

Introduction / Function

Introduction

The **UWT-LOT SLB 300** is an electromechanic level measuring instrument for the continuous measuring of level heights or level volumes in hoppers, silos or tanks.

It is used for monitoring the level in applications such as

- powders
- small grain bulk goods
- coarse grain bulk goods

Features

- Suitable for most types of bulk goods
- Resistant to:
 - Dielectricity and conductivity of the bulk good
 - Dust in the silo
 - Changes in moisture of the product
 - Products that are prone to sticking
- No mechanical forces on the silo roof, the sensor only comes into contact with the material surface
- Easy installation and commissioning
- High-tech measurement, easy to understand
- Very accurate measurement
- Output 0/4–20mA
- Range of measurement 70m
- Micro processor controlled measurement with intelligent monitoring
- Internal tape cleaner for difficult products
- Different sensor weights, suitable for every application
- Robust diecast housing with protection class IP66

UWT - LOT level measurement systems have withstood the test of time in various industries such as:

- Chemical industry
- Building materials industry
- Food industry
- Plastics industry

Function

The UWT - LOT SLB 300 is mounted on the top of the silo. A sensor weight is wound down into the silo. It is mounted at the end of a tape which is wound on a motor driven tape roller.

Upon contact with the bulk material, the motor changes the winding direction and the sensor weight is wound back to the upper stop position.

The unit is divided into two independently sealed chambers (tape chamber and electronic chamber). Only the tape chamber is in contact with the inside of the silo during measurement.

If the sensor weight is in the upper stop position, it seals the opening between the unit and the silo.

Pulses are generated during downward movement and the number of pulses can be processed directly by

- a PLC (Programmable logic controller)

or

- a counter (see chapter 11 "Display / Evaluation").

0/4-20mA output:

The pulses are internally converted into an analogue current signal. The current signal can be adjusted according to the application which means that a volumetric signal based on the silo geometry is possible.

The current signal is updated, when the sensor weight comes into contact with the material.

The measurement results from an external signal (contact or 24V DC). For automatic starting there is an integrated timer.

The measurement is controlled by a microprocessor. A comparison between the distance the weight moves downwards, and the distance the weight moves upwards, is done. When there is a discrepancy a signal output is activated. This guarantees, that the sensor weight is always in the upper stop position.

Technical data

Mechanical data

Housing:	Aluminium/cover stainless steel
Protection cover	Aluminium
Enclosure	IP 54 based on EN 60529
Process connection:	Flange DN 100 PN16 DIN 2633
Overall weight:	approx. 30kg (66.1lbs)
Measuring weight:	Stainless steel 12x0.2mm 1.4310/301
Measuring range:	Standard 30m (100ft), optional up to 70m (230ft)
Measuring speed:	approx. 0.3 m/s (0.98ft/sec) average (upward and downward movement)
Sensor weight:	approx. 3.5kg (7.7lbs)
Sensor weight material:	Stainless steel Folding cover made of canvas
Deviation of vertical mounting:	max. 2° off the vertical

Electrical data

Supply voltage:	3 x 400V 50-60Hz + N, +10% / -15%, other voltages on request
Installed load:	Motor: 0.25kW (cosφ = 0.8) 3 x 0.7A (type 400V and 500V) 3 x 1.2A (type 230V) with heating 120W
Connection terminal:	max. 2.5mm ²
Screwed cable gland:	3 x M25x1.5t for cable diameter 9 -14 mm
Signal output:	„counting pulse“ and „reset pulse“ floating relay contact max. 250V AC, 2A, 500VA floating current output 0/4 - 20mA, ±0.1mA max. load 500Ω
Measuring interval:	0.1m/pulse

Accuracy of measurement:	output pulse; 1 pulse (version with 10cm/pulse) Current output: 1%
Counting pulse:	Count: 0.2s ON; 0.2s OFF; Reset: 0.6s
Connection diagram:	Inside of the lid, datasheet
Protection class:	I
Heating (optional):	Thermostat controlled 230V, 80W; for temperatures down to -35°C or in case of condensation of water inside the housing
Signal output:	„Upper stop position“ / „Malfunction“ Floating relay contact max. 250V AC, 2A, 500VA

Operating conditions

Silo pressure:	max. 0.2bar (2.9psi)
Process temperature:	max. 80°C higher on request
Ambient temperature:	-20°C.. +50°C -35°C.. +50°C with heating
Tape operating time:	see page G13

Approvals

CE	EMC	EN 50081-1 EN 50082-2
	General purpose	EN 61010-1