

TECHNICAL INFORMATION

APPLICATIONS

Detection of air speed and direction in the following environments:

- road and rail tunnels
- tunnel's escape ways and bypasses
- venting pipes
- exhaust gases extraction pipes
- industrial installations

FEATURES

- no moving mechanical parts
- no need of spare parts
- ultrasonic "barrier" technology
- no contact measuring
- no need of maintenance – working checkout once a year
- analog and digital outputs
- easy and quick installing
- long life

The UFM5 ultrasonic anemometer has been designed and developed by EDS srl specifically for the monitoring of the air velocity and direction in road tunnels.

The instrument is point type and is very easy to be installed. It doesn't require in fact alignments, aims and difficult setup. Once installed, it is immediately ready to the use.

However the sturdy construction, reliability, precision and easyness of installation permit to use this device in other interesting applications as outlined above.

The two values obtained from the measuring system (velocity and direction) are useful to detect dangerous conditions and to conveniently inform the tunnel venting control system, so that it can act in the best way to clean the air and to save power as well.

The principle of operation of the system is based on the interaction among a well defined sonic path and the wind, that can modify the time and the way of propagation of the sound. This system results very precise and reliable.

The use of the Ultrasonic technology has many advantages:

- * determination of the mean value of the air velocity and direction in all the section of the tunnel
- * immunity to dust, humidity and varius types of dirt present in road tunnels
- * no contact measuring: the element where the



ultrasonic sound is flowing through is the air

- * easy and uncritical installation
- * cheap maintenance: the system requires an easy and cheap programmed maintenance that depends on the physical characteristics of the environment where it is installed
- * long life: the system will work well for a long time because it doesn't have an moving parts inside of it

UFM5 has several outputs: analog 0–5V and 4–20 mA proportional to the air velocity, digital for the indication of the air direction 0–1 (+5V), digital RS232/RS485 for data transferring to a PC.

TECHNICAL DATA

- * power supply : 12/24 V dc
- * power max.: 5W
- * measuring range: -20 / +20 m/s
- * resolution: 0,1 m/s
- * accuracy: +/- 2%
- * ambient temperature: -25 +55 °C
- * humidity: 15 – 95% RH
- * analog current output: 0–5V 4–20 mA
- * relay output for digital air direction
- * relay output for Fault
- * digital output for PC interface: RS232/RS485
- * protection index: IP67
- * weigth: 3,5 Kg
- * dimensions: 240x260x400 mm
- * built according to the norms: DIN EN ISO 9001–2000