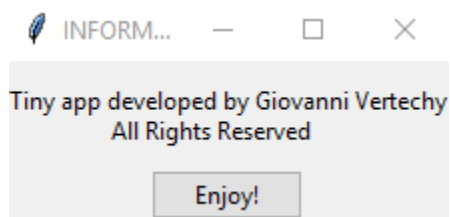


*Tiny FE Calculator* is a tabbed-type tiny utility; as of June 2019 it is a demo prototype, based on UL 508 A requirements for general use ICPs and NFPA 79 for industrial machinery; other functions/requirements (such as those for industrial machinery) may be implemented.

To launch the app double-click on the program icon; a message windows pops up:

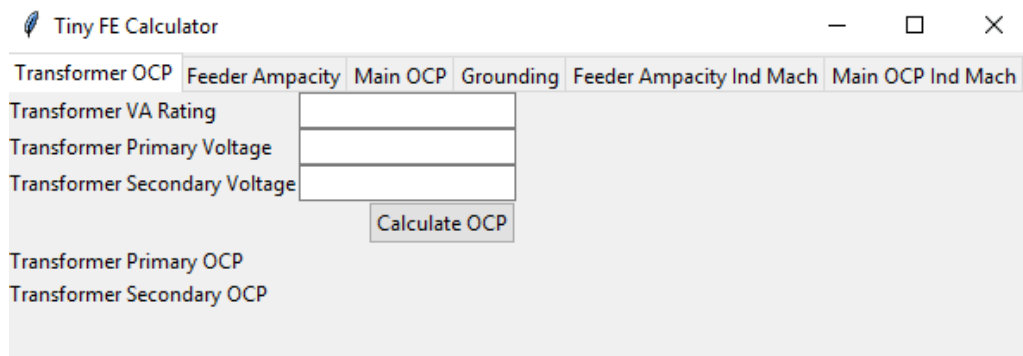


Click the “Enjoy!” button to open the program.

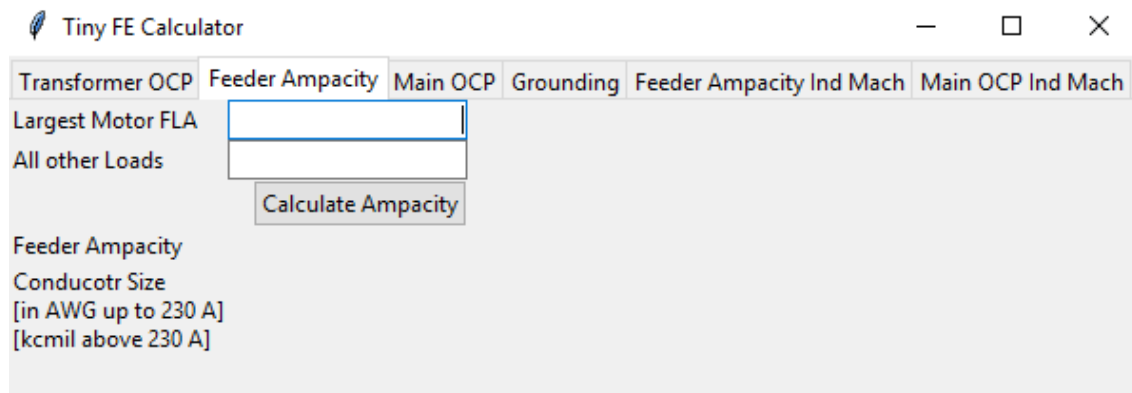
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Functionality is pretty much self-explanatory:

