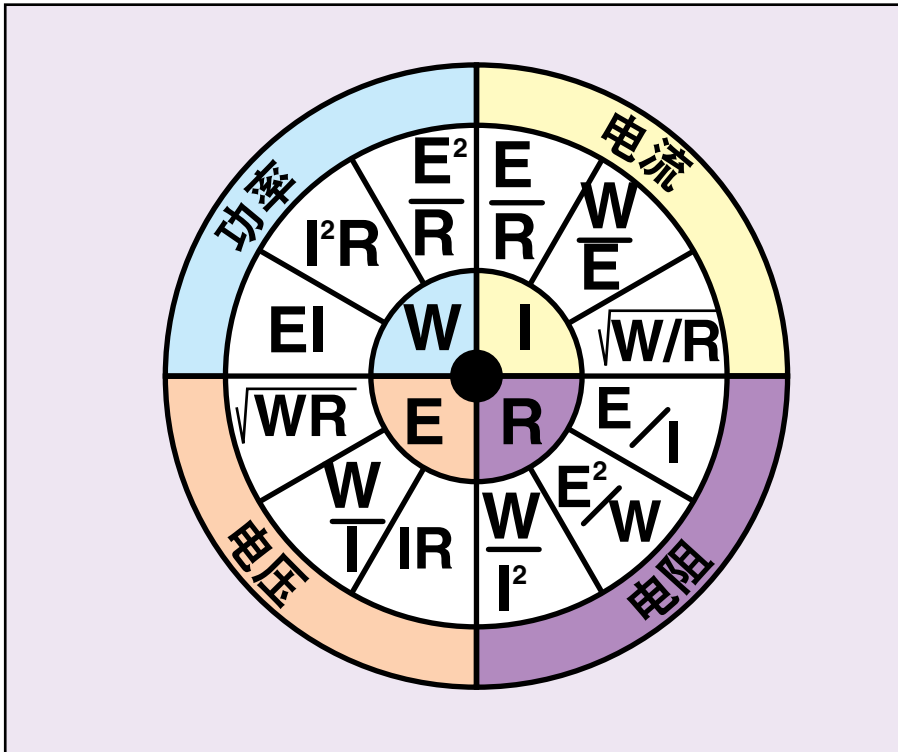


欧姆定律



欧姆定律的变式

电压

$$\text{电压} = \sqrt{\text{功率} \times \text{电阻}}$$

$$\text{电压} = \frac{\text{功率}}{\text{电流}}$$

$$\text{电压} = \text{电流} \times \text{电阻}$$

电阻

$$\text{电阻} = \frac{\text{电压}}{\text{电流}}$$

$$\text{电阻} = \frac{\text{电压}^2}{\text{功率}}$$

$$\text{电阻} = \frac{\text{功率}}{\text{电流}^2}$$

电流

$$\text{电流} = \frac{\text{电压}}{\text{电阻}}$$

$$\text{电流} = \frac{\text{功率}}{\text{电压}}$$

$$\text{电流} = \frac{\text{功率}}{\text{电阻}}$$

功率

$$\text{功率} = \frac{\text{电压}^2}{\text{电阻}}$$

$$\text{功率} = \text{电流}^2 \times \text{电阻}$$

$$\text{功率} = \text{电压} \times \text{电流}$$

表11 电阻加热负载的电流

kW	单相					三相平衡负载			
	120V	208V	240V	440V	480V	208V	240V	440V	480V
1	8.4	4.8	4.2	2.3	2.1	2.8	2.5	1.4	1.3
2	16.7	9.7	8.4	4.6	4.2	5.6	4.9	2.7	2.5
3	25	14.5	12.5	6.9	6.3	8.4	7.3	4	3.7
4	33.4	19.3	16.7	9.1	8.4	11.2	9.7	5.3	4.9
5	41.7	24.1	20.9	11.4	10.5	13.9	12.1	6.6	6.1
6	50	28.9	25	13.7	12.5	16.7	14.5	7.9	7.3
7.5	62.5	36.1	31.3	17.1	15.7	20.9	18.1	9.9	9.1
10	83.4	48.1	41.7	22.8	20.9	27.8	24.1	13.2	12.1
12	100	57.7	50	27.3	25	33.4	29	15.8	14.5
15	125	72.2	62.5	34.1	31.2	41.7	36.2	19.7	18.1
20	167	96.2	83.4	45.5	41.7	55.6	48.2	26.3	24.1
25	209	121	105	56.9	52.1	69.5	60.3	32.9	30.1
30	250	145	125	68.2	62.5	83.4	72.3	39.4	36.2
50	417	241	209	114	105	139	121	65.7	60.3
75	625	361	313	171	157	209	181	98.6	90.4
100	834	481	417	228	209	278	241	132	121

用于电加热负载的电流

加热元件经常在我们目录所示电压以外的电压上使用。以下显示的百分比用于确定产生的功率。如果您希望在上面未显示的电压上使用加热器，您可以使用这个公式计算产生的功率：

$$\text{实际功率} = \text{额定功率} \times \frac{\text{外加电压}^2}{\text{额定电压}^2}$$

各种外加电压的额定功率百分比

外加电压	额定电压														
	110	115	120	208	220	230	240	277	380	415	440	460	480	550	
110	100%	91%	84%	28%	25%	23%	21%	16%	8.4%	7%	6.2%	5.7%	5.2%	4%	
115	109%	100%	92%	31%	27%	25%	23%	17%	9.0%	7.6%	6.7%	6.2%	5.7%	4.3%	
120	119%	109%	100%	33%	30%	27%	25%	19%	10%	8.4%	7.4%	6.8%	6.3%	4.8%	
208			300%	100%	89%	82%	75%	56%	30%	25%	22%	20%	19%	14%	
220				112%	100%	91%	84%	63%	34%	28%	25%	23%	21%	16%	
230				122%	109%	100%	92%	69%	37%	31%	27%	25%	23%	17%	
240				133%	119%	109%	100%	75%	40%	33%	30%	27%	25%	19%	
277							133%	100%	53%	45%	40%	36%	33%	25%	
380								188%	100%	84%	74%	68%	63%	47%	
415									119%	100%	89%	81%	75%	57%	
440										112%	100%	91%	84%	64%	
460										123%	109%	100%	92%	70%	
480											119%	109%	100%	76%	
550												156%	143%	100%	