9 Connecting a Power Supply to the Instrument

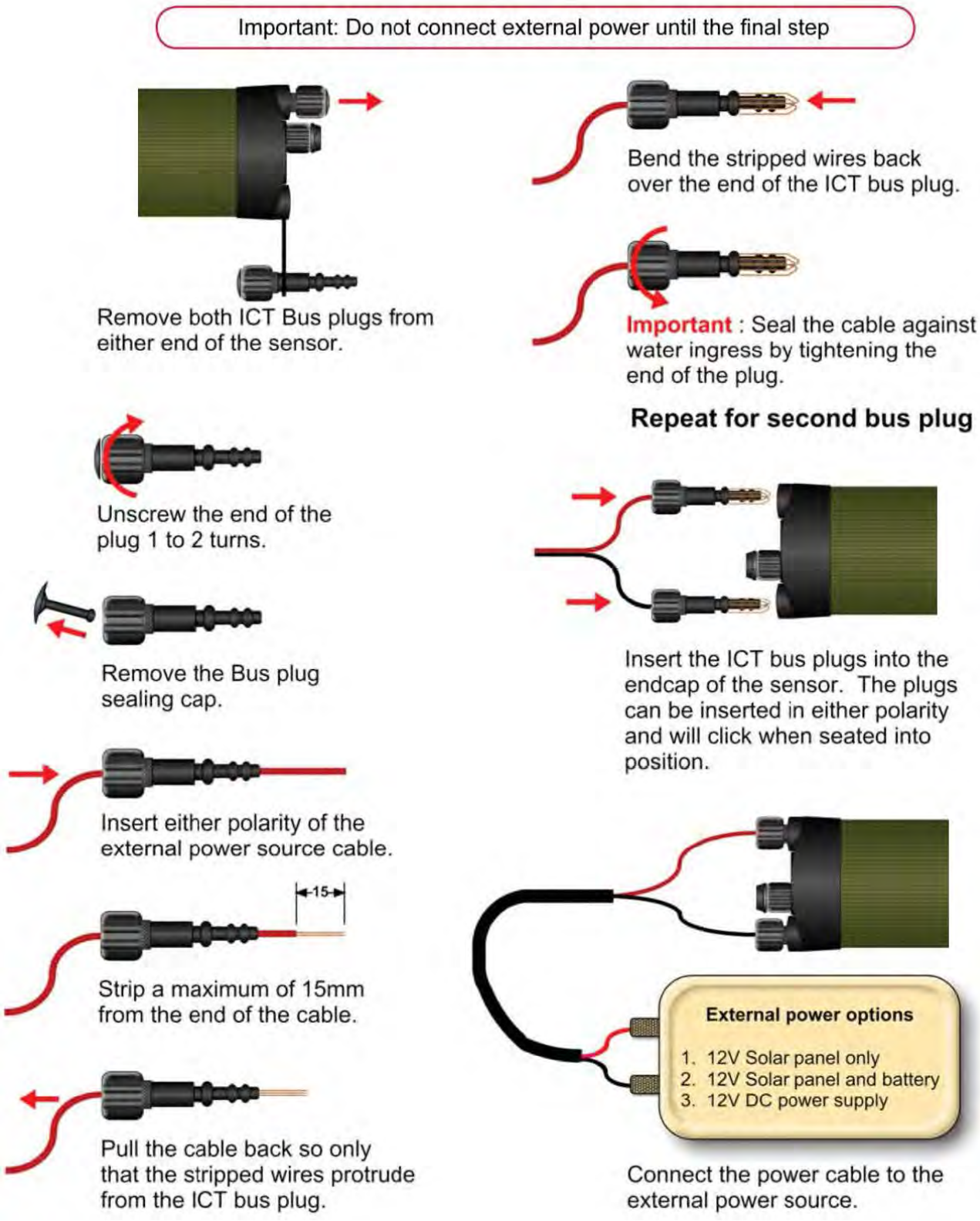


Figure 5: Using the unique ICT Power-Bus, and Power-Bus Plugs to trickle charge the SFM1's internal battery.

