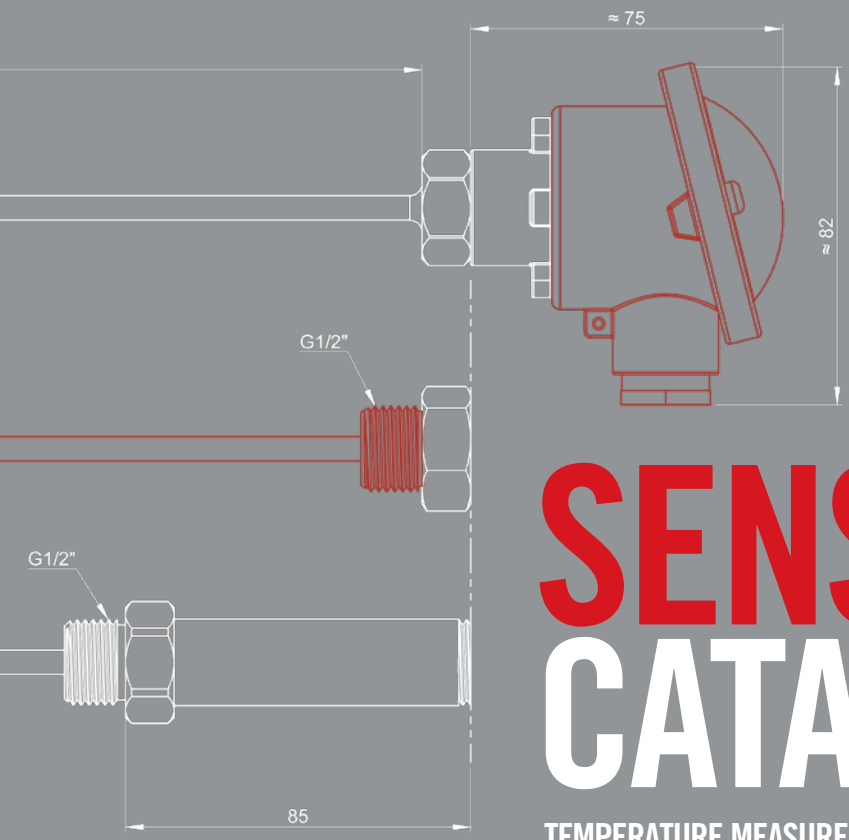
CHAUVIN ARNOUX
PYROCONTROLE

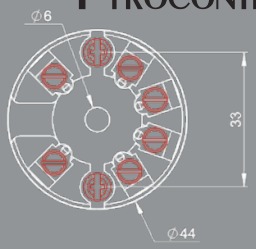
SENSORS CATALOGUE

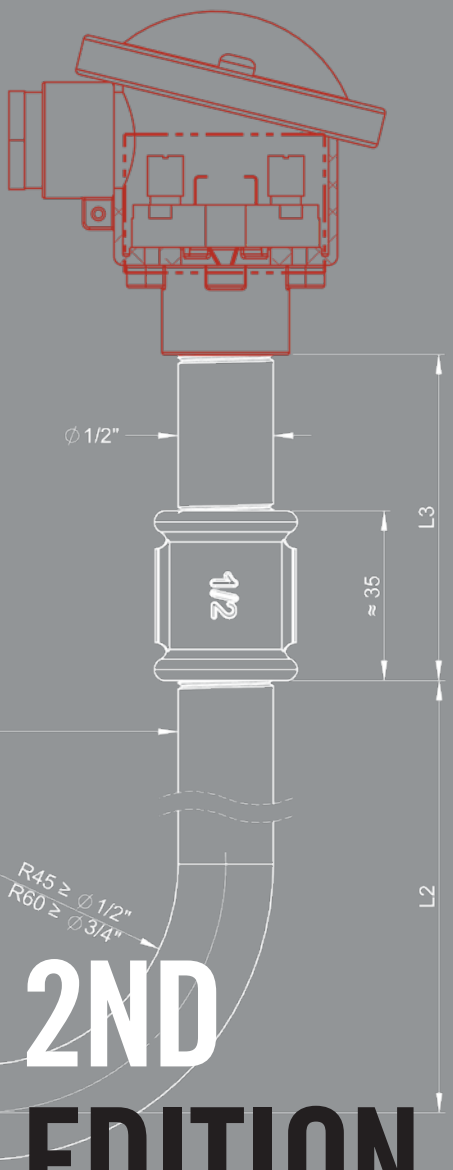
TEMPERATURE MEASUREMENT IN INDUSTRIAL ENVIRONMENTS

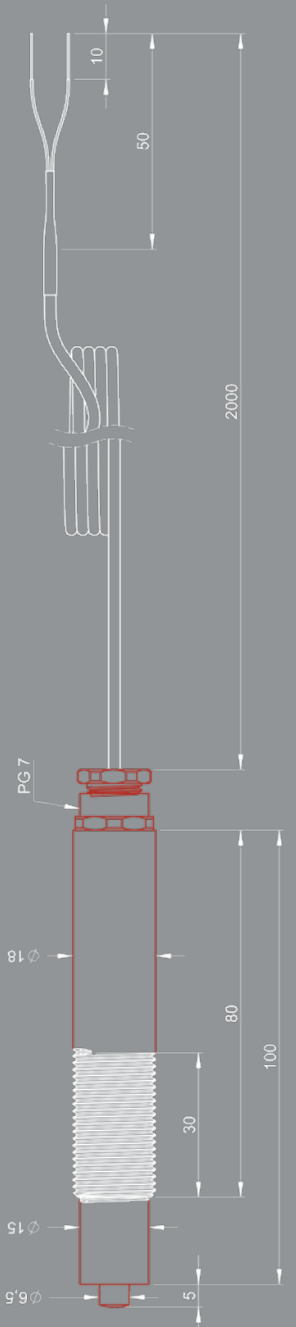
2ND EDITION

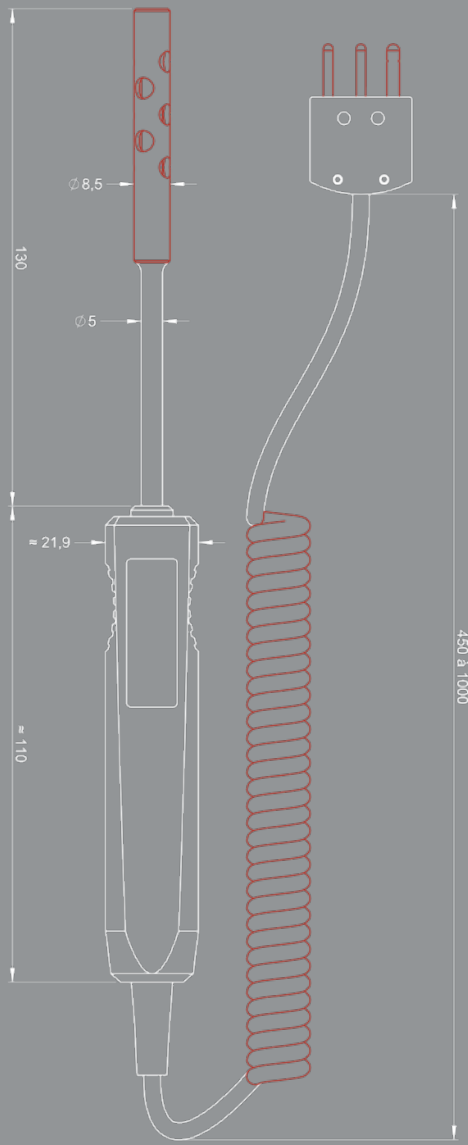
Measure up

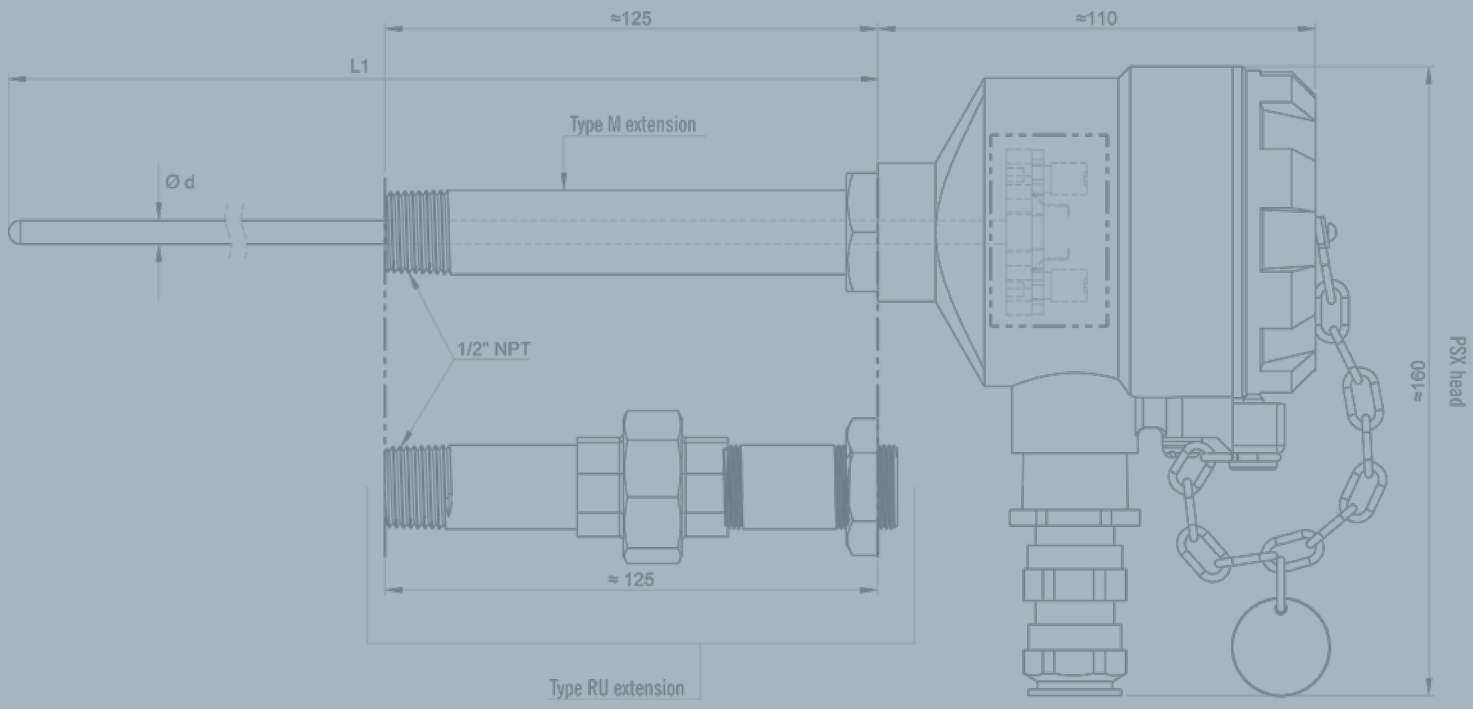


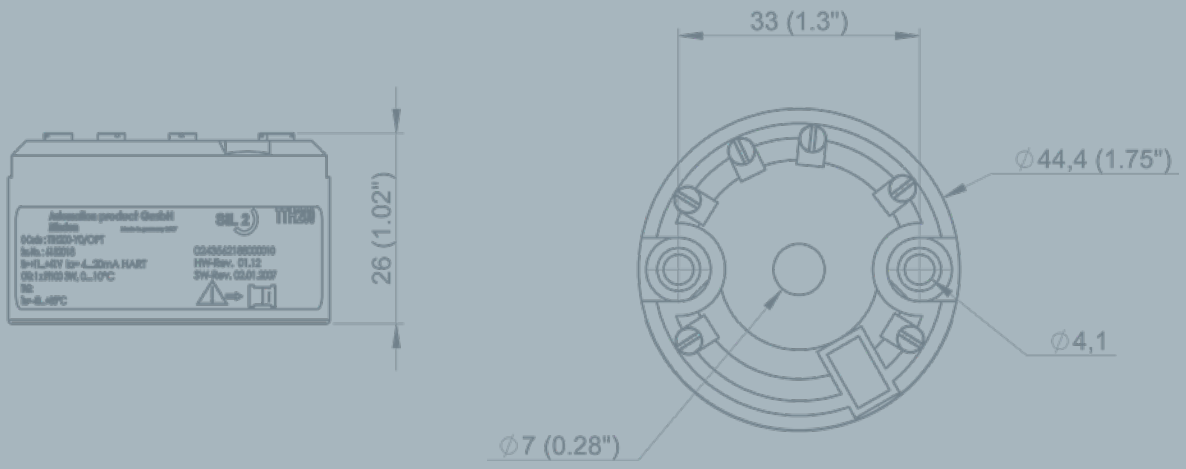




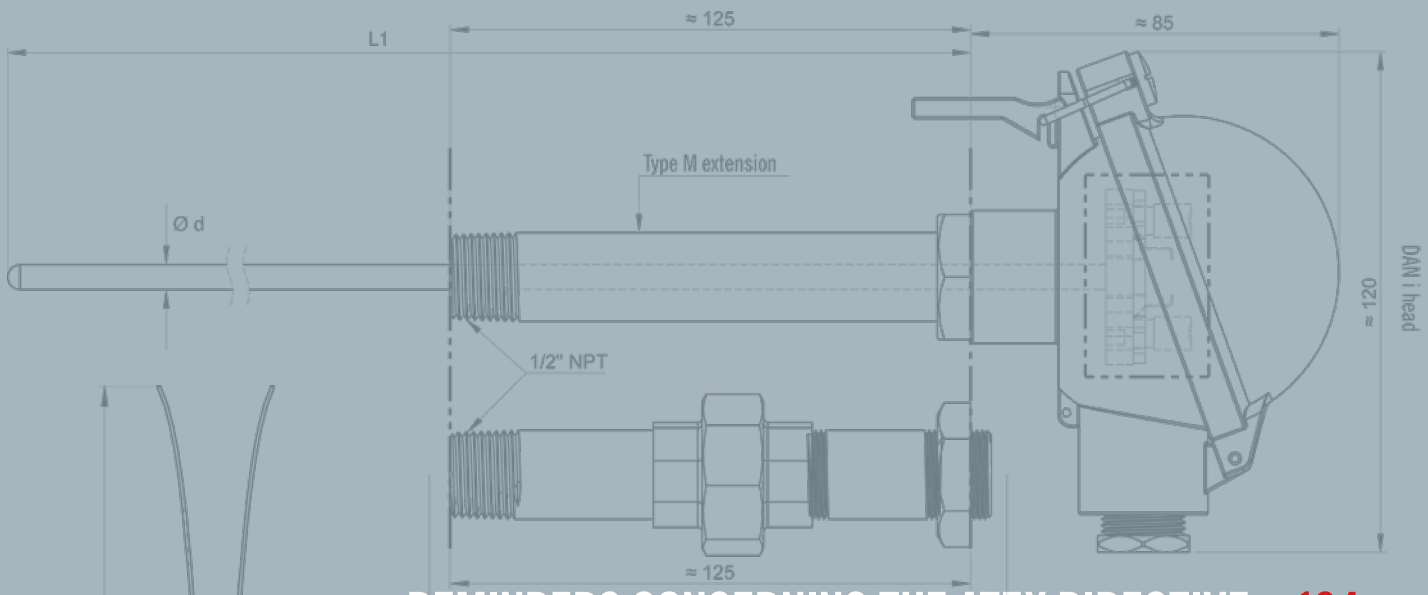


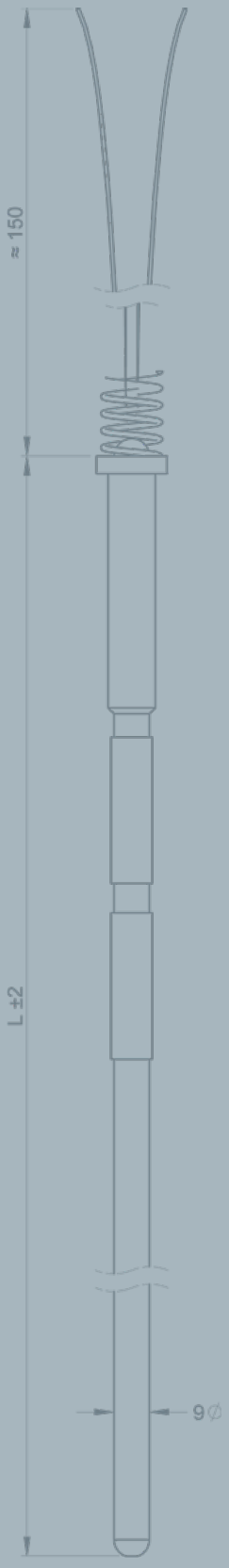






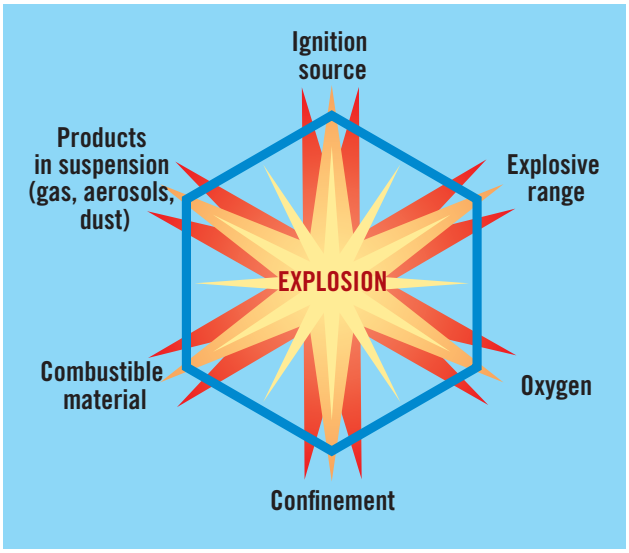
SENSORS FOR EXPLOSIVE ATMOSPHERES





THE ATEX 2014/34/EU DIRECTIVE

An explosive atmosphere (**ATEX**) is a mixture, in atmospheric conditions, of inflammable substances in gas, vapour or dust form with air, in which, after inflammation, combustion propagates to the whole of the unburned mixture.



Directive 2014/34/EU, which is a revision of directive 94/9/CE, was published in the official bulletin of the European Union on 29th March 2014. It has been mandatory since 20th April 2016. The texts for transposition into French law have been published:

- Decree no. 2015-799 of 1st July 2015 concerning hazardous products and equipment
- Decree of 1st July 2015 concerning organizations authorized to perform conformity assessments and in-service monitoring operations on hazardous products and equipment

Directive 2014/34/EU applies equally to electrical and mechanical equipment. It explicitly covers the instruments and protective systems used in an ATEX atmosphere, as well as the safety, control and adjustment systems, even if they are not in contact with an ATEX atmosphere, as long as they are necessary for or contribute to operation on instruments and protective systems.

Temperature measurements in explosive zones are covered by this directive.

1 - GLOSSARY

Explosive atmosphere: Defined as a mixture of inflammable substances in gas, vapour, mist or dust form…

- With air;
- In atmospheric conditions;
- In which, after inflammation, combustion propagates to the whole of the unburned mixture.

Explosible atmosphere: Atmosphere liable to become explosive.

Ignition source: Inherent to the equipment concerned, a specific feature whose activation constitutes a risk of ignition. A distinction must be made between these two concepts during risk analysis. The possible ignition sources are listed in EN 1127-1. On a site transforming combustible materials, and in the presence of oxygen in the ambient air, the ignition source is the only element which can easily be eliminated to prevent an explosion. 13 ignition sources are identified in EN 1127-1.

Normal operation: Situation which exists when the equipment, protective systems and components fulfil their planned function in the context of their design parameters. Small leaks may be part of normal operation. Failures requiring repairs or shutdown are not considered to be part of normal operation.

Dysfunction: Situation which exists when the equipment, protective systems and components do not fulfil their planned function and may generate an ignition source. A foreseeable dysfunction is one which we know through experience may occur during the product's life span. A rare dysfunction only occurs exceptionally.

2 - DETERMINATION OF THE ZONES

The site manager is responsible for classification of the zones in which an **ATEX** atmosphere may form. This classification depends on the probability of **ATEX** atmosphere formation and determines the category of equipment installed there. The equipment manufacturer is not responsible for imposing the right equipment category, but it has a duty to inform its customers of the applicable regulations. The zones are defined according to the type and the probability of it encountering such an atmosphere. There are 3 levels of classification for **ATEX zones**, depending on the clearance for the source of combustible material and the type of ventilation in place. A distinction is made between zones containing gas or vapour and zones where dust is present.

GASES / VAPOURS / MISTS	
Zone 0	Explosive atmosphere present continuously or for long periods in normal operation. **1000 hours/year = constant, long-term or frequent hazard**
Zone 1	Explosive atmosphere present occasionally in normal operation **Between 10 and 100 hours/year or more = occasional hazard**
Zone 2	Explosive atmosphere present accidentally, in the event of dysfunction or for short periods **Less than 10 hours/year = rare or short-term hazard**
DUSTS	
Zone 20	Explosive atmosphere present continuously or for long periods in normal operation. **1000 hours/year = constant, long-term or frequent hazard**
Zone 21	Explosive atmosphere present occasionally in normal operation **Between 10 and 100 hours/year or more = occasional hazard**
Zone 22	Explosive atmosphere present accidentally, in the event of dysfunction or for short periods **Less than 10 hours/year = rare or short-term hazard**

3 - GROUPS OF GASES AND DUSTS

En the ATEX framework, a reference gas corresponds to each group of gases. These groups are based on their ignition characteristics.

GROUP	REFERENCE GAS	GAS DANGER LEVEL
IIA	Propane	++
IIB	Ethylene	+++
IIC (the most dangerous)	Hydrogen/Acetylene	++++

Dusts are also classified in 3 groups of explosible gases.

GROUP	TYPE OF DUST	DUST DANGER LEVEL
IIIA	Combustible fibres	+
IIIB	Non-conductive dust	++
IIC (the most dangerous)	Conductive dust	+++

4 - DEFINITION OF THE EQUIPMENT CATEGORIES

GROUPS I AND II

The equipment and protective systems are divided into two groups:

- **Group I**: equipment intended for use in the underground and surface parts of mines which may be endangered by firedamp and/or inflammable dust.
- **Group II:** equipment intended for use in surface industries which may be endangered by explosible atmospheres.

We do not propose any products classified in Group I. We will therefore only deal with equipment in Group II.

CATEGORIES IN GROUP II

- **Category 1:** Equipment in this category is characterized by at least two protective systems against explosion risks, operating in such a way that, if one of the protective systems fails, at least one independent secondary system ensures sufficient protection. This equipment is designed to operate in zones 0 or 20.
- **Category 2:** The anti-explosion protective systems for equipment in this category must operate in a way that ensures a sufficient level of protection against explosion risks even in the event of foreseeable dysfunctions. This equipment is designed to operate in zones 1 or 21.
- **Category 3:** The design of the equipment in this category must ensure a sufficient level of anti-explosion protection in normal operation. This equipment is designed to operate in zones 2 or 22.

The equipment categories in Group II should be used as follows:

G : Gas

D : Dust

ZONE	EQUIPMENT CATEGORY
0	1G, (1)G
1	2G, (2)G (or 1G, (1)G)
2	3G, (3)G (or 1G and 2G, (1)G and (2)G)
20	1D, (1)D
21	2D, (2)D (or 1D, (1)D)
22	3D, (3)D (or 1D and 2D, (1)D and (2)D)

- Use in the hazardous zone: Category 1G
- Installation in safe zone. Transmits or receives a signal from to the hazardous zone: Category (1)G

If you wish to use equipment in zone 0, its category must be 1G. Only this category is authorized in this zone.

For zone 2, equipment in Category 3G is authorized, along with equipment in Categories 1G and 2G: what can do more can also do less.

Equipment in the xGD categories can be used in explosible Gas and Dust atmospheres.

5 - TEMPERATURE CLASSES

Below, we present the different **ATEX temperature classes**, applicable to **ATEX** atmospheres, with limitation rules which differ according to the temperatures. These temperature ranges (T1 to T6) can then be used to classify the equipment intended for installation or use in **ATEX** zones.

The self-ignition temperature indicated for a combustible product (gas, vapour, dust) is the temperature at which the mixture with air **spontaneously ignites.** There is no need to provide a specific ignition source (flame, spark, electric arc, etc.) because the temperature is sufficient to set fire to the mixture.
Manufacturers commit to a temperature for their equipment by means of **the temperature classes**. If the equipment is in temperature class T2, the manufacturer guarantees that the surface temperature of its equipment will never exceed 300°C in the conditions indicated.

The maximum admissible surface temperature must always be lower than the self-ignition point.

TEMPERATURE CLASSES

Maximum admissible surface temperature	Equipment marking
450°C	T1
300°C	T2
200°C	T3
135°C	T4
100°C	T5
85°C	T6

TABLE SUMMARIZING THE CORRESPONDENCE BETWEEN GAS GROUPS AND TEMPERATURE CLASSES:

CLASSIFICATION OF GASES AND VAPOURS IN GAS GROUPS AND TEMPERATURE CLASSES					
	T1	T2	T3	T4	T6
I	Methane				
II A	Acetone, ethane, ethyl acetate, ammoniac, benzol, acetic acid, carbon monoxide, methanol, propane, toluene	Ethyl alcohol, i-amyl acetate, n-butane, n-butyl alcohol	Gasoline, diesel oil, kerosene, domestic fuel oil, n-hexane	Acetic acid, ether	
II B	City gas	Ethylene			
II C	Hydrogen	Acetylene			Carbon disulphide

TEMPERATURE LIMITATION RULES

For dusts: the temperature is part of the Ex Dust marking.

- **Dust clouds:** If a dust cloud occurs, the maximum surface temperature of the equipment must not exceed 2/3 of the ignition temperature under any circumstances: Max. temperature (C°) = 2/3 of the ignition temperature of a dust cloud (Tci)
- **Dust layers:** The temperature must be limited if there is a layer of dust present less than 5 mm thick: Max. temperature = 5 mm – 75 k (75 k is the safety coefficient equal to 75°C)

EXAMPLES OF EXPLOSIBLE DUSTS

Acetylsalicylic acid, ascorbic acid, aluminium, starch (wheat), asphalt, wheat, cocoa, cellulose, flour / bread wheat, powdered milk, malt, paracetamol, polystyrene, soap, soya (flour), sugar, etc.

NOTES

- On DUST-certified ATEX products, the maximum surface temperature is indicated in plain language in the Dust marking on the label. This should not be confused with the temperature class (T1 to T6) which only concerns gases and vapours!
- Do not confuse the maximum surface temperature of dust-certified equipment (e.g. T85 °C) or the temperature class of gas-certified equipment (e.g. T4) with the admissible ambient temperature for the equipment. These are distinct characteristics.

		DUST CLOUD		5 MM DUST LAYER		
	IFA / INRS IDENTIFICATION NO.	SELF-IGNITION TEMPERATURE T1	EQUIPMENT SURFACE TEMPERATURE (2/3 OF T1)	SELF-IGNITION TEMPERATURE T2	EQUIPMENT SURFACE TEMPERATURE (T2-75°C)	MAX. SURFACE TEMPERATURE TO USE WHEN CHOOSING THE EQUIPMENT
Wheat in bulk	3466	490 °C	326 °C	290 °C	215 °C	215 °C
Cocoa powder	3469	590 °C	393 °C	250 °C	175 °C	175 °C
Wheat starch	3525	380 °C	253 °C	530 °C	455 °C	253 °C
Powdered milk	2046	460 °C	306 °C	330 °C	255 °C	255 °C
Soya flour	1264	430 °C	286 °C	420 °C	345 °C	286 °C
Sulphur	2535	240 °C	160 °C	250 °C	175 °C	160 °C
Charcoal	254	520 °C	346 °C	320 °C	245 °C	245 °C
Sugar, pectin	232	410 °C	273 °C	380 °C	305 °C	273 °C

Source: GESTIS-CARATEX databank

6 - PROTECTION MODES

There are several protection modes recognized by the IEC (International Electrotechnical Commission) and CENELEC (Comité Européen de Normalisation Electrotechnique / European Committee for Electrotechnical Standardization). Each protection mode is symbolized by lower-case letters which figure on the equipment's ATEX label. Several protection modes may be used on the same equipment. If so, the symbols concerned are indicated one after the other (e.g. Ex db eb op is q IIC T4 Gb).

