# EC motor

**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
County court Stuttgart · HRA 590344

General partner Elektrobau Mulfingen GmbH · Headquarters Mulfingen
County court Stuttgart · HRB 590142

## Nominal data

| | |
|---|---|
| **Type** | **M3G084-DF04-I3** |
| **Motor** | **M3G084-DF** |

| | | |
|---|---|---|
| Phase | | 1~ |
| Nominal voltage | V | 230 |
| Nominal voltage range | V | 200 .. 277 |
| Type of data definition | | ml/cu |
| State | | prelim. |
| Speed (rpm) | $min^{-1}$ | 2300 |
| Power input | W | 750 |
| Power output | W | 600 |
| Current draw | A | 3.3 |
| Rated torque | Ncm | 250 |
| 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

## Technical features

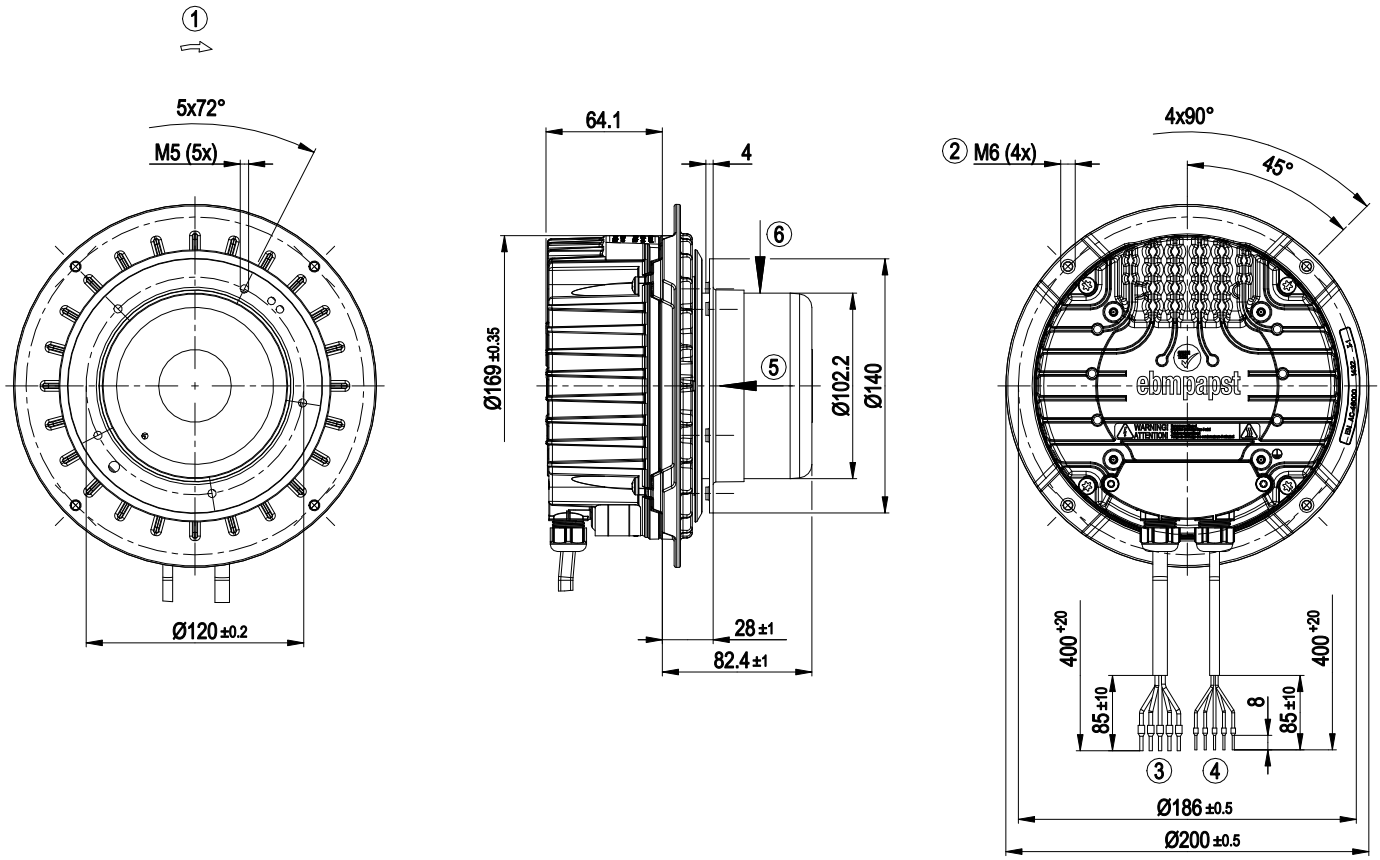
| | |
|---|---|
| **Mass** | 4.1 kg |
| **Size** | 84 mm |
| **Surface of rotor** | Coated in black |
| **Material of electronics housing** | Die-cast aluminium |
| **Direction of rotation** | Clockwise, seen on rotor |
| **Type of protection** | IP 20 |
| **Insulation class** | "F" |
| **Humidity (F)/environmental protection class (H)** | H0 - dry environment |
| **Note ambient temperature** | Occasional start-up between -40°C and -25°C is permissible.<br>For continuous operation at ambient temperatures below -25°C (e.g. refrigeration applications) we recommend our fan version with special low-temperature bearings. |
| **Max. permissible ambient motor temp. (transp./ storage)** | + 80 °C |
| **Min. permissible ambient motor temp. (transp./storage)** | - 40 °C |
| **Mounting position** | Any |
| **Cooling bore / aperture** | Rotor-side |
| **Operation mode** | S1 |
| **Motor bearing** | Ball bearing |
| **Technical features** | - Output 10 VDC, max. 10 mA<br>- Operation and alarm display<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 |
| **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; EN 60335-1; CE |
| **Approval** | UL 1004-7 + 60730; C22.2 Nr.77 + CAN/CSA-E60730-1; EAC |



