Ambulatory Monitoring, Inc.

PRODUCT CATALOG

Motionlogger

AMI offers an actigraph to fit all budget and protocol requirements. Various model Motionloggers offer applications that include basic sleep estimation; simultaneous environmental data collection; and time-of-day features. A range of recording capabilities exist including four validated sleep algorithms, PLM analysis, and a suite of circadian rhythm analyses. Software for device operation and data analysis is available for Windows 2000/XP and comparable systems – and our ActMe Operational Software allows for quick, easy download of actigraph data into the Fatigue Avoidance Scheduling Tool ("FAST") Program. All models are Lithium battery powered for long use and come with a full one-year warranty.

DESCRIPTION	CATALOG NUMBER

MicroMini-Motionlogger

MicroMini-Motionlogger® Actigraph

1-3/8" diameter waterproof MicroMini-Motionlogger weighing 0.9 oz. encased in a plastic enclosure. Features include user exchangeable battery and an approximate 4,000-hour battery run time. Contains 32K non-volatile memory; 16 Hz sample rate; 2-3 Hz bandwidth; modes of operation: Zero Crossing (ZC) or Proportional Integrating Measure (PIM, selectable high or low sensitivity); one-minute fixed epoch length (yielding up to 22 days of recording time per initialization in ZC and 11 days in PIM). Requires Micro Interface/Connector (Cat. #24.000C) to download data. Ask about custom graphics for the unit's face. Faux watch face standard.

24.000BEF

Micro Interface/Connector

MicroMini-Motionlogger® Actigraph Interface/Connector with ACT Operational Software

Required for initializing and downloading data from MicroMini Motionloggers.

24.000C
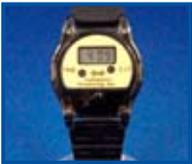
Micro SleepWatch

Micro Motionlogger Sleep Watch

Water resistant, 192K memory device with 1-4 month runtime, event marking, status feedback, multi-channel collection, off-wrist detection, and time-of-day display with a time-adjust feature for time zone change.

24.000SW

Micro Motionlogger Sleep Watch Interface/Connector with ACT Operational Software

Required for initializing and downloading data from Micro SleepWatch.

24.000SWI

(Analysis Software sold separately.)

Family of MicroMini's

Consists of single sensors similar to the MicroMini-Motionlogger activity monitor, which (together or separately) allow for multi-parameter data collection by means of a common Interface (Cat. #24.000C) and multi-channel integrated graphic display in ACTION4 analysis software.

Micro Light Sensor

Micro Light Sensor Ambient light sensor with a 1 part in 256 resolution. Possible ranges include 0 to 1,000 LUX in 4 LUX increments or 0 to 4,000 LUX in 16 LUX increments (specify when ordering). 32K memory allows for 22 days of recording. 5 second samples averaged and stored each minute.

24.000LS

Micro Temperature Sensor

Micro Temperature Sensor Single sensor to collect skin or ambient temperature. 32K memory allows for 22 days of recording. 5 second samples averaged and stored each minute. With a range of 19 to 43.6°C; 0.1°C resolution; and ±2°C precision.

24.000TS

Micro Sound Sensor

Micro Sound Sensor Environmental sound sensor. 32K memory for 22 days of recording. 5 second samples averaged and stored each minute. With a range of 40 to 85 dB SPL "C" weighting 400 hz Sine, 0.1-5 dB resolution; precision ±5 dB SPL.

24.000SS

Ask about CPT reimbursement codes!

Motionlogger® Actigraph Systems

DESCRIPTION	CATALOG NUMBER

BASIC MOTIONLOGGER
26.000

Features include event marker; audible feedback; 2MB memory; 2-3 Hz filter; sensitivity .01G at mid band; Zero Crossing (ZC), Time-Above-Threshold (TAT), ZC/TAT Dual, and Proportional Integrating Measure (PIM) modes of operation and Tri-Mode PZT (ZC, TAT, and PIM, simultaneously); water resistant (shower safe); and easy coin cell battery exchange (60-day battery life) via compartment isolated from sealed interior electronics. Epoch lengths are adjustable from one second to minutes.

BASIC MOTIONLOGGER-L
26.000L

Contains all of the features of Cat. #26.000 above as well as a photo optic light sensor nominally set up for 1 LUX resolution and 0-4,000 LUX range.

