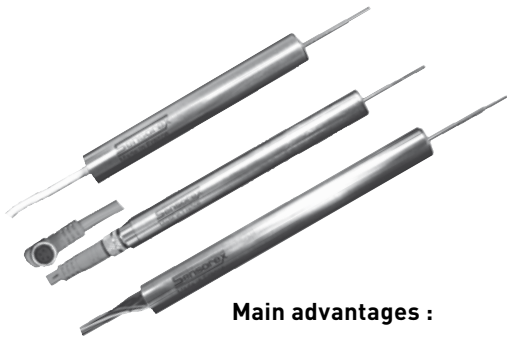


# HIGH PERFORMANCE LVDTs, 12 MM DIAMETER : SX12C - SX12K - SX12W SERIES



**Main advantages :**

- Infinite resolution.
- Very high MTBF.
- Excellent linearity < 0.15 % full scale.
- Very low thermal drift < 150 ppm/°C.
- High protection level IP66 or IP67.






## RANGE OVERVIEW

The SX12 range is a high performance LVDT series. They are particularly suitable for severe environment applications (high temperature and pressure), and where precision and outstanding reliability are needed.

3 different versions of this LVDT are available, as shown in the table below

## SELECTION GUIDE :

Model		Characteristics
SX12C		<ul style="list-style-type: none"> <li>- M8 connector output</li> <li>- Max. operating T° 85 °C</li> <li>- Operating pressure 250 bar</li> <li>- Plug'in</li> </ul>
SX12K		<ul style="list-style-type: none"> <li>- Shielded cable output</li> <li>- Max. operating T° 200 °C (option)</li> <li>- Max. operating pressure 250 Bar (option)</li> <li>- Rugged for extreme environments</li> </ul>
SX12W		<ul style="list-style-type: none"> <li>- 6 wire output</li> <li>- Max. operating T° 200°C (option)</li> <li>- Max. operating pressure 350 Bar (option)</li> <li>- Compact, easy to integrate</li> </ul>

## SIGNAL CONDITIONING

These sensors are AC/AC. They should be connected to a signal conditioning unit, model SX3120, SX9130, or SX6510. These signal conditioners can be found in our 2.0 catalogue.

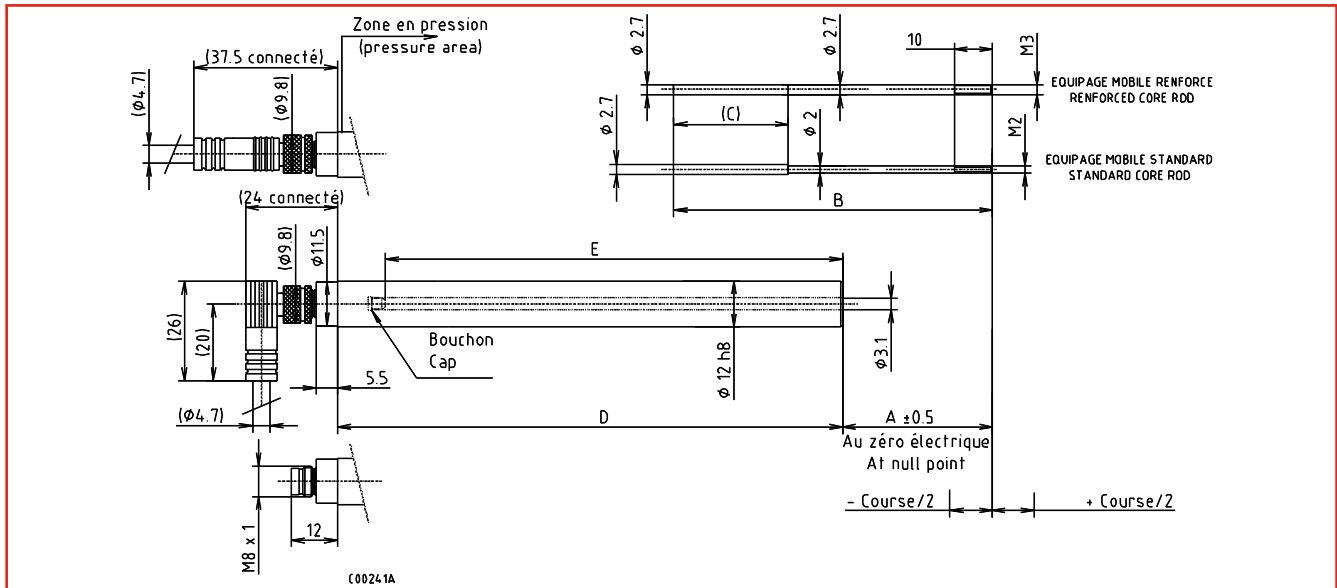
## GENERAL SPECIFICATIONS (AT 25 °C)

