



Lab-Trax-4/24T

*4-channel data acquisition hardware for use with
Data-Trax™ data recording and analysis software*

www.wpiinc.com

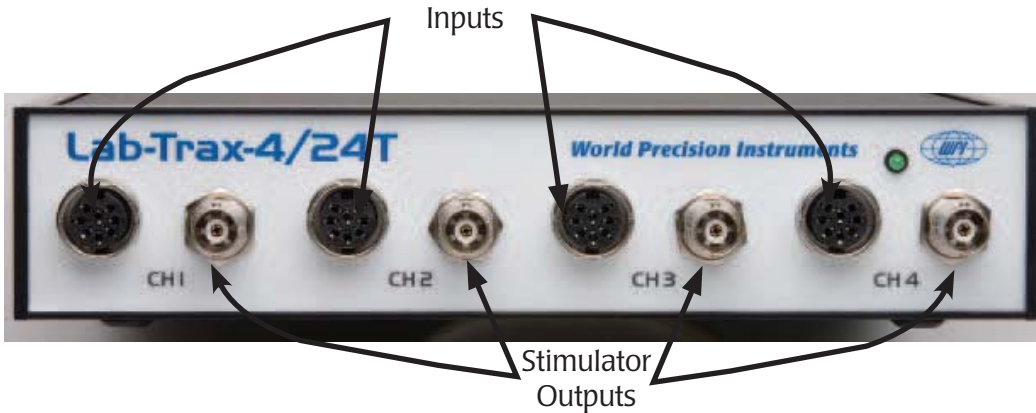
HARDWARE MANUAL

Serial No. _____

About Your Warranty

This instrument has a limited warranty. To ensure that you receive all notices regarding hardware changes, improvements or recalls as well as software updates if applicable, please complete the warranty registration for this product.

012414



Lab-Trax™ 4/24T is a 4-channel recorder that provides the high resolution and sensitivity required for cardiovascular/hemodynamic research, organ and tissue bath studies, oocyte clamp and epithelial voltage clamp applications. Each channel is independent, with its own 24-bit analog-to-digital converter. This provides much higher resolution and sensitivity over conventional recorders.

In addition, each channel input is equipped with the appropriate filters and amplification required. This makes the **Lab-Trax™ 4/24T** recorder a space-efficient “one box” solution. Setup is plug-and-play easy with connection to PC or Mac computers via the popular USB interface.

Included Items

The **Lab-Trax 4/24T** is shipped with the following:

- USB Cable
- Data-Trax2™ Installation CD
(Software manual is PDF file on CD, or select “Help” from Data-Trax2 menu)
- Hardware Instruction Sheet

If any items are missing, they should be reported to WPI within 10 days of receipt.

Optional Cable

The Lab-Trax4/24T is capable of recording 'single-ended' output voltages with the use of an adaptor cable (WPI# 300344). The cable converts the 8-pin DIN input on the LabTrax 4/24T into a male BNC connector. Use this five-foot cable to connect the 8-pin DIN connector to the Lab-Trax4/24 and the standard BNC to an amplifier.

Specifications

Input

Number of Inputs	4 - 8 Pin DIN connectors on front panel
Input Impedance	667 GigOhm Typ./182 GigOhm Min.
Input Range	+ 10 VDC
Noise	see Table below
Gain Telegraph	yes

Stimulator Outputs

Number	4 - BNC connectors on front panel
Resolution	16 Bit
Output Range	± 10 VDC
Modes	Pulse, Train, Constant, Step, Ramp, Triangle

Stimulator Performance

Time Step	0.04 mS, 0.4 mS, 4 mS
Pulse Width (max.)	1.2 S, 12 S, 120 S
Frequency	12.5 kHz, 1.25 kHz, 125 Hz

Digital Output

Lines	8 - 9 Pin DSUB on back panel
Digital Output Connector	DB9

A/D Converter

Samples/second	1, 2, 5, 10, 20, 50 100, 200, 500, 1 K, 2 K, 5 K
Resolution	(uV peak-peak) See Table Below
Interface	USB
Excitation	+ 5 VDC @ + 10 mA per channel
Isolation (optional)	300 Vrms, 10 Gig Ohm, 70 pF