BASIC MOTIONLOGGER INTERFACE
with ACT Operational Software Powered by 9-V Battery
25.111PS

This Interface is compatible with the above actigraph units; and it comes with an optional A/C power supply. For initializing and downloading data.

(Analysis Software sold separately.)

Basic Motionlogger

ACCESSORY AND REPLACEMENT ITEMS FOR MOTIONLOGGER® ACTIGRAPHS

Motionlogger Disposable Duracell Batteries (set of 6)	**21.196**
Motionlogger One-Piece Velcro Wrist Strap	**21.193**
Motionlogger One-Piece Ribbon Wrist Strap with Adjustable Buckle	**21.194**
One piece, single-use plastic, hospital-type wrist strap (set of one dozen)	**21.192**
Two-Piece buckled, plastic wrist strap	**21.199**
Serial Port Tester	**21.198**

Device to test communications between Interface and computer. Identifies integrity of the communication port.

Motionlogger Web Belt with Pouch	**21.199**

Black nylon pouch and quick release buckle belt (fitting waists up to 42") with tamper proof wrap-around enclosure for applications where activity measurements of general locomotion are the goal. Trunk activity measurement has been employed in ADHD and energy expenditure studies. Specify **Micro** or **Basic Pouch Size**

PVT-192 Psychomotor Vigilance Task Monitor

Reaction time testing is made easy with the PVT-192. The literature has shown that simple reaction time is a convenient and sensitive continuous performance test for long-term, large scale testing of awareness, effects of sleep deprivation, and drug effects. The PVT test, combined with easy-to-use React software, has proven to be a valuable tool wherever measures of performance or sleepiness are needed. These include the transportation and pharmaceutical industries. Call us for a bibliography.


PVT-192 Psychomotor Vigilance Task Monitor
35.100

Hand-held, self-contained system that stores repetitive reaction time measurements. Features include an LCD display for instructions and programmable analog mood scale; buttons for test selection and a means to stop the clock; microprocessor controlled; solid state storage; initialize with or without PC; multiple subject recording capability; and visual/audio cue. It also features an LED display as a visual cue and display of results at time of testing. The length of each test is programmed as is the range of the inter-stimulus intervals. Includes one charger/adapter, serial cable, and operational and React analysis software for Windows-compatible computers. This instrument comes with a full one-year warranty.

CALL FOR PRICING ON LARGE QUANTITY PURCHASES

Analysis Software

DESCRIPTION	CATALOG NUMBER
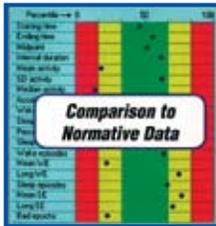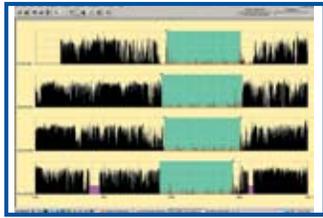
Motionlogger Analysis Software Package consisting of: **21.123**

> **Action W-2:** Clinical sleep estimation and database program with periodic leg movement analysis (sold separately @ $450).

> **ACTION4:** Windows version of ACTION3 circadian rhythm and research software (sold separately @ $650).

Supplement for AW-2: Sadeh Infant Sleep Estimation Algorithm   **21.AW+**

Motionlogger ActFAST Analysis Software: contains all of the features of Action W-2 described above with the added allowance of an expression of performance based upon the FAST SAFTE model.   **21.FAST**

Palm Logger Software   **21.PALM**

Offers simple and complex questionnaires as well as "Smart" event marking (investigators define a pick list of events for their subjects to choose from). Stanford and Epworth sleepiness scales are included. All features available on demand or in response to settable alarms. Also includes a low resolution psychomotor vigilance test. Runs on any Palm device (sold separately).

