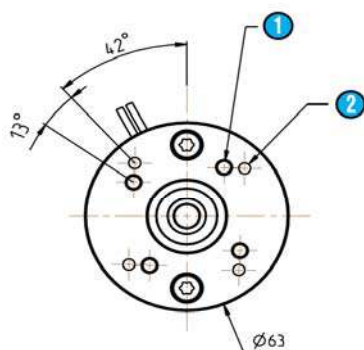


# Dc mind Brush motor Data sheet

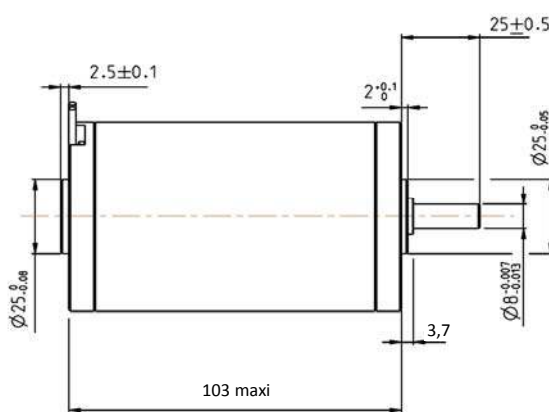
## 89 830 012

### Series

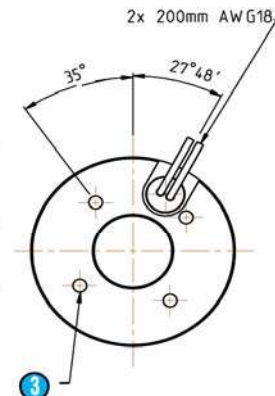
# 89 830



1 4 x M5 at 90°, depth 10mm and 40 mm diameter



2 4 x holes diam 3.65 at 90°, depth 8mm and 48 mm diameter



3 4 x M5 at 90°, depth 7mm and 40 mm diameter

## General characteristics

| Motor characteristics at (1) |                  | 24 Vdc |      |
|------------------------------|------------------|--------|------|
| <b>At no load - A</b>        |                  |        |      |
| Speed                        | rpm              | 3 600  | +10% |
| Current                      | A                | 0,23   |      |
| EMC (55022)                  | class            | B      |      |
| Life (2)                     | h                | 20 000 |      |
| <b>At max efficiency - B</b> |                  |        |      |
| Speed                        | rpm              | 3 240  | +10% |
| Torque (4)                   | mNm              | 111    |      |
| Power output                 | W                | 38     |      |
| Current                      | A                | 1,97   |      |
| Efficiency                   | %                | 80     |      |
| EMC (55022)                  | class            | B      |      |
| Life (2)                     | h                | 10 000 |      |
| <b>At nominal load - C</b>   |                  |        |      |
| Speed                        | rpm              | 3 000  | +10% |
| Torque (4)                   | mNm              | 180    |      |
| Power output                 | W                | 57     |      |
| Current                      | A                | 3,1    |      |
| Efficiency                   | %                | 77     |      |
| EMC (55022)                  | class            | B      |      |
| Life (2)                     | h                | 5 000  |      |
| <b>Others</b>                |                  |        |      |
| Starting torque              | mNm              | 1 080  |      |
| Starting current             | A                | 17,2   |      |
| Max. output power            | W                | 102    |      |
| <b>Motor parameters (1)</b>  |                  |        |      |
| Allowed speed                | rpm              | 10 000 | max  |
| Rated torque                 | mNm              | 180    |      |
| Electrical time constant     | ms               | 1,2    |      |
| Mechanical time constant     | ms               | 13     |      |
| Factor torque / speed        | mNm/rpm          | 0,3    |      |
| Dry friction                 | mNm              | 7      |      |
| Viscous friction             | mNm/krpm         | 1,5    |      |
| Rotor inertia                | gcm <sup>2</sup> | 380    |      |
| Thermal Resistance           | °/W              | 6      |      |
| Stator poles                 |                  | 2      |      |
| Collector blades             |                  | 12     |      |
| Cogging torque               | mNm              | 9      |      |
| Weight (g)                   | g                | 1 200  |      |
| Noise level                  | dBA              | 35     |      |

