

Original Gravity Measuring Instrument

PLATO
MONITOR



The new PLATO MONITOR instrument uses proven ultrasound technology for the rapid and reliable measurement of the original gravity of beer. The measured data are immediately available online for analysis and process control.

In contrast to other instruments, PLATO MONITOR features

- digital processing of the measuring signal, thereby eliminating interference;

- rapid response temperature measurement with low temperature sensitivity; and
- approximately seven times greater distance between transmitter and receiver.

These features ensure precise measurement of the original gravity, even under unfavourable process conditions (contamination, gas bubbles etc.).



Measuring principle

The speed of sound within a medium depends on the concentration of the individual components. In order to measure the sound velocity, a sound pulse is sent through the fluid. The time which the pulse takes to reach the ultrasonic receiver is measured. Because the distance between the ultrasonic transmitter and the receiver is

known, the sound velocity can be calculated. The relationship between the sound velocity and the concentration varies between different media.

For optimising the measurement results, the PLATO MONITOR is equipped with 5 standard product-specific calibration curves.

The PLATO MONITOR is comprised of an ultrasonic probe and a controller with digital display for installation in a switch cabinet. The tubular ultrasonic probe is made entirely of stainless steel and is installed in a Varivent® connection. The controller analyses the ultrasonic probe data, calculates the original gravity based on

the sound velocity and the temperature, adjusts the CO₂ as appropriate, and communicates with the user. The original gravity is indicated in °Plato directly on a LCD display. Calibration data for 30 types of beer can be stored, together with the product names. The beer types are switched by means of a membrane keypad or the interface.

The PLATO MONITOR may be used:

- in the brewhouse
- during filtration
- during filling

for:

- separation of first and last runnings
- brand separation
- optimisation of original gravity
- blending
- product monitoring; and
- quality assurance.

- Interference-free measuring through digital signal processing where interference caused by gas bubbles is filtered out. Measurement is possible in a gently boiling fluid.
- original gravity measurement is insensitive to fluctuations in temperature of up to 10 °C
- high accuracy, even under unfavourable process conditions; insensitive to contamination, material abrasion, corrosion or damage to the ultrasonic probe, due to the seven times greater distance between transmitter and receiver
- very responsive through rapid temperature measurement
- maintenance-free
- very compact ultrasonic probe
- storage capacity for 30 beer type-specific calibration data and product names
- 5 product-specific calibration curves for optimising measurement results.



Configuration

Applications

Special features

Scope of supply

- 1 ultrasonic probe with calibration data sheet
- 1 controller (standard version for installation in a switch cabinet)
- 1 connection cable set (2 cables of 10 m each)
- 1 operating manual

Optional:

- 1 portable controller



Technical Data

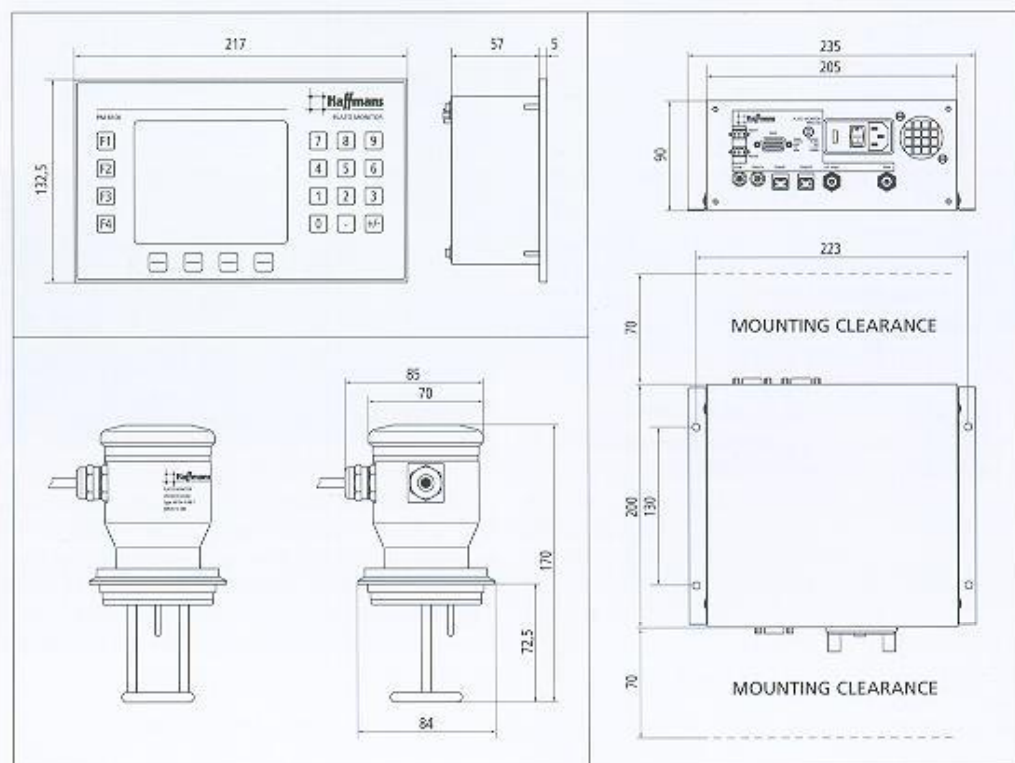


Measuring range	: 0 to 20° Plato
Accuracy	: ± 0.05° Plato*
Product temperature	: max. 160 °C
Product pressure	: max. 16 bar
Output:	
- Original gravity	: 0/4 - 20 mA
- Temperature	: 0/4 - 20 mA
- 2 limiting value switches (250 V, 2A max.)	
Input:	
- CO ₂ measurement	: 0/4 - 20 mA
- Interface	: RS 422/485/232

Display	: graphic LCD, 100 x 80 mm
Mains voltage	: 90 - 240 V, 50/60 Hz, 45 VA
Dimensions	: see dimensioned sketch

Ultrasonic probe:	
- Connection	: Varivent®
- Diameter	: DN 65 min.
- Material	: 1.4401
- IP protection rating	: IP 68

* after correct on-site instrument calibration according to the requirements for the specific beer type in use.



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