

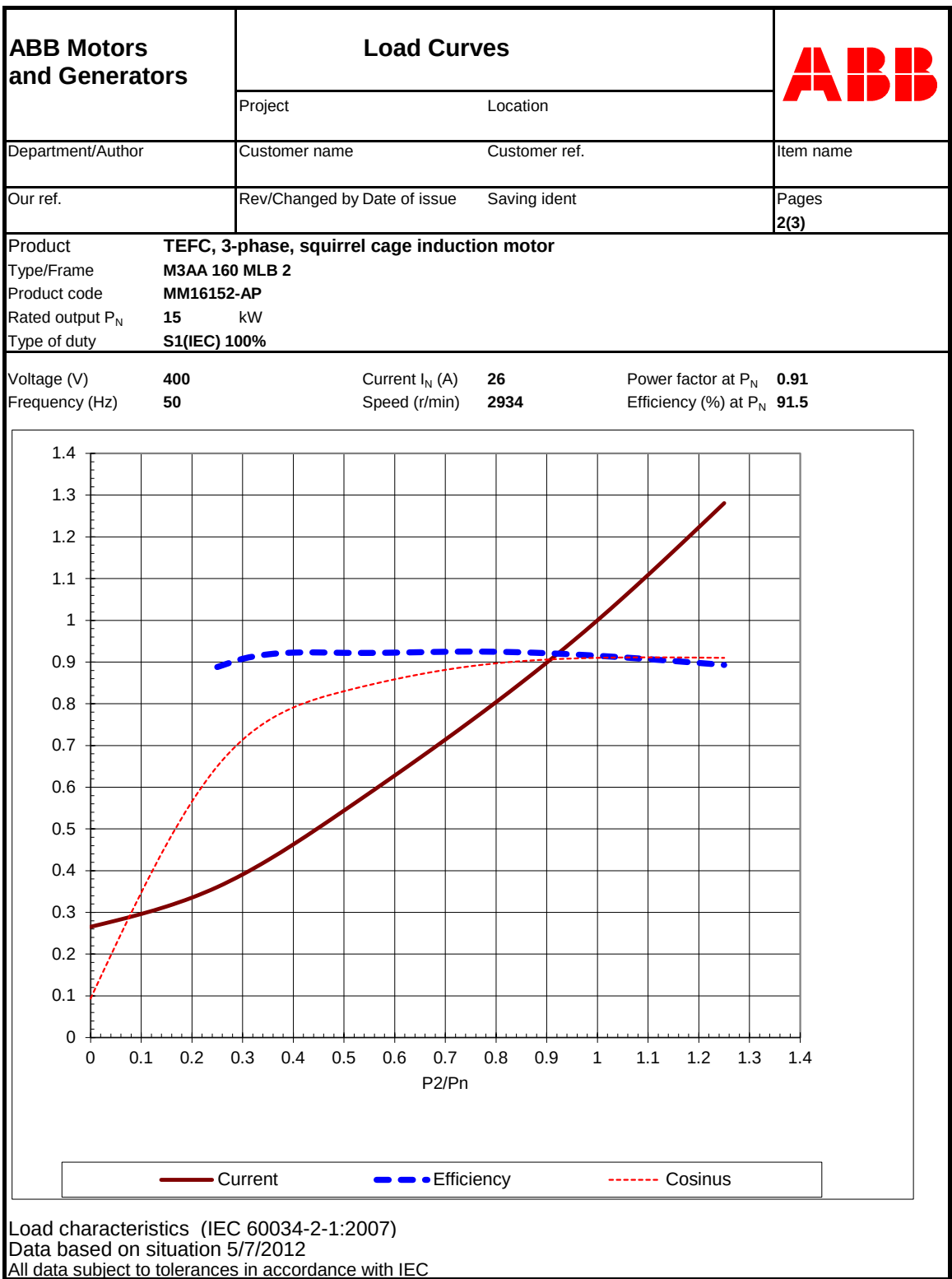
|                                      |  |                                   |               |               |  |                                                                                     |
|--------------------------------------|--|-----------------------------------|---------------|---------------|--|-------------------------------------------------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

