



# Technical Datasheet for Mahniroo Alternators DSG43 M2-4

## Generator data

|                                 |  |  |                        |                 |           |     |
|---------------------------------|--|--|------------------------|-----------------|-----------|-----|
| Generator :                     | DSG43 M2-4                                       | poles:   | 4                      | Standard:       | IEC60034  |     |
| Rated power :                   | 170 KVA  | Rated Current:                                   | 246 A                  | Rated Voltage:  | 230 V     |     |
| Active Power :                  | 136 Kwatt  | Reactive Power:                                  | 102 kvar               | Power Factor:   | 0.8       |     |
| Speed:                          | 1500 rpm   | Freq:  | 50 HZ                  | Mech Power:     | 148 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:                                 | 35 m <sup>3</sup> /min |                 |           |     |
| Weight:                         | 620 Kg   | Momment of Inertia:                              | 2.1 Kg/m <sup>2</sup>  |                 |           |     |
| Temperature Air inlet           | 40°C   | Cooling Water Quantity:                          | n/a                    |                 |           |     |
| Losses(enviroment):             | 12 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)

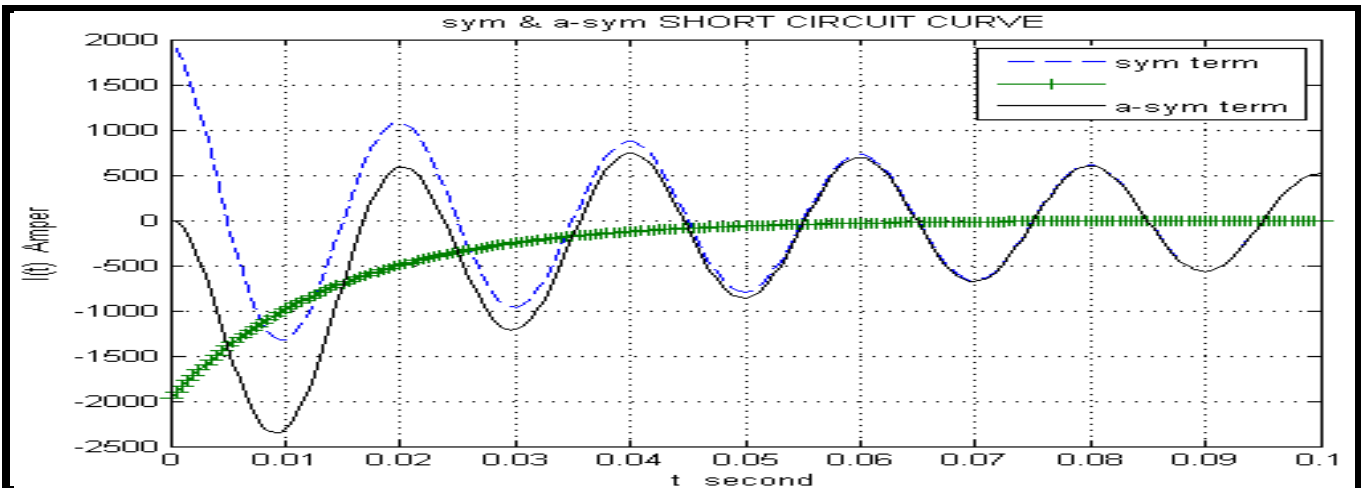
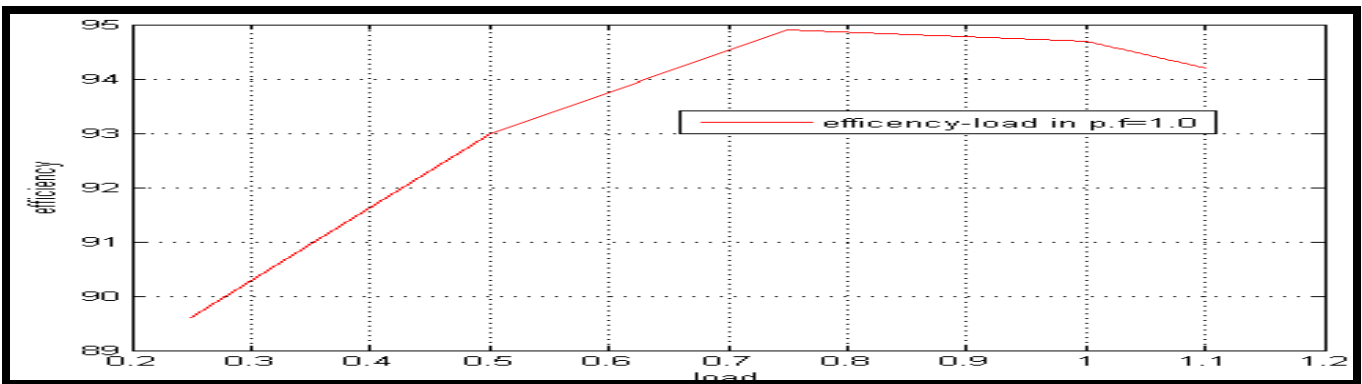
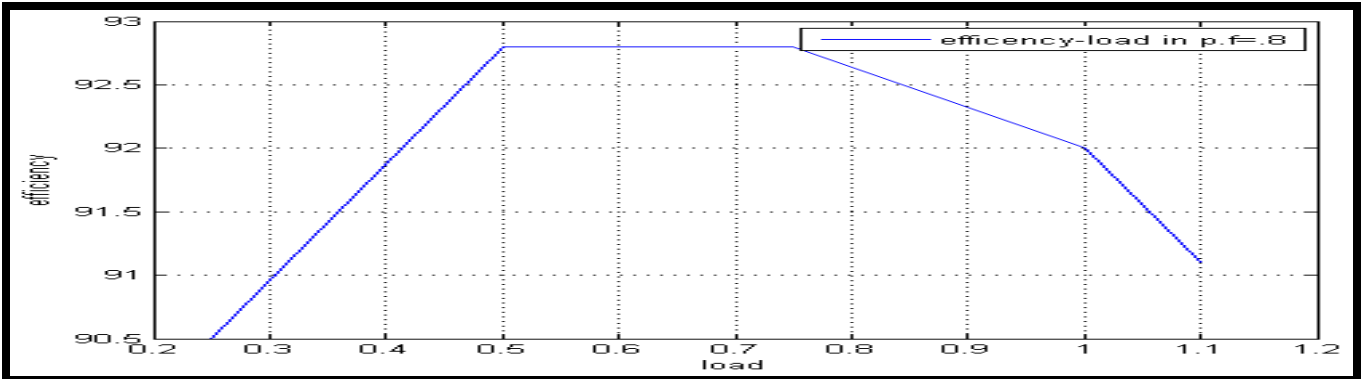
|              |      |      |      |      |      |
|--------------|------|------|------|------|------|
| Efficiencies | 110% | 100% | 75%  | 50%  | 25%  |
| P.F 0.8      | 91.1 | 92   | 92.8 | 92.8 | 90.5 |
| P.F 1.0      | 94.2 | 94.7 | 94.9 | 93   | 89.6 |

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

|                       |        |                       |       |            |          |
|-----------------------|--------|-----------------------|-------|------------|----------|
| $X_d^{saturated}$     | 2.34   | $X_q^{saturated}$     | 1.08  | $T_{d0}^T$ | 1.09 s   |
| $X_{d'}^{saturated}$  | 0.208  | $X_{q''}^{saturated}$ | 0.157 | $T_{d'}$   | 0.097 s  |
| $X_{d''}^{saturated}$ | 0.1326 | $X_0^{saturated}$     | 0.054 | $T_{d''}$  | 0.0072 s |
| $X_2^{saturated}$     | 0.141  |                       |       | $T_a$      | 0.0145 s |
| $X_{1s}^{saturated}$  | n.a.   |                       |       | $T_{q'}$   | 0.009 s  |



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General Arrangement for Mahniroo  
Alternators DSG43 M2-4

