

## PROCESS MEASUREMENT

### GROUP

Due to years of experience in the field of automatization we offer together with the SMB group any kind of automatic systems like filling stations, palletizers, conveyors and compact storage systems. In combination with our level measuring technique it's possible to design and produce belt conveyors, turn tables and shiploading systems with telescopic belts tailored on customers request. And of course worldwide.

### COMPETENCE

We offer our customers our comprehensive know how obtained over decades in different applications. Our strength is to combine standards and special solutions to meet customer specifications and to find the best solution for a turn key project.

### WORLDWIDE

Where ever you are, our global network of representatives and subsidiaries is able to supply qualified support when you need it. We deliver the equipment for your measuring tasks, provide documentation and training. Fast and competent support, short delivery times and a high level of delivery reliability – that's MBA Instruments staff is known for.

### COMPANY

MBA Instruments GmbH continues in developing, production and distribution of measuring technique "Type MAIHAK" and develops new ideas. Customers are our most important partners. If our partner is satisfied only than he is able to be successful. And we are also successful with him. Satisfaction of our customers is our success.



# MBA

PRODUCT INFORMATION



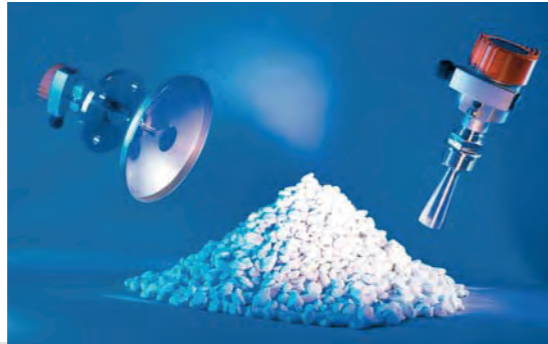
## MBA 300 / MBA 400

**Radar Level Measurement**  
Continuous and non-contact  
level measurement in bulk solids



**MADE IN GERMANY**

# MBA



## MBA 300 / MBA 400

### Continuous and non-contact level measurement in bulk solids

#### Measuring principle

Microwave pulses are emitted by the antenna system in the direction of the measured product, reflected by the product surface and received back again by the antenna system. The time from emission to reception of the signals is proportional to the level in the vessel. A special time stretching procedure enables reliable and precise measurement of the extremely short transmission periods.

The measuring principle is unaffected by dust generation, filling noise, air flow due to pneumatic filling and temperature fluctuations. In environment with high density of dust a purge air will keep the antenna clean.

#### Building material

- Building material
- Cement
  - Clinker
  - Sand
  - Gravel
  - Stones
- Energy / raw materials
- Coal
  - Coke
- Foodstuffs industry
- Flour
  - Milk powder
  - Sugar
  - Grain
  - Rice
- Intermediate products in the manufacturing
- Ceramic powder
  - Plastic granulates
  - Ores
  - Cinder

Technical Data		
	MBA 300	MBA 400
Measuring range and deviation	35 m ± 2mm	75 m ± 2mm
Process fitting	Mounting strap or flange	Thread G1½" or flange/316L
Process pressure	max. 2 bar	max 160 bar
Process temperature	- 40 ... + 80 °C	- 200 ... + 450 °C
Temperature for storage	- 40 ... + 80 °C	- 40 ... + 80 °C
Power supply	9,6 ... 36 V DC	9,6 ... 36 V DC



#### Horn antenna: MBA300

The metallic surface inside the antenna focuses the microwaves evenly. The horn antenna of the MBA300 is compact and can be used for general applications.

#### Horn antenna: MBA400

The microwave is emitted by the feed system and sent to the surface of the bulk material by the horn antenna. The special form of the horn antenna optimizes the signal-to-noise ratio. This increases the ability to measure in the near distance.

#### Parabolic antenna: MBA400

The microwave signal is emitted by the feed system and focussed to a narrow deviation by the parabolic form of the antenna. This antenna type is ideal for high and narrow silos. The antenna can be disassembled for a mounting the MBA400 on the silo.

Comparison: MBA300 – MBA400		
	MBA 300	MBA 400
Suitable for bulk material	yes	yes
Max. measuring range	15 m (49.2 ft)	75 m (246.1 ft)
Dust Explosion proof certificate	yes	yes
Gas Explosion proof certificate	yes	yes
Non contact measurement	yes	yes
Electrical connection for power supply and measuring signal	2-wire	2-wire
Influence from dust	no	no
Influence from filling noise	no	no
Min dielectric constant of product	1.4	1.4
Material of Antenna	Completely encapsulated plastic horn antenna/PVDF	Horn antenna/316L

Antennensysteme im Vergleich			
	Horn Antenna MBA300	Horn Antenna MBA400	Parabolic Antenna MBA400
Material	Plastic (PE)	stainless steel	stainless steel
Diameter	75 mm	40, 48, 75, 95 mm	245 mm
Deviation	10°	22°, 18°, 10°, 8°	4°
Temperature	max 80°C	max 130°C 200°C with cooling section	max 130°C 200°C with cooling section
Pressure	2.000 hPa (2 bar)	40.000 hPa (40 bar)	3.000 hPa (3 bar)