ALSONIC RAVM MC

Open channel radar flow meter

ALSONIC

GENERAL

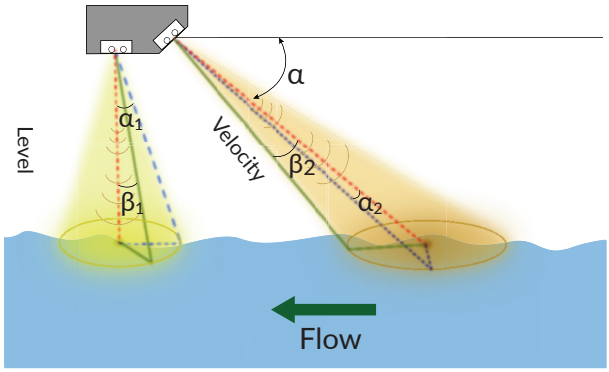
SmartMeasurement's ALSONIC RAVM-MC is a combined radar velocity and level transducer used with our multi-channel controller (MC) which may include a number radar velocity (VS) transducers to provide a true non-intrusive approach to open channel area velocity measurement in channels having widths of up to 500 m. The Alsonic-RAVM-MC can also be configured with up to 32 standalone radar velocity (VS) and/or velocity/level (VL) transducers in series in order to accurately profile large open channel systems (please see diagram on page 2.) The system is designed for continuous non-intrusive flow measurement of rivers, streams, municipal wastewater, and storm water channels. Users can also install a number of radar velocity (VS) transducers in combination with our radar level transducers (RL) which provides the same measurement as the combined VL/VS system. For channel widths of up to 10 meters, a cost-effective single channel system (SC) is recommended. The Alsonic RAVM-MC requires a multichannel controller with configuration software and MODBUS output to be configured in the control room on a standalone PC. MODBUS data includes flow, velocity, and height as well as sensor diagnostics. In applications where users want to install another level measurement technology (other than radar), either a single or multiple ALSONIC radar velocity transducers can be used for velocity profiling across the channel in combination with the level transducer by sending the outputs to our multichannel controller (MC) to perform the Area • Velocity flow calculation.

Alsonic RAVM VL

FEATURES

- Can be configured with up to 32 non contact velocity transducers to profile large channels of up to 500 meters width
- Easy installation and maintenance
- Standard remote flow computer and touch screen option
- Bi directional velocity measurements
- User friendly setup and diagnostic software
- Micro power consumption
- Eliminates swing interference caused by wind and/or weather
- Optional surcharge water level sensor

ALSONIC RAVM MC

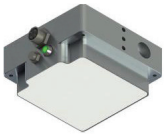


SPECIFICATIONS

Velocity transducer (VS)

- **Range:** 0.15~15m/s
- **Accuracy:** ±0.01m/s , ±1%
- **Frequency:** 24GHz
- **Power supply:** 6~24V_{DC}, <80mA
- **Output:** RS485/Modbus
- **Install angle:** α=45°
- **Beam angel:** α2=12°, β2=25°
- **Protection:** IP67
- **Dimensions:** 100x100x50mm

Level transducer (RL)



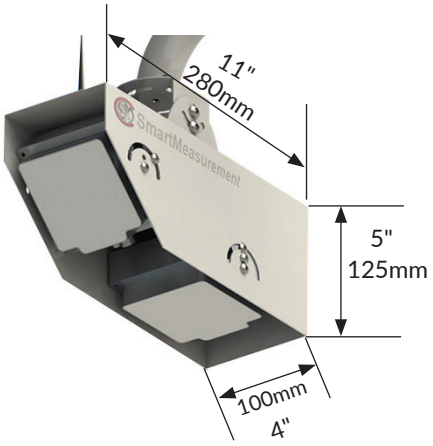
- **Level:** – 26GHz, 1.2~30m, α_1=12°, β_1=12°
  – 24GHz, 1.2~30m, α_1=5°, β_1=10°
  – 24GHz, 0.4~30m, α_1=8°, β_1=8°
  – 60GHz, 0.25~7m, α_1=7°, β_1=7°
- **Accuracy:** ±3mm, ±1%FS
- **Power supply:** 8~16V_{DC}, <12mA
- **Comunication:** RS485, 4-20mA, SDI12
- **Protection:** IP67
- **Dimensions:** 100x100x50mm

