

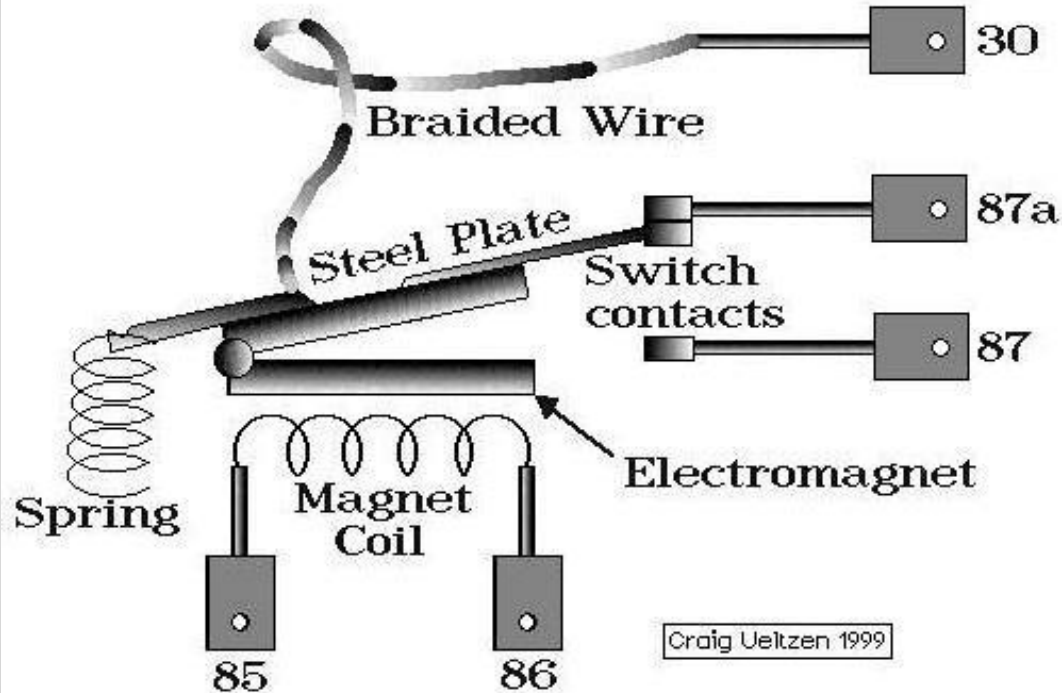
Building a Battery Backup System

With Robbie Vinson

Overview

- Relays
- Batteries
- 12v DC run times
- Components and assembly

Relays



Common

Normally Closed

Normally Open

Common

Line Voltage

Battery Types

Starting

Thinner plates

Short bursts of energy
delivery

Deep Cycle

Thicker plates

Long term energy
delivery

Battery Run Times

$$\frac{10 \times (\text{Battery load capacity in amp hours})}{(\text{Load power in watts})} = \text{Run time in hours}$$

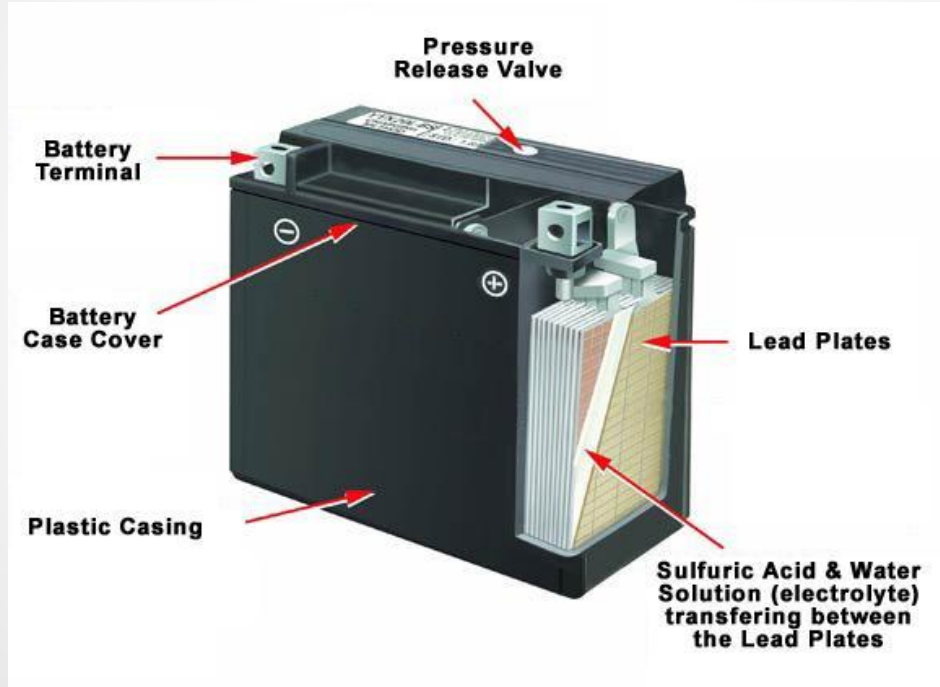
We have a 12V battery rated for 90 amp hours with a pump drawing 1.9 amps

To calculate watts multiply the amps x voltage

$$1.9\text{a} \times 12\text{v} = 22.8\text{w}$$

$$90 \text{ ah} \times 10 = 900 / 22.8 = 39.4 \text{ hours}$$

Battery



Relay



12v DC Pumps & Aeration

