



## Nominal data

|                               |                   |         |         |
|-------------------------------|-------------------|---------|---------|
| Type                          | D2E146-HS97-01    |         |         |
| Motor                         | M2E068-DF         |         |         |
| Phase                         |                   | 1~      | 1~      |
| Nominal voltage               | VAC               | 230     | 230     |
| Frequency                     | Hz                | 50      | 60      |
| Type of data definition       |                   | fa      | ml      |
| Valid for approval / standard |                   | CE      | CE      |
| Speed                         | min <sup>-1</sup> | 1350    | 1750    |
| Power input                   | W                 | 195     | 215     |
| Current draw                  | A                 | 0.86    | 0.94    |
| Motor capacitor               | μF                | 5       | 5       |
| Capacitor voltage             | VDB               | 400     | 400     |
| Capacitor standard            |                   | P2 (CE) | P2 (CE) |
| Min. back pressure            | Pa                | 0       | 150     |
| Max. ambient temperature      | °C                | 45      | 40      |

ml = max. load · me = max. efficiency · fa = running at free air · cs = customer specs · cu = customer unit  
Subject to alterations

## Data according to ErP directive

|                       |        |
|-----------------------|--------|
| Installation category | A      |
| Efficiency category   | Static |
| Variable speed drive  | No     |
| Specific ratio*       | 1.00   |

\* Specific ratio =  $1 + p_{fs} / 100\,000\text{ Pa}$

|                                |                   | Actual | Request 2013 | Request 2015 |
|--------------------------------|-------------------|--------|--------------|--------------|
| Overall efficiency $\eta_{es}$ |                   | 25.6   | 25.6         | 32.6         |
| Efficiency grade N             |                   | 37     | 37           | 44           |
| Power input $P_e$              | kW                | 0.16   |              |              |
| Air flow $q_v$                 | m <sup>3</sup> /h | 455    |              |              |
| Pressure increase $p_{fs}$     | Pa                | 331    |              |              |
| Speed n                        | min <sup>-1</sup> | 2315   |              |              |

