FLOWATCH®

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You have just acquired a piece of high precision equipment which has been created using the most modern technology. It has been designed to stand up to intensive use. However, in order to maintain its appearance and its precision, we recommend that you treat it with care and read this manual carefully.

To work properly, the **FLOWATCH** system has to include at least:

- 1 display unit
- 1 probe
- 1 impeller

Function of the buttons

- ✳ ON: press for 1 second
  OFF: press for 2 seconds (not auto off)
  LIGHT: press on and off briefly
- △ UP: setting mode
  START / STOP: chronometer mode
- ▽ DOWN: setting mode
  LAP / RESET: chronometer mode
- ✳ SET / CAL: setting mode
- ✳ + ▽ RESET MEMORY: press for 3 seconds

Configuration

To access the configuration mode of your instrument, just press on the ✳ button. Pressing the ✳ button once again cause the system to confirm the setting if there has been a change. If not then it goes to the next setting. To modify the settings the △ and ▽ buttons have to be used. Here is how to proceed with the different instrument settings.

Speed measuring unit
The units to be selected are: knots, mph, km/h, m/s, fps and cm/s. Once the unit is chosen, it remains displayed in the top right. If no other unit is chosen the instrument is set to the cm/s.

Temperature measurement unit
The units to be selected are: °F, °C, °F ✳ and °C ✳.

Setting the time of the average
The times to be selected are: --- (weighting), 3'', 6'', 12'', 30'', 1', 6', 30', 1:00', 6:00', 12:00', 24:00' or timer ⏲.
The timer mode allows measurement of the average between start (press △) and stop (press △), this time is displayed on the lower lines. This timer allows the use of the LapTime function (press ▽, the symbol ⏲ flashes). The ▽ button also allows the timer to be reset to zero. This works in the same way as a standard chronometer.

Setting of the speed and temperature displays
The displays to be selected are: ---, MIN, AV, MAX.
If AV is selected, the average of temperature and wind are shown. The display of average values is always made simultaneously for the speed (at the centre) and temperature (at the bottom). The other modes (---, MIN, MAX) only concern the temperature.
Setting of the display is not possible if the units selected are °F ✳ or °C ✳.

Measuring air or liquid flows

Instantaneous speed (at the top)
Maximum speed (at the centre)
The display of the maximum speed is made at the central part. It is the maximum measured value of the time of the average. The value is reset to zero during a RESET of the memory.
Average speed (at the center if AV is selected)

Measuring the temperature

The temperature sensor is on the end of each probe.
Instantaneous temperature
Important: Thermal inertia of the instrument directly affects the stabilization time of the measurement. The greater the temperature difference, is the longer this time will be. This time will be shorter if the wind speed is higher.

Wind-chill temperature
As you know, exposure to low temperatures is potentially dangerous to the human body. But did you know that wind plays a significant part in how your body actually feels temperatures? For example, an ambient temperature of 0°C and a 30 km/h wind have the same effect on you as a temperature of -13°C! The result of the calculation of the effect of wind on the temperature is called the "wind-chill temperature".
The **FLOWATCH** shows immediately the wind-chill.

Minimum temperature
Maximum temperature
These two modes show the min or max values measured over time of the average. The value is reset to zero during a RESET of the memory. These values are not those of the temperature felt by the body.

Probe specifications

Available in 2 different lengths, these 2 probes are essential to install any impeller.

- Aluminium telescopic rod, total length of 1.2m with 2 meters cable to measure in hard-to-reach ventilation shafts, air conditioning conduits, rivers flows and irrigation canals.
- Aluminium small rod, 10 cm long to use your **FLOWATCH** as a compact windmeter (mostly used with windspeed impellers ø 20mm and ø 12mm)
- Probe with a 15 meters sounding cable with waterflow impeller, to measure water flow from bridges.

Impellers specifications

- Regular size windspeed impeller: ø 20 mm, hole diameter ø 33 mm.
  Minimum sensitivity: < 3km/h - < 1m/s
  Precision : ±2%
  "off-axis" error: ±30° / ±3%
  Operating temperature : -50°C to +100°C
- Small size windspeed impeller: ø 12 mm, hole diameter ø 18 mm.
  Minimum sensitivity: < 3km/h - < 1m/s
  Precision: ±2%
  "off-axis" error: ±10° / ±3%
  Withstood temperature: -50°C to +100°C
- Water impeller: ø 60 mm
  Minimum sensitivity: < 0.3km/h - < 0.1m/s
  Precision: ±2%
  "off-axis" error: ±20° / ±3%

Technical data

- Sealed and weatherproof instrument
- Thread on the bottom of the instrument for fixing to a tripod (1/4")
- Speed resolution: 0.1 for all units (except in cm/s: 3cm/s)
- Maximum speed: 150 km/h (except in cm/s: 999cm/s)
- Thermometer precision: ± 0.2°C
- Thermometer resolution: 0.1°C
- Power supply: 2 batteries, 1.5V AA
  Battery lifetime, at least 3 years with occasional use of the display backlight. To replace, loosen the three screws on the metal plate.
- Weight: 210 grams (insubmersible)
- Dimensions: ø66 X 137 mm
- Warranty: 1 year
- All cable are in PUR

Warranty

Your instrument has a one year warranty, against material or manufacturing defects, from JDC ELECTRONIC SA starting from the date of purchase. The warranty does not cover damage caused by incorrect use.
The speed measuring principle of **FLOWATCH** is based on the detection of a rotating magnetic field produced by an impeller. If the device is subject to a strong magnetic field produced by a transformer or motor, it may happen that the instrument shows undesirable values, without any rotation from the impeller.

More information is available on our website under www.jdc.ch.

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