

Product Information

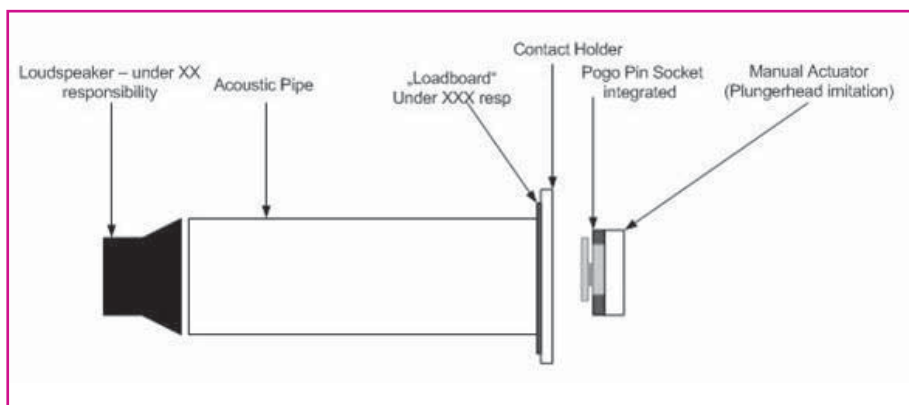
# MEMS - Acoustic



April 2009

## ACOUSTIC SENSOR TEST WITH RASCO HANDLERS

- Acoustic sensors are used e.g. in mobile phones, microphones, notebooks, medical systems, automotive applications, cameras and others...
- Measurement of sound with reference microphone in an acoustic chamber
- Integration into the contact site of a **standard handler**:
  1. Type A - micro top of device (top of device): Rerouting board in plunger head (dead-bug handling)
  2. Type B - micro on lead site (bottom of device): Standard live-bug handling and standard contacting

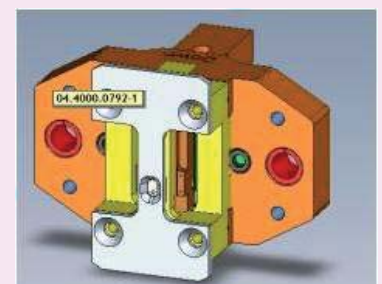
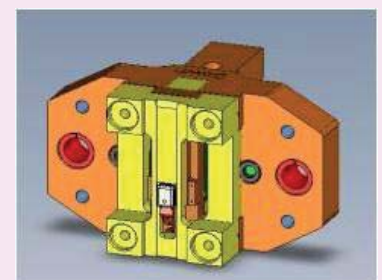
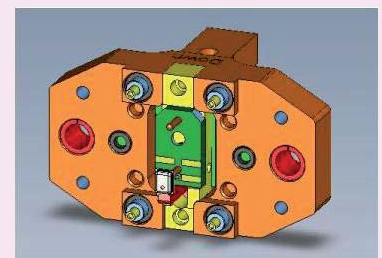


System Level Diagram Acoustic Test

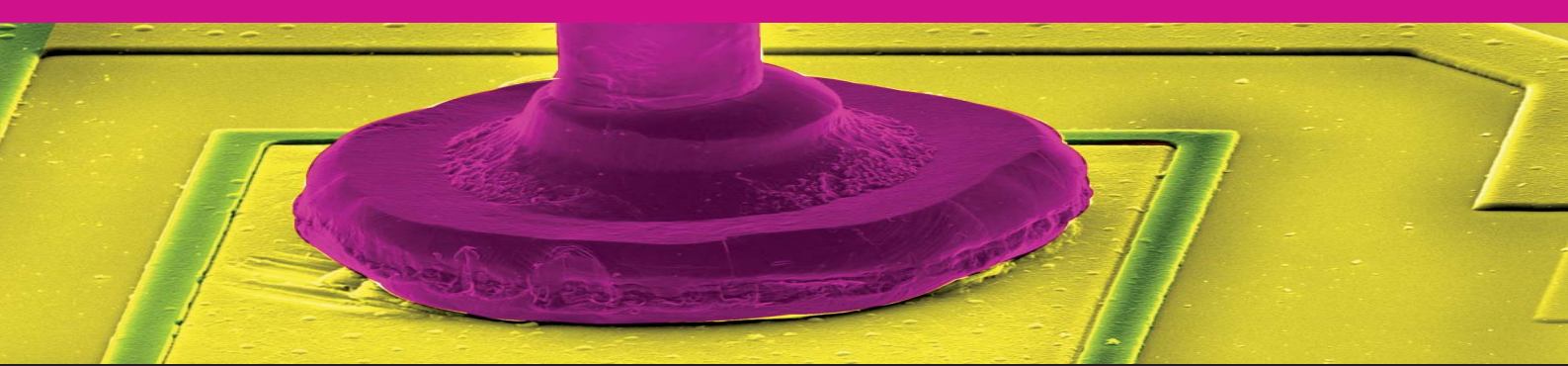
## CUSTOMER BENEFITS OF RASCO ACOUSTIC MEMS APPLICATIONS

- Various applications for individual customer requirements available
- Acoustic chamber exclusively provided by Rasco
- Extremely high accuracy of the contactor components for best performance
- 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)
- All acoustic applications are available on a standard Rasco tri-temp base system, a standard conversion kit and the specific MEMS configuration

