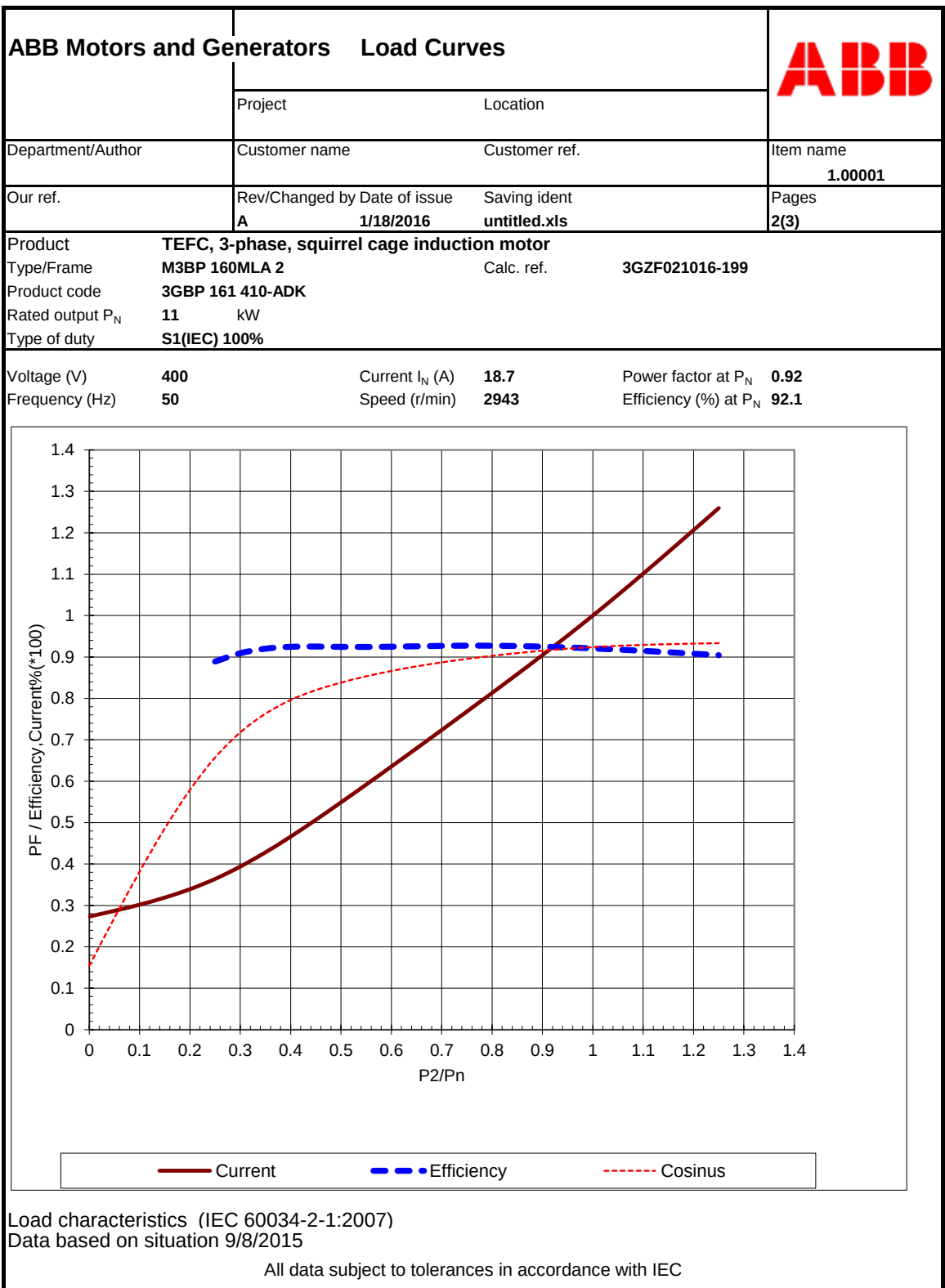
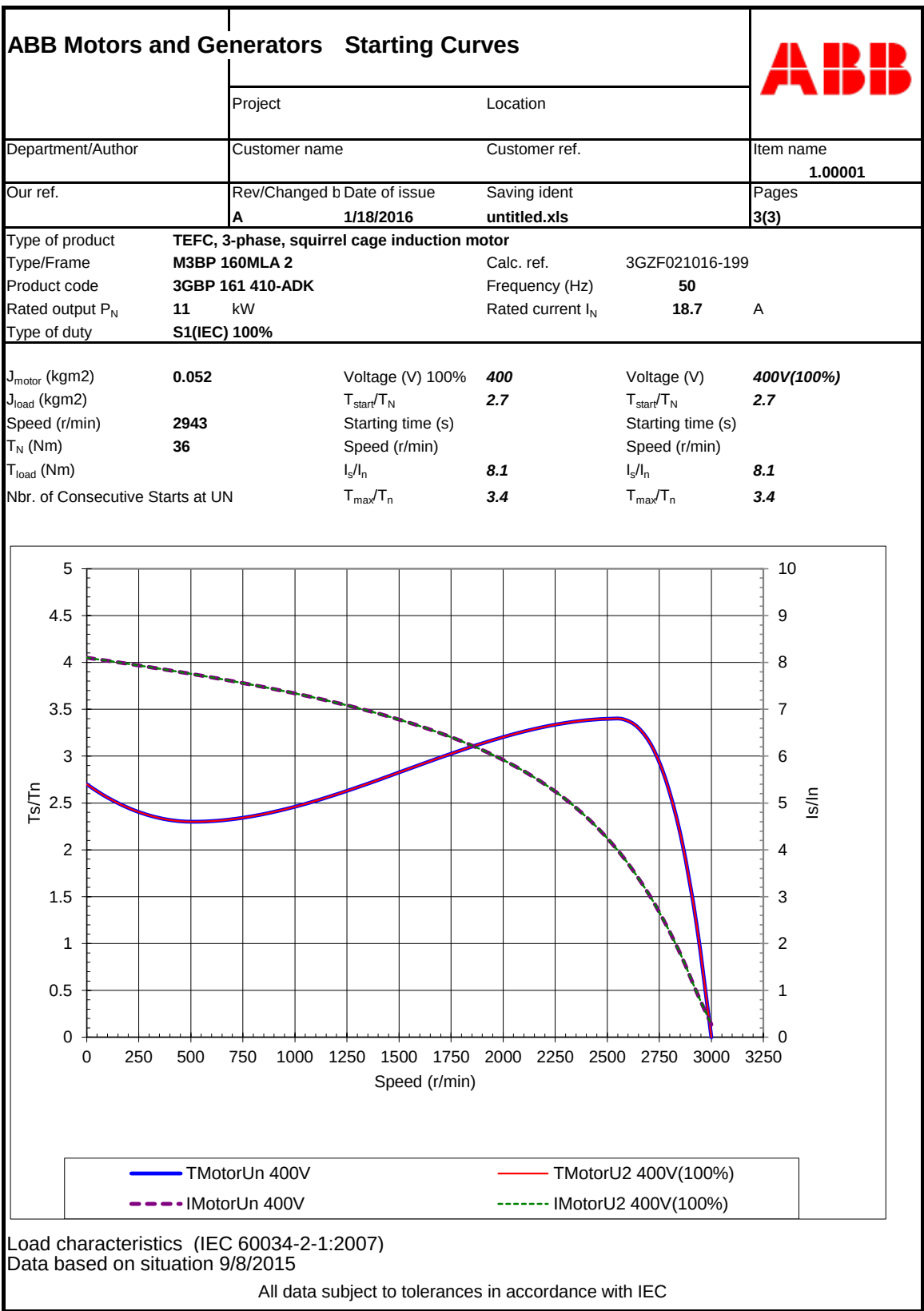


