

# DIGITAL MOISTURE METER



## INSTRUCTION MANUAL



### NATIONAL AGRI INSTRUMENTS

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## **WORKING PRINCIPLE:**

National Digital Moisture Meter is an impedance type working on principle of measurement of Dielectric constant of the material.

## **SALIENT FEATURES:**

Automatic inbuilt temperature compensation provided.

'LOBAT' / 'BAT' indication on display if pencil cells are weak/down. ABS Molded body for rugged used in field & for longer life.

No mechanical moving parts hence no wear & tear and maintenance free operation for long duration.

Non-destructive sample testing.

## **HOW TO MEASURE % MOISTURE:**

Pour specified quantity/size of material sample into Moisture Meter with help of hopper.

Press appropriate switch to read % MOISTURE on the display. Inbuilt temperature calculator is provided to display the reading after temperature compensation.

## **Technical Specification of Digital Moisture Meter:-**

National Moisture Meter Tested as per to IS-8824 -Part-I -1978

National Moisture Meter is calibrated and tested as per IS

Measuring range : 0 % to 40 % moisture

Sensitivity :  $\pm 0.1$  %

Accuracy :  $\pm 0.2$  %

Power consumption : 0.03 watts approximately.

Power requirement : Four pencil cells

Samples size: 250 C.C. approximately.

Size of meter: 125 mm H X 150 mm W X 210 mm D  
(approximately)

Weight of the meter : Less than one Kilogram

Measurement : One sample per minute

## **OPERATING INSTRUCTION**

### **(A) Setting the Instruments:-**



**Locate the Battery compartment at the bottom.  
Insert the 4 X 1.5 V pencil cells if not there.**



Press any switch 1, 2, 3, 4, etc. and check whether 'BAT' or 'LOBAT' appears on the left side of display. Insert the fresh pencil cells if 'BAT' or 'LOBAT' appears on the display.



Check the appropriate SWITCH number, ITEM NAME (commodity names) & QUANTITY on the sticker besides switch.

The display should be stable in about 3 to 5 seconds on the pressing switch. If there is a random variation, please contact the company.

The instrument is now ready to test the commodity samples. For the best result place the instruments on a solid non-conductive surface like wood, glass etc. avoiding close contact between the measuring compartment / seed compartment and large metal objects.

**AT ANY TIME DO NOT PLACE YOUR FINGERS OR METAL OBJECT OR ANY ELECTRONIC EQUIPMENTS NEAR THE MEASURING / SEED COMPARTMENTS.**

**(B) Testing Procedure:-**



The HOPPER is provided along with instrument / meter and must be used to pour the sample in the measuring / seed compartment of the instrument.

First check that HOPPER is clean and flap of hopper moves freely by rotating the KNOB. Close the flap with help of KNOB and put the LEVER down to hold the FLAP in closed position.

Take the commodity / Item sample as specified on the sticker at the bottom of the instrument and pour the sample in the HOPPER. For the 'FULL VOL' take the sample full HOPPER up to the top. For the Weight basis calibration, weigh the sample.



Now place the HOPPER on the top of the instrument/ meter so that KNOB & LEVER comes on the right side as shown. The alignment is important accuracy & repeatability.

Press the rear end of the LEVER to release the flap while holding the HOPPER firmly in position. The sample should fall freely. If FLAP gets stuck and the sample pours gradually, empty the instrument/meter and the HOPPER and repeat from Step-B2.

Remove The HOPPER And With Light Fingers Even Out The Sample Layer On The Top.  
Do Not Tap Or Shake The Meter Or Compress Sample With Help Of Fingers Or Any Other Object.

B-3



**Wait 40 seconds. This allows automatic temperature compensation. This may not necessary if sample and the meter both were at room temperature for more than one hour.**

**Press the appropriate switch specified for the sample and read the % MOISTURE on the digital display. The reading becomes steady in 3 to 5 seconds. Do not keep the switch pressed any longer, to get best battery life.**

**DO NOT PLACE YOUR HANDS OR METTALIC OBJECT NEAR THE MEASURING / SEED COMPARTMENT OR BACK SIDE OF THE INSTRUMENT / METER.**

**The meter reading obtained is the moisture content directly in percent. DON'T APPLY ANY CORRECTION FOR EMPTY CAVITY READING OR ANY OTHER FACTOR.**

