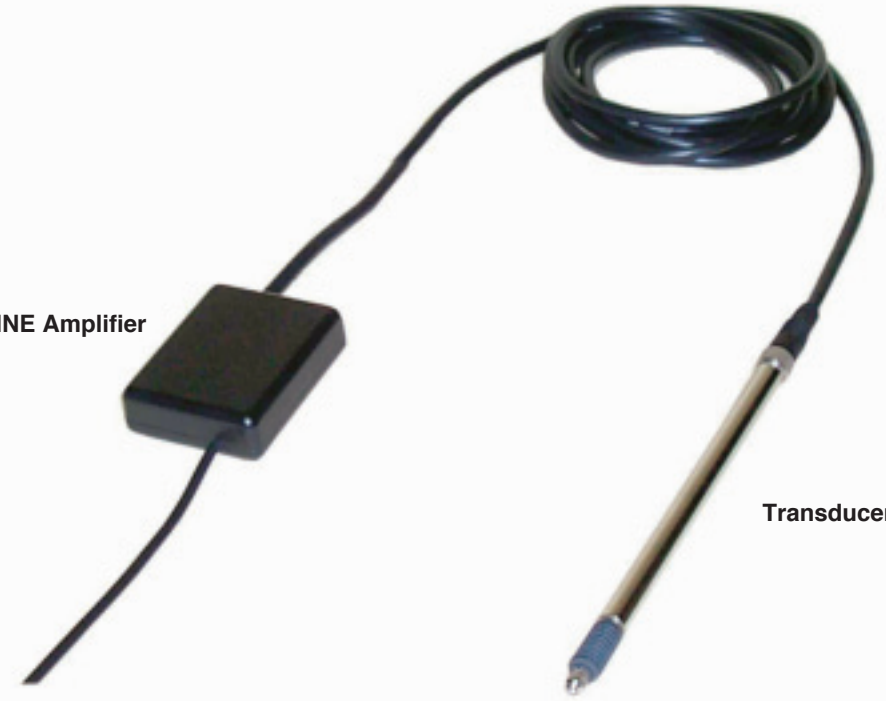
LVDT Transducer

With spring and IN-LINE Amplifier

Model 8739

Code:	8739 E
Manufacturer:	burster
Delivery:	stock/4 weeks
Warranty:	24 months
Issue:	1.1.2005



- **Ranges from 0 … 1 mm to 0 ... 10 mm**
- **Non-linearity 0.25 % Full Scale**
- **Transducer diameter 8 mm**
- **Vibration-free and wear resistant**
- **IN-LINE amplifier**
- **Output 0 ... 10 V**

Application

Inductive displacement transducers of this series measure linear displacements and indirectly all mechanical values convertible into distances by additional equipment (i.e. tension and compression forces, extension, torque, vibration).

The sensor body equipped with a connector has an outer diameter of only 8 mm and therefore is especially well suitable for the integration in dimensionally restricted structures.

Typical application fields are displacement and extension measurements on

- Machines
- Servo systems
- Motor vehicles
- Test benches
- Production plants

Description

The cylindrical case made of stainless steel, houses a differential transformer (LVDT). It consists of a primary and two secondary coils with axially movable cores.

A displacement of this core changes the magnetic induction of the coils. The IN-LINE carrier frequency amplifier converts the displacement into a direct proportional electrical DC voltage.

The transducer is constructed as a probe at which within the measuring range a spring pushes the probe tip towards the measuring object. Bellows protect the mechanical guidance of the probe tip against pollution. The IN-LINE amplifier is integrated in the connector cable and adjusted to the transducer. Both components form a unit while they can be separated for mounting purposes (miniature plug connection at the transducer). The sensor body is separated galvanically from the supply and the measuring signal.

8739-E

Technical Data

Order Code	Measuring Range	Dimensions [mm] L	A	B	H*	Maximum Frequency [Hz]	Tip Force at Full Scale max.[N]	Weight [g]
8739-5001-V501	0 ... 1 mm	103	97.5	15,5	4	100	2.3	25
8739-5002-V501	0 ... 2 mm	103	97.5	15.5	4	100	2.3	25
8739-5005-V501	0 ... 5 mm	140	130	23.0	7	100	2.3	35
8739-5010-V501	0 ... 10 mm	146	140	27.0	11	100	3.3	40

* total distance H (hub): pre distance 1 mm + measuring range + end distance 1 mm.

Technical Drawing Transducer

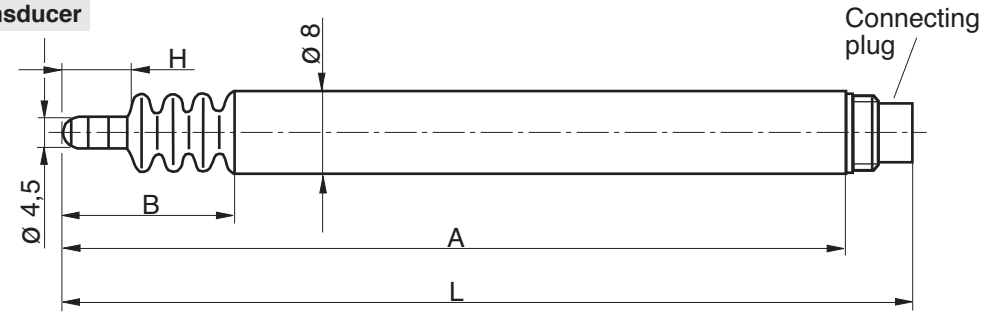
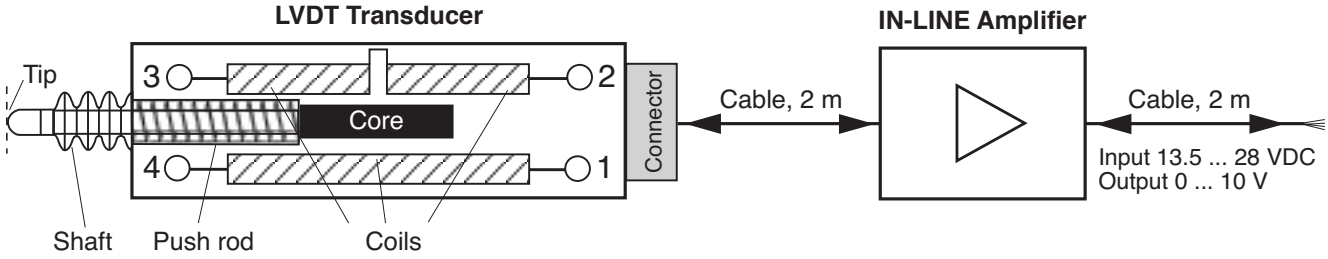


Figure of Function



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_{pp}
Terminal impedance:	1 kΩ
Recommended load resistor:	about > 1 MΩ

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.
Hysteresis error:	± 0.02 % F.S.
Repeatibility:	± 0.1 % F.S.
Push rod:	running in ball-bearings
Measuring tip:	thread M 2.5
Case material of sensor body:	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]

Electrical connection:	shielded, PVC-insulated wire, total length 4 m, the IN-LINE amplifier is axially and inseparably mounted, 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 .....green GND/Supply/Output .....white Shielding .....copper

Order Example

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

Accessories

Connector,12-PIN,
Matching to all burster table instruments — **Model 9941**

Connector, 9-PIN, Min-D for model 9310 — **Model 9900-V209**
Upon connection the transducer to DIGIFORCE® 9310 an external supply voltage and a signal of 0 ... 5 V are necessary (model 8739-....-V504)

Installation of connector to cable — **Model 99004**

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)