



SMC-1200

TECHNICAL INFORMATION

Model SMC-1200VH High Mass Flowmeter.

The **SMC-1200VH** High Mass Flowmeter is specifically designed to meet the rigorous demands of the CNG industry. The intrinsic characteristics make it especially suitable for flow measurement of flammable fluids, liquids or gaseous.

It's totally made in AISI 316/304 stainless steel, hence DEVELCO Mass Flowmeters fit requirements of applications of chemical and food industry.



General Specifications.

- **Coriolis type Flowmeter.**
- **SMC-1201VH Electromechanical Sensor is Intrinsically safe according Standard Clasification IRAM-IAP-IEC 79-0/11 Ex "ib" IIB T4.**
- **Approved for Explosive Gas Atmospheres.**
- **Its high dinamic flow measurement range (typical 100:1), and high zero stability, enable it use for Custody/Transfer applications.**
- **Connection with Flow Processor with an Standard Straight UTP Cable.**
- **SMC-1920T Flow Processor is Associated Equipment according Standard Clasification IRAM-IAP-IEC 79-0/11 Ex ["ib"] IIB T4.**
- **SMC-1201VH Electromechanical Sensor equipped with industrial RJ45 connector for Standard UTP Removable Cable.**





SMC-1201VH High Flow Sensor Technical Specifications.

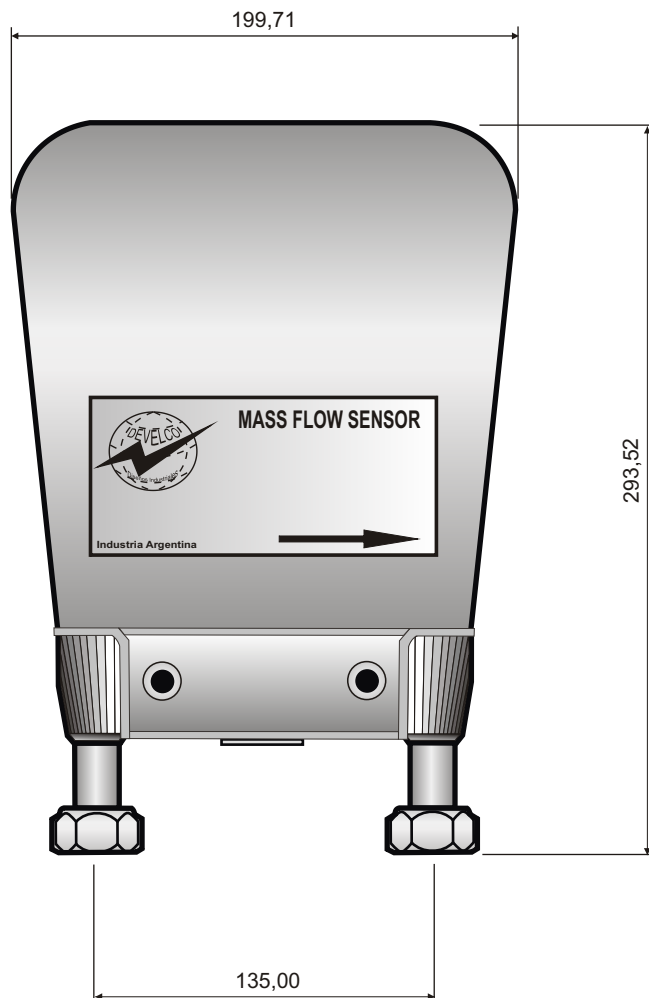
Main Measurement Variable	Flow.
Variables Measured and Reported	Flow rate, mass and volume totalizer, density and temperature.
Measurement Method	Coriolis type with Digital Phase Millesimal Resolver.
Maximum Flow Rate	70 Kg/min.
Minimum Flow Rate	0,5 Kg/min.
Resolution	Typical 1 G., configurable by the user according to the technical needs of fields device.
Accuracy	Factory Calibrated better than 0,5 %, it can be adjusted by the user.
Zero Stability	0,003 Kg/min from -30 to 70°C.
Measurement Uncertainty	Less than 0,5/0,25 % for gases/liquids fluids over all dinamic range from -30 to 70°C.

SMC-1201VH High Flow Sensor Operating Specifications.

