

Operating Instruction MiniAir60



Manufacturer:
TSR Messtechnik AG
Ebnatstrasse 164
CH-8207 Schaffhausen
Switzerland



WARNING!
means that death, serious injury or significant property damage can occur if the appropriate precautions are not taken.

With this Schiltknecht anemometer you have acquired a precision instrument of exceptional quality. You also obtain the benefit of our many years' experience in metrology and our close collaboration with Swiss and foreign universities, technical colleges and research institutes.
Our factory employs the greatest care in the manufacture of the MiniAir60. All probes have been calibrated in our accredited wind tunnels and are checked to conform to the required tolerances.

A. Description

The MiniAir60 ist particularly suitable for the heating, air conditioning and ventilation engineer. The following characteristics, based on practical requirements and unique in their combination, ensure efficient and reliable measurements:

- The aerodynamically optimised probe form represents the basis for accurate measurement. The probes are very largely unaffected by flow direction and are extremely reliable.
- The interchangeability of the snap heads ensures that there is no interruption of the measurement in case of damage. The changeover is extremely easy: the head is simply pulled vertically of the instrument.

B. Operating principle

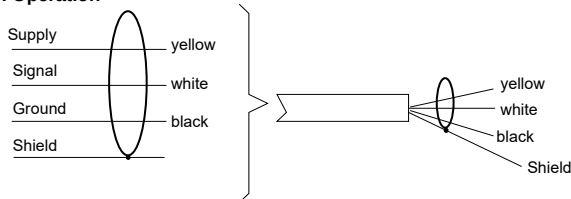
Measurement sensor

The impeller speed corresponding to the flow velocity is recorded electronically without feedback and converted via transducer.

General handling tips

- Do not bend connection cable (danger of cable break)
- Cleaning only according to cleaning instructions
- Allow heated high temperature sensors to cool slowly; never cool down with cold water or similar.
- Remove used batteries immediately and dispose of them properly to prevent leakage and damage to the unit.
- Strong electromagnetic interference sources (transformers, radios, transmitters, etc.) can influence the measurement accuracy.

C. Operation



Connection diagram (3-wire system)

The cable shield must be connected to the housing shield of the connected device (ground the sensor on one side only).
For unshielded devices, the cable shield must be connected to the device ground (GND) (do not ground the sensor).

ATTENTION

Wrong connection will destruct the probe (no Pol-Protection) !

Response time

The output signal is instantaneous.

Response time of the electronics:

when connecting the power supply (on/off): immediately
Time to reach 63 % of final value: 5.2 ms

Response time of the impellers:

Increase in flow: 1.0 sec.
Decrease in flow: 8.0 sec.

Cleaning instructions flow sensor

Important: Device and sensor must be switched off or disconnected before cleaning.

The probes are extremely sensitive measuring instruments and cleaning must therefore be carried out with extreme caution.

Fibres or other foreign objects can be carefully removed with fine tweezers.

Care must be taken not to bend or otherwise damage the wing or axle.

Under no circumstances may the adjustment of the bearing screws be changed; incorrect measurements may result.

Never reach into running impellers with hard objects!!

Never use cleaning agents for plastic sensors that remove the plasticizer from the plastic (practically all solvents).

We recommend cleaning the sensors:

- unning water
- soapy water
- pure petrol

Cleaning example:

1. Carefully swivel the impeller head part in clean pure petrol for approx. 10 minutes.
Then swivel the impeller head part in clean petrol for approx. 1 minute so that the impeller bearings are relubricated.

If soapy water is used as cleaning solution, it is advisable to thoroughly wash out the soap solution with distilled water before lubricating with petrol.

2. After cleaning, rub the outside of the sensor dry with a clean, lint-free cloth.
3. Allow the impeller head to dry for approx. 30 minutes.

Only clean the impeller head part!

Never immerse the sensors completely in the solution.