| ABB Motors and Generators                             |                                                                 | Technical Data Sheet - DOL                   |                              |  |              |
|-------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|--------------|
| Project                                               |                                                                 | Location                                     |                              |                                                                                     |              |
| Department/Author                                     | Customer name                                                   | Customer ref.                                |                              | Item name<br>1.00001                                                                |              |
| Our ref.                                              | Rev/Changed by<br>A                                             | Date of issue<br>1/18/2016                   | Saving ident<br>untitled.xls | Pages<br>1(3)                                                                       |              |
| No.                                                   | Definition                                                      | Data                                         | Unit                         | Remarks                                                                             |              |
| 1                                                     | Product                                                         | TEFC, 3-phase, squirrel cage induction motor |                              |                                                                                     |              |
| 2                                                     | Product code                                                    | EMM16112-PPN (3GBP161410-ADK+332+509)        |                              | Calc. ref. 3GZF021016-199                                                           |              |
| 3                                                     | Type/Frame                                                      | M3BP 160MLA 2                                |                              |                                                                                     |              |
| 4                                                     | Mounting                                                        | IM1001, B3(foot)                             |                              |                                                                                     |              |
| 5                                                     | Rated output P <sub>N</sub>                                     | 11                                           | kW                           |                                                                                     |              |
| 6                                                     | Service factor                                                  | 1                                            |                              |                                                                                     |              |
| 7                                                     | Type of duty                                                    | S1(IEC) 100%                                 |                              |                                                                                     |              |
| 8                                                     | Rated voltage U <sub>N</sub>                                    | 400                                          | VD                           | ± 5 % (IEC 60034-1)                                                                 |              |
| 9                                                     | Rated frequency f <sub>N</sub>                                  | 50                                           | Hz                           | ± 2 % (IEC 60034-1)                                                                 |              |
| 10                                                    | Rated speed n <sub>N</sub>                                      | 2943                                         | r/min                        |                                                                                     |              |
| 11                                                    | Rated current I <sub>N</sub>                                    | 18.7                                         | A                            |                                                                                     |              |
| 12                                                    | No-load current                                                 | 5.1                                          | A                            |                                                                                     |              |
| 13                                                    | Starting current I <sub>s</sub> /I <sub>N</sub>                 | 8.1                                          |                              | Fullfilled IEC 60034-12 design N,H                                                  |              |
| 14                                                    | Nominal torque T <sub>N</sub>                                   | 36                                           | Nm                           |                                                                                     |              |
| 15                                                    | Locked rotor torque T <sub>s</sub> /T <sub>N</sub>              | 2.7                                          |                              |                                                                                     |              |
| 16                                                    | Maximum torque T <sub>max</sub> /T <sub>N</sub>                 | 3.4                                          |                              |                                                                                     |              |
| 17                                                    | Minimum torque T <sub>min</sub> /T <sub>N</sub>                 | 2.3                                          |                              |                                                                                     |              |
| 18                                                    | Speed at minimum torque                                         | 510                                          | r/min                        |                                                                                     |              |
| Load characteristics (IEC 60034-2-1:2007)             |                                                                 | Load %                                       | Current A                    | Efficiency %                                                                        | Power factor |
| 19                                                    | PLL determined from residual loss                               | 100                                          | 18.7                         | 92.1 / IE3                                                                          | 0.92         |
| 20                                                    |                                                                 | 75                                           | 14.3                         | 92.7                                                                                | 0.9          |
| 21                                                    |                                                                 | 50                                           | 10.2                         | 92.4                                                                                | 0.84         |
| 22                                                    |                                                                 | Start                                        | 151                          |                                                                                     | 0.44         |
| 23                                                    | Maximum starting time from hot                                  | 15                                           | s                            |                                                                                     |              |
| 24                                                    | Maximum starting time from cold                                 | 27                                           | s                            |                                                                                     |              |
| 25                                                    | Insulation class / Temperature class                            | F / B                                        |                              |                                                                                     |              |
| 26                                                    | Ambient temperature                                             | 40                                           | °C                           |                                                                                     |              |
| 27                                                    | Altitude                                                        | 1000                                         | m.a.s.l.                     |                                                                                     |              |
| 28                                                    | Enclosure                                                       | IP55                                         |                              |                                                                                     |              |
| 29                                                    | Cooling system                                                  | IC411 self ventilated                        |                              |                                                                                     |              |
| 30                                                    | Bearing DE/NDE                                                  | 6309/C3 - 6209/C3                            |                              |                                                                                     |              |
| 31                                                    | Type of Grease                                                  |                                              |                              |                                                                                     |              |
| 32                                                    | Sound pressure level (LP dB(A) 1m)                              | 69                                           | dB(A)                        | at load                                                                             |              |
| 33                                                    | Moment of inertia J = ¼ GD2                                     | 0.052                                        | kg-m2                        |                                                                                     |              |
| 34                                                    | Balancing                                                       |                                              |                              |                                                                                     |              |
| 35                                                    | Vibration class                                                 |                                              |                              |                                                                                     |              |
| 36                                                    | Position of terminal box                                        | Top                                          |                              |                                                                                     |              |
| 37                                                    | Terminal box entries; no, dimens.                               |                                              |                              |                                                                                     |              |
| 38                                                    | Number of power terminals                                       |                                              |                              |                                                                                     |              |
| 39                                                    | Direction of rotation                                           | CW or CCW                                    |                              |                                                                                     |              |
| 40                                                    | Weight of rotor                                                 | 28                                           | kg                           |                                                                                     |              |
| 41                                                    | Total weight of motor                                           | 151                                          | kg                           |                                                                                     |              |
| 42                                                    | Dimension drawing no.                                           |                                              |                              |                                                                                     |              |
| 43                                                    |                                                                 |                                              |                              |                                                                                     |              |
| 44                                                    |                                                                 |                                              |                              |                                                                                     |              |
| 45                                                    |                                                                 |                                              |                              |                                                                                     |              |
| Ex-motors                                             |                                                                 |                                              |                              |                                                                                     |              |
| 46                                                    |                                                                 |                                              |                              |                                                                                     |              |
| 47                                                    |                                                                 |                                              |                              |                                                                                     |              |
| 48                                                    |                                                                 |                                              |                              |                                                                                     |              |
| Option Variant Codes / Definition                     |                                                                 |                                              |                              |                                                                                     |              |
| 49                                                    | 332 = Baldor Catalog number stamped on rating plate             |                                              |                              |                                                                                     |              |
| 50                                                    | 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A |                                              |                              |                                                                                     |              |
| 51                                                    |                                                                 |                                              |                              |                                                                                     |              |
| 52                                                    |                                                                 |                                              |                              |                                                                                     |              |
| Remarks:                                              |                                                                 |                                              |                              |                                                                                     |              |
| Data based on situation 9/8/2015                      |                                                                 |                                              |                              |                                                                                     |              |
| All data subject to tolerances in accordance with IEC |                                                                 |                                              |                              |                                                                                     |              |
| Guaranteed values on request                          |                                                                 |                                              |                              |                                                                                     |              |

