

Position Sensors Help Cameras Focus on Mars

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Hall Effect position sensors

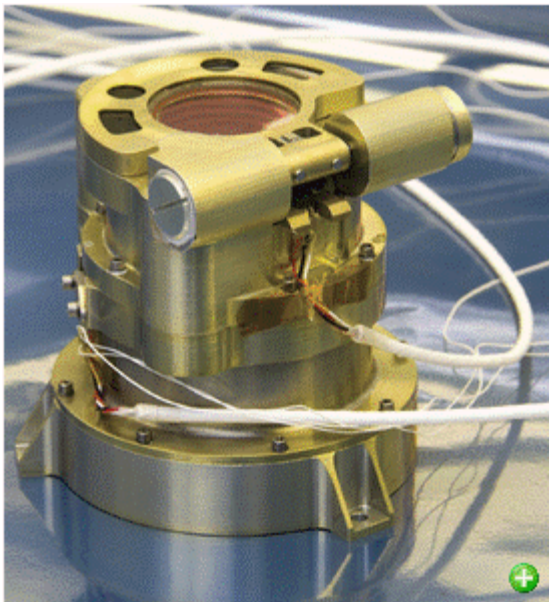
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Micropac's hermetic Hall Effect devices are being used by Alliance Spacesystems, LLC and Malin Space Science Systems in camera mechanisms on the Mars Science Laboratory (MSL) Rover. Malin Space Science Systems' Mast Camera (MastCam) and the Mars Hand-Lens Imager (MAHLI) will use focus, filter wheel, and cover mechanisms produced by Alliance Spacesystems. The Hall Effect position sensors are used in the focusing mechanisms on both cameras.



http://www.techbriefs.com/images/stories/features/2008/11_08app1.png

The two MastCams, each with a different focal length, are high-resolution color cameras mounted to a mast about two meters above the Martian surface. With their integral eight filter wheel mechanism, they will image the area immediately around the rover and study distant objects that the rover cannot reach physically. Mounted to the turret at the end of the rover's sample acquisition robotic arm, the MAHLI is designed for close examination of rocks, and reveals details smaller than the width of a human hair. Micropac's position sensors are used as an indicator of the position of MAHLI's protective lens cover. They also provide precise indexing of MastCam's filter wheel to align one of the eight filters to the lens assembly. The position sensors were chosen for their extreme low-temperature capabilities, surviving temperatures as low as -135°C and operating at -70°C in qualification testing.