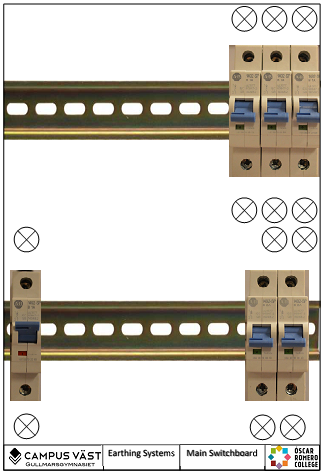
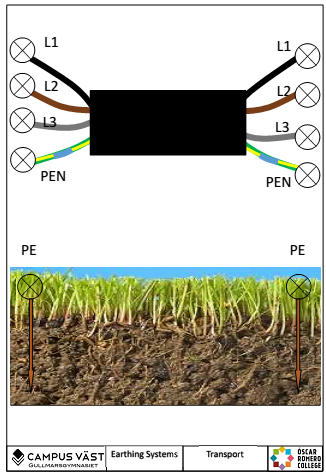
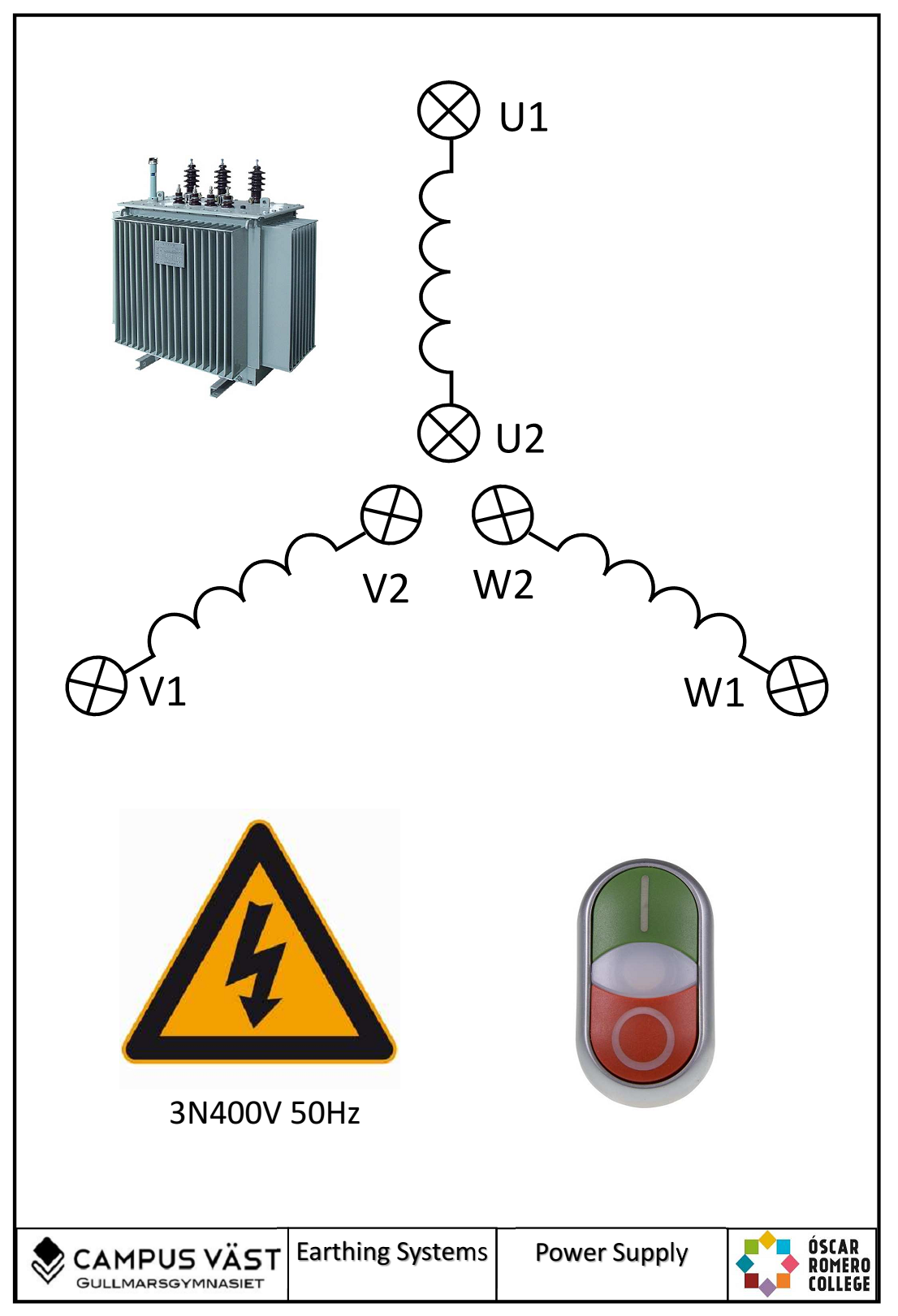
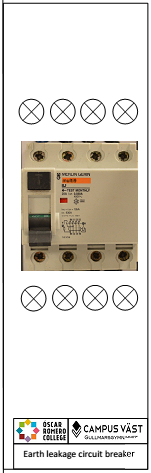
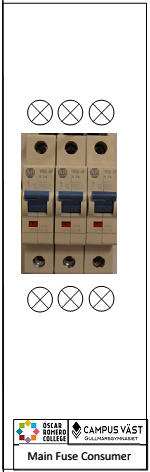


