



The engineer's choice

**ebm**papst

# 614 NGN

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## 1 General

|                                       |                        |  |
|---------------------------------------|------------------------|--|
| Fan type                              | Fan                    |  |
| Rotational direction looking at rotor | clockwise              |  |
| Airflow direction                     | Air outlet over struts |  |
| Bearing system                        | Sleeve bearing         |  |
| Mounting position                     | any                    |  |

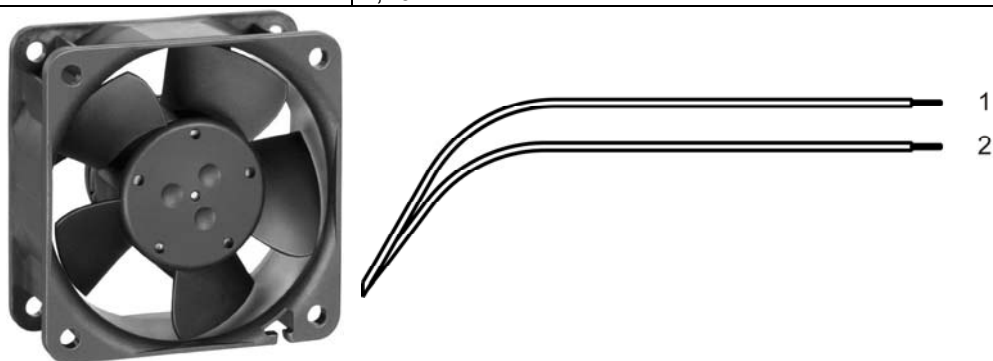
## 2 Mechanics

### 2.1 General

|                                                       |                                                                         |  |
|-------------------------------------------------------|-------------------------------------------------------------------------|--|
| Width                                                 | 60,0 mm                                                                 |  |
| Height                                                | 60,0 mm                                                                 |  |
| Depth                                                 | 25,0 mm                                                                 |  |
| Weight                                                | 0,066 kg                                                                |  |
| Housing material                                      | Plastic                                                                 |  |
| Impeller material                                     | Plastic                                                                 |  |
| Max. torque when mounted across both mounting flanges | wire outlet corner: 20 Ncm<br>remaining corners: 40 Ncm                 |  |
| Screw size                                            | ISO 4762 - M3 degreased, without an additional brace and without washer |  |

### 2.2 Connections

|                       |             |  |
|-----------------------|-------------|--|
| Electrical connection | Wires       |  |
| Length of lead wire   | 310 mm      |  |
| Tolerance             | + - 10,0 mm |  |
| Wire gauge (AWG)      | 22          |  |
| Insulation diameter   | 1,70 mm     |  |



|        | Colour | Operation |
|--------|--------|-----------|
| Wire 1 | red    | + UB      |
| Wire 2 | blue   | - GND     |

### 3 Operating Data

#### 3.1 Operating Data - Electrical Interface - Input

|               |      |
|---------------|------|
| Control input | None |
|---------------|------|

### 3.2 Electrical Operating Data

Measurement conditions: Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C; Motor axis horizontal; warm-up time before measuring 5 minutes (unless otherwise specified). In the intake and outlet area should not be any solid obstruction within 0,5 m.

$\Delta p = 0$ : corresp. to free air flow (see section 3.5)  
 I: corresp. to arithm. mean current value

| Features                     | Condition      | Symbol | Values      |             |             |
|------------------------------|----------------|--------|-------------|-------------|-------------|
| Voltage range                | $\Delta p = 0$ | U      | 18,0 V      |             | 28,0 V      |
| Nominal voltage              | $\Delta p = 0$ | $U_N$  |             | 24,0 V      |             |
| Power consumption            | $\Delta p = 0$ | P      | 1,2 W       | 2,1 W       | 2,8 W       |
| Tolerance                    | 0001           |        | +/- 17,5 %  | +/- 12,5 %  | +/- 17,5 %  |
| Current consumption          | $\Delta p = 0$ | I      | 67 mA       | 88 mA       | 100 mA      |
| Tolerance                    | 0001           |        | +/- 17,5 %  | +/- 12,5 %  | +/- 17,5 %  |
| Speed                        | $\Delta p = 0$ | n      | 3.920 1/min | 5.100 1/min | 6.000 1/min |
| Tolerance                    | 0001           |        | +/- 15,0 %  | +/- 10,0 %  | +/- 15,0 %  |
| Starting current consumption |                |        |             | 390 mA      |             |