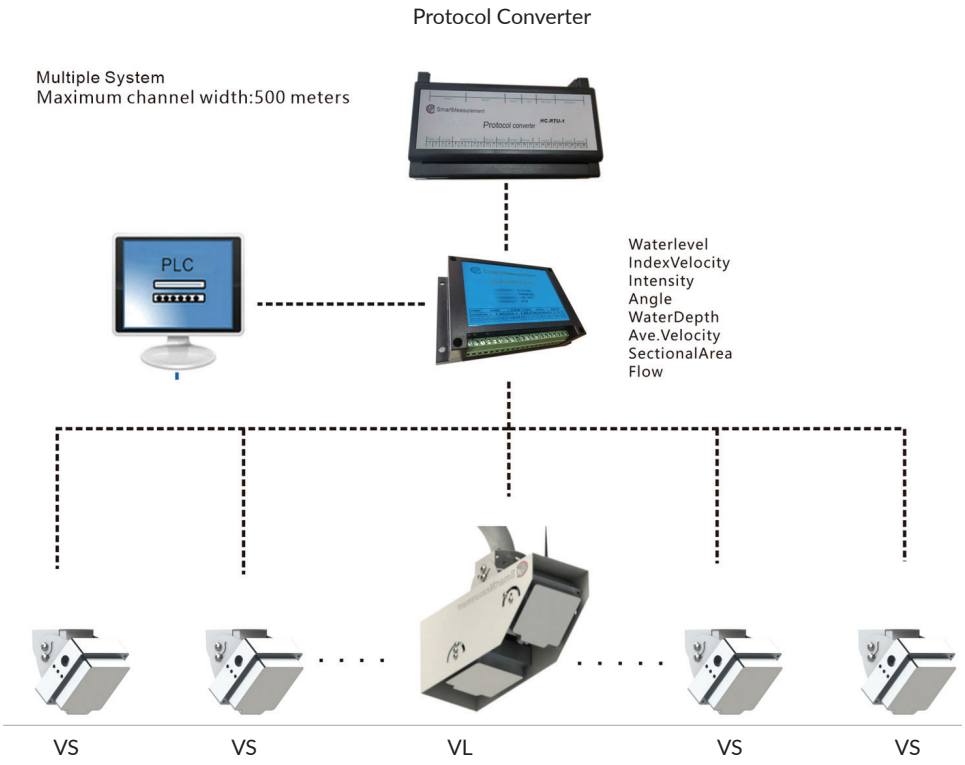
Multichannel controller (MC)

- **Input:** RS485 up to 32
- **Power supply:** 5~17V_{DC}, 5mA@12V
- **Output:** Velocity, level, flow,
  USB or SD card, 4~20mA,
  2 relays (8A@250V_{AC}, 5A@30V_{DC})
- **Comunication:** RS485, Modbus
- **Protection:** IP54
- **Dimensions:** 145x90x41mm