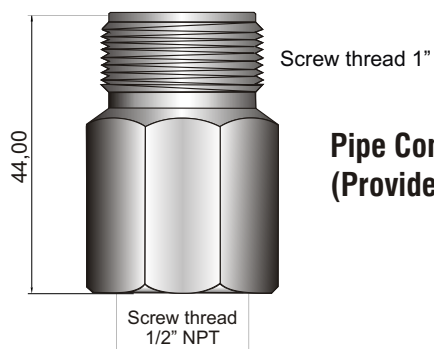
Fluid Type	Gases or liquids of low viscosity.	
Material of construction	Wetted parts	Stainless Steel AISI 316L.
	Sensor Case	Stainless Steel AISI 304.
	Sensor Base	Stainless Steel AISI 304L.
Maximum Operation Pressure	350 Kg/cm.	
Case Sealing	IP68 Protection according to IEC-60529.	
Oscillation Frequency of Diapason	From 200 to 270 Hz.	
Operating Temperature	-40 C° to + 80 C°.	
Electrical Safety	Intrinsically Safe Equipment	
	Standard Classification IRAM-IAP-IEC 79-0/11 Ex "ib" IIB T4.	



SMC-1201VH Mass Flow Sensor Dimensions.



Connection to Sensor



Pipe Connection Adapter
(Provided for DEVELCO)

Input Gas/Liquid Pipe

Measurements expressed
in millimeters and inch.



Mounting the Sensor.

For mounting the **SMC-1201** flow sensors, one must consider:

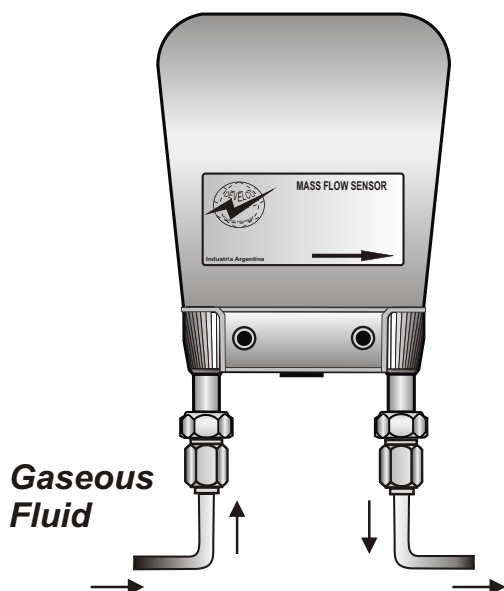
- The correct position for the type of fluid to be measured.
- Mechanical Interferences (vibrations, etc)
- Electromagnetic Interferences (transformers, solenoids, etc.)

When used for gaseous fluids, the case should be placed upwards, in this way the accumulations of liquids in the sensor's internal tubes is avoided.

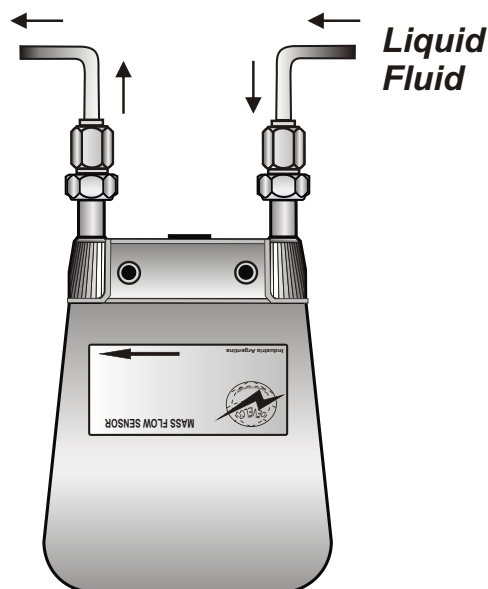
The installation with the case downwards permits the measurement of liquid fluids avoiding the accumulation of gases in the sensor's internal tubes..

Orienting the Sensor.

Correct positions for gases



Correct positions for liquids



WARNING

Failure to properly orienting the sensor could result in excessive measurement errors.



DEVELCO Fixing System for quick sensor mechanical installation.