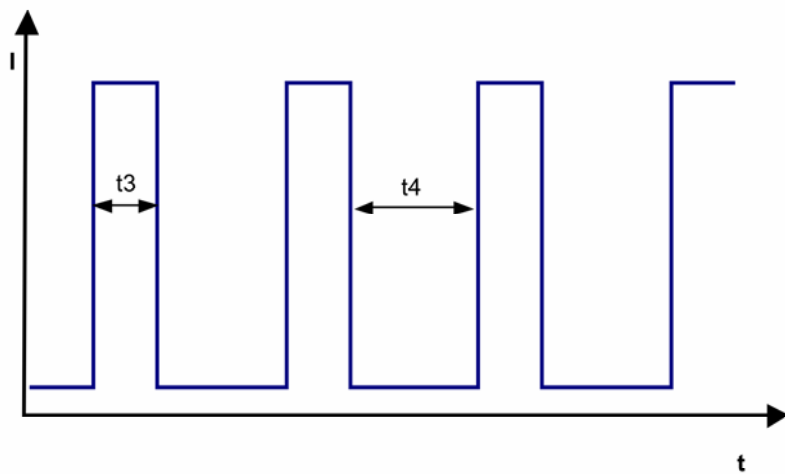
### 3.3 Operating Data - Electrical Interface -Output

|            |      |
|------------|------|
| Tacho type | None |
|------------|------|

|            |      |
|------------|------|
| Alarm type | None |
|------------|------|

### 3.4 Electrical Features

|                                        |                                                                              |  |
|----------------------------------------|------------------------------------------------------------------------------|--|
| Electronic function                    | None                                                                         |  |
| Reversed polarity protection           | Rectifying diode                                                             |  |
| Max. residual current at $U_n$         | $I_F \leq 5 \mu A$                                                           |  |
| Locked rotor protection                | Auto restart                                                                 |  |
| Locked rotor current at $U_n$          | approx. 390 mA                                                               |  |
| Clock signal $t_3/t_4$ at locked rotor | Typical: 0,2 s / 1,1 s<br>$t_3$ : 0,06 s... 0,77 s<br>$t_4$ : 0,3 s... 3,6 s |  |