Electrical stroke	± 3 to ± 150 mm
Power supply (primary)	2.2 V rms (6 V pp)
Frequency (primary excitation)	3500 Hz rms (400 Hz to 15 KHz)
Consumption	< 10 mW
Resolution	Infinite
Hysteresis	Non measurable
Linearity	< 0.15% F.S. (except strokes ± 125 mm and ± 150 mm < 0.25 % FS)
Thermal drift	< 150 ppm/°C
Zero null voltage	< 0.5 % FS
Operating temperature	- 40 °C to 200 °C (according to models)
Dielectrical strength	500 VDC / 1 mn
Insulation resistance	< 1000 Mohm / 500 VDC
Shock resistance	1000 g / 2 ms
Vibration resistance	12 g peak to peak (10 to 2000 Hz)
Protection	IP 66 or IP 67 (according to models)

# SX12C : M 8 CONNECTOR OUTPUT



## INTERFACE DRAWING & SPECIFICATIONS

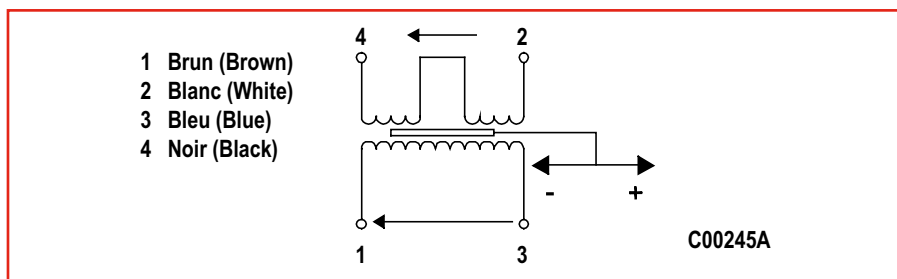


**Materials :** FeNi housing, stainless steel rod, mumetal core

Models		SX12 C006	SX12 C010	SX12 C020	SX12 C040	SX12 C060	SX12 C100	SX12 C150	SX12 C200	SX12 C250	SX12 C300	
Stroke (mm)	Electrical stroke	± 3	± 5	± 10	± 20	± 30	± 50	± 75	± 100	± 125	± 150	
	Mechanical stroke	± 6	± 6	± 18	± 30	± 37	± 56	± 83	± 107	± 136	± 162	
Electrical specifications at 3.5 KHz / 2.2 Vrms / 23°C	Sensitivity ± 5 % (mV/V.mm)	56	39	9	9	9	9	9	7,2	3,7	4,4	
	Primary impedance (Ohm), ± 20%	750	750	1250	2000	3000	2400	1500	3700	2800	1450	
	Secondary Impedance (Ohm)	<200	<200	<330	<300	<200	<400	<550	<750	<600	<450	
	Phase primary / secondary (Degrees)	< ± 6°										
Environnement	Operating temperature	- 25 °C to + 85 °C										
	Pressure	250 bar										
	IP	IP 67										
Dimensions (mm)	A	33	33	40.4	50.2	59.8	80.4	105.5	126.9	145.5	170	
	B	61.8	61.8	85.5	116	136	175.5	243	300	357	408	
	C	21.7	21.7	29.3	40.8	41.4	41.2	56	69.2	80	80	
	D	58.5	58.5	86.5	116.5	136.5	174.5	244.5	302.5	369.5	423.5	
	E	34.9	34.9	63.4	93.4	113.4	151.4	221.4	280.4	348.4	400.4	