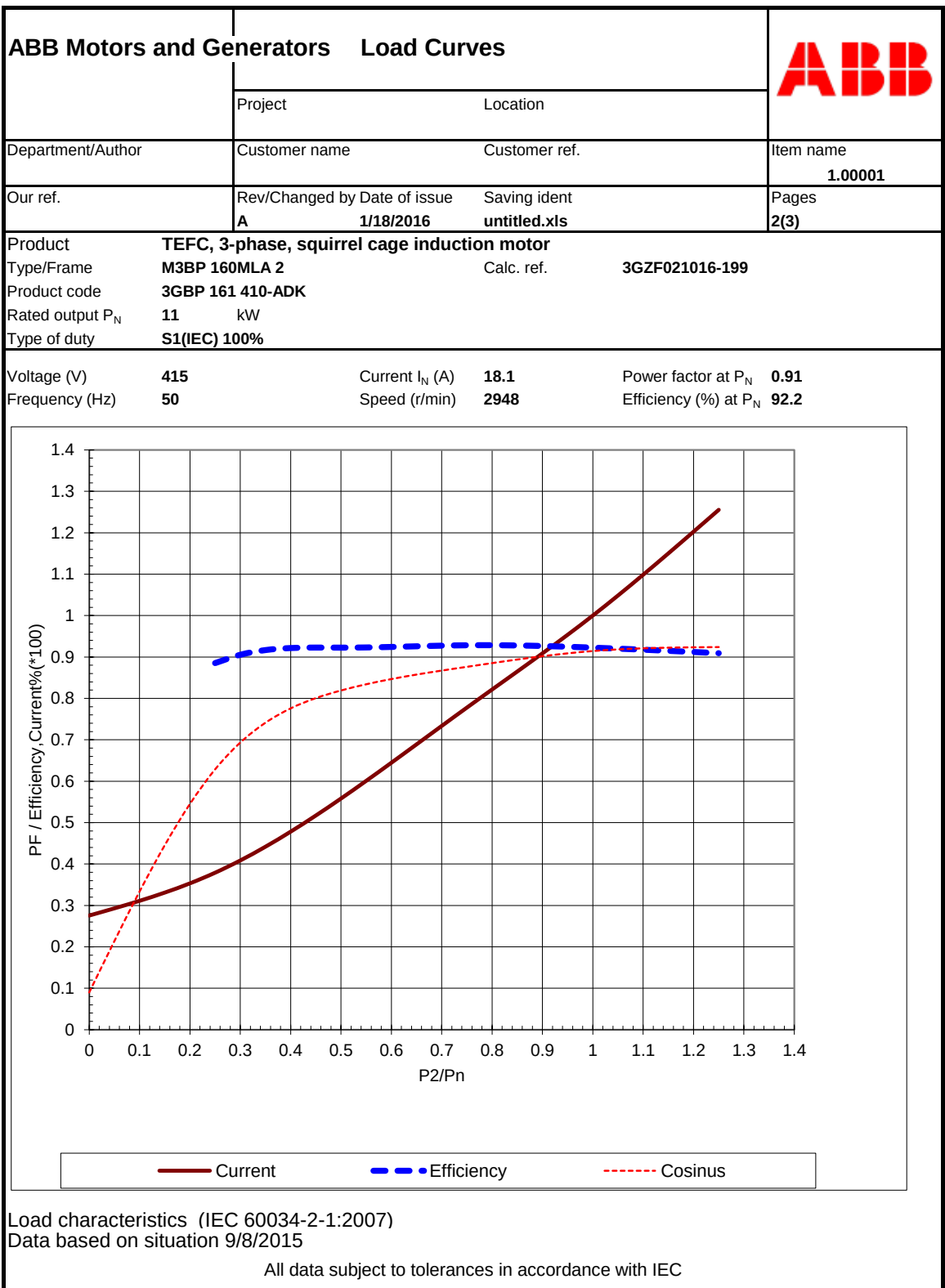


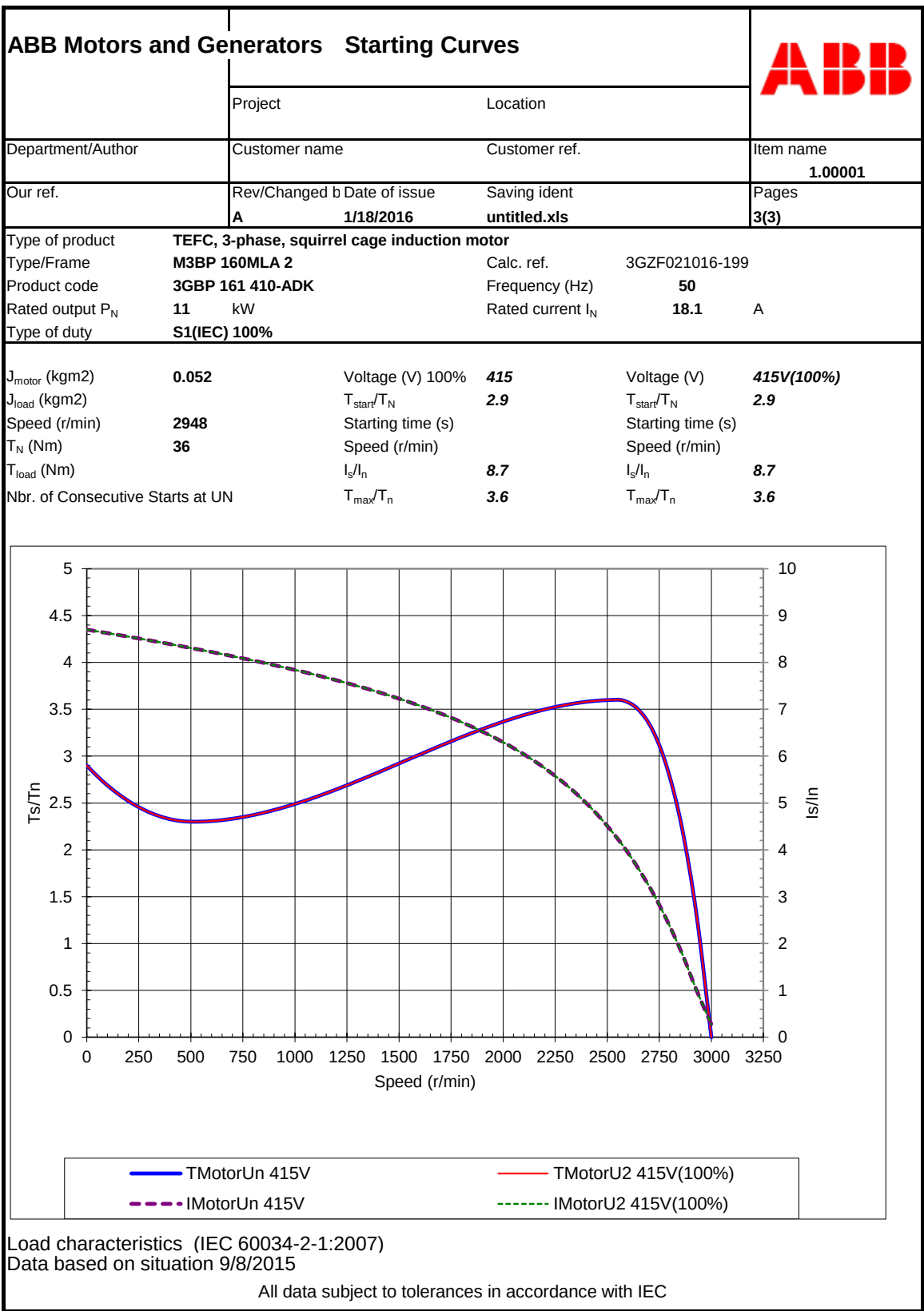


| ABB Motors and Generators |                            | Technical Data Sheet - DOL        |                                     |  |
|---------------------------|----------------------------|-----------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| Project                   |                            | Location                          |                                     |                                                                                     |
| Department/Author         | Customer name              | Customer ref.                     |                                     | Item name<br><b>1.00001</b>                                                         |
| Our ref.                  | Rev/Changed by<br><b>A</b> | Date of issue<br><b>1/18/2016</b> | Saving ident<br><b>untitled.xls</b> | Pages<br><b>1(3)</b>                                                                |

