**R3G250-RU27-81**

# EC centrifugal fan

backward-curved, single-intake

for rail applications



**ebm-papst Mulfingen GmbH & Co. KG**
Bachmühle 2 · D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com
www.ebmpapst.com

Limited partnership · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
Amtsgericht (court of registration) Stuttgart · HRB 590142

ErP2015 EXCEEDS THE NORM

## Nominal data

| | | |
|---|---|---|
| **Type** | **R3G250-RU27-81** | |
| **Motor** | **M3G084-CF** | |
| Nominal voltage | VDC | 26 |
| Nominal voltage range | VDC | 16 .. 32 |
| Method of obtaining data | | fa |
| Speed | min$^{-1}$ | 3860 |
| Power consumption | W | 410 |
| Current draw | A | 15.8 |
| Min. ambient temperature | °C | -40 |
| 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 ErP Directive

| | | Actual | Req. 2015 |
|---|---|---|---|
| 01 Overall efficiency $\eta_{es}$ | % | 57.6 | 48.9 |
| 02 Measurement category | | A | |
| 03 Efficiency category | | Static | |
| 04 Efficiency grade N | | 70.7 | 62 |
| 05 Variable speed drive | | Yes | |

| | | |
|---|---|---|
| 09 Power consumption $P_e$ | kW | 0.56 |
| 09 Air flow $q_v$ | m³/h | 1345 |
| 09 Pressure increase $p_{fs}$ | Pa | 789 |
| 10 Speed n | min$^{-1}$ | 3845 |
| 11 Specific ratio* | | 1.01 |

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

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

LU-162027

# EC centrifugal fan

backward-curved, single-intake

for rail applications

## Technical description

| | |
|---|---|
| **Weight** | 2.75 kg |
| **Fan size** | 250 mm |
| **Rotor surface** | Painted black |
| **Electronics housing material** | Die-cast aluminum, painted black |
| **Impeller material** | PA plastic, sheet-metal plate painted black |
| **Direction of rotation** | Clockwise, viewed toward rotor |
| **Degree of protection** | IP24 KM; (motor); electronics IP66 / 69K |
| **Insulation class** | "B" |
| **Moisture (F) / Environmental (H) protection class** | F5 |
| **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 top; rotor on bottom on request |
| **Condensation drainage holes** | None |
| **Cooling hole/opening** | On rotor side |
| **Mode** | S1 |
| **Motor storage** | Ball bearing; (sealed) |
| **Technical features** | - Start at 85 °C (2 min permitted)<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>- Temperature derating<br>- Overvoltage detection<br>- Thermal overload protection for electronics<br>- Undervoltage detection |
| **Electrical hookup** | Standby current less than 500 µA |
| **Motor protection** | Reverse polarity and locked-rotor protection |
| **With cable** | Lateral |
| **Protection class** | III |
| **Conformity with standards** | EN 15085-1, CPC3: 2007; EN 61373, Cat. 1B: 2010 |
| **Comment** | According to EN 45545; EN 50155 |



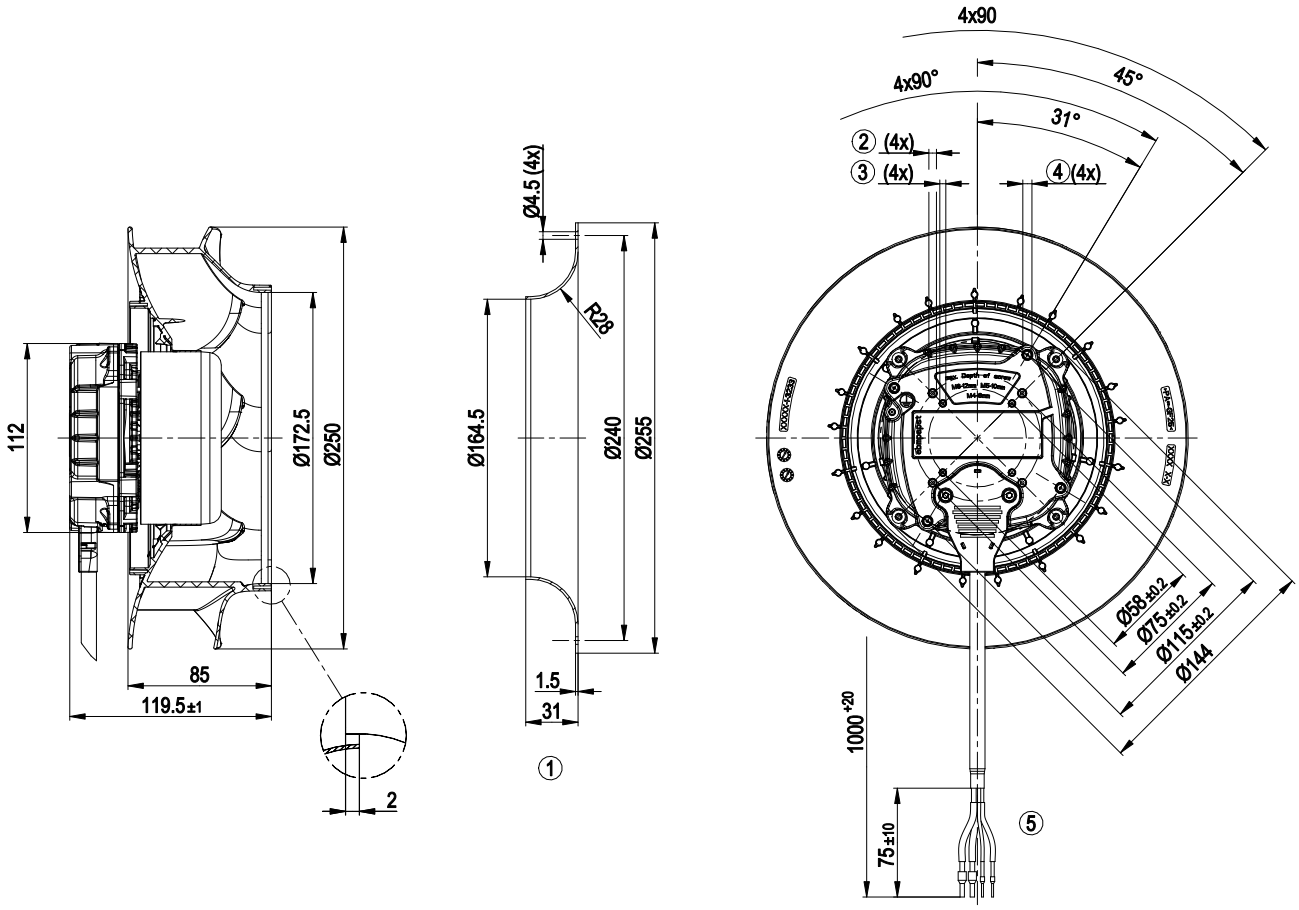
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC centrifugal fan

