**3414 NH**

Customer specification: No
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**INDEX**


**1 General ..... 2**

**2 Mechanics ..... 2**

2.1 General ..... 2
2.2 Motor ..... 2
2.3 Connections ..... 3

**3 Operating Data ..... 4**

3.1 Operating Data - Electrical Interface - Input ..... 4
3.2 Electrical Operating Data ..... 4
3.3 Operating Data - Electrical Interface -Output ..... 4
3.4 Electrical Features ..... 5
3.5 Aerodynamic ..... 5
3.6 Sound Data ..... 5

**4 Environment ..... 6**

4.1 General ..... 6
4.2 Climatic requirements ..... 6
4.3 Mechanical requirements ..... 7
4.4 EMC ..... 7

**5 Safety ..... 7**

5.1 Electrical Safety ..... 7
5.2 Approval Tests ..... 7

**6 Reliability ..... 7**

6.1 General ..... 7
6.2 Additional Data ..... 8


**Special features according to QMH 2-5.4.7 and company standard 1-23.00 have the following definitions:**

**"A"** : Product features or process parameters which influence the safety of a product or the compliance of legal requirements. (Must not necessary verified and documented 100%. Standards and legal requirements must be considered.)

**"FK"** : Product features or process parameters which influence the fit and function of a product or which have to be controlled or documented for some other reasons (e.g. Customer requirements).

## 1 General

| | | |
|---|---|---|
| Fan type | Fan | |
| Rotational direction looking at rotor | counterclockwise | **FK** |
| Airflow direction | Air outlet over struts | **FK** |
| Bearing system | Ball bearing | |
| Lubrication | see sectional drawing of the bearing | |
| Mounting position<br>Tolerance | any | |
| Balancing grade | 16,0 | **FK** |
| Impeller weight | 36,0 g | |

## 2 Mechanics

### 2.1 General

| | | |
|---|---|---|
| Width | 92,0 mm | |
| Height | 92,0 mm | |
| Depth | 25,4 mm | |
| Diameter | 0,0 mm | |
| Weight | 0,106 kg | |
| Housing material | Plastic | |
| Impeller material | Plastic | |
| Max. torque when mounted across both mounting flanges<br>Screw size | wire outlet corner: 40 Ncm<br>remaining corners: 60 Ncm<br>ISO 4762 - M4 degreased, without an additional brace and without washer | |

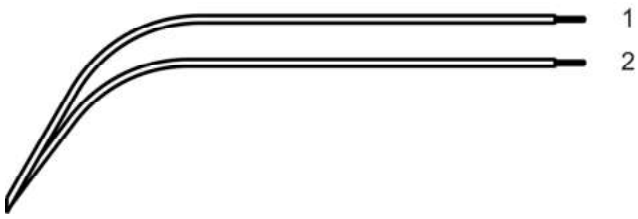
### 2.2 Motor

| | | |
|---|---|---|
| Type of motor | Electronically commutated external rotor | |
| Diameter of the motor | 25,0 mm | |
| Height of the motor | 6,0 mm | |
| Number of phases | 1 | |
| Number of windings | 1 | |
| Operating mode | Continuous duty | |
| Insulation material class | E | |

## 2.3 Connections

| | | |
|---|---|---|
| Electrical connection | Wires | |
| Length of lead wire<br>Tolerance | 310 mm<br>+- 10,0 mm | |
| Length of tube<br>Tolerance | | |
| Wire gauge (AWG) | 24 | |
| Insulation diameter | 1,55 mm | |
| Plug | see drawing | |
| Contact | see drawing | |






| | 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/m3; 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.