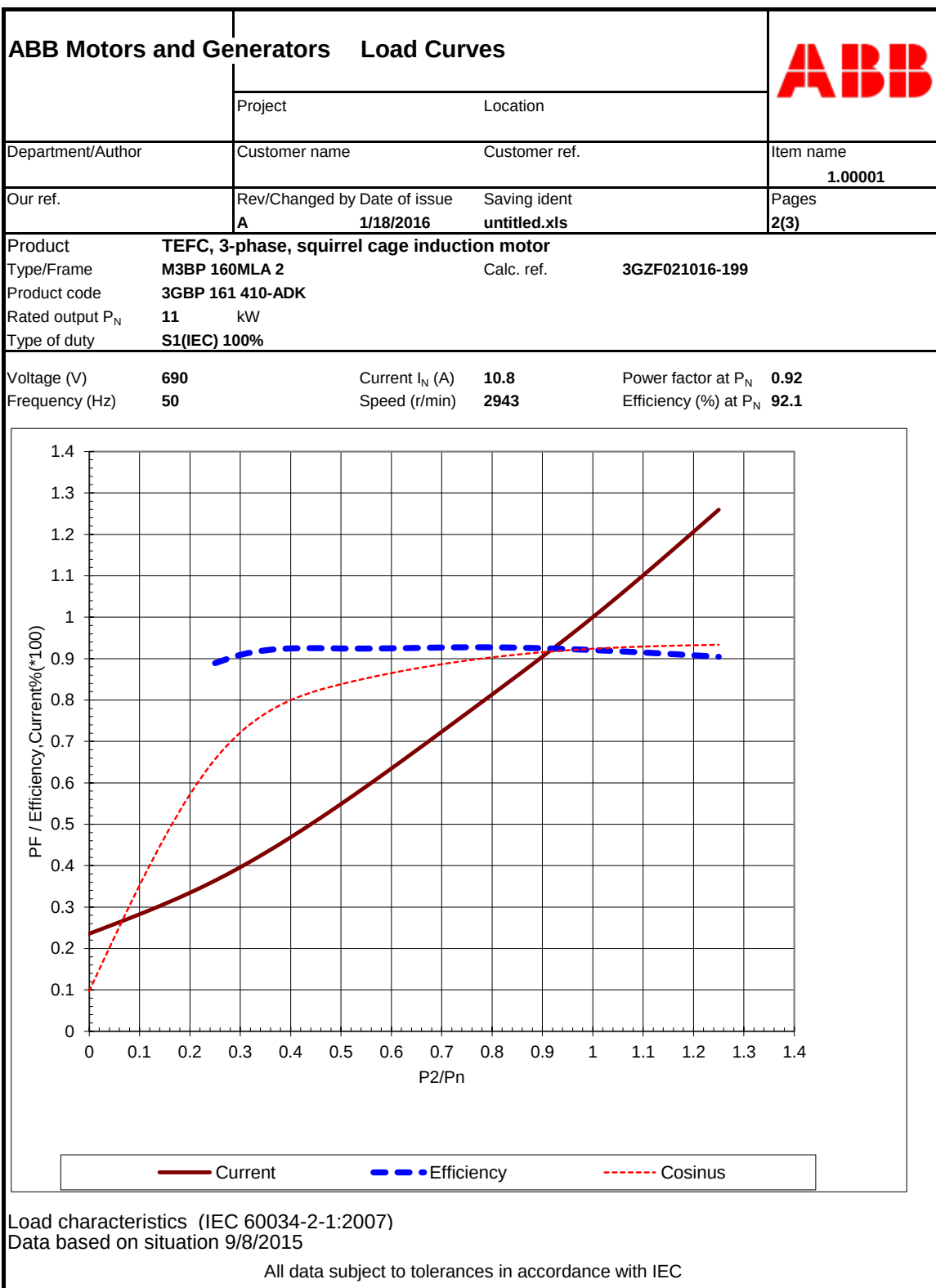
  

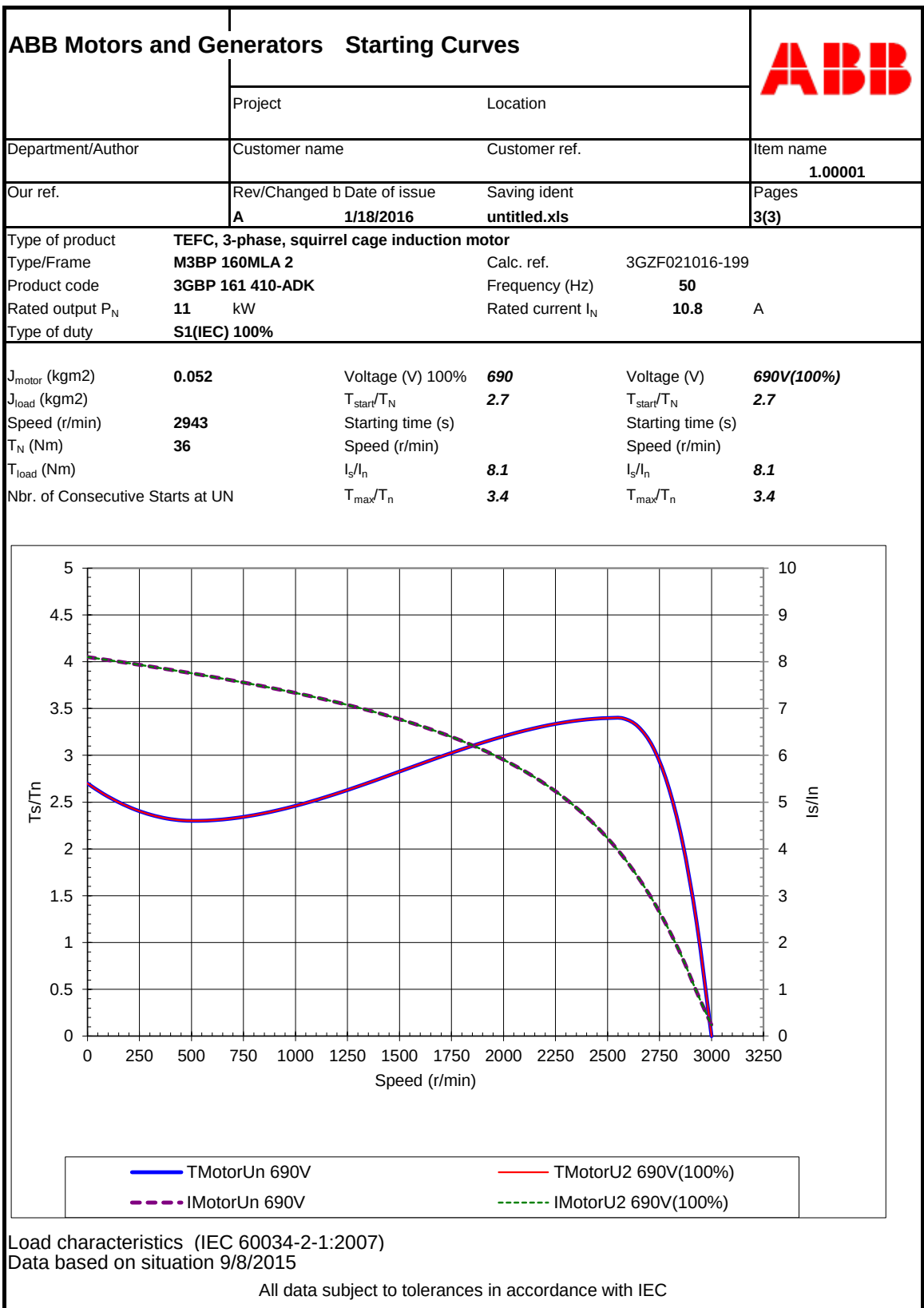
| No.                                                   | Definition                                                      | Data                                                | Unit        | Remarks                            |
|-------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|-------------|------------------------------------|
| 1                                                     | Product                                                         | <b>TEFC, 3-phase, squirrel cage induction motor</b> |             |                                    |
| 2                                                     | Product code                                                    | <b>EMM16112-PPN (3GBP161410-ADK+332+509)</b>        |             |                                    |
| 3                                                     | Type/Frame                                                      | <b>M3BP 160MLA 2</b>                                |             |                                    |
| 4                                                     | Mounting                                                        | <b>IM1001, B3(foot)</b>                             |             |                                    |
| 5                                                     | Rated output P <sub>N</sub>                                     | <b>11</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>415</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>2948</b>                                         | r/min       |                                    |
| 11                                                    | Rated current I <sub>N</sub>                                    | <b>18.1</b>                                         | A           |                                    |
| 12                                                    | No-load current                                                 | <b>5</b>                                            | A           |                                    |
| 13                                                    | Starting current I <sub>s</sub> /I <sub>N</sub>                 | <b>8.7</b>                                          |             | Fullfilled IEC 60034-12 design N,H |
| 14                                                    | Nominal torque T <sub>N</sub>                                   | <b>36</b>                                           | Nm          |                                    |
| 15                                                    | Locked rotor torque T <sub>s</sub> /T <sub>N</sub>              | <b>2.9</b>                                          |             |                                    |
| 16                                                    | Maximum torque T <sub>max</sub> /T <sub>N</sub>                 | <b>3.6</b>                                          |             |                                    |
| 17                                                    | Minimum torque T <sub>min</sub> /T <sub>N</sub>                 | <b>2.3</b>                                          |             |                                    |
| 18                                                    | Speed at minimum torque                                         | <b>510</b>                                          | r/min       |                                    |
| Load characteristics (IEC 60034-2-1:2007)             |                                                                 | Load %                                              | Current A   | Efficiency %                       |
| 19                                                    | PLL determined from residual loss                               | <b>100</b>                                          | <b>18.1</b> | <b>92.2 / IE3</b>                  |
| 20                                                    |                                                                 | <b>75</b>                                           | <b>14.1</b> | <b>92.8</b>                        |
| 21                                                    |                                                                 | <b>50</b>                                           | <b>10.1</b> | <b>92.2</b>                        |
| 22                                                    |                                                                 | <b>Start</b>                                        | <b>158</b>  | <b>0.44</b>                        |
| 23                                                    | Maximum starting time from hot                                  | <b>15</b>                                           | s           |                                    |
| 24                                                    | Maximum starting time from cold                                 | <b>27</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>6309/C3 - 6209/C3</b>                            |             |                                    |