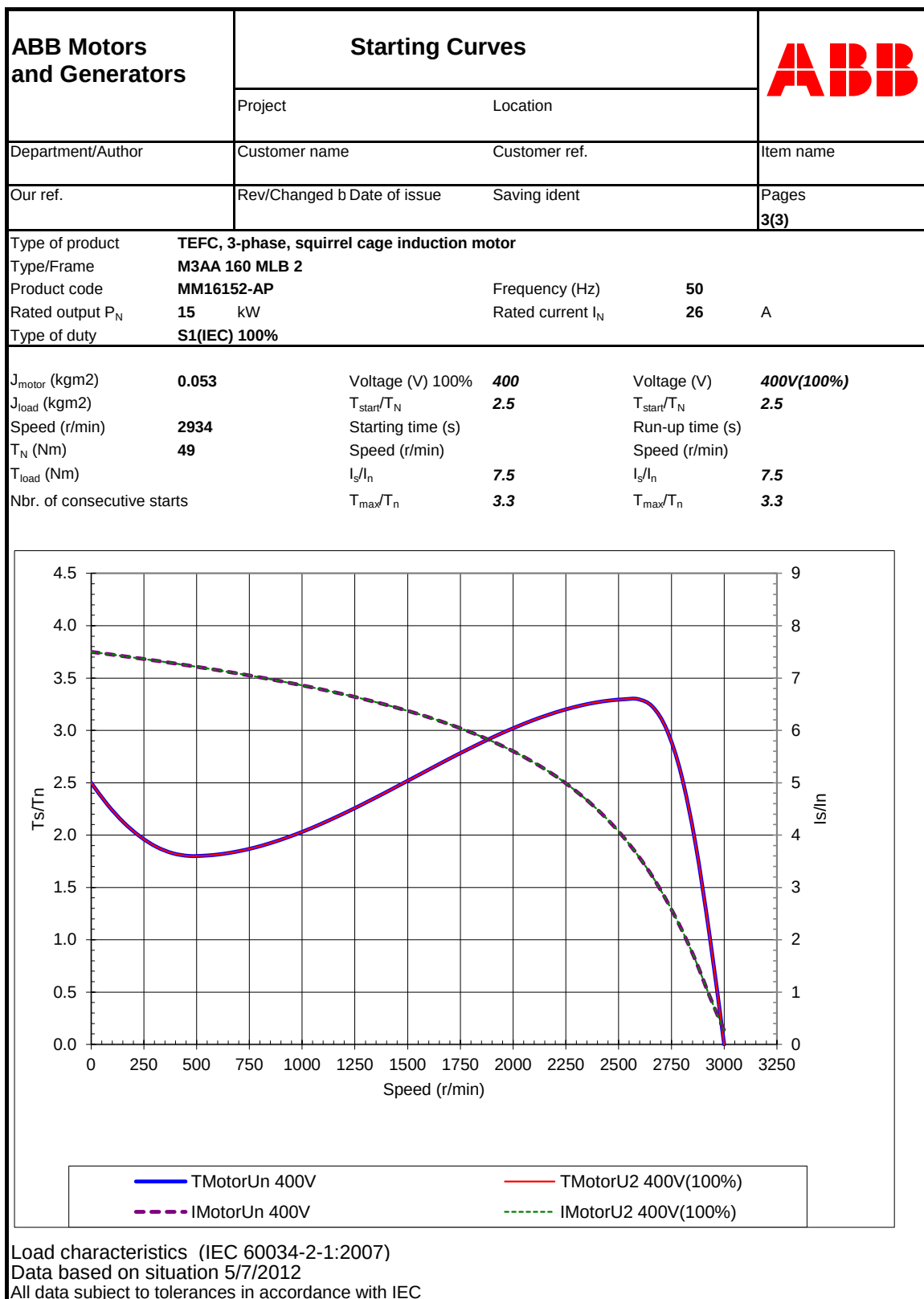
| No. | Definition                                         | Data                                                | Unit        | Remarks                            |              |
|-----|----------------------------------------------------|-----------------------------------------------------|-------------|------------------------------------|--------------|
| 1   | Product                                            | <b>TEFC, 3-phase, squirrel cage induction motor</b> |             |                                    |              |
| 2   | Product code                                       | <b>MM16152-AP (3GAA161036-ADG+332+333)</b>          |             |                                    |              |
| 3   | Type/Frame                                         | <b>M3AA 160 MLB 2</b>                               |             |                                    |              |
| 4   | Mounting                                           | <b>IM1001, B3(foot)</b>                             |             |                                    |              |
| 5   | Rated output P <sub>N</sub>                        | <b>15</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>2934</b>                                         | r/min       |                                    |              |
| 11  | Rated current I <sub>N</sub>                       | <b>26</b>                                           | A           |                                    |              |
| 12  | No-load current                                    | <b>6.9</b>                                          | A           |                                    |              |
| 13  | Starting current I <sub>s</sub> /I <sub>N</sub>    | <b>7.5</b>                                          |             | Fullfilled IEC 60034-12 design N,H |              |
| 14  | Nominal torque T <sub>N</sub>                      | <b>49</b>                                           | Nm          |                                    |              |
| 15  | Locked rotor torque T <sub>s</sub> /T <sub>N</sub> | <b>2.5</b>                                          |             |                                    |              |
| 16  | Maximum torque T <sub>max</sub> /T <sub>N</sub>    | <b>3.3</b>                                          |             |                                    |              |
| 17  | Minimum torque T <sub>min</sub> /T <sub>N</sub>    | <b>1.8</b>                                          |             |                                    |              |
| 18  | Speed at minimum torque                            | <b>480</b>                                          | r/min       |                                    |              |
| 19  | Load characteristics (IEC 60034-2-1:2007)          | Load %                                              | Current A   | Efficiency %                       | Power factor |
| 20  | PLL determined from residual loss                  | <b>100</b>                                          | <b>26</b>   | <b>91.5 / IE2</b>                  | <b>0.91</b>  |
| 21  |                                                    | <b>75</b>                                           | <b>19.7</b> | <b>92.5</b>                        | <b>0.89</b>  |
| 22  |                                                    | <b>50</b>                                           | <b>14.1</b> | <b>92.2</b>                        | <b>0.83</b>  |
| 23  |                                                    | <b>Start</b>                                        | <b>195</b>  |                                    | <b>0.45</b>  |
| 24  | Maximum starting time from hot                     | <b>15</b>                                           | s           |                                    |              |
| 25  | Maximum starting time from cold                    | <b>27</b>                                           | s           |                                    |              |
| 26  | Insulation class / Temperature class               | <b>F / B</b>                                        |             |                                    |              |
| 27  | Ambient temperature                                | <b>40</b>                                           | °C          |                                    |              |
| 28  | Altitude                                           | <b>1000</b>                                         | m.a.s.l.    |                                    |              |
| 29  | Enclosure                                          | <b>IP55</b>                                         |             |                                    |              |
| 30  | Cooling system                                     | <b>IC411 self ventilated</b>                        |             |                                    |              |
| 31  | Bearing DE/NDE                                     | <b>6309-2Z/C3 - 6209-2Z/C3</b>                      |             |                                    |              |
| 32  | Type of Grease                                     | <b>Greased for life</b>                             |             |                                    |              |
| 33  | Sound pressure level (LP dB(A) 1m)                 | <b>69</b>                                           | dB(A)       | at load                            |              |
| 34  | Moment of inertia J = ¼ GD2                        | <b>0.053</b>                                        | kg-m2       |                                    |              |
| 35  | Balancing                                          | <b>Half Key</b>                                     |             |                                    |              |
| 36  | Vibration class                                    | <b>Grade A</b>                                      |             |                                    |              |
| 37  | Position of terminal box                           | <b>Top</b>                                          |             |                                    |              |
| 38  | Terminal box entries; no, dimens.                  | <b>2xM40 + M16</b>                                  |             |                                    |              |
| 39  | Number of power terminals                          | <b>6</b>                                            |             |                                    |              |
| 40  | Direction of rotation                              | <b>CW or CCW</b>                                    |             |                                    |              |
| 41  | Total weight of motor                              | <b>105</b>                                          | kg          |                                    |              |
| 42  |                                                    |                                                     |             |                                    |              |

