

The inductive analogous sensor is suitable for non-contacting measuring of distance or position towards metals. The measuring principle is based on the physical effect of quality change of a resonant circuit which is caused by eddy current losses in conductive material.

The high-frequent alternating field of a LC resonant circuit leaves at the active surface of the sensor and is periodically excited by a pulse stage. As soon as electrically conducting material enters the field, eddy currents are produced. Energy is taken from the resonant circuit and its amplitude and fading time are influenced proportionally to the object distance. A μ -processor integrates the energy of the resonant circuit and determines the highly defining output signal.

The electro-magnetic field is unidirectional, i. e. it does neither heat nor magnetically influence the object to be measured. Acc. to function measuring is effected towards moved or not moved metals. For quick processes it must be taken into consideration that the periodically excited resonant circuit reaches a measuring rate of 100 and 250 per second.

Thanks to the robust construction in an entirely casted casing and comfortable handling industrial standard solutions as well as sophisticated applications are possible:

Examples:

Distance	path	position
edge guiding	true running	centering
sorting	detection	counting
expansion	deformation	deflection
rippleness	dim. tolerance	vibration
layer thickness	concentricity	eccentricity
roll gap	deviation	etc.

Connection of the unit

Connect the unit as shown in the diagram of connection. Contacts 2 and 5 are intended for the sensor communication via a serial interface and are to be connected with a RS 485 interface only.

Operation

The push-buttons are actuated by a small screw driver.

When actuating the 0 % and the 100 % push-button, measuring range set by the factory can be reduced. The direction of the output can be reversed also.

For entering your own linearization pls. see „Extended programming“

For return to factory setting, pls. see „Extended programming“

These and other functions of the unit can also be changed via the serial interface. Please ask for more information.

1. Adjustment of the measuring range:

The measuring range can be adapted to the task in question. Beginning and end of measuring range are programmed by means of two push-buttons incorporated. For this purpose the state of covering above the active sensor surface is to be simulated.

1.1.1 Simulate beginning of measuring range by object to be measured.

1.1.2 Keep push-button (set 0 %) pressed for approx. 2 s until green LED confirms storage of the beginning of the measuring range by intermittent light.

1.2.1 Simulate end of measuring range by object to be measured.

1.2.2 Keep push-button (set 100 %) pressed for approx. 2 s until green LED confirms storage of the end of the measuring range by intermittent light.

This storage is maintained also if the mains voltage is interrupted.

Beginning and end of measuring range must be within the nominal measuring range.

2. Extended programming / linearization

This mode is selected for setting your own linearization. For this purpose the measuring range must be simulated in steps of 10 %.

2.1 Start linearization mode by simultaneous pressing of both push-buttons for approx. 2 s until red LED confirms by quick intermittent light.

2.2 Simulate desired zero of the measuring range by means of the object to be measured.

2.3 Keep push-button (set 0 %) for approx. 2 s pressed until red LED confirms storage of the beginning of the measuring range by intermittent light.

2.4 The red LED gives intermittent light once every 2 s as request to simulate the 10 % value.

2.5 Keep push-button (set 0 %) for approx. 2 s pressed until red LED confirms storage of the 10 % value by intermittent light. Two times intermittent light requests to simulate the 20 % value etc.

2.6 Analogous simulating and entering of the values for 20 %, 30, % to 100 % by push-button set 0 %. After entering the 100 % value zero follows without intermittent light.

2.7 During the linearization mode you can call the next value (after wrong entering p. e.) by means of the push-button set 100 % (approx. 1 s) and by repeating several times return to the input desired. Short interruption of the operation voltage during linearization mode results in return to factory setting.

2.8 Permanent storage of linearization and return to the measuring mode by simultaneous pressing of both push-buttons for approx. 2 s. LED gives permanent green light.

3. Return to factory setting

Switch off mains voltage.

Keep both push-buttons pressed and switch in mains voltage until LED gives red intermittent light.