backward-curved, single-intake

for rail applications

## Product drawing




| | |
|---|---|
| 1 | Accessory part: inlet ring 96359-2-4013 not included in scope of delivery |
| 2 | Max. clearance for screw 10 mm, tapping hole ready for self-tapping M5 screw |
| 3 | Max. clearance for screw 8 mm, tapping hole ready for self-tapping M4 screw |
| 4 | Max. clearance for screw 12 mm, tapping hole ready for self-tapping M6 screw |
| 5 | Cable (railway) 2x 2.5 mm², 2x 1.0 mm², 4x crimped ferrules |



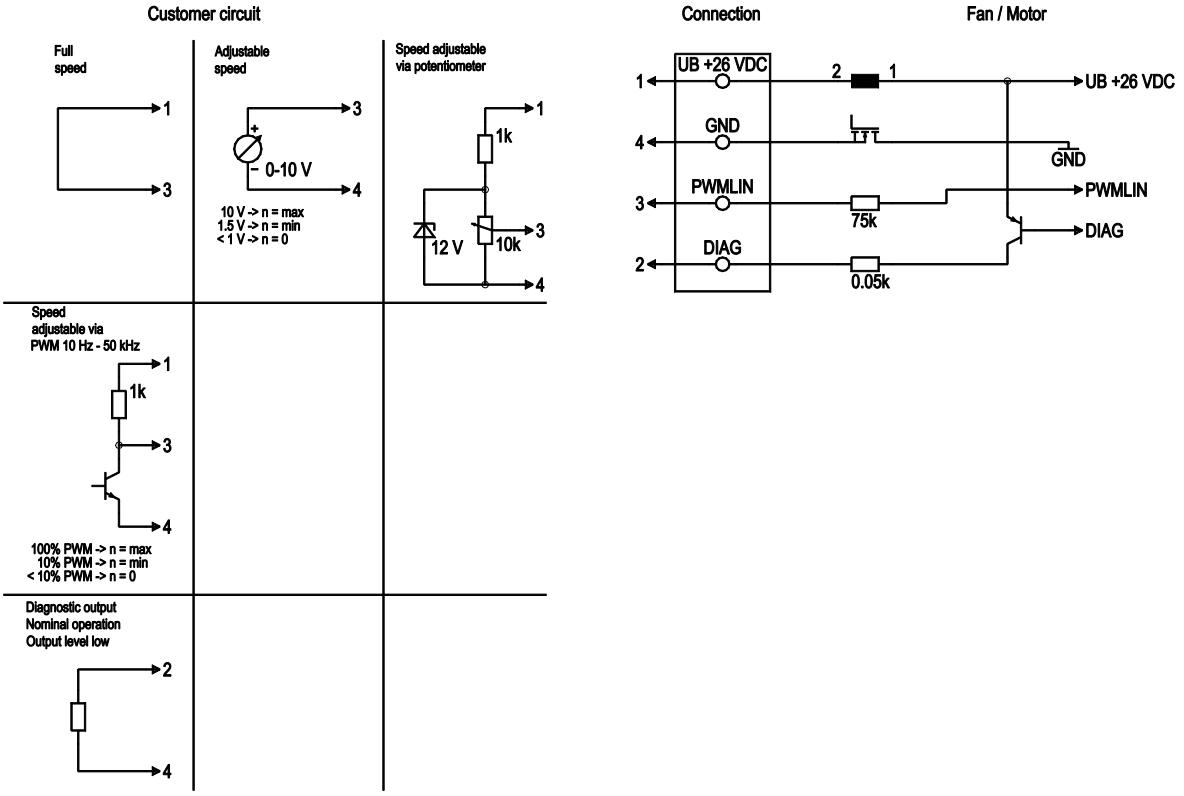
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC centrifugal fan