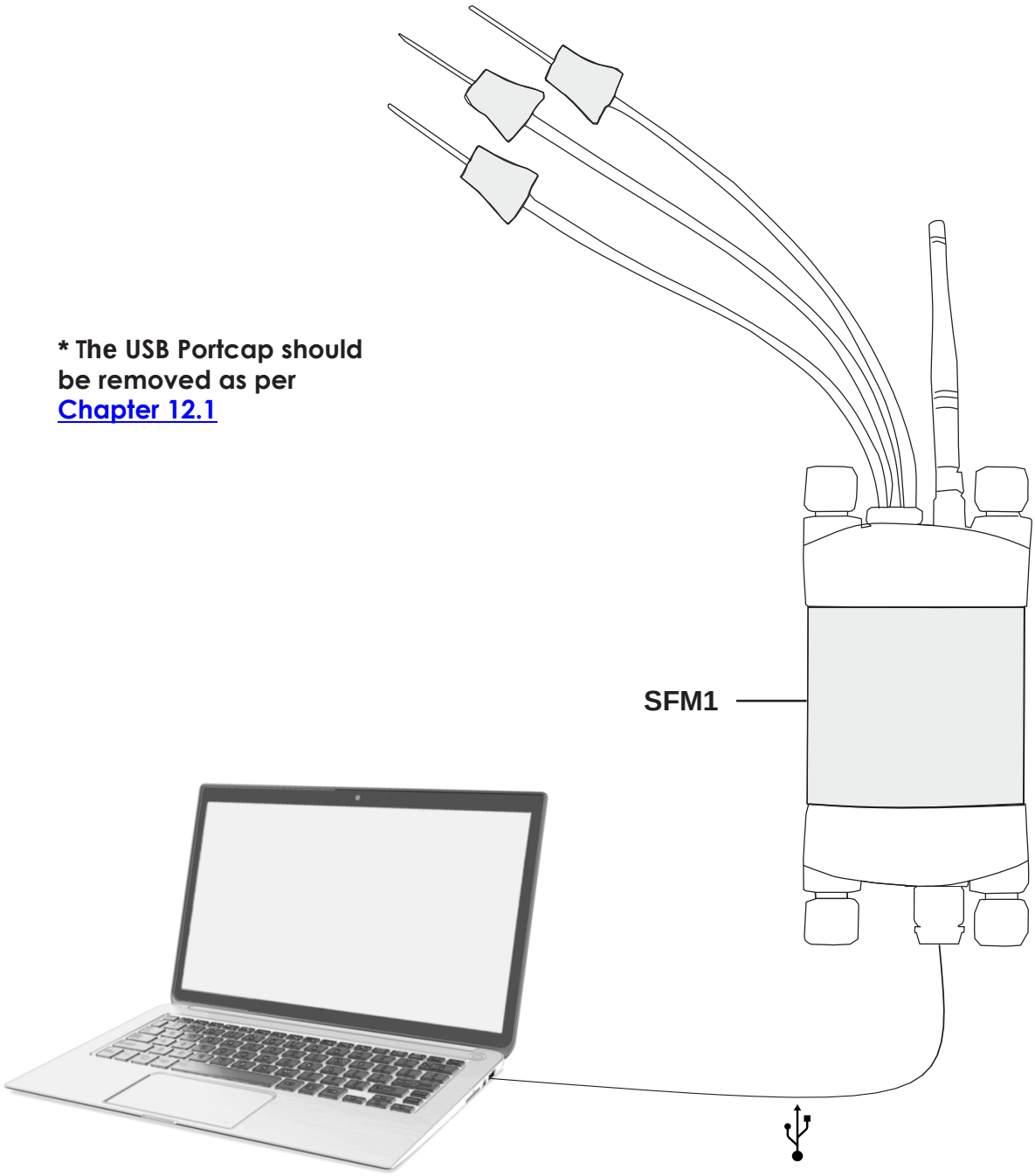
The unique power-bus plug design was developed by ICT International to simplify the electrical wiring process. It minimises the need for custom tools in the field requiring only that the outer cable sheath be stripped back to expose the copper wire. No other tools are required with all necessary components and fixings fully incorporated into the instrument design. Retaining straps ensure the power-bus plugs do not separate from the instrument when removed from the power-bus during wiring preparation and connection of external power.

