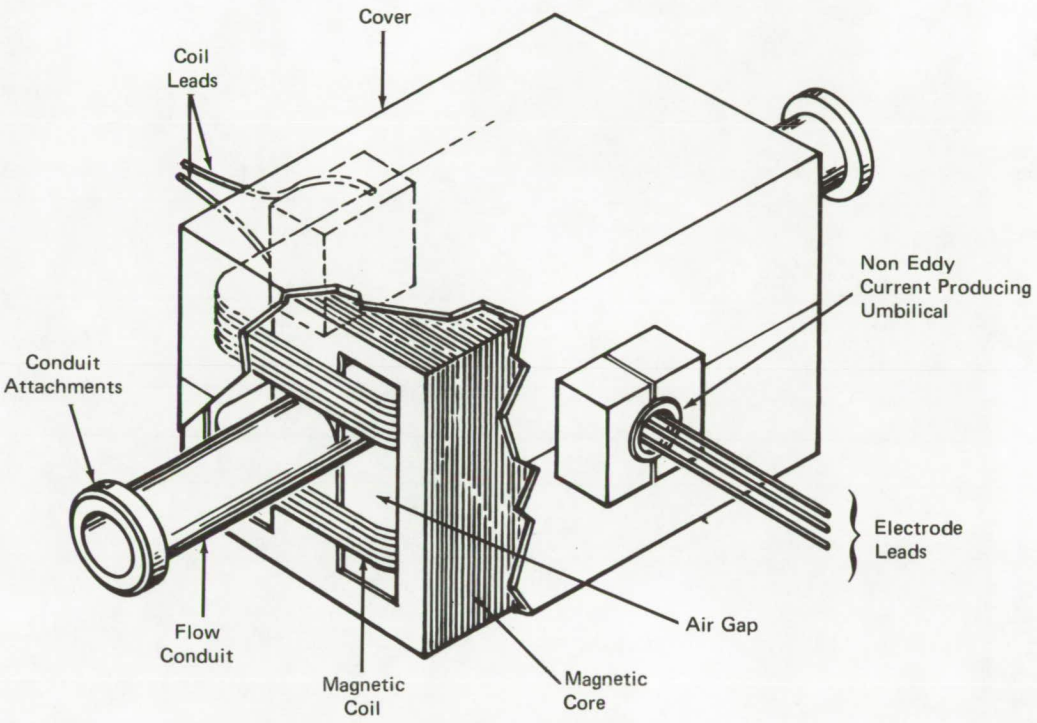
NASA TECH BRIEF

Marshall Space Flight Center

Low Noise Electromagnetic Flowmeter



The problem:

Parasitic hum associated with alternating magnetic fields increases circuit noise and limits measurement resolution in devices which measure the flow rates of conductive fluids.

The solution:

Parasitic hum is removed by the use of an isophase magnetic field created within the flowmeter and an enclosure which prevents leakage of this flux field. This method prevents contamination of the flow conduit and eliminates the zero point drift.

How it's done:

The flowmeter consists of a tubular flow conduit with a pair of detecting electrodes, one of high impedance and the other of low impedance. An electromagnet produces an alternating magnetic flux of the same phase throughout a substantial portion of the flow meter so that the output of a phase sensitive detector is proportional to the flow rate and not the variations in other physical parameters of the system.

(continued overleaf)

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Code A&PS-TU
Marshall Space Flight Center, Alabama 35812

Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

Patent Counsel
Marshall Space Flight Center
Code A&PS-PAT
Marshall Space Flight Center, Alabama 35812

Source: V. J. Cushing of
Engineering-Physics Co.
under contract to
Marshall Space Flight Center
(MFS-21291)