



DIGITAL GRAIN MOISTURE ANALYSER (DGMA)

a product of
CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION
SECTOR 30-C, CHANDIGARH



R&D AGRIONICS DEPARTMENT, CSIR-CSIO

DIGITAL GRAIN MOISTURE ANALYZER (DGMA)

It is based on capacitance variation technique. The instrument comprises mainly an analog unit and a digital unit. The meter uses a micro-controller, for controlling complete meter functioning. The sensing system consists of a capacitive transducer that converts moisture contents into the dielectric constant variations. Presence of a very small quantity of water causes considerable change in the dielectric constant in the sensor cell. These dielectric changes cause capacitance changes and in turn frequency variations proportional to the moisture contents in the grain sample. The variation in the dielectric is read in terms of frequency, which is further calibrated and related to percentage moisture.

TECHNICAL DETAILS (version 1.0)

Salient Features

- ❖ Data storage capacity of 1000 records and 100 plus crop calibration can be customized.
- ❖ 2 x 16 character alphanumeric LCD with membrane keypad.
- ❖ Easy and convenient way to calibrate new & existing crops through user friendly GUI.
- ❖ Offset correction for moisture and temperature readings against factory set calibrations.

Power saving features

- ❖ Auto braklight off.
- ❖ Auto power off

Principle of Measurement

Capacitive technique

Measuring Moisture Range

7% - 40%

Precision of Moisture

$< \pm 1\%$

Measuring Temperature Range

0°C - 70°C

Precision of Temperature

$\pm 1^\circ\text{C}$

Temperature Compensation

Internally compensated

RS 232 Port

- ❖ To print Crop Name, Moisture%, Temperature, Date and Time using printer.
- ❖ To transfer recorded data to PC.
- ❖ To calibrate new crop using GUI.

Calibration

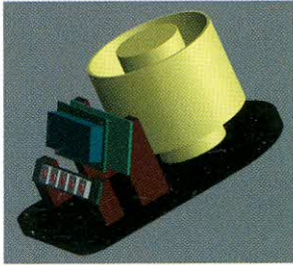
To calibrate new crop or existing crop by user friendly GUI.

Printer

Thermal portable printer

AC Mains

9V DC Adaptor for AC mains



New Model

Ultra Low Cost
Low Power
System-On-Chip
Compact
Fully Loaded Features

Battery Operated

Data Logging,
Downloading,
Erasing

9V Battery/3.7V (mobile battery) rechargeable.

- ❖ To read saved records which includes Moisture percentage, Temperature Crop name along with Date and Time.
- ❖ To download calibrated crop details of DGMA.
- ❖ To Erase saved records from DGMA.

Applications

- ❖ Procurement agencies
- ❖ Agriculture universities
- ❖ Quality Control
- ❖ Food processing industries
- ❖ Mandis
- ❖ Storage houses

Contact Details

Director

Central Scientific Instruments Organisation

Sector 30-C, Chandigarh-160 030 (India)

Ph. : 0172-2657190, Fax : 0172-2657267, E-mail : drpawankapur@yahoo.com

www.csio.res.in