Case Study of Sleep, Performance and Circadian Rhythms

In the following examples the MicroMini Motionlogger, the most accurate, rugged and water resistant actigraph on the market, was worn continuously, even in the shower and while swimming.
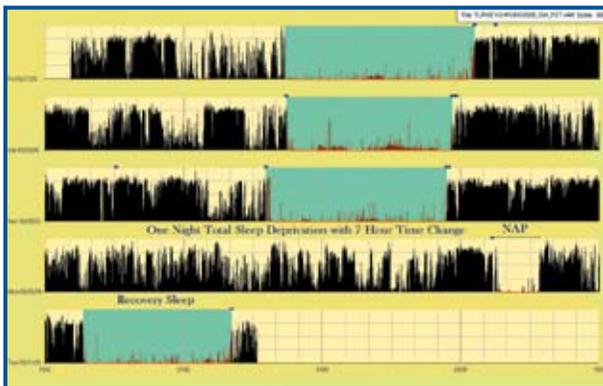

FIGURE 1

In **Figure 1** (using ActionW-2 clinical sleep analysis software) are the first days of a 22 day activity recording during eastward travel across 7 time zones demonstrates the change in sleep patterns.

FIGURE 2

A subset of available ActionW sleep statistics (**Figure 2**) shows the pre-flight Saturday night to be the most disturbed. Sleep efficiency is lower with 17 minutes of wakefulness within sleep and a high activity index indicating restlessness (61% of the minutes contained motion regardless of sleep/wake state.)
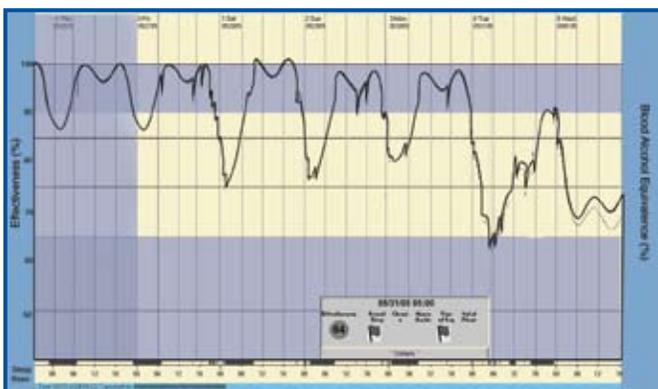

FIGURE 3

FAST (**Figure 3**) shows estimated performance level dips to 64% just before the recovery sleep which is equivalent to a Blood Alcohol Level of greater than 0.08.

FIGURE 4

Action4 circadian analyses (**Figure 4**) shows circadian disruption according to the Autocorrelation value at 24 hours (R24 is 0.33).

> *Our software, supported by NIH funded experts, contains validated algorithms – 88 to 90% sleep estimation algorithm correlated with PSG.*

Basic Inductotrace® System

The Inductotrace inductive plethysmograph consists of two elastic bands with insulated wires (Inductobands) wrapped around the rib cage and abdomen and connected to an Oscillator module and Calibration Unit. It measures rib cage and abdomen compartmental volume excursions through changes in self-inductance of the Inductobands. The sum of these two excursions can be calibrated to a known volume with spirobag or spirometer. The sensors have insulated wire for self-induction monitoring with gold plated contacts and come in sizes to fit torsos from premature newborn to super obese subjects. For animal studies we have sizes from kittens to horses.

DESCRIPTION	CATALOG NUMBER
Calibrator/Demodulator Unit AC/DC Coupled-Multifunction console: Provides isolated power for transducer-oscillator. Demodulates signals into scaled analog form. Conditions calibration input and displays voltage changes. Scales spirometer values in ml. Includes isolated power supply attenuators and cables. Instructions included. DC Switch — eliminates time constant. 110V-60 HZ. Size: 12" x 11 3/8" x 5 1/2" Weight: 10 lbs.	**10.9000**
Transducer Oscillator Energizes Inductobands with radio frequency. Wide range with connector ports for transducer cable and interconnect cable, 3/4" x 1 9/16" x 7/8". For normal size subjects (child, adult).	**10.7000**
Transducer Package This is a complete assembly with all components for operating Inductotrace System. It consists of five (5) sets of Inductoband transducers, three (3) sizes of Retainers, two (2) Transducer/Oscillator cables and one Spirobag. Kindly indicate sizes of transducers desired. Adult sizes: 66", 54", 48", 40", 36", 32", 28" Child sizes: 25", 20", 12", 10", 5"	**10.5000**
Spirobag for Calibration Procedure Individual bag holds 800 cc when fully expanded. Kit of 10.	**10.4026**
Total for Basic System	
Special Model Oscillators Special Oscillator small volume for neonates, infants and small animals.	**10.7001**
Large Volume Oscillator for extremely large subjects, horses and other large animals.	**10.7002**
Underwater Oscillator specially sealed system with connecting wires for attaching waterproof connectors (not supplied).	**10.7003**

Battery Operated Inductotrace System

The Battery Operated Inductotrace System provides respiratory data acquisition for polysomnography and ambulatory use. Patients connected with Inductobands, from newborn to extra large adult sizes, produce a reliable, high quality respiratory tracing for diagnostic determination of obstructive, central or mixed apnea.