Powering and charging the instrument is very easy and there are five different options to choose from providing flexibility in experimental design to suit your specific situation: Direct low-rate via USB[1], Direct via Solar Panel, External 12v Battery, combination of Solar Panel and External Battery and daisy-chaining instruments to share a power supply. The following diagrams illustrate the use of the unique power-bus plugs and the five different power configuration options that can be used to provide continuous instrument operation and trickle charging of the internal battery for long term deployment.

Note: [1] The SFM1 has a variable charge rate of between 60 and 200mA. The USB charge rate is 100mA. Maximum charge rate of 200mA is active when external voltage is above 16 volts DC (Solar Panel, Battery or CH24). Time required to fully charge the SFM1 @ 200mA is 3 hours. Time required to fully charge the SFM1 via USB is 6 hours.

9.1 Individual Power Supply Connections

9.1.1 Connecting Power Directly via a USB cable from a Computer



9.1.2 Connecting Power Directly via Solar Panel

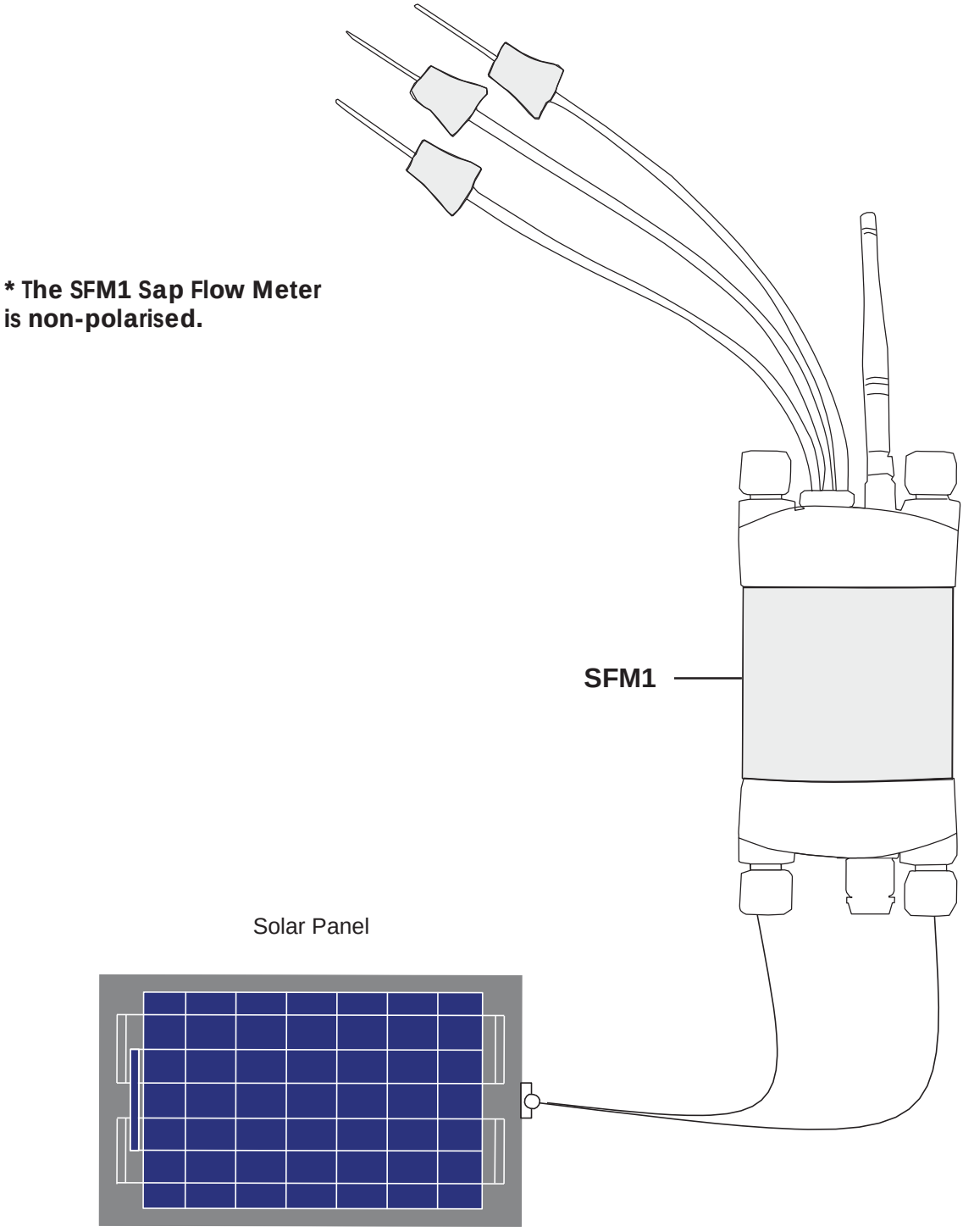


Figure 6: Solar panel connected directly to a SFM1 Sap Flow Meter

9.1.3 Connecting Power via External 12V Battery

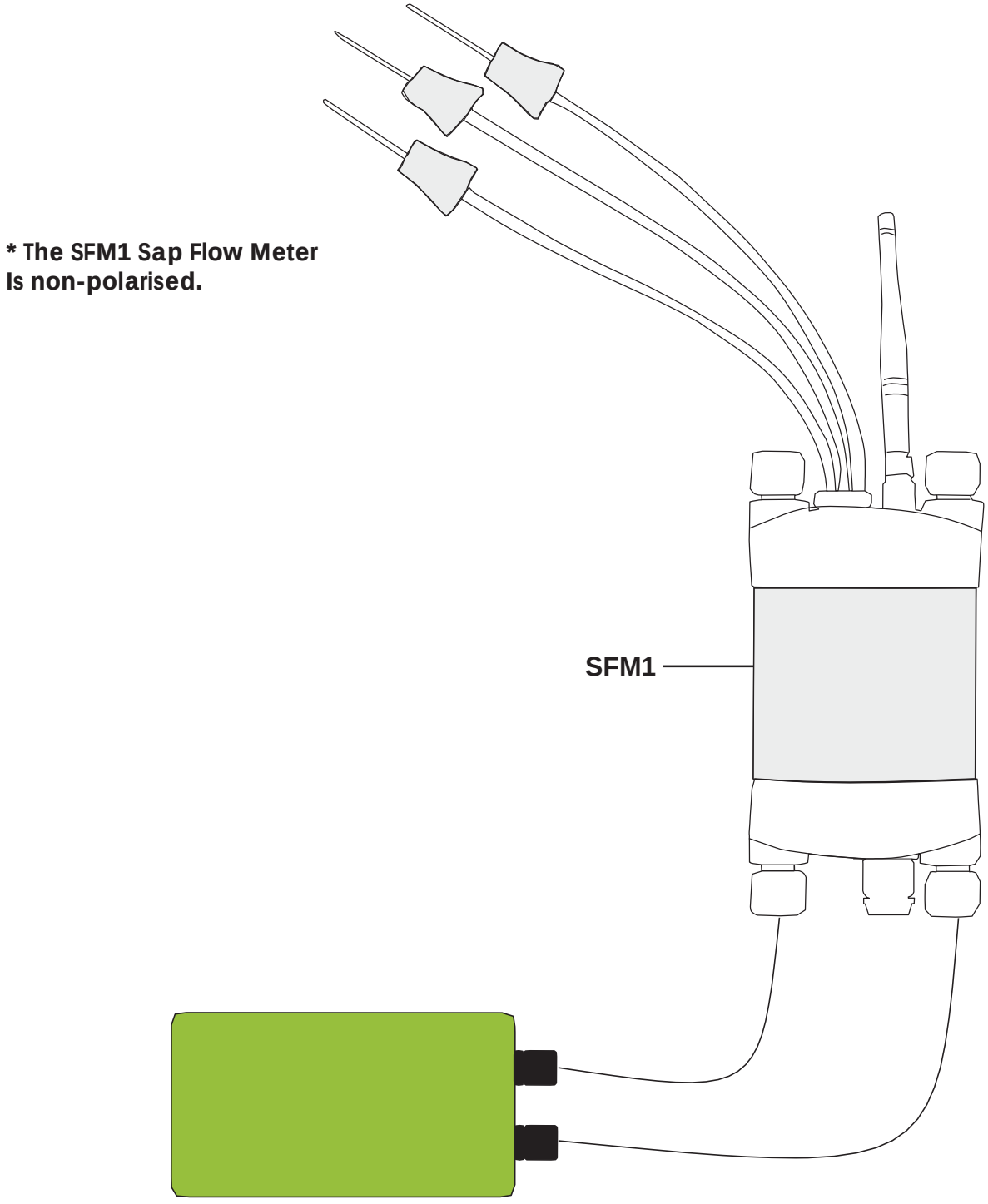


Figure 7: External 12V battery connected directly to a SFM1 Sap Flow Meter

9.1.4 Connecting Power via External 12V Battery and Solar Panel

*** The SFM1 Sap Flow Meter Is non-polarised.**

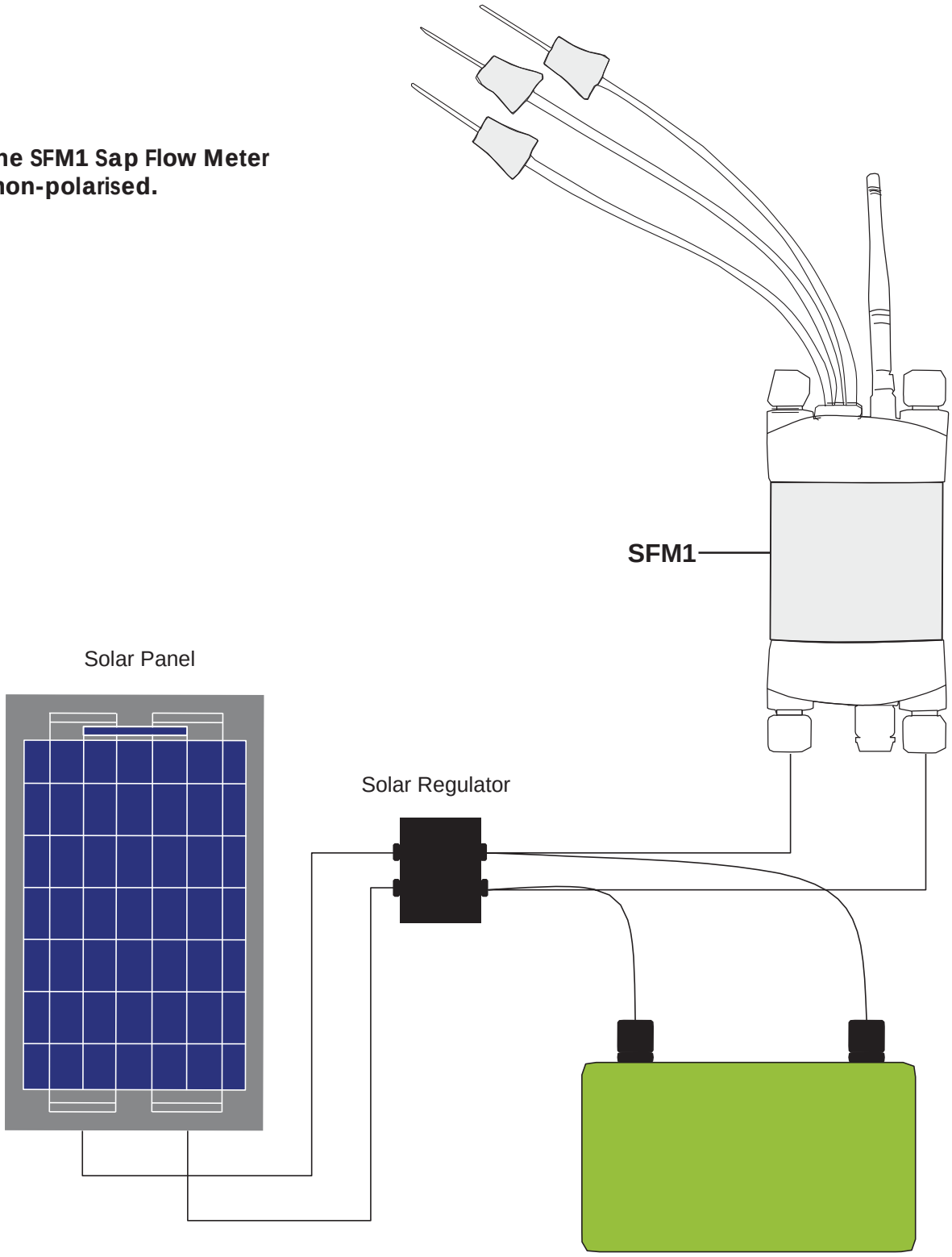


Figure 8: Solar panel connected to an external 12V battery with a solar regulator to charge a SFM1 Sap Flow Meter.

