Technical Data and Instructions

DataPlot Print Mechanism
Models PM1224V and PM1224H

GENERAL DESCRIPTION

The DataPlot model PM1224 Print Mechanism incorporates a fixed-array thermal printhead with 224 heat element dots arrayed in a single line across the width of the paper. The mechanism holds a supply roll of 2.6" wide thermal paper and moves the paper past the printhead in steps of approximately .005 inch. When driven by the DataPlot CB1224 Control Board, the print mechanism steps the paper forward, pausing after each step to heat selected dots. In this manner, a dot matrix representation of alphanumeric and/or graphic data can be printed. Two versions of this print mechanism are available, the PM1224V for mounting behind a vertical panel, and the PM1224H for horizontal mounting, as in a desktop calculator.
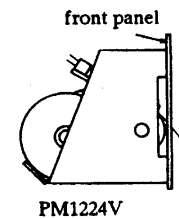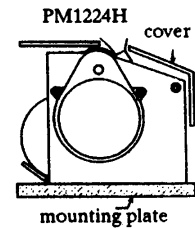
RESOLUTION

The 224 thermal dot elements are uniformly spaced at 100 dots per inch, with centers 0.010 inches apart. The mark made by each element is slightly larger than this spacing, so that the printer can produce solid lines and solidly filled areas on the paper. The standard mechanism advances the paper approximately 0.005 inches between steps, providing a dot matrix pitch of .010" across the paper by .005" along its length. The CB1224 Control Board and software use this dot matrix to produce a variety of character fonts and sizes and graphic images.

MOUNTING

The DataPlot model PM1224H Print Mechanism is designed to mount, as shown at the top right, to a horizontal surface using two 6-32 screws. The DataPlot model PM122 4V mounts to the rear of a vertical panel with printed paper exiting forward and down through a slot in that panel. Many cabinet designers provide a transparent tear-off bar in the paper exit area to aid in tearing the paper. If you prefer to use mounting studs, instead of screws, let us know and we will eliminate the mating PEM nuts from your print mechanisms. The mounting and cutout dimensions are shown on the reverse side of this sheet.

CONTROL BOARD CONNECTION

This print mechanism is designed to operate properly and reliably when driven by the B-G Instruments' DataPlot model CB1224 control board or another board specifically approved by B-G Instruments for that purpose. Attempting to operate it in any other way may cause permanent damage that would not be covered by warranty. With all system power off, attach the supplied ribbon cable between the 26-pin printhead connector and connector J3 on the control board, being sure to observe correct polarity by aligning the red dots on the connectors with those on the cable ends. Also connect the 8-pin stepper motor connect or cable to connector J1 on the control board. This connector is keyed to facilitate correct polarity assembly. Refer to the CB1224 data sheet for instructions for applying power and operating the printer. The standard length of these cables is 18 inches. Contact us if you need shorter or longer cables in your application.

PRINT SPEED

When driven by a CB1224 Control Board, the PM1224 Print Mechanism can print approximately 125 dot rows per second (somewhat slower for rows containing more than 64 printing dots). At .005" per step, the maximum paper speed is about .6 inches per second. Rows of 5x7 characters can be printed about 5 lines/second.

PAPER OUT, PAPER LOADING

A paper sensor in the PM1224 provides signals that are used by the PM1224 Control B oard to stop printing when the paper runs out and to "autoload" a new paper roll. To load the printer, be sure the power is on and insert the paper end into the paper feed slot beneath the platen from the rear. Be sure the sensitive side (outside of roll) is away from the platen. When the paper is fully inserted the platen will run, pulling about 2 inches of paper through. If you prefer to load the printer manually, just insert the cleanly cut end of a fresh roll of thermal paper into the space between the printhead and the cylindrical rubber platen while lifting the printhead manually to permit the paper to exit between the platen and printhead.

