

Operating Instructions

FLOWTEST 200

*portable and addressable
digital flow meter*



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Important!

It is imperative to read and observe all safety instructions prior to initial operation!

Technical Data

Measuring range	0 - 200 l/h
Display resolution	1 l/h
Max. measuring error	± 3 % F.S.
Reference temperature	20 °C
Max. temperature drift	± 0.15 % F.S./ °C
Operating pressure (overpressure)	0 - 1 bar
Max. operating pressure (overpressure)	1.3 bar
Operating voltage	38 - 72 VDC
Current consumption at 60 VDC	40 mA typ.
Operating temperature	0 to +50 °C
Storage temperature	-30 to +80 °C
Signal LEDs	Red: Alarm Yellow: Acknowledge Alarm
Signal output	Dry contact, make or break configurable
Max. switchable voltage / current	100 V DC / 0.1 A DC
Dimensions Flowtest 200	136.0 / 68.0 / 224.5 mm

Remote reading	LANCIER Tx-Bus
Address range	1 - 79
Frequency range	1000 Hz - 2000 Hz
Resolution	1 Hz = 0.2 l/h

Ordering Data

Flowtest 200

complete with plastic case and power supply unit **Order-No. 057752.000**

Accessories and spare parts

Filter element	Order-No. 057204.000
Power supply unit 230 V AC to 42 V DC / 200 mA	Order-No. 058125.000
Housing	Order-No. 058090.000
DIN mounting rail	Order-No. 057790.000
Wall frame	Order-No. 057791.000
Hose adaptor 10/7	Order-No. 058253.000

General Information

These operating instructions should make it easier for you to become acquainted with the product. They contain important information to ensure safe, appropriate and cost-effective use of the equipment.

The operating instructions endorse the directives of national regulations for the prevention of accidents and the protection of the environment.



These operating instructions shall be read and adopted by anyone assigned to work with/on the equipment, e. g. during operation to include setting-up, maintenance trouble-shooting.

In addition to the operating instructions and the mandatory regulations for the prevention of accidents, applicable in the operator's country and at the place of use, the recognized technical regulations for safe and professional operation shall also be observed.

Designated Use

The flow meter FLOWTEST 200 is designed to measure the flow rate of dry and clean pressurized air. It may be applied in laboratories as well as measuring device for leak tests on containers, tanks, pipe systems or pressurized cables. It is intended for portable use but can also be installed stationary.

Any non-compliant use excludes the manufacturer from liability for any damages. The operator carries the risk!

Safety Instructions



Important!
Read and observe safety instructions prior to initial operation!

- Keep the operating instructions ready to hand!



Accident prevention!
All circuit lines must be dead before mounting or dismounting of the flow meter or the opening of its housing !

- The unit should only be operated in technically-sound condition, for its designated use, with safety and risk awareness in mind, taking into account the operating instructions. In particular, operational faults, which can compromise safety, should be rectified immediately!
 - Do not make any modifications to the equipment!
 - Mounting, maintenance and repair work should only be performed by trained personnel!
 - Only use original LANCIER replacement parts!
-

**Risk of damage!****All circuit lines must be dead before mounting or dismounting of the flow meter or the opening its housing !**

- Do not exceed the maximum permissible working pressure!
- Avoid kinks in hoses!
- Assure properly fixed hoses inside the instrument!
- Lead dry and cleaned air only through the instrument!
- Observe maintenance instructions and intervals!
- Do not use aggressive detergents for cleaning. Use lint-free cloths.

Function

The digital flow meter FLOWTEST 200 is designed to measure the flow rate of dry and clean pressurized air. It may be applied in laboratories as well as a measuring device for leak tests on containers, tanks, pipe systems or pressurized cables.

The FLOWTEST 200 may be used as stand-alone instrument for testing purposes or as stationary instrument. In this case it may be integrated into the LANCIER monitoring system. For this purpose it is addressable by means of two coding switches on the circuit board.

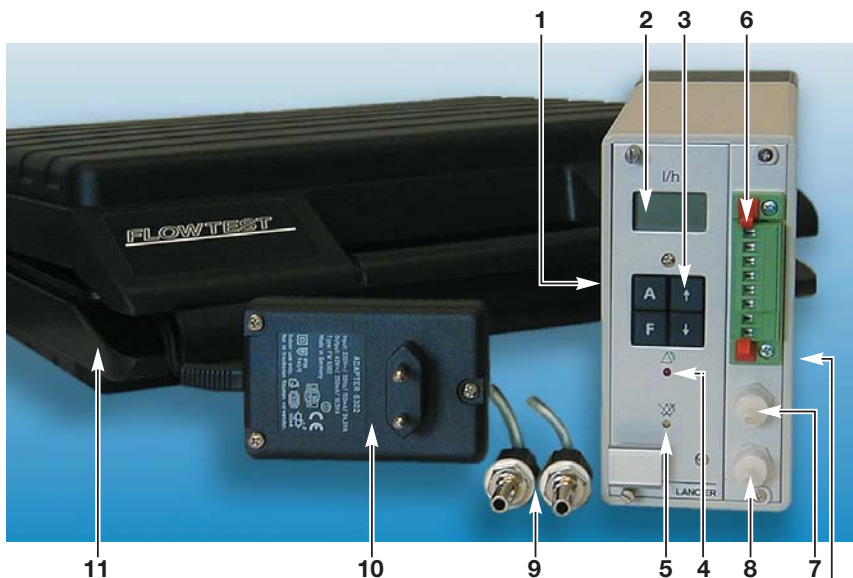
The flow rate is displayed on a 3-digit LC display with a resolution of 1 l/h.