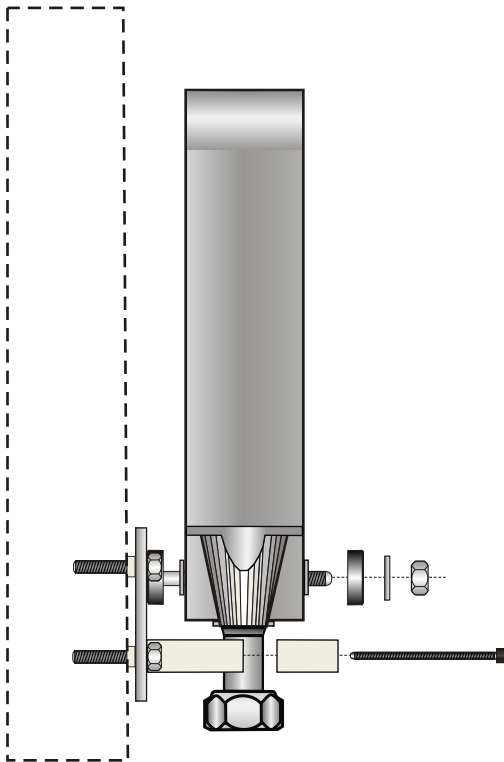
DEVELCO Fixing System is the solution for the correct assembly of the **SMC-1201** Flow Mass Sensors at the dispensers. Is provided with a fixing base with thickness 3mm stainless steel. Allows to user a more comfortable fit and easy installation via screw guides on the base. Is fitted with nylon fiberglass anchor cradles that allow a input/ output firm support of sensor connections. It has PBC supplements in order to prevent damage to the adjustment of the sensor body to the fixing base.



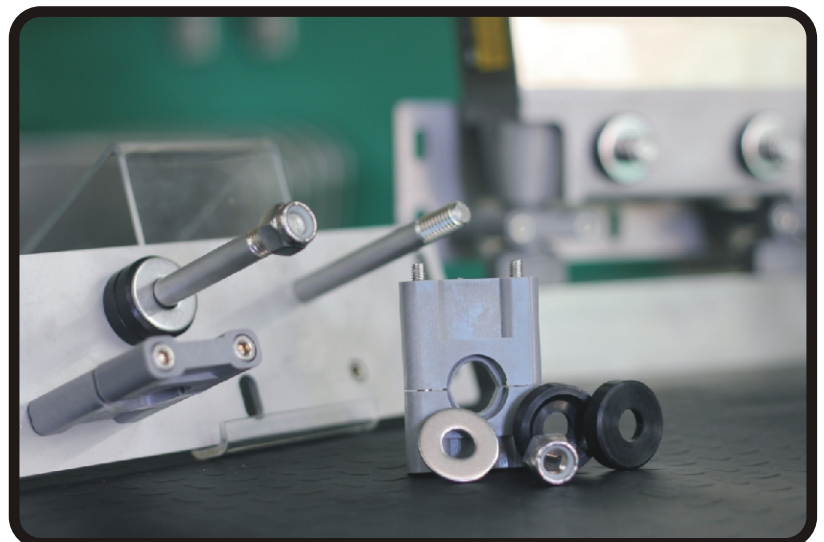
PBC supplements,
nuts and bolts of
stainless steel.

Fiberglass
fixing cradles

Fixing Base
3mm AISI 304.



Dispenser Chassis

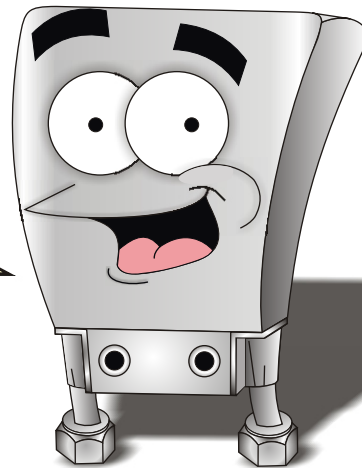




Handling Mass Flow Sensor.

The SMC-1201VH Mass Flow Sensor is a precision transducer, and despite being built of stainless steel, it must be handled with these care recommendations in mind:

Atte. Sensorín



- ***Do not expose to strong electric or magnetic fields.***
- ***Transporting Sensor and Interconnecting Cable independently to avoid possible damage to the RJ45 connector or cable.***
- ***Do not step on or mount it from its case.***
- ***Do not try cleaning the RJ45 connector inserting metal objects that can damage it's contacts.***
- ***Do not mistreat the interconnecting cable.***
- ***Do not adjust in excess the conductors on the terminal block.***
- ***Do not paint or remove its labels.***
- ***Do not submerge in solvents or corrosive fluids.***
- ***Do not try to clean the Sensor by inserting objects that may obstruct their input or output orifices.***

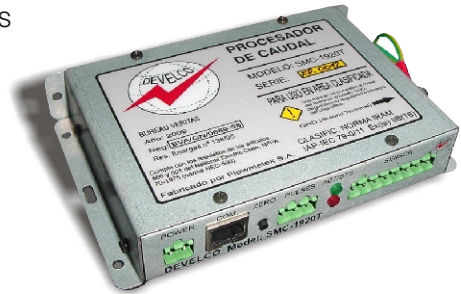


SMC-1920T Flow Processor.