| 31                                                    | Type of Grease                                                  |                                                     |             |                                    |
| 32                                                    | Sound pressure level (LP dB(A) 1m)                              | <b>69</b>                                           | dB(A)       | at load                            |
| 33                                                    | Moment of inertia J = ¼ GD2                                     | <b>0.052</b>                                        | kg-m2       |                                    |
| 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>28</b>                                           | kg          |                                    |
| 41                                                    | Total weight of motor                                           | <b>151</b>                                          | kg          |                                    |
| 42                                                    | Dimension drawing no.                                           |                                                     |             |                                    |
| 43                                                    |                                                                 |                                                     |             |                                    |
| 44                                                    |                                                                 |                                                     |             |                                    |
| 45                                                    |                                                                 |                                                     |             |                                    |
| Ex-motors                                             |                                                                 |                                                     |             |                                    |
| 46                                                    |                                                                 |                                                     |             |                                    |
| 47                                                    |                                                                 |                                                     |             |                                    |
| 48                                                    |                                                                 |                                                     |             |                                    |
| Option Variant Codes / Definition                     |                                                                 |                                                     |             |                                    |
| 49                                                    | 332 = Baldor Catalog number stamped on rating plate             |                                                     |             |                                    |
| 50                                                    | 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A |                                                     |             |                                    |
| 51                                                    |                                                                 |                                                     |             |                                    |
| 52                                                    |                                                                 |                                                     |             |                                    |
| Remarks:                                              |                                                                 |                                                     |             |                                    |
| Data based on situation 9/8/2015                      |                                                                 |                                                     |             |                                    |
| All data subject to tolerances in accordance with IEC |                                                                 |                                                     |             |                                    |
| Guaranteed values on request                          |                                                                 |                                                     |             |                                    |



