Vu Temperature Sensor

Product No. 2320

This general-purpose Temperature sensor is for use with the Vu data logger. It is the most commonly used sensor and can accurately measure the temperature of air, liquids and soil.

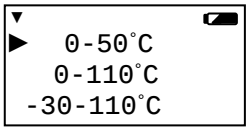
To change the sensor's range on Vu

This sensor will use whichever range is selected for Vu's built-in Temperature sensor.

Celsius ranges	Fahrenheit ranges
0 to 50°C (the default range)	0 to 120°F
0 to 110°C	0 to 232°F
-30 to 110°C	-22 to 230°F

- Use the up/down buttons ▲ ▼ to scroll to Meter and press enter ►.
- Press enter ► to open the Sensor menu.
- Scroll ▲ ▼ to Temperature and press enter ►.
- With the cursor pointing at **Set range** press enter ►.

  The cursor will indicate the current range selected. Use the ▲ ▼ buttons to scroll the list until the cursor is pointing at the required range. Press ► to select the range.



- Press ■ to return to the Sensor menu, then ■ to return to Meters window.

The range setting will be retained until changed by the user.

Practical information

- The sensor has a particularly low thermal inertia. The thermistor is housed at the end of the stainless steel tube, so it is the tip of the sensor that is most sensitive to temperature.
- Lay the sensor on its side, not its end, when measuring a surface temperature.
- Do NOT put any part of the sensor in a direct flame or on a hot plate.
- Temperatures higher than 150ºC will damage the sensor.
- The PVC insulation on the connecting cable has a working range of -10 to 85ºC, so keep this cable away from the source of heat.
- Avoid submerging the sensor beyond the stainless steel portion.
- Wash the sensor thoroughly after use.
- The boiling point of water will vary with changes in air pressure. At one atmosphere of pressure (101.3 kPa, 1013 mBar) pure water boils at 100ºC. Water boils when the vapour pressure of water equals the pressure of the gases above water, so if the pressure changes, then the temperature that the water boils at will also change.

Boiling Point of Water vs. Pressure

Pressure in kPA	Pressure in mBar	Temperature in ºC
101.3	1013	**100.0**
99.5	995	**99.5**
97.8	978	**99.0**
96.0	960	**98.5**
94.4	944	**98.0**
92.7	927	**97.5**

Suitable Primary Activities

- Exploring e.g. How to decide when it is hot or when it is cold? How warm is our classroom?
- Recording e.g. The temperature game.
- Investigating e.g. What happens when I am not here? How does heat move around? How does temperature change as you heat water? How heat changes against time? When materials combine, there will be a reaction.
- Insulation investigations e.g. Heat gain and loss.
- Changing of state e.g. Freezing and melting of water.
- Earth, Sun and Moon e.g. Seasons.
- Environment: e.g. Bug Alert. Why is it different over here? Habitats. Pond and river studies.
- Solar energy.
- Monitoring using 2 Temperature sensors e.g. What shall I wear today? Keeping warm. Where is it cold and hot? Decay. Are your hands warmer than mine? Goldilocks. Hot drinks. Too hot!

Advanced User information

Resolution 0.1˚C (0.1˚F)
Accuracy ± 0.5˚C at 0 - 70˚C, rising to ±1.0˚C at extremes of range.

- The 3 mm by 200 mm AISI 316 stainless steel tube has a high resistance to corrosion from a wide variety of weak acids and alkalis. Some environments e.g. saltwater may cause some discolouration to the stainless steel tube but this will have no effect on the sensor's performance.
- The sensor can be left in an alkaline solution such as Sodium Hydroxide (NaOH) for up to 48 hours, with only minor discoloration. We do not recommend use in a solution whose concentration is greater than 3 mol dm^{-3}.
- The maximum length of time recommended for exposure to an acid is dependent on the acid's concentration. In general, we do not recommend that temperature sensors be left to soak in acids of between 1 – 3 mol dm^{-3} concentrations for longer than 48 hours.

  The exceptions to this rule are Hydrochloric acid (HCl), and Sulphuric Acid (H_2SO_4). The maximum recommended times for exposure are:

Concentration of hydrochloric acid	Maximum exposure
1 mol dm^{-3}	20 minutes
2 mol dm^{-3}	10 minutes
3 mol dm^{-3}	5 minutes

Concentration of sulphuric acid	Maximum exposure
1 mol dm^{-3}	48 hours
2 mol dm^{-3}	20 minutes
3 mol dm^{-3}	10 minutes

Warranty

All Data Harvest Sensors are warranted to be free from defects in materials and workmanship for a period of 12 months from the date of purchase provided they have been used in accordance with any instructions, under normal laboratory conditions. This warranty does not apply if the Sensor has been damaged by accident or misuse.

In the event of a fault developing within the 12 month period, the Sensor must be returned to Data Harvest for repair or replacement at no expense to the user other than postal charges.

Note: Data Harvest products are designed for **educational** use and are not intended for use in industrial, medical or commercial applications.

WEEE (**W**aste **E**lectrical and **E**lectronic **E**quipment) Legislation

Data Harvest Group Ltd is fully compliant with WEEE legislation and is pleased to provide a disposal service for any of our products when their life expires. Simply return them to us clearly identified as 'life expired' and we will dispose of them for you.