If a programmable alarm limit is exceeded, a red LED will begin to glow and a dry contact switches (e. g. to trigger an external LED panel).

The common signal contacts of several FLOWTEST flow meters may be connected in parallel. Thus a common alarm is signalled when one of the instruments exceeds the alarm limit. This alarm can be acknowledged to clear the line. The actual alarm condition is indicated by a yellow LED of the respective instrument, thus reminding of the fault elimination.

Product description

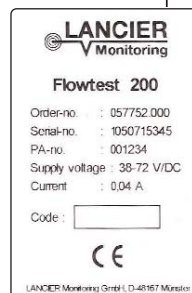
- 1 FLOWTEST 200 portable addressable digital flow meter
- 2 Digital LC display, 3 digits
- 3 Keypad
- 4 Red LED - alarm
- 5 Yellow LED - acknowledged alarm
- 6 Terminal strip
- 7 Air inlet
- 8 Air outlet
- 9 2 Connection Hoses
- 10 Power supply unit
- 11 Carrying case



Identification marking

The FLOWTEST 200 is clearly identified by the nameplate with technical data and particulars of the manufacturer. The nameplate is located on the outside of the housing to the right.

Compliance with the directives in force is confirmed by the attached EC declaration of conformity (see back of these operating instructions).



Set-up

Prior to start operation of the flow meter, several settings must be carried out.

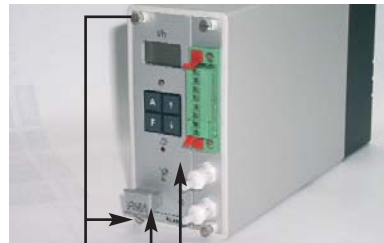


Accident prevention!

All circuit lines must be dead before opening on the instrument!

1. Dismantle the front panel with circuit board (12)

- Unscrew the screws (13) of the front panel (12) with a small screw driver.
- Hold the handle (14) and pull the circuit board carefully out of the housing.



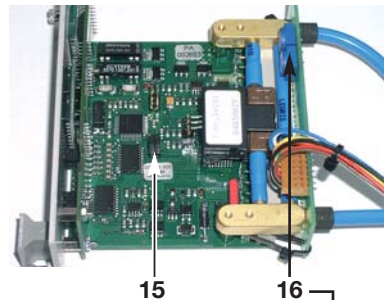
2. Set the dry contact „K“

The dry contact „K“ is used for the remote signalling of an alarm.

- Set the jumpers (15) according to your requirements:
make contact:



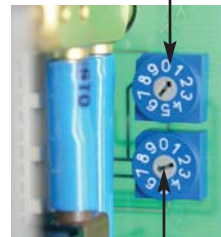
break contact:



3. Set the address for the monitoring system

If the FLOWTEST shall be integrated into the LANCIER monitoring system, it must have a unique address.

- Turn the arrow shaped groove (17) of the coding switches (16) to the required position.
 - the top switch refers to the decade figure
 - the lower switch refers to the single figure
 (Refer to example: address 17)
- Addresses 1 to 79 are allowed.



4. Remount the front panel with circuit board (12)

- Insert the circuit board (12) carefully into the housing.

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Risk of damage!

- Do not kink hoses!
- Do not clamp cables!

- Fix the screws (13) properly.

5. Connect the air hoses appropriate to the air inlet (7) and air outlet (8).
6. Connect the power supply unit (10) to the two lowest clamps of the terminal strip (6)



Risk of damage!
Mind the right polarity!

7. Set the alarm limit

- Press key **A** of the keypad (3).
The actual programmed alarm limit is shown in the display (2)
- Raise the alarm limit by holding the key **A** and pressing the key **↑**.
The actual value is shown in the display (2)
- Reduce the alarm limit by holding the key **A** and pressing the key **↓**.
The actual value is shown in the display (2)

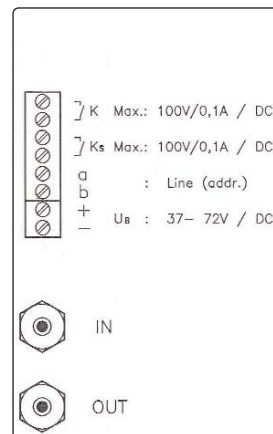


Connect remote signalling lines (optional)



Accident prevention!
All circuit lines must be dead before opening on the instrument!

