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# HANDHELD ANEMOMETER
# RVM 160

INSTRUCTION MANUAL

**Rev: 2**

CE

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# 1. DESCRIPTION

RVM 160 is a true portable, easy to use handheld anemometer, capable of measuring only wind speed.

Wind speed is measured by an electronic system, using a 3-cup Robinson's cross coupled to an optoelectronic transducer. Wind speed is indicated in m/s, km/h, knots, or miles/h (depending on the type of the instrument) on a liquid crystal display. Four R6 (AA size) alkaline batteries, located in a handle, power the electronics. Instead of batteries, four rechargeable AA size NiCd accumulators may be used.

RVM 160 may be placed on any standard photographic tripod, which can be fixed to the bottom of the RVM 160 handle by a standard 1/4” screw.

A carrying case is provided for transport and storage.

## 2. INSTRUCTIONS FOR USE

At the location where wind is to be measured, RVM 160 is taken out of the case. Anemometer is gripped by the handle and switched on with the ON / OFF switch (located on the handle). When switch is pushed to the "I" position, the instrument is turned on (value 0.0 is displayed on LCD). Second push to the “I” position turnes on the display illumination (which increases power consumtion). Pushing switch to the “0” position turns the instrument off.

RVM 160 switches off automatically when cup assembly is not rotating for more than 4 minutes.

When measured wind speed exceeds 53 m/s, - - - is displayed on LCD.

After turning it on, RVM 160 must be raised and held in the upright position at such a height that the display is at the eye level. Wind speed can be immediately read from the display. Depending on the type of an instrument, it is displayed in meters per second, knots, kilometres per hour, or miles per hour. If a conversion of units is necessary, the following constants should be used:

1 knot equals 1.852 km/h equals 0.514 m/s or aprox. 0.5 m/s
1 m/s equals 3.6 km/h equals 1.942 knots or aprox. 2 knots
1 km/h equals 0.278 m/s equals 0.54 knots
1 mph equals 0.447 m/s equals 0.869 knots

During the measurements, care should be taken not to disturb the wind field by the operator himself.

The handheld anemometer RVM 160 can be fixed onto a photographic tripod or similar supporting device. For this purpose, a standard 1/4" nut is provided on the lid of the handle.

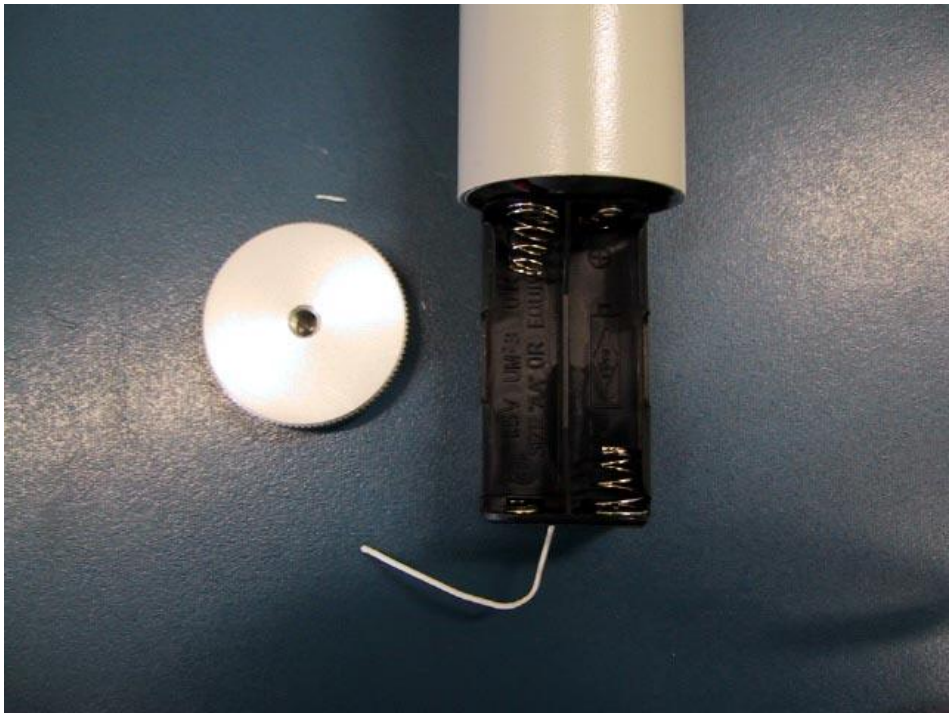
When using tripods or other supports care should be taken always to operate the instrument in a vertical position.

