

# **Operating Instructions for Temperature Sensor**

**Model: TWL**

**Ignition Protection Ex ia**



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## 2. Note

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Please read these operating instructions before unpacking and putting the unit in operation. Follow the instructions precisely as described herein.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EWG-machine guidelines.

## 3. Instrument Inspection

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Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

### **Scope of delivery:**

The standard delivery includes:

- Device model: TWL
- Operating Instructions

## 4. Regulation Use

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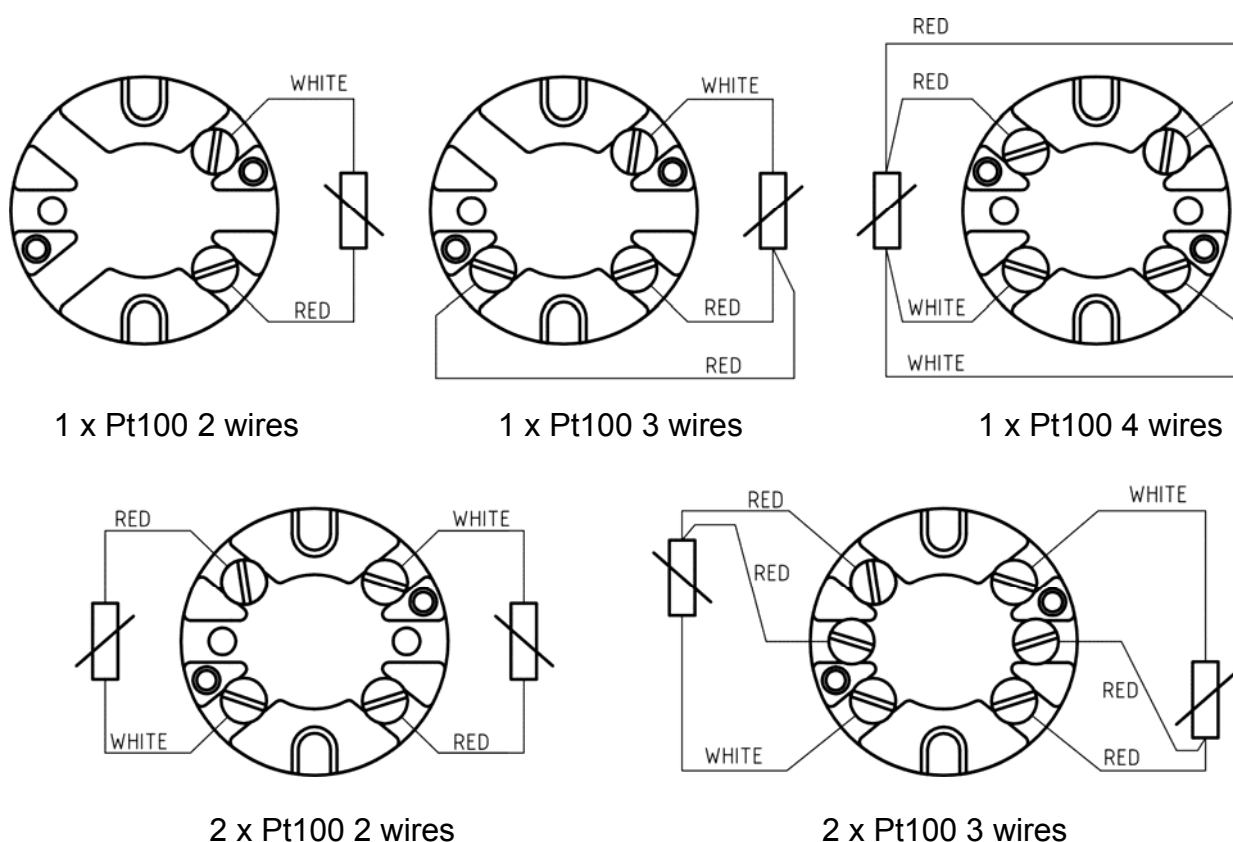
The temperature sensors of series TWL are suitable for all applications where processes involving fluids, solid bodies or materials, or gases, require temperature recording and measurement. Our temperature sensors are suitable for use in the following industrial areas: chemicals, petrochemicals, water, feed, food, sanitary, etc.

Any use of the Temperature Sensor, model: TWL, which exceeds the manufacturer's specification may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

## 5. Operating Principle

Resistance thermometers work by using the continuous change of resistance of metals subject to temperature rising and decreasing. The most common resistance material used is platinum, as it is very stable and has very good repeatability. The temperature coefficient of platinum is positive, so its resistance increases as the temperature rises. This property is defined in the IEC751 standard, which defines measurements deviations categories A and B.

## 6. Electrical connection



**Note:** For electrical connection of transmitter please refer to its separate manual.

## **7. Use in hazardous Areas**

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### **7.1 Area of validity**

These security instructions apply to **TWL** Series temperature sensors and their accessories for use in explosion-proof atmospheres conform to **CE certificate LOM 08ATEX2015 X**

### **7.2 Guidelines**

The TWL Series temperature measuring instruments work according to the heat resistance measuring principle. This measuring principle acts to check and measure the temperature also in Ex areas.

TWL devices can be with a standard 4 to 20 mA signal transmitter, protocol Hart, Profibus/Fieldbus or with direct access to the sensor. They are appropriate for use in Group IIC and Categories 1G/D Atex atmospheres.

The temperature class and/or the surface temperature relates solely to a device operated at ambient temperature. On installation the actual temperature class for process operation has to be determined.

The inlet bushings used must conform to the certification for their type in accordance with the directive.

The requirements of Regulation 94/9/CE, and the applicable national regulations for the use of measuring instruments in Ex areas, such as EN 60079-0:2011, EN 60079-11:2007 and other regulations relating to this certification type, must be fulfilled.

Only qualified specialist personnel may install devices in Ex areas.

### **7.3 General**

- When installing the sensor it is necessary to follow all the instructions and regulations for explosion-proof areas and the safety instructions included in these instructions.
- TWL-SN and TWL-SA must be protected with an enclosure that has a minimum degree of protection IP20.
- Make sure that the details on the sensor's type label correspond to the working conditions for the application.
- When installing the device, make sure you do not create any mechanical deformation as a result of solder spots or the application of mechanical force.