**Variant Codes / Definition**

|                              |
|------------------------------|
| 332 = Baldor catalog number  |
| 333 = Not for use in the USA |
|                              |
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Remarks:
   
  
 Data based on situation 5/7/2012
   
 All data subject to tolerances in accordance with IEC
   
 Guaranteed values on request





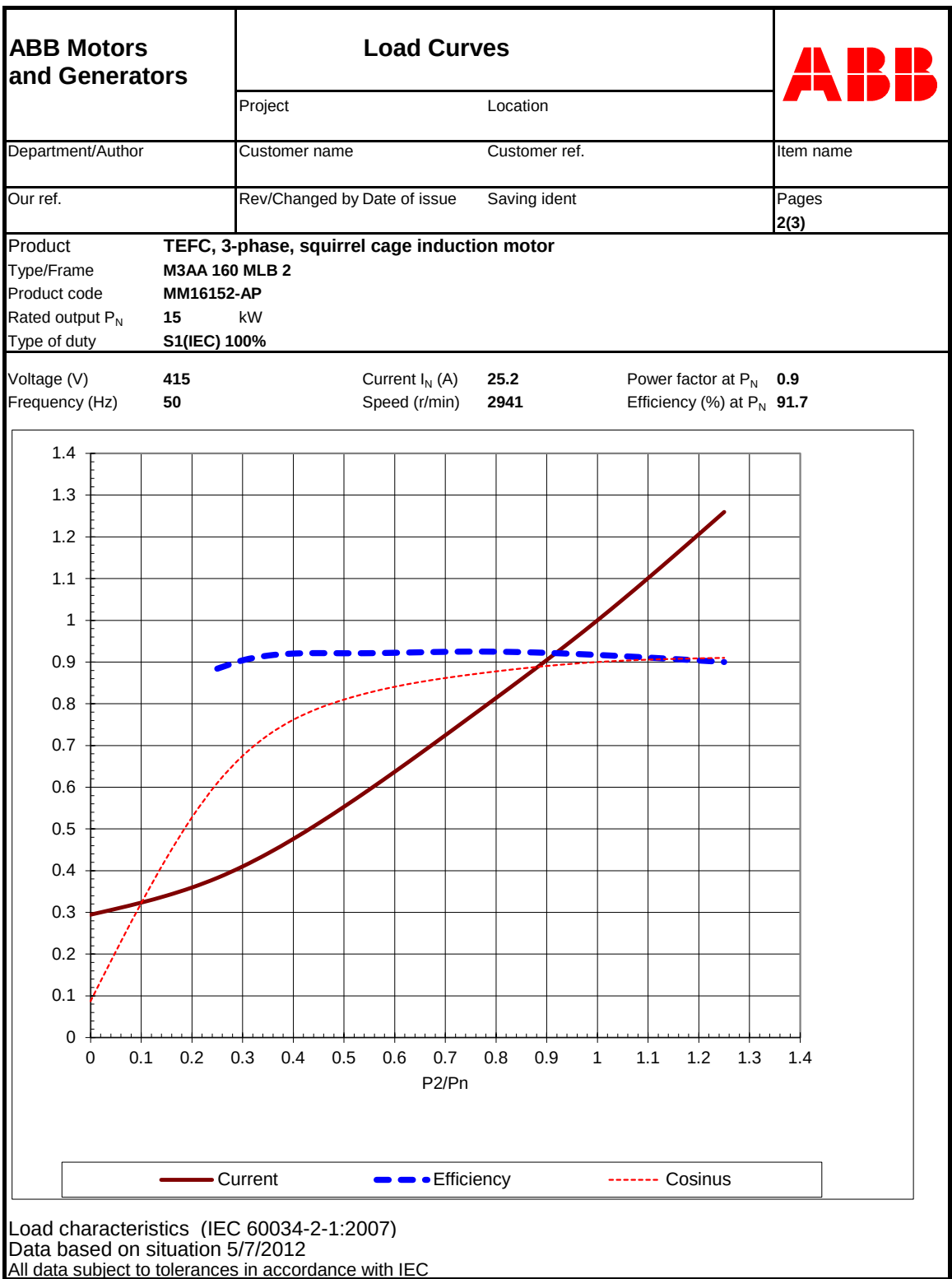
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|--------------------------------------|--|-----------------------------------|---------------|---------------|--|-------------------------------------------------------------------------------------|
| <b>ABB Motors<br/>and Generators</b> |  | <b>Technical Data Sheet - DOL</b> |               |               |  |  |
|                                      |  | Project                           |               | Location      |  |                                                                                     |
| Department/Author                    |  | Customer name                     |               | Customer ref. |  | Item name                                                                           |
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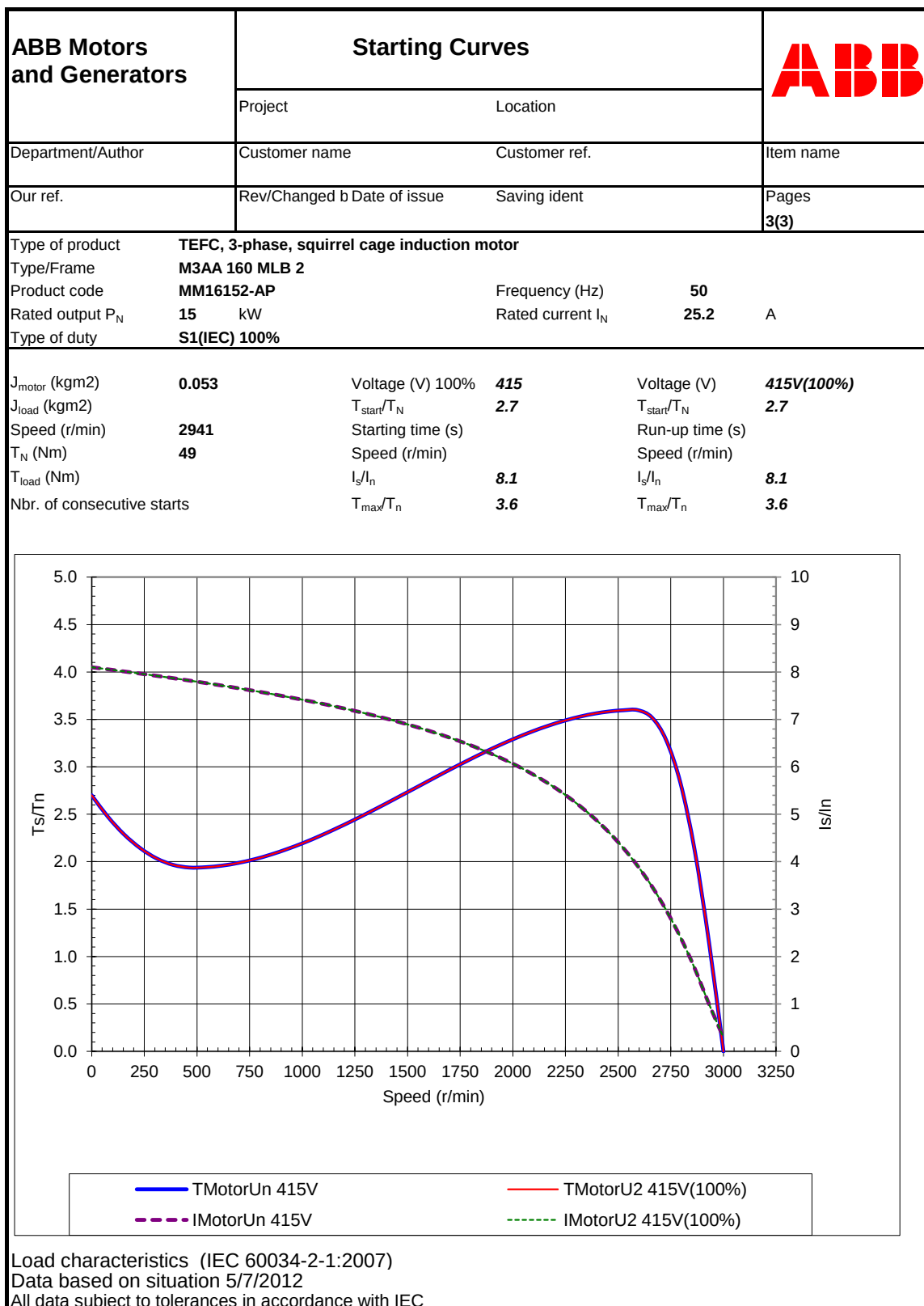
| No. | Definition                                         | Data                                                | Unit        | Remarks                            |              |
|-----|----------------------------------------------------|-----------------------------------------------------|-------------|------------------------------------|--------------|
| 1   | Product                                            | <b>TEFC, 3-phase, squirrel cage induction motor</b> |             |                                    |              |
| 2   | Product code                                       | <b>MM16152-AP (3GAA161036-ADG+332+333)</b>          |             |                                    |              |
| 3   | Type/Frame                                         | <b>M3AA 160 MLB 2</b>                               |             |                                    |              |
| 4   | Mounting                                           | <b>IM1001, B3(foot)</b>                             |             |                                    |              |
| 5   | Rated output P <sub>N</sub>                        | <b>15</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>2941</b>                                         | r/min       |                                    |              |
| 11  | Rated current I <sub>N</sub>                       | <b>25.2</b>                                         | A           |                                    |              |
| 12  | No-load current                                    | <b>7.4</b>                                          | A           |                                    |              |
| 13  | Starting current I <sub>s</sub> /I <sub>N</sub>    | <b>8.1</b>                                          |             | Fullfilled IEC 60034-12 design N,H |              |
| 14  | Nominal torque T <sub>N</sub>                      | <b>49</b>                                           | Nm          |                                    |              |
| 15  | Locked rotor torque T <sub>S</sub> /T <sub>N</sub> | <b>2.7</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>1.9</b>                                          |             |                                    |              |
| 18  | Speed at minimum torque                            | <b>480</b>                                          | r/min       |                                    |              |
| 19  | Load characteristics (IEC 60034-2-1:2007)          | Load %                                              | Current A   | Efficiency %                       | Power factor |
| 20  | PLL determined from residual loss                  | <b>100</b>                                          | <b>25.2</b> | <b>91.7 / IE2</b>                  | <b>0.9</b>   |