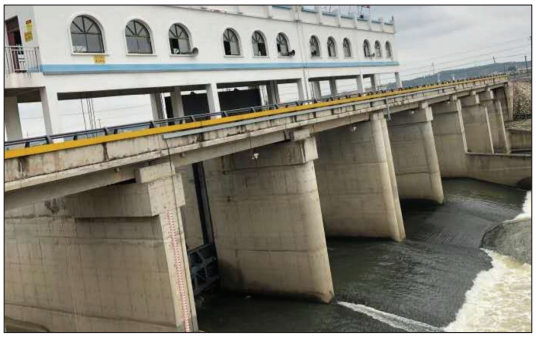
DIMENSIONS

Alsonic RAVM – multichannel flow/velocity





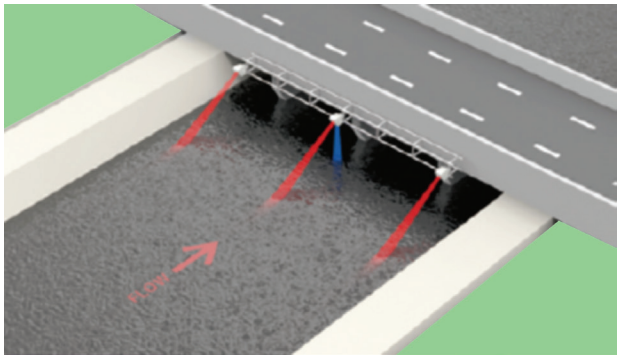
APPLICATIONS

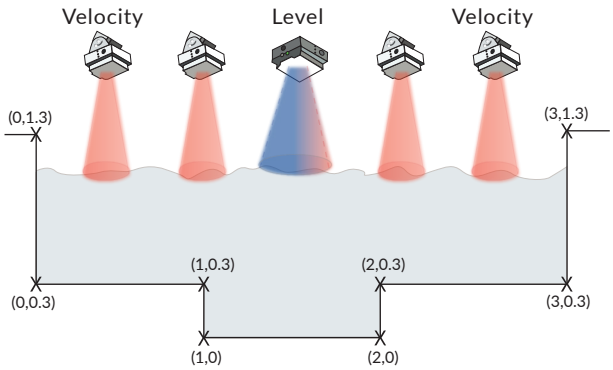


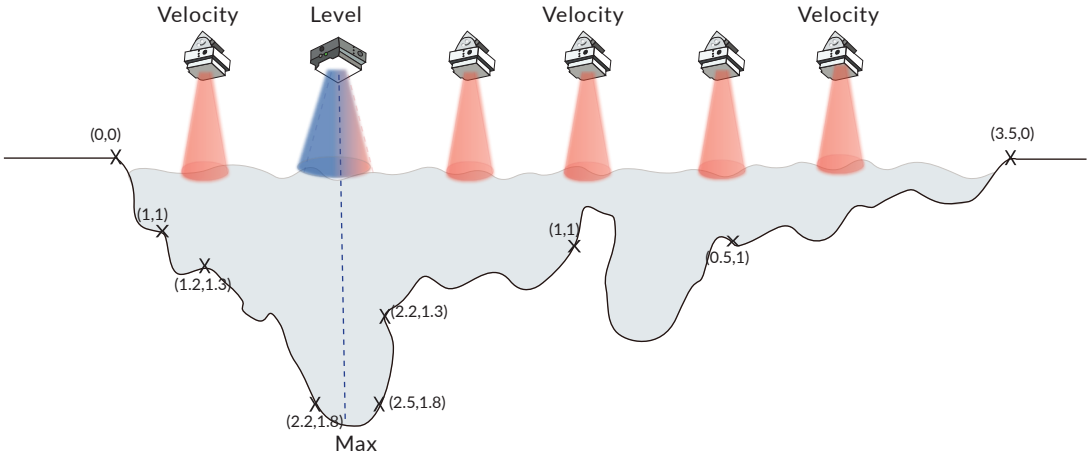
MOUNTING SYSTEM

Mounting Plate, Spring Ring and Scissors Rings.