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)	



Schematic Acoustic Contactor with/without plungerhead



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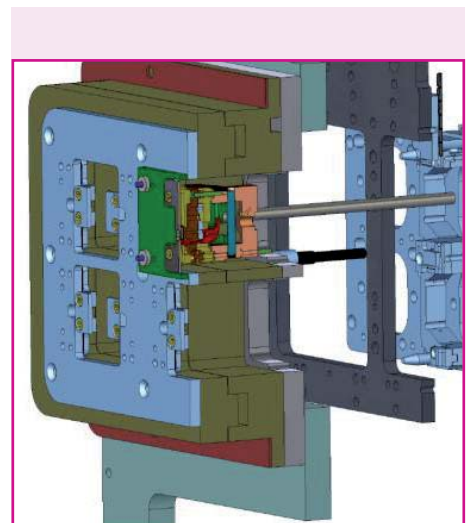


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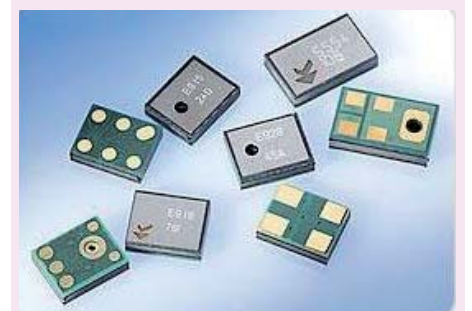
## SPECIFICATIONS

<b>Acoustic Chamber (example)</b>	
<ul style="list-style-type: none"> <li>• Min 75 dB of sound attenuation</li> <li>• Anechoic environment</li> <li>• Sound source at 60 cm from DUT (far field versus footprint) versus sound pressure chamber, near-field, diffuse field terms of loudspeaker size</li> </ul>	
<b>Sound Source <sup>(1)</sup></b>	
• Sound source bandwidth	20Hz to 20kHz @ 95dB SPL at 60 cm
• Sound source peak pressure	120dB SPL @ 1kHz at 60 cm
• Total distortion (amplifier and speaker)	>0.4% @ 20Hz to 20kHz
<b>Reference Microphone <sup>(1)</sup></b>	
• Sensitivity	2.5mV/Pa
• Dynamic range	27 - 160 dB re 20µPa
• Frequency range	3.15 Hz - 40 kHz
<b>Preamplifier <sup>(1)</sup></b>	
• Frequency range	2 Hz - 200 kHz (±0.2 dB)
• Noise linear (20 Hz - 20 kHz)	<6µV (typically 3.5µV) rms
• Operating temperature	-30°C to +70°C
<b>Microphone Power Supply <sup>(1)</sup></b>	
• Gain settings	0dB, +10dB, +20dB, +30dB, +40dB, +50dB
• Frequency response	3.5 Hz - 200 kHz
• A-weighting network	IEC 60651 type 0
<b>Acoustic Tests</b>	
• Frequency response	(on request)
• Sensitivity	(on request)
• SNR (Signal to Noise Ration)	(on request)
• THD (Total Harmonic Distortion)	(on request)
<b>Electrical Test</b>	
• Output impedance	(on request)
• Current	(on request)
<b>Application temperature range: -50°C to +85°C</b>	

(1) third party assembly



Schematic Acoustic Quad Contactor



Examples Acoustic Devices

## SALES & SERVICE

For more information please ask your local Rasco sales or service team or contact [sales@rasco.de](mailto:sales@rasco.de) or [service@rasco.de](mailto:service@rasco.de)

Contact: Germany: Rasco GmbH, Geigelsteinstraße 6, 83059 Kolbermoor/Germany, Phone: +49-8031-2337-0, Fax: +49-8031-2337-10  
 Asia: Delta Design, Inc./Rasco Asia, 3 Kallang Sector #01-06, Singapore 349278, Phone: +65-6288-6949, Fax: +65-6289-6949  
 USA: Delta Design, Inc./Rasco US, 12367 Crosthwaite Circle, Poway, CA 92064-6817, Phone: +1-858-848-8000, Fax: +1-858-848-8180  
 email: [info@deltad.com](mailto:info@deltad.com), [info@rasco.de](mailto:info@rasco.de); web: [www.deltad.com](http://www.deltad.com), [www.rasco.de](http://www.rasco.de)