**K3G310-RR05-H8**

# EC centrifugal module - RadiCal

backward curved, single inlet

with support plate

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## Nominal data

| | |
|---|---|
| **Type** | **K3G310-RR05-H8** |
| **Motor** | **M3G084-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | VAC | 230 |
| Nominal voltage range | VAC | 200 .. 277 |
| Frequency | Hz | 50/60 |
| Type of data definition | | ml |
| Speed (rpm) | $min^{-1}$ | 2250 |
| Power input | W | 500 |
| Current draw | A | 2.2 |
| Min. ambient temperature | °C | -25 |
| Max. ambient temperature | °C | 60 |

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

| | | Actual | Request 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 63.9 | 48.2 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 77.7 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power input $P_{ed}$ | kW | 0.49 |
| 09 Air flow $q_v$ | $m^3/h$ | 2005 |
| 09 Pressure increase $p_{fs}$ | Pa | 508 |
| 10 Speed (rpm) n | $min^{-1}$ | 2255 |
| 11 Specific ratio* | | 1.01 |

Data definition with optimum efficiency.
The ErP data is determined using a motor-impeller combination in a standardised measurement configuration.

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

LU-165322

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## Technical features

| | |
|---|---|
| **Mass** | 8.66 kg |
| **Size** | 310 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium |
| **Material of impeller** | PP plastic |
| **Material of mounting plate** | Aluminium sheet |
| **Material of distancing profiles** | Aluminium |
| **Material of inlet nozzle** | Sheet steel, galvanised and coated in black |
| **Material of guard grille** | Steel, galvanised |
| **Number of blades** | 6 |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | Motor IP 55, electronics IP 20 |
| **Insulation class** | "F" |
| **Humidity (F)/environmental protection class (H)** | F3-1 |
| **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 top; rotor on bottom on request |
| **Condensate discharge holes** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Operation and alarm display<br>- Operation and alarm display via LED<br>- Alarm relay<br>- Integrated PID controller<br>- Output limit<br>- Motor current limit<br>- PFC, active<br>- RS485 MODBUS RTU<br>- Soft start<br>- Control input 0-10 VDC / PWM<br>- Control interface with SELV potential safely disconnected from the mains<br>- Over-temperature protected electronics / motor<br>- Line undervoltage / phase failure detection |
| **EMC interference immunity** | Acc. to EN 61000-6-2 (industrial environment) |
| **EMC harmonics** | Acc. to EN 61000-3-2/3 |
| **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** | With plug |
| **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 61800-5-1; CE |
| **Approval** | UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1 |



