

# Lab 12: The Impedance of an Inductor

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**Table 1: First Approximation for  $R_{int}$**

$f(Hz)$	s/DIV	$V_{RL}(V)$	V/DIV for $V_{RL}$	$V_L(V)$	V/DIV for $V_L$	$R_{int}(\Omega)$
1000	0.5ms	3.48V	2V	0.08V	2V	2.35

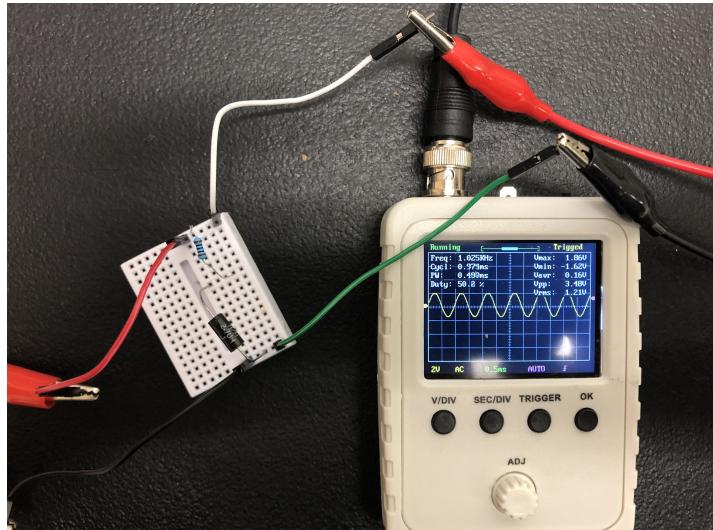
**Table 2: First Approximation for  $L$**

$f(Hz)$	s/DIV	$V_{RL}(V)$	V/DIV for $V_{RL}$	$V_L(V)$	V/DIV for $V_L$	$I_R(A)$	$Z_{L,eff}(\Omega)$	$X_L(\Omega)$	$L (H)$
65000	0.5ms	0.68V	0.1V	0.01V	0.1V	0.0086	1.163		

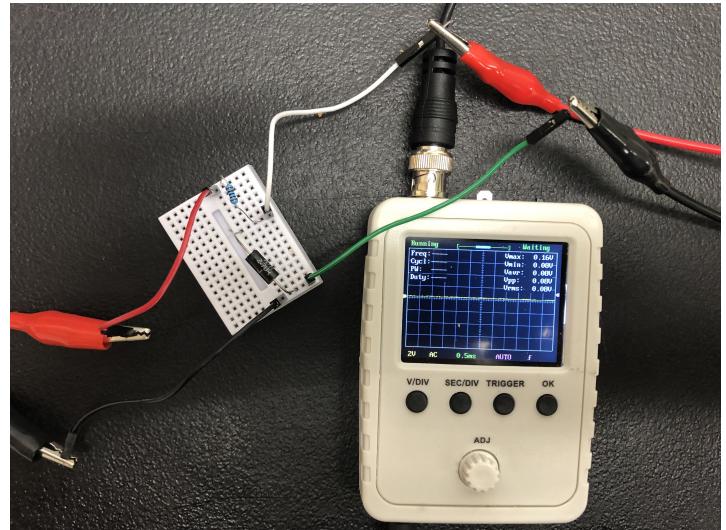
**Table 3: The Impedance of an Inductor**

$f(Hz)$	s/DIV	$V_{RL}(V)$	V/DIV for $V_{RL}$	$V_L(V)$	V/DIV for $V_L$
1000					
22000					
32000					
39000					
45000					
50000					
55000					
60000					
65000					

## SETUP



$V_{RL}$



$V_L$

- We assume that the current is determined by the largest resistor in the circuit,  $R$ . How large is the error that we can expect as a result?