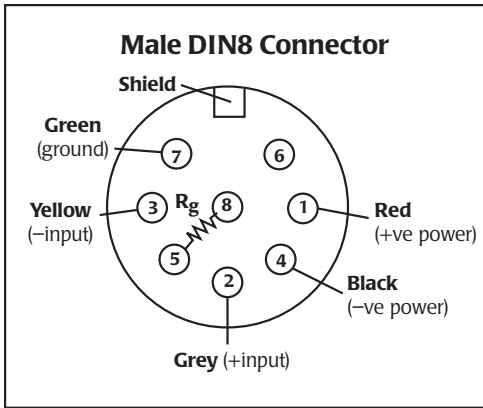
General

Enclosure	10 in Deep x 8.4 in. Wide x 1.7 in. High
Power	120 V/220 V, 50/60 Hz

Noise

Sample Speed	Typical System Noise/Resolution (peak to peak)
10	32 µV
20	50 µV
50	50 µV
100	50 µV
200	75 µV
500	100 µV
1000	250 µV
2000	500 µV
5000	1,000 µV

Connector Pin-out



The gain resistor, R_g , sets the gain of the transducer amplifier. See Table 1 below for the required resistance values to set the gain. If no gain resistor is installed, the gain is x1.

Do not use the power connectors to power anything other than a transducer such as **BLPR2** or **FORT25**.

$$R_g = \frac{49400}{G - 1}$$

R_g = Gain Resistor
 G = Gain

- DIN8 Connector Wiring
- pin 1 – positive power, +5V (red)
 - pin 2 – positive input (grey)
 - pin 3 – negative input (yellow)
 - pin 4 – negative power, -5V (black)
 - pin 5 – R_g (Gain Resistor)
 - pin 6 – NC
 - pin 7 – ground (green)
 - pin 8 – R_g (Gain Resistor)

TABLE 1

Gain Req'd	Resistor
x2	49.4 KOhm
x10	5.49 KOhm
x100	499 Ohm
x250	198 Ohm
x500	99 Ohm
x1000	49 Ohm
x5000	10 Ohm

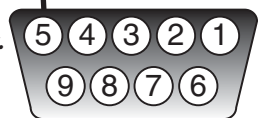
Set line voltage



FUSE

5 mm x 20 mm
 110V: 200 mA Fast
 230 V: 200 mA Fast

*Pins 1-8 are digital output.
 Pin 9 is grounded.*



Setting Up

- 1 Install software first!**
- 2** Connect the **Lab-Trax 4/24** to the PC via the USB cable.
- 3** Install drivers using the Operating System Wizard.
- 4** Launch software.



WORLD PRECISION INSTRUMENTS, INC.

175 Sarasota Center Boulevard
Sarasota, FL 34240-9258 USA
Telephone: (941) 371-1003 Fax: (941) 377-5428
E-mail: wpi@wpiinc.com

DECLARATION OF CONFORMITY

We: World Precision Instruments, Inc.
175 Sarasota Center Boulevard
Sarasota, FL 34240-9258 USA

As the distributor of the apparatus listed, declare under sole responsibility that the product(s):
LAB-TRAX4-24T

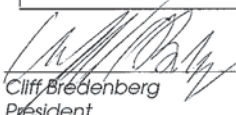
To which this declaration relates is/are in conformity with the following standards or other normative documents:

EMC Emissions:
EN55011
ICES-003
AS/NZS CISPR11

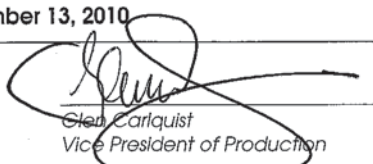
EMC Immunity:
EN61326-1
EN 61000-3-2 and EN 61000-3-3
EN 61000-4-3 thru EN 6100-4-6
EN 61000-4-11

And therefore conform(s) with the protection requirements of Council Directive 89/336/EEC relating to electromagnetic compatibility and Council Directive 73/23/EEC relating to safety requirements:

Issued on: **December 13, 2010**


Cliff Bredenberg
President

World Precision Instruments, Inc.
175 Sarasota Center Boulevard
Sarasota, FL 34240-9258 USA


Glen Carlquist
Vice President of Production

World Precision Instruments, Inc.
175 Sarasota Center Boulevard
Sarasota, FL 34240-9258 USA

Warranty

WPI (World Precision Instruments, Inc.) warrants to the original purchaser that this equipment, including its components and parts, shall be free from defects in material and workmanship for a period of one year* from the date of receipt. WPI's obligation under this warranty shall be limited to repair or replacement, at WPI's option, of the equipment or defective components or parts upon receipt thereof f.o.b. WPI, Sarasota, Florida U.S.A. Return of a repaired instrument shall be f.o.b. Sarasota.