- **Important:** Make sure there is an electrical connection between the device's earth and the earth of the system.
- Make sure the lid are closed before putting the device into operation.
- Before re-opening the lid, remove the plug from the mains or de-energise the device and make sure there is no danger of explosion.

## 7.4 Protection against E.S.D. (Electro Static Discharge)

Temperature sensors with plastic parts that can become electrically charged bear a warning label. Electrical charging must be avoided at all costs. Pay attention to the following:

- Avoid rubbing the device
- Never clean the device dry
- Do not install the device near material airflows or near steam outlets

## 7.5 Maintenance and repairs

The instrument does not require maintenance or servicing.

Repairs must be only carried out by Kobold Mesura ( manufacturer )

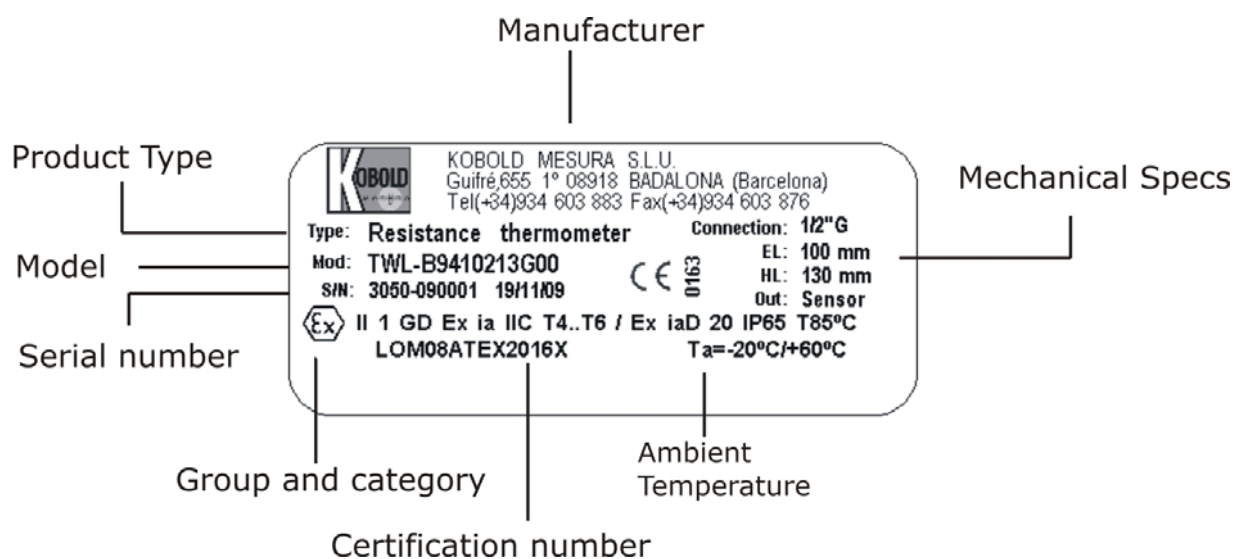
## 7.6 Storage

Measuring instruments should be protected against humidity and dust.

Storage temperature: -40°C....+85°C for sensors without transmitter.

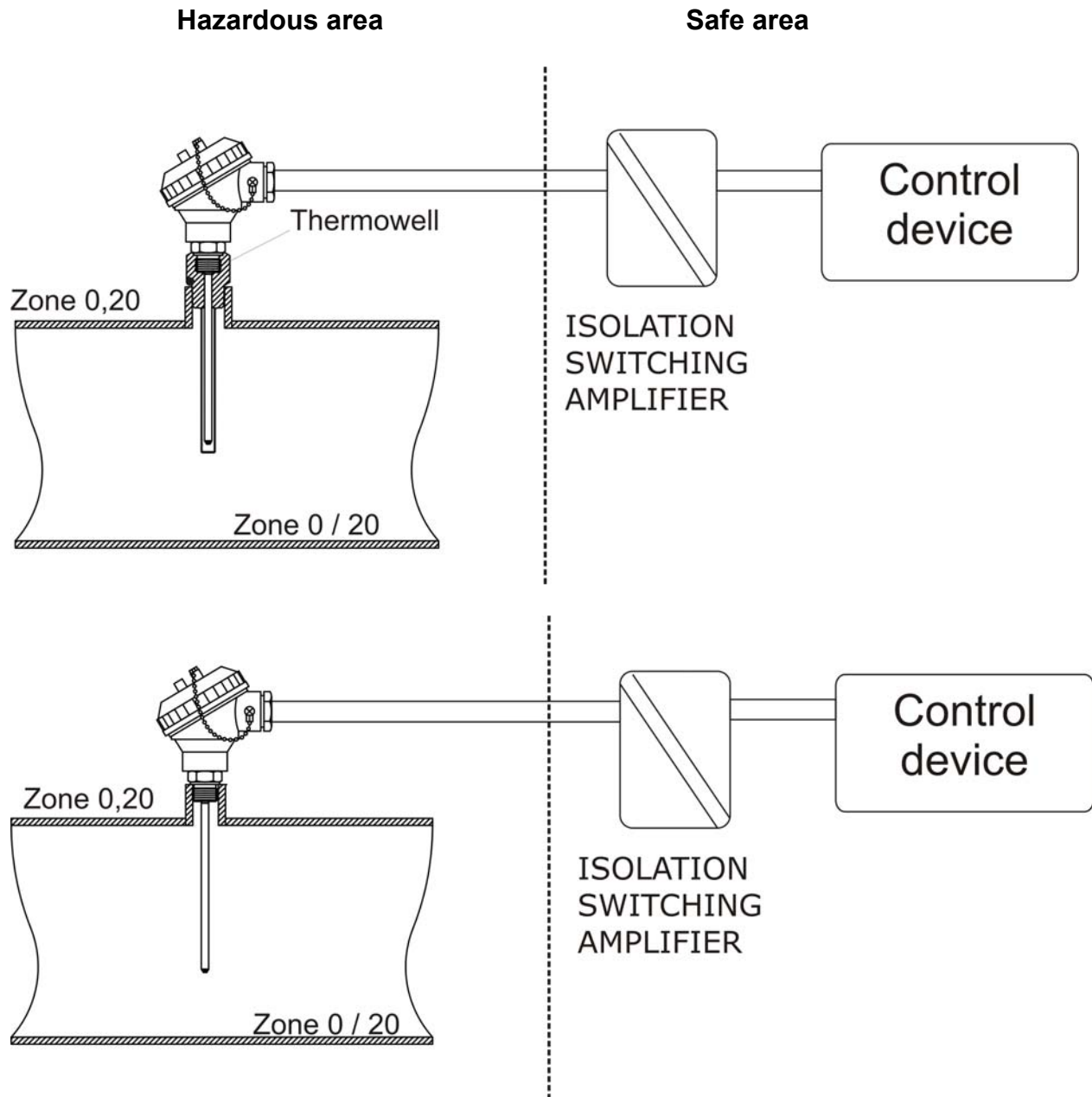
Storage temperature: See manual of the corresponding transmitter and display model.