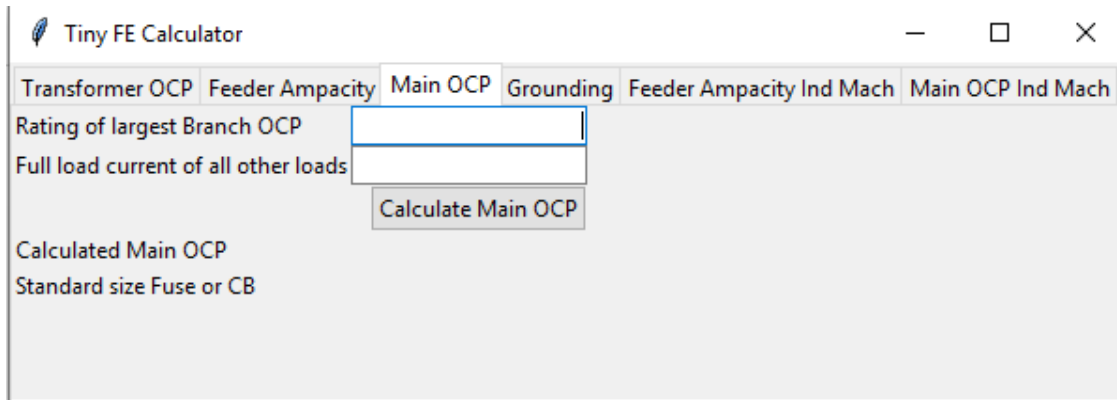
1. Tab 1: Transformer OCP - it calculates primary and secondary overcurrent protection size of single-phase control transformers. Reference: UL 508 A, par. 42.1.3 (Table 42.2).



2. Tab 2: Feeder Ampacity - it calculates the ampacity of feeder conductors on the load side of the main (feeder) overcurrent protective device; the “All other Loads” field requires a dash-separated number sequence, such as: 12-45.7-27.2 (no other characters such as commas, spaces, etc. shall be used). Reference: UL 508 A, par. 28.3.3

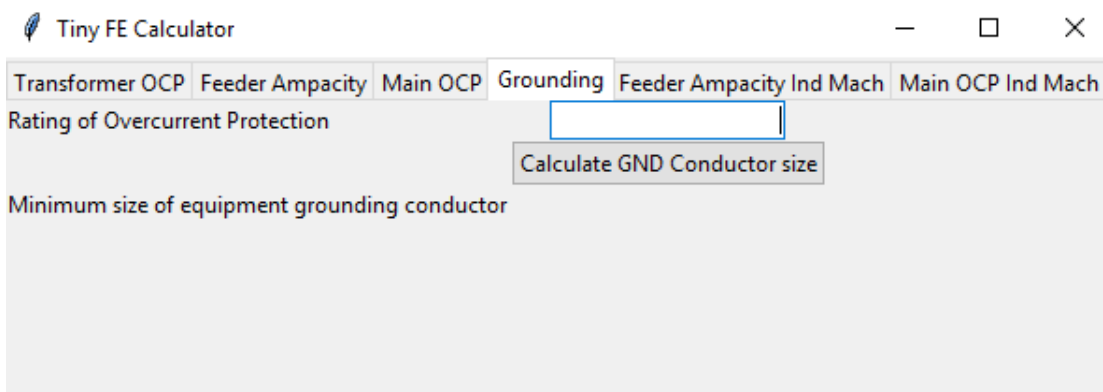


3. Tab 3: Main OCP - it calculates the size of the main (feeder) overcurrent protective device; the “Full load current of all other loads” field requires a dash-separated number sequence, such as: 12-45.7-27.2 (no other characters such as commas, spaces, etc. shall be used). Reference: UL 508 A, par. 32.3.1 (b)



