**R3G560-AQ04-03**

# EC centrifugal fan - Plug fan

backward curved, single inlet



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ErP2015 EXCEEDS THE NORM

## Nominal data

| | | |
|---|---|---|
| **Type** | **R3G560-AQ04-03** | |
| **Motor** | **M3G150-NA** | |
| Phase | | 3~ |
| Nominal voltage | VAC | 400 |
| Nominal voltage range | VAC | 380 .. 480 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed | $min^{-1}$ | 1750 |
| Power input | W | 4700 |
| Current draw | A | 7.3 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | +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 | Yes |
| Specific ratio* | 1.01 |

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

| | | Actual | Request 2013 | Request 2015 |
|---|---|---|---|---|
| Overall efficiency $\eta_{es}$ | | 67.2 | 54.5 | 58.5 |
| Efficiency grade N | | 70.7 | 58 | 62 |
| Power input $P_{ed}$ | kW | 4.67 | | |
| Air flow $q_v$ | $m^3/h$ | 11640 | | |
| Pressure increase $p_{fs}$ | Pa | 934 | | |
| Speed n | $min^{-1}$ | 1765 | | |

Data established at point of optimum efficiency



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## Technical features

| | |
|---|---|
| **Mass** | 38.2 kg |
| **Size** | 560 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | Aluminium sheet |
| **Number of blades** | 7 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 54 |
| **Insulation class** | "F" |
| **Humidity class** | F4-1 |
| **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 |
| **Condensate discharge holes** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - PFC, passive<br>- Control input 0-10 VDC / PWM<br>- Output 10 VDC, max. 1.1 mA<br>- Over-temperature protected electronics / motor<br>- Alarm relay<br>- Integrated PID controller<br>- Input for sensor 0-10 V or 4-20 mA<br>- Output for slave 0-10 V<br>- RS485 ebmBUS<br>- Motor current limit<br>- Soft start<br>- Line undervoltage / phase failure detection<br>- Output 20 VDC, max. 50 mA |
| **EMC interference immunity** | Acc. to EN 61000-6-2 (industrial environment) |
| **EMC interference emission** | Acc. to EN 61000-6-3 (household environment) |
| **Touch current acc. IEC 60990 (measuring network Fig. 4, TN system)** | <= 3.5 mA |
| **Electrical leads** | Via terminal box |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **Protection class** | I (if protective earth is connected by customer) |
| **Product conforming to standard** | EN 61800-5-1; CE |

