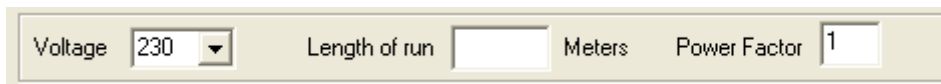


CABLE-MATE version 4.0

1: Calculate cable size

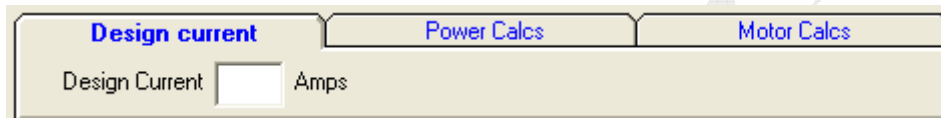
Step 1. Select required supply voltage from the drop-down box, Enter the length of cable to be installed in the 'Length of run' box, and a value for Power Factor if known or leave as 1 (the default value)



Voltage Length of run Meters Power Factor

Step 2. Directly enter a design current value in the 'Design current' box, under the 'Design current' TAB.

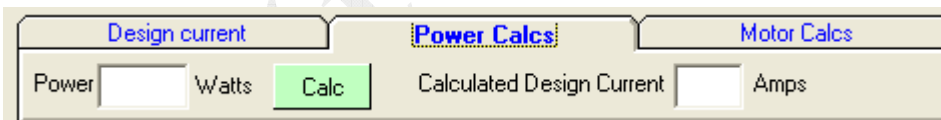
(If at any time you change any of these values, any calculations performed will be reset!)



Design current Power Calcs Motor Calcs
Design Current Amps

OR. Enter a power value in watts into the 'Power' box, and press the 'Calc' button, under the 'Power Calcs' TAB.

(If at any time you change any of these values, any calculations performed will be reset!)



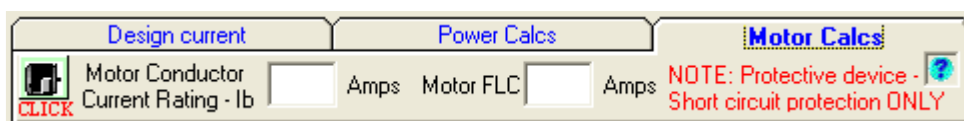
Design current **Power Calcs** Motor Calcs
Power Watts Calculated Design Current Amps



OR. (for screen resolutions of 1024x728 and higher only)

Enter a 'Motor Conductor Current Rating' value in the box, and the 'Motor FLC' in the box, under the 'Motor Calcs' TAB.

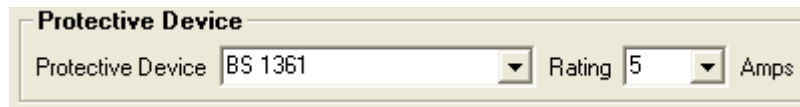
You can click on the icon to go to the Motor calculations page. These calculations use the protective device for short circuit protection only; the thermal overload in the motor starter provides overload protection. (Consult the Regulations, do not use if un-sure)

(If at any time you change any of these values, any calculations performed will be reset!)



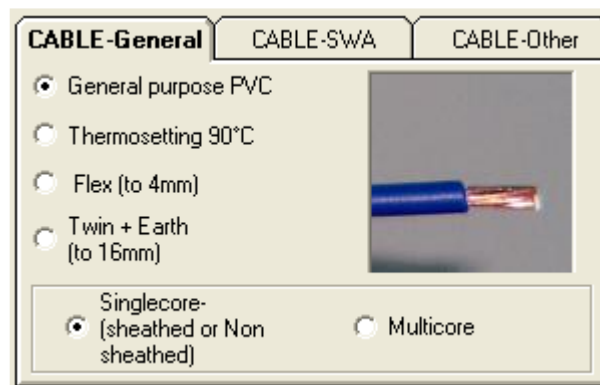
Design current Power Calcs **Motor Calcs**
 Motor Conductor Current Rating - Ib Amps Motor FLC Amps **NOTE: Protective device - Short circuit protection ONLY** 

Step 4. Choose a 'Protective device type' from the drop down box.