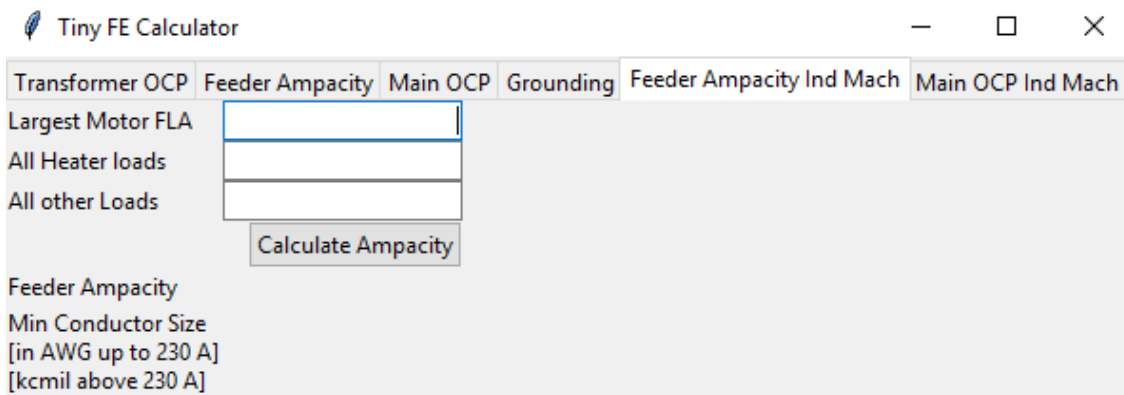
The screenshot shows the 'Main OCP' tab of the 'Tiny FE Calculator' application. The interface includes a tab bar at the top with options: Transformer OCP, Feeder Ampacity, Main OCP (selected), Grounding, Feeder Ampacity Ind Mach, and Main OCP Ind Mach. Below the tabs, there are two input fields: 'Rating of largest Branch OCP' and 'Full load current of all other loads'. A 'Calculate Main OCP' button is positioned below the second input field. The results section at the bottom displays 'Calculated Main OCP' and 'Standard size Fuse or CB'.

4. Tab 4: Grounding – it determines the minimum grounding conductor size (in AWG or kcmil), based on UL 508 A Tab. 15.1, and NFPA 79 Tab. 8.2.2.3



The screenshot shows the 'Grounding' tab of the 'Tiny FE Calculator' application. The tab bar at the top includes: Transformer OCP, Feeder Ampacity, Main OCP, Grounding (selected), Feeder Ampacity Ind Mach, and Main OCP Ind Mach. The main area contains an input field for 'Rating of Overcurrent Protection' and a 'Calculate GND Conductor size' button. The results section at the bottom shows 'Minimum size of equipment grounding conductor'.

5. Tab 5: Feeder Ampacity Ind Mach - it calculates the ampacity of feeder conductors on the load side of the main (feeder) overcurrent protective device; the “All other Loads” field requires a dash-separated number sequence, such as: 12-45.7-27.2 (no other characters such as commas, spaces, etc. shall be used). Reference: UL 508 A, par. 66.4.1



The screenshot shows the 'Feeder Ampacity Ind Mach' tab of the 'Tiny FE Calculator' application. The tab bar at the top includes: Transformer OCP, Feeder Ampacity, Main OCP, Grounding, Feeder Ampacity Ind Mach (selected), and Main OCP Ind Mach. The main area contains three input fields: 'Largest Motor FLA', 'All Heater loads', and 'All other Loads'. A 'Calculate Ampacity' button is located below the third input field. The results section at the bottom displays 'Feeder Ampacity', 'Min Conductor Size [in AWG up to 230 A]', and '[kcmil above 230 A]'.

6. Tab 6: Main OCP - it calculates the size of the main (feeder) overcurrent protective device; the “Full load current of all other loads” field requires a dash-separated number sequence, such as: 12-45.7-27.2 (no other characters such as commas, spaces, etc. shall be used). Reference: UL 508 A, par. 32.3.1 (b)

The image shows a screenshot of a software application titled "Tiny FE Calculator". The application has a tabbed interface with the following tabs: "Transformer OCP", "Feeder Ampacity", "Main OCP", "Grounding", "Feeder Ampacity Ind Mach", and "Main OCP Ind Mach". The "Main OCP" tab is currently selected. Within this tab, there are four input fields for the following labels: "Rating of largest Branch OCP", "All heater loads", "Largest motor FLA", and "Full load current of all other loads". Below these fields is a button labeled "Calculate Main OCP". At the bottom of the tab, there are two output labels: "Calculated Main OCP" and "Standard size Fuse or CB". The application window includes standard Windows-style window controls (minimize, maximize, close) in the top right corner.

Note: depending on the (largest) branch circuit protection size (such as when the largest branch OCP is close to the largest motor FLA - for example when using self protected combination motor controllers) the calculated Main OCP may be lower than the calculated feeder ampacity; the result is mathematically correct, but determination of main ocp size requires electrical engineering judgement.