Users Manual

DIGITAL GAUSSMETER

Model: DGM-102

Manufactured by

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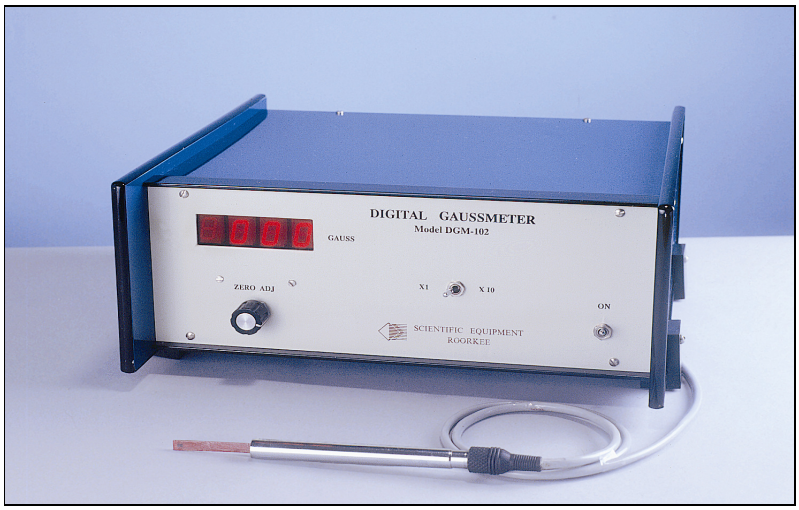
DIGITAL GAUSSMETER DGM-102



- Mag. Field Measurement
- Excellent Linearity
- IC Controlled Circuit
- Excellent Stability

DGM-102 operatres on the principle of Hall Effect in Semiconductors. A semiconductor carrying current develops an electromotive force, when placed in a magnetic field, in a direction perpendicular to the direction of both electric current and magnetic field. The magnitude of this e.m.f.is proportional to the field intensity, if the current is kept constant. This e.m.f. is called the Hall voltage. The small Hall Voltage is amplified through a high stability amplifier so that a Millivoltmeter connected at the output of the amplifier can be calibrated directly in magnetic field unit (gauss).

Applications

Wide application in industry where accurate measurements of magnetic field is required.

Measurement of steady magnetic field e.g. in loud speakers, dynamos, moving coil instruments etc.

Useful in laboratory experiments involging electromagnets.

Specifications

Range	:	0-2KG & 0-20KG
Resolution	:	1G at 0-2KG range
Accuracy	:	± 0.5%
Temperature	:	Upto 50℃
Display	:	3 ½ digit, 7 segment LED DPM with auto polarity and over flow indication
Power	:	220V ± 10%, 50Hz
Transducer	:	Hall Probe - InAs
Special Feature	:	Indicate the direction of the magnetic field
Weight	:	3Kg
Dimensions	:	280mm X 255mm X 120mm

OPERATING INSTRUCTIONS

PROBE

Take out the probe alongwith the cable through the *cutting provided on the rear side.*

The probe is encapsulated in a non-magnetic sheath. It is connected to the instrument by means of a four-core cable of suitable length and is normally kept inside the instrument. A transport cap is provided for protection of probe. It is advisable that the probe should not be used at temperature higher than 50 °C. The probe is very delicate and hence it is advised that its cap is inserted whenever the probe is not in use and kept inside the instrument alongwith the cable. Any kind of strain on the probe element is to be avoided.

ZERO ADJUSTMENT

Switch on the instrument. The readings is adjusted to zero with 'ZERO' control with the *probe away from any magnetic field.* The zero adjustment should be checked on X1 range.

MEASUREMENT

The range switch is now set to the appropriate range. The probe cap is removed and the probe is kept in the magnetic field to be measured. The flat face of the probe is kept perpendicular to the direction of the magnetic field. The reading of the meter multiplied by the range value gives the flux density of the magnetic field in gauss. *If the field strength is not known* it is advisable to start with X10 range.

DIRECTION OF MAGNETIC FIELD

If the magnetic field indicated by the gaussmeter is positive (without sign), the pole facing the side of the Hall Probe marked 'N' is 'North Pole'.

