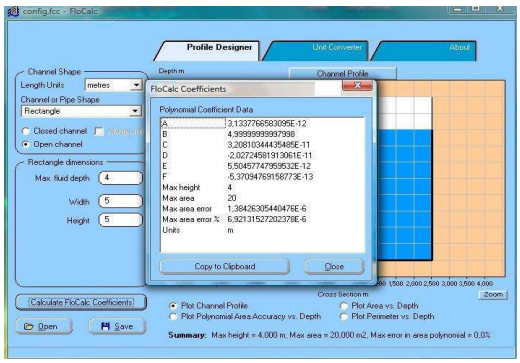
AGR3PRO - FLOWRATE MONITORING STATION

Monitoring of open channels and full pipelines. Flow rate calculation Q is obtained by area section of stream multiplied to the fluid velocity V (Q=A*V). A smart ultrasonic summergible compact sensor, can be freely placed inside the pipe or channel, thank or cockpit, on bottom side, detecting both fluid level and flow speed. Doppler effect shifts frequency ultrasound signal between emission and reception paths due to bubbles reflection or micro particles dissolved in water stream, proportionally to fluid velocity.

Average fluid velocity detected is taken as reference to media section area during flow rate calculation. Easy field mounting of electronic unit shut off stream no required.

User frendly setup entering channel width if regular or drawing other sections by software, or inner diameter for pipes. This basic tips allow to display flowrate and total flow. The electronic unit can hold up to 3 cards to read simultaneosly 3 velocity and depth sensors.

Optional card communication with SDI12, RS232, RS485 protocols links the instruments in PC Networks for remote viewing.



TECHNICAL SPECIFICATIONS

Dimensions, weight:	360x260x170 mm (H x W x D), approx kg 5
Enclosure material:	UV stabilized polycarbonate
Enclosure rating:	IP66
Operating temperature: (with internal battery)	-15…+50°C (5…122°F) with internal battery; -20...+65°C (-4…150°F) w/ external power
Backlit display:	16 character x 2 line alphanumeric LCD
Program memory:	2 Mb flash (sufficient for 600,000 discrete readings)
Power:	Internal 12Volt 7.2Ah battery with external solar panel or mains charger
Units of measure:	User definable (metric/US)
Application software:	FloCom+ PC software for system configuration, data downloading and velocity profile testing. Minimum system requirements - Windows® XP
Factory backup:	24 months - parts and labour guarantee

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TECHNICAL SPECIFICATIONS

DEPTH MEASUREMENT

Method	Ceramic pressure transducer with large flat sensing diaphragm which allows straight, undeflected flow over the sensing area to reduce drawdown effects at high stream velocities and provides for self cleaning with an impervious Alumina ceramic surface.
Full scale range:	4m (13ft) above the transducer face
Accuracy:	0.2% of full scale at constant temperature in a static stream; 1% of full scale over a stream 5 to 55° C (41 to 130° F)
Resolution: 1mm (0.04”)	1 mm (0.04")
Overrange:	60m (200ft) without damage
Min. operating depth:	17mm (0.67”)

VELOCITY MEASUREMENT

Method:	Submerged Ultrasonic Doppler
Range:	±0.025 to ± 8.0 m/s (±0.08 to ± 26ft/s)
Resolution:	1mm at 1.0 m/s (0.04” at 3.3ft/s)
Accuracy:	±1% up to 3.0 m/s (±1% up to 10ft/s)
Urethane sensor cable:	9mm (D) up to 50m (L) (0.35” (D) up to 164ft (L))
Min. operating depth:	40mm (1.57")
Max.operating temperature:	60° C (140° F)

DOPPLER INSERT VELOCITY SENSOR

Pipe size:	0.1 to 2.54m (4” to 100”) diameter
Process fitting:	2” BSP or 2” NPT
Max.process fitting pressure:	1034 kPa (150psi) The pipe must be de-pressurized prior to insertion or removal
Max. operating pressure:	253kPa (37psi)
Shaft dimensions LxD:	33cm x 2cm (13” x 0.8”)
Head dimensions DxH:	4.5cm x 2.5cm (1.8” x 1”)
Wetted materials:	Nickel plated brass and epoxy
Pipe intrusion area:	11.25cm2 (1.75 sq.”)

DOPPLER AREA/VELOCITY SENSOR and DOPPLER VELOCITY SENSOR

Pipe size:	0.15 to 2.54m (6” to 100”) diameter (for use in partially full pipes)
Max. channel width:	3m (10ft.) Doppler ultrasonic sensors will operate in wider channels, but a reliable stream gauging must be performed for best system accuracy.
Dimensions LxWxH:	12.5cm x 5cm x 1.6cm (5” x 2” x 0.63”)
Wetted materials:	PVC, Alumina ceramic and epoxy
Pipe intrusion area:	8cm2 (1.25 sq.”)