9.1.5 Sharing an External 12V Battery and Solar Panel via Daisy Chaining

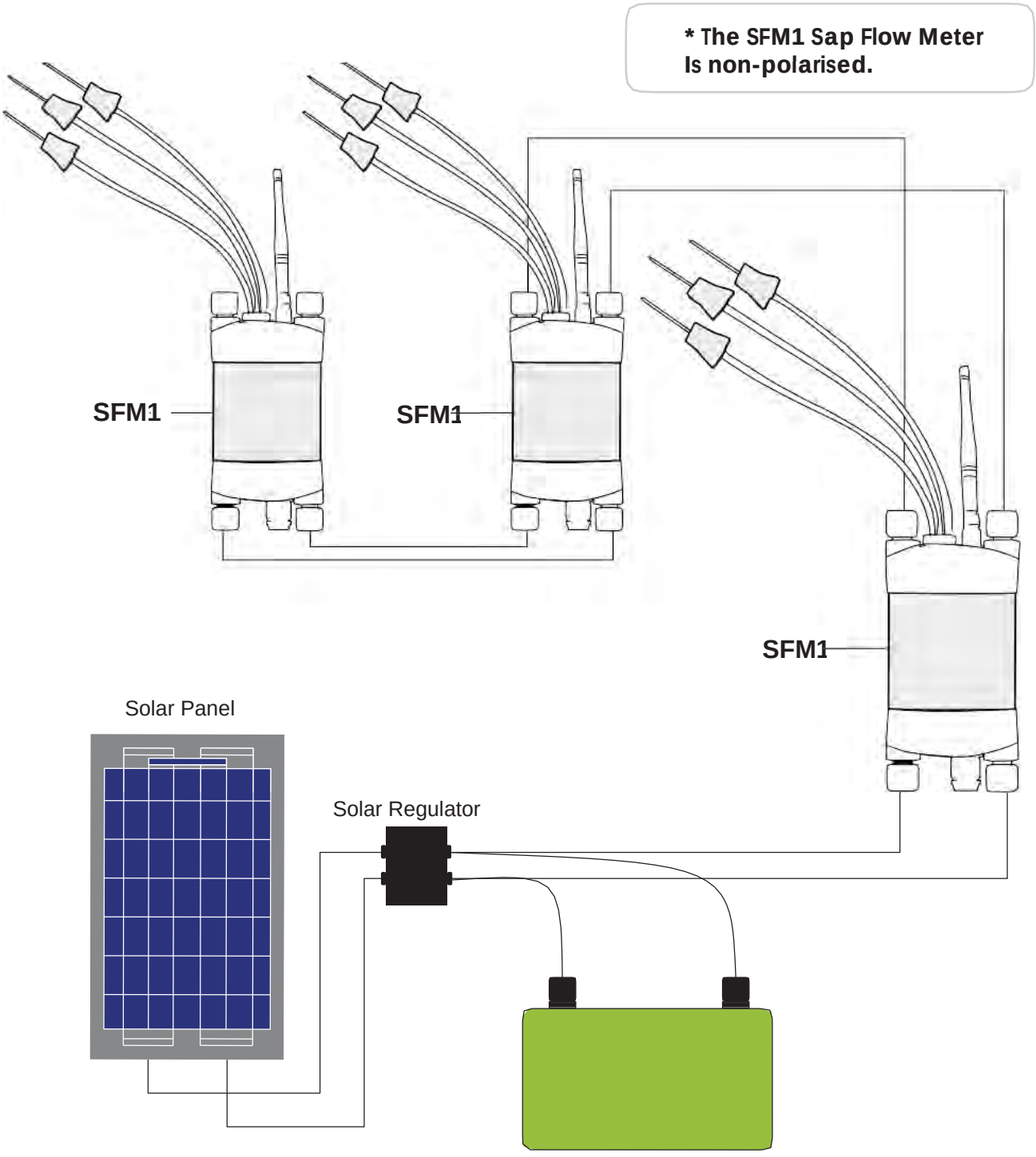


Figure 10: Solar panel connected to an external 12V battery with a solar regulator to charge multiple SFM1 Sap Flow Meters daisy chained together