



Dancer Design

INNOVATION IN ELECTRONICS

Custom solutions for Neuroscience and Psychology Research

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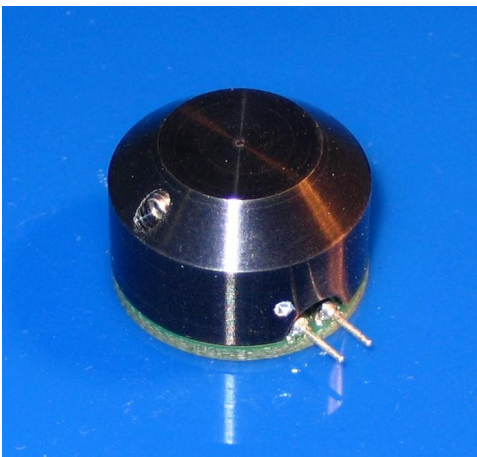
"Tactor" Miniature Stimulators

Dancer Design tactors are miniature vibrotactile electromagnetic solenoid-type stimulators. They are designed to be attached to the skin using adhesive rings, but may also be incorporated into objects or clothing.

The tactor can deliver a strong tactile stimulus at frequencies ranging from zero (static indentation) to 300 Hz. The vibration amplitude can be varied by changing the drive voltage. These characteristics allow for the delivery of qualitatively and quantitatively different stimuli, which may be useful in conveying information to a person.

Features

- Small size: 18mm diameter, 12mm high
- Light weight: 5.4 grams
- Design optimised for efficiency using finite element analysis software
- Flat probe and fixed surround optimally stimulates RA 1 receptors for localised stimulation
- Can be driven by standard audio amplifiers or Dancer Design Tactamp
- Wide frequency range: 0 – 300Hz
- Surfaces washable in alcohol for disinfection
- Screened design means low EM emission. Compatible with EEG.



Note: because of friction in the device tactors are not suitable for delivering stimuli at very low amplitudes, such as around the threshold of sensation. Please contact Dancer Design about other devices which are suitable for this.

Electrical and mechanical properties

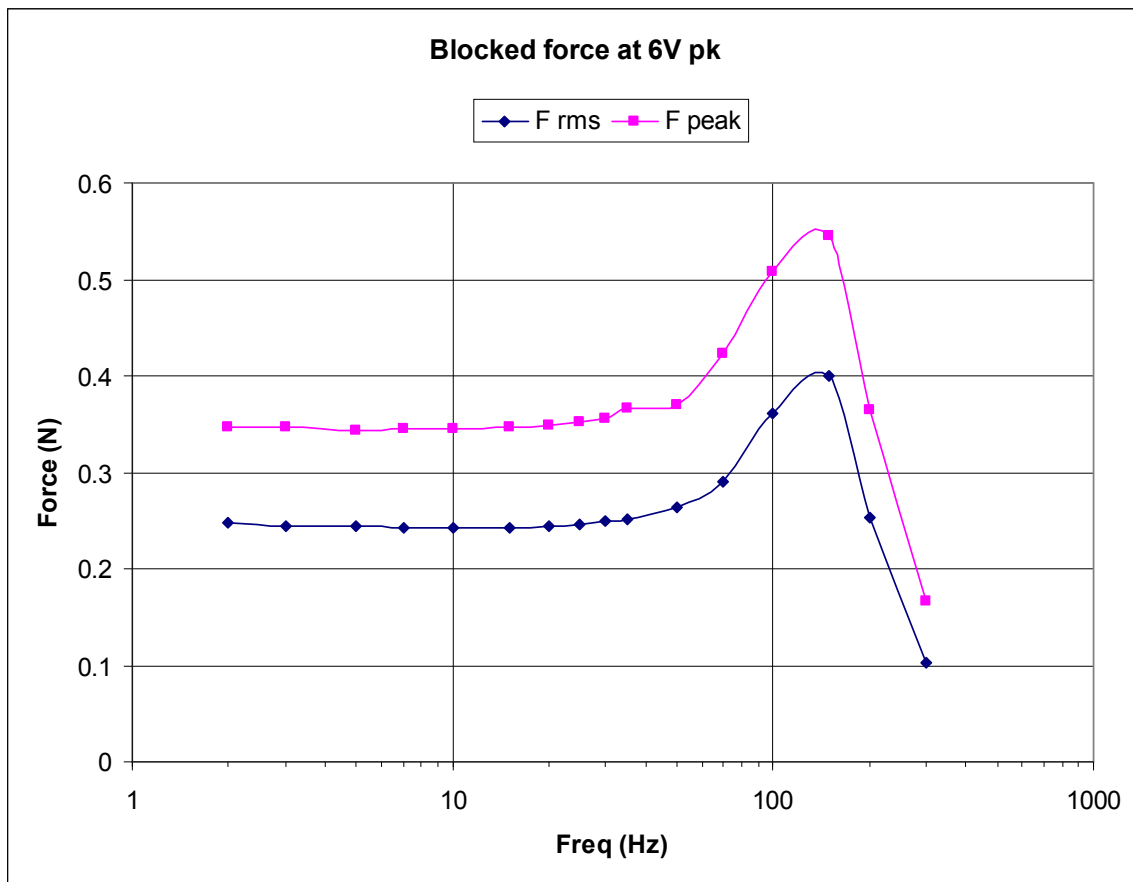
- DC resistance: 18Ω
- Recommended maximum drive voltage: 6V peak sine wave, 6V DC
- Maximum free extension of probe at 6V DC: $\sim 2\text{mm}$
- Maximum static force delivered by probe at 6V DC: 0.35N

