Version 1.0

Operating Manual

HYDROMETTE® BL

LG 17

EN

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0.1 Publication Statement

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GANN Mess- u. Regeltechnik GmbH, Gerlingen, Germany, 01/06/2018

0.2 General Notes

This measuring device fulfils the requirements of the applicable European and national directives (2014/30/EU). Appropriate declarations and documentation are held by the manufacturer. To ensure trouble-free operation of the measuring device and operational reliability, the user must carefully read the operating instructions. The measuring device may only be operated under the specified climatic conditions. These conditions can be found in chapter 3.1 "Technical Data". This measuring device may also only be used under the conditions and for the purposes it has been designed for. Operational reliability and functionality are no longer ensured if the device is modified or adapted. Gann Mess- u. Regeltechnik GmbH shall not be liable for any damage arising from such modifications or adaptations. The risk is borne solely by the user.

- The measuring device may be operated in residential and commercial areas as the stricter class B for interference emission (EMC) has been complied with.
- The device may not be operated in the immediate area of medical equipment (heart pacemakers, etc.).
- The measuring device may only be used for its intended purpose as described in these instructions. Keep the device and accessories out of the reach of children!
- Measurements must not be carried out on metallic surfaces.

Gann Mess- u. Regeltechnik GmbH shall not accept any liability for damage resulting from non-compliance with the operating instructions or by not taking due care during transport, storage or operation of the device, even if this requirement for care is not specifically addressed in the operating instructions.

0.3 WEEE Directive 2012/19/EU Law on Waste Electrical and Electronic Equipment

According to the European WEEE Directive, electronic equipment may not be disposed of in domestic waste. Their components must be recycled or disposed of separately, because toxic and hazardous components can cause lasting damage to the environment if not disposed of properly.

As a consumer, you are obliged under the German Electrical and Electronic Equipment Act (ElektroG) to return electrical and electronic equipment free of charge at the end of its service life to the manufacturer, the point of sale or to public collection points set up for this purpose. Details are regulated by the respective federal state law. The following symbol points out these regulations:

With this type of material separation, recycling and disposal of old equipment, you make an important contribution to protecting the environment.

