

Tail Flick Apparatus

with

Temperature Sensing

Provides three, general purpose, temperature inputs



Columbus Instruments Tail Flick Apparatus model TF-2

Objective and accurate assessment of pain is one of the most difficult measurements to perform. The technique of D'Amour and Smith (1941) relies on latency to flick of the tail from onset of a focused beam of intense light. This method, employed for decades, has now been augmented by the ability to monitor temperature at the site of exposure. Columbus Instruments model TF-2 is the newest model in our line of analgesia/nociceptive monitoring products. TF-2, an expanded version of our time-tested Tail Flick Apparatus is equipped with three "T"-type thermocouple inputs that allow concurrent measurement of room, rectal and exposure site temperatures. All three temperature readings are recorded at the moment of nociceptive action. TF-2 maintains all the programmable features of the our original Tail Flick Apparatus and adds improved PC interface/software as well as animal management capability. TF-2 is the next generation of products to provide a broader set of parameters for better assessment of the perception of pain in small laboratory animals.



C o l u m b u s I n s t r u m e n t s

Toll Free [US]: (800) 669-5011 Tel: (614) 276-0861 Fax: (614) 276-0529

Email: sales@colinst.com WebSite: www.colinst.com

Features of TF-2

Fast Response Temperature Probe

TF-2 employs a small (0.016", 0.4mm diameter) Teflon sheathed probe to sense tail temperature. The probe's size allows it to interleave within the fine hairs that coat the tails of most rodents and make contact with the skin surface. Probe position is such that it is oriented at the point of most intense exposure

3-channels of Temperature Sensing

TF-2 allows for the concurrent monitoring of up to three temperature "T"-type thermocouple sensors. Three temperatures provides full disclosure of the conditions under which the test was performed. Temperature channels two and three may be employed for rectal and room measurements. TF-2 records all three temperatures at the time of tail-flick. All temperatures are sensed with 0.1 degree C accuracy over a range of 0-55 degrees C. Full calibration of the sensors can be performed from the front panel to allow GLP validation.

Rapid onset and control of stimulus

TF-2 maintains the halogen light source in a ready-state by keeping the filament pre-heated with a small current. A generic scale (0-25) defining stimulus intensity is user adjustable in 0.1 increments. Automatic cutoff of the stimulus, to prevent over exposure, is user adjustable from 5-30 seconds.

High Precision Latency Detection

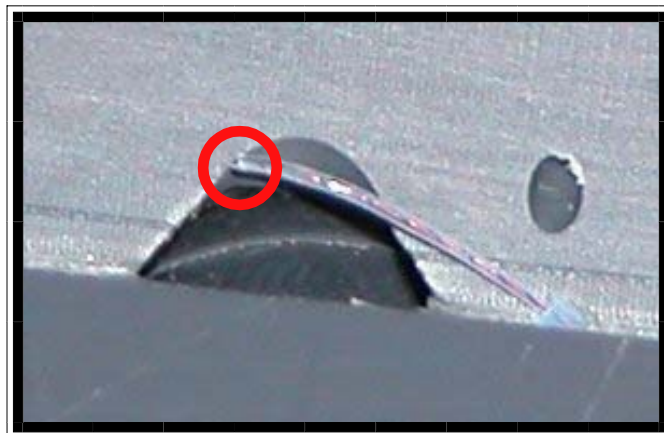
TF-2 provides a automatic detection of tail flick (by photocell interruption) as well as an interactive (user performed) method. Both processes detect latency with a temporal resolution of 0.01 second.

Animal Management Capability

TF-2 includes basic animal management capability that allows identification .

Fully Equipped Standard Unit

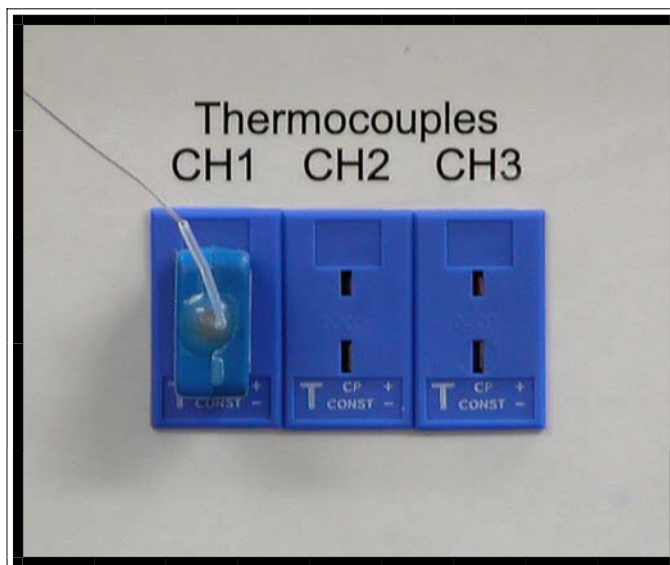
TF-2 is equipped with direct support for an attached printer as well as PC interface and associated software for Windows. The printer port accepts any printer capable of the Centronics standard ASCII character/control set. All data on the PC is stored in a simple format for integration with spreadsheets or statistical analysis programs.



TF-2's fast response temperature sensor



TF-2's display showing ambient temperature



TF-2's Three Temperature Inputs

Ordering Information:

1435 TF-2 with Printer Port, RS-232 and Software



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