The most widely-used protection modes for Pyrocontrole's temperature sensors are "ia" (intrinsic safety) and "d" (explosion-proof enclosure).

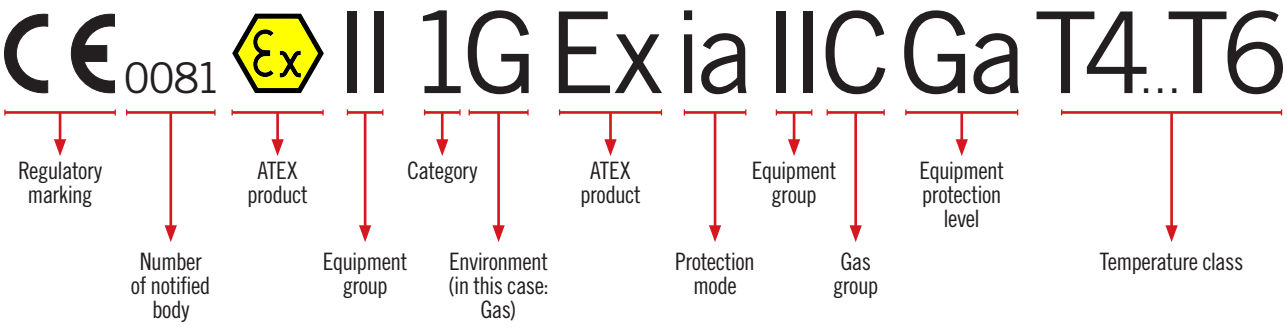
MAIN PROTECTION MODES FOR ELECTRICAL EQUIPMENT

TYPE	SYMBOL	PROTECTION MODE	GROUP	EQUIPMENT CATEGORY	EQUIPMENT PROTECTION LEVEL (EPL)	CENELEC / IEC STANDARDS	PRINCIPLE OF PROTECTION
d	da	explosion-proof enclosure	II	1 G	Ga	60079-1	Parts which may ignite an explosive atmosphere are enclosed in an enclosure which must withstand an internal explosion and prevent propagation of the explosion outside it.
	db			2 G	Gb		
	dc			3 G	Gc		
e	eb	increased safety	II	2 G	Gb	60079-7	Steps are taken from the design phase onwards to avoid any internal overheating and any electric arcs or sparks inside or on the external parts of electrical equipment.
	ec			2 D	Db		
i	ia	intrinsic safety	II	1 G	Ga	60079-11	Limitation of electrical energy and internal heating, thus preventing any ignition.
	ib			2 G	Gb		
	ic			3 G	Gc		
nA	nA	non-sparking	II	3 G	Gc	60079-15	Elimination of electric arcs, sparks and internal heating.
nC	nC	sealed unit	II	3 G	Gc	60079-15	Must contain any internal explosion or must prevent the explosive mixture from penetrating inside.
nR	nR	limited respiration	II	3 G	Ga	60079-15	Enclosure designed to limit penetration of the explosive mixture.
m	ma	encapsulated	II	1 G	Gb	60079-18	Exclusion of the explosive atmosphere by encapsulation of the parts in resin.
	mb			2 G	Gb		
	mc			3 G	Gc		
op is	op is	optical radiation with intrinsic safety	II	1 G	Ga	60079-28	Limitation of the light energy produced (e.g. by a LED), to avoid ignition of the surrounding explosive atmosphere.
	op is			2 G	Gb		
	op is			3 G	Gc		
t	ta	protection by enclosure	III	1 D	Da	60079-31	The construction of the equipment prevents any penetration inside by dust.
	tb			2 D	Db		
	tc			3 D	Dc		

7 - PROTECTION RATINGS

	IP INGRESS PROTECTION RATINGS (IEC 60529)	
	SOLID PARTICLE PROTECTION	LIQUID INGRESS PROTECTION
0	Not protection.	
1	Protected against solid bodies larger than 50 mm. Example: involuntary contact with hand.	Protection against dripping water (vertically-falling drops). Example: condensation.
2	Protected against solid bodies larger than 12.5 mm. Example: finger.	Protected against dripping water when the enclosure is tilted by up to (15°).
3	Protected against solid bodies larger than 2.5 mm. Example: tools, wires.	Protected against dripping water when the enclosure is tilted by up to 60 °.
4	Protected against solid bodies larger than 1 mm. Example: small tools, small wires.	Protected against water splashing from any direction.
5	Protected against dust. No harmful deposit.	Protected against water projected by a nozzle from any direction.
6	Protected against penetration by dust (dust-tight).	Protected against water projected in powerful jets similar to heavy sea spray.
7		Protected against the effects of immersion at depths between 0.15 and 1 m.
8		Protected against the effects of prolonged immersion under pressure.

8 - COMPLETE ATEX MARKING



DIRECTIVE NO. 2014/68/EU PRESSURE EQUIPMENT

The European Pressure Equipment Directive (PED) specifies the requirements concerning pressure equipment for the distribution of pressure equipment inside the European economic area. The version currently in force is directive 2014/68/EU of the European Parliament and Council of 15th May 2014 regarding harmonization of the legislation in the member states concerning the commercialization of pressure equipment.

After examining the datasheets from the Pressure Equipment Liaison Committee (CLAP) concerning Directive 2014/68/EU, PYROCONTROLE can inform you that:

- An isolated sensor does not meet the definition of a pressure accessory (Guideline number A-25 – CLAP number X029)
- If a sensor is considered to be a component incorporated in an item of equipment, the requirements must be checked but the marking is not applicable (Guideline number A-22 – CLAP number X027)
- The compliance assessment procedures and the essential safety requirements in PED 97/23/CE are applicable to the whole safety chain (Guideline number A-25 – CLAP number X029)

Consequently, CE marking cannot be placed on an isolated sensor (in the context of the Pressure Equipment Directive).

SIL (SAFETY INTEGRITY LEVEL) EN 61508 STANDARD

This standard covers the functional safety of electrical/electronic/programmable electronic systems related to safety. It concerns applications for which a failure of these systems has a significant effect on the safety of people, the environment and the installations.

THE EN 61508 STANDARD:

Some industrial processes may represent a hazard for people, the environment and the installations themselves.

The safety functions are intended to reduce these hazards. SIL involves reducing the risks to a tolerable level. The EN 61508 standard was published to describe both the type of risk assessment necessary and the development of safety functions for the sensors, the logical processing part and the actuators. These measures include “risk suppression” (systematic faults) and “risk control” (random faults). This basic standard, which is independent of the applications, describes the requirements regarding the safety functions of the components and systems, allowing the development of branch-specific standards (e.g. the EN 61511 standard: see below).

THE EN 61511 STANDARD:

This international standard can be used to define the requirements concerning the specifications, design, installation, operation and maintenance of an instrumented safety system, so that it can be implemented with total confidence, thus establishing and/or maintaining the safety of the process at an acceptable level. This standard was designed to constitute an implementation of IEC 61508 in process industries.

PYROCONTROLE proposes “SIL Capable” process sensors by using temperature transmitters compliant with the EN 61508 standard. The performance level may be: SIL 2 Capable or SIL 3 Capable, depending on the type of mounting.

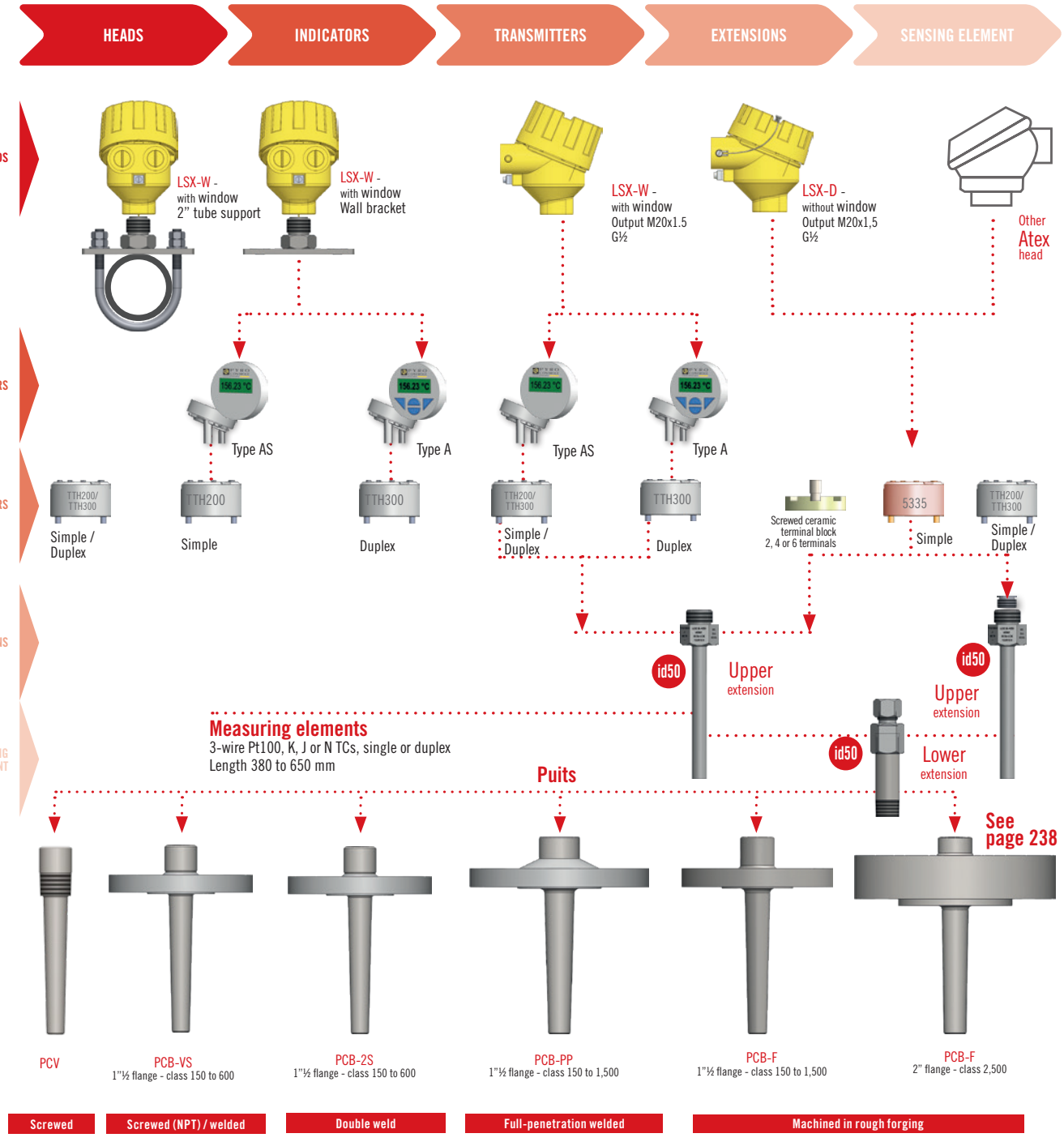
GAS ENVIRONMENT

ZONES 0, 1, 2 ATEX ia

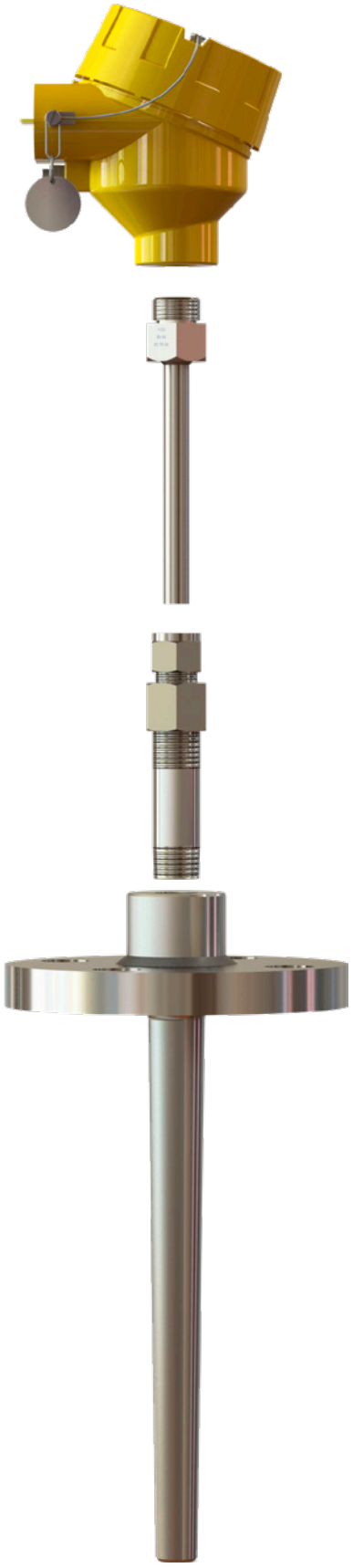
Complete, assembled sensor or totally configurable sensor: with CA PYROCONTROLE, you can choose.

Thanks to a wide choice of references, the PYROmodules id50 system allows you to define a tailored Atex ia/d sensor adapted to your in-line temperature measurement application.

ID50 MODULES I TAILORED CONSTRUCTION



Also, don't forget to protect your temperature sensors against excessive pressures, the velocity of the material and corrosion with our thermowells (see page 270)



For maintenance of your sensors, the id50 system enables you to replace the faulty part(s) only, whatever the sensor brand, at a competitive price.

GUARANTEED SAFETY

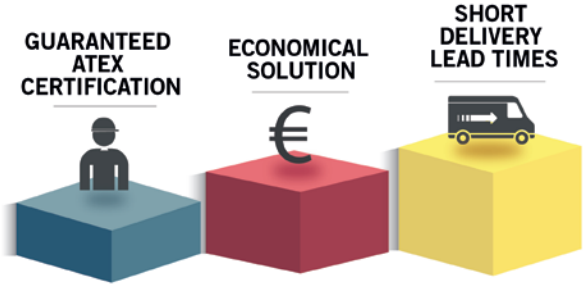
The id50 modules system offers numerous protective measures guaranteeing a high level of safety.

- Atex certification is maintained, even in the event of partial replacement of an existing sensor
- All the thermowells are the subject of calculation notes in accordance with the ASME PTC- 19.3 TW 2016 standard
- All the equipment is SIL-certified (for any assembly with a TTH200/ TTH300 transmitter)

ID50 MODULES SIMPLIFIED MAINTENANCE WORK

With the id50, modules, change only the faulty part(s) of your sensor and reduce your maintenance costs.

- This innovative modular system allows you to replace only the damaged parts
- Atex certification maintained
- id50 system adaptable to all types and makes of Atex sensors for temperature measurement



ID50

COMPLETE ASSEMBLED SENSOR

IP 54 | IEC 584-1 OR IEC60751 | Ex ia and Ex d | up to 1150°C

DESCRIPTION

id50 sensor delivered complete and assembled. This sensor comprises the components detailed in the pages which follow. The section presenting the thermowells begins on page 238.

SPECIFICATIONS

See following pages.

Cable gland to be ordered if needed.

See page 192 for an overview of the Pyromodules id50 solution.

CA PYROCONTROLE enables you to check the appropriate element using a test rod, code: L860514-001.

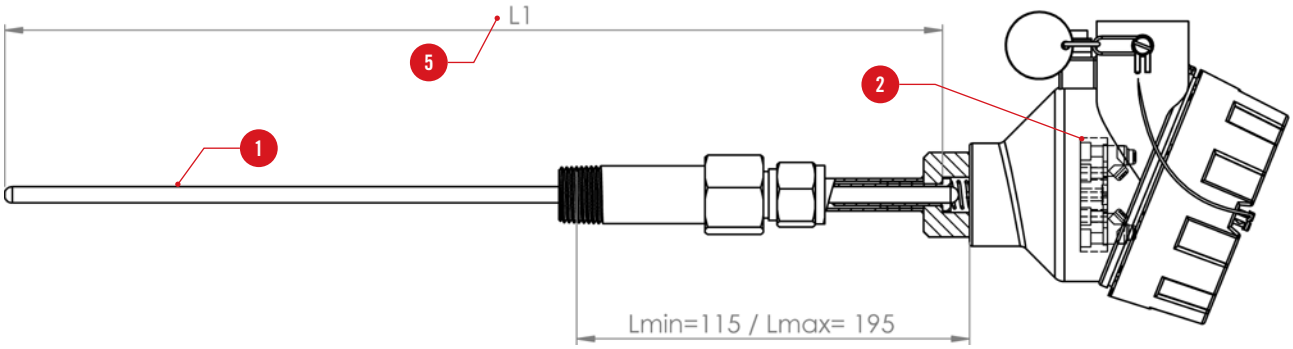
DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	ELEMENT	TERMINAL STRIP TRANSMITTER	DISPLAY	ATEX	LENGTH L1 (mm)	TRANSMITTER SCALE	CABLE GLAND
ID50	1TCK	B	AS	IA	950-1,000	0/250	PE1
Reference in table and diagram	1	2	3	4	5		
Possible choice	1Pt100 2Pt100 1TCK 2TCK 1TCJ 2TCJ 1TCN 2TCN	Ceramic terminal strip: B TTH200 T200 TTH300: T300 LC5335: 5335	Without: XS AS: AS A: AA	d : AD ia : IA	200 - 250 -300 350 - 400 -450 500 - 550 -600 650 - 700 -750 800 - 850 - 900 950 - 1000		Atex "d" for non-armoured cable: PE1 Atex "d" for armoured cable: PE2 Atex "ia": PE3 Cap: CAP

DIAGRAM (MM)



DISPLAY 3

Indicator type	Transmitter type	
	TTH200	TTH300
Type AS: without keypad	•	•
Type A: with keypad		•

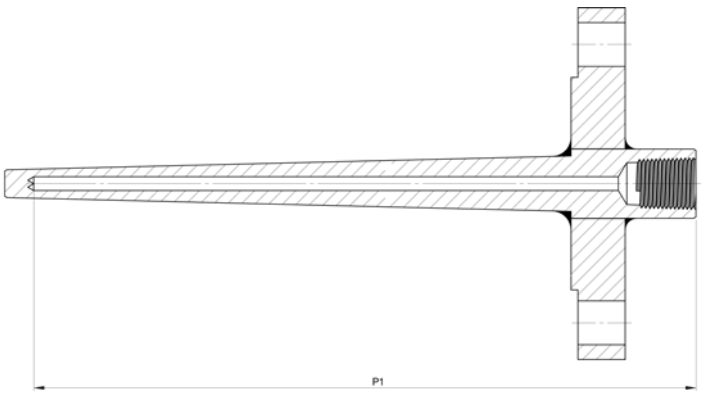
ATEX PROTECTION MODES 4

ATEX zone	ia protection mode	d protection mode
0	•	
1	•	•
2	•	•

LENGTH L1 5

The length L1 should be determined according to the depth of the thermowell (P1), as shown in the table below

Sensing element length	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
P1 min. (mm)	20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
P1 max. (mm)	85	135	185	235	285	335	385	435	485	535	585	635	685	735	785	835	885



LSX-D / LSX-W

HEADS FOR ID50

IP 54

WITH OR WITHOUT WINDOW

INTRINSIC SAFETY

DESCRIPTION

ATEX heads for the id50 system. The PYROmodules id50 solution gives you the choice between an LSX-W head with a window and an LSX-D head without a window

SPECIFICATIONS

Model	LSX-D	LSX-W
ATEX	Ex II 1 GD / Ex ia IIC T6	
Material	Epoxy-coated aluminium alloy	
Colour	Yellow	
Cable input (cable gland, not supplied)	1 input M20x1.5 with plastic cover	1 input M20x1.5 with plastic cover 1 input M20x1.5 with cap
Window for mounting a display		•
External earth terminal	•	•
Cover chain	•	
Accessory supplied	Sleeved base for locking the internal element, reference L810437-004	

DESIGN YOUR SENSOR ID50

HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

TO ORDER

Photo	Head	ATEX	Reference
	LSX-D: without window	ia	L810439-001
	LSX-W: with window	ia	L810523-001
	LSX-W with strap for 2" tube	ia	L810499-001
	LSX-W with wall bracket	ia	L810520-001

MOUNTING

AS - A

INDICATORS FOR ID50

WITH OR WITHOUT KEYPAD

INTRINSIC SAFETY

SELF-POWERED

DESCRIPTION

ATEX ia indicators for the id50 system.
LCD indicators for mounting on TTH transmitters
Type AS: without keypad
Type A: with keypad

SPECIFICATIONS

Model	Type AS	Type A
Reference	L810503-000	L810502-000
Properties	Graphical LCD indicator controlled by transmitter without configuration function	Graphical LCD indicator controlled by transmitter with configuration function (keypad)
Compatibility	TTH200 / TTH300	TTH300
Display	Polarity signs, 4 digits, 2 digits after decimal point	Height of characters depending on the mode, polarity signs, 4 digits, 2 digits after the decimal point, graphical bar indicator.
Display possibilities	Sensor process value Bar chart Output %	Sensor 1 process value Sensor 2 process value Ambient temp./ electronics temp. Output value Output % Bar chart Output % Troubleshooting display information for transmitter and sensor status
Ambient operating temperature	-20 to +70°C	

DESIGN YOUR SENSOR ID50

HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DISPLAY

Type A LCD indicator

Type AS LCD indicator

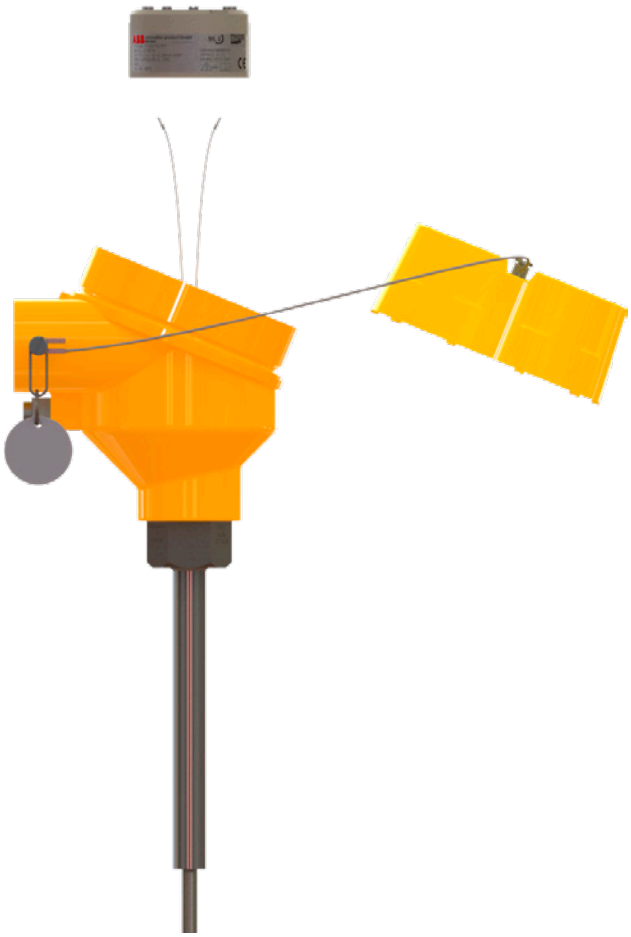
1. Quit / Cancel
2. Scroll back
3. Scroll forward
4. Confirm

TO ORDER

Indicator type	Transmitter type		Atex	Reference
	TTH200	TTH300		
Type AS: without keypad	•	•	ia	L810502-100
Type A: with keypad		•	ia	L810503-100

MOUNTING

The type A indicator can only be mounted on a TTH300 transmitter.
The type AS indicator can be mounted on a TTH200 or TTH300 transmitter.
It can be configured using the keypad on the indicator.
The indicator is fixed on a tilted base.
The indicator+transmitter assembly can only be mounted in LSX-W heads.



5335 TTH200/300

TRANSMITTERS FOR ID50

INSULATED 4-20 mA OUTPUT | TTH300 DUPLEX VERSION | TTH200 TTH300 IP20 / IP00 | 5335 IP68 / IP00 | UNIVERSAL INPUT | HART

DESCRIPTION

Programmable transmitters for conversion into a 4-20 mA analogue signal

TRANSMITTER SPECIFICATIONS

Model		TTH200	TTH300	5335
Reference		LTTH200-100	LTTH300-100	LC5335B-100
ATEX		Ex II 1 G Eex ia IIC T6 Ex II 2(1)G Eex [ia] ib IIC T6 Ex II 2 G (1D) Ex [iaD] ib IIC T6	Ex II 1 G Ex ia IIC T6 Ga Ex II 2(1)G Ex [ia] ib IIC T6 Gb (Ga) Ex II 2 G (1D) Ex [iaD] ib IIC T6 Gb (Da)	Ex II 1 G Ex ia IIC T6 or T4 Ga
Compatible protection mode	Ex ia	•	•	•
Ambient operating temperature		-50 to +44°C for T6 / -40 to +60°C for T4		-40 to +60°C for T6 -40 to +85°C for T4
HART protocol		HART 5	HART 5 or HART 7 (choice by switch) Delivered with HART 5 as standard.	HART 5
Input		3 or 4-wire Pt100 / J, K, N or T TC		
Cold junction compensation (if used as TC input)		•	•	•
Number of sensors		1	2	1
Output		4-20mA		
Sensor breakage		Programmable 3.5…23mA		
Power supply		11…30Vdc		8.0…30Vdc
Galvanic insulation		3.5 kVdc (2,5 kVac), 60s		1.5 kVac / 50Vac
Protection rating (as per EN60529) (head/ terminals)		IP20 / IP00		IP68 / IP00
Dimensions		Diam 44.4mm x h 24.7mm		Diam 44.0mm x h 20.2mm

TERMINAL STRIP SPECIFICATIONS

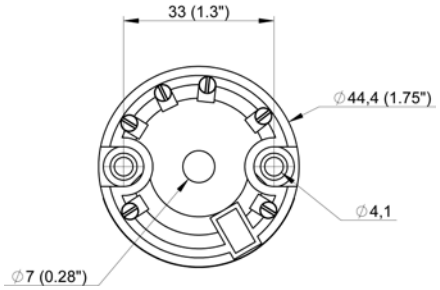
References	L015078-000	L015079-000	L015080-000
Number of terminals	2	4	6
Connection	1 x TC	2 x TC or 1 x 3-wire Pt100	2 x 3-wire Pt100

DESIGN YOUR SENSOR ID50

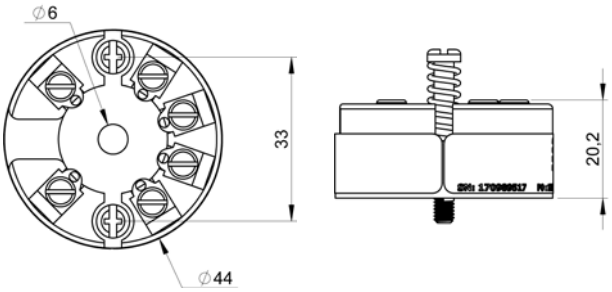
HEAD | INDICATOR | **TRANSMITTER** | EXTENSIONS | SENSING ELEMENT

CONNECTIONS

TTH200/300 transmitter

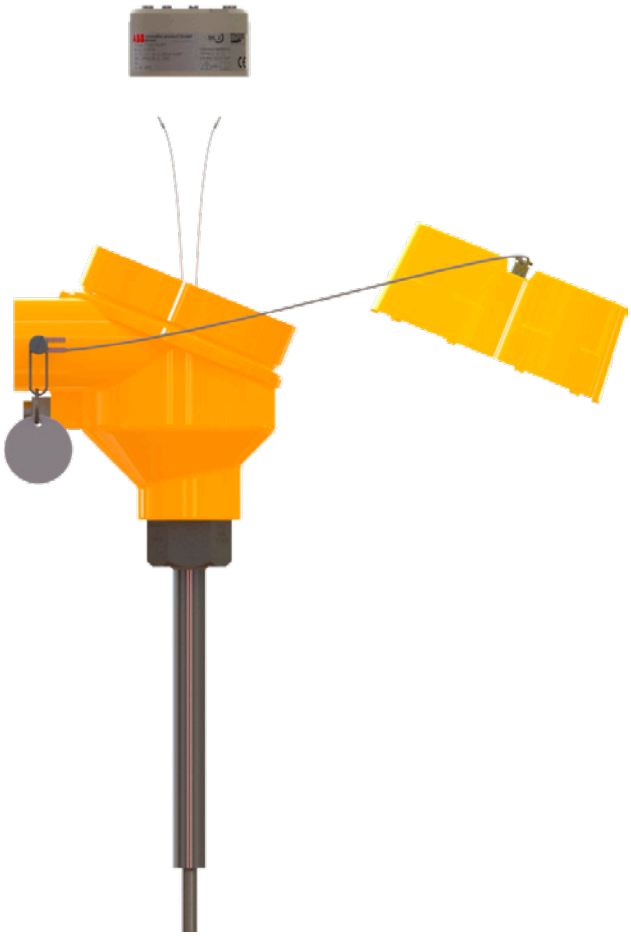


5335 transmitter



MOUNTING

Insert the wires of the ID50 measuring element inside the transmitter and screw it inside the connecting head.
For the intrinsic-safety loop calculation, the electrical parameters of the transmitters are indicated in the ia/A safety instructions.
Set up the cable of the ID50 measuring element as shown in the wiring diagrams.



