

## Pressure sensors unit Study of regulation

### DESCRIPTION

- The unit is delivered complete with instrumentation, technical documentation and instructions.
- Designed and manufactured to industrial standards.
- This unit is designed for various levels and fields of study.
- Inlets and outlets are connectable by safety female sockets - Ø 4 mm.  
Option :
  - Interface and software for PC
  - Utilities module
- It is possible to connect the measurement module with the control and regulation modules in series or parallel.



### SUGGESTED APPLICATIONS

- Illustration of the various theoretical principles involved in the measurement of pressure
- Manipulating controls
  - Characteristic curves
  - Comparison of the sensors
  - Adjustment of the regulator inlet
  - Calibration of the sensors compared to a reference
- Technical data about the elements in a regulation loop
- Sensor – regulator – actuator – perturbing element
- PID or self-adaptive
- Configuration of the regulator
- Characteristic curves (pressure, opening of the valve, response time, etc...)

Erreur! Liaison incorrecte.

## UTILITIES

Electricity : 230VACsingle-phase – 50 Hz  
Compressed air : 6 bar (90 psi) maximum

## DIMENSIONS AND WEIGHT

Length : 780 mm  
Width : 570 mm  
Height : 590 mm  
Weight : 50 kg

### **Absolute pressure sensor(4)**

Ceramic diaphragm  
Capacitive dried measure cell  
Outlet – current loop-20 mA  
Accuracy  $\pm 0.5\%$  of the full scale

### **Relative pressure sensor (2)**

Silicium diaphragm  
wheatstone-piezzo-resistive resistance  
Current loop outlet 4-20 mA  
Accuracy  $\pm 0.5\%$  of the instruments range

### **Differential pressure sensor (1)**

Silicium diaphragm  
Principle: numerical resonator  
Current loop outlet 4-20 mA  
Accuracy  $\pm 0.075\%$  of the full scale

### **BOURDON type manometer(3)**

DN80 – stainless steel  
Accuracy class : 1,6  
Analog outlet

### **PID type regulator with microprocessor**

Accuracy class : 0.2  
Configurable scale range  
Continue, logical and relay outlet  
– Proportional band from 0.5 to 1000%  
– Integral action time from 0.1 to 100 min  
– Derived action time from 0.01 to 10 min  
Self-adaptive: the PID parameters are calculated by the regulator for an optimized regulation.  
Numerical outlet MODBUS RS 232

### **Regulation valve (6)**

Stainless steel body  
Variable Cv  
Pneumatic actuator and positioner

### **Perturbation valve (7)**

### **Stainless steel tank (8)**

### **Manual vacuum pump (9)**

### **Safety valve: adjustment - 2 bars (10)**