

## Lampiran perhitungan

### MENCARI LUAS PENAMPANG KABEL

#### **Diameter 2 mm**

$$\begin{aligned}\text{Luas lingkaran} &= 3.14 \times D^2 / 4 \\ &= 3.14 \times (2^2) / 4 \\ &= 3.14 \times 4 / 4 \\ &= 3.14 \text{ mm}^2 \\ &= 0.00000314 \text{ m}^2\end{aligned}$$

#### **Diameter 3 mm**

$$\begin{aligned}\text{Luas lingkaran} &= 3.14 \times D^2 / 4 \\ &= 3.14 \times (3^2) / 4 \\ &= 3.14 \times 9 / 4 \\ &= 7.065 \text{ mm}^2 \\ &= 0.000007065 \text{ m}^2\end{aligned}$$

#### **Diameter 4 mm**

$$\begin{aligned}\text{Luas lingkaran} &= 3.14 \times D^2 / 4 \\ &= 3.14 \times (4^2) / 4 \\ &= 3.14 \times 16 / 4 \\ &= 12.56 \text{ mm}^2 \\ &= 0.00001256 \text{ m}^2\end{aligned}$$

## MENCARI HAMBATAN KAWAT

**Hambatan Penghantar Persamaannya :**

$$R = \frac{\rho x l}{A}$$

R = Hambatan penghantar (ohm)

$\rho$  = Hambatan jenis kawat (ohm.m)

$l$  = Panjang kawat (m)

A = Luas penampang (m<sup>2</sup>)

### 1. K1B1

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00000314}$$

$$= 0.0216 \text{ ohm}$$

### 2. K1B2

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00000314}$$

$$= 0.0216 \text{ ohm}$$

### 3. K2B1

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00000706}$$

$$= 0.0096 \text{ ohm}$$

### 4. K2B2

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00000706}$$

$$= 0.0096 \text{ ohm}$$

### 5. K3B1

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00001256}$$

$$= 0.0054 \text{ ohm}$$

### 6. K3B2

$$R = \frac{\rho x l}{A}$$

$$R = \frac{1.7 x 10^{-8} x 4}{0.00001256}$$

$$= 0.0054 \text{ ohm}$$

