

Fig. 7 Readings for copy paper 80 g/m²

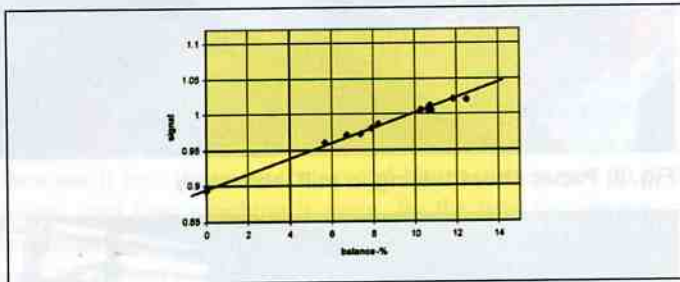


Figure 8: Readings for grey board 180 g/m²

spot check incoming raw materials and fuels (Fig. 4, 12, 13).

At the paper machine and laboratory, the tester can be used to measure the moisture content in either the individual paper sheets or paper rolls. The tester can read up to five readings per sec and the measurement area is around 1cm². This small spot size makes it possible to measure paper edges as well. The unit can measure a single sheet on all paper grades and can also measure multiple sheets and rolls (Fig. 5).

The tester can be used also to measure rotating paper rolls (Fig. 6). In these cases the tester has guide wheels which keep roll surface and sensing head distance constant. This feature can be used to check the performance of the online scanning gauges at any time. A few minutes' test can save thousand of dollars where otherwise a scanner systems specialist has to be called in externally.

The portable tester can easily be calibrated either onsite or in the supplier's facilities over the measurement range 2 to 15% of moisture. Wider moisture ranges call for more advanced tools and methods.

The same tester can be used for lightweight paper, fine paper, tissue paper, board etc (Figs 7, 8, 10, 11). The user can select the suitable calibration table.

A particular application for the portable meter is for addressing customer complaints. Many users have done this successfully, and by solving one complaint to the mill's advantage, the meter has paid for itself many times. Service personnel can travel with the meter and even keep the saved data in the meter's memory for later records. Checking rolls and stacks at a paper buyer's facilities is easy due to the small size of the instrument. The small optical head fits into tight places, even in printing presses. The cross profile of the web running in the printing machine can be quickly measured, to determine the causes of the problem.

ON LINE GAUGE APPLICATIONS

The process meter model D's features are optimised for rapid measurements. Regular QC can take use of this as a lower web noise, since a greater number of samples are measured compared to competing devices based on time units. Rapid processing of data allows other tasks and measurements to be done with RS232 while regular QC is running, for example via

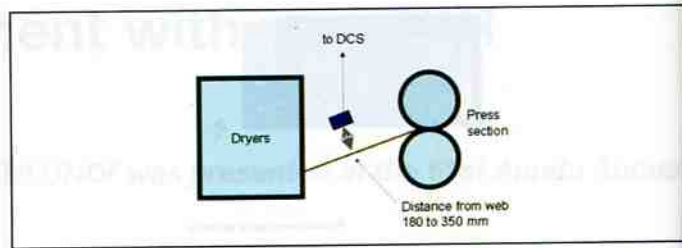


Fig. 9 Gauge installation above the web

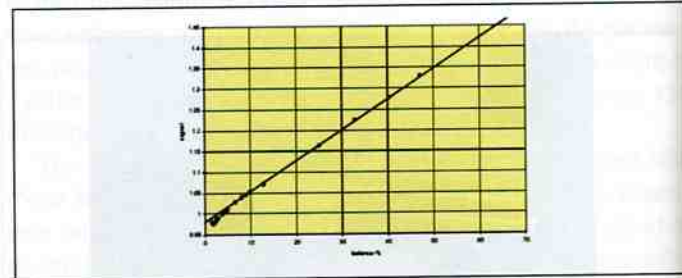


Fig. 10 Readings for brown board 250 g/m²

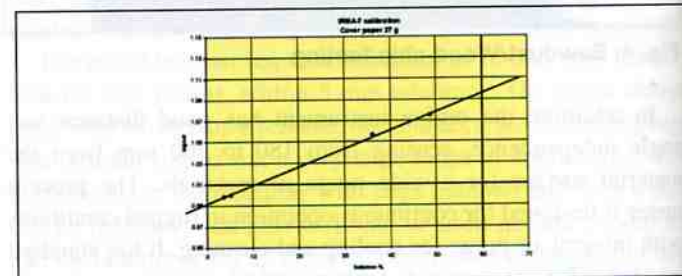


Fig. 11 Readings for cover paper 27 g/m²

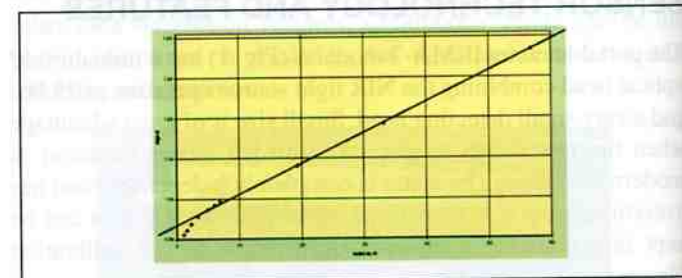


Fig. 12 Readings for cellulose 1500 g/m²

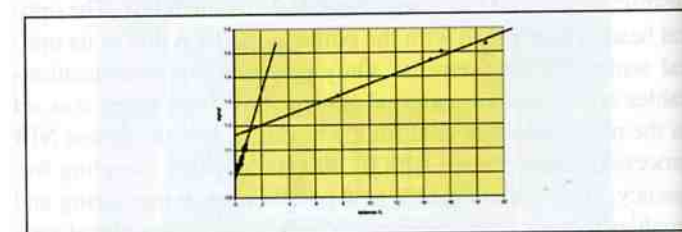


Fig. 13 Readings for paper machine felt 600 g/m²

Profibus DP. Using a scanner allows for obtaining continuously fresh CD profiles, which can be used in paper machine profile correction. Using the meter in the dryer section allows for faster operation and energy savings.

The high speed enables frequency analysis with periodic variations of up to 200 Hz. This nicely covers felt phenomena and practical cases of dryer cylinder faults in modern fast paper machines.

Typical online applications are manufacturing points where moisture varies and there is some possibility to control it either manually or using automatic control loops (Fig. 9).