CAUTION --- PRINTHEAD DAMAGE

The DataPlot CB1224 Control Board applies power to the selected thermal dots for a period of time sufficient to exceed the thermal paper activation temperature, or about 2 milliseconds. If electrical power is applied to these elements for a significantly longer period, or for too high a duty cycle, or in any other improperly controlled manner, irreversible printhead damage may occur. Such damage can be readily detected, as the affected dots will print only lightly, if at all, and is **not covered by warranty.** For this reason, it is important that the print mechanism be operated only by the DataPlot model CB1224 Control Board and that the applied power be as specified in the CB1224 Technical Data and Instructions Sheet.
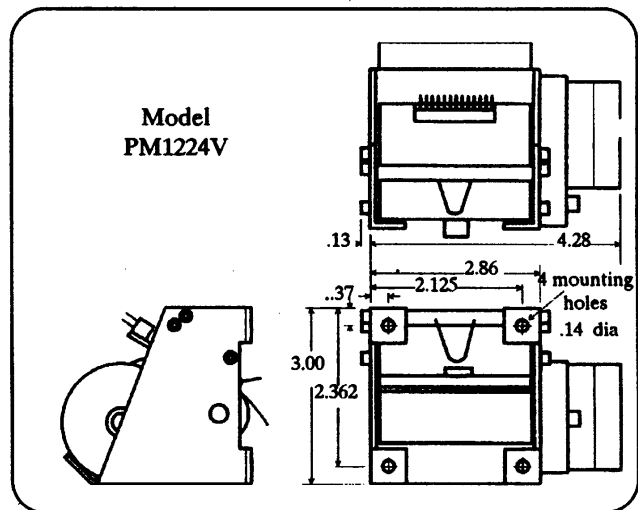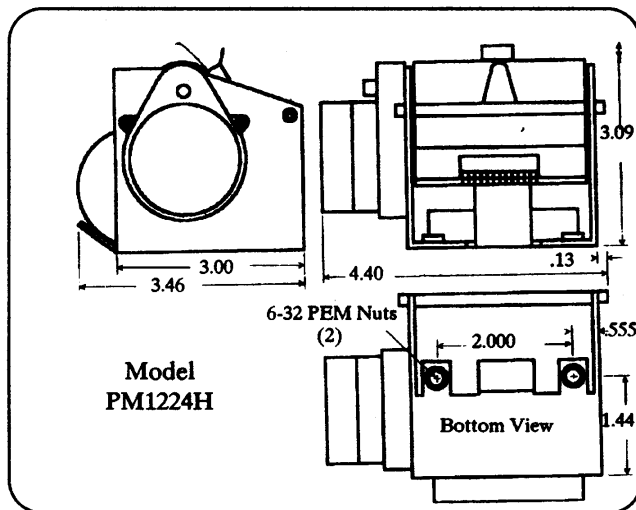
WARRANTY

B-G Instruments will repair or replace, at its option, any DataPlot model PM1224 Print Mechanism that malfunctions because of faulty manufacture within one year after its original date of sale, provided that the mechanism has been used exclusively with a properly functioning CB1224 Control Board and B-G Instruments' type TP-3 thermal Paper, and:

1. neither the print mechanism nor its control board have been modified in any way not specifically authorized by B-G Instruments, Inc., and
2. electrical power applied to the control board has always been within specifications for that board, and
3. the mechanism shows no evidence of electrical, thermal or mechanical damage, and
4. the mechanism has printed fewer than 100 million dot rows and less than 100,000 feet of paper.

THERMAL PAPER

We recommend using B-G Instruments' type TP-3 thermal paper, or its equivalent, in the DataPlot model PM1224 Print Mechanism. This paper produces a black on white image that is stable with time: Unlike some waxy coated papers, it does not stick to or cause material build-up on the printhead. TP-3 is a 2.6 inch wide, high quality facsimile grade paper that can produce high resolution permanent copy in the PM1224 printer. It is available from B-G Instruments in cartons of 36 rolls, or in larger quantities.

OVERALL AND MOUNTING DIMENSIONS

B-G Instruments, Inc.
13607 E Trent,
Spokane Valley, WA 99216, U.S.A.
http://www.bginstruments.com

Toll Free: (888) 244-4004
Phone: (509) 893-9881
Fax: (509) 893-9803
Email: contact@bginstruments.com