

Liquid measurement with

Oval Gear Meter Electronic Counter **Z-BOX** for Series COGEM

The Z-BOX is an electronic counter for oval gear meters of the series COGEM with data storage function and a digital interface. It serves as a volume and flow display with freely selectable units of measurement. The application in custody transfer of goods, as well as operational measurements are possible. Linearization. The error curve can be linearized for every measuring task with up to 10 correction factors. In this way, a measuring accuracy of up to 0.02% over the whole measuring range can be achieved for our oval gear meters.



The graphic display of the Z-BOX is controlled by 4 push-buttons. An easy menu control in connection with display of the respective function of a button allows a very easy operation of the meter with simultaneous high functionality.

When switching on the display, the actual volume and the actual flow rate are displayed. Due to this, a routine check of the meter is always possible by pushing only one button – independent from the menu point called up last.

The main menu of the meter has five submenus:

- Volume** The actual volume count, as well as the volume count in forward and backward direction, the volume of the batch counters and the total volume count, as well as status information will be displayed.
- Log book** All legally relevant calibration events, like opening the calibration seal, exceeding of limit values or error messages will be displayed and stored. In case of parameter modifications, the name of the user will be stored in addition to the information about the modified parameter.
- Archive** Apart from the interval data sets, the daily and monthly volume count will be displayed. The stored data can be used for invoicing purposes.
- Parameters** All legally relevant calibration parameters can be displayed. The parameters as well as the calibration data are protected by passwords with different access levels. The parameters may be modified corresponding to respective access level. This event will always be entered into the log book.
- Type plate** The most important characteristics of the device, like serial numbers, version numbers or pulse factors will be displayed on the electronic main label.

Interfaces

An optical interface allows easy reading of the data and the parameterizing the device, depending on the access via passwords.

Two separate NAMUR-interfaces allow generating of volume pulses, fault messages or batch signals.

Technical Data

Pulse trigger	<ul style="list-style-type: none"> • Wiegand- sensors (max. 500 Hz) • Reed contact or open collector (max. 10 Hz)
Pulse value	<ul style="list-style-type: none"> • Freely adjustable as volume/pulse or pulse/volume with 6 significant digits. • Additional correction factor for adjusting the pulse factor
Data storage	<ul style="list-style-type: none"> • 200 log book entries (counter stops, if log book is full) • 90 day values • 14 month values • 2500 interval data sets
Qmin, Qmax	Individually adjustable for every counter. Log book entry is made in case of exceeding Qmax
Interval duration	15 min, 60 min or 24h
Day change time	00:00 h or 06:00 h
Volume and flow display	<p>The units of the volume display and flow can be freely parameterized with the calibration lock open by the manufacturer or the user. The volume display is carried out in 9 digits with maximum 3 digits behind the decimal point.</p> <p>The following measured values will be displayed:</p> <ul style="list-style-type: none"> • Actual volume and actual flow (resettable) • Volume count in forward and backward direction • Volume count of the two batch counters • Total volume count, cannot be reset
Status display	<ul style="list-style-type: none"> • Actual battery status (0..100%) • Operating hours • Time and date
Batch counter	<p>Each of the two digital outputs can be set as batch counter. The batch quantity can be set at freely. When reaching the set batch quantity, the batch counter will be reset and a pulse will be issued. Pulse can be used for control purposes.</p> <p>If both outputs are used as batch counters, both will only be reset if the larger of the two batch quantities has been reached. The smaller quantity then serves generating a pulse for control purposes (e.g. ramp down flow rate).</p>
Linearization	For improving the initial accuracy of the volume measurement, the real flow (or volume) can be determined and corrected. For this, 5 to 10 correction factors can be used, which were determined on the e calibration stand.
User list	Parameter and stored data are protected from manipulation by identification character and accompanying password (with up to 8 digits) in addition to the calibration lock.
Display	Graphic display with 128 x 64 pixels
Interface	Optical interface, 9600Bd
Power supply	3,6 V Lithium battery (7200 mAh)
Operating temperature	-20....70 °C
Storage temperature	-30....80 °C