## CONNECTION

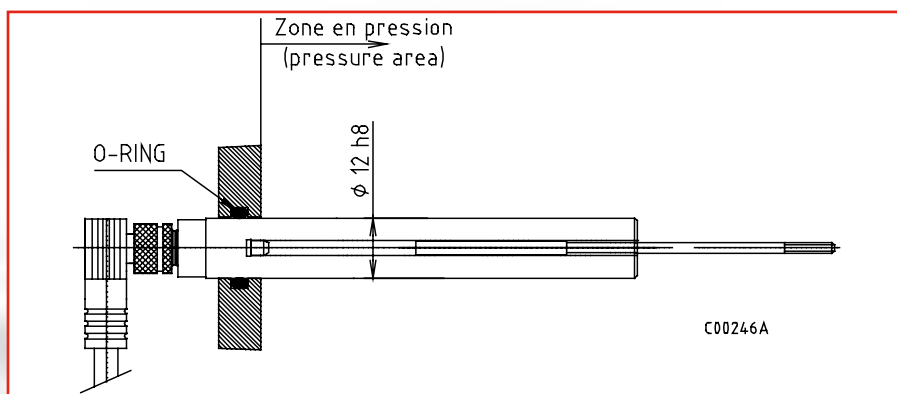
- M 8 connector ;
- 2 or 10 meters, axial or radial cable to be ordered separately.



## MOUNTING EXAMPLE

250 bar pressure.

**Nb :** The sensor is tested at 250 bar for 1 minute ; for intensive use, pressure level must be reduced by 25%.




## OPTION

- Reinforced core rod :  
2.7 mm diameter, M 3 screw : to be ordered separately

## SELECTION GUIDE

### Sensor

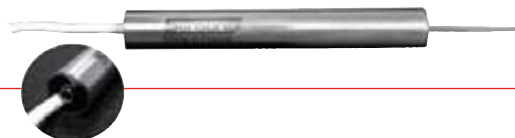
SX12C	XXX
	Total stroke

### Cable option

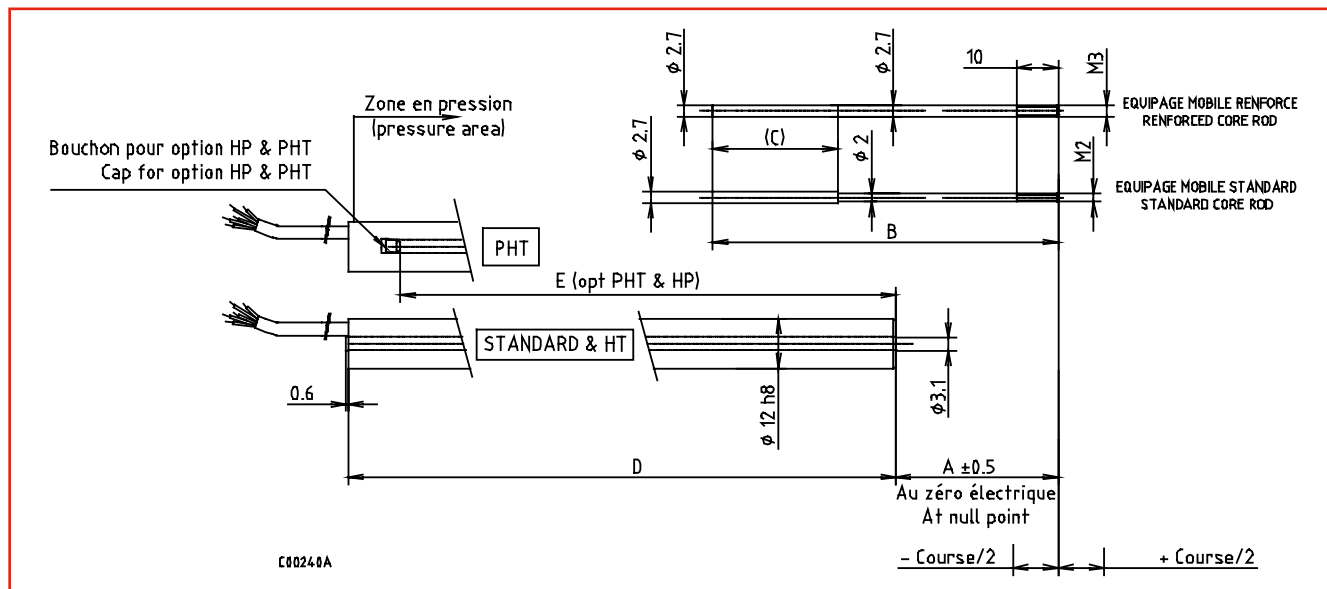
Type	Length	2m	10m
	Axial		690 150 401
Radial		690 150 403	690 150 404

Nota : Each Lvdt is delivered with its test report.

