

Ambient temperature shall be between -40°C / $+85^{\circ}\text{C}$

- By the ceramic sensor it will be resistant and sensitive to the shock pressures that may occur in the process and damage sensor, device's standard sensitiveness will be 0.5%. If requested this value may be decreased to 0.2%, their resistance against pressure shocks, will ensure them to be used easily in pumping lines, for example a 0,4 bar device is going to be able to endure against 25 bar pressure.
- Measurement range starts with 0...40 mbar. It will be able to change up to 0....60 bar.
- For explosive and flammable environments, Ex-proof types will be used.
- Connection type shall be 1/2" gear, flanged optionally.

Device housing and process connection shall be 316L.

- Its mount will be either aluminium or plastic (POM).
- For high temperatures, types which are filled with oil resistant to special temperature will be usable.
- Supply voltage shall be 2-wire 220 VAC or 24 VDC loop powered.
- Current output: 0/4...20mA, but by connecting LCD indicator, pressure will be readable at the field.
- Protection type class is IP 65.

8.8.16 Flow Measurement

The flow meters shall be based on ultrasonic transmitters on flumes or magnetic on pipes, if otherwise is not necessary depending on process requirements. The transmitter shall include a pulse signal that gives a pulse for a specific accumulated flow. The enclosure for all equipment shall be IP68. The technique shall be microprocessor based.

Flowmeters shall be selected considering cavitations and irregularities in fluid profile so that continuous measurement will be assured. Process connections shall be flange type, if otherwise is not necessary depending on process requirements.

Working principles and technical features of the equipment will be as follows:

- Microprocessor controlled sensitive electromagnetic flow meters that are designed to measure the flow of liquid that has electrical conductance bigger than 5 micro/cm will be used.
- Failure rate, between 10-100% measurement zone, will not exceed 0.5% of the measured value. Therefore, the device will keep its high sensitivity even in low flows.
- The electromagnetic flow meter flow sensor must be mounted in a location, which is free from interfering elements like valves, Ts, bends, pumps, etc. to ensure a laminar flow without turbulence upstream of the flow sensor. For that reason the flow sensor must be mounted in a straight pipe at a distance from interfering elements of minimum (5 x DN) upstream and minimum (2 x DN) downstream. Valves should always be mounted on the downstream side of the flow sensor. If it becomes necessary to use reducers, the inner angle must not exceed 7.5° .
- The measuring principle is practically independent of pressure, density, temperature and viscosity
- Nominal diameter shall be suitable for pipeline diameter DN 25 to 2400 (1 to 90")
- The calibration of the flow meter, will be possible by entering program values into the matrix inside the equipment by using the adequate number of buttons on itself.