| 21  |                                                    | <b>75</b>                                           | <b>19.4</b> | <b>92.5</b>                        | <b>0.87</b>  |
| 22  |                                                    | <b>50</b>                                           | <b>13.9</b> | <b>92.1</b>                        | <b>0.81</b>  |
| 23  |                                                    | <b>Start</b>                                        | <b>204</b>  |                                    | <b>0.45</b>  |
| 24  | Maximum starting time from hot                     | <b>15</b>                                           | s           |                                    |              |
| 25  | Maximum starting time from cold                    | <b>30</b>                                           | s           |                                    |              |
| 26  | Insulation class / Temperature class               | <b>F / B</b>                                        |             |                                    |              |
| 27  | Ambient temperature                                | <b>40</b>                                           | °C          |                                    |              |
| 28  | Altitude                                           | <b>1000</b>                                         | m.a.s.l.    |                                    |              |
| 29  | Enclosure                                          | <b>IP55</b>                                         |             |                                    |              |
| 30  | Cooling system                                     | <b>IC411 self ventilated</b>                        |             |                                    |              |
| 31  | Bearing DE/NDE                                     | <b>6309-2Z/C3 - 6209-2Z/C3</b>                      |             |                                    |              |
| 32  | Type of Grease                                     | <b>Greased for life</b>                             |             |                                    |              |
| 33  | Sound pressure level (LP dB(A) 1m)                 | <b>69</b>                                           | dB(A)       | at load                            |              |
| 34  | Moment of inertia J = ¼ GD2                        | <b>0.053</b>                                        | kg-m2       |                                    |              |
| 35  | Balancing                                          | <b>Half Key</b>                                     |             |                                    |              |
| 36  | Vibration class                                    | <b>Grade A</b>                                      |             |                                    |              |
| 37  | Position of terminal box                           | <b>Top</b>                                          |             |                                    |              |
| 38  | Terminal box entries; no, dimens.                  | <b>2xM40 + M16</b>                                  |             |                                    |              |
| 39  | Number of power terminals                          | <b>6</b>                                            |             |                                    |              |
| 40  | Direction of rotation                              | <b>CW or CCW</b>                                    |             |                                    |              |
| 41  | Total weight of motor                              | <b>105</b>                                          | kg          |                                    |              |
| 42  |                                                    |                                                     |             |                                    |              |