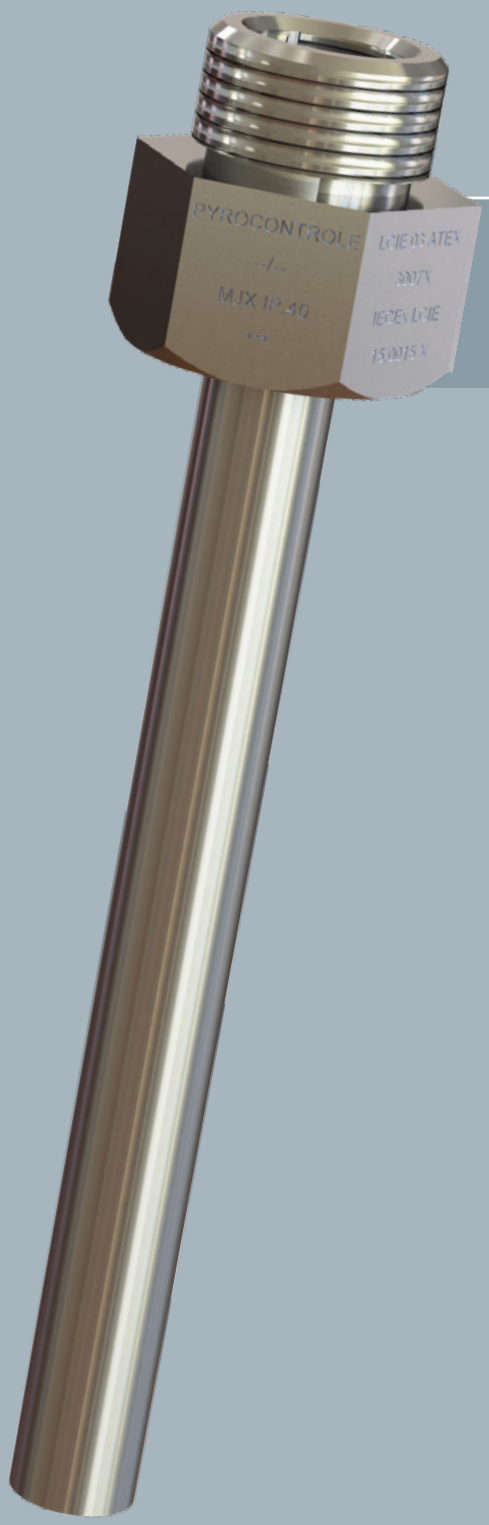
TO ORDER

Transmitter		ATEX	Reference
	TTH200	ia	LTTH200-100
	TTH300	ia	LTTH300-100
	5335B	ia	LC5335B-100

Ceramic terminal strip			ATEX	Reference
	2 terminals	Compatibility	ia	L015078-000
	4 terminals		ia	L015079-000
	6 terminals		ia	L015080-000

ID50 SENSOR

EXTENSIONS FOR ID50



ADJUSTABLE FROM 120 TO 200 MM

STAINLESS STEEL 316L

DESCRIPTION

The extension provides the link between the head and the thermowell. It comprises two parts, upper and lower, and can be adjusted without cutting according to the length of the measuring element and the depth of the thermowell.

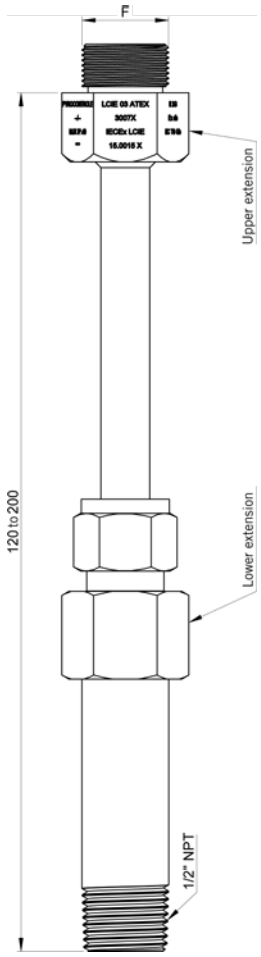
SPECIFICATIONS

Part	Upper	Lower
ATEX	Ex II 2G - Ex db IIC T6 Gb	N/A
Material	316L	
Mounting	On head	On thermowell
Threading	As per table opposite	½ NPT
Accessories	Screw for locking the measuring element for any head other than the LSX model. Thread lock.	

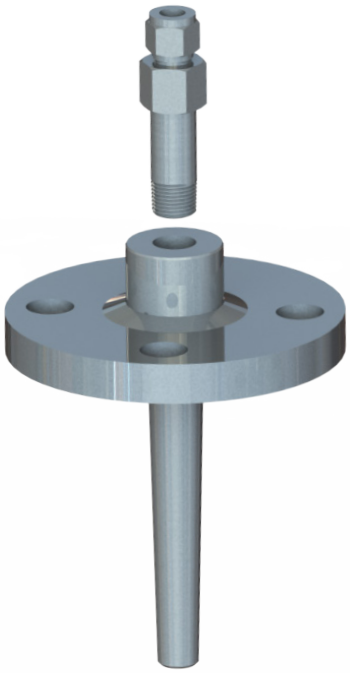
DESIGN YOUR SENSOR ID50

HEAD | INDICATOR | TRANSMITTER | **EXTENSIONS** | SENSING ELEMENT

DIAGRAM (MM)



MOUNTING



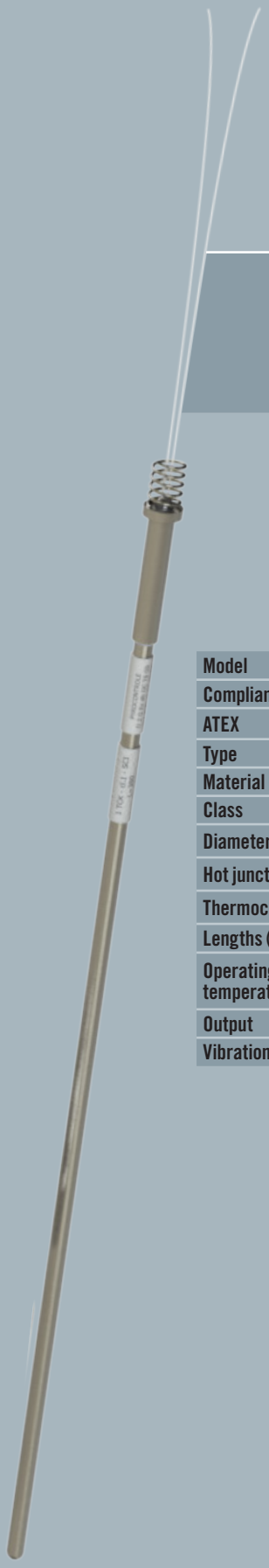
Set the upper extension in place on the thermowell.

Screw the lower extension on the thermowell with a size-27 open-end wrench by making use of the hexagonal shape of the leak-tight fitting.`

Tighten until the lower extension is locked.

TO ORDER

Assembly		F	Reference
Upper extension	For LSX head (locking screw not included)	G½	L810437-001
	for other heads (screw included)	G½	L810437-G12
		M24	L810437-M24
		M20	L810437-M20
		½ NPT	L810437-N12
Lower extension			L810437-000



IDG50

THERMOCOUPLE FOR ID50

INTRINSIC SAFETY | CLASS 1 | SINGLE OR DUPLEX | IEC 584-1 | up to 1100°C

DESCRIPTION

Thermocouple measuring elements for the id50 system.

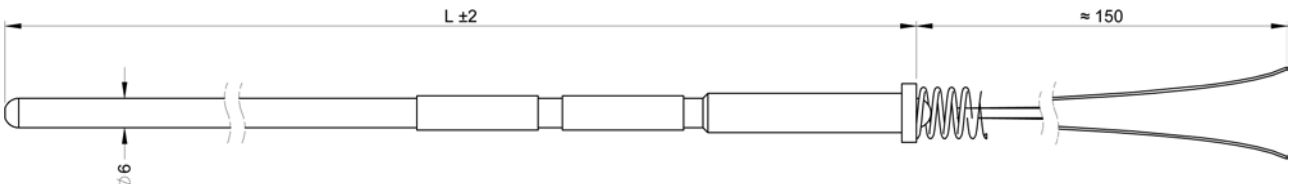
SPECIFICATIONS

Model		IDG50		
Compliance with standards		IEC 61515 / IEC 584-1 / EN 60079-0		
ATEX		Ex II 2 G / Ex db IIC T6 Gb / Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da		
Type		K	J	N
Material		Inconel 600	316L	Inconel 600
Class		1	1	1
Diameter (d) (mm)		6		
Hot junction		Insulated		
Thermocouple		Single / Duplex		
Lengths (mm)		200 to 1000		
Operating temperature (°C)	Min	-40	-40	-40
	Max	1100	700	1100
Output		Wires 150 mm long with end-pieces		
Vibration withstand		60g		

DESIGN YOUR SENSOR ID50

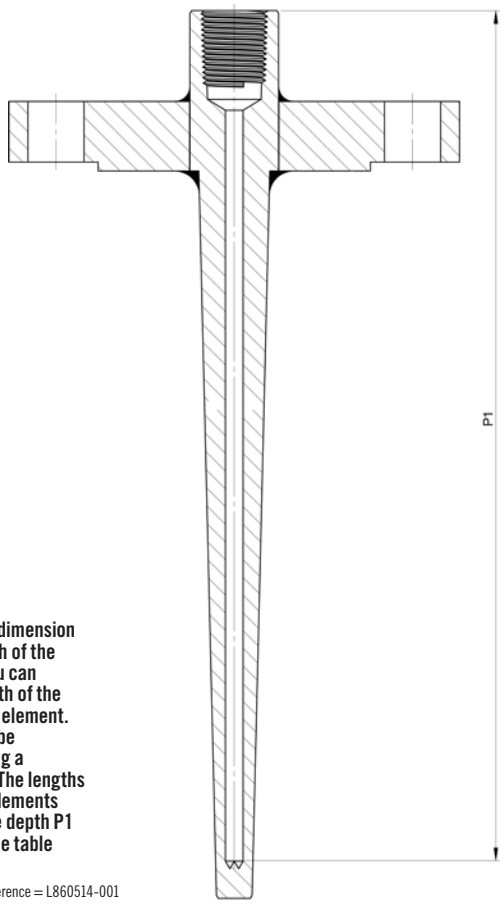
HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DIAGRAM (MM)



DETERMINATION OF THE LENGTH OF THE IDG50 ELEMENT

Flanged thermowell



By determining dimension P1 (drilling depth of the thermowell), you can choose the length of the ID50 measuring element. This length can be determined using a measuring rod. The lengths of the sensing elements according to the depth P1 are defined in the table below.

*measuring rod = Reference = L860514-001

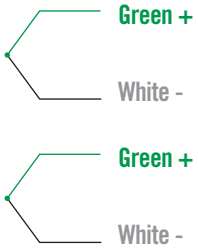
TO ORDER

K THERMOCOUPLE	Single reference	Duplex reference
Length 200 mm	L810430-200	L810431-200
Length 250 mm	L810430-250	L810431-250
Length 300 mm	L810430-300	L810431-300
Length 350 mm	L810430-350	L810431-350
Length 400 mm	L810430-400	L810431-400
Length 450 mm	L810430-450	L810431-450
Length 500 mm	L810430-500	L810431-500
Length 550 mm	L810430-550	L810431-550
Length 600 mm	L810430-600	L810431-600
Length 650 mm	L810430-650	L810431-650
Length 700 mm	L810430-700	L810431-700
Length 750 mm	L810430-750	L810431-750
Length 800 mm	L810430-800	L810431-800
Length 850 mm	L810430-850	L810431-850
Length 900 mm	L810430-900	L810431-900
Length 950 mm	L810430-950	L810431-950
Length 1000 mm	L810430-001	L810431-001
N thermocouple	L810447-...	L810449-...
J thermocouple	L810445-...	L810448-...

CONNECTIONS - SINGLE AND DUPLEX

K TC

Duplex K TC



Sensing element length	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
P1 min. (mm)	20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
P1 max. (mm)	85	135	185	235	285	335	385	435	485	535	585	635	685	735	785	835	885

IDG50

Pt100 FOR ID50

INTRINSIC SAFETY | CLASS A | SINGLE OR DUPLEX | IEC 60751 | up to 450°C

DESCRIPTION

Pt100 measuring elements for the id50 system

SPECIFICATIONS

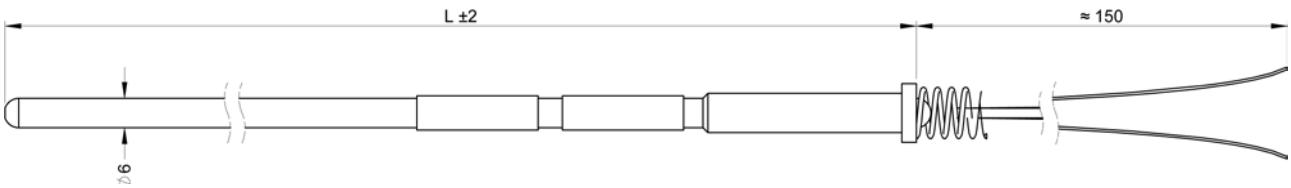
Model	IDG50			
Compliance with standards	IEC 60751 / EN 60079-0			
ATEX	Ⓔx II 2 G / Ex db IIC T6 Gb / Ⓔx II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da			
Type	Pt100			
Material	316 L			
Class	A			
Diameter (d) (mm)	6			
Min./max. operating temp. (°C)	-40°C… 450°C			
Output	Wires 150 mm long with end-pieces			
Reference	L810432	L810433	L810434	L810435
Thermocouple	Single	Duplex	Single	Duplex
Mounting	1x3 wires	2x3 wires	1x3 wires	2x3 wires
Vibration withstand	10g		50g	

See page 184 for an overview of the PYROmodules id50 solution

DESIGN YOUR SENSOR ID50

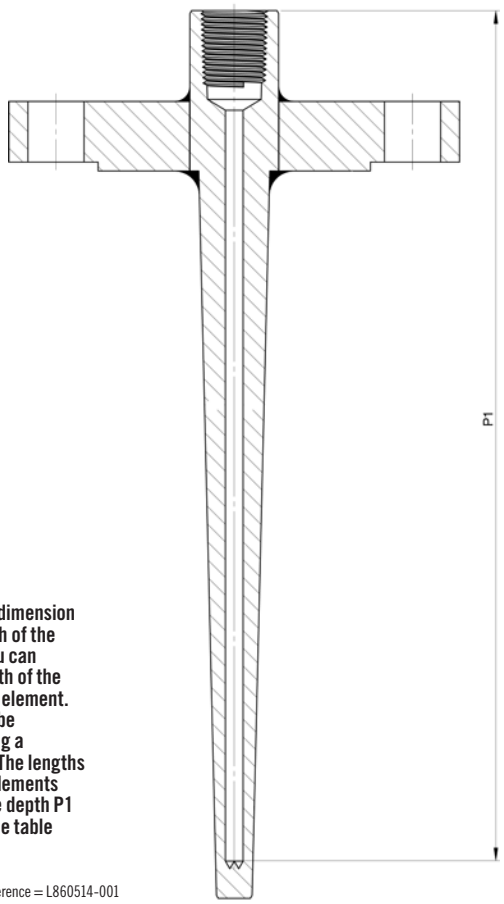
HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DIAGRAM (MM)



DETERMINATION OF THE LENGTH OF THE IDG50 SENSING ELEMENT

Flanged thermowell



By determining dimension P1 (drilling depth of the thermowell), you can choose the length of the ID50 measuring element. This length can be determined using a measuring rod. The lengths of the sensing elements according to the depth P1 are defined in the table below.

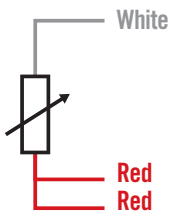
*measuring rod = Reference = L860514-001

TO ORDER

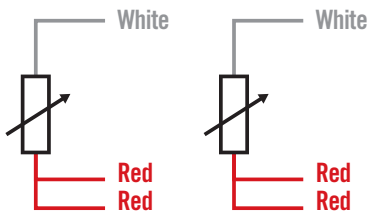
3-wire Pt100, Withstand 10g	Single reference	Duplex reference
Length 200 mm	L810432-200	L810433-200
Length 250 mm	L810432-250	L810433-250
Length 300 mm	L810432-300	L810433-300
Length 350 mm	L810432-350	L810433-350
Length 400 mm	L810432-400	L810433-400
Length 450 mm	L810432-450	L810433-450
Length 500 mm	L810432-500	L810433-500
Length 550 mm	L810432-550	L810433-550
Length 600 mm	L810432-600	L810433-600
Length 650 mm	L810432-650	L810433-650
Length 700 mm	L810432-700	L810433-700
Length 750 mm	L810432-750	L810433-750
Length 800 mm	L810432-800	L810433-800
Length 850 mm	L810432-850	L810433-850
Length 900 mm	L810432-900	L810433-900
Length 950 mm	L810432-950	L810433-950
Length 1000 mm	L810432-001	L810433-001
3-wire Pt100, Withstand 50g	L810434-...	L810435-...

CONNECTIONS

Connection 1 Pt100 Ω
1x3 wires

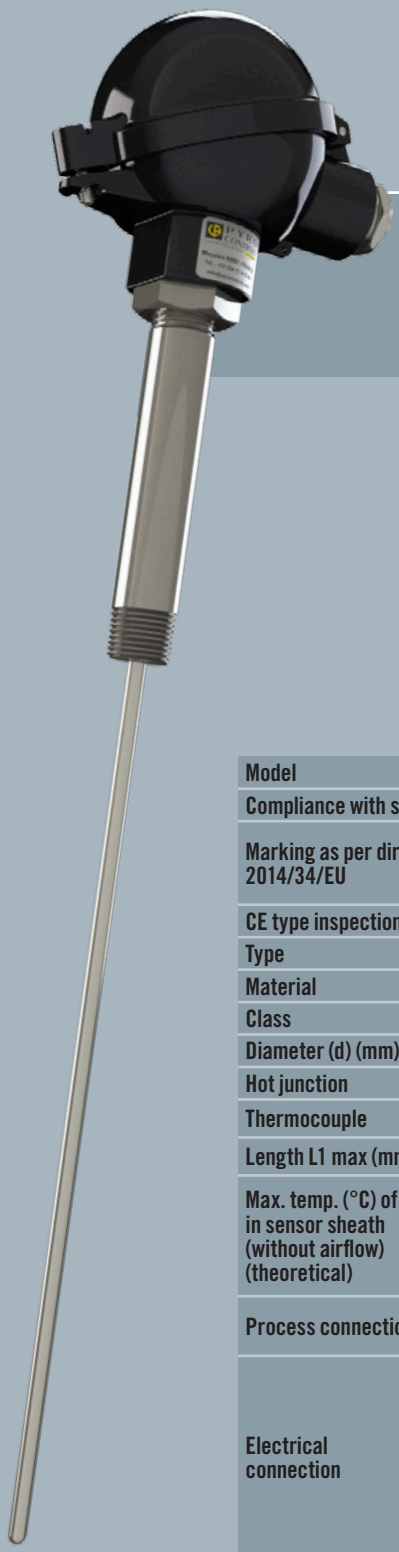


Connection 2 Pt100 Ω
2x3 wires



Sensing element length	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
P1 min. (mm)	20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
P1 max. (mm)	85	135	185	235	285	335	385	435	485	535	585	635	685	735	785	835	885

TA1G
THERMOCOUPLE



IP 54/65 | CLASS 1 | INTRINSIC SAFETY | IEC 584-1 | up to 1150°C

DESCRIPTION

Process sensor for use in explosive zones with a gas environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 270).

SPECIFICATIONS

Model		TA1G				
Compliance with standards		IEC 584-1 / NF EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		With DAN i head: Ex II 1G / Ex ia IIC T4…T6 Ga With DAN Vi head: Ex II 1 GD / Ex ia IIC T4…T6 Ga ia IIIC T135°C…T85°C Da				
CE type inspection certificate		LCIE 14ATEX3020 X				
Type		K	J	T	N	
Material		Inconel600	316L	316L	Inconel 600	Pyrosil
Class		1		2	1	
Diameter (d) (mm)		6 - 8				
Hot junction		Insulated				
Thermocouple		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	Diam. 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	Diam. 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½""NPT. Stainless steel.				
Electrical connection	Head type	DAN i			DAN-Vi	
	Material	Light alloy				
	Output	1 cable gland M20x1,5				
	Cable diam.	5,5 à 7,5 mm				
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP54			IP65	
Accessories (p.338)		Measuring element, thermowell, cable gland				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	EXTENSION	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE
TA1G	DNI	1T	AC	8	1,000	M	G	0/250
Reference in table and diagram	1	2	3	4	5	6	7	
Possible choice	DAN i: DNI DAN-Vi: DVI	1T 1J 1K 1N 2K 2J	316L: AC INCONEL 600: CM PYROSIL: DB	6 8	Max. 1,500 mm	Extension type M: M Extension type RU: R	LC5331B-321: F LC5335B-100: G	

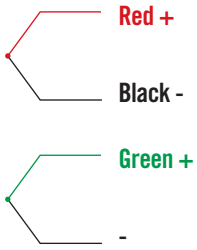
THERMOCOUPLE INFORMATION

2 Class 1 TC	Sheath diameter (mm) 6	Sheath diameter (mm) 8 (4)
T (CLASS 2)	316L	316L
J	316L	316L
K	INCONEL600	INCONEL600
N	INCONEL600	-
	PYROSIL	PYROSIL
2J	316L	316L
2K	INCONEL600	INCONEL600

3

CONNECTIONS

Duplex thermocouple



Single thermocouple

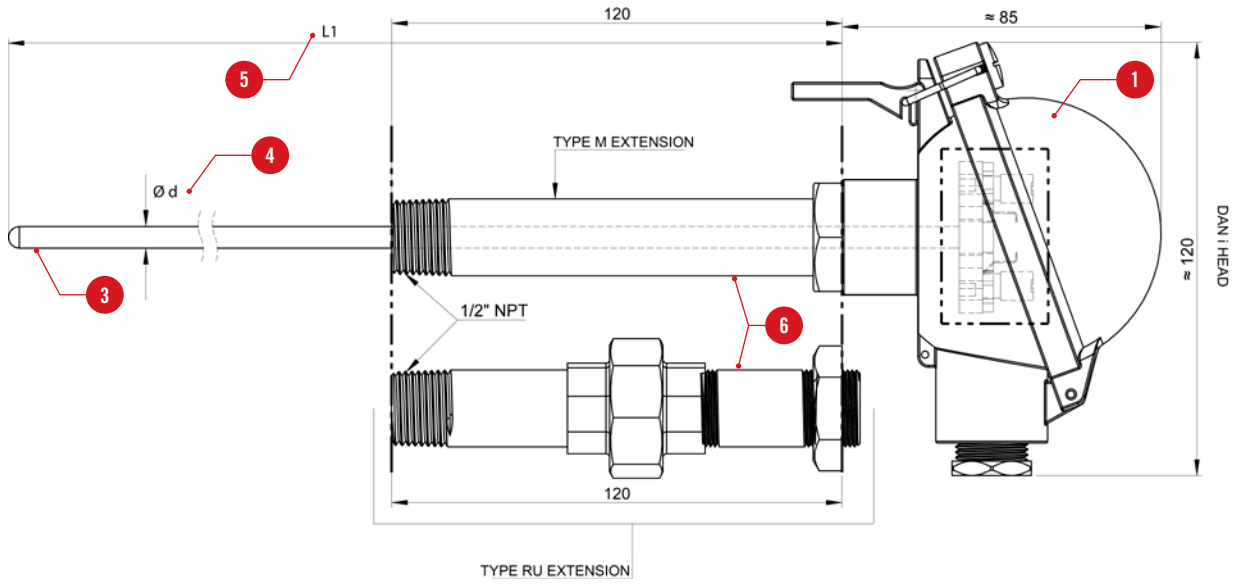
TRANSMITTER INFORMATION (1 TC ONLY)

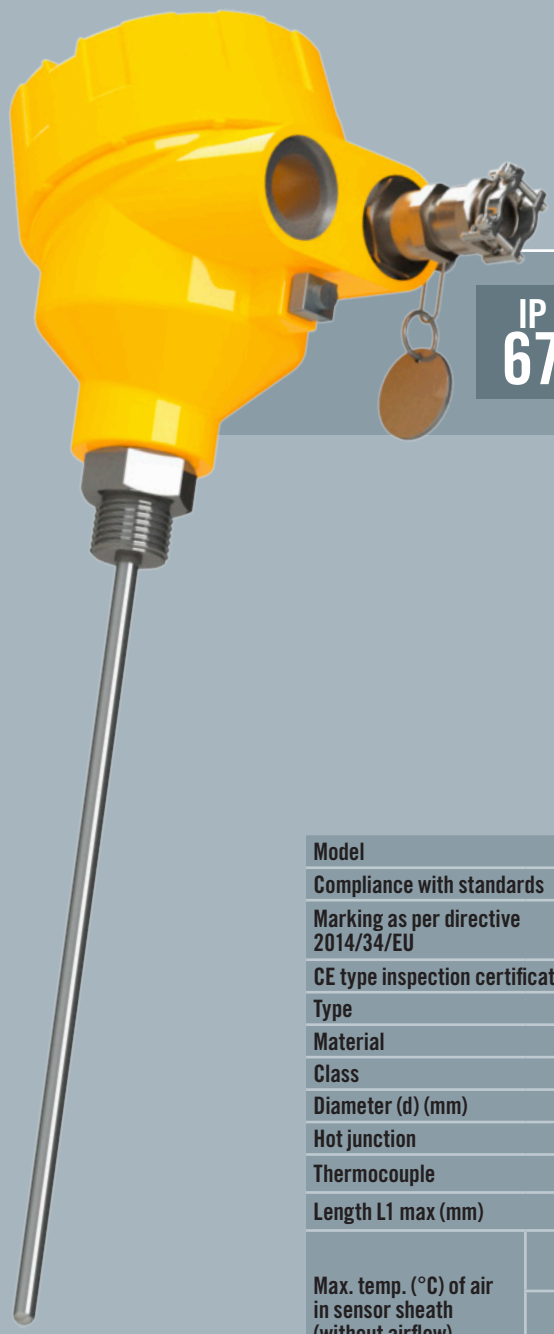
7

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100

For any other configuration, please contact us.

