

## 5.4.2 Electrical data BR05

| BR motor – Without servo-ventilation – 2000 rpm     |                  |                   | 051204 | 052204 | 053204 | 054204 | 055204 | 056204 | 057204 | 058204 |
|---|------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Stall torque <sup>1)3)</sup>                        | T <sub>0</sub>   | Nm                | 2      | 4      | 5.4    | 6.9    | 8.2    | 9.3    | 10.4   | 11.5   |
| Nominal power <sup>1)</sup>                         | P <sub>N</sub>   | W                 | 377    | 775    | 1047   | 1319   | 1529   | 1717   | 1864   | 2011   |
| Nominal torque <sup>1)</sup>                        | T <sub>N</sub>   | Nm                | 1.8    | 3.7    | 5      | 6.3    | 7.3    | 8.2    | 8.9    | 9.6    |
| Nominal speed                                       | n <sub>N</sub>   | rpm               | 2000   | 2000   | 2000   | 2000   | 2000   | 2000   | 2000   | 2000   |
| Peak torque 20°C                                    | T <sub>max</sub> | Nm                | 6      | 12     | 16.2   | 20.7   | 24.6   | 27.9   | 31.2   | 34.5   |
| Nominal current <sup>1)</sup>                       | I <sub>N</sub>   | Arms              | 0.81   | 1.57   | 2.23   | 2.76   | 3.15   | 3.69   | 3.88   | 4.32   |
| Stall current <sup>1)3)</sup>                       | I <sub>0</sub>   | Arms              | 0.87   | 1.64   | 2.32   | 2.92   | 3.41   | 4.03   | 4.37   | 4.99   |
| Peak current  | I <sub>max</sub> | Arms              | 2.53   | 4.78   | 6.76   | 8.5    | 9.95   | 11.8   | 12.7   | 14.5   |
| Rotor inertia                                       | J <sub>m</sub>   | kgcm <sup>2</sup> | 1.25   | 2      | 2.8    | 3.5    | 4.25   | 5      | 5.8    | 6.5    |
| Voltage constant 20°C <sup>2)</sup>                 | k <sub>e</sub>   | Vs/rad            | 1.44   | 1.52   | 1.46   | 1.48   | 1.50   | 1.44   | 1.49   | 1.44   |
| Torque constant 20°C with stall rotor <sup>2)</sup> | k <sub>t</sub>   | Nm/Arms           | 2.42   | 2.56   | 2.45   | 2.48   | 2.52   | 2.42   | 2.5    | 2.42   |
| Ke and kt reduction coeff. over temperature         | dk/dt            | [%/°C]            | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  |
| Winding resistance 20°C <sup>2)</sup>               | R <sub>c</sub>   | Ohm               | 84.3   | 28.7   | 15.5   | 9.77   | 7.73   | 5.51   | 4.88   | 3.9    |
| Winding inductance <sup>2)</sup>                    | L <sub>c</sub>   | mH                | 192    | 92.9   | 48.3   | 34.6   | 31.8   | 23.1   | 21.6   | 16     |
| E.M.F at 1000 rpm 20°C <sup>2)</sup>                | V1000            | V/krpm            | 151    | 160    | 152    | 155    | 157    | 151    | 156    | 151    |
| Nominal voltage <sup>1)</sup>                       | V <sub>n</sub>   | Vrms              | 381    | 368    | 335    | 328    | 330    | 312    | 319    | 306    |
| Weight  | m                | kg                | 4.2    | 5.1    | 6      | 6.9    | 7.8    | 8.7    | 9.6    | 10.5   |
| Number of poles                                     | 2p               |                   | 8      | 8      | 8      | 8      | 8      | 8      | 8      | 8      |