If the wind speed display indicates 00.0 m/s even when the cup assembly is rotating, this normally means that the batteries are exhausted and should be replaced. To replace the batteries, unscrew the lid on the handle, pull out the battery compartment and replace the batteries.

After the use, RVM 160 should be switched off by returning the ON /OFF switch into it’s central position.

## 3. BATTERIES

The battery elements are not inserted when the device is shipped. To insert the four R6 type (AA size) elements, the lid of the handle must be unscrewed and the plastic battery compartment pulled out of the handle. Batteries must be oriented so that the negative (-) poles touch the springs in the battery compartment. After inserting the batteries, return the battery box in the handle, and close the lid.



New batteries are able to drive the instrument for approximately 60 hours of continuous use. When the battery voltage falls to the approximately 3 V, the wind-speed section of the instrument ceases to work (showing constantly 00.0 on the display). This indicates that the batteries should be replaced.

The use of the sealed, long-life alkaline batteries is strongly recommended.

## 4. MAINTENANCE

When not in use, anemometer should be kept in the carrying case.

In order to avoid any chemical damage to the device the batteries must be removed from it when RVM 160 will not be used for more than a week. Care should be taken not to mechanically damage the instrument by dropping it to the ground or handling it without care. Different weather conditions at normal use can not damage the instrument; however, it should not be put into water or stored for longer time in a place with the high relative humidity.

RVM 160 should be cleaned by a soft cloth and a mild detergent solution.

Normally, no other maintenance or recalibration is required.

# 5. TECHNICAL DATA

| | *WIND SPEED* |
|---|---|
| **Measuring range:** | from 0 m/s to 50 m/s<br>or 0 to 100 knots<br>or 0 to 180 km/h |
| **Starting speed:** | 0.5 m/s |
| **Accuracy and linearity:** | +/- 0.5 m/s |
| **Resolution:** | 0.1 m/s |
| **Measuring system:** | optoelectronic |
| **Indicator:** | LC display |
| **Power supply:** | 6 V (4 x RS 6 type / AA size batteries) |
| **Battery life:** | approx. 60 hours of continuous work without scale illumination, aprox. 30 hours with illumination |
| **Working temperature:** | from - 20 deg. C to + 40 deg. C |
| **Working rel. humidity:** | from 10 % to 100 % RH |
| **Storage temperature:** | from - 40 deg. C to + 60 deg. C |
| **Storage rel. humidity:** | from 10 % to 60 % RH without condensation |
| **Dimensions:** | 275 mm x 210 mm x 140 mm |
| **Mass:** | approx. 0.5 kg |
| **Material:** | anodised aluminium, stainless steel |
| **Tripod:** | Any photographic tripod with 1/4" screw |
| **Dimensions of the case:** | 150 mm x 200 mm |
| **Weight:** | approx. 500 g without case |

# WARRANTY

Handheld anemometer RVM 160 SN.: Wind Speed Units:

Date of purchase:

Sold by: Purchased by:

(Signature & stamp) (Signature & stamp)

The device is warranted against all defects in material or labour for a period of 12 months from a date of purchase (either purchased directly from AMES or from an authorised representative).

We commit ourselves to repair without charge any defects and technical deficiencies caused under normal operation. This warranty is valid under the following conditions:

- that the device was used in accordance with the supplied instructions
- that the defect has occurred under the normal use and is not a result of any mechanical damage, atmospheric discharge, improper use or hostile operating or storage environment
- that the instrument had not been serviced by an unauthorised persons

Under the conditions stated above we accept the obligation to repair the product within thirty days.

We guarantee the availability of spare parts for a period of ten years from the date of purchase.

Manufacturer:

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# SPARE PARTS

The following spare parts are available for the RVM 160:

RVM 160 / SP 001: Nut for fixing the Robinson's cross on the axle
RVM 160 / SP 002: A 3-cup Robinson's cross
RVM 160 / SP 003: Upper (Teflon) bearing
RVM 160 / SP 005: Handle, complete
RVM 160 / SP 006: Coverlid for the handle
RVM 160 / SP 007: Battery compartment
RVM 160 / SP 008: Electronic assembly
RVM 160 / SP 010: A set of inner mechanical parts, including the axis, the stroboscope and ball bearings.