



TEST CERTIFICATE

Second addition to number E-00.02.C04

LOAD CELL TYPE S2

Issued by: Direcció General d'Energia, Mines i Seguretat Industrial - Generalitat de Catalunya
 (Notified Body number 0315)
 Avinguda de la Diagonal, 405 bis
 E-08008 BARCELONA SPAIN

In accordance with: Paragraph 8.1 of the European Standard "Metrological aspects of non-automatic weighing instruments" EN 45501:1992(+AC:1993). The applied error fraction p_1 with reference to paragraphs 3.5.4 and 4.12 of this standard is 0,7. Following paragraph 4.12 of this standard, the tests have been performed according to the OIML International Recommendation, OIML R 60 (2000).

Issued to: SENSOCAR, S.A.
 Carrer Gèminis, 77, nau 2, P.I.Can Parellada
 E-08228 TERRASSA SPAIN

In respect of: The model of a **load cell**, tested as part of a non-automatic weighing instrument.
 Manufacturer: SENSOCAR, S.A..
 Type: S2.
 This second addition complements the test certificate number E-00.02.C04, with changes relating to addition of new metrological characteristics in version S2-B.

Characteristics:

Classification		C3 \updownarrow \dagger				C4 \updownarrow \dagger				--			
Maximum number of LC verification intervals n_{LC}		3000				4000				--			
Maximum capacity E_{max}	(S2-A)	500		750		1000		1500		kg			
	(S2-B 350 Ω)	500	750	1000	1500	2000	3000	4000	5000	6000	7500	10000	kg
	(S2-B 1000 Ω)	2000	3000	4000	5000	6000	7500	10000	kg				
	(S2-C)	1300	2000	3000	4000	5000	6000	6500	kg				
Ratio minimum LC verification interval $Y = E_{max}/V_{min}$		(S2-A & S2-C)				12000				--			
		(S2-B)				15000				--			
Impedance input R_{LC}		(S2-A & S2-C)				350				Ω			
		(S2-B)				350		1000		Ω			
additional marking	temperature limits	rated output		minimum dead load		safe overload							
--	-10°C/+40°C	C = 2 mV/V		$E_{min} = 0$ kg		$E_{lim}/E_{max} = 150\%$							

The main characteristics are shown in the descriptive annex, which is an integral part of the test certificate and consists of 6 pages.

The type is described in the submitted technical documentation, identified with number 07/00. The documents of first addition to Test Certificate are described in the submitted technical documentations, identified with number 26/10. The changes covered by this addition are described in the submitted additional technical documentation, identified with number 03/12.

THE DEPUTY DIRECTOR OF INDUSTRIAL SAFETY

by delegation of competences, according to the resolution EMO/991/2011,
 of 12 April 2011 (DOGC 5865, of 26/04/2011)

Isidre Masalles i Roman



Generalitat de Catalunya
 Departament d'Empresa i Ocupació
 Direcció General d'Energia, Mines
 i Seguretat Industrial
 Subdirecció general de Seguretat Industrial