**Variant Codes / Definition**

|                              |
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| 332 = Baldor catalog number  |
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Remarks:
   
  
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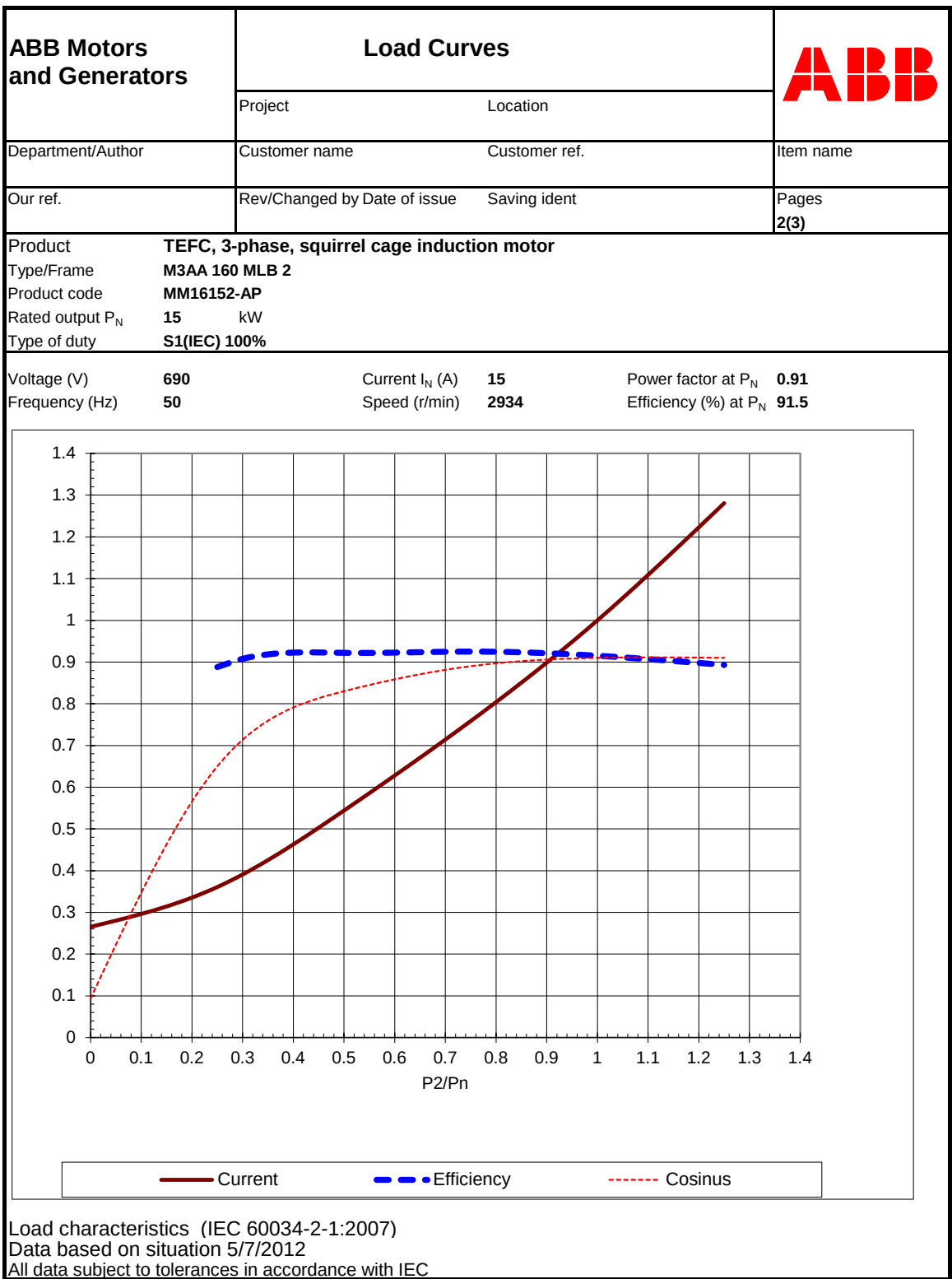
|                                      |  |                                   |               |               |  |                                                                                     |
|--------------------------------------|--|-----------------------------------|---------------|---------------|--|-------------------------------------------------------------------------------------|
| <b>ABB Motors<br/>and Generators</b> |  | <b>Technical Data Sheet - DOL</b> |               |               |  |  |
|                                      |  | Project                           |               | Location      |  |                                                                                     |
| Department/Author                    |  | Customer name                     |               | Customer ref. |  | Item name                                                                           |
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| No. | Definition                                         | Data                                                | Unit        | Remarks                            |              |
|-----|----------------------------------------------------|-----------------------------------------------------|-------------|------------------------------------|--------------|
| 1   | Product                                            | <b>TEFC, 3-phase, squirrel cage induction motor</b> |             |                                    |              |
| 2   | Product code                                       | <b>MM16152-AP (3GAA161036-ADG+332+333)</b>          |             |                                    |              |
| 3   | Type/Frame                                         | <b>M3AA 160 MLB 2</b>                               |             |                                    |              |
| 4   | Mounting                                           | <b>IM1001, B3(foot)</b>                             |             |                                    |              |
| 5   | Rated output P <sub>N</sub>                        | <b>15</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>690</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>2934</b>                                         | r/min       |                                    |              |
| 11  | Rated current I <sub>N</sub>                       | <b>15</b>                                           | A           |                                    |              |
| 12  | No-load current                                    | <b>4</b>                                            | A           |                                    |              |
| 13  | Starting current I <sub>s</sub> /I <sub>N</sub>    | <b>7.5</b>                                          |             | Fullfilled IEC 60034-12 design N,H |              |
| 14  | Nominal torque T <sub>N</sub>                      | <b>49</b>                                           | Nm          |                                    |              |
| 15  | Locked rotor torque T <sub>S</sub> /T <sub>N</sub> | <b>2.5</b>                                          |             |                                    |              |
| 16  | Maximum torque T <sub>max</sub> /T <sub>N</sub>    | <b>3.3</b>                                          |             |                                    |              |
| 17  | Minimum torque T <sub>min</sub> /T <sub>N</sub>    | <b>1.8</b>                                          |             |                                    |              |
| 18  | Speed at minimum torque                            | <b>480</b>                                          | r/min       |                                    |              |
| 19  | Load characteristics (IEC 60034-2-1:2007)          | Load %                                              | Current A   | Efficiency %                       | Power factor |
