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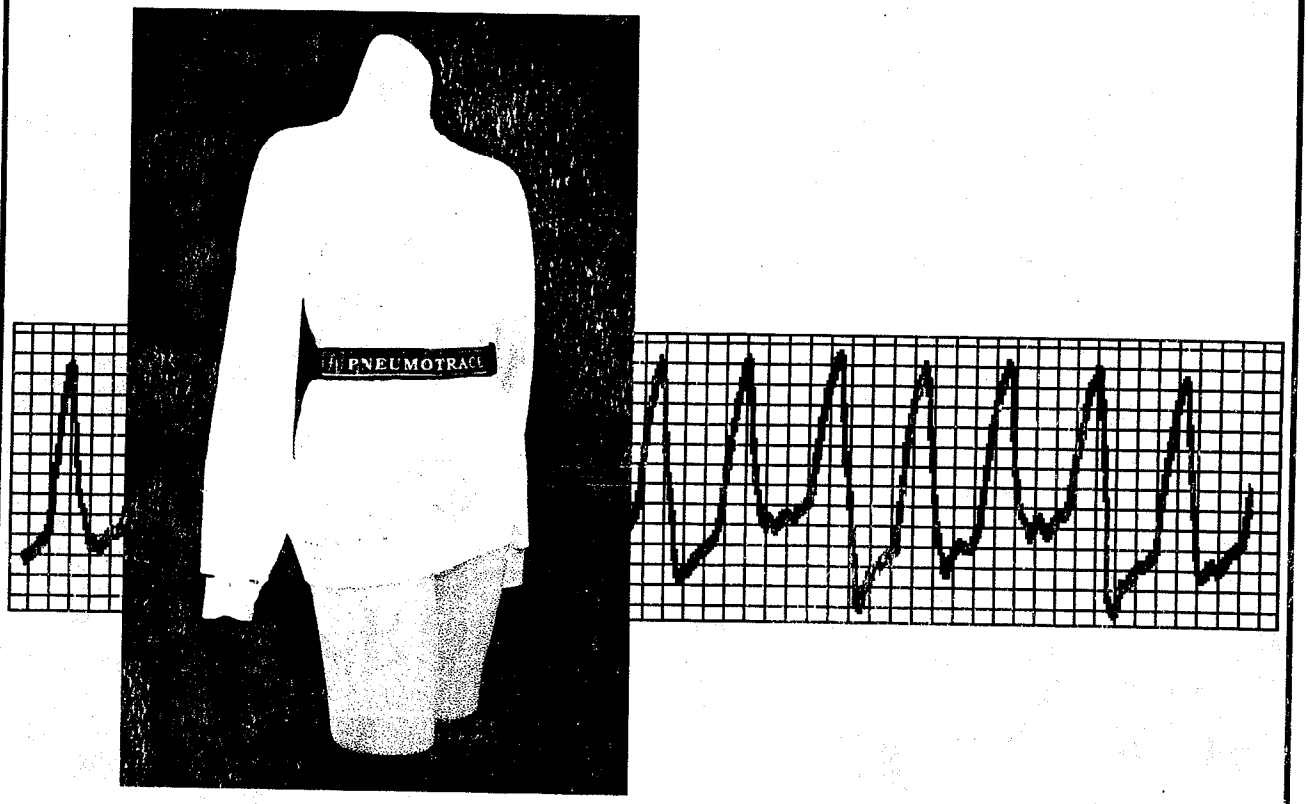
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Find the *UFI PneumoTrace II 1132* at our website: ***Click HERE***

INSTRUCTION MANUAL



model 1132

Piezo-Electric Respiration Transducer

December 1998

UFI *serving science with experience*

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WARRANTY

All UFI instruments are warranted against defects in materials and workmanship to the original using purchaser for a period of one year from the date of original purchase. The warranty is void if our inspection shows the equipment has been tampered with, or installed at variance with factory designated procedures or has been subjected to negligence, misuse, accident beyond normal usage, or has had it's serial number altered, defaced, or removed.

All questions regarding the warranty stated above should be directed to:

CUSTOMER SERVICE DEPT.
UFI
545 Main Street Suite C2
Morro Bay, CA 93442

NO person, including any dealer or agent is authorized to assume any liability for UFI. When corresponding or communication with UFI concerning your equipment, please include the model number and serial number of the instrument.

UFI instruments and transducers are subject to continuous improvement. We reserve the right to modify any design or specification without notice and without incurring any obligation.

ALL UFI TRANSDUCERS AND ELECTRODES ARE COVERED BY OUR EXCLUSIVE "LIFELINE® WARRANTY" AS OUTLINED BELOW

LIFELINE® WARRANTY

If your UFI transducer, electrode, or electrode tester ceases to operate---regardless of the cause---accidental, intentional, or whatever---**RETURN IT TO US.**
We will repair it or replace it with a new one for a minimal handling charge, as listed below:

Model 1010, 1010C, 1020, 1020EC, 1020FC, 1110	$19.50
Model 1030, 1040, 1070	$40.00
Model 1081 & 1081 SNP	$ 8.50
Model 1089 MK II & MK III	$55.00
Model 1130, 1131, 1132	$27.50

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MODEL 1132 PIEZO-ELECTRIC RESPIRATION TRANSDUCER INSTRUCTIONS

I. INTRODUCTION

The UFI Model 1132 PneumoTrace® is a solid-state transducer which measures respiratory changes in chest or abdominal circumference. It is a piezo-electric device, which responds linearly to changes in elongation, generating a positive voltage as the length increases.