Barcelona, 3 February 2012

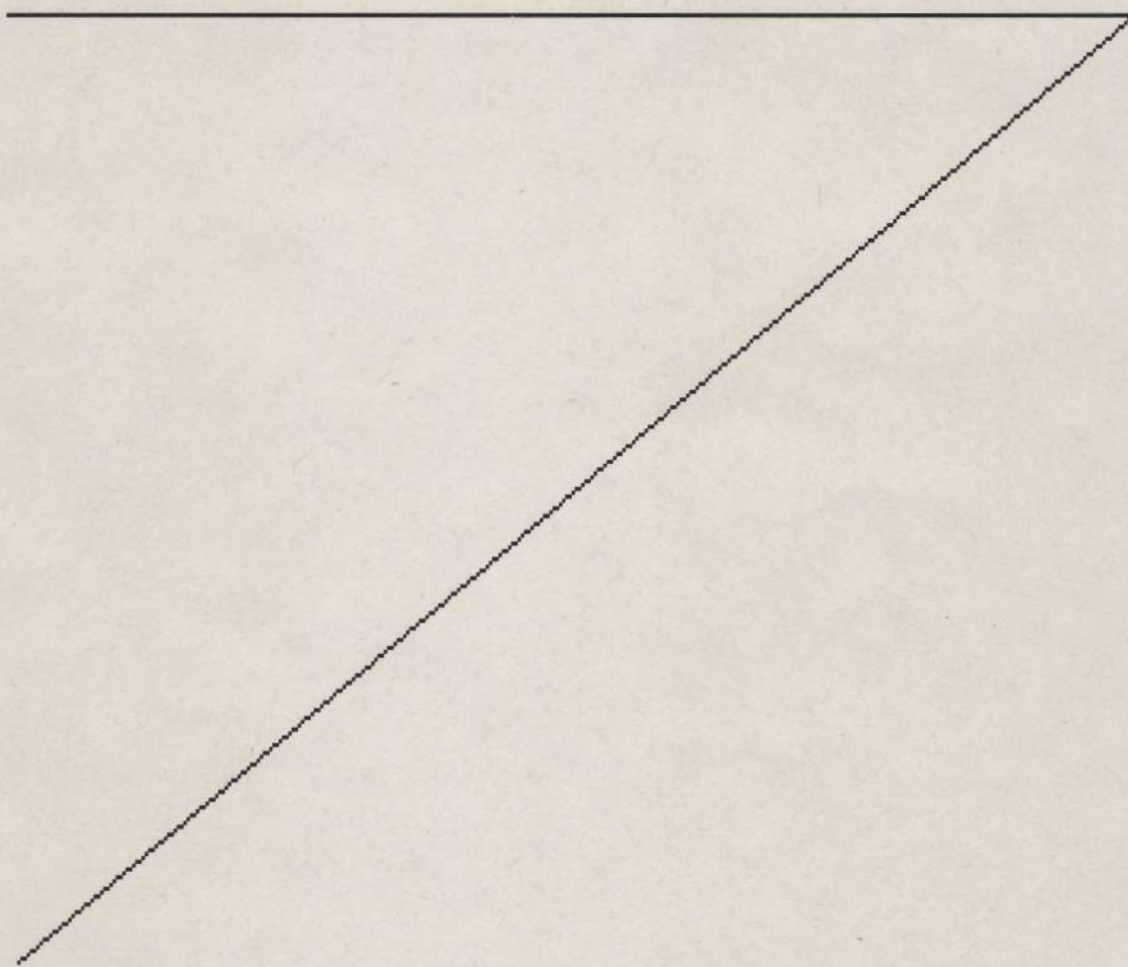
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 This test certificate refers only to metrological requirements.
 This test certificate cannot be used without applicant's authorization.



Descriptive annex to second addition to the test certificate number E-00.02.C04.

0.- Index.

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Descriptive annex to second addition to the test certificate number E-00.02.C04.

1.- Name and type of the instrument.

Load cell type S2.

Manufactured by:

SENSOCAR, S.A.
Carrer Géminis, 77, nau 2, P.I.Can Parellada
E-08228 TERRASSA SPAIN

It is using any concrete trade mark.

2.- Description of the modification.

This annex to second addition to the test certificate number E-00.02.C04 describes a modification of the type S2.

This second addition to the test certificate number E-00.02.C04 is relating to addition of new metrological characteristics in version S2-B.

Paragraph 1 of the annex to the test certificate number E-00.02.C04 was modified and replaced by paragraph 1 of the annex to first addition to the test certificate number E-00.02.C04.

Paragraph 2 of the annex to the test certificate number E-00.02.C04 was modified and replaced by paragraph 3.1 of the annex to first addition to the test certificate number E-00.02.C04.

