
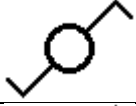




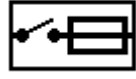





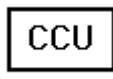

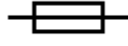
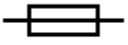


## 203: Electrical Installations Technology

### Handout 4: Symbols and Scales

#### Symbols

Below is a selection of architectural symbols that you may find on a plan. These and others can be found on the inside rear cover of the IET On-Site Guide.

<b>Switching</b>	
one way	
two way	
Intermediate	
pull	
<b>Socket outlets</b>	
Switched	
Unswitched	
fused connection units	
switched fused connection units	
<b>Lighting points</b>	
Fluorescent	
Incandescent	
Wall	
<b>Various</b>	
Cooker control unit	
Consumer control unit	
Integrated meter	
Fuse	
Circuit breaker	

## Scales

There need to be plans or drawings of where everything should go if an installation is to be completed accurately.

Drawing on a piece of paper the size of a whole house or factory would clearly be impracticable so a plan is drawn to scale, ie it is first decided how much smaller everything needs to be drawn on the paper. In order to retain accuracy, everything obviously needs to be made smaller by the same amount.

The most common scales in electrical installation are: 1:20, 1:50, 1:100.

In each case, everything is a 20<sup>th</sup>, 50<sup>th</sup> or 100<sup>th</sup> of its normal size, respectively.

A scale drawing is a drawing that represents a real object. The scale of the drawing is the ratio of the size of the drawing to the actual size of the object.

### Example 1

The length of a building is 60 metres, its width is 40 metres and it is drawn to a scale of 1:100. What are the length and breadth of the building on the drawing?

#### Solution:

Length	Width
Scale length = $\frac{\text{Actual length}}{\text{Scale}}$	Scale length = $\frac{\text{Actual length}}{\text{Scale}}$
= $\frac{60}{100}$	= $\frac{40}{100}$
= 0.6 metres	= 0.4 metres
= <b>60cm</b>	= <b>40cm</b>

### Example 2

On a plan with a scale of 1:50, a socket is measured at 23mm from a wall. How far from the wall must the socket be installed in the finished installation?

#### Solution:

$$\begin{aligned}\text{Actual distance} &= \text{Distance on plan} \times \text{scale} \\ &= 23 \times 50 \\ &= 1,150\text{mm}\end{aligned}$$

or

$$= \mathbf{1.15 \text{ metres}}$$

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