Data established at point of optimum efficiency



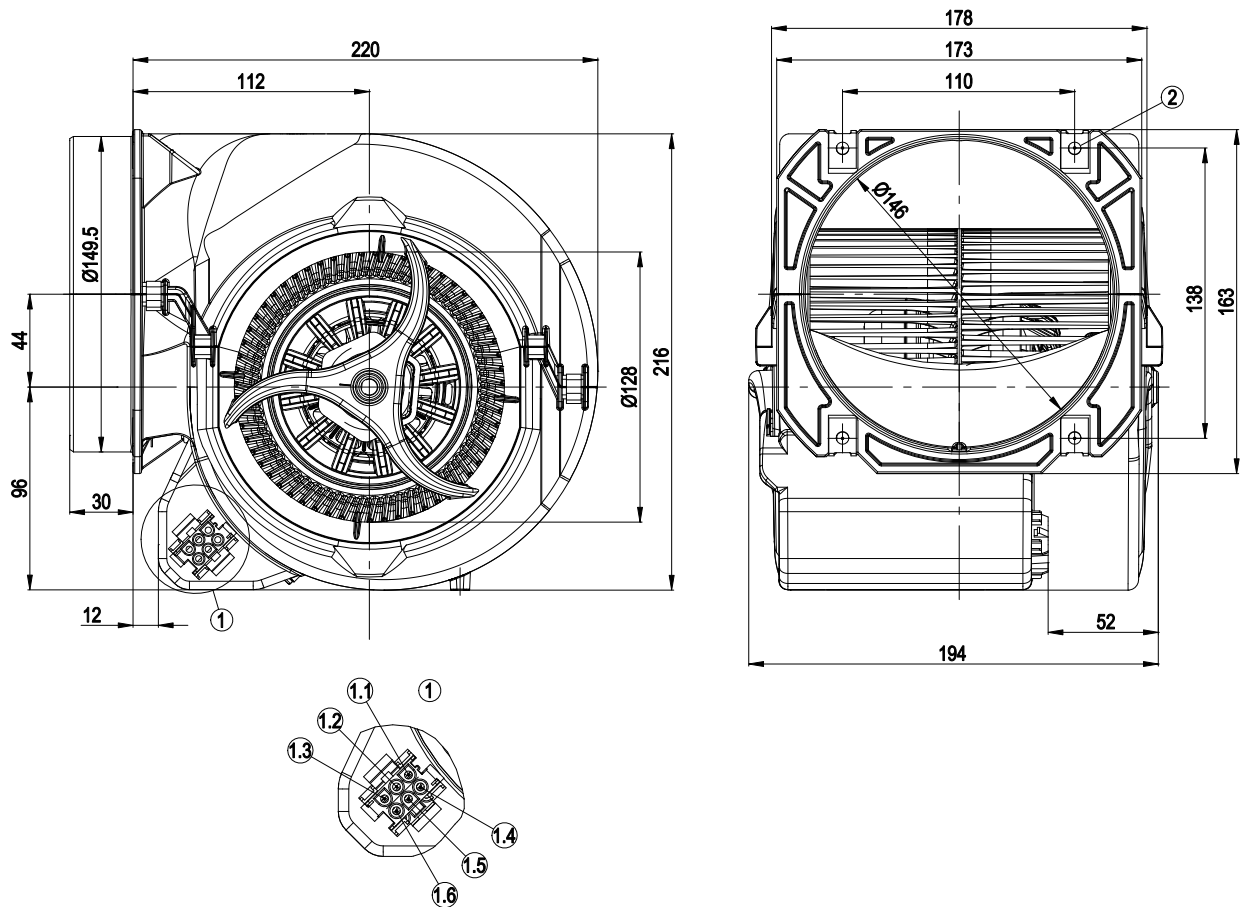
## Technical features

|                                                                    |                                                                              |
|--------------------------------------------------------------------|------------------------------------------------------------------------------|
| Mass                                                               | 2.94 kg                                                                      |
| Size                                                               | 146 mm                                                                       |
| Surface of rotor                                                   | Partially cast in aluminium                                                  |
| Material of terminal box                                           | PP plastic, black                                                            |
| Material of impeller                                               | PP plastic, fiberglass-reinforced                                            |
| Housing material                                                   | PP plastic, black                                                            |
| Motor suspension                                                   | Motor anti-vibration mounted on both sides                                   |
| Direction of rotation                                              | Counter-clockwise, seen on rotor                                             |
| Type of protection                                                 | IP 20                                                                        |
| Insulation class                                                   | "F"                                                                          |
| Humidity class                                                     | F0                                                                           |
| Max. permissible ambient motor temp. (transp./ storage)            | + 80 °C                                                                      |
| Min. permissible ambient motor temp. (transp./storage)             | - 40 °C                                                                      |
| Mounting position                                                  | Shaft horizontal or rotor on bottom; rotor on top on request                 |
| Condensate discharge holes                                         | None, open rotor                                                             |
| Operation mode                                                     | S1                                                                           |
| Motor bearing                                                      | Calotte bearing                                                              |
| Speed steps                                                        | 4                                                                            |
| Touch current acc. IEC 60990 (measuring network Fig. 4, TN system) | < 0.75 mA                                                                    |
| Electrical leads                                                   | With plug; Via terminal box, integrated capacitor connected via terminal box |
| Motor protection                                                   | Thermal overload protector (TOP) wired internally                            |
| Cable exit                                                         | Variable                                                                     |
| Protection class                                                   | I (if protective earth is connected by customer)                             |
| Product conforming to standard                                     | EN 60335-1; CE                                                               |
| Approval                                                           | GOST; CCC; VDE                                                               |

# AC centrifugal fan

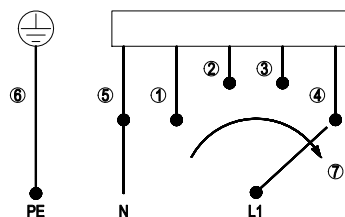
forward curved, dual inlet  
with housing (flange)

## Product drawing



|     |                                                                                                                  |
|-----|------------------------------------------------------------------------------------------------------------------|
| 1   | AMP Universal Mate-N-Lok coded plug system; connector shell: AMP 926 682-3; 6x plug pin: AMP 926 886-1           |
| 1.1 | L = stage 1                                                                                                      |
| 1.2 | L = step 2                                                                                                       |
| 1.3 | L = stage 3                                                                                                      |
| 1.4 | L = stage 4                                                                                                      |
| 1.5 | N                                                                                                                |
| 1.6 | Protective earth                                                                                                 |
| 2   | 4 x sheet metal nut for thread EN ISO 1478-ST4.8 (min. screw length 14.5 mm plus thickness of mounting material) |

