



Moisture Register Products

a division of AQUA Measure Instrument Co.



Model PM-80

Portable Moisture Meter for the Paper Industry

- ▶ Nondestructive Tests in Two Seconds
- ▶ 0 to 35 Percent Moisture Range
- ▶ Three Meter Scales:
 - Direct Percentage
 - Numerical
 - Colored Comparator
- ▶ Full Scale Suppression doubles numerical scale to 200 divisions
- ▶ Three Sensitivity Ranges (Hi-Med-Low)
- ▶ Built-in Electrical Standards for Each Range
- ▶ Battery Regulator Circuit maintains accuracy as battery discharges



The Model PM-80 is designed to measure the moisture content of paper rolls or stacks of paper. With its unique, patented ball bearing rollers, the PM-80 is equally effective on moving or stationary rolls or stacks of paper. Wet or dry streaks and moisture trends can be detected in seconds and proper corrective action can be taken immediately.

The PM-80 uses the patented Radio Frequency Capacitance Method to measure moisture content. Each roller electrode projects an RF field into the sample covering an area approximately 12 inches by 16 inches and penetrating to a depth of two inches. A patented rotatable outer cylinder, concentric with the fixed inner cylinder electrode, conveys the RF signal to the outside roller. The instrument measures the loss, or change, in RF dielectric constant as affected by the presence of moisture. The hard coat insulation on the rollers reduces the effect of surface moisture to enhance measurement accuracy.

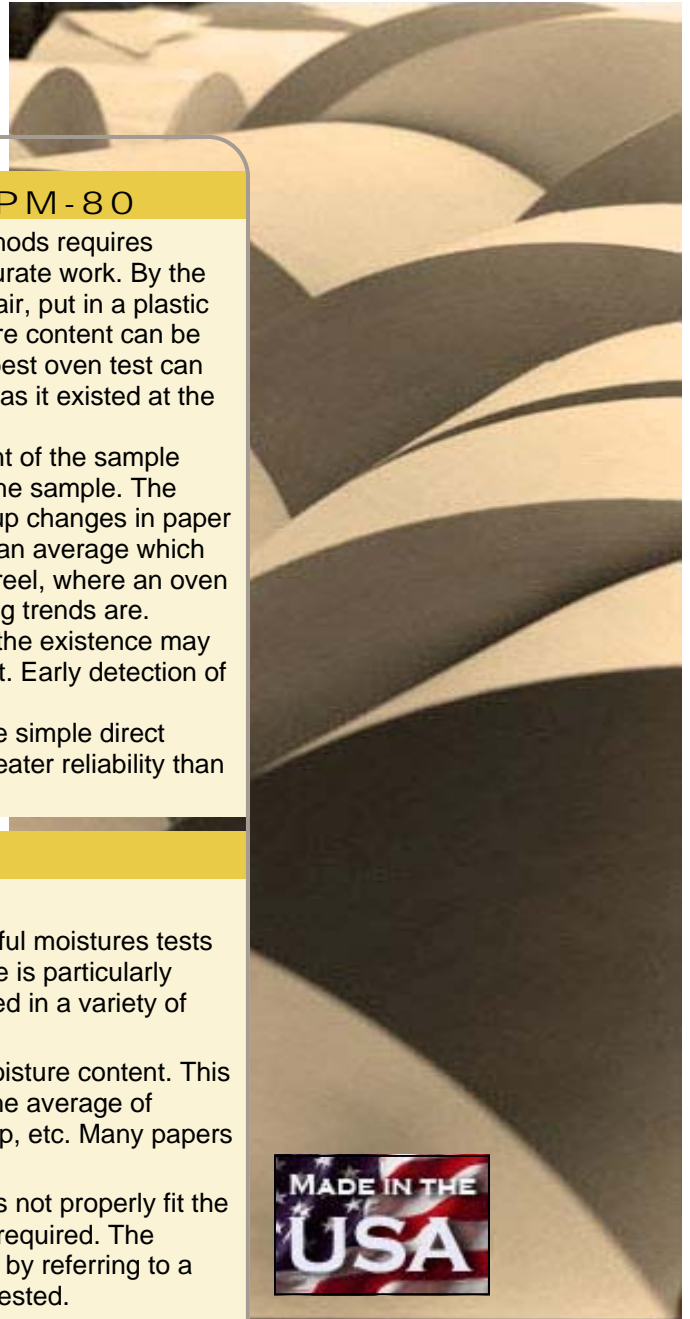
Powered by alkaline batteries, the PM-80 goes anywhere and a Battery Test button easily checks the condition of the batteries. The PM-80 weighs less than three pounds, yet its rugged one-piece construction allows continuous heavy use in production environments. Internal circuitry is fully temperature compensated and protected from static electricity. The molded plastic handle contains a switch actuating bar and auto turnoff.

Three moisture sensitivity ranges, three meter scales, and full scale suppression provide the versatility to handle nearly every paper application and moisture range.



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Oven Testing vs. Model PM-80

Accurate determination of moisture by oven drying methods requires standardized equipment, careful sample selection, and accurate work. By the time a sample has been cut from a roll, moved through the air, put in a plastic bag, carried to the lab, and then finally weighed, the moisture content can be entirely different than it was originally on the roll. Even the best oven test can only determine the average moisture content of the sample as it existed at the moment of weighing.

The PM-80, on the other hand, tells the moisture content of the sample beneath the rollers at the instant they are pressed against the sample. The PM-80 excels in locating wet or dry streaks, and in picking up changes in paper conditions. Measurements are not stored and displayed as an average which may result in missing moisture streaks. Used on a wind-up reel, where an oven test is impossible, the PM-80 shows instantly what the drying trends are. Streaks of moisture found by the PM-80 may dissipate, yet the existence may be a clue to trouble starting to occur in the drying equipment. Early detection of trouble spots can prevent waste and save money.

Whether you use the PM-80 as a comparator or with the simple direct scale, you'll find it tests faster, more accurately, and with greater reliability than many of the oven tests in use today.

Meter Scales

The PM-80 is equipped with three meter scales:

- The lower colored Comparator Scale provides meaningful moisture tests without reference to actual moisture percentages. This scale is particularly useful with a large number of paper types that must be tested in a variety of moisture ranges.
- The upper Direct Percentage Scale reads in percent moisture content. This is not an exact curve for any one particular paper, but it is the average of several curves made for common papers such as Kraft, Chip, etc. Many papers can be tested with this scale with good results.
- The Numerical Scale is used when the direct scale does not properly fit the type of paper being tested, or when the utmost accuracy is required. The reading on the dial is converted to percent moisture content by referring to a specific calibration chart established for the material being tested.



Calibration

Calibration consists of making PM-80 readings on paper rolls or stacks, cutting samples from beneath the instrument, and then oven drying these samples. Percentages and readings are plotted on a graph and a curve drawn. For your convenience, blank charts and graphs are provided in the operating manual.

Full Scale Suppression

The ability to use full scale (100 division) zero suppression with Model PM-80 effectively doubles the meter scale length to 200 divisions in each of the three sensitivity ranges to give readings between 100 and 200.

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