BESTECH
Sensors & Instrumentation

MICRO-EPSILON

Inductive-potentiometric displacement sensors
VIP Series

Load detection in washing machines

The displacement sensor ILU (Integrated Load and Unbalance Sensor) measures the depression of the suds container when the washing machine is loaded and its deviation during the spinning stage. Due to the inductive measurement principle, the sensor provides an absolute position acquisition for static and dynamic processes. The patented VIP sensor principle enables the integration of the sensor into a compact frictional damper. This gives he following additional advantages:

- The sensor is protected against ambient effects in thewashing machine.
- The sensor is mounted in the washing machine with the frictional damper as an integrated constituent part in one working step.
- Simple fitting of the sensor system through implementation of application-specific interfaces.

The operation and washing results are optimized through the load measurement. The displacement sensor supplies an output signal proportional to the weight of washing. The sensor signal is converted by the electronics into a visible bar display for the user. The momentary loading status is continuously displayed visually, enabling the washing drum to be optimally and fully loaded. In parallel to this, the amount of washing agent is calculated depending on the load and displayed. The operating costs are reduced and the environment is also preserved. The sensing of unbalance enables the speed to be adapted during the spin-dry stage. The running of the appliance and the spin-drying performance are improved and the service life increased.

SIEMENS Washing Machine Series Iq1430

SUSPA frictional damper
with integrated displacement sensor RD 32 FKS

Application

Measurement principle

The sensor forms a component with distributed electromagnetic parameters (R, L, C). It consists of a measuring coil with two connections, an intermediate layer and an electrode. The target (measuring ring) surrounds the measuring coil and can be moved along the measuring coil without making physical contact with it. The measuring signal is tapped off from the electrode and evaluated with the aid of an operational amplifier, whereby the output signal UOUT is proportional to the position X of the target. Consequently, an optimized ratio of sensor length to measuring range is achieved and the sensor can be integrated into the spring/frictional damper system.

Technical details

– Measuring range: 50 mm
– Reslution: 11 BIT

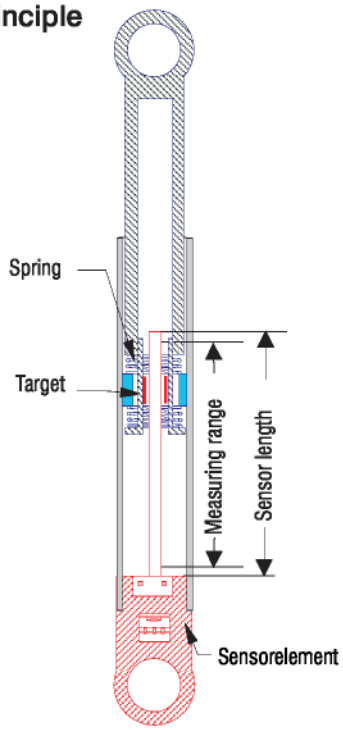
Sensormodell

I LU-50-O-10-SR

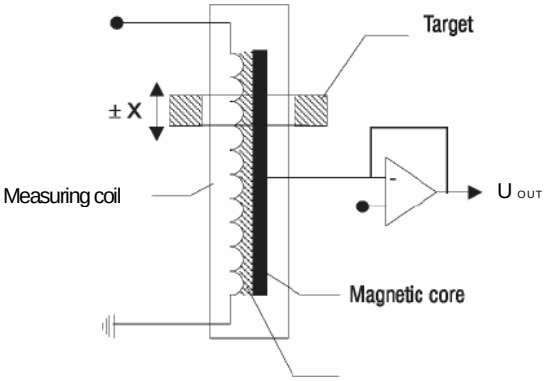
Reasons for the sensor selection

– Statically and dynamically effective sensor principle.
– Economical vip electronics.
– Sensor can be integrated into the frictional damper duetothe short installed length.

Functional principle



Block wiring diagram



Bestech Australia
U14/44 Garden Blvd
Dingley, VIC 3172
Tel.: 03 9540 5100
Fax: 03 9551 5541
Sales@bestech.com.au
www.bestech.com.au

Distributor of micro-epsilon
Koenigbacher Str. 15
94496 Ortenburg / Germany