DIAGRAM (MM)





TAX41G
THERMOCOUPLE

IP 67 | CLASS 1 | INTRINSIC SAFETY | IEC 584-1 | up to 1150°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathed thermocouple with output via DAN or LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		TAX41G				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da				
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X				
Type		K	J	T	N	
Material		Inconel 600	316L	316L	Inconel 600	Pyrosil
Class		1				
Diameter (d) (mm)		4.5 - 6 - 8				
Hot junction		Insulated / Earthed				
Thermocouple		Single / Duplex			Simple	
Length L1 max (mm)		1 500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	ø 4.5 mm	800°C	620°C	350°C	800°C	1100°C
	ø 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	ø 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Without, under head G½, connection G½				
Electrical connection	Head type	LSX			DAN-Vi	
	Material	Light alloy epoxy coating				
	Output	1 cable gland M20x1,5				
	Cable diam.	6 mm to 12 mm			4 mm to 12.5 mm	
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP67				
Accessories (p.338)		Leak-tight fittings, rotating fittings, thermowell				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	PROCESS CONNECTION	HOT JUNCTION
TAX41G	LSX	1T	AC	6	950	5	I
Reference in table and diagram	1	2	3	4	5	6	
Possible choice	LSX : LSX DAN-Vi : DVI	1T 1J 1K 1N 2K 2J	316L : AC INCONEL 600 : CM PYROSIL : DB	4.5 6 8	100 to 1,500	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Insulated: I Earthed: M

EN OPTION

CABLE GLAND	TRANSMITTER	TRANSMITTER SCALE	DIAL*
CAP	G	0/250	XS
	7		
For LSX head only Cap: CAP Atex ia: P3 For DAN head Cable gland M20x1.5: DAN	LC5331B-221: F LC5335B-100: G TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA * compatible with the TTH200/TTH300 transmitters (see page 200)

THERMOCOUPLE INFORMATION

Class 1 TC (2)	Sheath diameter (mm) (4)		
	4.5	6	8
T (CLASS 2)	316L	316L	316L
J	316L	316L	316L
K	INCONEL600	INCONEL600	INCONEL600
N	INCONEL600	INCONEL600	-
	PYROSIL	PYROSIL	PYROSIL
2J	316L	316L	316L
2K	INCONEL600	INCONEL600	INCONEL600

(3)

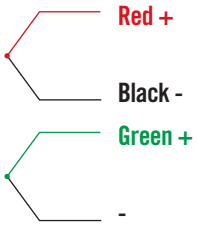
TRANSMITTER INFORMATION (1 TC ONLY)

(7)

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

CONNECTIONS

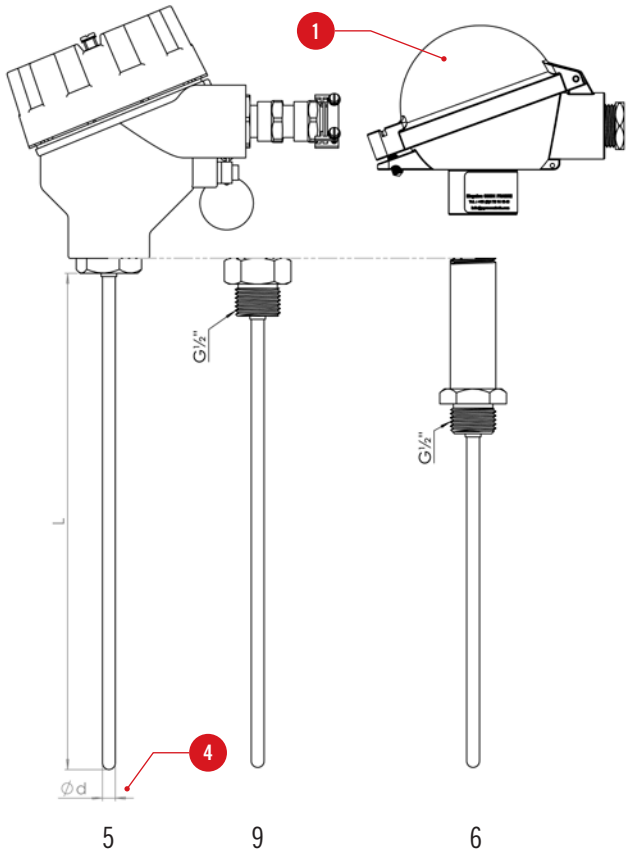
Duplex thermocouple



Single thermocouple

For any other configuration, please contact us.

DIAGRAM (MM)



PROCESS CONNECTION

(6)

SA1G

Pt100

IP 54/65 | CLASS A | IEC 60751 | INTRINSIC SAFETY | up to 450°C

DESCRIPTION

Pt100 process sensor for use in explosive zones with a gas environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 270).

SPECIFICATIONS

Model		SA1G	
Compliance with standards		IEC 60751 / EN 60079-0	
Marking as per directive 2014/34/EU		With DAN i head: Ex II 1G / Ex ia IIC T4…T6 Ga With DAN Vi head: Ex II 1 GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X	
Type		Pt100	
Class		A	
Mounting/Construction		1x3 wires / 1x4 wires / 2x2 wires / 2x3 wires	
Diameter (d) (mm)		6 / 8	
Min./max. operating temperature (°C)		-40…+450°C	
Type of measuring element		DS… / TS…	
Length L1 max (mm)		1 500	
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½" NPT. Stainless steel.	
Electrical connection	Head type	DAN i	DAN-Vi
	Material	Light alloy	
	Output	1 cable gland M20x1.5	
	Cable diam.	5.5 to 7.5 mm	
	Equipment	Ceramic terminal strip (standard) / Transmitter	
	IP	IP54	IP65
Accessories (p.338)		Measuring element, thermowell, cable gland	

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

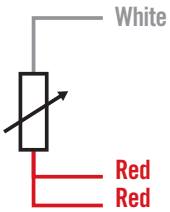
Parameters to be indicated when ordering. Example:

MODEL	HEAD	DIAM (mm)	MOUNTING	LENGTH L1 (mm)	EXTENSION	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE
SA1G	- DVI	- 6	- C	- 900	- M	- G	- 0/250
Reference in table and diagram	1	2	3	4	5	6	
Possible choice	DAN i: DNI DAN-Vi: DVI	6 8	1x3 wires: B 1x4 wires: C 2x2 wires: D 2x3 wires: E	Max. 1,500 mm* *2x2-wire mounting limited to 250 mm	Extension type M: M Extension type RU: R	LC5333B-100: E LC5331B-321: F LC5335B-100: G	

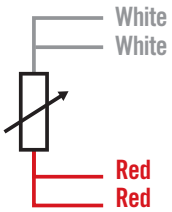
CONNECTIONS

3

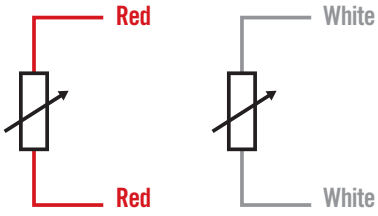
Connection 1 Pt100 Ω
1x3 wires



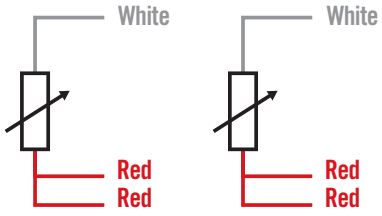
Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x2 wires



Connection 2 Pt100 Ω
2x3 wires

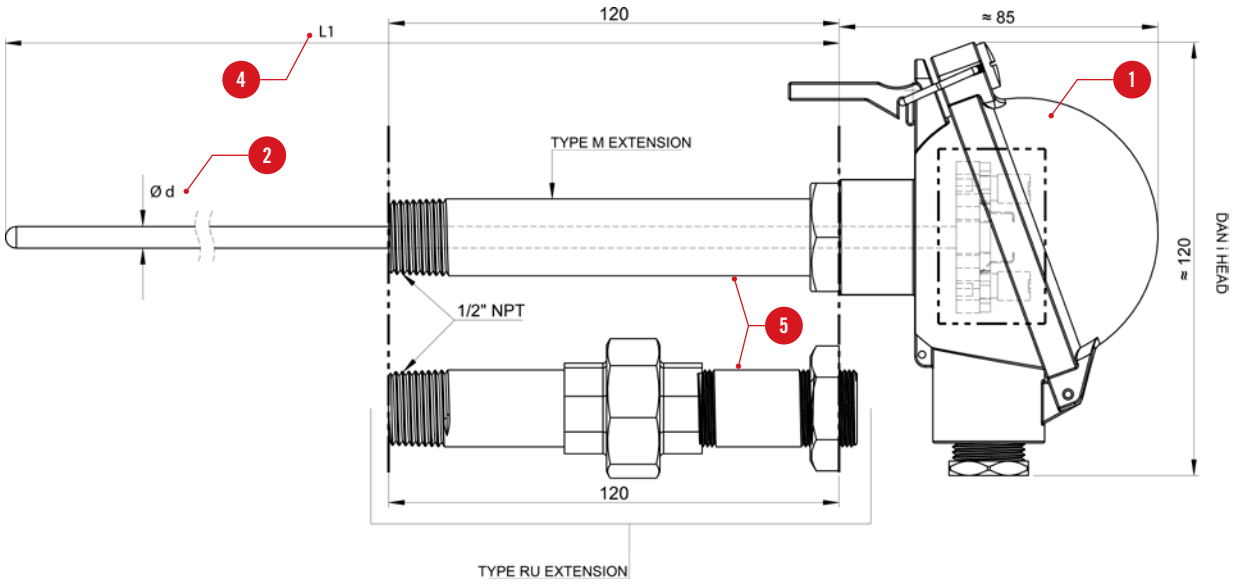


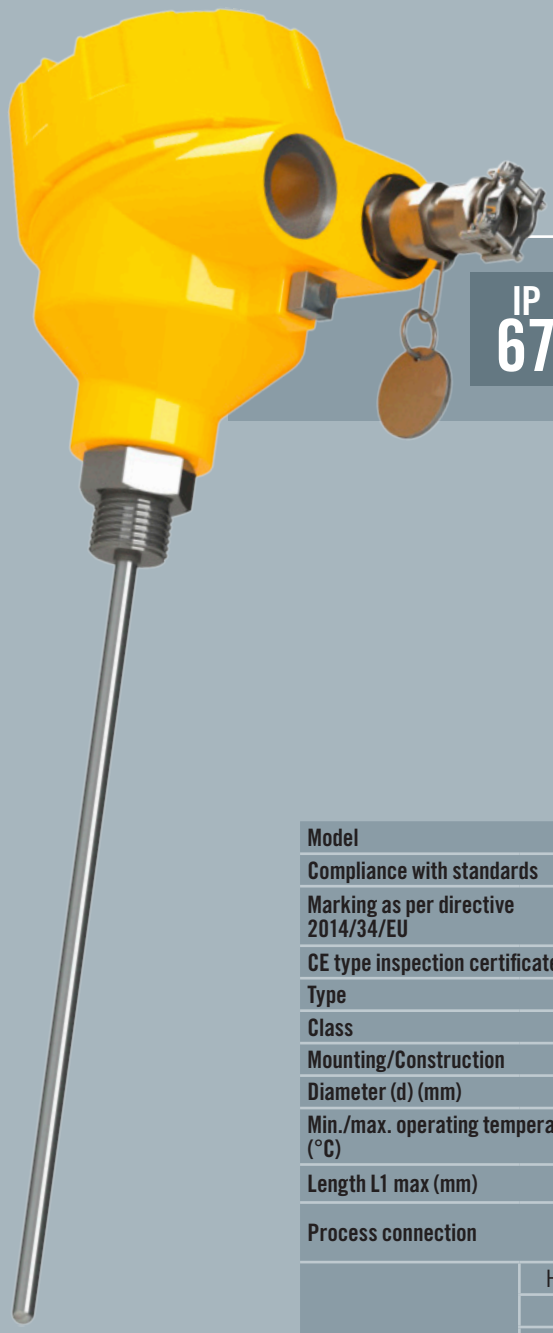
TRANSMITTER INFORMATION (1 PT100 ONLY)

6

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	NONE	ia	LC5333B-100
TC + Pt100	4-20mA	1.5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1.5kV	ia	LC5335B-100

DIAGRAM (MM)





SAX41G

Pt100

IP 67 | CLASS A | IEC 60751 | INTRINSIC SAFETY | up to 450°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathed PT100 sensor with output via DAN or LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		SAX41G	
Compliance with standards		IEC 60751 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X	
Type		PT 100Ω	
Class		A	
Mounting/Construction		1x3 wires / 1x4 wires / 2x3 wires	
Diameter (d) (mm)		4.5 - 6 - 8	
Min./max. operating temperature (°C)		-40…+450°C	
Length L1 max (mm)		1,500	
Process connection		Without, under head G½, connection G½	
Electrical connection	Head type	LSX	DAN-Vi
	Material	Light alloy epoxy coating	
	Output	1 PE M20x1,5	
	Cable diam.	6 mm to 12 mm	4 mm to 12,5 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter	
	IP	IP67	
Accessories (p. 338)		Leak-tight fittings, rotating fittings, thermowell	

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

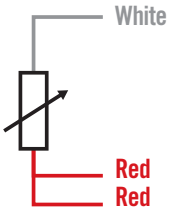
Parameters to be indicated when ordering. Example:

MODEL	HEAD	ø SHEATH (mm)	LENGTH L1 (MM)	MONTAGE	RACCORD PROCESS	CABLE GLAND	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE	OPTION: DIAL*
SAX41G	LSX	6	950	C	5	CAP	T200	0/250	AA
Référence tableau et schéma	1	2	3	4	5	6	6		6
Choix possible	LSX : LSX DAN-Vi : DVI	4.5 6 8	100 to 1500	1x3 wires : B 1x4 wires : C 2x3 wires : D	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	For LSX head only Cap: CAP Atex ia: P3 For DAN head Cable gland M20x1.5: DAN	LC5333B-100 : E LC5331B-321: F LC5335B-100: G TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA * compatible with the TTH200/TTH300 transmitters (see page 200)

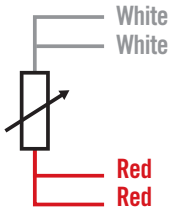
CONNECTIONS

3

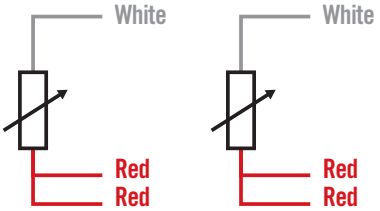
Connection 1 Pt100 Ω
1x3 wires



Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x3 wires

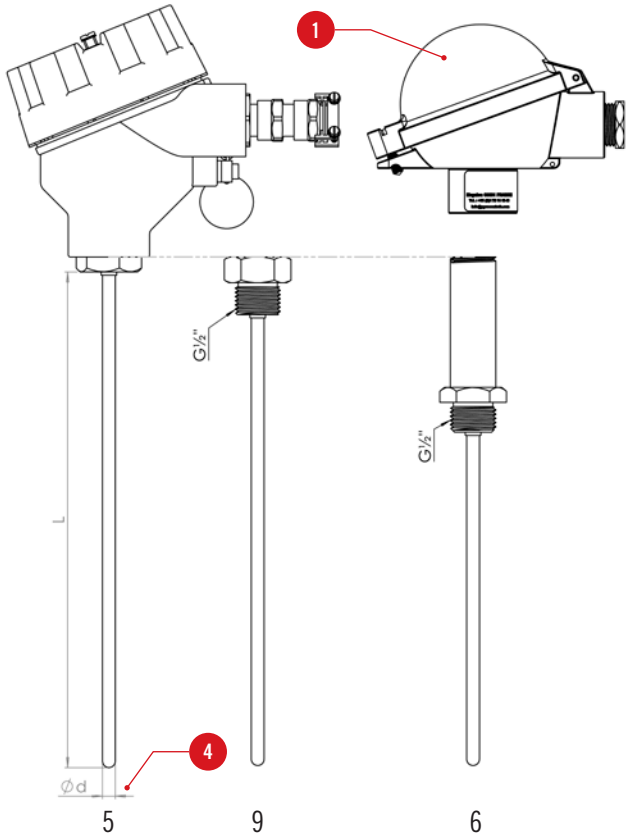


TRANSMITTER INFORMATION (1 TC ONLY)

6

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	WITHOUT	ia	LC5333B-100
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

DIAGRAM (MM)



PROCESS CONNECTION

5

TCG3i
THERMOCOUPLE

PVC CABLE OUTPUT | INTRINSIC SAFETY | CLASS 1 | IEC 584-1 | up to 1100°C

DESCRIPTION

Bendable flexible sheathed thermocouple for adaptation to the application, even in confined spaces. Small-diameter sensor with a short response time. Equipped with a cable for easy connection even over long distances.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21, 22).

Thermocouples up to 3 mm in diameter must be handled with caution to avoid any breakage.

SPECIFICATIONS

Model		TCG3i	
Compliance with standards		IEC 584-3 / EN 61515 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X	
Type		K	J
Material		Inconel 600	316L
Class		1	
Diameter (d) (mm)		1 / 1,5 / 2 / 3 / 4.5 / 6 / 8	
Hot junction		Insulated	
Thermocouple		Single / Duplex	
Length L max (mm)	Diam. 1 to 2 mm	100 to 36,000 mm	
	Diam.> 2 mm	100 to 30,000 mm	
Max. temp. in air (°C) in sensor sheath (without flow) (theoretical)	Diam.1 -1.5mm	650°C	260°C
	Diam. 2 mm	700°C	440°C
	Diam. 3 mm	750°C	520°C
	Diam. 4.5mm	800°C	620°C
	Diam. 6 mm	1000°C	720°C
	Diam. 8 mm	1100°C	720°C
Output	Type of cable	extension	
	Cable sheath	PVC	
	Max. temperature	105°C	
	Conductors	2x0.22 mm², PVC insulation	
	Braid	Internal, copper, connected to sensor sheath	
	Length Lc Min/Max (mm)	200 to 10,000 mm	
Accessories (p.338)		Leak-tight fittings, rotating fittings	

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		TC TYPE		Ø SHEATH (MM)		LENGTH L (mm)		LENGTH LC (mm)		PROTECTIVE SPRING
TCG3i	-	1K	-	2.0	-	10200	-	2000	-	0

Reference in table and diagram	1	2	3	4	5
Possible choice	1J 1K 2J 2K	1.0 1.5 2.0 3.0 4.5 6.0 8.0	Diam 1-1.5-2: 00100 to 36,000 Diam 3 - 4.5 - 6 - 8: 00100 to 30,000	Lc: 200 to 10,000 mm (standard: 2,000 mm)	Without: 0 With: 1 (standard)

DIAGRAM (MM)

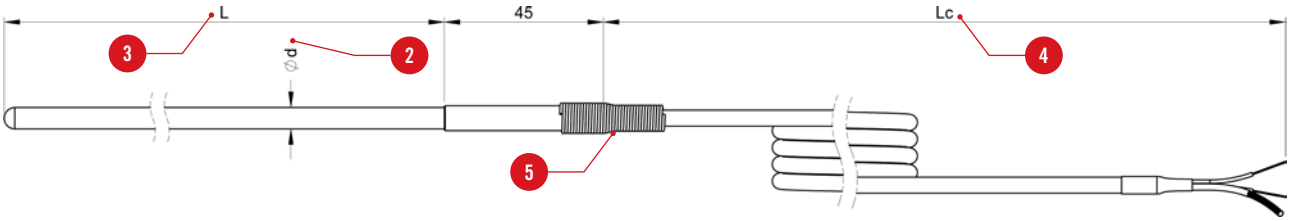
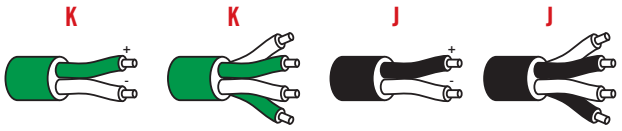


TABLE OF THERMOCOUPLE INFORMATION

Model	Cable	1 TC Class 1	Sheath diameter (mm)						
			1	1.5	2	3	4.5	6	8 2
TCG3i	PVC sheath	J	316L	316L	316L	316L	316L	316L	316L
		K	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600
		2J	-	316L	316L	316L	316L	316L	316L
		2K	-	-	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600

CONNECTIONS



Single Duplex Single Duplex

For any other configuration, please contact us.

TCG32i
THERMOCOUPLE

FEP CABLE OUTPUT | CLASS 1 | INTRINSIC SAFETY | IEC 584-1 | up to 1100°C

DESCRIPTION

Bendable flexible sheathed thermocouple for adaptation to the application, even in confined spaces. Small-diameter sensor with a short response time. Equipped with a cable for easy connection even over long distances.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21, 22).

Thermocouples up to 3 mm in diameter must be handled with caution to avoid any breakage.

SPECIFICATIONS

Model		TCG32i	
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X	
Type		K	J
Material		Inconel 600	316L
Class		1	
Diameter (d) (mm)		1 / 1.5 / 2 / 3 / 4.5 / 6 / 8	
Hot junction		Insulated	
Thermocouple		Single / Duplex	
Length L max (mm)	Diam. 1 to 2 mm	100 to 36,000 mm	
	Diam.> 2 mm	100 to 30,000 mm	
Max. temp. in air (°C) in sensor sheath (without flow) (theoretical)	Diam.1 -1.5mm	650°C	260°C
	Diam. 2 mm	700°C	440°C
	Diam. 3 mm	750°C	520°C
	Diam. 4.5mm	800°C	620°C
	Diam. 6 mm	1000°C	720°C
	Diam. 8 mm	1100°C	720°C
Output	Type of cable	extension	
	Cable sheath	FEP	
	Max. temperature	250°C	
	Conductors	2 x 0.22 mm², FEP insulation	
	Braid	Internal, copper, connected to sensor sheath	
	Length Lc Min/Max (mm)	200 to 10,000 mm	
Accessories (p.338)		Leak-tight fittings, rotating fittings	

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		TC TYPE		Ø SHEATH (mm)		LENGTH L (mm)		LENGTH LC (mm)		PROTECTIVE SPRING
TCG32i	-	1J	-	8.0	-	22,000	-	9,000	-	1
Reference in table and diagram		1		2		3		4		5
Possible choice		1J 1K 2J 2K		1.0 1.5 2.0 3.0 4.5 6.0 8.0		Diam 1-1.5-2: 100 to 36,000 Diam 3 - 4.5 - 6 - 8: 100 to 30,000		Lc: 200 to 10,000 mm (standard: 2,000 mm)		Without: 0 With: 1 (standard)

DIAGRAM (MM)

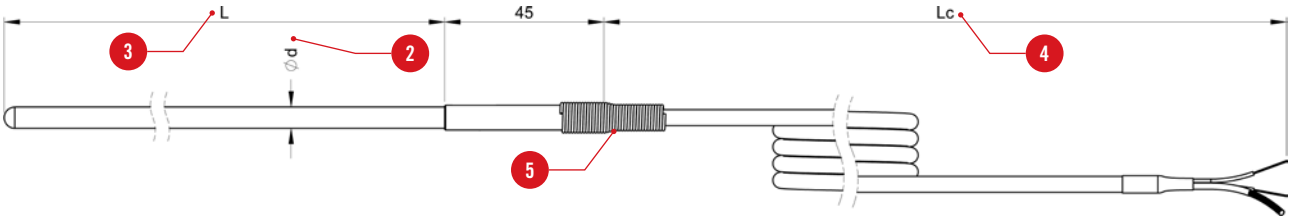
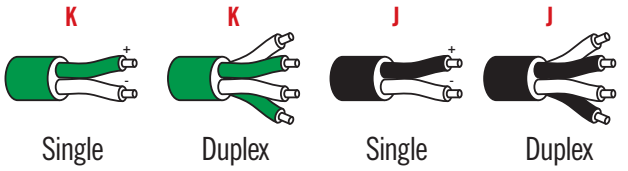


TABLE OF THERMOCOUPLE INFORMATION

Model	Cable	Class 1 TC (1)	Sheath diameter (mm)						
			1	1.5	2	3	4.5	6	8 (2)
TCG32i	FEP sheath	J	316L	316L	316L	316L	316L	316L	316L
		K	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600
		2J	-	316L	316L	316L	316L	316L	316L
		2K	-	-	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600

CONNECTIONS



For any other configuration, please contact us.

S1i
Pt100

PVC CABLE OUTPUT OU FEP OU SILICONE | CLASS A | INTRINSIC SAFETY | IEC 60751 | up to 450°C

DESCRIPTION

Sheathed Pt100 sensor, Class A as per IEC 60751, with cable output, for temperature measurement up to 450°C in low-pressure and low flow-rate environments.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21, 22).

SPECIFICATIONS

Model		S1i		
Compliance with standards		IEC 60751 / EN 60079-0		
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da		
CE type inspection certificate		LCIE 14ATEX3020 X		
Type		Pt100 Ω		
Material		316 L		
Class		A		
Mounting/Construction		Single: 1x3 wires ou 1x4 wires / Duplex: 2x2 wires ou 2x3 wires		
Diameter (d) (mm)		1.6 / 3 / 4.5 / 6 / 8		
Length L max (mm)		See table opposite		
Max. temp. in air (°C)		450°C		
Output	Sheath	PVC	FEP	SILICONE
	Max. temperature	105°C	200°C	200°C
	Conductors	3, 4 or 6 x 0.22 mm, PVC insulation	3, 4 or 6 x 0.22 mm, FEP insulation	3, 4 or 6 x 0.22 mm, FEP insulation
	Shielding braid	•	•	
	Length Lc Min/ Max (mm)	200 to 10,000 mm		
	Termination	Insulated bare wires		
Accessories (p.338)		Measuring element, thermowell, cable gland		

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		NO. OF PT100		MOUNTING		Ø SHEATH (mm)		LENGTH L (mm)		CABLE		LENGTH LC (mm)		PROTECTIVE SPRING
S1i	-	1	-	C	-	3	-	1,000	-	PVC	-	900	-	1
Reference in table and diagram		1		2		3		4		5		6		7
Possible choice		1 2		1x3 wires: B 1x4 wires: C 2x2 wires: D 2x3 wires: E		1,6 3 4.5 6 8		As per table below		PVC PVC FEP: FEP Silicone: SIL		200 to 10,000 mm		Without: 0 With: 1 (standard)

DIAGRAM (MM)

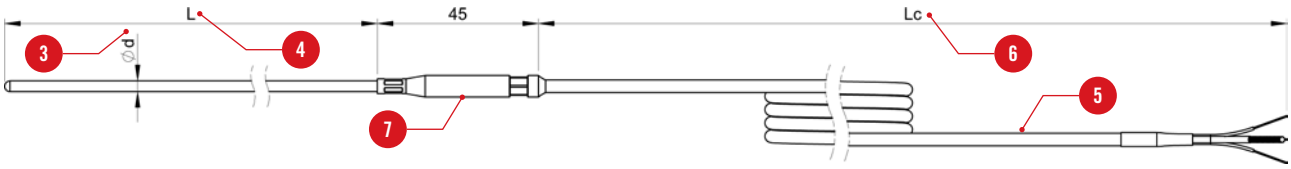


TABLE OF POSSIBLE ASSOCIATIONS

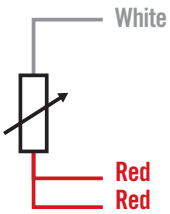
1 Number of Pt100	2 Mounting	Min. / max. length				3
		1.6	3	4.5	6	8
1	1x3 wires	50 / 250	50 / 1500	50 / 1500	50 / 1500	50 / 1500
	1x4 wires	50 / 250	50 / 1500	50 / 1500	50 / 1500	50 / 1500
2	2x2 wires	-	-	50 / 250	50 / 250	50 / 250
	2x3 wires	-	-	50 / 1500	50 / 1500	50 / 1500

4

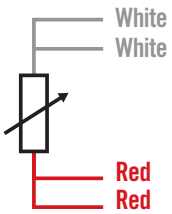
CONNECTIONS

2

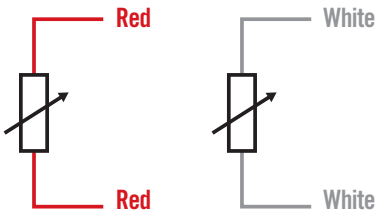
Connection 1 Pt100 Ω
1x3 wires



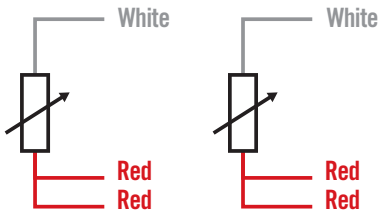
Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x2 wires



Connection 2 Pt100 Ω
2x3 wires



For any other configuration, please contact us.

