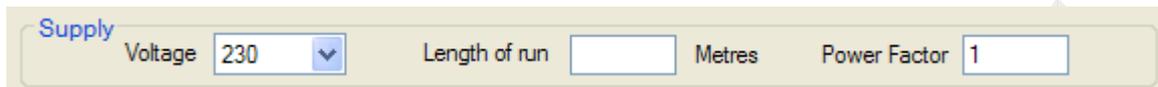# CABLE-MATE   version 5.06

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)


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!)
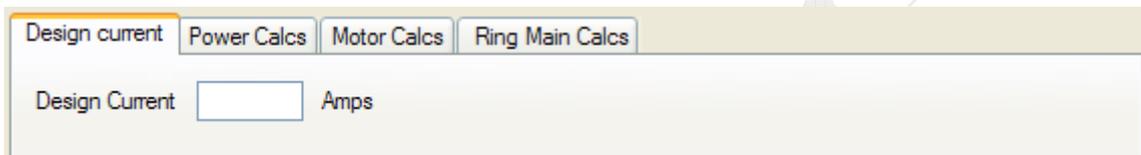
OR. Enter a power value in watts into the 'Power' box, and press the 'Calc' button, under the 'Power Calcs' TAB.
**(If at any time you change any of these values, any calculations performed will be reset!)**
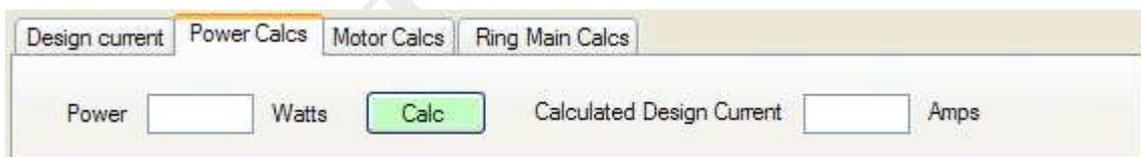
OR. Enter a 'Motor Conductor Current Rating' value in the box, and the 'Motor FLC' in the box, under the 'Motor Calcs' TAB.
You can click on the icon to go to the Motor calculations page. These calculations use the protective device for short circuit protection only; the thermal overload in the motor 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!)
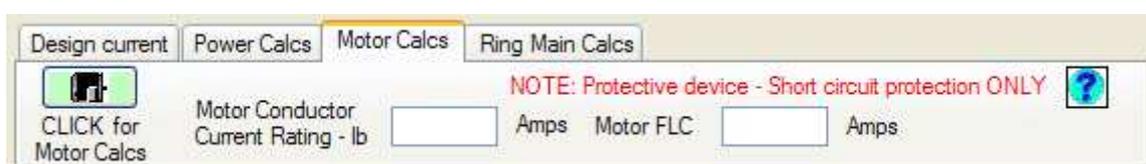
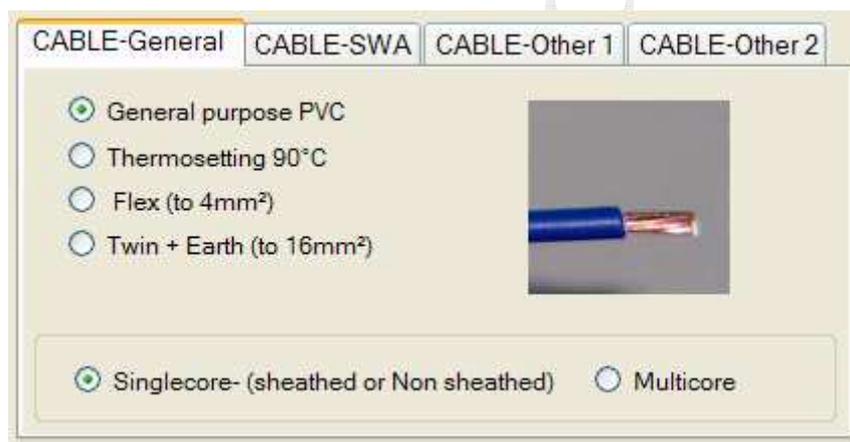**OR**. Select Ring final circuit cable size calculations under the 'Ring Main Calcs' TAB
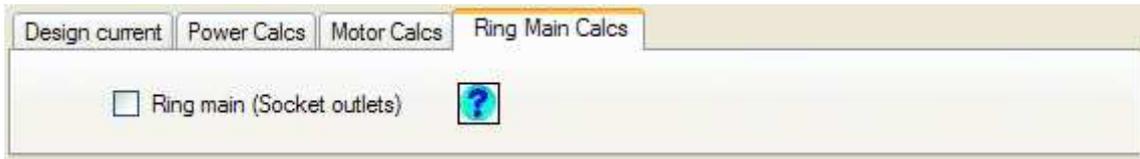
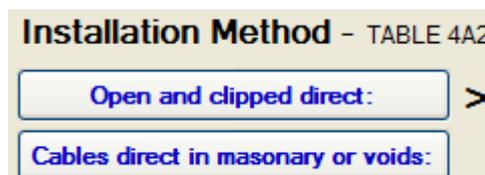**Step 4**. Choose a 'Protective device type' from the drop down box.

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. If the TAB is disabled then this method is not possible for the cable type selected.

(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'.

Step 9. Press the 'Calc Cable Size' button to calculate cable size.

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.**

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

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 [   ] mm²

You can see the next size of cable by pressing the **'NEXT'** button.

View next cable size

NEXT   Next cable size [   ]   Maximum length [   ] Metres   [   ] Voltdrop

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 '**Print**' button. This will display the Print preview page.

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

RESET form   Add to Worksheet
Print   Save   Exit

The '**Save**' button will allow you 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.

Please visit www.jarsoftelectrical.com to check for **free** updates regularly.

Any persons selling or distributing copies of this software will have their registration key removed from being able to use any future possible updates/upgrades……

If in doubt consult a qualified electrician.