## 8. Description of the Factory Label



## 9. Installation in the classified area

### 9.1 Examples of installation in explosion-proof areas conform to the protection type “intrinsical safe”: “Ex ia”





## 10. Technical Details

### 10.1 Sensor wiring

- 2 wires      Error due to the lead resistance of the sensor
- 3 wires      With connecting wires up to 25 m, lead resistance is negligible.
- 4 wires      The lead resistance of the connecting wires is negligible

### 10.2 General details

<b>Ambient temperature:</b>	-40...+150°C with ceramic terminal base -40...+85°C with transmitter -40...+85°C for ambient temperature sensor
<b>Meas. Range:</b>	-80...+600°C (other on request)
<b>Operating pressure:</b>	Max. 250 bar (depending on model, see order details)
<b>Connection head:</b>	Form B with chain, except TWL-ST: Aluminium or polycarbonate conn. head TWL-SN and TWL-SA: without connection head


### 10.3 Materials

<b>Sensor:</b>	St. steel 1.4404 (others on request) TWL-ST anodized aluminium
<b>Neckpipe:</b>	St. steel 1.4404 (others on request)
<b>Connection head:</b>	Aluminium, painted (PC on TWL-ST)
<b>Cable:</b>	Silicone or PTFE on model TWL-SN and TWL-SA (others on request)
<b>Terminal base:</b>	Ceramic (without transmitter)

### 10.4 Process connection

<b>Thread:</b>	G1/2" , G1" (others on request)
<b>Flange:</b>	DN25 (others on request)
<b>Weld-on sleeve:</b>	Ø 24 h7

### 10.5 ATEX-approval

 II 1 GD Ex ia IIC T4..T6/ Ex iaD 20 IP65  
T85°C -20°C ≤ Ta ≤ +60°C

### 10.6 Head transmitter

- Output:                      analogue output 4...20mA
- Communication:            HART<sup>®</sup>-protocol  
                                 PROFIBUS<sup>®</sup>/Fieldbus
- Minimum meas. span:      standard transmitter 25K  
                                 transmitter with HART<sup>®</sup> 10K

- Supply voltage: transmitter with PROFIBUS®/Fieldbus 5K  
8...35 Vdc for standard transmitter and transmitter  
with HART®  
9...32 Vdc for transmitter with PROFIBUS®/Fieldbus

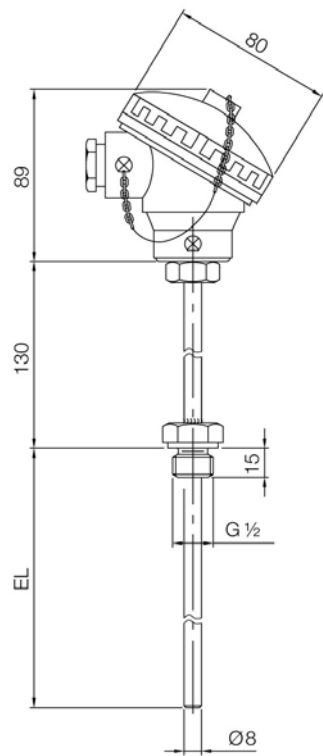
**Note**

For programming of transmitter please refer to their separate programming manual.

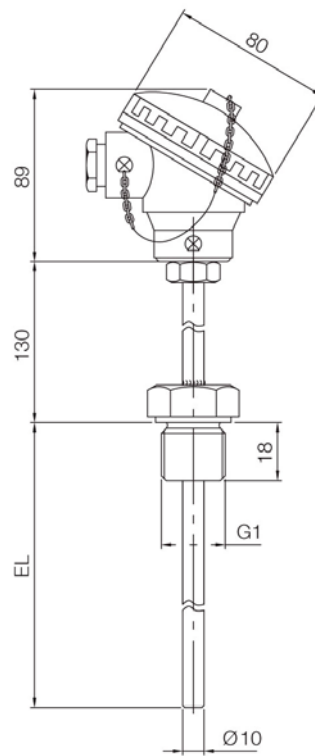
Sensors model TWL-SN and TWL-SA have no head transmitter and may only be used with a remote transmitter.

# 11. Dimensions

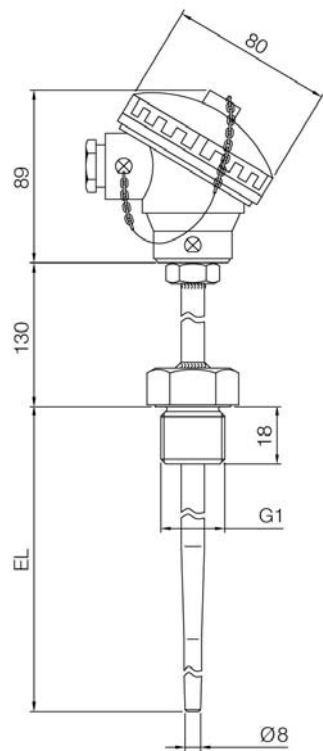
TWL-B...