ENVIRONMENT GAS

ZONES 1,2 ATEX d

LSX-D / LSX-W

HEADS FOR ID50

IP 54 | **WITH OR WITHOUT WINDOW** | **ANTI-EXPLOSION**

DESCRIPTION

ATEX heads for the id50 system. The PYROmodules id50 solution allows you to choose between an LSX-W head with a window and a head without a window: the LSX-D

SPECIFICATIONS

Model	LSX-D	LSX-W
ATEX	Ⓔx II 2 GD / Ex db IIC T6 Gb	
Material	Epoxy-coated aluminium alloy	
Colour	Yellow	
Cable input (cable gland, not supplied)	1 input M20x1.5 with plastic cover	1 input M20x1.5 with plastic cover 1 input M20x1.5 with cap
Process connection	G ½	
Window for mounting a display		•
External earth terminal	•	•
Cover chain	•	
Accessory supplied	Sleeved base for locking the internal element, reference L810437-004	

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

DESIGN YOUR SENSOR ID50

HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

TO ORDER

Picture	Head	ATEX	Reference
	LSX-D: without window	d	L810439-001
	LSX-W: with window	d	L810523-001
	LSX-W with strap for 2" tube	d	L810499-001
	LSX-W with wall bracket	d	L810520-001

MOUNTING

AS - A

INDICATORS FOR ID50

WITH OR WITHOUT KEYPAD

SELF-POWERED

DESCRIPTION

LCD indicators for mounting on TTH transmitters
Type AS: without keypad
Type A: with keypad

SPECIFICATIONS

Model	Type AS	Type A
Reference	L810503-000	L810502-000
Properties	Graphical LCD indicator controlled by transmitter without configuration function	Graphical LCD indicator controlled by transmitter with configuration function (keypad)
Compatibility	TTH200 / TTH300	TTH300
Display	Polarity signs, 4 digits, 2 digits after the decimal point	Height of characters depending on mode, polarity signs, 4 digits, 2 digits after the decimal point, bar graph indicator.
Display possibilities	Sensor process value Bar chart Output %	Sensor process value 1 Sensor process value 2 Ambient / electronics temp. Output value Output % Bar chart Output % Troubleshooting display information for transmitter and sensor status
Ambient operating temperature	-20 to +70°C	

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

DESIGN YOUR SENSOR ID50

HEAD | **INDICATOR** | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DISPLAY

Type A LCD indicator

Type AS LCD indicator

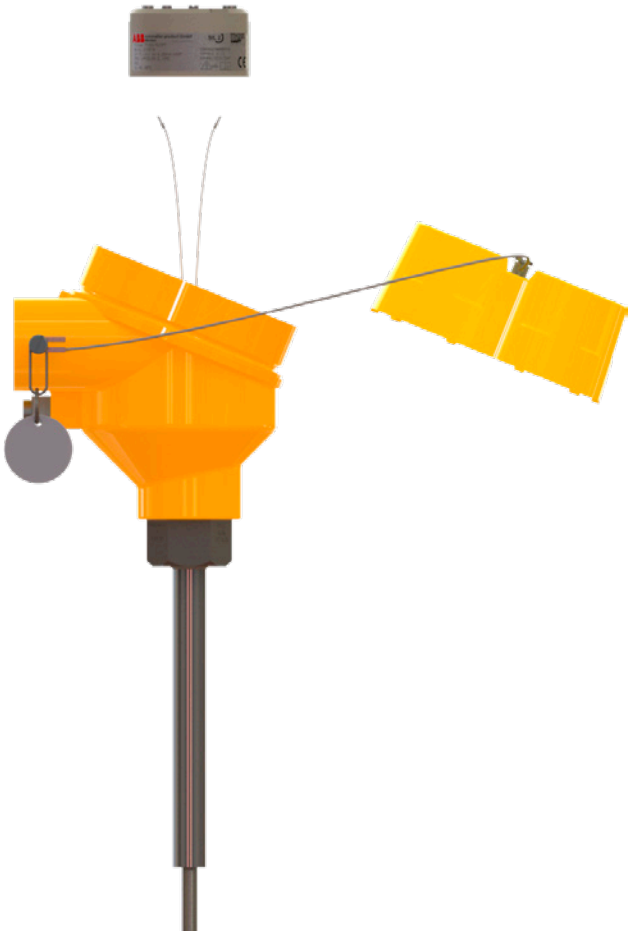
1. Quit / Cancel
2. Scroll back
3. Scroll forward
4. Confirm

TO ORDER

Indicator for TTHX00	Reference
Type AS: without keypad	L810502-100
Type A: with keypad	L810503-100

MOUNTING

The type A indicator can only be mounted on a TTH300 transmitter.
The type AS indicator can be mounted on a TTH200 or TTH300 transmitter.
It can be configured using the keypad on the indicator.
The indicator is fixed on a tilted base.
The indicator+transmitter assembly can only be mounted in LSX-W heads.



5335 TTH200/300

TRANSMITTERS FOR ID50

INSULATED 4-20 MA OUTPUT | TTH300 DUPLEX VERSION | TTH200 TTH300 IP20 / IP00 | 5335 IP68 / IP00 | UNIVERSAL INPUT | HART

DESCRIPTION

Programmable transmitters for conversion into a 4-20 mA analogue signal

TRANSMITTER SPECIFICATIONS

Model		TTH200	TTH300	5335
Reference		LTTH200-100	LTTH300-000	LC5335A-100
SIL2 as per IEC 61508		•		
Compatible protection mode	Ex d	•	•	•
Ambient operating temperature		-40 to +85°C / -20 to +70°C with display		-40 to +85°C
HART protocol		HART 5	HART 5 or HART 7 (choice by switch) Delivered with HART 5 as standard.	HART 5
Input		Pt100 3 or 4 wires / TC J, K, N, T		
Cold junction compensation (if used as TC input)		•	•	•
Number of sensors		1	2	1
Output		4-20mA		
Sensor breakage		Programmable 3.5…23mA		
Power supply		11...42 Vdc		8.0…35Vdc
Galvanic insulation		3.5 kVdc (2.5 kVac), 60s		1.5 kVac / 50Vac
Protection rating (as per EN60529) (head/ terminals)		IP20 / IP00		IP68 / IP00
Dimensions		Diam 44.4mm x h 24.7mm		Diam 44.0mm x h 20.2mm

TERMINAL STRIP SPECIFICATIONS

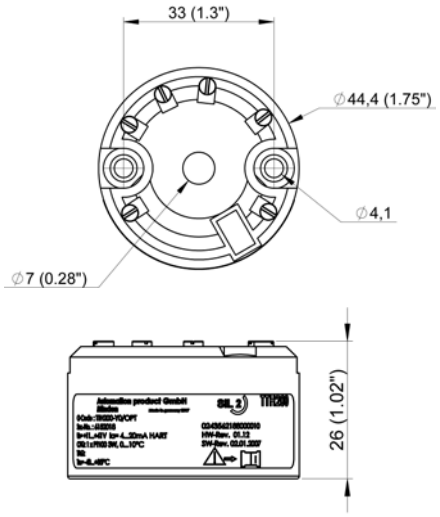
References	L015078-000	L015079-000	L015080-000
Number of terminals	2	4	6
Connection	1 x TC	2 x TC or 1 x 3-wire Pt100	2 x 3-wire Pt100

DESIGN YOUR SENSOR ID50

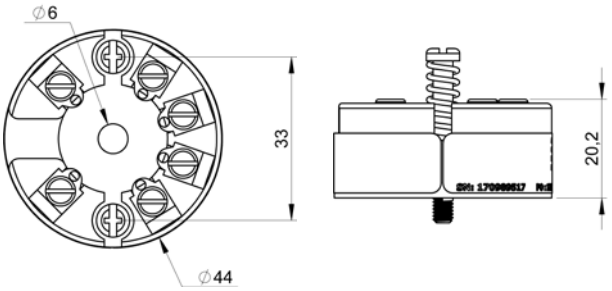
HEAD | INDICATOR | **TRANSMITTER** | EXTENSIONS | SENSING ELEMENT

CONNECTIONS

TTH200/300 transmitter

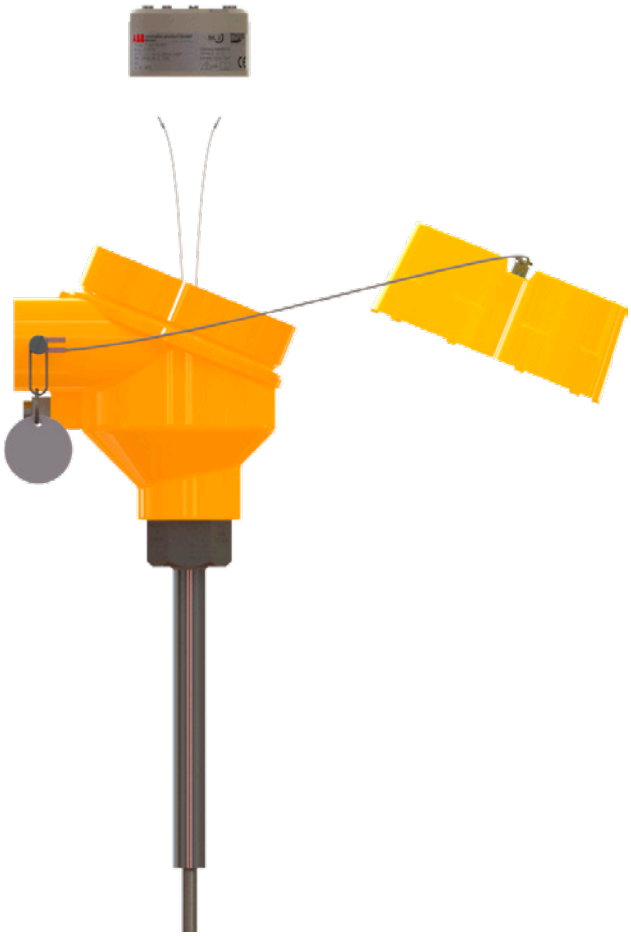


5335 transmitter



MOUNTING

Insert the wires of the ID50 measuring element inside the transmitter and screw it inside the connecting head.
For the intrinsic-safety loop calculation, the electrical parameters of the transmitters are indicated in the ia/A safety instructions.
Set up the cable of the ID50 measuring element as shown in the wiring diagrams.



TO ORDER

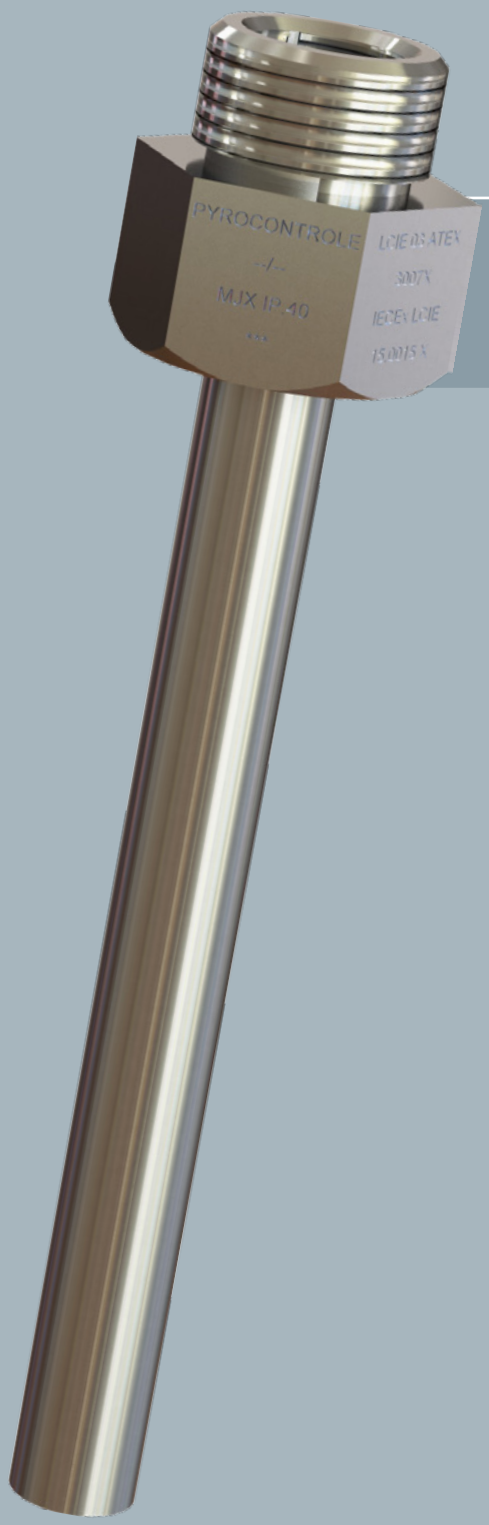
	Transmitter	Reference
	TTH200	LTTH200-000
	TTH300	LTTH300-000
	5335B	LC5335A-100

	Ceramic terminal strip	Reference
	2 terminals	L015078-000
	4 terminals	L015079-000
	6 terminals	L015080-000

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

ID50 SENSOR

EXTENSIONS FOR ID50



ADJUSTABLE FROM 120 TO 200 mA

316L STAINLESS STEEL

DESCRIPTION

The extension provides the link between the head and the thermowell. It comprises two parts, upper and lower, and can be adjusted without cutting , according to the length of the measuring element and the depth of the thermowell.

SPECIFICATIONS

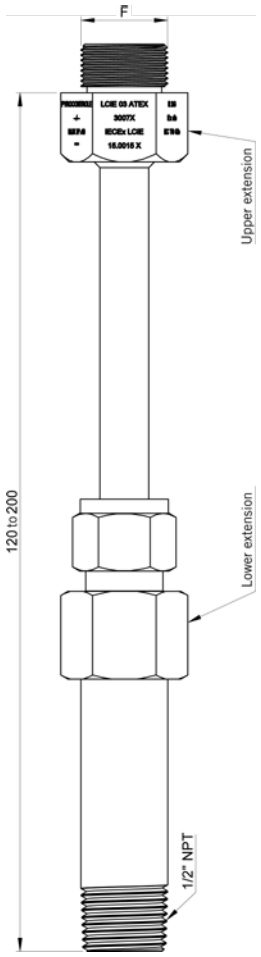
Part	Upper	Lower
ATEX	Ex II 2G - Ex db IIC T6 Gb	N/A
Material	316L	
Mounting	On head	On thermowell
Threading	As per table opposite	½ NPT
Accessories	Screw for locking the measuring element for any head other than the LSX model. Thread lock	

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

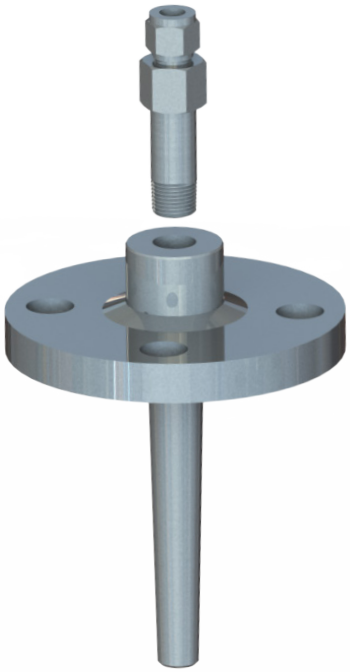
DESIGN YOUR SENSOR ID50

HEAD | INDICATOR | TRANSMITTER | **EXTENSIONS** | SENSING ELEMENT

DIAGRAM (MM)



MOUNTING



Set the lower extension in place on the thermowell.

Screw the lower extension on the thermowell with a size-27 open-end wrench by making use of the hexagonal shape of the leak-tight fitting.
Tighten until the lower extension is locked.

TO ORDER

Assembly		F	Reference
Upper extension	For LSX head (locking screw not included)	G½	L810437-001
	for other heads (screw included)	G½	L810437-G12
		M24	L810437-M24
		M20	L810437-M20
		½ NPT	L810437-N12
Lower extension			L810437-000

IDG50

THERMOCOUPLE FOR ID50

ANTI-EXPLOSION | CLASS 1 | SINGLE OR DUPLEX | IEC 584-1 | up to 1100°C

DESCRIPTION

Thermocouple measuring elements for the id50 system

SPECIFICATIONS

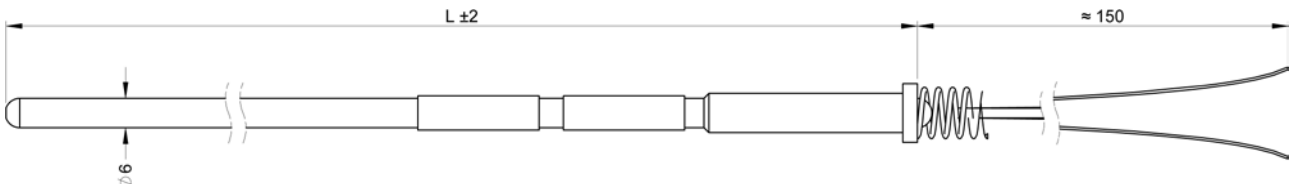
Model		IDG50		
Compliance with standards		IEC 61515 / IEC 584-1 / EN 60079-0		
ATEX		Ex II 2 G / Ex db IIC T6 Gb / Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da		
Type		K	J	N
Material		Inconel 600	316L	Inconel 600
Class		1	1	1
Diameter (d) (mm)		6		
Hot junction		Insulated		
Thermocouple		Single / Duplex		
Lengths (mm)		200 to 1000		
Operating temperature (°C)	Min	-40	-40	-40
	Max	1100	700	1100
Output		Wires 150 mm long with end-pieces		
Vibration withstand		60g		

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

DESIGN YOUR SENSOR ID50

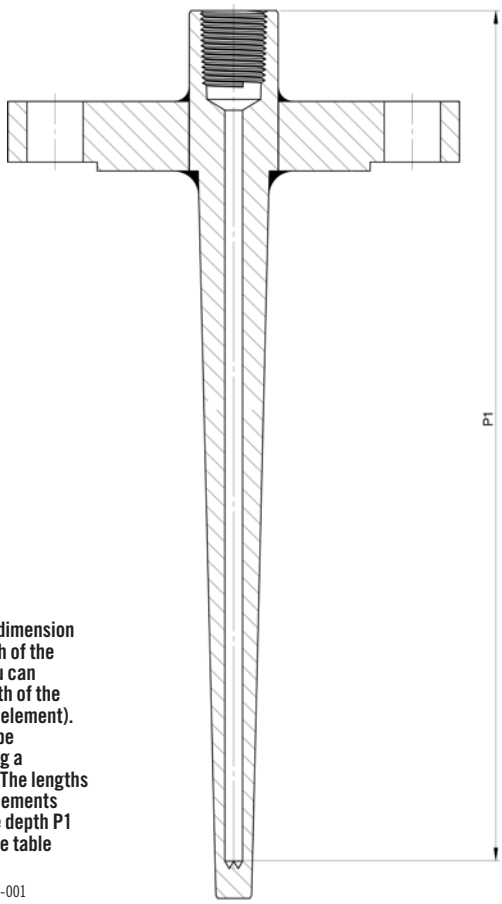
HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DIAGRAM (MM)



DETERMINATION OF IDG50 ELEMENT LENGTH

Flanged thermowell



By determining dimension P1 (drilling depth of the thermowell), you can choose the length of the ID50 measuring element). This length can be determined using a measuring rod*.The lengths of the sensing elements according to the depth P1 are defined in the table below.

*Reference = L860514-001

TO ORDER

K THERMOCOUPLE	Single reference	Duplex reference
Length 200 mm	L810430-200	L810431-200
Length 250 mm	L810430-250	L810431-250
Length 300 mm	L810430-300	L810431-300
Length 350 mm	L810430-350	L810431-350
Length 400 mm	L810430-400	L810431-400
Length 450 mm	L810430-450	L810431-450
Length 500 mm	L810430-500	L810431-500
Length 550 mm	L810430-550	L810431-550
Length 600 mm	L810430-600	L810431-600
Length 650 mm	L810430-650	L810431-650
Length 700 mm	L810430-700	L810431-700
Length 750 mm	L810430-750	L810431-750
Length 800 mm	L810430-800	L810431-800
Length 850 mm	L810430-850	L810431-850
Length 900 mm	L810430-900	L810431-900
Length 950 mm	L810430-950	L810431-950
Length 1000 mm	L810430-001	L810431-001
N thermocouple	L810447-...	L810449-...
J thermocouple	L810445-...	L810448-...

CONNECTIONS - SINGLE AND DUPLEX

KTC

KTC duplex

Sensing element length	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Min. P1 (mm)	20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
Max. P1 (mm)	85	135	185	235	285	335	385	435	485	535	585	635	685	735	785	835	885

IDG50

Pt100 FOR ID50

ANTI-EXPLOSION | CLASS A | SINGLE OR DUPLEX | IEC 60751 | up to 450°C

DESCRIPTION

Pt100 measuring elements for the id50 system

SPECIFICATIONS

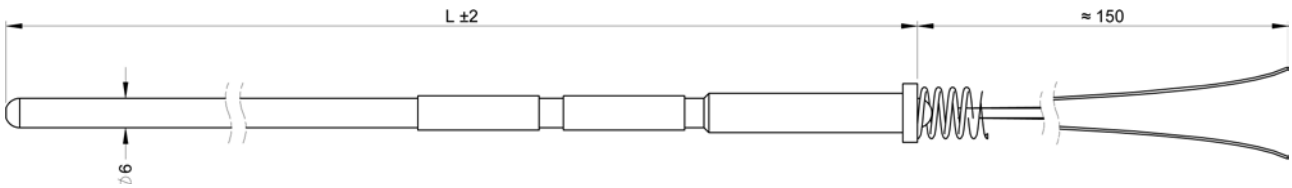
Model	IDG50			
Compliance with standards	IEC 60751 / EN 60079-0			
ATEX	Ex II 2 G / Ex db IIC T6 Gb / Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da			
Type	Pt100			
Material	316 L			
Class	A			
Diameter (d) (mm)	6			
Min./max. operating temp. (°C)	-40°C… 450°C			
Output	Wires 150 mm long with end-pieces			
Reference	L810432	L810433	L810434	L810435
Thermocouple	Single	Duplex	Single	Duplex
Mounting	1x3 wires	2x3 wires	1x3 wires	2x3 wires
Vibration withstand	10g		50g	

See page 192 for an overview of the PYROmodules id50 solution and page 194 to order a complete assembled sensor.

DESIGN YOUR SENSOR ID50

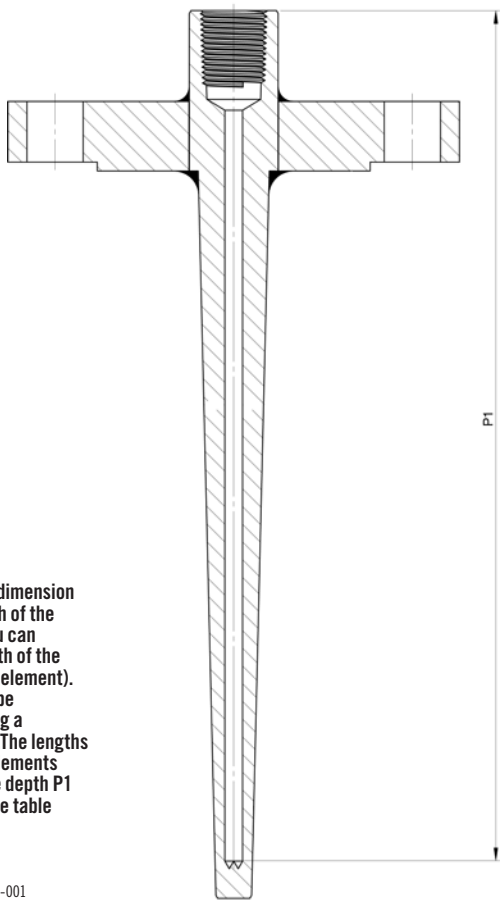
HEAD | INDICATOR | TRANSMITTER | EXTENSIONS | SENSING ELEMENT

DIAGRAM (MM)



DETERMINATION OF IDG50 ELEMENT LENGTH

Flanged thermowell



By determining dimension P1 (drilling depth of the thermowell), you can choose the length of the ID50 measuring element). This length can be determined using a measuring rod*.The lengths of the sensing elements according to the depth P1 are defined in the table below.

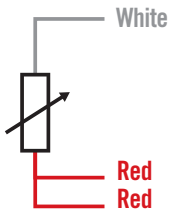
*Reference = L860514-001

TO ORDER

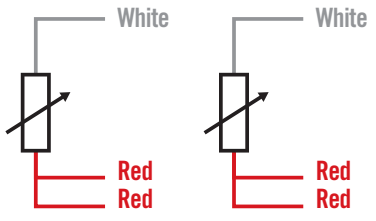
3-wire Pt100, Withstand 10g	Single reference	Duplex reference
Length 200 mm	L810432-200	L810433-200
Length 250 mm	L810432-250	L810433-250
Length 300 mm	L810432-300	L810433-300
Length 350 mm	L810432-350	L810433-350
Length 400 mm	L810432-400	L810433-400
Length 450 mm	L810432-450	L810433-450
Length 500 mm	L810432-500	L810433-500
Length 550 mm	L810432-550	L810433-550
Length 600 mm	L810432-600	L810433-600
Length 650 mm	L810432-650	L810433-650
Length 700 mm	L810432-700	L810433-700
Length 750 mm	L810432-750	L810433-750
Length 800 mm	L810432-800	L810433-800
Length 850 mm	L810432-850	L810433-850
Length 900 mm	L810432-900	L810433-900
Length 950 mm	L810432-950	L810433-950
Length 1000 mm	L810432-001	L810433-001

CONNECTIONS

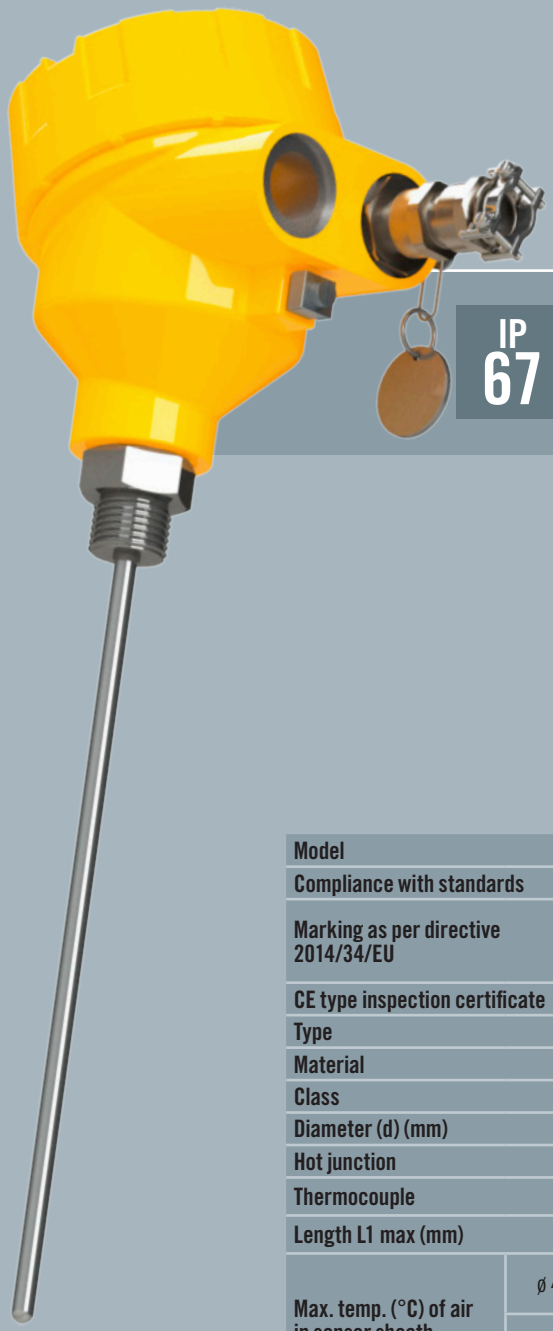
Connection 1 Pt100 Ω
1x3 wires



Connection 2 Pt100 Ω
2x3 wires



Sensing element length	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Min. P1 (mm)	20	70	120	170	220	270	320	370	420	470	520	570	620	670	720	770	820
Max. P1 (mm)	85	135	185	235	285	335	385	435	485	535	585	635	685	735	785	835	885



TAX42G
THERMOCOUPLE

IP 67 | CLASS 1 | ANTI EXPLOSION | IEC 584-1 | up to 1150°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathed thermocouple with output via LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		TAX42G				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when a voltage is present Do not open if there is dust in the atmosphere				
CE type inspection certificate		LCIE 14ATEX3007 X / IECEx LCIE 15.0015 X				
Type		K	J	T	N	
Material		Inconel600	316L	316L	Inconel 600	Pyrosil
Class		1				
Diameter (d) (mm)		4.5 - 6 - 8				
Hot junction		Insulated / Earthed				
Thermocouple		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	ø 4.5 mm	800°C	620°C	350°C	800°C	1100°C
	ø 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	ø 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Without, under head G½, connection G½				
Electrical connection	Head type	LSX				
	Material	Light alloy epoxy coating				
	Output	1 cable gland M20x1,5 with fastening module		1 cable gland M20x1.5 for armoured cable with fastening module		
	Cable diam.	7 mm to 12 mm		Ø internal : 4.5mm to 8mm Ø external : 7 mm to 12 mm		
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP67				
Accessories (p. 338)		Leak-tight fittings, rotating fittings, thermowell				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	PROCESS CONNECTION	HOT JUNCTION
TAX42G	LSX	1T	AC	6	950	5	I
Reference in table and diagram	1	2	3	4	5	6	
Possible choice	LSX : LSX	1T 1J 1K 1N 2K 2J	316L : AC INCONEL 600 : CM PYROSIL : DB	4.5 6 8	100 to 1,500	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Insulated: I Earthed: M

OPTION

CABLE GLAND	TRANSMITTER	TRANSMITTER SCALE	DIAL*
CAP	B	0/250	XS
	7		
Cap: CAP For non-armoured cable: PE1 For armoured cable: PE2	LC5334A-100: A LC5331A-321: B LC5335A-100: C TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA *compatible with the TTH200/TTH300 transmitters (see page 228)

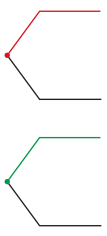
THERMOCOUPLE INFORMATION

Class 1 TC (2)	Sheath diameter (mm) (4)		
	4.5	6	8
T (CLASS 2)	316L	316L	316L
J	316L	316L	316L
K	INCONEL600	INCONEL600	INCONEL600
N	INCONEL600	INCONEL600	-
	PYROSIL	PYROSIL	PYROSIL
2J	316L	316L	316L
2K	INCONEL600	INCONEL600	INCONEL600

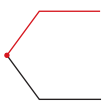
(3)

CONNECTIONS

Duplex thermocouple



Single thermocouple

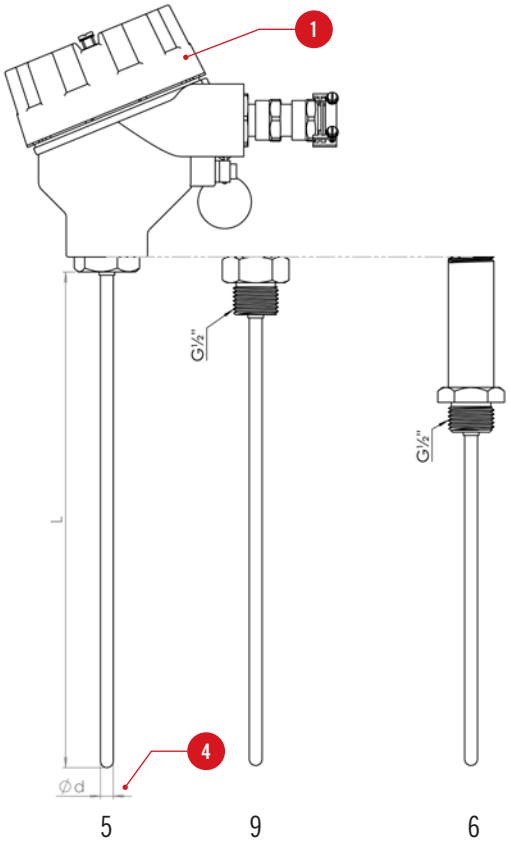


TRANSMITTER INFORMATION (1 TC ONLY) (7)

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

For any other configuration, please contact us.