| 20  | PLL determined from residual loss                  | <b>100</b>                                          | <b>15</b>   | <b>91.5 / IE2</b>                  | <b>0.91</b>  |
| 21  |                                                    | <b>75</b>                                           | <b>11.4</b> | <b>92.5</b>                        | <b>0.89</b>  |
| 22  |                                                    | <b>50</b>                                           | <b>8.2</b>  | <b>92.2</b>                        | <b>0.83</b>  |
| 23  |                                                    | <b>Start</b>                                        | <b>113</b>  |                                    | <b>0.45</b>  |
| 24  | Maximum starting time from hot                     | <b>15</b>                                           | s           |                                    |              |
| 25  | Maximum starting time from cold                    | <b>27</b>                                           | s           |                                    |              |
| 26  | Insulation class / Temperature class               | <b>F / B</b>                                        |             |                                    |              |
| 27  | Ambient temperature                                | <b>40</b>                                           | °C          |                                    |              |
| 28  | Altitude                                           | <b>1000</b>                                         | m.a.s.l.    |                                    |              |
| 29  | Enclosure                                          | <b>IP55</b>                                         |             |                                    |              |
| 30  | Cooling system                                     | <b>IC411 self ventilated</b>                        |             |                                    |              |
| 31  | Bearing DE/NDE                                     | <b>6309-2Z/C3 - 6209-2Z/C3</b>                      |             |                                    |              |
| 32  | Type of Grease                                     | <b>Greased for life</b>                             |             |                                    |              |
| 33  | Sound pressure level (LP dB(A) 1m)                 | <b>69</b>                                           | dB(A)       | at load                            |              |
| 34  | Moment of inertia J = ¼ GD2                        | <b>0.053</b>                                        | kg-m2       |                                    |              |
| 35  | Balancing                                          | <b>Half Key</b>                                     |             |                                    |              |
| 36  | Vibration class                                    | <b>Grade A</b>                                      |             |                                    |              |
| 37  | Position of terminal box                           | <b>Top</b>                                          |             |                                    |              |
| 38  | Terminal box entries; no, dimens.                  | <b>2xM40 + M16</b>                                  |             |                                    |              |
| 39  | Number of power terminals                          | <b>6</b>                                            |             |                                    |              |
| 40  | Direction of rotation                              | <b>CW or CCW</b>                                    |             |                                    |              |
| 41  | Total weight of motor                              | <b>105</b>                                          | kg          |                                    |              |
| 42  |                                                    |                                                     |             |                                    |              |

