

# SERVOCONTROLS

Save Energy with Feedback

Technical Alliance Partner for



The leader in Magnetostrictive Technology.



### TYPES OF LIQUID LEVEL SENSORS

- MR Model
- MC 420 Model
- MG Model
- USTD II Model

### OUTPUTS

- Analog 4-20 mA with HART Enabled
- **Digital Outputs**
- Modbus RTU
- DDA
- Foundation Fieldbus

### DIFFERENT TYPES OF FLOATS



### MATERIAL CHOICE OF FLOAT FOR CRITICAL APPLICATION:

- 316L Stainless Steel
- Teflon
  - Hastelloy C-275
  - Monel-500
  - Kynar
  - Nitrophyl
- Float size from 50 mm to 250mm  
- Specific gravity from 0.36 up

### 3 IN 1 MEASUREMENT THROUGH ONE OPENING

- Product Level
- Interface Level
- Temperature



### INDUSTRIES SERVED :

#### Pharmaceutical & Biotech



#### Chemical Industry



#### Specialty Chemicals



#### Oil & Gas Refineries



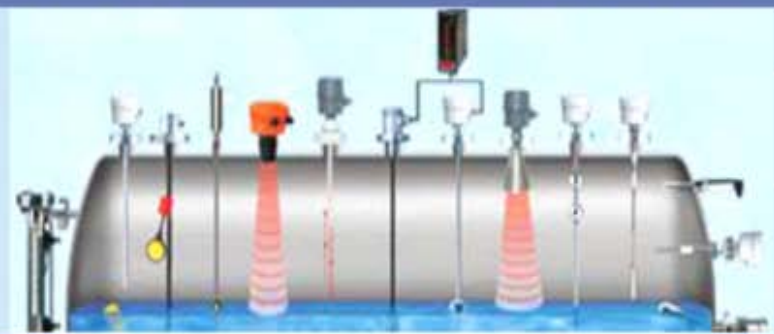
#### Food & Beverages



#### Ship Building & Marine Industry



### COMPLETE SOLUTION FOR LEVEL MEASUREMENT



### SERVOCONTROLS SPECIALTY

- MTS approved In house Service/Repair facility
- All types of Level Switches for Liquid & Solid application
- Ultrasonic/Guided Wave Radar, RF-Capacitance, By-pass Level Transmitter



## TYPES OF MAGNETOSTRICTIVE TRANSMITTERS

### 1. MR Model With Analog Output



- 4 to 20 mA analog Output with HART communication
- Non linearity - 0.02% FS
- Repeatability - 0.01% FS
- Input Voltage - 10.5 to 36 Vdc
- Two Channel Output
- Measuring length up to 12200mm

### 2. MC 420 Model With Analog Output



- Input Voltage - 10.5 to 36 Vdc
- Non linearity - 0.02% FS
- Repeatability - 0.01% FS
- 4 – 20 mA output with HART communication
- Measuring length - 457 to 5486 mm
- Used in hazardous area applications

### 3. MG Model With Digital Output



- Digital output with Modbus RTU, DDA or FOUNDATION Fieldbus
- Non linearity – 0.008% FS
- Hysteresis – 0.002% FS
- Input Voltage – 9 to 32 Vdc
- Measuring Length –  
Rigid pipe - 508 to 7620 mm  
flexible hose - 3048 to 22000 mm

### 4. USTD II Model



- Input Voltage – 10.5 to 30.1 Vdc
- Output - Direct Digital Access (DDA)
- Repeatability – 0.001% FS
- Measuring Length – up to 3785 mm
- Used In fuels, solvents & sump
- It is designed for use in Underground Storage Tanks

## INDUSTRIAL APPLICATIONS OF MAGNETOSTRICTIVE LEVEL SENSOR

### • PHARMACEUTICAL & BIOTECH INDUSTRY



- Level Plus sensors are ideal for batch and continuous processing inherent in the pharmaceutical industry
- Unparalleled accuracy and reliable measurements
- Customization & faster start-up time compared to other technologies

### • SPECIALTY CHEMICALS



Whether you're dealing with extreme temperatures, foaming liquids or caustic fluids, the specialty chemical industry presents a challenge to sensors that can not only withstand such environments - but can also deliver quality performance under those conditions.