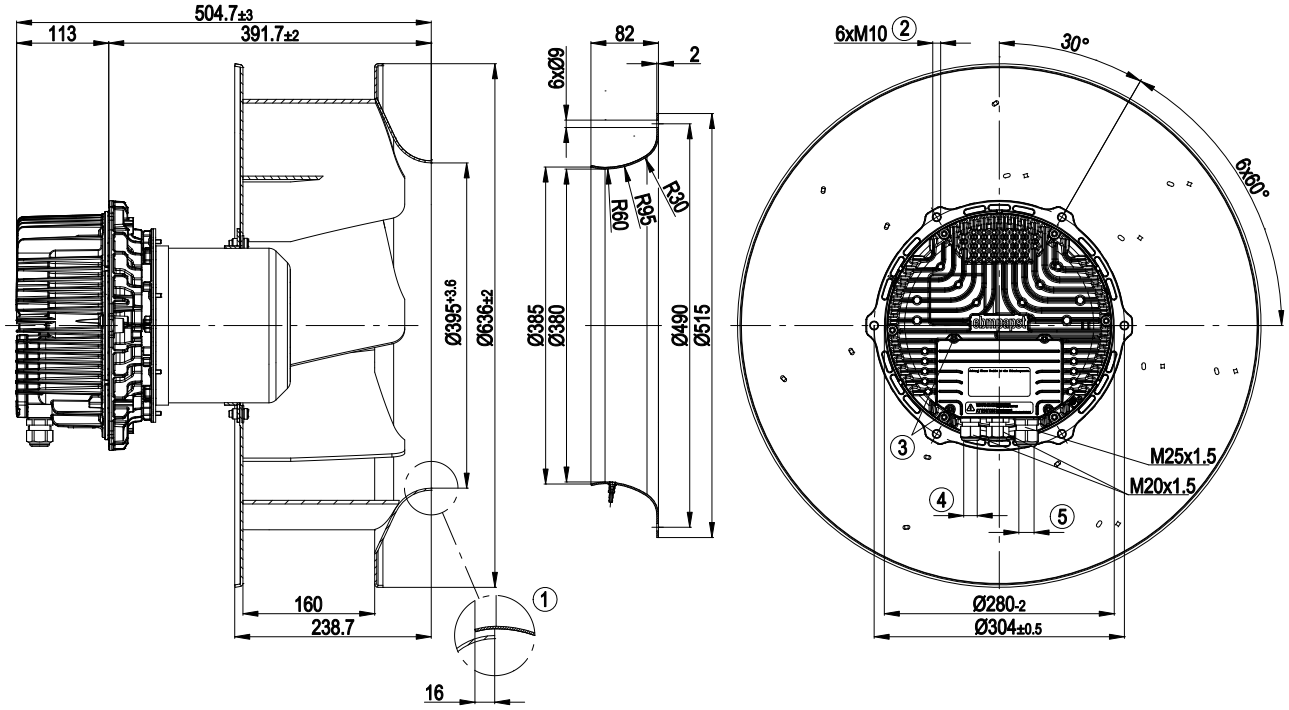


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## Product drawing




| | |
|---|---|
| 1 | Accessory part: Inlet nozzle 64030-2-4013, not included in the standard scope of delivery |
| 2 | Depth of screw max. 20 mm |
| 3 | Tightening torque 3.5±0.5 Nm |
| 4 | Cable diameter: min. 4 mm, max. 10 mm; tightening torque: 4±0.4 Nm |
| 5 | Cable diameter: min. 9 mm, max. 16 mm; tightening torque: 6±0.6 Nm |

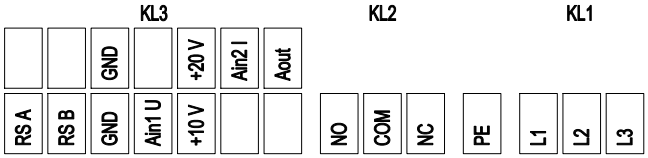


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## Connection screen




| No. | Pin | Signal | Function / assignment |
|---|---|---|---|
| PE | | PE | Ground wire |
| KL1 | | L3 | Power line, L3 |
| KL1 | | L2 | Power line, L2 |
| KL1 | | L1 | Power line, L1 |
| KL2 | | NC | Alarm relay, normally closed connection |
| KL2 | | COM | Alarm relay, COMMON (2 A, 250 VAC, AC1) |
| KL2 | | NO | Alarm relay, normally open connection |
| KL3 | | +10 V | Supply for external potentiometer, 10 VDC(+/-3 %) max. 10 mA |
| KL3 | | Ain1U | Analogue set value input, 0-10 V (impedance 100 kΩ),<br>can be used as an alternative to connection Ain2 I only |
| KL3 | | GND | GND |
| KL3 | | RSB | RS485 interface for ebmBus, RS B |
| KL3 | | RSA | RS485 interface for ebmBus, RS A |
| KL3 | | Aout | Analog output 0-10 V max. 5 mA, output of the current level control coefficient |
| KL3 | | Ain2 I | Analogue actual value input, 4-20 mA (impedance 100 Ω),<br>can be used only as an alternative to connection Ain1 U only |
| KL3 | | +20 V | Supply for external sensor, 20 VDC (+25 %/-10 %) max. 40 mA |
| KL3 | | GND | GND |

