Generalitat de Catalunya
Departament d'Innovació, Universitats i Empresa
Secretaria d'Indústria i Empresa
Subdirecció General de Seguretat Industrial
Servei d'Automòbils, Productes i Metrologia
Secció de Metrologia

TEST CERTIFICATE

Number E-09.02.C02

LOAD CELL TYPE AM

Issued by: Secretaria d'Indústria i Empresa - 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_i 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: ASCELL SENSOR, S.L..
Avinguda Congost, núm.56, nau 3, Polígon Industrial Congost
E-08760 MARTORELL SPAIN

In respect of: The model of a **load cell**, tested as part of a non-automatic weighing instrument.
Manufacturer: ASCELL SENSOR, S.L..
Type: AM.

Characteristics:

Classification	C3↓	
Maximum number of LC verification intervals n_{LC}	3000	
Maximum capacity E_{max}	50 to 1000	kg
Ratio minimum LC verification interval $Y = E_{max}/v_{min}$	7500	

additional marking	temperature limits	rated output	impedance input	minimum dead load	safe overload
--	-10ºC/+40ºC	C = 2 mV/V	R_{LC} = 410 Ω	E_{min} = 0 kg	E_{lim}/E_{max} = 120%

The main characteristics are shown in the descriptive annex, which is an integral part of the test certificate and consists of 9 pages.
The type is described in the submitted technical documentation, identified with number 02/09.
The summary of tests involved can be found in the descriptive annex.

For delegation
of Secretari d'Indústria I Empresa
THE HEAD OF THE SERVICE OF AUTOMOBILES,
PRODUCTS AND METROLOGY

Joan Pau Clar i Guevara

Generalitat de Catalunya
Departament d'Innovació,
Universitats i Empresa
Secretaria d'Indústria i Empresa
Subdirecció General de Seguretat Industrial
Servei d'Automòbils, Productes i Metrologia

Barcelona, 10 February 2009

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Descriptive annex to test certificate number E-09.02.C02

0.- Index.

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1.- Name and type of the instrument.

Load cell type AM.

Manufactured by:

ASCELL SENSOR, S.L..
518, No.AM Street
Hangzhou Economic and Technological Development Zone
310018 ZHEJIAN CHINA

It is using any concrete trade mark.

2.- Functional description.

Load cell type AM is a shearing load cell, based on a double beam joined at the ends. The principle of measurement is that of strain gauges, as a full bridge, in an elastic element.

Load cell type AM has an only one version.

Reference is made to Figure 1 (drawing LH-460), Figure 2 (drawing LH-461) and Figure 3 (drawing LH-462) of this descriptive annex.

3.- Technical characteristics.

3.1.- Metrological characteristics.

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

Classification		C3↓	--
Additional marking		---	--
Maximum number of LC verification intervals	n_{LC}	3000	--
Maximum capacity	E_{max}	50 to 1000	kg
Minimum dead load, relative	E_{min}/E_{max}	0	%
Ratio of minimum LC verification interval	$Y = E_{max}/v_{min}$	7500	--
Minimum dead load output return $Z = E_{max}/2DR$		3000	--
Rated output	C	2	mV/V
Maximum excitation voltage		12	V
Input impedance	R_{LC}	410	Ω
Minimum limit temperature rating	T_{min}	-10	°C
Maximum limit temperature rating	T_{max}	+40	°C
Safe overload	E_{lim}/E_{max}	120	%
Fraction maximum permissible error	p_{LC}	0,7	--

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Load cell type AM can have other maximum capacities from 50 kg to 1000 kg, respecting always its metrological and constructive characteristics, according to OIML R60.

Other characteristics are:

Material	Aluminium	--
Tolerance of nominal sensitivity	± 0,2	mV/V
Tolerance of input impedance	± 82	Ω

3.2.- Additional characteristics.

Load cell type AM has the following additional characteristics:

Output impedance	350	Ω
Tolerance of output impedance	± 7	Ω
Reference excitation voltage	10	V

4.- Connections.

The connection is a four-wire system or a six-wire system. For a four-wire system, nominal section is 0,25 mm^2 and nominal length is 4 m.

The cable is shielded, with the shielding not connected to the load cell.

