

# EC centrifugal module - RadiPac

backward-curved, single-intake  
with support bracket



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## Nominal data

|                          |                   |            |
|--------------------------|-------------------|------------|
| Type                     | K3G280-AU11-C2    |            |
| Motor                    | M3G084-GF         |            |
| Phase                    |                   | 3~         |
| Nominal voltage          | VAC               | 400        |
| Nominal voltage range    | VAC               | 380 .. 480 |
| Frequency                | Hz                | 50/60      |
| Method of obtaining data |                   | ml         |
| Speed (rpm)              | min <sup>-1</sup> | 3100       |
| Power consumption        | W                 | 1000       |
| Current draw             | A                 | 1.6        |
| Min. ambient temperature | °C                | -25        |
| Max. ambient temperature | °C                | 60         |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment  
Subject to change

## Data according to Commission Regulation (EU) 327/2011 (EN 17166)

|                                   |   | Actual | Req. 2015 |
|-----------------------------------|---|--------|-----------|
| 01 Overall efficiency $\eta_{es}$ | % | 64.6   | 51.2      |
| 02 Measurement category           |   | A      |           |
| 03 Efficiency category            |   | Static |           |
| 04 Efficiency grade N             |   | 75.4   | 62        |
| 05 Variable speed drive           |   | Yes    |           |

Data obtained at optimum efficiency level.  
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

|                               |                   |      |
|-------------------------------|-------------------|------|
| 09 Power consumption $P_{ed}$ | kW                | 0.94 |
| 09 Air flow $q_v$             | m <sup>3</sup> /h | 2405 |
| 09 Pressure increase $p_{fs}$ | Pa                | 842  |
| 10 Speed (rpm) n              | min <sup>-1</sup> | 3115 |
| 11 Specific ratio*            |                   | 1.01 |