The above warranty is contingent upon normal usage and does not cover products which have been modified without WPI's approval or which have been subjected to unusual physical or electrical stress or on which the original identification marks have been removed or altered. The above warranty will not apply if adjustment, repair or parts replacement is required because of accident, neglect, misuse, failure of electric power, air conditioning, humidity control, or causes other than normal and ordinary usage.

To the extent that any of its equipment is furnished by a manufacturer other than WPI, the foregoing warranty shall be applicable only to the extent of the warranty furnished by such other manufacturer. This warranty will not apply to appearance terms, such as knobs, handles, dials or the like.

WPI makes no warranty of any kind, express or implied or statutory, including without limitation any warranties of merchantability and/or fitness for a particular purpose. WPI shall not be liable for any damages, whether direct, indirect, special or consequential arising from a failure of this product to operate in the manner desired by the user. WPI shall not be liable for any damage to data or property that may be caused directly or indirectly by use of this product.

Claims and Returns

- Inspect all shipments upon receipt. Missing cartons or obvious damage to cartons should be noted on the delivery receipt before signing. Concealed loss or damage should be reported at once to the carrier and an inspection requested. All claims for shortage or damage must be made within 10 days after receipt of shipment. Claims for lost shipments must be made within 30 days of invoice or other notification of shipment. Please save damaged or pilfered cartons until claim settles. In some instances, photographic documentation may be required. Some items are time sensitive; WPI assumes no extended warranty or any liability for use beyond the date specified on the container.
- WPI cannot be held responsible for items damaged in shipment en route to us. Please enclose merchandise in its original shipping container to avoid damage from handling. We recommend that you insure merchandise when shipping. The customer is responsible for paying shipping expenses including adequate insurance on all items returned.
- Do not return any goods to WPI without obtaining prior approval and instructions (RMA#) from our returns department. Goods returned unauthorized or by collect freight may be refused. The RMA# must be clearly displayed on the outside of the box, or the package will not be accepted. Please contact the RMA department for a request form.
- Goods returned for repair must be reasonably clean and free of hazardous materials.
- A handling fee is charged for goods returned for exchange or credit. This fee may add up to 25% of the sale price depending on the condition of the item. Goods ordered in error are also subject to the handling fee.
- Equipment which was built as a special order cannot be returned.
- Always refer to the RMA# when contacting WPI to obtain a status of your returned item.
- For any other issues regarding a claim or return, please contact the RMA department.

Warning: This equipment is not designed or intended for use on humans.

** Electrodes, batteries and other consumable parts are warranted for 30 days only from the date on which the customer receives these items.*



World Precision Instruments, Inc.

USA

International Trade Center, 175 Sarasota Center Blvd., Sarasota FL 34240-9258
Tel: 941-371-1003 • Fax: 941-377-5428 • E-mail: sales@wpiinc.com

UK

1 Hunting Gate, Hitchin, Hertfordshire SG4 0TJ
Tel: 44 (0)1462 424700 • Fax: 44 (0)1462 424701 • E-mail: wpiuk@wpi-europe.com

Germany

Zossener Str. 55, 10961 Berlin
Tel: 030-6188845 • Fax: 030-6188670 • E-mail: wpide@wpi-europe.com

China & Hong Kong

WPI Shanghai Trading Co., Ltd.
Rm 29a, No8 Dongfang Rd., Pudong District, Shanghai, 200120 PR China
Tel: +86 21 6888 5517 • E-mail: chinasales@china.wpiinc.com

Internet

www.wpiinc.com • www.wpi-europe.com • www.wpiinc.cn