

Open Channel Flowmeters



UF 322 co-s : 1 – 2 velocity measurements (chords)

UF 322 co : up to 6 ultrasonic chords

- ✓ Velocity integrated on each chord
- ✓ Large choice of probes and supports
- ✓ Useable in any kind of section
- ✓ No hydraulic calibration
- ✓ Static probes with no maintenance
- ✓ Bi-directional flow measurements
- ✓ User friendly converter and software
- ✓ Complete remote processing

Advantages

- Insensitivity to downstream blockages
- Large range of flow rates can be measured
- Part filled to surcharge conditions measurable
- Limited civil work required
- ✓ Converter can be sited up to 500m from probes

Applications

- Sewage networks : wastewater / rainwater
- Inflow discharge from sewage works
- Irrigation channels
- Rivers up to approx 10m width
- ✓ Available for hazardous areas (Ex)

Ultraflo

Ultrasonic Measurements 

Represented by:

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SPECIALISTS IN FLOW MEASUREMENT

PRINCIPLE

To measure the flow of free - surface, open channels, rivers, etc., a combination of velocity and level measurements are required. The **UF 322** range uses the transit-time ultrasonic principle to measure velocity.

The **UF 322 co-s** and **UF 322 co** measure the flow rate by integrating the hydraulic profile from 2 to 6 velocity chords

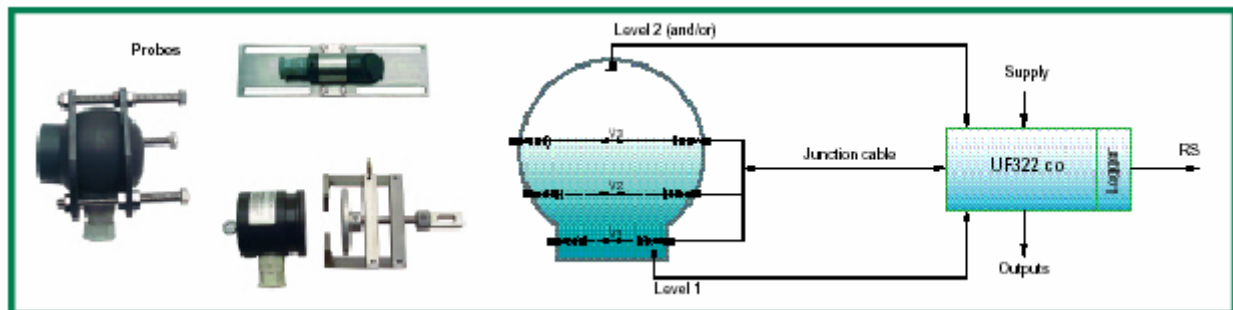
$$Q = \sum_{i=1}^{20} S_i v_i$$

PERFORMANCE

- Accuracy on velocity measurement < +/- 0.5%
- Accuracy on level acquisition < 0.1% (excluding errors of level device)
- Accuracy of section description < 0.25%
- Typical accuracy of flow calculation: 1 to 5% according to application and number of chords
- Maximum length of channel : according to the frequency of probes (0.5 MHz and more)
- Calculation of flow rate by programmable rule : Flow = f (Level) when all probes are out of flow

FEATURES

- Graphical display of readings and curves
- Easy to use keypad steps through set up windows
- Diagnostic screen shows : Echo display, gain...
- Language choice : English, French, German, Spanish, Italian...
- 8 site set ups can be stored in memory
- Software for PC / Windows NT, 95, 98
- Date, time data logger
 - > 8064 lines of 4 variables (32,400 in option) or
 - > 4032 lines of 9 variables (16,200 in option)
- Direct transfer of data to spreadsheet
- Display : flow, velocity, level, volume, etc.
- Isolated programmable current output 4-20 mA
- 3 programmable relay outputs : alarms, faults, totalisation...
- Numerical output RS 232 or 485 – JBus/Modbus
- Odd shaped channels can be configured in set-up (in 20 trapezoidal sections)
- Hydraulic model described in 20 sections :
 - > fixed model : absolute mode
 - > variable model : relative mode
- Possible acquisition of 2 levels – alarm if different
- Ultrasonic signal processing with DSP (Digital Signal Processing)



ELECTRICAL CHARACTERISTICS

- Power supply (max consumption : 10 W):
 - > 230/115 V AC 50/60 Hz
 - > 12-32 V DC as standard (option : 50 V)
- Inputs : 2 signals 4-20 mA for level(s)
15 V power supply for piezzo or ultrasonic sensors
2 wires
- Outputs
 - > 1 output 4-20 mA isolated – resolution 10⁻⁴
 - > 3 static relay outputs 100 V – 100 mA – 10 VA
 - > 1 output RS 232 or 485, 300 to 9600 Bauds, JBus/ModBus

MECHANICAL CHARACTERISTICS

- UF 322 enclosure is cast aluminium epoxy coated; all cable entries are via plug type connections
- Protection IP 67 ; Relative humidity : 90%
Temperature : -25°C / + 50 °C
- Dimensions : version CO-S : 340 x 240 x 123 mm (H x L x D) version CO : 340 x 240 x 225 mm
- Submersible probes

NOTES ON SITE SELECTION

- Performance and results mainly depend on geometric readings. Positioning and number of probes.
- Use of Ultraflux probe mounting tool is recommended.
- Avoid sites with bubbles or entrained air.