DIAGRAM (MM)



PROCESS CONNECTION (6)

SAX42G

Pt100

IP 67 | CLASS A | IEC 60751 | ANTI EXPLOSION | up to 450°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathedPT100 sensor with output via LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		SAX42G	
Compliance with standards		IEC 60751 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when a voltage is present Do not open if there is dust in the atmosphere	
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X	
Type		PT 100Ω	
Class		A	
Mounting		1x3 wires / 1x4 wires / 2x3 wires	
Diameter (d) (mm)		4.5 - 6 - 8	
Min./max. operating temperature (°C)		-40…+450°C	
Length L1 max (mm)		1,500	
Process connection		Without, under head G½, connection G½	
Electrical connection	Head type	LSX	
	Material	Light alloy epoxy coating	
	Output	1 cable gland M20x1,5 with fastening module	1 cable gland M20x1.5 for armoured cable with fastening module
	Cable diam.	7 mm to 12 mm	Ø internal : 4.5mm to 8mm Ø external : 7 mm to 12 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter	
	IP	IP67	
Accessories (p. 338)		Leak-tight fittings, rotating fittings, thermowell	

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

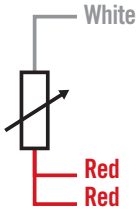
MODEL	HEAD	Ø SHEATH (mm)	LENGTH L1 (mm)	MOUNTING	PROCESS CONNECTION	CABLE GLAND
SAX42G	LSX	8	400	D	5	CAP
Reference in table and diagram	1	2	3	4	5	5
Possible choice	LSX : LSX	4.5 6 8	100 to 1,500	1x3 wires : B 1x4 wires : C 2x3 wires : D	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Cap: CAP For non-armoured cable: PE1 For armoured cable: PE2

OPTION

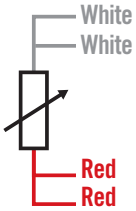
TRANSMITTER	TRANSMITTER SCALE	DIAL*
B	0/250	AA
6		
LC5331A-321: B LC5335A-100: C LC5333A-100: D TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA *compatible with the TTH200/TTH300 transmitters (see page 228)

CONNECTIONS 3

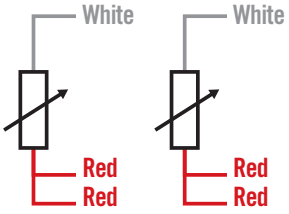
Connection 1 Pt100 Ω 1x3 wires



Connection 1 Pt100 Ω 1x4 wires



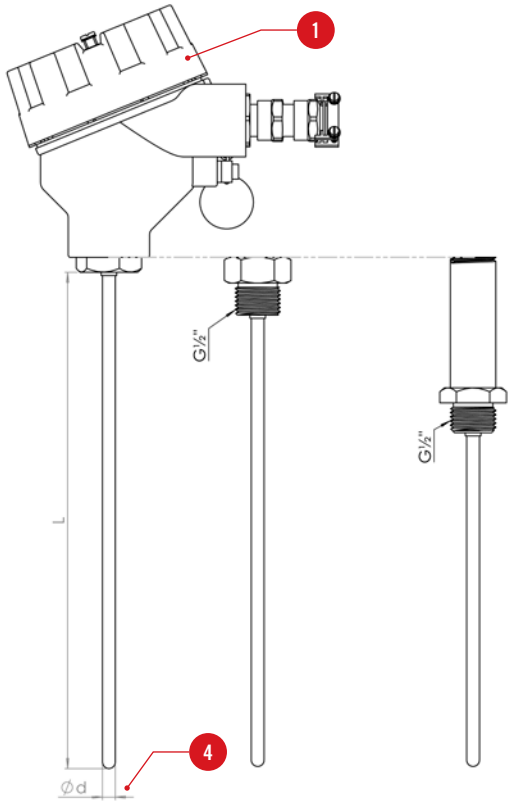
Connection 2 Pt100 Ω 2x3 wires



INFORMATIONS TRANSMETTEUR (1 PT100 UNIQUEMENT)

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	WITHOUT	ia	LC5333B-100
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

DIAGRAM (MM)

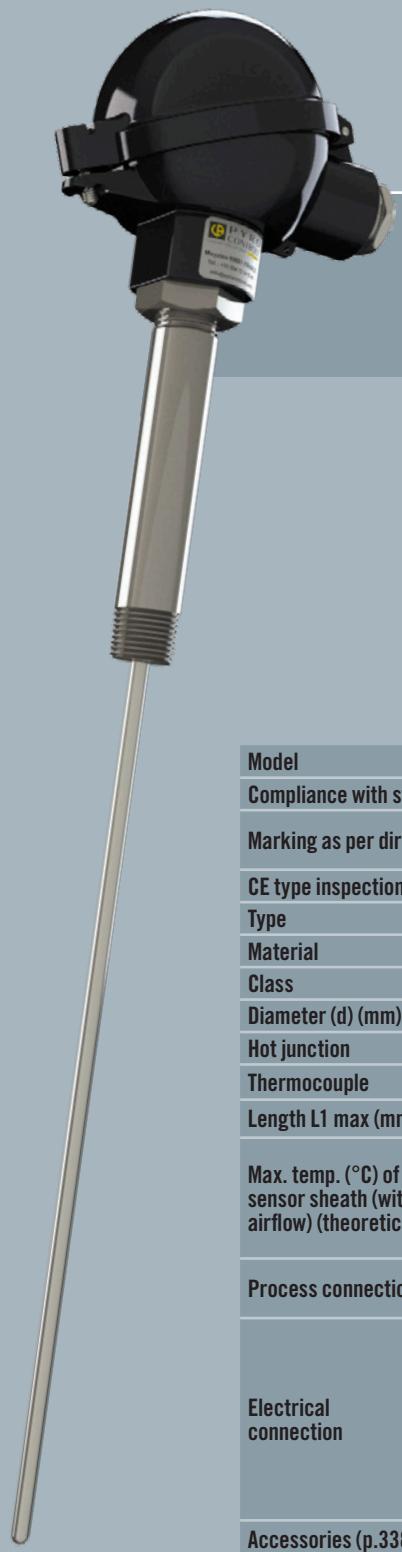


PROCESS CONNECTION 5

DUST ENVIRONMENT

ZONES 20, 21, 22 ATEX ia

TA1D
THERMOCOUPLE



IP 65 | CLASS 1 | IEC 584-1 | INTRINSIC SAFETY | up to 1150°C

DESCRIPTION

Process sensor for use in explosible zones with a dust environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 270).

SPECIFICATIONS

Model		TA1D				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da				
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X				
Type		K	J	T	N	
Material		Inconel600	316L	316L	Inconel 600	Pyrosil
Class		1		2	1	
Diameter (d) (mm)		6 - 8				
Hot junction		Insulated				
Thermocouple		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	Diam. 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	Diam. 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½" NPT. Stainless steel.				
Electrical connection	Head type	DAN-Vi				
	Material	Light alloy				
	Output	1 cable gland M20 x 1.5				
	Cable diam.	5.5 to 7.5 mm				
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP65				
Accessories (p.338)		Thermowell, cable gland				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC TYPE	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	EXTENSION	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE
TA1D	DVI	1N	CM	6	800	R	F	0/200
Reference in table and diagram	1	2	3	4	5	6	7	
Possible choice	DAN-Vi: DVI	1T 1J 1K 1N 2K 2J	316L: AC INCONEL 600: CM PYROSIL: DB	6 8	Max. 1,500 mm	Extension type M: M Extension type RU: R	LC5331B-321: F LC5335B-100: G	

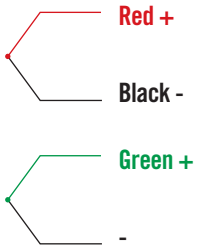
THERMOCOUPLE INFORMATION

2 Class 1 TC	Sheath diameter (mm) 6	Sheath diameter (mm) 8 (4)
T (CLASS 2)	316L	316L
J	316L	316L
K	INCONEL600	INCONEL600
N	INCONEL600	-
	PYROSIL	PYROSIL
2J	316L	316L
2K	INCONEL600	INCONEL600

3

CONNECTIONS

Duplex thermocouple



Single thermocouple

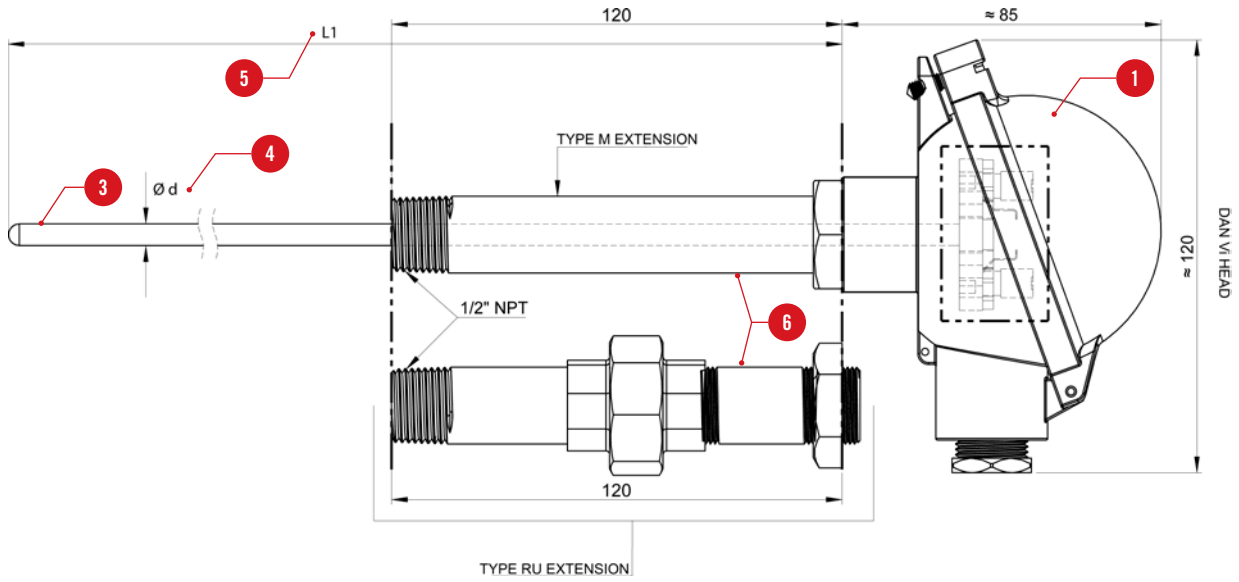
TRANSMITTER INFORMATION (1 TC ONLY)

7

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1.5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1.5kV	ia	LC5335B-100

For any other configuration, please contact us.

DIAGRAM (MM)



TAX41D
THERMOCOUPLE

IP 67 | CLASS 1 | INTRINSIC SAFETY | IEC 584-1 | up to 1150°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathed thermocouple with output via DAN or LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		TAX41D				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da				
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X				
Type		K	J	T	N	
Material		Inconel600	316L	316L	Inconel 600	Pyrosil
Class		1				
Diameter (d) (mm)		4.5 - 6 - 8				
Hot junction		Insulated / Earthed				
Thermocouple		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	ø 4.5 mm	800°C	620°C	350°C	800°C	1100°C
	ø 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	ø 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Without, under head G½, connection G½				
Electrical connection	Head type	LSX			DAN-Vi	
	Material	Light alloy epoxy costing				
	Output	1 cable gland M20x1,5				
	Cable diam.	6 mm to 12 mm			4 mm to 12,5 mm	
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP67				
Accessories (p.338)		Leak-tight fithings, rotating fittings, thermowell				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	PROCESS CONNECTION	HOT JUNCTION
TAX41D	LSX	1T	AC	6	950	5	I
Reference in table and diagram	1	2	3	4	5	6	
Possible choice	LSX : LSX DAN-Vi : DVI	1T 1J 1K 1N 2K 2J	316L : AC INCONEL 600 : CM PYROSIL : DB	4.5 6 8	100 to 1500	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Insulated: I Earthed: M

OPTION

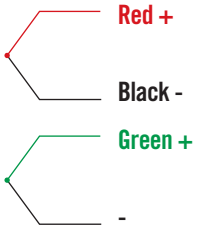
CABLE GLAND	TRANSMITTER	TRANSMITTER SCALE	DIAL*
PE3	G	0/250	XS
	7		
For LSX head only Cap: CAP Atex ia: P3 For DAN head Cable gland M20x1.5: DAN	LC5331B-221: F LC5335B-100: G TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA * compatible with the TTH200/TTH300 transmitters (see page 200)

THERMOCOUPLE INFORMATION

Class 1 TC (2)	Sheath diameter (mm)		
	4.5	6	8 (4)
T (CLASS 2)	316L	316L	316L
J	316L	316L	316L
K	INCONEL600	INCONEL600	INCONEL600
N	INCONEL600	INCONEL600	-
	PYROSIL	PYROSIL	PYROSIL
2J	316L	316L	316L
2K	INCONEL600	INCONEL600	INCONEL600 (3)

CONNECTIONS

Duplex thermocouple

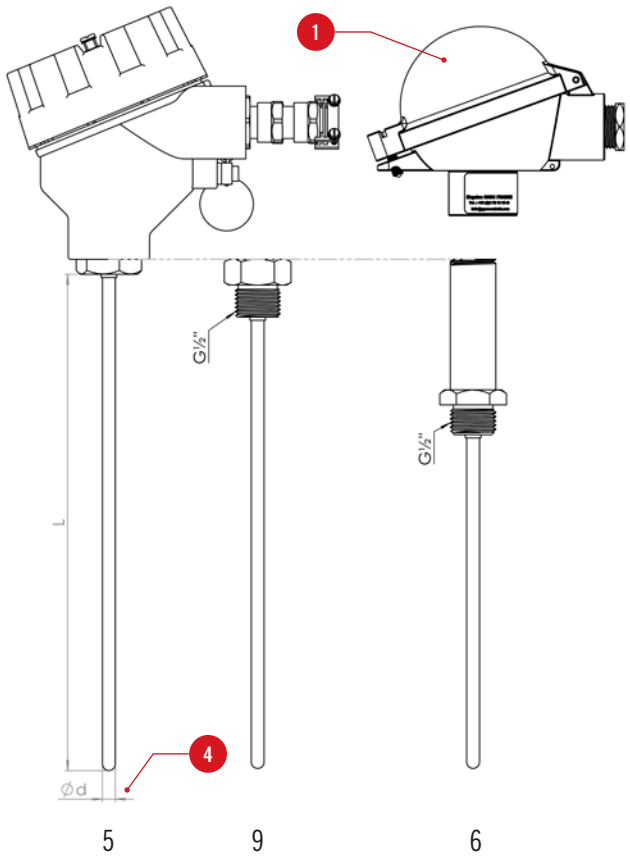


Single thermocouple

TRANSMITTER INFORMATION (1 TC ONLY) (7)

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100

DIAGRAM (MM)

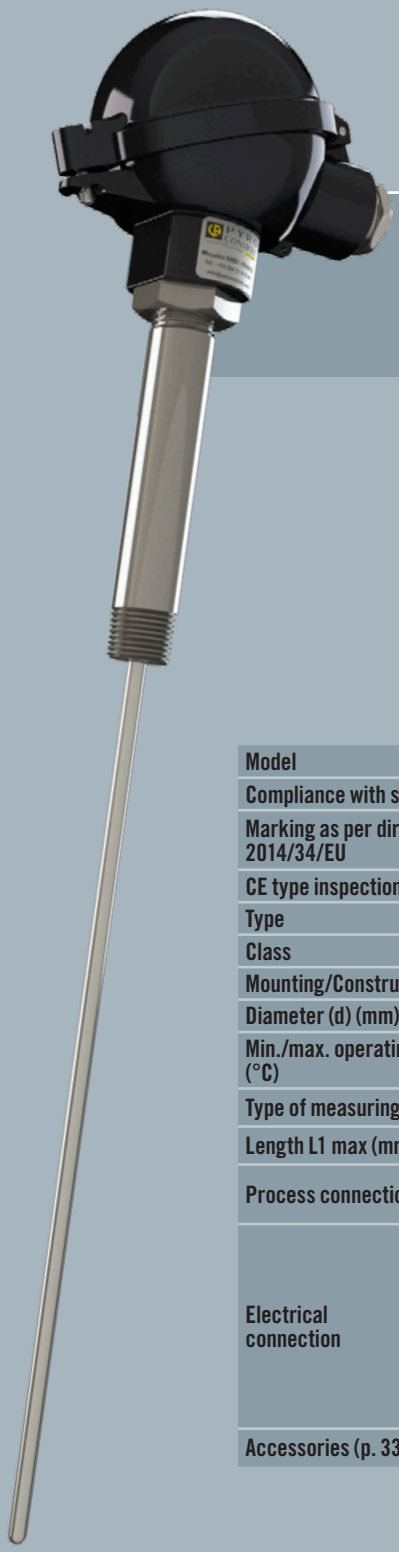


PROCESS CONNECTION (6)

Pour toute autre configuration, nous consulter.

SA1D

Pt100



IP 65 | CLASS A | IEC 60751 | INTRINSIC SAFETY | up to 450°C

DESCRIPTION

Process sensor for use in explosible zones with a dust environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 270).

SPECIFICATIONS

Model		SA1D
Compliance with standards		IEC 60751 / EN 60079-0
Marking as per directive 2014/34/EU		Ex II 1 GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X
Type		Pt100
Class		A
Mounting/Construction		1x3 wires / 1x4 wires / 2x2 wires / 2x3 wires
Diameter (d) (mm)		6 / 8
Min./max. operating temperature (°C)		-40…+450°C
Type of measuring element		DS… / TS…
Length L1 max (mm)		1,500
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½" NPT. Stainless steel.
Electrical connection	Head type	DAN-Vi
	Material	Light alloy
	Output	1 cable gland M20x1.5
	Cable diam.	5.5 to 7.5 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter
	IP	IP65
Accessories (p. 338)		Measuring element, thermowell, cable gland

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

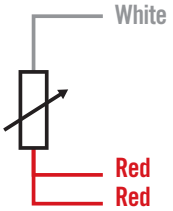
MODEL	HEAD	DIAM (mm)	MOUNTING	LENGTH L1 (mm)	EXTENSION	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE
SA1D							
Reference in table and diagram	1	2	3	4	5	6	
Possible choice	DAN-Vi: DVI	6 8	1x3 wires: B 1x4 wires: C 2x2 wires: D 2x3 wires: E	Max. 1,500 mm* *2x2-wire mounting limited to 250mm	Extension type M: M Extension type RU: R	LC5333B-100: E LC5331B-321: F LC5335B-100: G	

TRANSMITTER INFORMATION (1 PT100 ONLY) 6

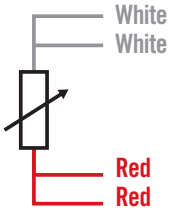
Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	NONE	ia	LC5333B-100
TC + Pt100	4-20mA	1.5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1.5kV	ia	LC5335B-100

CONNECTIONS 3

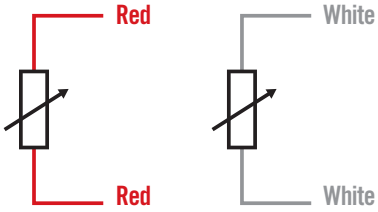
Connection 1 Pt100 Ω 1x3 wires



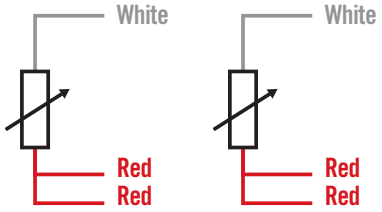
Connection 1 Pt100 Ω 1x4 wires



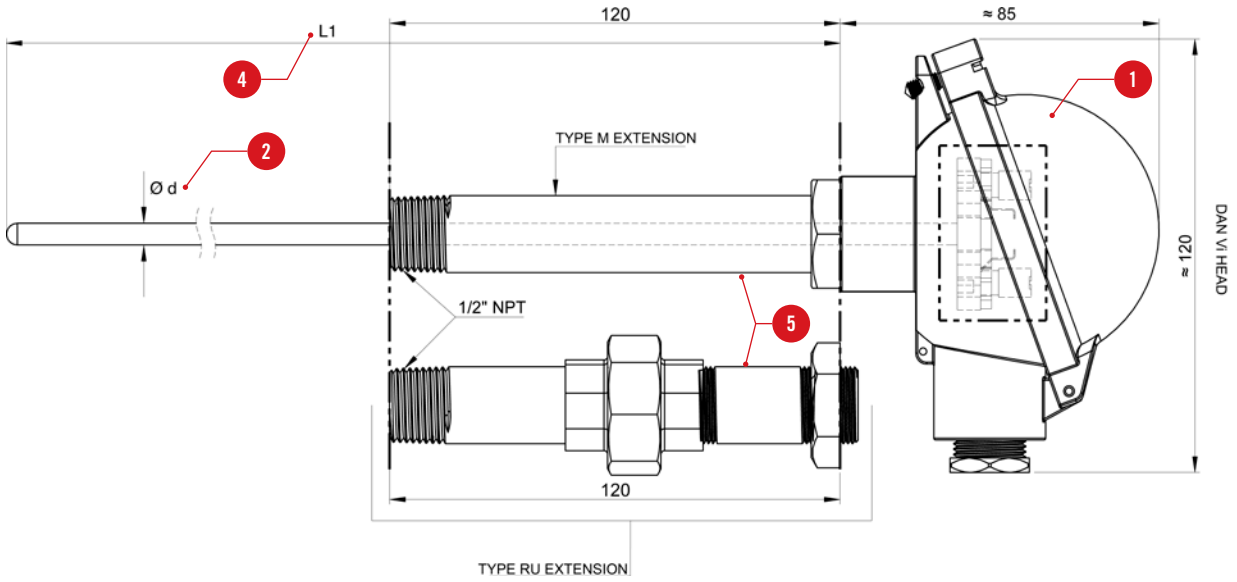
Connection 2 Pt100 Ω 2x2 wires

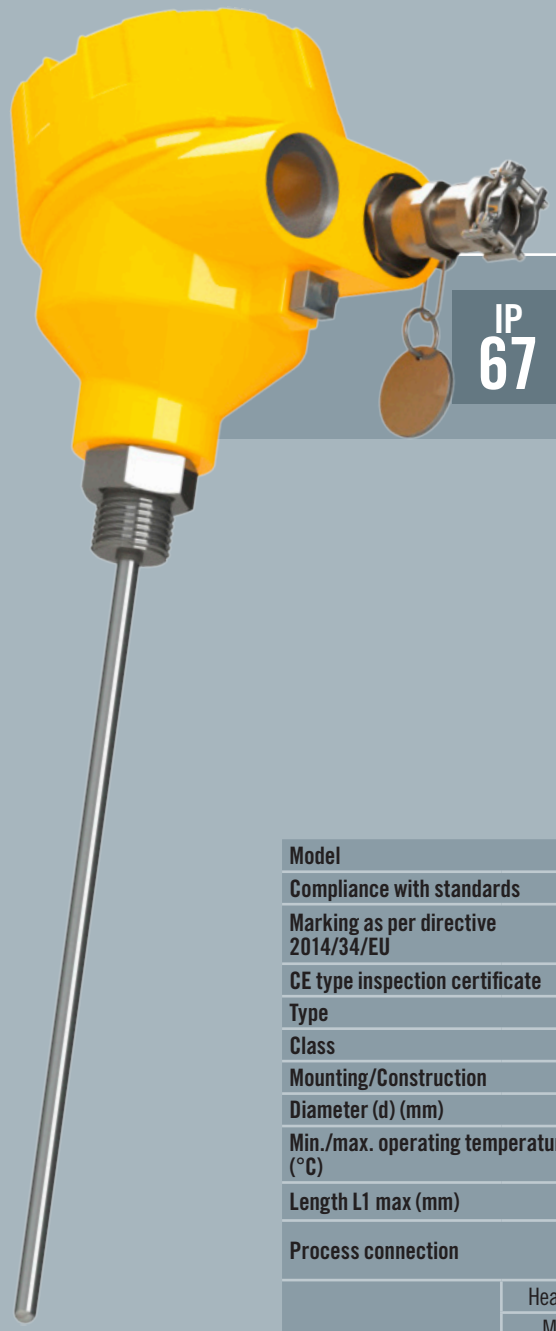


Connection 2 Pt100 Ω 2x3 wires



DIAGRAM





SAX41D

Pt100

IP 67 | CLASS A | IEC 60751 | INTRINSIC SAFETY | up to 450°C

DESCRIPTION

Capteur Process pour une utilisation en zone explosible avec un environnement poussière .Elément de mesure sonde PT100 gainée à sortie par tête DAN ou LSX. 3 variantes de raccordement sont prévues pour s'adapter à votre process. Montable sur puits thermométrique (voir page 270)

CARACTÉRISTIQUES

Model		SAX41D	
Compliance with standards		IEC 60751 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T4…T6 Ga Ex ia IIIC T135°C…T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X / IECEx LCIE 14.0021 X	
Type		PT 100Ω	
Class		A	
Mounting/Construction		1x3 wires / 1x4 wires / 2x3 wires	
Diameter (d) (mm)		4.5 - 6 - 8	
Min./max. operating temperature (°C)		-40…+450°C	
Length L1 max (mm)		1,500	
Process connection		Without, under head G½, connection G½	
Electrical connection	Head type	LSX	DAN-Vi
	Material	Light alloy epoxy coating	
	Output	1 PE M20x1,5	
	Cable diam.	6 mm to 12 mm	4 mm to 12,5 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter	
	IP	IP67	
Accessories (p. 338)		Leak-tight fittings, rotating fittings, thermowell	

