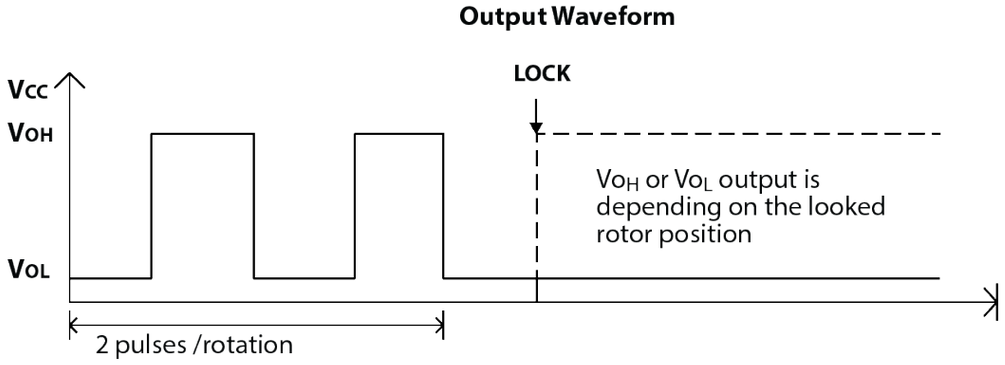
## 2.4. RPM signal specification



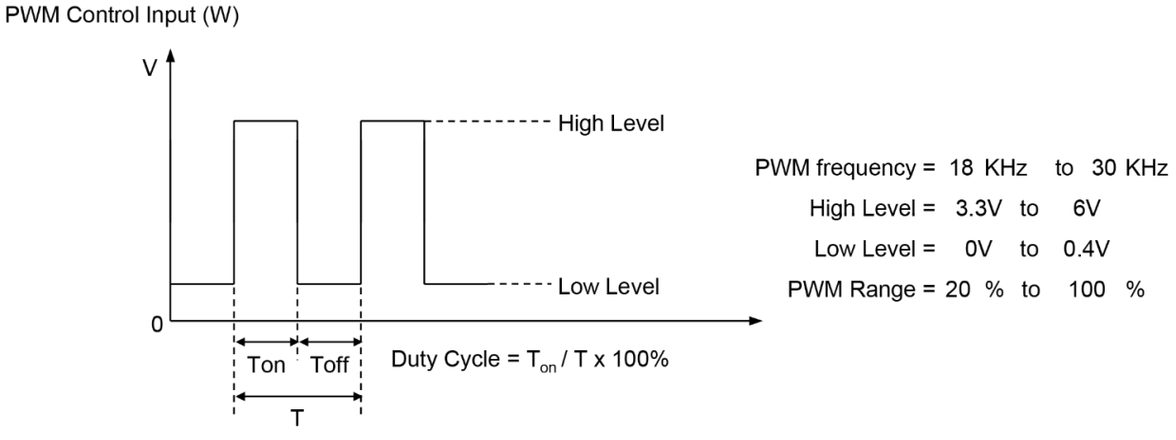

** Please select "R" to make "Link"

Within 1~5 mA ** 13.2V Max

If you need higher pull-up voltage, please contact Noctua. 5mA Max



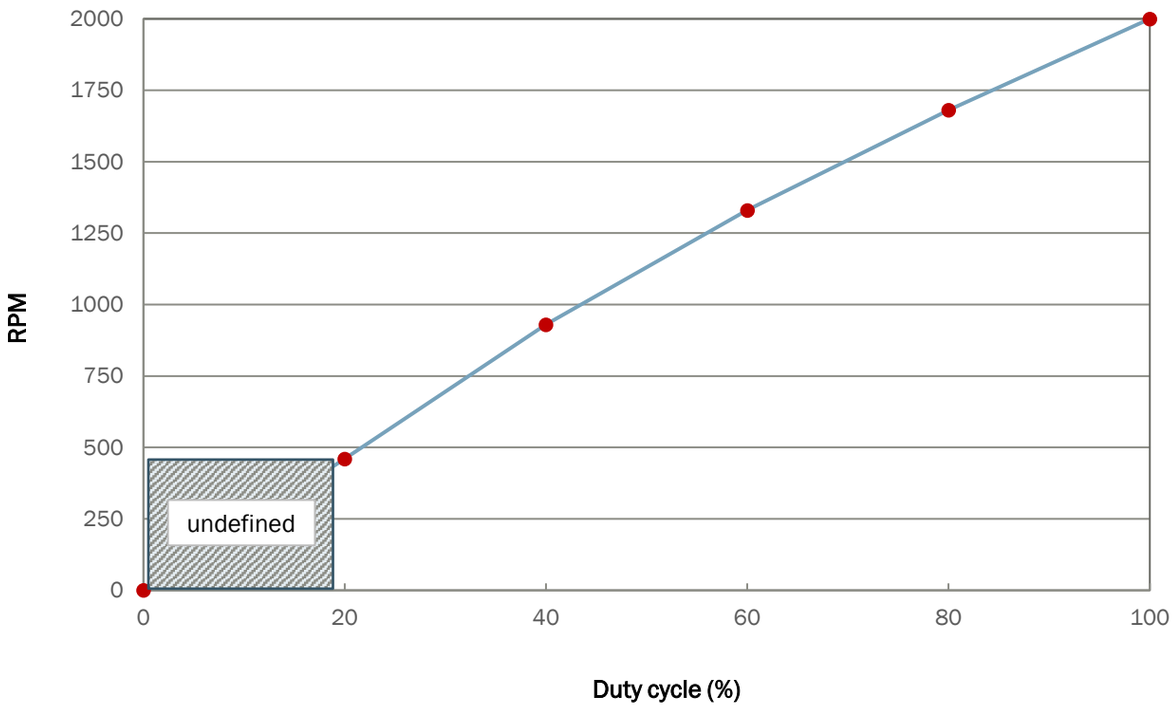

## 2.5. PWM duty cycle operating points



Fan stops at 0% PWM duty cycle.

