

### Keithley Instruments

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### SPECIFICATION CONDITIONS

This document contains specifications and supplemental information for the Model 3765 Hall Effect Card. Specifications are the standards against which the Model 3765 is tested. Upon leaving the factory, the Model 3765 meets these specifications. Supplemental, typical, and characteristic values are nonwarranted, apply at 23 °C (73 °F), and are provided solely for informational purposes. Measurement accuracies are specified under these conditions: 23 °C ±5 °C, 5 percent to 70 percent relative humidity, non-condensing.

### CONFIGURATION

Input characteristics and output are matrix-configurable for Van der Pauw or Hall Bar measurements. Input characteristics are selectable for either low resistivity or high resistivity samples.

### BACKPLANE

Voltage measurements can be made by connecting the a digital multimeter via internal backplane relays. The card can be isolated from the backplane using relays allowing external nanovoltmeter connections.

#### HIGH RESISTIVITY MODE

Category	Specification
Input voltage operating range	+8 V to -8 V
Input impedance	>100 TΩ in parallel with less than 3 pF
Input bias current	50 fA at 23 °C. Doubles approximately every 10 °C rise in ambient room temperature.
Input voltage noise	<10 μV peak to peak, 0.1 to 10 Hz bandwidth
Output resistance	10 KΩ

#### LOW RESISTIVITY MODE

Category	Specification
Input voltage operating range	+8 V to -8 V
Input impedance	>10 GΩ in parallel with less than 420 pf
Input bias current	<100 pA
Input voltage noise	<50 nV peak to peak, 0.1 to 10 Hz bandwidth
Input to output resistance	<30 Ω

Model 3765 Hall Effect Card Hall Effect Card Specifications

Category	Specification
<b>Matrix configuration</b>	Four rows by five columns single pole
<b>Contact configuration</b>	Form A
<b>Current source input</b>	Three-lug female triaxial; input high to low clamped at $\pm 12$ V; maximum input 100 mA
<b>Sample inputs</b>	Four three-lug female triaxial. Outer shell is analog ground Maximum input overload: $\pm 12$ V HI to analog ground or guard to analog ground
<b>Current monitor output</b>	Insulated female BNC
<b>Measurement outputs</b>	Spring-loaded terminals; accepts AWG. No. 18 to No. 24 wire; maximum load: 1 mA
<b>Maximum common mode voltage</b>	Analog ground to earth ground: $30 V_{PEAK}$ , DC to 60 Hz sine wave

Category	General specification	
<b>Warmup</b>	One hour to rated accuracies	
<b>Isolation</b>	Analog ground to earth ground; greater than $10^9 \Omega$ in parallel with 150 pF	
<b>Actuation time</b>	<b>Low current</b>	1 $\mu$ s
	<b>Voltage</b>	60 ms
	<b>LO R bypass</b>	10 ms
<b>Relay type</b>	<b>Low current</b>	Reed
	<b>Voltage</b>	Optically coupled FET
	<b>LO R bypass</b>	Latching electromechanical
<b>Relay drive current</b>	<b>Low current</b>	16 mA
	<b>Voltage</b>	5 mA
	<b>LO R bypass</b>	56 mA
<b>Relay drive scheme</b>	<b>Low current</b>	Direct
	<b>Voltage</b>	Direct
	<b>LO R bypass</b>	Latching electromechanical
<b>Environment</b>	<p><b>Indoor use only</b></p> <p><b>Temperature range:</b> Operating: 0 °C to 50 °C (32 °F to 122 °F), up to 35 °C (92 °F) at 70% relative humidity. Derate 3% relative humidity per degree Celsius from 35 °C to 50 °C (95 °F to 122 °F)</p> <p><b>Storage:</b> -25 °C to 65 °C (23 °F to 149 °F)</p> <p><b>Altitude:</b> 0 to 2000 m (0 to 6562 feet) above sea level</p> <p><b>Pollution degree:</b> 2</p>	
<b>Dimensions</b>	25.40 mm high x 166.12 mm wide x 263.40 mm long (1.00 in. x 6.54 in. x 10.37 in.)	
<b>Weight</b>	1.32 kg (2.90 lbs)	
<b>Safety</b>	NRTL listed to UL61010-1 and CAN/CSA C22.2 NO. 61010-1-12; UL 61010-2-030 and CAN/CSA-22.2 NO.61010-2-030-12. Conforms with European Union Low Voltage Directive	
<b>EMC</b>	Conforms to European Union EMC Directive	