D. Technical data

Probe	non-corrosive gases		
Medium	Flow	Output	Accuracies
Measuring ranges:	Micro:	0 – 2926.7 Hz	± 1.0% fs., plus ± 3.0% rdg
	0.6 bis 20 m/s	0 – 2803.8 Hz	± 1.0% fs., plus ± 3.0% rdg.
Micro Water	0.04 bis 5 m/s	0 – 760.0 Hz	± 2.0% fs., plus ± 3.5% rdg.
	0.05 bis 10 m/s	0 – 756.0 Hz	± 2.0% fs., plus ± 3.5% rdg.
Mini:	0.4 bis 20 m/s	0 – 1804.0 Hz	± 1.0% fs., plus ± 1.5% rdg.
	0.5 bis 40 m/s	0 – 1725.0 Hz	± 1.0% fs., plus ± 1.5% rdg.
Mini Water	0.02 bis 5 m/s	0 – 461.0 Hz	± 2.0% fs., plus ± 3.0% rdg.
	0.03 bis 10 m/s	0 – 457.0 Hz	± 2.0% fs., plus ± 3.0% rdg.
Macro:	0.2 bis 20 m/s	0 – 960.20 Hz	± 1.0% fs., plus ± 1.5% rdg.
	0.3 bis 40 m/s	0 – 926.99 Hz	± 1.0% fs., plus ± 1.5% rdg.
Head diam.	Micro	ø 11 x 15 mm	
	Mini	ø 22 x 28 mm	
	Macro	ø 80 x 85 mm	
Access opening	Micro	16 mm	
	Mini	35 mm	
	Macro	120 mm	
Probe length	Micro	165 mm	
	Mini	175 mm	
	Macro	225 mm	
Cable length	5 m		
Operating temperature	-10 bis +80 °C	(Water: 0 bis +70 °C)	
Storage temperature	-30 to +100 °C		
External power supply	4.5 – 5.5 VDC		
Current consumption	0.5 mA at 5 Volt		

Important Informations:

- Avoid moisture, extreme temperatures, vibrations and mechanical shocks. Do not shake!
- Cleaned the casing and glass with a soft, slightly damp cloth. Do not use cleaning materials or solvents! Do not immerse the system in water!
- Remove exhausted battery immediately or else they may leak and damage the instrument. Do your part of the environment! Old batteries don't belong in the bin, take them to a collection point for old batteries or hazardous waste.
- Strong electromagnetic interferences (e.g. transformer, handy, radio transmitter) may affect the accuracy of the measuring instrument.
- The system may not be modified! Use only original accessories.
 - The product must not have public trash collection or garbage cans be disposed of. It must be either according to the WEEE Directive or can be disposed of properly to the company Schiltknecht Messtechnik AG are sent back at his own expense.



Guarantee

Our guarantee covers verifiable material or manufacturing defects on systems and devices for a period of 12 months from delivery. For manhandling the guarantee is not applicable.

In the case of an event bringing the guarantee into operation, the defective part is repaired or replaced according to our choice. Transport and travel costs are paid by the ordering party.

The guarantee provisions of the supplier are applicable for non-Schiltknecht material. We accept no liability with respect to the suitability of the delivered products for the envisaged application.

Our guarantee is in all cases limited to the defective device. Liability for any secondary damages whatever is expressly ruled out.

EC-Declaration of Conformity:

Instrument: Vane anemometer
Instrument type: MiniAir60
Type designation: f.6xx.60.xx

The signing legal authorities state, that the above mentioned equipment meets the requirement of the electromagnetic compatibility (EMC) according to the Guideline of Counsel 2014/30EU.

The evaluation procedure of conformity was assured according to the following standards:

- EN 55022:2011-12 VDE 0878-22:2011-12 (emission)
- EN 61000-6-1:2007-10; VDE 0839-6-1:2007-10 (immunity)
- (With frequencies around 1 MHz it can lead to interference)

Certified according to EN ISO 9001:2015 and

EN ISO/IEC 17025:2017 (for air flow)

Your local distributor

Omni Instruments Ltd
Unit 1, 14 Nobel Road,
Wester Gourdie Industrial Estate,
Dundee, DD2 4UH.
Email: info@omni.uk.com
Web www.omniinstruments.co.uk
Telephone: +44 (0) 1382 443000