



| Test Report                                                                                                                   |             |           |       | Date of issue: 1.6.2015                     |         |                |                    |                  |       |      |    |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|-------|---------------------------------------------|---------|----------------|--------------------|------------------|-------|------|----|
| Customer:                                                                                                                     |             |           |       | Serial No.:                                 |         |                |                    |                  |       |      |    |
| Customer ref.:                                                                                                                |             |           |       | Type: M3GP 180MLA 4                         |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | Product Code: 3GGP182410-ADL                |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | Protection type: Ex tc IIIB/C T125C Dc      |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | Cert. No.: LCIE 13 ATEX 1034 X /            |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | IECEx LCIE 13.0047 X                        |         |                |                    |                  |       |      |    |
| Rating:                                                                                                                       |             |           |       |                                             |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | V                                           | Hz      | kW             | r/min              | A                | cos φ | Duty |    |
| 3-Motor                                                                                                                       |             |           |       | 690                                         | Y       | 50             | 18,5               | 1481             | 20,1  | 0,83 | S1 |
| Insul.cl.F                                                                                                                    |             |           |       | 400                                         | D       | 50             | 18,5               | 1481             | 34,9  | 0,83 | S1 |
|                                                                                                                               |             |           |       | 415                                         | D       | 50             | 18,5               | 1482             | 33,8  | 0,82 | S1 |
| Eff class IE3                                                                                                                 |             |           |       | 440                                         | D       | 60             | 18,5               | 1781             | 31,2  | 0,83 | S1 |
|                                                                                                                               |             |           |       | 460                                         | D       | 60             | 18,5               | 1783             | 30,3  | 0,82 | S1 |
|                                                                                                                               |             |           |       | 50Hz: IE3-92,6%(100%)-93,3%(75%)-92,9%(50%) |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | 60Hz: IE3-93,6%(100%)                       |         |                |                    |                  |       |      |    |
| Resistance                                                                                                                    |             |           |       | Insulation resistance at 85 °C              |         |                |                    | Overload         |       |      |    |
| Line                                                                                                                          |             |           |       | 2000 MΩ 1000 V                              |         |                |                    | Torque 160% 15s  |       |      |    |
| U <sub>1</sub> - V <sub>1</sub>                                                                                               |             |           |       | 0,25500 Ω                                   |         |                |                    | Speed 120% 120s  |       |      |    |
| U <sub>1</sub> - W <sub>1</sub>                                                                                               |             |           |       | 0,25570 Ω                                   |         |                |                    | Current 150% 15s |       |      |    |
| V <sub>1</sub> - W <sub>1</sub>                                                                                               |             |           |       | 0,25500 Ω                                   |         |                |                    |                  |       |      |    |
|                                                                                                                               |             |           |       | High-voltage test winding 1900 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                                                                                                                  |             | 400,6 D   | 50    | 13,2                                        | 0,45    |                | 1498               | 0,05             |       |      |    |
| Locked rotor test                                                                                                             |             | 84,4 D    | 50    | 34,9                                        | 1,73    |                | 0                  | 0,34             |       |      |    |
| Thermal test (100% load)                                                                                                      | 119,7       | 400,7 D   | 50    | 34,9                                        | 20,0    | 18,5           | 1481               | 0,83             | 92,7  |      |    |
| Partial load points:                                                                                                          |             |           |       |                                             |         |                |                    |                  |       |      |    |
| ~75% load                                                                                                                     | 89,2        | 400,1 D   | 50    | 27,3                                        | 14,9    | 13,9           | 1486               | 0,79             | 93,3  |      |    |
| ~50% load                                                                                                                     | 59,8        | 399,9 D   | 50    | 20,7                                        | 9,9     | 9,3            | 1490               | 0,69             | 93,0  |      |    |
| ~25% load                                                                                                                     | 29,7        | 400,6 D   | 50    | 15,6                                        | 5,1     | 4,6            | 1495               | 0,48             | 90,1  |      |    |
| Temperature rise at rated load.                                                                                               |             |           |       | [°C]                                        | [K]     | Method         | Measurement method |                  |       |      |    |
| Stator winding :                                                                                                              |             |           |       | 57                                          | 1       |                | 1 Resistance       |                  |       |      |    |
| Frame :                                                                                                                       |             |           |       | 26                                          | 2       |                | 2 Thermocouples    |                  |       |      |    |
| Bearing D-end :                                                                                                               |             |           |       | 31                                          | 2       |                | 3 Thermometer      |                  |       |      |    |
| Rotor:                                                                                                                        |             |           |       | 70                                          | 3       |                |                    |                  |       |      |    |
| Ambient Temperature :                                                                                                         |             |           |       | 25                                          | 2       |                |                    |                  |       |      |    |
| These tests have been carried out on motor no. 3G1P141700178, on date 2014-06-19 which is identical in design with the above. |             |           |       |                                             |         |                |                    |                  |       |      |    |
| Manufactured and tested in accordance with rules of IEC 60034-1 and IEC 60034-2-1. PLL determined from residual loss.         |             |           |       |                                             |         |                |                    |                  |       |      |    |
| On behalf of customer                                                                                                         |             |           |       |                                             |         |                |                    |                  |       |      |    |
| On behalf of manufacturer Date of test                                                                                        |             |           |       |                                             |         |                |                    |                  |       |      |    |
| Tested by Asea Brown Boveri, S.A., Fabrica Motores , 08192 Sant Quirze del Valles , Spain                                     |             |           |       |                                             |         |                |                    |                  |       |      |    |
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