



## High Pressure and High Rates Flow and Density Measurement

### HIGH PRESSURE CORIOLIS FLOW METER (abrasives proof)

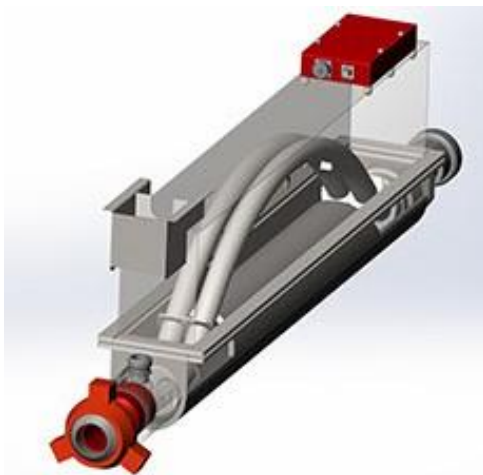
- **Density**
- **Flow Rate**
- **Pressure**
- **Temperature**

### DESCRIPTION

Two parallel tubes execute relative transverse oscillations in horizontal plane.

During operation these tubes are filled with process fluid which with the tubes execute induced oscillation relative to each other in resonant mode with amplitude of less than 0.5mm. Resonance frequency depends on weight of tubes filled with the fluid.

Thermal box ensures stable operation conditions of the device.



### CONSTRUCTION

High reliability design guarantees safe operation of sensors at high pressures and in models built for specialized applications, up to 1050 bar (15,000 psi)

#### Model RV-V-70-115-01 3"

Stainless molybdenum steel, slightly bent basic model for mud system

#### Model RV-V-50-112-01K 2"

Stainless molybdenum steel, slightly bent basic model for well cementing. Resistant to abrasive action of cement. Ideal for all high pressure applications; Enhanced Oil Recovery (EOR), workover, fracturing, formation pressure maintenance.

#### Model RV-V-30-122-01K 1"

U-shaped construction optimally suited for chemical downloads and tubing applications.

### APPLICATIONS

High pressure (abrasives proof) Coriolis flow meters are used in oil and gas and industrial services operations:

- Primary and secondary oil well cementing
- Drilling (mud systems)
- Well Killing
- Hydraulic fracturing (HF)
- Thermomechanical fracturing (THGF)
- Bottom hole high pressure acid treatment
- Workover wells
- Repairs and insulation works

### FEATURES

- Abrasives proof
- Withstand highly aggressive chemicals
- Quick mount with 2" or 3 inch connectors
- Non-radioactive (Needs no special license)
- Easily calibrated on the field
- Compact and portable for ease of transportation
- Shock and vibration resistant
- Up to 25 sensors can be connected in situ..
- Data update at a rate of two times per second.
- Minimum error

## SPECIFICATIONS

Model	Measured minimum volumetric flow rate, $q_{\min}$ , m <sup>3</sup> /h	Measured transient volumetric flow rate, $q_t$ , m <sup>3</sup> /h	Measured maximum volumetric flow rate, $q_{\max}$ , m <sup>3</sup> /h	Weight, kg	Dimensions, mm	Maximum pressure bar, (psi)
RV-V-30-122-01K in thermobox	0.6	6	60	38 50	650 X 530 X 200 650 x 650 x 240	400 (5,800)
RV-V-30-122-01K in thermobox	1.8	18	150	102 135	1710 X 200 X 340 1710 X 230 X 400	400 (5,800)
RV-V-30-122-01K in thermobox	1.8	18	90	86 110	950 X 810 X 250 950 X 880 X 350	400 (5,800)
RV-V-30-122-01K in thermobox	5.4	54	360	150 186	2120 X 517 X 207 2120 X 567 X 277	400 (5,800)
PV-V-75-01K (vibration density meter)		Up to 180 m <sup>3</sup> /h		80 147	1785 X 270 X 250 1785 X 300 X 31	1,050 (15,000)
Electromagnetic flowmeter	2	8	180	30	630 X 200 X 270	1,050 (15,000)

## PERFORMANCE CHARACTERISTICS

- Flowmeter density measurement range from 800 to 2,400kg/m<sup>3</sup>
- Density measurement absolute permissible error not more than +/- 10 kg/m<sup>3</sup>
- Relative measurement errors of volume flow and volume in the flow range from  $q_{\max}$  to  $q_t$  not more than 1%, from  $q_{\min}$  to  $q_t$  not more than 2 %
- Limits of permissible relative error of pressure measurement not more than +/- 1%
- Liquid temperature measurement range from -40 °C to + 80 °C without freezing of the measured medium in the measuring tubes of the sensor.



## DATA MONITORING SYSTEM

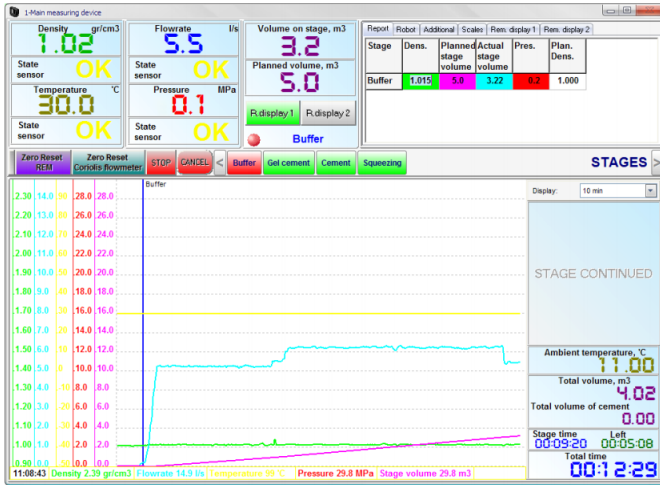
**ElectroTech™** manufacture the SKCS data monitoring system. A distinctive feature of the mobile (portable) version of the SKCS system is its ease of transportation (including passenger cars). Its moderate weight and dimensions makes it best suited for all oilfield locations – land, swamp and offshore.