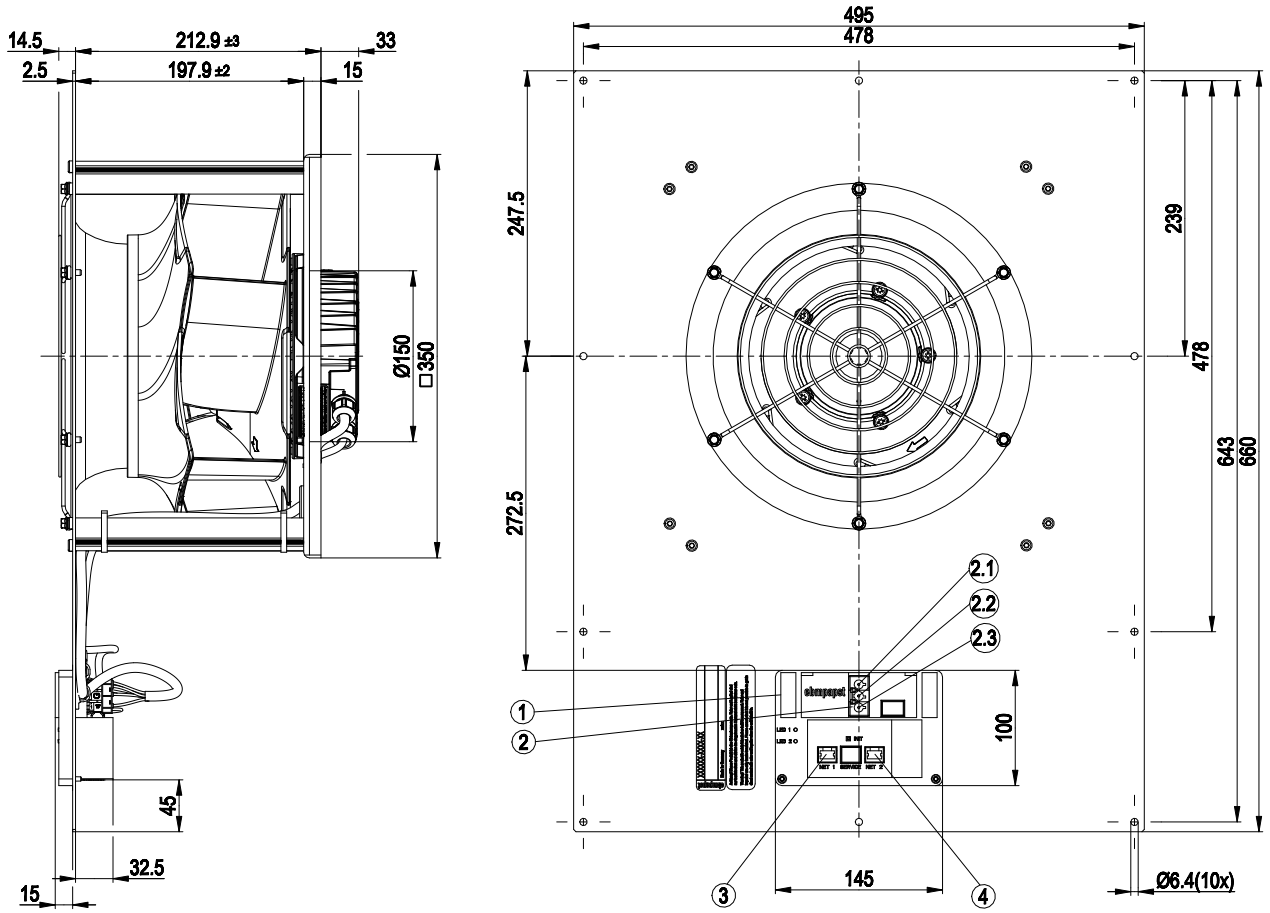
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## Product drawing




| | |
|---|---|
| 1 | Terminal box |
| 2 | Connector housing 3-pole GST18/3 Wieland 92.032.9058.1 |
| 2.1 | N |
| 2.2 | PE |
| 2.3 | L |
| 3 | Connector housing 8-pole Tyco 100616-2 |
| 4 | Connector housing 8-pole Tyco 100616-2 |