WEEE Directive 2012/19/EU

WEEE No.: DE91414473

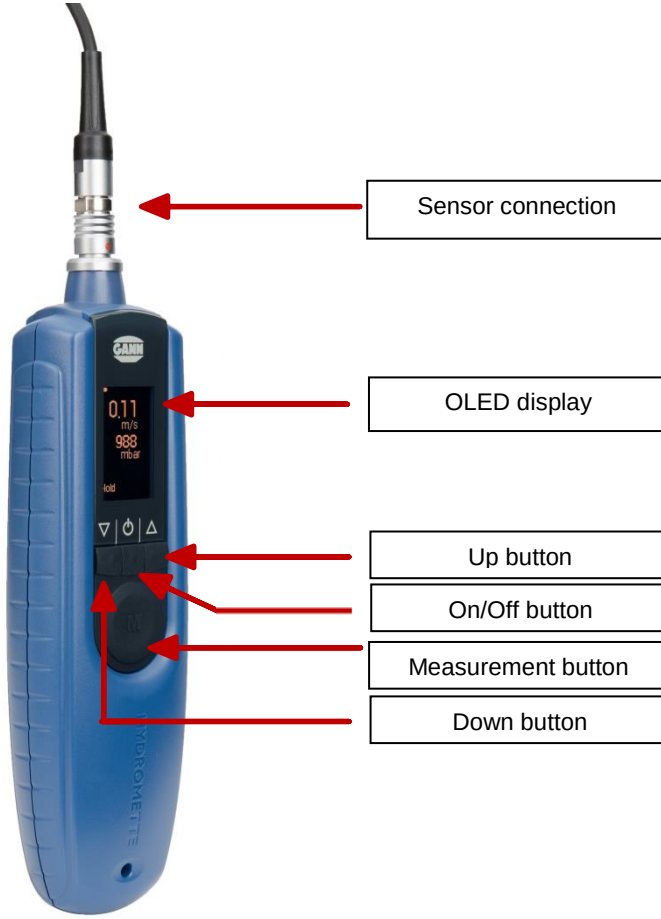
1 Introduction

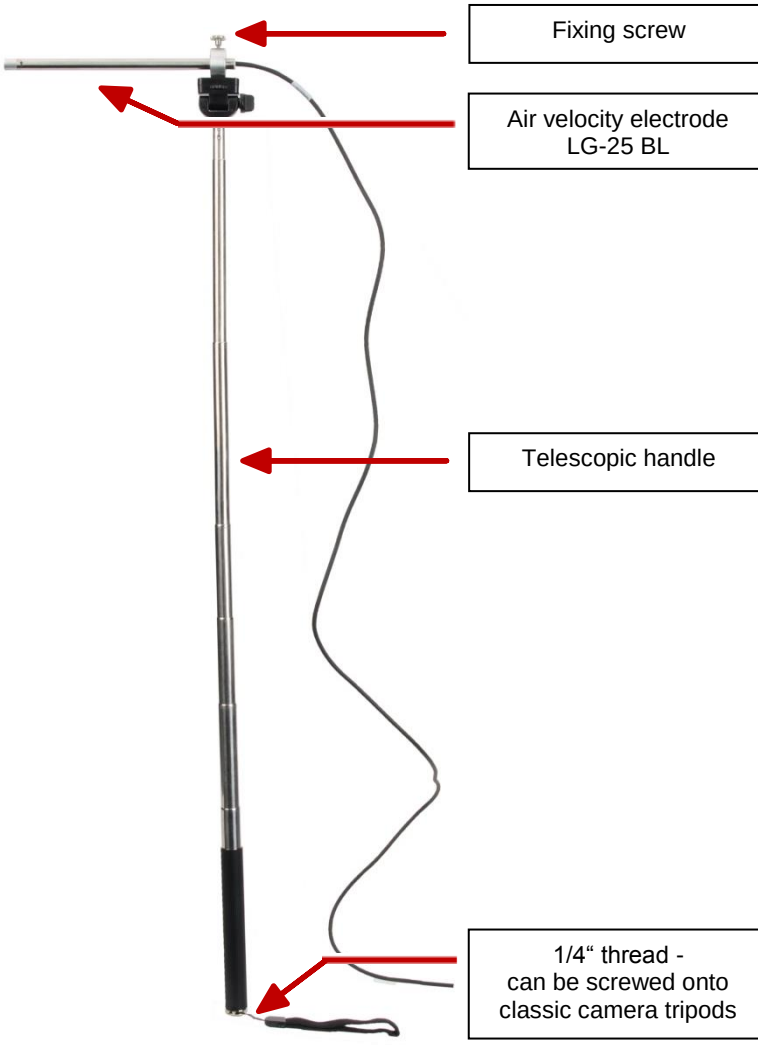
1.1 Description

The Hydromette® BL LG 17 is a high-precision air velocity measuring device (anemometer) for measuring even the smallest air flows for many areas of application, e.g. living space monitoring, air conditioning technology, blower-door test, laminar-flow control etc. The basic unit BL LG 17 is delivered with the air velocity electrode LG-25 BL and a telescopic handle that makes it possible to reach difficult to access places. The electrode can also be screwed onto classic camera tripods for long-term measurements. With the OLED display, air velocity and air pressure can be displayed simultaneously or a line or bar chart can be displayed.