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 motor

## Product drawing

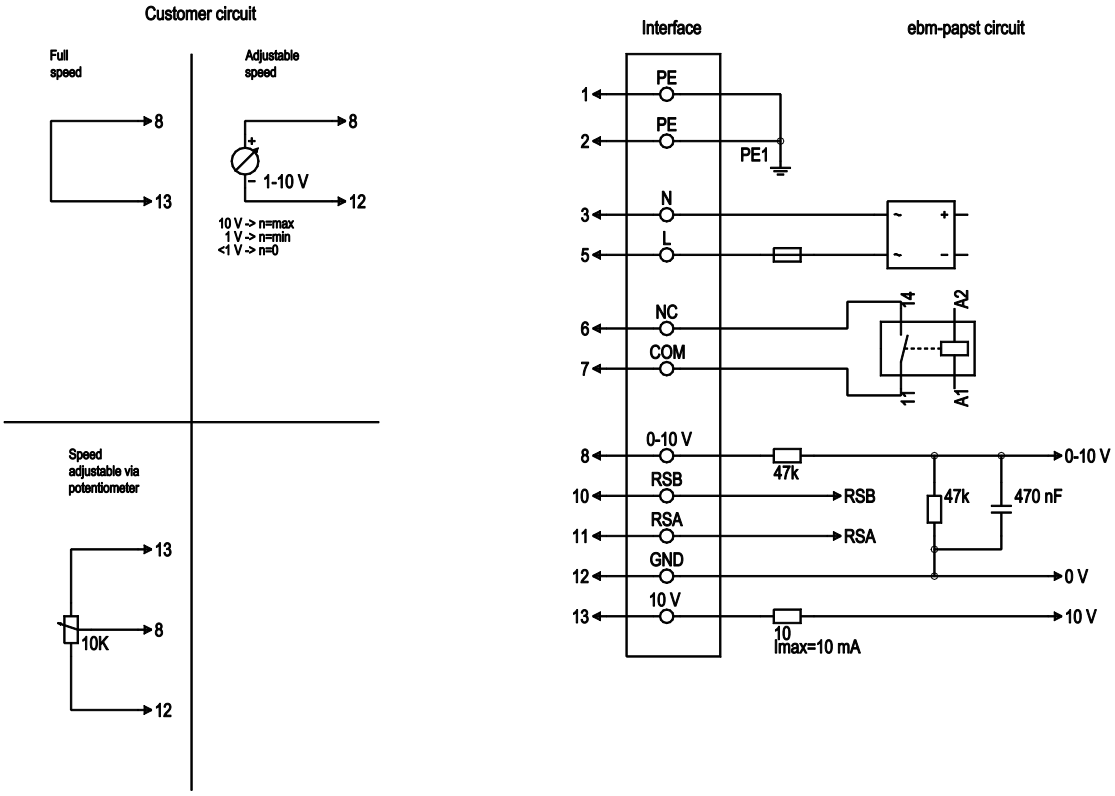



| | |
|---|---|
| 1 | Direction of rotation clockwise, viewed towards rotor |
| 2 | Thread reach max. 10 mm |
| 3 | Connection line PVC AWG18, 5x crimped core-end sleeves |
| 4 | Connection line PVC AWG22, 5x crimped core-end sleeves |
| 5 | Max. permissible axial load: 40 N (referenced to mounting position at rotor flange) |
| 6 | Max. permissible radial load: 40 N (referenced to mounting position at rotor flange) |
| - | Max. permissible balance quality grade: G 6.3 as per DIN ISO 1940-1 |