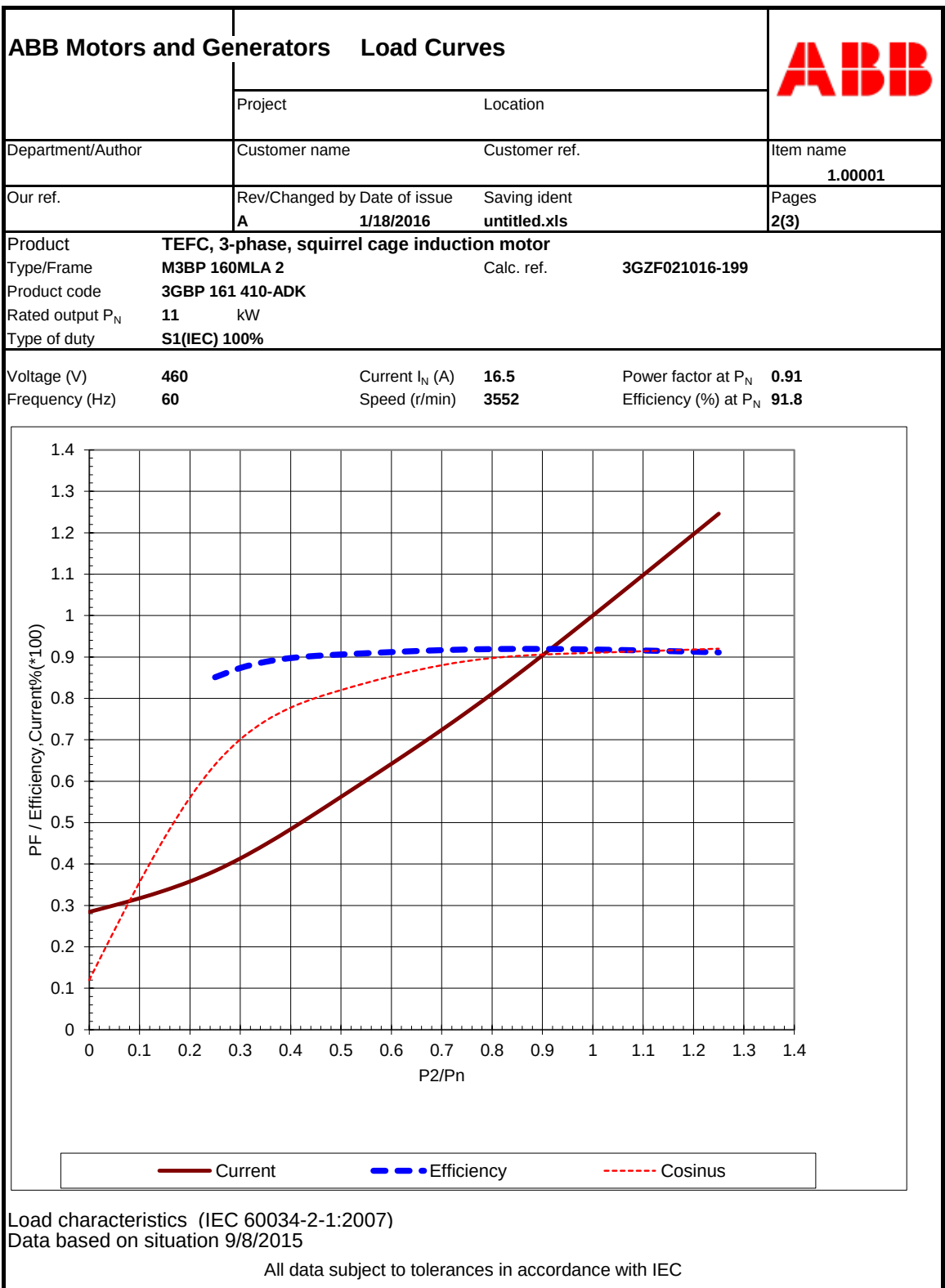


| ABB Motors and Generators                             |                                                                 | Technical Data Sheet - DOL                          |                                     |  |
|-------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| Project                                               |                                                                 | Location                                            |                                     |                                                                                     |
| Department/Author                                     | Customer name                                                   | Customer ref.                                       |                                     | Item name<br><b>1.00001</b>                                                         |
| Our ref.                                              | Rev/Changed by<br><b>A</b>                                      | Date of issue<br><b>1/18/2016</b>                   | Saving ident<br><b>untitled.xls</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>EMM16112-PPN (3GBP161410-ADK+332+509)</b>        |                                     |                                                                                     |
| 3                                                     | Type/Frame                                                      | <b>M3BP 160MLA 2</b>                                |                                     |                                                                                     |
| 4                                                     | Mounting                                                        | <b>IM1001, B3(foot)</b>                             |                                     |                                                                                     |
| 5                                                     | Rated output $P_N$                                              | <b>11</b>                                           | kW                                  |                                                                                     |
| 6                                                     | Service factor                                                  | <b>1</b>                                            |                                     |                                                                                     |
| 7                                                     | Type of duty                                                    | <b>S1(IEC) 100%</b>                                 |                                     |                                                                                     |
| 8                                                     | Rated voltage $U_N$                                             | <b>690</b>                                          | VY                                  | $\pm 5\%$ (IEC 60034-1)                                                             |
| 9                                                     | Rated frequency $f_N$                                           | <b>50</b>                                           | Hz                                  | $\pm 2\%$ (IEC 60034-1)                                                             |
| 10                                                    | Rated speed $n_N$                                               | <b>2943</b>                                         | r/min                               |                                                                                     |
| 11                                                    | Rated current $I_N$                                             | <b>10.8</b>                                         | A                                   |                                                                                     |
| 12                                                    | No-load current                                                 | <b>2.5</b>                                          | A                                   |                                                                                     |
| 13                                                    | Starting current $I_s/I_N$                                      | <b>8.1</b>                                          |                                     | Fullfilled IEC 60034-12 design N,H                                                  |
| 14                                                    | Nominal torque $T_N$                                            | <b>36</b>                                           | Nm                                  |                                                                                     |
| 15                                                    | Locked rotor torque $T_s/T_N$                                   | <b>2.7</b>                                          |                                     |                                                                                     |
| 16                                                    | Maximum torque $T_{max}/T_N$                                    | <b>3.4</b>                                          |                                     |                                                                                     |
| 17                                                    | Minimum torque $T_{min}/T_N$                                    | <b>2.3</b>                                          |                                     |                                                                                     |
| 18                                                    | Speed at minimum torque                                         | <b>510</b>                                          | r/min                               |                                                                                     |
| Load characteristics (IEC 60034-2-1:2007)             |                                                                 | Load %                                              | Current A                           | Efficiency %                                                                        |
| 19                                                    | PLL determined from residual loss                               | <b>100</b>                                          | <b>10.8</b>                         | <b>92.1 / IE3</b>                                                                   |
| 20                                                    |                                                                 | <b>75</b>                                           | <b>8.3</b>                          | <b>92.7</b>                                                                         |
| 21                                                    |                                                                 | <b>50</b>                                           | <b>5.9</b>                          | <b>92.4</b>                                                                         |
| 22                                                    |                                                                 | <b>Start</b>                                        | <b>88</b>                           | <b>0.44</b>                                                                         |
| 23                                                    | Maximum starting time from hot                                  | <b>15</b>                                           | s                                   |                                                                                     |
| 24                                                    | Maximum starting time from cold                                 | <b>27</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>6309/C3 - 6209/C3</b>                            |                                     |                                                                                     |
| 31                                                    | Type of Grease                                                  |                                                     |                                     |                                                                                     |
| 32                                                    | Sound pressure level (LP dB(A) 1m)                              | <b>69</b>                                           | dB(A)                               | at load                                                                             |
| 33                                                    | Moment of inertia $J = \frac{1}{4} GD^2$                        | <b>0.052</b>                                        | kg-m2                               |                                                                                     |
| 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>28</b>                                           | kg                                  |                                                                                     |
| 41                                                    | Total weight of motor                                           | <b>151</b>                                          | kg                                  |                                                                                     |
| 42                                                    | Dimension drawing no.                                           |                                                     |                                     |                                                                                     |
| 43                                                    |                                                                 |                                                     |                                     |                                                                                     |
| 44                                                    |                                                                 |                                                     |                                     |                                                                                     |
| 45                                                    |                                                                 |                                                     |                                     |                                                                                     |
| Ex-motors                                             |                                                                 |                                                     |                                     |                                                                                     |
| 46                                                    |                                                                 |                                                     |                                     |                                                                                     |
| 47                                                    |                                                                 |                                                     |                                     |                                                                                     |
| 48                                                    |                                                                 |                                                     |                                     |                                                                                     |
| Option Variant Codes / Definition                     |                                                                 |                                                     |                                     |                                                                                     |
| 49                                                    | 332 = Baldor Catalog number stamped on rating plate             |                                                     |                                     |                                                                                     |
| 50                                                    | 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A |                                                     |                                     |                                                                                     |
| 51                                                    |                                                                 |                                                     |                                     |                                                                                     |
| 52                                                    |                                                                 |                                                     |                                     |                                                                                     |
| Remarks:                                              |                                                                 |                                                     |                                     |                                                                                     |
| Data based on situation 9/8/2015                      |                                                                 |                                                     |                                     |                                                                                     |
| All data subject to tolerances in accordance with IEC |                                                                 |                                                     |                                     |                                                                                     |
| Guaranteed values on request                          |                                                                 |                                                     |                                     |                                                                                     |