Battery-Operated Inductotrace Interface Functions as a power supply and demodulates and translates rib cage and abdominal contribution to respiration into analog voltages with fixed ratio (not volume calibrated). Oscillator is built in. Uses one 9 volt battery. Extended cable from the system to the Inductobands. Furnished with a Transducer Package consisting of five (5) sets of Inductobands in sizes of your choice with three retainers, cable and one spirobag.	**10.4201**
Inductoview Software with PMD Digitally captures recorded respiratory data and stores the data on a PC (requires Windows XP and a USB port).	**10.4001**

Inductotrace is the Gold Standard in Respiratory Monitoring!

Inductobands, Retainers and Cables for Inductotrace Systems

DESCRIPTION			CATALOG NUMBER

Transducer Series 10.5000 is a specially manufactured coil on stretch knit fabric with gold plated connectors, safety tested insulated wires for use with Inductotrace electronics only. Cleaning by gas sterilization recommended. Packaged in sets of two (abdomen/chest). Inductoband stretches for proportional fit to size. Best fit is snug, comfortable and secure. Select best size after measurement of circumference of both chest (under armpit) and abdomen (girth at umbilicus). Two Inductobands must be used. Select appropriate retainer to hold coils in place.

Inductobands

PREMATURE	torso girth 7" to 9"	(17.78-22.86 cm)	**10.5005**
EXTRA SMALL	torso girth 10" to 15"	(25.40-38.10 cm)	**10.5010**
INFANT/BABY	torso girth 12" to 17"	(30.48-43.18 cm)	**10.5012**
TODDLER	torso girth 14" to 20"	(35.56-50.80 cm)	**10.5020**
CHILD/TEEN	torso girth 18" to 25"	(45.72-63.50 cm)	**10.5025**
SMALL ADULT	torso girth 22" to 28"	(55.88-71.12 cm)	**10.5028**
MEDIUM ADULT	torso girth 26" to 32"	(66.04-81.28 cm)	**10.5032**
REGULAR ADULT	torso girth 28" to 36"	(71.12-91.44 cm)	**10.5036**
LARGE ADULT	torso girth 32" to 40"	(81.28-101.60 cm)	**10.5040**
JUMBO ADULT	torso girth 34" to 48"	(86.36-121.92 cm)	**10.5048**
REGAL ADULT	torso girth 42" to 54"	(106.68-137.16 cm)	**10.5054**
X-LARGE ADULT	torso girth 48" to 66"	(121.92-167.64 cm)	**10.5066**

Inductobands

DESCRIPTION		CATALOG NUMBER

Retainers

Calibration accuracy depends on coil placement and retention. Retainers can be cut with scissors to facilitate comfortable fit.

Small Retainer	for Inductoband 10.5005, 10.5010, 10.5012	**10.5220R**
Child Retainer	for Inductoband 10.5020, 10.5025	**10.5228R**
Adult Retainer	for Inductoband 10.5028, 10.5032, 10.5036	**10.5236R**
Large Retainer	for Inductoband 10.5040, 10.5048	**10.5248R**
X-Large Retainer	for Inductoband 10.5054, 10.5066	**10.5266R**

Cables

Basic Transducer Cable — with precision gold plated plugs and pins. Goes from Inductoband to Transducer Oscillator	**10.5100**
Basic Output cable — Inductotrace Calibrator General Output Cable	**10.5110**
Inductotrace Oscillator/Calibrator Interconnect Cable	**10.5120**
Interface General Output Cable	**10.4213**
Interface to Oscillator Cable	**10.4220**
Extra Long Interconnect Cable 75'	**10.5210X**
Extra Long General Output Cable	**10.5110X**
Extra Long Inductotrace Interface Oscillator Cable 10'	**10.4221**
Extra Long Output Inductotrace Interface Cable 10'	**10.4214**
Belt to carry Inductotrace Interface during ambulatory recording (adjustable)	**10.4203**
Output Cable for Battery-Operated Inductotrace	**10.4215**

Retainers

Ask about custom sized Inductobands!