Paragraph 3.1 of the annex to the test certificate number E-00.02.C04 was modified and replaced by paragraph 3.2 of the annex to first addition to the test certificate number E-00.02.C04.

Paragraph 5 of the annex to the test certificate number E-00.02.C04 was modified and replaced by paragraph 3.3 of the annex to first addition to the test certificate number E-00.02.C04.

Paragraph 7 of the annex to the test certificate number E-00.02.C04 was modified and replaced by paragraph 3.4 of the annex to first addition to the test certificate number E-00.02.C04.

This second addition to the test certificate number E-00.02.C04 affects paragraph 3.1, paragraph 3.2 and paragraph 3.4 of the annex to first addition to the test certificate number E-00.02.C04.

3.- Text after modification.

Paragraph 2 of the annex to the test certificate number E-00.02.C04 and paragraph 3.1 of the annex to first addition to the test certificate number E-00.02.C04 are modified and replaced by paragraph 3.1 of this descriptive annex.

Paragraph 3.1 of the annex to the test certificate number E-00.02.C04 and paragraph 3.2 of the annex to first addition to the test certificate number E-00.02.C04 are modified and replaced by paragraph 3.2 of this descriptive annex.





Descriptive annex to second addition to the test certificate number E-00.02.C04.

Paragraph 7 of the annex to the test certificate number E-00.02.C04 and paragraph 3.4 of the annex to first addition to the test certificate number E-00.02.C04 are modified and replaced by paragraph 3.3 of this descriptive annex.

3.1.- Functional description.

Load cell type S2 is a traction-compression load cell, based on a structure type S. The principle of measurement is that of strain gauges, as a full bridge, in an elastic element.

Load cell type S2 has three versions: S2-A, S2-B and S2-C.

Version S2-B can be manufactured by an impedance input of 350 or 1000 Ω . Version S2-B of 1000 Ω has a ratio of minimum LC verification interval Y of 15000, a minimum dead load output return Z of 6000 and is manufactured by stainless steel.

Reference is made to Figure 1 (drawing B1) and Figure 2 (drawing B2) of version S2-A of the annex to the test certificate number E-00.02.C04; Figure 3 (drawing B3), Figure 4 (drawing B4), Figure 5 (drawing B5) and Figure 6 (drawing B6) of version S2-B of the annex to the test certificate number E-00.02.C04; Figure 9 (drawing S2-C/7.2) and Figure 10 (drawing S2-C/8.2) of version S2-C of the annex to first addition to the test certificate number E-00.02.C04, and Figure 11 (drawing S2-B-01) of this descriptive annex.

3.2.- Metrological characteristics.

Load cell type S2 has the following metrological characteristics and information for compatibility of modules:

- For version S2-A:

Classification		C3 \updownarrow \ddagger	C4 \updownarrow \ddagger	--
Additional marking		---		--
Maximum number of LC verification intervals	n_{LC}	3000	4000	--
Maximum capacity	E_{max}	500 750	1000 1500	kg
Minimum dead load, relative	E_{min}/E_{max}	0		%
Ratio of minimum LC verification interval	$Y = E_{max}/v_{min}$	12000		--
Minimum dead load output return $Z = E_{max}/2DR$		5000		--
Rated output	C	2		mVV
Input impedance	R_{LC}	350		Ω
Minimum limit temperature rating	T_{min}	-10		$^{\circ}C$
Maximum limit temperature rating	T_{max}	+40		$^{\circ}C$
Safe overload	E_{lim}/E_{max}	150		%
Fraction maximum permissible error	ρ_{LC}	0,7		--
Constructive material		Steel		--

Version S2-A can have other maximum capacities from 500 kg to 1500 kg, respecting always its metrological and constructive characteristics, according to OIML R60.





Descriptive annex to second addition to the test certificate number E-00.02.C04.