| Winding parameters (1)       |                      |       |      |
|------------------------------|----------------------|-------|------|
| Torque constant              | mNm/A                | 63,6  | +10% |
| Constant electromotive force | Volts/(rad/s)        | 0,064 | +10% |
|                              | V / Krpm             | 6,66  | +10% |
| Resistance                   | Ohms                 | 1,4   | +10% |
| Inductance                   | mH                   | 1,7   |      |
| Start voltage                | Volts                | 0,6   |      |
| Current demagnetization      | (magnets at 150 ° C) | A     | 60   |

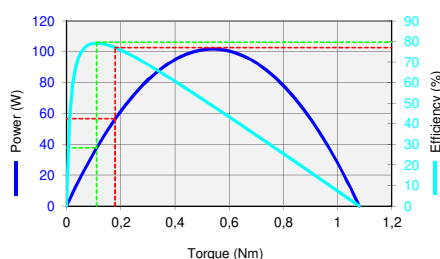
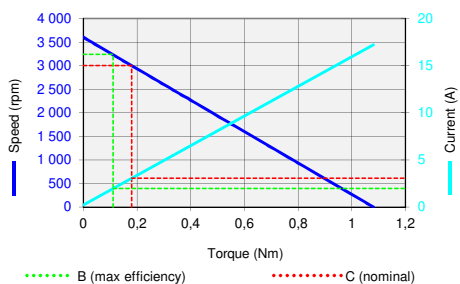
| Generic parameters                       |                |          |           |
|--|----------------|----------|-----------|
| Motor for direct current supply          |                |          | ✓         |
| Output shaft with ball bearings          |                |          | ✓         |
| Max. Radial force (20mm from front face) | N              |          | 150       |
| Max. axial force(5)                      | N              |          | 100       |
| Temperature range                        | CEI60068-2-1/2 | °C       | -30 / 70  |
| Storage temperature                      |                | °C       | -40 / 100 |
| Dielectric (1min 2mA 50Hz)               | CEI60335       | Vdc      | 500       |
| Motor insulation                         | CEI60085       | class    | E (120°C) |
| Enameled wire insulation                 |                | class    | F (155°C) |
| Salt spray                               | CEI60068-2-58  | severity | 2         |
| Degree of protection                     | CEI60529       | IP       | 65        |
| <b>EMC</b>                               |                |          |           |
| Electrostatic Discharge                  | CEI61000-4-2   | level    | 3         |
| Electrical fast transient / burst test   | CEI61000-4-4   | level    | 3         |
| Surge test                               | CEI61000-4-5   | level    | 2         |
| Radiated emission                        |                | class    | B         |

| Approvals  |            |  |           |
|--|------------|--|-----------|
| Designed in accordance with UL                   |            |  | 1004      |
| ROHS   | 2002/95/CE |  | ✓         |
| EC   |            |  | ✓         |
| Designed for medical machines using the standard |            |  | EN60601-1 |

Values without tolerances, are average production values.

(1) Cold motor, 20 ° C ambient temperature  
 (2) Continuous cycle, one direction  
 (3) Continuously rated torque, zero radial and axial loads  
 (4) Max torque for continuous operation at 20 ° C, decrease this value for higher ambient temperature  
 (5) Pinion or pulley fitting are done at the Crouzet factory, before final assembly.

## Curves



| Performance / Motor curves (1) |     |             |       |
|--------------------------------|-----|-------------|-------|
| Voltage supply                 |     | Vdc         |       |
|                                |     | 24          |       |
|                                |     | Output data |       |
|                                |     | A           | B     |
| Speed                          | rpm | 3 600       | 3 240 |
| Torque (4)                     | mNm | 0           | 111   |
| Current                        | A   | 0,2         | 2,0   |
| Power output                   | W   | -           | 38    |
| Efficiency                     | %   | -           | 80    |