



Peak Tesla Meter

This meter displays the peak value of magnetic pulses in one polarity (see below for specification on the North vs. South Pole determination). There are three ranges: 20 T (max 19.99 T), 2T (max 1.999 T) and 200mT (max 199.9 mT, which is 0.1999T).

Turn the meter on (typically use the 200mT range first). The meter will re-zero itself in the first 2 seconds. Place the flat probe loop (with a hole in the center) in the area to be measured, with the flat plane of the probe perpendicular to the field direction (the probe in the same plane as the pulsing loop). The display will hold the peak field until you momentarily press the "RE-ZERO". If the peak value of both directions is required, flip the probe upside down (recessed side up vs. flat side up) and repeat the RE_ZERO and measurement. The oscilloscope output has a frequency response of 10Hz - 1MHz. The output voltage ranges from +2V to -2V, and is normally at (approximately) zero when no signal is present. For each of the three ranges, the output is set so that 2 volts represents the maximum of each of the 3 ranges. That is, when set at 20T, a 20T pulse would have a height of 2V whereas 5T would have a height of .5V. At 200mT range, 2V represents .2T (2000 gauss), etc. A positive oscilloscope output is the same polarity as is captured by the peak display. If the flat side of the probe is flat against a North Pole pulse, the polarity is correct to read the pulse, and the display will show the north pole peak. To measure the south pole peak, flip the probe loop upside-down.

Because this meter is not a DC field detector, it resets to zero even if it is in a static magnetic field (it is effectively "AC coupled"). Accuracy of the peak hold is +/- 2% of reading +/- 1 count, but only if the rise time of the pulse is 10 milliseconds or a shorter time. If the pulse rises very slowly, the displayed number may be too low. The pulse should dwell at least 5 microseconds near the peak value for the +/- 2% accuracy.

The unit is powered by external power. Power supply should be between 8-15V using a center positive DC power jack 2.1mm. (9V adapter supplied).