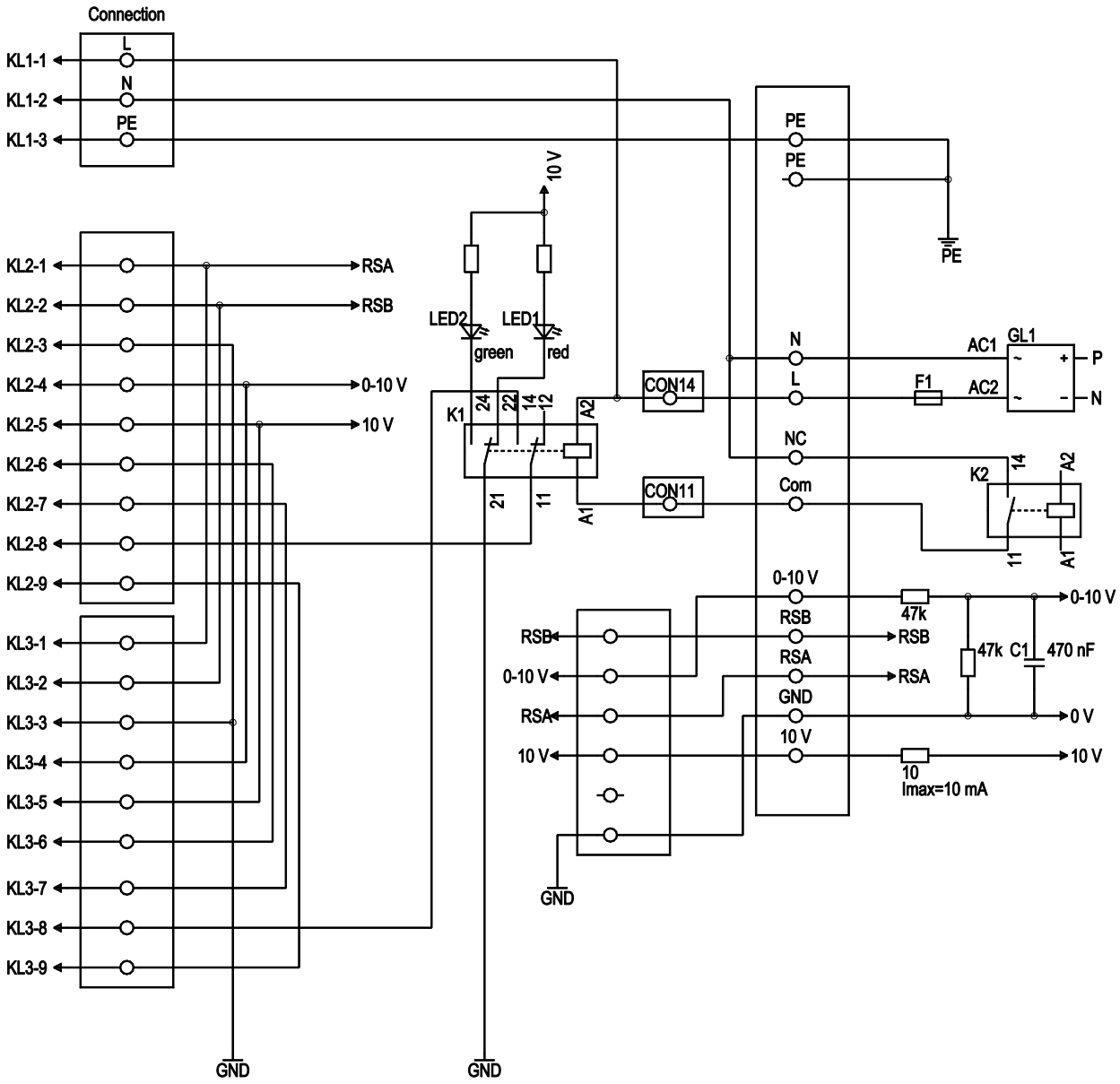
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## Connection screen




| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| 1 | 1 | L | black | Mains connection, power supply 1~ 200-277 VAC, 50/60 Hz |
| 1 | 2 | N | blue | Power supply, 1-phase, 200-277 VAC, 50/60 Hz |
| 1 | 3 | PE | green/yellow | Earth connection |
| 2 | 1 | RSA | - | Bus connection RS-485, RSA, MODBUS RTU; SELV |
| 2 | 2 | RSB | - | Bus connection RS-485, RSB, MODBUS RTU; SELV |
| 2 | 3 | GND | - | Reference earth for control interface; SELV |
| 2 | 4 | 0-10 V | - | Control input |
| 2 | 5 | +10 V | - | Fixed voltage output 10 VDC |
| 2 | 6 | RES | - | Reserve |
| 2 | 7 | COM* | - | Alarm COM* |
| 2 | 8 | NC | - | NC KL2 UMAX 24 V |
| 2 | 9 | Schirm | - | Shield |



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| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| 3 | 1 | RSA | - | Bus connection RS-485, RSA, MODBUS RTU; SELV |
| 3 | 2 | RSB | - | Bus connection RS-485, RSB, MODBUS RTU; SELV |
| 3 | 3 | GND | - | Reference earth for interface; SELV |
| 3 | 4 | 0-10 V | - | Control input |
| 3 | 5 | +10 V | - | Fixed voltage output 10 VDC |
| 3 | 6 | RES | - | Reserve |
| 3 | 7 | COM* | - | Alarm COM* |
| 3 | 8 | NC* | - | NC* KL3 UMAX 24 V |
| 3 | 9 | Schirm | - | Shield |