**The Moisture Meter is now ready to test next sample.**

**Minimum % MOISTURE expected in summer dry samples / Calibration available**

**This information provided based on the experience of the company representative to help the user to get idea.**

**The variation may cause due to relative humidity, temperature and weather condition of the area.**

## Calibration of following items available

ITEM AVAILABLE	QTY.	%MOISTURE
<b>OIL SEEDS</b>		
Groundnut seed	Full Volume	04.5
Mustard/Rape/Sarson/Toria seed	Full Volume	05.0
Natural Till/Sesamum/Gingly seed	Full Volume	05.0
Hulled Till/Sesamum/Gingly seed	Full Volume	04.5
Ram Till seed / Niger seed	Full Volume	05.0
Soyabean seed	Full Volume	07.5
Sunflower seed	Full Volume	05.5
Safflower / Kardi seed	Full Volume	05.5
Neem seed	Full Volume	05.5
Castor seed	Full Volume	05.0
Ambadi seed	Full Volume	05.0
Lin seed	Full Volume	05.5
Lahi seed	Full Volume	05.0
Mahuva / Guli / Dolomi seed	Full Volume	09.0
Karanja / Minnari / Pungum	Full Volume	08.5
Cotton seed / Binola / Saraki	100 Grams	05.5
Copra / Coconut	050 Grams	03.5
<b>SPICES WHOLE</b>		
Coriander seed / Dhana seed	Full Volume	07.0
Fennel / Variali seed	Full Volume	07.0
Fenugreek / Methi seed	Full Volume	07.0
Celery / Jeera seed	Full Volume	07.0
Cardamom / Eliachy	Full Volume	10.0
Ajma seed	Full Volume	07.0
Almond / Badam	Full Volume	05.5
Khaskhas / Poppy seed	Full Volume	05.0
Coffee seed	150 Grams	10.0
Kismis / Dry grapes	150 Grams	07.0
Black pepper	100 Grams	10.0
Cashew kernels	100 Grams	02.2
Charoli	100 Grams	06.0
Dhana dal	100 Grams	05.5
Dry Ginger	050 Grams	05.0
Dry Garlic	050 Grams	05.0
Cloves	050 Grams	03.5
<b>PULSES WHOLE &amp; DAL ( SPLIT )</b>		
Green gram / Mung whole	150 Grams	09.5
Green gram / Mung dal	150 Grams	10.5
Redgram/Toor/Tuvar/Arhar whole	150 Grams	09.5
Red gram/ Toor/ Tuvar/ Arhar dal	150 Grams	08.5
Black gram / Udad / Urad whole	150 Grams	09.5
Black gram / Udad / Urad dal	150 Grams	11.0
Moth whole	150 Grams	09.5
Moth dal	150 Grams	10.5



<b>ITEM AVAILABLE</b>	<b>QTY.</b>	<b>%MOISTURE</b>
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Horse/Bengal gram/Chana whole	150 Grams	09.5
Horse / Bengal gram / Chana dal	150 Grams	09.5
Masoor / Lentil whole	150 Grams	11.0
Masoor / Lentil dal	150 Grams	11.5
Batari whole	150 Grams	09.5
Batari dal	150 Grams	09.5
Tevda whole	150 Grams	09.5
Tevda dal	150 Grams	09.5
Peas / Cow peas whole	150 Grams	09.0
Peas / Cow peas dal	150 Grams	09.5
Wal & Wal dal	150 Grams	09.0

### **VEGETABLE SEED**

Cluster beans	150 Grams	09.5
Cucumber seed	150 Grams	08.0
Bhindi / Lady fingers seed	100 Grams	09.0
Jute Seed	100 Grams	08.5
Onion seed	100 Grams	08.0
Chilly seed	100 Grams	08.0
Ridge Guard seed	100 Grams	07.5
Water Melon seed	100 Grams	06.5
Ash Guard seed	050 Grams	07.5
Tomato seed	050 Grams	08.5
Bitter Guard / Karela seed	050 Grams	07.0
Snake Guard / Turia seed	050 Grams	07.5
Bottle Guard seed	050 Grams	07.0
Brinjal seed	050 Grams	08.0

### **GRAINS**

Wheat	150 Grams	09.5
Raw Rice	150 Grams	11.0
Para-boiled Rice	150 Grams	11.0
Jowar	150 Grams	09.5
Bajara	150 Grams	09.5
Maize	150 Grams	09.5
Barley	150 Grams	11.0
Ragi	150 Grams	11.0
Rajma	150 Grams	09.5
Paddy	100 Grams	11.0
Jav	100 Grams	11.0

### **CAKES OF OILSEEDS**

Castor cake	100 Grams	07.5
Cotton seed cake	100 Grams	07.5
Groundnut cake	100 Grams	07.5
Mustard Kachhi cake	100 Grams	07.5
Mustard Pakki cake	100 Grams	07.5
Mahuva cake	100 Grams	07.5
Neem seed cake	100 Grams	07.5
Sunflower cake	100 Grams	07.5
Safflower cake	100 Grams	07.5
Tilli cake	100 Grams	07.5

ITEM AVAILABLE	QTY.	%MOISTURE
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**DE-OILED CAKE (DOC) OF OIL SEEDS**

Copra DOC	100 Grams	07.0
Castor DOC	100 Grams	07.0
Cotton seed DOC	100 Grams	07.0
De-oiled Rice Bran	100 Grams	07.0
Groundnut DOC	100 Grams	07.0
Mustard DOC	100 Grams	07.0
Sunflower DOC	100 Grams	07.0
Safflower DOC	100 Grams	07.0
Soybeans DOC	100 Grams	07.0
Soya Meal	100 Grams	07.0
Till DOC	100 Grams	07.0

**FLOURS, POWDERS & OTHERS**

Animal feed	100 Grams	07.0
Besan	100 Grams	12.0
Fish meal	100 Grams	07.0
Maize Gluten	100 Grams	09.0
Maize Flour	100 Grams	10.0
Maida	100 Grams	12.0
Rice Police	100 Grams	10.0
Rava	150 Grams	12.0
Suji	150 Grams	12.0
Wheat Atta	100 Grams	12.0
Wheat Bran Coarse	50 Grams	08.0
Wheat Bran Fine	50 Grams	08.0
Methi Kuria	100 Grams	07.5
Mustard Kuria	100 Grams	05.5

**We are also developing new calibrations as per customer requirements.**

**MODELS AVAILABLE:**

- DMM** : Single switch model contain calibration / setting of **ONE** item.
- DMM2** : Two switches model contain calibration / setting of **TWO** items.
- DMM3** : Three switches model contain calibration / setting of **THREE** items.
- DMM4** : Four switches model contain calibration / setting of **FOUR** items.
- DMM5** : Five switches model contain calibration / setting of **FIVE** items.
- DMM6** : Six switches model contain calibration / setting of **SIX** items.
- DMM7** : Seven switches model contain calibration / setting of **SEVEN** items.
- DMM8** : Eight switches model contain calibration / setting of **EIGHT** items.

**Note:** National Agri Instruments reserve the right to carry out at any moment without prior notice modification of design, developments, parts & accessories as may be convenient and necessary.