The SMC-1920T Flow Processor is a new generation in DSP Technology, leading the Coriolis flowmeters to another level of efficiency. The SMC-1920T control, processes data and translates the electrical signal phase difference of the Mass Sensor Coils to quantified values of mass. It has analog output pulse and digital interfaces which behaviour can be properly programmed via Software, Hardware, or a combination of both.

The SMC-1920T is compatible with all Flow Mass Sensor models produced for our company, providing an excellent Hardware/Software upgrade service.

The units already installed will have a significant improvement in their performance and never become obsolesces.



Power Specifications of the SMC-1920T Flow Processor.

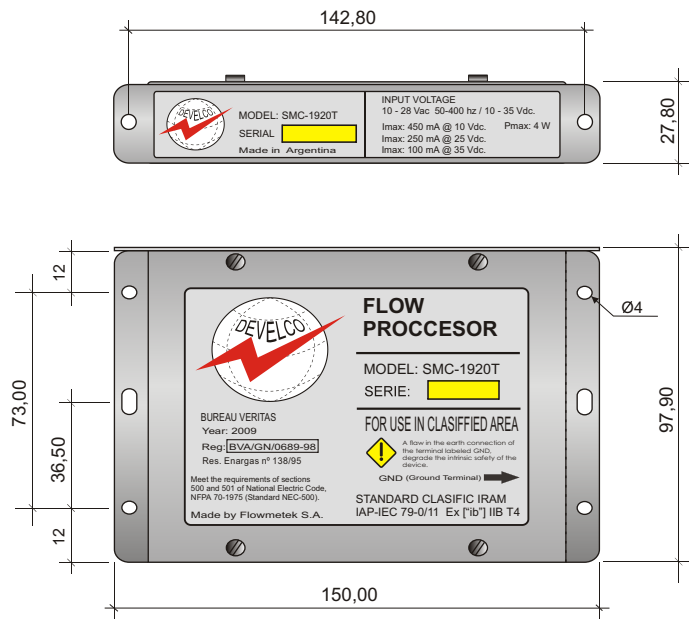
Input Voltage	10 - 28 Vac 50/400 Hz / 10 - 35 Vdc.
Maximum Current	Imax: 450ma @ 10 Vdc. Imax: 250ma @ 25 Vdc. Imax: 100ma @ 35 Vdc.
Maximum Power	Less 4 watt in any condition.
Electrical Safety	Intrinsically Safe according to Standard Classification IRAM-IAP-IEC 79-0/11 Ex ["ib"] IIB T4.

Features Signal Output of SMC-1920T Flow Processor.

Analogue Output	Pulse Output.
Signal	Active or Pasive Standard Signal Pulse, configurable by Hardware.
Amplitude Pulse	5 or 12 V positives in Active Mode, configurable by Hardware.
Pulse Width	Duty cycle automatically adjusted to 50% up to 50 msec pulse width.
Frecuency Output	Configurable by Software to 2Khz máx.
Impedance Output	660 ohm +/- 10% in active mode.
Digital Output	Serial Data Communication Channel.
Port 1	Standard RS-232 Half Duplex, compatible with VT100 terminals (can be used under Windows with the operating system standard application, Hyper Terminal).
Port 2	Standard RS-485 Half Duplex. It use the Develco proprietary protocol to communicate with the SMC-1900P Hand Held, or with the User Application.

