

## 4-20 mA DIGITAL PRESSURE SENSOR MS18CL Model

- ◆ Technology : **Thick Film Strain Gage On Ceramic**
- ◆ Design: **Monolithic structure**

**18 mm Diameter**  
**0...2 to 0...200 bar**  
**Gage Pressure**

**4-20 mA - 2 wires Pressure Sensor + Electronics Circuit**  
**Easy transmitters manufacturing**  
**Operating temperature range – 25°C to + 125°C**  
**Digital Zero and Span adjustments**

**All applications**  
**All aggressive media (★)**

### Presentation

The MS18CL sensors have been especially designed in order to facilitate the pressure transmitters manufacturing. They feature a 4-20 mA current output in a 2 wires configuration and are **protected against reverse polarity and transient voltage**. Pressure and temperature calibration may be done by means of a specific on board IC with a dedicated software tool. The electronics can perform zero and sensitivity adjustment as well as continuous aging detection and correction. A ground connection is available on a 3<sup>rd</sup> pin. The MS18CL sensors are temperature compensated, regarding both Zero Drift and Sensitivity Shift, by means of a Thick Film Thermistor screen printed on the ceramic base plate. This allows an efficient and short temperature compensation response time. It can be used with an unregulated excitation voltage from **8 to 32 Vdc**. Available Gage pressure configurations from 2 bar Full Scale up to 200 bar Full Scale.



**MS18CL**

- ◆ **Transducers Manufacturing - Industrial Equipment**
- ◆ **Main Applications : Pneumatic, hydraulic, water depth measurement, medical, pharmaceutical, food industry...**

### Mechanical specification:

MODELS	Rated Range (bar)	Burst Pressure (bar)
• MS18 CL – 002	0...2	4
• MS18 CL – 005	0...5	12.5
• MS18 CL – 010	0...10	25
• MS18 CL – 020	0...20	50
• MS18 CL – 050	0...50	125
• MS18 CL – 100	0...100	200
• MS18 CL – 200	0...200	400

Other ranges up to 600 bar available on request.

Combined Error (Linearity + Hysteresis)<sup>1</sup>  $\leq \pm 0.3\% \text{ FS [Terminal based]}$   
Repeatability  $\leq \pm 0.1\% \text{ FS}$

(★) Except hydrofluoric acid

<sup>1</sup> According to IEC 61298-2

**RoHS Compliant**  
Directive 2002/95/EC

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### Electrical specification:

(Continued)

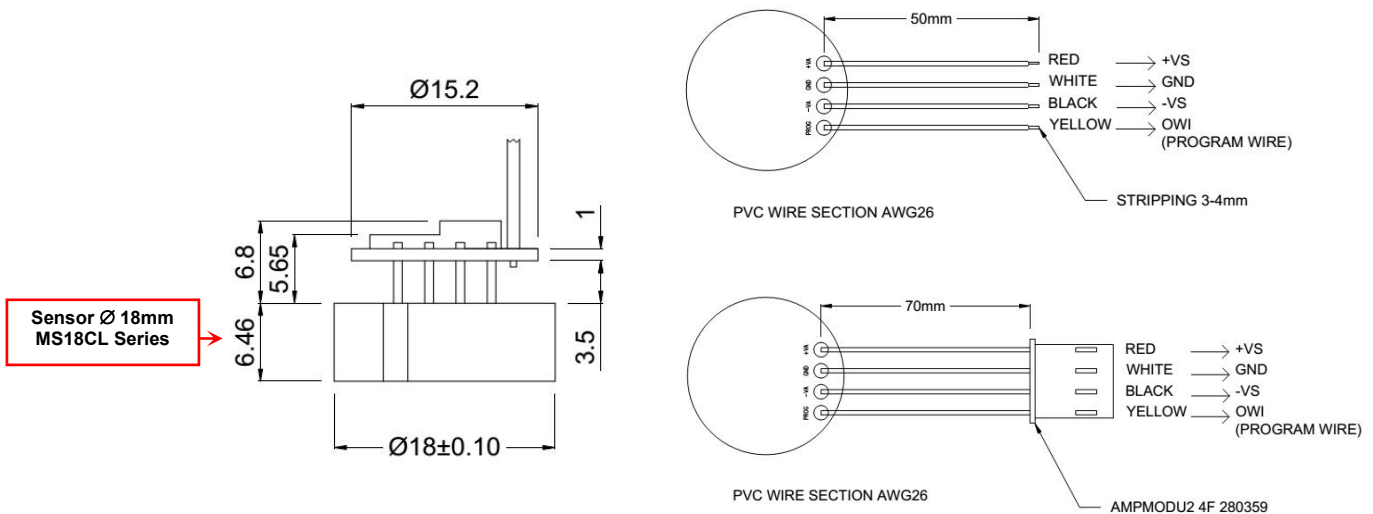
#### ▣ PRESSURE

- |                             |  |
|-----------------------------|--|
| • Excitation voltage [ Vs ] | 8...32 Vdc                                     |
| • Resistor Load [ Ω ]       | $RL = (Vs - 9) / 0.02 A$                       |
| • Power consumption         | 0.7 W  |
| • Output signal             | 4 -20 mA ( Zero & Span digitally programmable) |
| • Output connection         | AMP-MODU II or 4 wires                         |

### Environmental specification:

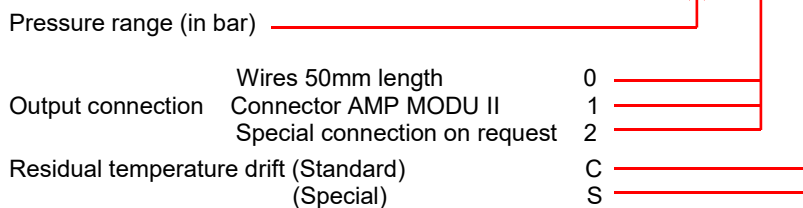
- |   |  |
|---|--|
| • Material in contact with fluid  | Alumina Al <sub>2</sub> O <sub>3</sub> – 96% |
| • Operating Temperature Range (Fluid)   | - 25°C to + 125°C                            |
| • Operating Temperature Range (Ambient)   | - 25°C to + 85°C                             |
| • Storage Temperature Range   | - 40°C to + 105°C                            |
| • Residual Temperature effect [Range 2 bar - 50 bar]<br>(Zero & Span, standard calibration) (*) | ≤ ± 0.03% FS/°C [0°C-85°C]                   |
|   | ≤ ± 0.04% FS/°C [-25°C-0°C]/[85°C-125°C]     |
|   | [Ranges > 50 bar]                            |
|   | ≤ ± 0.04% FS/°C [0°C-85°C]                   |
|   | ≤ ± 0.05% FS/°C [-25°C-0°C]/[85°C-125°C]     |
| • Humidity range  | <95%RH (no condensation)                     |
- (\*) Better accuracy achievable on request

### Dimensions (mm) and Drawing with schematic diagram Connections:



### Part Number Composition:

## MS18CL-XXX-X- X



Specification subject to change without prior notice

Oct. 2014 Issue