# SX12K : SHIELDED CABLE OUTPUT



## INTERFACE DRAWING & SPECIFICATIONS

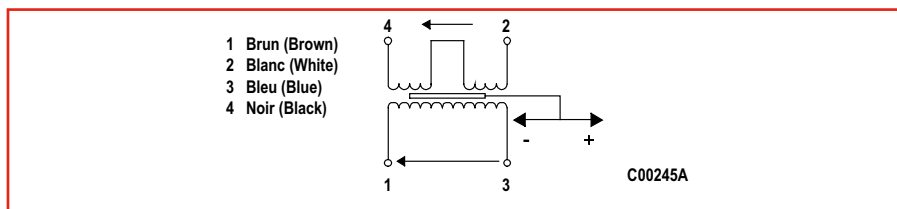


**Materials :** FeNi housing, stainless steel rod, mumetal core

Models		SX12 C006	SX12 C010	SX12 C020	SX12 C040	SX12 C060	SX12 C100	SX12 C150	SX12 C200	SX12 C250	SX12 C300	
Stroke (mm)	Electrical stroke	± 3	± 5	± 10	± 20	± 30	± 50	± 75	± 100	± 125	± 150	
	Mechanical stroke	± 6	± 6	± 18	± 30	± 37	± 56	± 83	± 107	± 136	± 162	
Electrical specifications at 3.5 KHz / 2.2 Vrms / 23°C	Sensitivity ± 5 % (mV/V.mm)	56	39	9	9	9	9	9	7,2	3,7	4,4	
	Primary impedance (Ohm), ± 20%	750	750	1250	2000	3000	2400	1500	3700	2800	1450	
	Secondary Impedance (Ohm)	<200	<200	<330	<300	<200	<400	<550	<750	<600	<450	
	Phase primary / secondary (Degrees)	< ± 6°										
Environnement	Std operating temp.	- 40 °C to + 125 °C										
	HT option temp.	- 40 °C to + 200 °C										
	Pressure & HT option	250 bar, - 40 to + 200 °C										
	IP	IP 66										
Dimensions (mm)	A	33	33	40.4	50.2	59.8	80.4	105.5	126.9	145.5	170	
	B	61.8	61.8	85.5	116	136	175.5	243	300	357	408	
	C	21.7	21.7	29.3	40.8	41.4	41.2	56	69.2	80	80	
	D	58.5	58.5	86.5	116.5	136.5	174.5	244.5	302.5	369.5	423.5	
	E	34.9	34.9	63.4	93.4	113.4	151.4	221.4	280.4	348.4	400.4	

## CONNECTION

- Shielded cable output, 5 PTFE screened cable 3.2 mm diameter, insulated wires gauge 26, standard length 2 m, 10 m length as option.

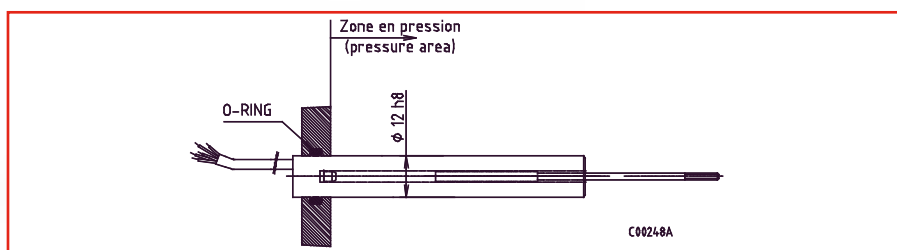


## OPTIONS

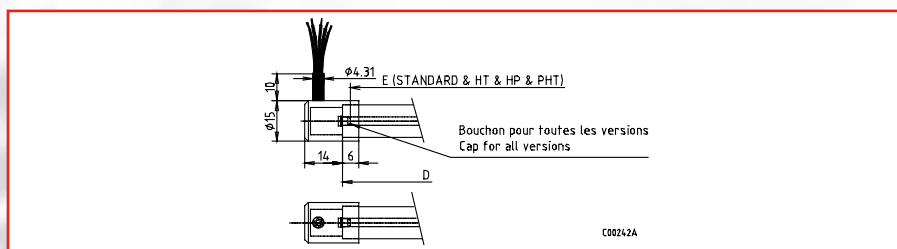
- **HT** : - 40 °C to + 200 °C operating temperature.
- **PHT** : 250 bar pressure and - 40 °C to + 200 °C operating temperature.