The starting voltage must be the same as the rated voltage.

| Duty cycle (%) | RPM | Tolerance |
|---|---|---|
| 0 | stop | 0 |
| 20 | 460 | +/- 20% |
| 40 | 930 | +/- 10% |
| 60 | 1330 | +/- 10% |
| 80 | 1680 | +/- 10% |
| 100 | 2000 | +/- 10% |



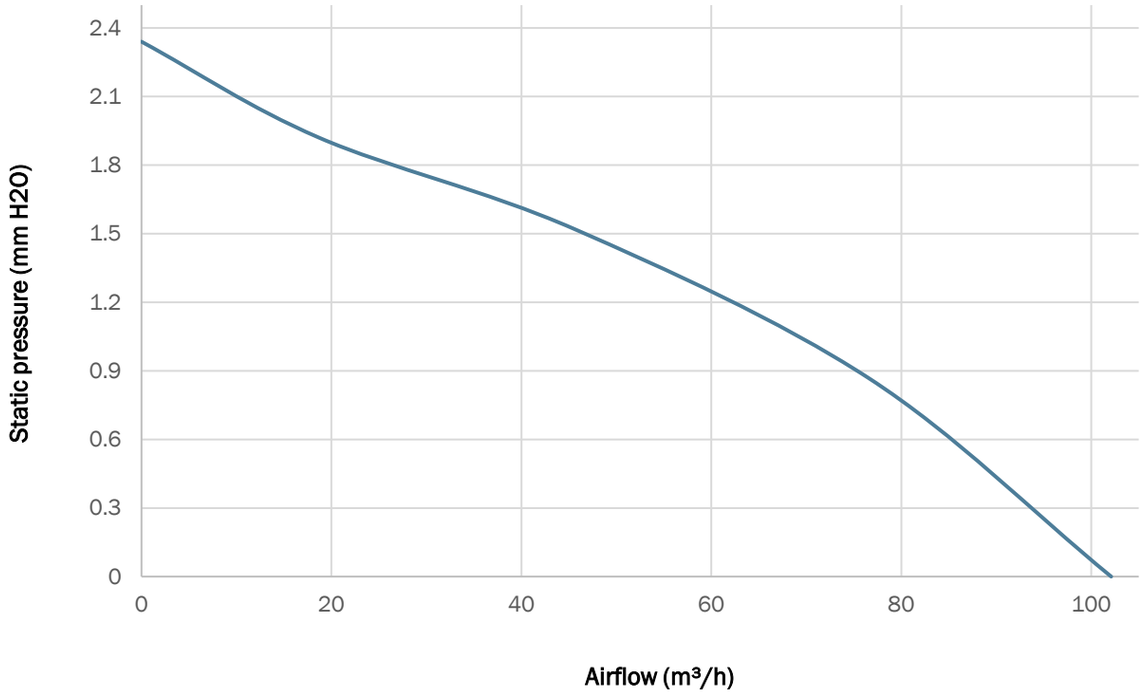
# 3. Performance specifications

## 3.1. General performance specifications (+/- 10%)

| | |
|---|---|
| **Rotational speed** | 2000 rpm |
| **Airflow** | 102.1 m³/h |
| **Acoustical noise** | 22.6 dB(A) |
| **Static pressure** | 2.34 mm H2O |
| **MTTF (at 40°C)** | > 150,000 h |

## 3.2 Performance curve

| | **Airflow [m³/h]** | **Pressure [mm H2O]** |
|---|---|---|
| **1** | 102.10 | 0.00 |
| **2** | 76.50 | 0.87 |
| **3** | 45.60 | 1.52 |
| **4** | 18.70 | 1.92 |
| **5** | 0.00 | 2.34 |



# 4. Remarks

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or consequential damages arising from such use, even if advised of the possibility of such damages.

Noctua doesn't take any responsibility if the product is used outside the specified parameters.

Specifications are obtained after 5 minutes of operation at 25°C and 65% humidity. The fan was mounted vertically in free air conditions.

Please note that excessive humidity can be harmful to the product and it should therefore be stored in cool, dry environments only. If the product was stored at less than 5°C for more than several hours, it should be stored at more than 20°C for at least 24 hours before use.

Handle the fan with care. Applying pressure or force upon the impeller or dropping the fan can result in damage. Take the necessary precautions (fan grills, etc.) to prevent injuries. Do not touch the fan blades during operation.

Please ensure the correct polarity. As the fan doesn't have a protection against reverse polarity, reverse connection can lead to damage.

Please make sure that the fan is properly mounted. Noctua cannot be held responsible for vibrations or other noises caused by improper installation.