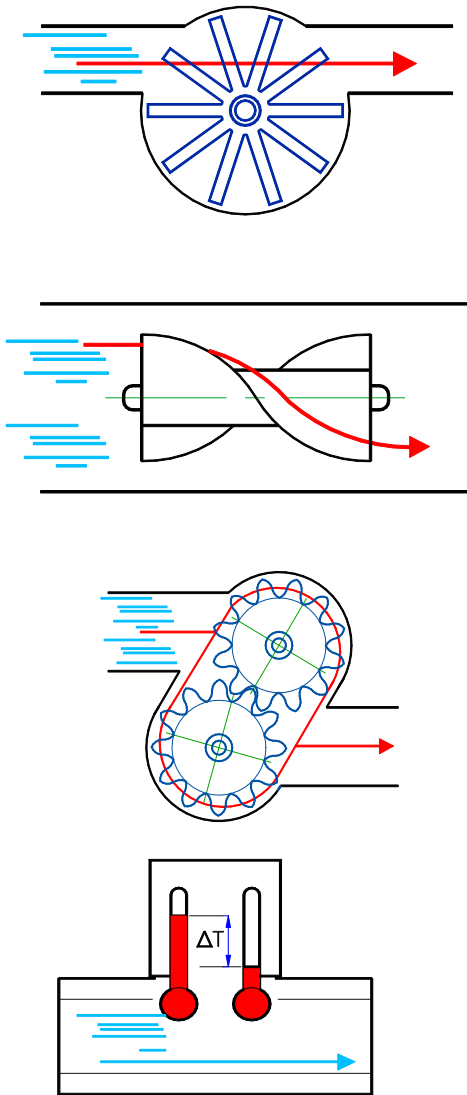


## TECHNOLOGY



### Rotor

The flow rate is measured by a rotor with several paddles whose rotation is proportional to the flow velocity. The rotor is housed in a flow chamber and is supported by a rotation axis with ball bearings. The paddles of the rotor can be equipped with metal or magnetic inserts in function of the sensor used for measuring the speed of rotation. The sensors used are inductive, hall and optical type. The output signal is a square wave frequency, determined by the characteristic number of pulses / liter of the used rotor.

### Turbine

The flow rate is measured by a turbine element with straight or helical paddles whose rotation is proportional to the flow velocity. The turbine is housed in a flow chamber and is supported by a rotation axis with ball bearings. The paddles of the turbine can be equipped with metal or magnetic inserts in function of the sensor used for measuring the speed of rotation. The sensors used are inductive, hall and optical type. The output signal is a square wave frequency, determined by the characteristic number of pulses / liter of the used turbine.

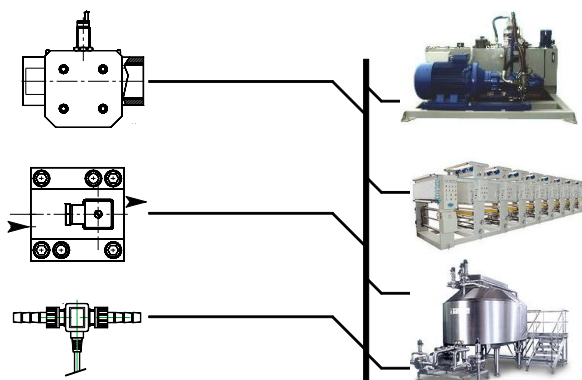
### Gear box

The liquid fills a volume defined by the size of the teeth of the gears. The flow determines the rotation of the gears that carry a precise volume of liquid. A Hall sensor detects the passage of gear teeth and then the volume of liquid transported. The output signal is a square wave frequency, determined by the characteristic number of pulses / liter of the used gear.

### Calorimetric

Electronic flow transmitter of static type without moving parts. The temperature difference detected by two sensors, one heated and one at the temperature of the fluid, is directly proportional to the flow rate and to flow velocity. The system is easy to install, has no pressure losses, is insensitive to impurities and can be used independently of the diameter of the pipe.

## FIELDS OF APPLICATION

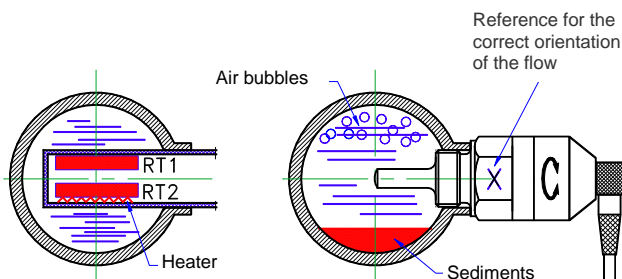
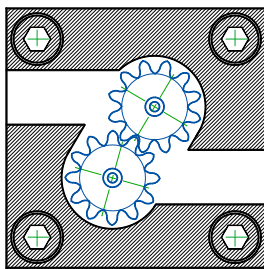
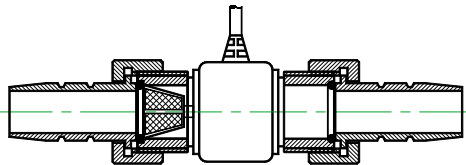
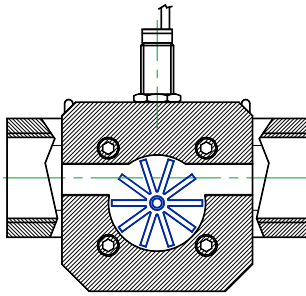


- Flow measurement of liquids and gases.
- Flow measurement of lubricant products with high viscosity.
- Dosing systems.
- Checking the ink on the printing machines.
- Checking the lubrication on machine tools.
- High pressure circuits.
- Cooling circuits.
- Industrial processes.
- Chemical industry.
- Medical Industry.

## ADVANTAGES

- Simple structure devices.
- Separation between the flow chamber and the measuring sensor.
- Measurement independent of viscosity (gear box system).
- Easy to install.

## SYSTEM DESCRIPTION



### Rotor

The rotor is an element for measuring flow with paddles positioned orthogonally to the direction of the flow. The rotor is supported by a rotation axis with ball bearings to reduce the friction and increase the stability of rotation. The speed of rotation is proportional to the flow rate.

### Turbine

The turbine is an element for measuring flow with straight or helical paddles oriented in the flow direction. The rotor is supported by a rotation axis with ball bearings to reduce the friction and increase the stability of rotation. The speed of rotation is proportional to the flow rate.

### Gear box

A pair of gears, free to rotate about a central axis, is housed in a metal body. The rotation is determined by the flow in motion. The measurement is of the volumetric type, independent of the viscosity of the liquid.

### Calorimetric

Two temperature sensors are positioned inside a stem. One of the sensors is permanently heated, the other assumes the temperature of the liquid. The temperature difference between the sensors is proportional to the flow velocity.

## TECHNICAL DATA

Concept	Rotor – Turbine – Gear box – Calorimetric
Process connection	1/8" ÷ 6"      DN06 ÷ DN150
Type of connection	Threaded      Hose adapter
PN	PN6 ÷ PN250
Max. temperature	100°C
Output signal	Frequency – Voltage – Current
Setting	Available with electronics
Material	Brass – Aluminium – Stainless steel – Plastic

## EXECUTIONS

### ■ IP67 protection

Cable output – DIN 43650A plug – M12x1 4 poles

### ■ Inductive sensor

No magnetic inserts in the rotor or turbine.  
Use with pressure up to 16 bar

### ■ Hall sensor

Magnetic inserts in the rotor or turbine.  
Use with pressure up to 250 bar

### ■ Optical sensor

No magnetic inserts in the rotor or turbine.  
Use with pressure up to 16 bar