The connection code is the following:

System	Four-wire	Six-wire
Positive input	Red	Red
Negative input	Black	Black
Positive output	Green	Green
Negative output	White	White
Positive sense	--	Violet
Negative sense	--	Gray

Reference is made to Figure 4 (drawing LH-463) of this descriptive annex.

5.- Location of the indications.

The indications required according to OIML R 60 (2000) are in the Figure 5 (drawing LH-464) in a label named *characteristic label.*

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6.- Conditions for use.

No property of this instrument, whether described or not, may be in conflict with the standard and international recommendation mentioned in the test certificate.

7.- Tests performed.

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

Type	Serial number	E_{max}	$Y = E_{max} / v_{min}$	$Z = E_{max} / 2DR$	n_{LC}
AM	46027	50 kg	7500	3000	3000
AM	46028	200 kg	7500	3000	3000

Tests performed with load cell:

Tests	R60 Ref.	Approved
Temperature test and repeatability (at 20, 40, -10 and 20ºC)	5.1.1, 5.4; A.4.1	+
Temperature effect on minimum dead load output (at 20, 40, -10 and 20ºC)	5.5.1.3; A.4.1	+
Creep test (at 20, 40 and -10ºC)	5.3.1; A.4.2	+
Minimum dead load output return (at 20, 40 and -10ºC)	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	-

8.- Drawings.

Dimensions indicate in this drawings are given in milimeters.

