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Flowatch Flowmeter



Operating Instructions

Flowatch

Air or Liquid Flow Measurement

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 causes 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 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 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 temperature and windspeed 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 bottom)

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 centre 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 the time will be. This time will be shorter if the windspeed 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 feels temperatures? For example, an ambient temperature of 0°C and a 30km/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 probes are essential to install any impeller.

- > Aluminium telescopic rod, total length of 1.2m with 2 metres cable to measure in hard-to-reach ventilation shafts, air conditioning conduits, rivers and irrigation canals.
- > Aluminium small rod, 10cm long to use your Flowatch as a compact windmeter (mostly used with windspeed impellers ø20mm and ø12mm)
- > Probe with a 15m sounding cable with waterflow impeller to measure waterflow from bridges.

Impeller specifications

- > Regular size windspeed impeller: ø20mm, hole diameter ø33mm.
Minimum sensitivity: < 3km/h - 1m/s
Precision: ±2%

- "off-axis" error: ±30° / ±3%
- Operating temperature: -50 to +100°C
- > Small size windspeed impeller: ø12mm, hole diameter ø18mm
Minimum sensitivity: < 3km/h - 1m/s
Precision: ±2%
- "off-axis" error: ±10° / ±3%
- Withstood temperature: -50 to +100°C
- > Water impeller: ø60mm
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: 150km/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 the three screws on the metal plate.
- > Weight: 210g (insubmersible)
- > Dimensions: ø66 x 137mm
- > Warranty: 1 year
- > All cables are 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.