

# LVDT Transducer

## With spring and IN-LINE Amplifier

### Model 8739

Code:	8739 E
Manufacturer:	burster
Delivery:	4 weeks
Warranty:	12 months
Issue:	1.2.2003



- Transducer diameter 8 mm
- Ranges from 0 ... 1 mm to 0 ... 10 mm
- Non-linearity 0.25 % Full Scale
- High sensitivity
- IN-LINE amplifier, output 0 ... 10 V

### Application

This gaging LVDT model is designed to provide linear displacement measurements in applications requiring a spring loaded and small diameter transducer.

It is able to measure direct or indirect mechanical values transformed into distances (e.g. force, extension, torque or vibration).

Typical application fields:

- Machines
- Servo systems
- Motor vehicles
- Dynamometers
- Production plants

Examples for measurements:

- Tank expansion
- Material thickness
- Engine head lift
- Past inspection after production
- Weighing systems
- Structural testing

### Description

In a very small case is built-in a LVDT-linear variable differential transformer which is an inductive device containing primary and secondary coaxial wound coils, and ferromagnetic core.

The core links the electromagnetic field of the primary coil to the secondary coils, inducing a voltage in each.

The shaft is guided by a linear bearing, and terminated in a hardened steel gaging tip. A spring is pressing the tip to measured object.

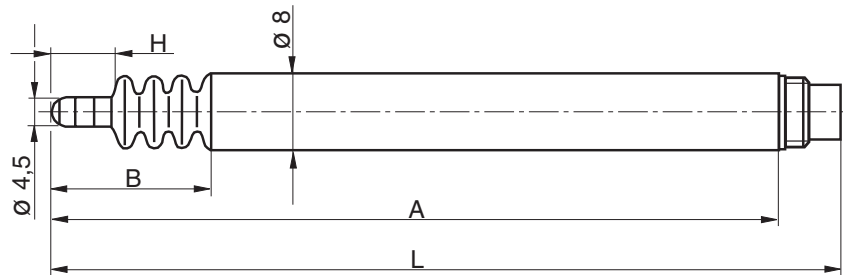
The IN-LINE amplifier is placed outside the transducer, integrated in the connecting cable. It is especially adjusted to the transducer and must not be changed. Output is 0 ... 10 V for measuring range.

**Technical data**

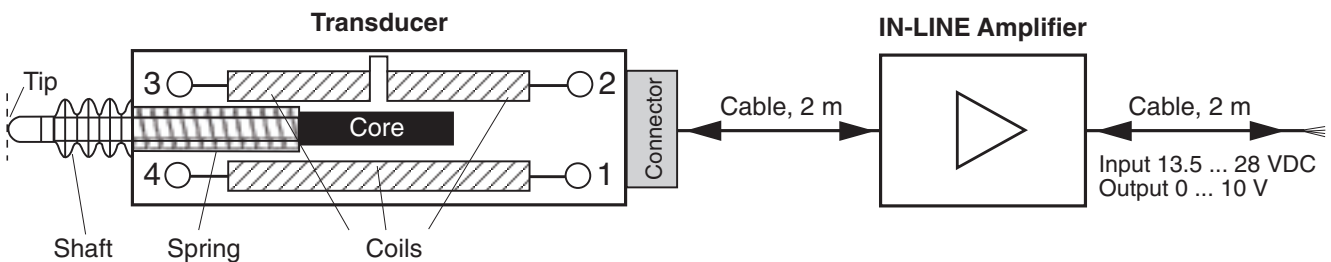
Order Code	Measuring Range	Dimensions [mm]				Mechanical Frequency [Hz]	Tip Force at Full Scale max.[N]	Weight [g]
		L	A	B	H*			
8739-5001-V501	0 ... 1 mm	103	97.5	15,5	4	10	2.3	25
8739-5002-V501	0 ... 2 mm	103	97.5	15.5	4	10	2.3	25
8739-5005-V501	0 ... 5 mm	140	130	23.0	7	5	2.3	35
8739-5010-V501	0 ... 10 mm	146	140	27.0	11	5	3.3	40

\* total distance H: pre distance 1 mm + measuring range + end distance 1 mm.

**Technical Drawing**



**Figure of Function**



**Electrical Values**

Supply voltage (protected against wrong polarity): 13.5 ... 28 VDC  
 Current input: < 30 mA  
 Output voltage: 0 ... +10 VDC  
 Ripple: approx. 20 mV<sub>pp</sub>  
 Terminal impedance: 1 kΩ  
 Recommended load resistor: about > 1 MΩ

Electrical connection: shielded, PVC-insulated wire, total length 4 m, Bending radius ≥ 10 mm, once open-end, the other end is equipped with a 4-PIN connector to sensor  
 Assembly: Fixation of the sensor by clamping  
 Pin-assignment: Supply-line of IN-LINE amplifier  
 Supply voltage .....brown  
 Output voltage .....yellow  
 GND/Supply/Output .....white  
 Shielding .....copper

**Environmental Conditions**

Working temperature range (incl. amplifier): - 20 °C ... 80 °C  
 Influence of temperature: 0.03% F.S./K

**Mechanical Values**

Deviation of linearity: ± 0.25 % F.S.  
 Repeatability: ± 0.1 % F.S.  
 Push rod: running in ball-bearings  
 Measuring tip: thread M 2.5  
 Spring force: ranges up to 5 mm max. 2.3 N  
 range 10 mm max. 3.3 N  
 Case material of sensor's transducer: ST 25, nickel-plated  
 Case material IN-LINE amplifier: plastic  
 Protection class of transducer: IP 60  
 Protection class of IN-LINE amplifier: IP 20  
 Dimensions of IN-LINE amplifier: 50 x 38 x 14 [mm]

**Order Example**

**Stroke transducer** with a measuring range of 0 ... 5 mm inclusive IN-LINE amplifier 0 ... +10 V Analogue output **Model 8739-5005-V501**

**Accessories**

**Installation of connector Model 99004**  
**Connector, 12-PIN, Matching to burster table equipment, e.g. model 9162, 9180, 9181 Model 9941**  
**Connector, 9-PIN, Min-D for model 9310 (external supply voltage necessary!) Model 9900-V209**  
 Power supply equipment, digital indicators and process supervisory device e.g. digital display 9180, DIGIFORCE® Model 9306 **see section 9 of the catalogue.**

**Option**

**Record of measured values (WKS)**  
 Calibration of sensor with indicator in 20 % steps (6 reading-points)