



## Product Information

# MEMS - Hall / GMR



April 2009

### HALL PRINCIPLE FOR HANDLER PERFORMANCE

- Hall applications are used for magnetic field measurement of devices with integrated magnetic sensors
- Measurement of magnetic flux density
- All flux directions possible
- Principle of test: In the contact site of the handler device is moved into a magnetic field
- Magnetic fields in the contact site can be individually activated

### HALL APPLICATIONS FOR RASCO HANDLERS

#### 1. HALL APPLICATION WITH COIL

- Moving the device into the magnetic field of a coil
- Switch application
- Change of magnetic field intensity
- Shape and size of coil for different magnetic fields as required

#### 2. HALL APPLICATION WITH PERMANENT MAGNET

- Moving the device into the magnetic field of a permanent magnet
- Rotating field application
- Change of orientation of the magnetic field in the contactor
- Magnet is turned by a servomotor



Hall principle:  
Device is moved into  
a magnetic field

Mechanical accuracy of magnetic field, related to device:

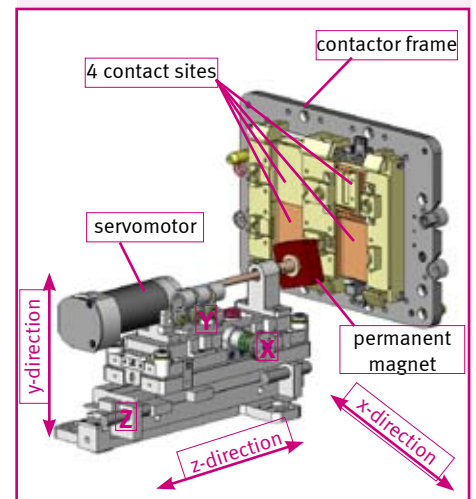
Complete Contactor Unit (4 contact sites)	Movability	Adjustment accuracy
X-direction (horizontal)	+/- 4 mm	min. +/- 0.1 mm
Y-direction (vertical)	+/- 10 mm	min. +/- 0.1 mm
Single Contact Site	Coplanarity in x/y/z direction	
X-direction (horizontal)	+/- 1.0 mm	+/- 0.1 mm
Y-direction (vertical)	+/- 1.0 mm	+/- 0.1 mm
Z-direction (horizontal)	60 mm	+/- 3.0 mm
Rotation	360°	—

### MEMS Availability

Realized Applications:	Gravity/ Pick&Place	Test-In-Strip
Hall	X	X
GMR	X	
Optical	X	
Pressure	X	X
Acoustic	X	
Gyrometer	(on request)	
Accelerometer	(on request)	



Hall contactor with coil





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**Rasco**  
A Cohu Company

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### HALL SENSOR TEST SO3000

- 32 in parallel
- Temperature range -60° to +160°C
- Distance between reference sensor/magnet interference plate and coil < +/- 0.15 mm



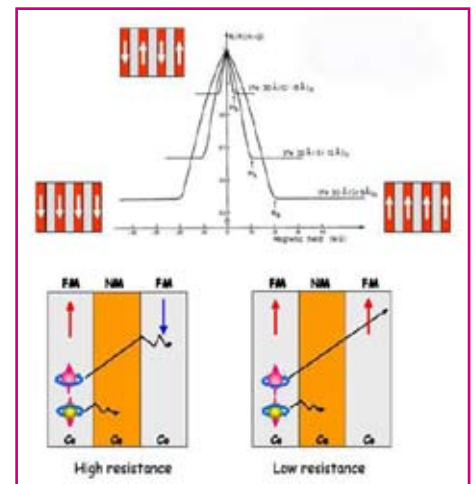
Hall contactor SO3000

### GMR - GIANT MAGNETO RESISTANCE SENSORS

- GMR effect: Electric resistance dependent on the orientation of the magnetic field in structures with ultra thin separated magnetic and non-magnetic layers
- For magnetic sensor device test purposes: Change of the magnetic field in the contactor
- Measurement of magnetic field intensity

### CUSTOMER BENEFITS OF RASCO HALL AND GMR APPLICATIONS

- Various Hall applications for individual customer requirements available
- Extremely high positioning accuracy of the device in the contactor for best performance
- Hall contactors for Gravity Feed and Pick & Place Handlers with single, dual, quad or octal contactor (depending on handler type, for Pick&Place up to 32 contact sites)
- Hall applications for Test-In-Strip Handler SO3000
- Communication between tester and handler to control the Hall unit via Ethernet TCP/IP or GPIB
- All Hall and GMR applications are available on a standard Rasco tri-temp base system, a standard conversion kit and the specific MEMS configuration



Schematic GMR effect

## SALES & SERVICE

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