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

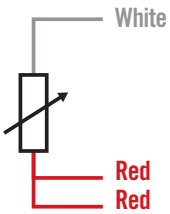
Parameters to be indicated when ordering. Example:

MODEL	HEAD	Ø SHEATH (mm)	LENGTH L1 (MM)	MONTAGE	RACCORD PROCESS	CABLE GLAND	OPTION: TRANSMITTER	OPTION: TRANSMITTER SCALE	OPTION: DIAL*
SA1G	LSX	6	950	C	5	CAP	T200	0/250	AA
Reference in table and diagram	1	2	3	4	5	6	6		6
Possible choice	LSX : LSX DAN-Vi : DVI	4.5 6 8	100 to 1500	1x3 wires : B 1x4 wires : C 2x3 wires : D	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	For LSX head only Cap: CAP Atex ia: P3 For DAN head Cable gland M20x1.5: DAN	LC5333B-100: E LC5331B-321: F LC5335B-100: G TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA * compatible with the TTH200/TTH300 transmitters (see page 200)

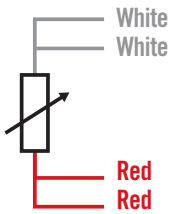
CONNECTIONS

3

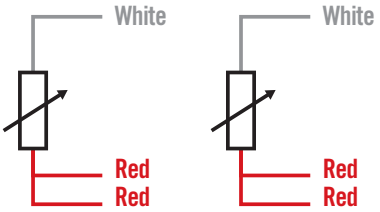
Connection 1 Pt100 Ω
1x3 wires



Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x3 wires

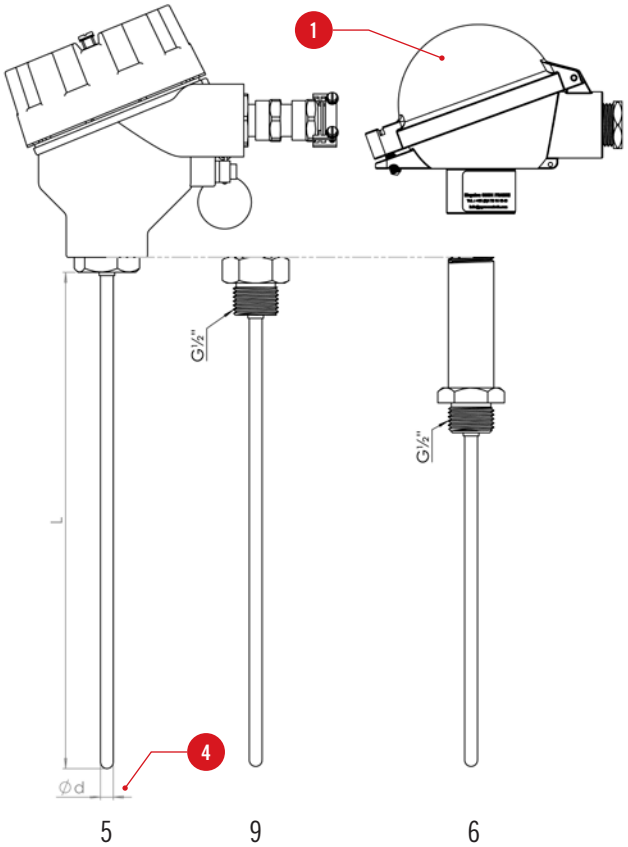


INFORMATIONS TRANSMETTEUR (1 PT100 UNIQUEMENT)

6

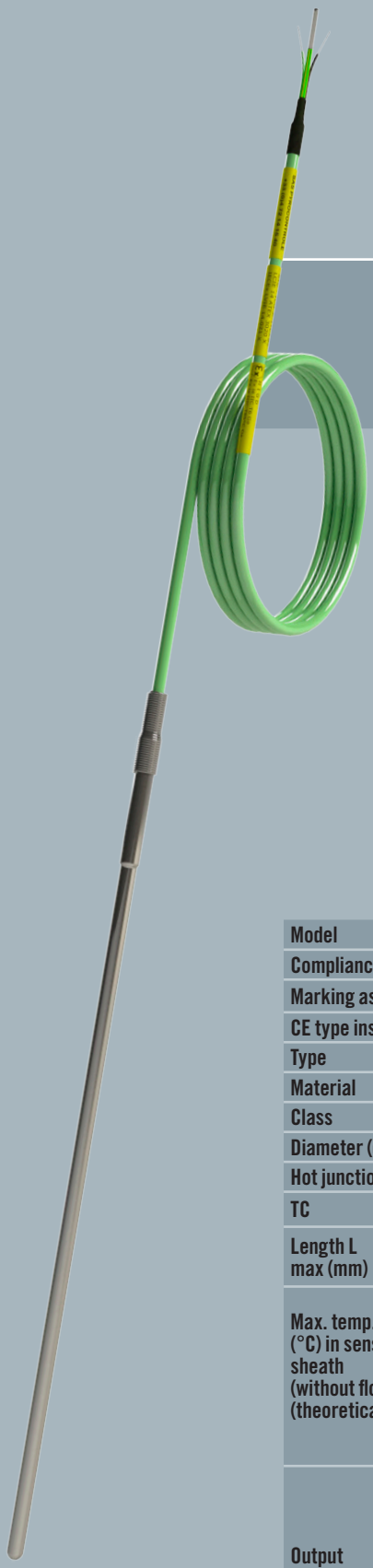
Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	WITHOUT	ia	LC5333B-100
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

DIAGRAM (MM)



PROCESS CONNECTION

5



TCG3i
THERMOCOUPLE

INTRINSIC SAFETY | CLASS 1 | IEC 584-1 | PVC CABLE OUTPUT | up to 1100°C

DESCRIPTION

Bendable flexible sheathed thermocouple for adaptation to the application, even in confined spaces. Small-diameter sensor with a short response time. Equipped with a cable for easy connection even over long distances.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21 and 22).

Thermocouples up to 3 mm in diameter must be handled with caution to avoid any breakage.

SPECIFICATIONS

Model		TCG3i	
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X	
Type		K	J
Material		Inconel 600	316L
Class		1	
Diameter (d) (mm)		1 / 1.5/ 2 / 3 / 4.5/ 6 / 8	
Hot junction		Insulated	
TC		Single / Duplex	
Length L max (mm)	Diam. 1 to 2 mm	100 to 36,000 mm	
	Diam.> 2 mm	100 to 30,000 mm	
Max. temp. in air (°C) in sensor sheath (without flow) (theoretical)	Diam.1 -1.5mm	650°C	260°C
	Diam. 2 mm	700°C	440°C
	Diam. 3 mm	750°C	520°C
	Diam. 4.5mm	800°C	620°C
	Diam. 6 mm	1000°C	720°C
	Diam. 8 mm	1100°C	720°C
Output	Type of cable	extension	
	Cable sheath	PVC	
	Max. temperature	105°C	
	Conductors	2 x 0.22 mm², PVC insulation	
	Braid	Internal, copper, connected to sensor sheath	
	Length Lc Min/ Max (mm)	200 to 10,000 mm	
Accessories (p. 338)		Leak-tight fittings, rotating fittings	

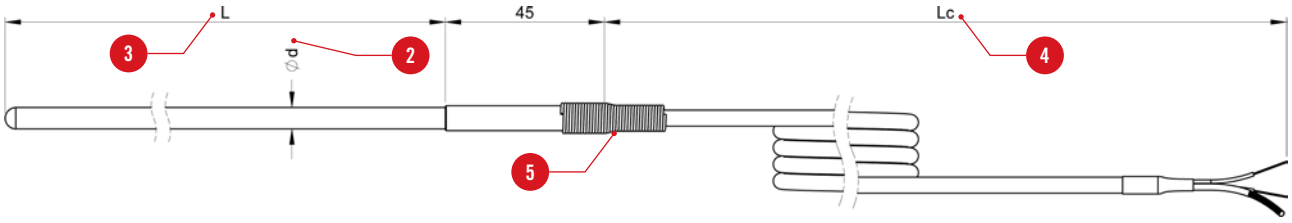
DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		TC TYPE		Ø SHEATH (mm)		LENGTH L (mm)		LENGTH LC (mm)		PROTECTIVE SPRING
TCG3i	-	1K	-	1	-	01500	-	2,000	-	0
Reference in table and diagram		1		2		3		4		5
Possible choice		1J 1K 2J 2K		1 1.5 2 3 4.5 6 8		Diam 1-1.5-2: 00100 to 36,000 Diam 3 - 4.5 - 6 - 8: 00100 to 30,000		Lc: 200 to 10,000 mm (standard: 2,000 mm)		Without: 0 With: 1 (standard)

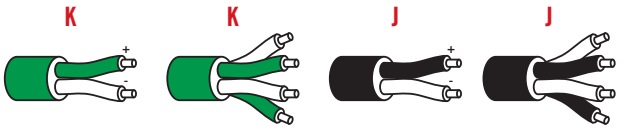
DIAGRAM (MM)



THERMOCOUPLE INFORMATION

Model	Cable	Class 1 TC (1)	Sheath diameter (m Class 1 TC m) (2)						
			1	1.5	2	3	4.5	6	8
TCG3i	PVC sheath	J	316L	316L	316L	316L	316L	316L	316L
		K	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600
		2J	-	316L	316L	316L	316L	316L	316L
		2K	-	-	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600

CONNECTIONS



For any other configuration, please contact us.

TCG32i
THERMOCOUPLE

FEP CABLE OUTPUT | CLASS 1 | IEC 584-1 | INTRINSIC SAFETY | up to 1100°C

DESCRIPTION

Bendable flexible sheathed thermocouple for adaptation to the application, even in confined spaces. Small-diameter sensor with a short response time. Equipped with a cable for easy connection even over long distances.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21, 22).

Thermocouples up to 3 mm in diameter must be handled with caution to avoid any breakage.

SPECIFICATIONS

Model		TCG32i	
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 1 GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da	
CE type inspection certificate		LCIE 14ATEX3020 X	
Type		K	J
Material		Inconel 600	316L
Class		1	
Diameter (d) (mm)		1 / 1.5/ 2 / 3 / 4.5/ 6 / 8	
Hot junction		Insulated	
Thermocouple		Single / Duplex	
Length L max (mm)	Diam. 1 to 2 mm	100 to 36,000 mm	
	Diam.> 2 mm	100 to 30,000 mm	
Max. temp. in air (°C) in sensor sheath (without flow) (theoretical)	Diam.1 -1.5mm	650°C	260°C
	Diam. 2 mm	700°C	440°C
	Diam. 3 mm	750°C	520°C
	Diam. 4.5mm	800°C	620°C
	Diam. 6 mm	1000°C	720°C
	Diam. 8 mm	1100°C	720°C
Output	Type of cable	extension	
	Cable sheath	FEP	
	Max. temperature	250°C	
	Conductors	2 x 0.22 mm², FEP insulation	
	Braid	Internal, copper, connected to sensor sheath	
	Length Lc Min/ Max (mm)	200 to 10,000 mm	
Accessories (p. 338)		Leak-tight fittings, rotating fittings	

DESIGN YOUR SENSOR

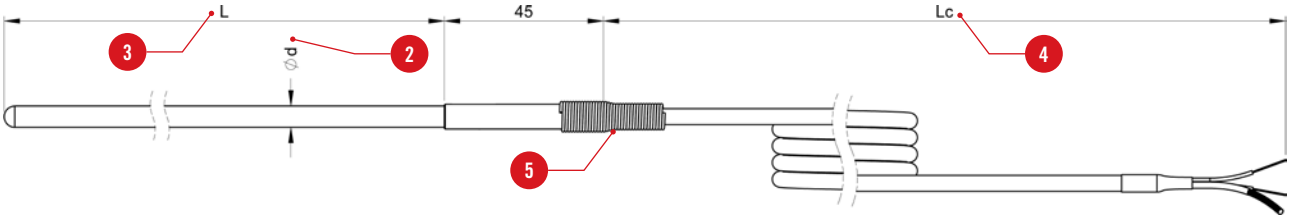
CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		TC TYPE		Ø SHEATH (mm)		LENGTH L1 (mm)		LENGTH LC (mm)		PROTECTIVE SPRING
TCG32i	-	2J	-	2	-	01700	-	8,000	-	1

Reference in table and diagram	1	2	3	4	5
Possible choice	1J 1K 2J 2K	1 1.5 2 3 4.5 6 8	Diam 1-1.5-2: 00100 to 36,000 Diam 3 - 4.5 - 6 - 8: 00100 to 30,000	Lc: 200 to 10,000 mm (standard: 2,000 mm)	Without: 0 With: 1 (standard)

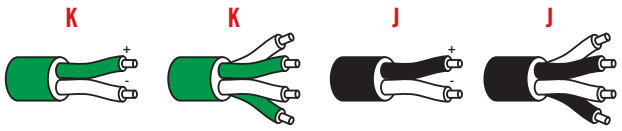
DIAGRAM (MM)



THERMOCOUPLE INFORMATION

Model	Cable	Class 1 TC (1)	Sheath diameter (mm) (2)						
			1	1.5	2	3	4.5	6	8
TCG32i	FEP sheath	J	316L	316L	316L	316L	316L	316L	316L
		K	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600
		2J	-	316L	316L	316L	316L	316L	316L
		2K	-	-	INCONEL600	INCONEL600	INCONEL600	INCONEL600	INCONEL600

CONNECTIONS



For any other configuration, please contact us.

S1i
Pt100

PVC OR FEP OR SILICONE CABLE OUTPUT | CLASS A | INTRINSIC SAFETY | IEC 60751 | up to 450°C

DESCRIPTION

Sheathed Pt100 sensor, Class A as per IEC 751, with cable output, for temperature measurement up to 450°C in low-pressure and low flow-rate environments.

Intrinsically-safe ATEX model for use in gas zones (0, 1 and 2) and dust zones (20, 21 and, 22).

SPECIFICATIONS

Model		S1i		
Compliance with standards		IEC 60751 / EN 60079-0		
Marking as per directive 2014/34/EU		Ex II 1GD / Ex ia IIC T6 Ga / Ex ia IIIC T85°C Da		
CE type inspection certificate		LCIE 14ATEX3020 X		
Type		Pt100 Ω		
Material		316 L		
Class		A		
Mounting/Construction		Single: 1x3 wires or 1x4 wires / Duplex: 2x2 wires or 2x3 wires		
Diameter (d) (mm)		1.6 / 3 / 4.5 / 6 / 8		
Length L1 max (mm)		See table opposite		
Max. temp. in air (°C) (without flow) (theoretical)		450°C		
Output	Sheath	PVC	FEP	SILICONE
	Max. temperature	105°C	200°C	200°C
	Conductors	3, 4 or 6 x 0.22 mm, PVC insulation	3, 4 or 6 x 0.22 mm, FEP insulation	3, 4 or 6 x 0.22 mm, FEP insulation
	Shielding braid	•	•	
	Length Lc Min/ Max (mm)	200 to 10,000 mm		
	Termination	Insulated bare wires		
Accessories (p. 338)		Measuring element, thermowell, cable gland		

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL		NO. OF PT100		MOUNTING		Ø SHEATH (mm)		LENGTH L (mm)		CABLE		LENGTH LC (mm)		PROTECTIVE SPRING
S1i	-	1	-	C	-	3	-	900	-	SIL	-	520	-	0
Reference in table and diagram		1		2		3		4		5		6		7
Possible choice		1 2		1x3 wires: B 1x4 wires: C 2x2 wires: D 2x3 wires: E		1.6 3 4.5 6 8		As per table below		PVC: PVC FEP: FEP Silicone: SIL		200 to 10,000 mm		Without: 0 With: 1 (standard)

DIAGRAM (MM)

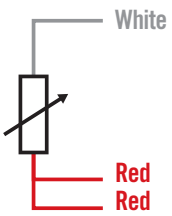
TABLE OF POSSIBLE ASSOCIATIONS

1 Number of Pt100	2 Mounting	Length L min. / max. (mm) 4				
		1.6	3	4.5	6	8
1	1x3 wires	50 / 250	50 / 1500	50 / 1500	50 / 1500	50 / 1500
	1x4 wires	50 / 250	50 / 1500	50 / 1500	50 / 1500	50 / 1500
2	2x2 wires	-	-	50 / 250	50 / 250	50 / 250
	2x3 wires	-	-	50 / 1500	50 / 1500	50 / 1500

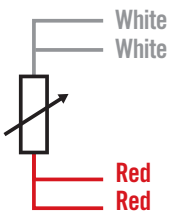
CONNECTIONS

2

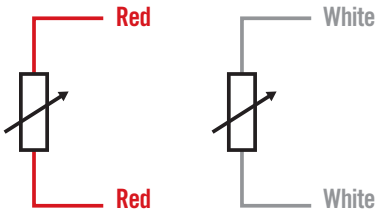
Connection 1 Pt100 Ω
1x3 wires



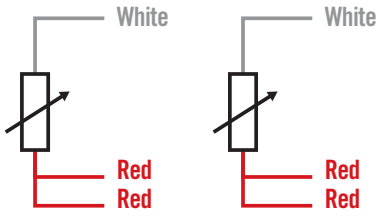
Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x2 wires



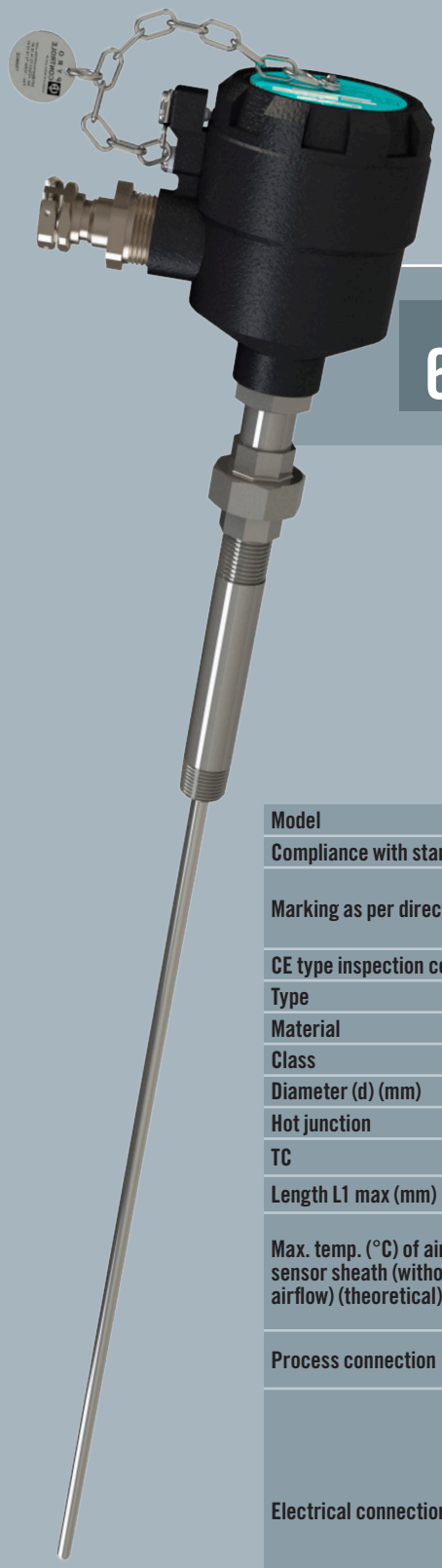
Connection 2 Pt100 Ω
2x3 wires



For any other configuration, please contact us.

DUST ENVIRONMENT

ZONES 21, 22 ATEX d



TA2D
THERMOCOUPLE

IP 65 | CLASS 1 | IEC 584-1 | ANTI-EXPLOSION | up to 1100°C

DESCRIPTION

Process sensor for use in explosible zones with a dust environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 270).

SPECIFICATIONS

Model		TA2D				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when live Do not open in the presence of dust atmospheres				
CE type inspection certificate		LCIE 15ATEX3007 X / IECEx LCIE 15.0015 X				
Type		K	J	T	N	
Material		Inconel 600	316L	316L	Inconel 600	Pyrosil
Class		1		2	1	
Diameter (d) (mm)		4.5 - 6				
Hot junction		Insulated / Earthed				
TC		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	Diam. 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	Diam. 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½" NPT. Stainless steel.				
Electrical connection	Head type	PSX				
	Material	Epoxy-coated light alloy				
	Output	1 anti-explosion cable gland 3/4" NPT with nickel-plated brass fastening				
	Cable diam.	For non-armoured cable : Ø 7.0 - 12.0 mm For armoured cable : Ø ext. 10.0 - 16.0 mm Ø int. 7.0 - 12.0 mm				
	Equipment	Ceramic terminal strip (standard) / Transmitter				
	IP	IP65				
Accessories (p. 338)		Measuring element, thermowell, cable gland				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

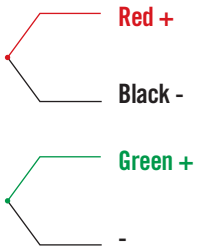
MODEL	HEAD	TC TYPE	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	HOT JUNCTION	EXTENSION	CABLE GLAND	EN OPTION TRANSMITTER	EN OPTION TRANSMITTER SCALE
TA2D	PSX	1T	AC	6	1,400	M	M	N	A	0/250
Reference in table and diagram	1	2	3	4	5	8	6		7	
Possible choice	PSX	1T 1J 1K 1N 2K 2J	316L : AC INCONEL 600 : CM PYROSIL : DB	4.5 6	Max. 1,500 mm	Insulated: I (standard) Earthed: M	Extension type M: M Extension type RU: R	For non-armoured cable : PE1 For armoured cable : PE2 Without : N	LC5334A-100 : A LC5331A-321 : B LC5335A-100 : C	

THERMOCOUPLE INFORMATION

2 Class 1 TC	Sheath diameter (mm) 4	
	6	8
T (CLASS 2)	316L	316L
J	316L	316L
K	INCONEL600	INCONEL600
N	INCONEL600	- 3
	PYROSIL	PYROSIL
2J	316L	316L
2K	INCONEL600	INCONEL600

ASSOCIATED CONNECTIONS ON TERMINAL STRIP

Duplex thermocouple



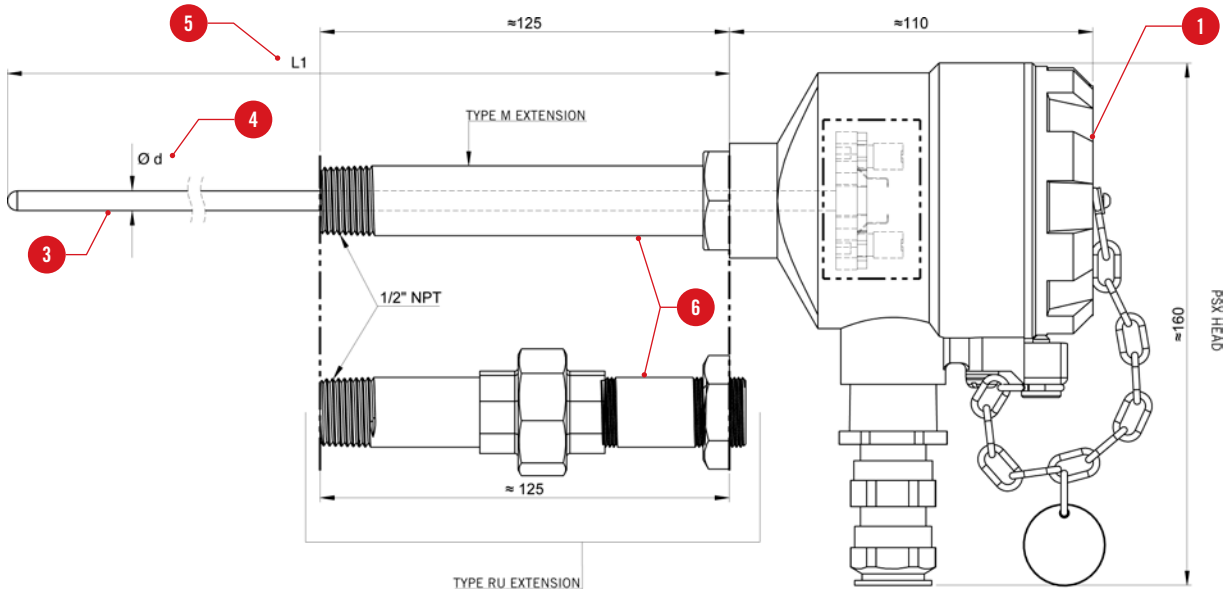
Single thermocouple

For any other configuration, please contact us

TRANSMITTER INFORMATION (1 TC ONLY) 7

Transmitter			
Input	Output	Galvanic insulation	Reference
TC	4-20mA	1.5kV	LC5334A-100
TC + Pt100	4-20mA	1.5kV	LC5331A-321
TC + Pt100	4-20mA + HART	1.5kV	LC5335A-100

DIAGRAM (MM)



DGM/TGM

THERMOCOUPLE

CLASS 1 | IEC 584-1 | SIMPLE OR DUPLEX | up to 1150°C

DESCRIPTION

Elément interchangeable à thermocouple pour une utilisation dans les capteurs type TPS. Equipé de ressorts de poussée pour un montage antivibratoire.

CARACTÉRISTIQUES

Model		DGM... / TGM...				
Compliance with standards		CEI 584-1 / NF EN 60584-1				
Type		K	J	T	N	
Material		Inconel600	316L	316L	Inconel 600	Pyrosil
Class		1		1	1	
Sheath diameter (mm)		4.5 - 6				
Hot junction		Insulated/Earthed				
Thermocouple		Single / Duplex		Single		
Length L1 Min/Max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	**Diam. 4.5 mm**	800°C	620°C	350°C	800°C	1100°C
	Diam. 6 mm	1100°C	720°C	350°C	1000°C	1100°C

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

	TYPE OF TERMINAL STRIP	ELEMENT TYPE		DIAMETER (mm)		TC TYPE		SHEATH TYPE		LENGTH L1 (MM)		HOT JUNCTION		OPTION: TRANSMITTER		OPTION: TRANSMITTER SCALE
	T	GM1	-	6	-	K	-	AC	-	800	-	I	-	N	-	-
Reference in table and diagram	1			2		3		4		5				6		
Possible choice	DIN ceramic terminal strip: D Socket for integrated transmitter: T	Single thermocouple: G1 Duplex thermocouple: G2		4.5 6		K J T N		316L: AC INCONEL 600: CM PYROSIL: DB		120 to 1,500 mm		Insulated: I (standard) Earthed: M		LC5334A-100: A LC5331A-321: B LC5335A-100: C SANS : N* *embase livrée fils libres (85 mm) sans boinier, ni transmeteur		

SCHÉMA (MM)

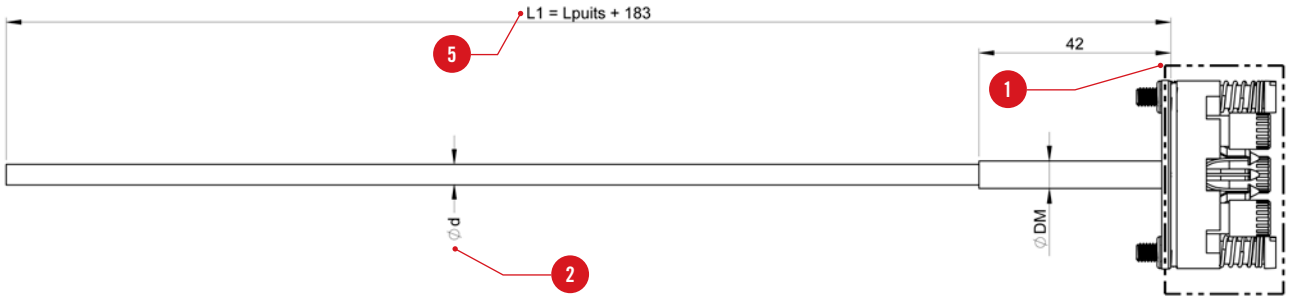


TABLEAU DES ASSOCIATIONS POSSIBLES

3 Type thermocouple Classe 1	Diamètre de la gaine (mm)	
	6	8 2
T (classe2)	316L	316L
J	316L	316L
K	INCONEL600	INCONEL600
N	INCONEL600	-
	PYROSIL	PYROSIL
2J	316L	316L
2K	INCONEL600 4	INCONEL600

INFORMATIONS TRANSMETTEUR 6

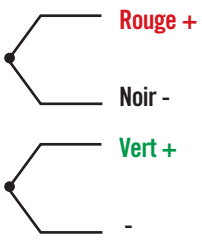
Transmetteur			
Entrée	Sortie	Isolation galvanique	Référence
TC	4-20mA	1,5kV	LC5334A-100
TC + Pt100	4-20mA	1,5kV	LC5331A-321
TC + Pt100	4-20mA + HART	1,5kV	LC5335A-100

Non compatible avec version duplex

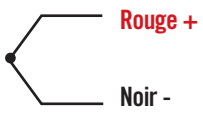
Pour toute autre configuration, nous consulter.