### • OIL & GAS REFINERY



From bulk petroleum storage refined fuels to propane gas, Level sensors provide the most accurate level measurements in the industry.

- Not affected by changes in atmospheric conditions
- The most accurate and reliable measurements

### • FOOD & BEVERAGE INDUSTRY



Everyone wants accurate inventory monitoring in order to know how much of a liquid is being produced or consumed. The need for distilleries is increased due to taxes. Distilleries are taxed on how much alcohol they produce and the more accurate the inventory level the less distilleries overpay in taxes.



## WHY MAGNETOSTRICTION ?

There are several technologies in addition to Magnetostriction which are used for measuring liquid level. But why Magnetostriction is most preferred in critical application in industries? Please refer below table.

Technology	Repeatability	Non linearity	Level & Interface	Ruggedness
Magnetostriction	High	Low	Yes	High
Radar	High	Medium	No	High
Ultrasonic	Medium	Medium	No	Medium
Capacitance	Medium	Medium	No	Low
TDR	Medium	Medium	Yes	Medium
Diff Pressure	Medium	Medium	No	Medium

### ACCURACY OF MEASURING :

- 0.1 mm for PRODUCT LEVEL
- 1 mm for INTERFACE LEVEL
- 1 Liter for PRODUCT VOLUME
- 0.1 Degree C for AVERAGE TEMP

## CUSTOMER REFERENCE



## SERVOCONTROLS ELECTROMECHANICAL LINEAR ACTUATOR FOR PROCESS CONTROL & LIQUID PACKAGING :

### Servocontrols GSM40

- Precise air control to the ovens is needed in this conversion process
- It is being used to control the air that is going into the Zinc process furnace/oven.



### Servocontrols GSM30

- 8 inch Samson valve
- 2 inch stroke
- Control of water
- 1 inch kammer valves
- GSM30 actuator with SV controllers



### Servocontrols I/ER Series



### Servocontrols EL30

- Very High Temperatures
- Explosion Proof - Class I Div I
- EL30 with customer mount/SV controller



### Various applications Of Linear Actuator In Process Industries



Damper application



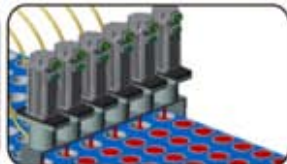
Specialty application



Valve application

### Sample Valve Applications:

We can retrofits and valve from any manufacturer, including: Emerson (Fisher), Samson, Kammer, Badger, Flowserve, Woodward, Masonellan, Warren, Fox, Jordan, Leslie



## SERVOCONTROLS ELECTROMECHANICAL Linear

### Actuator Applications :

Milk, Juice, Yogurt, Pudding, Gelatin  
Grease, Glue, Paint, Solvents, Dental Adhesive, Ink  
Used as highly accurate piston pump

### Advantages :

Precise volume control  
Flexible flow rate and volume adj.  
Adapts to product variations



**SERVOCONTROLS 100% EOU Unit in  
12 acres of land near Hattargi Belgaum  
Special Economy Zone**



**SERVOCONTROLS Existing facility  
Industrial Estate, Udyambag, Belgaum**



**Address for Correspondence:**

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**Servocontrol's  
First servo Valve Test Setup at Home Garage  
in July 2002 at Belgaum, Karantaka**



**Kaigarika Ratna Prashasti  
(Industrial Jewel Award May-2011)**



**Inauguration of Brand New Facility by then  
Chairman & CEO Mr. Sidney Emery of  
MTS Systems Corporation, Minneapolis  
USA on 24th Oct 2007**



**Servocontrols  
State bank of India's Esteemed Customer**



**Various MTS awards to Servocontrols in USA & Germany**



**Various Technology Excellence Awards**