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

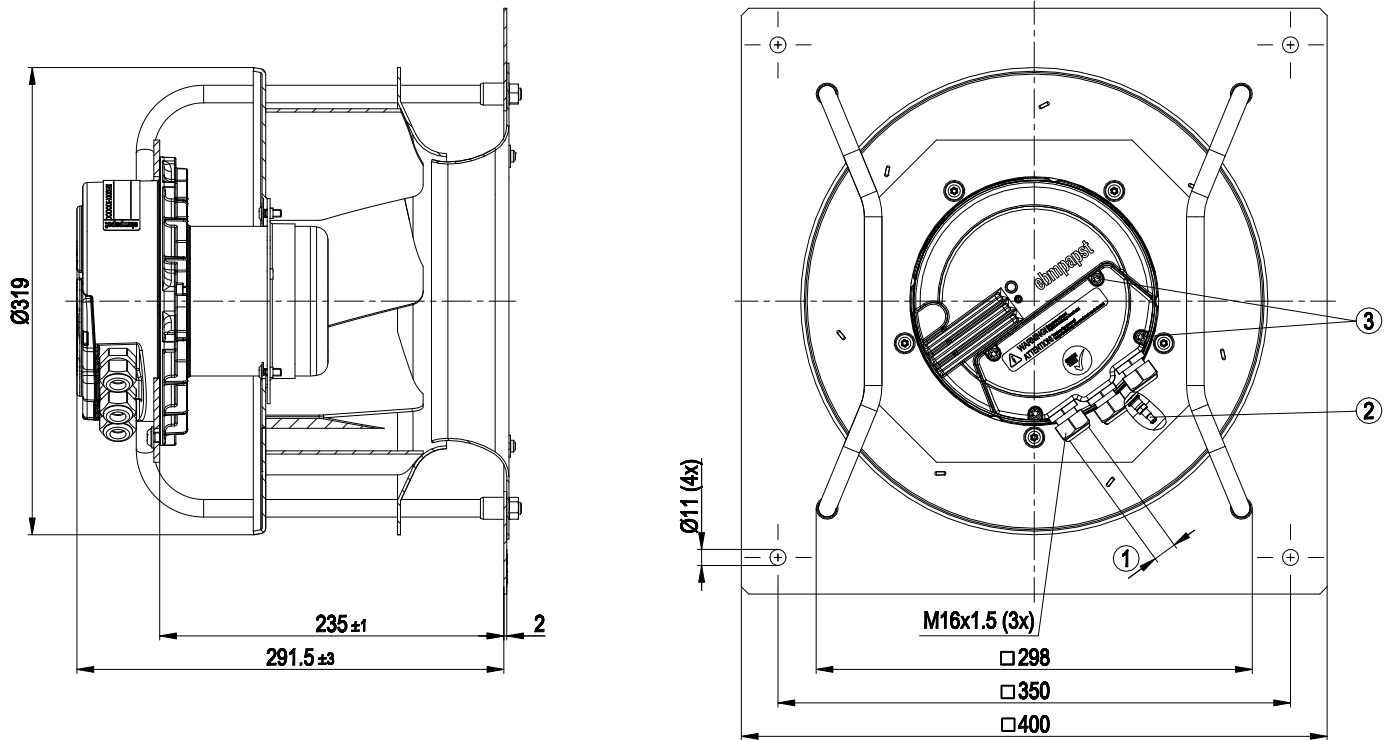
LU-198028



## Technical description

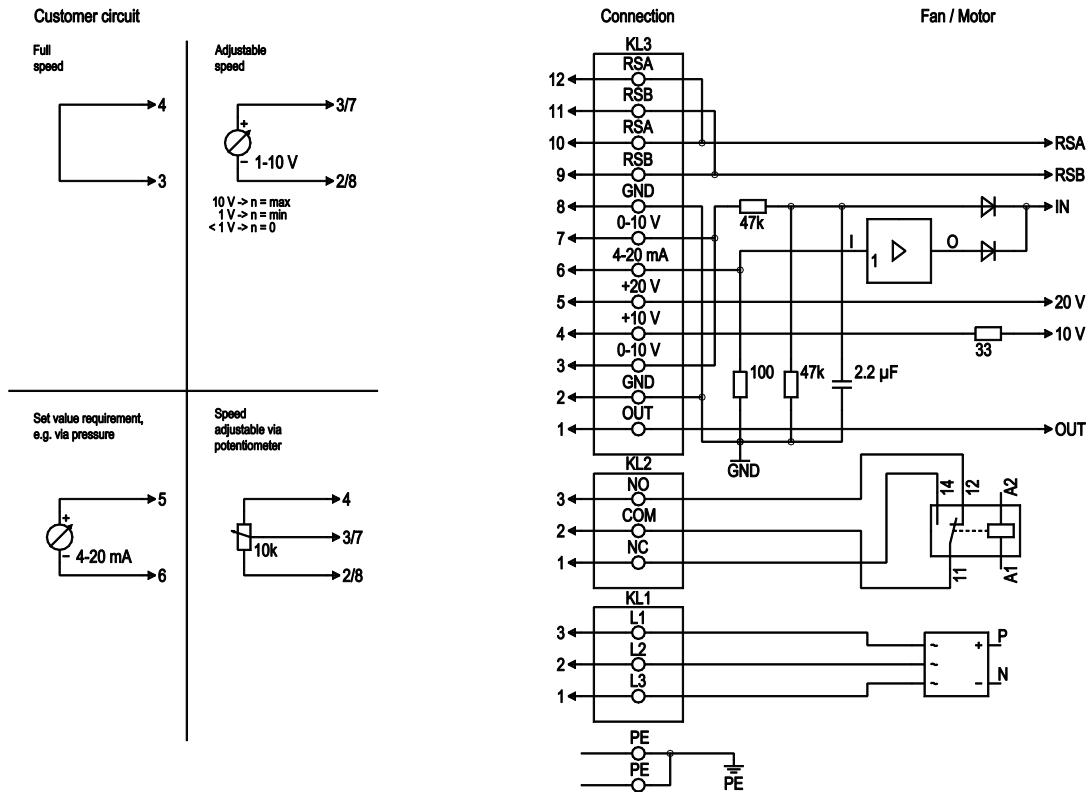
|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                                                                     | 11.7 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Size                                                                       | 280 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Motor size                                                                 | 84                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rotor surface                                                              | Painted black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electronics housing material                                               | Die-cast aluminum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Impeller material                                                          | Sheet aluminum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Support plate material                                                     | Sheet steel, galvanized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Support bracket material                                                   | Steel, painted black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Inlet nozzle material                                                      | Sheet steel, galvanized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Number of blades                                                           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Direction of rotation                                                      | Clockwise, viewed toward rotor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Degree of protection                                                       | IP54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Insulation class                                                           | "B"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Moisture (F) / Environmental (H) protection class                          | H1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Max. permitted ambient temp. for motor (transport/storage)                 | +80 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Min. permitted ambient temp. for motor (transport/storage)                 | -40 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Installation position                                                      | Shaft horizontal or rotor on bottom; rotor on top on request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Condensation drainage holes                                                | On rotor side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mode                                                                       | S1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Motor bearing                                                              | Ball bearing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Technical features                                                         | <ul style="list-style-type: none"> <li>- Output 10 VDC, max. 10 mA</li> <li>- Output 20 VDC, max. 50 mA</li> <li>- Output for slave 0-10 V</li> <li>- Input for sensor 0-10 V or 4-20 mA</li> <li>- External 24 V input (parameter setting)</li> <li>- Alarm relay</li> <li>- Power limiter</li> <li>- Motor current limitation</li> <li>- RS-485 MODBUS-RTU</li> <li>- Soft start</li> <li>- Control input 0-10 VDC / PWM</li> <li>- Control interface with SELV potential safely disconnected from supply</li> <li>- Thermal overload protection for electronics/motor</li> <li>- Line undervoltage / phase failure detection</li> </ul> |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Electrical hookup                                                          | Terminal box                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Motor protection                                                           | Thermal overload protector (TOP) internally connected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protection class                                                           | I (if protective earth is connected by customer to the housing's connection point)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Conformity with standards                                                  | EN 61800-5-1; CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Approval                                                                   | CSA C22.2 No. 77 + CAN/CSA-E60730-1; CCC; EAC; UL 1004-7 + 60730-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Product drawing