TN-C-S Earthing System

1. Search on the internet how a TN-C-S Earthing System looks like. Place a picture of this Earthing System here below.
2. Wich of the Earthing System Board would you need to create this system. Place Them in the correct order en draw the connections on it.



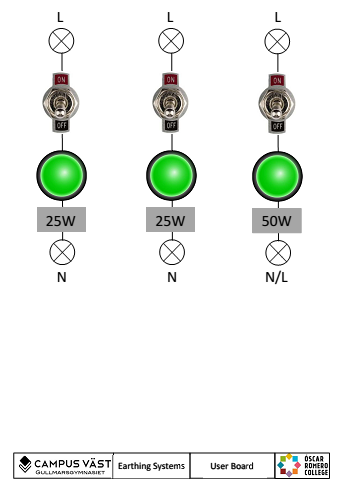
1. Where is this system used?
2. Build the system and do some measurements.

|  |  |  |
| --- | --- | --- |
| Messure points | | Voltage (V) |
| Messure on this board. | U1+W1 |  |
| U1+V1 |  |
| W1+V1 |  |
| U1+PEN (U2, W2, V2) |  |

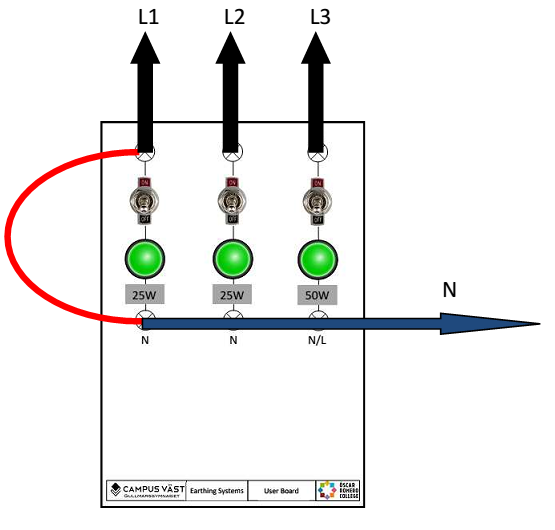
|  |  |  |
| --- | --- | --- |
| Messure points | | Voltage (V) |
| Messure on this board. | L1+L2 |  |
| L1+L3 |  |
| L2+L3 |  |
| L1+PEN |  |

1. In a real life system what would the values be?

|  |  |  |
| --- | --- | --- |
| Messure points | | Voltage (V) |
| On this board. | U1+W1 |  |
| U1+V1 |  |
| W1+V1 |  |
| U1+PEN (U2, W2, V2) |  |