BRANCHEMENT

Thermocouple duplex



Thermocouple simple



TAX42D
THERMOCOUPLE

IP 67 | CLASS 1 | ANTI EXPLOSION | IEC 584-1 | jusqu'à 1150°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathed thermocouple with output via LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		TAX42D				
Compliance with standards		IEC 584-1 / EN 61515 / EN 60079-0				
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when a voltage is present Do not open if there is dust in the atmosphere				
CE type inspection certificate		LCIE 14ATEX3007 X / IECEx LCIE 15.0015 X				
Type		K	J	T	N	
Material		Inconel 600	316L	316L	Inconel 600	Pyrosil
Class		1				
Diameter (d) (mm)		4.5 - 6 - 8				
Hot junction		Insulated / Earthed				
Thermocouple		Single / Duplex			Single	
Length L1 max (mm)		1,500				
Max. temp. (°C) of air in sensor sheath (without airflow) (theoretical)	ø 4.5 mm	800°C	620°C	350°C	800°C	1100°C
	ø 6 mm	1000°C	720°C	350°C	1000°C	1100°C
	ø 8 mm	1100°C	720°C	350°C	1100°C	1150°C
Process connection		Without, under head G½, connection G½				
Electrical connection	Type de tête	LSX				
	Matière	Light alloy epoxy coating				
	Sortie	1 cable gland M20x1,5 with fastening module			1 cable gland M20x1.5 for armoured cable with fastening module	
	Diam. câble	67 mm to 12 mm			Ø infernal : 4.5mm to 8mm Ø external : 7 mm to 12 mm	
	Equipement	Ceramic terminal strip (standard) / Transmitter				
	IP	IP67				
Accessories (p. 338)		Leak-tight fithings, rotating fittings, thermowell				

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

MODEL	HEAD	TC	SHEATH TYPE	Ø SHEATH (mm)	LENGTH L1 (mm)	PROCESS CONNECTION	HOT JUNCTION
TAX42D	LSX	1K	DB	4.5	870	6	I
Référence tableau et schéma	1	2	3	4	5	6	
Choix possible	LSX : LSX	1T 1J 1K 1N 2K 2J	316L: AC INCONEL 600: CM PYROSIL: DB	4.5 6 8	100 à 1500	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Insulated: I Earthed: M

OPTION

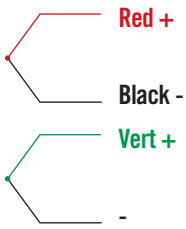
CABLE GLAND	TRANSMITTER	TRANSMITTER SCALE	DIAL*
PE2	C	0/250	XS
	7		
Cap: CAP For non-armoured cable: PE1 For armoured cable: PE2	LC5334A-100: A LC5331A-321: B LC5335A-100: C TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA *compatible with the TTH200/TTH300 transmitters (see page 228)

THERMOCOUPLE INFORMATION

Class 1 TC (2)	Sheath diameter (mm)		
	4.5	6	8 (4)
T (CLASS 2)	316L	316L	316L
J	316L	316L	316L
K	INCONEL600	INCONEL600	INCONEL600
N	INCONEL600	INCONEL600	-
	PYROSIL	PYROSIL	PYROSIL
2J	316L	316L	316L
2K	INCONEL600	INCONEL600	INCONEL600 (3)

CONNECTIONS

Duplex thermocouple



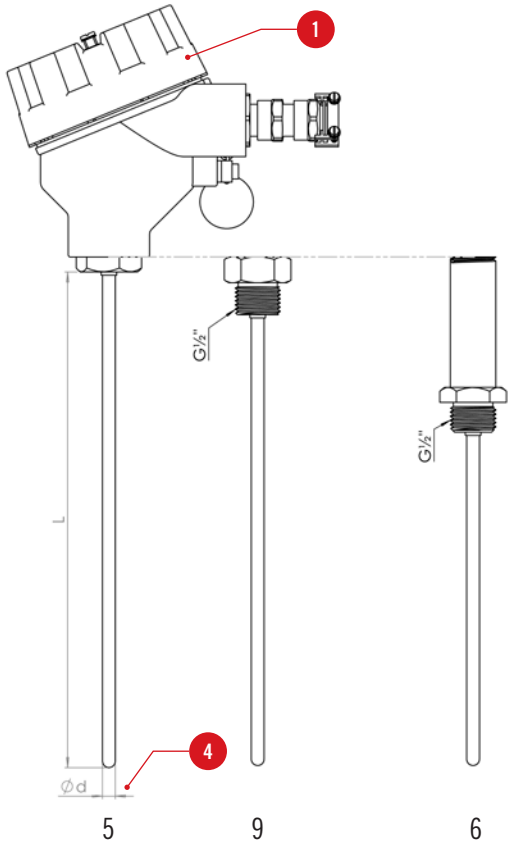
Single thermocouple

TRANSMITTER INFORMATION (1 TC ONLY) (7)

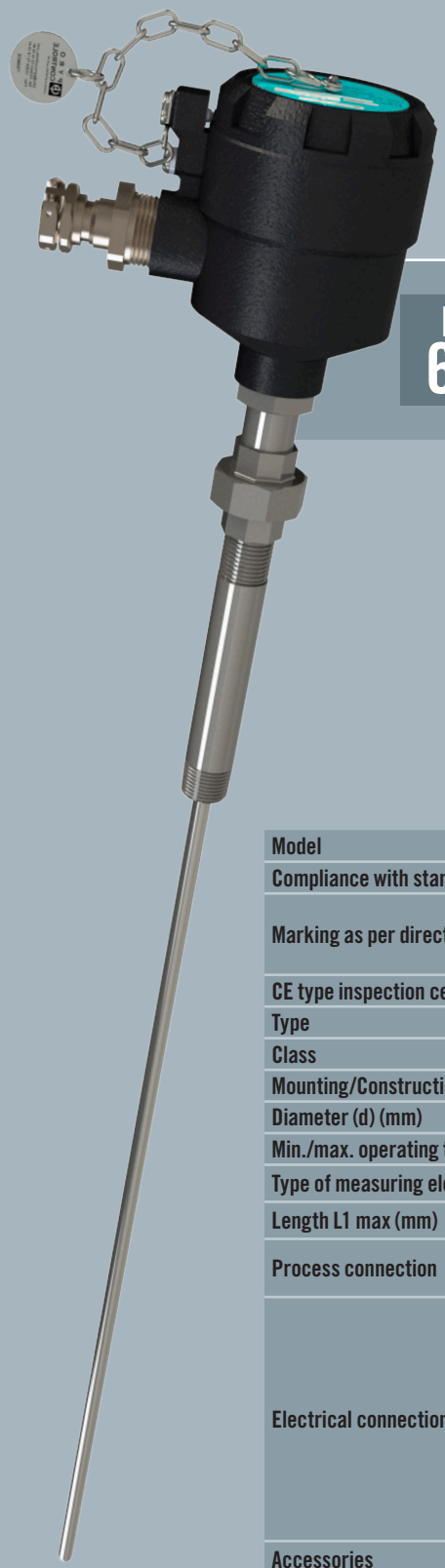
Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

For any other configuration, please contact us.

DIAGRAM (MM)



PROCESS CONNECTION (6)



SA2D

Pt100

IP 65 | CLASS A | IEC 60751 | ANTI-EXPLOSION | up to 450°C

DESCRIPTION

Process sensor for use in explosible zones with a dust environment, equipped with an interchangeable measuring element. For mounting in a thermowell (see page 238).

SPECIFICATIONS

Model		SA2D
Compliance with standards		IEC 60751 / EN 60079-0
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when live Do not open in the presence of dust atmospheres
CE type inspection certificate		LCIE 15ATEX3007 X / IECEx LCIE 15.0015 X
Type		Pt100
Class		A
Mounting/Construction		1x3 wires / 1x4 wires / 2x2 wires / 2x3 wires
Diameter (d) (mm)		4.5 - 6
Min./max. operating temp. (°C)		-40...+450°C
Type of measuring element		DS... / TS...
Length L1 max (mm)		1,500
Process connection		Type M extension - Type RU extension (makes it easy to orient the head). Threading: ½"NPT.Stainless steel.
Electrical connection	Head type	PSX
	Material	Epoxy-coated light alloy
	Output	1 anti-explosion cable gland 3/4" NPT with nickel-plated brass fastening
	Cable diam.	For non-armoured cable : Ø 7.0 - 12.0 mm For armoured cable : Ø ext. 10.0 - 16.0 mm Ø int. 7.0 - 12.0 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter
	IP	IP65
Accessories		Measuring element, thermowell, cable gland

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

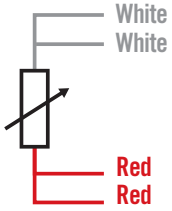
MODEL	HEAD	Ø (mm)	MOUNTING	LENGTH L1 (mm)	EXTENSION	CABLE GLAND	OPTION TRANSMITTER	OPTION TRANSMITTER SCALE
SA2D	PSX	6	D	1,250	M	N	B	0/200
Référence tableau et schéma	1	2	3	4	5		6	
Choix possible	PSX	4.5 6	1x3 wires: B 1x4 wires: C 2x2 wires: D 2x3 wires: E	Max. 1,500 mm* *2x2-wire mounting limited to 250mm	Extension type M : M Extension type RU : R	Pour câble non armé : PE1 Pour câble armé : PE2 SANS : N	LC5333A-100 : D LC5331A-321 : B LC5335A-100 : C	

TRANSMITTER INFORMATION (1 PT100 ONLY) 6

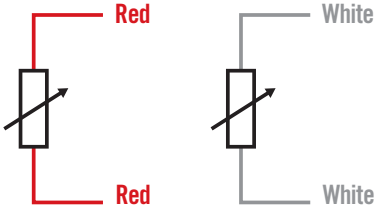
Transmitter			
Input	Output	Galvanic insulation	Reference
Pt100	4-20mA	NONE	LC5333A-100
TC + Pt100	4-20mA	1.5kV	LC5331A-321
TC + Pt100	4-20mA + HART	1.5kV	LC5335A-100

CONNECTIONS 3

Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x2 wires



Connection 2 Pt100 Ω
2x3 wires

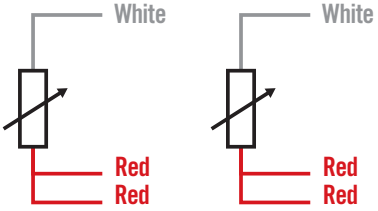
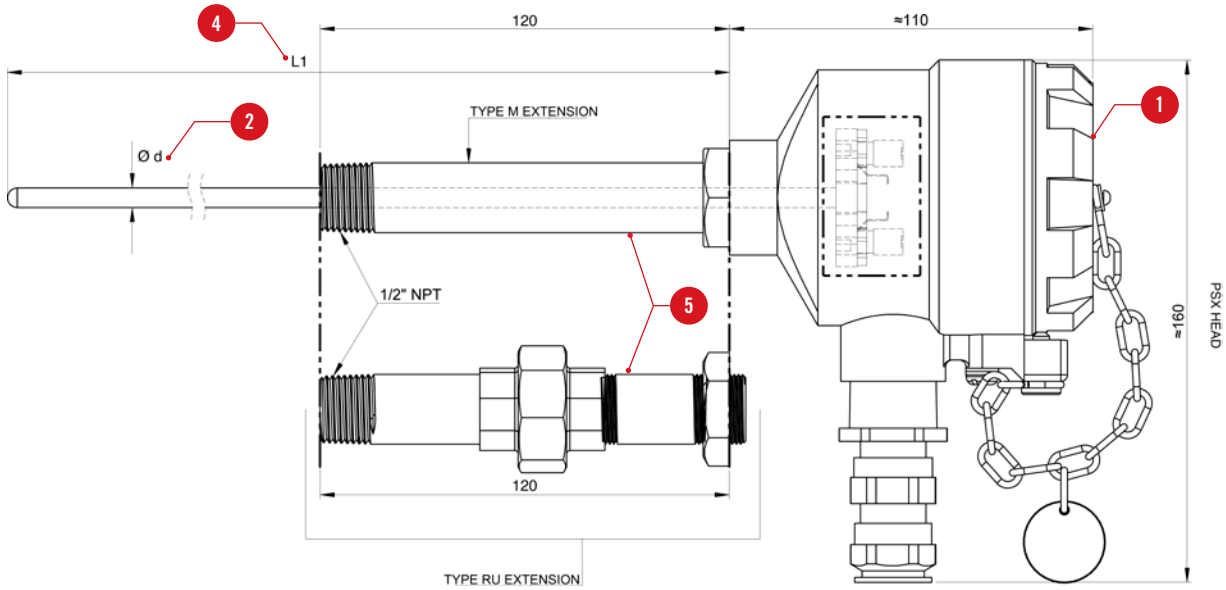


DIAGRAM (MM)



DSM/TSM

Pt100

CLASS A | IEC 60751 | SINGLE OR DUPLEX | up to 450°C

DESCRIPTION

Interchangeable Pt100 element for use in TPS/SPS sensors. Equipped with support springs for anti-vibration mounting.

SPECIFICATIONS

Model	DSM... / TSM...
Compliance with standards	IEC 60751
Type	Pt100
Class	A up to 450 °C I B from 450 to 600 °C
Mounting/Construction	1x3 wires / 1x4 wires / 2x2 wires / 2x3 wires
Sheath diameter (mm)	4.5 - 6
Min./Max. operating temp. (°C)	-40...+600°C
Sheath material	316L
Length L1 Min/Max (mm)	1,500

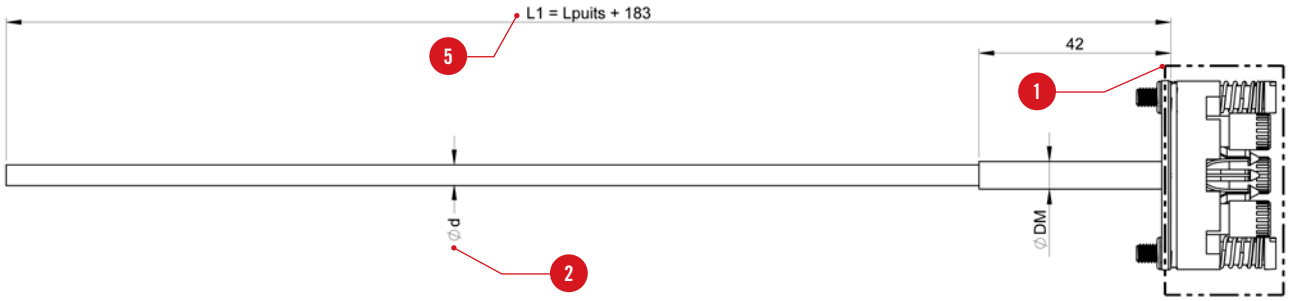
DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering

	TYPE OF TERMINAL STRIP		ELEMENT TYPE		Ø (mm)	MOUNTING	LENGTH L1 (mm)	OPTION TRANSMITTER	OPTION TRANSMITTER SCALE
	D	-	SM1	-	6	4	900	A	0/150
Reference in table and diagram	1		2		3	4	5	6	
Possible choice	DIN ceramic terminal strip: D Socket for integrated transmitter: T		Single Pt100: S1 Duplex Pt100: S2		4.5 6	1x2 or 2x2 wires: 2 1x3 or 2x3 wires: 3 1x4 wires: 4	Max 1,500 mm	LC5333A-100: A LC5331A-321: B LC5335A-100: C WITHOUT : N* *embase livrée fils libres (85 mm) sans boinier, ni transmeteur	

DIAGRAM



TRANSMITTER INFORMATION

6

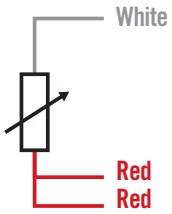
Transmitter			
Input	Output	Galvanic insulation	Reference
Pt100	4-20mA	SANS	LC5333A-100
TC + Pt100	4-20mA	1,5kV	LC5331A-321
TC + Pt100	4-20mA + HART	1,5kV	LC5335A-100

Not compatible with duplex version

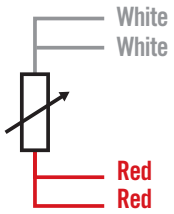
CONNECTIONS

2 4

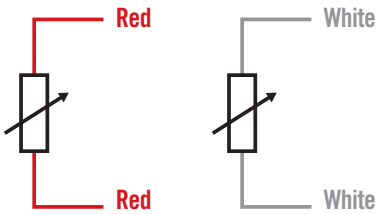
Connection 1 Pt100 Ω
1x3 wires



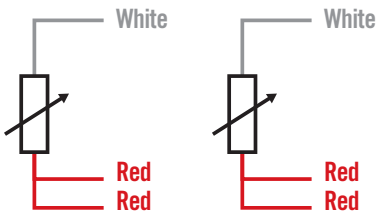
Connection 1 Pt100 Ω
1x4 wires



Connection 2 Pt100 Ω
2x2 wires



Connection 2 Pt100 Ω
2x3 wires



For any other configuration, please contact us.

SAX42D

Pt100

IP 67 | CLASS A | IEC 60751 | ANTI EXPLOSION | jusqu'à 450°C

DESCRIPTION

Process sensor for use in explosive zones with gas environments. Measuring element: sheathedPT100 sensor with output via LSX head. 3 connection variants are available for adaptation to your process. Mountable on thermowell (see page 270)

SPECIFICATIONS

Model		SAX42D	
Compliance with standards		IEC 60751 / EN 60079-0	
Marking as per directive 2014/34/EU		Ex II 2 GD / Ex db IIC T6 Gb / Ex tb IIIC T85°C Db IP.6X Do not open when a voltage is present Do not open if there is dust in the atmosphere	
CE type inspection certificate		LCIE 14ATEX3007 X / IECEx LCIE 15.0015 X	
Type		PT 100Ω	
Class		A	
Mounting		1x3 wires / 1x4 wires / 2x2 wires / 2x3 wires	
Diameter (d) (mm)		4.5 - 6 - 8	
Min./max. operating temperature (°C)		-40…+450°C	
Length L1 max (mm)		1,500	
Process connection		Without, under head G½, connection G½	
Electrical connection	Head type	LSX	
	Material	Light alloy epoxy coating	
	Output	1 cable gland M20x1,5 with fastening module	1 cable gland M20x1.5 for armoured cable with fastening module
	Cable diam.	7 mm to 12 mm	Ø internal : 4.5mm to 8mm Ø external : 7 mm to 12 mm
	Equipment	Ceramic terminal strip (standard) / Transmitter	
	IP	IP67	
Accessories (p. 338)		Leak-tight fittings, rotating fittings, thermowell	

For any other configuration, please contact us.

DESIGN YOUR SENSOR

CONFIGURATOR CODE

Parameters to be indicated when ordering. Example:

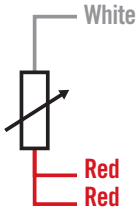
MODEL	HEAD	Ø SHEATH (mm)	LENGTH L1 (mm)	MOUNTING	PROCESS CONNECTION	CABLE GLAND
SAX42D	LSX	8	1140	B	9	PE1
Reference in table and diagram	1	2	3	4	5	5
Possible choice	LSX : LSX	4.5 6 8	100 to 1500	1x3 wires : B 1x4 wires : C 2x3 wires : D	Without: 5 Extension and connection G ½": 6 Connection hunder head G ½": 9	Cap: CAP For non-armoured cable: PE1 For armoured cable: PE2

OPTION

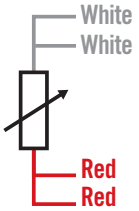
TRANSMITTER	TRANSMITTER SCALE	DIAL*
B	0/250	AA
6		
LC5331A-321: B LC5335A-100: C LC5333A-100: D TTH200: T200 TTH300: T300		Without: XS AS: AS A: AA *compatible with the TTH200/ TTH300 transmitters (see page 228)

CONNECTIONS 3

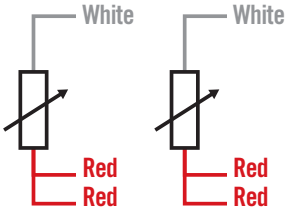
Branchement 1 Pt100 Ω
1x3 wires



Branchement 1 Pt100 Ω
1x4 wires



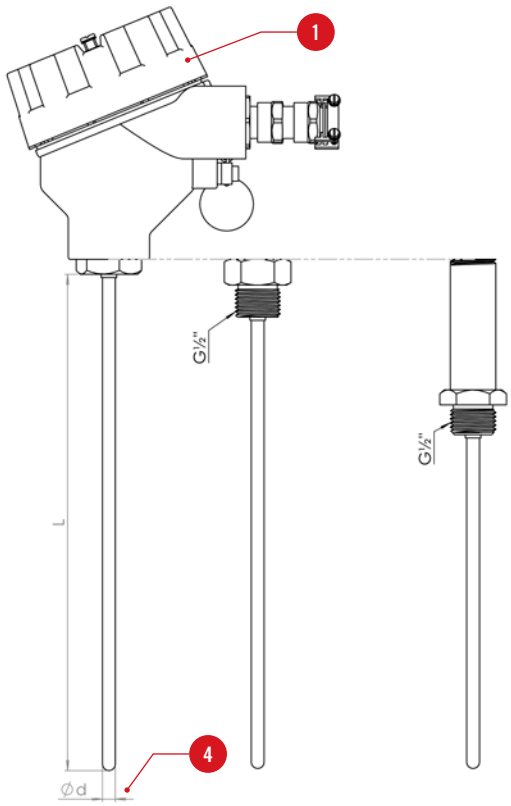
Branchement 2 Pt100 Ω
2x3 wires



INFORMATIONS TRANSMETTEUR (1 PT100 UNIQUEMENT)

Transmitter				
Input	Output	Galvanic insulation	ATEX	Reference
Pt100	4-20mA	WITHOUT	ia	LC5333B-100
TC + Pt100	4-20mA	1,5kV	ia	LC5331B-321
TC + Pt100	4-20mA + HART	1,5kV	ia	LC5335B-100
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH200
TC + Pt100	4-20mA + HART	3,5kV	ia	TTH300

DIAGRAM (MM)



PROCESS CONNECTION 6

CHAUVIN ARNOUX
Immeuble Front Office
12 - 16 rue Sarah Bernhardt
92600 Asnières-sur-Seine
Tel. : +33 1 44 85 44 85
Fax : +33 1 46 27 07 48
info@chauvin-arnoux.fr
www.chauvin-arnoux.com

CHAUVIN ARNOUX METRIX
Immeuble Front Office
12 - 16 rue Sarah Bernhardt
92600 Asnières-sur-Seine
Tel. : +33 1 44 85 44 85
Fax : +33 1 46 27 07 48
info@chauvin-arnoux.fr
www.chauvin-arnoux.com

CHAUVIN ARNOUX ENERGY
16, rue Georges Besse
92182 Antony Cedex - France
Tel. : +33 1 75 60 10 30
Fax : +33 1 46 66 62 54
info@enerdis.fr
www.chauvin-arnoux-energy.com

MANUMESURE
9, allée Jean Prouvé
92110 Clichy - France
Tel. : +33 1 75 61 01 80
Fax : +33 1 47 33 28 02
info@manumesure.fr
www.manumesure.fr

YOUR CONTACTS

FRANCE
SOUTH-WEST SECTOR
Telephone: +33 (0)4 72 14 16 31
sud.est@pyrocontrole.fr

WEST SECTOR
Telephone: +33 (0)4 81 76 02 55
ouest@pyrocontrole.fr

ILE-DE-FRANCE/NORTH-EAST SECTOR
Telephone: +33 (0)4 81 76 02 54
idf.nord.est@pyrocontrole.fr

INTERNATIONAL
PYROCONTROLE EXPORT DEPARTMENT
Telephone: +33 (0)4 72 14 15 40
export@pyrocontrole.com

10 SUBSIDIARIES WORLDWIDE

GERMANY
CHAUVIN ARNOUX GMBH
Ohmstraße 1
77694 KEHL / RHEIN
Tel.: +49 7851 99 26-0
Fax: +49 7851 99 26-60
info@chauvin-arnoux.de
www.chauvin-arnoux.de

AUTRICHE
CHAUVIN ARNOUX GES.M.B.H
Gastgegasse 27
1230 WIEN
Tél. : +43 1 61 61 9 61
Fax : +43 1 61 61 9 61-61
vie-office@chauvin-arnoux.at
www.chauvin-arnoux.at

CHINA
SHANGHAI PU-JIANG ENERDIS INSTRUMENTS CO. LTD
3 Floor, 23 Building
Gemdale Viseen Minhang Technology
& Industrial Park Project
1288 lane, Zhongchun Road Minhang
District, SHANGHAI City.
Tél. : +86 21 65 21 51 96
Fax : +86 21 65 21 61 07
info@chauvin-arnoux.com.cn

SPAIN
CHAUVIN ARNOUX IBÉRICA SA
C/ Roger de Flor N°293
1a Planta
08025 BARCELONA
Tel. : +34 902 20 22 26
Fax : +34 934 59 14 43
info@chauvin-arnoux.es
www.chauvin-arnoux.es

ITALY
AMRA SPA
Via Sant'Ambrogio, 23
20846 MACHERIO (MB)
Tel. : +39 039 245 75 45
Fax : +39 039 481 561
info@amra-chauvin-arnoux.it
www.chauvin-arnoux.it

MIDDLE EAST
CHAUVIN ARNOUX MIDDLE EAST
PO Box 60-154
1241 2020 JAL EL DIB
(Beirut) - LEBANON
Tel. : +961 1 890 425
Fax : +961 1 890 424
camie@chauvin-arnoux.com
www.chauvin-arnoux.com

UNITED KINGDOM
CHAUVIN ARNOUX LTD
Unit 1 Nelson Ct, Flagship Sq
Shaw Cross Business Pk, Dewsbury
West Yorkshire - WF12 7TH
Tel. : +44 1924 460 494
Fax : +44 1924 455 328
info@chauvin-arnoux.co.uk
www.chauvin-arnoux.com

SCANDINAVIA
CA MÄTSYSTEM AB
Sjöflygvägen 35
SE-183 62 TABY
Tel. : +46 8 50 52 68 00
Fax : +46 8 50 52 68 10
info@camatsystem.com
www.camatsystem.com

SWITZERLAND
CHAUVIN ARNOUX AG
Moosacherstrasse 15
8804 AU / ZH
Tel. : +41 44 727 75 55
Fax : +41 44 727 75 56
info@chauvin-arnoux.ch
www.chauvin-arnoux.ch

USA
CHAUVIN ARNOUX INC
d.b.a AEMC Instruments
15 Faraday Drive
Dover - NH 03820
Tel. : +1 (800) 945-2362
Fax : +1 (603) 742-2346
sales@aemc.com
www.aemc.com

FRANCE
PYROCONTROLE
6 bis, av du Docteur Schweitzer
69881 Meyzieu Cedex - France
Tel. : +33 4 72 14 15 40
Fax : +33 4 72 14 15 41
info@pyrocontrole.com
www.pyrocontrole.com

MIDDLE EAST
Chauvin Arnoux Middle East
P.O. BOX 60-154
1241 2020 JAL EL DIB -
LEBANON
Tel: +961 1 890 425
Fax: +961 1 890 424
camie@chauvin-arnoux.com
www.chauvin-arnoux.com

UNITED KINGDOM
Chauvin Arnoux Ltd
Unit 1 Nelson Ct, Flagship Sq,
Shaw Cross Business Pk
Dewsbury, West Yorkshire -
WF12 7TH
Tel: +44 1924 460 494
Fax: +44 1924 455 328
info@chauvin-arnoux.co.uk
www.chauvin-arnoux.com

CHAUVIN ARNOUX