


| ABB Motors and Generators                             |  | Technical Data Sheet - DOL                          |                            |                                    |  |
|---|--|---|----------------------------|------------------------------------|---|
|   |  | Project   | Location                   |                                    |   |
| Department/Author                                     | Customer name                                      | Customer ref.                                       |                            | Item name                          |   |
|   |  |   |                            | <b>1.00059</b>                     |   |
| Our ref.  | Rev/Changed by                                     | Date of issue                                       | Saving ident               | Pages                              |   |
|   | <b>A</b>   | <b>21/11/2017</b>                                   | <b>wimes stock.do2.xls</b> | <b>1(3)</b>                        |   |
| No.   | Definition   | Data  | Unit                       | Remarks                            |   |
| 1   | Product  | <b>TEFC, 3-phase, squirrel cage induction motor</b> |                            |                                    |   |
| 2   | Product code                                       | <b>3GBA 111 320-BDD</b>                             |                            | Calc. ref. 3GZC021011-58           |   |
| 3   | Type/Frame   | <b>M2BAX 112MB 2</b>                                |                            |                                    |   |
| 4   | Mounting   | <b>IM3001, B5(flange)</b>                           |                            |                                    |   |
| 5   | Rated output P <sub>N</sub>                        | <b>4</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>  | VD                         | ± 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>2904</b>   | r/min                      |                                    |   |
| 11  | Rated current I <sub>N</sub>                       | <b>7.2</b>  | A                          |                                    |   |
| 12  | No-load current                                    | <b>1.48</b>   | A                          |                                    |   |
| 13  | Starting current I <sub>s</sub> /I <sub>N</sub>    | <b>9.3</b>  |                            | Fullfilled IEC 60034-12 design N,H |   |
| 14  | Nominal torque T <sub>N</sub>                      | <b>13.2</b>   | Nm                         |                                    |   |
| 15  | Locked rotor torque T <sub>s</sub> /T <sub>N</sub> | <b>2.8</b>  |                            |                                    |   |
| 16  | Maximum torque T <sub>max</sub> /T <sub>N</sub>    | <b>3.7</b>  |                            |                                    |   |
| 17  | Minimum torque T <sub>min</sub> /T <sub>N</sub>    | <b>2.6</b>  |                            |                                    |   |
| 18  | Speed at minimum torque                            | <b>150</b>  | r/min                      |                                    |   |
|   | Load characteristics (IEC 60034-2-1:2014)          | Load %  | Current A                  | Efficiency %                       |   |
| 19  | PLL determined from residual loss                  | <b>100</b>  | <b>7.2</b>                 | <b>88.1 / IE3</b>                  |   |
| 20  |  | <b>75</b>   | <b>5.5</b>                 | <b>89</b>                          |   |
| 21  |  | <b>50</b>   | <b>3.9</b>                 | <b>89.2</b>                        |   |
| 22  |  | <b>Start</b>  | <b>67</b>                  | <b>0.47</b>                        |   |
| 23  | Maximum starting time from hot                     | <b>20</b>   | s                          |                                    |   |
| 24  | Maximum starting time from cold                    | <b>37</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>6206-2Z/C3 - 6205-2Z/C3</b>                      |                            |                                    |   |
| 31  | Type of Grease                                     |   |                            |                                    |   |
| 32  | Sound pressure level (LP dB(A) 1m)                 | <b>64</b>   | dB(A)                      | at load                            |   |
| 33  | Moment of inertia J = ¼ GD <sup>2</sup>            | <b>0.00711</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>8</b>  | kg                         |                                    |   |
| 41  | Total weight of motor                              | <b>42</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 15/08/2016                    |  |   |                            |                                    |   |
| All data subject to tolerances in accordance with IEC |  |   |                            |                                    |   |
| Guaranteed values on request                          |  |   |                            |                                    |   |

