

LAMPIRAN

1. Hasil Perhitungan Nilai Faktor Daya Pada *Electrical Panel Distribution Busbar System* Yang Terkonfigurasi Pada Beban

Berikut ini hasil perhitungan faktor daya pada *electrical panel distribution busbar system*

a. Faktor daya pada beban 56 Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 220 \times 1,9$$

$$S = 723 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 220 \times 1,9 \times 0,8$$

$$P = 579 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{579}{723} = 0,80$$

b. Faktor daya pada beban 75 Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 223 \times 1,5$$

$$S = 579 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 223 \times 1,5 \times 0,8$$

$$P = 463 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{463}{579} = 0,79$$

c. Faktor daya pada beban 100Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 220 \times 1,1$$

$$S = 419 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 220 \times 1,1 \times 0,8$$

$$P = 418 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{418}{419} = 0,99$$

d. Faktor daya pada beban 200Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 232 \times 0,6$$

$$S = 241 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 232 \times 0,6 \times 0,8$$

$$P = 192 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{192}{241} = 0,79$$

e. Faktor daya pada beban 500Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 236 \times 0,3$$

$$S = 122 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 236 \times 0,3 \times 0,8$$

$$P = 98 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{98}{122} = 0,80$$

f. Faktor daya pada beban 750Ω

Daya semu

$$S = \sqrt{3} \times V \times I$$

$$S = \sqrt{3} \times 237 \times 0,2$$

$$S = 82 \text{ VA}$$

Daya aktif

$$P = \sqrt{3} \times V \times I \times \cos \varphi$$

$$P = \sqrt{3} \times 237 \times 0,2 \times 0,8$$

$$P = 65 \text{ W}$$

Faktor daya

$$\cos \varphi = \frac{82}{65} = 0,79$$