

MODULATION INPUT BOX TMB-2

FOR TS-140LP / TS-150LP / TS-300LP

Instruction manual









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Safety Instructions

If you suspect the system to be in any way unsafe, unplug and prevent any possible accidental usage. Contact your nearest service centre.

Do not use in potentially explosive surroundings.

For indoor use only.



Notes on equipment safety

The TMB-2 has been designed, manufactured and tested to conform to the safety regulations for measurement- and control-equipment DIN EN 61010-1 (IEC 1010-1) and satisfies the relevant requirements of EEC Directive 73/23.

The system conforms to EEC Directive 89/336 (electro-magnetic compatibility).
The operator should read this manual which contains important warnings and information.

Cleaning the outside of the System

Use neutral detergents. Cleaning with solvents will damage the outside surface of the unit.
Do not use cleaning materials that contain ammonia.
Do not use isopropyl alcohol to remove dirt from the unit.
Do not use flammable substances or any type of spray to clean the unit.

Accessories

- 1 D-Sub 15 cable m/f
- 1 Instruction Manual

Introduction

The modulation-box allows an excitation signal to be applied to the TS-Isolation System so that the system may be used as a shaker in any direction. The modulation is applied to the isolated TS system so that external vibrations are avoided.

Different excitation directions can be selected by the Mode Switch.

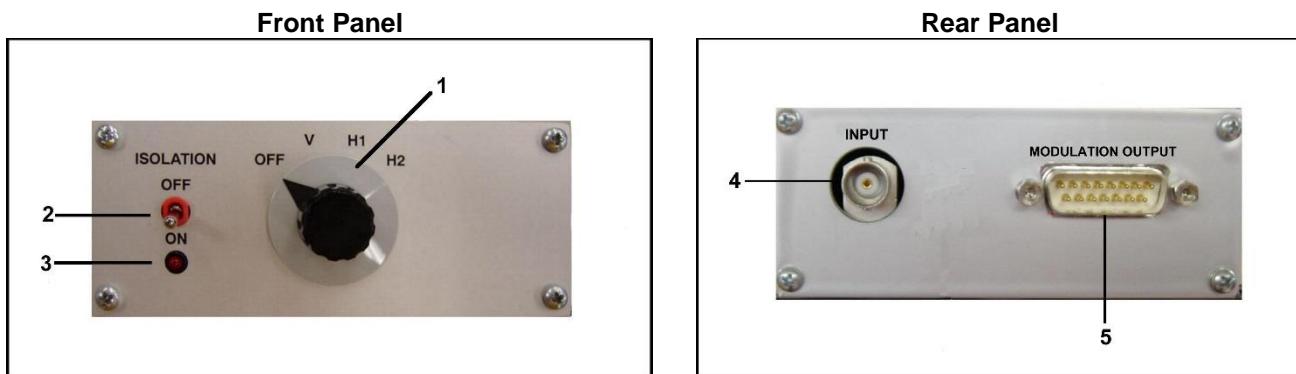
Connecting the modulation Input box to a TS system

Connect the modulation-box to the rear of the TS isolation system using a D-Sub 15m/f cable. No separate power supply is required.

For use as a shaker a sine wave will normally be required. This must be supplied via an external signal generator.

Connect the signal to the INPUT BNC socket (4). **(Max. amplitude 8Vpp)**

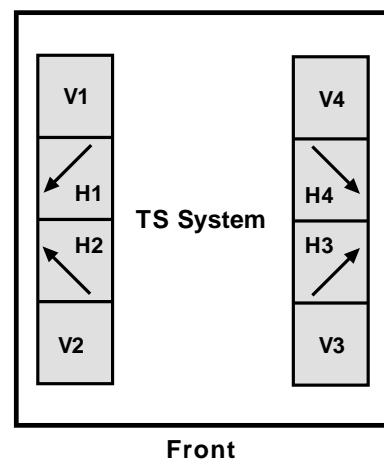
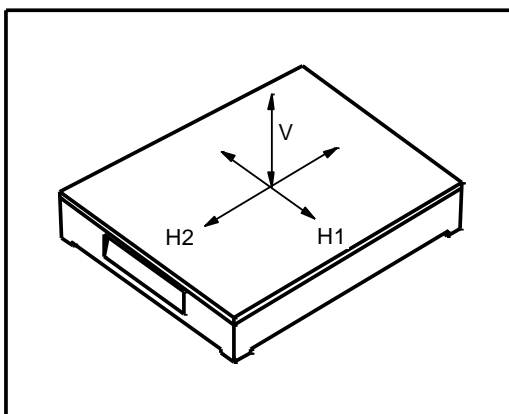
Overview



- 1 Direction mode select switch
- 2 Isolation switch
- 3 Isolation indicator

- 4 Input BNC socket
- 5 Modulation signal output socket

Fig. 1





Operation

Switch on the TS isolation system and enable the isolation on the front panel.
Set the isolation switch (2) on the modulation-box to ON.

