
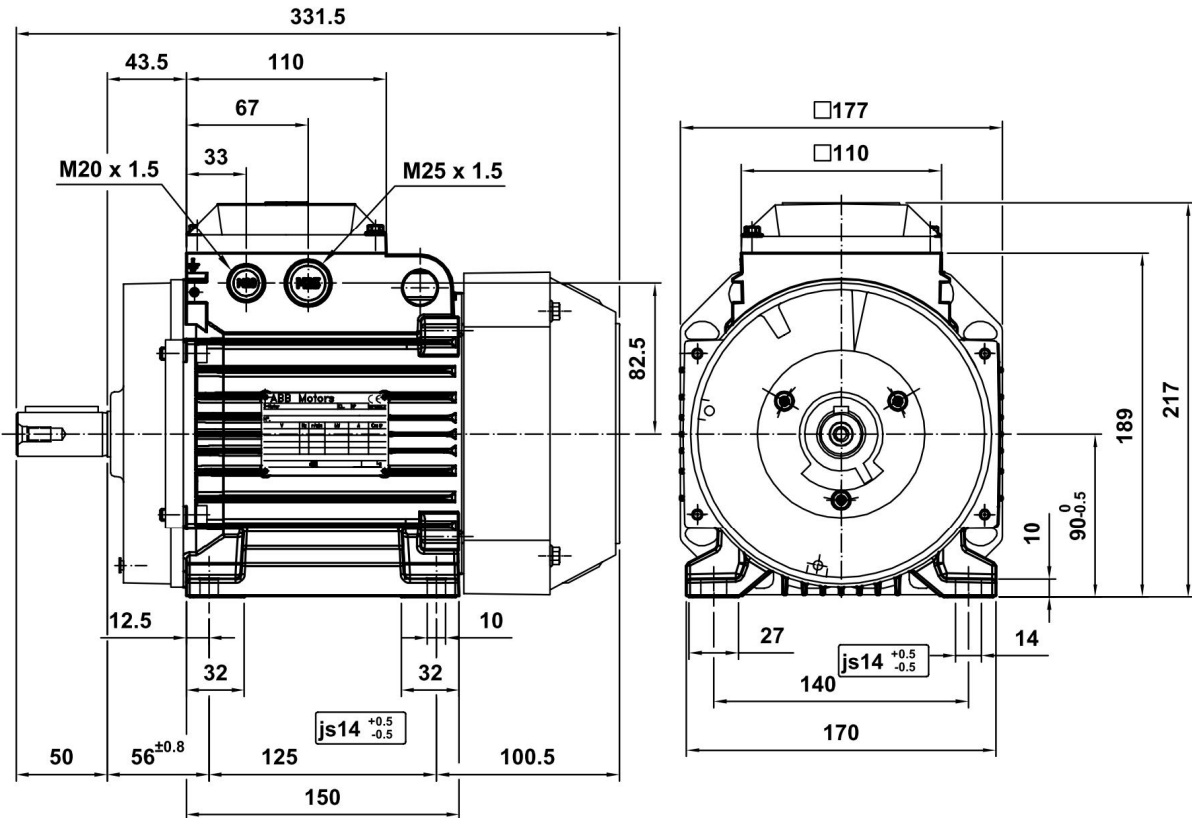
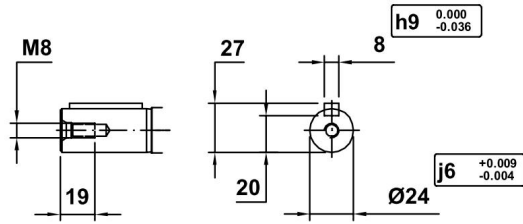


