

SHOT TIMER FOR MAGNETIC PARTICLE INSPECTION EQUIPMENT CALIBRATION



This instrument is designed to enable MPI equipment users to meet the requirements of auditors from organisations such as Boeing, who insist on accurate measurement of magnetising periods imposed on components by MPI equipment.

Rapid non-contact test to measure magnetising shot.

Measuring range 0.01 to 19.99 seconds.

Single  **control.**

Simple displayed messages.

rdy - ready for measurement.

run - measurement in progress.

Err - magnetising shot exceeds 20s.

Calibration traceable to international standards.



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GENERAL DESCRIPTION

The **DURAMAG** measures the magnetising shot time by monitoring the magnetic field produced by such equipment and displaying the time that this field is present. A Hall Effect sensor is used to detect the presence of magnetic fields with strengths from 20 mT (200 Gauss) upwards, and the resultant signal from this sensor is conditioned and processed to display, the time period during which the field was present. This obviously corresponds to the "Mag Duration" or "Timed Magnetising Shot".




OPERATION

The **DURAMAG** is switched on by pressing the  push button on the front panel. After a short time the display will show **rdy.**, indicating that the instrument is ready to measure. The **rdy** display will remain until the Hall Effect sensor detects the presence of a magnetic field. At this point the timer is triggered and the display now indicates **run.** When the field disappears the display will indicate and hold the measured duration of the magnetic field in seconds, which is displayed to 2 decimal places.

The instrument will hold the last reading until the  button is depressed, to reset the

instrument ready for a further measurement. If however, the instrument is left inactive for five minutes it will switch itself off to extend battery life. In the event that the measured duration of the magnetic field exceeds 20 seconds, the message **Err** will be displayed, indicating that there was an error with the last reading.

To switch off the instrument, depress the  button and hold it depressed for approximately 2.5 seconds or leave the instrument to switch itself off.

SUPPLY

The **DURAMAG** is powered from 2 x AA size batteries. A low battery level is indicated by the **batt** message on the display.

CALIBRATION

The **DURAMAG** is supplied with a calibration conformance certificate traceable to International Standards. This certifies the accuracy of the timing process.

A re-calibration service is available upon request.

TECHNICAL SPECIFICATION

Dimensions case:	Length = 152mm Width = 83mm Height = 34mm
Weight:	300g including batteries
Operating temperature:	0 to +55 °C
Storage temperature:	-25 to +70 °C (21 days)
Display:	LCD with 12mm high
Timing range:	0.1 - 19.99 seconds
Timing resolution:	0.001 seconds
Display resolution:	0.01 seconds
Supply current OFF:	negligible
Supply current ON:	up to 30mA
Instrument sealing:	IP65
Sensor Sensitivity:	20mT (200 Gauss)
Sensor Type:	Miniature Linear Hall effect sensor mounted within the instrument case, just above the display
Operating temperature:	0 to +55 °C (limited by PVC cable)