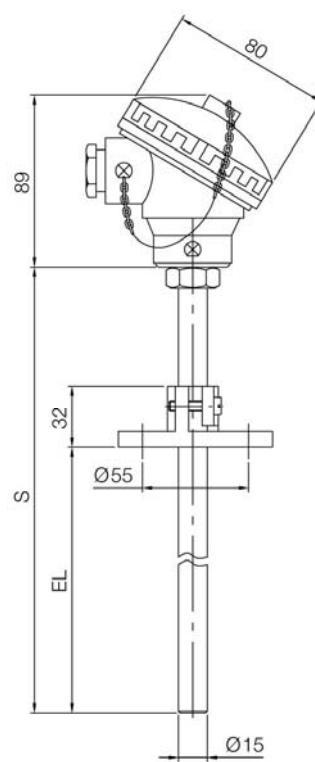
TWL-C...



TWL-G...



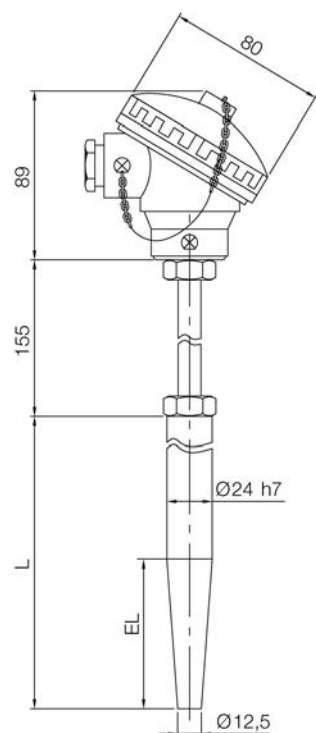
TWL-1F...



EL = immersion length

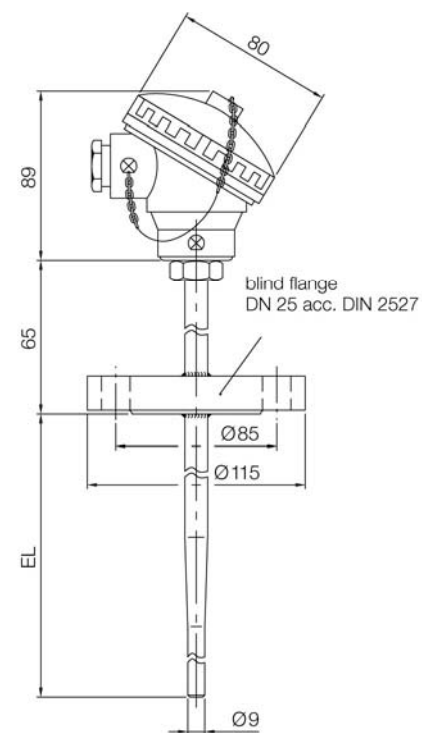
S = overall probe length

TWL-D...

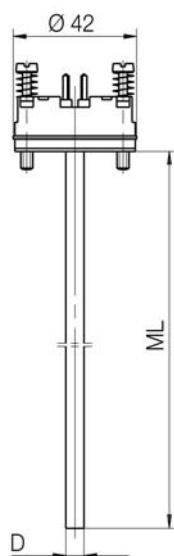


L = overall length weld-in probe  
EL = immersion length

TWL-F...



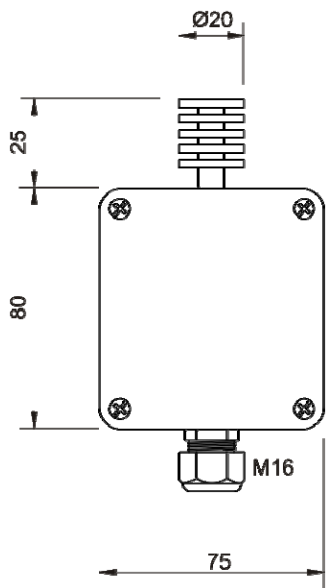
TWL-M...



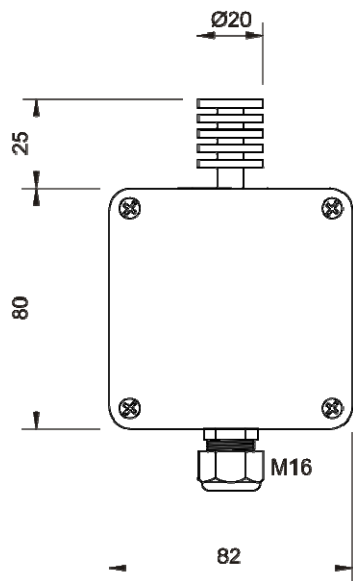
ML = length measuring insert

Diameter D	
...M82...	8mm
...M62...	6mm
...M52...	5mm

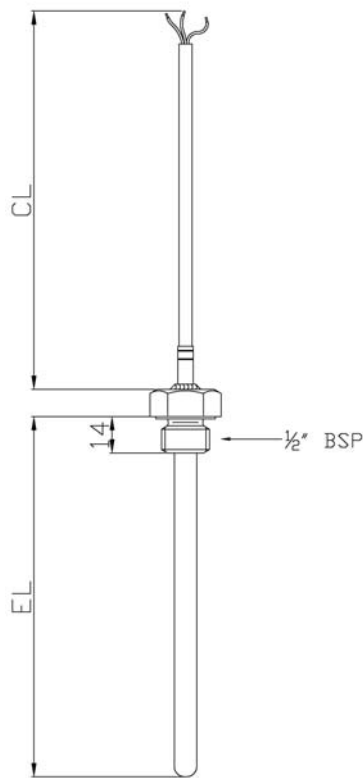
TWL-ST240...A...



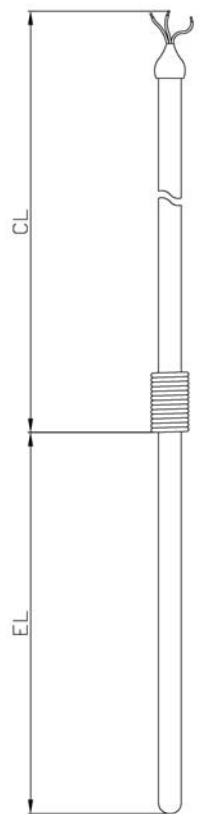
TWL-ST240...P...