The SKCS system includes a primary sensor – Coriolis flowmeter for measuring fluid density (viscosity measurement optional). This enables operators to monitor and control treatment fluids parameters – **density, flow rate, pressure and temperature**. The Coriolis flowmeter is part of the mobile SKCS unit and it comes supplied in a thermal container which enables the system to withstand extreme temperatures and vibrations.

Data transmission is via cable (Wi-Fi optional) to the remote operator's workstation. Data is stored on external storage at the remote workstation, laptop or tablet. Up to 6 parameters can be viewed on the bright remote display. Job logs data reflects real-time job conditions. Data capture is available for after-job analysis using Excel. Remote data transmission to customer's server via GPRS satellite signals is available upon request.

## FEATURES

- **Weight** 50 kg
- **Dimensions;** 650 X 530 X 200 mm
- **Installation time,** not more than 10 minutes
- **Operating Mode** in 10 seconds
- **Power Supply;** 220 VAC or 12 VDC, 300 W
- **Battery Power Backup** (for short term power outage)



## APPLICATIONS

Our SKCS is used in cementing operations for measuring cement slurry density, flow, pressure and temperature. Our sensors and data measuring unit are ideal for high pressure (up to 15,000 psi), high densities and high flow rates. Typical oilfield applications include the following;

- Primary and secondary well cementing
- Drilling (mud system)
- Workover (coil tubing)
- Well killing
- Enhanced Oil Recovery



SKCS system is equipped with primary density and flow sensors designed and produced by **ElectroTech™**. The system can be transported, mounted, operated and maintained by a single personnel.

Service software acquires and transmits process data in real time thereby enabling operators to respond to job conditions within acceptable time limits. The software captures job data and creates databases of all cementing job and on the job process conditions.

Depending on application demands, the flow and density measuring tubes can be separate units or incorporated into the mobile data acquisition unit.

The basic SKCS unit includes; Coriolis meter, power supply, laptop with printer, remote display, signal and data cables and optional Wi-Fi signal transmission module. GPRS data transmission via satellite is optional.

## PRODUCT CERTIFICATIONS

All our field sensors and data measuring systems meet the following standards with more accreditations in progress – API, IEC, NEMA

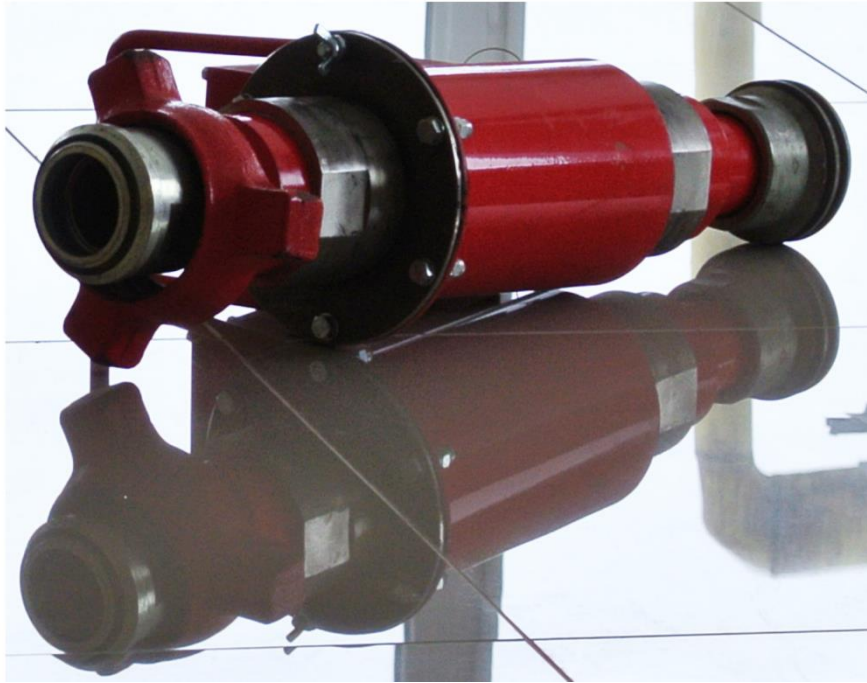
## CERTIFICATIONS

All **ElectroTech** products are manufactured to ISO 9001:2015 Standards.

They also meet CE (European Community) Zone 2 protection Standards.

## WARRANTY & AFTER SALES SERVICE

All our products are covered by warranty for 12 months from date of delivery or installation of software. Warranty service is carried out by replacing failed sensor immediately after technical service examination. After sales and field support services are provided by our Nigeria representative – **Accellup Consulting Limited**.



## SALES & SUPPORT

RPE  
ELECTROTECH  
LLC



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