**Nb** : the sensor is tested at 250 bar for 1minute ; for intensive use, pressure level must be reduced by 25%.

### Mounting example



- **Radial output** : to be ordered separately.



- **Reinforced core rod** : 2.7 mm diameter, M 3 screw : to be ordered separately.
- **Intrinsically safe according to ATEX norm** : please contact us.

## SELECTION GUIDE

SX12K	xxx	xxx	xxx
	Total stroke	HT or PHT option	Cable length 2 m (std) or 10 m (option)

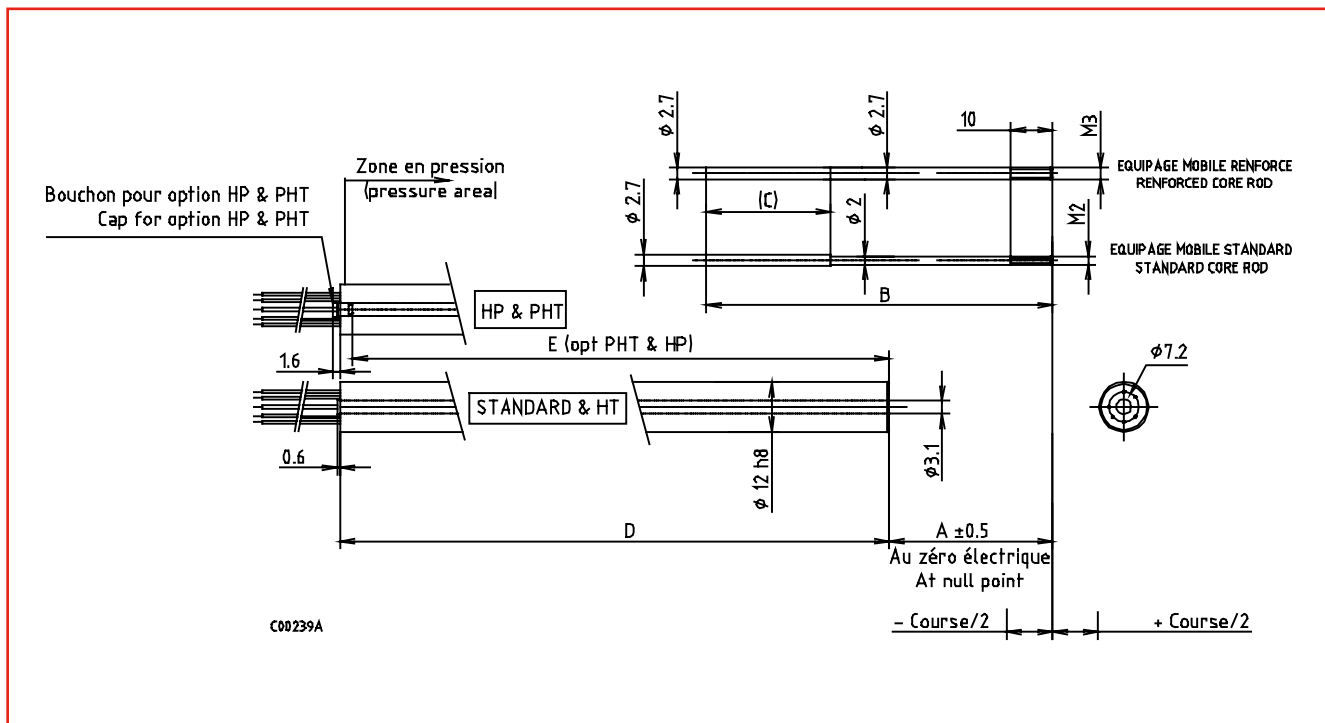
Radial output : order ref. 690 150 400

Nota : Each LvdT is delivered with its test report. The SXi programm is only for standard sensors.