TWL-SN...



TWL-SA...



## 12. Order codes

Screw-in resistance thermometer form 2G with neckpipe, protection Ex ia, thermowell G ½ male according to DIN 43772 (with neckpipe), p<sub>max</sub> 10 bar

Model	Immersion length (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
TWL-B94	<b>10</b> = 100 Ø8x6 mm	<b>2</b> = G ½" AG	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C <b>2</b> = 2 x Pt100 Cat. B -80...+600°C <b>3</b> = 1 x Pt100 Cat. A -80...+600°C <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4</b> <sup>3)</sup> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head ( to be specified in writing)	<b>0</b> = without  <b>A</b> <sup>4)</sup> = programmable transmitter 2-wire  <b>B</b> <sup>4)</sup> = transmitter with HART protocol 2-wire  <b>C</b> <sup>4)</sup> = transmitter profibus/Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description
	<b>16</b> = 160 Ø8x6 mm						
	<b>25</b> = 250 Ø8x6 mm						
	<b>40</b> = 400 Ø8x6 mm						
	<b>XX</b> <sup>1)</sup> = special length Ø8x6 mm						

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing

Screw-in resistance thermometer form 2G with neckpipe, protection Ex ia, thermowell G 1 male according to DIN 43772 (with neckpipe), p<sub>max</sub> 10 bar

Model	Immersion length (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
TWL-CB4	<b>10</b> = 100 Ø10x8 mm	<b>4</b> = G 1 AG	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C <b>2</b> = 2 x Pt100 Cat. B -80...+600°C <b>3</b> = 1 x Pt100 Cat. A -80...+600°C <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4</b> <sup>3)</sup> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head ( to be specified in writing)	<b>0</b> = without  <b>A</b> <sup>4)</sup> = programmable transmitter 2-wire  <b>B</b> <sup>4)</sup> = transmitter with HART protocol 2-wire  <b>C</b> <sup>4)</sup> = transmitter profibus/Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description
	<b>16</b> = 160 Ø10x8 mm						
	<b>25</b> = 250 Ø10x8 mm						
	<b>40</b> = 400 Ø10x8 mm						
	<b>XX</b> <sup>1)</sup> = special length Ø10x8 mm						

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing

**Screw-in resistance thermometer form 3G with neckpipe, protection Ex ia,  
tapered thermowell G 1 male according to DIN 43772 for faster response time, p<sub>max</sub> 30 bar**

Model	Immersion length (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
<b>TWL-G94</b>	<b>16</b> = 160 Ø8x6 mm  <b>25</b> = 250 Ø8x6 mm  <b>28</b> = 280 Ø8x6 mm  <b>XX<sup>1)</sup></b> = special length Ø8x6 mm	<b>2</b> = G 1 AG	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C <b>2</b> = 2 x Pt100 Cat. B -80...+600°C <b>3</b> = 1 x Pt100 Cat. A -80...+600°C <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4<sup>3)</sup></b> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head ( to be specified in writing)	<b>0</b> = without  <b>A<sup>4)</sup></b> = programmable transmitter 2-wire  <b>B<sup>4)</sup></b> = transmitter with HART protocol 2-wire  <b>C<sup>4)</sup></b> = transmitter profibus/Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing.

**Immersion resistance thermometer form 1, protection Ex ia,  
thermowell according to DIN 43772 with adjustable flange, p<sub>max</sub> 10 bar**

Model	Immersion length (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
<b>TWL-1F4</b>	<b>50</b> = 500 Ø15 mm  <b>71</b> = 710 Ø15 mm  <b>1T</b> = 1000 Ø15 mm  <b>T4</b> = 1400 Ø15 mm  <b>2T</b> = 2000 Ø15 mm  <b>XX<sup>1)</sup></b> = special length Ø15 mm	<b>B</b> = Adjustable G ¾ male st. st.  <b>C</b> = aluminium sliding flange DIN 43743	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C <b>2</b> = 2 x Pt100 Cat. B -80...+600°C <b>3</b> = 1 x Pt100 Cat. A -80...+600°C <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4<sup>3)</sup></b> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head ( to be specified in writing)	<b>0</b> = without  <b>A<sup>4)</sup></b> = programmable transmitter 2-wire  <b>B<sup>4)</sup></b> = transmitter with HART protocol 2-wire  <b>C<sup>4)</sup></b> = transmitter profibus/Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing

**Weld-on resistance thermometer form 4, protection Ex ia,  
Thermowell according to DIN43772, p<sub>max</sub> 250bar**

Model	Immersion length EL/L (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
TWL-D	<b>1406</b> = 65/140 (D1) st. st. 1.4404  <b>2412</b> = 125/200 (D2) st. st. 1.4404  <b>4406</b> = 65/200(D4) st. st. 1.4404  <b>5412</b> = 125/260(D5) st. st. 1.4404  <b>XXXX</b> <sup>1)</sup> = special length	0 = weld-on	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C  <b>2</b> = 2 x Pt100 Cat. B -80...+600°C  <b>3</b> = 1 x Pt100 Cat. A -80...+600°C  <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4</b> <sup>3)</sup> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head ( to be specified in writing)	<b>0</b> = without  <b>A</b> <sup>4)</sup> = programmable transmitter 2-wire  <b>B</b> <sup>4)</sup> = transmitter with HART protocol 2-wire  <b>C</b> <sup>4)</sup> = transmitter profibus Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description
	<b>1906</b> <sup>2)</sup> = 65/140(D1) st. st. 1.4903  <b>2912</b> <sup>2)</sup> = 125/200(D2) st. st. 1.4903  <b>4906</b> <sup>2)</sup> = 65/200(D4) st. st. 1.4903  <b>5912</b> <sup>2)</sup> = 125/260(D5) st. st. 1.4903  <b>XXXX</b> <sup>1)</sup> = special length						

<sup>1)</sup> Please specify special length in writing.