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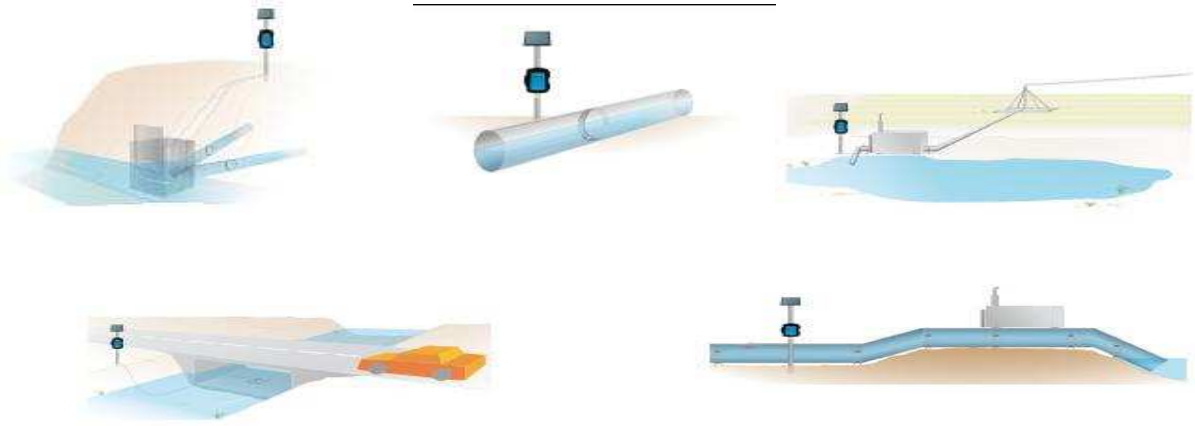
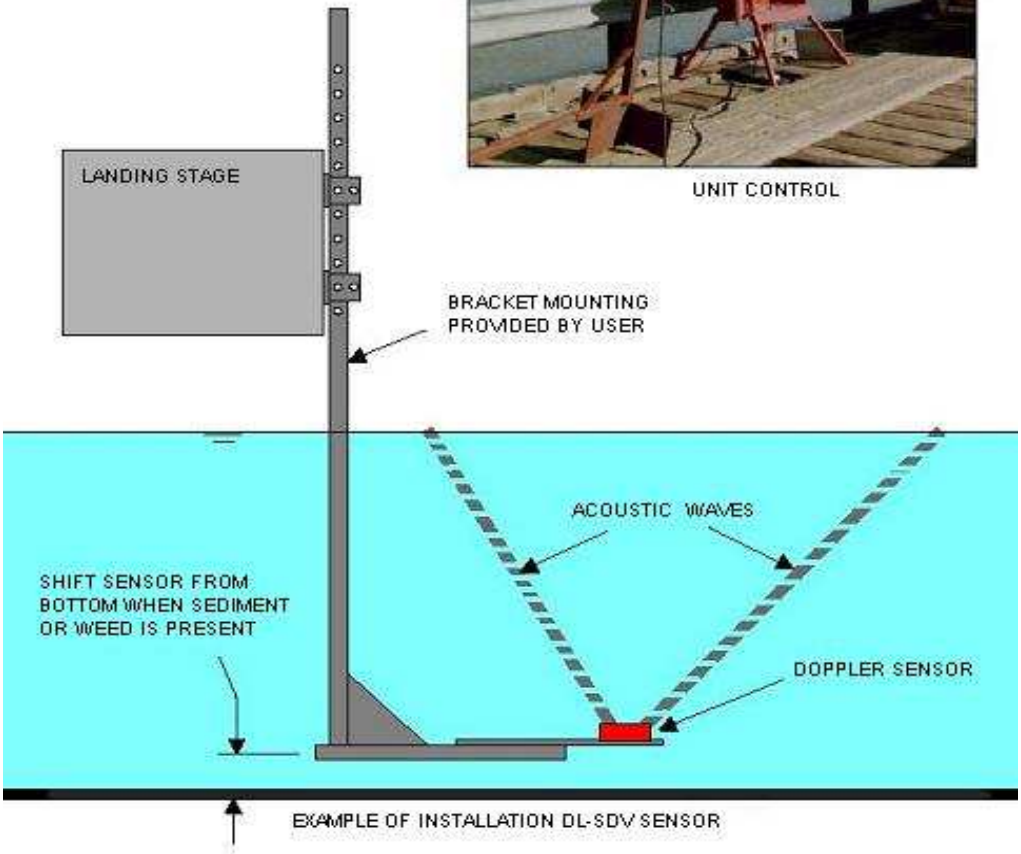


UNIT CONTROL



EXAMPLE OF INSTALLATION DL-SDV SENSOR

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