- For version S2-B (with $R_{LC} = 350 \Omega$):

Classification	C3 \updownarrow \dagger		C4 \updownarrow \dagger		--							
Additional marking	---				--							
Maximum number of LC verification intervals n_{LC}	3000		4000		--							
Max. Capacity E_{max}	500	750	1000	1500	2000	3000	4000	5000	6000	7500	10000	kg
Minimum dead load, relative E_{min}/E_{max}	0											%
Ratio of minimum LC verification interval $Y = E_{max}/V_{min}$	12000											--
Minimum dead load output return $Z = E_{max}/2DR$	5000											--
Rated output C	2											mVV
Input impedance R_{LC}	350											Ω
Minimum limit temperature rating T_{min}	-10											$^{\circ}C$
Maximum limit temperature rating T_{max}	+40											$^{\circ}C$
Safe overload E_{lim}/E_{max}	150											%
Fraction maximum permissible error ρ_{LC}	0,7											--
Constructive material	Steel											--

Version S2-B with $R_{LC} = 350 \Omega$ can have other maximum capacities from 500 kg to 10000 kg, respecting always its metrological and constructive characteristics, according to OIML R60.

- For version S2-B (with $R_{LC} = 1000 \Omega$):

Classification	C3 \updownarrow \dagger		C4 \updownarrow \dagger		--							
Additional marking	---				--							
Maximum number of LC verification intervals n_{LC}	3000		4000		--							
Maximum capacity E_{max}	2000	3000	4000	5000	6000	7500	10000	kg				
Minimum dead load, relative E_{min}/E_{max}	0											%
Ratio of minimum LC verification interval $Y = E_{max}/V_{min}$	15000											--
Minimum dead load output return $Z = E_{max}/2DR$	6000											--
Rated output C	2											mVV
Input impedance R_{LC}	350											Ω
Minimum limit temperature rating T_{min}	-10											$^{\circ}C$
Maximum limit temperature rating T_{max}	+40											$^{\circ}C$
Safe overload E_{lim}/E_{max}	150											%
Fraction maximum permissible error ρ_{LC}	0,7											--
Constructive material	Stainless steel											--

Version S2-B with $R_{LC} = 1000 \Omega$ can have other maximum capacities from 2000 kg to 10000 kg, respecting always its metrological and constructive characteristics, according to OIML R60.

- For version S2-C:

Classification	C3 \updownarrow \dagger		C4 \updownarrow \dagger		--
Additional marking	---				--



Descriptive annex to second addition to the test certificate number E-00.02.C04.

Maximum number of LC verification intervals	n_{LC}			3000		4000		--	
Maximum capacity	E_{max}	1300	2000	3000	4000	5000	6000	6500	kg
Minimum dead load, relative	E_{min}/E_{max}	0							%
Ratio of minimum LC verification interval	$Y = E_{max}/V_{min}$	12000							--
Minimum dead load output return	$Z = E_{max}/2DR$	5000							--
Rated output	C	2							mV/V
Input impedance	R_{LC}	350							Ω
Minimum limit temperature rating	T_{min}	-10							$^{\circ}C$
Maximum limit temperature rating	T_{max}	+40							$^{\circ}C$
Safe overload	E_{lim}/E_{max}	150							%
Fraction maximum permissible error	ρ_{LC}	0,7							--
Constructive material		Steel							--

Version S2-C can have other maximum capacities from 1300 kg to 6500 kg, respecting always its metrological and constructive characteristics, according to OIML R60.

Other characteristics are:

Tolerance of nominal sensitivity	$\pm 0,1$	mV/V
Tolerance of input impedance	± 5	Ω

3.3.- Tests performed.