# SX12W : WIRE OUTPUT



## INTERFACE DRAWING & SPECIFICATIONS

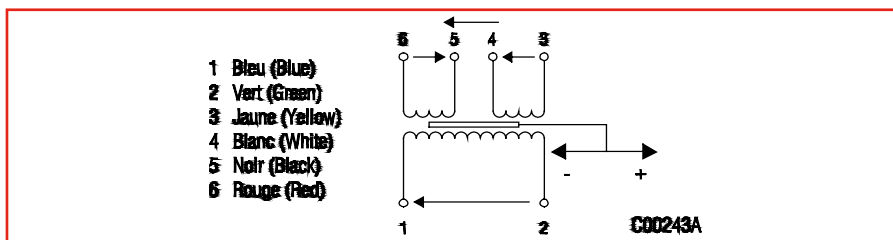


**Materials:** FeNi housing, stainless steel rod, mumetal core

Models		SX12 W006	SX12 W010	SX12 W020	SX12 W040	SX12 W060	SX12 W100	SX12 W150	SX12 W200	SX12 W250	SX12 W300	
Stroke (mm)	Electrical stroke	± 3	± 5	± 10	± 20	± 30	± 50	± 75	± 100	± 125	± 150	
	Mechanical stroke	± 6	± 6	± 18	± 30	± 37	± 56	± 83	± 107	± 136	± 162	
Electrical specifications at 3.5 KHz / 2.2 Vrms / 23 °C)	Sensitivity ± 5 % (mV/V.mm)	56	56	39	9	9	9	9	7,2	3,7	4,4	
	Primary impedance (Ohm) ± 20 %	750	750	1250	2000	3000	2400	1500	3700	2800	1450	
	Second. Imped. (Ohm) Phase	<200	<200	<330	<300	<200	<400	<550	<750	<600	<450	
	Primary / secondary (Degrees)	< ± 6°										
Environnement	Standard op. Temp.	- 40 °C to + 125 °C										
	HT temp. option	- 40 °C to + 200 °C										
	High Pressure option	350 bar										
	Pressure HT Option	250 bar, - 40 °C to + 200 °C										
IP	IP 66											
Dimensions (mm)	A	33	33	40.4	50.2	59.8	80.4	105.5	126.9	145.5	170	
	B	61.8	61.8	85.5	116	136	175.5	243	300	357	408	
	C	21.7	21.7	29.3	40.8	41.4	41.2	56	69.2	80	80	
	D	38.5	38.5	67	97	117	155	225	284	352	404	
	E (mini)	34.9	34.9	63.4	93.4	113.4	151.4	221.4	280.4	348.4	400.4	

## CONNECTION

- 6 tinned insulated wires, gauge 26, 1 m length.



## OPTIONS

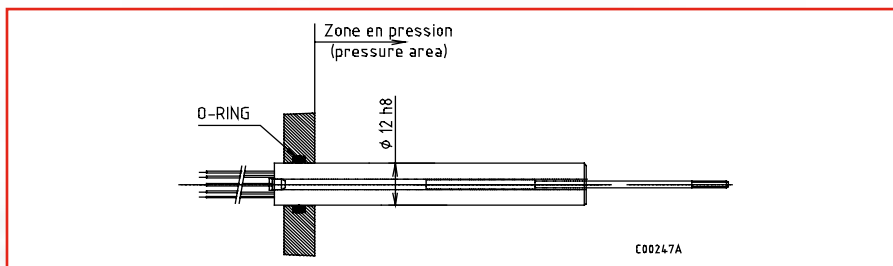
- **HT** : - 40 °C to + 200 °C operating temperature.
- **HP** : 350 bar pressure, maximum temperature + 85 °C.

**Nb** : the sensor is tested at 350 bar for 1 minute ; for intensive use, pressure level must be reduced by 25%.

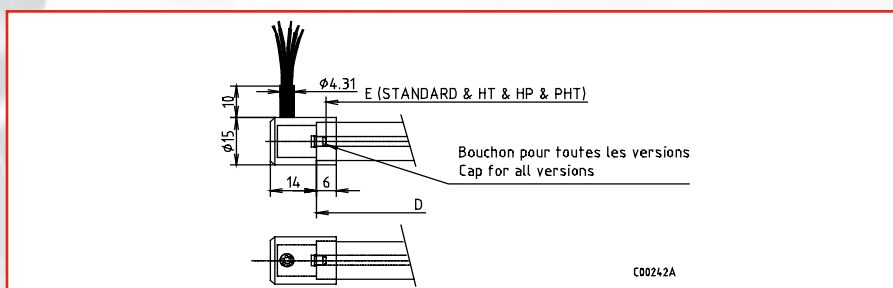
- **PHT** : 250 bar pressure and - 40 °C to + 200 °C operating temperature.

