



Thermocouple Pod (Model EP306)



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- Plug and play installation with **e-corder** units
- Use with either a K- or T-type thermocouple probe
- -270 °C to 485 °C (K-type probe)
- -270 °C to 385 °C (T-type probe)
- Offset mode for relative measurements
- Raw signal corresponds to NIST ITS-90 thermoelectric emf values for easy calibration

Description

A compact signal conditioner for use with an **e-corder** unit, enabling continuous monitoring and recording of temperature from K- or T-type thermocouple probes. It can also be used in offset mode to monitor small variations around a fixed temperature.

Thermocouple Compatibility

The Thermocouple Pod can be used with most K-type and T-type thermocouples. Suitable thermocouple probes include:

- ET405 K-type Thermocouple Probe
- ET1400 T-type Thermocouple Probe (± 0.1 °C accuracy between 0 and 50 °C)

Applications

The Pod can be used as a general purpose laboratory thermometer for both research and teaching use, including melting and boiling point determinations, measurements of heats of reaction, and calorimetric kinetic experiments.

Theory of Operation

The raw signal from the Pod corresponds to the thermoelectric emf values for K- or T-type thermocouples as described by the NIST ITS-90 thermocouple database, available at:

<http://srdata.nist.gov/its90/main/>

It can be easily calibrated with the Chart Thermocouple extension, or with accurately known temperature sources.

Specifications

Input impedance:	~1 k Ω
Gain:	x100
Range settings:	5, 12, 25, 50, 125, 250, 500 °C ($\pm 0.2, 0.5, 1, 2, 5, 10, 20$ mV)
Offset mode ranges:	$\pm 1, 2, 5, 12, 25$ °C ($\pm 0.05, 0.1, 0.2, 0.5, 1$ mV)
Extent of offset:	-50 °C to 385 °C (T-type), or 485 °C (K-type)
Output signal:	± 2 V maximum
Cold junction compensation:	Optimized at an ambient temperature of 20 °C, 40.3 μ V/°C
Accuracy:	0.1%

DC drift:	2 μ V/°C
Low pass filter settings:	1, 2, 5, 10, 20, 30 Hz
Response time (@ 30 Hz):	~13 ms for 0 – 90% of final value. Probe size will limit response time.
Amplifier noise:	1 μ V p-p (0.1 to 10 Hz)
Input connector:	Miniature thermocouple socket
Dimensions (l x w x h):	108 x 58 x 35 mm
Weight:	~200 g
<i>eDAQ Pty Ltd reserves the right to alter these specifications at any time.</i>	

WARRANTY: eDAQ Hardware units are supported by a one year warranty