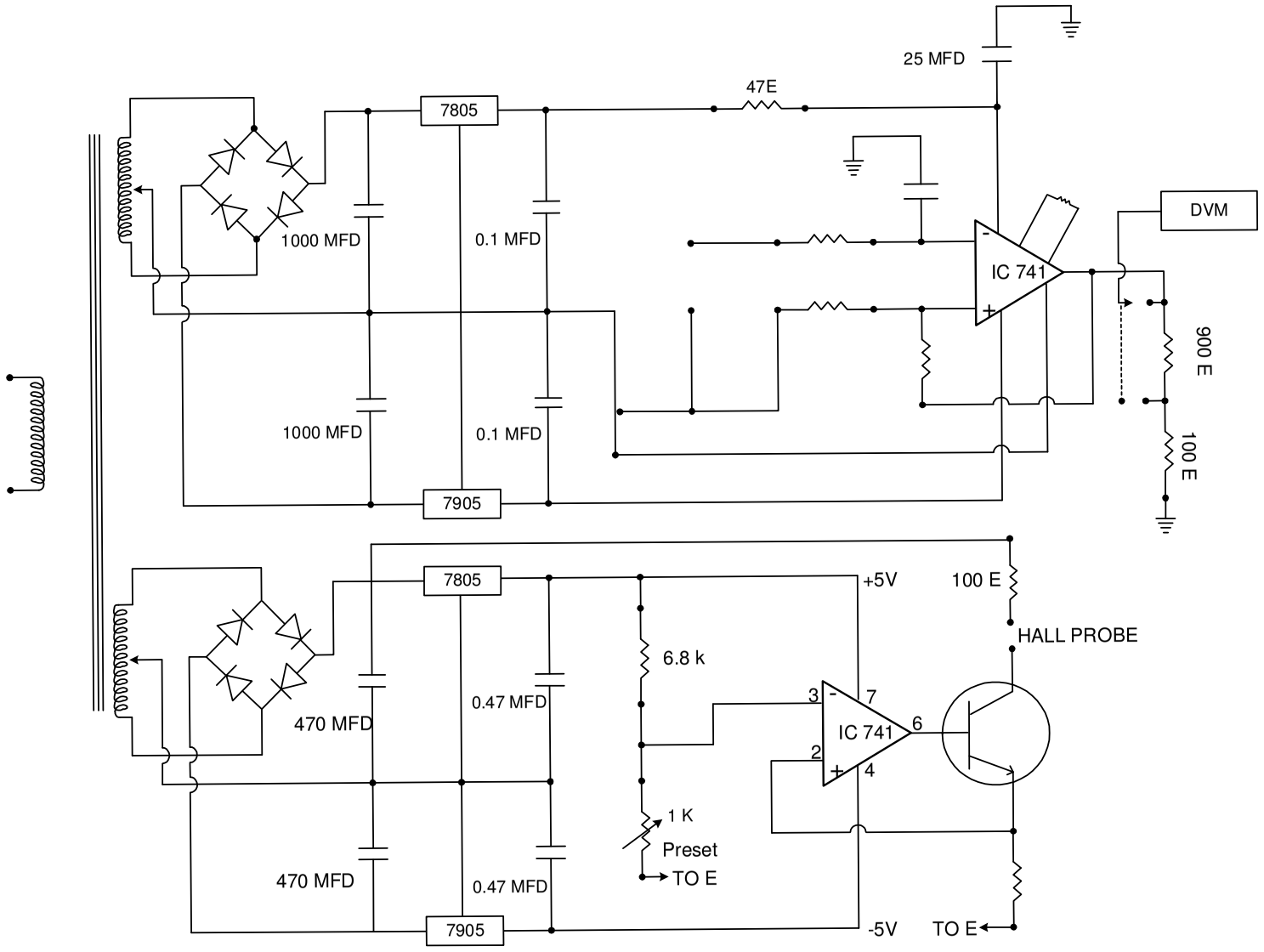
SERVICING INSTRUCTIONS

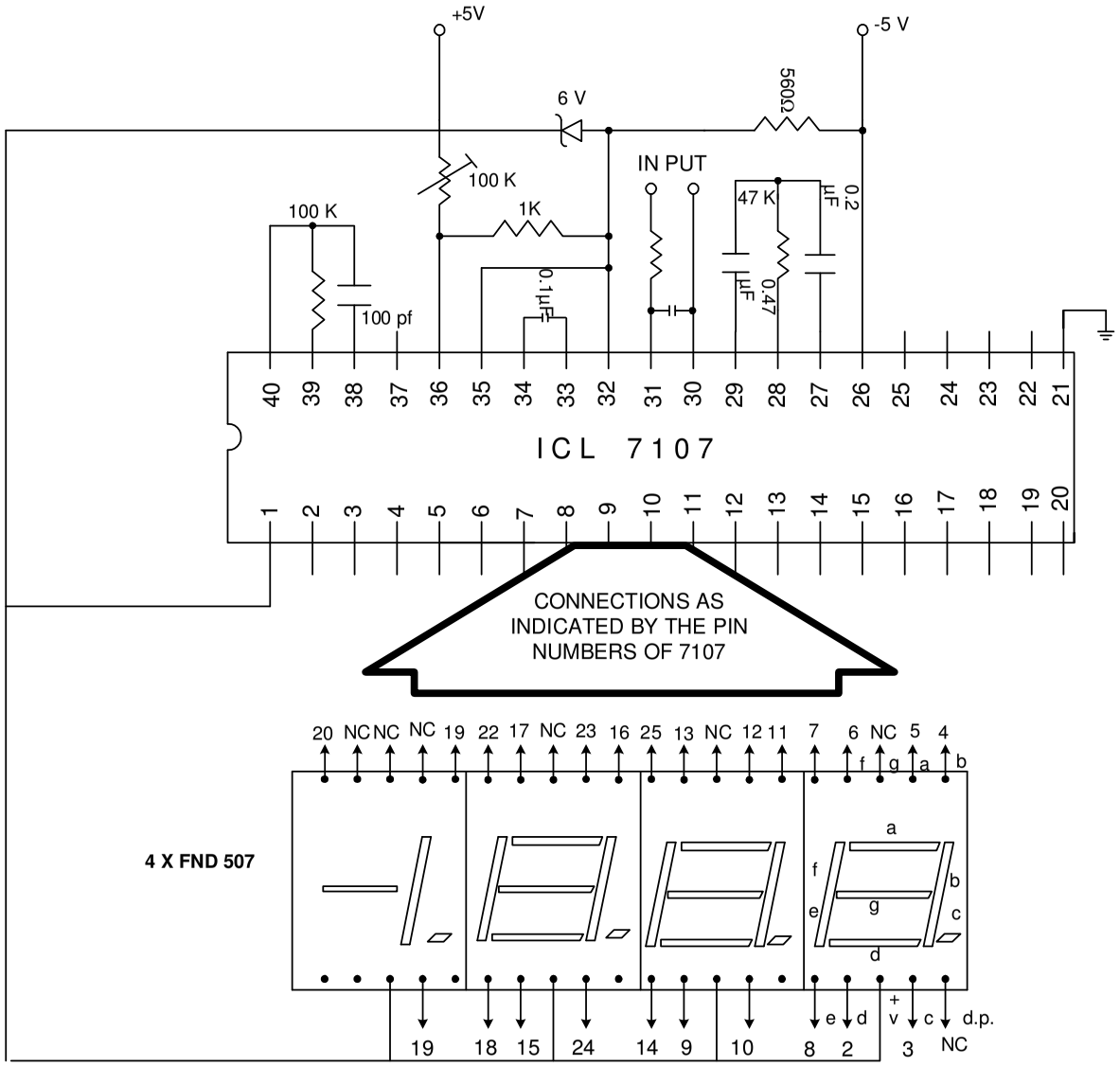
Normally the resistance between the Red & Black wires (Current input terminals) of the probe is about 1035 ± 50 ohms and that between Yellow & Blue wires (Hall Voltage terminal) is 625 ± 50 ohms. If any of these resistances is very high or short probe is taken to be defective.

After replacing the new Hall Probe it may be calibrated by adjusting the Hall Probe current to the value given for the new probe with the help of a preset (1K) provided for it in the circuit. Alternately it may be recalibrated with a standard magnet or gaussmeter.

DIGITAL GAUSSMETER, MODEL DGM-102

SCHEMATIC DIAGRAM





CIRCUIT DIAGRAM OF DIGITAL PANEL METER