Materials

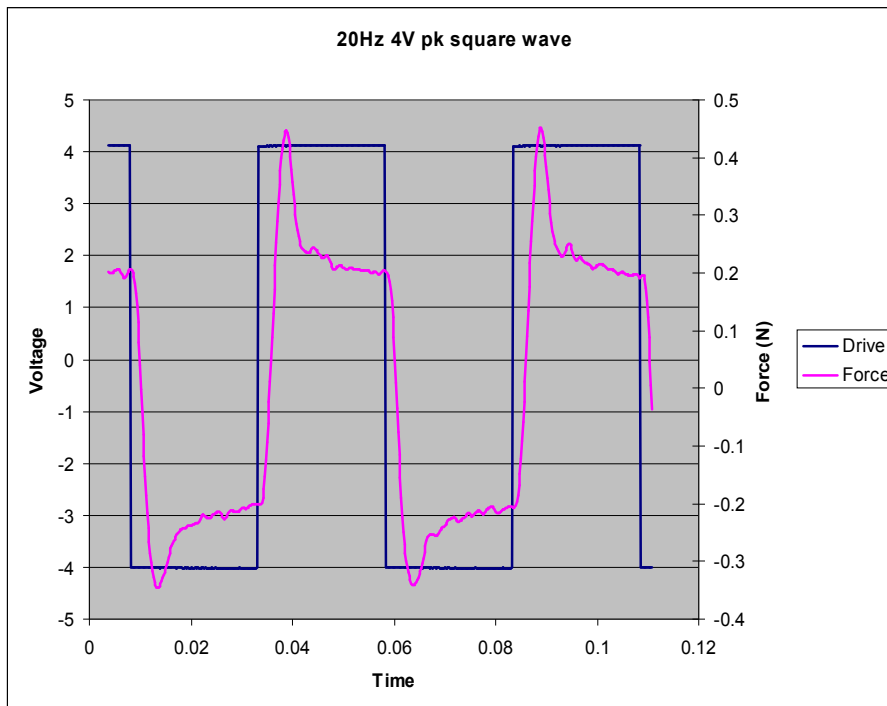
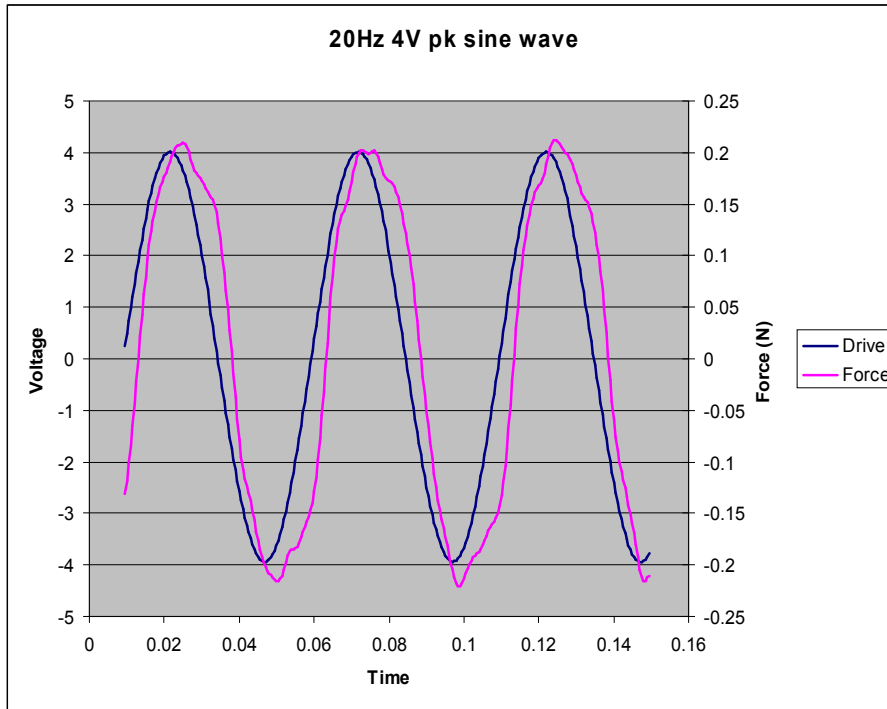
- Base: FR4 glass reinforced epoxy laminate
- Probe: Epoxy resin
- Cover: Anodised aluminium
- Connector pins: Tin plated brass
- Optional adhesive attachment ring: hypoallergenic adhesive tape

Force / frequency plot

Probe attached to rigid strain gauge. Drive voltage: sine wave, 6V peak.



Force output / voltage input characteristics at 20Hz



For further information, advice on use of factors and custom drive solutions, contact Dancer Design: chris.dancer@dancerdesign.co.uk