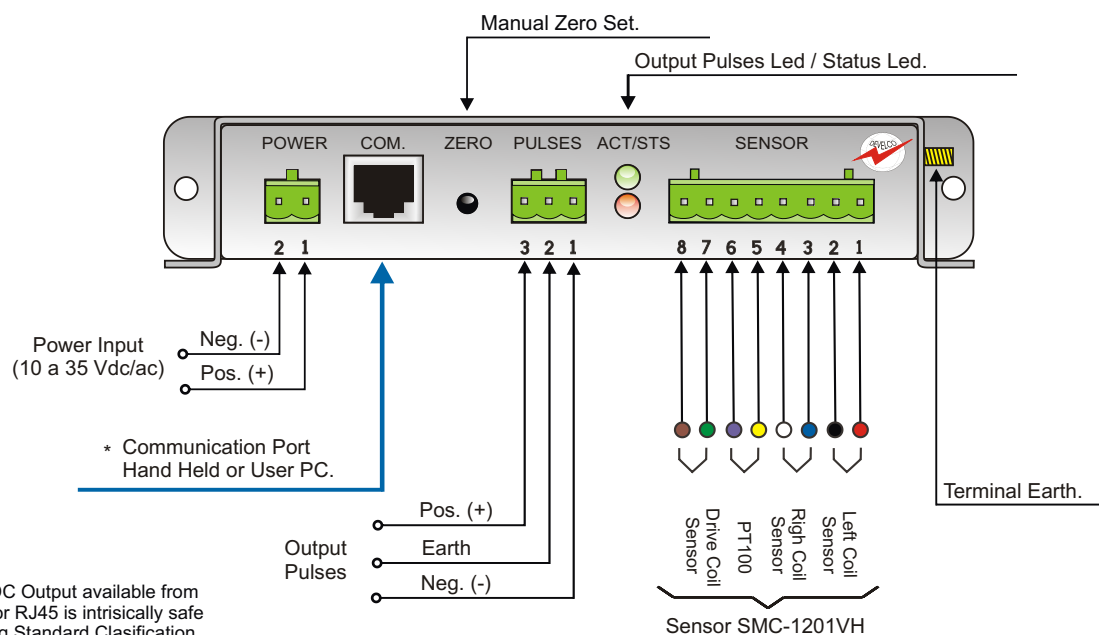


SMC-1920T Flow Processor Dimensions.



Measurement expressed in millimeters.

Connection Diagram SMC-1920T Flow Processor.