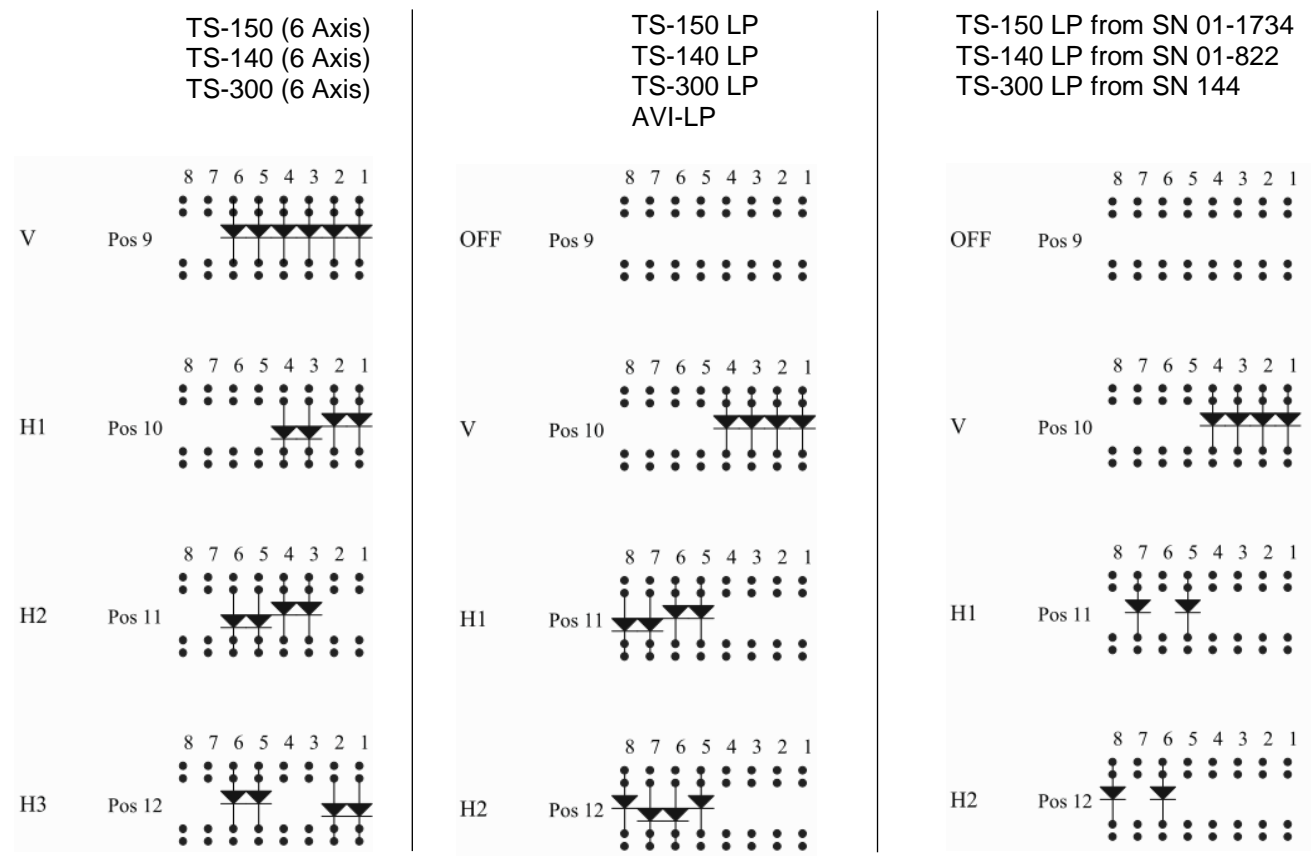
Three excitation directions are selectable using the Direction Mode Select switch (1). As the frequency of the excitation is scanned the VELOCITY will remain approximately constant over the range 1-100Hz. Beyond this frequency some resonances are likely to appear, depending on the load. For control purposes an external accelerometer should be used.

Note: If the isolation switch (2) is set to OFF, the modulation amplitude will be much larger, particularly around the passive resonance frequency of the TS system (5-20Hz depending on load) and added to any building vibrations that may be present. Use under these conditions is not recommended, but no damage will occur to the TS system. If no signal generator is attached, the switch (2) may be used as a remote control for switching the isolation on and off.

V is vertical, H1, H2 are horizontal excitations in the directions as shown in fig 1

Modulation signal combinations

The different excitations are formed by placing diodes in the main circuit board according to the scheme illustrated in figure 2. The signals required for the different excitation directions depend on the age of the TS system. Different arrangements are required for voice coil versions, early TS/LP and later TS/LP. The correct configuration can be determined from the serial number.





Pin layout for the D-Sub 15 connector

1	Modulation Input S8
2	RXD
3	TXD
4	-6V (100Ω in series)
5	GND
6	Modulation input S2
7	Modulation input S4
8	Modulation input S6
9	+6V (100Ω in series)
10	external disable
11	external enabled indicator
12	Modulation Input S7
13	Modulation input S1
14	Modulation input S3
15	Modulation input S5

Specifications

Input Signal:	Sine wave, max. amplitude 8Vpp
Dimensions:	170x103x43mm (LxBxH)
Weight:	420g
Application:	Indoor
Protection class:	IP 20
Temperature range:	5°C - 40°C
Relative humidity:	10 – 90% (5 – 30°C) 10 – 60% (30 – 40°C)