| ABB Motors and Generators                             |                                                                 | Technical Data Sheet - DOL                   |           |  |              |
|-------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------|-----------|-------------------------------------------------------------------------------------|--------------|
| Project                                               |                                                                 | Location                                     |           |                                                                                     |              |
| Department/Author                                     |                                                                 | Customer name                                |           | Customer ref.                                                                       |              |
| Our ref.                                              |                                                                 | Rev/Changed by<br>A                          |           | Date of issue<br>1/18/2016                                                          |              |
|                                                       |                                                                 | Saving ident<br>untitled.xls                 |           | Pages<br>1(3)                                                                       |              |
| No.                                                   | Definition                                                      | Data                                         | Unit      | Remarks                                                                             |              |
| 1                                                     | Product                                                         | TEFC, 3-phase, squirrel cage induction motor |           |                                                                                     |              |
| 2                                                     | Product code                                                    | EMM16112-PPN (3GBP161410-ADK+332+509)        |           |                                                                                     |              |
| 3                                                     | Type/Frame                                                      | M3BP 160MLA 2                                |           |                                                                                     |              |
| 4                                                     | Mounting                                                        | IM1001, B3(foot)                             |           |                                                                                     |              |
| 5                                                     | Rated output P <sub>N</sub>                                     | 11                                           | kW        |                                                                                     |              |
| 6                                                     | Service factor                                                  | 1                                            |           |                                                                                     |              |
| 7                                                     | Type of duty                                                    | S1(IEC) 100%                                 |           |                                                                                     |              |
| 8                                                     | Rated voltage U <sub>N</sub>                                    | 460                                          | VD        | ± 5 % (IEC 60034-1)                                                                 |              |
| 9                                                     | Rated frequency f <sub>N</sub>                                  | 60                                           | Hz        | ± 2 % (IEC 60034-1)                                                                 |              |
| 10                                                    | Rated speed n <sub>N</sub>                                      | 3552                                         | r/min     |                                                                                     |              |
| 11                                                    | Rated current I <sub>N</sub>                                    | 16.5                                         | A         |                                                                                     |              |
| 12                                                    | No-load current                                                 | 4.7                                          | A         |                                                                                     |              |
| 13                                                    | Starting current I <sub>s</sub> /I <sub>N</sub>                 | 9.2                                          |           | Fullfilled IEC 60034-12 design N,H                                                  |              |
| 14                                                    | Nominal torque T <sub>N</sub>                                   | 29.6                                         | Nm        |                                                                                     |              |
| 15                                                    | Locked rotor torque T <sub>s</sub> /T <sub>N</sub>              | 2.9                                          |           |                                                                                     |              |
| 16                                                    | Maximum torque T <sub>max</sub> /T <sub>N</sub>                 | 3.8                                          |           |                                                                                     |              |
| 17                                                    | Minimum torque T <sub>min</sub> /T <sub>N</sub>                 | 2.5                                          |           |                                                                                     |              |
| 18                                                    | Speed at minimum torque                                         | 612                                          | r/min     |                                                                                     |              |
| Load characteristics (IEC 60034-2-1:2007)             |                                                                 | Load %                                       | Current A | Efficiency %                                                                        | Power factor |
| 19                                                    | PLL determined from residual loss                               | 100                                          | 16.5      | 91.8 / IE3                                                                          | 0.91         |
| 20                                                    |                                                                 | 75                                           | 12.7      | 91.8                                                                                | 0.89         |
| 21                                                    |                                                                 | 50                                           | 9.3       | 90.6                                                                                | 0.82         |
| 22                                                    |                                                                 | Start                                        | 152       |                                                                                     | 0.41         |
| 23                                                    | Maximum starting time from hot                                  | 15                                           | s         |                                                                                     |              |
| 24                                                    | Maximum starting time from cold                                 | 27                                           | s         |                                                                                     |              |
| 25                                                    | Insulation class / Temperature class                            | F / B                                        |           |                                                                                     |              |
| 26                                                    | Ambient temperature                                             | 40                                           | °C        |                                                                                     |              |
| 27                                                    | Altitude                                                        | 1000                                         | m.a.s.l.  |                                                                                     |              |
| 28                                                    | Enclosure                                                       | IP55                                         |           |                                                                                     |              |
| 29                                                    | Cooling system                                                  | IC411 self ventilated                        |           |                                                                                     |              |
| 30                                                    | Bearing DE/NDE                                                  | 6309/C3 - 6209/C3                            |           |                                                                                     |              |
| 31                                                    | Type of Grease                                                  |                                              |           |                                                                                     |              |
| 32                                                    | Sound pressure level (LP dB(A) 1m)                              | 77                                           | dB(A)     | at load                                                                             |              |
| 33                                                    | Moment of inertia J = ¼ GD2                                     | 0.052                                        | kg-m2     |                                                                                     |              |
| 34                                                    | Balancing                                                       |                                              |           |                                                                                     |              |
| 35                                                    | Vibration class                                                 |                                              |           |                                                                                     |              |
| 36                                                    | Position of terminal box                                        | Top                                          |           |                                                                                     |              |
| 37                                                    | Terminal box entries; no, dimens.                               |                                              |           |                                                                                     |              |
| 38                                                    | Number of power terminals                                       |                                              |           |                                                                                     |              |
| 39                                                    | Direction of rotation                                           | CW or CCW                                    |           |                                                                                     |              |
| 40                                                    | Weight of rotor                                                 | 28                                           | kg        |                                                                                     |              |
| 41                                                    | Total weight of motor                                           | 151                                          | kg        |                                                                                     |              |
| 42                                                    | Dimension drawing no.                                           |                                              |           |                                                                                     |              |
| 43                                                    |                                                                 |                                              |           |                                                                                     |              |
| 44                                                    |                                                                 |                                              |           |                                                                                     |              |
| 45                                                    |                                                                 |                                              |           |                                                                                     |              |
| Ex-motors                                             |                                                                 |                                              |           |                                                                                     |              |
| 46                                                    |                                                                 |                                              |           |                                                                                     |              |
| 47                                                    |                                                                 |                                              |           |                                                                                     |              |
| 48                                                    |                                                                 |                                              |           |                                                                                     |              |
| Option Variant Codes / Definition                     |                                                                 |                                              |           |                                                                                     |              |
| 49                                                    | 332 = Baldor Catalog number stamped on rating plate             |                                              |           |                                                                                     |              |
| 50                                                    | 509 = Fulfilling EISA Subtype I efficiency requirements, CC031A |                                              |           |                                                                                     |              |
| 51                                                    |                                                                 |                                              |           |                                                                                     |              |
| 52                                                    |                                                                 |                                              |           |                                                                                     |              |
| Remarks:                                              |                                                                 |                                              |           |                                                                                     |              |
| Data based on situation 9/8/2015                      |                                                                 |                                              |           |                                                                                     |              |
| All data subject to tolerances in accordance with IEC |                                                                 |                                              |           |                                                                                     |              |
| Guaranteed values on request                          |                                                                 |                                              |           |                                                                                     |              |



