Ultrasonic portable flowmeter

MINISONIC P

The **MINISONIC P** calculates the speed and the flow of the fluid by the measurement of the **difference of the transit time** of ultrasonic waves.
This advanced portable flowmeter incorporating over 30 years of practical field experience, can be used to measure flow in all water applications, flow of various oil products, petrochemical and food industries process.
MINISONIC P uses the very **latest electronic technology** combined with **highly efficient digital signal processing** (DSP) technics which maximize the system performance giving the user significant benefits. MINISONIC P gives outstanding measurement capability including the ability to adapt its operation to suit the most challenging site conditions.
The system consists in a hand held control unit and two probes with support and cables.

Non-invasive external probes clamped on the pipe

Suitable for pipes from 4 to 3300 mm diameter

Easy and quick installation

Very light weight : less than 1 kg

User friendly operation, set up by keypad or software

Robust, watertight (IP67) control unit enclosure

Automatic control of ultrasonic signal using the ESC mode (Echo Shape Control)

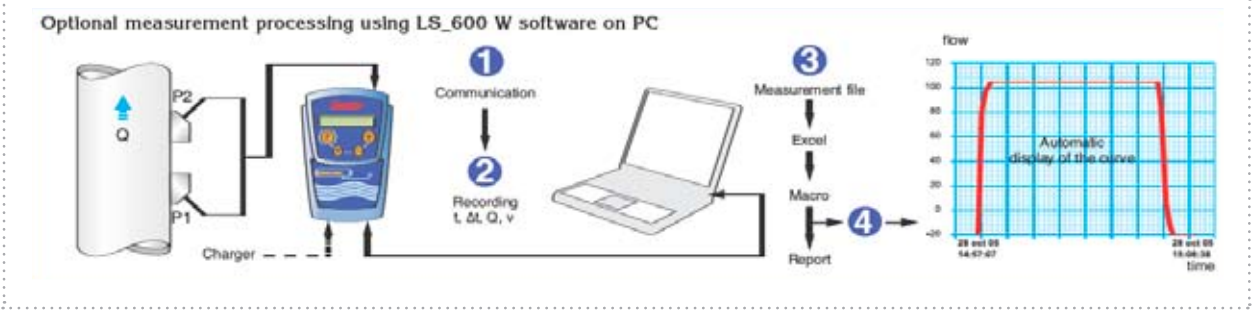
Battery life : up to 40 hours continuous operation

Probes available from -100°C to +180°C (pipe temperature)

Automatic zero flow adjustment with «anti air-bubble» signal processing

Very high accuracy and sensitivity : 0,001 m/s up to... 99m/s

Dual pipe version available



Ultraflux
Ultrasonic Measurements

SPECIFICATIONS*

Typical accuracy following dry calibration : 0,5% (DN> 100mm)
Bi-directional measurement
Repeatability : 0,05%, linearity : 0,1 % (on test loop)
Volume metering from 1 cl to100 m^3
Built-in correction for multiproduct and for laminar/turbulent transitions flow
No pressure loss
No damage to pipe
No or very low maintenance : no drift in time
Choice of probes in installation : modes /, V, N et W

*at reference conditions

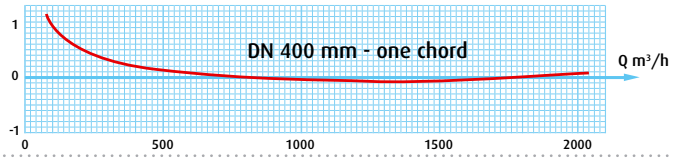
FEATURES

2 lines LCD display - 16 characters - Programmable backlight
Ergonomic keypad
Fast and easy parameter set-up, with access mode option
Analog output (x 2), relays (x 2)
High resolution time measurement < 0,1 ns
Dynamic gain up to 89 dB
Choice of 7 languages : French / English / German / Portuguese / Spanish / Italian / Polish
Battery life : up to 40h
Serial link RS 232 (JBUS/MODBUS) / RS 485
Echo analyser with automatic control (ESC mode)
Multiparameter : flow, speed, gain, signal quality ratio...

ESC MODE & AUTOMATIC ZERO FLOW

To achieve accurate flow readings, proper probes selection and installation are required.
The E.S.C. mode acts as an «auto focus» for the ultrasonic signals in order to optimise the acoustic signal.
Zero offset adjustment at no flow conditions is not necessary, nevertheless auto zero function can still be used.

Typical results



PROBES AND SUPPORTS

ULTRAFLUX offers a large range of conventional technology and microstructure technology probes with supports, designed for easy and secure installation.

ELECTRICAL CHARACTERISTICS

A CE product
Power supply :
⇨ Internal battery 12V NiMh
⇨ Charger 90 V– 260 VAC - Auxiliary power supply function
Isolated and active 4-20 mA output current (250 Ohm)
Static relays 100 V - 100 mA (x 2)

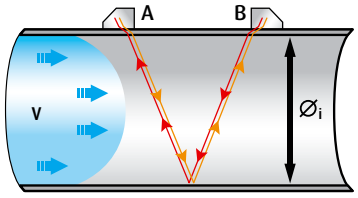
MECHANICAL CHARACTERISTICS

ABS enclosure with carrying pocket :
220 mm x 115 mm x 64 mm
Converter weight < 1Kg
IP 67 protection against dust and immersion
Working temperature : -10°C to +50°C

KIT DESCRIPTION

MINISONIC P kit includes :
⇨ MINISONIC P unit in carrying case, including pocket for cable (l=2,5m)
⇨ 1 charger and PC cable and software LS_600W (CD)
In addition :
⇨ Extra cable for probes (l=5m)
⇨ External data logger with software
⇨ Oscilloscope interface (echo analysis)
⇨ Probes and attaching system stored in separate carrying bag or case with a coupling agent

Principle : the difference of the transit time of ultrasonic waves
ΔT = TBA - TAB
v = f(ΔT)
Q = f (v, Φ i)
Q = flow
TAB : time of propagation of ultrasound between the probes



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