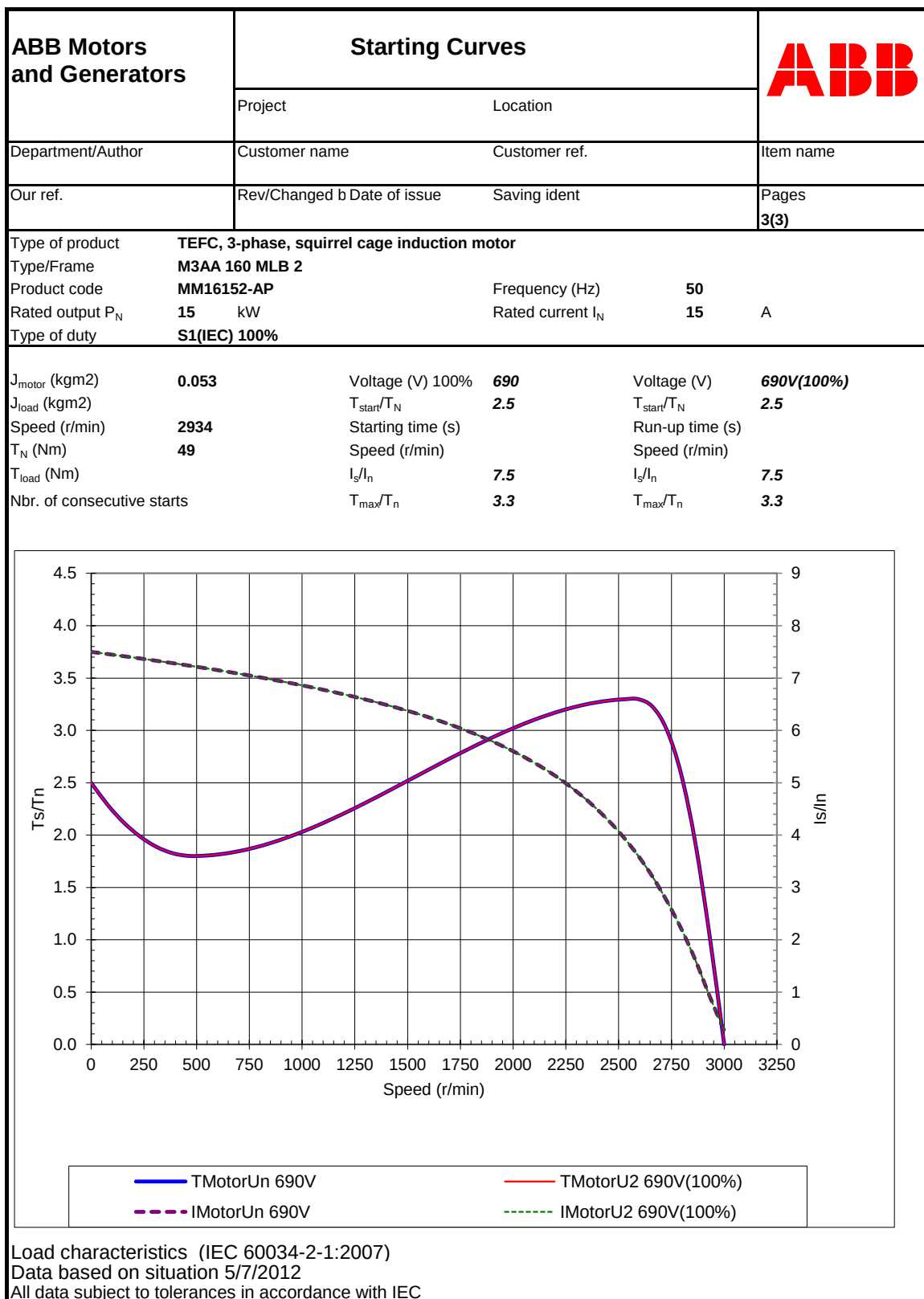
**Variant Codes / Definition**

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| ABB Motors<br>and Generators |  | Technical Data Sheet - DOL |               |               |  |
|                              |  | Project                    |               | Location      |                                                                                     |
| Department/Author            |  | Customer name              |               | Customer ref. | Item name                                                                           |
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| No. | Definition                                         | Data                                                | Unit        | Remarks                            |              |
|-----|----------------------------------------------------|-----------------------------------------------------|-------------|------------------------------------|--------------|
| 1   | Product                                            | <b>TEFC, 3-phase, squirrel cage induction motor</b> |             |                                    |              |
| 2   | Product code                                       | <b>MM16152-AP (3GAA161036-ADG+332+333)</b>          |             |                                    |              |
| 3   | Type/Frame                                         | <b>M3AA 160 MLB 2</b>                               |             |                                    |              |
| 4   | Mounting                                           | <b>IM1001, B3(foot)</b>                             |             |                                    |              |
| 5   | Rated output P <sub>N</sub>                        | <b>15</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>460</b>                                          | VD          | ± 5 % (IEC 60034-1)                |              |
| 9   | Rated frequency f <sub>N</sub>                     | <b>60</b>                                           | Hz          | ± 2 % (IEC 60034-1)                |              |
| 10  | Rated speed n <sub>N</sub>                         | <b>3545</b>                                         | r/min       |                                    |              |
| 11  | Rated current I <sub>N</sub>                       | <b>22.4</b>                                         | A           |                                    |              |
| 12  | No-load current                                    | <b>6.4</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>40</b>                                           | Nm          |                                    |              |
| 15  | Locked rotor torque T <sub>S</sub> /T <sub>N</sub> | <b>2.7</b>                                          |             |                                    |              |
| 16  | Maximum torque T <sub>max</sub> /T <sub>N</sub>    | <b>3.8</b>                                          |             |                                    |              |
| 17  | Minimum torque T <sub>min</sub> /T <sub>N</sub>    | <b>1.9</b>                                          |             |                                    |              |
| 18  | Speed at minimum torque                            | <b>576</b>                                          | r/min       |                                    |              |
| 19  | Load characteristics (IEC 60034-2-1:2007)          | Load %                                              | Current A   | Efficiency %                       | Power factor |
| 20  | PLL determined from residual loss                  | <b>100</b>                                          | <b>22.4</b> | <b>92.1 / IE3</b>                  | <b>0.91</b>  |
| 21  |                                                    | <b>75</b>                                           | <b>17.1</b> | <b>92.3</b>                        | <b>0.89</b>  |