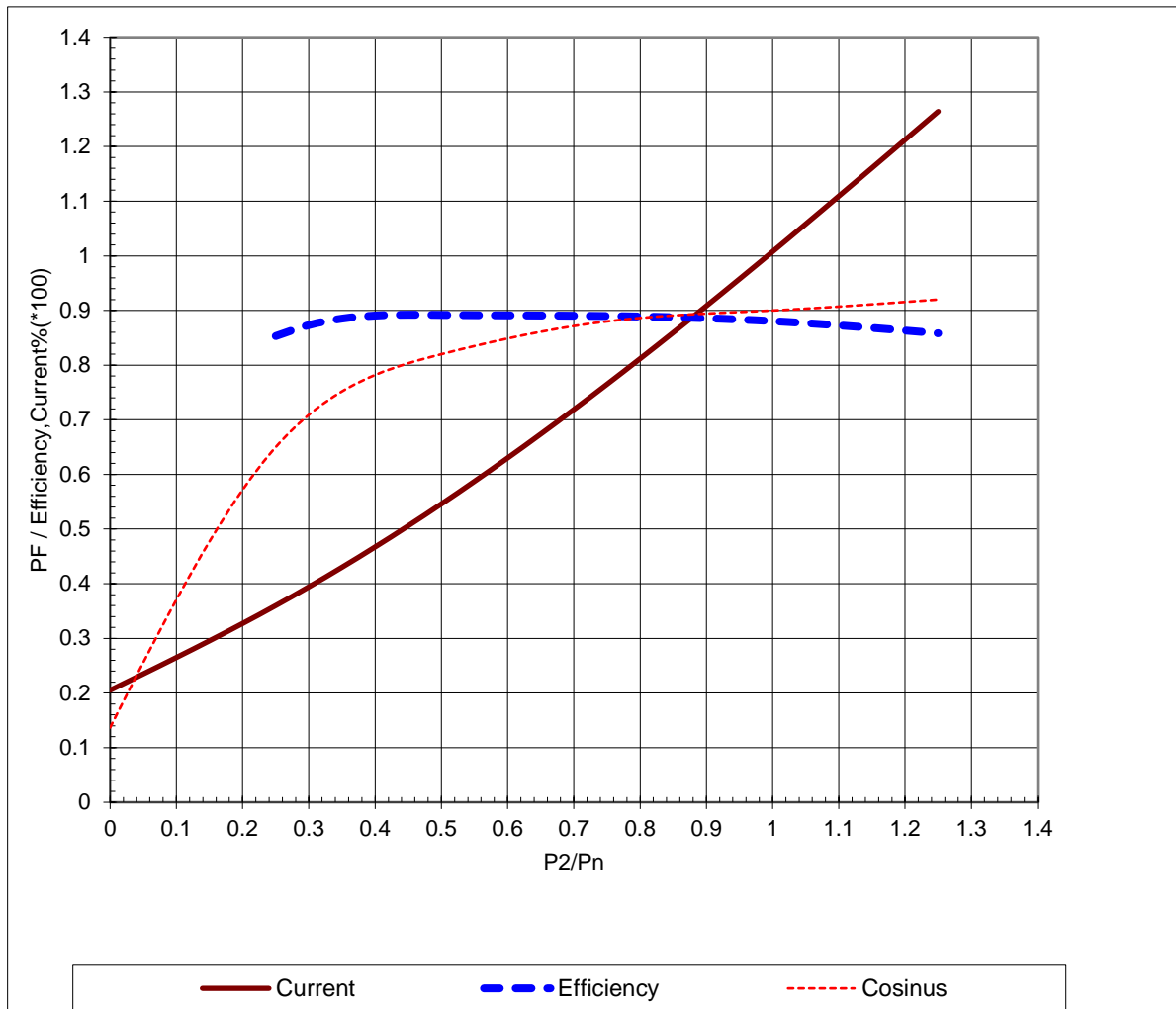
Project \_\_\_\_\_ Location \_\_\_\_\_

Department/Author \_\_\_\_\_ Customer name \_\_\_\_\_ Customer ref. \_\_\_\_\_ Item name **1.00059**

Our ref. \_\_\_\_\_ Rev/Changed by **A** Date of issue **21/11/2017** Saving ident **wimes stock.do2.xls** Pages **2(3)**

Product **TEFC, 3-phase, squirrel cage induction motor**  
 Type/Frame **M2BAX 112MB 2** Calc. ref. **3GZC021011-58**  
 Product code **3GBA 111 320-BDD**  
 Rated output  $P_N$  **4** kW  
 Type of duty **S1(IEC) 100%**

Voltage (V) **400** Current  $I_N$  (A) **7.2** Power factor at  $P_N$  **0.9**  
 Frequency (Hz) **50** Speed (r/min) **2904** Efficiency (%) at  $P_N$  **88.1**