<sup>1)</sup> Stainless steel 1.7380 or 1.7337 on request.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing

**Insertion resistance thermometer form 3F, protection Exia flange DN25 PN40,  
Tapered thermowell according to DIN 43772 for faster response time p<sub>max</sub> 50bar**

Model	Immersion length (mm)	Process connection	Sensor type/category <sup>2)</sup>	Wiring	Connection head	Head transmitter	Special option
TWL-F94	<b>22</b> = 225  <b>28</b> = 285  <b>34</b> = 345  <b>XX</b> <sup>1)</sup> = special length	4 = DN25	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C  <b>2</b> = 2 x Pt100 Cat. B -80...+600°C  <b>3</b> = 1 x Pt100 Cat. A -80...+600°C  <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4</b> <sup>3)</sup> = 4-wire	<b>G</b> = form B, With chain  <b>Y</b> = special connection head head (to be specified in writing)	<b>0</b> = without  <b>A</b> <sup>4)</sup> = programmable transmitter 2-wire  <b>B</b> <sup>4)</sup> = transmitter with HART protocol 2-wire  <b>C</b> <sup>4)</sup> = transmitter profibus/Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing



**Spare measuring insert for resistance thermometer**  
According to DIN 43772 and protection Ex ia

Model	Immersion length (mm)	For form	Measuring insert length	Sensor type/category	Wiring	Head transmitter	Special option
TWL-M82 Ø8mm	0050 = 500	1	528	<b>1</b> = 1 x Pt100 Cat. B -80...+600°C  <b>2</b> = 2 x Pt100 Cat. B -80...+600°C  <b>3</b> = 1 x Pt100 Cat. A -80...+600°C  <b>4</b> = 2 x Pt100 Cat. A -80...+600°C	<b>2</b> = 2-wire  <b>3</b> = 3-wire  <b>4</b> <sup>3)</sup> = 4-wire	<b>0</b> = without  <b>A</b> <sup>4)</sup> = programmable transmitter 2-wire  <b>B</b> <sup>4)</sup> = transmitter with HART protocol 2-wire  <b>C</b> <sup>4)</sup> = transmitter profibus Fieldbus	<b>0</b> = without  <b>Y</b> = acc. description
	0071 = 710		738				
	001T = 1000		1028				
	00T4 = 1400		1428				
	002T = 2000		2028				
	XXXX <sup>1)</sup> = special length		Acc. to special length				
TWL-M62 Ø6mm	0010 = 100	2G (Model TWL-CB4 only)	258				
	0016 = 160		318				
	0025 = 250		408				
	0040 = 400		558				
	XXXX <sup>1)</sup> = special length		Acc. to special length				
TWL-M52 Ø5mm	0010 = 100	2G (Model TWL-B94 only)	258				
	0016 = 160		318				
	0025 = 250		408				
	0040 = 400		558				
	XXXX <sup>1)</sup> = special length		Acc. to special length				
	0022 = 225	3F	318				
	0028 = 285		378				
	0034 = 345		438				
	XXXX <sup>1)</sup> = special length		Acc. to special length				
	0016 = 160	3G	318				
	0025 = 250		408				
	0028 = 280		438				
	XXXX <sup>1)</sup> = special length		Acc. to special length				
	1406 = 65/140	4	322				
	2412 = 125/200		382				
	4406 = 65/200		382				
	5412 = 125/260		442				
	1906 = 65/140		322				
	2912 = 125/200		382				
	4906 = 65/200		382				
	5912 = 125/260		442				
	XXXX <sup>1)</sup> = special length		Acc. to special length				

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Maximum temperature +750°C on request.

<sup>3)</sup> Only with 1x Pt100

<sup>4)</sup> Please specify measuring range in writing

## Ambient resistance thermometer, protection Exia.p<sub>max</sub>. Atmospheric pressure

Model	Immersion length (mm)	Process connection	Sensor type/category	Wiring	Connection head	Head transmitter	Special option
TWL-ST	24 = 24mm XX <sup>1)</sup> = special length	0 = wall mounting	1 = 1xPt100 cat.B 2 = 2xPt100 cat.B 3 = 1xPt100 cat.A 4 = 2xPt100 cat.A	2 = 2 wires 3 = 3 wires 4 <sup>2)</sup> = 4 wires	A = aluminium P = polycarbonate	0 = without A <sup>3)</sup> = programmable transmitter 2-wire B <sup>3)</sup> = transmitter with HART protocol 2-wire C <sup>3)</sup> = transmitter profibus/Fieldbus	0 = without Y = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Only with 1x Pt100

<sup>3)</sup> Please specify measuring range in writing

## Screw-in resistance thermometer with cable, protection Ex ia Male according to DIN 43772, p<sub>max</sub>. 10 bar

Model	Immersion length (mm)	Process connection	Sensor type/category	Wiring	Connection head/cable <sup>3)</sup>	Head transmitter	Special option
TWL-SN	10 = 100 Ø6 mm 16 = 160 Ø6 mm 25 = 250 Ø6 mm 40 = 400 Ø6 mm XX <sup>1)</sup> = special length	2 = G1/2" AG	1 = 1 x Pt100 Cat. B -80...+600°C 2 = 2 x Pt100 Cat. B -80...+600°C 3 = 1 x Pt100 Cat. A -80...+600°C 4 = 2 x Pt100 Cat. A -80...+600°C	2 = 2 wires 3 = 3 wires 4 <sup>2)</sup> = 4 wires	S = silicone cable P = PTFE cable X <sup>4)</sup> = special length and/or material	0 = without	0 = without Y = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Only with 1x Pt100

<sup>3)</sup> Please specify special length cable "CL" standard model 1mt

<sup>4)</sup> Please specify special length "CL" and material

## Insertion resistance thermometer with cable, protection Ex ia. P<sub>max</sub>. 10 bar

Model	Immersion length (mm)	Process connection	Sensor type/category	Wiring	Connection head/cable <sup>3)</sup>	Head transmitter	Special option
TWL-SA	10 = 100 Ø6 mm 16 = 160 Ø6 mm 25 = 250 Ø6 mm 40 = 400 Ø6 mm XX <sup>1)</sup> = special length	0 = without	1 = 1 x Pt100 Cat. B -80...+600°C 2 = 2 x Pt100 Cat. B -80...+600°C 3 = 1 x Pt100 Cat. A -80...+600°C 4 = 2 x Pt100 Cat. A -80...+600°C	2 = 2 wires 3 = 3 wires 4 <sup>2)</sup> = 4 wires	S = silicone cable P = PTFE cable X <sup>4)</sup> = special length and/or material	0 = without	0 = without Y = acc. description

<sup>1)</sup> Please specify special length in writing.