| 22  |                                                    | <b>50</b>                                           | <b>12.5</b> | <b>91.2</b>                        | <b>0.82</b>  |
| 23  |                                                    | <b>Start</b>                                        | <b>195</b>  |                                    | <b>0.42</b>  |
| 24  | Maximum starting time from hot                     | <b>15</b>                                           | s           |                                    |              |
| 25  | Maximum starting time from cold                    | <b>27</b>                                           | s           |                                    |              |
| 26  | Insulation class / Temperature class               | <b>F / B</b>                                        |             |                                    |              |
| 27  | Ambient temperature                                | <b>40</b>                                           | °C          |                                    |              |
| 28  | Altitude                                           | <b>1000</b>                                         | m.a.s.l.    |                                    |              |
| 29  | Enclosure                                          | <b>IP55</b>                                         |             |                                    |              |
| 30  | Cooling system                                     | <b>IC411 self ventilated</b>                        |             |                                    |              |
| 31  | Bearing DE/NDE                                     | <b>6309-2Z/C3 - 6209-2Z/C3</b>                      |             |                                    |              |
| 32  | Type of Grease                                     | <b>Greased for life</b>                             |             |                                    |              |
| 33  | Sound pressure level (LP dB(A) 1m)                 | <b>77</b>                                           | dB(A)       | at load                            |              |
| 34  | Moment of inertia J = ¼ GD2                        | <b>0.053</b>                                        | kg-m2       |                                    |              |
| 35  | Balancing                                          | <b>Half Key</b>                                     |             |                                    |              |
| 36  | Vibration class                                    | <b>Grade A</b>                                      |             |                                    |              |
| 37  | Position of terminal box                           | <b>Top</b>                                          |             |                                    |              |
| 38  | Terminal box entries; no, dimens.                  | <b>2xM40 + M16</b>                                  |             |                                    |              |
| 39  | Number of power terminals                          | <b>6</b>                                            |             |                                    |              |
| 40  | Direction of rotation                              | <b>CW or CCW</b>                                    |             |                                    |              |
| 41  | Total weight of motor                              | <b>105</b>                                          | kg          |                                    |              |
| 42  |                                                    |                                                     |             |                                    |              |

Variant Codes / Definition

332 = Baldor catalog number  
**333 = Not for use in the USA**

Remarks:

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