**Type Test Report**

<table>
<thead>
<tr>
<th>Customer:</th>
<th>Tag No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order No.:</td>
<td>0140</td>
</tr>
<tr>
<td>Type: M3MA 80 MB 2</td>
<td></td>
</tr>
<tr>
<td>Product Code: 3GMA081320-xSx</td>
<td></td>
</tr>
<tr>
<td>Protection type:</td>
<td></td>
</tr>
<tr>
<td>Cert. No.:</td>
<td></td>
</tr>
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</table>

**Customer ref.:**

**Rating:**

<table>
<thead>
<tr>
<th>3-Motor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ins. Class F</td>
</tr>
<tr>
<td>IP69K</td>
</tr>
</tbody>
</table>

| Eff class NEMA Premium Efficiency |
| NEMA NOM EFF 77% |

**Resistance**

<table>
<thead>
<tr>
<th>Line</th>
<th>Ambient: 20 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>U₁ - V₁</td>
<td>11.57500 Ω</td>
</tr>
<tr>
<td>U₁ - W₁</td>
<td>11.57700 Ω</td>
</tr>
<tr>
<td>V₁ - W₁</td>
<td>11.58000 Ω</td>
</tr>
</tbody>
</table>

| Insulation resistance at 20 °C |
| R > 2000 Mohm |
| 1000 V |

| High-voltage test |
| 2400 V |
| 1 s |

**Test**

<table>
<thead>
<tr>
<th>Test</th>
<th>Torque [Nm]</th>
<th>Line U[V]</th>
<th>[Hz]</th>
<th>Input [A]</th>
<th>P₁ [W]</th>
<th>P₂ [W]</th>
<th>n[r/min]</th>
<th>cos φ</th>
<th>η [%]</th>
<th>s [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-load test</td>
<td>459.2</td>
<td>Y</td>
<td>60</td>
<td>0.55</td>
<td>81.97</td>
<td></td>
<td></td>
<td></td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Thermal test (100% load)</td>
<td>2.0</td>
<td>461.7</td>
<td>Y</td>
<td>60</td>
<td>1.28</td>
<td>885.1</td>
<td>741.8</td>
<td>3524</td>
<td>0.87</td>
<td>83.7</td>
</tr>
<tr>
<td>Partial load points:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>~75% load</td>
<td>1.4</td>
<td>457.8</td>
<td>Y</td>
<td>60</td>
<td>1.01</td>
<td>650.0</td>
<td>537.5</td>
<td>3551</td>
<td>0.82</td>
<td>82.9</td>
</tr>
<tr>
<td>~50% load</td>
<td>1.0</td>
<td>458.2</td>
<td>Y</td>
<td>60</td>
<td>0.80</td>
<td>455.9</td>
<td>360.5</td>
<td>3576</td>
<td>0.72</td>
<td>79.1</td>
</tr>
<tr>
<td>~25% load</td>
<td>0.5</td>
<td>458.6</td>
<td>Y</td>
<td>60</td>
<td>0.64</td>
<td>263.7</td>
<td>178.5</td>
<td>3597</td>
<td>0.54</td>
<td>68.9</td>
</tr>
</tbody>
</table>

**Temperature rise at rated load:**

<table>
<thead>
<tr>
<th>[°C]</th>
<th>[K]</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stator winding</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>Frame</td>
<td>90</td>
<td>2</td>
</tr>
<tr>
<td>Bearing D-end</td>
<td>87</td>
<td>2</td>
</tr>
<tr>
<td>Bearing N-end</td>
<td>86</td>
<td>2</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

- Tested according to IEEE-112 Method B.
- On behalf of customer
- On behalf of manufacturer
- Date of test: 05/02/2018

Tests performed by ABB S.p.A. - HMMG - 20010 Vittuone (MI) Italy

Computer print-out valid without signature.