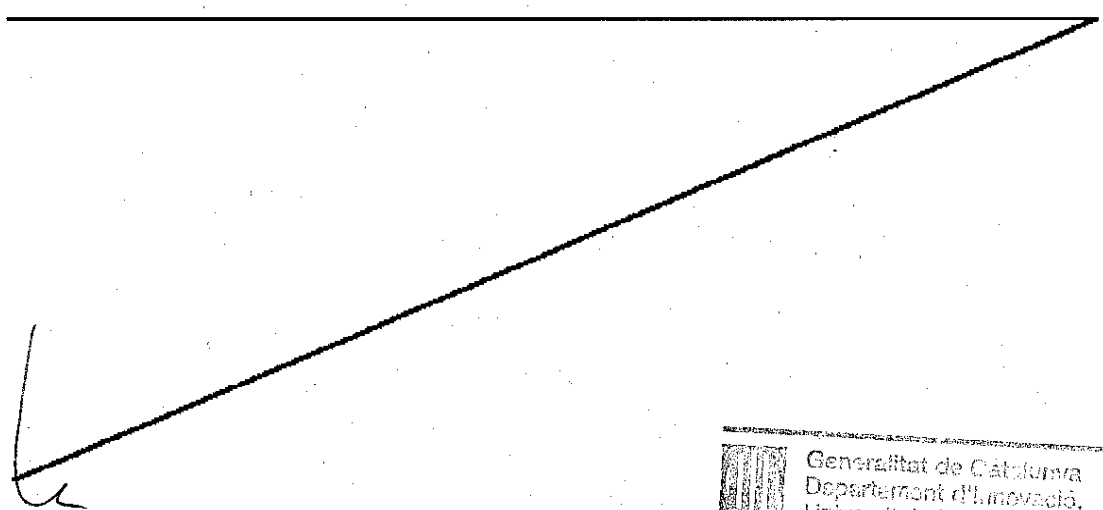

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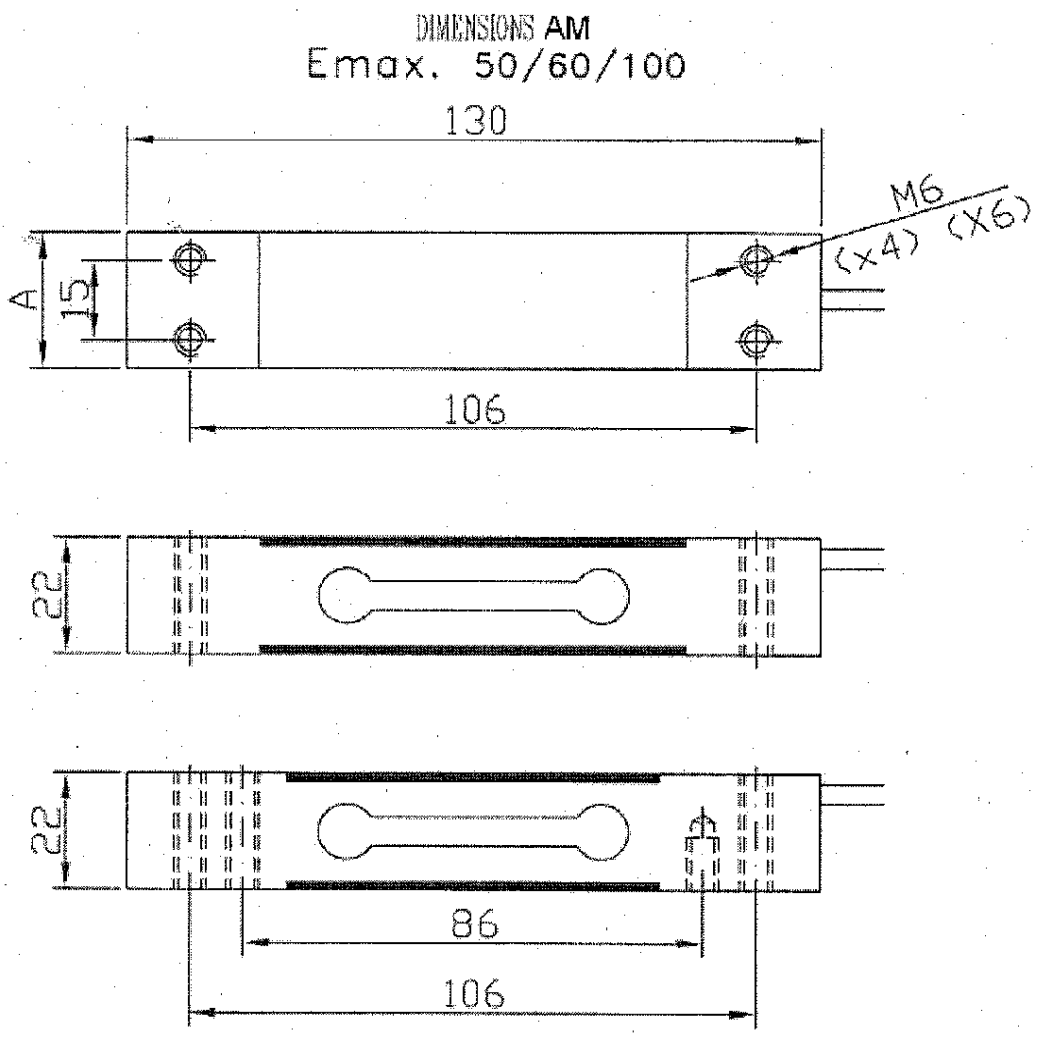
Figure 1.- Drawing LH-460.



