

Special Features

- direct in-line measurement without bypass lines
- very rugged measuring method: insensitive to contamination, no moving parts built in; smooth interior surfaces, no dead spaces, bacteriologically recognized as safe
- suitable for SIP/CIP without any problem
- signal transmission from transmitter to control and display panel insensitive to interference
- universal adaptation to the pipeline by pipe adapters
- rapid response rate, also suitable for stop&go operation
- complete electronic system designed according to the regulations for electromagnetic compatibility (CE sign)
- possible original gravity measurement of both filtered and unfiltered beer
- possible CO₂ compensation in the measured value (analog input 0/4...20 mA)
- applicable for beer phase separation (first and/or last runnings water), original gravity control, quality control
- possible measurement of cold, hot, and boiling wort



Measuring Method

The **DI-LIQUI** measures the sound velocity in aqueous products at a high precision. Different material concentrations can be determined by an additional very accurate temperature measurement.

The **concentration** is determined by the aid of special calibrating curves which are filed in the control and display panel (see data sheet D 23.18 E). The measured values of sound velocity and temperature are already processed in the transmitter, with the effect that only signals being insensitive to interference are transmitted to the control and display panel, which enables the allocation of different products and, if necessary, the compensation of CO₂ contents as well as the indication of measured values.

Technical Data (Transmitter)

Nominal widths		pipe adapters: DN 50 - 65 - 80 – 100 - 125
Connections	Standard	welding ends
	Options	other connections on request to (e. g. clamp, APV, Tuchenhagen, ...)
Materials		pipe adapter: stainless steel AISI 316 L
		sensor head: stainless steel AISI 316 Ti
		electronic housing: cast aluminium
Admissible pressure		10 bars max.
Ambient temperature		50°C max.
Cleaning temperature		120°C max.
Possible product temperature		-5 ... +105°C (special temperature adjustment required)
Auxiliary energy		230 V ±10% / 48 ... 62 Hz
Power consumption		< 20 VA
Protective class		IP 65

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DI-LIQUI
Version 2
Transmitter

D 23.14 E

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Operating Conditions

A perfect sound velocity measurement free from interferences requires an absolutely “boublefree” liquid. It has to be guaranteed that CO₂ is completely dissolved in beer. The counterpressure in the pipeline has to be sufficiently high to avoid a CO₂ release. The transmitter should be preferably installed in an ascending pipeline.

The following influencing variables should be considered for an accurate measurement:

- CO₂ fluctuations of more than ±0.2 g/l require an additional compensation.
- The temperature compensation spans over a range of ±5°C from the nominal temperature.
- Up to a yeast cell number of 6 mio./ml unfiltered beer can be perfectly measured.
- Very high fluctuations of the yeast cell number affect the measuring accuracy.

Technical Data Measuring Technique

Transmitter with additional control and display panel D 23.18 E (standard)

Measuring parameters		Measuring accuracy	
Sound velocity:		+/- 0.10 m/s	
Temperature:		+/- 0.03°C	
Typical applications:	Measuring accuracy	Repeatability	Typical measuring range
Original gravity in beer	+/-0.05 °Plato	+/- 0.02 °Plato	0 - 20 °Plato
Alcohol in beer	+/-0.07 % by vol.	+/-0.03 % by vol.	0 - 10 % by vol.
Alcohol in water	+/-0.1 % by vol.	+/-0.05 % by vol.	0 - 20 % by vol. or 50 - 100 % by vol.
Sugar in soft drinks	+/-0.1 °Brix	+/-0.05 °Brix	0 - 20 °Brix or 45 - 65 °Brix
Syrup	+/-0.1 °Brix	+/-0.05 °Brix	45 - 70 °Brix
Original gravity in wort	+/-0.15 °Plato	+/-0.05 °Plato	0 - 20 °Plato
Further ingredients and products		on demand	
Temperature ranges		standard: -5 ... 25°C (special calibration: 65 ... 95°C or 80 ... 105°C)	
Response rate		1 sec. (in running process)	
Data line		RS485/internal GEA Diessel “CS3” bus to the control and display panel	
Measuring value output		via an additional control and display panel (D 23.18 E)	

Abmessungen des DI-Liqui (V2)
dimensions of the DI-Liqui (V2)