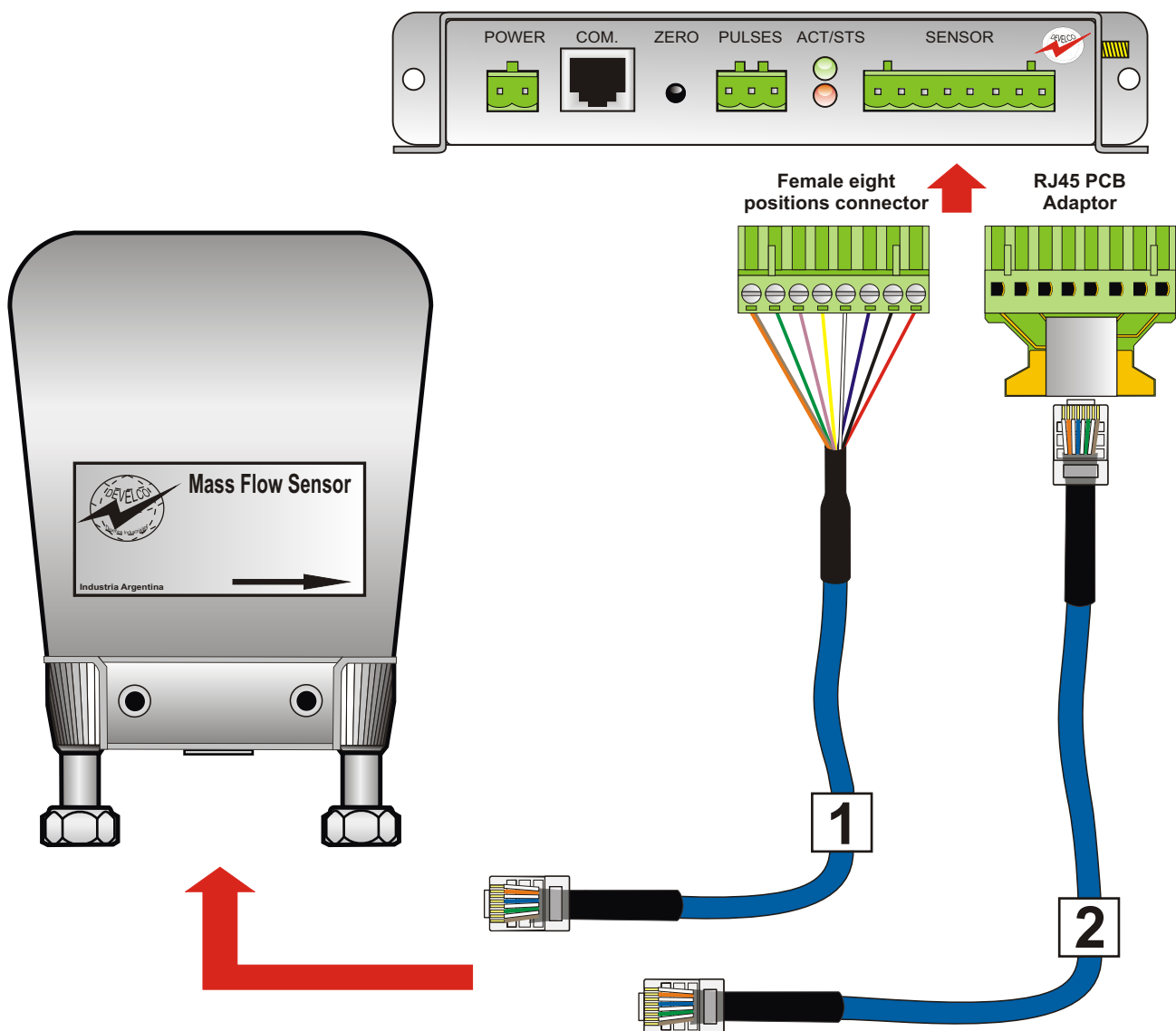




Connection SMC-1201VH Mass Flow Sensor to Flow Processor.

Mass Flow Sensor can be connected two different ways:

- 1- With a UTP cable (supplied, according TIA/EIA 568B Wiring Scheme T568B), with connector RJ45 on one end (sensor connection), and cable with terminals at the other end (connection to the SMC-1920T).
- 2- With a UTP cable (supplied, according TIA/EIA 568B Wiring Scheme T568B), with connector RJ45 in both ends. It use a RJ45 PCB adaptor to the male eight positions connector used on the SMC-1920T.





SMC-1900P Hand Held.

The **SMC-1900P** Hand Held belongs to a new generation of programmable electronic controller. It is designed to configure, test and control the DEVELCO Mass flow sensors. Show the information in three languages, spanish, english and portuguese.

The Hand Held is a intrinsically safe device which has no battery. It works connected directly to the **SMC-1920T** Flow Processor using a Standard Straight UTP cable. Trough this cable is performed the data communication with the **SMC-1920T** and DC power energy routing.



Functions Operation SMC-1900P Hand Held.

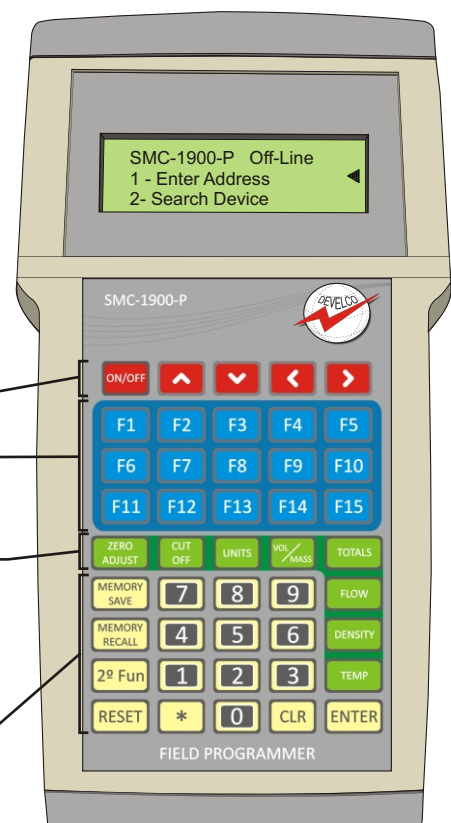
- Configure the SMC-1920T Flow Processor.
- Check the Technical Operation of the Unit.
- Characterize a specific Mass Flow sensor.
- Display on screen up to 4 Process Variables.
- Check Totalizers, Flow Rate, Density and Temperature in real time.

Navigation and On/Off keys.

Function keys to configure and view directly the SMC-1920T registers.

The most usual function keys, allow to make more complex tasks, such as real-time presentation of values for flow, totalizer, density and temperature.

Numeric keypad and Cancellation & Acceptance values/options keys. The four yellow keys of the first column performs special functions.





Connection from SMC-1900P Hand Held to SMC-1920T Flow Processor.

The connection of the Flow Processor to Hand Held is performed with a UTP cable (supplied, according TIA/EIA 568B Wiring Scheme T568B), with connector RJ45 in both ends. The equipment obtains the DC power energy for its operation from the SMC-1920T Flow Processor.

The SMC-1900P Hand Held is a Equipment Intrinsically Safe according Standard Clasification IRAM-IAP-IEC 79-0/11 Ex ["ib"] IIB T4.