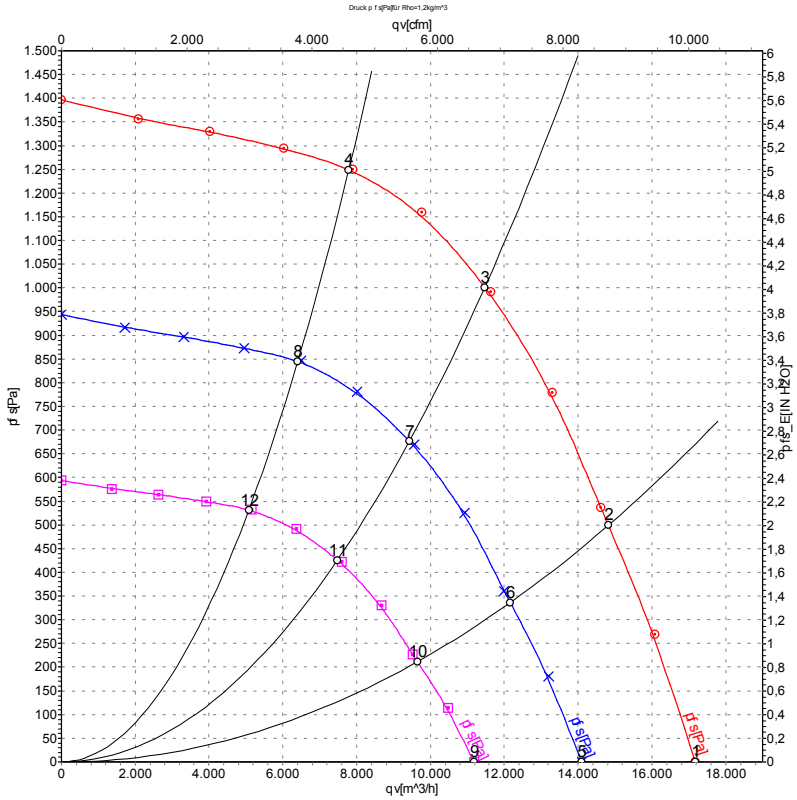


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## Charts: Air flow 50 Hz




Measurement: LU-128639

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: LwA measured as per ISO 13347 / LpA 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

| | U | f | n | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | $LwA_{out}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | dB(A) | dB(A) | dB(A) | $m^3/h$ | Pa |
| 1 | 400 | 50 | 1750 | 3032 | 4.77 | 88 | 97 | 103 | 17170 | 0 |
| 2 | 400 | 50 | 1750 | 3929 | 6.10 | 84 | 91 | 96 | 14820 | 500 |
| 3 | 400 | 50 | 1750 | 4700 | 7.30 | 78 | 84 | 91 | 11470 | 1000 |
| 4 | 400 | 50 | 1750 | 4366 | 6.71 | 79 | 86 | 92 | 7785 | 1250 |
| 5 | 400 | 50 | 1450 | 1675 | 2.64 | 84 | 93 | 98 | 14090 | 0 |
| 6 | 400 | 50 | 1450 | 2171 | 3.37 | 80 | 87 | 92 | 12160 | 336 |
| 7 | 400 | 50 | 1450 | 2602 | 4.01 | 74 | 80 | 86 | 9430 | 681 |
| 8 | 400 | 50 | 1450 | 2432 | 3.74 | 75 | 82 | 88 | 6405 | 848 |
| 9 | 400 | 50 | 1150 | 836 | 1.32 | 79 | 88 | 93 | 11180 | 0 |
| 10 | 400 | 50 | 1150 | 1083 | 1.68 | 75 | 82 | 87 | 9650 | 211 |
| 11 | 400 | 50 | 1150 | 1298 | 2.00 | 68 | 75 | 81 | 7480 | 428 |
| 12 | 400 | 50 | 1150 | 1213 | 1.87 | 70 | 76 | 83 | 5080 | 534 |

U = Supply voltage · f = Frequency · n = Speed · $P_{ed}$ = Power input · I = Current draw · $LpA_{in}$ = Sound pressure level inlet side · $LwA_{in}$ = Sound power level inlet side · $LwA_{out}$ = Sound power level outlet side
qv = Air flow · $p_{fs}$ = Pressure increase



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