

Electrical parameters

The following parameters define a solenoid :

Tension (V) : volts
 Frequency : 50 Hz, 60 Hz direct current etc.
 Power consumption (w) : watts (VA) volt ampere

Intensity (A) : ampere at inrush holding
 Resistance (R) : ohms
 Impedance (Z) : ohms
 Max. temperature of the coil when continuously energized.

Alternating current

$$U=Z \cdot I \quad I=\frac{U}{Z} \quad P = U \cdot I \cos \varphi \text{ (Watt)}$$

$$P = U \cdot I \text{ (VA)}$$

$$\cos \varphi = \frac{R}{Z}$$

$$Z = \sqrt{R^2+L^2\omega^2}$$

L = inductance

ω = pulsation

Fig. 7

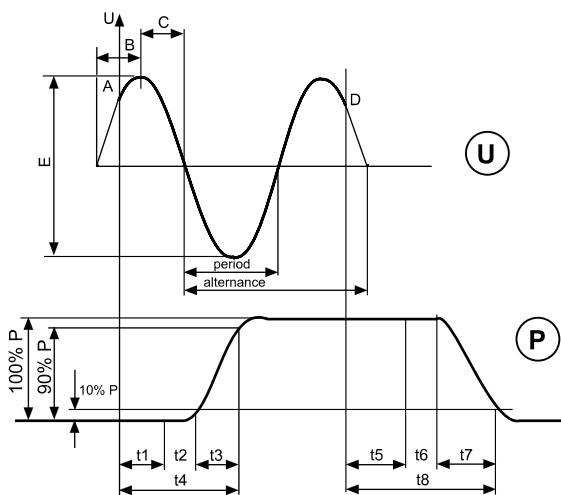
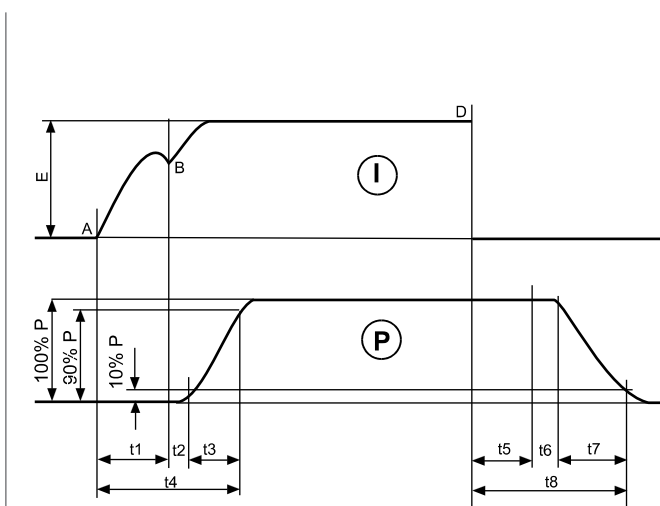


Fig. 7a



Response time

- | | | | |
|---|--------------------|----|--------------------------------|
| U | Voltage | E1 | Plunger |
| I | Current | t2 | Moving parts valve |
| E | Max. voltage | t3 | Increase pressure |
| P | Pressure | t4 | Response time at energizing |
| A | Switch ON | t5 | t5 = t1, t6 = t2 |
| B | Increasing current | t7 | Pressure fall |
| C | Decreasing current | t8 | Response time at de-energizing |
| D | Switch OFF | | |