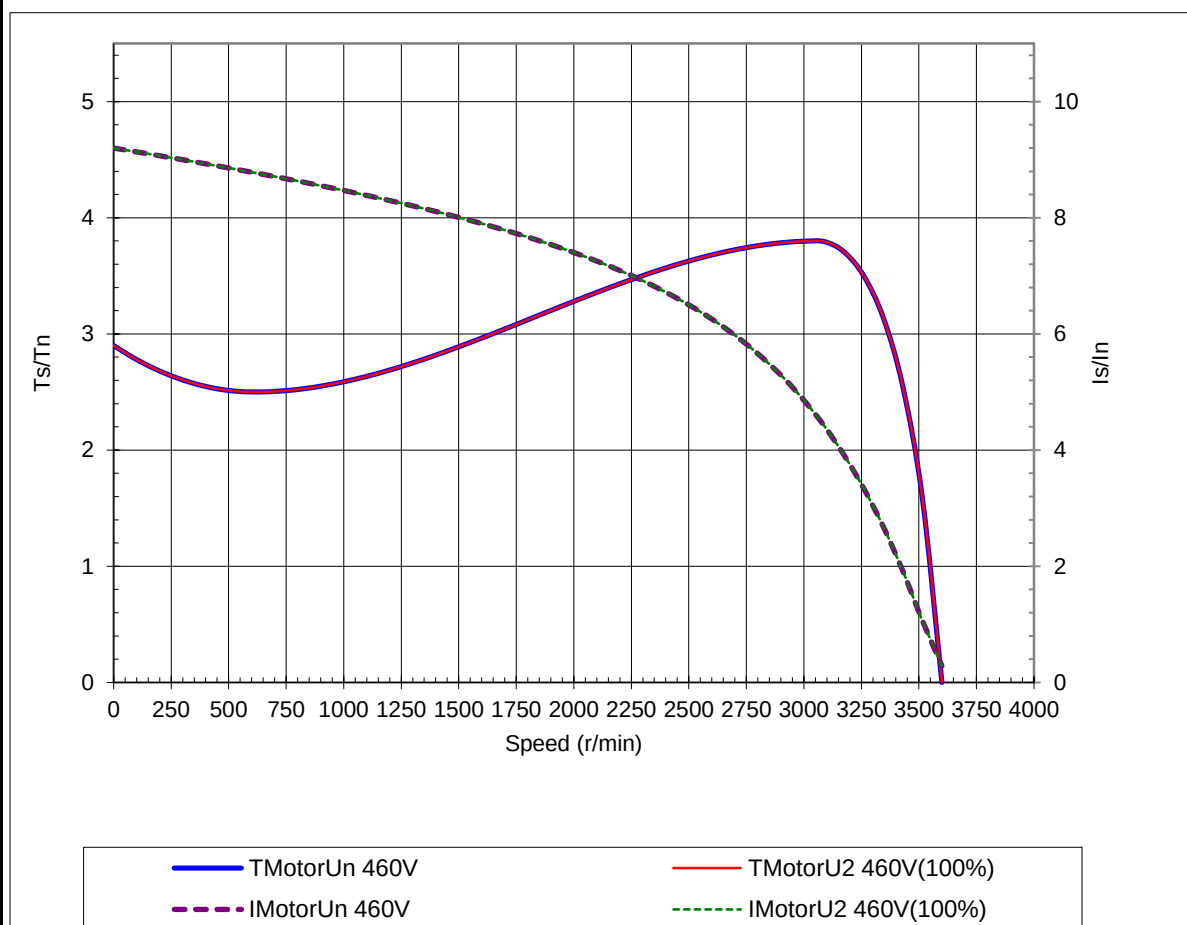
# ABB Motors and Generators Starting Curves



|                   |                             |                     |                |
|-------------------|-----------------------------|---------------------|----------------|
|                   | Project                     | Location            |                |
| Department/Author | Customer name               | Customer ref.       | Item name      |
|                   |                             |                     | <b>1.00001</b> |
| Our ref.          | Rev/Changed b Date of issue | Saving ident        | Pages          |
|                   | <b>A 1/18/2016</b>          | <b>untitled.xls</b> | <b>3(3)</b>    |

|                    |                                                     |                     |                |
|--------------------|-----------------------------------------------------|---------------------|----------------|
| Type of product    | <b>TEFC, 3-phase, squirrel cage induction motor</b> |                     |                |
| Type/Frame         | <b>M3BP 160MLA 2</b>                                | Calc. ref.          | 3GZF021016-199 |
| Product code       | <b>3GBP 161 410-ADK</b>                             | Frequency (Hz)      | <b>60</b>      |
| Rated output $P_N$ | <b>11 kW</b>                                        | Rated current $I_N$ | <b>16.5 A</b>  |
| Type of duty       | <b>S1(IEC) 100%</b>                                 |                     |                |

|                                  |              |                   |            |                   |                   |
|----------------------------------|--------------|-------------------|------------|-------------------|-------------------|
| $J_{motor}$ (kgm <sup>2</sup> )  | <b>0.052</b> | Voltage (V) 100%  | <b>460</b> | Voltage (V)       | <b>460V(100%)</b> |
| $J_{load}$ (kgm <sup>2</sup> )   |              | $T_{start}/T_N$   | <b>2.9</b> | $T_{start}/T_N$   | <b>2.9</b>        |
| Speed (r/min)                    | <b>3552</b>  | Starting time (s) |            | Starting time (s) |                   |
| $T_N$ (Nm)                       | <b>29.6</b>  | Speed (r/min)     |            | Speed (r/min)     |                   |
| $T_{load}$ (Nm)                  |              | $I_s/I_N$         | <b>9.2</b> | $I_s/I_N$         | <b>9.2</b>        |
| Nbr. of Consecutive Starts at UN |              | $T_{max}/T_n$     | <b>3.8</b> | $T_{max}/T_n$     | <b>3.8</b>        |



Load characteristics (IEC 60034-2-1:2007)  
Data based on situation 9/8/2015

All data subject to tolerances in accordance with IEC