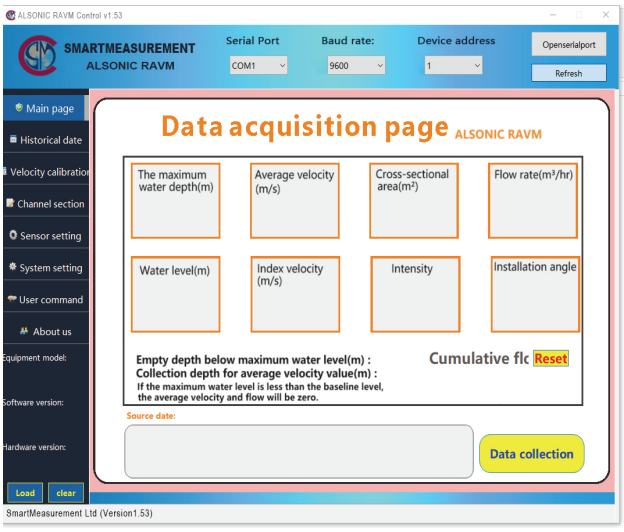
All sensors can be attached to a mounting plate or spring and scissors rings to install the sensors in minutes, thus reducing time in the manhole. The sensor is first attached to a carrier which can then slide onto any of the compatible mounting systems. This maintains a height suitable for measuring flow rates and velocities at very low water levels. To install the sensors in rectangular, trapezoidal or earthen channels, we recommend the sensor mounting plate. Stainless steel spring rings simplify sensor installation in cylindrical pipes. Standard diameter sizes from 150 mm (6 inches) to 600 mm (24 inches) are available. You can install the sensor and fasten the cable to the downstream edge of the ring in place before entering the manhole. The self-expanding device is tightened by expanding the band for a friction fit inside of the pipe. The adjustable scissors ring is installed in large diameter pipes from 500 mm (20 inches) to 1800 mm (72 inches) in diameter. It consists of a base section, one or more pairs of extensions to fit the size of the pipe, and a scissors mechanism.

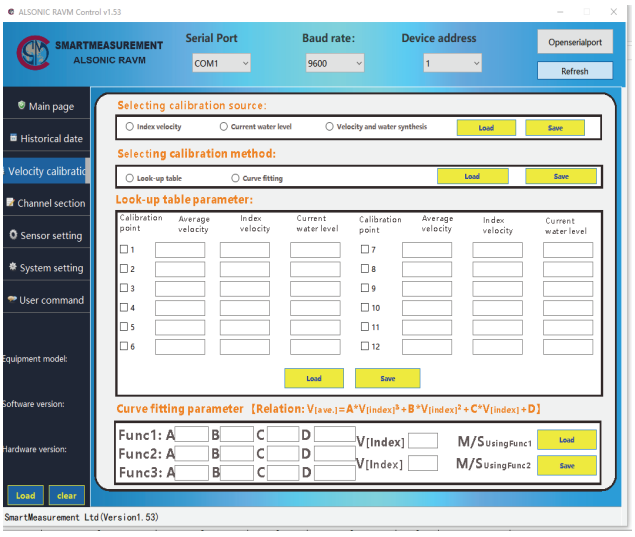






CONFIGURATION SOFTWARE





TYPE OF FLUID	Please provide the name of your fluid media, the operating PH, and conductivity
FULL SCALE FLOW	Please provide the max and min flow rate, in units of CMH, GPM or LPM, etc.
CHANNEL SHAPE AND DIMENSIONS	Please provide channel shape and dimensions including maximum and minimum level
CHANNEL MATERIAL	Channel material such as concrete, fiber glass, mud

ALSONIC RAVM-						TRANSDUCER STYLE
Velocity + level sensor, width 0.8~12m (level 1.2~30m), 6~24V_{DC}, RS485		VL				Multi-Channel Flow
Level sensor, width 0.8~12m (level 1.2~30m), 6~24V_{DC}, RS485		RL				
Velocity sensor, 6~24V_{DC}, 4-20mA, RS485		VS				Velocity Transducer - up to 32psc
Solar power supply Multichannel controller up 32 transducers (maximum channel width 500 meters) including RS485 and configuration software, IP54		MC				Multi-channel controller
Solar power supply			SL			Power supply
6~24 V_{DC}			DC			
90~245 V_{AC}, 50/60Hz			AC			
None options				NN		Power supply
Extreme cold style				BC		
Configuration software program				Config		
Display module for MC controller				DP		
LORA				LO		
Bluetooth				BT		
Data logger for controller				DL		
Lighting rod				LR		
Installation tool and accessories				IS		
RoHS approval				RP		
IP68 Protection				68		

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