| IEC LV Motors   |  | Technical Data Sheet - DOL                          |                                   |  |  |
|---|--|---|-----------------------------------|--|---|
|   |  | Project   | Location                          |  |   |
| Department/Author<br><b>SARAVANAN</b>                 |  | Customer name                                       | Customer ref                      |  | Item name<br><b>1.00008</b>   |
| Our ref.<br><b>Trielectric International FZE</b>      |  | Rev/Changed by<br><b>A</b>                          | Date of issue<br><b>10/2/2023</b> | Saving ident<br><b>untitled.xlsm</b>           | Pages<br><b>1(3)</b>  |
| No.   | Definition   | Data  | Unit                              | Remarks  |   |
| 1   | Product  | <b>TEFC, 3-phase, squirrel cage induction motor</b> |                                   |  |   |
| 2   | Product code                                       | <b>3GAA 092 540-ASK</b>                             |                                   | Calc. ref.                                     | <b>3GZF021009-480</b>   |
| 3   | Type/Frame   | <b>M3AA 90LD 4</b>                                  |                                   |  |   |
| 4   | Mounting   | <b>IM1001, B3(foot)</b>                             |                                   |  |   |
| 5   | Rated output P <sub>N</sub>                        | <b>1.5</b>  | kW                                |  |   |
| 6   | Service factor                                     | <b>1</b>  |                                   |  |   |
| 7   | Type of duty                                       | <b>S1(IEC) 100%</b>                                 |                                   |  |   |
| 8   | Rated voltage U <sub>N</sub>                       | <b>400</b>  | VY                                | ± 5 % (IEC 60034-1)                            |   |
| 9   | Rated frequency f <sub>N</sub>                     | <b>50</b>   | Hz                                | ± 2 % (IEC 60034-1)                            |   |
| 10  | Rated speed n <sub>N</sub>                         | <b>1439</b>   | r/min                             |  |   |
| 11  | Rated current I <sub>N</sub>                       | <b>3.2</b>  | A                                 |  |   |
| 12  | No-load current                                    | <b>2</b>  | A                                 |  |   |
| 13  | Starting current I <sub>s</sub> /I <sub>N</sub>    | <b>8.2</b>  |                                   | Meet IEC 60034-12, N <sub>1</sub> (H at 60 Hz) |   |
| 14  | Nominal torque T <sub>N</sub>                      | <b>10</b>   | Nm                                |  |   |
| 15  | Locked rotor torque T <sub>s</sub> /T <sub>N</sub> | <b>3.5</b>  |                                   |  |   |
| 16  | Maximum torque T <sub>max</sub> /T <sub>N</sub>    | <b>4</b>  |                                   |  |   |
| 17  | Minimum torque T <sub>min</sub> /T <sub>N</sub>    | <b>3.4</b>  |                                   |  |   |
| 18  | Speed at minimum torque                            | <b>225</b>  | r/min                             |  |   |
| Load characteristics (IEC 60034-2-1:2014)             |  | Load %  | Current A                         | Efficiency %                                   | Power factor  |
| 19  | PLL determined from residual loss                  | <b>100</b>  | <b>3.2</b>                        | <b>85.3 / IE3</b>                              | <b>0.78</b>   |
| 20  |  | <b>75</b>   | <b>2.7</b>                        | <b>84.7</b>                                    | <b>0.7</b>  |
| 21  |  | <b>50</b>   | <b>2.3</b>                        | <b>82.8</b>                                    | <b>0.56</b>   |
| 22  |  | <b>Start</b>  | <b>26.2</b>                       |  | <b>0.59</b>   |
| 23  | Maximum starting time from hot                     | <b>36</b>   | s                                 |  |   |
| 24  | Maximum starting time from cold                    | <b>66</b>   | s                                 |  |   |
| 25  | Insulation class / Temperature class               | <b>F / B</b>  |                                   |  |   |
| 26  | Ambient temperature                                | <b>40</b>   | °C                                |  |   |
| 27  | Altitude   | <b>1000</b>   | m.a.s.l.                          |  |   |
| 28  | Enclosure  | <b>IP55</b>   |                                   |  |   |
| 29  | Cooling system                                     | <b>IC411 self ventilated</b>                        |                                   |  |   |
| 30  | Bearing DE/NDE                                     | <b>6205-2Z/C3 - 6204-2Z/C3</b>                      |                                   |  |   |
| 31  | Type of Grease                                     |   |                                   |  |   |
| 32  | Sound pressure level (LP dB(A) 1m)                 | <b>51</b>   | dB(A)                             | at load  |   |
| 33  | Moment of inertia J = ¼ GD <sup>2</sup>            | <b>0.0055</b>                                       | kg-m <sup>2</sup>                 |  |   |
| 34  | Balancing  |   |                                   |  |   |
| 35  | Vibration class                                    |   |                                   |  |   |
| 36  | Position of terminal box                           | <b>Top</b>  |                                   |  |   |
| 37  | Terminal box entries; no, dimens.                  |   |                                   |  |   |
| 38  | Number of power terminals                          |   |                                   |  |   |
| 39  | Direction of rotation                              | <b>CW or CCW</b>                                    |                                   |  |   |
| 40  | Weight of rotor                                    | <b>6</b>  | kg                                |  |   |
| 41  | Total weight of motor                              | <b>19</b>   | kg                                |  |   |
| 42  | Dimension drawing no.                              |   |                                   |  |   |
| 43  |  |   |                                   |  |   |
| 44  |  |   |                                   |  |   |
| 45  |  |   |                                   |  |   |
| Ex-motors   |  |   |                                   |  |   |
| 46  |  |   |                                   |  |   |
| 47  |  |   |                                   |  |   |
| 48  |  |   |                                   |  |   |
| Option Variant Codes / Definition                     |  |   |                                   |  |   |
| 49  |  |   |                                   |  |   |
| 50  |  |   |                                   |  |   |
| 51  |  |   |                                   |  |   |
| 52  |  |   |                                   |  |   |
| Remarks:  |  |   |                                   |  |   |
| Data based on situation 3/28/2022                     |  |   |                                   |  |   |
| All data subject to tolerances in accordance with IEC |  |   |                                   |  |   |
| Guaranteed values on request                          |  |   |                                   |  |   |



Additional information:

|                             |   |   |
|-----------------------------|---|---|
| <b>Dimension Print</b>      | Motor Type:<br>M3AA (K) 90 B3, B6, B7, B8, V5, V6 | Document No:<br>3GZW500609-20 A<br>13 AA 90 A |
|                             | Description: SQUIRREL CAGE MOTOR                  |   |
| Unit: Motors and Generators | Issued by: G.Borg                                 | Replaces:                                     |
| Date: 05.01.2017            | Approved by: G.Borg                               | Replaced by:                                  |
| <b>ABB AB</b>               | Customer Reference:                               | <b>ABB</b>                                    |