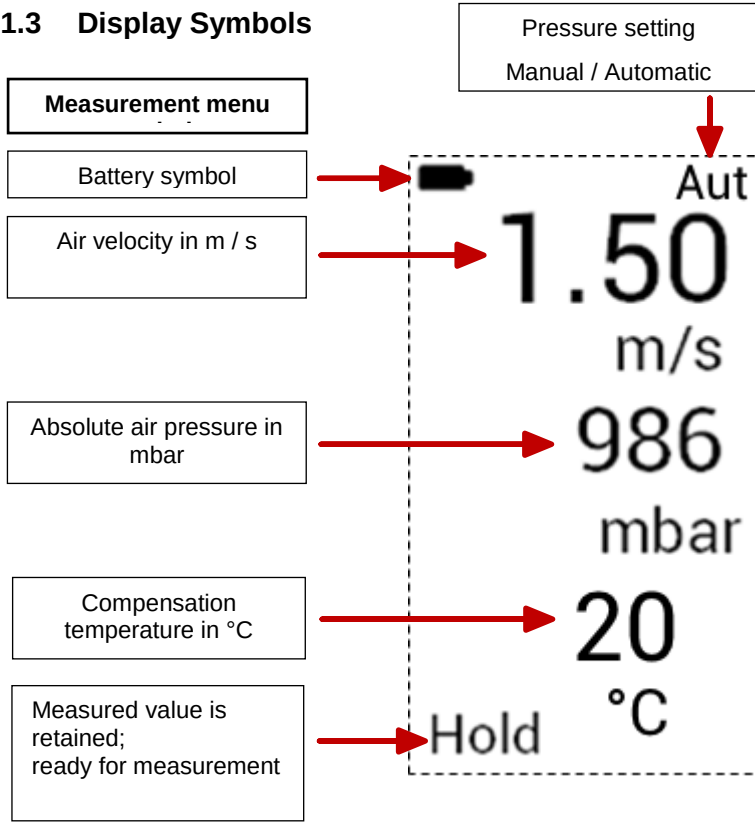
The air velocity electrode LG-25 BL is designed for applications within closed spaces.

1.2 Device Layout and Button Assignment




Fixing screw
Air velocity electrode
LG-25 BL
Telescopic handle
1/4“ thread -
can be screwed onto
classic camera tripods

1.3 Display Symbols



2 Basic Functions

2.1 Switching on the Device / Standby Mode

The device is switched on by pressing the "On" button.

The following is shown on the display if no air velocity sensor is connected:

“No sensor”.

The device does not function without connected air velocity sensor.

Therefore, please connect your associated sensor.

2.2 Display in Measuring Mode

Measured value in m/s or ft/min

Measured / manual pressure in mbar

Compensation temperature in °C

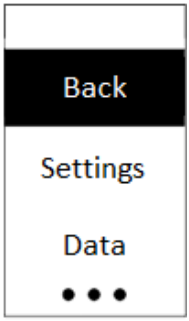
"Hold" symbol signals readiness to make a measurement

A measurement process is started by pressing the **"M"** button. The "Hold" symbol disappears during the measurement and the values are updated. After releasing the "M" button, the "Hold" symbol is displayed again and the last measured values remain unchanged.

The device is now in Standby mode. Press the "M" button again to start a new measurement.

Approx. 5 minutes after releasing the measurement button, the device switches off automatically to save battery power. When the device is switched on again, the last measured value is shown on the display.

2.3 Menu Guidance



Pressing the "Up" or "Down" button in standby mode takes you to the **main menu.**

Use the **"Up" button** and the **"Down" button** to **navigate** through the menu.

The **selection of a menu item** is performed by pressing the measurement button.

The **three dots** at the top and bottom of the screen indicate that **further selection items** are available that are displayed when scrolling.

The following **selection items** are available for further selection:

1. Back (◀) to the measurement menu (standby mode): the measurement process can be performed here

2. Settings: settings can be defined here (section 2.3.2)

3. Data Menu: the last 5 measured values, the minimum / maximum values and the version can be retrieved here (sections 2.3.11 and 2.3.12)

4. Measurement Mode Display: the display of the measured values can be defined here (sections 2-3.13 to 2.3.15)

2.3.1 Measurement Menu

The last measurement with the note **"Hold"** is shown here.

A new measurement can be started in this menu by pressing the **"M"** button.

During the measuring process, the "Hold" symbol disappears from the display. After releasing the "M" button, the measured value is saved. The "Hold" symbol is displayed again.

If the current measured value of the air velocity is greater than the stored maximum value, the **“Max“** symbol flashes on the display. The maximum value is automatically stored in the memory.

If the current measured value of the air velocity is smaller than the stored minimum value, the **“Min“** symbol flashes on the display. The storage method corresponds to that of the maximum value.

