

# Temperature probe with embedded transmitter interchangeable with M12 connector

- **SPM12-TR18:** Assembly of PT100 probe and 4...20mA transmitter
- **TR18:** Transmitter alone
  - PT100 input, 3 or 4 wires (4 pins female M12)
  - Loop powered
  - M12 male 4 pins or 5 pins compatible
  - Configurable measure range (via USB link)
- **SPM12:** Temperature probe alone
  - All version to define:  
straight, screw connection, with cable, ...
  - Connection with 4 pins M12 male.



The assembly SPM12 - TR18 form a temperature sensor transmitter with a M12 connection. Each element remains interchangeable quickly to facilitate the maintenance and reduce costs. The transmitter is configurable with an USB-rs232 link. This allowing to manage only one model.

### Description of SPM12 temperature probe:

The SPM12 series probes are designed for temperature measurement in low cost application. Equipped with a mechanically welded protection sheath, there are suitable for wide use of industrial applications. There can have direct output or a 4...20mA output signal.

#### - Wiring

IP67 4 pins M12 male connector

#### - Measure elements

PT100, PT1000 single or double vibrated, glued and waterproof

2, 3 or 4 wires mounting or 2x2 wires

(3 wires PT100 mounting if TR18 transmitter)

PT100 element class A, B, 1/3 or 1/10 class B

#### - mounting

1/2 G cyl. stainless steel connector welded on sheath

Sliding connection (RC)

Straight pipe (R0)

Welded or sliding flange

other connection type on request

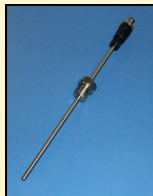
#### - protective sheath

Stainless steel 316 L 6mm diameter, 0.4mm wall thickness

Useful length (including threading): 20 ... 500 mm

Operating temperature : -50 ... +600°C

**The operating temperature for the transmitter should be under the 85°C limit, if needing, remote the transmitter with a M12 cable.**



### Description of TR18 transmitter:

- PT100 sensor measurement
- 3 wires mounting element or 4 wires (TR18 -4F)

#### Sensor correction / signal treatment:

- Linearization and line resistance compensation
- Security value programmable if sensor breaking detection
- Response time programmable from 0.2 to 60sec (Measure variations filtering)
- Output normal or reverse
- Measure offset adjustment
- neutralization of thermal environment variation effects

#### Features / Mounting and wiring:

- stainless steel enclosure. 18 mm diameter, electronic recover of silicon resin
- Wiring on IP67 M12 connector
- protected against reverse polarity

#### Performance / Environment

- Long term stability 0.1 %/year
- Operating temperature: up to 85 °C
- Great EMC performance (full shielding)
- Resistant, protected against shock and vibration (conformal coating)

#### Configuration:

- Configurable with USB - M12 specific cable available separately (terminal mode, without specific software)



TR18

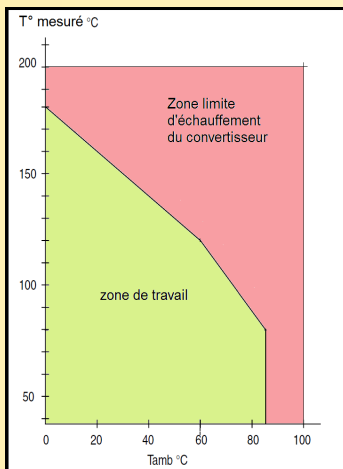


Order code										Request a quote	
<b>SP</b>	<b>M12</b>	-	<b>TR18</b>	<b>Ti 100</b>	<b>ER</b>	-	<b>RS</b>	/	<b>L 150</b>	/	<b>D 6</b>
Platinum probe	Model		Optional transmitter 4...20mA Input 3 or 4 wires	Extension length (Intermediate pipe) (mm) Optional	If Reduced extremity		Connection type  RS : welded connection (standard) R0: no connection RCi: stainless steel sliding connection BS : welded flange Bjpc : JPC flange RT:turning connection		Useful length (mm)		external sheath diameter  6mm (standard) optional

**Technical characteristics for SPM12 (6mm diameter)**

- Maximal operating temperature : 600°C
- Response time (version with standard extremity) (average value, for indication only)
  - in water, 0,4 m/s :  $t_{0,5} = 5 \text{ s}$   $t_{0,9} = 12 \text{ s}$
  - in air, 3,0 m/s :  $t_{0,5} = 40 \text{ s}$   $t_{0,9} = 110 \text{ s}$
- Response time (version with reduced extremity) (average value, for indication only)
  - in water, 0,4 m/s :  $t_{0,5} = 2 \text{ s}$   $t_{0,9} = 5 \text{ s}$
  - in air, 3,0 m/s :  $t_{0,5} = 21 \text{ s}$   $t_{0,9} = 70 \text{ s}$
- Dielectric strength : 500Vdc
- Insulation resistance : > 200Mohms
- pressure holding : 50bar typical (at ambient temperature)

**Operating limits for transmitter**



**Mounting accessories**



**INPUT**

TYPE	RANGE	ACCURACY
PT100, 3 wires:	-200 ... 600°C	+/- 0.25°C
PT100, 4 wires:	-200 ... 600°C	+/- 0.1°C

Line influence : 0.3°C / 10ohms  
 response time : ~200msec  
 measure rate : 6 per seconde

**POWER SUPPLY / OUTPUT (14bits resolution)**

TYPE	RANGE	ACCURACY
current output	4...20mA	+/- 0.01mA
electronic consumption	< 3.6mA	
security value :	3.6 ... 23mA	
Power supply	9 ... 40Vdc (2 wires technology)	
Load (under 24Vdc)	750 Ohms	
Supply voltage influence :	0.002% / V	
Load influence :	0.004% / 100 ohms	

**ENVIRONMENT**

Operating temperature : -20 to +85 °C  
 Storage temperature : -30 to +85 °C  
 humidity : 100 %  
 Thermal Influence : < 0.01% / °C  
 weight : ~ 100 g

**Compatibilité électromagnétique**

Normes génériques: **NFEN50081-2 / NFEN50082-2**



<b>EN55011</b>	satisfait	groupe 1 / classe A	
<b>EN61000-4-2</b>	sans influence	B	<b>ENV50140</b> < +/- 5 %
<b>EN61000-4-4</b>	< +/- 5 %	B	<b>ENV50141</b> < +/- 10 %
<b>EN61000-4-5</b>	< +/- 5 %	B	<b>ENV50204</b> sans influence
<b>EN61000-4-8</b>	sans influence	A	
<b>EN61000-4-11</b>	< +/- 5 %	B	DBT <b>73/23/CEE</b>

**WIRING AND OUTLINE DIMENSIONS:**

