



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       |                                  |         |                   |                    |       |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|-------|----------------------------------|---------|-------------------|--------------------|-------|-------|
| <b>Test Report</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |           |       | Date of issue: 5.12.2014         |         |                   |                    |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       | Serial No.:                      |         |                   |                    |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       | Type: M2BAX 280SMB 6 IMB3/IM1001 |         |                   |                    |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       | Product Code: 3GBA283220-ADM     |         |                   |                    |       |       |
| Rating:                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |           |       |                                  |         |                   |                    |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V              | Hz        |       | kW                               | r/min   | A                 | cos φ              | Duty  |       |
| 3~Motor                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 690            | Y         | 50    | 45                               | 991     | 48                | 0,84               | S1    |       |
| Insul.cl.F                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 400            | D         | 50    | 45                               | 991     | 82                | 0,84               | S1    |       |
| IP55                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 660            | Y         | 50    | 45                               | 989     | 49                | 0,85               | S1    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 380            | D         | 50    | 45                               | 989     | 85                | 0,85               | S1    |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 440            | D         | 60    | 45                               | 1191    | 74                | 0,84               | S1    |       |
| Eff class IE3                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 460            | D         | 60    | 45                               | 1192    | 72                | 0,83               | S1    |       |
| 50Hz: IE3-93,7%(100%)-94,0%(75%)-93,5%(50%)                                                                                                                                                                                                                                                                                                                                                                                                                          |                |           |       |                                  |         |                   |                    |       |       |
| 60Hz: IE3-94,5%(100%)                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |           |       |                                  |         |                   |                    |       |       |
| Resistance                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |           |       | Insulation resistance at 39 °C   |         | Overload          |                    |       |       |
| Line                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Ambient: 25 °C |           |       | 26000 MΩ 1000 V                  |         | Voltage 130% 180s |                    |       |       |
| U <sub>1</sub> - V <sub>1</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,07804 Ω      |           |       |                                  |         | Torque 160% 15s   |                    |       |       |
| U <sub>1</sub> - W <sub>1</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,07802 Ω      |           |       |                                  |         | Speed 120% 120s   |                    |       |       |
| V <sub>1</sub> - W <sub>1</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0,07801 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]    | η[r/min]           | cos φ | η [%] |
| No load test                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                | 400,7 D   | 50    | 28,2                             | 0,96    |                   | 1000               | 0,05  |       |
| Locked rotor test                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                | 77,4 D    | 50    | 82,0                             | 3,33    |                   | 0                  | 0,30  |       |
| Thermal test (100% load)                                                                                                                                                                                                                                                                                                                                                                                                                                             | 433,7          | 400,2 D   | 50    | 81,9                             | 47,6    | 45,0              | 992                | 0,84  | 94,5  |
| Partial load points:                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |           |       |                                  |         |                   |                    |       |       |
| ~75% load                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 325,3          | 400,2 D   | 50    | 63,8                             | 35,6    | 33,8              | 995                | 0,81  | 94,8  |
| ~50% load                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 216,7          | 400,1 D   | 50    | 47,6                             | 23,8    | 22,5              | 998                | 0,72  | 94,4  |
| ~25% load                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 108,3          | 400,0 D   | 50    | 34,5                             | 12,3    | 11,3              | 1000               | 0,51  | 91,5  |
| Temperature rise at rated load.                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       | °C                               | [K]     | Method            | Measurement method |       |       |
| Stator winding :                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |           |       | 42                               | 1       |                   | 1 Resistance       |       |       |
| Frame :                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |           |       | 25                               | 2       |                   | 2 Thermometer      |       |       |
| Bearing D-end :                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |           |       | 29                               | 2       |                   | 3 Thermocouples    |       |       |
| Rotor :                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |           |       | 49                               | 3       |                   |                    |       |       |
| Ambient Temperature :                                                                                                                                                                                                                                                                                                                                                                                                                                                |                |           |       | 25                               | 2       |                   |                    |       |       |
| <p>These tests have been carried out on motor no. 3GF13172074, on date 2013-08-26 which is identical in design with the above.</p> <p>Manufactured and tested in accordance with rules of IEC 60034-1 and IEC 60034-2-1. PLL determined from residual loss.</p> <p>On behalf of customer</p> <p>On behalf of manufacturer Date of test</p> <p>Tested by ABB Oy, Motors and Generators, Vaasa, Finland</p> <p>Telephone +358 10 2211<br/>Telefax +358 10 22 47372</p> |                |           |       |                                  |         |                   |                    |       |       |

Computer print-out valid without signature.