kg	mm A
50/60	38.5
100	50

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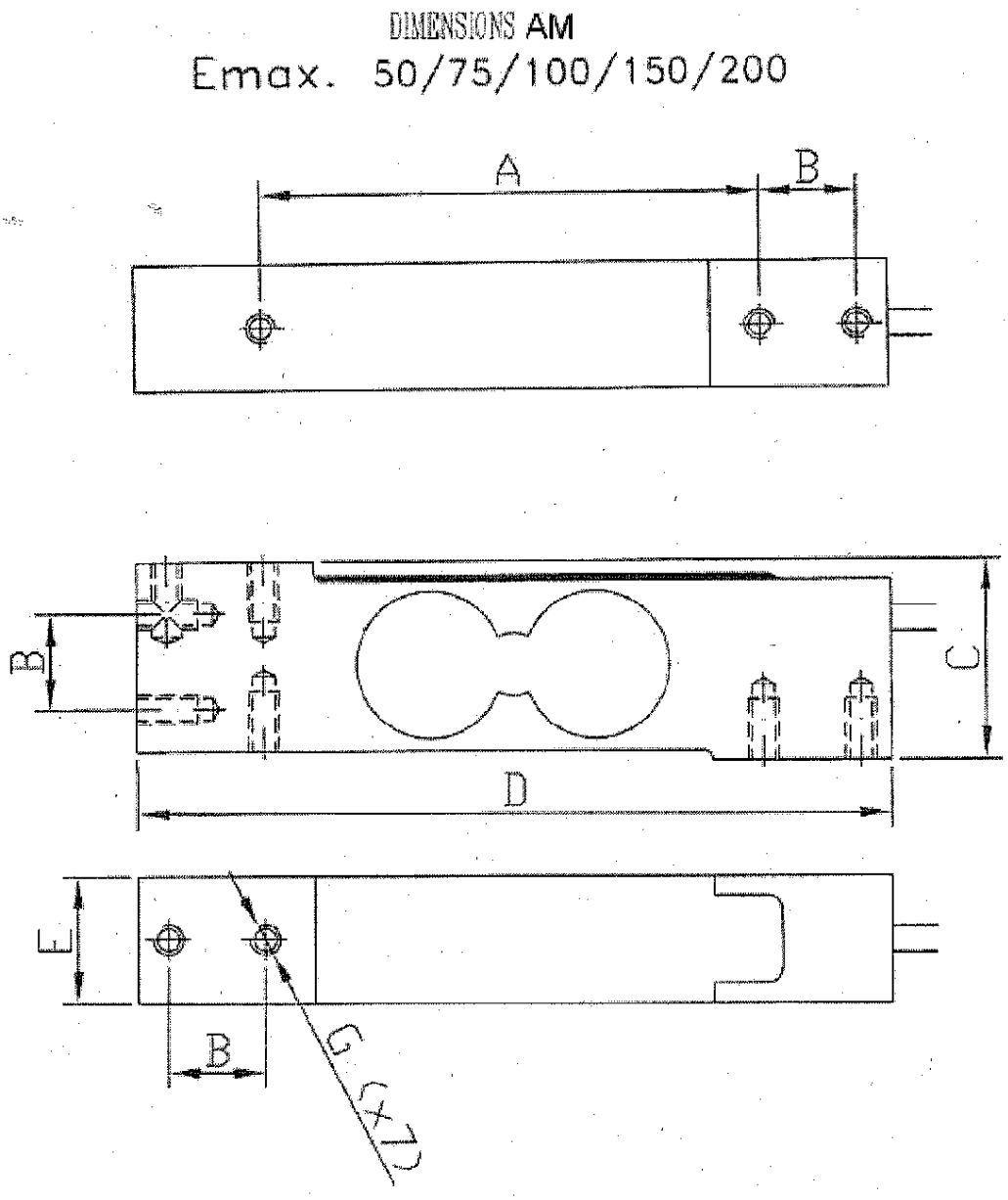
Figure 2.- Drawing LH-461.



