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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 \pm 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 T Ω 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 μ V peak to peak, 0.1 to 10 Hz bandwidth
Output resistance	10 K Ω

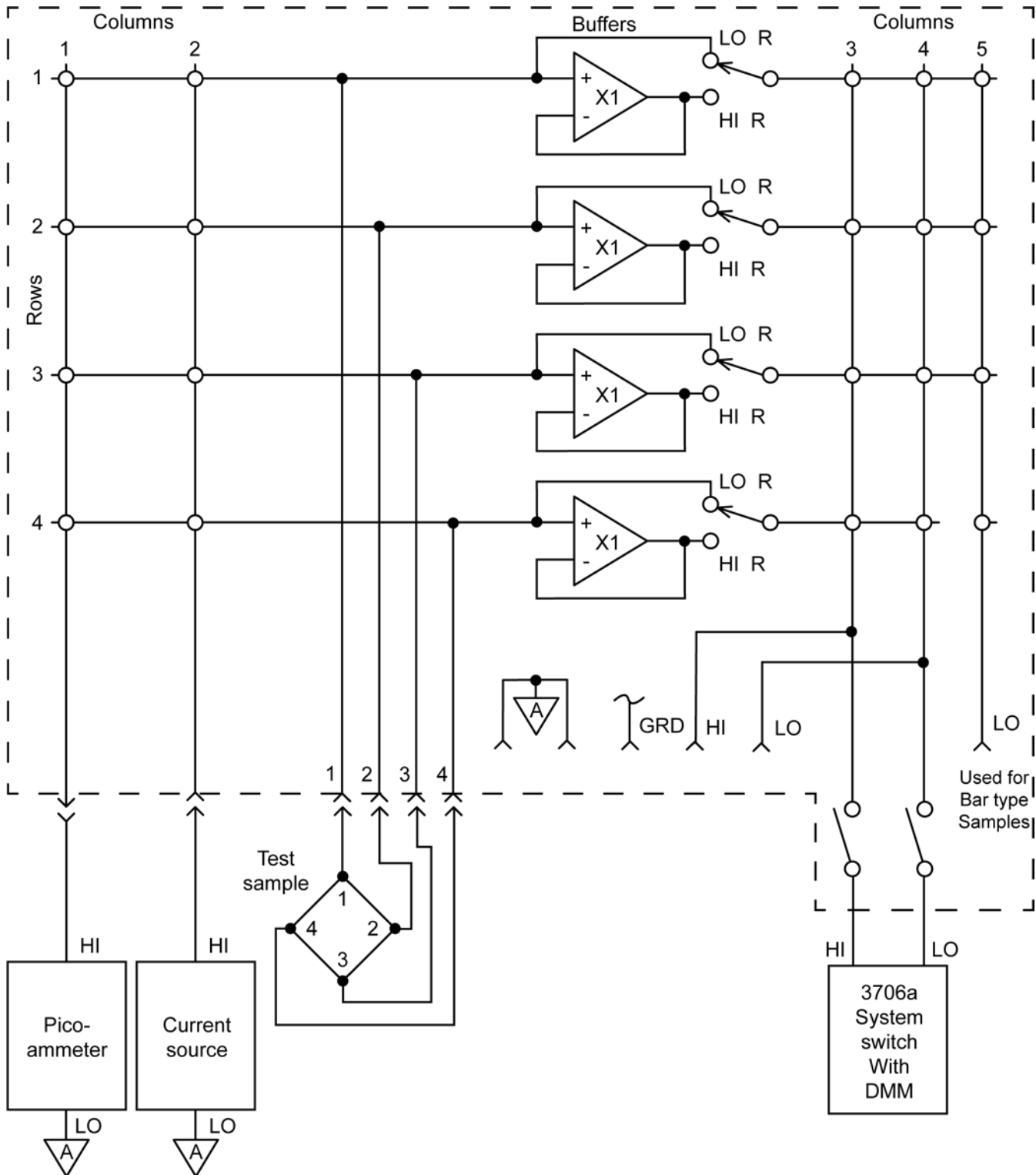
LOW RESISTIVITY MODE

Category	Specification
Input voltage operating range	+8 V to -8 V
Input impedance	>10 G Ω 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
Matrix configuration	Four rows by five columns single pole
Contact configuration	Form A
Current source input	Three-lug female triaxial; input high to low clamped at ± 12 V; maximum input 100 mA
Sample inputs	Four three-lug female triaxial. Outer shell is analog ground Maximum input overload: ± 12 V HI to analog ground or guard to analog ground
Current monitor output	Insulated female BNC
Measurement outputs	Spring-loaded terminals; accepts AWG. No. 18 to No. 24 wire; maximum load: 1 mA
Maximum common mode voltage	Analog ground to earth ground: 30 V _{PEAK} , DC to 60 Hz sine wave

Category	General specification	
Warmup	One hour to rated accuracies	
Isolation	Analog ground to earth ground; greater than $10^9 \Omega$ in parallel with 150 pF	
Actuation time	Low current	1 μ s
	Voltage	60 ms
	LO R bypass	10 ms
Relay type	Low current	Reed
	Voltage	Optically coupled FET
	LO R bypass	Latching electromechanical
Relay drive current	Low current	16 mA
	Voltage	5 mA
	LO R bypass	56 mA
Relay drive scheme	Low current	Direct
	Voltage	Direct
	LO R bypass	Latching electromechanical
Environment	Indoor use only Temperature range: 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) Storage: -25 °C to 65 °C (23 °F to 149 °F) Altitude: 0 to 2000 m (0 to 6562 feet) above sea level Pollution degree: 2	
Dimensions	25.40 mm high \times 166.12 mm wide \times 263.40 mm long (1.00 in. \times 6.54 in. \times 10.37 in.)	
Weight	1.32 kg (2.90 lbs)	
Safety	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	
EMC	Conforms to European Union EMC Directive	



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