Tests have been performed with load cells with the following identification and characteristics:

Type	Serial numbers	R_{LC}	E_{max}	$Y = E_{max}/V_{min}$	$Z = E_{max}/2DR$	n_{LC}
S2-A	1686	350 Ω	500 kg	12000	5000	4000
S2-B	11534		2000 kg			
S2-C	0023/10-10		1300 kg			
S2-B	38606/11-11	1000 Ω	2000 kg	1500	6000	

Tests performed with load cell:

Tests	R60 No.	approved
Temperature test and repeatability (at 20, 40, -10 and 20 $^{\circ}C$)	5.1.1, 5.4; A.4.1	+
Temperature effect on minimum dead load output (at 20, 40, -10 and 20 $^{\circ}C$)	5.5.1.3; A.4.1	+
Creep test (at 20, 40 and -10 $^{\circ}C$)	5.3.1; A.4.2	+
Minimum dead load output return (at 20, 40 and -10 $^{\circ}C$)	5.3.2; A.4.3	+
Barometric pressure effects at room temperature	5.5.2; A.4.4	+
Humidity test, cyclic: CH-marked (or without marked)	5.5.3.1; A.4.5	+
Humidity test, static: SH-marked	5.5.3.2; A.4.6	-

4.- Drawings.

Dimensions indicate in this drawings are given in millimetres.

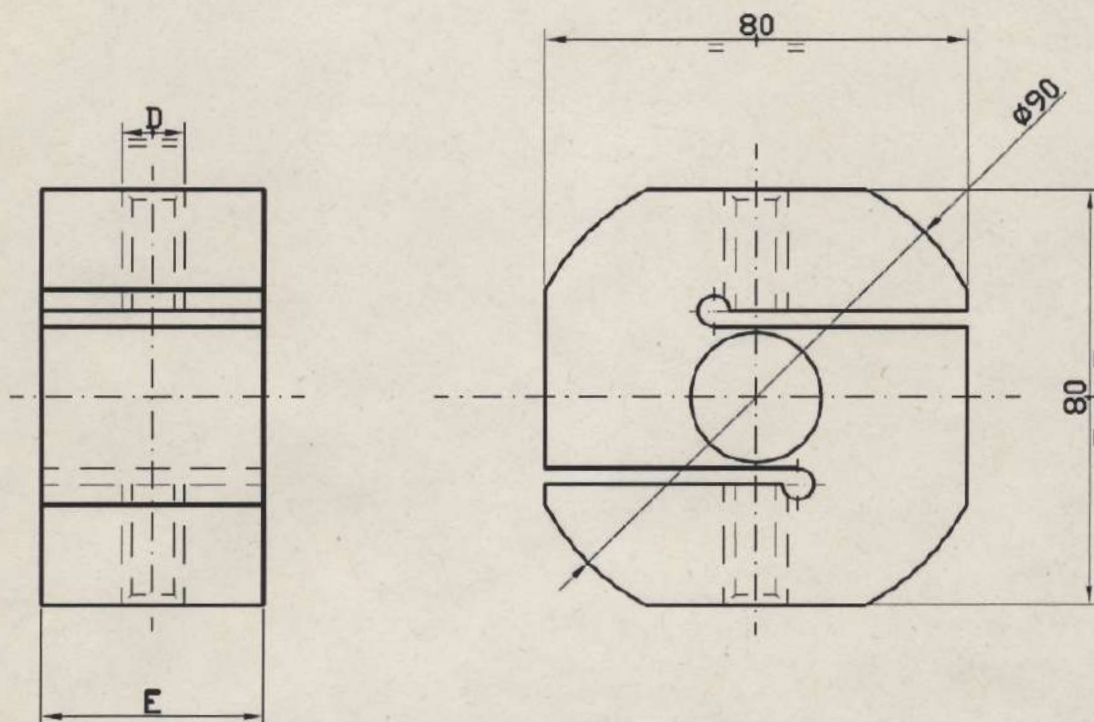
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Descriptive annex to second addition to the test certificate number E-00.02.C04.

Figure 11.- Drawing S2-B-01: Version S2-B ($R_{LC} = 1000 \Omega$).



CAPACITAT (kg)	D	E
2000	M16	42
2500	M16	42
3000	M24x2	42
5000	M24x2	42
6000	M24x2	42
10000	M24x2	52

