



| Type Test Report   |             |   |       | Date of issue: 2011.12.19                         |  |                |  |                  |       |
|--|-------------|---|-------|---|--|----------------|--|------------------|-------|
| Customer:  |             |   |       | Serial No.: 3GE074309T2202                        |  |                |  |                  |       |
|  |             |   |       | Type: M3AA 90LB 2<br>Product Code: 3GAA091443-_HE |  |                |  |                  |       |
| Customer ref.:   |             |   |       |   |  |                |  |                  |       |
| Rating:  |             | V   | Hz    | kW  | r/min  | A              | cos φ  | Duty             |       |
| 3~Motor<br>Insul.cl.F<br>IP55<br><br>Eff class IE2   |             | 415   | D 50  | 2,20  | 2890   | 4,20           | 0,86   | S1               |       |
|  |             | 50Hz : IE2 - 84,3(100%) - 84,8(75%) - 83,8(50%) |       |   |  |                |  |                  |       |
| Resistance<br>Line   |             | Ambient: 22,0 °C                                |       |   | Insulation resistance at 20 °C<br>R > 2000 Mohm 1000 V |                | Overload   |                  |       |
| U <sub>1</sub> - V <sub>1</sub><br>U <sub>1</sub> - W <sub>1</sub><br>V <sub>1</sub> - W <sub>1</sub>                    |             | 4,36200 Ω<br>4,35900 Ω<br>4,36100 Ω             |       |   |  |                | Current 150 % 120s<br>Torque 160 % 15s<br>Speed 120 % 120s |                  |       |
|  |             | High-voltage test winding                       |       |   |  | 2400 V         |  | 60 s             |       |
| Test   | Torque [Nm] | Line U[V]                                       | f[Hz] | Input I[A]  | P1 [kW]  | Output P2 [kW] | n[r/min]   | cos φ            | η [%] |
| No load test   |             | 415 D   | 50    | 2,1   | 0,15   |                | 3000   | 0,10             |       |
| Locked rotor test  |             | 71,3 D  | 50    | 4,5   | 0,29   |                | 0  | 0,52             |       |
| Thermal test ( 100% load )   | 7,3         | 415 D   | 50    | 4,2   | 2,61   | 2,20           | 2889   | 0,86             | 84,30 |
| Partial load points:   |             |   |       |   |  |                |  |                  |       |
| ~75% load  | 5,4         | 415 D   | 50    | 3,3   | 1,95   | 1,65           | 2915   | 0,81             | 84,80 |
| ~50% load  | 3,6         | 415 D   | 50    | 2,5   | 1,31   | 1,10           | 2944   | 0,71             | 83,80 |
| ~25% load  | 1,8         | 415 D   | 50    | 1,89  | 0,71   | 0,55           | 2970   | 0,52             | 77,80 |
| Temperature rise at rated load.  |             | [°C]  |       | [K]   | Method   |                | Measurement method   |                  |       |
| Stator winding :   |             |   |       | 57,8  | 3  |                | 1 Resistance   |                  |       |
| Frame :  |             |   |       | 17  | 3  |                | 2 Thermometer  |                  |       |
| Bearing D-end :  |             |   |       | 34  | 3  |                | 3 Thermocouples  |                  |       |
| Ambient Temperature :  |             | 25  |       |   | 3  |                |  |                  |       |
| Manufactured and tested in accordance with rules of IEC 60034-1 and IEC 60034-2-1.<br>PLL determined from residual loss. |             |   |       |   |  |                |  |                  |       |
| On behalf of customer  |             |   |       |   |  |                |  |                  |       |
| On behalf of manufacturer  |             | Date of test                                    |       | 8.11.2007   |  |                |  |                  |       |
| Tested by Asea Brown Boveri, S.A., Fabrica Motores , 08192 Sant Quirze del Valles , Spain                                |             |   |       |   |  | Telephone      |  | +34 93 728 85 00 |       |
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