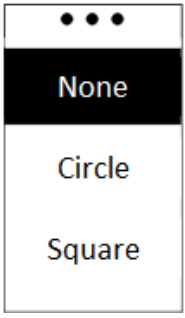
2.3.2 Settings

The following settings can be made in this menu:

- **Area:** selection option for circle with diameter specification or rectangle with length and width specification
- **Averaging:** for a calmer display in the case of highly fluctuating flow, the display value can be averaged over several values
- **Units:** selection of the desired units of measurement
- **Language**
- **Brightness**
- **Limits:** limit settings for alarm signals
- **C.Temp.:** setting of the compensation temperature
- **C.Pressure:** setting of the compensation pressure

2.3.3 Flow Rate

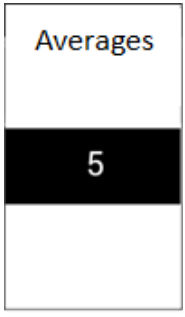
Main menu → Settings (⚙) → Surface (▨) maximum value display



A diameter or two edge lengths of an air duct can be entered for the **calculation of the flow rate**. If the flow rate measurement is deactivated in this menu (selection option "none"), the air velocity is displayed again.

2.3.4 Averaging of the Display Value

Main menu → Settings (⚙) → Averaging (∅)



Averaging of up to five values can be set to obtain a calmer display in the case of highly fluctuating values.

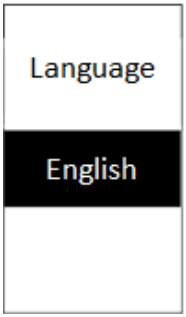
2.3.5 Units Setting

Main menu → Settings (⚙) → Units (📏)

The units system can be changed from metric ("m/s") to Imperial ("ft/min") in this menu.

2.3.6 Languages Setting

Main menu → Settings (⚙) → Language (🌐)



Language selection options:

- German
- English
- Symbols

2.3.7 Brightness Setting

Main menu → Settings (⚙) → Brightness (☼)

The brightness of the display can be adjusted in steps. It must be noted that the current consumption increases with higher brightness and thus the operating time reduces.

2.3.8 Alarms Limit Value

Main menu → Settings (⚙) → Limits (☰)

An alarm can be activated for an upper and/or lower limit value in the "Limits" menu.

2.3.9 Compensation Temperature

Main menu → Settings (⚙) → C.Temp. (T_K)

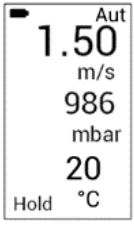
The factory setting of the compensation temperature for the air velocity is 20 °C.

Under this menu item, the temperature setting for the compensation of the air velocity can be manually adapted to the actual local conditions.

2.3.10 Compensation Pressure

Main menu → Settings (⚙) → C.Pressure (P_K)

A specific pressure can be entered manually under the "Set" menu item in the "Compensation Pressure" menu. The pressure setting is shown at the top right in the measurement mode.



Attention: the pressure sensor is in the display unit and not in the air velocity sensor!

2.3.11 Minimum / Maximum Value Display

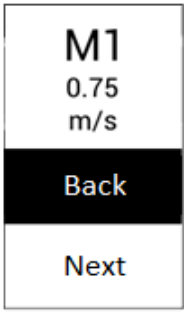
Main menu → Data ( ) → Min / Max ( )

The minimum and maximum measured air velocity values of a measurement series are displayed in this menu. The display of the minimum value and maximum value is only possible for the air velocity value.

The minimum value and maximum value can be removed from the memory using the "Delete" menu item.

2.3.12 Memory Menu

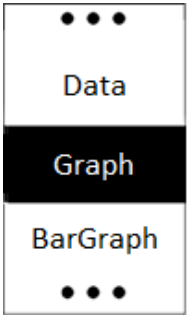
Main menu → Data ( ) → Memory ( )



The last 5 measured values are saved in this menu. The display and the respective units depend on the selected measurement mode.