mm	A	B	C	D	E	G
	100	19.1	40	150	25.4	M6

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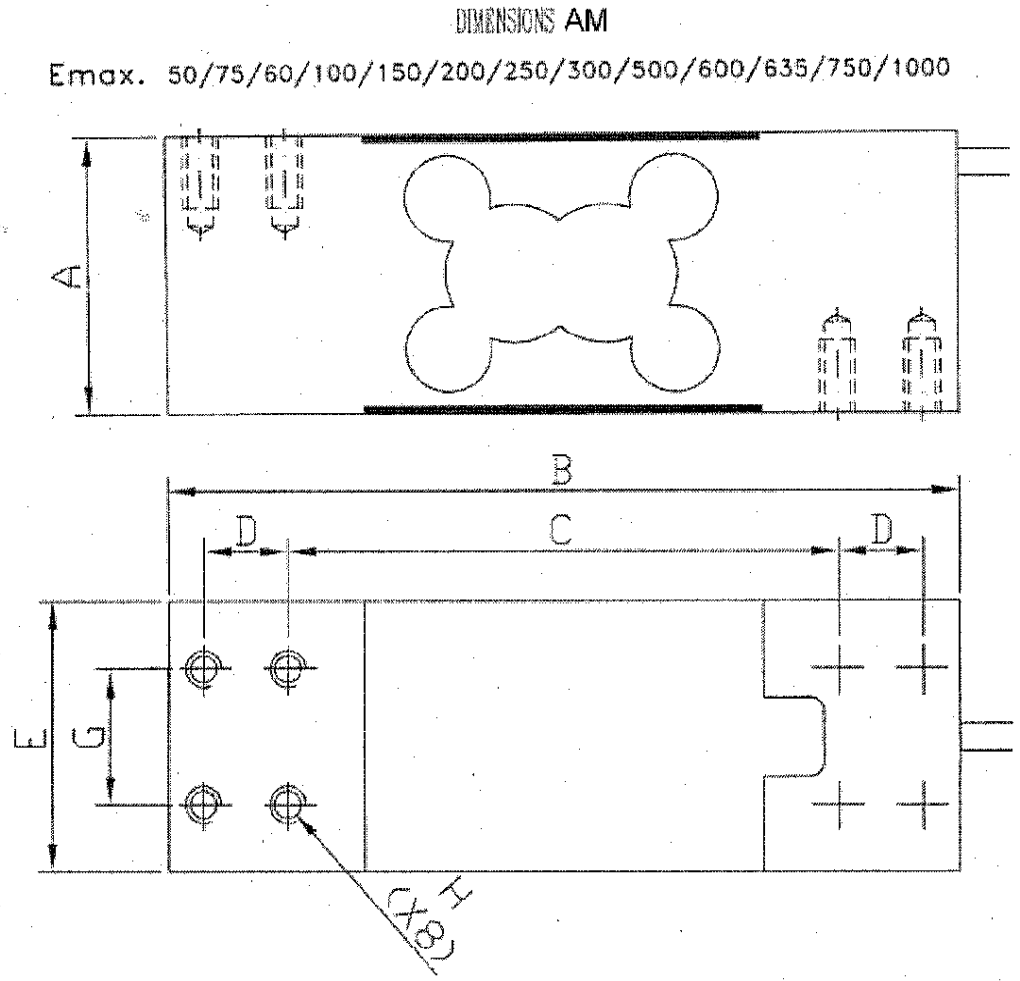
Figure 3.- Drawing LH-462.



mm	A	B	C	D	E	G	H
	62	176/188	107/122	19/35	60/63.5	30/50	M8

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Figure 4.- Drawing LH-463.