**Nb** : the sensor is tested at 250 bar for 1 minute ; for intensive use, pressure level must be reduced by 25%.

### Mounting example



- **Radial output** : to be ordered separately.



- **Reinforced core rod** : 2.7 mm diameter, M 3 screw : to be ordered separately.

## SELECTION GUIDE

SX12W	XXX	XXX
<b>SXi</b>	Total stroke	HT, PHT or HP option

Radial output : order ref. 690 150 400

*Nota* : Each LvdT is delivered with its test report. The SXi programm is only for standard sensors.

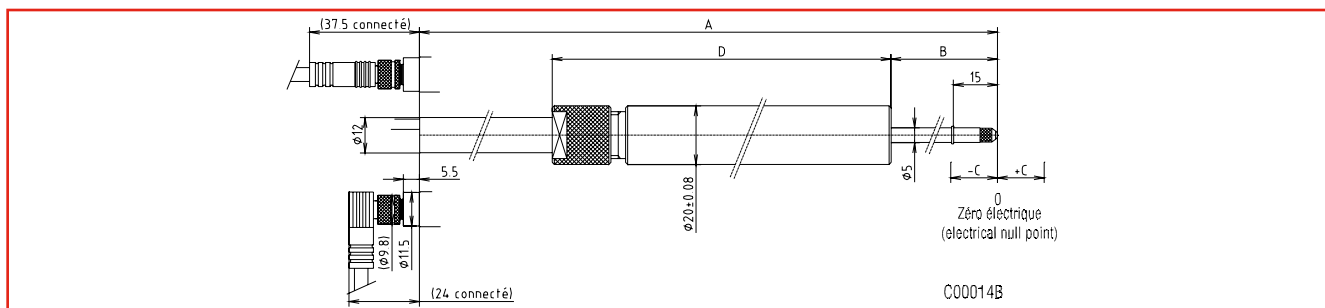
## ACCESSORIES FOR SX 12 L.V.D.T. TRANSDUCERS

### GAUGE HEAD KIT FOR SX 12 SERIES LVDT TRANSDUCERS

These kits are designed to give SX 12 series transducers (maximum range  $\pm 50$  mm) a precise guiding of the core assembly on a ball bearing.

- Easy mounting
- High rigidity
- May be used between  $- 40^{\circ}$  and  $85^{\circ}\text{C}$  ( $- 40$  to  $+ 200$   $^{\circ}\text{C}$  option HT).

References	Stroke (mm)		B	SX12W	SX12K	SX12C	D
	Meca.	Elect.		A	A	A	
EP 006	$\pm 7,5$	$\pm 3$	22,5	146	173	173	113,5
EP 010	$\pm 7,5$	$\pm 5$	22,5	151	175	178	113,5
EP 020	$\pm 12,5$	$\pm 10$	27,5	210	230	230	147,0
EP 040	$\pm 22,5$	$\pm 20$	37,5	270	290	290	170,5
EP 060	$\pm 30,0$	$\pm 30$	50,0	333	350	350	238,0
EP 100	$\pm 55,0$	$\pm 50$	70,0	431	450	450	330,0



### GAUGE HEAD WITH PROTECTIVE BELLOWS

These kits are designed to enable a perfect guiding and are totally protected against dust, particles and steam.

References	Stroke (mm)		A	SX12W	SX12K	SX12C	D
	Meca.	Elect.		A	A	A	
EP 006	$\pm 7,5$	$\pm 3$	99,5	213	240	245	103,5
EP 010	$\pm 7,5$	$\pm 5$	99,5	218	245	245	103,5
EP 020	$\pm 12,5$	$\pm 10$	104,5	277	297	297	137,0
EP 040	$\pm 22,5$	$\pm 20$	114,5	337	357	307	160,5