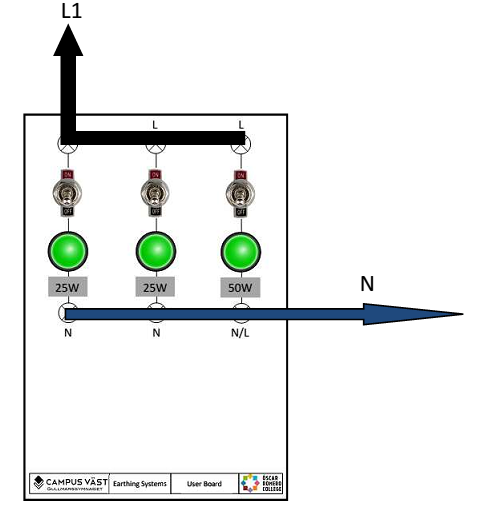
1. Ad this board to the system and connect it to the 1-fase circuit breaker. 

and make the following connections.



What happens? How do you call this phenomenon?

1. Make the following connections.



Turn on the switches one by one and measure the voltage on the lamps

Voltage over lamp 1 (25W) .........................................................

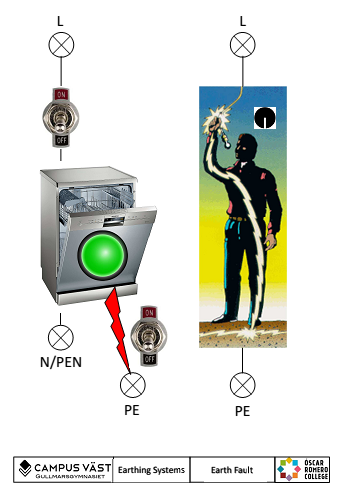
Voltage over lamp 1 (25W) .........................................................

Voltage over lamp 1 (50W) .........................................................

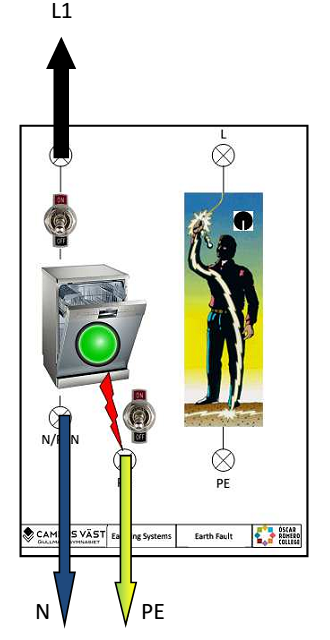
What happens after you turn on all switches? How do you call this phenomenon? Remark: be patient it could take a few minutes before something happens.

Search for a circuit breaker characteristic and show what is happening.

1. Ad this board to the system and connect it to the 2-pole circuit breaker.

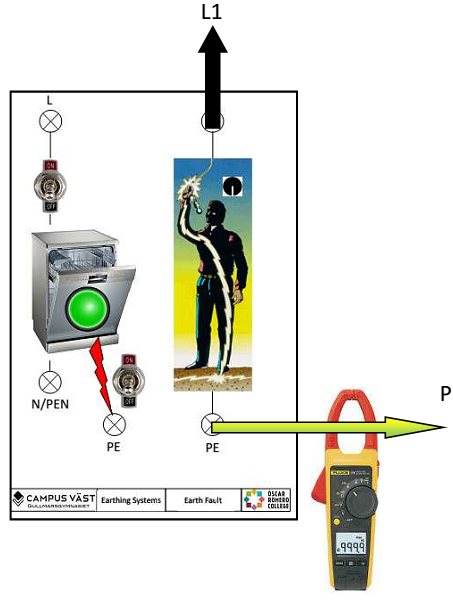


1. Make the following connections.



Turn on both switches. What happens? How do you call this phenomenon?

1. Make the following connections.



Messure the current at the different positions of the switch. Write down the value.

Switch position 1: ......................................................

Switch position 2: .......................................................

Switch position 3: .......................................................

Switch position 4: .......................................................

What happens? How do you call this type of current?