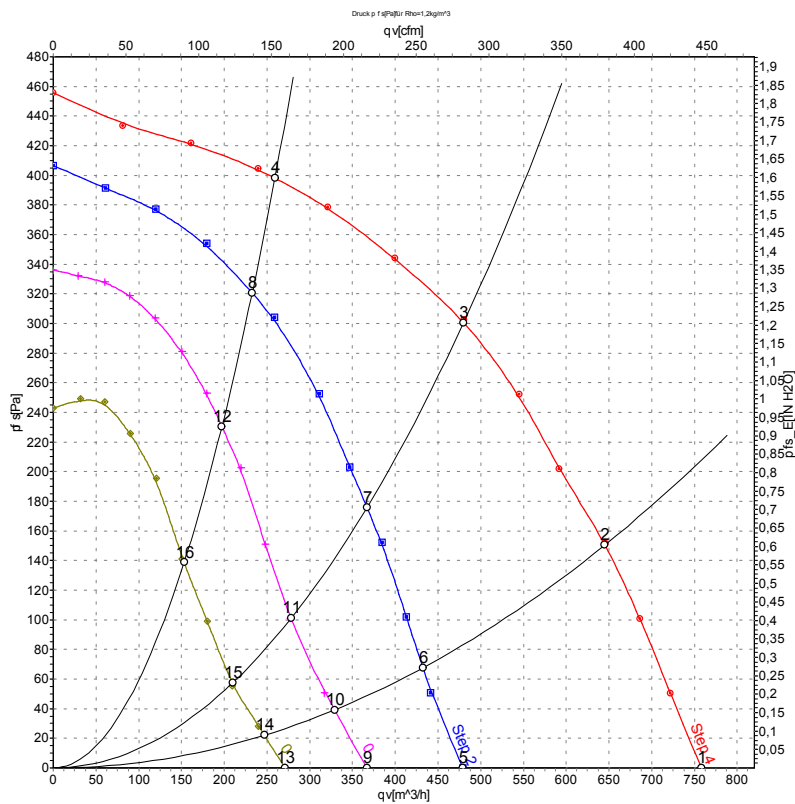
## Connection screen



When changing speeds, switch must break the circuit

|   |                |   |        |   |                     |
|---|----------------|---|--------|---|---------------------|
| 1 | Step 1 (min.)  | 2 | Step 2 | 3 | Step 3              |
| 4 | Step 4 (max.)  | 5 | N      | 6 | PE protective earth |
| 7 | Speed increase |   |        |   |                     |

## Charts: Air flow 50 Hz



Measurement: LU-72087  
 Measurement: LU-72089  
 Measurement: LU-72091  
 Measurement: LU-72094

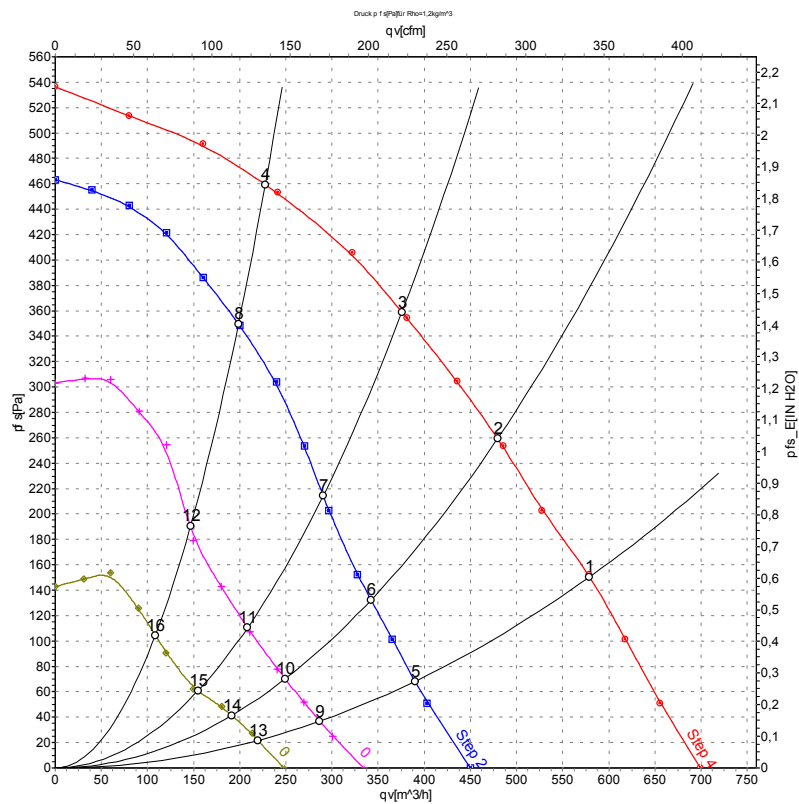
Air performance measured as per ISO 5801  
 Installation category A. For detailed  
 information on the measuring set-up, please  
 contact ebm-papst. Suction-side noise  
 levels: L<sub>WA</sub> measured as per ISO 13347 /  
 L<sub>pA</sub> measured with 1m distance to fan axis.  
 The values given are valid under the  
 measuring conditions mentioned above and  
 may vary according to the actual installation  
 situation. With any deviation from the  
 standard set-up, the specific values have to  
 be checked and reviewed with the unit  
 installed.

