

AIR VOLUME & AIR VELOCITY



FlowFinder

MEASURING AIR FLOW
WITH ZERO PRESSURE COMPENSATION

The FlowFinder® is an air flow measurement instrument designed for measurements in mechanical air supply and exhaust systems. The operating principle of the FlowFinder® is based on the zero pressure compensation method.

ACIN

instrumenten bv

made to measure



MEASURING AIR FLOW WITH ZERO PRESSURE COMPENSATION

The **FlowFinder®** is an air flow measurement instrument designed for measurements in mechanical air supply and exhaust systems. The scales supplied are in dm^3/s and m^3/h . The operating principle of the **FlowFinder®** is based on the zero pressure compensation method. With this method the resistance of the measuring instrument is compensated by means of a fan, so the characteristic of the air distribution system is not influenced by the measurements. Research at the universities of Stuttgart (D), Trier (D) and Delft (NL) has proven the zero pressure compensation method to be the most accurate way of measuring air flows in supply and exhaust ornaments of various shapes and sizes.

Scope

Due to its analogue zero pressure indicator (resolution $< 1 \text{ Pa}$) the **FlowFinder®** has a large application area. The scale with its length of approx. 260 mm and its non-linear graduation enables accurate measurement of very small air quantities like a few dm^3/s .

The **FlowFinder®** is used to measure:

- air conditioning systems with a low terminal resistance
- small air quantities
- low air velocities
- natural ventilation
- line diffusers (with optional hoods)

Operation

The **FlowFinder®** is placed in front of an outlet or grille and is adjusted manually until the zero pressure indicator reads zero. Because of the unique zero pressure compensation method, the air flow is hardly influenced by placing or removing the instrument. The zero pressure indicator reacts instantly, so the correct air flow can be determined very quickly. The resistance of the **FlowFinder®** is fully compensated by an electric fan powered by a rechargeable battery.

The **FlowFinder®** operation is based on mechanical principles, so that the repeatability is very good. The scale and the zero pressure indicator will hardly need re-adjusting. The **FlowFinder®** is supplied with two hoods, dimensions 435 x 350 mm and 315 x 230 mm respectively. If necessary other adapters can be fitted without changing the air flow scale.

Accuracy

The inaccuracy of the air flow is less than 5% of the indicated value with a minimum value. The nominal non-repeatability is 1% with a minimum value. The nominal difference between supply and exhaust is less than 2% with a minimum value. See the specifications). This more than meets the tolerances normally used to balance air conditioning systems.

Standard equipment **FlowFinder®**

- conical hood
- hood straight
- battery set in leather case
- battery charger
- transport case
- user's manual
- calibration certificate (NMI traceable)

Options

- foldable hood 280x1200 or 600x600 mm
- extra battery set in leather case
- socket for mains supply
- special hoods and accessories on request



The **FlowFinder®** is supplied with a NMI-traceable calibration certificate.

The **FlowFinder®** has been developed in cooperation with the section Interrio Climate of TNO Delft, The Netherlands.

SPECIFICATIONS	FF 225	FF 300
air flow range (supply and exhaust)	0..225 m^3/hour 0.. 63 dm^3/s	0..300 m^3/uur 0.. 83 dm^3/s
air temperature range	-20..+80 $^{\circ}\text{C}$	-20..+80 $^{\circ}\text{C}$
inaccuracy (at 20 $^{\circ}\text{C}$) *	3..5% of the reading, minimum value of 2 m^3/h	3..5% of the reading, minimum value of 2 m^3/h
non-repeatability	> 1% of the reading, minimum value of 0,3 m^3/hour	> 1% of the reading, minimum value of 0,5 m^3/hour
difference between supply and exhaust	< 2% of the reading, minimum value of 0,5 m^3/hour	< 2% of the reading, minimum value of 0,8 m^3/hour
resolution zero pressure indicator	< 1 Pa	< 1 Pa
battery discharge time	120 minutes (fan continuously in operation)	90 minutes
weight FlowFinder®	3900 g	3900 g
weight battery case	2500 g	3200 g
dimensions FlowFinder® (lxwxh)	405 x 240 x 225	405 x 240 x 225
dimensions FF with conical hood	435 x 350 x 325 mm	435 x 350 x 325 mm

* = inaccuracy is defined as the root sum square of deviations due to non-linearity, hysteresis and non-repeatability.

acin instrumenten bv

handelskade 76 p.o.box 1111 tel. +31 70 3070703 info@acin.nl
2288 bg rijswijk 2280 cc rijswijk fax. +31 70 3070938 www.acin.nl
the netherlands the netherlands

ACIN