Load characteristics (IEC 60034-2-1:2014)  
 Data based on situation 15/08/2016

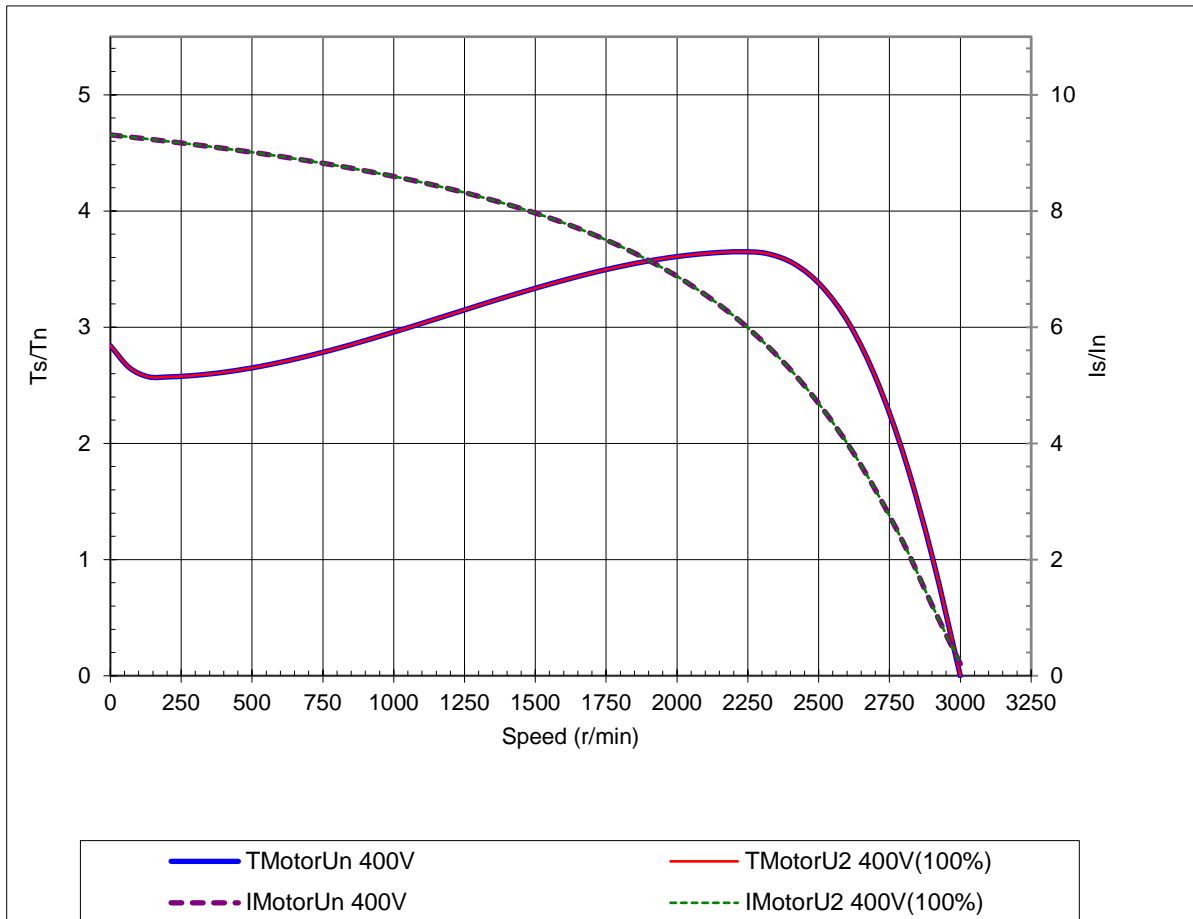
All data subject to tolerances in accordance with IEC



|                   |                             |                            |                |
|-------------------|-----------------------------|----------------------------|----------------|
|                   | Project                     | Location                   |                |
| Department/Author | Customer name               | Customer ref.              | Item name      |
|                   |                             |                            | <b>1.00059</b> |
| Our ref.          | Rev/Changed b Date of issue | Saving ident               | Pages          |
|                   | <b>A 21/11/2017</b>         | <b>wimes stock.do2.xls</b> | <b>3(3)</b>    |

|                             |   |                              |               |
|-----------------------------|---|------------------------------|---------------|
| Type of product             | <b>TEFC, 3-phase, squirrel cage induction motor</b> |                              |               |
| Type/Frame                  | <b>M2BAX 112MB 2</b>                                | Calc. ref.                   | 3GZC021011-58 |
| Product code                | <b>3GBA 111 320-BDD</b>                             | Frequency (Hz)               | <b>50</b>     |
| Rated output P <sub>N</sub> | <b>4 kW</b>   | Rated current I <sub>N</sub> | <b>7.2 A</b>  |
| Type of duty                | <b>S1(IEC) 100%</b>                                 |                              |               |

|  |               |                                    |            |                                    |                   |
|--|---------------|------------------------------------|------------|------------------------------------|-------------------|
| J <sub>motor</sub> (kgm <sup>2</sup> ) | <b>0.0071</b> | Voltage (V) 100%                   | <b>400</b> | Voltage (V)                        | <b>400V(100%)</b> |
| J <sub>load</sub> (kgm <sup>2</sup> )  |               | T <sub>start</sub> /T <sub>N</sub> | <b>2.8</b> | T <sub>start</sub> /T <sub>N</sub> | <b>2.8</b>        |
| Speed (r/min)                          | <b>2904</b>   | Starting time (s)                  |            | Starting time (s)                  |                   |
| T <sub>N</sub> (Nm)                    | <b>13.2</b>   | Speed (r/min)                      |            | Speed (r/min)                      |                   |
| T <sub>load</sub> (Nm)                 |               | I <sub>s</sub> /I <sub>n</sub>     | <b>9.3</b> | I <sub>s</sub> /I <sub>n</sub>     | <b>9.3</b>        |
| Nbr. of Consecutive Starts at UN       |               | T <sub>max</sub> /T <sub>n</sub>   | <b>3.7</b> | T <sub>max</sub> /T <sub>n</sub>   | <b>3.7</b>        |



Load characteristics (IEC 60034-2-1:2014)  
Data based on situation 15/08/2016

All data subject to tolerances in accordance with IEC