1. **Connect an external LED panel to alarm contact „K“**
 - Connect the two wires to clamps (**K**) of the terminal strip (6).
 - The signal is triggered by the dry contact „K“ (make or break, set-up ref. page 7)
2. **Connect a remote alarm line to alarm contact „Ks“**
for single or common alarms
 - Connect the two wires to clamp (**Ks**) of the terminal strip (6)
 - The signal is triggered by the dry contact „Ks“
3. **Connect the flow meter to the Tx-bus**
of the LANCIER monitoring system
 - Connect the two wires to clamps (**a**) and (**b**) of the terminal strip (6)
 - The measured values of the flow meter will be read periodically by the monitoring system



The LANCIER Tx-Bus

A maximum of 127 addressable transducers can be connected to one supervision pair. The flow meter FLOWTEST may be addressed from 1 to 79 only.

The measured values of all sensors connected to the LANCIER monitoring system are transmitted in time intervals. Therefore all installed sensors must be coded before being installed (refer to set-up, article 3).

Function Test

Each transducer has to be checked with the Lancier Testbox (Order no. 050833.000) for accurate function and coding. The necessary steps are described in the manual of the Testbox.



Important!

Check all transducers before use, in order to avoid later malfunction!

Operation

- The alarm limit is programmed
- The FLOWTEST is connected pneumatically
- Electric power is supplied

1. The measured values are in normal condition below alarm limit

- Red LED (4) and yellow LED (5) are dark
- Display (2) shows actual flow

2. Alarm value is exceeded

- Red LED (4) glows
- Alarm contact „K“ is activated
- Alarm contact „Ks“ is activated
- Press key **A** of the keypad (3) to read the actual flow value in the display (2)
- Press key **F** of the keypad (3) to acknowledge the alarm

3. Alarm value is exceeded and alarm is acknowledged

- Red LED (4) glows
- Yellow LED (5) glows
- Alarm contact „K“ is activated
- Alarm contact „Ks“ is deactivated, the signalling line is clear for alarms of other instruments



4. **The measured values exceed the measuring range of 200 l/h**
 - Red LED (4) glows
 - Alarm contact „K“ is activated
 - Alarm contact „Ks“ is activated
 - Display (2) flashes „200“

5. **The measured values are sunk to normal condition, at least 4 l/h below alarm limit**
 - Red LED (4) and yellow LED (5) are dark
 - Display (2) shows actual flow
 - Alarm contact „K“ is deactivated
 - Alarm contact „Ks“ is deactivated

Disregard small leaks

If there is only a slight increase of air flow and immediate fault elimination is impossible, alarms can be avoided by increasing the signal value by at least 4 l/h. The defective equipment or cable remains monitored at an increased air flow. **Take this measure in exceptional cases only.**

Maintenance

Every 1200 operation hours



Important!

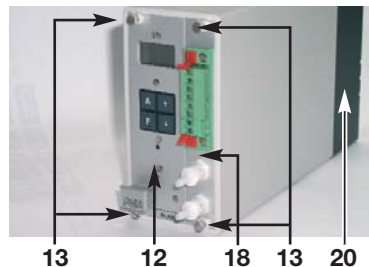
Mounting, maintenance and repair work should only be performed by trained personnel!



Accident prevention!

All circuit lines must be dead before the housing!

1. **Dismantle the front panel with circuit board (12) and the connection panel (18)**
 - Unscrew the screws (13) of the front panel (12) and the connection panel (18) with a small screw driver.
 - Pull the front panel with circuit board (12) and the connection panel (18) carefully out of the housing.



2. **Separate the two parts of the housing**
 - Unscrew the screws (19) inside the housing with a small screw driver.
 - Pull off the rear part of the housing (20).

3. Replace micro filter (21)

- Unscrew filter top cover (22)
- Replace filter element (Order-no. 057204.000)
- Screw on filter top cover

4. Remount the two parts of the housing

- Marry the two parts of the housing (20).
- Fix the screws (19) inside the with a small screw driver.

5. Remount the front panel with circuit board (12) and the connection panel (18)

- Mount the connection panel (18)
- Insert the circuit board (12) carefully into the housing.



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Risk of damage!

- Do not kink hoses!
- Do not clamp cables!

- Fix the screws (12) properly.

6. Connect the air hoses appropriate to the air inlet (7) and air outlet (8).

7. Connect the power supply unit (10) to the two lowest clamps of the terminal strip (6)



Risk of damage!

Mind the right polarity!

8. Connect remote signalling lines if required (ref. Page 8)



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EC Declaration of Conformity

according to directive 98/37/EEC

We declare under our sole responsibility, that the product

Make: LANCIER Monitoring
Type: FLOWTEST 200

to which this declaration relates corresponds to the relevant basic safety and health requirements of the directive 98/37/EEC, and to the requirements of the other relevant directives:

73/23/EEC Low voltage directive
89/336/EEC Electromagnetic compatibility

For proper implementation of the health and safety requirements named in the EC directives the following standard(s) and/or technical specification(s) have been consulted:

GSG German product safety law
EN 61000-6-3/4 Emitted interference
EN 61000-6-1/2 Interference resistance (fault-free operation)

Münster, 19 March 2004


Research and Development


Managing Director