<sup>2)</sup> Only with 1x Pt100

<sup>3)</sup> Please specify special length cable "CL" standard model 1mt

<sup>4)</sup> Please specify special length "CL" and material

## 13. Declaration of conformance

### **DECLARACIÓN DE CONFORMIDAD CE**

EC DECLARATION OF CONFORMITY

EG-KONFORMITÄTSERKLÄRUNG

DÉCLARATION DE CONFORMITÉ

DICHIARAZIONE DI CONFORMITÀ CE

KOBOLD MESURA S.L.U.  
Guifré 655, 08918 Badalona (España)

#### **Declara, bajo la propia responsabilidad, que el producto**

*Declares under our sole responsibility, that the product*

*Erklärt in alleiniger Verantwortung, daß das produkt*

*Déclare sous sa seule responsabilité, que le produit*

*Dichiara sotto la propria responsabilità, che il prodotto*

TWL.....

#### **A los cuales se refiere esta declaración, son conformes a las siguiente Directivas Europeas:**

*To which this declaration relates is in conformity with the following European Directives:*

*An auf das diese Erklärung verweist, sie mit den Europäischen Richtlinien im Einklang stehen folgend:*

*À auxquels se réfère cette déclaration, ils sont conformes aux Directives Européennes suivant :*

*A ai quali si riferisce questa dichiarazione, sono conformi alle direttive europee seguente:*

**EMC89/336/CE Directiva Ex 94/9/EC**

#### **Normas armonizadas y documentos de la normativa aplicados:**

*Applied harmonised standards and normative documents:*

*Angewandte harmonisierte Normen oder normativer Dokumente:*

*Normes harmonisées et documents normatifs appliqués*

*Norme armonizzate e documenti normativi applicati:*

EN61010-1 :2001    EN60079-0:2006  
EN61000-6-2 :2006    EN60079-11 :2007

#### **Certificado de examen CE de tipo**

*EC-type examination certificat*

*EG-baumusterprübescheinigung*

*Attestation d'examen CE de type*

*Certificazione per esame di tipo CE*

#### **Marcado**

*Marking*

*Markierung*

*Inscription*

*Marcatura*

LOM 08ATEX2015 X



II 1GD Ex ia IIC T4...T6 / Ex iaD 20 IP65 T85°C  
-20°C ≤ Ta ≤ +60°C

**Fabricado en:** KOBOLD MESURA SLU C/ Guifré, 655 08918 BADALONA (Spain)

*Made in:*

*Hergestellt in:*

*Fabriqué dans:*

*Fabbricato in:*

**Organismo notificado:** LOM 0163

*Notified organism*

*Mitgeteilter Organismus*

*Organization annoncée*

*Organismo informato*

**Número notificación :** LOM 05ATEX9070

*Number notification*

*Zahlmitteilung*

*Nombre notification*

*Notifica di numero*

Badalona 25 Febrero 2008  
DT0312 25/02/2008

Gerente

Antonio Sánchez Tomás

# 14. ATEX-Certificates




LABORATORIO OFICIAL J. M. MADARIAGA



## (1) EC-TYPE EXAMINATION CERTIFICATE

- (2) Equipment or protective system intended for use in potentially explosive atmospheres  
Directive 94/9/EC
- (3) EC-Type Examination Certificate nr **LOM 08ATEX2015 X**
- (4) Equipment or protection system      Temperature sensors  
Types TWL... and TTL...
- (5) Applicant      KOBOLD MESURA, S.L.U.
- (6) Address      Grifé, 655  
08918- Badalona (BARCELONA)  
ESPAÑA
- (7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) Laboratorio Oficial J.M. Madariaga (LOM), notified body number 0163 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.  
The examination and test results are recorded in confidential report nr. **LOM 07.165 PP**
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- |           |                        |                         |
|-----------|------------------------|-------------------------|
| Standards | <b>EN 60079-0:2006</b> | <b>EN60079- 11:2007</b> |
|-----------|------------------------|-------------------------|
- (10) If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-Type Examination Certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of the Directive apply to the manufacture and supply of this equipment or protective system. These are not covered by this certificate.
- (12) The marking of the equipment or protective system shall include the following:

 II 1 GD      Ex ia IIC T4..T6  
Ex iaD 20 IP65 T85 °C  
-20 °C ≤ Ta ≤ +60 °C

Madrid, 28<sup>th</sup> March 2008



Carlos Fernández Ramón  
DIRECTOR OF THE LABORATORY

Angel Vega Remesal  
Head of the ATEX

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ENSAYOS E INVESTIGACIONES DE MATERIALES Y EQUIPOS PARA ATMÓSFERAS EXPLOSIVAS Y MINERÍA  
( Real Decreto 334/1992 de 3 de Abril - BOE 1992-04-29)



✉ Alenza, 1 - 28003 MADRID • ☎ (34) 91 4421366 / 91 3367009 • 📠 (34) 91 4419933 • 📧 lom@lom.upm.es