Δp = 0: corresp. to free air flow (see section 3.5)
I: corresp. to arithm. mean current value

| Features | Condition | Symbol | Values | | |
|---|---|---|---|---|---|
| Voltage range | Δp = 0 | U | 18,0 V | | 26,0 V |
| Nominal voltage | Δp = 0 | $U_N$ | | 24,0 V | |
| Power consumption<br>Tolerance | Δp = 0<br>0001 | P | 1,3 W<br>+- 17,5 % | 2,3 W<br>+- 12,5 % | 2,9 W<br>+- 15,0 % |
| Current consumption<br>Tolerance | Δp = 0<br>0001 | I | 70 mA<br>+- 17,5 % | 95 mA*)<br>+- 12,5 % | 110 mA<br>+- 15,0 % |
| Speed<br>Tolerance | Δp = 0<br>0001 | n | 2.300 1/min<br>+- 12,5 % | 3.000 1/min*)<br>+- 7,5 % | 3.150 1/min<br>+- 10,0 % |
| Starting current consumption | | | | 254 mA | |

*) Attention: Marked values are "FK" features

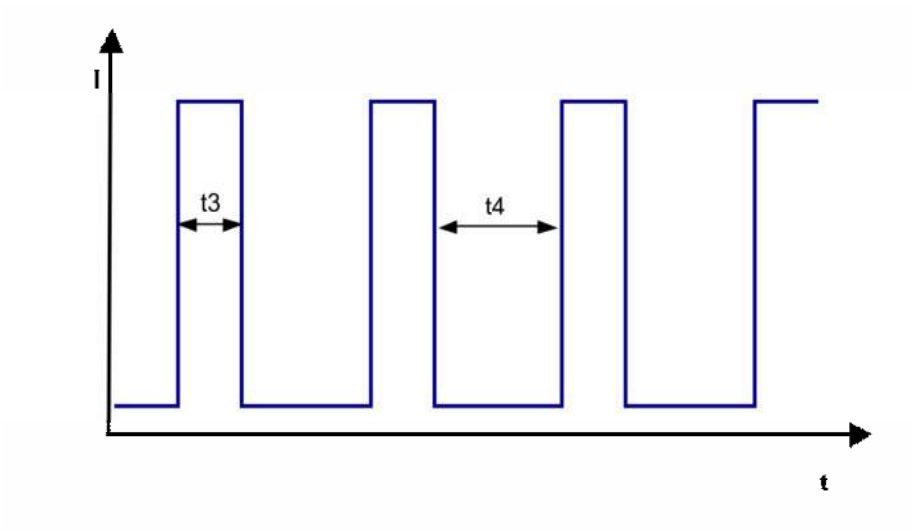
### 3.3 Operating Data - Electrical Interface -Output

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

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

### 3.4 Electrical Features

| | | |
|---|---|---|
| Electronic function | None | |
| Reversed polarity protection<br>Max. residual current at Un | Rectifying diode<br>IF <= 5 uA | **A** |
| Locked rotor protection | Auto restart | **A** |
| Locked rotor current at Un | approx. 254 mA | |
| Clock signal t3/t4 at locked rotor | Typical: 0,2 s / 1,1 s<br>t3: 0,06 s... 0,77 s<br>t4: 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/m3; Temperature 23°C +/- 3°C;
In the intake and outlet area should not be any solid obstruction within 0,5 m.

a.) Operation condition:

| |
|---|
| 3.000 1/min at free air flow |

| | | |
|---|---|---|
| Max. free-air flow (Δp = 0 / $\dot{V}$ = max.) | 91,0 m3/h | **FK** |
| Max. static pressure (Δp = max. / $\dot{V}$ =0) | 42 Pa | **FK** |

### 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 Lp(A) < 5 dB(A)
For further measurement conditions see section 3.5

a.) Operation condition:

| |
|---|
| 3.000 1/min at free air flow |

| | | |
|---|---|---|
| Optimal operating point | 70,0 m3/h @ 13 Pa | |
| Sound power level at the optimal operating point | 4,8 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 | |

*) Permittet 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.

### 4.3 Mechanical requirements

Please require severity levels and specification parameters from the responsible development departments

### 4.4 EMC

not specified

## 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 | **A** |
| 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 / UL507, Electric Fans |
| VDE | Yes / Approval acc. to EN 60950 (VDE 0805) - Information technology equipment - Part 1 Safety - Connection to a SELV circuit. |
| CSA | Yes / C22.2 No. 113-M1984 Fans and Ventilators |
| CCC | No |

The approval tests are observed to:
U approval max.:26,0 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 | |
| Life expectancy L10 Delta (40 °C) | 140.000 h | |

### 6.2 Additional Data

not specified