2.3.13 Measurement Mode Display

Main menu → Data ( ) → Graph ( )



The air velocity is displayed either as graphs or as bars. This allows the measured variable to be recognised more quickly.

2.3.14 Graph Measurement Mode

Main menu → Graph ( ) → Start (▶)

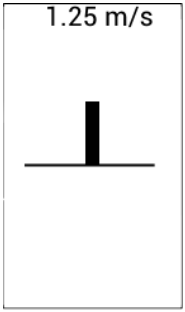
The uniformity of a flow can be seen very well with the graphic display of the air velocity measurement value. The graph measurement is started and stopped by pressing the measurement button.

The data recorded during the graph measurement are opened as follows:

Main menu → Graph ( ) → Data ( )

2.3.15 Bar Measurement Mode

Main menu → Bar ( ) → Start ( )



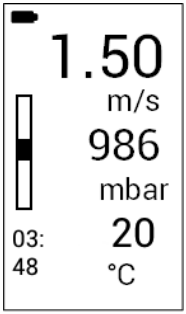
The bar display of the air velocity measured value enables fast visual feedback for the measured value. The bar measurement is started and stopped by pressing the measurement button.

The data recorded during the bar measurement are opened as follows:

Main menu → Bar ( ) → Data ( )

2.3.16 Continuous Measurement Mode

Main menu → Continuous ( ) → Start ( )



In continuous measurement mode, measurement is performed without having to press the measurement button. The display switches off after approx. 20 seconds to save power. The display is switched on again by pressing the "Up" or "Down" button. The continuous measurement is ended by pressing and holding the measurement button. The measurement is ended automatically after a duration of 30 minutes.

The data recorded during the continuous measurement are opened as follows:

Main menu → Continuous ( ) → Data ( )

2.4 Other Functions

2.4.1 Automatic Switch-off

If no button is pressed within approx. 5 minutes, the device switches off automatically. The current values are retained and are displayed again after the device is switched on again.

2.4.2 Battery Monitoring

The battery must be replaced If the battery symbol is shown empty () on the display.

A list of battery types that can be used can be found in the "Hydromette® Technical Data" section.

2.4.3 Dirty or Defective Sensor

If the "Sensor is dirty or defective" message is displayed, the error can possibly be corrected by cleaning the sensor (see section 4). However, the sensor must be sent for repair if this procedure does not help.

2.4.4 Calibration Error

If the "Calibration error" message is displayed, the sensor must be sent for repair.

3 Specifications

3.1 Technical Data of the Hydromette®

Display:	OLED display
Display resolution:	0.01 m/s
Response time:	< 2 s
Storage conditions:	+ 5 to + 40 °C
	- 10 to + 60 °C (short-term)
Operating conditions:	0 to + 50 °C
	- 10 to + 60 °C (short-term)
Power supply:	9 V block battery
Approved types:	type 6LR61 and 6F22
Dimensions:	185 x 50 x 30 (L x W x H) mm
Weight:	approx. 310 g

3.2 Technical Data of the air velocity sensor

Weight:	approx. 202 g
Diameter in the range of the sensor:	9 mm
Cable length:	1.8 m
Length of the handle pushed together:	approx. 23 cm
Length for complete telescopic extension:	approx. 1.1 m

3.3 Prohibited Environmental Conditions

- Condensation, air humidity continuously too high (> 85%) and wetness
- Permanent presence of dust and combustible gases, fumes or solutions
- Ambient temperatures continuously too high (> +50 °C)
- Ambient temperatures continuously too low (< 0 °C)

3.4 Measuring Ranges

Air velocity: -2.50 to +2.50 m/s

Measurement accuracy: ± 3% of the measured value*
+ 2% of the measuring range end 2.5 m/s**

*(e.g. ± 0.06 m/s for display 2 m/s)

**(e.g. ± 0.05 m/s for display 2.5 m/s)

Minimal deviation at 0 m/s: ± 0.05 m/s

Absolute air pressure: 300 - 1100 mbar

Measurement accuracy: ±1 mbar

3.5 Transport & Storage Conditions

The Hydromette® BL LG 17 may only be stored in the packaging that is provided by us or available from us as accessory. We shall not accept any liability or warranty for damage that may occur to the device or the sensor system as a result of non-compliance. In particular, it is important to avoid storing the devices in foams not supplied by us as these could damage the sensors due to possible outgassing and falsify the measured values.