# Motors in brief

## Motor sizes 56–132

| Motor size   | M3AA   | 56–63   | 71  | 80          | 90         | 100        | 112        | 132                         |                               |
|--|--|---|---|-------------|------------|------------|------------|-----------------------------|-------------------------------|
| Stator and end shields                                     | Material   | Die-cast aluminum alloy                       |   |             |            |            |            |                             |                               |
|  | Paint colour shade   | Munsell blue 8B 4.5/3.25                      |   |             |            |            |            |                             |                               |
|  | Corrosion class  | C3 according to IEO/EN 12944-5                |   |             |            |            |            |                             |                               |
| Feet   | Integrated aluminum feet   |   |   |             |            |            |            |                             |                               |
| Bearings   | D-end  | 6201-2Z/C3                                    | 6203-2Z/C3  | 6204-2Z/C3  | 6205-2Z/C3 | 6306-2Z/C3 | 6306-2Z/C3 | 6208-2Z/C3                  |                               |
|  |  |   |   |             |            |            |            |                             | 6308-2Z/C3 <sup>1)</sup>      |
|  |  |   |   |             |            |            |            |                             | E2.6208-2Z/C3 <sup>2)</sup>   |
|  |  |   |   |             |            |            |            | E2.6308-2Z/C3 <sup>3)</sup> |                               |
| N-end  | 6201-2Z/C3   | 6202-2Z/C3                                    | 6203-2Z/C3  | 6204-2Z/C3  | 6205-2Z/C3 | 6205-2Z/C3 | 6206-2Z/C3 | 6206-2Z/C3                  |                               |
|  |  |   |   |             |            |            |            | E2.6206-2Z/C3 <sup>4)</sup> |                               |
| Axially-locked bearings                                    | Inner bearing cover  | ND-end retaining ring                         | Locked at D-end   |             |            |            |            |                             |                               |
| Bearing seal   | D-end  | V-ring  |   |             |            |            |            |                             |                               |
|  | N-end  | Labyrinth seal                                |   |             |            |            |            |                             |                               |
| Lubrication  | Permanent grease lubrication. Grease temperature range -40°C to +160°C |   |   |             |            |            |            |                             |                               |
| Measuring nipples for condition monitoring of the bearings | Not included   |   |   |             |            |            |            |                             |                               |
| Rating plate   | Material   | Aluminum                                      |   |             |            |            |            |                             |                               |
| Terminal box   | Material   | Die-cast aluminum alloy, integrated to stator |   |             |            |            |            |                             |                               |
|  | Cover screws material  | Zinc-electroplated steel                      |   |             |            |            |            |                             |                               |
| Connections  | Openings   | 2x(M16+M16)                                   | 2x(M20 + M20)   | 2x(M20+M25) |            |            |            | 2x(M20+M25) <sup>5)</sup>   |                               |
|  |  |   |   |             |            |            |            |                             | 2x(M40+M32+M12) <sup>6)</sup> |
|  |  | Terminals                                     | 6 terminals for connection with cable lugs (not included) |             |            |            |            |                             |                               |
| Cable glands   | Optional   |   |   |             |            |            |            |                             |                               |
| Fan  | Material   | Glass-fiber reinforced polypropylene          |   |             |            |            |            |                             |                               |
| Fan cover  | Material   | Polypropylene                                 |   |             |            |            |            |                             |                               |
|  | Paint colour shade   | Munsell blue 8B 4.5/3.25                      |   |             |            |            |            |                             |                               |
|  | Corrosion class  | C3  |   |             |            |            |            |                             |                               |
| Stator winding   | Material   | Copper  |   |             |            |            |            |                             |                               |
|  | Insulation   | Insulation class F                            |   |             |            |            |            |                             |                               |
|  | Winding protection   | Optional                                      |   |             |            |            |            |                             |                               |
| Rotor winding  | Material   | Die-cast aluminum                             |   |             |            |            |            |                             |                               |
| Balancing  | Half key balancing   |   |   |             |            |            |            |                             |                               |
| Key ways   | Closed key way   |   |   |             |            |            |            |                             |                               |
| Drain holes  | Without drain holes  |   | Drain holes with closable plastic plugs, open on delivery |             |            |            |            |                             |                               |
| External earthing bolt                                     | As option  |   |   |             |            |            |            |                             |                               |
| Enclosure  | IP 55  |   |   |             |            |            |            |                             |                               |
| Cooling method   | IC 411   |   |   |             |            |            |            |                             |                               |

<sup>1)</sup> (SM) except 4p 11&15kW HO

<sup>4)</sup> HO 2p 9,2&15kW

<sup>2)</sup> 2p 9,2kW HO

<sup>5)</sup> S, SB, M, MA

<sup>3)</sup> 2p 15kW HO

<sup>6)</sup> SC, MC, SMA-SME