| BR motor – Without servo-ventilation – 3000 rpm     |                  |                   | 051304 | 052304 | 053304 | 054304 | 055304 | 056304 | 057304 | 058304 |
|---|------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Stall torque <sup>1)3)</sup>                        | T <sub>0</sub>   | Nm                | 2      | 4      | 5.4    | 6.9    | 8.2    | 9.3    | 10.4   | 11.5   |
| Nominal power <sup>1)</sup>                         | P <sub>N</sub>   | W                 | 550    | 1131   | 1508   | 1885   | 2136   | 2356   | 2513   | 2670   |
| Nominal torque <sup>1)</sup>                        | T <sub>N</sub>   | Nm                | 1.75   | 3.6    | 4.8    | 6      | 6.8    | 7.5    | 8      | 8.5    |
| Nominal speed                                       | n <sub>N</sub>   | rpm               | 3000   | 3000   | 3000   | 3000   | 3000   | 3000   | 3000   | 3000   |
| Peak torque 20°C                                    | T <sub>max</sub> | Nm                | 6      | 12     | 16.2   | 20.7   | 24.6   | 27.9   | 31.2   | 34.5   |
| Nominal current <sup>1)</sup>                       | I <sub>N</sub>   | Arms              | 1.26   | 2.38   | 3.16   | 3.9    | 4.44   | 5.02   | 5.35   | 5.53   |
| Stall current <sup>1)3)</sup>                       | I <sub>0</sub>   | Arms              | 1.39   | 2.55   | 3.43   | 4.32   | 5.16   | 5.99   | 6.7    | 7.2    |
| Peak current  | I <sub>max</sub> | Arms              | 4.04   | 7.44   | 9.99   | 12.6   | 15     | 17.5   | 19.5   | 21     |
| Rotor inertia                                       | J <sub>m</sub>   | kgcm <sup>2</sup> | 1.25   | 2      | 2.8    | 3.5    | 4.25   | 5      | 5.8    | 6.5    |
| Voltage constant 20°C <sup>2)</sup>                 | k <sub>e</sub>   | Vs/rad            | 0.90   | 0.98   | 0.98   | 1.00   | 0.99   | 0.97   | 0.97   | 1.00   |
| Torque constant 20°C with stall rotor <sup>2)</sup> | k <sub>t</sub>   | Nm/Arms           | 1.51   | 1.65   | 1.65   | 1.68   | 1.67   | 1.63   | 1.63   | 1.68   |
| Ke and kt reduction coeff. over temperature         | dk/dt            | [%/°C]            | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  |
| Winding resistance 20°C <sup>2)</sup>               | R <sub>c</sub>   | Ohm               | 32.7   | 12.3   | 6.71   | 4.67   | 3.37   | 2.52   | 2.06   | 1.87   |
| Winding inductance <sup>2)</sup>                    | L <sub>c</sub>   | mH                | 70.7   | 36.9   | 21.2   | 17.6   | 14.1   | 9.9    | 9.2    | 7.7    |
| E.M.F at 1000 rpm 20°C <sup>2)</sup>                | V1000            | V/krpm            | 94.3   | 103    | 103    | 105    | 104    | 102    | 102    | 105    |
| Nominal voltage <sup>1)</sup>                       | V <sub>n</sub>   | Vrms              | 328    | 336    | 322    | 323    | 316    | 304    | 302    | 308    |
| Weight  | m                | kg                | 4.2    | 5.1    | 6      | 6.9    | 7.8    | 8.7    | 9.6    | 10.5   |
| Number of poles                                     | 2p               |                   | 8      | 8      | 8      | 8      | 8      | 8      | 8      | 8      |

| BR motor – Without servo-ventilation – 4000 rpm     |                  |                   | 051404 | 052404 | 053404 | 054404 | 055404 | 056404 | 057404 | 058404 |
|---|------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Stall torque <sup>1)3)</sup>                        | T <sub>0</sub>   | Nm                | 2      | 4      | 5.4    | 6.9    | 8.2    | 9.3    | 10.4   | 11.5   |
| Nominal power <sup>1)</sup>                         | P <sub>N</sub>   | W                 | 712    | 1466   | 1927   | 2346   | 2597   | 2806   | 2932   | 3142   |
| Nominal torque <sup>1)</sup>                        | T <sub>N</sub>   | Nm                | 1.7    | 3.5    | 4.6    | 5.6    | 6.2    | 6.7    | 7      | 7.5    |
| Nominal speed                                       | n <sub>N</sub>   | rpm               | 4000   | 4000   | 4000   | 4000   | 4000   | 4000   | 4000   | 4000   |
| Peak torque 20°C                                    | T <sub>max</sub> | Nm                | 6      | 12     | 16.2   | 20.7   | 24.6   | 27.9   | 31.2   | 34.5   |
| Nominal current <sup>1)</sup>                       | I <sub>N</sub>   | Arms              | 1.52   | 3.03   | 4.06   | 4.91   | 5.44   | 5.81   | 6.11   | 6.58   |
| Stall current <sup>1)3)</sup>                       | I <sub>0</sub>   | Arms              | 1.72   | 3.34   | 4.59   | 5.83   | 6.93   | 7.77   | 8.74   | 9.72   |
| Peak current  | I <sub>max</sub> | Arms              | 5.02   | 9.73   | 13.4   | 17     | 20.2   | 22.6   | 25.5   | 28.3   |
| Rotor inertia                                       | J <sub>m</sub>   | kgcm <sup>2</sup> | 1.25   | 2      | 2.8    | 3.5    | 4.25   | 5      | 5.8    | 6.5    |
| Voltage constant 20°C <sup>2)</sup>                 | k <sub>e</sub>   | Vs/rad            | 0.73   | 0.75   | 0.73   | 0.74   | 0.74   | 0.75   | 0.74   | 0.74   |
| Torque constant 20°C with stall rotor <sup>2)</sup> | k <sub>t</sub>   | Nm/Arms           | 1.22   | 1.26   | 1.23   | 1.24   | 1.24   | 1.26   | 1.25   | 1.24   |
| Ke and kt reduction coeff. over temperature         | dk/dt            | [%/°C]            | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  | -0.11  |
| Winding resistance 20°C <sup>2)</sup>               | R <sub>c</sub>   | Ohm               | 20.8   | 7.03   | 3.7    | 2.58   | 1.84   | 1.53   | 1.24   | 1.02   |
| Winding inductance <sup>2)</sup>                    | L <sub>c</sub>   | mH                | 48.5   | 21.4   | 13.3   | 10     | 7.7    | 5.9    | 5.4    | 4.2    |
| E.M.F at 1000 rpm 20°C <sup>2)</sup>                | V1000            | V/krpm            | 76     | 78.4   | 76.9   | 77.4   | 77.4   | 78.4   | 77.9   | 77.4   |
| Nominal voltage <sup>1)</sup>                       | V <sub>n</sub>   | Vrms              | 339    | 331    | 314    | 312    | 306    | 307    | 303    | 320    |
| Weight  | m                | kg                | 4.2    | 5.1    | 6      | 6.9    | 7.8    | 8.7    | 9.6    | 10.5   |
| Number of poles                                     | 2p               |                   | 8      | 8      | 8      | 8      | 8      | 8      | 8      | 8      |