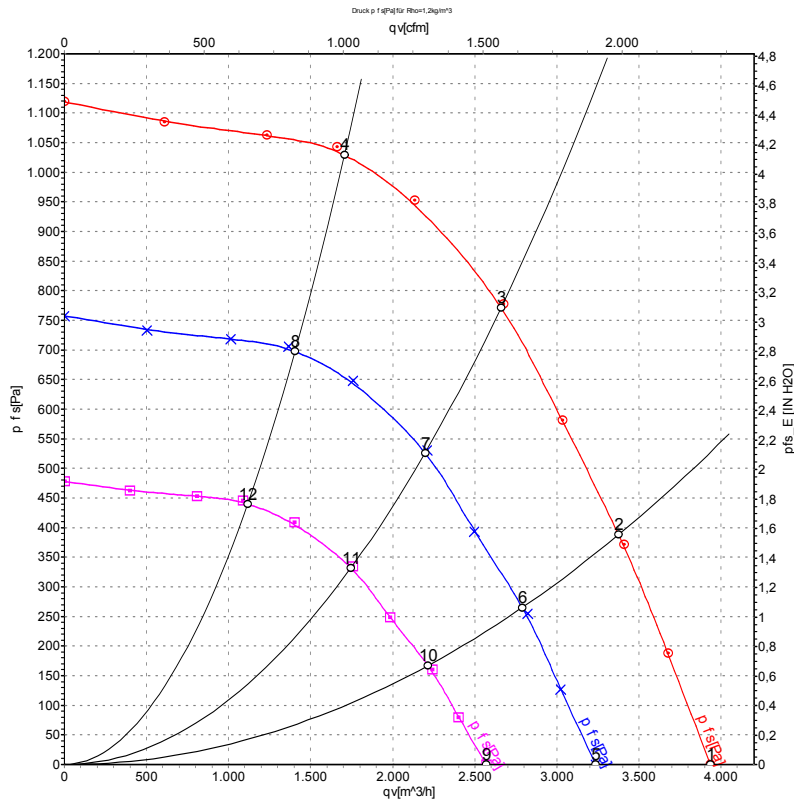
|   |                                                                          |
|---|--------------------------------------------------------------------------|
| 1 | Cable diameter min. 4 mm, max. 10 mm; tightening torque $2.5 \pm 0.4$ Nm |
| 2 | Inlet ring with pressure tap (k-factor 93)                               |
| 3 | Tightening torque $3.5 \pm 0.5$ Nm                                       |

## Connection diagram



| No. | Conn.   | Designation | Function/assignment                                                                                                                                                           |
|-----|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PE  |         | PE          | Protective earth terminal                                                                                                                                                     |
| KL1 | 1, 2, 3 | L1, L2, L3  | Power supply, voltage range (see nameplate), 50/60 Hz                                                                                                                         |
| KL2 | 1       | NC          | Floating status contact, break for failure                                                                                                                                    |
| KL2 | 2       | COM         | floating status contact, changeover contact, common connection (2 A, max. 250 VAC, min. 10 mA, AC1)                                                                           |
| KL2 | 3       | NO          | Floating status contact, make for failure                                                                                                                                     |
| KL3 | 1       | OUT         | Analog output, 0-10 VDC, max. 3 mA, SELV, output of current motor modulation level:<br>1 V corresponds to 10% modulation level.<br>10 V corresponds to 100% modulation level. |
| KL3 | 2, 8    | GND         | Reference ground for control interface, SELV                                                                                                                                  |
| KL3 | 3, 7    | 0-10 V      | Use control / current sensor value input 0-10 VDC, impedance 100 kΩ only as alternative to 4-20 mA input, SELV                                                                |
| KL3 | 4       | +10 V       | Voltage output 10 VDC (±3%), max. 10 mA, power supply for external devices (e.g. potentiometer), SELV                                                                         |
| KL3 | 5       | +20 V       | Voltage output 20 VDC (+25%/-10%), max. 50 mA, power supply for external devices (e.g. sensors), SELV                                                                         |
| KL3 | 6       | 4-20 mA     | Use control / current sensor value input 4-20 mA, impedance 100 Ω only as alternative to 0-10 V input, SELV                                                                   |
| KL3 | 9, 11   | RSB         | RS485 interface for MODBUS, RSB                                                                                                                                               |
| KL3 | 10, 12  | RSA         | RS485 interface for MODBUS, RSA                                                                                                                                               |

## Curves: Air performance 50 Hz



Measurement: LU-130335-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

|    | U   | f  | n                 | P <sub>ed</sub> | I    | LpA <sub>in</sub> | LwA <sub>in</sub> | LwA <sub>out</sub> | q <sub>v</sub> | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub> |
|----|-----|----|-------------------|-----------------|------|-------------------|-------------------|--------------------|----------------|-----------------|----------------|-----------------|
|    | V   | Hz | min <sup>-1</sup> | W               | A    | dB(A)             | dB(A)             | dB(A)              | m³/h           | Pa              | cfm            | in. wg          |
| 1  | 400 | 50 | 3100              | 645             | 1.04 | 78                | 86                | 93                 | 3935           | 0               | 2315           | 0.00            |
| 2  | 400 | 50 | 3100              | 852             | 1.35 | 75                | 83                | 90                 | 3375           | 390             | 1985           | 1.57            |
| 3  | 400 | 50 | 3100              | 1000            | 1.60 | 72                | 80                | 86                 | 2660           | 775             | 1565           | 3.11            |
| 4  | 400 | 50 | 3100              | 921             | 1.46 | 76                | 83                | 89                 | 1705           | 1030            | 1005           | 4.14            |
| 5  | 400 | 50 | 2575              | 358             | 0.58 | 74                | 82                | 88                 | 3235           | 0               | 1905           | 0.00            |
| 6  | 400 | 50 | 2575              | 482             | 0.76 | 71                | 79                | 85                 | 2790           | 269             | 1640           | 1.08            |
| 7  | 400 | 50 | 2575              | 562             | 0.89 | 68                | 76                | 82                 | 2195           | 534             | 1295           | 2.14            |
| 8  | 400 | 50 | 2575              | 514             | 0.82 | 71                | 79                | 84                 | 1405           | 700             | 825            | 2.81            |
| 9  | 400 | 50 | 2045              | 180             | 0.29 | 69                | 77                | 83                 | 2570           | 0               | 1515           | 0.00            |
| 10 | 400 | 50 | 2045              | 242             | 0.38 | 66                | 74                | 80                 | 2215           | 170             | 1305           | 0.68            |
| 11 | 400 | 50 | 2045              | 282             | 0.45 | 63                | 71                | 77                 | 1745           | 337             | 1025           | 1.35            |
| 12 | 400 | 50 | 2045              | 257             | 0.41 | 66                | 74                | 79                 | 1115           | 442             | 655            | 1.77            |

U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>ed</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase