



## Technical Datasheet for Mahniroo Alternators DSG29 M1-4

### Generator data

|                                 |  |  |                        |                        |            |     |
|---------------------------------|--|--|------------------------|------------------------|------------|-----|
| Generator :                     | DSG29 M1-4                                       | poles:   | 4                      | Standard:              | IEC60034   |     |
| Rated power :                   | 30 KVA   | Rated Current:                                   | 43.2 A                 | Rated Voltage:         | 230 V      |     |
| Active Power :                  | 24 Kwatt   | Reactive Power:                                  | 18 kvar                | Power Factor:          | 0.8        |     |
| Speed:                          | 1500 rpm   | Freq:  | 50 HZ                  | Mech Power:            | 27.5 kwatt |     |
| Voltage range/ferquency range : |  | Zone A according IEC 60034-1 (dU=+/-5%,df=+/-2%) |                        |                        |            |     |
| Insulation class                | stator: Class H                                  | Rotor: Class H                                   | Temperature Rise: H    |                        |            |     |
| Winding Pitch:                  | 2/3  |  |                        |                        |            |     |
| Ambient Temperature:            | 40°C   | Site altitude:                                   | 1000 m                 | Enclosure :IP23        |            |     |
| Enviroment: Standard Enviroment |  |  |                        |                        |            |     |
| Cooling:                        | 1C 01-Open-circuit ventilation                   |  | Cooling Air Vol:       | 10 m <sup>3</sup> /min |            |     |
| Weight:                         | 175 Kg   | Momment of Inertia:                              | 0.28 Kg/m <sup>2</sup> |                        |            |     |
| Temperature Air inlet           | 40°C   | Cooling Water Quantity:                          | n/a                    |                        |            |     |
| Losses(enviroment):             | 3.5 Kwatt  | Losses(cooling):                                 | n/a                    |                        |            |     |
| Wires:                          | 4 terminals, starpoint connected in terminal box |  |                        | [                      | Single     | yes |
| Voltage regulator:              | Cosimat C /MN                                    |  | Operation mode         |                        | Parallel   | yes |

### Electrical Data (aac,IEC)

|              |      |      |      |      |      |
|--------------|------|------|------|------|------|
| Efficiencies | 110% | 100% | 75%  | 50%  | 25%  |
| P.F 0.8      | 86   | 87.3 | 88.2 | 88.3 | 84.9 |
| P.F 1.0      | 90.9 | 91.5 | 91.8 | 91   | 86.7 |

### Reactances (p.u.) and time constants (second)

|                       |       |                       |       |           |          |
|-----------------------|-------|-----------------------|-------|-----------|----------|
| $X_d^{saturated}$     | 2     | $X_q^{saturated}$     | 0.93  | $T_{d0}'$ | 0.49 s   |
| $X_{d'}^{saturated}$  | 0.172 | $X_{q''}^{saturated}$ | 0.133 | $T_{d'}$  | 0.043 s  |
| $X_{d''}^{saturated}$ | 0.106 | $X_0^{saturated}$     | 0.46  | $T_{d''}$ | 0.0039 s |
| $X_2^{saturated}$     | 0.118 |                       |       | $T_a$     | 0.007 s  |
| $X_{1s}^{saturated}$  | n.a.  |                       |       | $T_{q'}$  | 0.0049 s |



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