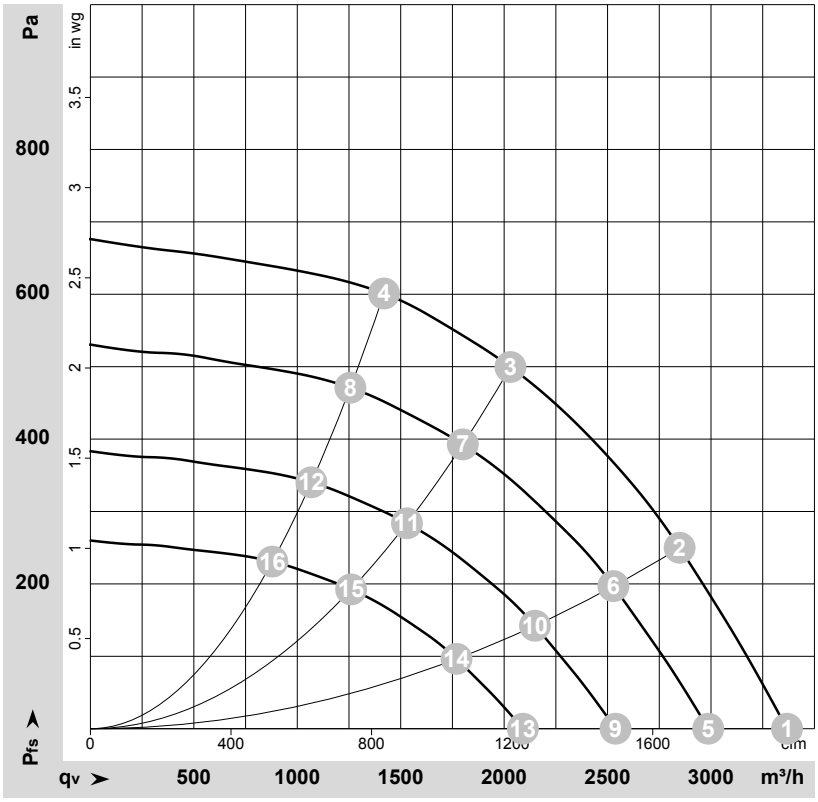
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## Charts: Air flow 50 Hz




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-165322-1

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 | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|
| | V | Hz | $min^{-1}$ | W | A | $m^3/h$ | Pa | cfm | inH2O |
| 1 | 230 | 50 | 2250 | 327 | 1.44 | 3365 | 0 | 1980 | 0.00 |
| 2 | 230 | 50 | 2250 | 422 | 1.85 | 2850 | 250 | 1675 | 1.00 |
| 3 | 230 | 50 | 2250 | 500 | 2.20 | 2030 | 500 | 1195 | 2.01 |
| 4 | 230 | 50 | 2250 | 449 | 1.97 | 1420 | 600 | 835 | 2.41 |
| 5 | 230 | 50 | 2000 | 228 | 1.01 | 2985 | 0 | 1760 | 0.00 |
| 6 | 230 | 50 | 2000 | 295 | 1.29 | 2530 | 197 | 1490 | 0.79 |
| 7 | 230 | 50 | 2000 | 342 | 1.50 | 1800 | 393 | 1060 | 1.58 |
| 8 | 230 | 50 | 2000 | 312 | 1.37 | 1255 | 471 | 740 | 1.89 |
| 9 | 230 | 50 | 1700 | 140 | 0.62 | 2540 | 0 | 1495 | 0.00 |
| 10 | 230 | 50 | 1700 | 181 | 0.79 | 2150 | 142 | 1265 | 0.57 |
| 11 | 230 | 50 | 1700 | 210 | 0.92 | 1530 | 284 | 900 | 1.14 |
| 12 | 230 | 50 | 1700 | 191 | 0.84 | 1070 | 340 | 630 | 1.36 |
| 13 | 230 | 50 | 1400 | 78 | 0.35 | 2090 | 0 | 1230 | 0.00 |
| 14 | 230 | 50 | 1400 | 101 | 0.44 | 1770 | 97 | 1040 | 0.39 |
| 15 | 230 | 50 | 1400 | 117 | 0.51 | 1260 | 193 | 740 | 0.77 |
| 16 | 230 | 50 | 1400 | 107 | 0.47 | 880 | 231 | 520 | 0.93 |

U = Supply voltage · f = Frequency · n = Speed (rpm) · $P_{ed}$ = Power input · I = Current draw · $q_V$ = Air flow · $p_{fs}$ = Pressure increase



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