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

## Connection screen

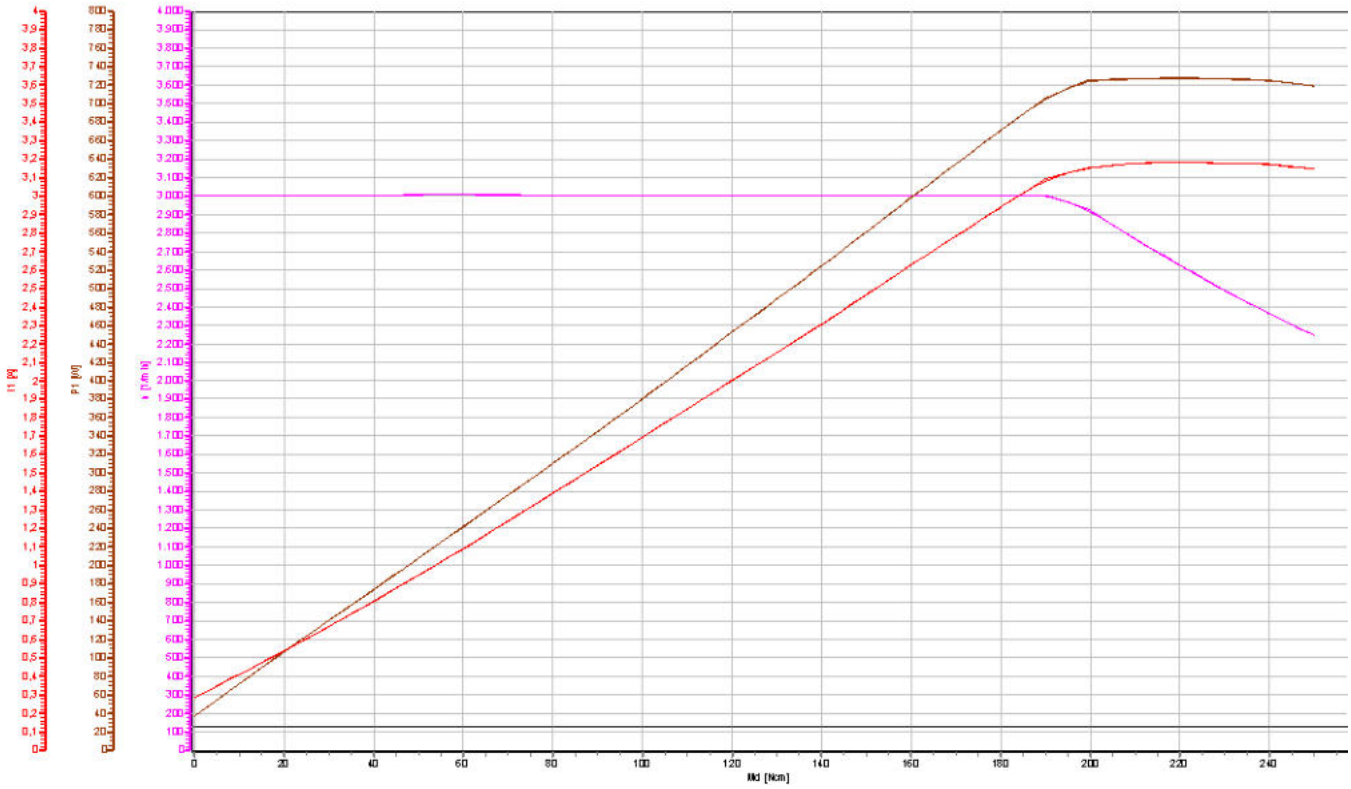



| No. | Conn. | Designation | Colour | Function / assignment |
|---|---|---|---|---|
| 1 | 1, 2 | PE | green/yellow | Protective earth |
| 1 | 3 | N | blue | Supply voltage, neutral conductor, 50/60 Hz |
| 1 | 5 | L | black | Supply voltage, phase, 50/60 Hz |
| 1 | 6 | NC | white 1 | Status relay, floating status contact; break for failure, contact rating 250 VAC / 2A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side |
| 1 | 7 | COM | white 2 | Status relay, floating status contact; common connection, contact rating 250 VAC / 2A (AC1) min. 10 mA, basic insulation on mains side and reinforced insulation on control interface side |
| 2 | 8 | 0-10V | yellow | Analogue input 1 (set value); 0-10 V; Ri=100kΩ; parametrisable curve |
| 2 | 10 | RSB | brown | RS485 interface for Modbus, RSB |
| 2 | 11 | RSA | white | RS485 interface for Modbus, RSA |
| 2 | 12 | GND | blue | Reference ground for control interface, SELV |
| 2 | 13 | +10V | red | Fixed voltage output 10 VDC; +10 V +/-3%; max. 10 mA; short-circuit-proof; power supply for external devices (e.g. potentiometer) |



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

## Charts: Speed (rpm)






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