## Measured values

|    | Stage | U   | f  | n                 | P <sub>e</sub> | I    | qv   | p <sub>fs</sub> |
|----|-------|-----|----|-------------------|----------------|------|------|-----------------|
|    |       | V   | Hz | min <sup>-1</sup> | W              | A    | m³/h | Pa              |
| 1  | 4     | 230 | 50 | 1350              | 195            | 0.86 | 760  | 0               |
| 2  | 4     | 230 | 50 | 1795              | 185            | 0.81 | 645  | 150             |
| 3  | 4     | 230 | 50 | 2200              | 169            | 0.75 | 480  | 300             |
| 4  | 4     | 230 | 50 | 2520              | 146            | 0.65 | 260  | 400             |
| 5  | 3     | 230 | 50 | 875               | 128            | 0.61 | 480  | 0               |
| 6  | 3     | 230 | 50 | 1215              | 125            | 0.60 | 430  | 67              |
| 7  | 3     | 230 | 50 | 1680              | 116            | 0.58 | 365  | 176             |
| 8  | 3     | 230 | 50 | 2255              | 94             | 0.52 | 235  | 321             |
| 9  | 2     | 230 | 50 | 660               | 109            | 0.53 | 365  | 0               |
| 10 | 2     | 230 | 50 | 915               | 106            | 0.52 | 330  | 38              |
| 11 | 2     | 230 | 50 | 1280              | 102            | 0.51 | 280  | 100             |
| 12 | 2     | 230 | 50 | 1920              | 88             | 0.48 | 195  | 230             |
| 13 | 1     | 230 | 50 | 510               | 95             | 0.47 | 270  | 0               |
| 14 | 1     | 230 | 50 | 715               | 94             | 0.47 | 245  | 22              |
| 15 | 1     | 230 | 50 | 960               | 92             | 0.46 | 210  | 55              |
| 16 | 1     | 230 | 50 | 1515              | 85             | 0.44 | 155  | 138             |

U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase

## Charts: Air flow 60 Hz



Measurement: LU-72088  
Measurement: LU-72090  
Measurement: LU-72092  
Measurement: LU-72095

Air performance measured as per ISO 5801  
Installation category A. For detailed  
information on the measuring set-up, please  
contact ebm-papst. Suction-side noise  
levels: L<sub>WA</sub> measured as per ISO 13347 /  
L<sub>pA</sub> measured with 1m distance to fan axis.  
The values given are valid under the  
measuring conditions mentioned above and  
may vary according to the actual installation  
situation. With any deviation from the  
standard set-up, the specific values have to  
be checked and reviewed with the unit  
installed.

## Measured values

|    | Stage | U   | f  | n                 | P <sub>e</sub> | I    | qv   | p <sub>fs</sub> |
|----|-------|-----|----|-------------------|----------------|------|------|-----------------|
|    |       | V   | Hz | min <sup>-1</sup> | W              | A    | m³/h | Pa              |
| 1  | 4     | 230 | 60 | 1750              | 215            | 0.94 | 580  | 150             |
| 2  | 4     | 230 | 60 | 2060              | 212            | 0.93 | 480  | 260             |
| 3  | 4     | 230 | 60 | 2380              | 208            | 0.91 | 375  | 360             |
| 4  | 4     | 230 | 60 | 2710              | 201            | 0.89 | 230  | 460             |
| 5  | 3     | 230 | 60 | 1175              | 131            | 0.67 | 390  | 68              |
| 6  | 3     | 230 | 60 | 1485              | 129            | 0.67 | 340  | 132             |
| 7  | 3     | 230 | 60 | 1855              | 125            | 0.66 | 290  | 214             |
| 8  | 3     | 230 | 60 | 2365              | 114            | 0.65 | 200  | 350             |
| 9  | 2     | 230 | 60 | 890               | 106            | 0.57 | 285  | 37              |
| 10 | 2     | 230 | 60 | 1100              | 105            | 0.57 | 250  | 70              |
| 11 | 2     | 230 | 60 | 1365              | 104            | 0.57 | 210  | 110             |
| 12 | 2     | 230 | 60 | 1835              | 99             | 0.56 | 145  | 187             |
| 13 | 1     | 230 | 60 | 665               | 92             | 0.50 | 220  | 22              |
| 14 | 1     | 230 | 60 | 820               | 91             | 0.50 | 190  | 41              |
| 15 | 1     | 230 | 60 | 1010              | 90             | 0.50 | 155  | 60              |
| 16 | 1     | 230 | 60 | 1325              | 88             | 0.50 | 110  | 104             |

U = Supply voltage · f = Frequency · n = Speed · P<sub>e</sub> = Power input · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase