**K3G280-RU65-82**

# EC centrifugal module - RadiCal

backward-curved, single-intake

with support structure, for rail applications



## Nominal data

| | | |
|---|---|---|
| **Type** | **K3G280-RU65-82** | |
| **Motor** | **M3G084-CF** | |
| Nominal voltage | VDC | 26 |
| Nominal voltage range | VDC | 16 .. 32 |
| Method of obtaining data | | fa |
| Speed (rpm) | $min^{-1}$ | 2830 |
| Power consumption | W | 460 |
| Current draw | A | 18.0 |
| Min. ambient temperature | °C | -40 |
| Max. ambient temperature | °C | 70 |

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

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## Technical description

| | |
|---|---|
| **Weight** | 0.001 kg |
| **Size** | 280 mm |
| **Motor size** | 84 |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum |
| **Impeller material** | PA plastic, sheet-metal plate painted black |
| **Spacer material** | Aluminum |
| **Inlet nozzle material** | Sheet steel, galvanized |
| **Support structure material** | Aluminum |
| **Number of blades** | 6 |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | Motor IP24 KM, electronics IP6K9K |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | H4 |
| **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 |
| **Cooling hole/opening** | On rotor side |
| **Mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Start-up at 85°C (2 min) permissible<br>- Fault output (high-side switch max. 30 mA)<br>- Load dump (58 V)<br>- Motor current limitation<br>- Soft start<br>- Control input 0-10 VDC/PWM<br>- Standstill in the case of open circuit<br>- Temperature derating<br>- Overvoltage detection<br>- Thermal overload protection for electronics<br>- Undervoltage detection |
| **EMC regulations** | According to EN 50121-3-2 |
| **With cable** | Lateral |
| **Protection class** | I (with customer connection of protective earth) |
| **Conformity with standards** | EN 15085-1, CPC3: 2013; EN 45545-2, HL3: 2013 + A1:2015; EN 50155: 2008; EN 61373, Cat. 1B: 2010 |
| **Approval** | EAC |
| **Comment** | A prerequisite for operation is a Class 1 vehicle electrical system architecture according to EN 50533; if supply potential (e.g. 230 VAC) is passed through the alarm relay, the SELV signal wires lose their property of reinforced insulation and they then have only basic insulation<br>The SELV property (reinforced insulation) is not lost when voltages of up to 110 VDC are passed through the alarm relay. |

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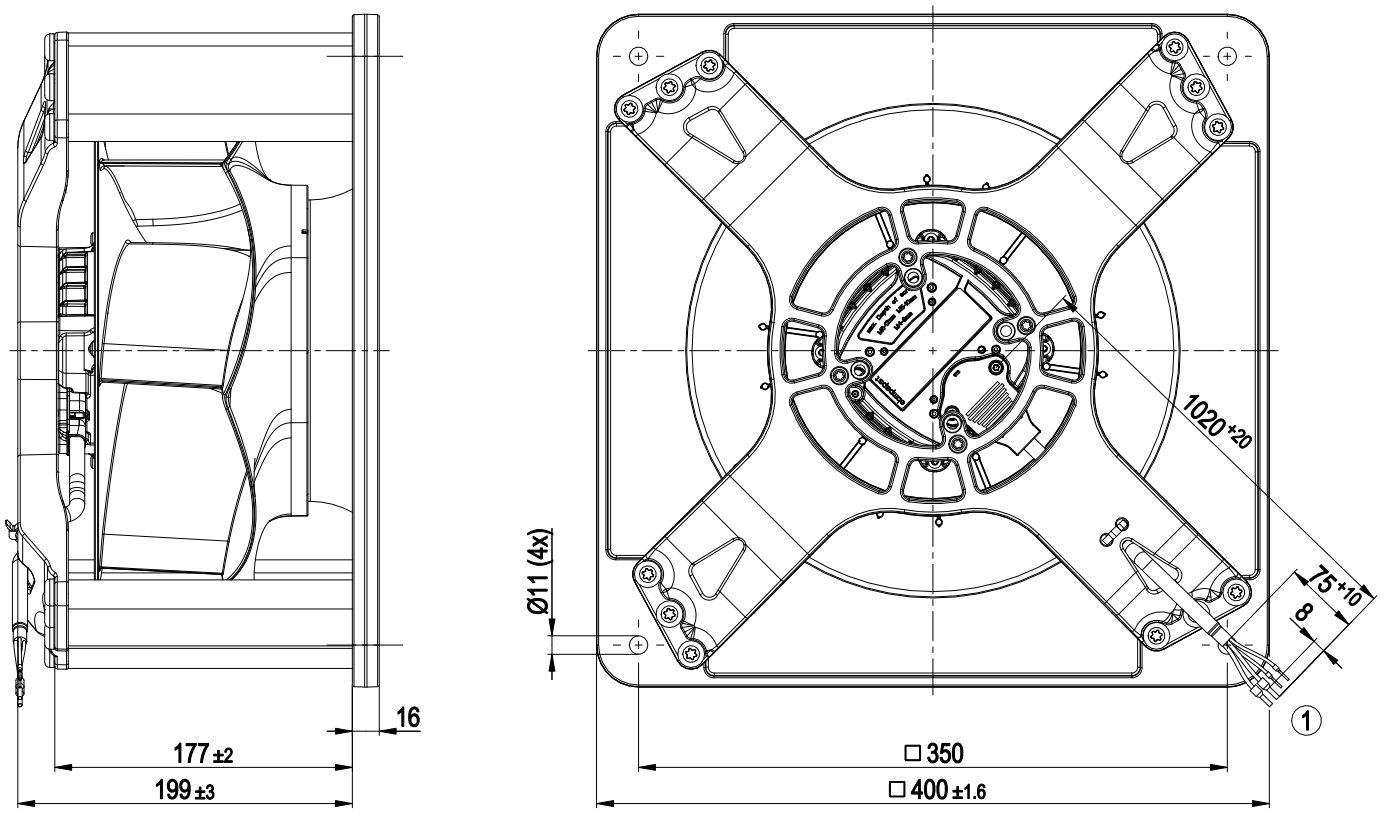
## Product drawing




| | |
|---|---|
| 1 | 2x cable BETAtrans® 3 GKW 6 mm², 2x cable BETAtrans® 3 GKW 1 mm² |
| | 4x wire-end ferrule |

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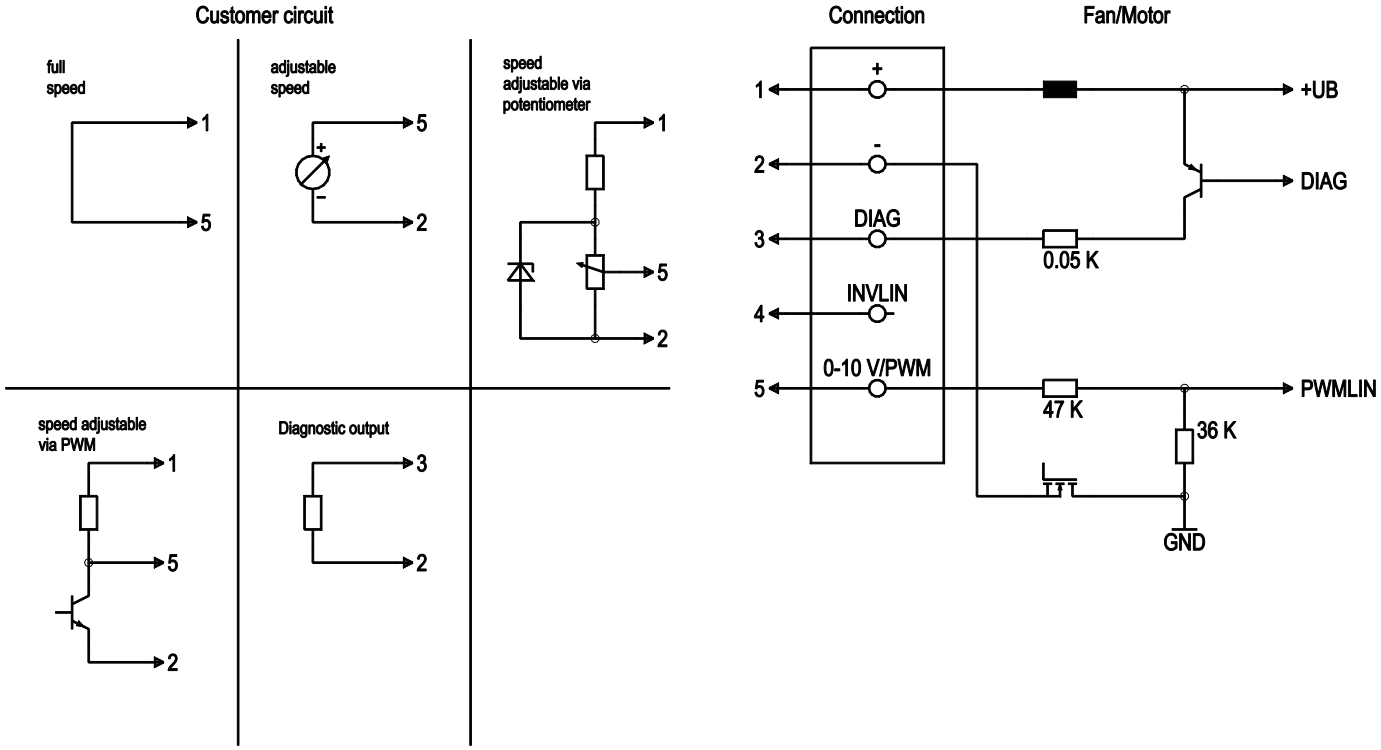
## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| 1 | 1 | + | black | Power supply, see nameplate for voltage range |
| 1 | 2 | - | brown | Power supply, see nameplate for voltage range |
| 1 | 3 | DIAG | white | Diagnostic output: open collector, Isink max = 10 mA, Ri > 2.1 kΩ<br>Fan OK -> high; fan error -> low |
| 1 | 4 | INVLIN | | not used |
| 1 | 5 | 0-10 V / PWM | yellow | Control input: Ri > 47 kΩ<br>0-10 V (typ. < 1 V -> n=0; 1.5 V -> n=min; > 10 V -> n=max)<br>PWM (amplitude 10 V; 1-50 kHz; typ. < 5 % -> n=0; 15% -> n=min; > 100% -> n=max) |

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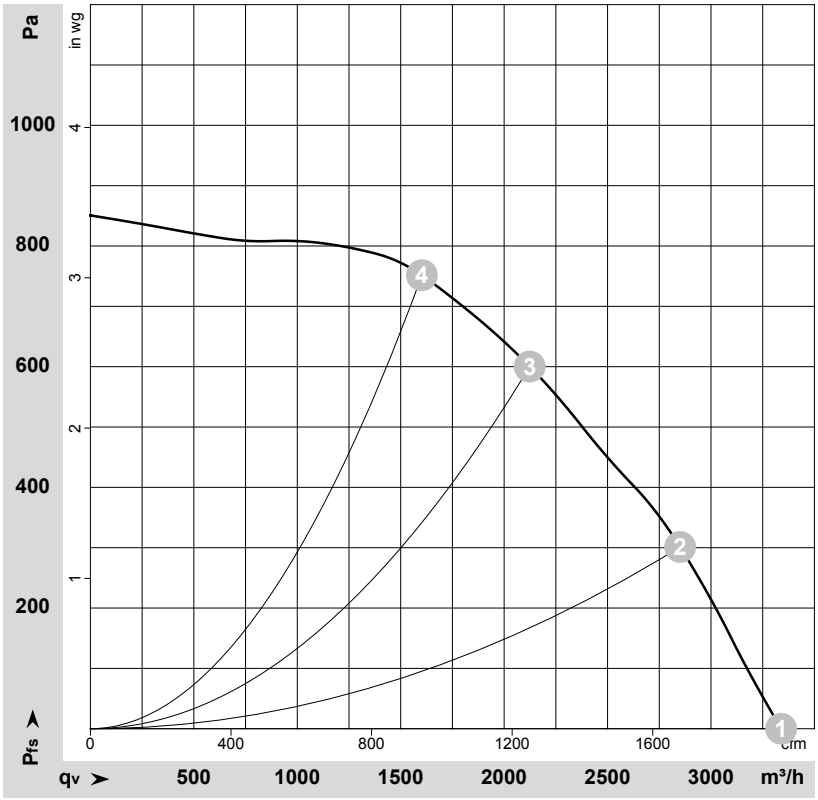
## Curves: Air performance




ρ = 1.15 kg/m³ ± 2 %

Measurement: LU-175089-1

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 | n | $P_{ed}$ | I | $LpA_{in}$ | $LwA_{in}$ | $q_V$ | $p_{fs}$ | $q_V$ | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa | cfm | in. wg |
| 1 | 26 | 2830 | 460 | 18.00 | 78 | 85 | 3340 | 0 | 1965 | 0.00 |
| 2 | 26 | 2810 | 584 | 22.41 | 74 | 81 | 2850 | 300 | 1680 | 1.20 |
| 3 | 26 | 2810 | 645 | 24.77 | 70 | 77 | 2125 | 600 | 1250 | 2.41 |
| 4 | 26 | 2835 | 623 | 23.89 | 70 | 77 | 1605 | 750 | 945 | 3.01 |

U = Voltage · n = Speed (rpm) · $P_{ed}$ = Power consumption · I = Current draw · $LpA_{in}$ = Sound pressure level intake side · $LwA_{in}$ = Sound power level intake side · $q_V$ = Air flow
$p_{fs}$ = Pressure increase