



The volume rate measuring system



USMS

www.volumen-messsystem.com

USMS Offers:



- Exact and reliable volumetric flow measurement using state-of-the-art ultrasonic technology
- for efficient performance supervision and
- cost control as well as regulation of downstream processes.

Suitable for all bulk materials: sand, gravel, C&D rubble, crushed concrete, wood, coal, soil, etc.

The volume rate measuring system USMS has been developed and tested specifically for such applications in cooperation with NASA technicians.

The ultrasonic measuring system allows exact and reliable measurement of conveyor belt flow rates by means of laser controlled ultrasonic sensors. The customer can govern all processes in real time to intercept any arising production difficulties, and has progressive, concise performance reports for further evaluation.



Choose from the Following 3 Models:

USMS 1

USMS 1-1 sensor unit with connecting cable to 1 processor unit per system

recommended for mobile plants



1 sensor unit installed in a robust aluminum housing, equipped with ultrasonic sensors and laser sensors
1 processor unit with LCD display, printer and memory card port
1 connecting cable for power supply and data transfer

USMS 2

USMS 2 –up to 5 sensor units with connecting cables to 1 processor units per system

recommended for screen stations



up to 5 sensor units, each installed in a robust aluminum housing, each equipped with ultrasonic sensors and laser sensors
1 processor unit with LCD display, printer and memory cart port
up to 5 connecting cables for power supply and data transfer

USMS 3

USMS 3 - up to 200 sensor units with radio transmission to 1 processor unit per system

suitable for all applications



up to 200 sensor units, each installed in a robust aluminum housing, each equipped with ultrasonic sensors, laser sensors, built- in processor,
radio transmitter, cable for power supply
1 processor unit with radio receiver, PC- adapter, software for PC
1 connecting cable from processor unit to PC for data transfer

SENSOR UNIT



The sensor unit contains height sensors and path sensors which serve to collect data.

The height sensors are ultrasonic sensors located in regular intervals across the entire belt width which continuously measure the surface profile of the conveyed material.

The height of the bulk goods is measured at a rate of 160 readings per second. Simultaneously, a path sensor measures the distance which the bulk rate travels in transport direction under the height sensors. The volume is then calculated based on these values. The supplementary laser sensors serve to supervise the proper function of the ultrasonic sensors, thereby ensuring uninterrupted performance.



The standard sensor unit with 5 ultrasonic sensors and 6 laser sensors is designed for conveyor belts measuring up to 1200mm wide. For conveyor belts less than 700 mm wide, the sensor head contains 3 ultrasonic sensors and 4 laser sensors. The sensor head for the USMS 3 is equipped with an integrated radio transmitter in addition to the ultrasonic and laser sensors.



The sensors are contained in a robust, 100% dust-proof aluminum housing with a stable framework which can be mounted on the support frame of any conveyor belt.

PROCESSOR UNIT

The processor unit of the USMS models with cable connections (USMS 1 and USMS 2) is equipped with a microprocessor which evaluates and processes the measuring results. Evaluation data can either be printed directly at the processor unit in the form of a daily journal, or can be saved to an external memory card as data carrier. Using an appropriate card reader, data from the memory card can be further analyzed at any standard computer, i.e. with a spreadsheet calculation program.



The processor unit is also the operational and system interface; the keypad and LCD display allow the user to set and check system parameters by simple menu navigation. The entire evaluation unit is enclosed in a 100% sealed aluminum housing.

The system model USMS 3 operates by radio transmission: the measuring results are processed and evaluated directly in the respective sensor units before being radioed to the processor unit. The information received from all sensor units is decoded in the processor unit and transferred directly to a connected computer.

By means of a specially designed software, the user can analyse the measuring data as well as access the operational and system interface at the computer.

The USMS 3 system can be expanded to include up to 200 sensor units.



ADVANTAGES

Mounting and Maintenance:

Simple and speedy assembly

Low clearance

All loading belts are unchanged

Quick replacement on other installations

Self – checking

100% maintenance – free

Completely unaffected by dirt, dust, temperature, light, and vibration

Operation:

Easy to operate

Rugged construction

No moving parts

Automatic calibration

Features:

Exact performance supervision and prime – time compilation

Simplified contract billing

Concise performance reports

Precise volume measurement even for damp / wet material

Certified calibration

Non - contact measurement (weather proof)

Accuracy independent of conveyor incline

DETAILS

Technical specifications:

Measurement: up to 1500 mm belt width

Power supply: 12or 24v DC

Display: 2-line alpha – numerical LCD – display with LED backlight

Keypad: 4 x 4 switch matrix

Operational temperature: -20 C to 80 C (-13 F to 176 F)

Housing: aluminum housing with

Weatherproof standard: IP65

Standard dimensions:

Sensor unit: 83.0 x 10.0 x 12.0 cm (32.7 x 3.9 x 4.7 in.)

Processor unit: 37.0 x 27.0 x 13.0 cm (14.6 x 10.6 x 5.1 in.)

Standard weight:

Sensor unit: 30 kg (66.1 lbs)

Processor unit: 22 kg (48.5 lbs)



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