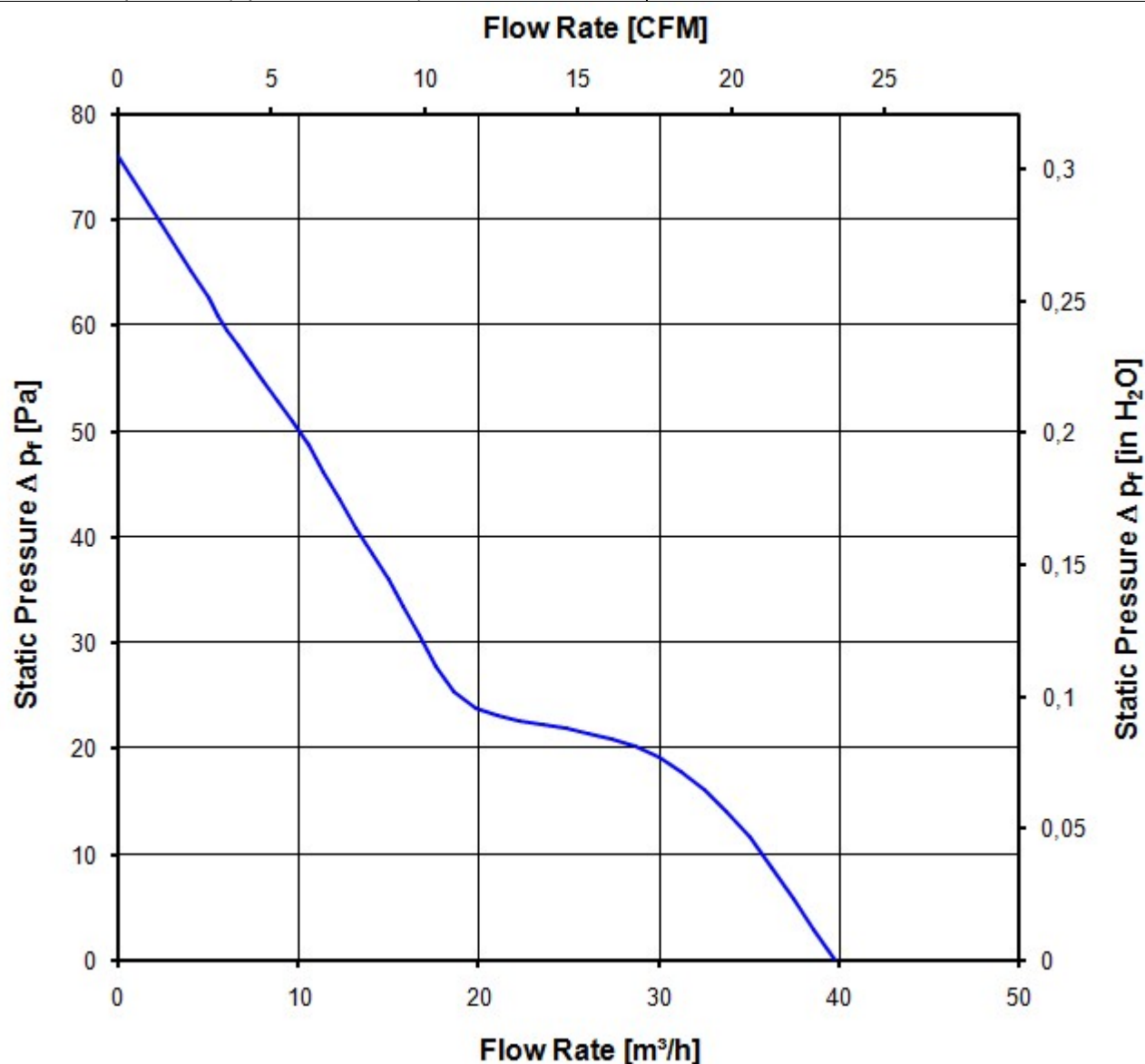
### 3.5 Aerodynamic

Measurement conditions: Measured with a double chamber intake rig acc. to DIN EN ISO 5801.  
 Normal air density = 1,2 kg/m<sup>3</sup>; Temperature 23°C +/- 3°C;  
 In the intake and outlet area should not be any solid obstruction within 0,5 m.

a.) Operation condition:

5.100 1/min at free air flow

|                                                                   |                        |  |
|-------------------------------------------------------------------|------------------------|--|
| Max. free-air flow ( $\Delta p = 0$ / $\dot{V} = \text{max.}$ )   | 40,0 m <sup>3</sup> /h |  |
| Max. static pressure ( $\Delta p = \text{max.}$ / $\dot{V} = 0$ ) | 76 Pa                  |  |



### 3.6 Sound Data

Measurement conditions: Sound pressure level: 1 Meter distance between microphone and the air intake.  
 Sound power level: Acc. to DIN 45635 part 38 (ISO 10302)  
 Measured in a semianchoic chamber with a background noise level of  $L_p(A) < 5 \text{ dB(A)}$   
 For further measurement conditions see section 3.5

a.) Operation condition:

|                                                                 |                                |  |
|-----------------------------------------------------------------|--------------------------------|--|
| 5.100 1/min at free air flow                                    |                                |  |
| Optimal operating point                                         | 31,0 m <sup>3</sup> /h @ 17 Pa |  |
| Sound power level at the optimal operating point                | 5,0 bel(A)                     |  |
| Sound pressure level at free air flow, measured in rubber bands | 35,0 dB(A)                     |  |

## 4 Environment

### 4.1 General

|                                            |        |  |
|--------------------------------------------|--------|--|
| Min. permitted ambient temperature TU min. | -20 °C |  |
| Max. permitted ambient temperature TU max. | 70 °C  |  |
| Min. permitted storage temperature TL min. | -40 °C |  |
| Max. permitted storage temperature TL max. | 80 °C  |  |

### 4.2 Climatic requirements\*)

|                          |                                                               |  |
|--------------------------|---------------------------------------------------------------|--|
| Humidity requirements    | humid heat, constant; according to DIN EN 60068-2-78, 14 days |  |
| Water exposure           | None                                                          |  |
| Radiation exposure       | None                                                          |  |
| Dust requirements        | None                                                          |  |
| Salt fog requirements    | None                                                          |  |
| Harmful gas requirements | None                                                          |  |

\*) Permitted application area:

The product is intended for use in sheltered rooms with controlled temperature and controlled humidity. Directly exposure to water must be avoided.

Pollution degree 1 (according DIN EN 60664-1)

There is either no pollution or it occurs only dry, non-conductive pollution. The pollution has no negative impact.