The protective cap (yellow) must always be put over the sensor head for the transport.

4 Application Notes

4.1 General Notes

- The sensor element should be in the middle of the pipe when measuring the flow rate.
- The air velocity sensor LG 25 is only suitable for use in clean gases. In particular, the medium to be measured must not contain oils, residue-forming substances or abrasive particles.
- The tilt angle to the direction of flow should not exceed ± 5°, otherwise the measurement accuracy can be reduced.
- The LG 25 air velocity sensor is designed for indoor applications and is not suitable for outdoor use.
- The sensor can be rotated and positioned at a desired angle by loosening the knurled screw. The knurled screw may only be tightened by hand. Using pliers to tighten the knurled screw can damage the sensor holder and the sensor.
- There is a 1/4" thread on the bottom of the handle. The handle can be screwed onto a tripod for a more stable measurement.

4.2 Cleaning of the Sensor Head

A dusty or dirty sensor head can be blown off with compressed air (do not impress hard pressure shocks!). If this procedure does not help, the sensor head can be treated by immersion and rinsing in alcohol (e.g. isopropanol) which dries without leaving residues. The sensor is not ready for measurement again until after the alcohol has completely dried.

- Do not shake, knock or tap the wet sensor!
- Never attempt to clean the sensor head with mechanical influences of any kind. Any contact with the sensor element recessed in the chamber head results in irreversible damage to the sensor.
- Do not use any abrasive cleaning agents, brushes or other objects, fluffy cloths, etc. to clean the sensor head!
- Unsuitable cleaning agents can deposit on the sensor element and thus result in incorrect measurements or permanently damage the sensor element.
- If the chamber head gap of the sensor head is completely filled with cleaning liquid, accelerate the drying process by blowing out if necessary.

Alcohol (dries up residue-free) and hydrogen peroxide are permitted as disinfectants. If the sensor element is heavily wetted with the cleaning liquid, the "contamination detection" of the sensor can be activated. The sensor automatically returns to its normal function after the sensor element has dried. Due to its capillarity, the chamber head gap of the sensor head can be completely filled with cleaning liquid. In this case, it can take **more than an hour** for the liquid to evaporate and for the sensor to function properly again. It is recommended to blow the measuring gap free with a

short blast of compressed air or similar to accelerate the drying process.

4.3 Maintenance

Soiling of the sensor head results in falsification of the measured value. Therefore, the sensor head must be checked regularly for soiling. In the case of heavy soiling or when the sensor head is wetted with liquids, the sensor outputs an error signal. In this case, clean the sensor as described below. If the error signal does not disappear after cleaning and drying, the sensor must be sent to the manufacturer for examination.

5 Appendix

5.1 General Concluding Remarks

The conclusions to be drawn from the measurement results are related to the individual conditions and the knowledge from professional experience for each user.

Warranty Conditions

Gann Mess- u. Regeltechnik GmbH shall rectify material or manufacturing defects at no cost by repair or replacement of the defective part at its discretion that occur within six months of purchase or one year of despatch from the factory, whichever period ends first. Neither the replacement nor the repair of a part constitutes a new warranty or an extension of the original warranty period.

Batteries or other wear parts such as cables or filter fabric are excluded from the warranty.

When making any warranty claim, the device must be sent postage-free to Gann Mess- u. Regeltechnik GmbH or the supplier with details of the claim and enclosing proof of purchase. The warranty is void if attempted repairs or other manipulations have been performed by the owner or third parties.

Gann Mess- u. Regeltechnik GmbH shall not accept any responsibility for damage or malfunctions caused by improper or incorrect handling or storage of the device. Gann Mess- u. Regeltechnik GmbH shall never accept liability for damage, lost profit, lost usage or other consequential damage that arise from the use of the product or the inability to use it.

-Subject to technical changes-

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