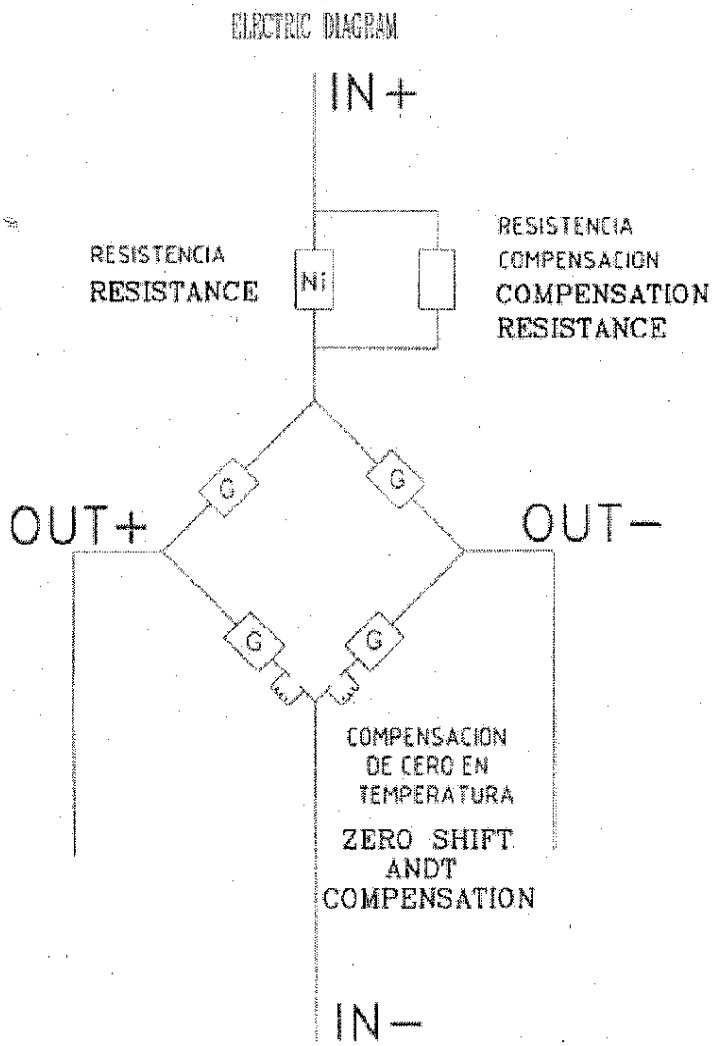

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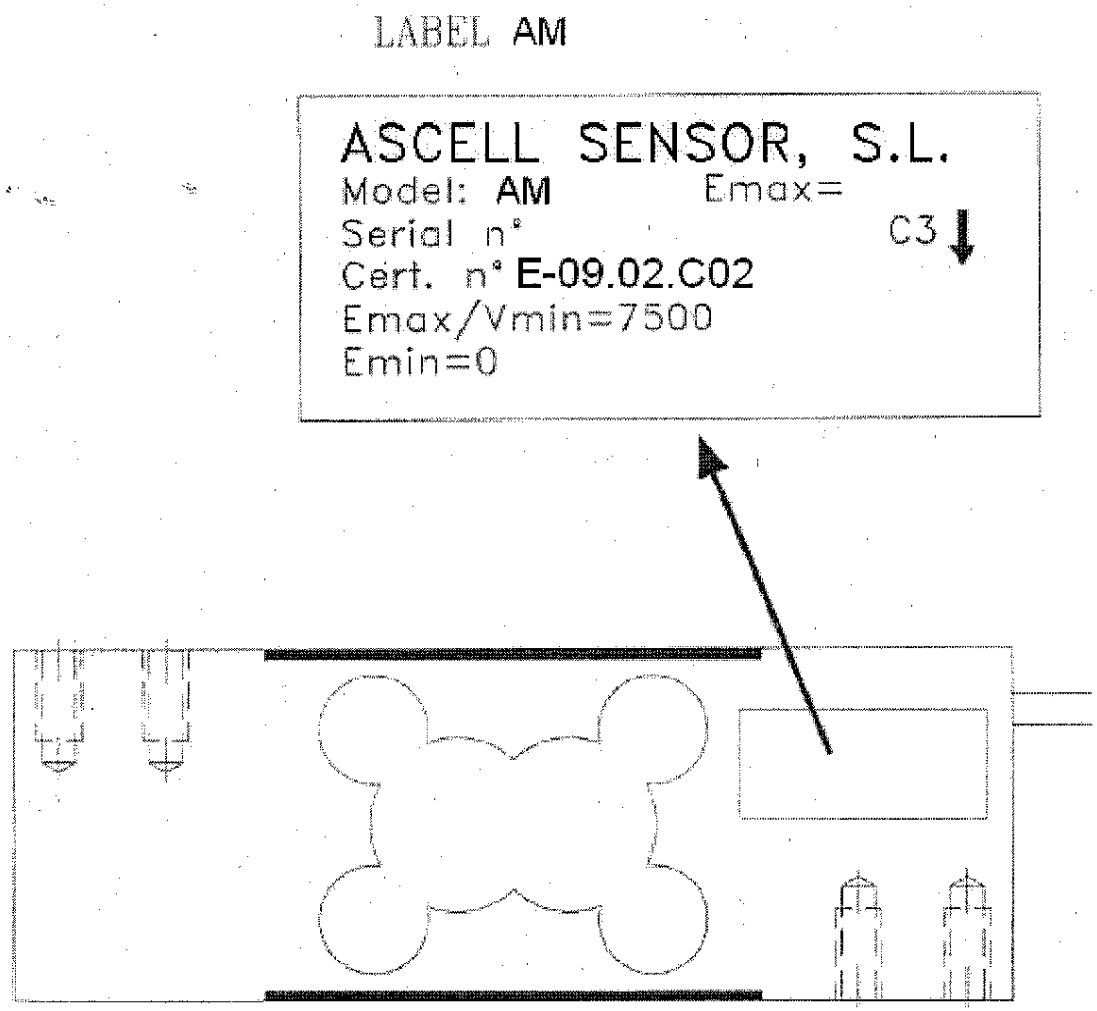
Figure 5.- Drawing LH-464.



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