

## 26 Table of Warnings

WARNING 1 - Please Read, Understand and Complete this checklist before unpacking the SFM1 Sap Flow Meter.....	10
WARNING 2 – The measurement needles of the SFM1 are made of hollow 1.3 mm stainless steel tubing. They can easily be bent, damaged or broken off if basic care is not taken in handling the instrument. If the needles are damaged please contact ICT international via our web site <a href="http://www.ictinternational.com">www.ictinternational.com</a> and submit a ticket explaining the issue and request an RMA # via the Service Desk). Needles must be replaced by a qualified technician certified by ICT International.....	18
Warning 3 – Water proofing cannot be achieved if the communication port cover is left unscrewed. Water entry via this port WILL cause damage and is not covered under warranty.	22
WARNING 4 When connecting power to the SFM1 use the power bus-ports on either side of the instrument at the same end. Do not split the power input with on one input top and bottom on the same side of the instrument. The gold plated copper pipes run the entirety of the instrument on each side, and whilst the power supply circuit is non-polarised placing a positive and a negative input into the same pipe (top and bottom of the instrument), this would cause a short circuit.....	33
WARNING 5 If connecting up the solar panel outdoors in sunlight do not short (touch the positive and negative) wires together, as this will damage the solar panel.....	45
WARNING 6 DO NOT PULSE WHEN NEEDLES ARE IN AIR. – This is a safety precaution, to ensure long serviceability of the heater. The heater is a monofilament wire that like an incandescent light bulb has a finite and unpredictable life span and can burn out if unable to dissipate the heat when operated in air. This warning should be particularly heeded when unpacking the instrument for the first time and becoming familiar with it, perhaps on a desk rather than installed in a tree.....	77
WARNING 7 – Never use the default Correction values for presentation of Sap Velocity or Sap Flow Data. The data WILL BE WRONG! Sap Velocity and Sap Flow data should only be presented when the corrections specific to the installation and the tree being measured have been entered or used in post processing Raw Needle Temperatures or Raw Heat Pulse Velocities in Sap Flow Tool.....	92
WARNING 8 – Entering values beyond the specific range of the input limits for each parameter will turn the data entry inside the boxes red to show an error has been made. ....	93
WARNING 9 - When preparing the bark surface it is essential that the reference or datum point be equal for both measurement needles in the axial direction around the heater. This is to ensure all measurement points are located at the same depth below the cambium and across the radial profile of the sapwood.....	106
WARNING 10 - If using a flat blade screw driver in the vertical orientation the screw driver will merely split the fibres and not provide a true measure of where the bark, phloem and cambium stop and the sapwood commence. ....	107
WARNING 11- When screwing the corer into the tree, Do NOT use force when starting the penetration. It may cause damage to the corer and small chips may come out of the tip. Gently guide the penetration with one hand and gently push and turn clockwise with the other hand at the centre of the borer handle. Hold the corer handle steady. When the initial 2-3 cm has been penetrated, use both hands to turn the handle.....	109
WARNING 12 - The increment borer should be removed from the tree immediately after the core has been extracted. Only a few moments too long in certain tree species will make the unscrewing procedure almost impossible, since the fresh wood in the tree immediately starts its healing process to seal the hole. ....	110

WARNING 13 - Be sure to take appropriate care following safety guidelines both of the [Methyl Orange MSDS](#) and when using hot water. .... 111

WARNING 14 – Removing the installation guide can be dangerous. The force required to extract the guide from the bark is significant and causes it to be released rapidly with little control. Under these circumstances the very sharp mounting pins have the potential to cause minor injury to the users fingers. To avoid this potential issue it is recommended to use a flat blade screw driver to lever the guide out slowly and carefully..... 113

WARNING 15 - Holes must be drilled slowly. If you attempt to force the drill into the stem you WILL break the drill bit. The power drill should be set to “drill speed” (for variable speed power drills) and the trigger fully depressed so that the drill bit is spinning at the highest speed. This will produce a clean cut of the fibres and reduce tearing and bruising of the xylem cells. The drill bit should not be pushed or forced into the stem under any circumstances. This simply increases wounding and forces fibres to be compressed into the end of the hole making needle insertion difficult or impossible. Use short, slow increments in drilling the hole removing the drill bit regularly to remove waste fibres and debris from the flutes of the drill bit. A small wire brush is useful for cleaning drill flutes during this process. Installing sap flow sensors is not for the “Fast, and the Furious”! Remember Aesop’s fable of the Hare and the Tortoise, slow and steady wins the race!  
..... 114

WARNING 16 – NEVER use a hammer or heavy object to hammer the needles into place. This will damage the needles..... 118

WARNING 17 - It is recommended that the regional settings of the Instrument are set to those of the computer that will be used to process the Sap Flow data. Failure to do this will result in a data file that is unreadable in both Excel and Sap Flow Tool Software because the file structure is the opposite of what the computer is configured for. .... 125

WARNING 18 – It is very important that the integrity of the original \*.CSV data file be maintained. Opening this file in Excel will corrupt the native Comma Separated Values file format as Excel introduces hidden formatting markers. These hidden markers have the potential to make the file unreadable in Sap Flow Tool. It is recommended that if the CSV file is opened in Excel save file as an \*.XLSX file format maintaining the original file name, but do not save any changes to the original \*.CSV file. .... 125

WARNING 19 – Do NOT attempt to download a \*.BIN file via the USB cable or MCC1 wireless modem. It is too large. You must download this file type by removing the MicroSD card..... 126

WARNING 20 - Failure to select “Append Mode” without renaming the log file will simply overwrite the contents of the existing log file..... 135

WARNING 21 this calibration function must only be used if a suitable calibration reference and isothermal calibration chamber is available. Failure to meet this criteria will result in an erroneous calibration being stored in the instrument that will cause the Sap Flow Meter to measure inaccurately. .... 166