# LABORATORIO OFICIAL J. M. MADARIAGA

(A1) SCHEDULE

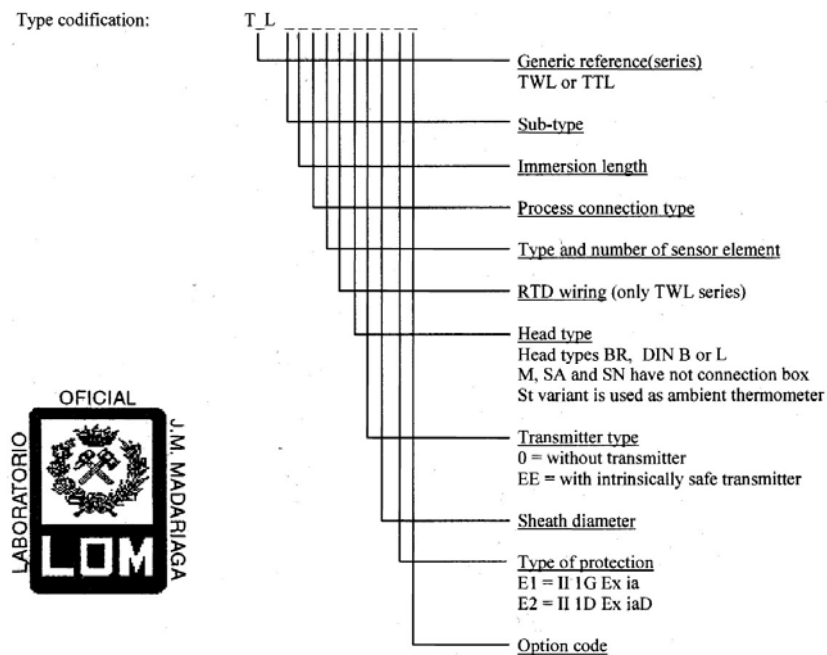
(A2) EC-Type Examination Certificate: **LOM 08ATEX2015 X**

(A3) Description of equipment or protective system

Temperature sensors based on thermocouple (TTL series) o thermoresistor RTD (TWL series) having a head in three formats and a sheath that contains the sensor element. Also is included an ambient thermometer (ST head) that uses a metallic or plastic enclosure.

Sensors can be connected either directly or indirectly by means of intrinsically safe transmitters placed into the head. Permitted intrinsically safety transmitters are listed in manufactured descriptive documents.

Type codification:



Temperature class

TWL series without transmitter:

T4

TWL series without transmitter:

T6

T\_L series with transmitter:

T4 to T6 temperature class is the same that the used intrinsically safe transmitter modules

Specific parameters of the type of protection

TWL series without transmitter:

Pi: 1,2 W

T\_L series with transmitter:

Input specific parameters are the same that the used intrinsically safe transmitter modules

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ROPCEP 07.3/2



# LABORATORIO OFICIAL J. M. MADARIAGA

(A1) **SCHEDULE**

(A2) EC-Type Examination Certificate: **LOM 08ATEX2015 X**

(A4) Test report nr **LOM 07.165 PP**

(A5) Special conditions for safe use

- It must be taken in account the electrostatic hazard when As and BR3 plastic head boxes are used
- Variants without head box (sub-types M, Sa and SN) must be protected with an enclosure having at least a degree of protection IP20
- The marked temperature class or surface temperature only refers to the equipment operating t ambient temperature. It must be determined the real process temperature in the installation. Head temperature must not be greater than 60 °C.

(A6) Individual tests

None

(A7) Essential Health and Safety Requirements

Explosion safe requirements are covered by application of the standards indicated in page 1/3 of this certificate.

(A8) Descriptive Documents

		Rev.	Date
- Technical description nr.:	DT0315	-	2008-02-25
- Technical manuals nr:	CT3225	-	2008-02-25
	CT3226	-	2008-02-25
- Drawings nr.:	PM0507R0	0	2007-10-23
	PM0508R0	0	2007-10-23
	PM0509R0	0	2007-10-23
	PM0510R0	0	2007-10-23
	PM0511R0	0	2007-10-23
	PM0512R0	0	2007-10-23
	PM0529R0	0	2007-10-23
	PM0530R0	0	2007-10-23
	PM0531R0	0	2007-10-23
	PM0532R0	0	2007-10-23
	PM0533R0	0	2007-10-23
	PM0534R0	0	2007-10-23
	PM0535R0	0	2007-10-23
	PM0536R0	0	2007-10-23
	PM0537R0	0	2007-10-23
	PM0538R0	0	2007-10-23
	PM0539R0	0	2007-10-23
	PM0540R0	0	2007-10-23
	PM0541R0	0	2007-10-23
	PM0542R0	0	2007-10-23
	DT0340	-	2008-01-02
	DT0342	-	2008-01-02
	DT0316	-	2008-01-02



ROPCEP 07.3/2

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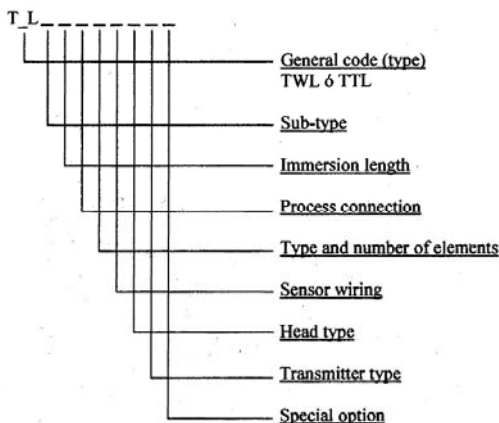


LABORATORIO OFICIAL J. M. MADARIAGA



(1) **EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT**

- (2) Equipment or protective system intended for use in potentially explosive atmospheres  
Directive 94/9/EC
- (3) Supplement nr. 1 to EC-Type Examination Certificate number **LOM 08ATEX2015 X**
- (4) Equipment or protection system  
Temperature sensors  
Types TWL..., TTL...
- (5) Applicant  
KOBOLD MESURA, S.L.U.
- (6) Address  
Guifré, 665  
08918 BADALONA(BARCELONA)  
SPAIN
- (7) Test report nr.: **LOM 09.495 FP**
- (8) Variations included in this certificate  
To update de type codification:



- (9) Changes in marking  
Only those that correspond to the new type codification



This supplement must be an inseparable part together with the base **LOM 08ATEX2015 X**

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RCPCER 07.4/2  
Rev. 0

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**LABORATORIO OFICIAL J. M. MADARIAGA**


(3) Supplement nr. 1 to EC-Type Examination Certificate number **LOM 08ATEX2015 X**

(10) Descriptive documents

- Description nr.: DT0396

Rev.	Date
-	2009-07-14

Madrid, 2009-10-21

  
 Carlos Fernández Ramón  
 DIRECTOR OF THE LABORATORY

  
 Angel Vega Remesal  
 Head of ATEX area



RCP CER 07.4/2  
 Rev. 0

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[www.kobold.com](http://www.kobold.com)

**Technical data**  
**Subject to change without prior notice**