The 1132 PneumoTrace® is SELF EXCITING, i.e., it does NOT require that an "excitation voltage" be supplied. As a result, it may be used as a single-ended input for any polygraph or strip chart recorder. It's nominal output with respiration can be anywhere between 20 and 400 mV. Some attenuation of its output may be necessary. A simple resistor voltage divider will do.

The Model 1132 is designed to work into an input impedance of 1 MΩ.

SPECIFICATIONS

Size	1.5" wide x 0.125" thick x 9" long
Output	Nominal 20 to 200 mV
Cable length	6' standard, can be up to 50'

WASHABLE!!!!!

Covered by UFI's exclusive LIFELINE® Warranty

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II. ATTACHMENT CONSIDERATIONS

Three fundamental considerations apply to use of the PneumoTrace® for measuring respiration. These are:

1. Placement on your subject
2. Adjusting the PneumoTrace® for correct size
3. Adjusting the PneumoTrace® for correct tension

While none of these techniques are difficult to master, it is wise to practice with the PneumoTrace® on an experimental subject so that you can achieve a high level of expertise and confidence.

III. PLACEMENT CONSIDERATIONS

It is best to place the PneumoTrace® around the body at the level of maximum respiratory expansion. This will vary considerably between erect and supine positions.

The PneumoTrace® is a sensitive transducer! When the transducer is placed around the chest at the level of the left ventricle, cardiac pulses can be apparent...especially during the pauses between inspiration and expiration.

IV. SIZE CONSIDERATIONS

The basic PneumoTrace® is supplied as an elastic belt approximately 9" long. VELCRO™ closures on the ends and VELCRO™ extenders allow adjustment to body circumferences from 12" to over 40"

Using these extenders we have even measured the respiration of a horse! Additional extenders are available for a slight charge, or you can easily purchase sections of VELCRO™ from your local sewing supply store.

V. TENSION ADJUSTMENT

Correct tension adjustment of the PneumoTrace® is the most critical parameter affecting successful operation. The PneumoTrace® must initially be snug to maximize sensitivity of the system to respiratory measurement. To achieve proper tension, stretch the belt around the body, and have the subject inspire and hold the breath. At maximum inspiration stretch the belt to nearly maximum extension (so that it is almost taut) and fasten the VELCRO™ closure. The PneumoTrace® will now record respiratory changes, with maximum sensitivity.

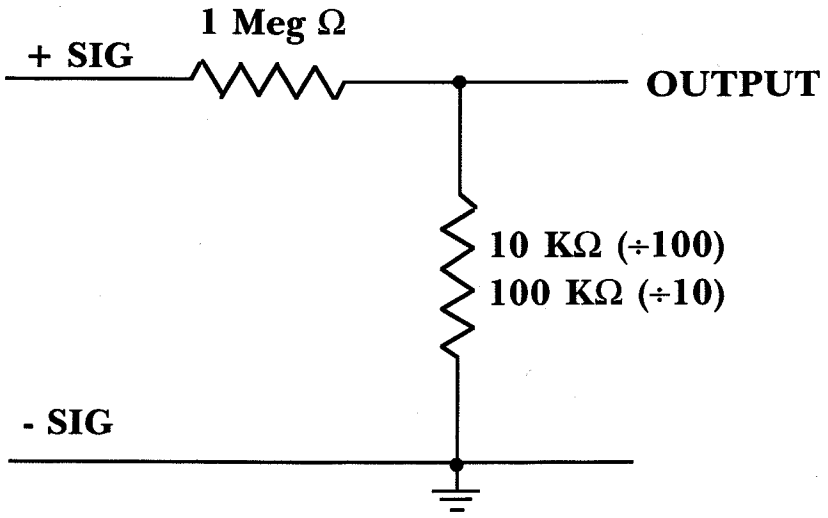
VI. CONNECTION CONSIDERATIONS

A. The 1132 requires an input impedance of at least l00 KΩ, but preferably higher and a signal conditioner with a low frequency response extending below 1 Hz.

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B. The 1132 can easily produce pulses of several volts or more during handling and placement. If the monitoring equipment cannot handle inputs of this magnitude, the 1132 should be disconnected from the monitoring equipment until after it has been attached to your subject.

C. Some amplifiers will saturate on signals of 4-5 mV. In such a case, a simple resistive voltage attenuator (as shown below) should be inserted between the transducer and the instrument input to reduce the signal to an allowable level.



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VII. MISCELLANEOUS CONSIDERATIONS

DISTANCE--------- The PneumoTrace® has been used at distances of up to 60 feet from the signal conditioning/recording instruments with absolutely no degradation of signal quality. We expect that this distance could be extended to several hundred feet without problems.

RECORDING SMALL ANIMAL RESPIRATION---- UFI has developed a smaller version of the PneumoTrace® which has been successfully used to record small animal respiration.

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