## 5 Safety

### 5.1 Electrical Safety

|                                                                                                                                                                                                                                                                                                                                                                                           |                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--|
| Dielectric strength<br>DIN EN 60950 (VDE 0805) and DIN EN 60335 (VDE 0700)<br>A.) Type test<br>Measuring conditions: After 48h of storage at 95% R.H. and 25°C.<br>No arcing or breakdown is allowed!<br>All connections together to ground.<br>B.) Routine test<br>Measuring conditions: At indoor climate.<br>No arcing or breakdown is allowed!<br>All connections together to ground. | Not applicable<br><br>Not applicable |  |
| Isolation resistance<br>Measuring conditions: After 48h of storage at 95% R.H. and 25°C measured with U=500 VDC for 1 min.                                                                                                                                                                                                                                                                | RI > 10 MOhm                         |  |
| Air and leakage distances                                                                                                                                                                                                                                                                                                                                                                 | 1,0 mm / 1,2 mm                      |  |
| Protection class                                                                                                                                                                                                                                                                                                                                                                          | III                                  |  |

### 5.2 Approval Tests

|     |     |
|-----|-----|
| CE  | Yes |
| UL  | Yes |
| VDE | Yes |
| CSA | Yes |
| CCC | No  |

The approval tests are observed to:

U approval max.: 28,0 V @ TU approval max.: 70,0 °C

## 6 Reliability

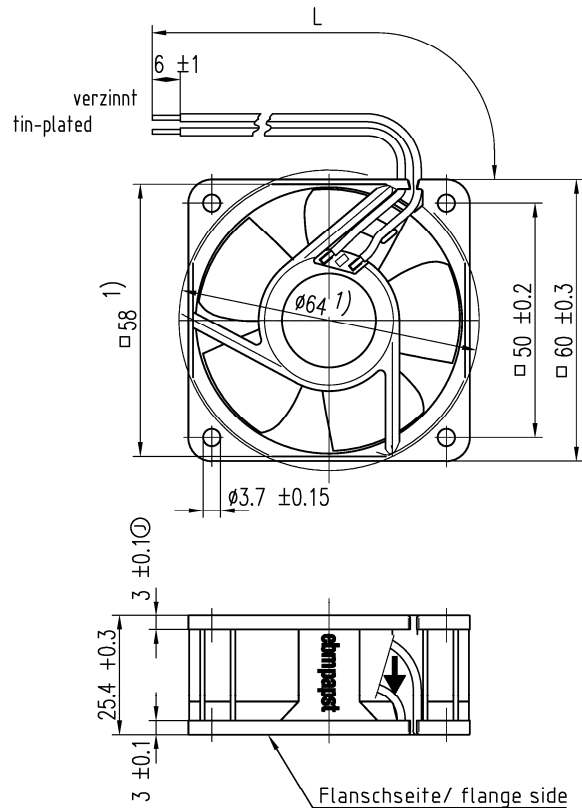
### 6.1 General

|                                   |          |  |
|-----------------------------------|----------|--|
| Life expectancy L10 at TU = 40 °C | 70.000 h |  |
| Life expectancy L10 at TU max.    | 35.000 h |  |

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Schutzmerk nach DIN ISO 9001 beachten/  
Refer to protection notice DIN ISO 9001

Anzahl und Länge der Litze s. Spezifikation  
length and number of wires see design specification



1) Maße für Montagewand

1) dimensions for assembly wall

①

|                                      |                     |                                     |                                  |                              |                     |                           |                       |                       |              |                |
|--------------------------------------|---------------------|-------------------------------------|----------------------------------|------------------------------|---------------------|---------------------------|-----------------------|-----------------------|--------------|----------------|
|                                      |                     |                                     | ebmpapst                         |                              | Werkstoff/Material: |                           |                       | Volumen/Volume (mm³): |              |                |
| SAP-Status/State                     | Änd.-Nr./Change-No. | AutoCAD-System-Version              | CAD-Umgebung/<br>CAD-Environment |                              |                     |                           |                       | Gewicht/Mass (g):     |              |                |
|                                      |                     | Datum/Date                          |                                  | Name/Name                    |                     | Artikel/Title             |                       |                       |              |                |
|                                      |                     | Bearb./Drawn                        |                                  |                              |                     |                           |                       |                       |              |                |
|                                      |                     | Gepr./Checked                       |                                  |                              |                     |                           |                       |                       |              |                |
|                                      |                     | Freig./Released                     |                                  |                              |                     |                           |                       |                       |              |                |
| Tolerierung/Tolerances:              |                     |                                     |                                  |                              |                     |                           |                       |                       |              |                |
| Allgemeintoleranzen/Gen. tolerances: |                     | <b>ebmpapst</b>                     |                                  | Zchg.-Nr./ Drawing.-No.:     |                     |                           | Ers.f.Zchg./Replaces: |                       |              |                |
|                                      |                     |                                     |                                  |                              |                     |                           |                       |                       |              |                |
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