

To meet the needs of the computer peripheral, the electronic controls and the automotive fields, we have come up with a transducer which is compatible with today's digital circuitry, yet which remains small, compact and inexpensive. The RS digital magnetic pickup offers either positive or negative going logic signals, as may be required. Air gap-surface speed combinations vary from 20 inches per second at 0.010" to 2500 inches per second at 0.075". Another feature of the RS digital magnetic pickup is that once the surface speed-air gap specification is exceeded, the output amplitude does not change with further variations of air gap or surface speed. An option for specially shaped chisel tipped pole pieces is available for better resolution for extremely closely spaced teeth or slots.

T S I

OPERATING INSTRUCTIONS DIGITAL MAGNETIC PICKUP

GENERAL: The Model **RS 304-172** pickup provides a digital pulse output whenever there is an abrupt change from non-magnetic to magnetic material moving past the pole piece. The rise-fall times and amplitude of the output pulse are independent of the characteristics and speed of the magnetic discontinuity. The maximum rise time is 1000 nanoseconds; the maximum fall time is 50 nanoseconds.

MOUNTING: The pickups are designed to mount in a 1/4" —40 threaded hole.

ADJUSTMENT: The gap between the actuator and the Digital Magnetic Pickup pole piece should be adjusted so that the operating point is established above the sensitivity curves shown on the reverse side. As an example, if the surface speed is 100 ips any gap from 0" to 0.050" will provide full pulse amplitude under the worst case operating conditions. For more detailed sensitivity information, refer to the specification sheet.

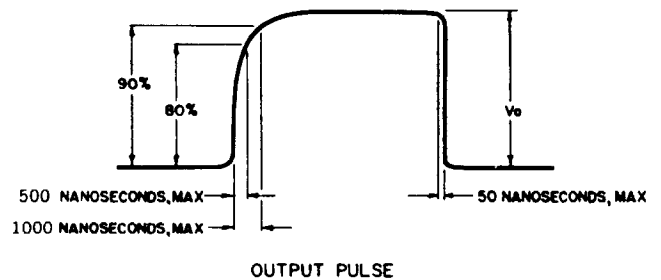
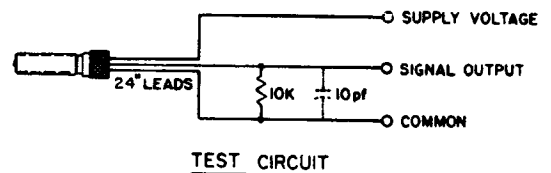
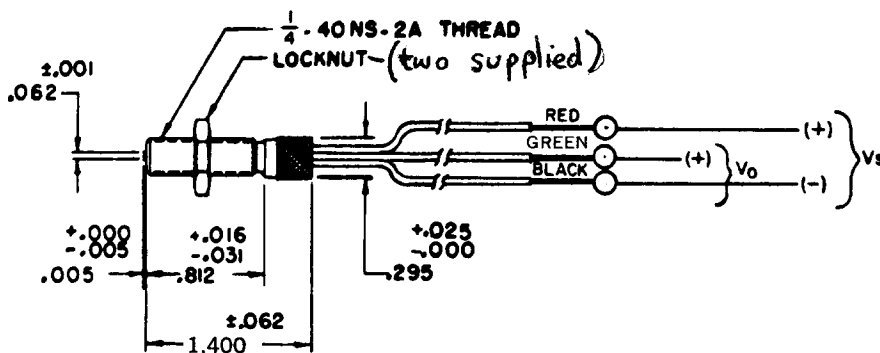
CONNECTIONS: Red (Power Input)—The red lead should be connected to the positive terminal of the d-c power source. A d-c voltage 5.0V dc $\pm 10\%$ may be used.
Black (Common)—The black lead is common to the low side of the signal and the negative side of the power source.
Green (Signal Out)—The green lead is the signal output.

CAUTION: OBSERVE POLARITY WHEN CONNECTING—MOMENTARY REVERSAL WILL DAMAGE THE UNIT.

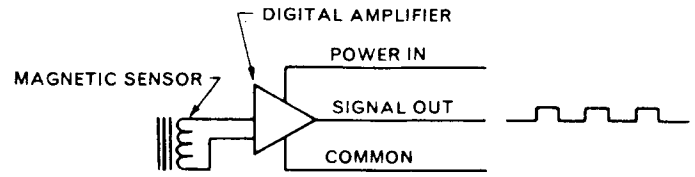
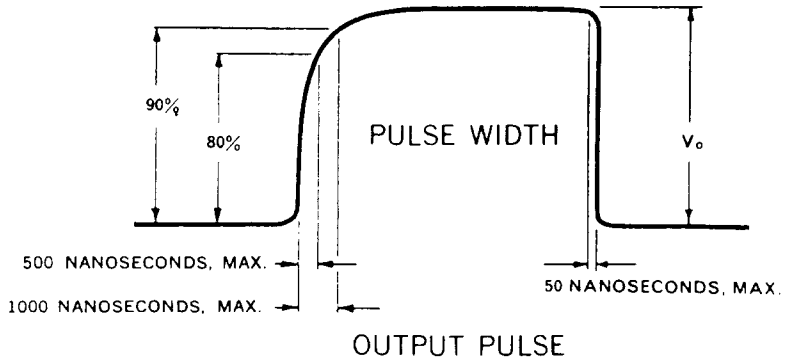
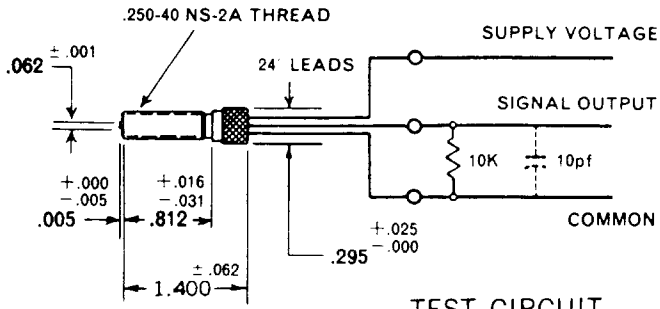
OUTPUT CHARACTERISTICS: With no discontinuity moving in front of the pole piece, the output voltage will be less than +0.150 volts. For each discontinuity passing the pole piece, a positive pulse will be produced. To calculate the output pulse amplitude for various loads the following relationship may be used:

$$V_o = V_s \frac{R}{R + 5,000}$$

Where: V_o —Amplitude of output pulse (volts)
 V_s —Supply voltage (volts, d-c)
 R —Loads impedance (ohms)
5,000—Approximate output impedance (ohms)



New applications for DIGIMAG center around the automobile and truck industries for use in ignition timing, top dead center, speed control, anti-skid, fuel control, crank and throttle angle sensing, wheel speed and overspeed sensing applications plus a variety of other diagnostic applications. Contact factory or your local sales representative for more information.



Model No.	Power Supply (V_s)	Output Zero Level	Output Pulse Height (V)	Max. Current (I_s) Short Circuit
DMP-250-1500-AP	+5 to 15V	+0.150V max.	$V = \frac{R_L V_s}{R_L + 5}$ Where: $R_L =$ Load Impedance (Kilohms)	$I_s = \frac{V_s}{5}$
DMP-250-1500-AN	-5 to 15V	-0.250V max.		$I_s =$ Short Circuit Current (MA)

FULL OUTPUT OBTAINED AT ANY POINT ABOVE LINE

