

Headphone Kit

Model HPK

OPERATION MANUAL



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1. Introduction

The Hydrological Services Headphone Kit HPK conditions the signal from a current meter so that a tone is heard through headphones when the meter contacts close. A volume control allows adjustment of the sound to a comfortable level. When used with a stopwatch, a traditional, low cost alternative to current meter measurement is achieved. A x10 input provides a tone on every 10th contact closure which allows very fast flows to be easily counted. Internal jumpers provide for 2 extra user preferences : a short tone when the contacts first close, or a continuous tone while the contacts are closed, as well as 2 contact debounce settings. The unit is powered by a 9V PP alkaline battery.



2. Operation

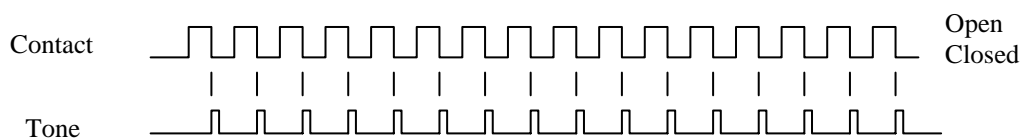
2.1 Connections

A 3.5mm headphone jack plug can be inserted into the headphone socket. You can use fully enclosed headphones (as supplied) or simple earphones (as used with an iPod). The headphone jack plug may be either stereo or mono.

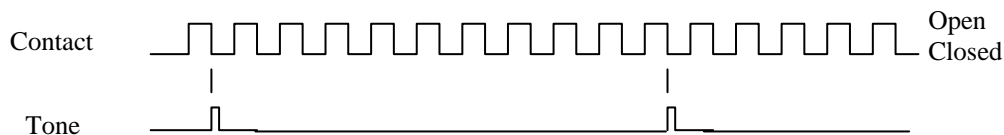


The current meter is plugged into the red and black banana sockets. The black socket is “common” and the red plug may be put into the “x1” or “x10” socket.

When in the “x1” socket you will hear a tone for each contact closure.



When in the “x10” socket you will hear a tone for every 10th contact closure.

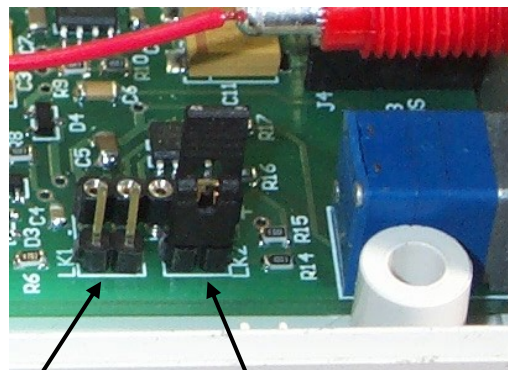


This is useful when the current meter is spinning too fast to count the pulses.

2.2 Internal Options

Remove the 4 screws on the rear of the unit and separate the two case halves. This will reveal a circuit board with 2 jumpers marked LK1 and LK2. (When the jumper is put on the two pins, it is “ON” – and when the jumper is on one pin, it is “OFF”. These jumpers allow the following operator preferences :

Jumper	Mode	Description	Preference
LK1	OFF	Jumper on 1 pin only	Short audio tone when contacts first close.
LK1	ON	Jumper joins 2 pins	Audio tone while contacts are closed. (x1 + COM)
LK2	OFF	Jumper on 1 pin only	2.5mS Contact debounce (mag head meter)
LK2	ON	Jumper joins 2 pins	10mS Contact debounce (cats whisker meter)



LK1 – shown with jumper off

LK2 – shown with jumper on

2.3 On / Off Volume Control

When the volume control knob is turned fully anti-clockwise you will feel a click as the unit turns off. It is **important** to always leave the unit in the **OFF** position, otherwise the batteries will go flat after about 18 hours.

Turning the volume control knob clockwise, will increase the sound level in the headphones.

2.4 Batteries

The Headphone Kit HPK operates on 1 x 9V PP alkaline battery. To change the battery :

- Slide open the battery cover.



- Replace the 9V PP battery – noting the polarity.



- Replace the battery cover.

3. Specification

3.1 Headphones

Brand + Model	Sony MDR-XD100
Connector	3.5mm stereo plug
Details	40mm dome driver 1500mW Power Sensitivity 100dB/mW Response 12 – 22,000Hz 70 ohm impedance at 1kHz 175g without cord

3.2 Signal Conditioner

Power Source	9V PP Alkaline Battery (supplied) or 9V NiMH Battery
Consumption	8 mA (contact open) 9mA (contact closed)
Power ON / OFF	Volume control turned fully counter-clockwise – click.
Volume	Rotary volume control
Headphone socket	3.5mm stereo jack socket (either stereo or mono jack plug may be used)
Meter Contact Input	x 1 - beep for every contact closure x 10 - beep every 10 th contact closure
AudioTone	1.0 kHz
Internal Jumper Options	LK1 Jumper off : Short tone when contact first closes LK1 Jumper on : Tone sounds while contact is closed LK2 jumper off : 2.5mS contact debounce LK2 jumper on : 10mS contact debounce
Mounting	Belt Clip
Dimensions	114mm x 72mm x 45mm
Weight	196g (with 9V battery installed)
Environmental	-20C to + 70C at 95% RH Non Condensing (No IP rating)