



| Type Test Report                                                                                                                                 |             |           |       |            | Date of issue: 2012-02-15                        |                |                 |                    |       |                   |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-------|------------|--------------------------------------------------|----------------|-----------------|--------------------|-------|-------------------|------|
| Customer:                                                                                                                                        |             |           |       |            | Serial No.: 3GA083408T5504                       |                |                 |                    |       |                   |      |
|                                                                                                                                                  |             |           |       |            | Type: M2AA 80A 4<br>Product Code: 3GAA082001-_DE |                |                 |                    |       |                   |      |
| Customer ref.:                                                                                                                                   |             |           |       |            |                                                  |                |                 |                    |       |                   |      |
| Rating:                                                                                                                                          |             |           |       |            |                                                  |                |                 |                    |       |                   |      |
|                                                                                                                                                  |             |           |       |            | V                                                | Hz             | kW              | r/min              | A     | cos φ             | Duty |
| 3~Motor                                                                                                                                          |             |           |       |            | 690                                              | Y 50           | 0,55            | 1375               | 0,81  | 0,77              | S1   |
| Insul.cl.F                                                                                                                                       |             |           |       |            | 400                                              | D 50           | 0,55            | 1375               | 1,41  | 0,77              | S1   |
| IP55                                                                                                                                             |             |           |       |            | 460                                              | D 60           | 0,55            | 1695               | 1,20  | 0,74              | S1   |
| Resistance                                                                                                                                       |             |           |       |            | Insulation resistance at 25 °C                   |                |                 |                    |       | Overload          |      |
| Line                                                                                                                                             |             |           |       |            | R > 2000 Mohm 1000 V                             |                |                 |                    |       | Current 150% 120s |      |
| U <sub>1</sub> - V <sub>1</sub>                                                                                                                  |             |           |       |            | Ambient: 22,0 °C                                 |                |                 |                    |       | Torque 160% 15s   |      |
| U <sub>1</sub> - W <sub>1</sub>                                                                                                                  |             |           |       |            | 31,53000 Ω                                       |                |                 |                    |       | Speed 120% 120s   |      |
| V <sub>1</sub> - W <sub>1</sub>                                                                                                                  |             |           |       |            | 31,49000 Ω                                       |                |                 |                    |       |                   |      |
|                                                                                                                                                  |             |           |       |            | 31,51000 Ω                                       |                |                 |                    |       |                   |      |
|                                                                                                                                                  |             |           |       |            | 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                                                                                                                                     |             | 400 D     | 50    | 0,86       | 0,07                                             |                | 1500            | 0,12               |       |                   |      |
| Locked rotor test                                                                                                                                |             | 117 D     | 50    | 1,50       | 0,22                                             |                | 0               | 0,71               |       |                   |      |
| Thermal test ( 100% load )                                                                                                                       | 3,8         | 400 D     | 50    | 1,37       | 0,76                                             | 0,55           | 1373            | 0,80               | 72,70 |                   |      |
| Partial load points:                                                                                                                             |             |           |       |            |                                                  |                |                 |                    |       |                   |      |
| ~75% load                                                                                                                                        | 2,8         | 400 D     | 50    | 1,10       | 0,55                                             | 0,41           | 1411            | 0,72               | 74,70 |                   |      |
| ~50% load                                                                                                                                        | 1,9         | 400 D     | 50    | 0,92       | 0,38                                             | 0,28           | 1443            | 0,59               | 73,70 |                   |      |
| ~25% load                                                                                                                                        | 0,9         | 400 D     | 50    | 0,81       | 0,22                                             | 0,14           | 1473            | 0,39               | 64,40 |                   |      |
| Temperature rise at rated load.                                                                                                                  |             |           |       |            | °C                                               | [K]            | Method          | Measurement method |       |                   |      |
| Stator winding :                                                                                                                                 |             |           |       |            | 51,0                                             | 3              | 1 Resistance    |                    |       |                   |      |
| Frame :                                                                                                                                          |             |           |       |            | 23                                               | 3              | 2 Thermometer   |                    |       |                   |      |
| Bearing D-end :                                                                                                                                  |             |           |       |            | 14                                               | 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 2008-09-10                                                                                                |             |           |       |            |                                                  |                |                 |                    |       |                   |      |
| Tested by Asea Brown Boveri, S.A., Fabrica Motores , 08192 Sant Quirze del Valles , Spain Telephone +34 93 728 85 00<br>Telefax +34 93 728 85 33 |             |           |       |            |                                                  |                |                 |                    |       |                   |      |

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