Torque and power values refer to motor flanged and suspended in horizontal positions (aluminium flange 350x350x25 mm)

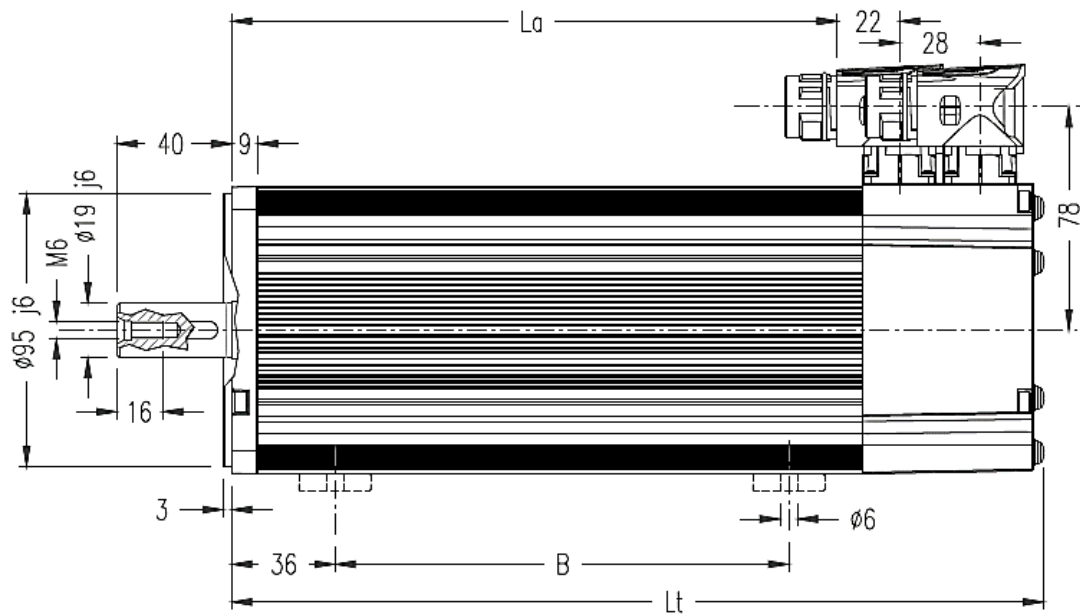
Minimum PWM 8kHz, DC bus test voltage 590 Vdc, tested with resolver

<sup>1)</sup> Continuous service S1 (dT=105°C)

<sup>2)</sup> Tolerance ± 10%

<sup>3)</sup> Value referred to 100 rpm

## 5.5.2 Overall dimensions – BR05



VENTILATION: FREE CONVECTION IC410

|       | Without brake |     |     |
|-------|---------------|-----|-----|
|       | B             | La  | Lt  |
| BR051 | 50            | 102 | 176 |
| BR052 | 72            | 124 | 198 |
| BR053 | 94            | 146 | 220 |
| BR054 | 115           | 167 | 241 |
| BR055 | 137           | 189 | 265 |
| BR056 | 158           | 210 | 284 |
| BR057 | 180           | 232 | 306 |
| BR058 | 202           | 252 | 328 |

|       | With brake |     |     |
|-------|------------|-----|-----|
|       | B          | La  | Lt  |
| BR051 | 90         | 142 | 216 |
| BR052 | 112        | 164 | 238 |
| BR053 | 134        | 186 | 260 |
| BR054 | 155        | 207 | 281 |
| BR055 | 177        | 229 | 305 |
| BR056 | 198        | 250 | 324 |
| BR057 | 220        | 272 | 346 |
| BR058 | 242        | 292 | 368 |