backward-curved, single-intake

for rail applications

## Connection diagram




| No. | Conn. | Designation | Color | Function/assignment |
|---|---|---|---|---|
| 1 | 1 | UB +26 VDC | black | Power supply 26 VDC |
| 1 | 2 | DIAG | white | Diagnostic output |
| 1 | 3 | PWMLIN | yellow | Analog voltage control input 0-10 V or PWM |
| 1 | 4 | GND | brown | Power supply GND, reference ground |



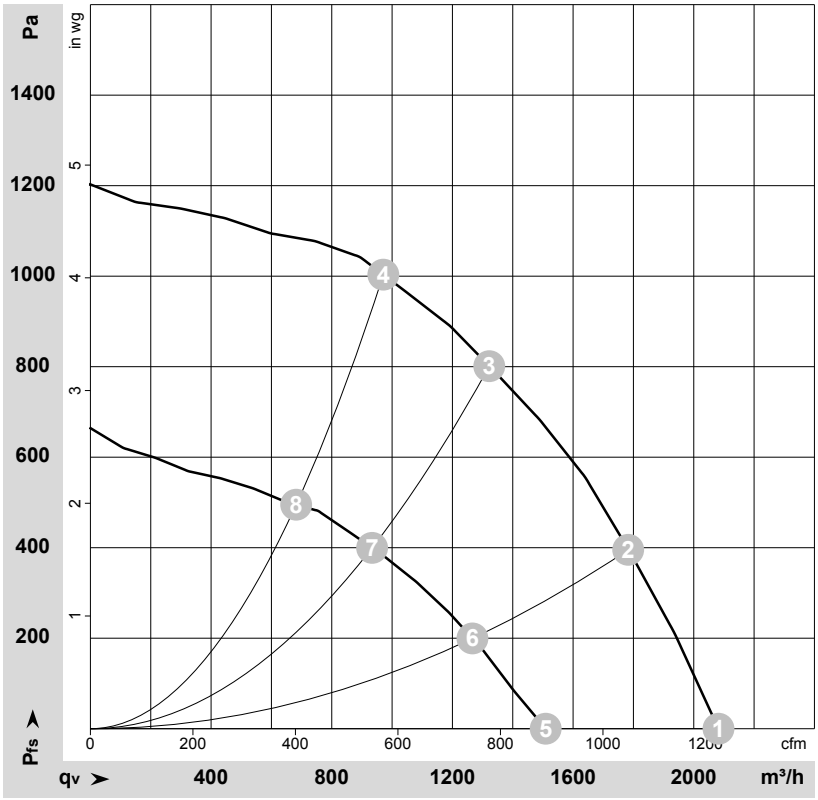
ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com

# EC centrifugal fan

backward-curved, single-intake

for rail applications

## Curves: Air performance




ρ = 1,15 kg/m³ ± 2%

Measurement: LU-162027
Measurement: LU-162195

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 | $LpA_{in}$ | $LwA_{in}$ | qv | $p_{fs}$ |
|---|---|---|---|---|---|---|---|---|
| | V | $min^{-1}$ | W | A | dB(A) | dB(A) | $m^3/h$ | Pa |
| 1 | 26-32 | 3860 | 410 | 15.8* | 80 | 87 | 2080 | 0 |
| 2 | 26-32 | 3860 | 513 | 19.8* | 78 | 85 | 1785 | 400 |
| 3 | 26-32 | 3860 | 568 | 21.9* | 74 | 81 | 1320 | 800 |
| 4 | 26-32 | 3860 | 560 | 21.6* | 76 | 82 | 970 | 1000 |
| 5 | 16 | 2800 | 166 | 10.43 | | | 1510 | 0 |
| 6 | 16 | 2755 | 187 | 11.72 | | | 1265 | 200 |
| 7 | 16 | 2730 | 204 | 12.78 | | | 935 | 400 |
| 8 | 16 | 2730 | 197 | 12.39 | | | 680 | 495 |

U = Power supply · n = Speed · $P_{ed}$ = Power consumption · I = Current draw · * = Current measured at nominal voltage · $LpA_{in}$ = Sound pressure level intake side · $LwA_{in}$ = Sound power level intake side
qv = Air flow · $p_{fs}$ = Pressure increase



ebm-papst Mulfingen GmbH & Co. KG · Bachmühle 2 · D-74673 Mulfingen · Phone +49 (0) 7938 81-0 · Fax +49 (0) 7938 81-110 · info1@de.ebmpapst.com · www.ebmpapst.com