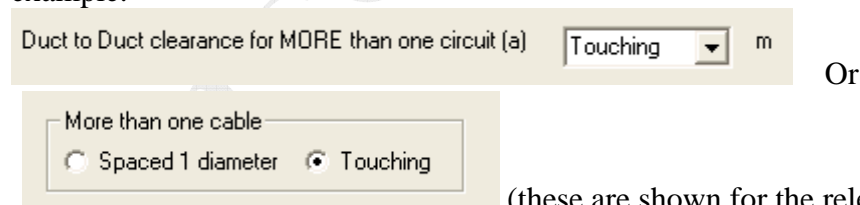
Step 5. Select a 'Rating' value for the chosen protective device from the drop down box.

Step 6. Select the 'Cable type' from the different TABS, and either 'Singlecore' or 'Multicore'.



Step 7. Click on the appropriate 'Installation Method' from the selection available, consult the 17th Edition regulations for more information. If you keep the mouse over the 'Installation method description', its method letter will be shown.

(For certain installation methods, if more than one cable/circuit exists then a distance between cables or ducts, for example, must be made **before** the number of cables/circuits is selected from the grouping factor list)
example:



(these are shown for the relevant installation methods)

Step 8. Select the appropriate 'Correction factors' from the drop down boxes, 'Grouping factor', 'Ambient temperature' and 'Thermal insulation correction factor'.

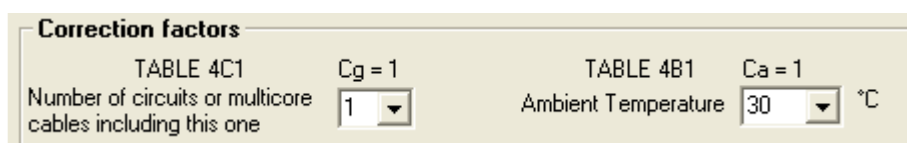


TABLE 52.2 Thermal insulation correction factors, length in insulation (mm)	Ci = 1 none
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Step 9. Press the ‘Calc Cable Size’ button to calculate cable size.

Calc Cable size	Current carrying capacity of cable	<input type="text"/>	Cable size selected	<input type="text"/>
------------------------	------------------------------------	----------------------	----------------------------	----------------------

Step 10. Press the ‘Calc Voltdrop’ button to check the voltdrop for the calculated cable size, **if the calculated cable size voltdrop is too high, the software will increase the cable size to satisfy the voltdrop regulations.**

Max value of Voltdrop - Appendix 12 <input type="radio"/> 3% (Lighting) <input checked="" type="radio"/> 5% (Other uses)				
Calc Voltdrop	<input type="text"/> Volts	Maximum permissible voltdrop (regulation - 525)	9.2 Volts	Maximum cable length <input type="text"/> Meters

(You can enter a different value for voltdrop if you should need to, up to the maximum permissible value by highlighting the value in the Max permissible voltdrop box with your mouse and entering a new value)

2 <input type="radio"/> 3% (Lighting) <input checked="" type="radio"/> 5% (Other uses)
Maximum permissible voltdrop (regulation - 525) <input style="background-color: #e0e0e0;" type="text" value="11.5"/> Volts

This also gives a maximum length of cable value, if your cable length is near to this value then it may be wise to increase the cable size further to allow for any possible additions in the future. The minimum Earth conductor as per Table 54.7 or Actual size for Twin & Earth is also shown.

Minimum Earth conductor size as per TABLE 54.7 or ACTUAL Earth conductor size for TWIN and EARTH	Earth conductor size	<input type="text"/>	mm²
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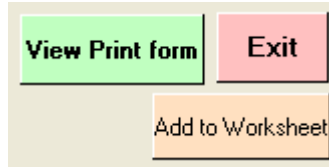
You can see the next size of cable by pressing the + button.

View next cable size	<input type="button" value="+"/>	Next cable size	<input type="text"/>	Maximum cable length	<input type="text"/>	Meters	<input type="text"/>	Voltdrop
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If at any time you change any of the values, you will have to recalculate the cable size and voltdrop again!.

Step 11. To print out a copy of the calculations press the 'View Print Form' button. This will display the Print page.

The 'View Print Form' button will only show the print page if the calculations have been done first!.



The print page will allow you to print the results as they are displayed on the page or you can use the 'Save to File' button to save a copy of the results as a TEXT file.

The TEXT file can be opened with most word processor programs and can be 'copied and pasted' into reports or write-ups. Where possible, the relevant 17th edition Regulations are quoted.

The Cable and Earth conductor size calculated can also be added to a 'worksheet' with the use of the 'Add to Worksheet' button.

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This software is 'as is'; I accept NO responsibility for ANY CALCULATIONS, RESULTS or WORK based on this software.

If in doubt consult a qualified electrician.